DISTRIBUTION SHEET

To DISTRIBUTION	From ANALYTICAL SERVICES	Page 1 of 2		
Project Title/Work Order WHC-SD-WM-DP-077, Rev. 0 - "45-Day Safety Screening for Tank 241-B-102 Auger Samples, Riser 1"		Date:	11/30/94	
		EDT NO.:	EDT-140745	
		ECN NO.:	N/A	
Name	MSIN	Text With all Attach	Addendum 1A Only	EDT/ECN Only

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J. L. Scott	R3-87			X

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J. Noble-Dial	S7-54			X

Westinghouse Hanford Company

J. N. Appel	G3-21			X
H. Babad	S7-30			X
K. E. Bell	T6-06			X
D. R. Bratzel	S7-31			X
R. J. Cash	S7-15			X
C. DeFigh-Price	X3-71			X
J. L. Deichman	H4-19			X
S. J. Eberlein	S7-31			X
C. E. Golberg	H5-49			X
J. M. Henderson	R3-85			X
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J. G. Hill	K7-97			X
L. Jensen	T6-07	X		
T. J. Kelley	S7-30			X
N. W. Kirch	R2-11			X
J. G. Kristofzski	T6-06			X
P. M. Morant	H4-25			X
A. F. Noonan	K9-81	X		
A. D. Rice	T6-06			X
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R. D. Schreiber	R2-12			X
B. C. Simpson	R2-12			X
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1. EDT 140745

BD-7400-172-1 (07/91)

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Document Number: WHC-SD-WM-DP-077, REV 0

Document Title: 45-Day Safety Screening for Tank 241-B-102 Auger Samples

Release Date: 11/30/94

**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 M. Broz

November 30, 1994

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SUPPORTING DOCUMENT		1. Total Pages 70
2. Title 45-Day Safety Screening for Tank 241-B-102 Auger Samples, Riser 1	3. Number WHC-SD-WM-DP-077	4. Rev No. 0
5. Key Words 45 Day, Safety Screening, Tank 241-B-102, B-102, Auger Samples, Riser 1 APPROVED FOR 11/30/94 KMB PUBLIC RELEASE	6. Author Name: Kevin E. Bell Signature Organization/Charge Code 8E480/MDR2D	
7. Abstract N/A		
8. RELEASE STAMP <div style="border: 1px solid black; padding: 10px; margin: 10px auto; width: fit-content;">OFFICIAL RELEASE BY WJG DATE DEC 01 1994 55 SLA.S</div>

Westinghouse
Hanford Company

P.O. Box 1970 Richland, WA 99352

WHC-SD-WM-DP-077, REV. 0

ANALYTICAL SERVICES

Project:

SINGLE SHELL TANK
WASTE CHARACTERIZATION
45 DAY SAFETY SCREENING
FOR B-102 AUGER SAMPLES, RISER 1

Tank:

241-B-102

Date Printed:

NOVEMBER 28, 1994

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WHC-SD-WM-DP-077, REV. 0

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WHC-SD-WM-DP-077, REV. 0

NARRATIVE

WHC-SD-WM-DP-077, REV. 0

From: Program Support 9457980
Phone: 373-1604
Date: November 29, 1994
Subject: 45-DAY DELIVERABLE FOR TANK 241-B-102, AUGER SAMPLE; RISER 1

To: H. Babad S7-30

cc: D. R. Bratzel R2-18
J. L. Deichman H4-19
C. DeFigh-Price X3-71
N. W. Kirch R2-11
R. D. Schreiber R2-12
JGK-File/LB

Reference: WHC-SD-WM-TP-226, Rev. 0, "Tank 241-B-102 Tank
Characterization Plan", dated August 11, 1994, Westinghouse
Hanford Company, Richland, WA 99352

This is the 45-Day report for the fiscal year 1994 B-102 auger sampling characterization effort. Only one of the two planned auger samples was received by the 222-S Laboratory, however it was decided to begin the 45-day clock and issue a report based on receipt of the first auger sample. If a second auger sample is taken from tank B-102 in fiscal year 1995, a revision of this report or a new report will be issued to include any new data.

Included are copies of the differential scanning calorimetry (DSC) and thermogravimetric analysis (TGA) scans as requested in Reference 1. Also included is a copy of any immediate notification documentation, chain of custody forms, the hot cell work plan, extruded segment [auger] description sheets, and total alpha data.

B-102 Analytical Summary

One auger sample from riser 1 of single-shell tank 241-B-102 (B-102) was extruded, broken down, and analyzed for DSC, TGA, and total alpha as prescribed in Reference 1 except where noted below. Analytical results were tracked and reported using the laboratory information management system known as LabCore.

The TGA percent moisture results are below the safety criteria limit of 17% in a subsample taken approximately five minutes after extrusion and a second subsample taken from the lower half of the auger. Verbal and written notifications were made as prescribed in Reference 1. The DSC analysis of all subsamples indicates the presence of reaction exotherms, however the results are a factor of two or more below the notification limit of 523 Joules/gram (J/g). Total alpha results are all below the detection limit. In some cases, the tank characterization plan (TCP) accuracy and precision criteria are not met. If a re-run was not performed when a TCP quality control limit was not met, then reasons for not performing the re-run are provided.

Sample Receipt and Extrusion

B-102 Riser 1

The 10 inch auger sample 94-AUG-010 was removed from riser 1 of tank B-102 on 10/16/94 at 1510 hours. The sample was shipped to the 222-S Laboratory on 10/17/94 at 1335 hours and received at the laboratory on 10/17/94 at 1430 hours. Loading and extrusion of the sample in the hot cell took place on 10/19/94. No problems were noted in extruding the auger sample.

A total of 45.85 g of sample was collected. Sample material was present on all flutes of the auger, although flutes 1-3 only contained a small amount of white, crusty material. This 10 inch auger has 9 flutes. Flute 1 begins at the auger shaft while flute 9 ends at the auger tip. Flutes 4-6 contained the majority of material, appearing moist, sticky, and brown in color. The material on flutes 7-9 was white in color and pasty. No drainable liquid was collected, however during extrusion 3 or 4 drops of thin slurry dripped from the end of the auger sleeve. The tip of the auger contained brown, muddy material, some of which dripped onto the extrusion tray. Other material from the flutes described above fell onto the extrusion tray during subsampling.

Subsamples of this auger sample were taken as follows. The subsample for DSC/TGA analysis labeled Immediate Sample was removed from flutes 5 and 6 approximately five minutes after extrusion. The Upper Half of Segment subsample was collected for safety screening analysis from flutes 1-5. Finally, the Lower Half of Segment subsample was collected from flutes 5-9. The remaining material was collected and archived.

For ALARA reasons, smaller aliquots of those taken originally and described above are often the samples actually used for analysis. See Table 1 for additional subsampling information. Columns 3 and 4 of Table 1 respectively give the vial or jar number, in which the subsample was originally placed, and the weight of that subsample. If a smaller aliquot was subsequently removed from the original jar or vial, the identity of the new container and the aliquot weight are recorded in columns 5 and 6.

Analytical Results

The safety screening analytical results are presented in Table 2. The table includes the LabCore sample number, which may be cross-referenced with Table 1. It also includes the upper or lower action limits as defined in the TCP. The limit selected for immediate notification is highlighted in greybar. A lower density greybar is used to indicate where action limits were exceeded. Column 2 of Table 2 indicates the sample preparation used, if any. As shown, total alpha analyses are marked with "F" indicating a fusion preparation was performed on the sample before analysis.

TGA (Moisture Content)

Weight percent water by TGA was performed under a nitrogen atmosphere using procedure LA-560-112, Rev. A-1. Analytical results are below the notification limit of 17% for the subsamples taken five minutes after extrusion and from the lower half of the auger. Copies of the immediate notifications are reproduced in a following attachment. As in the case of

auger samples from BX-105, the average percent moisture in the sample taken five minutes after extrusion is comparable to the other subsamples taken 30 to 50 minutes after extrusion.

Standard recoveries are excellent ranging from 99.0% to 99.24%. The duplicate precision acceptance criteria of 10% was achieved with sample 190, but was not achieved with the remaining samples. In an initial run, the standard recovery was low (93.6%) for samples 191 and 193 in addition to having poor precision. These samples were re-run with a significant improvement in precision.

