CERTIFICATION REPORT FOR AREA 7 MISCELLANEOUS AREAS

FERNALD CLOSURE PROJECT
FERNALD, OHIO

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U.S. DEPARTMENT OF ENERGY

20500-RP-0008
REVISION 1

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LIST OF ACRONYMS AND ABBREVIATIONS

ASCOC	area-specific constituent of concern
ASL	Analytical Support Level
BTV	benchmark toxicity value
CAWWT	Converted Advanced Wastewater Treatment (Facility)
CDL	Certification Design Letter
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
COC	constituent of concern
CRDL	contract required detection limit
CU	certification unit
D&D	decontamination and dismantlement
DOE	U.S. Department of Energy
FCP	Fernald Closure Project
FRL	final remediation level
FTF	Fire Training Facility
HAMDC	highest allowable minimum detectable concentration
µg/kg	micrograms per kilograms
µg/L	micrograms per liter
MDL	minimum detectable level
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
OSDF	On-Site Disposal Facility
OU	Operable Unit
PAHs	polyaromatic hydrocarbons
PCB	polychlorinated biphenyl
pCi/g	picoCuries per gram
pCi/L	picoCuries per liter
PSP	Project Specific Plan
RAWP	Remedial Action Work Plan
RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision
SCQ	Sitewide CERCLA Quality Assurance Project Plan
SED	Sitewide Environmental Database
SEP	Sitewide Excavation Plan
STP	Sewage Treatment Plant
SWRB	Storm Water Retention Basin
TACOS	Transitional Additional Contractor Office Space
TPU	Total Propagated Uncertainty
UCL	upper confidence limit
V&V	verification and validation
V/FCN	Variance/Field Change Notice
WAC	waste acceptance criteria

EXECUTIVE SUMMARY

This Certification Report presents the information and data used by the U.S. Department of Energy (DOE) to determine that soils in the Area 7 Miscellaneous Areas meet established final remediation levels (FRLs). This area consists of portions of Area 7F (Building 30/45 Parking Lot), Area 7G [Converted Advanced Wastewater Treatment (CAWWT) Facility, footprint of the former Sewage Treatment Plant and surrounding area], Area 7H [footprint of the former Transitional Additional Contractor Office Space (TACOS) office trailer complex], and Areas 7I and 7K (the Silos Water Treatment Facility Area and adjacent road). The CAWWT Facility will remain operational post-closure. Once the CAWWT Facility is no longer necessary, it will be removed and the footprint will be certified.

This Certification Report includes details of the certification sampling, analysis, and validation that took place in Area 7 Miscellaneous Areas. Figure 1-1 depicts the layout of Area 7 Miscellaneous Areas.

Consistent with the Sitewide Excavation Plan (DOE 1998), these areas underwent predesign, excavation, and precertification activities, including the use of real-time instrumentation as well as physical sampling and analysis. As a result of these activities, it was determined that no further remediation was necessary prior to certification.

Area 7 Miscellaneous Areas were made up of 18 Group 1 certification units (CUs). Several of the CUs are located either within or contain part of high leachability zones where the FRL for total uranium is 20 milligrams per kilograms. CU delineation is described in the Certification Design Letter and Certification Project Specific Plan for Area 7 Miscellaneous Areas (DOE 2006). Certification sampling was conducted to verify that the certification criteria were achieved. These criteria state that: 1) the mean concentration or activities of the primary area-specific constituents of concern (ASCOCs) within a CU are less than the FRLs at the 95 percent upper confidence level (UCL) or the 90 percent UCL for the secondary ASCOCs; and 2) no certification result can exceed two times the FRL (i.e., the hotspot criterion). If either of these criteria is not met, then further investigation and possible excavation is required.

There were two reported results greater than two times the FRL in Area 7 Miscellaneous Areas for the primary ASCOC radium-226. These hotspots were located in CUs 4 and 14. The locations were excavated and re-sampled. Following the re-sampling events, the pre-excavated data was replaced with the new below-FRL result in Appendix A.

There was one reported result greater than two times the FRL in CU 4 for the primary ASCOC total uranium. The location was excavated and re-sampled. Following the re-sampling event, the pre-excavated data was replaced with the new below-FRL result in Appendix A.

In order to demonstrate that no above-FRL conditions existed in trenches created by utility removal, samples were collected from the trench bottoms. These utilities were removed after precertification had been completed. The data from this sampling effort along with a statistical evaluation (where necessary) are presented in this document.

Upon completion of final certification statistics, all of the Miscellaneous Areas CUs pass the certification criteria. On the basis of this reported information and supporting project files, DOE that determined that no additional remedial actions are required in this portion of the site. The area will be considered certified when the U.S. Environmental Protection Agency and Ohio Environmental Protection Agency concur that certification criteria have been met.

1.0 INTRODUCTION

1.1 PURPOSE

This Certification Report presents the information and data used by the U.S. Department of Energy (DOE) to determine that soils in the Area 7 Miscellaneous Areas meet established final remediation levels (FRLs). Figure 1-1 depicts the boundaries, location, and layout of the Area 7 Miscellaneous Areas.

On the basis of this reported information and supporting project files, DOE has determined that no additional remedial actions are required in this portion of the site.

1.2 BACKGROUND

In the Operable Unit (OU) 5 Record of Decision (ROD, DOE 1996a), DOE made a commitment to excavate contaminated soil that exceeds health-based FRLs. The excavated material may be disposed of at the On-Site Disposal Facility (OSDF) or at an off-site disposal facility if it does not meet OSDF waste acceptance criteria (WAC). The OU5 Remedial Investigation Report (RI, DOE 1995a) defined the extent of above-FRL soil contamination and, in general, indicated widespread contamination occurring in approximately 430 acres of the 1,050-acre FCP.

In the OU5 Remedial Action Work Plan (RAWP, DOE 1996b), DOE agreed to prepare a Sitewide Excavation Plan (SEP, DOE 1998) that defined the overall approach to cleaning up soil and at- and below-grade debris in accordance with the OU2 ROD (DOE 1995b), OU3 ROD (DOE 1996c), and OU5 ROD.

In the SEP, the FCP was divided into distinct remedial areas and phases for soil remediation, based on the operable units' remediation schedule. After all necessary remediation is completed within each area/phase, the soil is certified as having attained all clean up goals (i.e., FRLs). The general approach for the removal of contaminated soil and debris in Area 7 Miscellaneous Areas followed "Excavation Approach D - Excavation Following D&D in the Former Production Area, STP and FTF," as described in Section 4.4 of the SEP.

1.3 SCOPE AND AREA DESCRIPTION

The scope of this Certification Report includes details of certification sampling, analysis and validation that took place in Area 7 Miscellaneous Areas. Figure 1-1 depicts the layout of Area 7 Miscellaneous Areas that is to be certified under this Certification Report.

The Converted Advanced Wastewater Treatment (CAWWT) Facility will remain operational post-closure. Once the CAWWT Facility is no longer necessary, it will be removed and the footprint will be certified.

1.4 OBJECTIVES

The objectives of this Certification Report are:

- Summarize the precertification and remedial activities,
- Describe the analytical methods, data validation processes, data reduction and statistical processes used to support the certification process,
- Present certification sampling results for all certification units (CUs),
- Present the statistical analysis showing that all CUs have passed the certification criteria, including FRL attainment and hotspot criteria, and
- Describe access controls implemented to prevent recontamination.

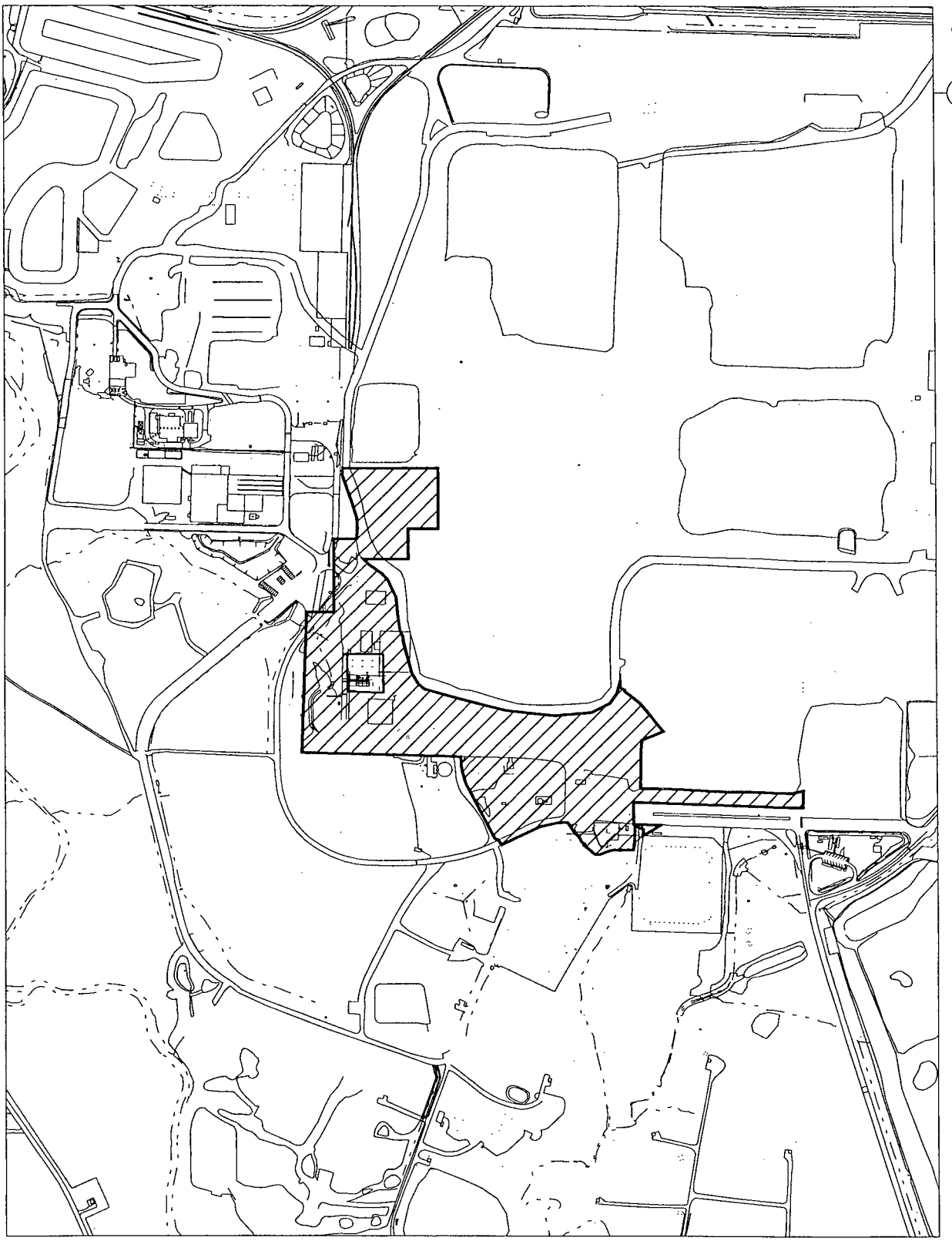
1.5 REPORT FORMAT

This Certification Report is presented in six sections with supporting documentation and data in the appendices. These sections are as follows:

Section 1.0	Introduction: Purpose, background, area description, scope, and objectives of the report
Section 2.0	Certification Approach: The approach for certification sampling and analysis
Section 3.0	Overview of Field Activities: Historical data evaluation, precertification, area preparation, excavation and changes to work scope
Section 4.0	Analytical Methodologies, Data Validation Processes and Data Reduction
Section 5.0	Certification Evaluation and Conclusions
Appendix A	Certification Samples, Analytical Results and Statistics Tables
Appendix B	Variances/Field Change Notices (V/FCNs) Associated with Area 7 Miscellaneous Areas Certification Effort
Appendix C	Correction of 7-day Radium-226 Results

1.6 FCP MASTER CERTIFICATION MAP

In order to track certification areas at the FCP, DOE updates a controlled map (Figure 1-2) showing the status of the soil remediation areas and phased areas with all Certification Reports. This map has been updated to include certification of Area 7 Miscellaneous Areas.



LEGEND:

A7 MISC. AREA

SCALE

600 300 0 600 FEET

FIGURE 1-1. AREA 7 MISCELLANEOUS AREAS CERTIFICATION AREA LOCATION MAP

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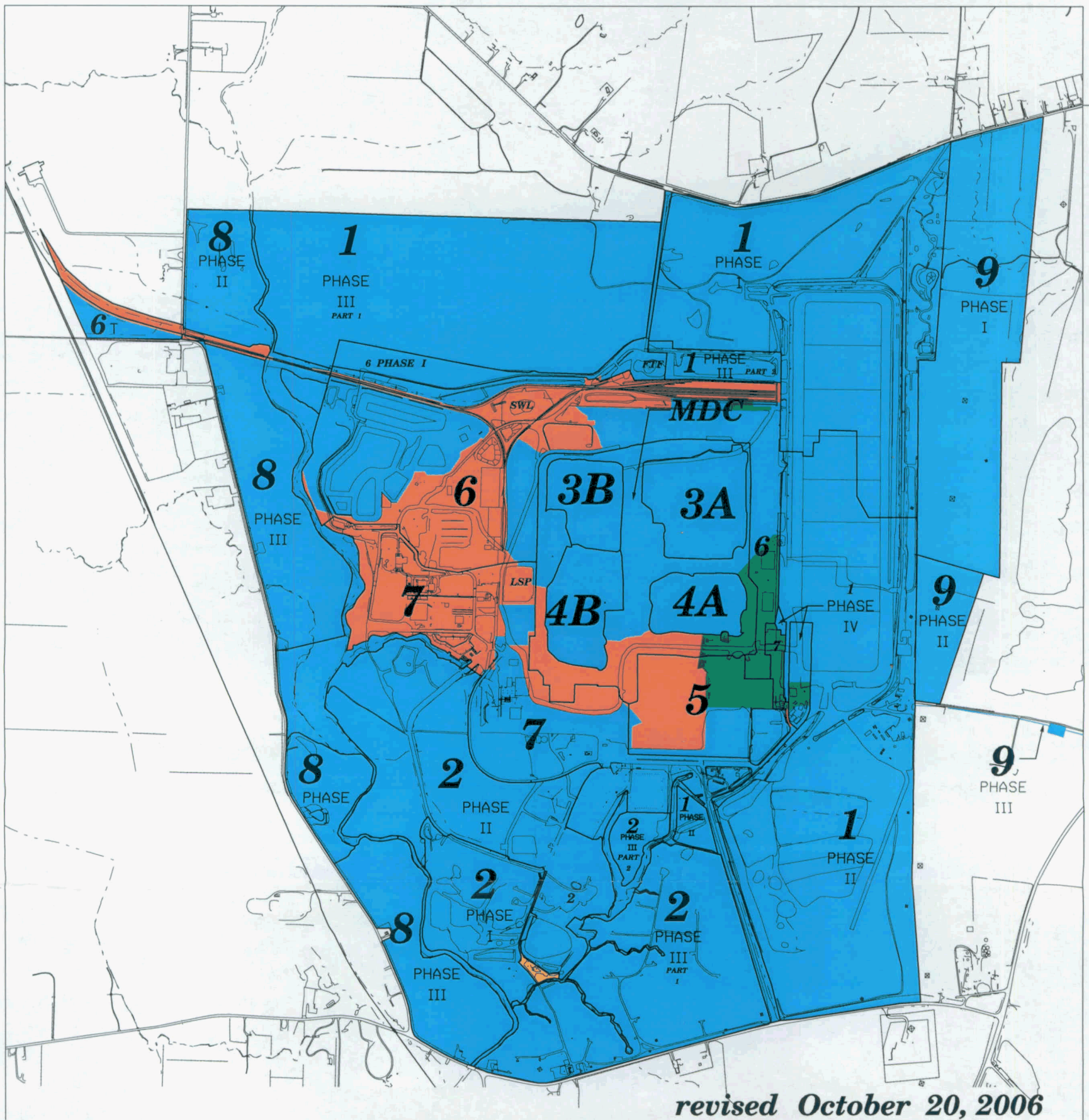
STATE PLANAR COORDINATE SYSTEM 1983

08-FEB-2007



AREAS	TOTAL ACRES	APPROVED CERT. ACRES	CERT. ACRES IN PROGRESS	REMEDIATION ACRES IN PROGRESS	PREDESIGN ACRES IN PROGRESS	REMAINING ACRES
AREA 1	395.1	394.0	0	1.0	0	0
AREA 2	173.9	173.9	0	0	0	0
AREA 3A/4A	29.3	29.3	0	0	0	0
AREA 3B/4B	25.4	25.4	0	0	0	0
AREA 5	26.9	8.9	12.4	5.6	0	0
AREA 6	148.9	84.0	54.1	10.8	0	0
AREA 7	77.0	48.3	26.3	2.4	0	0
AREA 8	98.9	98.9	0	0	0	0
MDC	39.8	24.2	11.7	3.9	0	0
PR/SSOD/PPDD	33.3	33.3	0	0.0	0	0
TOTAL ON SITE	1048.6	920.4	104.6	23.6	0	0
AREA 9	85.6	85.6	0	0	0	0
TOTAL OFF SITE	85.6	85.6	0	0	0	0

AREA 10 INCLUDES PIPELINES RELATED TO GROUNDWATER REMEDIATION AND OTHER UTILITIES NOT SPECIFICALLY LISTED.

SCALE

1100 550 0 1100 FEET

FIGURE 1-2. FCP CONTROLLED CERTIFICATION MAP

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STATE PLANAR COORDINATE SYSTEM 1983
08-FEB-2007

2.0 CERTIFICATION APPROACH

2.1 CERTIFICATION STRATEGY

This section summarizes the area-specific constituent of concern (ASCOC) selection process and the certification approach, including CU establishment, sampling design, and statistical analysis. The general certification strategy is described in Section 3.4 of the SEP, and the specific strategy for Area 7 Miscellaneous Areas is described in the CDL and Certification Sampling PSP for Area 7 Miscellaneous Areas.

2.1.1 Area-Specific Constituents of Concern

Total uranium, radium-226, radium-228, thorium-228 and thorium-232 are sitewide primary constituents of concern (COCs) and were retained as ASCOCs for this remediation effort. Secondary ASCOCs for Area 7 are listed in the SEP; however, some COCs were not retained for Area 7 Miscellaneous Areas based on the area investigations.

2.1.2 ASCOC Selection Criteria

The selection process for retaining ASCOCs for a remediation area is driven by applying a set of decision criteria. A soil contaminant is retained as an ASCOC if:

- It is listed as a soil COC in the OU5 ROD and, it is listed as an ASCOC in Table 2-7 of the SEP for the Remediation Area of interest;
- It is listed as a COC for a hazardous waste management unit or underground storage tank that lies within the certification area boundary;
- It can be traced to site use in the remediation area of interest, either through process knowledge or known release of the constituent to the environment;
- Analytical results indicated that a contaminant is present above its FRL, and the above-FRL concentrations are not attributed to false positives or elevated Contract Required Detection Limits (CRDLs);
- Physical characteristics of the contaminant, such as degradation rate or volatility, indicated it is likely to persist in the soil between time of release and remediation; or
- The contaminant is one of the sitewide primary COCs (total uranium, radium-226, radium-228, thorium-238, and thorium-232).

Table 2-1 lists the secondary ASCOCs identified in Table 2-7 of the SEP. Using the above process, the ASCOCs were refined to those listed in Table 2-2, which presents all of the ASCOCs listed in Table 2-1. Additionally, Table 2-2 lists the justification for retaining or not retaining the ASCOCs, and the ecological COCs for each CU in Area 7 Miscellaneous Areas.

2.1.3 ASCOC Selection Process

Each COC listed in Table 2-1 was evaluated for their relevance to Area 7 Miscellaneous Areas. Table 2-2 presents the reasoning for either retaining or eliminating the ASCOCs listed in Table 2-1. Table 2-3 presents the final list of ASCOCs and associated FRLs/benchmark toxicity values (BTVs) for the Area 7 Miscellaneous Areas.

2.2 CERTIFICATION APPROACH

The certification design for Area 7 Miscellaneous Areas followed the general approach outlined in Section 3.4 of the SEP. The design for Area 7 Miscellaneous Areas is depicted on Figure 2-1 and the sample locations are depicted in Figures 2-2 through 2-10. The five primary ASCOCs (total uranium, radium-226, radium-228, thorium-228, and thorium-232) were retained in each CU.

Many factors were taken into consideration when determining the boundaries for each CU within Area 7 Miscellaneous Areas. These factors included: areas defined as high leachability zones, historical land use, proximity to other areas of the site, and residual COC data. Additionally, since Area 7 Miscellaneous Areas falls within the Former Production Area, it is considered to be an impacted area, and was therefore comprised of Group 1 CUs to allow for more concentrated sampling.

The CAWWT Facility will remain operational post-closure and will not be certified at this time. Once the CAWWT Facility is no longer necessary, it will be removed and the footprint will be certified. Figure 2-1 shows the footprint of the CAWWT Facility.

2.2.1 Area 7 Miscellaneous Areas Certification Unit Design

The Area 7 Miscellaneous Areas consists of 18 Group 1 CUs that were designed around a combination of former land use, location, and COCs for each area. As shown on Figure 2-1, the separate areas included in this certification effort are represented by groups of CUs as follows:

- Area 7F
- Area 7G
- Area 7H
- Area 7I/K

Due to the need to construct a backwash basin to support CAWWT Facility operations, sampling was needed in the basin footprint located to the south of the CAWWT Facility. As discussed in the Certification Design Letter (CDL) and Certification Project Specific Plan (PSP) for Area 7 Miscellaneous Areas (DOE 2006), this sampling effort was completed under V/FCN 20500-PSP-0010-03 written to the PSP for Excavation Control and Precertification of Area 7 Support and Silos Process Area (DOE 2005a).

In Area 7G (CAWWT Area), CUs 4, 6 through 10, and 18 (CAWWT Backwash Basin) are in a designated high-leachability zone. The minimum detectable level (MDL) for total uranium in these CUs is 20 milligrams per kilogram (mg/kg), which reflects the more restrictive criteria imposed for these areas. Finally, CU 7 was designed around the burial area for perchlorate-contaminated equipment.

2.2.2 Sample Selection Process

For the 18 Group 1 CUs, the selection of certification sampling locations was conducted according to Section 3.4.2 of the SEP. Each CU was first divided into 16 approximately equal sub-CUs. Sample locations were then generated by randomly selecting an easting and northing coordinate within the boundaries of each sub-CU, then testing those locations against the minimum distance criteria for the CU. If the minimum distance criteria were not met, an alternative random location was selected for that sub-CU, and all the locations were re-tested. This process continued, until all 16 random locations met the minimum distance criteria.

Four of the 16 sample locations (one location from each quadrant of the CU) were designated with a "V." One sample location in the CU was designated with a "D," indicating a field duplicate sample collection location. The four samples designated as "archive" were not collected in any CU. Samples were collected for analysis from the 0 to 6-inch interval at all locations.

Prior to commencement of certification sampling field activities, all certification sample locations were surveyed and field verified to make sure no surface obstacles would prevent collection at the planned location. It was not necessary to move any planned certification sample locations.

2.2.3 Certification Sampling

Samples were collected for analysis from 0 to 6 inches in each Group 1 CU. The four samples designated as "archive" were not collected because they were not needed for additional analysis.

2.2.4 Statistical Analysis

Two criteria must be met for the CU to pass certification. If the data distribution is normal or lognormal, the first criterion compares the 95 percent upper confidence limit (UCL) on the mean of each primary COC to its FRL, or the 90 percent UCL on the mean of each secondary ASCOC. On an individual CU basis, any ASCOC with the 95 percent UCL (for primary ASCOCs) or 90 percent UCL (for secondary ASCOCs) above the FRL results in that CU failing certification. If the data distribution is not normal or lognormal, the appropriate nonparametric approach discussed in Appendix G of the SEP will be used to evaluate the first criterion; the *a posteriori* test will be performed to determine whether the sample size is sufficient for a meaningful conclusion of this comparison. The second criterion is the hotspot criterion, which states that primary or secondary ASCOC results must not exceed two times the FRL. When the given UCL on the

mean for each COC is less that its FRL and the hotspot criterion is met, the CU will be considered certified.

In the event that a CU passes the *a posteriori* test but fails certification, the following two scenarios will be evaluated: 1) localized contamination, and 2) widespread contamination. Details on the evaluation and responses to these possible outcomes are provided in Section 3.4.5 of the SEP.

TABLE 2-1
ASCOCs FOR AREA 7 FROM THE SEP

Primary COCs	Secondary COCs for Area 7
Radium-226	Aroclor-1254
Radium-228	Aroclor-1260
Thorium-228	Arsenic
Thorium-232	Beryllium
Total Uranium	Cesium-137
	Dieldrin
	Lead
	Lead-210
	Manganese
	Technetium-99
	Thorium-230
	Ecological COCs for Area 7
	Antimony
	Cadmium
	Molybdenum
	Silver
	PAHs

PAHs - polyaromatic hydrocarbons

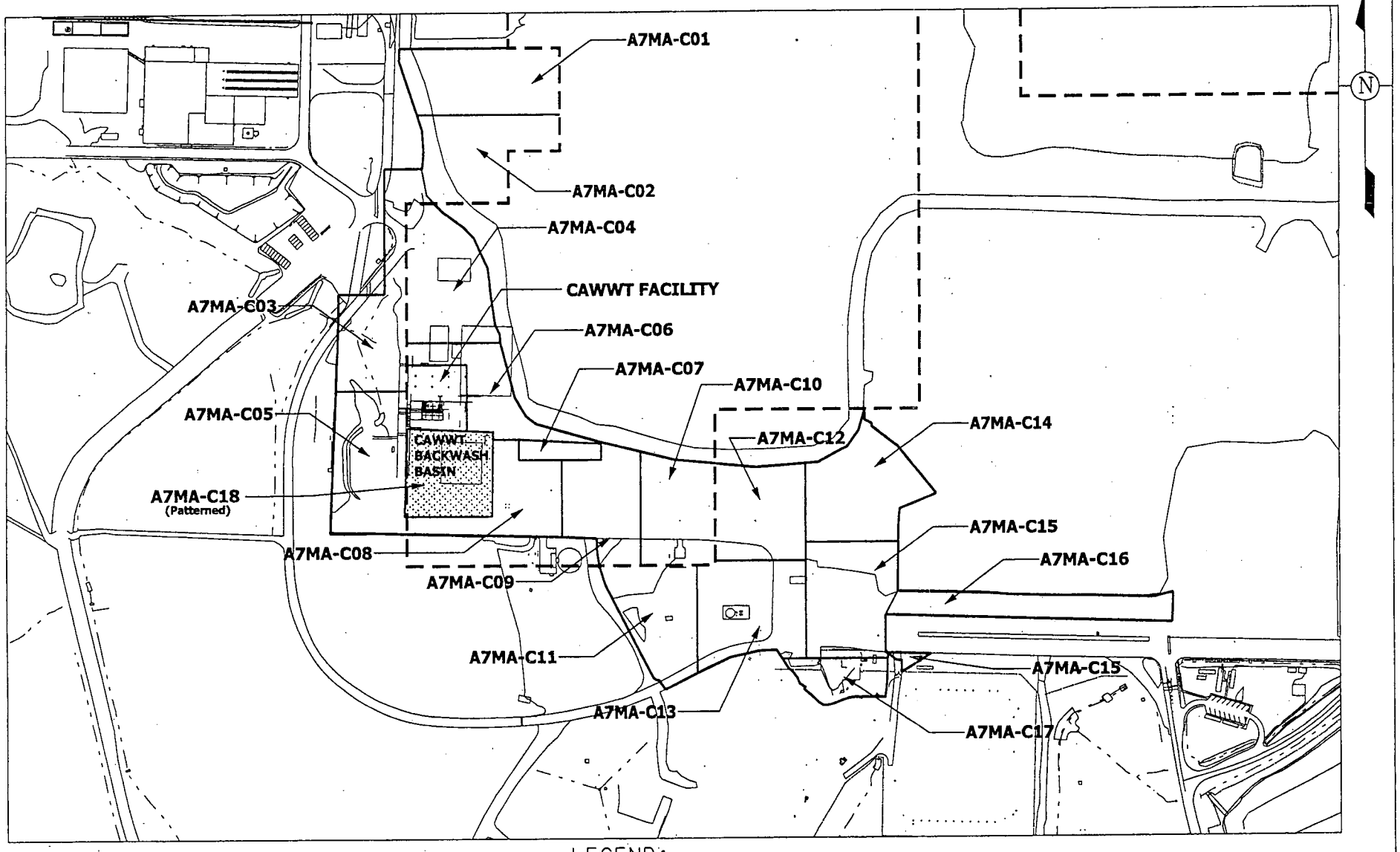
TABLE 2-2
ASCOC LIST FOR AREA 7 MISCELLANEOUS AREAS

ASCOC	Retained as ASCOC?	Justification	CU
Radiological			
Radium-226	Yes	Sitewide primary COC	All
Radium-228	Yes	Sitewide primary COC	All
Thorium-228	Yes	Sitewide primary COC	All
Thorium-232	Yes	Sitewide primary COC	All
Total Uranium	Yes	Sitewide primary COC	All
Lead-210	No	Not detected at concentrations above the FRL	None
Technetium-99	Yes	COC for Area 7I and CAWWT Basin	17, 18, Trench
Thorium-230	No	Not detected at concentrations above the FRL	None
Cesium-137	No	Not detected at concentrations above the FRL	None
Inorganics			
Antimony	Yes	Ecological COC for 7F.	1, Trench
Arsenic	Yes	Above-FRL COC for 7G and 7H;	1-15
Beryllium	Yes	Above-FRL COC for 7F, 7G, and 7H	1-15, 18, Trench
Cadmium	No	Not detected at concentrations above the FRL	Trench
Lead	No	Not detected at concentrations above the FRL	None
Manganese	No	Not detected at concentrations above the FRL	None
Molybdenum	No	Not detected at concentrations above the FRL	Trench
Perchlorate	Yes	COC for Area 7H (equipment burial area only)	7
Silver	No	Not detected at concentrations above the FRL	Trench
Organics			
Aroclor-1254	Yes	Above-FRL COC for 7G and 7H	3-15, 17, 18, Trench
Aroclor-1260	Yes	Above-FRL COC for 7G and 7H	3-15, 17, 18, Trench
Dieldrin	Yes	Above-FRL COC for 7G and 7H	3-15, Trench
PAHs	No	Not detected at concentrations above the FRL	None

TABLE 2-3
FINAL ASCOC LIST FOR AREA 7
MISCELLANEOUS AREAS CERTIFICATION UNITS

ASCOC	FRL *(BTV)*
Radiological	
Radium-226	1.7 pCi/g
Radium-228	1.8 pCi/g
Thorium-228	1.7 pCi/g
Thorium-232	1.5 pCi/g
Total Uranium	82 mg/kg
Total Uranium (high-leachability)	20 mg/kg
Technetium-99	29.1 pCi/g*
Inorganics	
Antimony	96 mg/kg *(10 mg/kg)*
Arsenic	12 mg/kg
Beryllium	1.5 mg/kg
Perchlorate	NA
Pesticides/PCBs	
Aroclor-1254	0.13 mg/kg
Aroclor-1260	0.13 mg/kg
Dieldrin	0.015 mg/kg

PCB - polychlorinated biphenyl
pCi/g - picoCuries per gram



LEGEND:

A7MA BOUNDARY

HIGH LEACH ZONE

SCALE

350 175 0 350 FEET

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STATE PLANAR COORDINATE SYSTEM 1983

FIGURE 2-1. AREA 7 MISCELLANEOUS AREAS CU LOCATION MAP

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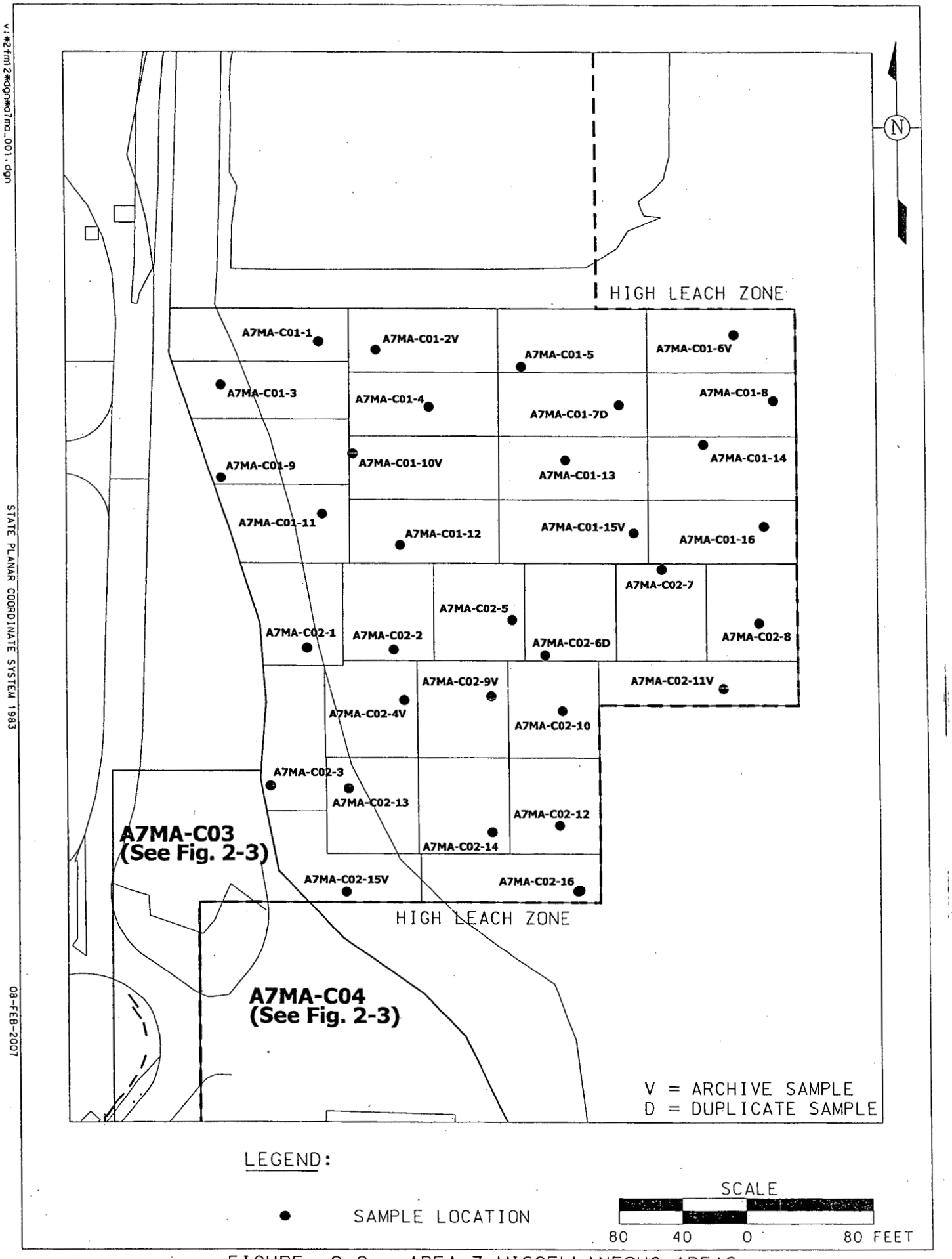


FIGURE 2-2. AREA 7 MISCELLANEOUS AREAS
SUB CU AND SAMPLE LOCATION MAP FOR CUs 1 & 2

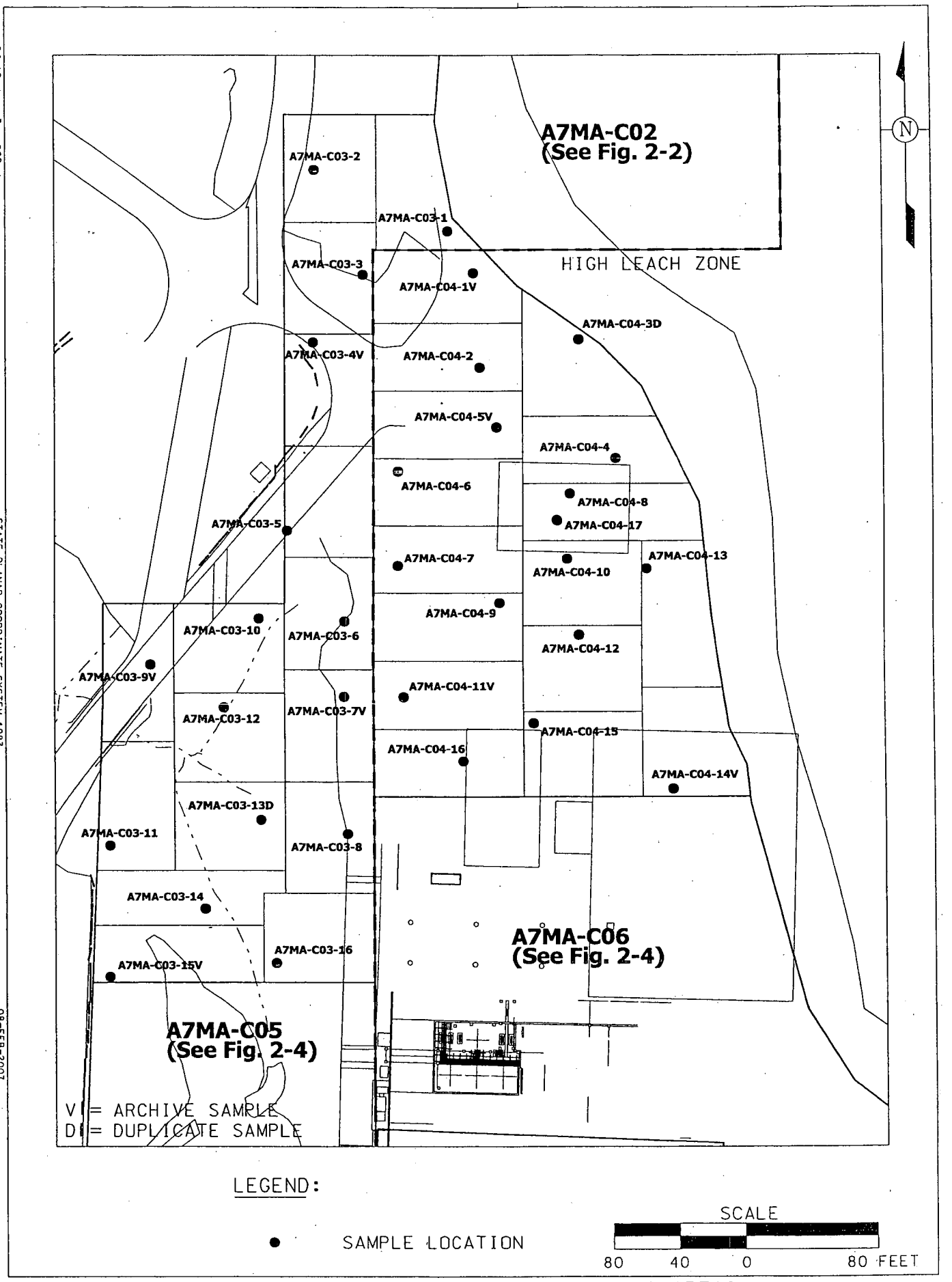
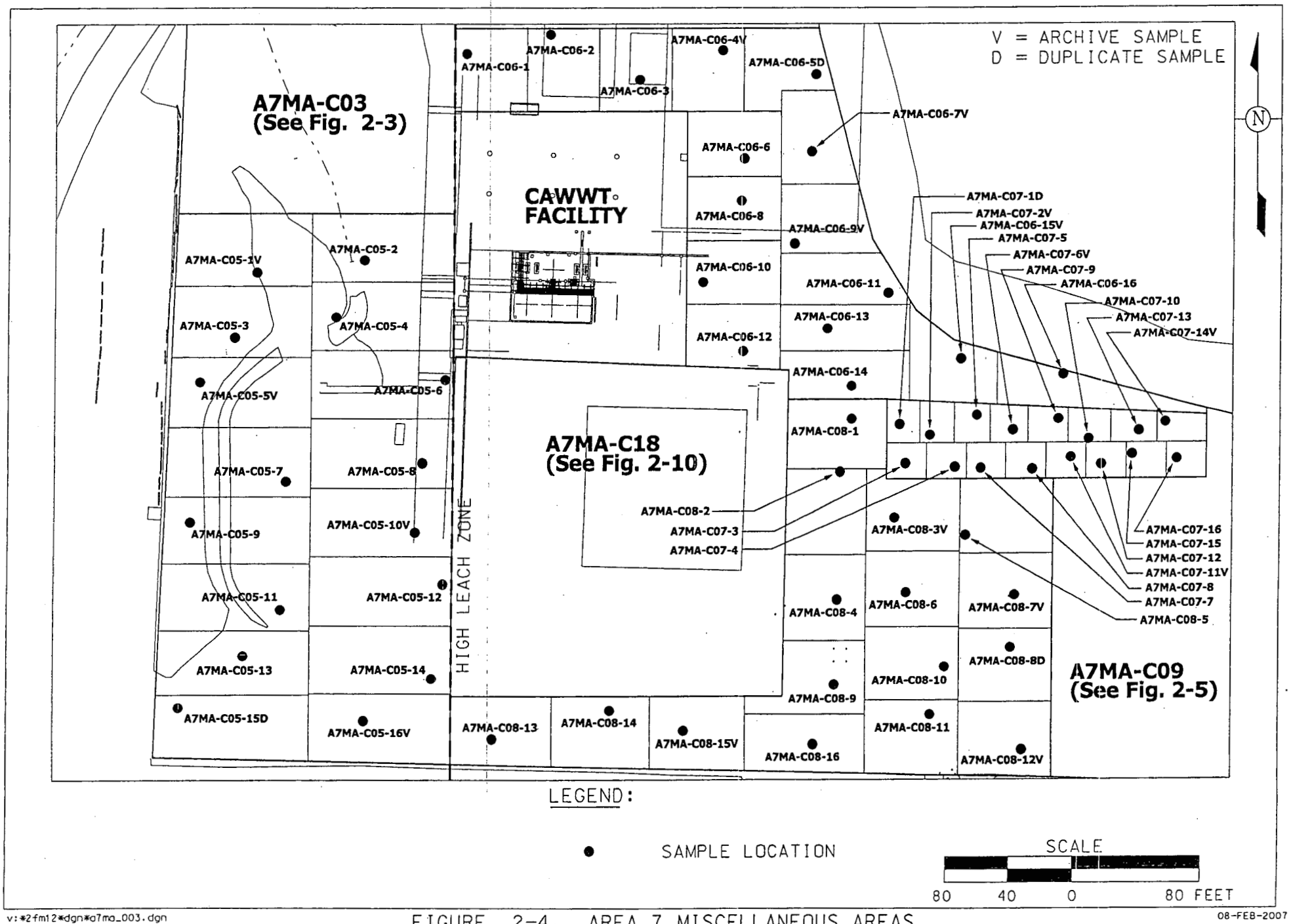


FIGURE 2-3. AREA 7 MISCELLANEOUS AREAS SUB CU AND SAMPLE LOCATION MAP FOR CUs 3 & 4



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STATE PLANAR COORDINATE SYSTEM 1983

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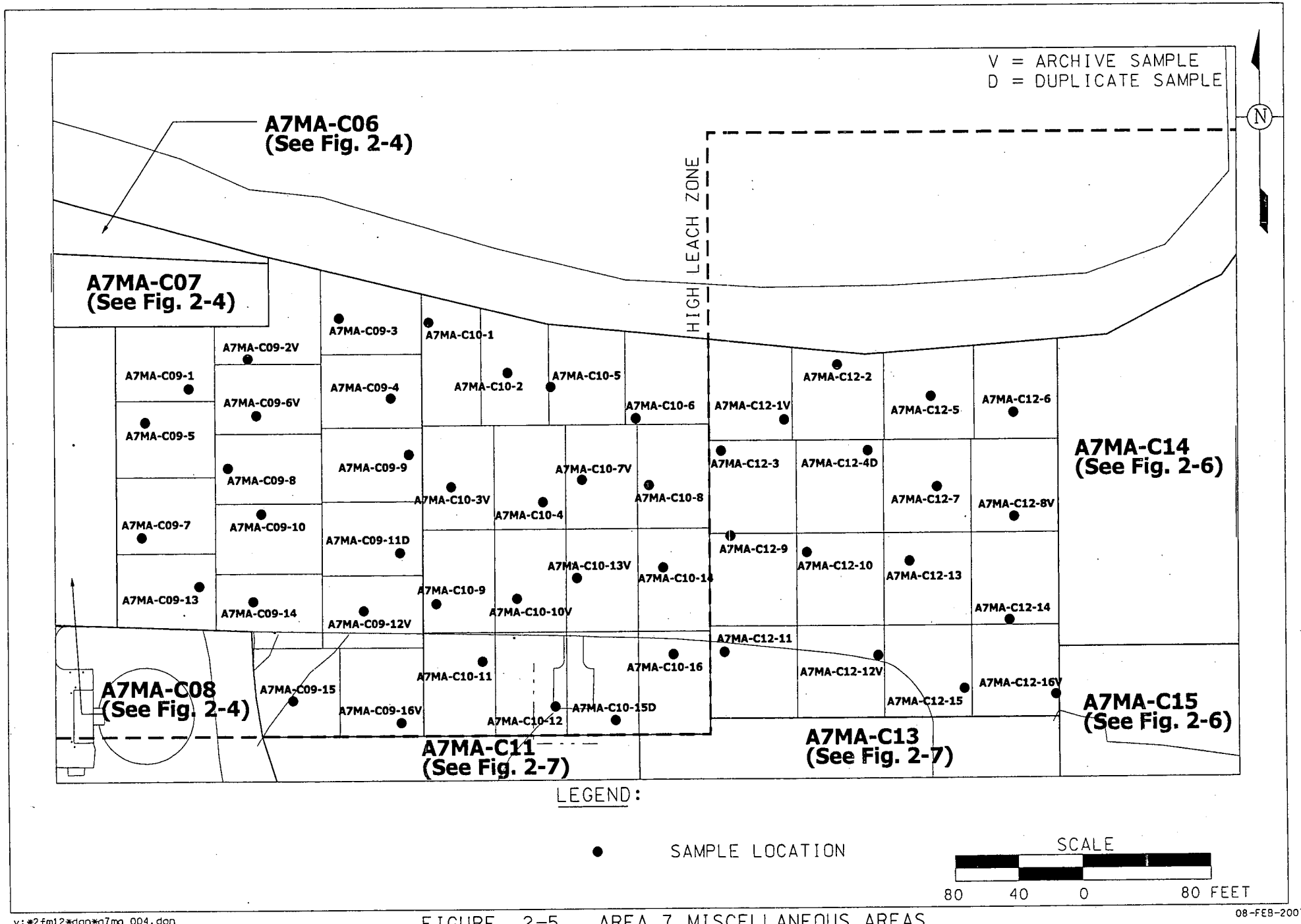
FIGURE 2-4. AREA 7 MISCELLANEOUS AREAS
SUB CU AND SAMPLE LOCATION MAP FOR CUs 5, 6, 7, & 8



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STATE PLANAR COORDINATE SYSTEM 1983

