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TANK 241B204 PUSH MODE CORE SAMPLING & ANALYSIS
PLAN

COMPLETE

ENGINEERING CHANGE NOTICE

Page 1 of 2

1. ECN No 625727

Proj.
ECN

2. ECN Category (mark one) Supplemental ☐ Direct Revision ☒ Change ECN ☐ Temporary ☐ Standby ☐ Supersedure ☐ Cancel/Void ☐	3. Originator's Name, Organization, MSIN, and Telephone No. Leela Sasaki, Characterization Plans, Coordination and Reports, R2-12, 373-1027		3a. USQ Required? ☐ Yes ☒ No	4. Date 10/11/95
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12. Description of Change This ECN is being generated in order to update/add additional information to the existing document.				
13a. Justification (mark one) Criteria Change ☒ Design Improvement ☐ Environmental ☐ Facility Deactivation ☐ As-Found ☐ Facilitate Const ☐ Const. Error/Omission ☐ Design Error/Omission ☐				
13b. Justification Details This revision incorporated the requirements of the latest revision of the Safety Screening Data Quality Objective (WHC-SD-WM-SP-004, Rev. 2).				
14. Distribution (include name, MSIN, and no. of copies) See attached distribution sheet.			RELEASE STAMP OFFICIAL RELEASE BY WHC DATE OCT 18 1995 <i>Stacy</i>	

ENGINEERING CHANGE NOTICE

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1. ECN (use no. from pg. 1)

ECN-625727

15. Design Verification Required	16. Cost Impact				17. Schedule Impact (days)	
	ENGINEERING		CONSTRUCTION			
☐ Yes	Additional	☐ \$	Additional	☐ \$	Improvement	☐
☒ No	Savings	☐ \$	Savings	☐ \$	Delay	☐

18. Change Impact Review: Indicate the related documents (other than the engineering documents identified on Side 1) that will be affected by the change described in Block 12. Enter the affected document number in Block 19.

SDD/DD	☐	Seismic/Stress Analysis	☐	Tank Calibration Manual	☐
Functional Design Criteria	☐	Stress/Design Report	☐	Health Physics Procedure	☐
Operating Specification	☐	Interface Control Drawing	☐	Spares Multiple Unit Listing	☐
Criticality Specification	☐	Calibration Procedure	☐	Test Procedures/Specification	☐
Conceptual Design Report	☐	Installation Procedure	☐	Component Index	☐
Equipment Spec.	☐	Maintenance Procedure	☐	ASME Coded Item	☐
Const. Spec.	☐	Engineering Procedure	☐	Human Factor Consideration	☐
Procurement Spec.	☐	Operating Instruction	☐	Computer Software	☐
Vendor Information	☐	Operating Procedure	☐	Electric Circuit Schedule	☐
OM Manual	☐	Operational Safety Requirement	☐	ICRS Procedure	☐
FSAR/SAR	☐	IEFD Drawing	☐	Process Control Manual/Plan	☐
Safety Equipment List	☐	Cell Arrangement Drawing	☐	Process Flow Chart	☐
Radiation Work Permit	☐	Essential Material Specification	☐	Purchase Requisition	☐
Environmental Impact Statement	☐	Fac. Proc. Samp. Schedule	☐	Tickler File	☐
Environmental Report	☐	Inspection Plan	☐		☐
Environmental Permit	☐	Inventory Adjustment Request	☐		☐

19. Other Affected Documents: (NOTE: Documents listed below will not be revised by this ECN.) Signatures below indicate that the signing organization has been notified of other affected documents listed below.

Document Number/Revision

Document Number/Revision

Document Number Revision

N/A

20. Approvals

[illegible]

RELEASE AUTHORIZATION

Document Number: WHC-SD-WM-TSAP-005, REV 1

Document Title: Tank 241-B-204 Push Mode Core Sampling and Analysis Plan

Release Date: 10/17/95

**This document was reviewed following the
procedures described in WHC-CM-3-4 and is:**

APPROVED FOR PUBLIC RELEASE

WHC Information Release Administration Specialist:

Kara Broz

10/17/95

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Tank 241-B-204 Push Core Sampling and Analysis Plan