DSC (Energetics Content)

Analyses for DSC were performed under a nitrogen atmosphere using procedure LA-514-113, Rev B-1. An exotherm is observed for each sample run. All exotherms are corrected to J/g on a dry-weight basis. As the DSC scans indicate, the reported exotherms are all preceded by an endotherm of greater magnitude. This complicates integration of the exotherm because of uncertainty in the baseline at the inflection point. The initial exotherms for samples 190, 191, and 192 were re-integrated resulting in more conservative exotherms. The latter values are reported in Table 2. The relative percent difference (RPD) of duplicate runs for samples 192 and 193 were less than 10% on the wet basis. The RPD exceeded the TCP limit of 10% on the calculated value, however. This is due to variations in the percent moisture values. Re-runs were not performed since 1) the RPD values on the pre-calculated exotherms were acceptable and 2) variations in the percent moisture values were primarily responsible for the RPD values greater than 10%.

Total Alpha

Analyses for total alpha were performed on an alpha proportional counter according to procedure LA-508-101, Rev. D-2. Standard recoveries are excellent, demonstrating that the instrument is in control and functioning properly. All results are below the detection limit of 0.75 uCi/g, which is 55 times below the notification limit of 41 uCi/g. Spike recoveries are within the 90-110% range, and RPD on duplicate runs could not be calculated because of the less-than values.

Sincerely,

Kevin Bell,
B-102 Project Coordinator

keb

Attachments 1) Sample Data Summary (2-pages)
 2) Immediate Notification Documentation (3-pages)
 3) Sampling and Custody Data (6-pages)
 4) Analyses for DSC, TGA and Total Alpha (51-pages)

Table 1. Subsampling and Sample Load-Out Information for Tank B-102

Riser	Subsample Location	Original Vial or Jar	wt (g)	Transferred to vial or jar	Load-out wt (g)	LabCore Sample #
1	flutes 5, 6	vial 6180	4.89	no transfer	4.89	S94T000190
1	flutes 1-5	jar 6154	9.69	vial 6181	3.38	S94T000191/192
1	flutes 5-9	jar 6155	7.42	vial 6182	3.42	S94T000193/194
1	tray material	jar 7020	23.85	no transfer	not loaded out	see below
1	archive	jar 6154 and jar 6155 ¹	6.31 +4.0	jar 7020	29.90	S94T000195

¹ Following removal of aliquots for analysis from jars 6154 and 6155, the remainder of material from these jars was transferred into jar 7020 for archiving. The tray drippings originally placed in jar 7020 were not analyzed.

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SAMPLE DATA SUMMARY

Table 2. Analytical Summary Table for B-102 Auger Samples.
B-102

CORE NUMBER: 94-AUG-010

SEGMENT #: 1

SEGMENT PORTION: Immediate Sampling (to check moisture loss)

Sample#	R A# Analyte	Unit	Action Limits		Standard/%	Prep Blk	Result	Duplicate	Average	RPD/%	Spk Rec/%	Det Limit	Count	Err/%
			Lower	Upper										
S94T000190	% Water by TGA using Mettler	%	17.000	n/a	99.00	n/a	16.98	17.82	17.40	4.83	n/a	0.000		n/a
S94T000190	DSC Exotherm Dry Calculated	Joules/g Dry	n/a	523.000	n/a	n/a	311.4	243.6	277.5	24.4	n/a	0.000		n/a
S94T000190	DSC Exotherm using Mettler	Joules/g	n/a	n/a	104.0	n/a	258.5	200.2	229.3	25.4	n/a	0.000		n/a

SEGMENT PORTION: U Upper Half of Segment

Sample#	R A# Analyte	Unit	Action Limits		Standard/%	Prep Blk	Result	Duplicate	Average	RPD/%	Spk Rec/%	Det Limit	Count	Err/%
			Lower	Upper										
S94T000191	% Water by TGA using Mettler	%	17.000	n/a	99.24	n/a	22.83	18.17	20.50	22.7	n/a	0.000		n/a
S94T000191	DSC Exotherm Dry Calculated	Joules/g Dry	n/a	523.000	n/a	n/a	188.3	161.9	175.1	15.1	n/a	0.000		n/a
S94T000191	DSC Exotherm using Mettler	Joules/g	n/a	n/a	95.96	n/a	145.3	132.5	138.9	9.21	n/a	0.000		n/a
S94T000192	Alpha of Digested Solid	uCi/g	n/a	41.000	90.15	<3.26e-01	< 0.326	<3.70e-1	n/a	n/a	93.80	0.751		249.9

SEGMENT PORTION: L Lower Half of Segment

Sample#	R A# Analyte	Unit	Action Limits		Standard/%	Prep Blk	Result	Duplicate	Average	RPD/%	Spk Rec/%	Det Limit	Count	Err/%
			Lower	Upper										
S94T000193	% Water by TGA using Mettler	%	17.000	n/a	99.24	n/a	13.07	15.15	14.11	14.7	n/a	0.000		n/a
S94T000193	DSC Exotherm Dry Calculated	Joules/g Dry	n/a	523.000	n/a	n/a	242.1	270.9	256.5	11.2	n/a	0.000		n/a
S94T000193	DSC Exotherm using Mettler	Joules/g	n/a	n/a	95.96	n/a	210.5	229.9	220.2	8.81	n/a	0.000		n/a
S94T000194	Alpha of Digested Solid	uCi/g	n/a	41.000	90.15	<3.26e-01	< 4.06E-1	<3.21e-1	n/a	n/a	96.30	0.746		500

=> Limit violated

=> Selected Limit

WMC-SD-WM-DP-077, REV. 0

WHC-SD-WM-DP-077, REV. 0

**B-102 IMMEDIATE NOTIFICATION
DOCUMENTATION**

[13] From: Kevin E Bell at ~WHC225 11/14/94 7:16AM (2451 bytes: 33 ln)
To: Harry Babad at ~WHC142, David R Bratzel at ~WHC268, Cherri DeFigh-Price at ~WHC79, John L Deichman at ~WHC321, Vernon W Hall at ~WHC321, Thomas J (Tom) Kelley at ~WHC396, Nicholas W (Nick) Kirch at ~WHC140, John G Kristofzski at ~WHC168, Andrew D Rice at ~WHC168, Ruth D Schreiber at ~WHC163, B C (Brad) Carpenter at ~WHC140

WHC-SD-WM-DP-077, REV. 0

cc: Kevin E Bell

Subject: SAFETY LIMIT EXCEEDED ON BX-105 AND B-102

----- Message Contents -----

As required by the BX-105 TCP (WHC-SD-WM-TP-239, Rev. 0) and the B-102 TCP (WHC-SD-WM-TP-226, Rev. 0), an immediate notification was made at 1402 hours on 11/11/94 by C. Clark, the 222-S on-duty Shift Manager, to the East Tank Farms Shift Manager, regarding thermal gravimetric analysis (TGA) measurements indicating <17% water in auger samples from tanks BX-105 and B-102. This cc:Mail is the required follow-up written notification of the initial, verbal notification.

1) Tank BX-105, Riser 2, Lower half of auger: %water by TGA yields 15.74% for sample and 13.43% for duplicate. There was no exotherm by DSC associated with this sample. The auger sample contained no drainable liquid and the sample was pasty rather than crystalline.

2) Tank B-102, Riser 1, Immediate sample to check moisture loss: %water by TGA yields 16.98% for sample. The duplicate result was not below the notification limit. This sample was taken approximately 5 minutes after extrusion. There is an exotherm of 168.4 J/g in the DSC associated with this sample. This exotherm has not yet been calculated on a dry weight basis.

3) Tank B-102, Riser 1, Lower half of auger: %water by TGA yields 13.07% for sample and 15.15 for duplicate. The DSC for this sample has not been reported at the time of writing.

Please address any questions to K. Bell @ 373-1629.