08-FEB-2007

FIGURE 2-5. AREA 7 MISCELLANEOUS AREAS
SUB CU AND SAMPLE LOCATION MAP FOR CUs 9, 10, & 12

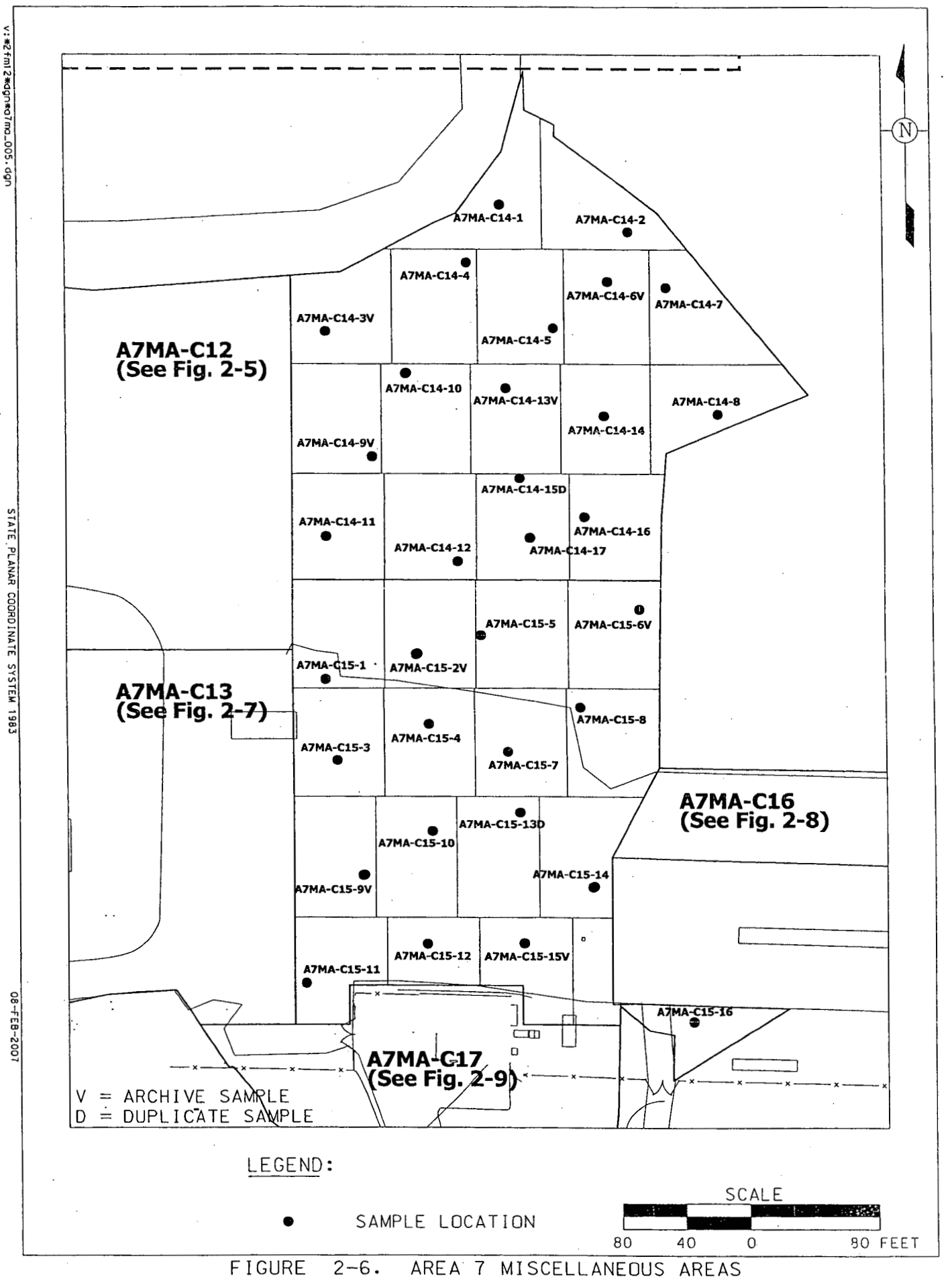
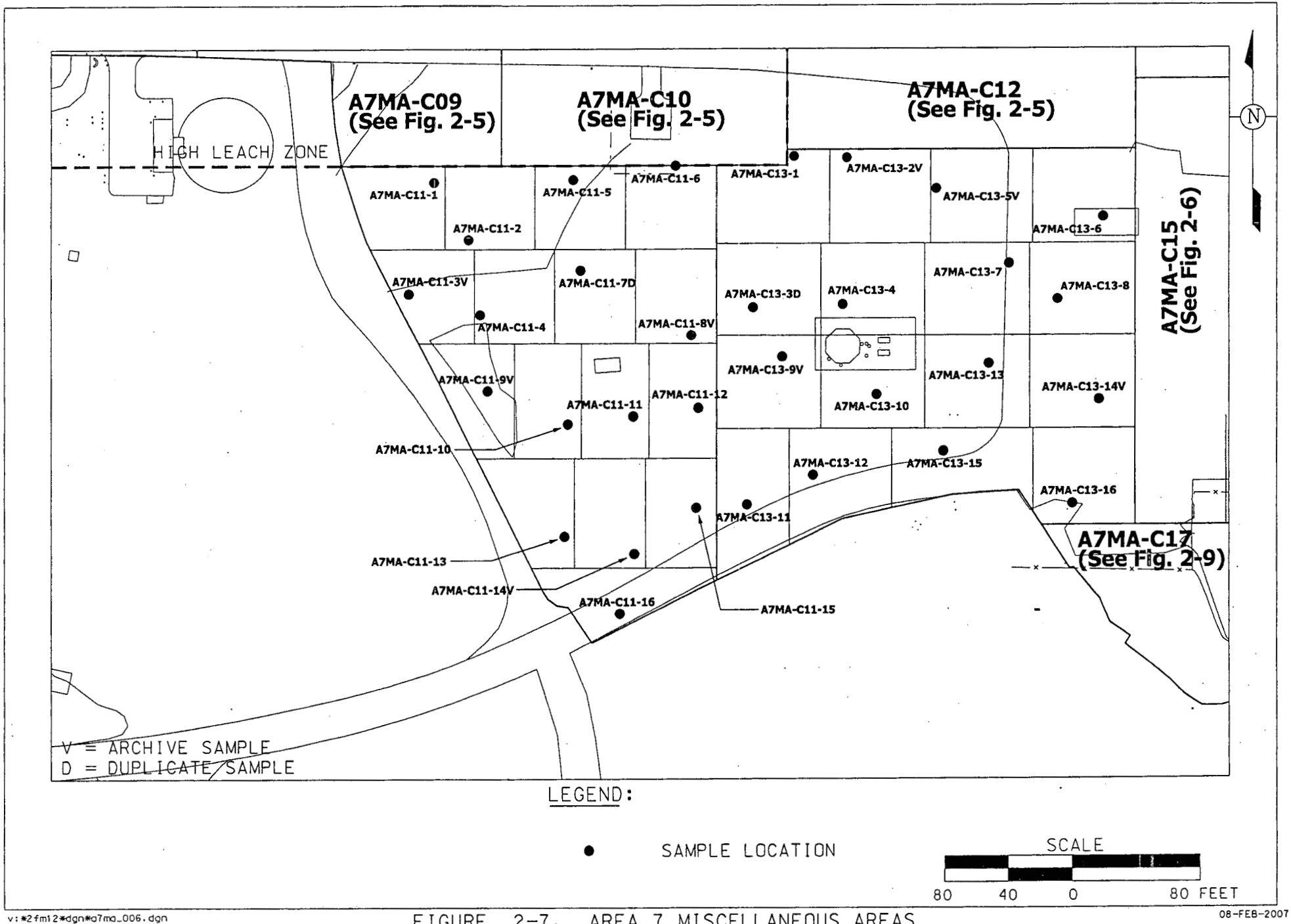


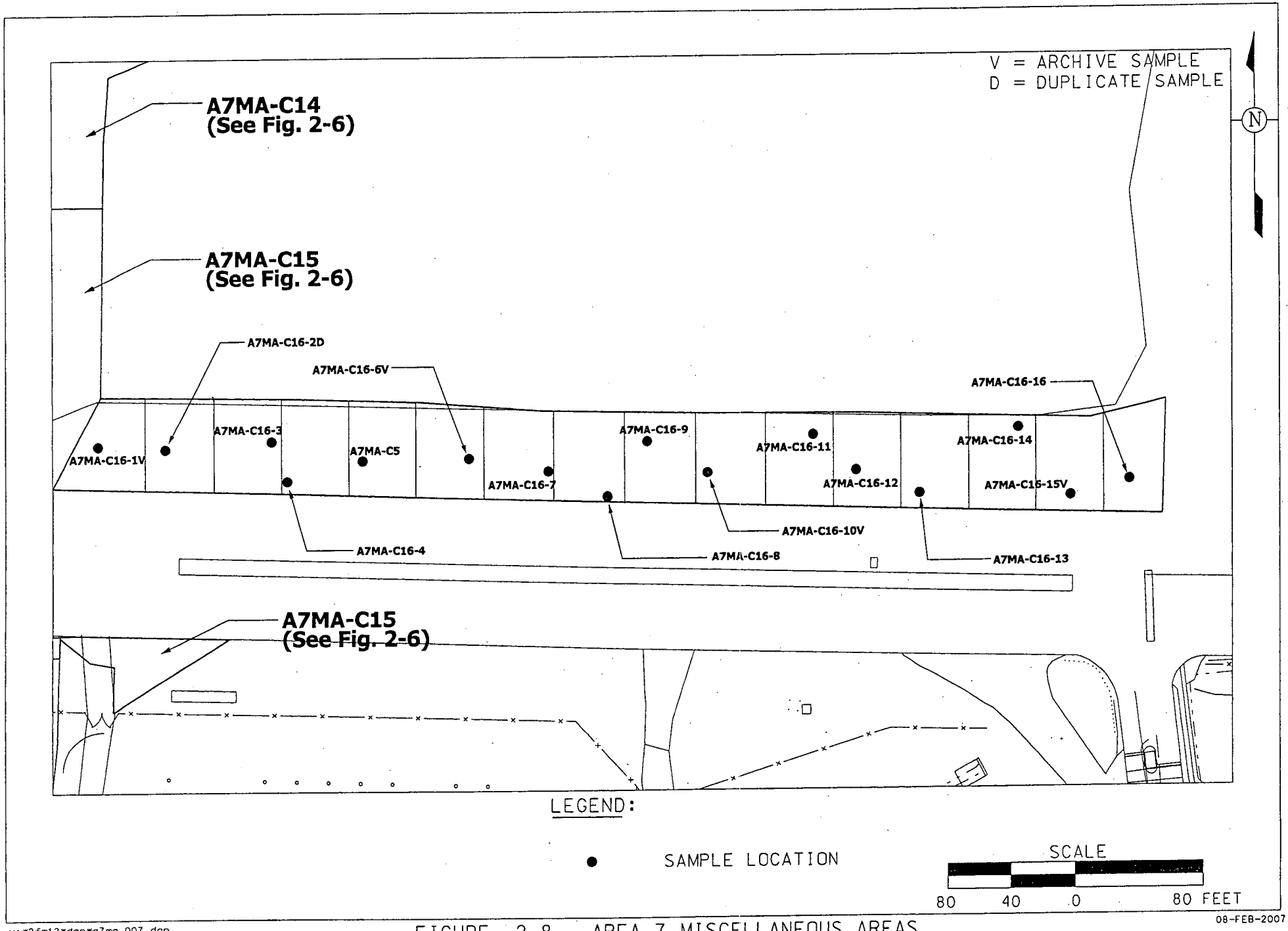
FIGURE 2-6. AREA 7 MISCELLANEOUS AREAS
SUB CU AND SAMPLE LOCATION MAP FOR CUs 14 & 15



v:*2fm12*dgn*a7ma_006.dgn
STATE PLANAR COORDINATE SYSTEM 1983

08-FEB-2007

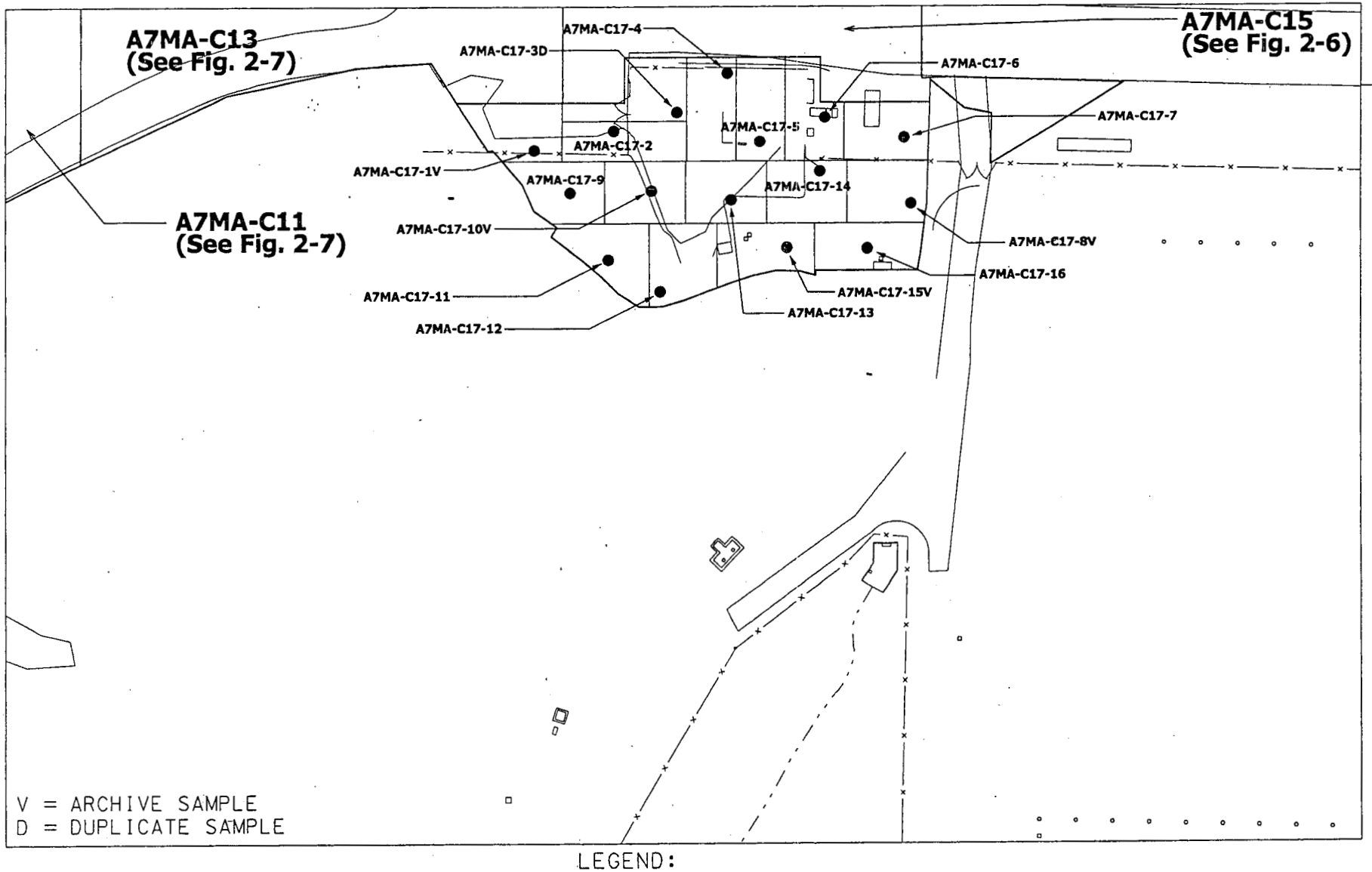
FIGURE 2-7. AREA 7 MISCELLANEOUS AREAS
SUB CU AND SAMPLE LOCATION MAP FOR CUs 11 & 13



v:*2fm12*dgn*a7ma_007.dgn
STATE PLANAR COORDINATE SYSTEM 1983

08-FEB-2007

FIGURE 2-8. AREA 7 MISCELLANEOUS AREAS SUB CU AND SAMPLE LOCATION MAP FOR CU 16



LEGEND:

● SAMPLE LOCATION

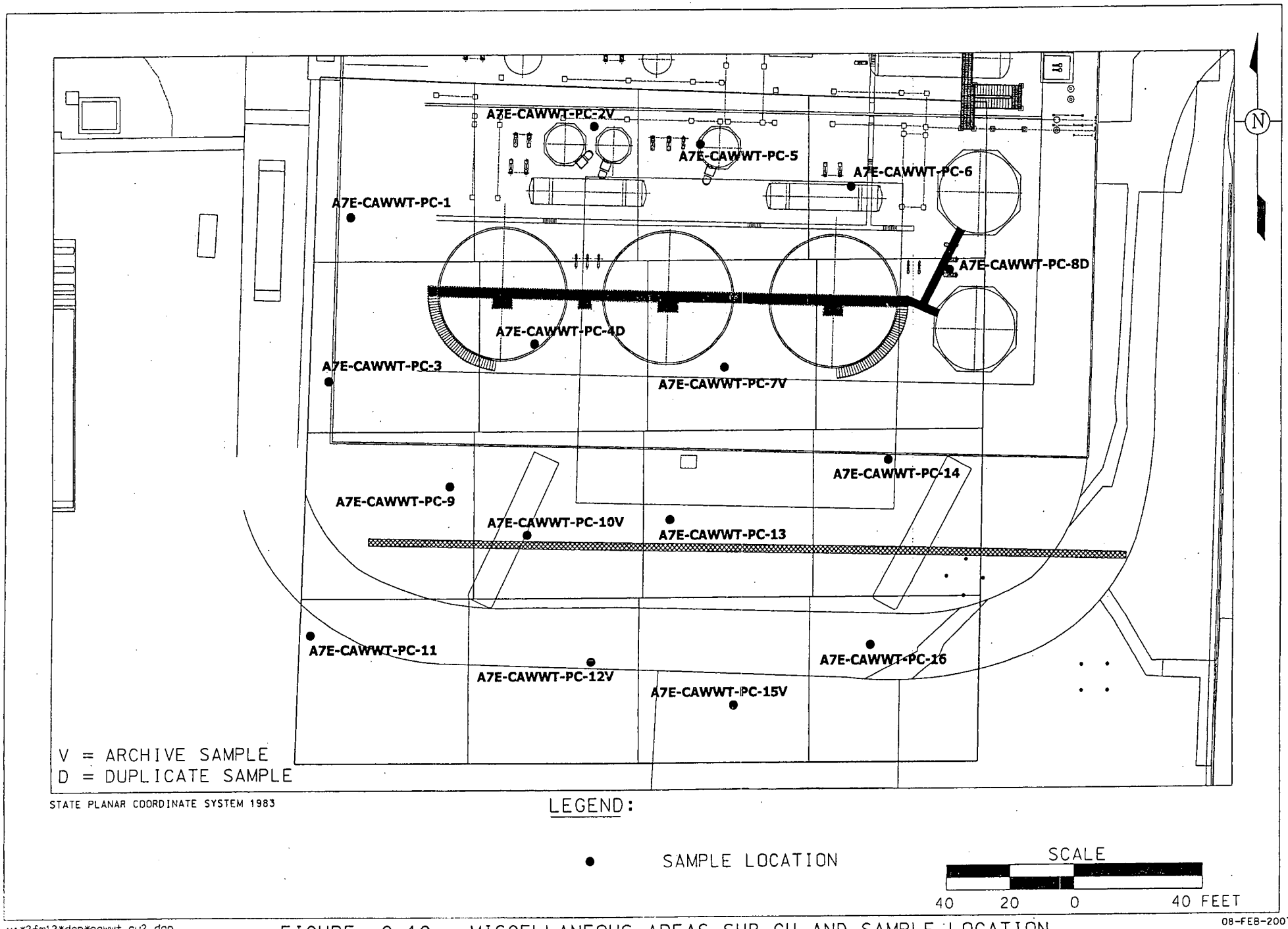
SCALE

80 40 0 80 FEET

v:*2fm12*dgn*a7ma_008.dgn
STATE PLANAR COORDINATE SYSTEM 1983

08-FEB-2007

FIGURE 2-9. AREA 7 MISCELLANEOUS AREAS
SUB CU AND SAMPLE LOCATION MAP FOR CU 17



v:*2fm12*dgn*cawwt_cu2.dgn

08-FEB-2007

FIGURE 2-10. MISCELLANEOUS AREAS SUB CU AND SAMPLE LOCATION MAP FOR CU 18 (CAWWT BACKWASH BASIN)

3.0 OVERVIEW OF FIELD ACTIVITIES

In accordance with the SEP, prior to conducting precertification and certification activities, all soil demonstrated to contain contamination above the associated FRLs or other applicable action levels were evaluated for remedial actions.

In addition to the Predesign Investigations, the OU3 and OU5 RI Reports (DOE 1995c and 1995a) and Feasibility Study Reports (FS, DOE 1995d and 1995e) were used for remedial design of Area 7 Miscellaneous Areas. Final grade excavation monitoring/sampling and real-time scanning/sampling data have been collected pursuant to the RI/FS and remedial activities.

Before initiating the certification process, all historical soil data within the Area 7 Miscellaneous Areas certification area was pulled from the Sitewide Environmental Database (SED). Based on the results of sampling and scanning activities summarized in Sections 2.1 through 2.4, it has been determined that no further remedial actions are necessary to remove above-FRL soil.

Those utilities removed as part of the remediation process were taken out after all excavation was completed to design grade and precertification had been completed. Once the utility had been removed as required by the technical specifications, precertification was performed on the trench bottom created by the removal of these utilities and then back-filled with the precertified overburden soil. These sampling events are described in V/FCNs 20500-PSP-0009-36, 20500-PSP-0009-83, and 20500-PSP-0009-97 (Appendix B) written to the PSP for the Excavation Control and Precertification of Area 7 Silos and General Area (Supplement to 20300-PSP-0001) (DOE 2005b) and V/FCN 20500-PSP-0010-10 (Appendix B) written to the PSP for the Excavation Control and Precertification of Area 7 Support and Silos Process Area (Supplement to 20300-PSP-0011). The sample locations are shown on Figures 3-1 through 3-5 and the data as well as any necessary statistical evaluation is included in Appendix A.

3.1 AREA PREPARATION AND PRECERTIFICATION

3.1.1 Area 7F - Building 30/45 Parking Lot

3.1.1.1 Historical, Predesign and Excavation Control

After a review of the historical data, predesign samples were collected and evaluated to determine the nature and extent of the contamination present in the Building 30/45 Parking Lot as well as to fill in existing data gaps. Data were also collected to bound above-FRL areas with physical sampling. The results of the investigations are presented in the Excavation Plan for Area 7 Silos and General Area (DOE 2005c).

Excavation of the Area 7F - Building 30/45 Parking Lot began in 2005. In addition to the removal of contamination present in the areas designated as above-FRL, existing at-grade concrete and asphalt pads/roads were excavated as part of the remediation process.

3.1.1.2 Precertification

According to guidelines established in Section 3.3.3 of the SEP, precertification activities were conducted to evaluate residual radiological contamination patterns as specified in the PSP for the Excavation Control and Precertification of Area 7 Silos and General Area (Supplement to 20300-PSP-0011).

During precertification, real-time scanning indicated the presence of hotspots. Upon excavation, significant amounts of contaminated clay piping was exposed. Excavation continued until all of the contaminated clay pipe was removed from the area and real-time was able to determine that no additional contamination was present. Area 7F passed the requirements of precertification, and it was determined that certification of the soil could be completed.

3.1.2 Area 7G - CAWWT and STP Area

3.1.2.1 Historical, Predesign and Excavation Control

Prior to beginning predesign, all historical data from Area 7 were collected and evaluated. Predesign samples were then collected to determine the nature and extent of contamination as well as to fill in any existing data gaps. Data were also collected to bound above-FRL areas with physical sampling. The results of the investigations are presented in the Excavation Plan for Area 7 Silos and General Area and the Excavation Plan for Area 7 Support and Silos Process Area (DOE 2005d).

Excavation of the Area 7G - CAWWT Area began in 2005. In addition to the removal of contamination present in the areas designated as above-FRL, at-grade concrete and asphalt pads/roads were excavated as part of the remediation process. With the exception of the CAWWT Facility, which will remain through closure, all foundations, slabs, footers, and other support structures were removed.

Due to the need to construct a backwash basin to support CAWWT operations, sampling was needed in the basin footprint located to the south of the CAWWT Facility. This sampling effort was done under V/FCN 20500-PSP-0010-03 written to the PSP for Excavation Control and Precertification of Area 7 Support and Silos Process Area. The data from this sampling effort is presented in Appendix A and a statistical review of the results will be in this report.

Prior to removal of the Sewage Treatment Facility Plant (STP), predesign samples were collected, and no above-FRL contamination was detected in this area. This area did not require excavation.

3.1.2.2 Precertification

According to guidelines established in Section 3.3.3 of the SEP, precertification activities were conducted to evaluate residual radiological contamination patterns, as specified in the PSP for the Excavation Control and Precertification of Area 7 Silos and General Area (Supplement to 20300-PSP-0011) and the PSP for Excavation Control and Precertification of the Area 7 Support and Silos Process Area (Supplement to 20300-PSP-0011). Area 7G passed the requirements of precertification, and it was determined that certification of the soil could be completed.

3.1.3 Area 7H - TACOS Office Trailer Complex Area

3.1.3.1 Historical, Predesign and Excavation Control

After a review of the historical data, predesign samples were collected and evaluated to determine the nature and extent of the contamination present in the TACOS Office Trailer Complex Area as well as to fill in existing data gaps. Data were also collected to bound above-FRL areas with physical sampling. The results of the investigations are presented in the Excavation Plan for Area 7 Silos and General Area.

Excavation of the Area 7H - TACOS Office Trailer Complex Area began in 2005. In addition to the removal of contamination present in the areas designated as above-FRL, existing at-grade concrete and asphalt pads/roads, existing foundations, slabs, footers and other support structures were removed.

Additionally, five perchloric acid fume hoods were excavated and removed from the Equipment Burial Area in August 2005 (Figure 3-6). During Area 7 predesign, four borings were placed around the burial trenches. None of the samples collected revealed any above-FRL contamination. Upon completion of the excavation, excavation control samples were collected to confirm that no perchlorate contamination existed. Following the excavation of the perchloric acid fume hoods, physical samples were also collected for radiological analysis from the footprint of the excavation because the area was too wet for real-time scans. These samples were collected under V/FCN 20500-PSP-0009-04 and revealed no above-FRL contamination.

3.1.3.2 Precertification

According to guidelines established in Section 3.3.3 of the SEP, precertification activities were conducted to evaluate residual radiological contamination patterns as specified in the PSP for the Excavation Control and Precertification of Area 7 Silos and General Area (Supplement to 20300-PSP-0011). Area 7H passed the requirements of precertification, and it was determined that certification of the soil could be completed.

3.1.4 Area 7I and 7K - Silos Water Treatment Facility Area and Adjacent Road

3.1.4.1 Historical, Predesign and Excavation Control

Based on the results of historical data collection and evaluation, predesign sampling was done to determine the nature and extent of contamination on Areas 7I and 7K. Additionally, samples were collected to fill any data gaps left in this area. The results of these investigations are presented in the PSP for the Excavation Control and Precertification of Area 7 Silos and General Area (Supplement to 20300-PSP-0011) and the PSP for Excavation Control and Precertification of Area 7 Support and Silos Process Area (Supplement to 20300-PSP-0011).

Excavation of the Area 7I and 7K - Silos Water Treatment Facility Area began in 2006. In addition to the removal of contamination present in the areas designated as above-FRL, existing at-grade concrete and asphalt pads/roads, existing foundations, slabs, footers, and other support structures were removed.

Two below-grade structures remain in this area as shown in Figure 3-6. The first is the remaining sections of the 60-inch storm sewer pipe running north to south under the access road to the north of the Storm Water Retention Basin (SWRB). The other remaining below-grade structure is the remnant of an 18-inch storm water pipe adjacent to the 60-inch pipe. The main reason that remaining sections of these two pipelines cannot be excavated without significant risk to the ongoing CAWWT and OSDF operations is due to their location. These two pipes cross the main roadway of the site and run directly under the OSDF leachate conveyance system and the main effluent line running between the CAWWT and the Great Miami River.

There was some soil/sediment left in the southern end of the 60-inch pipe that was from the soil placed inside the down gradient end of the pipe to block the water from flowing into the SWRB when excavating the SWRB footprint. All remaining soil/sediment in the pipe was removed from this line during the restoration process and visually confirmed. Following the removal of the sediment, smear samples were collected inside the pipe by Radiological Control and documented on a radiological field survey as shown on Appendix D to ensure that there is no removable contamination left. Based on these results, it has been determined that any remaining contamination is of a fixed nature. The water flowing through the pipe into the SWRB now has levels below the site discharge limits for uranium [30 micrograms per liter (μg/L)] and does not show increased concentrations at the downstream end of the pipe. The pipe has been incorporated into the storm water management system in the restoration design as the main outlet of overflow from the former production area footprint. Due to these factors, no further remediation for the 60-inch pipe is planned. Access to this pipe will be further restricted administratively as required by Legacy Management - steep slope, ponding water, and also by heavy vegetation in a few years. Additionally, access restricting metal grating with appropriate posting has been installed.

Only a 20-foot section of the 18-inch pipe under the main roadway is left in place and buried. However, this line is isolated and about 20 feet below ground and has no likelihood of free flowing material in it. Due to the depth of the pipe, it was unsafe to visually check or collect sediment samples (if present) from the remaining section of the pipe. However, it was reasonable to assume that the amount of sediment left in this old storm sewer pipe would not be significant and the sediment should have conditions similar to the surrounding soil because it has not been in service since the installation of the 60-inch pipe in the 1950s.

Requirements involving routine inspection of the gates placed on the 60-inch and 18-inch pipes' locations are specified in the LMICP including observation of potential exposures of buried portions of either pipe due to erosion.

A decision for removal and disposition of the pipes will be made with regulatory consultations and approvals after the leachate and main effluent lines are no longer needed."

3.1.4.2 Precertification

According to guidelines established in Section 3.3.3 of the SEP, precertification activities were conducted to evaluate residual radiological contamination patterns as specified in the PSP for the Excavation Control and Precertification of Area 7 Silos and General Area (Supplement to 20300-PSP-0011) and the PSP for Excavation Control and Precertification of Area 7 Support and Silos Process Area (Supplement to 20300-PSP-0011). Area 7I and 7K passed the requirements of precertification, and it was determined that certification of the soil could be completed.

3.2 CHANGES TO SCOPE OF WORK

The scope of work for Area 7 Miscellaneous Areas Certification Sampling required seven changes, which were documented with seven V/FCNs (see Appendix B) and discussed in the following paragraphs.

Variance 20500-PSP-0016-1 documents the collection of one additional sample at previously sampled certification boring location A7MA-C-14-15D to confirm/verify the presence or absence of above-FRL conditions in this area.

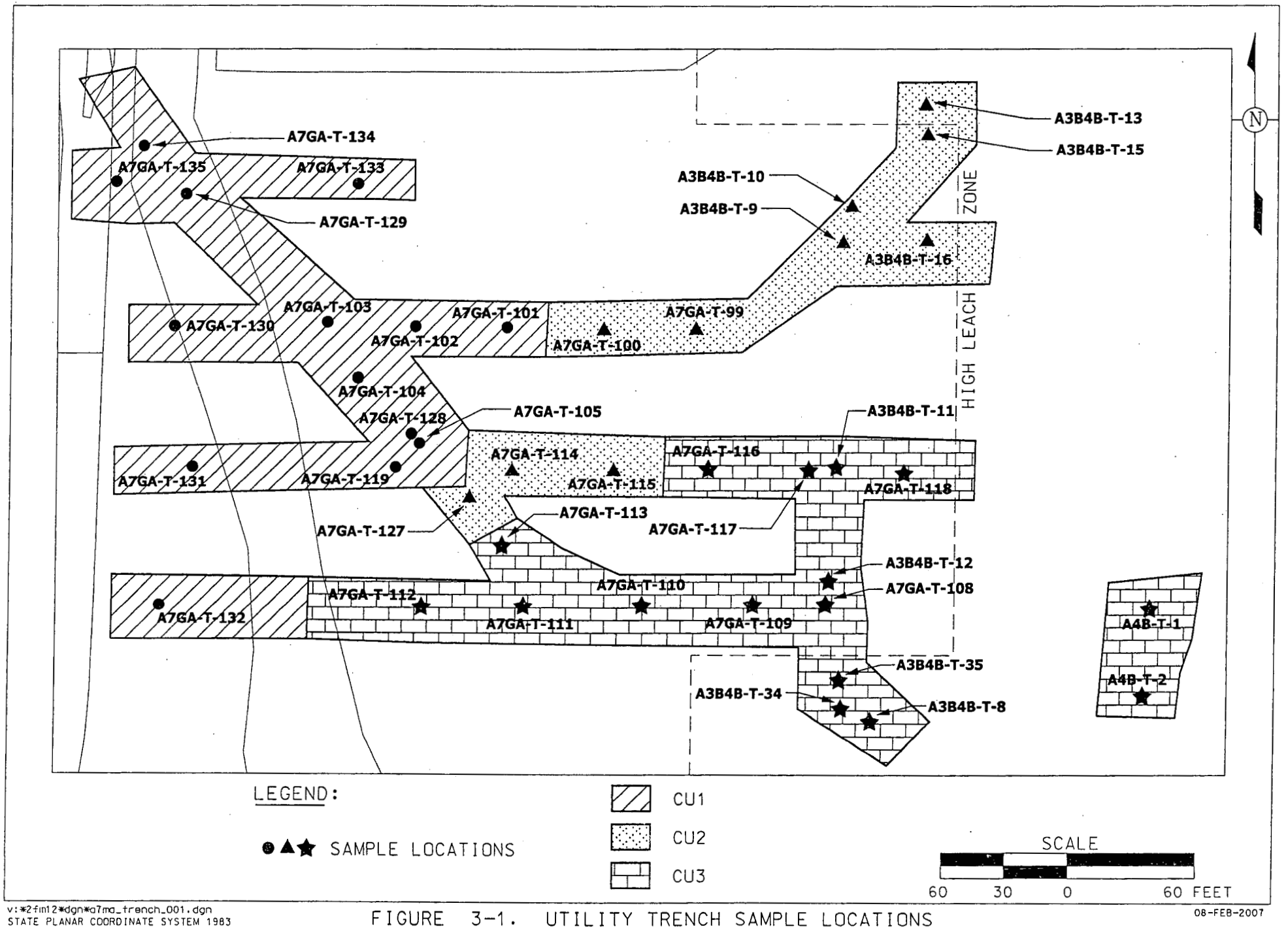
Variance 20500-PSP-0016-2 documents the collection of soil samples at previously sampled certification boring location A7MA-C-14-15D, its bounding samples, and one sample from within the same sub-CU from a random location.

Variance 20500-PSP-0016-3 documents the collection of soil samples at previously sampled certification boring location A7MA-C04-8, its bounding samples, and one sample from within the same sub-CU from a random location.

Variance 20500-PSP-0016-4 documents the collection of soil samples at previously sampled certification boring location A7MA-C04-6, its bounding samples, and one sample from within the same sub-CU from a random location.

Variance 20500-PSP-0016-5 documents the collection of soil samples at previously sampled certification boring location A7MA-C-14-15D and its bounding samples.

Variance 20500-PSP-0016-6 documents the collection of soil samples to further bound previously sampled bounding boring location A7MA-C-14-15S.



v:*2fm12*dgn*a7ma_trench_001.dgn
STATE PLANAR COORDINATE SYSTEM 1983

FIGURE 3-1. UTILITY TRENCH SAMPLE LOCATIONS

08-FEB-2007

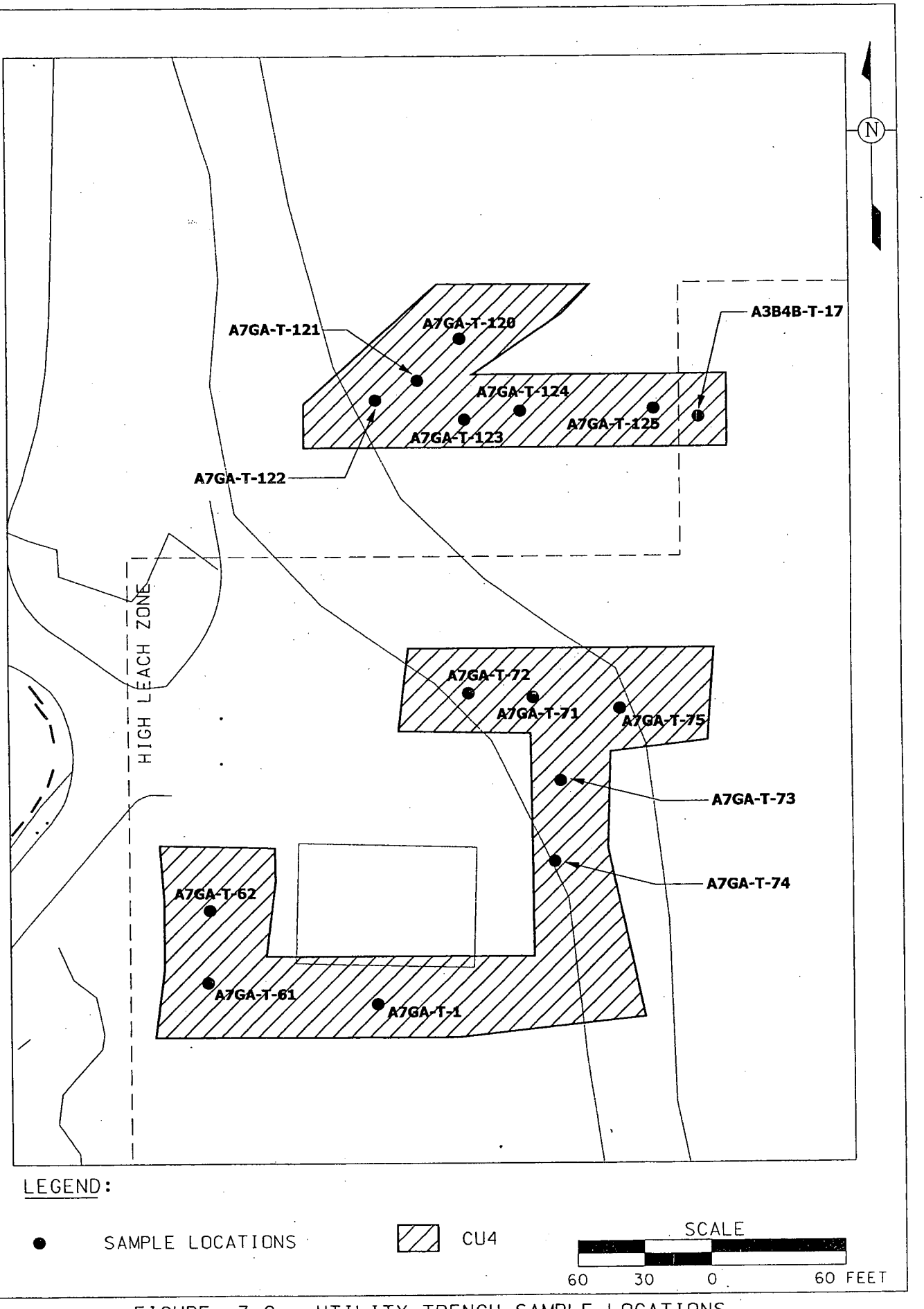
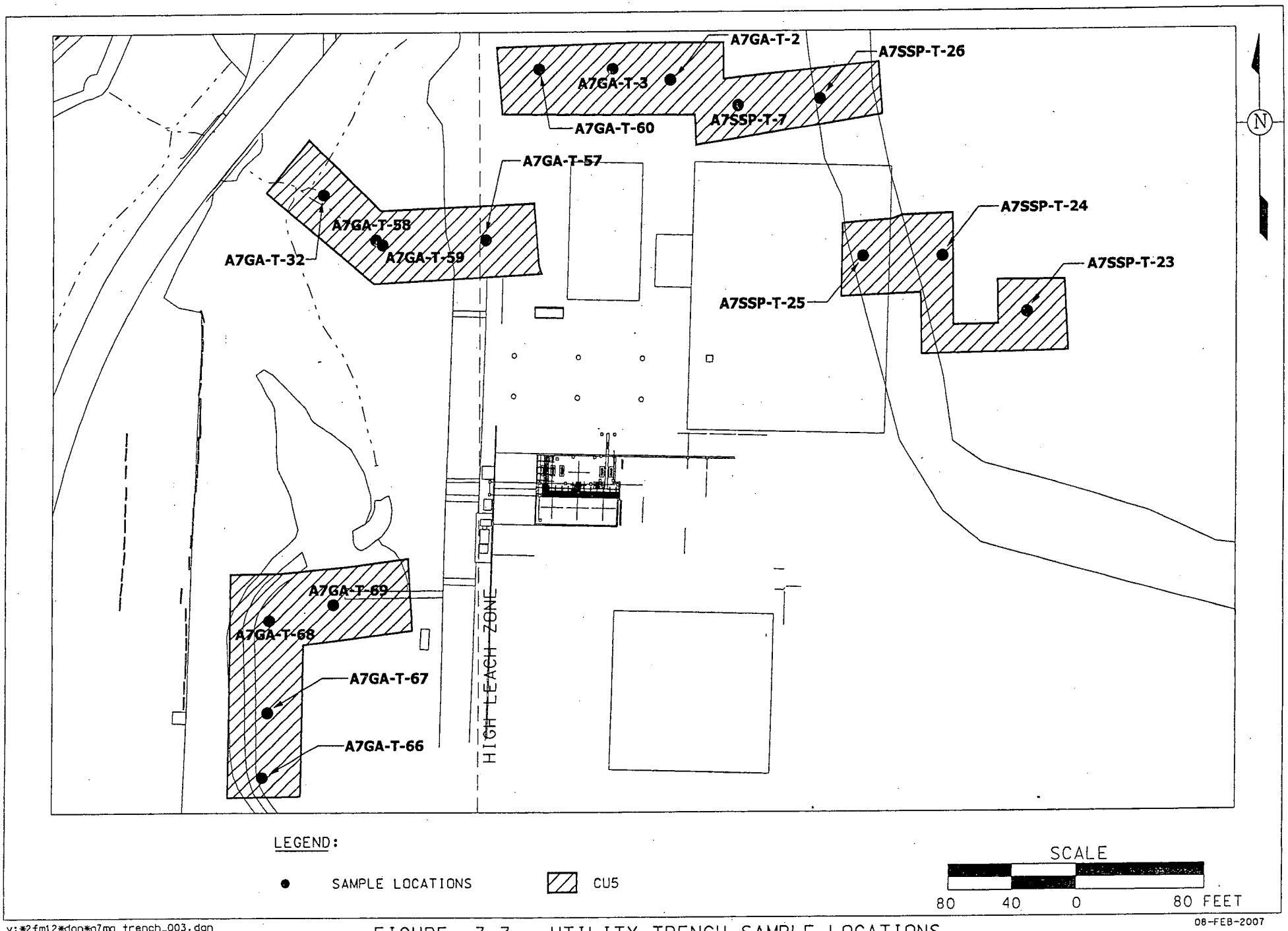


FIGURE 3-2. UTILITY TRENCH SAMPLE LOCATIONS

v:\2fm12\dgn\07ma_trench_002.dgn

STATE PLANAR COORDINATE SYSTEM 1983

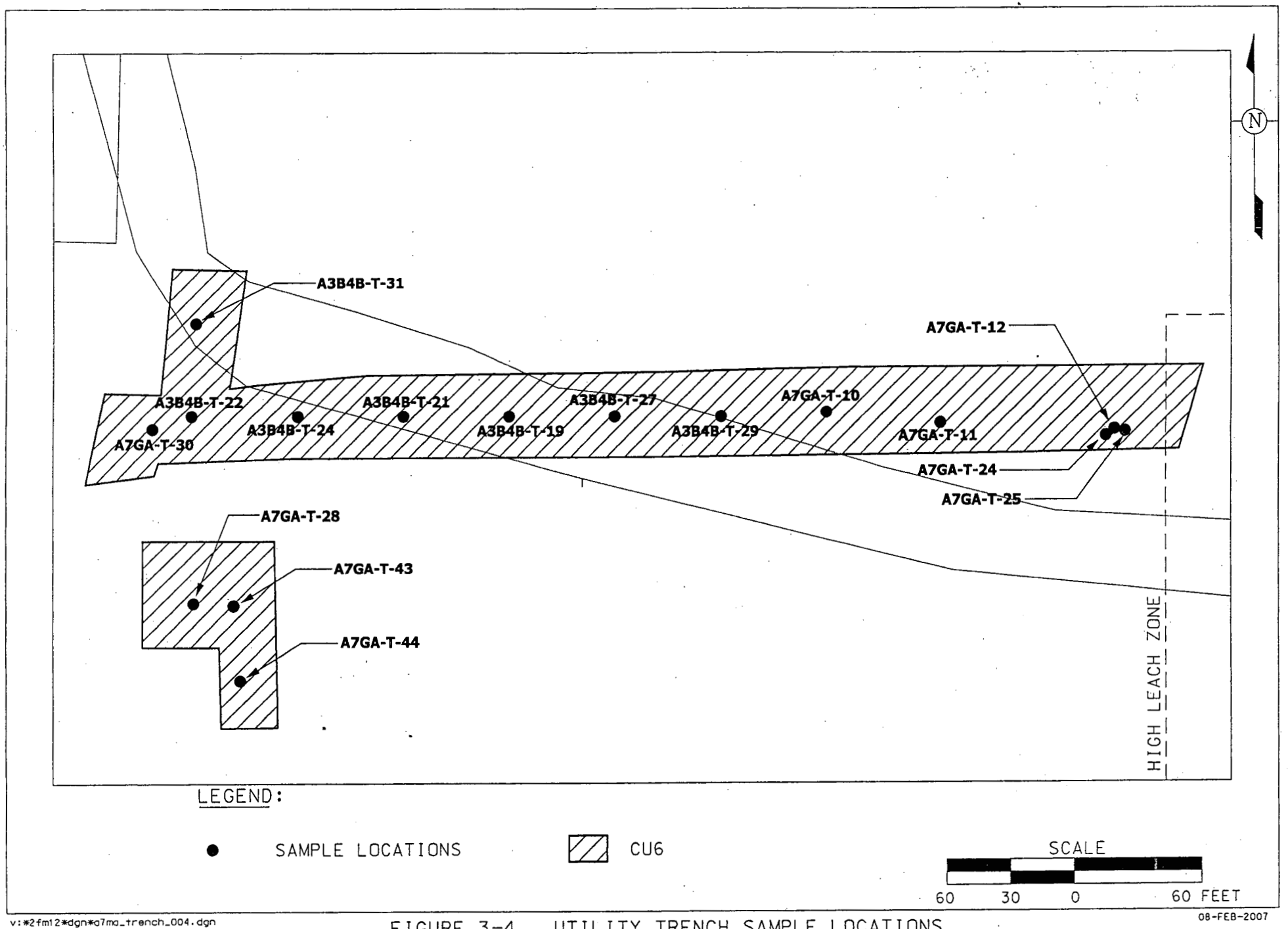
08-FEB-2007



v:*2fm12*dgn*a7ma_trench_003.dgn
STATE PLANAR COORDINATE SYSTEM 1983

FIGURE 3-3. UTILITY TRENCH SAMPLE LOCATIONS

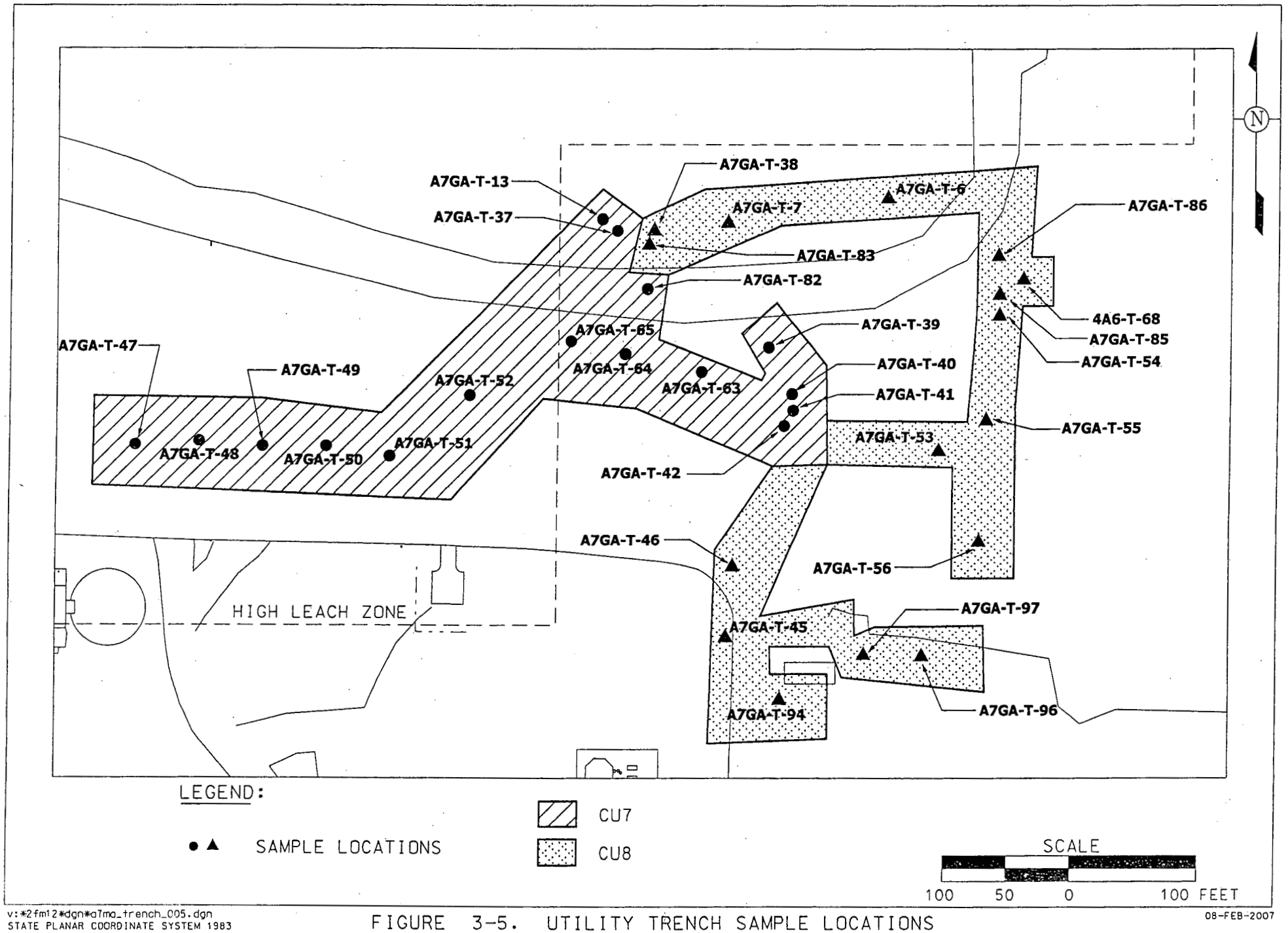
08-FEB-2007



v:*2fm12*dgn*a7ma_trench_004.dgn
STATE PLANAR COORDINATE SYSTEM 1983

FIGURE 3-4. UTILITY TRENCH SAMPLE LOCATIONS

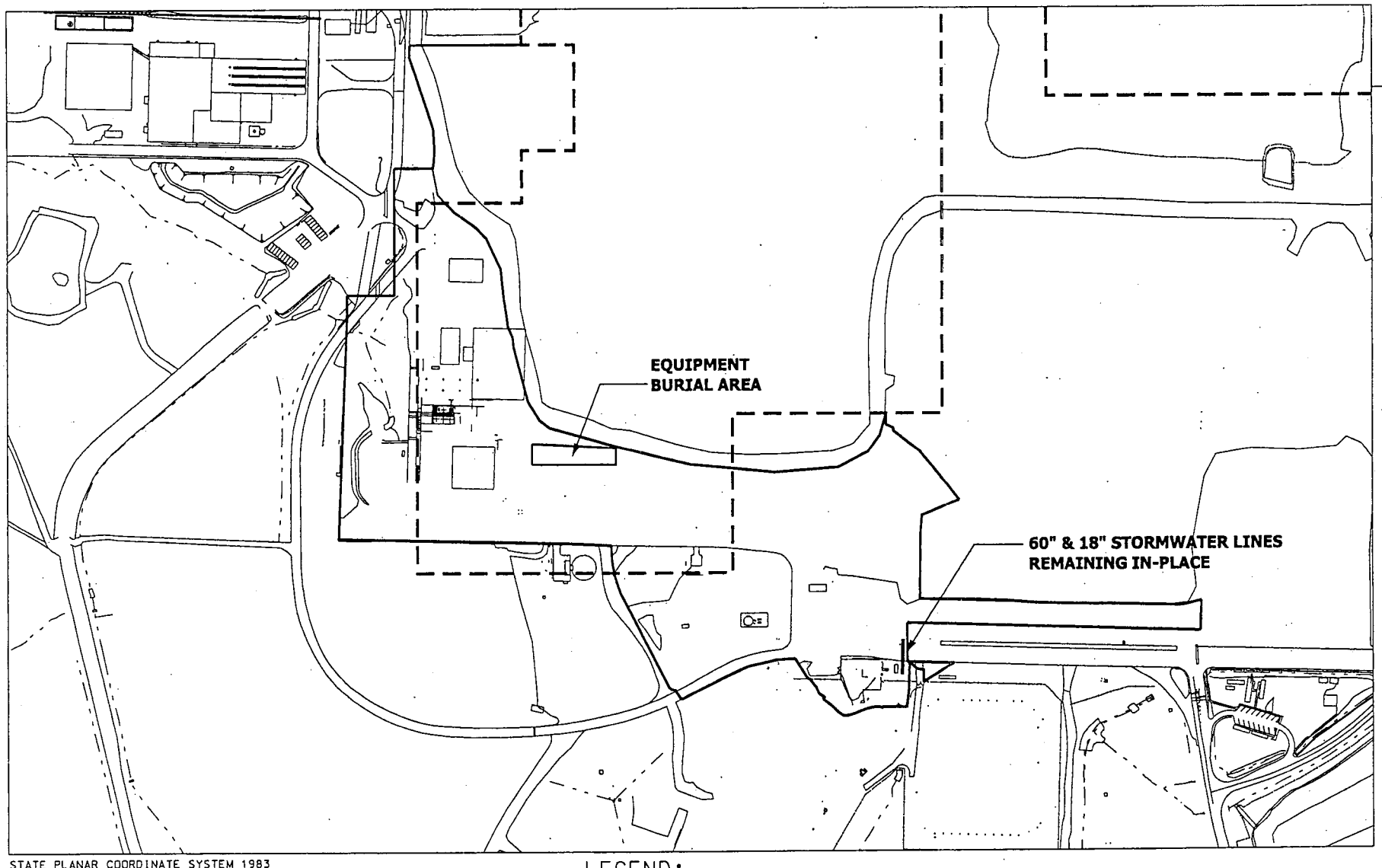
08-FEB-2007



v:*2fm12*dgn*a7ma_trench_005.dgn
STATE PLANAR COORDINATE SYSTEM 1983

FIGURE 3-5. UTILITY TRENCH SAMPLE LOCATIONS

08-FEB-2007



STATE PLANAR COORDINATE SYSTEM 1983
v:*2fm12*dgn*a7ma_200.dgn
08-FEB-2007

LEGEND:

A7MA BOUNDARY

HIGH LEACH ZONE

SCALE

350 175 0 350 FEET

FIGURE 3-6. LOCATION MAP FOR 60- & 18-IN STORMWATER LINES & THE EQUIPMENT BURIAL AREA

4.0 ANALYTICAL METHODOLOGIES, DATA VALIDATION PROCESSES, AND DATA REDUCTION

4.1 ANALYTICAL METHODOLOGIES

All samples collected were sent off site for analysis. The laboratories complied with Sitewide Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) Quality Assurance Project Plant (SCQ) requirements (DOE 2003). The SCQ is the source for analytical methodologies (Appendix G), data verification and validation, and analytical quality assurance/quality control requirements.