Prepared for the U.S. Department of Energy
Office of Environmental Restoration
and Waste Management

by

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LIST OF ABBREVIATIONS

B-204	Tank 241-B-204
cm	centimeters
DQO	data quality objective
DSC	differential scanning calorimetry
GEA	gamma energy analysis
HPGE/MCA	high purity germanium - multi channel analysis
IC	ion chromatography
ICP	inductively coupled plasma - atomic emission spectroscopy
LiBr	lithium bromide
LFL	Lower Flammability Limit
RSST	reactive system screening tool - adiabatic calorimetry
SAP	Sampling and Analysis Plan
SARP	Safety and Analysis Report for Packaging
TCP	Tank Characterization Plan
TGA	thermogravimetric analysis
TIC	total inorganic carbon
TOC	total organic carbon
WHC	Westinghouse Hanford Company

1.0 SAMPLING AND ANALYSIS OBJECTIVES

This Sampling and Analysis Plan (SAP) will identify characterization objectives pertaining to sample collection, laboratory analytical evaluation, and reporting requirements for two push-mode core samples from tank 241-B-204 (B-204). It is written in accordance with the *Tank Safety Screening Data Quality Objective* (Dukelow et al. 1995). This data quality objective (DQO) is described in the Tank Characterization Plan (TCP) for tank 241-B-204 (B-204). This SAP will also identify procedures and requirements for collecting and characterizing samples from tank B-204 by the push core sampling method.

2.0 SAMPLING EVENT REQUIREMENTS

As of July 31, 1995, tank B-204 contained 189,000 liters (50,000 gallons) of noncomplexed waste corresponding to a waste depth of 656 cm (258 inches). The tank contents were comprised of 185,000 liters (49,000 gallons) of sludge with 3,800 liters (1,000 gallon) of supernate and no pumpable liquid remaining (Hanlon 1995).

Prior to core sampling, the dome space (below the riser) shall be sampled and analyzed for the presence of flammable gases. The sample shall be taken from within the dome space and the data reported as a percentage of the LFL. The results shall be submitted to the project coordinator within one week of the sampling event. If the limits are above 25% of the LFL when analyzing by gas chromatography/mass spectrometer (GC/MS) or gas-specific monitoring gauges, or above 10% of the LFL when analyzing with a combustible gas meter, the necessity for recurring sampling for flammable gas concentration and the frequency of such sampling will be determined by the Flammable Gas Program.

Tank B-204 is currently scheduled to be core sampled using a push-mode core sampling truck. At least two samples are expected to be taken from risers 2 and 7. If a different riser is necessary to meet sampling and analysis requirements, this change must be recorded and approved by the cognizant engineer before sampling. The risers used may be recorded on a permanent data sheet or recorded directly in the work package.

Fourteen segments per core are expected to be taken from tank B-204. Segment 1 is expected to be 28 cm (11 inches) in depth. Segments 2 through 14 should each be 48 cm (19 inches) in depth. The sampling objective is to obtain a vertical profile of the waste; therefore, more or less segments may need to be taken depending on the accuracy of the current waste volume records. For detailed information regarding the sampling activities, refer to work package ES-95-00555. This document contains the operating procedures and the chain-of-custody records for this sampling event.

One field blank for tank B-204 shall be obtained by filling a sampler with deionized water. This field blank is to accompany the samples to the laboratory hot cell. All collected samples and the field blank shall be shipped to the laboratory following the *Load/Transport Sample Cask(s)* procedure (TO-080-090). Core samples shall be transported to the laboratory

within three calendar days from the time each segment is removed from the tank.

Occasionally, lithium bromide (LiBr) solution may be used to aid in the collection of the core samples. If LiBr solution is used, Sampling Operations must state this in the chain-of-custody form that accompanies the sample to the laboratory, and must provide a LiBr solution blank to the laboratory. The LiBr solution blank shall consist of a container filled with LiBr solution from the same batch of LiBr solution used during the sampling. This blank shall be analyzed for lithium and bromide in order to determine the concentration of the tracer at the time the core was taken. Only one LiBr solution blank per tank is required in addition to the field/trip blank.

3.0 LABORATORY ANALYSIS REQUIREMENTS

3.1 ANALYSIS SCHEME

In order to comply with the safety screening DQO, the following steps shall be performed on each sample:

- ▶ Extrude segments
- ▶ Analyze drainable liquids and half-segment subsamples from each segment from each core as shown in Table 1.
- ▶ Filter liquids prior to analysis.
- ▶ Archive at least 10 mL of each subsegment or drainable liquid from each segment.

