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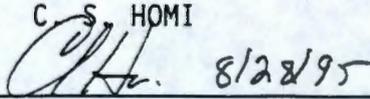
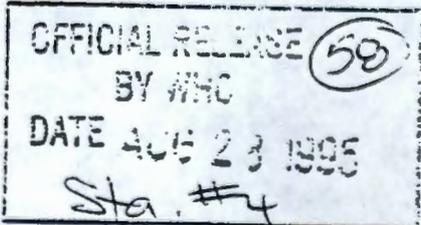


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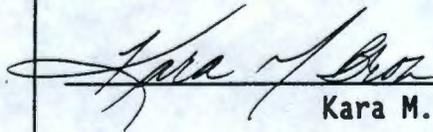
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This document is a plan that identifies the information needed to address relevant issues concerning short-term and long-term safe storage and long-term management of Single-Shell Tank (SST) 241-AN-106.			
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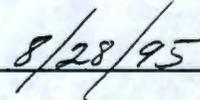
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Revision 0

UC-2070

Tank 241-AN-106 Tank Characterization Plan

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LIST OF ABBREVIATIONS

AN-106	241-AN-106
DQO	Data Quality Objective
DSSF	Double-Shell Slurry Feed
HTCE	Historical Tank Content Estimate
NCPLX	Non-complexed waste
TCP	Tank Characterization Plan
TLM	Tank Layering Model
TOC	Total Organic Carbon
USQ	Unreviewed Safety Question
WHC	Westinghouse Hanford Company

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1.0 INTRODUCTION

This Tank Characterization Plan (TCP) identifies the information needed to address relevant issues concerning short-term and long-term safe storage and long-term management of Double Shell Tank 241-AN-106 (AN-106). It should be understood that the various needs and issues surrounding tank AN-106 are evolving as new information about the tank is uncovered. As a result of this progression, this Tank Characterization Plan addresses only the issues that, to this date, have been identified. It is expected that deviations from this plan may occur as additional issues or needs arise which impact the management of tank AN-106. As necessary, this Tank Characterization Plan will be revised to reflect those changes or deviations.

Tank AN-106 was constructed from 1978 to 1980 and entered into service in September 1981. The tank received non-complexed waste until January 1983. From February 1983 until February 1984, the tank received concentrated customer waste. During the second and third quarters of 1992, AN-106 supernatant was pumped to tank AP-102. AN-106 is currently inactive and is considered a concentrated waste holding tank. Presently, tank AN-106 waste is classified as Double Shell Slurry Feed.

This tank currently contains waste with a total volume of 1,590 kL (420 kgal), which is equivalent to 387.9 centimeters (152.7 inches) of waste as measured from the baseline of the tank. The waste is comprised of 1,525.6 kL (403 kgal) of supernate and 64.4 kL (17 kgal) of concentrated supernate with 1,525.6 kL (403 kgal) of pumpable liquid remaining (Brevick et al). The apparent trend of the evaporation rate from AN-106 has decreased from 419.1 L (110.7 gal) per week in February 1983 to 392.9 L (103.8 gal) per week in January 1995. A review of the psychrometric data suggests a decrease in the rate of heat generation by the waste

At this time sampling data for tank AN-106 is not available. This tank is not on any Watch list. Near-term sampling and analysis activities are focused on either verification of the non-watchlist tank status, identification of any new safety issues or changing the non-Watch List status. Should any safety issues be identified additional analysis will occur consistent with the identified issue.

In addition to the resolution of the safety issues, it is intended that all tank waste will be subject to pretreatment and retrieval to prepare for final storage or disposal. Presently, these long-range plans have yet to be fully identified and are, therefore, not included in this document.

2.0 PROGRAM ELEMENTS REQUIRING INFORMATION FOR TANK 241-AN-106

This section identifies the various program elements, and identifies which of these programs require characterization data from tank AN-106.

2.1 GENERAL SAFETY ISSUES

The *Tank Safety Screening Data Quality Objective* (Redus 1995) describes the sampling and analytical requirements that are used to screen waste tanks for unidentified safety issues. The primary analytical requirements for the safety screening of a tank are energetics, total alpha activity, moisture content, and flammable gas concentration.