Laboratory analysis of certification samples was conducted using approved analytical methods, as discussed in Appendix H of the SEP. The MDL was set at 10 percent of the FRL and analyses were conducted to Analytical Support Level (ASL) D or E, where the MDL of 10 percent of the FRL is above the SCQ ASL detection level, but the analyses meet all other SCQ ASL D criteria. ASL D data packages were provided for all of the analytical data. All data were validated. Once data were validated as required, results were entered into the Fernald Closure Project (FCP) SED. Final certification results are provided in Appendix A, and a summary of the analytical methods follows:

4.1.1 Chemical Methods

Metals

Samples submitted for arsenic were analyzed by inductively coupled plasma-mass spectrometry.

Samples submitted for antimony and beryllium were analyzed by inductively coupled plasma-atomic emission spectroscopy.

Perchlorate

Samples submitted for perchlorate were analyzed by ion chromatography.

Polychlorinated Biphenyl (PCBs)

Samples submitted for PCB analyses were analyzed by gas chromatography.

4.1.2 Radiochemical Methods

The radiochemical analytical methods depended on the specific nuclides of interest. Performance-based specification criteria included highest allowable minimum detectable concentration (HAMDC) percent overall tracer/chemical recovery, percent matrix spike recovery, method blank concentration, percent recovery of laboratory control sample, and relative error ratio for duplicate samples for each analyte. The on-site laboratory was required to meet these specifications using the methodologies described below.

Total Uranium

Samples were analyzed for unaium-238 using gamma spectrometry, and the results were used to calculate the total uranium value as follows:

Total uranium (mg/kg) = (2.998544) x uranium-238 gamma spectrometry result (pCi/g)

The validation qualifier assigned to the total uranium value was the same as the uranium-238 qualifier.

Radium-226

Samples were analyzed by gamma spectrometry, and radium-226 was quantified by measuring gamma rays emitted by members of its decay chain. This method does not require chemical separation, but the samples must be allowed a 7-day progeny in-growth period before counting (Appendix C). The off-site laboratory used the same gamma ray emission lines and error weighted average methodology to calculate all of the Area 7 Miscellaneous Areas certification results.

Radium-228

Radium-228 was quantified by measuring gamma rays emitted by members of its decay chain. The off-site laboratory used the same gamma ray emission lines and error weighted average methodology to calculate all Area 7 Miscellaneous Areas certification results.

Isotopic Thorium

Isotopic thorium (thorium-228 and thorium-232) was quantified by measuring gamma rays emitted by members of its decay chain. The off-site laboratory used the same gamma ray emission lines and error weighted average methodology to calculate all Area 7 Miscellaneous Areas certification results.

Technetium-99

Technetium-99 was quantified by using a liquid scintillation counter.

4.2 DATA VERIFICATION AND VALIDATION

This section discusses the data verification and validation (V&V) process used to examine the quality of field and laboratory results. Data were qualified to indicate the level of data usability, or level of confidence in the reported analytical results following Section 11.2 and Appendix D of the SCQ.

Specific parameters associated with the data were evaluated during V&V to determine whether or not the data quality objectives were met. Five principal quality assurance parameters (i.e., precision, accuracy, completeness, comparability, and representativeness) were addressed during V&V. Field sampling and

handling, laboratory analysis and reporting, and non-conformances and discrepancies in the data were examined to ensure compliance with appropriate and applicable procedures.

The V&V process evaluated the following parameters:

- Specific field forms for sample collection and handling
- Chain of Custody forms
- Completeness of laboratory data deliverable.

The data validation process examined the analytical data to determine the validation qualifier of the results. General areas examined that apply to all the chemical data include the following:

- Holding Times
- Instrument calibrations
- Calculation of results
- Matrix spike/matrix spike duplicate recoveries
- Laboratory/field duplicate precision
- Field/Laboratory Blank contamination
- Dry weight correction for solid samples
- Correct detection limits reported
- Laboratory control sample recoveries and compliance with established limits.

Parameters unique to the evaluation of radiochemical analyses include:

- Calibration data for specific energies
- Background checks
- Relative Error ratios
- Detector efficiencies
- Background count correction.

For this project, all the radiological data were reviewed and validated for all criteria noted above. Per project requirements, a minimum of 10 percent of the certification data were validated to Level D. This validation included the same review process as for Level B, but included a systematic review of the raw data and recalculations.

Following V&V, qualifier codes were applied to specific data points, reflecting the level of confidence assigned to the particular datum. These codes included:

- No qualification; the positive result or detection limit is confident as reported

J Positive result is estimated or imprecise; data point is usable for decision-making purposes. Positive results less than the contract required reporting limits are also qualified in this manner

R Positive result or detection limit is considered unreliable; data point should not be used for decision-making purposes

U Undetected result at the stated limit of detection

UJ Undetected result; detection limit is considered estimated or imprecise; the data point is usable for decision-making purposes

N Positive result is tentatively identified - that is, there is some question regarding the actual identification and quantification of the result. Compound reported is best professional judgment of the interpretation of the supporting data, such as mass spectra. Caution must be exercised with the use of these data

NJ The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. This qualifier indicates the presumptive presence of the analyte, but the result can only be considered estimated. This qualifier is not used in typical inorganic analyses, but could be used to qualify organic or radiochemistry data due to spectral interpretation problems.

NV Not Validated. The results for this sample were not validated

Z This result, or detection limit in this analysis is not the best one to use; another analysis (e.g., the dilution or re-analysis) contains a more confident and usable result.

4.3 DATA REDUCTION

Each sample used to support the Area 7 Miscellaneous Areas certification decision was entered in the SED with the following information:

Field Information

- Sample Identification Number - A unique number assigned to each discrete sample point
- Coordinate Information - Northing and Easting locations.

Using the information as summarized above, the following actions were taken for data reduction of each CU data set.

1. All of the data for each CU were queried from SED. All of the data were used even if the CU had more than the minimum required data points.

2. The data from the validation fields were used for statistical calculations.

3. Data with a qualifier of R or Z were not used in the statistical calculations.

4. The higher of the two duplicate results was used in the statistical calculations.

5. One half on the non-detect (U or UJ) values were used in the statistical calculations.

Laboratory Information

For each sample result the following information is entered:

- Laboratory Result - The reported analytical value from the laboratory
- Laboratory Qualifier - The qualifier reported from the lab. For radiological parameters non-detect values are assigned a U qualifier
- Total Propagated Uncertainty (TPU) - The TPU is an estimate of the overall uncertainty associated with a measured or calculated result that has been derived from an evaluation of all factors that can influence a result, including both systematic and random sources of uncertainty. For both *in situ* and laboratory-based radioactivity measurements, factors such as the random nature of the radioactive decay process (i.e., counting uncertainty), the mass or volume of the "sample" being analyzed, the variation in radiation detection efficiency with the energy of the emitted radiation and the density and chemical composition of the sample, uncertainty in nuclear decay parameters used to convert counts to activity, and attenuation of the radiation must be considered to properly asses the overall uncertainty of the measured result.
- Units - The units in which the Laboratory Result is reported.

Validation Information

- Validation Result - The result based on the validation process. During the validation process, sample results may be adjusted. If the laboratory result is less than the associated minimum detectable concentration, the validation result becomes the minimum detectable concentration value.
- Validation TPU - The TPU based on the validation process (applicable to radiological parameters only). The data Validation Section evaluates the reported TPU as described in the SCQ in Section 11.2 and Appendix D to assess the impact on the data quality and will qualify the data as estimated if the uncertainty is excessive.
- Validation Qualifier - The qualifier assigned as a result of the data validation process.
- Validation Units - The units in which the Validation Result is reported.

5.0 CERTIFICATION EVALUATION AND CONCLUSIONS

Certification success or failure was based on evaluating sample data from each CU against criteria discussed in Section 2.2.4. Subsequent to the certification, full validation was performed on all data. Final certification data are presented in Appendix A.1.

5.1 CERTIFICATION RESULTS AND EVALUATION

Below is a summary of the analytical results and statistical analyses of the data for each CU in Area 7 Miscellaneous Areas.

A7MA-C01

CU A7MA-C01 passed all of the certification criteria as discussed in Section 2.2.4. The results are presented in Appendix A.1.

A7MA-C02

CU A7MA-C02 passed all of the certification criteria as discussed in Section 2.2.4. The results are presented in Appendix A.1.

A7MA-C03

CU A7MA-C03 passed all of the certification criteria as discussed in Section 2.2.4. The results are presented in Appendix A.1.

A7MA-C04

There was one result for radium-226 (3.73 pCi/g) that was greater than two times the FRL (1.7 pCi/g) in sub-CU A7MA-C04-8. V/FCN 20500-PSP-0016-3 was written to bound the radium-226 hotspot approximately 5 feet from the original sample location. These four locations were used to delineate the hotspot prior to excavation. The results from the first round of sampling, including the radium-226 results, are presented in Appendix A.1.

Following excavation, one bias (A7MA-C04-8A) and one random (A7MA-C04-17) location in sub-CU A7MA-C04-8 were sampled. The results from both sampling locations as well as the bounding sample locations (A7MA-C04-8N, A7MA-C04-8S, A7MA-C04-8E, and A7MA-C04-8W) were below the FRL; therefore, no further action was required. The data from the location with the highest result in this sub-CU (A7MA-C04-8N, 0.711 pCi/g) was used in the statistical analysis for CU 4.

There was one result for total uranium (44.4 mg/kg) that was greater than two times the FRL (20 mg/kg) in sub-CU A7MA-C04-6. V/FCN 20500-PSP-0016-4 was written to bound the total uranium hotspot

approximately 5 feet from the original sample location. These four locations were used to delineate the hotspot prior to excavation. The results from the first round of sampling, including the total uranium results, are presented in Appendix A.1.

Following excavation, one bias (A7MA-C04-6A) and one random (A7MA-C04-18) location in sub-CU A7MA-C04-6 were sampled. The results from both sampling locations as well as the bounding samples (A7MA-C04-6N, A7MA-C04-6S, A7MA-C04-E, and A7MA-C04-6W) were below the FRL; therefore, no further action was required. The data from the location with the highest result in this sub-CU (A7MA-C04-6N, 17.7 mg/kg) was used in the statistical analysis for CU 4.

The results from the second round of sampling for total uranium and radium-226 results are presented in Appendix A.2. A7MA-C04 passed all of the certification criteria as discussed in Section 2.2.4.

A7MA-C05

CU A7MA-C05 passed all of the certification criteria as discussed in Section 2.2.4. The results are presented in Appendix A.1.

A7MA-C06

CU A7MA-C06 passed all of the certification criteria as discussed in Section 2.2.4. The results are presented in Appendix A.1.

A7MA-C07

CU A7MA-C07 passed all of the certification criteria as discussed in Section 2.2.4. The results are presented in Appendix A.1.

A7MA-C08

CU A7MA-C08 passed all of the certification criteria as discussed in Section 2.2.4. The results are presented in Appendix A.1.

A7MA-C09

CU A7MA-C09 passed all of the certification criteria as discussed in Section 2.2.4. The results are presented in Appendix A.1.

A7MA-C010

CU A7MA-C10 passed all of the certification criteria as discussed in Section 2.2.4. The results are presented in Appendix A.1.

A7MA-C11

CU A7MA-C11 passed all of the certification criteria as discussed in Section 2.2.4. The results are presented in Appendix A.1.

A7MA-C12

CU A7MA-C12 passed all of the certification criteria as discussed in Section 2.2.4. The results are presented in Appendix A.1.

A7MA-C13

CU A7MA-C13 passed all of the certification criteria as discussed in Section 2.2.4. The results are presented in Appendix A.1.

A7MA-C14

There was one result for radium-226 (9.13 pCi/g) that was greater than two times the FRL (1.7 pCi/g) at location A7MA-C14-15. V/FCN 20500-PSP-0016-2 was written to bound the radium-226 hotspot approximately 5 feet from the original sample location. The results from the first round of sampling, including the radium-226 results, are presented in Appendix A.1.

Following excavation, one bias sample (A7MA-C14-15B) and one random location (A7MA-C14-17) in sub-CU A7MA-C14-15 were sampled. The radium-226 result (5.06 pCi/g) from the southern bounding location (A7MA-C14-15S) was greater than two times the FRL. All other samples associated with sampling directed by V/FCN 20500-PSP-0016-2 except A7MA-C14-17 (1.71 pCi/g) (A7MA-C14-15B, A7MA-C14-15N, A7MA-C14-15E, and A7MA-C14-15W) were below the FRL. V/FCNs 20500-PSP-0016-5 and 20500-PSP-0016-6 were written to bound the radium-226 hotspot (A7MA-C14-15S) approximately 5 feet from the original sample location. The results from the second round of sampling are presented in Appendix A.2.

Following excavation, one bias sample (A7MA-C14-15C) and one sample at the newly excavated hotspot (A7MA-C14-15S3) in sub-CU A7MA-C14-15 was sampled. The results from this sampling location as well as the bounding samples (A7MA-C14-15N2, A7MA-C14-15S3, A7MA-C14-15W3, A7MA-C14-15E3) were below the FRL. Therefore, no further action was required. The data from the location with the highest result in this sub-CU (A7MA-C14-17, 1.71 pCi/g) was used in the statistical analysis for CU 14. The results from this final round of sampling are presented in Appendix A.3. CU A7MA-C14 passed all of the certification criteria as discussed in Section 2.2.4.

A7MA-C15

CU A7MA-C15 passed all of the certification criteria as discussed in Section 2.2.4. The results are presented in Appendix A.1.

A7MA-C16

CU A7MA-C16 passed all of the certification criteria as discussed in Section 2.2.4. The results are presented in Appendix A.1.

A7MA-C17

CU A7MA-C17 passed all of the certification criteria as discussed in Section 2.2.4. The results are presented in Appendix A.1.

A7MA-C18

CU A7MA-C18 passed all of the certification criteria as discussed in Section 2.2.4. The results are presented in Appendix A.1.

Utility Trenches

Data and a statistical evaluation, if needed, are presented in Appendix A. Statistical evaluation was done for this data only if any of the analytical results exceeded the FRL. When this occurred, this information was included in Appendix A as well. Upon review, the utility trenches passed certification.

5.2 AREA 7 MISCELLANEOUS AREAS CERTIFICATION CONCLUSIONS

Based on the certification analytical results, precertification data, and statistical analysis, DOE has determined that the remedial objectives in the OU5 ROD have been achieved for Area 7 Miscellaneous Areas. No further remedial actions are required. This portion of the FCP will be released for restoration and final land use upon U.S. Environmental Protection Agency and Ohio Environmental Protection Agency concurrence.

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APPENDIX A

CERTIFICATION SAMPLES, ANALYTICAL RESULTS AND FINAL STATISTICS TABLES

APPENDIX A
STATISTICAL ABBREVIATIONS AND SYMBOLS

The procedure used to determine if the data are either normally distributed or lognormally distributed is outlined in Section G.2.3 of Appendix G to the SEP. The second paragraph under "Step 3: Perform the Shapiro-Wilk Test to evaluate if the data are normally or lognormally distributed" states that "If the Shapiro-Wilk Test indicates both normal and lognormal distributions fit the data, the distribution with the highest p-value will be used in the Student's t-Test (Section G.2.2.2) to make the certification decision." Therefore, the distribution testing procedure is not a matter of transforming the data and then testing for lognormality only when the normality assumption fails as the comment seems to imply. The method is to test both normality and lognormality and select the distribution that "best" fits the data as defined by the test yielding the higher p-value above a minimum acceptable value. The minimum acceptable p-value for acceptance of a distribution was set at 0.05.

Abbreviations:

W-Statistic Probability - Shapiro-Wilk probability of the "better" fit - either normal or lognormal (note: a value less than 0.05 indicates that neither normality nor lognormality could be accepted, but the highest p-value is still shown.)

t-Test (N) - indicates that the normal distribution is best fit to data with a p-value greater than or equal to 0.05.

t-Test (LN) - indicates that the lognormal distribution is best fit to data with a p-value greater than or equal to 0.05.

Sign Test - the Sign test was used because one of the following situations occurred:

1. there were greater than 50 percent non-detects,
2. between 15 and 50 percent non-detects and data not symmetrically distributed,
3. less than 15 percent non-detects, but fails Shapiro-Wilk test for both normality and lognormality and data not symmetrically distributed.

Wilcoxon SR - the Wilcoxon Signed Rank procedure was used because of one of the following situations:

1. between 15 and 50 percent non-detects and data symmetrically distributed,
2. less than 15 percent non-detects, but fails Shapiro-Wilk test for both normality and lognormality and data symmetrically distributed.

Note: Data was considered to be "symmetrically distributed" if the Standardized Skewness had an Absolute Value of less than or equal to 2.00 (i.e., between -2.00 and 2.00).

Number of NDs - number of non-detects.

- - maximum result was below the FRL indicating that no statistical result needed to be reported.

ATTACHMENT A.1

SAMPLING RESULTS AND STATISTICS INITIAL SAMPLING

Certification Unit A7MA-C01

	Primary COCs					Secondary COCs		
SampleID	Radium-226	Radium-228	Thorium-228	Thorium-232	Uranium, Total	Antimony	Arsenic	Beryllium
A7MA-C01-1	0.727 J	0.586 J	0.622 J	0.586 J	6.59 -	0.394 U	2.11 -	0.18 J
A7MA-C01-3	1.45 -	0.57 -	0.553 -	0.57 -	5.13 -	0.407 U	5.26 -	0.311 -
A7MA-C01-4	0.904 J	0.721 J	0.752 J	0.721 J	8.66 -	0.426 U	5.88 -	0.409 J
A7MA-C01-5	1.11 J	0.905 J	0.958 J	0.905 J	6.42 -	0.411 U	7.22 -	0.519 J
A7MA-C01-7	1.45 J	1.16 J	1.18 J	1.16 J	3.36 U	0.471 U	9.6 -	1.07 J
A7MA-C01-7-D	1.04 J	0.855 J	0.854 J	0.855 J	3.2 U	0.478 U	8.23 -	0.462 J
A7MA-C01-8	1.13 J	0.912 J	0.938 J	0.912 J	7.3 -	0.391 U	7.13 -	0.457 J
A7MA-C01-9	0.961 -	0.743 -	0.719 -	0.743 -	4.28 J	0.452 U	3.78 -	0.398 -
A7MA-C01-11	0.919 J	0.652 J	0.642 J	0.652 J	15.5 -	0.432 U	6.15 -	0.437 J
A7MA-C01-12	1.01 J	0.782 J	0.814 J	0.782 J	4.92 J	0.484 U	4.34 -	0.634 J
A7MA-C01-13	1.63 J	1.03 J	1.03 J	1.03 J	3.19 U	0.467 U	8.41 -	0.676 J
A7MA-C01-14	1.45 J	1.01 J	1.02 J	1.01 J	6.98 -	0.476 U	10.2 -	0.65 J
A7MA-C01-16	1.09 J	0.829 J	0.813 J	0.829 J	5.82 -	0.448 U	6.75 -	0.53 J
Limit	1.7	1.8	1.7	1.5	82	96	12	1.5
Units	pCi/g	pCi/g	pCi/g	pCi/g	mg/kg	mg/kg	mg/kg	mg/kg
Conf. Level	95%	95%	95%	95%	95%	90%	90%	90%
Max. Result	1.63	1.16	1.18	1.16	15.5	0.484 U	10.2	1.07
Max. >= Limit	No	No	No	No	No	No	No	No
W-statistic Prob. #	- -	- -	- -	- -	- -	- -	- -	- -
Test Procedure	- -	- -	- -	- -	- -	- -	- -	- -
Sample Size	12	12	12	12	12	12	12	12
Nondetects	0	0	0	0	2	12	0	0
% Nondetects	0%	0%	0%	0%	17%	100%	0%	0%
Est. Mean*	- -	- -	- -	- -	- -	- -	- -	- -
UCL	- -	- -	- -	- -	- -	- -	- -	- -
Prob. > Limit	- -	- -	- -	- -	- -	- -	- -	- -
Pass / Fail	- -	- -	- -	- -	- -	- -	- -	- -

a posteriori Sample	- -	- -	- -	- -	- -	- -	- -	- -
Size calculation	- -	- -	- -	- -	- -	- -	- -	- -

Note: Est. Mean = Estimated measure of central tendency(Normal: Mean; LogNormal: Est. Mean; Non-Parametric: Median)
The maximum value of the two duplicates was used in all statistical equations.
#: This is the highest reported probability of the Shapiro-Wilk W-statistic for tests for the validity of the normality assumption.
The test is performed on the raw data (untransformed) data (N) and the log-transformed data (LN) to test for lognormality.

Certification Unit A7MA-C02

	Primary COCs					Secondary COCs	
SampleID	Radium-226	Radium-228	Thorium-228	Thorium-232	Uranium, Total	Arsenic	Beryllium
A7MA-C02-1	1.09 -	0.686 -	0.672 -	0.686 -	8.5 -	6.35 -	0.421 -
A7MA-C02-2	0.918 J	0.712 J	0.762 J	0.712 J	8.52 -	6.28 -	0.489 J
A7MA-C02-3	1.26 -	1.1 -	1.19 -	1.1 -	24.9 -	4.65 -	0.455 -
A7MA-C02-5	0.909 J	0.732 J	0.76 J	0.732 J	5.89 -	8.06 -	0.452 J
A7MA-C02-6	1.07 -	0.824 J	0.783 J	0.824 J	7.2 -	6.68 -	0.497 J
A7MA-C02-6-D	1.13 -	1.03 J	1.04 J	1.03 J	6.14 J	7.04 -	0.482 J
A7MA-C02-7	1.02 J	0.934 J	1.02 J	0.934 J	3.81 -	8 -	0.423 J
A7MA-C02-8	1.36 J	1.02 J	1.04 J	1.02 J	6.57 -	6.92 -	0.771 J
A7MA-C02-10	1.27 J	0.913 J	0.914 J	0.913 J	2.64 U	11.6 -	0.338 J
A7MA-C02-12	1.15 -	0.98 J	1.04 J	0.98 J	7.72 -	6.25 -	0.435 J
A7MA-C02-13	1.03 -	0.747 -	0.799 -	0.747 -	9.38 -	8.66 -	0.51 -
A7MA-C02-14	0.81 J	0.514 J	0.513 J	0.514 J	6.37 -	6.06 -	0.536 J
A7MA-C02-16	1.30 J	1.12 J	1.15 J	1.12 J	11.7 -	6.08 -	0.646 J
Limit	1.7	1.8	1.7	1.5	82	12	1.5
Units	pCi/g	pCi/g	pCi/g	pCi/g	mg/kg	mg/kg	mg/kg
Conf. Level	95%	95%	95%	95%	95%	90%	90%
Max. Result	1.36	1.12	1.19	1.12	24.9	11.6	0 .771
Max. >= Limit	No	No	No	No	No	No	No
W-statistic Prob. #	- -	- -	- -	- -	- -	- -	- -
Test Procedure	- -	- -	- -	- -	- -	- -	- -
Sample Size	12	12	12	12	12	12	12
Nondetects	0	0	0	0	1	0	0
% Nondetects	0%	0%	0%	0%	8%	0%	0%
Est. Mean*	- -	- -	- -	- -	- -	- -	- -
UCL	- -	- -	- -	- -	- -	- -	- -
Prob. > Limit	- -	- -	- -	- -	- -	- -	- -
Pass / Fail	- -	- -	- -	- -	- -	- -	- -
a posteriori Sample	- -	- -	- -	- -	- -	- -	- -
Size calculation	- -	- -	- -	- -	- -	- -	- -

Note: Est. Mean = Estimated measure of central tendency(Normal: Mean; LogNormal: Est. Mean; Non-Parametric: Median)
The maximum value of the two duplicates was used in all statistical equations.
#: This is the highest reported probability of the Shapiro-Wilk W-statistic for tests for the validity of the normality assumption.
The test is performed on the raw data (untransformed) data (N) and the log-transformed data (LN) to test for lognormality.

Certification Unit A7MA-C03

	Primary COCs					Secondary COCs				
SampleID	Radium-226	Radium-228	Thorium-228	Thorium-232	Uranium, Total	Arsenic	Beryllium	Aroclor-1254	Aroclor-1260	Dieldrin
A7MA-C03-1	1.28 -	0.757 -	0.737 -	0.757 -	21 -	5.68 J	0.716 -	11.8 J	9.9 J	1.4 U
A7MA-C03-2	1.22 -	0.894 -	0.911 -	0.894 -	11.5 -	9.62 J	0.785 -	7.2 J	3.8 U	1.5 U
A7MA-C03-3	1.1 -	0.82 -	0.777 -	0.82 -	10.8 -	3.32 J	0.617 -	4 U	4 U	1.6 U
A7MA-C03-5	1.29 -	0.817 -	0.82 -	0.817 -	4.44 -	6.65 J	1.04 -	4 U	4 U	1.6 U
A7MA-C03-6	1.03 -	1.61 J	1.63 J	1.61 J	14 J	4.5 -	0.58 J	31.3 -	16.7 -	1.5 UJ
A7MA-C03-8	1.23 -	0.966 -	0.956 -	0.966 -	7.96 -	5.99 J	0.741 -	3.9 U	3.9 U	1.6 U
A7MA-C03-10	1.22 -	1.03 -	1.05 -	1.03 -	11.5 -	7.03 J	0.691 -	4.2 J	3.9 U	1.6 U
A7MA-C03-11	1.03 -	1.04 J	1.03 J	1.04 J	13.2 J	7.3 -	0.55 J	3.8 J	3.8 U	1.5 UJ
A7MA-C03-12	1.12 -	1.03 J	1.05 J	1.03 J	13.1 J	5.3 -	0.52 J	3.8 U	3.8 U	1.5 UJ
A7MA-C03-13	0.886 -	0.965 J	0.995 J	0.965 J	12.1 J	6.2 -	0.67 J	4 U	4 U	1.6 UJ
A7MA-C03-13-D	0.837 -	0.829 J	0.824 J	0.829 J	7.4 J	5.6 -	0.49 J	3.8 U	3.8 U	1.5 UJ
A7MA-C03-14	0.921 -	0.975 J	0.98 J	0.975 J	18.5 J	5 -	0.66 J	4 U	4 U	1.6 UJ
A7MA-C03-16	1.06 -	0.818 -	0.812 -	0.818 -	9.24 -	5.56 J	0.722 -	3.9 U	3.9 U	1.6 U
Limit	1.7	1.8	1.7	1.5	82	12	1.5	130	130	15
Units	pCi/g	pCi/g	pCi/g	pCi/g	mg/kg	mg/kg	mg/kg	µg/kg	µg/kg	µg/kg
Conf. Level	95%	95%	95%	95%	95%	90%	90%	90%	90%	90%
Max. Result	1.29	1.61	1.63	**1.61**	21	9.62	1.04	31.3	16.7	1.6 UJ
Max. >= Limit	No	No	No	**Yes**	No	No	No	No	No	No
W-statistic Prob. #	- -	- -	- -	2.2% (LN)	- -	- -	- -	- -	- -	- -
Test Procedure	- -	- -	- -	Median (Sign)	- -	- -	- -	- -	- -	- -
Sample Size	12	12	12	12	12	12	12	12	12	12
Nondetects	0	0	0	0	0	0	0	7	10	12
% Nondetects	0%	0%	0%	0%	0%	0%	0%	58%	83%	100%
Est. Mean*	- -	- -	- -	0.9655	- -	- -	- -	- -	- -	- -
UCL	- -	- -	- -	1.03	- -	- -	- -	- -	- -	- -
Prob. > Limit	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Pass / Fail	- -	- -	- -	Pass	- -	- -	- -	- -	- -	- -
a posteriori Sample	- -	- -	- -	7	- -	- -	- -	- -	- -	- -
Size calculation	- -	- -	- -	Pass	- -	- -	- -	- -	- -	- -

Note: Est. Mean = Estimated measure of central tendency(Normal: Mean; LogNormal: Est. Mean; Non-Parametric: Median)
The maximum value of the two duplicates was used in all statistical equations.
#: This is the highest reported probability of the Shapiro-Wilk W-statistic for tests for the validity of the normality assumption.
The test is performed on the raw data (untransformed) data (N) and the log-transformed data (LN) to test for lognormality.

Certification Unit A7MA-C04

	Primary COCs					Secondary COCs				
SampleID	Radium-226	Radium-228	Thorium-228	Thorium-232	Uranium, Total	Arsenic	Beryllium	Aroclor-1254	Aroclor-1260	Dieldrin
A7MA-C04-2	1.15 -	0.918 -	0.926 -	0.918 -	8.82 J	8.93 J	0.599 -	10.8 J	4.7 J	1.5 U
A7MA-C04-3	1.28 -	1.05 -	1.04 -	1.05 -	21.9 J	5.42 J	0.507 -	4 U	4 U	1.6 U
A7MA-C04-3-D	1.28 -	1.16 -	1.15 -	1.16 -	16.2 J	3.85 J	0.481 -	3.9 U	3.9 U	1.6 U
A7MA-C04-4	1.71 -	1.13 -	1.14 -	1.13 -	13.8 J	13.7 J	1.22 -	4 U	4 U	1.6 U
A7MA-C04-6	1.26 -	1.2 -	1.22 -	1.2 -	**44.4** -	4.43 J	0.471 -	9.3 J	6.7 J	1.6 U
A7MA-C04-7	1.04 -	1.01 -	1.05 -	1.01 -	8.47 -	8.8 J	0.819 -	4.1 U	4.1 U	1.6 U
A7MA-C04-8	**3.73** -	0.846 -	0.885 -	0.846 -	6.86 J	6.43 J	0.418 -	3.8 U	3.8 U	1.5 U
A7MA-C04-9	1.56 -	1.19 -	1.14 -	1.19 -	4.45 J	14.8 J	1.65 -	4.4 J	4 U	1.6 U
A7MA-C04-10	1.15 -	0.825 -	0.872 -	0.825 -	5.56 J	12 J	0.578 -	4.5 J	3.6 U	1.5 U
A7MA-C04-12	1.88 -	0.888 -	0.814 -	0.888 -	7.95 J	7.75 J	0.817 -	7.8 J	3.8 U	1.5 U
A7MA-C04-13	1.72 -	0.794 -	0.763 -	0.794 -	9.17 J	6.69 J	0.597 -	6.4 J	3.5 U	1.4 U
A7MA-C04-15	1.13 -	0.82 -	0.749 -	0.82 -	4.68 J	8.78 J	0.624 -	3.9 U	3.9 U	1.5 U
A7MA-C04-16	1.28 -	0.849 -	0.872 -	0.849 -	5.68 J	12.9 J	0.668 -	3.9 U	3.9 U	1.6 U
Limit	1.7	1.8	1.7	1.5	20	12	1.5	130	130	15
Units	pCi/g	pCi/g	pCi/g	pCi/g	mg/kg	mg/kg	mg/kg	µg/kg	µg/kg	µg/kg
Conf. Level	95%	95%	95%	95%	95%	90%	90%	90%	90%	90%
Max. Result	**3.73**	1.2	1.22	1.2	**44.4**	**14.8**	**1.65**	10.8	6.7	1.6 U
Max. >= Limit	**Yes**	No	No	No	**Yes**	**Yes**	**Yes**	No	No	No
W-statistic Prob. #	1.2% (LN)	- -	- -	- -	8.3% (LN)	69.2% (LN)	24.9% (LN)	- -	- -	- -
Test Procedure	Median (Sign)	- -	- -	- -	Lognormal	Lognormal	Lognormal	- -	- -	- -
Sample Size	12	12	12	12	12	12	12	12	12	12
Nondetects	0	0	0	0	0	0	0	6	10	12
% Nondetects	0%	0%	0%	0%	0%	0%	0%	50%	83%	100%
Est. Mean*	1.280	- -	- -	- -	11.4	9.29	0.75	- -	- -	- -
UCL	1.72	- -	- -	- -	18.51	11.02	0.89	- -	- -	- -
Prob. > Limit	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Pass / Fail	**FAIL**	- -	- -	- -	pass	pass	pass	- -	- -	- -
a posteriori Sample	54	- -	- -	- -	6	7	2	- -	- -	- -
Size calculation	**Fail**	- -	- -	- -	Pass	Pass	Pass	- -	- -	- -

Note: Est. Mean = Estimated measure of central tendency(Normal: Mean; LogNormal: Est. Mean; Non-Parametric: Median)
The maximum value of the two duplicates was used in all statistical equations.
#: This is the highest reported probability of the Shapiro-Wilk W-statistic for tests for the validity of the normality assumption.
The test is performed on the raw data (untransformed) data (N) and the log-transformed data (LN) to test for lognormality.

Certification Unit A7MA-C05

	Primary COCs					Secondary COCs				
SampleID	Radium-226	Radium-228	Thorium-228	Thorium-232	Uranium, Total	Arsenic	Beryllium	Aroclor-1254	Aroclor-1260	Dieldrin
A7MA-C05-2	0.877 -	0.818 -	0.845 -	0.818 -	6.82 -	2.4 J	0.31 -	8.2 J	3.6 U	1.4 UJ
A7MA-C05-3	1.17 -	0.991 -	0.985 -	0.991 -	9.55 -	5.9 -	0.62 -	13.3 -	3.6 UJ	1.4 U
A7MA-C05-4	0.78 -	0.754 -	0.749 -	0.754 -	6.81 -	5.2 -	0.47 -	3.5 U	3.5 UJ	1.4 U
A7MA-C05-6	0.982 -	0.969 -	0.976 -	0.969 -	8.74 -	4.6 J	0.63 -	3.9 U	3.9 U	1.5 UJ
A7MA-C05-7	0.849 -	0.626 -	0.637 -	0.626 -	4.55 J	5.8 -	0.46 -	3.7 U	3.7 UJ	1.5 U
A7MA-C05-8	0.951 -	1.08 -	1.06 -	1.08 -	14.6 -	5 J	0.71 -	5.3 J	3.9 U	1.6 UJ
A7MA-C05-9	1.18 -	1.5 -	1.46 -	1.5 -	19.6 -	6.9 -	0.61 -	11.9 J	5.6 J	1.5 U
A7MA-C05-11	0.881 -	0.763 -	0.768 -	0.763 -	4.81 -	6.5 -	0.45 -	3.6 U	3.6 UJ	1.4 U
A7MA-C05-12	0.881 -	0.895 -	0.924 -	0.895 -	8.31 -	6.9 J	0.7 -	9.1 J	3.9 U	1.6 UJ
A7MA-C05-13	1.3 -	1.08 -	1.06 -	1.08 -	8.95 -	17.7 J	1.2 -	4.1 U	4.1 U	1.7 UJ
A7MA-C05-14	0.94 -	0.819 -	0.837 -	0.819 -	6.57 -	8.8 J	0.81 -	3.71 U	3.71 U	1.48 UJ
A7MA-C05-15	1.28 -	1.24 -	1.28 -	1.24 -	28.4 -	6.1 J	0.56 -	6.2 J	3.9 U	1.6 UJ
A7MA-C05-15-D	1.16 -	1.3 -	1.28 -	1.3 -	26.5 -	4.3 J	0.59 -	3.8 U	3.8 U	1.5 UJ
Limit	1.7	1.8	1.7	1.5	82	12	1.5	130	130	15
Units	pCi/g	pCi/g	pCi/g	pCi/g	mg/kg	mg/kg	mg/kg	µg/kg	µg/kg	µg/kg
Conf. Level	95%	95%	95%	95%	95%	90%	90%	90%	90%	90%
Max. Result	1.3	1.5	1.46	1.5	28.4	**17.7**	1.2	13.3	5.6	1.7 UJ
Max. >= Limit	No	No	No	No	No	**Yes**	No	No	No	No
W-statistic Prob. #	- -	- -	- -	- -	- -	18.2% (LN)	- -	- -	- -	- -
Test Procedure	- -	- -	- -	- -	- -	Lognormal	- -	- -	- -	- -
Sample Size	12	12	12	12	12	12	12	12	12	12
Nondetects	0	0	0	0	0	0	0	6	11	12
% Nondetects	0%	0%	0%	0%	0%	0%	0%	50%	92%	100%
Est. Mean*	- -	- -	- -	- -	- -	6.83	- -	- -	- -	- -
UCL	- -	- -	- -	- -	- -	8.45	- -	- -	- -	- -
Prob. > Limit	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Pass / Fail	- -	- -	- -	- -	- -	pass	- -	- -	- -	- -
a posteriori Sample	- -	- -	- -	- -	- -	3	- -	- -	- -	- -
Size calculation	- -	- -	- -	- -	- -	Pass	- -	- -	- -	- -

Note: Est. Mean = Estimated measure of central tendency(Normal: Mean; LogNormal: Est. Mean; Non-Parametric: Median)
The maximum value of the two duplicates was used in all statistical equations.
#: This is the highest reported probability of the Shapiro-Wilk W-statistic for tests for the validity of the normality assumption.
The test is performed on the raw data (untransformed) data (N) and the log-transformed data (LN) to test for lognormality.

Certification Unit A7MA-C06

	Primary COCs					Secondary COCs				
SampleID	Radium-226	Radium-228	Thorium-228	Thorium-232	Uranium, Total	Arsenic	Beryllium	Aroclor-1254	Aroclor-1260	Dieldrin
A7MA-C06-1	1.21 -	1.2 -	1.21 -	1.2 -	26.3 -	3.29 J	0.638 -	3.9 U	3.9 U	1.6 U
A7MA-C06-2	1.13 -	0.71 J	0.725 J	0.71 J	5.98 J	9.9 J	0.37 J	3.8 U	3.8 U	1.5 U
A7MA-C06-3	1.13 -	0.977 J	1.05 J	0.977 J	4.39 J	5.32 J	0.464 J	3.8 U	3.8 U	1.5 U
A7MA-C06-5	1.03 -	0.747 J	0.771 J	0.747 J	4.26 J	9.04 J	0.336 J	3.8 U	3.8 U	1.5 U
A7MA-C06-5-D	1.04 -	0.996 J	1.01 J	0.996 J	7.54 J	9.76 J	0.365 J	3.8 U	3.8 U	1.5 U
A7MA-C06-6	1.07 -	0.854 J	0.828 J	0.854 J	5.69 J	7.34 J	0.465 J	4 U	4 U	1.6 U
A7MA-C06-8	1.10 -	0.918 J	0.873 J	0.918 J	5.73 J	5.15 J	0.587 J	3.8 U	3.8 U	1.5 U
A7MA-C06-10	1.11 -	0.795 J	0.759 J	0.795 J	4.26 J	6.81 J	0.393 J	3.8 U	3.8 U	7.6 U
A7MA-C06-11	1.05 -	0.832 J	0.852 J	0.832 J	9.57 J	7.38 J	0.442 J	3.6 U	3.6 U	1.5 U
A7MA-C06-12	1.09 -	0.743 J	0.737 J	0.743 J	4.23 J	10.6 J	0.503 J	4 U	4 U	1.6 U
A7MA-C06-13	1.24 -	0.856 J	0.834 J	0.856 J	9.69 J	7.89 J	0.456 J	14.8 -	9.7 U	9.7 U
A7MA-C06-14	0.939 -	0.733 J	0.734 J	0.733 J	7.71 J	4.34 J	0.303 J	3.8 U	3.8 U	1.5 U
A7MA-C06-16	0.978 -	0.705 -	0.715 -	0.705 -	9.47 -	4.54 -	0.43 -	3.6 U	3.6 U	1.4 UJ
Limit	1.7	1.8	1.7	1.5	20	12	1.5	130	130	15
Units	pCi/g	pCi/g	pCi/g	pCi/g	mg/kg	mg/kg	mg/kg	µg/kg	µg/kg	µg/kg
Conf. Level	95%	95%	95%	95%	95%	90%	90%	90%	90%	90%
Max. Result	1.24	1.2	1.21	1.2	**26.3**	10.6	0 .638	14.8	9.7 U	9.7 U
Max. >= Limit	No	No	No	No	**Yes**	No	No	No	No	No
W-statistic Prob. #	- -	- -	- -	- -	5.1% (LN)	- -	- -	- -	- -	- -
Test Procedure	- -	- -	- -	- -	Lognormal	- -	- -	- -	- -	- -
Sample Size	12	12	12	12	12	12	12	12	12	12
Nondetects	0	0	0	0	0	0	0	11	12	12
% Nondetects	0%	0%	0%	0%	0%	0%	0%	92%	100%	100%
Est. Mean*	- -	- -	- -	- -	8.2	- -	- -	- -	- -	- -
UCL	- -	- -	- -	- -	11.50	- -	- -	- -	- -	- -
Prob. > Limit	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Pass / Fail	- -	- -	- -	- -	pass	- -	- -	- -	- -	- -
a posteriori Sample	- -	- -	- -	- -	3	- -	- -	- -	- -	- -
Size calculation	- -	- -	- -	- -	Pass	- -	- -	- -	- -	- -

Note: Est. Mean = Estimated measure of central tendency(Normal: Mean; LogNormal: Est. Mean; Non-Parametric: Median)
The maximum value of the two duplicates was used in all statistical equations.
#: This is the highest reported probability of the Shapiro-Wilk W-statistic for tests for the validity of the normality assumption.
The test is performed on the raw data (untransformed) data (N) and the log-transformed data (LN) to test for lognormality.

Certification Unit A7MA-C07

	Primary COCs					Secondary COCs					
SampleID	Radium-226	Radium-228	Thorium-228	Thorium-232	Uranium, Total	Arsenic	Beryllium	Aroclor-1254	Aroclor-1260	Dieldrin	Perchlorate
A7MA-C07-1	1.12 -	0.888 -	0.88 -	0.888 -	9.86 J	4.43 J	0.608 -	3.9 U	3.9 UJ	1.6 UJ	11.3 U
A7MA-C07-1-D	1.13 -	0.886 -	0.907 -	0.886 -	12.7 J	6.12 J	0.622 -	3.9 U	3.9 UJ	1.6 UJ	11.8 U
A7MA-C07-3	1.01 -	0.942 -	0.936 -	0.942 -	9.4 J	5.92 J	0.452 -	3.6 U	3.6 UJ	1.5 UJ	10.9 U
A7MA-C07-4	1.02 -	0.793 -	0.801 -	0.793 -	8.47 J	6.01 J	0.581 -	10.2 J	3.7 UJ	1.5 UJ	10.9 U
A7MA-C07-5	1.2 -	0.97 -	0.996 -	0.97 -	5.04 J	4.88 J	0.734 -	3.8 U	3.8 UJ	1.5 UJ	11.3 U
A7MA-C07-7	1.04 -	0.829 -	0.785 -	0.829 -	6.84 J	5.67 J	0.843 -	3.7 U	3.7 UJ	1.5 UJ	10.9 U
A7MA-C07-8	0.979 -	0.756 -	0.784 -	0.756 -	10 J	5.91 J	0.568 -	7.5 J	3.9 UJ	1.6 UJ	11.8 U
A7MA-C07-9	1.07 -	0.786 -	0.797 -	0.786 -	6.05 J	5.57 J	0.47 -	3.5 U	3.5 UJ	1.4 UJ	10.6 U
A7MA-C07-10	1.07 -	0.814 -	0.816 -	0.814 -	10.6 J	6.77 J	0.573 -	3.6 U	3.6 UJ	1.5 UJ	10.8 U
A7MA-C07-12	1.15 -	0.907 -	0.95 -	0.907 -	10.9 J	8.69 J	0.481 -	3.9 U	3.9 UJ	1.6 UJ	26.6 J
A7MA-C07-13	1.03 -	0.813 -	0.816 -	0.813 -	12.5 J	5.46 J	0.531 -	3.6 U	3.6 UJ	1.4 UJ	10.8 U
A7MA-C07-15	1.21 -	0.978 -	0.976 -	0.978 -	11.5 J	4.65 J	0.649 -	4.2 J	3.6 UJ	1.4 UJ	10.7 U
A7MA-C07-16	1.06 -	0.868 -	0.891 -	0.868 -	13.2 J	5.16 J	0.397 -	3.8 U	3.8 UJ	1.5 UJ	11.5 U
Limit	1.7	1.8	1.7	1.5	20	12	1.5	130	130	15	NA
Units	pCi/g	pCi/g	pCi/g	pCi/g	mg/kg	mg/kg	mg/kg	µg/kg	µg/kg	µg/kg	µg/kg
Conf. Level	95%	95%	95%	95%	95%	90%	90%	90%	90%	90%	NA
Max. Result	1.21	0 .978	0 .996	0 .978	13.2	8.69	0 .843	10.2	3.9 UJ	1.6 UJ	26.6
Max. >= Limit	No	No	No	No	No	No	No	No	No	No	NA
W-statistic Prob. #	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Test Procedure	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Sample Size	12	12	12	12	12	12	12	12	12	12	12
Nondetects	0	0	0	0	0	0	0	9	12	12	11
% Nondetects	0%	0%	0%	0%	0%	0%	0%	75%	100%	100%	92%
Est. Mean*	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
UCL	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Prob. > Limit	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Pass / Fail	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
a posteriori Sample	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Size calculation	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -

Note: Est. Mean = Estimated measure of central tendency(Normal: Mean; LogNormal: Est. Mean; Non-Parametric: Median)
The maximum value of the two duplicates was used in all statistical equations.
#: This is the highest reported probability of the Shapiro-Wilk W-statistic for tests for the validity of the normality assumption.
The test is performed on the raw data (untransformed) data (N) and the log-transformed data (LN) to test for lognormality.