[20] From: Kevin E Bell at ~WHC225 11/17/94 1:18PM (1818 bytes: 21 ln)
To: Harry Babad at ~WHC142, David R Bratzel at ~WHC268, John L Deichman at
~WHC321, Vernon W Hall at ~WHC321, Thomas J (Tom) Kelley at ~WHC396,
Nicholas W (Nick) Kirch at ~WHC140, John G Kristofzski at ~WHC168,
Andrew D Rice at ~WHC168, Ruth D Schreiber at ~WHC163, B C (Brad) Carpenter at
~WHC140

cc: Kevin E Bell

WHC-SD-WM-DP-077, REV. 0

Subject: SAFETY LIMIT EXCEEDED ON B-102

----- Message Contents -----

As required by the B-102 TCP (WHC-SD-WM-TP-226, Rev. 0), an immediate notification was made at 0945 hours on 11/17/94 by D. Hardy, the 222-S on-duty Shift Manager, to J. Carlson, the East Tank Farms Shift Manager, regarding thermal gravimetric analysis (TGA) measurements indicating <17% water in auger samples from tank B-102. This cc:Mail is the required follow-up written notification of the initial, verbal notification. Also as required, verbal notification was made to G. Forehand of the Characterization Program.

1) Tank B-102, Riser 1, Lower half of auger: %water by TGA yields 13.07% for sample and 15.15% for duplicate. There was an exotherm in the DSC associated with this sample, however the values are 4 to 5 times below the notification limit of 523 J/g. The auger sample contained no drainable liquid and the sample was pasty rather than crystalline.

Please address any questions to K. Bell @ 373-1629.

WHC-SD-WM-DP-077, REV. 0

SAMPLING AND CUSTODY DATA

CHAIN-OF-CUSTODY RECORD FOR AUGER SAMPLING

COPY

Shipment Number 200W-08.TF (2) Sample Number 94-AUG-010 (3) Supervisor B. PRAZNIK
 Tank B-102 (5) Riser 1 (6) Cask Serial Number 1007C

Radiation Survey Data:		(7) FIELD	(31) LABORATORY	(8) Shipment Description	
Over Top Dose Rate	<u>.6 mR/hr @C</u>		<u>.5 mR/hr @C</u>	A. Work Package Number	<u>2E-93-02242-W</u>
Side Dose Rate	<u>2 mR/hr @C</u>		<u>1 mR/hr @C</u>	B. Cask Seal Number	<u>3774</u>
Bottom Dose Rate	<u>.8 mR/hr @C</u>		<u>.5 mR/hr @C</u>	C. Date and Time Sample	<u>10-16-94 / 1510 hrs</u>
Smearable Contamination	<u><20 dpm</u> (Alpha)		<u><20 dpm</u> (Alpha)	Removed from Tank	<u>40%</u>
	<u><1K dpm</u> (Beta-Gamma)		<u><1K dpm</u> (Beta-Gamma)	D. Expected Liquid Content	<u>60%</u>
RCT* <u>[Signature]</u> (Signature)		RCT* <u>[Signature]</u> (Signature)		E. Expected Solid Content	<u>40 mR/h</u>
				F. Dose Rate Through Drill String	<u># 7"</u>
				G. Expected Sample Length	

9) INFORMATION (Include statement of laboratory tests to be performed.)

12

(10) Field Comments		(32) Laboratory Comments			
(11) Point of Origin <u>B-102 - 1150 #1</u>	(12) Destination <u>222 SLAB</u>	(13) Sender Name (Sign and PRINT) <u>[Signature] Robert J PRAZNIK</u>	(14) Date/Time <u>10-17-94/1335</u>	(15) Sender Comments <u>N/A</u>	
(17) Relinquished By (Sign and PRINT) <u>[Signature] PRAZNIK</u>		(18) Received By (Sign and PRINT) <u>[Signature] James R. Feherty</u>	(19) Date/Time <u>10-17-94/1345</u>	(20) Receiver Comments <u>N/A</u>	
(21) Relinquished By (Sign and PRINT) <u>[Signature] James R. Feherty</u>		(22) Received By (Sign and PRINT) <u>[Signature] Sandra Cobb</u>	(23) Date/Time <u>10-17-94/1430</u>	(24) Receiver Comments	
(25) Relinquished By (Sign and PRINT)		(26) Received By (Sign and PRINT)	(27) Date/Time	(28) Receiver Comments	
(16) Seal Intact Upon Release? ☒ Yes ☐ No		(29) Seal Intact Upon Receipt? ☒ Yes ☐ No		(30) Seal Data Consistent with this Record?	
		Shipment No. ☒ Yes ☐ No		Cask Seal No. ☒ Yes ☐ No	
				Sample No. ☒ Yes ☐ No	

WHC-SD-WM-IP-077, REV. 0

Tank 241-B-102
Hot Cell Work Plan

WHC-SD-WM-DP-077, REV. 0

I. Overview

- A. Waste tank 241-B-102 sampling is planned to consist of 1 auger sample each from risers 1 and 7. Five inches of sludge are expected from each auger sample.
- B. This hot cell work plan (HCWP) is based upon Tank 241-B-102 Tank Characterization Plan (WHC-SD-WM-TP-226 Rev. 0). If discrepancies occur between the HCWP and TCP, the TCP will take precedence. For specifics on QA/QC, refer to section 4.0 of the TCP.
- C. Auger samples will be loaded into 1-E2 hot cell in accordance with procedure LO-160-101, Core Segment Receipt and Preparation. The auger sample will be prepared for the 222-S Laboratory in accordance with procedure LO-160-103, Core Segment Extrusion Process and Sample Preparation and this work plan.

II. General Comments

- A. The cognizant scientist may deviate from this hot cell work plan should unforeseen circumstances arise. All deviations shall 1) be recorded in the laboratory notebook WHC-N-1005 and 2) relayed to the project coordinator.
- B. According to the TCP, Hot Cell operations will separate drainable liquid (if any) from sample. Hot Cell operations will isolate dry crust material (if any). Hot Cell operations will separate remaining sample into two equal subsamples.

III. Pre-job Preparation

- 1. Hot cell technicians will ensure that vials are tare weighed.
- 2. Hot cell technicians will apply labels with next available jar number. Clear tape will be used to cover and protect the labels on jars. Use appropriate outer covering on jars to minimize decontamination efforts when loaded out of the hot cell.
- 3. Hot Cell technicians will log all appropriate information about jars into logbook WHC-N-754. Record the date, jar number, jar size, tare weight, tank number, and customer I.D. after the jar contains the sample.
- 4. Hot Cell technicians will log all appropriate information on archive samples in logbook WHC-N-755. Record the date, jar

WHC-SD-WM-DP-077, REV. 0

number, jar size, tare weight, tank number, and customer I.D. after the jar contains the sample.

5. Check out video equipment and ensure battery is charged.
6. Obtain new Super-VHS tape and label 241-B-102.

IV. Sample Preparation, Extrusion and Breakdown

A. Sample Preparation

1. Perform section A (Preparation of 1E Laboratory for Cask Disassembly) of procedure LO-160-101.
2. Perform section B (Cask Receipt and Preparation of Sampler for Load-in into 1E-2 Hot Cell) of procedure LO-160-101.

Note: Contact Kevin Bell and Harry Babad before performing the next step.

3. Perform section C (Loading of Sampler into 1E-2) of procedure LO-160-101.

B. Sample Extrusion

1. Perform section I (Authorization and Preliminary Setup) of procedure LO-160-103.

NOTE: Position the auger liner so drainable liquid will not be lost during the removal of the auger.

2. Remove the rubber stopper.
3. Using the auger extraction tool, remove auger sample and sleeve from the liner.
4. Place the auger assembly on the auger stand.
5. Disconnect auger extraction tool from auger assembly.

NOTE: If video camera is available, video the process of removing the sleeve.

6. Remove sleeve from the auger sample.
7. Video sample on the auger.
8. Subsample auger as follows:
 - a. Inspect the top portion of the auger sample for a hard dry layer. If present, separate the hard dry layer

WHC-SD-WM-DP-077, REV. 0

and retain as a subsample. Place subsample in an appropriate size vial or jar.