As a precautionary measure, the Safety and Analysis Report for Packaging (SARP) in the *Load/Transport Sample Cask(s)* procedure (TO-080-090) has been reviewed for any safety issues involved with transportation of tank B-204 core samples. For core samples from tank B-204, the shipping container must be vented every 47 days to release any accumulated gas.

Opportunistic analyses as defined in Kristofzski (1995a) will be included at the discretion of the project coordinator when the laboratory is not operating at maximum capacity.

Any decisions, observations, or deviations made to this work plan or during the sample breakdown and analyses shall be documented in writing with justification. These decisions and observations shall also be reported in the data report. The reporting formats for analyses are contained in Table 1.

3.2 SPECIFIC METHODS AND ANALYSES

The analyses in Table 1 to be performed on tank B-204 core samples are based on the safety screening DQO referenced in Section 1.0. The laboratory procedure numbers, which shall be used for the analyses, are included in the table.

WHC-SD-WM-TSAP-005, REV. 1

Table 1: B-204 Chemical, Radiological and Physical Analytical Requirements

SOLID ANALYSES																
Project Name	B-204 Push Mode Core Sample				COMMENTS				REPORTING LEVELS							
Plan Number	WHC-SD-WM-TSAP-005, REV. 1				Homogenization Test - Per Laboratory Discretion				FORMAT I							
PROGRAM	PROGRAM CONTACTS				Field Blank - Required				FORMAT II							
A. Safety Screening Rev 2	Safety Screening E. J. Lipke				Hot Cell Blank - Per Laboratory Discretion				FORMAT III							
TWRS	L. M. Sasaki				Lithium Bromide Solution Blank - Required				FORMAT IV							
					TANK				FORMAT V							
					B-204				FORMAT VI							
					2				Special							
PROGRAM	PRIMARY ANALYSES					PREP ²	QUALITY CONTROL ³					CRITERIA			FOR-MAT	
	METHOD	ANAL.	WHC PROCEDURE	½ SEG SLDG	½ SEG SC		DUP	SPK/ MSD	BLK	CALIB STD	PR	AC	UNITS	NOTIFICATION LIMIT ⁴		EXPECTED RANGE ⁴
A	DSC	Energy	LA-514-113	X	X	d	ea smpl	N/A	N/A	ea AB	±10	90-110	J/g ⁵	≥ 480	unknown	I, III, IV
A	TGA	% H ₂ O	LA-560-112	X	X	d	ea smpl	N/A	N/A	ea AB	±10	90-110	wt%	none	unknown	III, IV
A	α counting	Total Alpha	LA-508-101	X ¹³	X ¹³	f or a	ea smpl	1/mtr ⁹	ea PB	ea AB	±10	90-110	μCi/g	> 41	unknown	I, III, IV
A	Gravimetry	bulk density	LO-160-103	X	X	d	N/A	N/A	N/A	ea AB	±10	90-110	g/mL	none	unknown	III, IV
A	IC	Br	LA-533-105	X	X	w	ea smpl	1/mtr ⁹	ea AB	ea AB	±15	85-115	μg/mL	none	unknown	III, IV
A	ICP	Li	LA-505-151	X	X	f or a	ea smpl	see ⁸	ea PB	ea AB	±15	85-115	μg/g	none	unknown	III, IV
PROGRAM	SECONDARY ANALYSES					PREP ²	QUALITY CONTROL ³					CRITERIA			FOR-MAT	
	METHOD	ANAL.	WHC PROCEDURE	½ SEG SLDG	½ SEG SC		DUP	SPK/ MSD	BLK	CALIB STD	PR	AC	UNITS	NOTIFICATION LIMIT ⁴		EXPECTED RANGE ⁴
A	RSS ¹⁰	Energy	see ¹⁰	X	X	d	N/A	N/A	N/A	ea AB	±20	80-120	J/g ⁵	none	unknown	III, IV
A	α counting ¹¹	23840 Pu	LA-503-156	X ¹³	X ¹³	f	ea smpl	1/mtr ⁹	ea PB	ea AB	±20	80-120	μCi/g	none	unknown	III, IV
A	ICP ¹¹	Al, Cr, Fe, Mn, Na, Ni, Si, U	LA-505-151	X ¹³	X ¹³	f	ea smpl	see ⁸	ea PB	ea AB	±15	85-115	μg/g	none	unknown	III, IV
A	Fluorimetry	U, total	LA-925-009	X ¹³	X ¹³	f	ea smpl	1/mtr ⁹	ea PB	ea AB	±10	90-110	μg/g	none	unknown	III, IV
A	Persulfate ¹²	TOC	LA-344-100	X	X	d	ea smpl	1/mtr ⁹	ea AB	ea AB	±10	90-110	μg C/g	> 30,000	unknown	I, III, IV
A	Distillation ⁷	CN	LA-695-102	X	X	d	ea smpl	1/mtr ⁹	ea AB	ea AB	±20	80-120	μg/g	> 39,000	unknown	I, III, IV