Certification Unit A7MA-C08

	Primary COCs					Secondary COCs				
SampleID	Radium-226	Radium-228	Thorium-228	Thorium-232	Uranium, Total	Arsenic	Beryllium	Aroclor-1254	Aroclor-1260	Dieldrin
A7MA-C08-1	1.13 J	0.812 -	0.822 -	0.812 -	5.24 -	3.6 J	0.43 -	4 U	4 U	1.6 UJ
A7MA-C08-2	1.26 J	0.737 -	0.761 -	0.737 -	4.3 -	10.6 J	0.53 -	4.4 J	3.9 U	1.6 UJ
A7MA-C08-4	0.804 -	0.759 -	0.766 -	0.759 -	3.15 J	3.1 -	0.48 -	3.5 U	3.5 UJ	1.4 U
A7MA-C08-5	1.13 J	0.898 -	0.896 -	0.898 -	7.67 -	4.4 J	0.54 -	3.6 U	3.6 U	1.5 UJ
A7MA-C08-6	1.08 -	1.09 -	1.08 -	1.09 -	4.95 -	4.8 -	0.8 -	3.9 U	3.9 UJ	1.6 U
A7MA-C08-8	1.19 J	1.03 -	1.01 -	1.03 -	7.61 -	6 J	0.66 -	3.8 U	3.8 U	1.5 UJ
A7MA-C08-8-D	1.00 J	0.99 -	0.947 -	0.99 -	7.33 -	4.1 J	0.7 -	3.9 U	3.9 U	1.6 UJ
A7MA-C08-9	1.02 -	0.874 J	0.871 -	0.874 J	6.82 J	5.79 -	0.464 J	3.8 U	3.8 U	1.5 U
A7MA-C08-10	0.896 J	0.891 -	0.899 -	0.891 -	5.59 -	4.3 J	0.45 -	3.8 U	3.8 U	1.5 UJ
A7MA-C08-11	1.15 J	0.8 -	0.815 -	0.8 -	14 -	6.1 J	0.59 -	15.5 -	6.9 J	1.5 UJ
A7MA-C08-13	1.24 -	1.49 -	1.53 -	1.49 -	24.2 -	4.4 -	0.71 -	7.8 J	4 UJ	1.6 U
A7MA-C08-14	1.04 -	1.14 -	1.13 -	1.14 -	9.24 -	5.1 -	0.66 -	4 U	4 UJ	1.6 U
A7MA-C08-16	0.975 -	0.989 -	0.984 -	0.989 -	6.97 -	4.6 -	0.46 -	4.6 J	3.7 UJ	1.5 U
Limit	1.7	1.8	1.7	1.5	20	12	1.5	130	130	15
Units	pCi/g	pCi/g	pCi/g	pCi/g	mg/kg	mg/kg	mg/kg	µg/kg	µg/kg	µg/kg
Conf. Level	95%	95%	95%	95%	95%	90%	90%	90%	90%	90%
Max. Result	1.26	1.49	1.53	1.49	**24.2**	10.6	0.8	15.5	6.9	1.6 UJ
Max. >= Limit	No	No	No	No	**Yes**	No	No	No	No	No
W-statistic Prob. #	- -	- -	- -	- -	48.1% (LN)	- -	- -	- -	- -	- -
Test Procedure	- -	- -	- -	- -	Lognormal	- -	- -	- -	- -	- -
Sample Size	12	12	12	12	12	12	12	12	12	12
Nondetects	0	0	0	0	0	0	0	8	11	12
% Nondetects	0%	0%	0%	0%	0%	0%	0%	67%	92%	0%
Est. Mean*	- -	- -	- -	- -	8.25	- -	- -	- -	- -	- -
UCL	- -	- -	- -	- -	11.82	- -	- -	- -	- -	- -
Prob. > Limit	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Pass / Fail	- -	- -	- -	- -	pass	- -	- -	- -	- -	- -
a posteriori Sample	- -	- -	- -	- -	4	- -	- -	- -	- -	- -
Size calculation	- -	- -	- -	- -	Pass	- -	- -	- -	- -	- -

Note: Est. Mean = Estimated measure of central tendency(Normal: Mean; LogNormal: Est. Mean; Non-Parametric: Median)
The maximum value of the two duplicates was used in all statistical equations.
#: This is the highest reported probability of the Shapiro-Wilk W-statistic for tests for the validity of the normality assumption.
The test is performed on the raw data (untransformed) data (N) and the log-transformed data (LN) to test for lognormality.

Certification Unit A7MA-C09

	Primary COCs					Secondary COCs				
SampleID	Radium-226	Radium-228	Thorium-228	Thorium-232	Uranium, Total	Arsenic	Beryllium	Aroclor-1254	Aroclor-1260	Dieldrin
A7MA-C09-1	0.929 -	0.743 -	0.72 -	0.743 -	9.4 -	6.4 J	0.46 -	3.6 J	3.5 U	1.4 UJ
A7MA-C09-3	0.649 -	0.561 -	0.559 -	0.561 -	8.51 -	5.3 J	0.48 -	16.9 -	5.7 J	1.5 UJ
A7MA-C09-4	1.05 -	0.774 -	0.761 -	0.774 -	9.48 -	5.6 J	0.45 -	11.2 J	4 J	1.4 UJ
A7MA-C09-5	1.11 -	0.914 -	0.895 -	0.914 -	11.6 -	7.9 J	0.75 -	3.8 U	3.8 U	1.5 UJ
A7MA-C09-7	1.07 -	1.06 -	1.04 -	1.06 -	9.61 -	5.4 J	0.77 -	3.9 U	3.9 U	1.6 UJ
A7MA-C09-8	1.00 -	0.92 -	0.925 -	0.92 -	8.01 -	6.2 J	0.5 -	3.5 U	3.5 U	1.4 UJ
A7MA-C09-9	1.18 -	1.03 -	1.03 -	1.03 -	13.4 -	10.2 J	0.82 -	3.8 U	3.8 U	1.5 UJ
A7MA-C09-10	0.937 -	0.825 -	0.817 -	0.825 -	7.05 -	8.2 J	0.47 -	3.7 U	3.7 U	1.5 UJ
A7MA-C09-11	0.858 -	0.81 -	0.796 -	0.81 -	6.5 -	5.9 J	0.45 -	3.6 U	3.6 U	1.5 UJ
A7MA-C09-11-D	0.932 -	0.807 -	0.808 -	0.807 -	7.29 -	4.2 J	0.4 -	13 J	5.1 J	1.5 UJ
A7MA-C09-13	1.10 -	0.878 -	0.88 -	0.878 -	9 -	5.5 J	0.58 -	3.7 U	3.7 U	1.5 UJ
A7MA-C09-14	1.00 -	1.07 -	1.07 -	1.07 -	10.8 -	7.9 J	0.7 -	3.7 U	3.7 U	1.5 UJ
A7MA-C09-15	0.955 -	0.969 -	0.982 -	0.969 -	17.8 -	7.3 J	0.67 -	3.7 U	3.7 U	1.5 UJ
Limit	1.7	1.8	1.7	1.5	20	12	1.5	130	130	15
Units	pCi/g	pCi/g	pCi/g	pCi/g	mg/kg	mg/kg	mg/kg	µg/kg	µg/kg	µg/kg
Conf. Level	95%	95%	95%	95%	95%	90%	90%	90%	90%	90%
Max. Result	1.18	1.07	1.07	1.07	17.8	10.2	0 .82	16.9	5.7	1.6 UJ
Max. >= Limit	No	No	No	No	No	No	No	No	No	No
W-statistic Prob. #	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Test Procedure	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Sample Size	12	12	12	12	12	12	12	12	12	12
Nondetects	0	0	0	0	0	0	0	8	9	12
% Nondetects	0%	0%	0%	0%	0%	0%	0%	67%	75%	100%
Est. Mean*	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
UCL	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Prob. > Limit	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Pass / Fail	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
a posteriori Sample	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Size calculation	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -

Note: Est. Mean = Estimated measure of central tendency(Normal: Mean; LogNormal: Est. Mean; Non-Parametric: Median)
The maximum value of the two duplicates was used in all statistical equations.
#: This is the highest reported probability of the Shapiro-Wilk W-statistic for tests for the validity of the normality assumption.
The test is performed on the raw data (untransformed) data (N) and the log-transformed data (LN) to test for lognormality.

Certification Unit A7MA-C10

	Primary COCs					Secondary COCs				
SampleID	Radium-226	Radium-228	Thorium-228	Thorium-232	Uranium, Total	Arsenic	Beryllium	Aroclor-1254	Aroclor-1260	Dieldrin
A7MA-C10-1	0.976 -	0.738 -	0.774 -	0.738 -	9.66 J	5.53 -	0.503 -	3.7 U	3.7 U	1.5 UJ
A7MA-C10-2	0.835 -	0.573 -	0.574 -	0.573 -	7.93 J	5.17 -	0.349 -	3.6 U	3.6 U	1.4 UJ
A7MA-C10-4	0.52 -	0.369 -	0.395 -	0.369 -	3.83 J	3.72 -	0.254 -	6.5 J	3.5 U	7 UJ
A7MA-C10-5	0.852 -	0.748 -	0.782 -	0.748 -	7.92 J	5.09 -	0.359 -	5.4 J	3.5 U	1.4 UJ
A7MA-C10-6	0.727 -	0.499 -	0.548 -	0.499 -	11.4 J	5.3 -	0.368 -	3.5 U	3.5 U	1.4 UJ
A7MA-C10-8	0.893 -	0.658 -	0.667 -	0.658 -	6.66 J	5.89 -	0.39 -	7.8 J	3.5 U	1.4 UJ
A7MA-C10-9	1.01 -	0.903 -	0.904 -	0.903 -	7.39 J	12.8 -	0.367 -	3.6 U	3.6 U	1.4 UJ
A7MA-C10-11	1.04 -	1.08 -	1.03 -	1.08 -	9.42 -	5.7 -	0.56 -	4 U	4 UJ	1.6 U
A7MA-C10-12	0.663 -	0.635 -	0.63 -	0.635 -	3.65 -	5.1 -	0.46 -	3.6 U	3.6 UJ	1.5 U
A7MA-C10-14	0.722 -	0.558 -	0.591 -	0.558 -	7.3 J	4.97 -	0.184 J	3.5 U	3.5 U	1.4 UJ
A7MA-C10-15	1.09 -	1.02 -	1.03 -	1.02 -	16.1 -	8.4 -	0.63 -	5.7 J	4.1 UJ	1.6 U
A7MA-C10-15-D	1.08 -	1.04 -	1.07 -	1.04 -	14.6 -	8.8 -	0.59 -	4 U	4 UJ	1.6 U
A7MA-C10-16	1.44 -	1.2 J	1.18 -	1.2 J	5.17 J	10.8 -	0.491 J	3.9 U	3.9 U	1.6 U
Limit	1.7	1.8	1.7	1.5	20	12	1.5	130	130	15
Units	pCi/g	pCi/g	pCi/g	pCi/g	mg/kg	mg/kg	mg/kg	µg/kg	µg/kg	µg/kg
Conf. Level	95%	95%	95%	95%	95%	90%	90%	90%	90%	90%
Max. Result	1.44	1.2	1.18	1.2	16.1	**12.8**	0 .63	7.8	4.1 UJ	7 UJ
Max. >= Limit	No	No	No	No	No	**Yes**	No	No	No	No
W-statistic Prob. #	- -	- -	- -	- -	- -	3.6% (LN)	- -	- -	- -	- -
Test Procedure	- -	- -	- -	- -	- -	Median (Sign)	- -	- -	- -	- -
Sample Size	12	12	12	12	12	12	12	12	12	12
Nondetects	0	0	0	0	0	0	0	8	12	12
% Nondetects	0%	0%	0%	0%	17%	0%	0%	67%	0%	0%
Est. Mean*	- -	- -	- -	- -	- -	5.415	- -	- -	- -	- -
UCL	- -	- -	- -	- -	- -	5.89	- -	- -	- -	- -
Prob. > Limit	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Pass / Fail	- -	- -	- -	- -	- -	Pass	- -	- -	- -	- -
a posteriori Sample	- -	- -	- -	- -	- -	5	- -	- -	- -	- -
Size calculation	- -	- -	- -	- -	- -	Pass	- -	- -	- -	- -

Note: Est. Mean = Estimated measure of central tendency(Normal: Mean; LogNormal: Est. Mean; Non-Parametric: Median)
The maximum value of the two duplicates was used in all statistical equations.
#: This is the highest reported probability of the Shapiro-Wilk W-statistic for tests for the validity of the normality assumption.
The test is performed on the raw data (untransformed) data (N) and the log-transformed data (LN) to test for lognormality.

Certification Unit A7MA-C11

	Primary COCs					Secondary COCs				
SampleID	Radium-226	Radium-228	Thorium-228	Thorium-232	Uranium, Total	Arsenic	Beryllium	Aroclor-1254	Aroclor-1260	Dieldrin
A7MA-C11-1	0.839 -	0.895 J	0.892 J	0.895 J	24.2 J	6.7 -	0.68 J	11 J	6.1 J	1.6 UJ
A7MA-C11-2	1.13 -	0.964 J	0.971 J	0.964 J	8.35 J	7.6 -	0.89 J	3.9 U	3.9 U	1.6 UJ
A7MA-C11-4	0.971 -	1.06 -	1.04 -	1.06 -	8.24 -	5.8 J	0.64 -	3.9 U	3.9 U	1.6 UJ
A7MA-C11-5	1.01 -	0.919 J	0.926 J	0.919 J	12.8 J	6.6 -	0.59 J	4 U	4 U	1.6 UJ
A7MA-C11-6	1.08 -	0.905 -	0.895 -	0.905 -	11.6 -	6.3 J	0.45 -	3.8 U	3.8 U	1.5 U
A7MA-C11-7	0.978 -	0.929 -	0.909 -	0.929 -	16.1 -	6.7 J	0.6 -	3.9 U	3.9 U	1.6 UJ
A7MA-C11-7-D	0.995 -	1.02 -	0.999 -	1.02 -	17.4 -	5.7 J	0.62 -	3.9 U	3.9 U	1.6 UJ
A7MA-C11-10	1.17 -	0.931 -	0.966 -	0.931 -	20 -	4.8 J	0.54 -	15.3 -	6.9 J	1.5 UJ
A7MA-C11-11	1.11 -	0.964 -	0.939 -	0.964 -	16.4 -	5.7 J	0.54 J	3.9 U	3.9 U	1.5 U
A7MA-C11-12	1.20 -	1.00 -	1.00 -	1.00 -	8.56 -	8.5 J	0.72 -	3.8 J	3.8 U	1.5 UJ
A7MA-C11-13	0.988 -	0.906 -	0.926 -	0.906 -	10.8 -	6.2 J	0.67 -	4.2 J	3.9 U	1.6 UJ
A7MA-C11-15	0.982 -	0.748 -	0.765 -	0.748 -	4.72 -	11.1 J	0.64 -	3.8 U	3.8 U	1.5 UJ
A7MA-C11-16	0.879 -	0.764 -	0.772 -	0.764 -	4.27 -	3.2 J	0.58 -	3.7 U	3.7 U	1.5 UJ
Limit	1.7	1.8	1.7	1.5	82	12	1.5	130	130	15
Units	pCi/g	pCi/g	pCi/g	pCi/g	mg/kg	mg/kg	mg/kg	µg/kg	µg/kg	µg/kg
Conf. Level	95%	95%	95%	95%	95%	90%	90%	90%	90%	90%
Max. Result	1.2	1.06	1.04	1.06	24.2	11.1	0 .89	15.3	6.9	1.6 UJ
Max. >= Limit	No	No	No	No	No	No	No	No	No	No
W-statistic Prob. #	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Test Procedure	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Sample Size	12	12	12	12	12	12	12	12	12	12
Nondetects	0	0	0	0	0	0	0	8	10	12
% Nondetects	0%	0%	0%	0%	0%	0%	0%	67%	83%	100%
Est. Mean*	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
UCL	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Prob. > Limit	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Pass / Fail	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -

a posteriori Sample	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Size calculation	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -

Note: Est. Mean = Estimated measure of central tendency(Normal: Mean; LogNormal: Est. Mean; Non-Parametric: Median)
The maximum value of the two duplicates was used in all statistical equations.
#: This is the highest reported probability of the Shapiro-Wilk W-statistic for tests for the validity of the normality assumption.
The test is performed on the raw data (untransformed) data (N) and the log-transformed data (LN) to test for lognormality.

Certification Unit A7MA-C12

	Primary COCs					Secondary COCs				
SampleID	Radium-226	Radium-228	Thorium-228	Thorium-232	Uranium, Total	Arsenic	Beryllium	Aroclor-1254	Aroclor-1260	Dieldrin
A7MA-C12-2	1.17 -	1.08 -	1.08 -	1.08 -	4.97 J	7.03 -	0.623 -	3.9 U	3.9 U	1.5 UJ
A7MA-C12-3	1.14 -	0.921 -	0.929 -	0.921 -	19.6 J	10.3 -	0.745 -	3.7 U	3.7 U	1.5 UJ
A7MA-C12-4	1.01 -	0.747 -	0.738 -	0.747 -	8.03 J	5.31 -	0.44 -	5 J	3.6 U	7.2 UJ
A7MA-C12-4-D	1.01 -	0.729 -	0.689 -	0.729 -	7.97 J	5.77 -	0.424 -	5.2 J	3.5 U	7 UJ
A7MA-C12-5	1.16 -	0.943 -	0.968 -	0.943 -	9.54 J	7.14 -	0.621 -	3.6 U	3.6 U	1.4 UJ
A7MA-C12-6	1.10 -	0.815 -	0.862 -	0.815 -	10.7 J	6.26 -	0.427 -	8.2 J	3.6 U	7.2 UJ
A7MA-C12-7	1.04 -	0.747 -	0.806 -	0.747 -	7.51 J	5.95 -	0.433 -	5 J	3.7 U	7.4 UJ
A7MA-C12-9	0.985 -	0.879 -	0.935 -	0.879 -	15.4 J	7.95 -	0.552 -	3.7 U	3.7 U	1.5 UJ
A7MA-C12-10	0.832 -	0.585 -	0.575 -	0.585 -	5.51 J	7.86 -	0.454 -	7.4 J	3.6 U	7.2 UJ
A7MA-C12-11	0.822 -	0.682 -	0.727 -	0.682 -	10.5 -	6.22 J	0.396 J	3.6 U	3.6 U	1.4 U
A7MA-C12-13	0.809 -	0.600 -	0.6 -	0.6 -	8.92 J	7.84 -	0.416 -	8.9 J	3.8 J	7.2 UJ
A7MA-C12-14	0.832 -	0.626 -	0.599 -	0.626 -	9.28 J	6.81 -	0.366 -	4.4 J	3.5 U	7 UJ
A7MA-C12-15	1.11 -	1.03 -	1.05 -	1.03 -	18.6 J	7.4 -	0.466 -	3.8 U	3.8 U	1.5 UJ
Limit	1.7	1.8	1.7	1.5	82	12	1.5	130	130	15
Units	pCi/g	pCi/g	pCi/g	pCi/g	mg/kg	mg/kg	mg/kg	µg/kg	µg/kg	µg/kg
Conf. Level	95%	95%	95%	95%	95%	90%	90%	90%	90%	90%
Max. Result	1.17	1.08	1.08	1.08	19.6	10.3	0 .745	8.9	3.8	7.4 UJ
Max. >= Limit	No	No	No	No	No	No	No	No	No	No
W-statistic Prob. #	--	--	--	--	--	--	--	--	--	--
Test Procedure	--	--	--	--	--	--	--	--	--	--
Sample Size	12	12	12	12	12	12	12	12	12	12
Nondetects	0	0	0	0	0	0	0	6	11	12
% Nondetects	0%	0%	0%	0%	0%	0%	0%	50%	92%	100%
Est. Mean*	--	--	--	--	--	--	--	--	--	--
UCL	--	--	--	--	--	--	--	--	--	--
Prob. > Limit	--	--	--	--	--	--	--	--	--	--
Pass / Fail	--	--	--	--	--	--	--	--	--	--
a posteriori Sample	--	--	--	--	--	--	--	--	--	--
Size calculation	--	--	--	--	--	--	--	--	--	--

Note: Est. Mean = Estimated measure of central tendency(Normal: Mean; LogNormal: Est. Mean; Non-Parametric: Median)
The maximum value of the two duplicates was used in all statistical equations.
#: This is the highest reported probability of the Shapiro-Wilk W-statistic for tests for the validity of the normality assumption.
The test is performed on the raw data (untransformed) data (N) and the log-transformed data (LN) to test for lognormality.

Certification Unit A7MA-C13

	Primary COCs					Secondary COCs				
SampleID	Radium-226	Radium-228	Thorium-228	Thorium-232	Uranium, Total	Arsenic	Beryllium	Aroclor-1254	Aroclor-1260	Dieldrin
A7MA-C13-1	1.00 -	0.795 J	0.78 -	0.795 J	12.9 J	13.9 -	0.749 J	4 U	4 U	1.6 U
A7MA-C13-3	1.10 -	0.796 J	0.79 -	0.796 J	8.46 J	8.04 -	0.603 J	3.6 U	3.6 U	1.4 U
A7MA-C13-3-D	0.976 -	0.63 J	0.671 -	0.63 J	5.04 J	6.66 -	0.335 J	3.5 U	3.5 U	1.4 U
A7MA-C13-4	0.666 -	0.45 J	0.418 -	0.45 J	2.57 J	4.08 -	0.303 J	3.4 U	3.4 U	1.4 U
A7MA-C13-6	1.53 -	1.30 -	1.35 -	1.30 -	4.32 U	9.75 J	0.808 J	4 U	4 U	1.6 U
A7MA-C13-7	1.07 -	0.897 J	0.888 -	0.897 J	16.6 J	6.41 -	0.586 J	3.8 U	3.8 U	1.5 U
A7MA-C13-8	1.31 -	0.945 J	0.934 -	0.945 J	18.2 J	6.88 -	0.607 J	4.1 U	4.1 U	1.6 U
A7MA-C13-10	1.17 -	1.08 J	1.08 -	1.08 J	4.78 J	11.5 -	0.588 J	3.7 U	3.7 U	1.5 U
A7MA-C13-11	1.45 -	1.12 J	1.10 -	1.12 J	2.86 J	18.7 -	1.28 J	4.2 U	4.2 U	1.7 U
A7MA-C13-12	0.843 -	0.666 J	0.679 -	0.666 J	5.5 J	5.52 -	0.375 J	3.6 U	3.6 U	1.4 U
A7MA-C13-13	1.07 -	0.879 J	0.861 -	0.879 J	8.64 J	10.8 -	0.84 J	4 U	4 U	1.6 U
A7MA-C13-15	0.994 -	0.911 J	0.92 -	0.911 J	8.82 J	6.09 -	0.401 J	49.6 -	29 -	1.5 U
A7MA-C13-16	1.31 -	1.04 J	1.00 -	1.04 J	15.5 J	6.13 -	0.711 J	46.9 -	19.4 -	1.5 U
Limit	1.7	1.8	1.7	1.5	82	12	1.5	130	130	15
Units	pCi/g	pCi/g	pCi/g	pCi/g	mg/kg	mg/kg	mg/kg	µg/kg	µg/kg	µg/kg
Conf. Level	95%	95%	95%	95%	95%	90%	90%	90%	90%	90%
Max. Result	1.53	1.3	1.35	1.3	18.2	18.7	1.28	49.6	29	1.7 U
Max. >= Limit	No	No	No	No	No	Yes	No	No	No	No
W-statistic Prob. #	- -	- -	- -	- -	- -	86.2% (LN)	- -	- -	- -	- -
Test Procedure	- -	- -	- -	- -	- -	Lognormal	- -	- -	- -	- -
Sample Size	12	12	12	12	12	12	12	12	12	12
Nondetects	0	0	0	0	1	0	0	10	10	12
% Nondetects	0%	0%	0%	0%	8%	0%	0%	83%	83%	100%
Est. Mean*	- -	- -	- -	- -	- -	9.03	- -	- -	- -	- -
UCL	- -	- -	- -	- -	- -	11.02	- -	- -	- -	- -
Prob. > Limit	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Pass / Fail	- -	- -	- -	- -	- -	pass	- -	- -	- -	- -
a posteriori Sample	- -	- -	- -	- -	- -	7	- -	- -	- -	- -
Size calculation	- -	- -	- -	- -	- -	Pass	- -	- -	- -	- -

Note: Est. Mean = Estimated measure of central tendency(Normal: Mean; LogNormal: Est. Mean; Non-Parametric: Median)
The maximum value of the two duplicates was used in all statistical equations.
#: This is the highest reported probability of the Shapiro-Wilk W-statistic for tests for the validity of the normality assumption.
The test is performed on the raw data (untransformed) data (N) and the log-transformed data (LN) to test for lognormality.

Certification Unit A7MA-C14

	Primary COCs					Secondary COCs				
SampleID	Radium-226	Radium-228	Thorium-228	Thorium-232	Uranium, Total	Arsenic	Beryllium	Aroclor-1254	Aroclor-1260	Dieldrin
A7MA-C14-1	1.04 -	0.902 -	1.03 -	0.902 -	9.01 -	6.84 -	0.537 -	5.4 J	3.7 U	1.5 UJ
A7MA-C14-2	1.01 -	0.805 -	0.746 -	0.805 -	9.13 -	4.16 -	0.389 -	5 J	3.5 U	1.4 UJ
A7MA-C14-4	1.43 J	1.03 -	1.03 -	1.03 -	19 J	10.1 -	1.06 -	3.5 U	3.5 U	1.4 UJ
A7MA-C14-5	1.39 J	0.978 -	0.962 -	0.978 -	11.7 J	8.9 -	0.907 -	3.5 U	3.5 U	1.4 UJ
A7MA-C14-7	1.36 J	1.04 -	0.983 -	1.04 -	10.1 J	5.97 -	0.589 -	3.8 U	3.8 U	1.5 UJ
A7MA-C14-8	1.33 J	0.771 -	0.748 -	0.771 -	7.66 J	9.48 -	0.871 -	3.6 U	3.6 UJ	1.4 UJ
A7MA-C14-10	0.858 J	0.71 -	0.707 -	0.71 -	4.58 J	6.37 -	0.454 -	11.1 J	6 J	1.4 UJ
A7MA-C14-11	0.915 J	0.579 -	0.565 -	0.579 -	1.9 U	6.51 -	0.554 -	7.4 J	4.2 J	1.4 UJ
A7MA-C14-12	0.922 -	0.729 -	0.728 -	0.729 -	10.4 -	6.53 J	0.384 J	6 J	3.7 J	1.4 U
A7MA-C14-14	0.87 -	0.502 -	0.51 -	0.502 -	7.92 -	4.11 J	0.31 J	4.1 U	4.1 U	1.7 U
A7MA-C14-15	1.53 J	0.496 -	0.517 -	0.496 -	8.1 J	8.7 -	0.74 -	12.3 J	8.8 J	1.4 UJ
A7MA-C14-15-D	**9.13 J**	0.395 -	0.368 -	0.395 -	3.45 U	7.21 -	0.624 -	8.4 J	6 J	1.4 UJ
A7MA-C14-16	0.950 -	0.812 -	0.831 -	0.812 -	3.36 J	5.68 J	0.537 J	3.8 U	3.8 U	1.5 U
Limit	1.7	1.8	1.7	1.5	82	12	1.5	130	130	15
Units	pCi/g	pCi/g	pCi/g	pCi/g	mg/kg	mg/kg	mg/kg	µg/kg	µg/kg	µg/kg
Conf. Level	95%	95%	95%	95%	95%	90%	90%	90%	90%	90%
Max. Result	9.13	1.04	1.03	1.04	19	10.1	1.06	12.3	8.8	1.7 U
Max. >= Limit	Yes	No	No	No	No	No	No	No	No	No
W-statistic Prob. #	< 0.01% (LN)	- -	- -	- -	- -	- -	- -	- -	- -	- -
Test Procedure	Median (Sign)	- -	- -	- -	- -	- -	- -	- -	- -	- -
Sample Size	12	12	12	12	12	12	12	12	12	12
Nondetects	0	0	0	0	1	0	0	6	8	12
% Nondetects	0%	0%	0%	0%	8%	0%	0%	50%	67%	100%
Est. Mean*	1.026	- -	- -	- -	- -	- -	- -	- -	- -	- -
UCL	1.39	- -	- -	- -	- -	- -	- -	- -	- -	- -
Prob. > Limit	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Pass / Fail	Pass	- -	- -	- -	- -	- -	- -	- -	- -	- -
a posteriori Sample	7	- -	- -	- -	- -	- -	- -	- -	- -	- -
Size calculation	Pass	- -	- -	- -	- -	- -	- -	- -	- -	- -

Note: Est. Mean = Estimated measure of central tendency(Normal: Mean; LogNormal: Est. Mean; Non-Parametric: Median)
The maximum value of the two duplicates was used in all statistical equations.
#: This is the highest reported probability of the Shapiro-Wilk W-statistic for tests for the validity of the normality assumption.
The test is performed on the raw data (untransformed) data (N) and the log-transformed data (LN) to test for lognormality.

Certification Unit A7MA-C15

	Primary COCs					Secondary COCs				
SampleID	Radium-226	Radium-228	Thorium-228	Thorium-232	Uranium, Total	Arsenic	Beryllium	Aroclor-1254	Aroclor-1260	Dieldrin
A7MA-C15-1	1.07 J	0.903 J	0.91 -	0.903 J	6.18 -	6.2 -	0.52 -	3.8 U	3.8 U	1.5 U
A7MA-C15-3	1.16 J	0.91 J	0.935 -	0.91 J	5.24 -	5.3 -	1.6 -	3.9 U	3.9 U	1.6 U
A7MA-C15-4	1.18 J	1.11 J	1.13 -	1.11 J	7.14 -	4.9 -	0.71 -	3.9 U	3.9 U	1.6 U
A7MA-C15-5	1.23 J	0.995 J	0.99 -	0.995 J	7.62 -	5.9 -	0.66 -	3.9 U	5.2 J	1.5 U
A7MA-C15-7	1.10 J	0.92 J	0.926 -	0.92 J	6.53 -	5.5 -	0.56 -	8.9 J	5.5 J	1.5 U
A7MA-C15-8	0.990 J	0.718 J	0.709 -	0.718 J	3.58 -	5 -	0.4 -	4.1 U	4.1 U	1.6 U
A7MA-C15-10	1.28 J	1.08 J	1.07 -	1.08 J	5.35 -	5.4 -	0.43 -	3.9 U	3.9 U	1.6 U
A7MA-C15-11	1.08 J	0.715 J	0.727 -	0.715 J	6.3 -	4.4 -	1 -	11 J	7.6 J	1.5 U
A7MA-C15-12	1.26 J	0.946 J	0.923 -	0.946 J	5.76 -	8.3 -	0.51 -	3.9 U	3.9 U	1.6 U
A7MA-C15-13	1.55 J	1.24 J	1.24 -	1.24 J	6.93 -	12.3 -	1.4 -	3.8 U	3.8 U	1.5 U
A7MA-C15-13-D	1.56 J	1.24 J	1.23 -	1.24 J	7.33 -	13.4 -	1.4 -	3.8 U	3.8 U	1.5 U
A7MA-C15-14	1.01 J	0.826 J	0.809 -	0.826 J	4.54 -	5.2 -	0.34 -	3.8 U	3.8 U	1.5 U
A7MA-C15-16	1.02 J	0.818 J	0.816 -	0.818 J	6.6 -	5.7 -	0.57 -	10.1 J	3.9 J	1.5 U
Limit	1.7	1.8	1.7	1.5	82	12	1.5	130	130	15
Units	pCi/g	pCi/g	pCi/g	pCi/g	mg/kg	mg/kg	mg/kg	µg/kg	µg/kg	µg/kg
Conf. Level	95%	95%	95%	95%	95%	90%	90%	90%	90%	90%
Max. Result	1.56	1.24	1.24	1.24	7.62	13.4	1.6	11	7.6	1.6 U
Max. >= Limit	No	No	No	No	No	Yes	Yes	No	No	No
W-statistic Prob. #	- -	- -	- -	- -	- -	< 0.01% (LN)	35.2% (LN)	- -	- -	- -
Test Procedure	- -	- -	- -	- -	- -	Median (Sign)	Lognormal	- -	- -	- -
Sample Size	12	12	12	12	12	12	12	12	12	12
Nondetects	0	0	0	0	0	0	0	9	8	12
% Nondetects	0%	0%	0%	0%	0%	0%	0%	75%	67%	100%
Est. Mean*	- -	- -	- -	- -	- -	5.45	0.72	- -	- -	- -
UCL	- -	- -	- -	- -	- -	5.9	0.91	- -	- -	- -
Prob. > Limit	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Pass / Fail	- -	- -	- -	- -	- -	Pass	pass	- -	- -	- -
a posteriori Sample	- -	- -	- -	- -	- -	5	3	- -	- -	- -
Size calculation	- -	- -	- -	- -	- -	Pass	Pass	- -	- -	- -

Note: Est. Mean = Estimated measure of central tendency(Normal: Mean; LogNormal: Est. Mean; Non-Parametric: Median)
The maximum value of the two duplicates was used in all statistical equations.
#: This is the highest reported probability of the Shapiro-Wilk W-statistic for tests for the validity of the normality assumption.
The test is performed on the raw data (untransformed) data (N) and the log-transformed data (LN) to test for lognormality.

Certification Unit A7MA-C16

	Primary COCs				
SampleID	Radium-226	Radium-228	Thorium-228	Thorium-232	Uranium, Total
A7MA-C16-1	1.10 -	0.723 J	0.706 J	0.723 J	4.09 J
A7MA-C16-2	1.19 -	0.886 J	0.891 J	0.886 J	3.99 J
A7MA-C16-2-D	1.20 -	1.1 J	1.15 J	1.1 J	7.79 J
A7MA-C16-3	0.872 -	0.615 J	0.6 J	0.615 J	2.44 J
A7MA-C16-4	1.46 -	1.23 -	1.24 -	1.23 -	8.02 -
A7MA-C16-5	1.35 -	1.11 J	1.11 J	1.11 J	2.51 U
A7MA-C16-7	1.01 -	0.922 J	0.97 J	0.922 J	3.8 J
A7MA-C16-8	1.02 -	0.914 J	0.959 J	0.914 J	6.77 J
A7MA-C16-9	1.19 -	0.969 J	0.904 J	0.969 J	7.49 J
A7MA-C16-11	1.10 -	0.953 J	0.974 J	0.953 J	4.38 J
A7MA-C16-12	1.28 -	1.16 J	1.17 J	1.16 J	7.46 J
A7MA-C16-13	1.48 -	1.18 J	1.11 J	1.18 J	5.41 J
A7MA-C16-14	1.65 -	1.21 J	1.16 J	1.21 J	5.86 J
A7MA-C16-16	1.03 -	0.969 J	0.871 J	0.969 J	2.88 J
Limit	1.7	1.8	1.7	1.5	82
Units	pCi/g	pCi/g	pCi/g	pCi/g	mg/kg
Conf. Level	95%	95%	95%	95%	95%
Max. Result	1.65	1.23	1.24	1.23	8.02
Max. >= Limit	No	No	No	No	No
W-statistic Prob. #	- -	- -	- -	- -	- -
Test Procedure	- -	- -	- -	- -	- -
Sample Size	13	13	13	13	13
Nondetects	0	0	0	0	1
% Nondetects	0%	0%	0%	0%	8%
Est. Mean*	- -	- -	- -	- -	- -
UCL	- -	- -	- -	- -	- -
Prob. > Limit	- -	- -	- -	- -	- -
Pass / Fail	- -	- -	- -	- -	- -

a posteriori Sample	- -	- -	- -	- -	- -
Size calculation	- -	- -	- -	- -	- -

Note: Est. Mean = Estimated measure of central tendency(Normal: Mean; LogNormal: Est. Mean; Non-Parametric: Median)
The maximum value of the two duplicates was used in all statistical equations.
#: This is the highest reported probability of the Shapiro-Wilk W-statistic for tests for the validity of the normality assumption. The test is performed on the raw data (untransformed) data (N) and the log-transformed data (LN) to test for lognormality.

Certification Unit A7MA-C17

	Primary COCs					Secondary COCs		
SampleID	Radium-226	Radium-228	Thorium-228	Thorium-232	Uranium, Total	Technetium-99	Aroclor-1254	Aroclor-1260
A7MA-C17-2	1.54 J	1.39 J	1.39 J	1.39 J	3.64 U	0.819 U	4.2 U	4.2 U
A7MA-C17-3	0.879 J	0.7 J	0.68 J	0.7 J	3.84 J	0.754 U	3.8 U	3.8 U
A7MA-C17-3-D	1.29 J	1.13 J	1.13 J	1.13 J	9.82 J	0.751 U	4 U	4 U
A7MA-C17-4	1.03 J	0.806 J	0.83 J	0.806 J	3.11 J	0.824 U	4 U	4 U
A7MA-C17-5	0.912 J	0.777 J	0.765 J	0.777 J	5.37 J	0.829 U	3.9 U	3.9 U
A7MA-C17-6	0.944 J	0.776 J	0.773 J	0.776 J	3.02 U	0.776 U	5.7 J	3.9 J
A7MA-C17-7	0.984 J	0.785 J	0.773 -	0.785 J	5.75 -	1.61 U	4.4 J	3.5 U
A7MA-C17-9	1.22 J	1.02 J	1.02 -	1.02 J	8.53 -	1.65 U	7.2 J	5.1 J
A7MA-C17-11	1.20 J	0.932 J	0.947 -	0.932 J	4.7 -	1.61 U	3.9 U	3.9 U
A7MA-C17-12	1.09 J	0.882 J	0.849 -	0.882 J	5.41 -	1.65 U	5.7 J	4.3 J
A7MA-C17-13	0.964 J	0.774 J	0.763 -	0.774 J	5.68 -	1.64 U	4 J	3.7 U
A7MA-C17-14	1.13 J	0.962 J	0.957 -	0.962 J	5.25 -	1.46 U	3.7 U	3.7 U
A7MA-C17-16	1.05 J	0.83 J	0.837 -	0.83 J	4.24 J	1.56 U	4 U	4 U
Limit	1.7	1.8	1.7	1.5	82	30	130	130
Units	pCi/g	pCi/g	pCi/g	pCi/g	mg/kg	pCi/g	µg/kg	µg/kg
Conf. Level	95%	95%	95%	95%	95%	90%	90%	90%
Max. Result	1.54	1.39	1.39	1.39	9.82	1.65 U	7.2	5.1
Max. >= Limit	No	No	No	No	No	No	No	No
W-statistic Prob. #	--	--	--	--	--	--	--	--
Test Procedure	--	--	--	--	--	--	--	--
Sample Size	12	12	12	12	12	12	12	12
Nondetects	0	0	0	0	2	12	7	9
% Nondetects	0%	0%	0%	0%	17%	100%	58%	75%
Est. Mean*	--	--	--	--	--	--	--	--
UCL	--	--	--	--	--	--	--	--
Prob. > Limit	--	--	--	--	--	--	--	--
Pass / Fail	--	--	--	--	--	--	--	--

a posteriori Sample	--	--	--	--	--	--	--	--
Size calculation	--	--	--	--	--	--	--	--

Note: Est. Mean = Estimated measure of central tendency(Normal: Mean; LogNormal: Est. Mean; Non-Parametric: Median)
The maximum value of the two duplicates was used in all statistical equations.
#: This is the highest reported probability of the Shapiro-Wilk W-statistic for tests for the validity of the normality assumption.
The test is performed on the raw data (untransformed) data (N) and the log-transformed data (LN) to test for lognormality.

Certification Unit A7MA-C18

	Primary COCs					Secondary COCs			
SampleID	Radium-226	Radium-228	Thorium-228	Thorium-232	Uranium, Total	Technetium-99	Beryllium	Aroclor-1254	Aroclor-1260
A7E-CAWWT-PC-1	1.37 -	1.15 -	1.18 -	1.15 -	7.43 J	0.896 U	0.586 -	3.8 U	3.8 U
A7E-CAWWT-PC-3	0.599 -	0.308 -	0.332 -	0.308 -	3.19 J	0.872 U	0.13 U	3.4 U	3.4 U
A7E-CAWWT-PC-4	1.25 -	0.904 -	0.913 -	0.904 -	5.82 J	0.869 U	0.534 -	3.9 U	3.9 U
A7E-CAWWT-PC-4-D	1.19 -	0.996 -	1.01 -	0.996 -	3.47 U	0.806 U	0.554 -	4 U	4 U
A7E-CAWWT-PC-5	1.22 -	1.07 -	1.13 -	1.07 -	7.97 J	1.41 -	0.535 -	3.9 U	3.9 U
A7E-CAWWT-PC-6	1.36 -	0.939 -	0.938 -	0.939 -	5.65 J	0.9 U	0.541 U	4 U	4 U
A7E-CAWWT-PC-8	1.31 -	0.861 -	0.88 -	0.861 -	4.61 U	0.878 U	0.496 U	4.3 U	4.3 U
A7E-CAWWT-PC-9	0.898 -	0.769 -	0.783 -	0.769 -	3.42 U	0.859 U	0.344 U	4.8 J	3.7 U
A7E-CAWWT-PC-11	0.804 -	0.566 -	0.574 -	0.566 -	5.46 J	0.865 U	0.242 U	34.1 UJ	34.1 UJ
A7E-CAWWT-PC-12	0.332 J	0.431 -	0.455 -	0.431 -	2.97 U	0.834 U	0.101 U	3.5 U	3.5 U
A7E-CAWWT-PC-13	0.965 -	0.918 -	0.932 -	0.918 -	15.3 J	0.814 U	0.396 U	3.8 U	3.8 U
A7E-CAWWT-PC-14	1.18 -	0.779 -	0.867 -	0.779 -	4.27 U	1.29 -	0.51 -	3.9 U	3.9 U
A7E-CAWWT-PC-16	0.546 -	0.324 -	0.317 -	0.324 -	2.74 U	0.793 U	0.106 U	35.1 UJ	35.1 UJ
Limit	1.7	1.8	1.7	1.5	20	30	1.5	130	130
Units	pCi/g	pCi/g	pCi/g	pCi/g	mg/kg	pCi/g	mg/kg	µg/kg	µg/kg
Conf. Level	95%	95%	95%	95%	95%	90%	90%	90%	90%
Max. Result	1.37	1.15	1.18	1.15	15.3	1.41	0 .586	35.1 UJ	35.1 UJ
Max. >= Limit	No	No	No	No	No	No	No	No	No
W-statistic Prob. #	--	--	--	--	--	--	--	--	--
Test Procedure	--	--	--	--	--	--	--	--	--
Sample Size	12	12	12	12	12	12	12	12	12
Nondetects	0	0	0	0	5	10	8	11	12
% Nondetects	0%	0%	0%	0%	42%	83%	67%	92%	100%
Est. Mean*	--	--	--	--	--	--	--	--	--
UCL	--	--	--	--	--	--	--	--	--
Prob. > Limit	--	--	--	--	--	--	--	--	--
Pass / Fail	--	--	--	--	--	--	--	--	--

a posteriori Sample	--	--	--	--	--	--	--	--	--
Size calculation	--	--	--	--	--	--	--	--	--

Note: Est. Mean = Estimated measure of central tendency(Normal: Mean; LogNormal: Est. Mean; Non-Parametric: Median)
The maximum value of the two duplicates was used in all statistical equations.
#: This is the highest reported probability of the Shapiro-Wilk W-statistic for tests for the validity of the normality assumption.
The test is performed on the raw data (untransformed) data (N) and the log-transformed data (LN) to test for lognormality.

ATTACHMENT A.2

SAMPLING RESULTS AND STATISTICS SECONDARY SAMPLING

Certification Unit 4 Total Uranium pass

	Primary COCs
SampleID	Uranium, Total
A7MA-C04-2	8.82 J
A7MA-C04-3	21.9 J
A7MA-C04-3-D	16.2 J
A7MA-C04-4	13.8 J
A7MA-C04-6A	1.34 J
A7MA-C04-6E	1.16 J
A7MA-C04-6N	17.7 -
A7MA-C04-6S	1.46 J
A7MA-C04-6W	1.32 J
A7MA-C04-7	8.47 -
A7MA-C04-8	6.86 J
A7MA-C04-9	4.45 J
A7MA-C04-10	5.56 J
A7MA-C04-12	7.95 J
A7MA-C04-13	9.17 J
A7MA-C04-15	4.68 J
A7MA-C04-16	5.68 J
A7MA-C04-18	1.65 J
Limit	20
Units	mg/kg
Conf. Level	95%
Max. Result	21.9
Max. > Limit	**Yes**
W-statistic Prob. #	43.7% (LN)
Test Procedure	Lognormal
Sample Size	12
Nondetects	0
% Nondetects	0%
Est. Mean*	9.6
UCL	13.36
Prob. > Limit	- -
Pass / Fail	pass

a posteriori Sample	4
Size calculation	Pass

Certification Unit 4 Radium-226 pass

	Primary COCs
SampleID	Radium-226
A7MA-C04-2	1.15 -
A7MA-C04-3	1.28 -
A7MA-C04-3-D	1.28 -
A7MA-C04-4	1.71 -
A7MA-C04-6	1.26 -
A7MA-C04-7	1.04 -
A7MA-C04-8A	0.513 -
A7MA-C04-8E	0.638 -
A7MA-C04-8N	0.711 -
A7MA-C04-8S	0.67 -
A7MA-C04-8W	0.705 -
A7MA-C04-9	1.56 -
A7MA-C04-10	1.15 -
A7MA-C04-12	1.88 -
A7MA-C04-13	1.72 -
A7MA-C04-15	1.13 -
A7MA-C04-16	1.28 -
A7MA-C04-17	0.689 -
Limit	1.70
Units	pCi/g
Conf. Level	95%
Max. Result	1.88
Max. >= Limit	**Yes**
W-statistic Prob. #	53.5% (N)
Test Procedure	Normal
Sample Size	12
Nondetects	0
% Nondetects	0.0%
Est. Mean*	1.323
UCL	1.496
Prob. > Limit	- -
Pass / Fail	pass

a posteriori Sample Size calculation	7 Pass

Note: Est. Mean = Estimated measure of central tendency(Normal: Mean; LogNormal: Est. Mean; Non-Parametric: Median)
The maximum value of the two duplicates was used in all statistical equations.
#: This is the highest reported probability of the Shapiro-Wilk W-statistic for tests for the validity of the normality assumption.
The test is performed on the raw data (untransformed) data (N) and the log-transformed data (LN) to test for lognormality.