- b. Separate remaining auger sample into equal subsamples. Place each subsample into an appropriate size jar or vial.
9. Collect the liner liquid into an appropriate size collection vessel or jar.
10. Clean auger, auger stand, and hot cell as required before processing the next sample.
11. Prior to submitting samples to the laboratory for analyses, perform the following steps:
 - a. Homogenize each subsample individually
 - b. If any, filter the aqueous sample thru a 0.45 micron filter. Retain liquid subsample for safety screening analyses.
 - c. Remove aliquots of each sample according to the TCP.
 - d. Have project coordinator generate laboratory numbers and labels for all samples to be submitted to the laboratory.

Cognizant Scientist

Date 10-15-94

Project Coordinator

Date 10-19-94

Oct. 19, 1994 7

Hot Cell Temp - 79.1 °F
% Humidity - 20%

WHC-SD-WM-DP-077, REV. 0

Tank 241-B-102
Extruded Segment Description Sheet20 grams = 19.96
500 grams = 499.77Sample 94-AUG-010 Riser 1 Core Auger Segment

General Description of Sample:

1. 1400 hrs, removed rubber stopper, tilted sampler, observed no liner liquid (Drainable Liquid).
2. 1405 hrs, inserted Auger extraction tool; 1407, removed Auger & sleeve; observed a few (thin) drops of Liquid.
3. 6180# (20ml), between flutes (5) & (6). Sample is moist, gummy & sticky. (4.89 grams)
DSC/T6A, Pasty, caulk like.
4. Jar (125ml) 6124# samples collected from flutes (5) through (1). Slightly screening. (9.68g)
archive
5. Jar (125ml) 6155# samples collected from flutes (5) through (4). Archive & Slightly screening (7.42 grams).
6. Vial 7020 (40ml) - Sample from TRAY (23.85 grams).
white (paste) Brown (paste) white (thin) crusty

Sketch:

Photo

PROJECT: B-102 | S947000189
GROUP: 94000010 | PRESERVATIVE: NONE
CUST ID: PARENT AUGER #10 - RISER 1

ANALYSIS: DLIQVOL1, DLIQWT01, EST.G/ML,
EXTEND01, LLIQWT01, NOTESBOOK, SLDVOL01,
SLDWT-01

Sampler Efficiency

Volume of Sampler NA%Volume of Air %Volume of Liquid %Volume of Solids Comments: Auger Sampler

Drainable Liquid Density

Total Weight NATotal Volume Density Turbidity Comments: none

Solids

Color White/BrownConsistency paste/caulkHomogeneity non HomogeneousTexture thick & stickymetrometer NA

Liner Liquid

Collection Jar 6121 ¹⁰⁻¹⁵⁻⁹⁴ ADDGross Wt. Tare Wt. Net Wt. NANo. Phases

Drainable Liquid

Collection Jar 6121Gross Wt. NAtare Wt. Net Wt. No. Phases Cognizant Scientist: Allen B. Berry

Oct 19, 1994

Reviewed By:

WHC-SD-WM-DP-077, REV. 0

UNDIGESTED SAMPLE ANALYSES-DIRECT

LABCORE Data Entry Template for Worklist# 112

Analyst: KLW Instrument: DSC01 Method: LA-514-113 B-1 W 11/14/94

Worklist Comment: Please use N2 purge.JMF WHC-SD-WM-DP-077, REV. 0

Seg	Type	Sample#	Rep	AI	Test	Matrix	Actual	Found	DL	Unit
1	STD				DSC-01	SOLID	<u>28.45</u>	<u>29.6</u>	<u>104.0% Rec</u> N/A	Joule
2	SAMPLE	S94T000148	0		DSC-01	SOLID	<u>N/A</u>	<u>0</u>		Joule
3	DUP	S94T000148	0		DSC-01	SOLID	<u>0</u>	<u>0</u>	<u>N/A</u>	Joule
4	SAMPLE	S94T000190	0		DSC-01	SOLID	<u>N/A</u>	<u>168.4</u>		Joule
5	DUP	S94T000190	0		DSC-01	SOLID	<u>168.4</u>	<u>144.1</u>	<u>N/A</u>	Joule

Final page for worklist # 112

Analyst Signature

Date

Samples were reintegrated 11/17/94 and reentered into labcore see worklist 166. J. M. Luye
Std # 12N14A (Indium)
Entered and approved 11/1/94. J. M. Luye

Data Entry Comments:

S94T000148 has no exotherms but has two endotherms of 661.19 J/g at 118.8°C and 667.49 J/g at 285°C; duplicate has endotherms of 693.99 J/g at 108.7°C and 669.59 J/g at 285°C. S94T000190 also has two endotherms of 669.29 J/g at 115.4°C and 284.29 J/g at 287.9°C, ~~and~~ the exotherm at 381.3°C; duplicate has endotherms of 609.69 J/g at 122.1°C and 237.2 J/g at 290.0°C, and the exotherm at 379.6°C.

Jenn Luye
11/1/94

DSC STD

6.504 mg

Rate: 10.0 °C/min

File: 00039.001

DSC METTLER

31-Oct-94

Ident: 0.0

222-S Laboratory

exo

5. mW

Integration
Delta H 193 mJ
29.6 J/g
Peak 161.3°C
-7.5 mW

WHC-SD-WM-DP-077, REV.0

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 19 TO 21

120.

140.

160.

180. °C

filed 10/31/94

S94T000190 N2

13.643 mg

Rate: 10.0 °C/min

File: 00044.001

DSC METTLER

31-Oct-94

Ident: 0.0

222-S Laboratory

WHC-SD-WM-DP-077, REV.0

S94T000190 (DUP) N2
17.311 mg
Rate: 10.0 °C/min
File: 00046.001 DSC METTLER 31-Oct-94
Ident: 0.0 222-S Laboratory

WHC-SD-WM-DP-077, REV. 0

LABCORE Data Entry Template for Worklist# 113

Analyst: KLV Instrument: DSC01 Method: LA-514-113 B-1 KV 11/14/94

Worklist Comment: Please use N2 Purge. JMF WHC-SD-WM-DP-077, REV. 0

Seg	Type	Sample#	Rep	AI	Test	Matrix	Actual	Found	DL	Unit
1	STD	12N14A			DSC-01	SOLID	28.45	27.3	96.0% Rec N/A	Joule
2	SAMPLE	S94T000191	0		DSC-01	SOLID	N/A	85.0		Joule
3	DUP	S94T000191	0		DSC-01	SOLID	85.0	70.2	N/A	Joule
4	SAMPLE	S94T000193	0		DSC-01	SOLID	N/A	98.7		Joule
5	DUP	S94T000193	0		DSC-01	SOLID	98.7	127.6	N/A	Joule

Final page for worklist # 113

Analyst Signature

Date

Samples were re integrated and re entered into labcore, see work list 1166. J. M. Luye
Verified 11/16/94, and data entry error corrected. J. M. Luye

Data Entry Comments:

Samples were brown med like semi solid. KLV
Ind 12N14A S94T000191 has 2 endotherms of 602.6 J/g at 119.5 °C
and 267.7 J/g at 290.4 °C; duplicate has 378.4 J/g at 116.4 °C and
200.99 J/g at 289.8 °C. S94T000193 has two endotherms of 425.6 J/g
at 120.8 °C and 359.8 J/g at 294.1 °C; duplicate has 440.0 J/g at 110.2 °C and 453.1 J/g at 292.3 °C. J. M. Luye

Units shown for QC (SPK) may not reflect the actual units.

Page: 1

DSC STD
6.571 mg
Rate: 10.0 °C/min

File: 00095.001
Ident: 0.0

DSC METTLER
222-S Laboratory

12-Nov-94

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 23 TO 27.

exo

Handwritten signature
11/12/94

S94T000191 N2
18.852 mg

File: 00096.001 DSC METTLER 12-Nov-94
Ident: 0.0 222-S Laboratory

Rate: 10.0 °C/min

exo >

S94T000191 (DUP) N2

13.433 mg

Rate: 10.0 °C/min

File: 00097.001 DSC METTLER 12-Nov-94

Ident: 0.0 222-S Laboratory

exo v

10. mW

S94T000193 N2
18.181 mg

File: 00098.001 DSC METTLER 12-Nov-94
Ident: 0.0 222-S Laboratory

Rate: 10.0 °C/min

exo >

WHC-SD-WM-DP-077, REV. 0

S94T000193 (DUP) N2

12.031 mg

Rate: 10.0 °C/min

File: 00099.001

DSC METTLER

12-Nov-94

Ident: 0.0

222-S Laboratory

exo

22

10. mW

Integration
Delta H 5294 mJ
440.0 J/g
Peak 110.2°C
-20.0 mW

Integration
Delta H 1535 mJ
127.6 J/g
Peak 352.8°C
4.1 mW

Integration
Delta H 5451 mJ
453.1 J/g
Peak 292.3°C
-17.1 mW

WHC-SD-WM-DP-077, REV.0

100.