¹ 1/2 SEG SLDG-1/2 segment, sludge, 1/2 SEG SC-1/2 segment, saltcake;

² d-direct, fusion dissolution, a-acid dissolution, w-water dissolution

³ PR-precision, AC-accuracy, ea-each, smpl-sample, DUP-duplicate, SPK/MSD-spike and matrix spike duplicate, AB-analytical batch, PB-preparation blank, N/A-not applicable, mtrx-matrix, CL-control limit

⁴ Except as noted, units for notification limits and expected range are those listed in the "units" column.

⁵ Dry weight basis.

⁶ Direct liquid samples may be diluted in acid or water to adjust to proper sample size and/or pH.

⁷ This analyses required if TOC by persulfate is less than 3 wt%.

⁸ Tracer or carrier may be used in place of a spike and results corrected for recovery.

⁹ Either serial dilutions or matrix spikes will be performed.

¹⁰ RSST performed only if DSC exceeds notification limit. The RSST method, yet to be proceduralized, may be found in WHC-SD-WM-TF-104.

¹¹ Perform if total alpha exceeds notification limit.

¹² Perform this analysis if the DSC limit is exceeded.

¹³ Analyze only the bottom half segment of each segment extruded.

Table 1: B-204 Chemical, Radiological and Physical Analytical Requirements

LIQUID ANALYSES															
Project Name		B-204 Push Mode Core Sample				COMMENTS						REPORTING LEVELS			
Plan Number		WHC-SD-WM-TSAP-005, REV. 1				Homogenization Test - Per Laboratory Discretion Field Blank - Required Hot Cell Blank - Per Laboratory Discretion Lithium Bromide Solution Blank - Required						FORMAT I		Early Notify	
PROGRAM		PROGRAM CONTACTS										FORMAT II		Process Control	
A. Safety Screening Rev 2		Safety Screening		E.J. Lipke								FORMAT III		Safety Screen	
		TWRS		L. M. Sasaki								FORMAT IV		Waste Management	
						TANK		#CORES				FORMAT V		RCRA Compliance	
						B-204		2				FORMAT VI		Special	
PROGRAM	PRIMARY ANALYSES				PREP ²	QUALITY CONTROL ³						CRITERIA			FOR-MAT
	METHOD	ANAL.	WHC PROCEDURE	FB & S-LEV LIQ			DUP	SPK/MSD	BLK	CALIB STD	PR	AC	UNITS	NOTIFICATION LIMIT ⁴	
A	DSC	Energy	LA-514-113	X	d	ea smpl	N/A	N/A	ea AB	±10	90-110	J/g ⁵	≥ 480	unknown	I, III, IV
A	TGA	% H ₂ O	LA-560-112	X	d	ea smpl	N/A	N/A	ea AB	±10	90-110	wt%	none	unknown	III, IV
A	α counting	Total Alpha	LA-508-101	X	d	ea smpl	1/mtrx	ea PB	ea AB	±10	90-110	μCi/g	> 41	unknown	I, III, IV
A	Specific Gravity	density	LA-510-112	X	d	ea smpl	N/A	N/A	ea AB	±20	80-120	g/mL	none	unknown	III, IV
A	ICP	Li	LA-505-151	X	d ⁶	ea smpl	1/mtrx	ea PB	ea AB	±10	90-110	μg/mL	none	unknown	III, IV
A	IC	Br	LA-533-105	X	d ⁶	ea smpl	1/mtrx	ea AB	ea AB	±20	80-120	μg/mL	none	unknown	III, IV
A	Visual	Organic	LA-519-151	X	d	N/A	N/A	N/A	N/A	N/A	N/A	N/A	presence	unknown	I, III, IV
	SECONDARY ANALYSES				PREP ²	QUALITY CONTROL ³						CRITERIA			FOR-MAT
PROGRAM	METHOD	ANAL.	WHC PROCEDURE	FB & S-LEV LIQ		DUP	SPK/MSD	BLK	CALIB STD	PR	AC	UNITS	NOTIFICATION LIMIT ⁴	EXPECTED RANGE ⁴	
A	Distillation ⁷	CN	LA-695-102	X	d	ea smpl	1/mtrx	ea AB	ea AB	±20	80-120	μg/mL	> 39,000 ¹¹	unknown	I, III, IV
A	ICP ¹¹	Al, Cr, Fe, Mn, Na, Ni, Si, U	LA-505-151	X	f	ea smpl	see ⁹	ea PB	ea AB	±15	85-115	μg/mL	none	unknown	III, IV
A	Fluorimetry	U, total	LA-925-009	X	f	ea smpl	1/mtrx	ea PB	ea AB	±10	90-110	μg/mL	none	unknown	III, IV
A	Persulfate ¹²	TOC	LA-344-100	X	d	ea smpl	1/mtrx	ea AB	ea AB	±20	80-120	μg C/mL	> 30,000 ¹¹	unknown	I, III, IV
A	RSST ¹⁰	Energy	see ¹⁰	X	d	N/A	N/A	N/A	ea AB	±20	80-120	J/g ⁵	none	unknown	III, IV