Certification Unit 14 Radium-226 fail

	Primary COCs
SampleID	Radium-226
A7MA-C14-1	1.04 -
A7MA-C14-2	1.01 -
A7MA-C14-4	1.43 J
A7MA-C14-5	1.39 J
A7MA-C14-7	1.36 J
A7MA-C14-8	1.33 J
A7MA-C14-10	0.858 J
A7MA-C14-11	0.915 J
A7MA-C14-12	0.922 -
A7MA-C14-14	0.870 -
A7MA-C14-15B	0.878 J
A7MA-C14-15B-D	0.926 J
A7MA-C14-15E	1.63 J
A7MA-C14-15N	1.21 J
A7MA-C14-15S	**5.06 J**
A7MA-C14-15W	1.11 J
A7MA-C14-16	0.950 -
A7MA-C14-17	1.71 J
Limit	1.7
Units	pCi/g
Conf. Level	95%
Max. Result	**5.06**
Max. >= Limit	**Yes**
W-statistic Prob. #	< 0.01% (LN)
Test Procedure	Median (Sign)
Sample Size	12
Nondetects	0
% Nondetects	0%
Est. Mean*	1.03
UCL	1.39
Prob. > Limit	- -
Pass / Fail	Pass

a posteriori Sample	7
Size calculation	Pass

Note: Est. Mean = Estimated measure of central tendency(Normal: Mean; LogNormal: Est. Mean; Non-Parametric: Median)
The maximum value of the two duplicates was used in all statistical equations.
#: This is the highest reported probability of the Shapiro-Wilk W-statistic for tests for the validity of the normality assumption.
The test is performed on the raw data (untransformed) data (N) and the log-transformed data (LN) to test for lognormality.

ATTACHMENT A.3

SAMPLING RESULTS AND STATISTICS TERTIARY SAMPLING

Certification Unit 14 Ra-226 pass

	Primary COCs
SampleID	Radium-226
A7MA-C14-1	1.04 -
A7MA-C14-2	1.01 -
A7MA-C14-4	1.43 J
A7MA-C14-5	1.39 J
A7MA-C14-7	1.36 J
A7MA-C14-8	1.33 J
A7MA-C14-10	0.858 J
A7MA-C14-11	0.915 J
A7MA-C14-12	0.922 -
A7MA-C14-14	0.870 -
A7MA-C14-15C	1.15 -
A7MA-C14-15C-D	1.21 -
A7MA-C14-15E3	1.60 -
A7MA-C14-15N2	1.35 -
A7MA-C14-15S2	1.10 -
A7MA-C14-15S3	1.69 -
A7MA-C14-15W3	1.18 -
A7MA-C14-16	0.950 -
A7MA-C14-17	1.71 J
Limit	1.7
Units	0
Conf. Level	95%
Max. Result	1.71
Max. >= Limit	**Yes**
W-statistic Prob. #	11.7% (LN)
Test Procedure	Lognormal
Sample Size	12
Nondetects	0
% Nondetects	0%
Est. Mean*	1.15
UCL	1.31
Prob. > Limit	- -
Pass / Fail	pass

a posteriori Sample	4
Size calculation	Pass

Note: Est. Mean = Estimated measure of central tendency(Normal: Mean; LogNormal: Est. Mean;
The maximum value of the two duplicates was used in all statistical equations.
#: This is the highest reported probability of the Shapiro-Wilk W-statistic for tests for the vali
The test is performed on the raw data (untransformed) data (N) and the log-transformed da

ATTACHMENT A.4

UTILITY SAMPLING RESULTS AND STATISTICS

UTILITY SAMPLING RESULTS AND STATISTICS

Trench CU 4		Trench CU 5			Trench CU 6		Trench CU 7		Trench CU 8	
Sample ID	Radium-226	Sample ID	Beryllium	Radium-226	Sample ID	Aroclor-1254	Sample ID	Beryllium	Sample ID	Beryllium
A3B4B-T-17	0.967 -	A7GA-T-2	0.625 J	1.5 -	A3B4B-T-19	4.1 U	A7GA-T-13	0.615 -	4A6-T-68	1 -
A7GA-T-1	1.44 -	A7GA-T-3	1.71 J	1.97 -	A3B4B-T-21	4 U	A7GA-T-39	0.67 -	A7GA-T-45	0.63 -
A7GA-T-120	0.867 -	A7GA-T-32	0.42 -	1.04 -	A3B4B-T-22	4 U	A7GA-T-40	0.45 -	A7GA-T-46	0.9 -
A7GA-T-121	1.02 -	A7GA-T-57	0.85 -	1.07 -	A3B4B-T-24	4 U	A7GA-T-41	0.75 -	A7GA-T-53	0.6 -
A7GA-T-122	0.716 -	A7GA-T-58	0.46 -	0.902 -	A3B4B-T-27	4.1 U	A7GA-T-42	0.27 -	A7GA-T-54	0.84 -
A7GA-T-123	1.08 -	A7GA-T-59	0.26 -	0.689 -	A3B4B-T-29	4.2 U	A7GA-T-47	0.91 -	A7GA-T-55	0.83 -
A7GA-T-124	1.18 -	A7GA-T-60	0.53 -	0.851 -	A3B4B-T-31	3.9 U	A7GA-T-48	1 -	A7GA-T-56	0.75 -
A7GA-T-125	0.983 -	A7GA-T-66	0.39 -	0.849 -	A7GA-T-10	14 U	A7GA-T-49	0.69 -	A7GA-T-6	0.92 -
A7GA-T-61	0.704 -	A7GA-T-67	0.55 -	0.79 -	A7GA-T-11	12.6 U	A7GA-T-50	1.5 -	A7GA-T-7	0.84 -
A7GA-T-62	0.765 -	A7GA-T-68	0.5 -	0.794 -	A7GA-T-12	12.9 U	A7GA-T-51	1.1 -	A7GA-T-83	0.61 -
A7GA-T-71	1.19 -	A7GA-T-69	0.38 -	0.766 -	A7GA-T-24	377 J	A7GA-T-52	0.68 -	A7GA-T-85	0.92 -
A7GA-T-72	1.31 -	A7SSP-T-23	0.237 -	0.776 -	A7GA-T-25	4 UJ	A7GA-T-63	0.73 -	A7GA-T-86	0.85 -
A7GA-T-73	1.06 -	A7SSP-T-24	0.462 -	0.84 -	A7GA-T-28	3.9 U	A7GA-T-64	0.64 -	A7GA-T-94	0.52 -
A7GA-T-74	0.928 -	A7SSP-T-25	0.241 -	0.771 -	A7GA-T-30	4 U	A7GA-T-65	0.68 -	A7GA-T-96	1.6 -
A7GA-T-75	1.79 -	A7SSP-T-26	0.556 -	1.07 -	A7GA-T-43	3.8 U	A7GA-T-82	0.44 -	A7GA-T-97	1.1 -
		A7SSP-T-7	0.9 -	0.983 -	A7GA-T-44	3.6 U				
Limit	1.7	Limit	1.5	1.7	Limit	130	Limit	1.5	Limit	1.5
Units	pCi/g	Units	mg/kg	pCi/g	Units	ug/kg	Units	mg/kg	Units	mg/kg
Conf. Level	95%	Conf. Level	90%	95%	Conf. Level	90%	Conf. Level	90%	Conf. Level	90%
Max. Result	1.79	Max. Result	1.71	1.97	Max. Result	377	Max. Result	1.5	Max. Result	1.6
Max. >= Limit	Yes	Max. >= Limit	Yes	Yes	Max. >= Limit	Yes	Max. >= Limit	Yes	Max. >= Limit	Yes
W-statistic Prob. #	85.0% (LN)	W-statistic Prob. #	38.9% (LN)	< 0.01% (LN)	W-statistic Prob. #	< 0.01% (LN)	W-statistic Prob. #	51.1% (LN)	W-statistic Prob. #	45.0% (LN)
Test Procedure	Lognormal	Test Procedure	Lognormal	Median (Sign)	Test Procedure	Proportions (Sign)	Test Procedure	Lognormal	Test Procedure	Lognormal
Sample Size	15	Sample Size	16	16	Sample Size	16	Sample Size	15	Sample Size	15
Nondetects	0	Nondetects	0	0	Nondetects	15	Nondetects	0	Nondetects	0
% Nondetects	0%	% Nondetects	0%	0%	% Nondetects	94%	% Nondetects	0%	% Nondetects	0%
Est. Mean*	1.1	Est. Mean*	0.6	0.9	Est. Mean*	2.0	Est. Mean*	0.7	Est. Mean*	0.9
UCL	1.21	UCL	0.69	1.04	UCL	- -	UCL	0.88	UCL	0.96
Prob. > Limit	- -	Prob. > Limit	- -	- -	Prob. > Limit	0.00	Prob. > Limit	- -	Prob. > Limit	- -
Pass / Fail	Pass	Pass / Fail	Pass	Pass	Pass / Fail	Pass	Pass / Fail	Pass	Pass / Fail	Pass
a posteriori Sample	4	*a posteriori Sample*	2	6	*a posteriori Sample*	4	*a posteriori Sample*	3	*a posteriori Sample*	2
Size calculation	Pass	Size calculation	Pass	Pass	Size calculation	Pass	Size calculation	Pass	Size calculation	Pass

UTILITY SAMPLING RESULTS

CU	Boring	Sample ID	Parameter	Val Res	VQ	Units
1	A7GA-T-101	A7GA-T-101^RMP	Aroclor-1254	4	U	ug/kg
1	A7GA-T-101	A7GA-T-101^RMP	Aroclor-1260	4	U	ug/kg
1	A7GA-T-101	A7GA-T-101^RMP	Beryllium	0.882	-	mg/kg
1	A7GA-T-101	A7GA-T-101^RMP	Dieldrin	1.6	U	ug/kg
1	A7GA-T-101	A7GA-T-101^RMP	Radium-226	1.57	-	pCi/g
1	A7GA-T-101	A7GA-T-101^RMP	Radium-228	0.998	-	pCi/g
1	A7GA-T-101	A7GA-T-101^RMP	Thorium-228	0.954	-	pCi/g
1	A7GA-T-101	A7GA-T-101^RMP	Thorium-232	0.998	-	pCi/g
1	A7GA-T-101	A7GA-T-101^RMP	Uranium, Total	2.45	J	mg/kg
1	A7GA-T-102	A7GA-T-102^RMP	Aroclor-1254	4	U	ug/kg
1	A7GA-T-102	A7GA-T-102^RMP	Aroclor-1260	4	U	ug/kg
1	A7GA-T-102	A7GA-T-102^RMP	Beryllium	0.667	-	mg/kg
1	A7GA-T-102	A7GA-T-102^RMP	Dieldrin	1.6	U	ug/kg
1	A7GA-T-102	A7GA-T-102^RMP	Radium-226	0.877	-	pCi/g
1	A7GA-T-102	A7GA-T-102^RMP	Radium-228	0.761	-	pCi/g
1	A7GA-T-102	A7GA-T-102^RMP	Thorium-228	0.859	-	pCi/g
1	A7GA-T-102	A7GA-T-102^RMP	Thorium-232	0.761	-	pCi/g
1	A7GA-T-102	A7GA-T-102^RMP	Uranium, Total	1.89	U	mg/kg
1	A7GA-T-103	A7GA-T-103^RMP	Aroclor-1254	4.2	U	ug/kg
1	A7GA-T-103	A7GA-T-103^RMP	Aroclor-1260	4.2	U	ug/kg
1	A7GA-T-103	A7GA-T-103^RMP	Beryllium	0.727	-	mg/kg
1	A7GA-T-103	A7GA-T-103^RMP	Dieldrin	1.7	U	ug/kg
1	A7GA-T-103	A7GA-T-103^RMP	Radium-226	1.38	-	pCi/g
1	A7GA-T-103	A7GA-T-103^RMP	Radium-228	1.04	-	pCi/g
1	A7GA-T-103	A7GA-T-103^RMP	Thorium-228	0.94	-	pCi/g
1	A7GA-T-103	A7GA-T-103^RMP	Thorium-232	1.04	-	pCi/g
1	A7GA-T-103	A7GA-T-103^RMP	Uranium, Total	4.25	-	mg/kg
1	A7GA-T-104	A7GA-T-104^RMP	Aroclor-1254	4.1	U	ug/kg
1	A7GA-T-104	A7GA-T-104^RMP	Aroclor-1260	4.1	U	ug/kg
1	A7GA-T-104	A7GA-T-104^RMP	Beryllium	0.767	-	mg/kg
1	A7GA-T-104	A7GA-T-104^RMP	Dieldrin	1.7	U	ug/kg
1	A7GA-T-104	A7GA-T-104^RMP	Radium-226	1.52	-	pCi/g
1	A7GA-T-104	A7GA-T-104^RMP	Radium-228	1.11	-	pCi/g
1	A7GA-T-104	A7GA-T-104^RMP	Thorium-228	1.09	-	pCi/g
1	A7GA-T-104	A7GA-T-104^RMP	Thorium-232	1.11	-	pCi/g
1	A7GA-T-104	A7GA-T-104^RMP	Uranium, Total	5.67	-	mg/kg
1	A7GA-T-105	A7GA-T-105^RMP	Beryllium	0.643	-	mg/kg
1	A7GA-T-119	A7GA-T-119^RMP	Beryllium	1.03	-	mg/kg
1	A7GA-T-128	A7GA-T-128^RMP	Aroclor-1254	4.2	U	ug/kg
1	A7GA-T-128	A7GA-T-128^RMP	Aroclor-1260	4.2	U	ug/kg
1	A7GA-T-128	A7GA-T-128^RMP	Beryllium	0.342	U	mg/kg
1	A7GA-T-128	A7GA-T-128^RMP	Dieldrin	1.7	U	ug/kg
1	A7GA-T-128	A7GA-T-128^RMP	Radium-226	1.16	-	pCi/g
1	A7GA-T-128	A7GA-T-128^RMP	Radium-228	0.82	-	pCi/g
1	A7GA-T-128	A7GA-T-128^RMP	Thorium-228	0.885	-	pCi/g
1	A7GA-T-128	A7GA-T-128^RMP	Thorium-232	0.82	-	pCi/g
1	A7GA-T-128	A7GA-T-128^RMP	Uranium, Total	5.8	-	mg/kg
1	A7GA-T-129	A7GA-T-129^RMP	Aroclor-1254	4.2	U	ug/kg
1	A7GA-T-129	A7GA-T-129^RMP	Aroclor-1260	4.2	U	ug/kg
1	A7GA-T-129	A7GA-T-129^RMP	Beryllium	0.52	-	mg/kg
1	A7GA-T-129	A7GA-T-129^RMP	Dieldrin	1.7	U	ug/kg
1	A7GA-T-129	A7GA-T-129^RMP	Radium-226	1.04	-	pCi/g
1	A7GA-T-129	A7GA-T-129^RMP	Radium-228	1.11	-	pCi/g
1	A7GA-T-129	A7GA-T-129^RMP	Thorium-228	1.12	-	pCi/g
1	A7GA-T-129	A7GA-T-129^RMP	Thorium-232	1.11	-	pCi/g
1	A7GA-T-129	A7GA-T-129^RMP	Uranium, Total	5.73	-	mg/kg

UTILITY SAMPLING RESULTS

CU	Boring	Sample ID	Parameter	Val Res	VQ	Units
1	A7GA-T-130	A7GA-T-130^RMP	Aroclor-1254	4	U	ug/kg
1	A7GA-T-130	A7GA-T-130^RMP	Aroclor-1260	4	U	ug/kg
1	A7GA-T-130	A7GA-T-130^RMP	Beryllium	0.9	-	mg/kg
1	A7GA-T-130	A7GA-T-130^RMP	Dieldrin	1.6	U	ug/kg
1	A7GA-T-130	A7GA-T-130^RMP	Radium-226	0.953	-	pCi/g
1	A7GA-T-130	A7GA-T-130^RMP	Radium-228	1.08	-	pCi/g
1	A7GA-T-130	A7GA-T-130^RMP	Thorium-228	1.09	-	pCi/g
1	A7GA-T-130	A7GA-T-130^RMP	Thorium-232	1.08	-	pCi/g
1	A7GA-T-130	A7GA-T-130^RMP	Uranium, Total	7.09	-	mg/kg
1	A7GA-T-131	A7GA-T-131^RMP	Aroclor-1254	3.7	U	ug/kg
1	A7GA-T-131	A7GA-T-131^RMP	Aroclor-1260	3.7	U	ug/kg
1	A7GA-T-131	A7GA-T-131^RMP	Beryllium	0.78	-	mg/kg
1	A7GA-T-131	A7GA-T-131^RMP	Dieldrin	1.5	U	ug/kg
1	A7GA-T-131	A7GA-T-131^RMP	Radium-226	0.984	-	pCi/g
1	A7GA-T-131	A7GA-T-131^RMP	Radium-228	0.9	-	pCi/g
1	A7GA-T-131	A7GA-T-131^RMP	Thorium-228	0.925	-	pCi/g
1	A7GA-T-131	A7GA-T-131^RMP	Thorium-232	0.9	-	pCi/g
1	A7GA-T-131	A7GA-T-131^RMP	Uranium, Total	3.9	-	mg/kg
1	A7GA-T-132	A7GA-T-132^RMP	Aroclor-1254	3.6	U	ug/kg
1	A7GA-T-132	A7GA-T-132^RMP	Aroclor-1260	3.6	U	ug/kg
1	A7GA-T-132	A7GA-T-132^RMP	Beryllium	0.41	-	mg/kg
1	A7GA-T-132	A7GA-T-132^RMP	Dieldrin	1.5	U	ug/kg
1	A7GA-T-132	A7GA-T-132^RMP	Radium-226	0.789	-	pCi/g
1	A7GA-T-132	A7GA-T-132^RMP	Radium-228	0.819	-	pCi/g
1	A7GA-T-132	A7GA-T-132^RMP	Thorium-228	0.832	-	pCi/g
1	A7GA-T-132	A7GA-T-132^RMP	Thorium-232	0.819	-	pCi/g
1	A7GA-T-132	A7GA-T-132^RMP	Uranium, Total	3.71	-	mg/kg
1	A7GA-T-133	A7GA-T-133^RMP	Aroclor-1254	4	U	ug/kg
1	A7GA-T-133	A7GA-T-133^RMP	Aroclor-1260	4	U	ug/kg
1	A7GA-T-133	A7GA-T-133^RMP	Beryllium	0.8	-	mg/kg
1	A7GA-T-133	A7GA-T-133^RMP	Dieldrin	1.6	U	ug/kg
1	A7GA-T-133	A7GA-T-133^RMP	Radium-226	1.33	-	pCi/g
1	A7GA-T-133	A7GA-T-133^RMP	Radium-228	1.15	-	pCi/g
1	A7GA-T-133	A7GA-T-133^RMP	Thorium-228	1.15	-	pCi/g
1	A7GA-T-133	A7GA-T-133^RMP	Thorium-232	1.15	-	pCi/g
1	A7GA-T-133	A7GA-T-133^RMP	Uranium, Total	8.24	-	mg/kg
1	A7GA-T-134	A7GA-T-134^RMP	Aroclor-1254	4.1	U	ug/kg
1	A7GA-T-134	A7GA-T-134^RMP	Aroclor-1260	4.1	U	ug/kg
1	A7GA-T-134	A7GA-T-134^RMP	Beryllium	0.51	-	mg/kg
1	A7GA-T-134	A7GA-T-134^RMP	Dieldrin	1.6	U	ug/kg
1	A7GA-T-134	A7GA-T-134^RMP	Radium-226	0.89	-	pCi/g
1	A7GA-T-134	A7GA-T-134^RMP	Radium-228	0.951	-	pCi/g
1	A7GA-T-134	A7GA-T-134^RMP	Thorium-228	0.977	-	pCi/g
1	A7GA-T-134	A7GA-T-134^RMP	Thorium-232	0.951	-	pCi/g
1	A7GA-T-134	A7GA-T-134^RMP	Uranium, Total	5.06	-	mg/kg
1	A7GA-T-135	A7GA-T-135^RMP	Aroclor-1254	3.8	U	ug/kg
1	A7GA-T-135	A7GA-T-135^RMP	Aroclor-1260	3.8	U	ug/kg
1	A7GA-T-135	A7GA-T-135^RMP	Beryllium	0.58	-	mg/kg
1	A7GA-T-135	A7GA-T-135^RMP	Dieldrin	1.5	U	ug/kg
1	A7GA-T-135	A7GA-T-135^RMP	Radium-226	0.999	-	pCi/g
1	A7GA-T-135	A7GA-T-135^RMP	Radium-228	0.919	-	pCi/g
1	A7GA-T-135	A7GA-T-135^RMP	Thorium-228	0.917	-	pCi/g
1	A7GA-T-135	A7GA-T-135^RMP	Thorium-232	0.919	-	pCi/g
1	A7GA-T-135	A7GA-T-135^RMP	Uranium, Total	5.25	-	mg/kg
2	A3B4B-T-1	A3B4B-T-1^RMP	Antimony	0.788	U	mg/kg
2	A3B4B-T-1	A3B4B-T-1^RMP	Aroclor-1254	12.1	U	ug/kg

UTILITY SAMPLING RESULTS

CU	Boring	Sample ID	Parameter	Val Res	VQ	Units
2	A3B4B-T-1	A3B4B-T-1^RMP	Beryllium	0.77	J	mg/kg
2	A3B4B-T-1	A3B4B-T-1^RMP	Cadmium	0.292	J	mg/kg
2	A3B4B-T-1	A3B4B-T-1^RMP	Molybdenum	1.5	-	mg/kg
2	A3B4B-T-1	A3B4B-T-1^RMP	Radium-226	1.08	-	pCi/g
2	A3B4B-T-1	A3B4B-T-1^RMP	Radium-228	0.837	-	pCi/g
2	A3B4B-T-1	A3B4B-T-1^RMP	Silver	0.296	U	mg/kg
2	A3B4B-T-1	A3B4B-T-1^RMP	Technetium-99	0.862	U	pCi/g
2	A3B4B-T-1	A3B4B-T-1^RMP	Thorium-228	0.837	-	pCi/g
2	A3B4B-T-1	A3B4B-T-1^RMP	Thorium-232	0.837	-	pCi/g
2	A3B4B-T-1	A3B4B-T-1^RMP	Uranium, Total	5.36	-	mg/kg
2	A3B4B-T-10	A3B4B-T-10^RMP	Antimony	0.67	U	mg/kg
2	A3B4B-T-10	A3B4B-T-10^RMP	Aroclor-1254	10.9	U	ug/kg
2	A3B4B-T-10	A3B4B-T-10^RMP	Beryllium	0.547	-	mg/kg
2	A3B4B-T-10	A3B4B-T-10^RMP	Cadmium	0.306	J	mg/kg
2	A3B4B-T-10	A3B4B-T-10^RMP	Molybdenum	1.44	-	mg/kg
2	A3B4B-T-10	A3B4B-T-10^RMP	Radium-226	1.25	-	pCi/g
2	A3B4B-T-10	A3B4B-T-10^RMP	Radium-228	0.941	-	pCi/g
2	A3B4B-T-10	A3B4B-T-10^RMP	Silver	0.251	U	mg/kg
2	A3B4B-T-10	A3B4B-T-10^RMP	Technetium-99	0.985	U	pCi/g
2	A3B4B-T-10	A3B4B-T-10^RMP	Thorium-228	0.946	-	pCi/g
2	A3B4B-T-10	A3B4B-T-10^RMP	Thorium-232	0.941	-	pCi/g
2	A3B4B-T-10	A3B4B-T-10^RMP	Uranium, Total	4.29	J	mg/kg
2	A3B4B-T-13	A3B4B-T-13^RMP	Antimony	0.676	U	mg/kg
2	A3B4B-T-13	A3B4B-T-13^RMP	Aroclor-1254	4	U	ug/kg
2	A3B4B-T-13	A3B4B-T-13^RMP	Beryllium	0.899	-	mg/kg
2	A3B4B-T-13	A3B4B-T-13^RMP	Cadmium	0.332	J	mg/kg
2	A3B4B-T-13	A3B4B-T-13^RMP	Molybdenum	1.1	J	mg/kg
2	A3B4B-T-13	A3B4B-T-13^RMP	Radium-226	1.46	-	pCi/g
2	A3B4B-T-13	A3B4B-T-13^RMP	Radium-228	1.14	-	pCi/g
2	A3B4B-T-13	A3B4B-T-13^RMP	Silver	0.634	UJ	mg/kg
2	A3B4B-T-13	A3B4B-T-13^RMP	Technetium-99	0.866	U	pCi/g
2	A3B4B-T-13	A3B4B-T-13^RMP	Thorium-228	1.14	-	pCi/g
2	A3B4B-T-13	A3B4B-T-13^RMP	Thorium-232	1.14	-	pCi/g
2	A3B4B-T-13	A3B4B-T-13^RMP	Uranium, Total	14.8	-	mg/kg
2	A3B4B-T-15	A3B4B-T-15^RMP	Antimony	0.421	U	mg/kg
2	A3B4B-T-15	A3B4B-T-15^RMP	Aroclor-1254	3.5	U	ug/kg
2	A3B4B-T-15	A3B4B-T-15^RMP	Beryllium	0.318	J	mg/kg
2	A3B4B-T-15	A3B4B-T-15^RMP	Cadmium	0.169	J	mg/kg
2	A3B4B-T-15	A3B4B-T-15^RMP	Molybdenum	0.843	J	mg/kg
2	A3B4B-T-15	A3B4B-T-15^RMP	Radium-226	1.19	NV	pCi/g
2	A3B4B-T-15	A3B4B-T-15^RMP	Radium-228	0.8	NV	pCi/g
2	A3B4B-T-15	A3B4B-T-15^RMP	Silver	0.134	U	mg/kg
2	A3B4B-T-15	A3B4B-T-15^RMP	Technetium-99	0.755	U	pCi/g
2	A3B4B-T-15	A3B4B-T-15^RMP	Thorium-228	0.842	NV	pCi/g
2	A3B4B-T-15	A3B4B-T-15^RMP	Thorium-232	0.8	NV	pCi/g
2	A3B4B-T-15	A3B4B-T-15^RMP	Uranium, Total	4.59	NV	mg/kg
2	A3B4B-T-16	A3B4B-T-16^RMP	Antimony	0.804	U	mg/kg
2	A3B4B-T-16	A3B4B-T-16^RMP	Aroclor-1254	12.1	J	ug/kg
2	A3B4B-T-16	A3B4B-T-16^RMP	Beryllium	0.569	J	mg/kg
2	A3B4B-T-16	A3B4B-T-16^RMP	Cadmium	0.23	J	mg/kg
2	A3B4B-T-16	A3B4B-T-16^RMP	Molybdenum	1.71	J	mg/kg
2	A3B4B-T-16	A3B4B-T-16^RMP	Radium-226	1.19	NV	pCi/g
2	A3B4B-T-16	A3B4B-T-16^RMP	Radium-228	0.842	NV	pCi/g
2	A3B4B-T-16	A3B4B-T-16^RMP	Silver	0.255	U	mg/kg
2	A3B4B-T-16	A3B4B-T-16^RMP	Technetium-99	0.76	U	pCi/g
2	A3B4B-T-16	A3B4B-T-16^RMP	Thorium-228	0.824	NV	pCi/g

UTILITY SAMPLING RESULTS

CU	Boring	Sample ID	Parameter	Val Res	VQ	Units
2	A3B4B-T-16	A3B4B-T-16^RMP	Thorium-232	0.842	NV	pCi/g
2	A3B4B-T-16	A3B4B-T-16^RMP	Uranium, Total	9.34	NV	mg/kg
2	A3B4B-T-2	A3B4B-T-2^RMP	Antimony	0.744	U	mg/kg
2	A3B4B-T-2	A3B4B-T-2^RMP	Aroclor-1254	13.9	-	ug/kg
2	A3B4B-T-2	A3B4B-T-2^RMP	Beryllium	0.567	J	mg/kg
2	A3B4B-T-2	A3B4B-T-2^RMP	Cadmium	0.337	J	mg/kg
2	A3B4B-T-2	A3B4B-T-2^RMP	Molybdenum	2.51	-	mg/kg
2	A3B4B-T-2	A3B4B-T-2^RMP	Radium-226	1.3	-	pCi/g
2	A3B4B-T-2	A3B4B-T-2^RMP	Radium-228	0.788	-	pCi/g
2	A3B4B-T-2	A3B4B-T-2^RMP	Silver	0.279	U	mg/kg
2	A3B4B-T-2	A3B4B-T-2^RMP	Technetium-99	0.801	U	pCi/g
2	A3B4B-T-2	A3B4B-T-2^RMP	Thorium-228	0.817	-	pCi/g
2	A3B4B-T-2	A3B4B-T-2^RMP	Thorium-232	0.788	-	pCi/g
2	A3B4B-T-2	A3B4B-T-2^RMP	Uranium, Total	18.2	-	mg/kg
2	A3B4B-T-3	A3B4B-T-3^RMP	Antimony	0.668	U	mg/kg
2	A3B4B-T-3	A3B4B-T-3^RMP	Aroclor-1254	11.8	U	ug/kg
2	A3B4B-T-3	A3B4B-T-3^RMP	Beryllium	0.585	J	mg/kg
2	A3B4B-T-3	A3B4B-T-3^RMP	Cadmium	0.38	J	mg/kg
2	A3B4B-T-3	A3B4B-T-3^RMP	Molybdenum	2.78	-	mg/kg
2	A3B4B-T-3	A3B4B-T-3^RMP	Radium-226	1.11	-	pCi/g
2	A3B4B-T-3	A3B4B-T-3^RMP	Radium-228	0.787	-	pCi/g
2	A3B4B-T-3	A3B4B-T-3^RMP	Silver	0.25	U	mg/kg
2	A3B4B-T-3	A3B4B-T-3^RMP	Technetium-99	0.86	U	pCi/g
2	A3B4B-T-3	A3B4B-T-3^RMP	Thorium-228	0.764	-	pCi/g
2	A3B4B-T-3	A3B4B-T-3^RMP	Thorium-232	0.787	-	pCi/g
2	A3B4B-T-3	A3B4B-T-3^RMP	Uranium, Total	7.73	-	mg/kg
2	A3B4B-T-4	A3B4B-T-4^RMP	Antimony	0.734	U	mg/kg
2	A3B4B-T-4	A3B4B-T-4^RMP	Aroclor-1254	12.7	U	ug/kg
2	A3B4B-T-4	A3B4B-T-4^RMP	Beryllium	0.723	J	mg/kg
2	A3B4B-T-4	A3B4B-T-4^RMP	Cadmium	0.292	J	mg/kg
2	A3B4B-T-4	A3B4B-T-4^RMP	Molybdenum	2.24	-	mg/kg
2	A3B4B-T-4	A3B4B-T-4^RMP	Radium-226	1.68	-	pCi/g
2	A3B4B-T-4	A3B4B-T-4^RMP	Radium-228	0.861	-	pCi/g
2	A3B4B-T-4	A3B4B-T-4^RMP	Silver	0.275	U	mg/kg
2	A3B4B-T-4	A3B4B-T-4^RMP	Technetium-99	0.807	U	pCi/g
2	A3B4B-T-4	A3B4B-T-4^RMP	Thorium-228	0.879	-	pCi/g
2	A3B4B-T-4	A3B4B-T-4^RMP	Thorium-232	0.861	-	pCi/g
2	A3B4B-T-4	A3B4B-T-4^RMP	Uranium, Total	17.6	-	mg/kg
2	A3B4B-T-5	A3B4B-T-5^RMP	Antimony	0.732	U	mg/kg
2	A3B4B-T-5	A3B4B-T-5^RMP	Aroclor-1254	11.9	U	ug/kg
2	A3B4B-T-5	A3B4B-T-5^RMP	Beryllium	0.637	J	mg/kg
2	A3B4B-T-5	A3B4B-T-5^RMP	Cadmium	0.28	J	mg/kg
2	A3B4B-T-5	A3B4B-T-5^RMP	Molybdenum	1.62	-	mg/kg
2	A3B4B-T-5	A3B4B-T-5^RMP	Radium-226	1.19	-	pCi/g
2	A3B4B-T-5	A3B4B-T-5^RMP	Radium-228	0.786	-	pCi/g
2	A3B4B-T-5	A3B4B-T-5^RMP	Silver	0.275	U	mg/kg
2	A3B4B-T-5	A3B4B-T-5^RMP	Technetium-99	1.31	-	pCi/g
2	A3B4B-T-5	A3B4B-T-5^RMP	Thorium-228	0.779	-	pCi/g
2	A3B4B-T-5	A3B4B-T-5^RMP	Thorium-232	0.786	-	pCi/g
2	A3B4B-T-5	A3B4B-T-5^RMP	Uranium, Total	14.4	-	mg/kg
2	A3B4B-T-9	A3B4B-T-9^RMP	Antimony	1.42	U	mg/kg
2	A3B4B-T-9	A3B4B-T-9^RMP	Aroclor-1254	11.9	U	ug/kg
2	A3B4B-T-9	A3B4B-T-9^RMP	Beryllium	0.696	-	mg/kg
2	A3B4B-T-9	A3B4B-T-9^RMP	Cadmium	0.3	J	mg/kg
2	A3B4B-T-9	A3B4B-T-9^RMP	Molybdenum	1.56	-	mg/kg
2	A3B4B-T-9	A3B4B-T-9^RMP	Radium-226	1.31	-	pCi/g

UTILITY SAMPLING RESULTS

CU	Boring	Sample ID	Parameter	Val Res	VQ	Units
2	A3B4B-T-9	A3B4B-T-9^RMP	Radium-228	0.947	-	pCi/g
2	A3B4B-T-9	A3B4B-T-9^RMP	Silver	0.267	U	mg/kg
2	A3B4B-T-9	A3B4B-T-9^RMP	Technetium-99	0.827	U	pCi/g
2	A3B4B-T-9	A3B4B-T-9^RMP	Thorium-228	0.965	-	pCi/g
2	A3B4B-T-9	A3B4B-T-9^RMP	Thorium-232	0.947	-	pCi/g
2	A3B4B-T-9	A3B4B-T-9^RMP	Uranium, Total	3.1	U	mg/kg
2	A7GA-T-100	A7GA-T-100^RMP	Aroclor-1254	4	U	ug/kg
2	A7GA-T-100	A7GA-T-100^RMP	Aroclor-1260	4	U	ug/kg
2	A7GA-T-100	A7GA-T-100^RMP	Beryllium	0.915	-	mg/kg
2	A7GA-T-100	A7GA-T-100^RMP	Dieldrin	1.6	U	ug/kg
2	A7GA-T-100	A7GA-T-100^RMP	Radium-226	1.36	-	pCi/g
2	A7GA-T-100	A7GA-T-100^RMP	Radium-228	1.11	-	pCi/g
2	A7GA-T-100	A7GA-T-100^RMP	Thorium-228	1.06	-	pCi/g
2	A7GA-T-100	A7GA-T-100^RMP	Thorium-232	1.11	-	pCi/g
2	A7GA-T-100	A7GA-T-100^RMP	Uranium, Total	7.79	-	mg/kg
2	A7GA-T-114	A7GA-T-114^RMP	Aroclor-1254	4	U	ug/kg
2	A7GA-T-114	A7GA-T-114^RMP	Aroclor-1260	4	U	ug/kg
2	A7GA-T-114	A7GA-T-114^RMP	Beryllium	1.14	-	mg/kg
2	A7GA-T-114	A7GA-T-114^RMP	Dieldrin	1.6	UJ	ug/kg
2	A7GA-T-114	A7GA-T-114^RMP	Radium-226	1.62	-	pCi/g
2	A7GA-T-114	A7GA-T-114^RMP	Radium-228	1.33	-	pCi/g
2	A7GA-T-114	A7GA-T-114^RMP	Thorium-228	1.33	-	pCi/g
2	A7GA-T-114	A7GA-T-114^RMP	Thorium-232	1.33	-	pCi/g
2	A7GA-T-114	A7GA-T-114^RMP	Uranium, Total	11.8	-	mg/kg
2	A7GA-T-115	A7GA-T-115^RMP	Aroclor-1254	4	U	ug/kg
2	A7GA-T-115	A7GA-T-115^RMP	Aroclor-1260	4	U	ug/kg
2	A7GA-T-115	A7GA-T-115^RMP	Beryllium	1.02	-	mg/kg
2	A7GA-T-115	A7GA-T-115^RMP	Dieldrin	1.6	UJ	ug/kg
2	A7GA-T-115	A7GA-T-115^RMP	Radium-226	1.41	-	pCi/g
2	A7GA-T-115	A7GA-T-115^RMP	Radium-228	1.24	-	pCi/g
2	A7GA-T-115	A7GA-T-115^RMP	Thorium-228	1.31	-	pCi/g
2	A7GA-T-115	A7GA-T-115^RMP	Thorium-232	1.24	-	pCi/g
2	A7GA-T-115	A7GA-T-115^RMP	Uranium, Total	5.08	-	mg/kg
2	A7GA-T-127	A7GA-T-127^RMP	Aroclor-1254	4.2	U	ug/kg
2	A7GA-T-127	A7GA-T-127^RMP	Aroclor-1260	4.2	U	ug/kg
2	A7GA-T-127	A7GA-T-127^RMP	Beryllium	0.521	U	mg/kg
2	A7GA-T-127	A7GA-T-127^RMP	Dieldrin	1.7	U	ug/kg
2	A7GA-T-127	A7GA-T-127^RMP	Radium-226	1.18	-	pCi/g
2	A7GA-T-127	A7GA-T-127^RMP	Radium-228	0.87	-	pCi/g
2	A7GA-T-127	A7GA-T-127^RMP	Thorium-228	0.878	-	pCi/g
2	A7GA-T-127	A7GA-T-127^RMP	Thorium-232	0.87	-	pCi/g
2	A7GA-T-127	A7GA-T-127^RMP	Uranium, Total	6.73	-	mg/kg
2	A7GA-T-99	A7GA-T-99^RMP	Aroclor-1254	4	U	ug/kg
2	A7GA-T-99	A7GA-T-99^RMP	Aroclor-1260	4	U	ug/kg
2	A7GA-T-99	A7GA-T-99^RMP	Beryllium	0.995	-	mg/kg
2	A7GA-T-99	A7GA-T-99^RMP	Dieldrin	1.6	U	ug/kg
2	A7GA-T-99	A7GA-T-99^RMP	Radium-226	1.13	-	pCi/g
2	A7GA-T-99	A7GA-T-99^RMP	Radium-228	1.16	-	pCi/g
2	A7GA-T-99	A7GA-T-99^RMP	Thorium-228	1.22	-	pCi/g
2	A7GA-T-99	A7GA-T-99^RMP	Thorium-232	1.16	-	pCi/g
2	A7GA-T-99	A7GA-T-99^RMP	Uranium, Total	4.71	-	mg/kg
3	A3B4B-T-11	A3B4B-T-11^RMP	Antimony	0.74	U	mg/kg
3	A3B4B-T-11	A3B4B-T-11^RMP	Aroclor-1254	3.9	U	ug/kg
3	A3B4B-T-11	A3B4B-T-11^RMP	Beryllium	0.76	-	mg/kg
3	A3B4B-T-11	A3B4B-T-11^RMP	Cadmium	0.317	J	mg/kg
3	A3B4B-T-11	A3B4B-T-11^RMP	Molybdenum	0.861	J	mg/kg

UTILITY SAMPLING RESULTS

CU	Boring	Sample ID	Parameter	Val Res	VQ	Units
3	A3B4B-T-11	A3B4B-T-11^RMP	Radium-226	1.71	-	pCi/g
3	A3B4B-T-11	A3B4B-T-11^RMP	Radium-228	0.947	-	pCi/g
3	A3B4B-T-11	A3B4B-T-11^RMP	Silver	0.694	UJ	mg/kg
3	A3B4B-T-11	A3B4B-T-11^RMP	Technetium-99	0.925	U	pCi/g
3	A3B4B-T-11	A3B4B-T-11^RMP	Thorium-228	0.911	-	pCi/g
3	A3B4B-T-11	A3B4B-T-11^RMP	Thorium-232	0.947	-	pCi/g
3	A3B4B-T-11	A3B4B-T-11^RMP	Uranium, Total	5.39	U	mg/kg
3	A3B4B-T-12	A3B4B-T-12^RMP	Antimony	0.767	U	mg/kg
3	A3B4B-T-12	A3B4B-T-12^RMP	Aroclor-1254	4.1	U	ug/kg
3	A3B4B-T-12	A3B4B-T-12^RMP	Beryllium	0.896	-	mg/kg
3	A3B4B-T-12	A3B4B-T-12^RMP	Cadmium	0.327	J	mg/kg
3	A3B4B-T-12	A3B4B-T-12^RMP	Molybdenum	1.38	J	mg/kg
3	A3B4B-T-12	A3B4B-T-12^RMP	Radium-226	1.65	-	pCi/g
3	A3B4B-T-12	A3B4B-T-12^RMP	Radium-228	1.19	-	pCi/g
3	A3B4B-T-12	A3B4B-T-12^RMP	Silver	0.719	UJ	mg/kg
3	A3B4B-T-12	A3B4B-T-12^RMP	Technetium-99	0.899	U	pCi/g
3	A3B4B-T-12	A3B4B-T-12^RMP	Thorium-228	1.1	-	pCi/g
3	A3B4B-T-12	A3B4B-T-12^RMP	Thorium-232	1.19	-	pCi/g
3	A3B4B-T-12	A3B4B-T-12^RMP	Uranium, Total	7.5	J	mg/kg
3	A3B4B-T-34	A3B4B-T-34^RMP	Antimony	0.75	NV	mg/kg
3	A3B4B-T-34	A3B4B-T-34^RMP	Aroclor-1254	3.8	UNV	ug/kg
3	A3B4B-T-34	A3B4B-T-34^RMP	Beryllium	0.69	NV	mg/kg
3	A3B4B-T-34	A3B4B-T-34^RMP	Cadmium	0.32	NV	mg/kg
3	A3B4B-T-34	A3B4B-T-34^RMP	Molybdenum	1.1	NV	mg/kg
3	A3B4B-T-34	A3B4B-T-34^RMP	Radium-226	0.983697	NV	pCi/g
3	A3B4B-T-34	A3B4B-T-34^RMP	Radium-228	0.966	NV	pCi/g
3	A3B4B-T-34	A3B4B-T-34^RMP	Silver	0.1	NV	mg/kg
3	A3B4B-T-34	A3B4B-T-34^RMP	Technetium-99	2.09	UNV	pCi/g
3	A3B4B-T-34	A3B4B-T-34^RMP	Thorium-228	0.957	NV	pCi/g
3	A3B4B-T-34	A3B4B-T-34^RMP	Thorium-232	0.966	NV	pCi/g
3	A3B4B-T-34	A3B4B-T-34^RMP	Uranium, Total	7.69	NV	mg/kg
3	A3B4B-T-35	A3B4B-T-35^RMP	Antimony	0.53	NV	mg/kg
3	A3B4B-T-35	A3B4B-T-35^RMP	Aroclor-1254	5.6	NV	ug/kg
3	A3B4B-T-35	A3B4B-T-35^RMP	Beryllium	0.74	NV	mg/kg
3	A3B4B-T-35	A3B4B-T-35^RMP	Cadmium	0.26	NV	mg/kg
3	A3B4B-T-35	A3B4B-T-35^RMP	Molybdenum	1	NV	mg/kg
3	A3B4B-T-35	A3B4B-T-35^RMP	Radium-226	4.76502	NV	pCi/g
3	A3B4B-T-35	A3B4B-T-35^RMP	Radium-228	0.988	NV	pCi/g
3	A3B4B-T-35	A3B4B-T-35^RMP	Silver	0.087	NV	mg/kg
3	A3B4B-T-35	A3B4B-T-35^RMP	Technetium-99	2.22	UNV	pCi/g
3	A3B4B-T-35	A3B4B-T-35^RMP	Thorium-228	0.998	NV	pCi/g
3	A3B4B-T-35	A3B4B-T-35^RMP	Thorium-232	0.988	NV	pCi/g
3	A3B4B-T-35	A3B4B-T-35^RMP	Uranium, Total	6.55	NV	mg/kg
3	A3B4B-T-8	A3B4B-T-8^RMP	Antimony	1.47	U	mg/kg
3	A3B4B-T-8	A3B4B-T-8^RMP	Aroclor-1254	12.3	U	ug/kg
3	A3B4B-T-8	A3B4B-T-8^RMP	Beryllium	0.97	-	mg/kg
3	A3B4B-T-8	A3B4B-T-8^RMP	Cadmium	0.568	-	mg/kg
3	A3B4B-T-8	A3B4B-T-8^RMP	Molybdenum	1.35	-	mg/kg
3	A3B4B-T-8	A3B4B-T-8^RMP	Radium-226	1.65	-	pCi/g
3	A3B4B-T-8	A3B4B-T-8^RMP	Radium-228	1.21	-	pCi/g
3	A3B4B-T-8	A3B4B-T-8^RMP	Silver	0.275	U	mg/kg
3	A3B4B-T-8	A3B4B-T-8^RMP	Technetium-99	0.954	U	pCi/g
3	A3B4B-T-8	A3B4B-T-8^RMP	Thorium-228	1.18	-	pCi/g
3	A3B4B-T-8	A3B4B-T-8^RMP	Thorium-232	1.21	-	pCi/g
3	A3B4B-T-8	A3B4B-T-8^RMP	Uranium, Total	10.4	-	mg/kg
3	A4B-T-1	A4B-T-1^RMP	Aroclor-1254	0.7	J	ug/kg

UTILITY SAMPLING RESULTS

CU	Boring	Sample ID	Parameter	Val Res	VQ	Units
3	A4B-T-1	A4B-T-1^RMP	Beryllium	0.798	-	mg/kg
3	A4B-T-1	A4B-T-1^RMP	Radium-226	1.17	-	pCi/g
3	A4B-T-1	A4B-T-1^RMP	Radium-228	1.14	-	pCi/g
3	A4B-T-1	A4B-T-1^RMP	Technetium-99	0.729	U	pCi/g
3	A4B-T-1	A4B-T-1^RMP	Thorium-228	1.17	-	pCi/g
3	A4B-T-1	A4B-T-1^RMP	Thorium-232	1.14	-	pCi/g
3	A4B-T-1	A4B-T-1^RMP	Uranium, Total	8.36	-	mg/kg
3	A4B-T-2	A4B-T-2^RMP	Aroclor-1254	4	J	ug/kg
3	A4B-T-2	A4B-T-2^RMP	Beryllium	0.733	-	mg/kg
3	A4B-T-2	A4B-T-2^RMP	Radium-226	1.35	-	pCi/g
3	A4B-T-2	A4B-T-2^RMP	Radium-228	1.18	-	pCi/g
3	A4B-T-2	A4B-T-2^RMP	Technetium-99	0.738	U	pCi/g
3	A4B-T-2	A4B-T-2^RMP	Thorium-228	1.13	-	pCi/g
3	A4B-T-2	A4B-T-2^RMP	Thorium-232	1.18	-	pCi/g
3	A4B-T-2	A4B-T-2^RMP	Uranium, Total	17	-	mg/kg
3	A7GA-T-108	A7GA-T-108^RMP	Aroclor-1254	4	U	ug/kg
3	A7GA-T-108	A7GA-T-108^RMP	Aroclor-1260	4	U	ug/kg
3	A7GA-T-108	A7GA-T-108^RMP	Beryllium	1.15	-	mg/kg
3	A7GA-T-108	A7GA-T-108^RMP	Dieldrin	1.6	UJ	ug/kg
3	A7GA-T-108	A7GA-T-108^RMP	Radium-226	1.32	-	pCi/g
3	A7GA-T-108	A7GA-T-108^RMP	Radium-228	1.07	-	pCi/g
3	A7GA-T-108	A7GA-T-108^RMP	Thorium-228	1.11	-	pCi/g
3	A7GA-T-108	A7GA-T-108^RMP	Thorium-232	1.07	-	pCi/g
3	A7GA-T-108	A7GA-T-108^RMP	Uranium, Total	5.98	-	mg/kg
3	A7GA-T-109	A7GA-T-109^RMP	Aroclor-1254	4.2	U	ug/kg
3	A7GA-T-109	A7GA-T-109^RMP	Aroclor-1260	4.2	U	ug/kg
3	A7GA-T-109	A7GA-T-109^RMP	Beryllium	0.881	-	mg/kg
3	A7GA-T-109	A7GA-T-109^RMP	Dieldrin	1.7	UJ	ug/kg
3	A7GA-T-109	A7GA-T-109^RMP	Radium-226	1.83	-	pCi/g
3	A7GA-T-109	A7GA-T-109^RMP	Radium-228	1.23	-	pCi/g
3	A7GA-T-109	A7GA-T-109^RMP	Thorium-228	1.28	-	pCi/g
3	A7GA-T-109	A7GA-T-109^RMP	Thorium-232	1.23	-	pCi/g
3	A7GA-T-109	A7GA-T-109^RMP	Uranium, Total	8.85	-	mg/kg
3	A7GA-T-110	A7GA-T-110^RMP	Aroclor-1254	4.1	U	ug/kg
3	A7GA-T-110	A7GA-T-110^RMP	Aroclor-1260	4.1	U	ug/kg
3	A7GA-T-110	A7GA-T-110^RMP	Beryllium	0.983	-	mg/kg
3	A7GA-T-110	A7GA-T-110^RMP	Dieldrin	1.7	UJ	ug/kg
3	A7GA-T-110	A7GA-T-110^RMP	Radium-226	1.31	-	pCi/g
3	A7GA-T-110	A7GA-T-110^RMP	Radium-228	1.16	-	pCi/g
3	A7GA-T-110	A7GA-T-110^RMP	Thorium-228	1.18	-	pCi/g
3	A7GA-T-110	A7GA-T-110^RMP	Thorium-232	1.16	-	pCi/g
3	A7GA-T-110	A7GA-T-110^RMP	Uranium, Total	2.9	U	mg/kg
3	A7GA-T-111	A7GA-T-111^RMP	Aroclor-1254	4.1	U	ug/kg
3	A7GA-T-111	A7GA-T-111^RMP	Aroclor-1260	4.1	U	ug/kg
3	A7GA-T-111	A7GA-T-111^RMP	Beryllium	1.02	-	mg/kg
3	A7GA-T-111	A7GA-T-111^RMP	Dieldrin	1.6	UJ	ug/kg
3	A7GA-T-111	A7GA-T-111^RMP	Radium-226	1.29	-	pCi/g
3	A7GA-T-111	A7GA-T-111^RMP	Radium-228	1.13	-	pCi/g
3	A7GA-T-111	A7GA-T-111^RMP	Thorium-228	1.16	-	pCi/g
3	A7GA-T-111	A7GA-T-111^RMP	Thorium-232	1.13	-	pCi/g
3	A7GA-T-111	A7GA-T-111^RMP	Uranium, Total	5.39	-	mg/kg
3	A7GA-T-112	A7GA-T-112^RMP	Aroclor-1254	4	U	ug/kg
3	A7GA-T-112	A7GA-T-112^RMP	Aroclor-1260	4	U	ug/kg
3	A7GA-T-112	A7GA-T-112^RMP	Beryllium	1.2	-	mg/kg
3	A7GA-T-112	A7GA-T-112^RMP	Dieldrin	1.6	UJ	ug/kg
3	A7GA-T-112	A7GA-T-112^RMP	Radium-226	1.42	-	pCi/g