200.

300.

400.

°C

LABCORE Data Entry Template for Worklist# 166

WAF

Analyst: KLV Instrument: DSC01 Method: LA-514-113 B-1
Worklist Comment: Reintegrated DSC.JMF WHC-SD-WM-DP-077, REV. 0

Seg	Type	Sample#	Rep	Al	Test	Matrix	Actual	Found	DL	Unit
1	STD	12N14A			DSC-01	SOLID	28.45	27.3	N/A	Joule
2	SAMPLE	S94T000191	0		DSC-01	SOLID	N/A	145.3		Joule
3	DUP	S94T000191	0		DSC-01	SOLID	145.3	132.5	N/A	Joule
4	SAMPLE	S94T000193	0		DSC-01	SOLID	N/A	210.5		Joule
5	DUP	S94T000193	0		DSC-01	SOLID	210.5	229.9	N/A	Joule
6	STD	12N14A			DSC-01	SOLID	28.45	29.6	N/A	Joule
7	SAMPLE	S94T000190	0		DSC-01	SOLID	N/A	258.5		Joule
8	DUP	S94T000190	0		DSC-01	SOLID	258.5	200.2	N/A	Joule

Final page for worklist # 166

John Lye for
Analyst Signature
K. L. Vogel

11/17/94
Date

Verified 11/17/94 JMF

Data Entry Comments:

*S94T000190: 2 endotherms 711.49 J/g at 115.4°C and 310.7 J/g at 287.9°C; dup
685.2 J/g at 120.1°C and 280.7 J/g*

LABCORE Data Entry Template for Worklist# 164

Analyst: JMF Instrument: DSC01 Method: LA-514-113 B-1

Worklist Comment: Dry DSC B-102. JMF

WHC-SD-WM-DP-077, REV. 0

Seg	Type	Sample#	Rep	AI	Test	Matrix	Actual	Found	DL	Unit
1	SAMPLE	S94T000190	0		DSC-02	TGA 16.98, 168.4 DSC SOLID	N/A	202.8		Joule
2	DUP	S94T000190	0		DSC-02	17.82g, 144.1 SOLID	202.8	175.3	N/A	Joule
3	SAMPLE	S94T000191	0		DSC-02	18.17 SOLID	N/A	110.2		Joule
4	DUP	S94T000191	0		DSC-02	SOLID	110.2	85.8	N/A	Joule
5	SAMPLE	S94T000193	0		DSC-02	SOLID	N/A	113.5		Joule
6	DUP	S94T000193	0		DSC-02	SOLID	113.5	150.4	N/A	Joule

Final page for worklist # 164

JMF
Analyst Signature

11/16/94
Date

Entered & reviewed 11/16/94. JMF

Data Entry Comments:

As entered using DSC data before
reintegration. JMF This is replaced
by 11/16/94. JMF

Units shown for QC (SPK) may not reflect the actual units.

Page: 1

LABCORE Data Entry Template for Worklist# 167

Analyst: JMF Instrument: DSC01 Method: LA-514-113
Worklist Comment: Reintegrated DSC dry. JMF WHC-SD-WM-DP-077, REV. 0

Seg	Type	Sample#	Rep	AI	Test	Matrix	Actual	Found	DL	Unit
1	DUP	S94T000190	0		DSC-02	SOLID	<u>311.4</u>	<u>243.6</u>	<u>N/A</u>	Joule
2	SAMPLE	S94T000190	0		DSC-02	SOLID	<u>N/A</u>	<u>311.4</u>		Joule
3	DUP	S94T000191	0		DSC-02	SOLID	<u>188.3</u>	<u>161.9</u>	<u>N/A</u>	Joule
4	SAMPLE	S94T000191	0		DSC-02	SOLID	<u>N/A</u>	<u>188.3</u>		Joule
5	DUP	S94T000193	0		DSC-02	SOLID	<u>242.1</u>	<u>270.9</u>	<u>N/A</u>	Joule
6	SAMPLE	S94T000193	0		DSC-02	SOLID	<u>N/A</u>	<u>242.1</u>		Joule

Final page for worklist # 167

Jann Lye
Analyst Signature

11/17/94
Date

Data Entry Comments: Reintegrated DSC. JMF

S94T000190 N2
13.643 mg

Rate: 10.0 °C/min

File: 00044.001 DSC METTLER 31-Oct-94
Ident: 0.0 222-S Laboratory

S94T000190 (DUP) N2
17.311 mg
Rate: 10.0 °C/min
File: 00046.001 DSC METTLER 31-Oct-94
Ident: 0.0 222-S Laboratory

WHC-SD-WM-DP-077, REV.0

S94T000191 N2
18.852 mg

Rate: 10.0 °C/min

File: 00096.001 DSC METTLER 12-Nov-94
Ident: 0.0 222-S Laboratory

S94T000191 (DUP) N2
13.433 mg
Rate: 10.0 °C/min
File: 00097.001 DSC METTLER 12-Nov-94
Ident: 0.0 222-S Laboratory

WHC-SD-WM-DP-077, REV. 0

S94T000193 N2
18.181 mg

File: 00098.001 DSC METTLER 12-Nov-94
Ident: 0.0 222-S Laboratory

Rate: 10.0 °C/min

Aug 9 + 10

108

LABCORE Data Entry Template for Worklist# 107

Analyst: KLK Instrument: TGA01 Method: LA-560-112 A-1 KV 11/14/94

Worklist Comment: Please use N2 purge. JMF

WHC-SD-WM-DP-077, REV. 0

Seg	Type	Sample#	Rep	AI	Test	Matrix	Actual	Found	DL	Unit
1	STD	412N8A			TGA-01	SOLID	59.19	58.61	99.0% N/A	%
2	SAMPLE	S94T000148	0		TGA-01	SOLID	N/A	16.18		%
3	DUP	S94T000148	0		TGA-01	SOLID	16.18	14.78	N/A	%
4	SAMPLE	S94T000190	0		TGA-01	SOLID	N/A	16.98		%
5	DUP	S94T000190	0		TGA-01	SOLID	16.98	17.82	N/A	%

Final page for worklist # 107

 Analyst Signature

 Date

Data Entry Comments:

Entered and approved. J. M. Luge 11/1/94

S94T000148 Gluey, gooly Ivory color, has 2nd wt loss 23.64% at 275°C; dup 23.53% at 273°C. S94T000190 Rocky road ice cream consistency, has 2nd wt loss of 24.01% at 279°C; dup 23.78% at 281°C. J. M. Luge

Units shown for QC (SPK) may not reflect the actual units.

 Page: 1

TGA STD
17.070 mg

Rate: 10.0 °C/min

File: 00038.001 TG METTLER 28-Oct-94
Ident: 0.0 222-S Laboratory

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 38 TO 40.