¹ S-LEV LIQ-liquid taken from the segment level, FB- field blank² d-direct, f-fusion dissolution, a-acid dissolution, w-water dissolution³ PR-precision, AC-accuracy, ea-each, smpl-sample, DUP-duplicate, SPK/MSD-spike and matrix spike duplicate, AB-analytical batch, PB-preparation blank, N/A-not applicable, mtrx-matrix⁴ Except as noted, units for notification limits and expected range are those listed in the "units" column.⁵ Dry weight basis.⁶ Direct liquid samples may be diluted in acid or water to adjust to proper sample size and/or pH.⁷ This analyses required if TOC by persulfate is less than 3 wt%.⁸ Tracer or carrier may be used in place of a spike and results corrected for recovery.⁹ Either serial dilutions or matrix spikes will be performed.¹⁰ RSST performed only if DSC exceeds notification limit. The RSST method, yet to be proceduralized, may be found in WHC-SD-WM-TP-104.¹¹ Corrected from weight basis to volumetric basis assuming a liquid density of 1.0 g/mL.¹² Perform this analysis if the DSC limit is exceeded.

3.3 INSUFFICIENT SEGMENT RECOVERY

If the amount of material recovered from samples taken from a tank is insufficient to perform the analyses requested in the respective SAP and permit a minimum 10 mL archive per sample, the laboratory shall notify the Tank Cognizant Engineer within one working day. At that time, a prioritization of the analyses maybe provided to the laboratories. Any analyses prescribed by the SAP, but not performed, shall be identified in the appropriate data report with justification for non-performance.

4.0 QUALITY ASSURANCE CONTROL

4.1 LABORATORY OPERATIONS

Laboratories performing analysis in support of this Tank Sampling and Analysis Plan shall have approved and implemented quality assurance project plans. These QA plans shall meet the *Hanford Analytical Services Quality Assurance Plan* (DOE 1995) minimum requirements as the baseline for laboratory quality systems. Quality requirements for conducting Characterization Project sampling and analysis are described in *TWRS Characterization Program Quality Assurance Program Plan* (Whelan 1994), *Fiscal Year 1995 Tank Waste Remediation System Tank Waste Analysis Plan* (Haller 1994), and in this SAP. Characterization Project sampling and analysis shall be conducted in conformance with these quality assurance requirements.

Sample quality control (duplicates, spikes, standards) are identified in Table 1. If no criteria are provided, the performing laboratory shall perform to its quality assurance plan.