UTILITY SAMPLING RESULTS

CU	Boring	Sample ID	Parameter	Val Res	VQ	Units
3	A7GA-T-112	A7GA-T-112^RMP	Radium-228	1.26	-	pCi/g
3	A7GA-T-112	A7GA-T-112^RMP	Thorium-228	1.28	-	pCi/g
3	A7GA-T-112	A7GA-T-112^RMP	Thorium-232	1.26	-	pCi/g
3	A7GA-T-112	A7GA-T-112^RMP	Uranium, Total	4.25	J	mg/kg
3	A7GA-T-113	A7GA-T-113^RMP	Aroclor-1254	4.3	U	ug/kg
3	A7GA-T-113	A7GA-T-113^RMP	Aroclor-1260	4.3	U	ug/kg
3	A7GA-T-113	A7GA-T-113^RMP	Beryllium	0.581	U	mg/kg
3	A7GA-T-113	A7GA-T-113^RMP	Dieldrin	1.7	UJ	ug/kg
3	A7GA-T-113	A7GA-T-113^RMP	Radium-226	0.834	-	pCi/g
3	A7GA-T-113	A7GA-T-113^RMP	Radium-228	0.735	-	pCi/g
3	A7GA-T-113	A7GA-T-113^RMP	Thorium-228	0.762	-	pCi/g
3	A7GA-T-113	A7GA-T-113^RMP	Thorium-232	0.735	-	pCi/g
3	A7GA-T-113	A7GA-T-113^RMP	Uranium, Total	2.32	U	mg/kg
3	A7GA-T-116	A7GA-T-116^RMP	Aroclor-1254	4	U	ug/kg
3	A7GA-T-116	A7GA-T-116^RMP	Aroclor-1260	4	U	ug/kg
3	A7GA-T-116	A7GA-T-116^RMP	Beryllium	0.988	-	mg/kg
3	A7GA-T-116	A7GA-T-116^RMP	Dieldrin	1.6	UJ	ug/kg
3	A7GA-T-116	A7GA-T-116^RMP	Radium-226	1.53	-	pCi/g
3	A7GA-T-116	A7GA-T-116^RMP	Radium-228	1.12	-	pCi/g
3	A7GA-T-116	A7GA-T-116^RMP	Thorium-228	1.14	-	pCi/g
3	A7GA-T-116	A7GA-T-116^RMP	Thorium-232	1.12	-	pCi/g
3	A7GA-T-116	A7GA-T-116^RMP	Uranium, Total	7.66	-	mg/kg
3	A7GA-T-117	A7GA-T-117^RMP	Aroclor-1254	4	U	ug/kg
3	A7GA-T-117	A7GA-T-117^RMP	Aroclor-1260	4	U	ug/kg
3	A7GA-T-117	A7GA-T-117^RMP	Beryllium	0.883	-	mg/kg
3	A7GA-T-117	A7GA-T-117^RMP	Dieldrin	1.6	UJ	ug/kg
3	A7GA-T-117	A7GA-T-117^RMP	Radium-226	1.27	-	pCi/g
3	A7GA-T-117	A7GA-T-117^RMP	Radium-228	1.07	-	pCi/g
3	A7GA-T-117	A7GA-T-117^RMP	Thorium-228	1.05	-	pCi/g
3	A7GA-T-117	A7GA-T-117^RMP	Thorium-232	1.07	-	pCi/g
3	A7GA-T-117	A7GA-T-117^RMP	Uranium, Total	5.26	-	mg/kg
3	A7GA-T-118	A7GA-T-118^RMP	Aroclor-1254	3.8	U	ug/kg
3	A7GA-T-118	A7GA-T-118^RMP	Aroclor-1260	3.8	U	ug/kg
3	A7GA-T-118	A7GA-T-118^RMP	Beryllium	1.06	-	mg/kg
3	A7GA-T-118	A7GA-T-118^RMP	Dieldrin	1.5	UJ	ug/kg
3	A7GA-T-118	A7GA-T-118^RMP	Radium-226	1.43	-	pCi/g
3	A7GA-T-118	A7GA-T-118^RMP	Radium-228	1.26	-	pCi/g
3	A7GA-T-118	A7GA-T-118^RMP	Thorium-228	1.27	-	pCi/g
3	A7GA-T-118	A7GA-T-118^RMP	Thorium-232	1.26	-	pCi/g
3	A7GA-T-118	A7GA-T-118^RMP	Uranium, Total	6.29	-	mg/kg
4	A3B4B-T-17	A3B4B-T-17^RMP	Antimony	0.458	UJ	mg/kg
4	A3B4B-T-17	A3B4B-T-17^RMP	Aroclor-1254	4	U	ug/kg
4	A3B4B-T-17	A3B4B-T-17^RMP	Beryllium	0.48	-	mg/kg
4	A3B4B-T-17	A3B4B-T-17^RMP	Cadmium	0.39	J	mg/kg
4	A3B4B-T-17	A3B4B-T-17^RMP	Molybdenum	2	-	mg/kg
4	A3B4B-T-17	A3B4B-T-17^RMP	Radium-226	0.967	-	pCi/g
4	A3B4B-T-17	A3B4B-T-17^RMP	Radium-228	0.894	-	pCi/g
4	A3B4B-T-17	A3B4B-T-17^RMP	Silver	0.07	J	mg/kg
4	A3B4B-T-17	A3B4B-T-17^RMP	Technetium-99	1.9	U	pCi/g
4	A3B4B-T-17	A3B4B-T-17^RMP	Thorium-228	0.879	-	pCi/g
4	A3B4B-T-17	A3B4B-T-17^RMP	Thorium-232	0.894	-	pCi/g
4	A3B4B-T-17	A3B4B-T-17^RMP	Uranium, Total	6.19	-	mg/kg
4	A7GA-T-1	A7GA-T-1^RMP	Aroclor-1254	12.8	U	ug/kg
4	A7GA-T-1	A7GA-T-1^RMP	Aroclor-1260	12.8	U	ug/kg
4	A7GA-T-1	A7GA-T-1^RMP	Beryllium	0.597	J	mg/kg
4	A7GA-T-1	A7GA-T-1^RMP	Dieldrin	5.1	U	ug/kg

UTILITY SAMPLING RESULTS

CU	Boring	Sample ID	Parameter	Val Res	VQ	Units
4	A7GA-T-1	A7GA-T-1^RMP	Radium-226	1.44	-	pCi/g
4	A7GA-T-1	A7GA-T-1^RMP	Radium-228	1.16	-	pCi/g
4	A7GA-T-1	A7GA-T-1^RMP	Thorium-228	1.13	-	pCi/g
4	A7GA-T-1	A7GA-T-1^RMP	Thorium-232	1.16	-	pCi/g
4	A7GA-T-1	A7GA-T-1^RMP	Uranium, Total	7.4	-	mg/kg
4	A7GA-T-120	A7GA-T-120^RMP	Aroclor-1254	3.5	U	ug/kg
4	A7GA-T-120	A7GA-T-120^RMP	Aroclor-1260	3.5	U	ug/kg
4	A7GA-T-120	A7GA-T-120^RMP	Beryllium	0.395	U	mg/kg
4	A7GA-T-120	A7GA-T-120^RMP	Dieldrin	1.4	U	ug/kg
4	A7GA-T-120	A7GA-T-120^RMP	Radium-226	0.867	-	pCi/g
4	A7GA-T-120	A7GA-T-120^RMP	Radium-228	0.471	-	pCi/g
4	A7GA-T-120	A7GA-T-120^RMP	Thorium-228	0.463	-	pCi/g
4	A7GA-T-120	A7GA-T-120^RMP	Thorium-232	0.471	-	pCi/g
4	A7GA-T-120	A7GA-T-120^RMP	Uranium, Total	5.84	-	mg/kg
4	A7GA-T-121	A7GA-T-121^RMP	Aroclor-1254	3.5	U	ug/kg
4	A7GA-T-121	A7GA-T-121^RMP	Aroclor-1260	3.5	U	ug/kg
4	A7GA-T-121	A7GA-T-121^RMP	Beryllium	0.476	U	mg/kg
4	A7GA-T-121	A7GA-T-121^RMP	Dieldrin	1.4	U	ug/kg
4	A7GA-T-121	A7GA-T-121^RMP	Radium-226	1.02	-	pCi/g
4	A7GA-T-121	A7GA-T-121^RMP	Radium-228	0.582	-	pCi/g
4	A7GA-T-121	A7GA-T-121^RMP	Thorium-228	0.575	-	pCi/g
4	A7GA-T-121	A7GA-T-121^RMP	Thorium-232	0.582	-	pCi/g
4	A7GA-T-121	A7GA-T-121^RMP	Uranium, Total	12.1	-	mg/kg
4	A7GA-T-122	A7GA-T-122^RMP	Aroclor-1254	3.4	U	ug/kg
4	A7GA-T-122	A7GA-T-122^RMP	Aroclor-1260	3.4	U	ug/kg
4	A7GA-T-122	A7GA-T-122^RMP	Beryllium	0.106	U	mg/kg
4	A7GA-T-122	A7GA-T-122^RMP	Dieldrin	1.4	U	ug/kg
4	A7GA-T-122	A7GA-T-122^RMP	Radium-226	0.716	-	pCi/g
4	A7GA-T-122	A7GA-T-122^RMP	Radium-228	0.44	-	pCi/g
4	A7GA-T-122	A7GA-T-122^RMP	Thorium-228	0.467	-	pCi/g
4	A7GA-T-122	A7GA-T-122^RMP	Thorium-232	0.44	-	pCi/g
4	A7GA-T-122	A7GA-T-122^RMP	Uranium, Total	3.93	J	mg/kg
4	A7GA-T-123	A7GA-T-123^RMP	Aroclor-1254	3.6	U	ug/kg
4	A7GA-T-123	A7GA-T-123^RMP	Aroclor-1260	3.6	U	ug/kg
4	A7GA-T-123	A7GA-T-123^RMP	Beryllium	0.452	U	mg/kg
4	A7GA-T-123	A7GA-T-123^RMP	Dieldrin	1.4	U	ug/kg
4	A7GA-T-123	A7GA-T-123^RMP	Radium-226	1.08	-	pCi/g
4	A7GA-T-123	A7GA-T-123^RMP	Radium-228	0.536	-	pCi/g
4	A7GA-T-123	A7GA-T-123^RMP	Thorium-228	0.554	-	pCi/g
4	A7GA-T-123	A7GA-T-123^RMP	Thorium-232	0.536	-	pCi/g
4	A7GA-T-123	A7GA-T-123^RMP	Uranium, Total	5.5	-	mg/kg
4	A7GA-T-124	A7GA-T-124^RMP	Aroclor-1254	3.6	U	ug/kg
4	A7GA-T-124	A7GA-T-124^RMP	Aroclor-1260	3.6	U	ug/kg
4	A7GA-T-124	A7GA-T-124^RMP	Beryllium	0.448	U	mg/kg
4	A7GA-T-124	A7GA-T-124^RMP	Dieldrin	1.4	U	ug/kg
4	A7GA-T-124	A7GA-T-124^RMP	Radium-226	1.18	-	pCi/g
4	A7GA-T-124	A7GA-T-124^RMP	Radium-228	0.999	-	pCi/g
4	A7GA-T-124	A7GA-T-124^RMP	Thorium-228	1.02	-	pCi/g
4	A7GA-T-124	A7GA-T-124^RMP	Thorium-232	0.999	-	pCi/g
4	A7GA-T-124	A7GA-T-124^RMP	Uranium, Total	2.79	U	mg/kg
4	A7GA-T-125	A7GA-T-125^RMP	Aroclor-1254	3.6	U	ug/kg
4	A7GA-T-125	A7GA-T-125^RMP	Aroclor-1260	3.6	U	ug/kg
4	A7GA-T-125	A7GA-T-125^RMP	Beryllium	0.597	U	mg/kg
4	A7GA-T-125	A7GA-T-125^RMP	Dieldrin	1.4	U	ug/kg
4	A7GA-T-125	A7GA-T-125^RMP	Radium-226	0.983	-	pCi/g
4	A7GA-T-125	A7GA-T-125^RMP	Radium-228	0.887	-	pCi/g

UTILITY SAMPLING RESULTS

CU	Boring	Sample ID	Parameter	Val Res	VQ	Units
4	A7GA-T-125	A7GA-T-125^RMP	Thorium-228	0.901	-	pCi/g
4	A7GA-T-125	A7GA-T-125^RMP	Thorium-232	0.887	-	pCi/g
4	A7GA-T-125	A7GA-T-125^RMP	Uranium, Total	2.79	U	mg/kg
4	A7GA-T-61	A7GA-T-61^RMP	Aroclor-1254	3.8	U	ug/kg
4	A7GA-T-61	A7GA-T-61^RMP	Aroclor-1260	3.8	U	ug/kg
4	A7GA-T-61	A7GA-T-61^RMP	Beryllium	0.33	-	mg/kg
4	A7GA-T-61	A7GA-T-61^RMP	Dieldrin	1.5	U	ug/kg
4	A7GA-T-61	A7GA-T-61^RMP	Radium-226	0.704	-	pCi/g
4	A7GA-T-61	A7GA-T-61^RMP	Radium-228	0.621	-	pCi/g
4	A7GA-T-61	A7GA-T-61^RMP	Thorium-228	0.642	-	pCi/g
4	A7GA-T-61	A7GA-T-61^RMP	Thorium-232	0.621	-	pCi/g
4	A7GA-T-61	A7GA-T-61^RMP	Uranium, Total	3.94	J	mg/kg
4	A7GA-T-62	A7GA-T-62^RMP	Aroclor-1254	3.9	U	ug/kg
4	A7GA-T-62	A7GA-T-62^RMP	Aroclor-1260	3.9	U	ug/kg
4	A7GA-T-62	A7GA-T-62^RMP	Beryllium	0.35	-	mg/kg
4	A7GA-T-62	A7GA-T-62^RMP	Dieldrin	1.6	U	ug/kg
4	A7GA-T-62	A7GA-T-62^RMP	Radium-226	0.765	-	pCi/g
4	A7GA-T-62	A7GA-T-62^RMP	Radium-228	0.656	-	pCi/g
4	A7GA-T-62	A7GA-T-62^RMP	Thorium-228	0.661	-	pCi/g
4	A7GA-T-62	A7GA-T-62^RMP	Thorium-232	0.656	-	pCi/g
4	A7GA-T-62	A7GA-T-62^RMP	Uranium, Total	4.72	-	mg/kg
4	A7GA-T-71	A7GA-T-71^RMP	Aroclor-1254	3.9	U	ug/kg
4	A7GA-T-71	A7GA-T-71^RMP	Aroclor-1260	3.9	U	ug/kg
4	A7GA-T-71	A7GA-T-71^RMP	Beryllium	0.71	-	mg/kg
4	A7GA-T-71	A7GA-T-71^RMP	Dieldrin	1.5	U	ug/kg
4	A7GA-T-71	A7GA-T-71^RMP	Radium-226	1.19	-	pCi/g
4	A7GA-T-71	A7GA-T-71^RMP	Radium-228	1.08	-	pCi/g
4	A7GA-T-71	A7GA-T-71^RMP	Thorium-228	1.11	-	pCi/g
4	A7GA-T-71	A7GA-T-71^RMP	Thorium-232	1.08	-	pCi/g
4	A7GA-T-71	A7GA-T-71^RMP	Uranium, Total	4.44	-	mg/kg
4	A7GA-T-72	A7GA-T-72^RMP	Beryllium	0.547	-	mg/kg
4	A7GA-T-72	A7GA-T-72^RMP	Dieldrin	1.5	U	ug/kg
4	A7GA-T-72	A7GA-T-72^RMP	Radium-226	1.31	-	pCi/g
4	A7GA-T-72	A7GA-T-72^RMP	Radium-228	1.08	-	pCi/g
4	A7GA-T-72	A7GA-T-72^RMP	Thorium-228	1.14	-	pCi/g
4	A7GA-T-72	A7GA-T-72^RMP	Thorium-232	1.08	-	pCi/g
4	A7GA-T-72	A7GA-T-72^RMP	Uranium, Total	5.88	-	mg/kg
4	A7GA-T-73	A7GA-T-73^RMP	Aroclor-1254	3.6	U	ug/kg
4	A7GA-T-73	A7GA-T-73^RMP	Aroclor-1260	3.6	U	ug/kg
4	A7GA-T-73	A7GA-T-73^RMP	Beryllium	0.637	-	mg/kg
4	A7GA-T-73	A7GA-T-73^RMP	Dieldrin	1.4	U	ug/kg
4	A7GA-T-73	A7GA-T-73^RMP	Radium-226	1.06	-	pCi/g
4	A7GA-T-73	A7GA-T-73^RMP	Radium-228	0.964	-	pCi/g
4	A7GA-T-73	A7GA-T-73^RMP	Thorium-228	0.908	-	pCi/g
4	A7GA-T-73	A7GA-T-73^RMP	Thorium-232	0.964	-	pCi/g
4	A7GA-T-73	A7GA-T-73^RMP	Uranium, Total	7.62	-	mg/kg
4	A7GA-T-74	A7GA-T-74^RMP	Aroclor-1254	3.9	U	ug/kg
4	A7GA-T-74	A7GA-T-74^RMP	Aroclor-1260	3.9	U	ug/kg
4	A7GA-T-74	A7GA-T-74^RMP	Beryllium	0.468	-	mg/kg
4	A7GA-T-74	A7GA-T-74^RMP	Dieldrin	1.5	U	ug/kg
4	A7GA-T-74	A7GA-T-74^RMP	Radium-226	0.928	-	pCi/g
4	A7GA-T-74	A7GA-T-74^RMP	Radium-228	0.826	-	pCi/g
4	A7GA-T-74	A7GA-T-74^RMP	Thorium-228	0.908	-	pCi/g
4	A7GA-T-74	A7GA-T-74^RMP	Thorium-232	0.826	-	pCi/g
4	A7GA-T-74	A7GA-T-74^RMP	Uranium, Total	12.2	-	mg/kg
4	A7GA-T-75	A7GA-T-75^RMP	Aroclor-1254	3.9	U	ug/kg

UTILITY SAMPLING RESULTS

CU	Boring	Sample ID	Parameter	Val Res	VQ	Units
4	A7GA-T-75	A7GA-T-75^RMP	Aroclor-1260	3.9	U	ug/kg
4	A7GA-T-75	A7GA-T-75^RMP	Beryllium	0.92	-	mg/kg
4	A7GA-T-75	A7GA-T-75^RMP	Dieldrin	1.6	U	ug/kg
4	A7GA-T-75	A7GA-T-75^RMP	Radium-226	1.79	-	pCi/g
4	A7GA-T-75	A7GA-T-75^RMP	Radium-228	1.16	-	pCi/g
4	A7GA-T-75	A7GA-T-75^RMP	Thorium-228	1.15	-	pCi/g
4	A7GA-T-75	A7GA-T-75^RMP	Thorium-232	1.16	-	pCi/g
4	A7GA-T-75	A7GA-T-75^RMP	Uranium, Total	5.9	-	mg/kg
5	A7GA-T-2	A7GA-T-2^RMP	Aroclor-1254	13.2	U	ug/kg
5	A7GA-T-2	A7GA-T-2^RMP	Aroclor-1260	13.2	U	ug/kg
5	A7GA-T-2	A7GA-T-2^RMP	Beryllium	0.625	J	mg/kg
5	A7GA-T-2	A7GA-T-2^RMP	Dieldrin	5.3	U	ug/kg
5	A7GA-T-2	A7GA-T-2^RMP	Radium-226	1.5	-	pCi/g
5	A7GA-T-2	A7GA-T-2^RMP	Radium-228	1.16	-	pCi/g
5	A7GA-T-2	A7GA-T-2^RMP	Thorium-228	1.22	-	pCi/g
5	A7GA-T-2	A7GA-T-2^RMP	Thorium-232	1.16	-	pCi/g
5	A7GA-T-2	A7GA-T-2^RMP	Uranium, Total	6.9	-	mg/kg
5	A7GA-T-3	A7GA-T-3^RMP	Aroclor-1254	13.3	U	ug/kg
5	A7GA-T-3	A7GA-T-3^RMP	Aroclor-1260	13.3	U	ug/kg
5	A7GA-T-3	A7GA-T-3^RMP	Beryllium	1.71	J	mg/kg
5	A7GA-T-3	A7GA-T-3^RMP	Dieldrin	5.3	U	ug/kg
5	A7GA-T-3	A7GA-T-3^RMP	Radium-226	1.97	-	pCi/g
5	A7GA-T-3	A7GA-T-3^RMP	Radium-228	1.28	-	pCi/g
5	A7GA-T-3	A7GA-T-3^RMP	Thorium-228	1.26	-	pCi/g
5	A7GA-T-3	A7GA-T-3^RMP	Thorium-232	1.28	-	pCi/g
5	A7GA-T-3	A7GA-T-3^RMP	Uranium, Total	5.92	-	mg/kg
5	A7GA-T-32	A7GA-T-32^RMP	Aroclor-1254	4.2	J	ug/kg
5	A7GA-T-32	A7GA-T-32^RMP	Aroclor-1260	3.6	U	ug/kg
5	A7GA-T-32	A7GA-T-32^RMP	Beryllium	0.42	-	mg/kg
5	A7GA-T-32	A7GA-T-32^RMP	Dieldrin	1.4	U	ug/kg
5	A7GA-T-32	A7GA-T-32^RMP	Radium-226	1.04	-	pCi/g
5	A7GA-T-32	A7GA-T-32^RMP	Radium-228	0.848	J	pCi/g
5	A7GA-T-32	A7GA-T-32^RMP	Thorium-228	0.869	J	pCi/g
5	A7GA-T-32	A7GA-T-32^RMP	Thorium-232	0.848	J	pCi/g
5	A7GA-T-32	A7GA-T-32^RMP	Uranium, Total	21.3	J	mg/kg
5	A7GA-T-57	A7GA-T-57^RMP	Aroclor-1254	3.8	U	ug/kg
5	A7GA-T-57	A7GA-T-57^RMP	Aroclor-1260	3.8	U	ug/kg
5	A7GA-T-57	A7GA-T-57^RMP	Beryllium	0.85	-	mg/kg
5	A7GA-T-57	A7GA-T-57^RMP	Dieldrin	1.5	U	ug/kg
5	A7GA-T-57	A7GA-T-57^RMP	Radium-226	1.07	-	pCi/g
5	A7GA-T-57	A7GA-T-57^RMP	Radium-228	0.938	-	pCi/g
5	A7GA-T-57	A7GA-T-57^RMP	Thorium-228	0.907	-	pCi/g
5	A7GA-T-57	A7GA-T-57^RMP	Thorium-232	0.938	-	pCi/g
5	A7GA-T-57	A7GA-T-57^RMP	Uranium, Total	8.38	-	mg/kg
5	A7GA-T-58	A7GA-T-58^RMP	Aroclor-1254	4.1	U	ug/kg
5	A7GA-T-58	A7GA-T-58^RMP	Aroclor-1260	4.1	U	ug/kg
5	A7GA-T-58	A7GA-T-58^RMP	Beryllium	0.46	-	mg/kg
5	A7GA-T-58	A7GA-T-58^RMP	Dieldrin	1.6	U	ug/kg
5	A7GA-T-58	A7GA-T-58^RMP	Radium-226	0.902	-	pCi/g
5	A7GA-T-58	A7GA-T-58^RMP	Radium-228	0.914	-	pCi/g
5	A7GA-T-58	A7GA-T-58^RMP	Thorium-228	0.898	-	pCi/g
5	A7GA-T-58	A7GA-T-58^RMP	Thorium-232	0.914	-	pCi/g
5	A7GA-T-58	A7GA-T-58^RMP	Uranium, Total	7.83	-	mg/kg
5	A7GA-T-59	A7GA-T-59^RMP	Aroclor-1254	4.2	U	ug/kg
5	A7GA-T-59	A7GA-T-59^RMP	Aroclor-1260	4.2	U	ug/kg
5	A7GA-T-59	A7GA-T-59^RMP	Beryllium	0.26	-	mg/kg

UTILITY SAMPLING RESULTS

CU	Boring	Sample ID	Parameter	Val Res	VQ	Units
5	A7GA-T-59	A7GA-T-59^RMP	Dieldrin	1.7	U	ug/kg
5	A7GA-T-59	A7GA-T-59^RMP	Radium-226	0.689	-	pCi/g
5	A7GA-T-59	A7GA-T-59^RMP	Radium-228	0.54	-	pCi/g
5	A7GA-T-59	A7GA-T-59^RMP	Thorium-228	0.543	-	pCi/g
5	A7GA-T-59	A7GA-T-59^RMP	Thorium-232	0.54	-	pCi/g
5	A7GA-T-59	A7GA-T-59^RMP	Uranium, Total	3.49	-	mg/kg
5	A7GA-T-60	A7GA-T-60^RMP	Aroclor-1254	4	U	ug/kg
5	A7GA-T-60	A7GA-T-60^RMP	Aroclor-1260	4	U	ug/kg
5	A7GA-T-60	A7GA-T-60^RMP	Beryllium	0.53	-	mg/kg
5	A7GA-T-60	A7GA-T-60^RMP	Dieldrin	1.6	U	ug/kg
5	A7GA-T-60	A7GA-T-60^RMP	Radium-226	0.851	-	pCi/g
5	A7GA-T-60	A7GA-T-60^RMP	Radium-228	0.972	-	pCi/g
5	A7GA-T-60	A7GA-T-60^RMP	Thorium-228	0.984	-	pCi/g
5	A7GA-T-60	A7GA-T-60^RMP	Thorium-232	0.972	-	pCi/g
5	A7GA-T-60	A7GA-T-60^RMP	Uranium, Total	6.94	-	mg/kg
5	A7GA-T-66	A7GA-T-66^RMP	Aroclor-1254	3.9	U	ug/kg
5	A7GA-T-66	A7GA-T-66^RMP	Aroclor-1260	3.9	U	ug/kg
5	A7GA-T-66	A7GA-T-66^RMP	Beryllium	0.39	-	mg/kg
5	A7GA-T-66	A7GA-T-66^RMP	Dieldrin	1.5	U	ug/kg
5	A7GA-T-66	A7GA-T-66^RMP	Radium-226	0.849	-	pCi/g
5	A7GA-T-66	A7GA-T-66^RMP	Radium-228	0.635	-	pCi/g
5	A7GA-T-66	A7GA-T-66^RMP	Thorium-228	0.633	-	pCi/g
5	A7GA-T-66	A7GA-T-66^RMP	Thorium-232	0.635	-	pCi/g
5	A7GA-T-66	A7GA-T-66^RMP	Uranium, Total	4.41	-	mg/kg
5	A7GA-T-67	A7GA-T-67^RMP	Aroclor-1254	4	U	ug/kg
5	A7GA-T-67	A7GA-T-67^RMP	Aroclor-1260	4	U	ug/kg
5	A7GA-T-67	A7GA-T-67^RMP	Beryllium	0.55	-	mg/kg
5	A7GA-T-67	A7GA-T-67^RMP	Dieldrin	1.6	U	ug/kg
5	A7GA-T-67	A7GA-T-67^RMP	Radium-226	0.79	-	pCi/g
5	A7GA-T-67	A7GA-T-67^RMP	Radium-228	0.742	-	pCi/g
5	A7GA-T-67	A7GA-T-67^RMP	Thorium-228	0.745	-	pCi/g
5	A7GA-T-67	A7GA-T-67^RMP	Thorium-232	0.742	-	pCi/g
5	A7GA-T-67	A7GA-T-67^RMP	Uranium, Total	3.17	J	mg/kg
5	A7GA-T-68	A7GA-T-68^RMP	Aroclor-1254	4	U	ug/kg
5	A7GA-T-68	A7GA-T-68^RMP	Aroclor-1260	4	U	ug/kg
5	A7GA-T-68	A7GA-T-68^RMP	Beryllium	0.5	-	mg/kg
5	A7GA-T-68	A7GA-T-68^RMP	Dieldrin	1.6	U	ug/kg
5	A7GA-T-68	A7GA-T-68^RMP	Radium-226	0.794	-	pCi/g
5	A7GA-T-68	A7GA-T-68^RMP	Radium-228	0.767	-	pCi/g
5	A7GA-T-68	A7GA-T-68^RMP	Thorium-228	0.769	-	pCi/g
5	A7GA-T-68	A7GA-T-68^RMP	Thorium-232	0.767	-	pCi/g
5	A7GA-T-68	A7GA-T-68^RMP	Uranium, Total	4.57	-	mg/kg
5	A7GA-T-69	A7GA-T-69^RMP	Aroclor-1254	3.9	U	ug/kg
5	A7GA-T-69	A7GA-T-69^RMP	Aroclor-1260	3.9	U	ug/kg
5	A7GA-T-69	A7GA-T-69^RMP	Beryllium	0.38	-	mg/kg
5	A7GA-T-69	A7GA-T-69^RMP	Dieldrin	1.6	U	ug/kg
5	A7GA-T-69	A7GA-T-69^RMP	Radium-226	0.766	-	pCi/g
5	A7GA-T-69	A7GA-T-69^RMP	Radium-228	0.723	-	pCi/g
5	A7GA-T-69	A7GA-T-69^RMP	Thorium-228	0.729	-	pCi/g
5	A7GA-T-69	A7GA-T-69^RMP	Thorium-232	0.723	-	pCi/g
5	A7GA-T-69	A7GA-T-69^RMP	Uranium, Total	2.6	-	mg/kg
5	A7SSP-T-23	A7SSP-T-23^RMP	Aroclor-1254	3.8	U	ug/kg
5	A7SSP-T-23	A7SSP-T-23^RMP	Beryllium	0.237	-	mg/kg
5	A7SSP-T-23	A7SSP-T-23^RMP	Radium-226	0.776	-	pCi/g
5	A7SSP-T-23	A7SSP-T-23^RMP	Radium-228	0.51	-	pCi/g
5	A7SSP-T-23	A7SSP-T-23^RMP	Technetium-99	0.734	U	pCi/g

UTILITY SAMPLING RESULTS

CU	Boring	Sample ID	Parameter	Val Res	VQ	Units
5	A7SSP-T-23	A7SSP-T-23^RMP	Thorium-228	0.505	-	pCi/g
5	A7SSP-T-23	A7SSP-T-23^RMP	Thorium-232	0.51	-	pCi/g
5	A7SSP-T-23	A7SSP-T-23^RMP	Uranium, Total	2.13	J	mg/kg
5	A7SSP-T-24	A7SSP-T-24^RMP	Aroclor-1254	4	U	ug/kg
5	A7SSP-T-24	A7SSP-T-24^RMP	Beryllium	0.462	-	mg/kg
5	A7SSP-T-24	A7SSP-T-24^RMP	Radium-226	0.84	-	pCi/g
5	A7SSP-T-24	A7SSP-T-24^RMP	Radium-228	0.533	-	pCi/g
5	A7SSP-T-24	A7SSP-T-24^RMP	Technetium-99	0.752	U	pCi/g
5	A7SSP-T-24	A7SSP-T-24^RMP	Thorium-228	0.527	-	pCi/g
5	A7SSP-T-24	A7SSP-T-24^RMP	Thorium-232	0.533	-	pCi/g
5	A7SSP-T-24	A7SSP-T-24^RMP	Uranium, Total	3.25	J	mg/kg
5	A7SSP-T-25	A7SSP-T-25^RMP	Aroclor-1254	3.7	U	ug/kg
5	A7SSP-T-25	A7SSP-T-25^RMP	Beryllium	0.241	-	mg/kg
5	A7SSP-T-25	A7SSP-T-25^RMP	Radium-226	0.771	-	pCi/g
5	A7SSP-T-25	A7SSP-T-25^RMP	Radium-228	0.517	-	pCi/g
5	A7SSP-T-25	A7SSP-T-25^RMP	Technetium-99	0.741	U	pCi/g
5	A7SSP-T-25	A7SSP-T-25^RMP	Thorium-228	0.559	-	pCi/g
5	A7SSP-T-25	A7SSP-T-25^RMP	Thorium-232	0.517	-	pCi/g
5	A7SSP-T-25	A7SSP-T-25^RMP	Uranium, Total	2.72	J	mg/kg
5	A7SSP-T-26	A7SSP-T-26^RMP	Aroclor-1254	18	-	ug/kg
5	A7SSP-T-26	A7SSP-T-26^RMP	Beryllium	0.556	-	mg/kg
5	A7SSP-T-26	A7SSP-T-26^RMP	Radium-226	1.07	-	pCi/g
5	A7SSP-T-26	A7SSP-T-26^RMP	Radium-228	0.703	-	pCi/g
5	A7SSP-T-26	A7SSP-T-26^RMP	Technetium-99	0.797	U	pCi/g
5	A7SSP-T-26	A7SSP-T-26^RMP	Thorium-228	0.697	-	pCi/g
5	A7SSP-T-26	A7SSP-T-26^RMP	Thorium-232	0.703	-	pCi/g
5	A7SSP-T-26	A7SSP-T-26^RMP	Uranium, Total	4.15	-	mg/kg
5	A7SSP-T-7	A7SSP-T-7^RMP	Aroclor-1254	11.8	U	ug/kg
5	A7SSP-T-7	A7SSP-T-7^RMP	Beryllium	0.9	-	mg/kg
5	A7SSP-T-7	A7SSP-T-7^RMP	Radium-226	0.983	-	pCi/g
5	A7SSP-T-7	A7SSP-T-7^RMP	Radium-228	0.794	-	pCi/g
5	A7SSP-T-7	A7SSP-T-7^RMP	Technetium-99	1.45	U	pCi/g
5	A7SSP-T-7	A7SSP-T-7^RMP	Thorium-228	0.791	-	pCi/g
5	A7SSP-T-7	A7SSP-T-7^RMP	Thorium-232	0.794	-	pCi/g
5	A7SSP-T-7	A7SSP-T-7^RMP	Uranium, Total	3.56	J	mg/kg
6	A3B4B-T-19	A3B4B-T-19^RMP	Antimony	0.55	J	mg/kg
6	A3B4B-T-19	A3B4B-T-19^RMP	Aroclor-1254	4.1	U	ug/kg
6	A3B4B-T-19	A3B4B-T-19^RMP	Beryllium	0.77	-	mg/kg
6	A3B4B-T-19	A3B4B-T-19^RMP	Cadmium	0.24	J	mg/kg
6	A3B4B-T-19	A3B4B-T-19^RMP	Molybdenum	0.96	J	mg/kg
6	A3B4B-T-19	A3B4B-T-19^RMP	Radium-226	1.05	-	pCi/g
6	A3B4B-T-19	A3B4B-T-19^RMP	Radium-228	0.622	-	pCi/g
6	A3B4B-T-19	A3B4B-T-19^RMP	Silver	0.072	J	mg/kg
6	A3B4B-T-19	A3B4B-T-19^RMP	Technetium-99	1.9	U	pCi/g
6	A3B4B-T-19	A3B4B-T-19^RMP	Thorium-228	0.592	-	pCi/g
6	A3B4B-T-19	A3B4B-T-19^RMP	Thorium-232	0.622	-	pCi/g
6	A3B4B-T-19	A3B4B-T-19^RMP	Uranium, Total	6.48	-	mg/kg
6	A3B4B-T-21	A3B4B-T-21^RMP	Antimony	0.84	J	mg/kg
6	A3B4B-T-21	A3B4B-T-21^RMP	Aroclor-1254	4	U	ug/kg
6	A3B4B-T-21	A3B4B-T-21^RMP	Beryllium	0.47	-	mg/kg
6	A3B4B-T-21	A3B4B-T-21^RMP	Cadmium	0.29	J	mg/kg
6	A3B4B-T-21	A3B4B-T-21^RMP	Molybdenum	0.79	J	mg/kg
6	A3B4B-T-21	A3B4B-T-21^RMP	Radium-226	0.87	-	pCi/g
6	A3B4B-T-21	A3B4B-T-21^RMP	Radium-228	0.756	-	pCi/g
6	A3B4B-T-21	A3B4B-T-21^RMP	Silver	0.053	J	mg/kg
6	A3B4B-T-21	A3B4B-T-21^RMP	Technetium-99	2	U	pCi/g

UTILITY SAMPLING RESULTS

CU	Boring	Sample ID	Parameter	Val Res	VQ	Units
6	A3B4B-T-21	A3B4B-T-21^RMP	Thorium-228	0.731	-	pCi/g
6	A3B4B-T-21	A3B4B-T-21^RMP	Thorium-232	0.756	-	pCi/g
6	A3B4B-T-21	A3B4B-T-21^RMP	Uranium, Total	4.98	-	mg/kg
6	A3B4B-T-22	A3B4B-T-22^RMP	Antimony	2.38	UJ	mg/kg
6	A3B4B-T-22	A3B4B-T-22^RMP	Aroclor-1254	4	U	ug/kg
6	A3B4B-T-22	A3B4B-T-22^RMP	Beryllium	0.74	-	mg/kg
6	A3B4B-T-22	A3B4B-T-22^RMP	Cadmium	0.29	J	mg/kg
6	A3B4B-T-22	A3B4B-T-22^RMP	Molybdenum	1.9	-	mg/kg
6	A3B4B-T-22	A3B4B-T-22^RMP	Radium-226	0.974	-	pCi/g
6	A3B4B-T-22	A3B4B-T-22^RMP	Radium-228	0.949	-	pCi/g
6	A3B4B-T-22	A3B4B-T-22^RMP	Silver	0.054	J	mg/kg
6	A3B4B-T-22	A3B4B-T-22^RMP	Technetium-99	1.87	U	pCi/g
6	A3B4B-T-22	A3B4B-T-22^RMP	Thorium-228	0.944	-	pCi/g
6	A3B4B-T-22	A3B4B-T-22^RMP	Thorium-232	0.949	-	pCi/g
6	A3B4B-T-22	A3B4B-T-22^RMP	Uranium, Total	5.71	-	mg/kg
6	A3B4B-T-24	A3B4B-T-24^RMP	Antimony	0.66	J	mg/kg
6	A3B4B-T-24	A3B4B-T-24^RMP	Aroclor-1254	4	U	ug/kg
6	A3B4B-T-24	A3B4B-T-24^RMP	Beryllium	0.24	-	mg/kg
6	A3B4B-T-24	A3B4B-T-24^RMP	Cadmium	0.14	J	mg/kg
6	A3B4B-T-24	A3B4B-T-24^RMP	Molybdenum	1	-	mg/kg
6	A3B4B-T-24	A3B4B-T-24^RMP	Radium-226	0.777	-	pCi/g
6	A3B4B-T-24	A3B4B-T-24^RMP	Radium-228	0.583	-	pCi/g
6	A3B4B-T-24	A3B4B-T-24^RMP	Silver	0.0475	U	mg/kg
6	A3B4B-T-24	A3B4B-T-24^RMP	Technetium-99	1.98	U	pCi/g
6	A3B4B-T-24	A3B4B-T-24^RMP	Thorium-228	0.595	-	pCi/g
6	A3B4B-T-24	A3B4B-T-24^RMP	Thorium-232	0.583	-	pCi/g
6	A3B4B-T-24	A3B4B-T-24^RMP	Uranium, Total	3.46	-	mg/kg
6	A3B4B-T-27	A3B4B-T-27^RMP	Antimony	0.72	J	mg/kg
6	A3B4B-T-27	A3B4B-T-27^RMP	Aroclor-1254	4.1	U	ug/kg
6	A3B4B-T-27	A3B4B-T-27^RMP	Beryllium	0.45	-	mg/kg
6	A3B4B-T-27	A3B4B-T-27^RMP	Cadmium	0.46	J	mg/kg
6	A3B4B-T-27	A3B4B-T-27^RMP	Molybdenum	2	-	mg/kg
6	A3B4B-T-27	A3B4B-T-27^RMP	Radium-226	0.967	-	pCi/g
6	A3B4B-T-27	A3B4B-T-27^RMP	Radium-228	0.858	-	pCi/g
6	A3B4B-T-27	A3B4B-T-27^RMP	Silver	0.079	J	mg/kg
6	A3B4B-T-27	A3B4B-T-27^RMP	Technetium-99	1.99	U	pCi/g
6	A3B4B-T-27	A3B4B-T-27^RMP	Thorium-228	0.84	-	pCi/g
6	A3B4B-T-27	A3B4B-T-27^RMP	Thorium-232	0.858	-	pCi/g
6	A3B4B-T-27	A3B4B-T-27^RMP	Uranium, Total	3.49	J	mg/kg
6	A3B4B-T-29	A3B4B-T-29^RMP	Antimony	0.491	UJ	mg/kg
6	A3B4B-T-29	A3B4B-T-29^RMP	Aroclor-1254	4.2	U	ug/kg
6	A3B4B-T-29	A3B4B-T-29^RMP	Beryllium	0.43	-	mg/kg
6	A3B4B-T-29	A3B4B-T-29^RMP	Cadmium	0.51	-	mg/kg
6	A3B4B-T-29	A3B4B-T-29^RMP	Molybdenum	2.6	-	mg/kg
6	A3B4B-T-29	A3B4B-T-29^RMP	Radium-226	0.893	-	pCi/g
6	A3B4B-T-29	A3B4B-T-29^RMP	Radium-228	0.828	-	pCi/g
6	A3B4B-T-29	A3B4B-T-29^RMP	Silver	0.072	J	mg/kg
6	A3B4B-T-29	A3B4B-T-29^RMP	Technetium-99	2.05	U	pCi/g
6	A3B4B-T-29	A3B4B-T-29^RMP	Thorium-228	0.819	-	pCi/g
6	A3B4B-T-29	A3B4B-T-29^RMP	Thorium-232	0.828	-	pCi/g
6	A3B4B-T-29	A3B4B-T-29^RMP	Uranium, Total	5.81	-	mg/kg
6	A3B4B-T-31	A3B4B-T-31^RMP	Antimony	0.47	J	mg/kg
6	A3B4B-T-31	A3B4B-T-31^RMP	Aroclor-1254	3.9	U	ug/kg
6	A3B4B-T-31	A3B4B-T-31^RMP	Beryllium	0.37	-	mg/kg
6	A3B4B-T-31	A3B4B-T-31^RMP	Cadmium	0.22	J	mg/kg
6	A3B4B-T-31	A3B4B-T-31^RMP	Molybdenum	0.9	J	mg/kg

UTILITY SAMPLING RESULTS

CU	Boring	Sample ID	Parameter	Val Res	VQ	Units
6	A3B4B-T-31	A3B4B-T-31^RMP	Radium-226	0.701	-	pCi/g
6	A3B4B-T-31	A3B4B-T-31^RMP	Radium-228	0.548	-	pCi/g
6	A3B4B-T-31	A3B4B-T-31^RMP	Silver	0.045	J	mg/kg
6	A3B4B-T-31	A3B4B-T-31^RMP	Technetium-99	1.92	U	pCi/g
6	A3B4B-T-31	A3B4B-T-31^RMP	Thorium-228	0.546	-	pCi/g
6	A3B4B-T-31	A3B4B-T-31^RMP	Thorium-232	0.548	-	pCi/g
6	A3B4B-T-31	A3B4B-T-31^RMP	Uranium, Total	3.14	J	mg/kg
6	A7GA-T-10	A7GA-T-10^RMP	Aroclor-1254	14	U	ug/kg
6	A7GA-T-10	A7GA-T-10^RMP	Aroclor-1260	14	U	ug/kg
6	A7GA-T-10	A7GA-T-10^RMP	Beryllium	0.728	-	mg/kg
6	A7GA-T-10	A7GA-T-10^RMP	Dieldrin	1.9	U	ug/kg
6	A7GA-T-10	A7GA-T-10^RMP	Radium-226	1.61	-	pCi/g
6	A7GA-T-10	A7GA-T-10^RMP	Radium-228	1.03	-	pCi/g
6	A7GA-T-10	A7GA-T-10^RMP	Thorium-228	1.02	-	pCi/g
6	A7GA-T-10	A7GA-T-10^RMP	Thorium-232	1.03	-	pCi/g
6	A7GA-T-10	A7GA-T-10^RMP	Uranium, Total	5.12	-	mg/kg
6	A7GA-T-11	A7GA-T-11^RMP	Aroclor-1254	12.6	U	ug/kg
6	A7GA-T-11	A7GA-T-11^RMP	Aroclor-1260	12.6	U	ug/kg
6	A7GA-T-11	A7GA-T-11^RMP	Beryllium	0.34	-	mg/kg
6	A7GA-T-11	A7GA-T-11^RMP	Dieldrin	1.7	U	ug/kg
6	A7GA-T-11	A7GA-T-11^RMP	Radium-226	1.08	-	pCi/g
6	A7GA-T-11	A7GA-T-11^RMP	Radium-228	0.672	-	pCi/g
6	A7GA-T-11	A7GA-T-11^RMP	Thorium-228	0.722	-	pCi/g
6	A7GA-T-11	A7GA-T-11^RMP	Thorium-232	0.672	-	pCi/g
6	A7GA-T-11	A7GA-T-11^RMP	Uranium, Total	2.2	J	mg/kg
6	A7GA-T-12	A7GA-T-12^RMP	Aroclor-1254	12.9	U	ug/kg
6	A7GA-T-12	A7GA-T-12^RMP	Aroclor-1260	12.9	U	ug/kg
6	A7GA-T-12	A7GA-T-12^RMP	Beryllium	0.624	-	mg/kg
6	A7GA-T-12	A7GA-T-12^RMP	Dieldrin	1.7	U	ug/kg
6	A7GA-T-12	A7GA-T-12^RMP	Radium-226	1.66	-	pCi/g
6	A7GA-T-12	A7GA-T-12^RMP	Radium-228	0.83	-	pCi/g
6	A7GA-T-12	A7GA-T-12^RMP	Thorium-228	0.819	-	pCi/g
6	A7GA-T-12	A7GA-T-12^RMP	Thorium-232	0.83	-	pCi/g
6	A7GA-T-12	A7GA-T-12^RMP	Uranium, Total	6.66	-	mg/kg
6	A7GA-T-24	A7GA-T-24^RMP	Aroclor-1254	377	J	ug/kg
6	A7GA-T-24	A7GA-T-24^RMP	Aroclor-1260	101	J	ug/kg
6	A7GA-T-24	A7GA-T-24^RMP	Beryllium	0.4	-	mg/kg
6	A7GA-T-24	A7GA-T-24^RMP	Dieldrin	1.6	UJ	ug/kg
6	A7GA-T-24	A7GA-T-24^RMP	Radium-226	0.857	-	pCi/g
6	A7GA-T-24	A7GA-T-24^RMP	Radium-228	0.73	-	pCi/g
6	A7GA-T-24	A7GA-T-24^RMP	Thorium-228	0.738	-	pCi/g
6	A7GA-T-24	A7GA-T-24^RMP	Thorium-232	0.73	-	pCi/g
6	A7GA-T-24	A7GA-T-24^RMP	Uranium, Total	6.96	-	mg/kg
6	A7GA-T-25	A7GA-T-25^RMP	Aroclor-1254	4	UJ	ug/kg
6	A7GA-T-25	A7GA-T-25^RMP	Aroclor-1260	4	UJ	ug/kg
6	A7GA-T-25	A7GA-T-25^RMP	Beryllium	0.3	-	mg/kg
6	A7GA-T-25	A7GA-T-25^RMP	Dieldrin	1.6	UJ	ug/kg
6	A7GA-T-25	A7GA-T-25^RMP	Radium-226	1.02	-	pCi/g
6	A7GA-T-25	A7GA-T-25^RMP	Radium-228	0.941	-	pCi/g
6	A7GA-T-25	A7GA-T-25^RMP	Thorium-228	0.945	-	pCi/g
6	A7GA-T-25	A7GA-T-25^RMP	Thorium-232	0.941	-	pCi/g
6	A7GA-T-25	A7GA-T-25^RMP	Uranium, Total	5.34	-	mg/kg
6	A7GA-T-28	A7GA-T-28^RMP	Aroclor-1254	3.9	U	ug/kg
6	A7GA-T-28	A7GA-T-28^RMP	Aroclor-1260	3.9	U	ug/kg
6	A7GA-T-28	A7GA-T-28^RMP	Beryllium	0.47	-	mg/kg
6	A7GA-T-28	A7GA-T-28^RMP	Dieldrin	1.6	U	ug/kg