2.2 SPECIFIC SAFETY ISSUES

2.2.1 Ferrocyanide

This tank is not on the Ferrocyanide Watch List and; therefore, no information needs are currently identified for this program element.

2.2.2 Organic

This tank is not on the Organic Watch List and; therefore, no information needs are currently identified for this program element.

2.2.3 High Heat

This AN-106 is not listed as High Heat tank and; therefore, no information needs are currently identified for this program element.

2.2.4 Flammable Gas

This tank is not on the Flammable Gas Watch List and; therefore, no information needs are currently identified for this program element.

2.2.5 Vapor

The tanks currently scheduled to be vapor sampled may be classified into four categories: (1) those tanks which are to be rotary mode core sampled (as a consequence of the rotary sampling system); (2) tanks on the Organic or Ferrocyanide Watch Lists; (3) tanks in C farm; and (4) tank BX-104, due to vapor exposure. This tank is not categorized in one of the above four groups, therefore characterization of the tank headspace is not needed.

2.2.6 Criticality

No information separate from that for the general safety issue of tank AN-106 are currently identified for this program element. However, if the general safety screening of tank AN-106 identifies a potential criticality concern, analyses for fissile materials and neutron sorbers and poisons will be performed as identified in the safety screening data quality objective.

2.2.7 Screening Approach Evaluation

The safety screening approach is currently under review. Information is required from key tanks to determine if a revised approach to screening may be adopted, as proposed in Meacham, 1995. Sampling of this tank is required to support the non-Watch List status.

2.3 CONTINUING OPERATIONS

2.3.1 Compatibility/Stabilization

Tank AN-106 waste will be sampled to determine compatibility. Sampling and analysis requirements must be performed as per *Data Quality Objectives for the Waste Compatibility Program* (Fowler 1995). The analyses employed will be for transuranics (TRUs) such as ^{239}Pu and ^{241}Am , Total Organic Content (TOC), heat generation (by determining the amount of ^{90}Sr and ^{137}Cs) and measuring the "pumpability" of the waste (i.e. density, viscosity, percent of volume composed of solids...etc).

2.3.2 Evaporator

No information needs are currently identified for this program element.

2.4 DOUBLE-SHELL TANK WASTE ANALYSIS PLAN

No information needs are currently identified for this program element, although work to identify these needs is in progress and expected to be completed in fiscal year 1995.

2.5 DISPOSAL

2.5.1 Retrieval

Current retrieval needs (Bloom 1995) do not call for test samples to be taken from tank AN-106.

2.5.2 Pretreatment/Vitrification

Long-range planning for pretreatment and disposal needs are currently under development (Kupfer 1995). Short-term data needs do not include tank AN-106.

2.6 HISTORICAL MODEL EVALUATION

Bounding tanks and data requirements for historical model evaluations are found in DQO *Historical Model Evaluation Data Requirements* (Simpson 1995). Tank AN-106 is not identified as a primary bounding tank for historical model evaluations.

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3.0 HOW INFORMATION WILL BE OBTAINED

The safety screening DQO requires that a vertical profile of the tank waste be obtained from at least two widely spaced risers. This vertical profile may be obtained using core, auger (for shallow tanks), or grab samples. A grab sampling has been scheduled for fiscal year 1995. No other sampling is scheduled through fiscal year 1997 (Stanton 1995).

The availability of AN-106 risers, for sampling, has not been determined.

4.0 PRIORITY OF INFORMATION REQUIREMENTS

The grab sampling has been completed for FY 1995. At the present no other sampling is scheduled.

Table 4-1: Integrated DQO Requirements

Sampling Event	Applicable DQO	Sampling Requirements	Analytical Requirements
Grab Sampling	-Compatibility DQO -Safety Screening DQO	3 grab samples Complete 3/10/95	Energetics, Moisture, Major Anions, Cations & Radionuclides, SpG & pH, Separable Organics, Total Alpha

5.0 WHEN INFORMATION IS NEEDED

Data are required for tank AN-106 during FY 1996 for safety screening and to prepare a Tank Characterization Report.

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