4.2 SAMPLE COLLECTION

Before sampling can be performed on a tank, available risers must be identified for use in the sampling event. The selected risers must be inspected and prepared to confirm their ability to be used in sampling. Safety hazards must be identified and special precautions must be made if needed. If deemed necessary by the sampling and tank cognizant engineers, video surveillance should be performed to identify any potential problems that may occur during the sampling event.

Samples are to be taken from a tank and shipped to the performing laboratory by Sampling Operations in accordance with the respective work package. That work package shall also initiate the chain-of-custody for the samples. Approved procedure T0-080-090 ("Load/Transport Sample Cask(s)") is to be used during the sampling event. Samples shall be identified by a unique number before being shipped to the performing laboratory. The sampling team is responsible for documenting any problems and procedural changes affecting the validity of the sample in a field notebook. Sampling Operations shall enter this information in the comment section of the chain-of-custody form for addition to the data reports.

Sampling Operations should transport each sample collected to the performing laboratory within one working day of removing the sample from the

tank, but must transport each segment or sample within three calendar days. Sampling Operations is responsible for verbally notifying the WHC 222-S Laboratory (373-2435) at least 24 hours in advance of an expected shipment.

4.3 SAMPLE CUSTODY

The chain-of-custody form is initiated by the sampling team as described in the work package. Samples are shipped in a cask and sealed with a Waste Tank Sample Seal.

WASTE TANK SAMPLE SEAL	
Supervisor:	Sample No.:
Date of Sampling:	Time of Sampling:
Shipment No.:	Serial No.:

The sealed and labeled samples are shipped to the laboratory along with the chain-of-custody form. The receipt and control of samples in the WHC 222-S Laboratory are described in laboratory procedure LO-090-101.

5.0 EXCEPTIONS, CLARIFICATIONS, AND ASSUMPTIONS

5.1 EXCEPTIONS TO DQO REQUIREMENTS

In the safety screening DQO (Dukelow et al. 1995), total cyanide analysis is requested as a secondary analyte on a quarter-segment level. However, it is not possible to change an already prepared homogenized half-segment to a quarter-segment. Therefore, after discussions with the Safety Screening Program, it has been decided that cyanide would be run on half-segments in correlation with all other analyses requested by the safety screening DQO.

5.2 CLARIFICATIONS AND ASSUMPTIONS

A number of clarifications and assumptions relating to the notification limits or decision thresholds identified in the applicable DQO efforts need to be made with respect to the analyses in Table 1. Each of these issues is discussed below:

- Any exothermic reaction (in cal/g or J/g) determined by differential scanning calorimetry (DSC) must be reported on a dry weight basis as shown in equation (1) using the weight percent water determined from thermogravimetric analysis (TGA).

$$\text{Exotherm (dry wt)} = \frac{[\text{exotherm (wet wt)} \times 100]}{(100 - \% \text{ water})}$$

NOTE: A large error in the DSC value may result when converting samples containing greater than 90 percent water to a dry weight basis. However, this conversion is still required.

- The safety screening DQO (Dukelow, et al. 1995) requires that additional analyses be performed if total alpha activity is greater than 1 g/L. Total alpha is measured in $\mu\text{Ci/g}$ rather than g/L. To convert the notification limit for total alpha into a number more readily usable by the laboratory, it was assumed that all alpha decay originates from Pu-239. The notification limit may then be calculated as shown in equation (2):

$$\left(\frac{1 \text{ g}}{\text{L}}\right) \left(\frac{1 \text{ L}}{10^3 \text{ mL}}\right) \left(\frac{1 \text{ mL}}{\text{density g}}\right) \left(\frac{0.062 \text{ Ci}}{1 \text{ g}}\right) \left(\frac{10^6 \mu\text{Ci}}{1 \text{ Ci}}\right) = \frac{61.5 \mu\text{Ci}}{\text{density g}}$$

NOTE: Samples measured for total alpha shall also be measured for density. The notification limit shall be 41 $\mu\text{Ci/g}$ unless the measured density exceeds 1.5 g/mL when the notification limit will be adjusted according to equation 2.

6.0 DELIVERABLES

All analyses will be reported as Format I, III, or IV as indicated in Table 1. Additional information regarding reporting formats is given in (Schreiber 1994a).