Step Analysis
Height-10.01 mg
-58.61 %
ResiC. 7.06 mg
41.39 %
Dpeak 77.0 °C

WHC-SD-MM-DP-077, REV.0

Handwritten signature 10/31/94

S94T000190 N2

18.973 mg

Rate: 10.0 °C/min

File: 00045.001

TG

METTLER

29-Oct-94

Ident: 0.0

222-S Laboratory

33

WHC-SD-WM-DP-077, REV.0

S94T000190 (DUP) N2
16.415 mg

Rate: 10.0 °C/min

File: 00047.001 TG METTLER 29-Oct-94
Ident: 0.0 222-S Laboratory

WHC-SD-WM-DP-077, REV. 0

LABCORE Data Entry Template for Worklist# 108

Analyst: KRM Instrument: TGA01 Method: LA-560-112 A-1

Worklist Comment: Please use N2 purge. JMF

WHC-SD-WM-DP-077, REV. 0

Seg	Type	Sample#	Rep	AI	Test	Matrix	Actual	Found	DL	Unit
1	STD	42N8A			TGA-01	SOLID	59.19	55.41	93.69%	N/A %
2	SAMPLE	S94T000191	0		TGA-01	SOLID	N/A	23.51		%
3	DUP	S94T000191	0		TGA-01	SOLID	23.51	16.26		N/A %
4	SAMPLE	S94T000193	0		TGA-01	SOLID	N/A	18.21		%
5	DUP	S94T000193	0		TGA-01	SOLID	18.21	22.88		N/A %

Final page for worklist # 108

Analyst Signature

11-1-94
Date

Entered & posted Jann Guye 11/1/94

Data Entry Comments:

S94T000191 sample has 2nd wt. loss of 19.20% at 263.0°C. Dup has 2nd wt. loss of 22.88% at 275°C. S94T000193 sample has second wt. loss of 26.39% at 271°C and dup has 24.65% at 281°C. The recovery on the standard was low, maybe outside limit Jann Guye. Will have to be rerun because of low standard recovery.

Page: 1

TGA STD

23.433 mg

Rate: 10.0 °C/min

File: 00060.001

Ident: 0.0

TG

METTLER

29-Oct-94

222-S Laboratory

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 42 TO 46.

WHC-SD-WM-DP-077, REV. 0

Step Analysis

Height-12.99 mg

-55.41 %

ResiC. 10.45 mg

44.59 %

Dpeak 89.0 °C

James M. Luge
for K. M. M. M. M.
11/29/94

12

5. mg

100.

200.

300.

400.

°C

S94T000191 N2

10.790 mg

Rate: 10.0 °C/min

File: 00061.001

TG

METTLER

29-Oct-94

Ident: 0.0

222-S Laboratory

Step Analysis

Height -2.54 mg

-23.51 %

ResiC. 8.25 mg

76.49 %

Dpeak 53.0 °C

Step Analysis

Height -2.07 mg

-19.20 %

ResiC. 5.96 mg

55.25 %

Dpeak 263.0 °C

WHC-SD-MM-DP-077, REV.0

13

S94T000191 (DUP) N2
12.122 mg

Rate: 10.0 °C/min

File: 00063.001 TG METTLER 30-Oct-94
Ident: 0.0 222-S Laboratory

Step Analysis

Height -1.97 mg
-16.26 %
ResiC. 10.15 mg
83.74 %
Dpeak 45.0 °C

Step Analysis
Height -2.77 mg
-22.88 %
ResiC. 7.21 mg
59.45 %
Dpeak 275.0 °C

WHC-SD-WM-DP-077, REV. 0

2. mg

100. 200. 300. 400. °C

S94T000193 N2

7.662 mg

Rate: 10.0 °C/min

File: 00064.001

TG

METTLER

30-Oct-94

Ident: 0.0

222-S Laboratory

Step Analysis

Height -1.39 mg

-18.21 %

ResiC. 6.27 mg

81.79 %

Dpeak 45.0 °C

Step Analysis

Height -2.02 mg

-26.39 %

ResiC. 4.13 mg

53.86 %

Dpeak 271.0 °C

S94T000193 (DUP) N2

22.565 mg

Rate: 10.0 °C/min

File: 00065.001

TG

METTLER

30-Oct-94

Ident: 0.0

222-S Laboratory

Step Analysis

Height -5.16 mg

-22.88 %

ResiC. 17.40 mg

77.12 %

Dpeak 65.0 °C

Step Analysis

Height -5.56 mg

-24.65 %

ResiC. 11.62 mg

51.48 %

Dpeak 281.0 °C

WHC-SD-WM-DP-077, REV.0

LABCORE Data Entry Template for Worklist# 148

Analyst: DWS Instrument: TGA01 Method: LA-560-112 A-1

Worklist Comment: Please run under N2, this is a rerun. JMF WHC-SD-WM-DP-077, REV. 0

Seg	Type	Sample#	Rep	AI	Test	Matrix	Actual	Found	DL	Unit
1	STD	48N8A HAD 11-10-94			TGA-01	SOLID	59.19	58.74	N/A	%
2	SAMPLE	S94T000191	0		TGA-01	SOLID	N/A	22.83		%
3	DUP	S94T000191	0		TGA-01	SOLID	22.83	18.17	N/A	%
4	SAMPLE	S94T000193	0		TGA-01	SOLID	N/A	13.07		%
5	DUP	S94T000193	0		TGA-01	SOLID	13.07	15.15	N/A	%

Final page for worklist # 148

[Signature]
Analyst Signature

11-9-94
Date

[Signature] 11-10-94

Approved 11/11/94 J.M. Leye

Data Entry Comments:

S94T000191 has second wt. loss step of 18.57% at 277°C, and 19.17% at 277°C in duplicate; S94T000193 has a second weight loss step of 21.82 at 281°C and 19.87 at 273°C. JMF

Units shown for QC (SPK) may not reflect the actual units.

Page: 1

TGA STD 48N8A *gmf 11/29/94*
19.523 mg Rate: 10.0 °C/min

File: 00076.001 TG METTLER 06-Nov-94
Ident: 0.0 222-S Laboratory

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 48 TO 52.

Step Analysis
Height-11.47 mg
-58.74 %
ResidC. 8.06 mg
41.26 %
Dpeak 87.0 °C

WHC-SD-WM-DP-077, REV. 0

BEST AVAILABLE COPY

84

5. mg

100.

200.

300.

400.

°C

David W. Smith 11-9-94

S94T000191 N2

23.930 mg

Rate: 10.0 °C/min

File: 00077.001

TG

METTLER

06-Nov-94

Ident: 0.0

222-S Laboratory

Step Analysis

Height -5.46 mg

-22.83 %

ResiC. 18.47 mg

77.17 %

Dpeak 69.0 °C

BEST AVAILABLE COPY

Step Analysis

Height -4.43 mg

-18.51 %

ResiC. 13.76 mg

57.48 %

Dpeak 273.0 °C

WHC-SD-WM-DP-077, REV.0

49

5. mg

100.

200.

300.

400.

°C

File: 00078.001 TG METTLER 07-Nov-94
Ident: 0.0 222-S Laboratory

S94T000191 N2 (DUP)
29.615 mg Rate: 10.0 °C/min

Step Analysis
Height -5.38 mg
-18.17 %
Resid. 24.23 mg
81.83 %
Dpeak 55.0 °C

BEST AVAILABLE COPY

WHC-SD-WM-DP-077, REV. 0

Step Analysis
Height -5.68 mg
-19.17 %
Resid. 18.07 mg
61.03 %
Dpeak 277.0 °C

S94T000193N2

30.058 mg

Rate: 10.0 °C/min

File: 00079.001 TG METTLER 07-Nov-94

Ident: 0.0

222-S Laboratory

Step Analysis

Height -3.93 mg

-13.07 %

ResiC. 26.13 mg

86.93 %

Dpeak 49.0 °C

BEST AVAILABLE COPY

Step Analysis

Height -6.56 mg

-21.82 %

ResiC. 19.22 mg

63.94 %

Dpeak 281.0 °C

WHC-SD-WM-DP-077, REV.0

51

5. mg

100.

200.

300.

400.