UTILITY SAMPLING RESULTS

CU	Boring	Sample ID	Parameter	Val Res	VQ	Units
6	A7GA-T-28	A7GA-T-28^RMP	Radium-226	0.736	-	pCi/g
6	A7GA-T-28	A7GA-T-28^RMP	Radium-228	0.713	-	pCi/g
6	A7GA-T-28	A7GA-T-28^RMP	Thorium-228	0.726	-	pCi/g
6	A7GA-T-28	A7GA-T-28^RMP	Thorium-232	0.713	-	pCi/g
6	A7GA-T-28	A7GA-T-28^RMP	Uranium, Total	4.99	-	mg/kg
6	A7GA-T-30	A7GA-T-30^RMP	Aroclor-1254	4	U	ug/kg
6	A7GA-T-30	A7GA-T-30^RMP	Aroclor-1260	4	U	ug/kg
6	A7GA-T-30	A7GA-T-30^RMP	Beryllium	0.38	-	mg/kg
6	A7GA-T-30	A7GA-T-30^RMP	Dieldrin	1.6	U	ug/kg
6	A7GA-T-30	A7GA-T-30^RMP	Radium-226	0.731	-	pCi/g
6	A7GA-T-30	A7GA-T-30^RMP	Radium-228	0.648	-	pCi/g
6	A7GA-T-30	A7GA-T-30^RMP	Thorium-228	0.726	-	pCi/g
6	A7GA-T-30	A7GA-T-30^RMP	Thorium-232	0.648	-	pCi/g
6	A7GA-T-30	A7GA-T-30^RMP	Uranium, Total	6.01	-	mg/kg
6	A7GA-T-43	A7GA-T-43^RMP	Aroclor-1254	3.8	U	ug/kg
6	A7GA-T-43	A7GA-T-43^RMP	Aroclor-1260	3.8	U	ug/kg
6	A7GA-T-43	A7GA-T-43^RMP	Beryllium	0.26	-	mg/kg
6	A7GA-T-43	A7GA-T-43^RMP	Dieldrin	1.5	U	ug/kg
6	A7GA-T-43	A7GA-T-43^RMP	Radium-226	0.594	-	pCi/g
6	A7GA-T-43	A7GA-T-43^RMP	Radium-228	0.538	-	pCi/g
6	A7GA-T-43	A7GA-T-43^RMP	Thorium-228	0.527	-	pCi/g
6	A7GA-T-43	A7GA-T-43^RMP	Thorium-232	0.538	-	pCi/g
6	A7GA-T-43	A7GA-T-43^RMP	Uranium, Total	3.1	J	mg/kg
6	A7GA-T-44	A7GA-T-44^RMP	Aroclor-1254	3.6	U	ug/kg
6	A7GA-T-44	A7GA-T-44^RMP	Aroclor-1260	3.6	U	ug/kg
6	A7GA-T-44	A7GA-T-44^RMP	Beryllium	0.45	-	mg/kg
6	A7GA-T-44	A7GA-T-44^RMP	Dieldrin	1.4	U	ug/kg
6	A7GA-T-44	A7GA-T-44^RMP	Radium-226	0.786	-	pCi/g
6	A7GA-T-44	A7GA-T-44^RMP	Radium-228	0.762	-	pCi/g
6	A7GA-T-44	A7GA-T-44^RMP	Thorium-228	0.772	-	pCi/g
6	A7GA-T-44	A7GA-T-44^RMP	Thorium-232	0.762	-	pCi/g
6	A7GA-T-44	A7GA-T-44^RMP	Uranium, Total	3.7	J	mg/kg
7	A7GA-T-13	A7GA-T-13^RMP	Aroclor-1254	223	-	ug/kg
7	A7GA-T-13	A7GA-T-13^RMP	Aroclor-1260	27.4	J	ug/kg
7	A7GA-T-13	A7GA-T-13^RMP	Beryllium	0.615	-	mg/kg
7	A7GA-T-13	A7GA-T-13^RMP	Dieldrin	1.8	U	ug/kg
7	A7GA-T-13	A7GA-T-13^RMP	Radium-226	10.9	-	pCi/g
7	A7GA-T-13	A7GA-T-13^RMP	Radium-228	0.745	-	pCi/g
7	A7GA-T-13	A7GA-T-13^RMP	Thorium-228	0.721	-	pCi/g
7	A7GA-T-13	A7GA-T-13^RMP	Thorium-232	0.745	-	pCi/g
7	A7GA-T-13	A7GA-T-13^RMP	Uranium, Total	9.72	-	mg/kg
7	A7GA-T-37	A7GA-T-37^R	Radium-226	0.964	-	pCi/g
7	A7GA-T-39	A7GA-T-39^RMP	Aroclor-1254	3.7	U	ug/kg
7	A7GA-T-39	A7GA-T-39^RMP	Aroclor-1260	3.7	U	ug/kg
7	A7GA-T-39	A7GA-T-39^RMP	Beryllium	0.67	-	mg/kg
7	A7GA-T-39	A7GA-T-39^RMP	Dieldrin	1.5	U	ug/kg
7	A7GA-T-39	A7GA-T-39^RMP	Radium-226	1.12	-	pCi/g
7	A7GA-T-39	A7GA-T-39^RMP	Radium-228	1.15	-	pCi/g
7	A7GA-T-39	A7GA-T-39^RMP	Thorium-228	1.17	-	pCi/g
7	A7GA-T-39	A7GA-T-39^RMP	Thorium-232	1.15	-	pCi/g
7	A7GA-T-39	A7GA-T-39^RMP	Uranium, Total	7.88	J	mg/kg
7	A7GA-T-40	A7GA-T-40^RMP	Aroclor-1254	3.8	U	ug/kg
7	A7GA-T-40	A7GA-T-40^RMP	Aroclor-1260	3.8	U	ug/kg
7	A7GA-T-40	A7GA-T-40^RMP	Beryllium	0.45	-	mg/kg
7	A7GA-T-40	A7GA-T-40^RMP	Dieldrin	1.5	U	ug/kg
7	A7GA-T-40	A7GA-T-40^RMP	Radium-226	0.872	-	pCi/g

UTILITY SAMPLING RESULTS

CU	Boring	Sample ID	Parameter	Val Res	VQ	Units
7	A7GA-T-40	A7GA-T-40^RMP	Radium-228	0.778	-	pCi/g
7	A7GA-T-40	A7GA-T-40^RMP	Thorium-228	0.781	-	pCi/g
7	A7GA-T-40	A7GA-T-40^RMP	Thorium-232	0.778	-	pCi/g
7	A7GA-T-40	A7GA-T-40^RMP	Uranium, Total	7	J	mg/kg
7	A7GA-T-41	A7GA-T-41^RMP	Aroclor-1254	4	U	ug/kg
7	A7GA-T-41	A7GA-T-41^RMP	Aroclor-1260	4	U	ug/kg
7	A7GA-T-41	A7GA-T-41^RMP	Beryllium	0.75	-	mg/kg
7	A7GA-T-41	A7GA-T-41^RMP	Dieldrin	1.6	U	ug/kg
7	A7GA-T-41	A7GA-T-41^RMP	Radium-226	0.823	-	pCi/g
7	A7GA-T-41	A7GA-T-41^RMP	Radium-228	0.785	-	pCi/g
7	A7GA-T-41	A7GA-T-41^RMP	Thorium-228	0.77	-	pCi/g
7	A7GA-T-41	A7GA-T-41^RMP	Thorium-232	0.785	-	pCi/g
7	A7GA-T-41	A7GA-T-41^RMP	Uranium, Total	3.87	J	mg/kg
7	A7GA-T-42	A7GA-T-42^RMP	Aroclor-1254	3.9	U	ug/kg
7	A7GA-T-42	A7GA-T-42^RMP	Aroclor-1260	3.9	U	ug/kg
7	A7GA-T-42	A7GA-T-42^RMP	Beryllium	0.27	-	mg/kg
7	A7GA-T-42	A7GA-T-42^RMP	Dieldrin	1.6	U	ug/kg
7	A7GA-T-42	A7GA-T-42^RMP	Radium-226	0.794	-	pCi/g
7	A7GA-T-42	A7GA-T-42^RMP	Radium-228	0.578	-	pCi/g
7	A7GA-T-42	A7GA-T-42^RMP	Thorium-228	0.608	-	pCi/g
7	A7GA-T-42	A7GA-T-42^RMP	Thorium-232	0.578	-	pCi/g
7	A7GA-T-42	A7GA-T-42^RMP	Uranium, Total	2.6	J	mg/kg
7	A7GA-T-47	A7GA-T-47^RMP	Aroclor-1254	4.1	U	ug/kg
7	A7GA-T-47	A7GA-T-47^RMP	Aroclor-1260	4.1	U	ug/kg
7	A7GA-T-47	A7GA-T-47^RMP	Beryllium	0.91	-	mg/kg
7	A7GA-T-47	A7GA-T-47^RMP	Dieldrin	1.6	U	ug/kg
7	A7GA-T-47	A7GA-T-47^RMP	Radium-226	0.945	-	pCi/g
7	A7GA-T-47	A7GA-T-47^RMP	Radium-228	1.04	-	pCi/g
7	A7GA-T-47	A7GA-T-47^RMP	Thorium-228	1.03	-	pCi/g
7	A7GA-T-47	A7GA-T-47^RMP	Thorium-232	1.04	-	pCi/g
7	A7GA-T-47	A7GA-T-47^RMP	Uranium, Total	5.93	-	mg/kg
7	A7GA-T-48	A7GA-T-48^RMP	Aroclor-1254	3.9	U	ug/kg
7	A7GA-T-48	A7GA-T-48^RMP	Aroclor-1260	3.9	U	ug/kg
7	A7GA-T-48	A7GA-T-48^RMP	Beryllium	1	-	mg/kg
7	A7GA-T-48	A7GA-T-48^RMP	Dieldrin	1.6	U	ug/kg
7	A7GA-T-48	A7GA-T-48^RMP	Radium-226	1.09	-	pCi/g
7	A7GA-T-48	A7GA-T-48^RMP	Radium-228	1.2	-	pCi/g
7	A7GA-T-48	A7GA-T-48^RMP	Thorium-228	1.22	-	pCi/g
7	A7GA-T-48	A7GA-T-48^RMP	Thorium-232	1.2	-	pCi/g
7	A7GA-T-48	A7GA-T-48^RMP	Uranium, Total	5.66	-	mg/kg
7	A7GA-T-49	A7GA-T-49^RMP	Aroclor-1254	3.9	U	ug/kg
7	A7GA-T-49	A7GA-T-49^RMP	Aroclor-1260	3.9	U	ug/kg
7	A7GA-T-49	A7GA-T-49^RMP	Beryllium	0.69	-	mg/kg
7	A7GA-T-49	A7GA-T-49^RMP	Dieldrin	1.6	U	ug/kg
7	A7GA-T-49	A7GA-T-49^RMP	Radium-226	0.892	-	pCi/g
7	A7GA-T-49	A7GA-T-49^RMP	Radium-228	0.924	-	pCi/g
7	A7GA-T-49	A7GA-T-49^RMP	Thorium-228	0.93	-	pCi/g
7	A7GA-T-49	A7GA-T-49^RMP	Thorium-232	0.924	-	pCi/g
7	A7GA-T-49	A7GA-T-49^RMP	Uranium, Total	4.21	-	mg/kg
7	A7GA-T-50	A7GA-T-50^RMP	Aroclor-1254	3.7	U	ug/kg
7	A7GA-T-50	A7GA-T-50^RMP	Aroclor-1260	3.7	U	ug/kg
7	A7GA-T-50	A7GA-T-50^RMP	Beryllium	1.5	-	mg/kg
7	A7GA-T-50	A7GA-T-50^RMP	Dieldrin	1.5	U	ug/kg
7	A7GA-T-50	A7GA-T-50^RMP	Radium-226	1.46	-	pCi/g
7	A7GA-T-50	A7GA-T-50^RMP	Radium-228	1.25	-	pCi/g
7	A7GA-T-50	A7GA-T-50^RMP	Thorium-228	1.24	-	pCi/g

UTILITY SAMPLING RESULTS

CU	Boring	Sample ID	Parameter	Val Res	VQ	Units
7	A7GA-T-50	A7GA-T-50^RMP	Thorium-232	1.25	-	pCi/g
7	A7GA-T-50	A7GA-T-50^RMP	Uranium, Total	6	-	mg/kg
7	A7GA-T-51	A7GA-T-51^RMP	Aroclor-1254	3.7	U	ug/kg
7	A7GA-T-51	A7GA-T-51^RMP	Aroclor-1260	3.7	U	ug/kg
7	A7GA-T-51	A7GA-T-51^RMP	Beryllium	1.1	-	mg/kg
7	A7GA-T-51	A7GA-T-51^RMP	Dieldrin	1.5	U	ug/kg
7	A7GA-T-51	A7GA-T-51^RMP	Radium-226	1.06	-	pCi/g
7	A7GA-T-51	A7GA-T-51^RMP	Radium-228	0.934	-	pCi/g
7	A7GA-T-51	A7GA-T-51^RMP	Thorium-228	0.948	-	pCi/g
7	A7GA-T-51	A7GA-T-51^RMP	Thorium-232	0.934	-	pCi/g
7	A7GA-T-51	A7GA-T-51^RMP	Uranium, Total	5.4	-	mg/kg
7	A7GA-T-52	A7GA-T-52^RMP	Aroclor-1254	3.7	U	ug/kg
7	A7GA-T-52	A7GA-T-52^RMP	Aroclor-1260	3.7	U	ug/kg
7	A7GA-T-52	A7GA-T-52^RMP	Beryllium	0.68	-	mg/kg
7	A7GA-T-52	A7GA-T-52^RMP	Dieldrin	1.5	U	ug/kg
7	A7GA-T-52	A7GA-T-52^RMP	Radium-226	0.986	-	pCi/g
7	A7GA-T-52	A7GA-T-52^RMP	Radium-228	0.995	-	pCi/g
7	A7GA-T-52	A7GA-T-52^RMP	Thorium-228	0.979	-	pCi/g
7	A7GA-T-52	A7GA-T-52^RMP	Thorium-232	0.995	-	pCi/g
7	A7GA-T-52	A7GA-T-52^RMP	Uranium, Total	5.53	-	mg/kg
7	A7GA-T-63	A7GA-T-63^RMP	Aroclor-1254	3.9	U	ug/kg
7	A7GA-T-63	A7GA-T-63^RMP	Aroclor-1260	3.9	U	ug/kg
7	A7GA-T-63	A7GA-T-63^RMP	Beryllium	0.73	-	mg/kg
7	A7GA-T-63	A7GA-T-63^RMP	Dieldrin	1.6	U	ug/kg
7	A7GA-T-63	A7GA-T-63^RMP	Radium-226	0.988	-	pCi/g
7	A7GA-T-63	A7GA-T-63^RMP	Radium-228	0.896	-	pCi/g
7	A7GA-T-63	A7GA-T-63^RMP	Thorium-228	0.942	-	pCi/g
7	A7GA-T-63	A7GA-T-63^RMP	Thorium-232	0.896	-	pCi/g
7	A7GA-T-63	A7GA-T-63^RMP	Uranium, Total	4.55	J	mg/kg
7	A7GA-T-64	A7GA-T-64^RMP	Aroclor-1254	4	U	ug/kg
7	A7GA-T-64	A7GA-T-64^RMP	Aroclor-1260	4	U	ug/kg
7	A7GA-T-64	A7GA-T-64^RMP	Beryllium	0.64	-	mg/kg
7	A7GA-T-64	A7GA-T-64^RMP	Dieldrin	1.6	U	ug/kg
7	A7GA-T-64	A7GA-T-64^RMP	Radium-226	0.825	-	pCi/g
7	A7GA-T-64	A7GA-T-64^RMP	Radium-228	0.794	-	pCi/g
7	A7GA-T-64	A7GA-T-64^RMP	Thorium-228	0.798	-	pCi/g
7	A7GA-T-64	A7GA-T-64^RMP	Thorium-232	0.794	-	pCi/g
7	A7GA-T-64	A7GA-T-64^RMP	Uranium, Total	4.4	-	mg/kg
7	A7GA-T-65	A7GA-T-65^RMP	Aroclor-1254	4.1	U	ug/kg
7	A7GA-T-65	A7GA-T-65^RMP	Aroclor-1260	4.1	U	ug/kg
7	A7GA-T-65	A7GA-T-65^RMP	Beryllium	0.68	-	mg/kg
7	A7GA-T-65	A7GA-T-65^RMP	Dieldrin	1.6	U	ug/kg
7	A7GA-T-65	A7GA-T-65^RMP	Radium-226	0.965	-	pCi/g
7	A7GA-T-65	A7GA-T-65^RMP	Radium-228	0.881	-	pCi/g
7	A7GA-T-65	A7GA-T-65^RMP	Thorium-228	0.888	-	pCi/g
7	A7GA-T-65	A7GA-T-65^RMP	Thorium-232	0.881	-	pCi/g
7	A7GA-T-65	A7GA-T-65^RMP	Uranium, Total	5.65	-	mg/kg
7	A7GA-T-82	A7GA-T-82^RMP	Aroclor-1254	3.9	U	ug/kg
7	A7GA-T-82	A7GA-T-82^RMP	Aroclor-1260	3.9	U	ug/kg
7	A7GA-T-82	A7GA-T-82^RMP	Beryllium	0.44	-	mg/kg
7	A7GA-T-82	A7GA-T-82^RMP	Dieldrin	1.6	U	ug/kg
7	A7GA-T-82	A7GA-T-82^RMP	Radium-226	0.72	-	pCi/g
7	A7GA-T-82	A7GA-T-82^RMP	Radium-228	0.634	-	pCi/g
7	A7GA-T-82	A7GA-T-82^RMP	Thorium-228	0.624	-	pCi/g
7	A7GA-T-82	A7GA-T-82^RMP	Thorium-232	0.634	-	pCi/g
7	A7GA-T-82	A7GA-T-82^RMP	Uranium, Total	3.41	J	mg/kg

UTILITY SAMPLING RESULTS

CU	Boring	Sample ID	Parameter	Val Res	VQ	Units
8	4A6-T-68	4A6-T-68^RMP	Aroclor-1254	3.6	U	ug/kg
8	4A6-T-68	4A6-T-68^RMP	Aroclor-1260	3.6	U	ug/kg
8	4A6-T-68	4A6-T-68^RMP	Beryllium	1	-	mg/kg
8	4A6-T-68	4A6-T-68^RMP	Radium-226	1.18	NV	pCi/g
8	4A6-T-68	4A6-T-68^RMP	Radium-228	1.2	NV	pCi/g
8	4A6-T-68	4A6-T-68^RMP	Technetium-99	2.15	UNV	pCi/g
8	4A6-T-68	4A6-T-68^RMP	Thorium-228	1.21	NV	pCi/g
8	4A6-T-68	4A6-T-68^RMP	Thorium-232	1.2	NV	pCi/g
8	4A6-T-68	4A6-T-68^RMP	Uranium, Total	5.55	NV	mg/kg
8	A7GA-T-38	A7GA-T-38^R	Radium-226	1.12	-	pCi/g
8	A7GA-T-45	A7GA-T-45^RMP	Aroclor-1254	3.9	U	ug/kg
8	A7GA-T-45	A7GA-T-45^RMP	Aroclor-1260	3.9	U	ug/kg
8	A7GA-T-45	A7GA-T-45^RMP	Beryllium	0.63	-	mg/kg
8	A7GA-T-45	A7GA-T-45^RMP	Dieldrin	1.6	U	ug/kg
8	A7GA-T-45	A7GA-T-45^RMP	Radium-226	0.807	-	pCi/g
8	A7GA-T-45	A7GA-T-45^RMP	Radium-228	0.715	-	pCi/g
8	A7GA-T-45	A7GA-T-45^RMP	Thorium-228	0.711	-	pCi/g
8	A7GA-T-45	A7GA-T-45^RMP	Thorium-232	0.715	-	pCi/g
8	A7GA-T-45	A7GA-T-45^RMP	Uranium, Total	5.44	-	mg/kg
8	A7GA-T-46	A7GA-T-46^RMP	Aroclor-1254	4.1	U	ug/kg
8	A7GA-T-46	A7GA-T-46^RMP	Aroclor-1260	4.1	U	ug/kg
8	A7GA-T-46	A7GA-T-46^RMP	Beryllium	0.9	-	mg/kg
8	A7GA-T-46	A7GA-T-46^RMP	Dieldrin	1.6	U	ug/kg
8	A7GA-T-46	A7GA-T-46^RMP	Radium-226	0.9	-	pCi/g
8	A7GA-T-46	A7GA-T-46^RMP	Radium-228	0.906	-	pCi/g
8	A7GA-T-46	A7GA-T-46^RMP	Thorium-228	0.915	-	pCi/g
8	A7GA-T-46	A7GA-T-46^RMP	Thorium-232	0.906	-	pCi/g
8	A7GA-T-46	A7GA-T-46^RMP	Uranium, Total	3.65	-	mg/kg
8	A7GA-T-53	A7GA-T-53^RMP	Aroclor-1254	3.8	U	ug/kg
8	A7GA-T-53	A7GA-T-53^RMP	Aroclor-1260	3.8	U	ug/kg
8	A7GA-T-53	A7GA-T-53^RMP	Beryllium	0.6	-	mg/kg
8	A7GA-T-53	A7GA-T-53^RMP	Dieldrin	1.5	U	ug/kg
8	A7GA-T-53	A7GA-T-53^RMP	Radium-226	1.16	J	pCi/g
8	A7GA-T-53	A7GA-T-53^RMP	Radium-228	1.01	-	pCi/g
8	A7GA-T-53	A7GA-T-53^RMP	Thorium-228	1	-	pCi/g
8	A7GA-T-53	A7GA-T-53^RMP	Thorium-232	1.01	-	pCi/g
8	A7GA-T-53	A7GA-T-53^RMP	Uranium, Total	6.45	J	mg/kg
8	A7GA-T-54	A7GA-T-54^RMP	Aroclor-1254	4.3	U	ug/kg
8	A7GA-T-54	A7GA-T-54^RMP	Aroclor-1260	4.3	U	ug/kg
8	A7GA-T-54	A7GA-T-54^RMP	Beryllium	0.84	-	mg/kg
8	A7GA-T-54	A7GA-T-54^RMP	Dieldrin	1.7	U	ug/kg
8	A7GA-T-54	A7GA-T-54^RMP	Radium-226	1.19	J	pCi/g
8	A7GA-T-54	A7GA-T-54^RMP	Radium-228	1.17	-	pCi/g
8	A7GA-T-54	A7GA-T-54^RMP	Thorium-228	1.17	-	pCi/g
8	A7GA-T-54	A7GA-T-54^RMP	Thorium-232	1.17	-	pCi/g
8	A7GA-T-54	A7GA-T-54^RMP	Uranium, Total	5.79	J	mg/kg
8	A7GA-T-55	A7GA-T-55^RMP	Aroclor-1254	4.2	U	ug/kg
8	A7GA-T-55	A7GA-T-55^RMP	Aroclor-1260	4.2	U	ug/kg
8	A7GA-T-55	A7GA-T-55^RMP	Beryllium	0.83	-	mg/kg
8	A7GA-T-55	A7GA-T-55^RMP	Dieldrin	1.7	U	ug/kg
8	A7GA-T-55	A7GA-T-55^RMP	Radium-226	0.883	J	pCi/g
8	A7GA-T-55	A7GA-T-55^RMP	Radium-228	0.92	-	pCi/g
8	A7GA-T-55	A7GA-T-55^RMP	Thorium-228	0.891	-	pCi/g
8	A7GA-T-55	A7GA-T-55^RMP	Thorium-232	0.92	-	pCi/g
8	A7GA-T-55	A7GA-T-55^RMP	Uranium, Total	5	J	mg/kg
8	A7GA-T-56	A7GA-T-56^RMP	Aroclor-1254	4.1	U	ug/kg

UTILITY SAMPLING RESULTS

CU	Boring	Sample ID	Parameter	Val Res	VQ	Units
8	A7GA-T-56	A7GA-T-56^RMP	Aroclor-1260	4.1	U	ug/kg
8	A7GA-T-56	A7GA-T-56^RMP	Beryllium	0.75	-	mg/kg
8	A7GA-T-56	A7GA-T-56^RMP	Dieldrin	1.7	U	ug/kg
8	A7GA-T-56	A7GA-T-56^RMP	Radium-226	1.14	J	pCi/g
8	A7GA-T-56	A7GA-T-56^RMP	Radium-228	0.948	-	pCi/g
8	A7GA-T-56	A7GA-T-56^RMP	Thorium-228	0.926	-	pCi/g
8	A7GA-T-56	A7GA-T-56^RMP	Thorium-232	0.948	-	pCi/g
8	A7GA-T-56	A7GA-T-56^RMP	Uranium, Total	5.09	J	mg/kg
8	A7GA-T-6	A7GA-T-6^RMP	Aroclor-1254	12.1	U	ug/kg
8	A7GA-T-6	A7GA-T-6^RMP	Aroclor-1260	12.1	U	ug/kg
8	A7GA-T-6	A7GA-T-6^RMP	Beryllium	0.92	-	mg/kg
8	A7GA-T-6	A7GA-T-6^RMP	Dieldrin	4.9	U	ug/kg
8	A7GA-T-6	A7GA-T-6^RMP	Radium-226	1.17	-	pCi/g
8	A7GA-T-6	A7GA-T-6^RMP	Radium-228	1.06	-	pCi/g
8	A7GA-T-6	A7GA-T-6^RMP	Thorium-228	1.09	-	pCi/g
8	A7GA-T-6	A7GA-T-6^RMP	Thorium-232	1.06	-	pCi/g
8	A7GA-T-6	A7GA-T-6^RMP	Uranium, Total	8.51	J	mg/kg
8	A7GA-T-7	A7GA-T-7^RMP	Aroclor-1254	12.1	U	ug/kg
8	A7GA-T-7	A7GA-T-7^RMP	Aroclor-1260	12.1	U	ug/kg
8	A7GA-T-7	A7GA-T-7^RMP	Beryllium	0.84	-	mg/kg
8	A7GA-T-7	A7GA-T-7^RMP	Dieldrin	4.8	U	ug/kg
8	A7GA-T-7	A7GA-T-7^RMP	Radium-226	1.1	-	pCi/g
8	A7GA-T-7	A7GA-T-7^RMP	Radium-228	0.928	-	pCi/g
8	A7GA-T-7	A7GA-T-7^RMP	Thorium-228	0.895	-	pCi/g
8	A7GA-T-7	A7GA-T-7^RMP	Thorium-232	0.928	-	pCi/g
8	A7GA-T-7	A7GA-T-7^RMP	Uranium, Total	5.42	J	mg/kg
8	A7GA-T-83	A7GA-T-83^RMP	Aroclor-1254	3.9	U	ug/kg
8	A7GA-T-83	A7GA-T-83^RMP	Aroclor-1260	3.9	U	ug/kg
8	A7GA-T-83	A7GA-T-83^RMP	Beryllium	0.61	-	mg/kg
8	A7GA-T-83	A7GA-T-83^RMP	Dieldrin	1.6	U	ug/kg
8	A7GA-T-83	A7GA-T-83^RMP	Radium-226	0.956	-	pCi/g
8	A7GA-T-83	A7GA-T-83^RMP	Radium-228	0.829	-	pCi/g
8	A7GA-T-83	A7GA-T-83^RMP	Thorium-228	0.839	-	pCi/g
8	A7GA-T-83	A7GA-T-83^RMP	Thorium-232	0.829	-	pCi/g
8	A7GA-T-83	A7GA-T-83^RMP	Uranium, Total	5.4	-	mg/kg
8	A7GA-T-85	A7GA-T-85^RMP	Aroclor-1254	4.1	U	ug/kg
8	A7GA-T-85	A7GA-T-85^RMP	Aroclor-1260	4.1	U	ug/kg
8	A7GA-T-85	A7GA-T-85^RMP	Beryllium	0.92	-	mg/kg
8	A7GA-T-85	A7GA-T-85^RMP	Dieldrin	1.7	U	ug/kg
8	A7GA-T-85	A7GA-T-85^RMP	Radium-226	1.24	-	pCi/g
8	A7GA-T-85	A7GA-T-85^RMP	Radium-228	1.04	-	pCi/g
8	A7GA-T-85	A7GA-T-85^RMP	Thorium-228	1.04	-	pCi/g
8	A7GA-T-85	A7GA-T-85^RMP	Thorium-232	1.04	-	pCi/g
8	A7GA-T-85	A7GA-T-85^RMP	Uranium, Total	5.02	-	mg/kg
8	A7GA-T-86	A7GA-T-86^RMP	Aroclor-1254	4.2	U	ug/kg
8	A7GA-T-86	A7GA-T-86^RMP	Aroclor-1260	4.2	U	ug/kg
8	A7GA-T-86	A7GA-T-86^RMP	Beryllium	0.85	-	mg/kg
8	A7GA-T-86	A7GA-T-86^RMP	Dieldrin	1.7	U	ug/kg
8	A7GA-T-86	A7GA-T-86^RMP	Radium-226	1.03	-	pCi/g
8	A7GA-T-86	A7GA-T-86^RMP	Radium-228	1.17	-	pCi/g
8	A7GA-T-86	A7GA-T-86^RMP	Thorium-228	1.2	-	pCi/g
8	A7GA-T-86	A7GA-T-86^RMP	Thorium-232	1.17	-	pCi/g
8	A7GA-T-86	A7GA-T-86^RMP	Uranium, Total	5.56	-	mg/kg
8	A7GA-T-94	A7GA-T-94^RMP	Aroclor-1254	4.1	U	ug/kg
8	A7GA-T-94	A7GA-T-94^RMP	Aroclor-1260	4.1	U	ug/kg
8	A7GA-T-94	A7GA-T-94^RMP	Beryllium	0.52	-	mg/kg

UTILITY SAMPLING RESULTS

CU	Boring	Sample ID	Parameter	Val Res	VQ	Units
8	A7GA-T-94	A7GA-T-94^RMP	Dieldrin	1.6	U	ug/kg
8	A7GA-T-94	A7GA-T-94^RMP	Radium-226	0.936	-	pCi/g
8	A7GA-T-94	A7GA-T-94^RMP	Radium-228	1.09	-	pCi/g
8	A7GA-T-94	A7GA-T-94^RMP	Thorium-228	1.11	-	pCi/g
8	A7GA-T-94	A7GA-T-94^RMP	Thorium-232	1.09	-	pCi/g
8	A7GA-T-94	A7GA-T-94^RMP	Uranium, Total	5.86	-	mg/kg
8	A7GA-T-96	A7GA-T-96^RMP	Aroclor-1254	3.8	U	ug/kg
8	A7GA-T-96	A7GA-T-96^RMP	Aroclor-1260	3.8	U	ug/kg
8	A7GA-T-96	A7GA-T-96^RMP	Beryllium	1.6	-	mg/kg
8	A7GA-T-96	A7GA-T-96^RMP	Dieldrin	1.5	U	ug/kg
8	A7GA-T-96	A7GA-T-96^RMP	Radium-226	1.56	-	pCi/g
8	A7GA-T-96	A7GA-T-96^RMP	Radium-228	1.23	-	pCi/g
8	A7GA-T-96	A7GA-T-96^RMP	Thorium-228	1.23	-	pCi/g
8	A7GA-T-96	A7GA-T-96^RMP	Thorium-232	1.23	-	pCi/g
8	A7GA-T-96	A7GA-T-96^RMP	Uranium, Total	5.57	-	mg/kg
8	A7GA-T-97	A7GA-T-97^RMP	Aroclor-1254	4	U	ug/kg
8	A7GA-T-97	A7GA-T-97^RMP	Aroclor-1260	4	U	ug/kg
8	A7GA-T-97	A7GA-T-97^RMP	Beryllium	1.1	-	mg/kg
8	A7GA-T-97	A7GA-T-97^RMP	Dieldrin	1.6	U	ug/kg
8	A7GA-T-97	A7GA-T-97^RMP	Radium-226	1.42	-	pCi/g
8	A7GA-T-97	A7GA-T-97^RMP	Radium-228	1.21	-	pCi/g
8	A7GA-T-97	A7GA-T-97^RMP	Thorium-228	1.2	-	pCi/g
8	A7GA-T-97	A7GA-T-97^RMP	Thorium-232	1.21	-	pCi/g
8	A7GA-T-97	A7GA-T-97^RMP	Uranium, Total	6.34	-	mg/kg

APPENDIX B

VARIANCE/FIELD CHANGE NOTICES ASSOCIATED WITH THE AREA 7 MISCELLANEOUS AREAS CERTIFICATION EFFORT

VARIANCE / FIELD CHANGE NOTICE	Significant? (Yes or No): NO	V/F: 20500-PSP-0009-36
WBS NO.: PROJECT/DOCUMENT/ECDC # 20500-PSP-0009 Rev.0		Page: 1 of 3
PROJECT TITLE: Project Specific Plan for Excavation Control And Precertification of Area 7 Silos and General Area		Date: 12/8/05

VARIANCE / FIELD CHANGE NOTICE (Include justification):

This Variance/Field Change Notice (V/FCN) documents the collection of physical soil samples for precertification of the soil beneath the bedding of excavated utilities located in Area 7 Silos Area. Construction will be excavating known utilities; however, the possibility exists that unknown utilities will be uncovered during excavation. All sampling locations will be field located approximately every fifty feet along the bottom of the excavation. All samples will be collected from the bottom of the excavation from the bucket of an excavator (if necessary) after the piping and bedding material has been removed or from paddys created to represent the sample locations. The goal will be to collect samples from the top six inches of soil from the bottom of the excavation. Additionally, if there is evidence of leakage from the piping (e.g. broken, cracked, or disjointed piping, stained or discolored soil), then a biased sample location will be flagged and samples will be collected from the floor and both sidewalls approximately one foot from the floor of the excavation.

The TALs are listed on Attachment 1 and the Sampling and Analytical Requirements are listed on Attachment 2.
dma 12/15/05

The estimated number of sample locations is 50. The sample identifiers from the first location shall be A7GA-T-1^RMP and each additional sample ID will be sequentially numbered (e.g. second sample ID is A7GA-T-2^RMP).

Where:

A7GA = Area 7 General Area
T = trench
1, 2, 3, etc. = Consecutive Sample Numbers (Locations)
R = Radiological analysis; M=Metals; P=Pesticides/PCBs

Field Sketch Required: ~~No~~ Yes. dma 12/15/05
Surveying Required: Yes. ~~Samplers shall contact Surveying when locations are ready to be surveyed.~~ Real-time will survey. dma 12/15/05
Field QC samples required: No
Field validation required: Yes
Analytical data validation required: Yes, VSL D
Data package requirements: ASL D (E)
Data for shipping: Total Uranium = 192 mg/kg from boring A7-SA2-19

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

REQUESTED BY: Denise Arico Date: 12/8/05

X IF REQD	VARIANCE/FCN APPROVAL	DATE	X IF REQD	VARIANCE/FCN APPROVAL	DATE
X	QUALITY ASSURANCE: R. Frisk	12/12/05	X	PROJECT MANAGER: J.D. Chiou	12/9/05
	DATA QUALITY MANAGEMENT		X	CHARACTERIZATION MANAGER: F. Miller	12/9/05
X	ANALYTICAL CUSTOMER SUPPORT: Paul S. McSwiggan	12/13/05		RTIMP Manager	
~~X~~ dma	WAO 12/9/05		X	SAMPLING MANAGER: T. Buhrlage	12/12/05

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:

ATTACHMENT 2

SAMPLING AND ANALYTICAL REQUIREMENTS

TALs	Method	ASL	Matrix	Preserve	Hold Time	TAT	Container[a]	Minimum Mass
Rads/Metals/Pest-PCBs (TALs EIJ)	Gamma Spec	D/E	Solid	Cool 4° C	12 months	Prelim 10 days[b] Final 30 days	Glass with Teflon lined Lid	500 g
	ICP or ICP/MS				6 months	10 days		
	GC				14 days	10 days		

[a] 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.

[b] The full data package for Lead-210, Technetium-99, and Thorium-230 is required in 10 days. Only an EDD is required for the preliminary gamma data.

VARIANCE / FIELD CHANGE NOTICE	Significant? (Yes or No): NO	V/F: 20500-PSP-0009-83
WBS NO.: PROJECT/DOCUMENT/ECDC # 20500-PSP-0009 Rev. 0		Page: 1 of 2
PROJECT TITLE: PSP for the Excavation Control and Precertification of Area 7 Silos and General Area		Date: 4/3/06

VARIANCE / FIELD CHANGE NOTICE (Include justification):

EXCAVATION CONTROL

This V/FCN documents the collection of physical soil samples for precertification of soil beneath the bedding of excavated utilities located in the Area 7 Storm Water Retention Basins Area. Construction will be excavating known utilities; however, the possibility exists that unknown utilities will be uncovered during excavation. All sampling locations will be field located approximately every fifty feet along the bottom of the excavation. All samples will be collected from the bottom of the excavation from the bucket of an excavator (if necessary) after the piping and bedding material has been removed or from paddys created to represent the sample locations. The goal will be to collect samples from the top six inces of soil from the bottom of the excavation. Additionally, if there is evidence of leakage from the piping (e.g., broken, cracked, or disjoined piping, stained or discolored soil), then a biased sample location will be flagged and samples will be collected from the floor of both sidewalls approximately one foot from the floor of the excavation. .

The Sampling and Analytical Requirements and TALs are provided on Attachment 1. The area specific constituents of concern for this sampling effort will be the primary radionuclides (total uranium, radium-226, radium-228, thorium-228, thorium-232 – TAL E), technetium-99 (TAL A), and aroclor-1254 and aroclor-1260 (TAL K).

The first sample ID shall be A7-SA4-T-1^RP, and each additional sample consecutively numbered, where:
A7 = Area 7
SA4 = Subarea 4
T = Trench
1, 2, etc.. = consecutive sample numbers (locations)
RP = radiological and PCB analysis

Field sketch required: Yes
Surveying required: No, will be provided by Real-Time

Justification:
As discussed in Sections 3.5.3 and 3.6 of the Excavation Plan for Area 7 Silos and General Area, due to the depths of the excavations to access the inspection sump and underdrain collection sump/system, the soil will be removed as below-FRL soil. Because the utilities in this area are so deep, it is necessary to backfill the trenches after the utilities have been removed in order to ensure the area is left in a safe condition. Therefore, samples will be collected from the bottom of the excavation prior to backfilling the trenches similarly to the sampling performed during the excavation of the Abandoned Outfall Line. Per Section 1.3 of the PSP, the collection of physical samples will be documented with a V/FCN.

REQUESTED BY: Denise Arico Date: 4/3/06

X IF REQD	VARIANCE/FCN APPROVAL	DATE	X IF REQD	VARIANCE/FCN APPROVAL	DATE
X	QUALITY ASSURANCE: R. Friske	4-5-06	X	PROJECT MANAGER: J.D. Chew	4/3/06
	DATA QUALITY MANAGEMENT		X	CHARACTERIZATION MANAGER: F. Miller	4/3/06
X	ANALYTICAL CUSTOMER SUPPORT: Paul S. McGuigan	4/3/06		RTIMP Manager	
	WAO		X	Sampling Manager: T. Buhrlage for TGB	4/19/06

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

DISTRIBUTION

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

VARIANCE / FIELD CHANGE NOTICE	Significant? (Yes or No): YES	V/F: 20500-PSP-0009-97
WBS NO.: PROJECT/DOCUMENT/ECDC # 20500-PSP-0009 Rev.0		Page: 1 of 3
PROJECT TITLE: Project Specific Plan for Excavation Control And Precertification of Area 7 Silos and General Area		Date: 8/9/06

VARIANCE / FIELD CHANGE NOTICE (Include justification):

This Variance/Field Change Notice (V/FCN) documents the collection of physical soil samples for precertification of the soil beneath an excavated contaminated utility running east to west across the 30/45 parking lot. All sampling locations will be field located approximately every fifty feet along the bottom of the excavation. All samples will be collected from the bottom of the excavation. The goal will be to collect samples from the top six inches of soil from the bottom of the excavation.

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

The estimated number of sample locations is 3. The sample identifiers from the first location shall be the next consecutive number from the utility trench sampling designated in V/FCN 20500-PSP-0009-36.

Where:

A7GA = Area 7 General Area
T = trench
1, 2, 3, etc. = Consecutive Sample Numbers (Locations)
R = Radiological analysis; M=Metals; P=Pesticides/PCBs

Field Sketch Required: No
Surveying Required: Yes. Samplers shall contact Surveying when locations are ready to be surveyed.
Field QC samples required: No
Field validation required: Yes

Justification:
Samples are required to confirm/verify that no above-FRL areas exist for any of the ASCOCs in the trenches areas. Per Section 1.3 of the PSP, the collection of physical sample will be documented with a V/FCN.

REQUESTED BY: Debbie Brennan Date: 8/8/06

X IF REQD	VARIANCE/FCN APPROVAL	DATE	X IF REQD	VARIANCE/FCN APPROVAL	DATE
X	QUALITY ASSURANCE: R. Friske	8-23-06	X	PROJECT MANAGER: T.D. Chiou for J.D. Chiou	10 Aug 06
	DATA QUALITY MANAGEMENT		X	CHARACTERIZATION MANAGER: F. Miller	10 Aug 06
X	ANALYTICAL CUSTOMER SUPPORT: Paul J. McMurgan	8/10/06		RTIMP Manager	
X	WAO	8-5-06	X	SAMPLING MANAGER: T. Bullage	8/10/06

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

DISTRIBUTION

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

ATTACHMENT 2

SAMPLING AND ANALYTICAL REQUIREMENTS

TALs	Method	ASL	Matrix	Preserve	Hold Time	TAT	Container[a]	Minimum Mass
Rads/Metals/Pest-PCBs (TALs EIJ)	Gamma Spec	D/E	Solid	Cool 4° C	12 months	EDD gamma 10 days Final gamma 14 days	Glass with Teflon lined Lid	500 g
	ICP or ICP/MS				6 months	10 days		
	GC				14 days	10 days		

[a] 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.

GC - gas chromatography
ICP/MS - inductively coupled plasma/mass spectrometry

Special Instructions (SPL/Lab):
No field QC will be collected under this V/FCN.
Analytical data validation required: Yes, VSL D
Data package requirements: ASL D (E)
Data for shipping: Total Uranium = 44.4 mg/kg from boring A7MA-C04-6

VARIANCE / FIELD CHANGE NOTICE	Significant? (Yes or No): NO	V/F: 20500-PSP-0010-3
WBS NO.: PROJECT/DOCUMENT/ECDC # 20500-PSP-0010 Rev.A		Page: 1 of 4
PROJECT TITLE: PSP for the Excavation Control of Area 7 Support and Silos Process Area		Date: 9/27/05

VARIANCE / FIELD CHANGE NOTICE (Include justification):

EXCAVATION CONTROL SAMPLING

This Variance/Field Change Notice (V/FCN) documents the collection of grab soil samples from the area south of the CAWWT facility. At each boring location, two samples are to be collected - one sample will be analyzed for the primary rads (TAL D), technetium-99 (TAL A), and beryllium (TAL B); the other sample will be analyzed for aroclor-1254 and aroclor-1260 (TAL E). The Sampling and Analytical Requirements and TALs are shown on Attachment 1. The location of the area to be sampled and all sample locations are shown in Figure 1.

The Sample Locations and Identifiers are provided on Attachment 2. The IDs for the samples collected from the first boring shall be A7E-CAWWT-PC-1^D-RM and A7E-CAWWT-PC-1^D-P, where:
DHB 9/27/05 DHB 9/27/05

A7E = Area 7 Excavation Control/Precertification
CAWWT = Area South of CAWWT
PC = Precertification
1, 2, etc. = Consecutive Sample Numbers (Locations)
RM = radiological and metals analysis
P = PCB analysis
D = Duplicate Sample DHB 9/27/05
Historical data for shipping is 9.0 mg/kg total uranium from boring A7E-CAWWT-SF-5.

Surveying required: Yes, by surveying group
Field QC samples required: Yes
Field data validation: Yes
Analytical data validation: Yes
Off-site data package requirements (if applicable): ASL D

Justification:
Additional soil from this area is required to be excavated in order to construct the CAWWT Backwash Facility. Once all contaminated material has been remediated from this footprint, samples will be collected to confirm that no additional remediation is necessary. Therefore, this area will undergo Precertification activities including physical sampling. This is similar to the approach used in the Area 5 Administration Complex remediation.

REQUESTED BY: Debbie Brennan Date: 9/27/05

X IF REQD	VARIANCE/FCN APPROVAL	DATE	X IF REQD	VARIANCE/FCN APPROVAL	DATE
X	QUALITY ASSURANCE: R. Frisk	9-28-05	X	PROJECT MANAGER: D. Gilley	9/27/05
	DATA QUALITY MANAGEMENT		X	CHARACTERIZATION MANAGER: F. Miller	9/27/05
X	ANALYTICAL CUSTOMER SUPPORT: Paul J. McGregor	9/27/05		RTIMP Manager	
X	WAO Linda Barlow	9/27/05	X	SAMPLING MANAGER: T. Burbridge	9/27/05

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:

SAMPLE LOCATIONS AND IDENTIFIERS				
Boring	Sample ID	Analysis (TAL)	Northing	Easting
A7E-CAWWT-PC-1	A7E-CAWWT-PC-1^RM	ABD	479443.39	1348041.4
	A7E-CAWWT-PC-1^P	E		
A7E-CAWWT-PC-2V	A7E-CAWWT-PC-2^RM	archive	479471.07	1348118.19
	A7E-CAWWT-PC-2^P			
A7E-CAWWT-PC-3	A7E-CAWWT-PC-3^RM	ABD	479393.23	1348034.8
	A7E-CAWWT-PC-3^P	E		
A7E-CAWWT-PC-4D	A7E-CAWWT-PC-4^RM	ABD	479404.38	1348099.58
	A7E-CAWWT-PC-4^P	E		
	A7E-CAWWT-PC-4^RM-D	ABD		
	A7E-CAWWT-PC-4^P-D	E		
A7E-CAWWT-PC-5	A7E-CAWWT-PC-5^RM	ABD	479465.45	1348151.33
	A7E-CAWWT-PC-5^P	E		
A7E-CAWWT-PC-6	A7E-CAWWT-PC-6^RM	ABD	479452.23	1348198.96
	A7E-CAWWT-PC-6^P	E		
A7E-CAWWT-PC-7V	A7E-CAWWT-PC-7^RM	archive	479397.08	1348159
	A7E-CAWWT-PC-7^P			
A7E-CAWWT-PC-8	A7E-CAWWT-PC-8^RM	ABD	479426.57	1348230.1
	A7E-CAWWT-PC-8^P	E		
A7E-CAWWT-PC-9	A7E-CAWWT-PC-9^RM	ABD	479360.82	1348072.92
	A7E-CAWWT-PC-9^P	E		
A7E-CAWWT-PC-10V	A7E-CAWWT-PC-10^RM	archive	479345.73	1348097.39
	A7E-CAWWT-PC-10^P			
A7E-CAWWT-PC-11	A7E-CAWWT-PC-11^RM	ABD	479314.12	1348029.45
	A7E-CAWWT-PC-11^P	E		
A7E-CAWWT-PC-12	A7E-CAWWT-PC-12^RM	ABD	479305.76	1348117.76
	A7E-CAWWT-PC-12^P	E		
A7E-CAWWT-PC-13	A7E-CAWWT-PC-13^RM	ABD	479350.28	1348142.11
	A7E-CAWWT-PC-13^P	E		
A7E-CAWWT-PC-14	A7E-CAWWT-PC-14^RM	ABD	479368.39	1348210.96
	A7E-CAWWT-PC-14^P	E		
A7E-CAWWT-PC-15V	A7E-CAWWT-PC-15^RM	archive	479292.21	1348162.34
	A7E-CAWWT-PC-15^P			
A7E-CAWWT-PC-16	A7E-CAWWT-PC-16^RM	ABD	479310.65	1348205.6
	A7E-CAWWT-PC-16^P	E		

VARIANCE / FIELD CHANGE NOTICE	Significant? (Yes or No): NO	V/F: 20500-PSP-0010-10
WBS NO.: PROJECT/DOCUMENT/ECDC # 20500-PSP-0010 Rev.0		Page: 1 of 4
PROJECT TITLE: PSP for the Excavation Control of Area 7 Support and Silos Process Area		Date: 12/7/05

VARIANCE / FIELD CHANGE NOTICE (Include justification):

EXCAVATION CONTROL SAMPLING

This Variance/Field Change Notice (V/FCN) documents the collection of physical soil samples for precertification of the soil beneath the bedding of excavated utilities located throughout Area 7 Support and Silos Process Area (Figure 1). Contact the WAO representative or construction lead for the locations to be sampled.