6.1 FORMAT I REPORTING

Table 1 contains the notification limits for each analyte. Any results exceeding their notification limits shall be reported via telephone by the 222-S Laboratory Shift Manager to the East Tank Farm Operations Shift Manager as soon as the data are obtained and reviewed (Kristofzski 1995b). This verbal notification must be followed within one working day by written communication to the Safety Screening Representative, Process Control, and the Characterization Project Office documenting the observations (Schreiber 1994b). Additional analyses for verification purposes may be contracted between the performing laboratory and the contacts above by a revision to this document, or by a memorandum of understanding.

6.2 FORMAT III REPORTING

A Format III report, giving the results of the primary analyses required by the safety screening DQO, shall be issued to the Safety Screening Representative, the Characterization Project, Process Control, the Tank Characterization Resource Center, and Tank Characterization Database (Schreiber 1994b) within 45 days of receipt of the last sample at the laboratory loading dock. The DSC and TGA scans have been requested due to the interpretive nature of the analysis. If analyses for the safety screening secondary analytes are required, these results shall be provided within 90 days of receipt of the last sample at the laboratory loading dock. No calibration data are requested for these reports. Detailed information regarding the contents of this reporting format are given in (Schreiber 1994a).

6.3 FORMAT IV REPORTING

This report shall include the results of the analyses required by the safety screening DQO (see Table 1 for delineation of program requests). The data package shall be provided to the Characterization Project, the Tank Characterization Resource Center, and Tank Characterization Database representatives within 105 days of the sampling event. Detailed information regarding the contents of this reporting format are given in (Schreiber 1994a). If possible, this final report shall be combined with the 45-day safety screening report (if there are no secondary analyses required) or with the 90-day report.

In addition to this data package, an electronic version of the analytical results shall be provided to the Tank Characterization Database representative on the same day that the final data package is issued. The data must be available to the Washington State Department of Ecology within 216 days of the sampling event, so this electronic copy must be sent at the time of data package delivery or within 209 days of the sampling event, whichever is earlier, to allow time for data entry. The electronic version shall be in the standard electronic format specified in (Bobrowski et al. 1994).

7.0 CHANGE CONTROL

Under certain circumstances, it may become necessary for the performing laboratory to make decisions concerning a sample without review of the data by the customer or the Characterization Program. These changes shall be documented through the use of internal characterization change notices or analytical deviation reports for minor low-impact changes and documented in applicable laboratory notebooks. All significant changes (such as changes in scope) shall be documented by Characterization Plans Coordination and Reports via an Engineering Change Notice to this plan. All such changes shall also be clearly documented in the final data report. Any non-significant changes may be made by the project coordinator and documented by placing a notation in the permanent record (e.g., a notation in the extrusion logbook or a memo to file). The significance of any changes is determined solely by the project coordinator.

At the request of the Characterization Program, additional analysis of sample material from this characterization project shall be performed following a revision of this Sampling and Analysis Plan or issuance of a letter of instruction.

8.0 REFERENCES

- Bobrowski, S. F., S. J. Harris, and J. D. Schwab, 1994, "Standard Electronic Format Specification for Tank Characterization Database Loader, Version 2.0", Pacific Northwest Laboratory, Richland, Washington (Transmitted by PNL Letter TCD-94-002, June 16, 1994, S. F. Bobrowski, PNL, to C. S. Haller, WHC).
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- Dukelow, G. T., J. W. Hunt, H. Babad, and J. E. Meacham, 1995, *Tank Safety Screening Data Quality Objective*, WHC-SD-WM-SP-004, Rev. 2, Westinghouse Hanford Company, Richland, Washington.
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- Kristofzski, J. G., 1995a, Letter to J. H. Baldwin, et al., "Directions for 'Opportunistic Analyses,'" 75310-95-103, dated September 13, 1995.
- Kristofzski, J. G., 1995b, Letter to G. B. Griffin, "Reestablishment of Immediate Notification System", 75310-95-102, dated September 8, 1995.
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- Schreiber, R. D., 1994b, Letter to J. G. Kristofzski, "Point of Contact/Distribution List", 7E720-94-141, dated October 11, 1994.
- Whelan, T. E., 1994, *TWRS Characterization Program Quality Assurance Program Plan*, WHC-SD-WM-QAPP-025, Rev. 0, Westinghouse Hanford Company, Richland, Washington.