°C

File: 00080.001 TG METTLER 07-Nov-94
 Ident: 0.0 222-S Laboratory

S94T000193N2 (DUP)
 27.229 mg Rate: 10.0 °C/min

WHC-SD-WM-DP-077, REV. 0

FUSION DIGESTION ANALYSES

LABCORE Data Entry Template for Worklist# 115

Analyst: WKS Instrument: AB00 15 Method: LA-508-101, D-2 11-29-94
 Worklist Comment: Use ludlum to determine SS. Use .100 mL Spike volume. WHC-SD-WM-DP-077, REV. 0

Seg	Type	Sample#	Rep	AI	Test	Matrix	Actual	Found	DL	Unit
1, 2	1	BLNK-PREP			@ALPHA01 ALPHA01	SOLID			N/A	uCi/g
	1	BLNK-PREP			@ALPHA01 ALPHA01E	SOLID			N/A	% Ct.
3, 4	2	STD			@ALPHA01 ALPHA01	SOLID			N/A	uCi/g
	2	STD			@ALPHA01 ALPHA01E	SOLID			N/A	% Ct.
5, 6	3	SAMPLE	S94T000192	0	@ALPHA01 ALPHA01	SOLID	N/A			uCi/g
	3	SAMPLE	S94T000192	0	@ALPHA01 ALPHA01E	SOLID	N/A			% Ct.
7, 8	4	DUP	S94T000192	0	@ALPHA01 ALPHA01	SOLID			N/A	uCi/g
	4	DUP	S94T000192	0	@ALPHA01 ALPHA01E	SOLID			N/A	% Ct.
9, 10	5	SPK	S94T000192	0	@ALPHA01 ALPHA01	SOLID			N/A	uCi/g
11, 12	6	SAMPLE	S94T000194	0	@ALPHA01 ALPHA01	SOLID	N/A			uCi/g
	6	SAMPLE	S94T000194	0	@ALPHA01 ALPHA01E	SOLID	N/A			% Ct.
13, 14	7	DUP	S94T000194	0	@ALPHA01 ALPHA01	SOLID			N/A	uCi/g
	7	DUP	S94T000194	0	@ALPHA01 ALPHA01E	SOLID			N/A	% Ct.
15, 16	8	SPK	S94T000194	0	@ALPHA01 ALPHA01	SOLID			N/A	uCi/g

Final page for worklist # 115

Analyst Signature

Date

10-28-94

10/31/94

Data Entry Comments:

.100 - 10 - .100 Sample Size

RPD of 15% for STD + replicate is acceptable for the following reasons: ① STD counts

per minute is < 1000 X L.C. ② Mean of STD + Rep. is within limits ③ Sample values are all less than 8 making a count unjustifiable.

Units shown for QC (SPK) may not reflect the actual units.

Page: 1

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LA-508-101 ~~D-2~~ ^{D-2} ¹¹⁻²⁹⁻⁹⁴ AT: LIQUIDS/SOLIDS

		STANDARD	REPLICATE
Type	DETECTOR NUMBER	15	
STANDARD	DISH SIZE 1, 2, or 5 (MS)	2	
Work List	TOTAL COUNTS (TC)	1482	1273
115	COUNT TIME in MINUTES (CT)	30	
AT or TB?	BACKGROUND in cpm (BKG)	.5	
AT	SAMPLE SIZE in mL (SS)	10	
Test Code	DILUTION FACTOR (DF)	1	
Alpha 01	DIGEST DILUTION FACTOR (DDF)	1	
Matrix	EFFICIENCY FACTOR (EFF)		
LIQUID	Lc, Rmax, or Rs.(SAMPLE RATE) as APPROPRIATE		
Sample #	STANDARD BOOK 1 61852	9.54E-3	
Instrument Code			
WB26872			
Analyst			
Jim A. Smith			
Date			
10-28-94			
Time			
1300			

WHC-SD-WM-DP-077, REV. 0

1,2

LA-508-101 ~~D-2~~ ^{D-2} ¹¹⁻²⁹⁻⁹⁴ AT: LIQUIDS/SOLIDS

		BLANK	REPLICATE
Type	DETECTOR NUMBER	15	
BLANK	DISH SIZE 1, 2, or 5 (MS)	2	
	TOTAL COUNTS (TC)	4	7
	COUNT TIME in MINUTES (CT)	30	
AT or TB?	BACKGROUND in cpm (BKG)	.5	
AT 192 / 194	SAMPLE SIZE in mL (SS)	.100	
	DILUTION FACTOR (DF)	101	
	DIGEST DILUTION FACTOR (DDF)	1.7648	
Matrix	EFFICIENCY FACTOR (EFF)		
LIQUID - Solid	Lc, Rmax, or Rs.(SAMPLE RATE) as APPROPRIATE		

Data Entry by: Jim A. Smith Date: 10-28-94

Data Entry by: MCJ Date: 10-31-94

LA-508-101 D-2 AT: 11-29-94 LIQUIDS/SOLIDS

		SAMPLE	REPLICATE
Type	DETECTOR NUMBER	15	
SAMPLE	DISH SIZE 1, 2, or 5 (MS)	2	
Work List	TOTAL COUNTS (TC)	11	8
115	COUNT TIME in MINUTES (CT)	30	
AT or TB?	BACKGROUND in cpm (BKG)	.5	
AT	SAMPLE SIZE in mL (SS)	.100	
Test Code	DILUTION FACTOR (DF)	101	
Alpha 01	DIGEST GRAMS of SOLIDS/L (Dg/L)	1.7648	
Matrix	EFFICIENCY FACTOR (EFF)		
SOLID	Lc, Rmax, or Rs (SAMPLE RATE) as APPROPRIATE		
Sample #			
S94T000 192			
Instrument Code			
WB26872			
Analyst			
dm125			
Date			
10-28-94			
Time			
1300			

WHC-SD-WM-DP-077, REV.0

LA-508-101 D-2 AT: 11-29-94 LIQUIDS/SOLIDS

		DUPLICATE	REPLICATE
Type	DETECTOR NUMBER	15	
DUPLICATE	DISH SIZE 1, 2, or 5 (MS)	2	
	TOTAL COUNTS (TC)	12	16
	COUNT TIME in MINUTES (CT)	30	
AT or TB?	BACKGROUND in cpm (BKG)	.5	
AT	SAMPLE SIZE in mL (SS)	.100	
	DILUTION FACTOR (DF)	101	
	DIGEST GRAMS of SOLIDS/L (Dg/L)	1.7560	
Matrix	EFFICIENCY FACTOR (EFF)		
SOLID	Lc, Rmax, or Rs (SAMPLE RATE) as APPROPRIATE		

Data Entry by: dm125 Date: 10-28-94
 Data Entry by: 11-29-94 Date: 10-28-94

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11/12
11-29-94

LA-508-101 D4 D2 AT: LIQUIDS/SOLIDS

		SAMPLE	REPLICATE
Type	DETECTOR NUMBER	15	
SAMPLE	DISH SIZE 1, 2, or 5 (MS)	2	
Work List	TOTAL COUNTS (TC)	13	17
115	COUNT TIME in MINUTES (CT)	30	
AT or TB?	BACKGROUND in cpm (BKG)	.5	
AT	SAMPLE SIZE in mL (SS)	100	
Test Code	DILUTION FACTOR (DF)	101	
Alpha 01	DIGEST GRAMS of SOLIDS/L (Dg/L)	1.7768	
Matrix	EFFICIENCY FACTOR (EFF)		
SOLID	Ic, Rmax, or Rs (SAMPLE RATE) as APPROPRIATE		
Sample #			
594T000194			
Instrument Code			
WB26872			
Analyst			
Date			
10-28-94			
Time			
1300			

WHC-SD-WM-DP-077, REV. 0

12/14
11-29-94

LA-508-101 D4 D2 AT: LIQUIDS/SOLIDS

		DUPLICATE	REPLICATE
Type	DETECTOR NUMBER	15	
DUPLICATE	DISH SIZE 1, 2, or 5 (MS)	2	
	TOTAL COUNTS (TC)	9	11
	COUNT TIME in MINUTES (CT)	30	
AT or TB?	BACKGROUND in cpm (BKG)	.5	
AT	SAMPLE SIZE in mL (SS)	100	
	DILUTION FACTOR (DF)	101	
	DIGEST GRAMS of SOLIDS/L (Dg/L)	1.7916	
Matrix	EFFICIENCY FACTOR (EFF)		
SOLID	Ic, Rmax, or Rs (SAMPLE RATE) as APPROPRIATE		

Data Entry by: *[Signature]* Date: 10-22-94
Data Entry by: *[Signature]* Date: 10-31-94