Construction will be excavating known utilities; however, the possibility exists that unknown utilities will be uncovered during excavation. All sampling locations will be field located approximately every fifty feet along the bottom of the excavation. All samples will be collected from the bottom of the excavation from the bucket of an excavator (if necessary) after the piping and bedding material has been removed or from paddys created to represent the sample locations. The goal will be to collect samples from the top six inches of soil from the bottom of the excavation. The estimated number of samples is 30.

Additionally, if there is evidence of leakage from the piping (e.g. broken, cracked, or disjointed piping, stained or discolored soil), then a biased sample location will be flagged and samples will be collected from the floor and both sidewalls approximately one foot from the floor of the excavation.

The TALs are listed on Attachment 1 and the sampling and analytical requirements are listed on Attachment 2. The first sample ID will be A7SSP-T-1^RMP and each additional sample ID will be sequentially numbered (e.g. second sample ID will be A7SSP-T-2^RMP).

Where:
A7SSP = Area 7 Support and Silos Process Area
T = trench
1, 2, 3, etc. = Consecutive Sample Numbers (Locations)
R = Radiological analysis; M=Metals; P=Aroclor-1254

Field sketch required: no
Surveying required: Yes. Samplers shall contact Surveying when locations are ready to be surveyed.
Field QC samples required: No
Field data validation: Yes
Analytical data validation: Yes VSL D
Off-site data package requirements (if applicable): ASL D(E)
The highest total uranium result from this area is 574 mg/kg from boring location P34-1.

Justification:
Samples are required to confirm/verity that no above-FRL areas exist for any of the ASCOCs in the trenched areas. Per Section 1.3 of the PSP, the collection of physical sample will be documented with a V/FCN.

REQUESTED BY: Debbie Brennan Date: 12/7/05

X IF REQD	VARIANCE/FCN APPROVAL	DATE	X IF REQD	VARIANCE/FCN APPROVAL	DATE
X	QUALITY ASSURANCE: R. Friske	12/12/05	X	PROJECT MANAGER: J.D. Chiou	12/8/05
	DATA QUALITY MANAGEMENT		X	CHARACTERIZATION MANAGER: F. Miller	12/8/05
X	ANALYTICAL CUSTOMER SUPPORT:	12/13/05		RTIMP Manager	
xdmc	WAO 12/9/05		X	SAMPLING MANAGER: T. Bubloge	12/12/05

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:

ATTACHMENT 1

TAL 20500-PSP-0010-A
Soil Analysis (ASL D/E)

Analyte	WAC	FRL	MDL - Soil
Technetium-99	29.1 pCi/g	30 pCi/g	2.91 pCi/g

TAL 20500-PSP-0010-B
Soil Analysis (ASL D/E)

Component	WAC	FRL	MDL
Beryllium	--------	1.5 mg/kg	0.15 mg/kg

TAL 20500-PSP-0010-D
Soil Analysis (ASL D/E)

Component	WAC	FRL	MDL
Total Uranium	1030 mg/kg	20 mg/kg	2.0 mg/kg
Radium-226	--------	1.7 pCi/g	0.17 pCi/g
Radium-228	--------	1.8 pCi/g	0.18 pCi/g
Thorium-228	--------	1.7 pCi/g	0.17 pCi/g
Thorium-232	--------	1.5 pCi/g	0.15 pCi/g

TAL 20500-PSP-0010-F
Soil Analysis (ASL D/E)

Component	WAC	FRL	MDL
Aroclor-1254	--------	0.13 mg/kg	0.013 mg/kg

VARIANCE/FIELD CHANGE NOTICE LOG FOR THE CERTIFICATION DESIGN LETTER AND CERTIFICATION PROJECT SPECIFIC PLAN FOR AREA 7 MISCELLANEOUS AREAS

Variance No.	Variance Date	Variance Description	Significant? (Y or N)	Date Signed	Date Distributed	EPA/OEPA Approval
Revision A						
20500-PSP-0016-1	8/2/06	Documents the sampling of a hotspot in CU 14 identified by physical sampling prior to excavation.	Y	8/9/06	8/11/06	10/13/06
20500-PSP-0016-2	8/3/06	Documents the sampling of a hotspot in CU14, it's bounding samples, and a random sample location in the same sub-CU.	Y	8/10/06	8/11/06	10/13/06
20500-PSP-0016-3	8/3/06	Documents the collection of samples from a hotspot in CU04 defined by physical sampling.	Y	8/9/06	8/11/06	10/13/06
20500-PSP-0016-4	8/10/06	Documents the collection of samples after excavation from the footprint of a hotspot in CU04.	Y	8/25/06	9/12/06	10/13/06
20500-PSP-0016-5	8/15/06	Documents the collection of soils samples from a hotspot in CU14.	Y	8/23/06	9/12/06	10/13/06
20500-PSP-0016-6	8/17/06	Documents the collection of further bounding samples from a hotspot in CU14.	Y	8/23/06	9/12/06	10/13/06

VARIANCE / FIELD CHANGE NOTICE

Significant? (Yes or No) YES

V/F: 20500-PSP-0016-1

WBS NO.: PROJECT/DOCUMENT/ECDC # 20500-PSP-0016 Rev. A

PROJECT TITLE: Certification Design Letter and Certification Project Specific Plan For Area 7 Miscellaneous Areas

Date: 8/2/06

VARIANCE / FIELD CHANGE NOTICE (Include justification):

This Variance/Field Change Notice (V/FCN) documents the collection of one additional sample at previously sampled certification boring location A7MA-C-14-15D. One sample will be collected from the previously sampled certification boring location A7MA-C-14-15D to confirm/verify the presence or absence of above-FRL conditions in this area. The estimated total number of samples is 1. These samples will be analyzed for radium-226 (TAL I).

See Attachment 1 for the TAL and the Sampling and Analytical Requirements. The Sample Id and its associated location is listed on Attachment 1.

Field sketch required: No
Surveying Required: Yes, Surveyors will survey these sample points prior to sampling.
Field data validation: Yes

Justification:

The original sample result and it's duplicate for this sample location did not agree for radium-226. The real-time scanning results for this area support the result that is the lower of the two results. An additional sample is going to be collected prior to excavation to verify/confirm the presence or absence of the above-FRL area. Per Section 4.3 of the PSP, the changes to the PSP will be documented with a V/FCN.

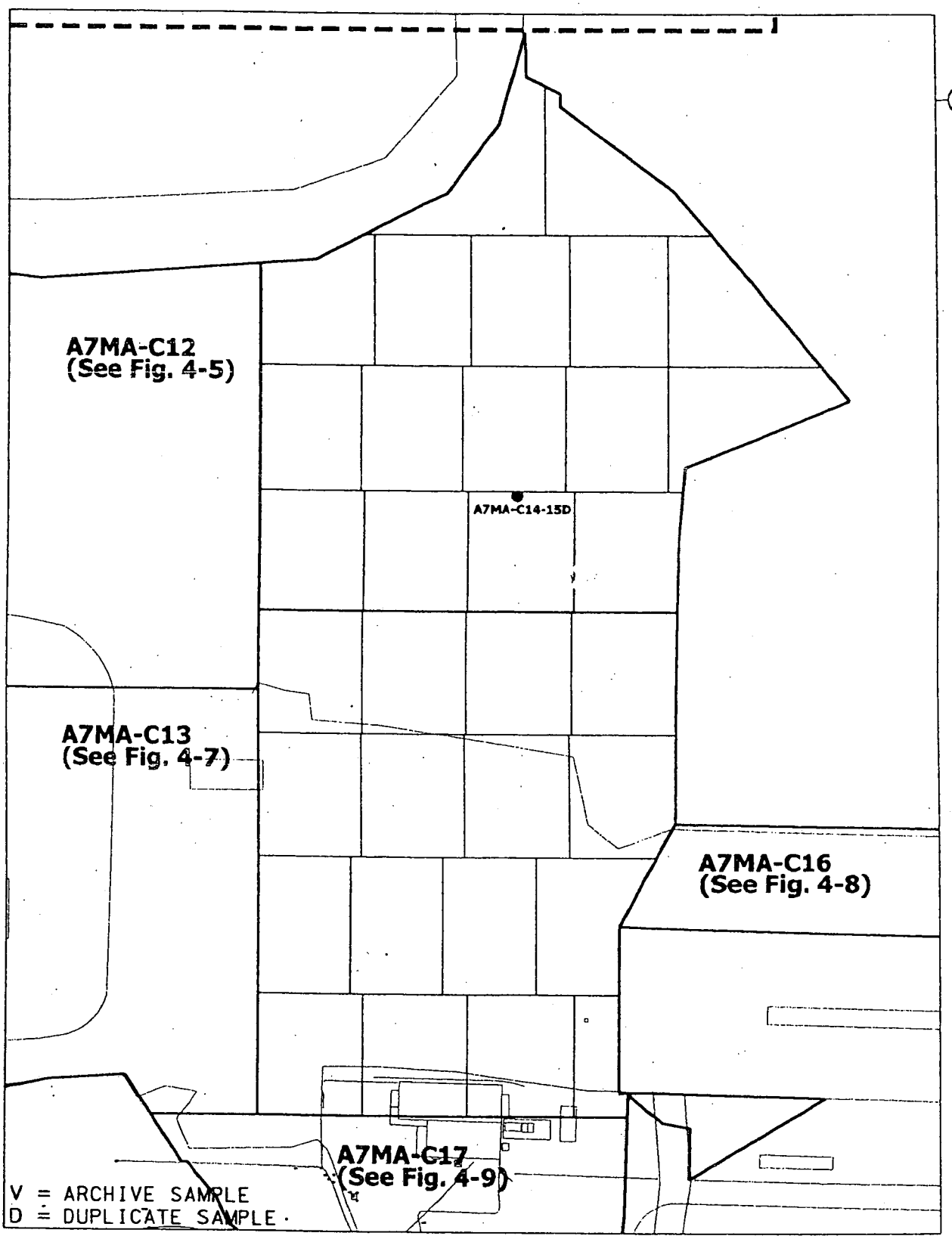
REQUESTED BY: Debbie Brennan — Date: 8/2/06

X IF REQD	VARIANCE/FCN APPROVAL	DATE	X IF REQD	VARIANCE/FCN APPROVAL	DATE
X	QUALITY ASSURANCE: R. Friske	8-9-06	X	PROJECT MANAGER: J.D. Chiou	8/3/06
	DATA QUALITY MANAGEMENT		X	CHARACTERIZATION MANAGER: F. Miller	3/4/06
X	ANALYTICAL CUSTOMER SUPPORT: Paul J. McNaughton	8/3/06		RTIMP Manager	
X	WAD	8-8-06	X	SAMPLING MANAGER: T. Buhrlage	8/7/06

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

DISTRIBUTION

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



LEGEND:

DRAFT

● SAMPLE LOCATION

SCALE

80 40 0 80 FEET

FIGURE 1. AREA 7 MISCELLANEOUS AREAS
SUB CU AND SAMPLE LOCATION MAP FOR CUs 14 & 15

V:\82fm12\dgn\a07mo_100.dgn
STATE PLANAR COORDINATE SYSTEM 1983
02-AUG-2006

VARIANCE / FIELD CHANGE NOTICE

Significant (Yes or No) YES

V/F: 20500-PSP-0016-2

WBS NO.: PROJECT/DOCUMENT/ECDC # 20500-PSP-0016 Rev. A

Page: 1 of 2

PROJECT TITLE: Certification Design Letter and Certification Project Specific Plan For Area 7 Miscellaneous Areas

Date: 8/3/06

VARIANCE / FIELD CHANGE NOTICE (Include justification):

This Variance/Field Change Notice (V/FCN) documents the collection of soil samples at previously sampled certification boring location A7MA-C-14-15D, it's bounding samples, and one sample from within the same sub-CU from a random location.

One sample and one duplicate will be collected from the previously sampled certification boring location A7MA-C-14-15D after excavation to confirm/verify that all above-FRL contaminants have been removed from this area. Additionally, one sample will be collected 5 feet from the original sample in each of the cardinal directions (north, south, east, and west). One sample will also be collected from a random location within the sub-CU. The estimated total number of samples is 7. These samples will be analyzed for radium-226 (TAL I).

See Attachment 1 for the TAL and the Sampling and Analytical Requirements. The Sample Ids and their associated locations are as listed on Attachment 1.

Field sketch required: No
Surveying Required: Yes, Surveyors will survey these sample points prior to sampling.
Field data validation: Yes

Justification:

The original sample result and it's duplicate for this sample location did not agree for radium-226. The real-time scanning results for this area support the result that is the lower of the two results. Samples are going to be collected to confirm/verify that excavation removed any contamination that may have been present in the certification area. Per Section 4.3 of the PSP, the changes to the PSP will be documented with a V/FCN.

REQUESTED BY: Debbie Brennan Date: 8/3/06

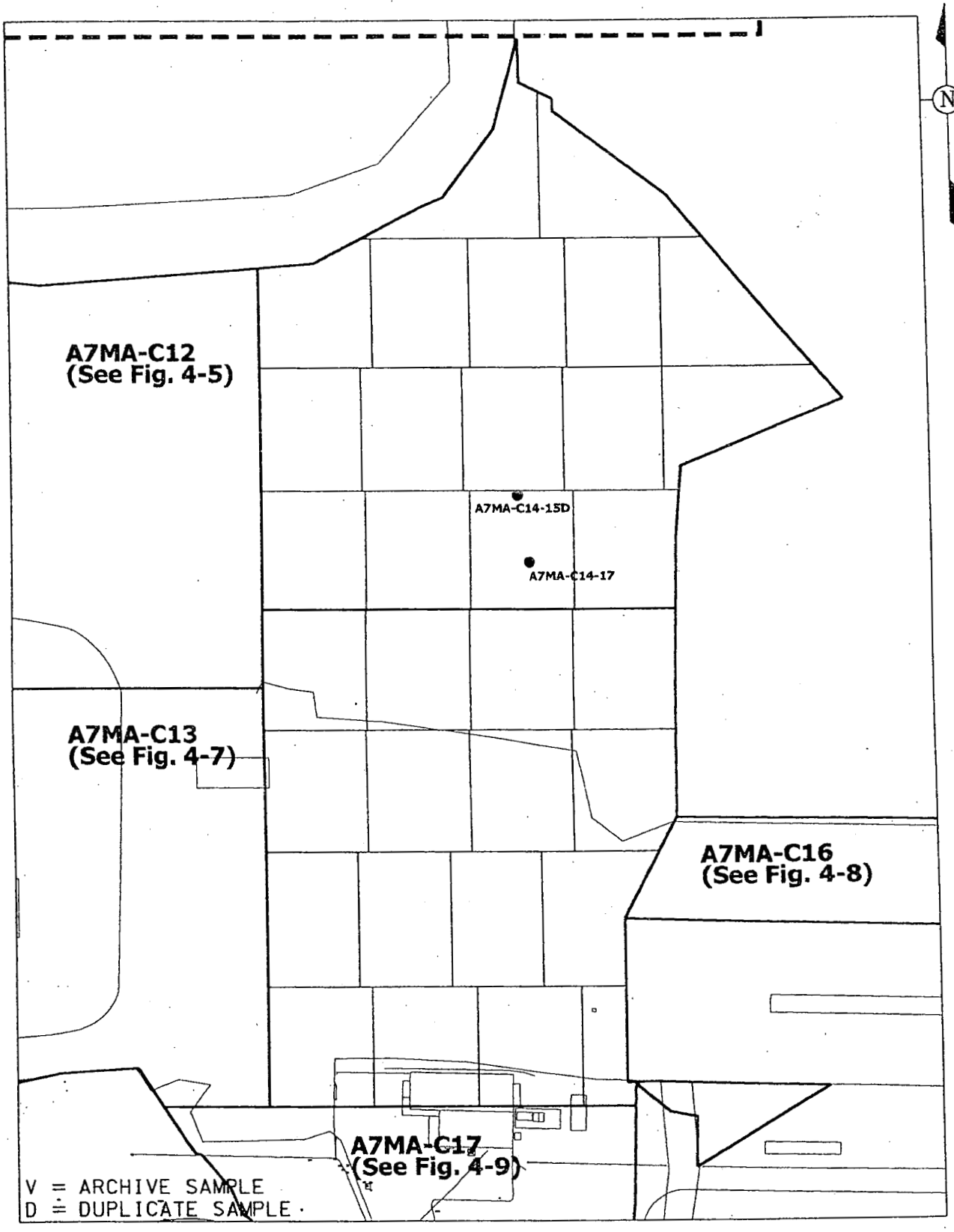
X IF REQD	VARIANCE/FCN APPROVAL	DATE	X IF REQD	VARIANCE/FCN APPROVAL	DATE
X	QUALITY ASSURANCE: R. Friske	8-9-06	X	PROJECT MANAGER: J.D. Chiou	8/3/06
	DATA QUALITY MANAGEMENT		X	CHARACTERIZATION MANAGER: F. Miller	3 Aug 06
X	ANALYTICAL CUSTOMER SUPPORT: Paul J. McGuigan	8/3/06		RTIMP Manager	
X	WAC	8-8-06	X	SAMPLING MANAGER: T. Burlage	8/10/06

VARIANCE/FCN APPROVED [X]YES [ ]NO

REVISION REQUIRED: [ ]YES [x]NO

DISTRIBUTION

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



LEGEND:

● SAMPLE LOCATION

SCALE

80 40 0 80 FEET

DRAFT

FIGURE 1. AREA 7 MISCELLANEOUS AREAS
SUB CU AND SAMPLE LOCATION MAP FOR CUs 14 & 15

STATE PLANAR COORDINATE SYSTEM 1983

02-AUG-2006

~v:#2fmi2#dgn#o7md_100.dgn

VARIANCE / FIELD CHANGE NOTICE

Significant (Yes or No) YES

V/F: 20500-PSP-0016-3

WBS NO.: PROJECT/DOCUMENT/ECDC # 20500-PSP-0016 Rev. A

Page: 1 of 2

PROJECT TITLE: Certification Design Letter and Certification Project Specific Plan For Area 7 Miscellaneous Areas

Date: 8/3/06

VARIANCE / FIELD CHANGE NOTICE (Include justification):

This Variance/Field Change Notice (V/FCN) documents the collection of soil samples at previously sampled certification boring location A7MA-C04-8, it's bounding samples, and one sample from within the same sub-CU from a random location.

One sample will be collected from the previously sampled certification boring location A7MA-C04-8 after excavation to confirm/verify that all above-FRL contaminants have been removed from this area. Additionally, one sample will be collected 5 feet from the original sample in each of the cardinal directions (north, south, east, and west). One sample will also be collected from a random location within the sub-CU. The estimated total number of samples is 6. These samples will be analyzed for radium-226 (TAL I).

Note: Since backfilling has occurred in the area, the random sample location will need to be taken approximately from the elevation of the original sample. Therefore, the target elevation to begin sampling this point is ~570'.

See Attachment 1 for the TAL and the Sampling and Analytical Requirements. The Sample Ids and their associated locations are as listed on Attachment 1.

Field sketch required: No
Surveying Required: Yes, Surveyors will survey sample points prior to sampling. For the random sample location, samplers will need to have current elevation to be able to achieve target depth.
Field data validation: Yes

Justification:

The original sample result was above-FRL radium-226. Samples need to be collected to confirm/verify that excavation removed any contamination that may have been present in the certification area. Per Section 4.3 of the PSP, the changes to the PSP will be documented with a V/FCN.

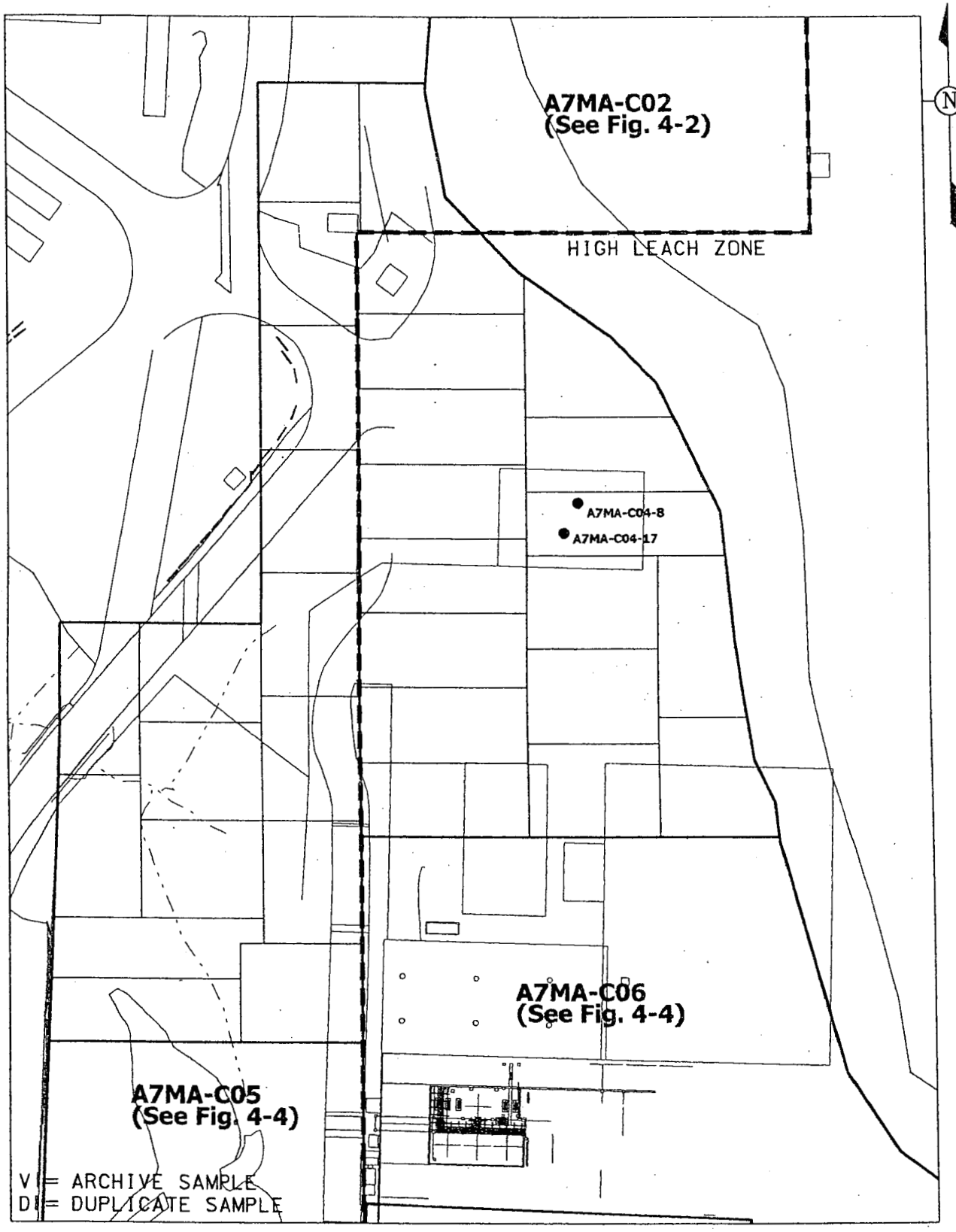
REQUESTED BY: Debbie Brennan — Date: 8/3/06

X IF REQD	VARIANCE/FCN APPROVAL	DATE	X IF REQD	VARIANCE/FCN APPROVAL	DATE
X	QUALITY ASSURANCE: R. Friske	8-9-06	X	PROJECT MANAGER: J.D. Chiou	8/3/06
	DATA QUALITY MANAGEMENT		X	CHARACTERIZATION MANAGER: F. Miller	8/4/06
X	ANALYTICAL CUSTOMER SUPPORT: Paul J. Meturgan	8/4/06		RTIMP Manager	
X	WAC	8-8-06	X	SAMPLING MANAGER: T. Buhrlage	8/7/06

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

DISTRIBUTION

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



LEGEND:

DRAFT

● SAMPLE LOCATION

SCALE

80 40 0 80 FEET

FIGURE 1. AREA 7 MISCELLANEOUS AREAS
SUB CU AND SAMPLE LOCATION MAP FOR CU 4 HOTSPOT

STATE PLANAR COORDINATE SYSTEM 1983

04-AUG-2006

VARIANCE / FIELD CHANGE NOTICE

Significant? (Yes or No) YES

V/F: 20500-PSP-0016-4

WBS NO.: PROJECT/DOCUMENT/ECDC # 20500-PSP-0016 Rev. A

PROJECT TITLE: Certification Design Letter and Certification Project Specific Plan For Area 7 Miscellaneous Areas

Date: 8/10/06

VARIANCE / FIELD CHANGE NOTICE (Include justification):

This Variance/Field Change Notice (V/FCN) documents the collection of soil samples at previously sampled certification boring location A7MA-C04-6, it's bounding samples, and one sample from within the same sub-CU from a random location.

One sample will be collected from the previously sampled certification boring location A7MA-C04-~~4~~ 6 PHB 8/10/06 after excavation to confirm/verify that all above-FRL total uranium contamination has been removed from this area. Additionally, one sample will be collected 5 feet from the original sample in each of the cardinal directions (north, south, east, and west). One sample will also be collected from a random location within the sub-CU. The estimated total number of samples is 6. These samples will be analyzed for total uranium (TAL J).

Note: Since backfilling has occurred in the area, any or all of the sample locations may need to be collected by boring to the targeted elevation. For the random sample location this target elevation is ~574.7'. For the 5 excavated sample locations this target elevation is ~573.7'.

See Attachment 1 for the TAL and the Sampling and Analytical Requirements. The Sample Ids and their associated locations are as listed on Attachment 1.

Field sketch required: No
Surveying Required: Yes, Surveyors will survey sample points prior to sampling. For all sample locations that have been backfilled before sampling can occur, samplers will need to have current elevation to be able to achieve target depth.
Field data validation: Yes

Justification:

The original sample result was above-FRL for total uranium. Samples need to be collected to confirm/verify that excavation removed any contamination that may have been present in the certification area. Per Section 4.3 of the PSP, the changes to the PSP will be documented with a V/FCN.

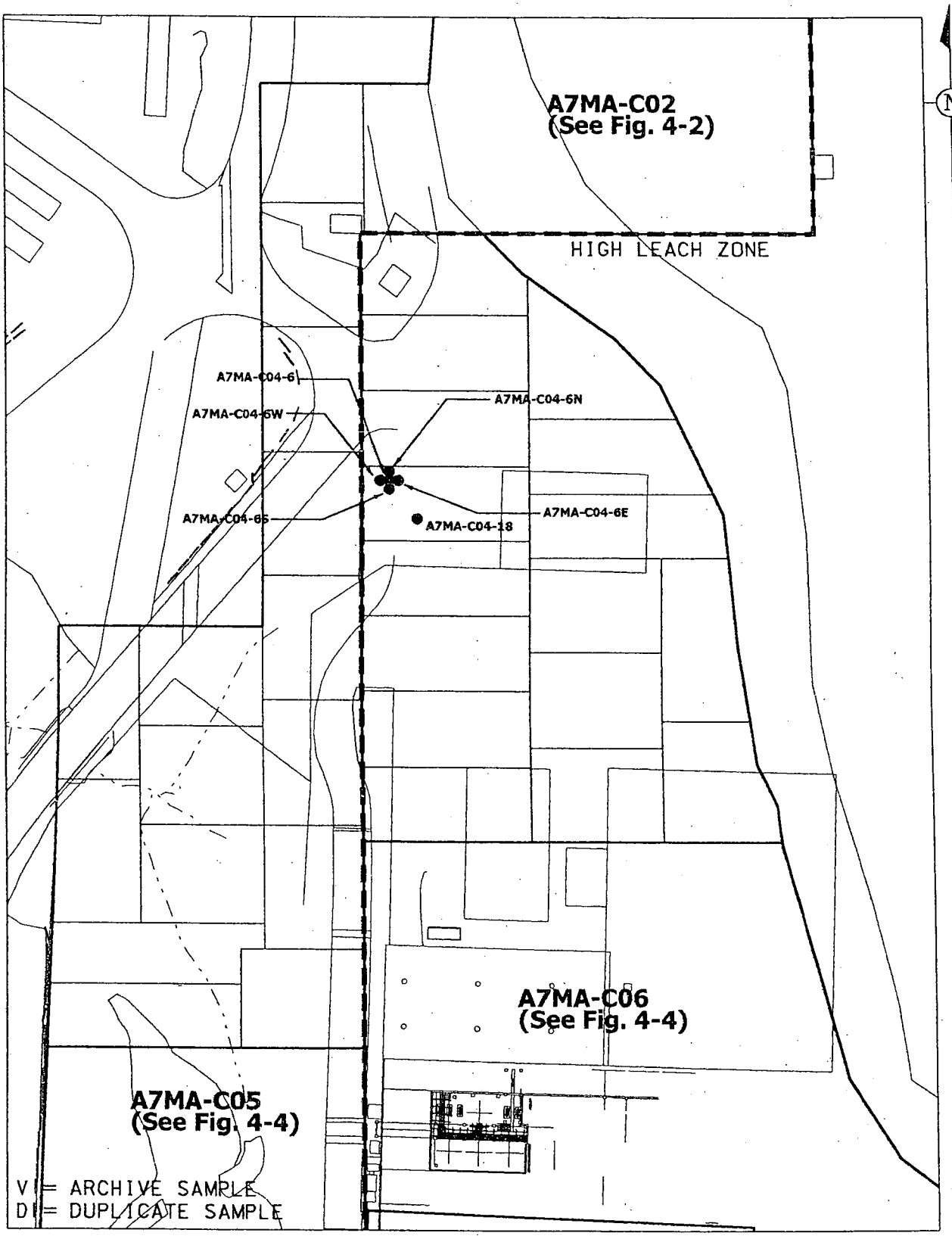
REQUESTED BY: Debbie Brennan Date: 8/10/06

X IF REQD	VARIANCE/FCN APPROVAL	DATE	X IF REQD	VARIANCE/FCN APPROVAL	DATE
X	QUALITY ASSURANCE: R. Friske	8-23-06	X	PROJECT MANAGER: J.D. Chism for Chism	10 Aug 06
	DATA QUALITY MANAGEMENT		X	CHARACTERIZATION MANAGER: R. Aldrich	10 Aug 06
X	ANALYTICAL CUSTOMER SUPPORT: Paul J. McAuliffe	8/14/06		RTIMP Manager	
X	WAO dmd 8/16/06		X	SAMPLING MANAGER: T. Burlage	8/21/06

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

DISTRIBUTION

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



LEGEND:

DRAFT

● SAMPLE LOCATION

SCALE

80 40 0 80 FEET

FIGURE 1. AREA 7 MISCELLANEOUS AREAS
SUB CU AND SAMPLE LOCATION MAP FOR CU 4 HOT SPOT

~V:\62.fml 2\mdgn\a7ma_017.dgn
STATE PLANAR COORDINATE SYSTEM 1983
10-AUG-2006

VARIANCE / FIELD CHANGE NOTICE

Significant? Yes or No? YES

V/F: 20500-PSP-0016-5

WBS NO.: PROJECT/DOCUMENT/ECDC # 20500-PSP-0016 Rev. A

PROJECT TITLE: Certification Design Letter and Certification Project Specific Plan For Area 7 Miscellaneous Areas

Date: 8/15/06

VARIANCE / FIELD CHANGE NOTICE (Include justification):

This Variance/Field Change Notice (V/FCN) documents the collection of soil samples at previously sampled certification boring location A7MA-C-14-15D and it's bounding samples.

One sample and one duplicate will be collected from the previously sampled certification boring location A7MA-C-14-15D after excavation to confirm/verify that all above-FRL contaminants have been removed from this area. Additionally, one sample will be collected 5 feet from the original sample in each of the cardinal directions (north, south, east, and west). The estimated total number of samples is 6. These samples will be analyzed for radium-226 (TAL I).

See Attachment 1 for the TAL and the Sampling and Analytical Requirements. The Sample Ids and their associated locations are as listed on Attachment 1.

Field sketch required: No
Surveying Required: Yes, Surveyors will survey these sample points prior to sampling.
Field data validation: Yes

Justification:

The original sample result and it's duplicate for this sample location did not agree for radium-226. The real-time scanning results for this area support the result that is the lower of the two results. Samples are going to be collected to confirm/verify that excavation removed any contamination that may have been present in the certification area. Per Section 4.3 of the PSP, the changes to the PSP will be documented with a V/FCN.

REQUESTED BY: Debbie Brennan — Date: 8/15/06

X IF REQD	VARIANCE/FCN APPROVAL	DATE	X IF REQD	VARIANCE/FCN APPROVAL	DATE
X	QUALITY ASSURANCE: R. Friske	8-23-06	X	PROJECT MANAGER: J.D. Chio	8/18/06
	DATA QUALITY MANAGEMENT		X	CHARACTERIZATION MANAGER: R. Ambo	8/19/06
X	ANALYTICAL CUSTOMER SUPPORT: Paul J. McMorgan	8/15/06		RTIMP Manager	
X	WAO	9-5-06	X	SAMPLING MANAGER: T. Burlage	8/21/06

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

DISTRIBUTION

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

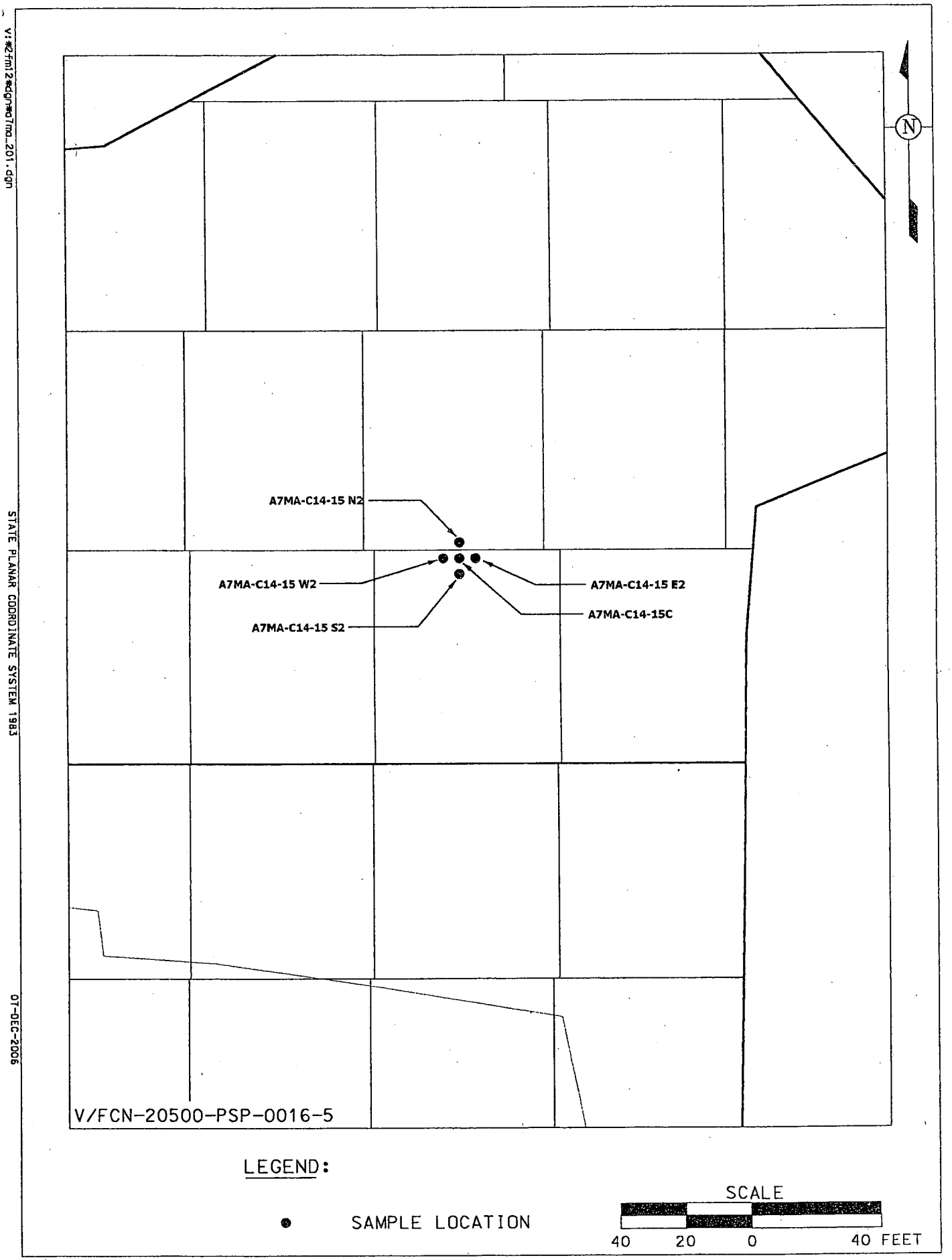


FIGURE 1. AREA 7 MISCELLANEOUS AREAS SUB-CU & BOUNDING LOCATIONS FOR A7MA-C14-15

VARIANCE / FIELD CHANGE NOTICE

Significant (Yes or No): YES

V/F: 20500-PSP-0016-6

WBS NO.: PROJECT/DOCUMENT/ECDC # 20500-PSP-0016 Rev. A

PROJECT TITLE: Certification Design Letter and Certification Project Specific Plan For Area 7 Miscellaneous Areas

Date: 8/17/06

VARIANCE / FIELD CHANGE NOTICE (Include justification):

This Variance/Field Change Notice (V/FCN) documents the collection of soil samples to further bound previously sampled bounding boring location A7MA-C-14-15S.

One sample will be collected 5 feet from the previously sampled bounding boring location A7MA-C-14-15S in 3 of the cardinal directions (south, east, and west) after excavation to confirm/verify that all above-FRL contaminants have been removed from this area. The estimated total number of samples is 3. These samples will be analyzed for radium-226 (TAL I).

See Attachment 1 for the TAL and the Sampling and Analytical Requirements. The Sample Ids and their associated locations are as listed on Attachment 1.

Field sketch required: No
Surveying Required: Yes, Surveyors will survey these sample points prior to sampling.
Field data validation: Yes

Justification:

The bounding sample result for sample location A7MA-C14-15S was greater than 3 times the FRL for radium-226. Samples are going to be collected to confirm/verify that excavation removed any contamination that may have been present in the certification area. Per Section 4.3 of the PSP, the changes to the PSP will be documented with a V/FCN.

REQUESTED BY: Debbie Brennan — Date: 8/17/06

X IF REQD	VARIANCE/FCN APPROVAL	DATE	X IF REQD	VARIANCE/FCN APPROVAL	DATE
X	QUALITY ASSURANCE: R. Friske	8-23-06	X	PROJECT MANAGER: J.D. Chiou	8/30/06
	DATA QUALITY MANAGEMENT		X	CHARACTERIZATION MANAGER: R. Abitz	29 Aug 06
X	ANALYTICAL CUSTOMER SUPPORT: Paul J. McTurgan	8/18/06		RTIMS Manager	
X	WAD	9-5-06	X	SAMPLING MANAGER: T. Bullinge	8/21/06

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

DISTRIBUTION

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

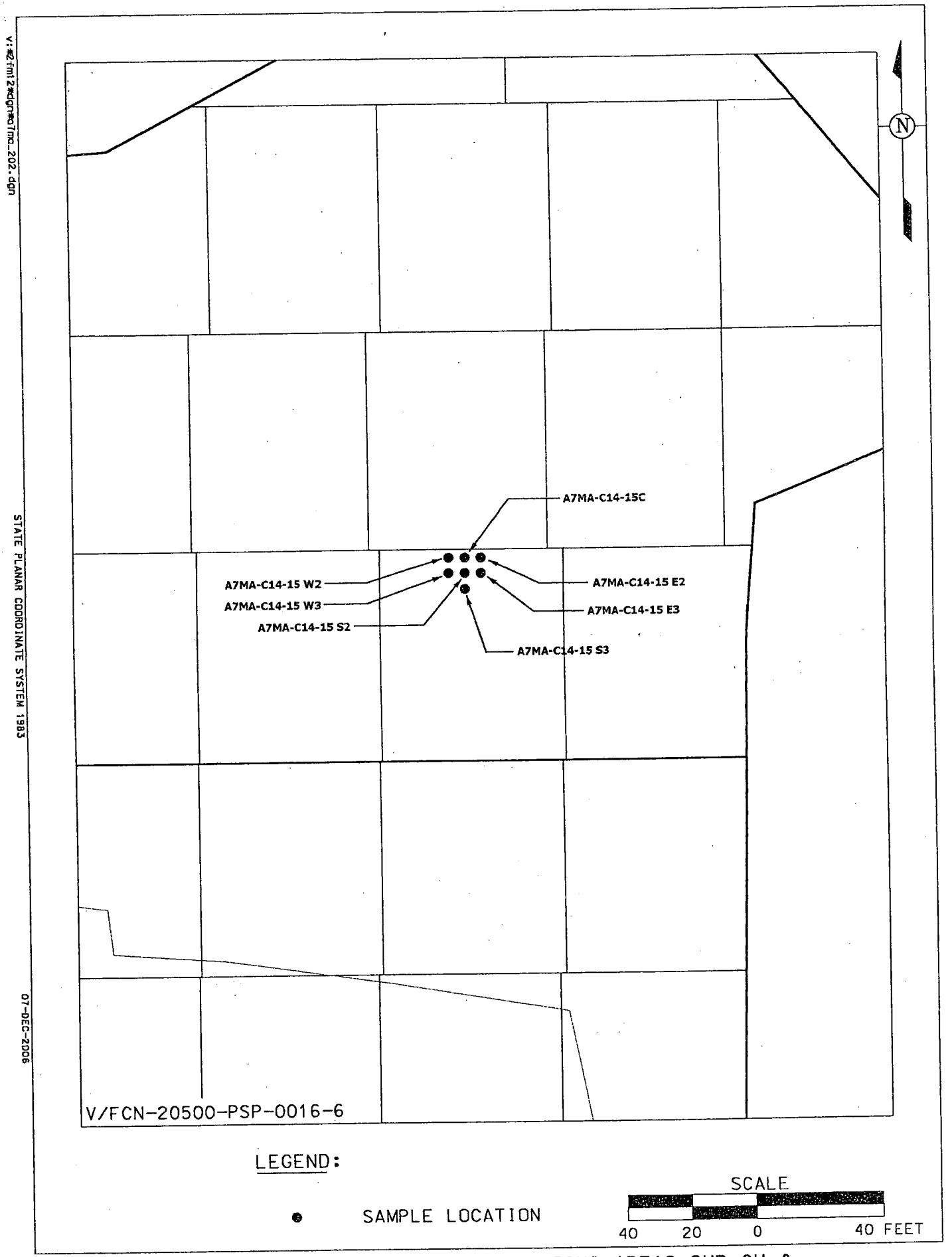


FIGURE 1. AREA 7 MISCELLANEOUS AREAS SUB-CU & BOUNDING LOCATIONS FOR A7MA-C14-15

APPENDIX C

CORRECTION ON 7-DAY RADIUM-226 RESULTS

APPENDIX C
CORRECTION OF 7-DAY RADIUM-226 RESULTS

On July 10, 2006, OEPA approved DOE's July 6, 2006 request to reduce the in-growth period for radon, with the stipulation that additional soil samples would be collected from non-certified areas to verify initial assumptions and finalize the documentation of the process. This attachment to the certification report presents the analytical results for 7- and 21-day in-growth periods for samples collected from non-certified areas, as described in variance 20810-PSP-0004-36.

Figure 1 summarizes the results for 48 samples collected from non-certified areas. A regression of the data ($R^2 = 0.9969$) yields the following equation for the estimate of the 21-day value:

21-day value = 1.053*7-day value – 0.0156

This correction will be applied to 7-day analytical results to yield an estimate of the 21-day result. If statistical calculations are performed in the certification report, the estimate for 21-day results will be used to determine the pass/fail criteria for the certification units.

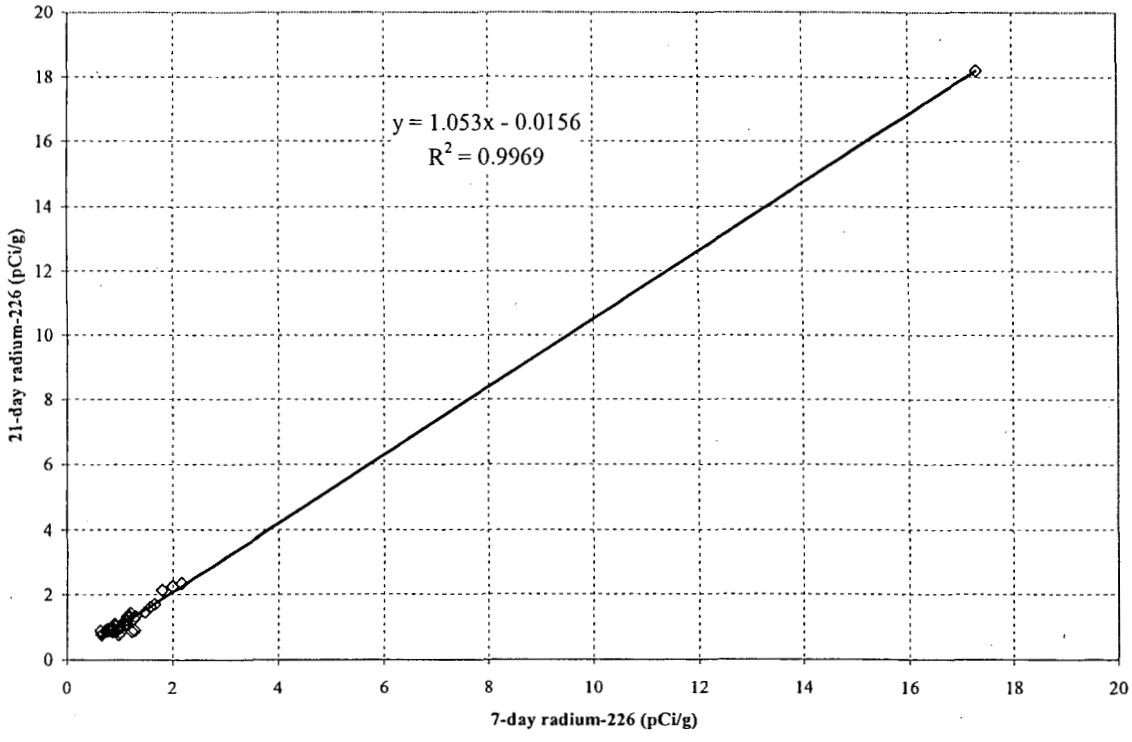


FIGURE 1. Regression analysis of radium-226 data based on 7- and 21-day ingrowth period for radon-222

APPENDIX D

RADIOLOGICAL SURVEY FOR THE SIXTY-INCH PIPE

APPENDIX D

RADIOLOGICAL SURVEY FOR THE SIXTY-INCH PIPE

FEMP COVER SHEET		SURVEY NUMBER 06-08-08-17
DATE 8/23/06	RCT PRINT Dawn Loebker	PAGE 1 of 2
TIME 1330	SIGNATURE Dawn Loebker	BADGE # [redacted]
RWP NUMBER	REVIEWER PRINT Foster	DATE 8/24/06
N/A	SIGNATURE	BADGE # [redacted]

LOCATION: SWRB

REASON FOR SURVEY	Survey on 60' Pipe. N/A

SUMMARY:

N/A

FS-F-4617
REV. 2: 04/01/99, RP-0023

FEMP / RADIOLOGICAL SURVEY REPORT

SURVEY NUMBER: 06-08-08-17 PAGE 2 OF 2

DATE:	RCT PRINT:	RCT SIGNATURE:
8/23/06	Dawn Loekker	Dawn Loekker
DATE REVIEWED:	REVIEWED BY (PRINT):	REVIEWED BY (SIGNATURE):
8/24/06	Foster	[illegible]

[redacted]

MODEL	SERIAL NUMBER	TYPE	CALIBRATION DUE DATE	BKGD (cpm)	EFF %	COUN TIME (min)	MDA (pCi)	PERFORMANCE TEST SATIS. YES	PERFORMANCE TEST SATIS. NO
3	90075	B,γ	2/07	40	30	NA	3K	X	NA
			NA						

ITEM NUMBER	LOCATION AND/OR DESCRIPTION	DPM/100cm² REMOVABLE	DPM/100cm² FIXED	DPM/100cm² REMOVABLE	DPM/100cm² FIXED	CORRECTED DOSE RATE (MREM/HR)			
			REMOVABLE		REMOVABLE				
1	100' Pipe	NA	NA	NA	45K				
			NA				NA		

Note: [illegible]