508101_C

0-2 K24 11-29-94
LA-508-101 B AT: SPIKED SAMPLE

		SPIKE	REPLICATE
Type	DETECTOR NUMBER	15	
SPIKE	DISH SIZE 1, 2, or 5 (MS)	2	
Work List	TOTAL COUNTS (TC)	54102	55100
	COUNT TIME in MINUTES (CT)	30	
AT or TB?	BACKGROUND in cpm (BKG)	.5	
AT	SAMPLE VOLUME in mL (Spiked Vial) (SS)	.100	
Test Code	SAMPLE DILUTION FACTOR (Spiked Vial) (DF)	101	
Alpha 01	DIGEST GRAMS of SOLIDS/L (Dg/L)	1.7768	
Matrix	SPIKE VOLUME in mL (SVol)	.100	
solid	SPIKE DILUTION FACTOR (SDF)	1	
Sample #	SPIKE VALUE in μ Ci/L (SVal)	36.4	
S94T000194	INSTRUMENT EFFICIENCY FACTOR (EFF)		
Instrument Code	SAMPLE + SPIKE μ Ci/g (S+S)		
W826872	AVERAGE or MAXIMUM μ Ci/g from FORM C		
Analyst	SPIKE BOOK 1 94B43		
Date			
10-24-94			
Time			
1300			

Data Entry by:

Jason Ash

Date:

10-28-94

508101_X

10-31-94

0-2 K24 11-29-94
LA-508-101 B TB: SPIKED SAMPLE

		SPIKE	REPLICATE
Type	DETECTOR NUMBER		
SPIKE	DISH SIZE 1, 2, or 5 (MS)		
	TOTAL COUNTS (TC)		
	COUNT TIME in MINUTES (CT)		
	BACKGROUND in cpm (BKG)		
	SAMPLE VOLUME in mL (Spiked Vial) (SS)		
	SAMPLE DILUTION FACTOR (Spiked Vial) (DF)		
	DIGEST GRAMS of SOLIDS/L (Dg/L)		
	SPIKE VOLUME in mL (SVol)		
	SPIKE DILUTION FACTOR (SDF)		
	SPIKE VALUE in μ Ci/L (SVal)		
	INSTRUMENT EFFICIENCY FACTOR (EFF)		
	SAMPLE + SPIKE μ Ci/g (S+S)		
	AVERAGE or MAXIMUM μ Ci/g from FORM C		
	SPIKE BOOK 1		

Data Entry by:

Date:

Data Entry by:

Date:

508101_X

WHC-SD-WM-DP-077, REV.0

02 KH 112994

LA-508-101 D- AT: SPIKED SAMPLE

9,10

		SPIKE	REPLICATE
Type	DETECTOR NUMBER	15	
SPIKE	DISH SIZE 1, 2, or 5 (NS)	2	
Work List	TOTAL COUNTS (TC)	55318	52993
115	COUNT TIME in MINUTES (CT)	30	
AT or TB?	BACKGROUND in cpm (BKG)	.5	
AT	SAMPLE VOLUME in mL (Spiked Vial) (SS)	.100	
Test Code	SAMPLE DILUTION FACTOR (Spiked Vial) (DF)	101	
Apha 01	DIGEST GRAMS of SOLIDS/L (Dg/L)	1.7648	
Matrix	SPIKE VOLUME in mL (SVol)	.100	
Solid	SPIKE DILUTION FACTOR (SDF)	1	
Sample #	SPIKE VALUE in $\mu\text{Ci/L}$ (SVol)	36.7	
59400092	INSTRUMENT EFFICIENCY FACTOR (EFF)		
Instrument Code	SAMPLE + SPIKE $\mu\text{Ci/g}$ (S+S)		
WB26872	AVERAGE or MAXIMUM $\mu\text{Ci/g}$ from FORM C		
Analyst	SPIKE BOOK #	94843	
Smith			
Date			
10-28-94			
Time			
1300			

Data Entry by: Joel Smith Date: 10-28-94
508101_X

02 KH 112994

LA-508-101 D- TB: SPIKED SAMPLE

		SPIKE	REPLICATE
Type	DETECTOR NUMBER		
SPIKE	DISH SIZE 1, 2, or 5 (NS)		
	TOTAL COUNTS (TC)		
	COUNT TIME in MINUTES (CT)		
	BACKGROUND in cpm (BKG)		
	SAMPLE VOLUME in mL (Spiked Vial) (SS)		
	SAMPLE DILUTION FACTOR (Spiked Vial) (DF)		
	DIGEST GRAMS of SOLIDS/L (Dg/L)		
	SPIKE VOLUME in mL (SVol)		
	SPIKE DILUTION FACTOR (SDF)		
	SPIKE VALUE in $\mu\text{Ci/L}$ (SVol)		
	INSTRUMENT EFFICIENCY FACTOR (EFF)		
	SAMPLE + SPIKE $\mu\text{Ci/g}$ (S+S)		
	AVERAGE or MAXIMUM $\mu\text{Ci/g}$ from FORM C		
	SPIKE BOOK #		

Data Entry by: Joel Smith Date: 10-24-94
Data Entry by: M. C. Smith Date: 10-31-94
508101_X

WHC-SD-WM-DP-077, REV. 0

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

WHC-SD-WM-DP-077, REV. 0

AT : LA-508-101 (D-2) LIQUIDS

		STANDARD	REPLICATE
Type	DETECTOR NUMBER	15	15
STANDARD	DISH SIZE 1, 2, or 5 (MS)	2	2
Work List	TOTAL COUNTS (TC)	1482	1273
115	COUNT TIME in MINUTES (CT)	30	30
AT or TB ?	BACKGROUND in cpm (BKG)	0.5	0.5
AT	SAMPLE SIZE in mL (SS)	10.000	10.000
Test Code	DILUTION FACTOR (DF)	1	1
ALPHA01	DIGEST DILUTION FACTOR (DDF)	1	1
Matrix	EFFICIENCY FACTOR (EFF)	0.2380	0.2380
LIQUID	Lc, Rmax, or Rs, (SAMPLE RATE) as APPROPRIATE	48.900	41.933
Sample #	Sample Concentration in $\mu\text{Ci/L}$	9.26E-03	
	Replicate Concentration in $\mu\text{Ci/L}$	7.94E-03	
Instrument Code			
WB26872	Average Concentration in $\mu\text{Ci/L}$	8.5958E-03	
Analyst			
JMV	Rs (Sample Count Rate) = $(TC / CT) - BKG$		
Date	ALPHA TOTAL $\mu\text{Ci/L}$ = $Rs \cdot 1000\text{mL/L} \cdot DF \cdot DDF / (EFF \cdot SS \cdot 2220000\text{dpm}/\mu\text{Ci})$		
10/28/94	ALPHA TOTAL $\mu\text{Ci/mL}$ = ALPHA TOTAL $\mu\text{Ci/L} / 1000\text{mL/L}$		
Time	Relative Counting Error = $[(The\ Square\ Root\ of\ TC + BKG \cdot CT) / (TC - BKG \cdot CT)] \cdot 1.96 \cdot 100$		
01:00 PM	Detection Levels and Less Than Values are determined from Procedure LA-508-002.		

RESULTS

ALPHA TOTAL in $\mu\text{Ci/mL}$ (Average)	=	8.60E-06	DETECTION LEVEL
			1.31E-07 $\mu\text{Ci/mL}$
RELATIVE COUNTING ERROR	=	5.6%	

Data Entry by: <i>[Signature]</i>	Date: 10/31/94
Approved by: <i>[Signature]</i>	Date: 10/31/94

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

WHC-SD-WM-DP-077, REV. 0

AT : LA-508-101 (D-2) SOLIDS

		BLANK	REPLICATE
Type	DETECTOR NUMBER	15	15
BLANK	DISH SIZE 1, 2, or 5 (MS)	2	2
Work List	TOTAL COUNTS (TC)	4	7
115	COUNT TIME in MINUTES (CT)	30	30
AT or TB ?	BACKGROUND in cpm (BKG)	0.5	0.5
AT	SAMPLE SIZE in mL (SS)	0.100	0.100
Test Code	DILUTION FACTOR (DF)	101	101
ALPHA01	DIGEST GRAMS of SOLIDS/L (Dg/L)	1.7648	1.7648
Matrix	EFFICIENCY FACTOR (EFF)	0.2380	0.2380
SOLID	Lc, Rmax, or Rs, (SAMPLE RATE) as APPROPRIATE	0.301	0.301
Sample #	Sample Concentration in $\mu\text{Ci/g}$	< 3.26E-01	
192,194	Replicate Concentration in $\mu\text{Ci/g}$	< 3.26E-01	
Instrument Code			
WB26872	Maximum Concentration in $\mu\text{Ci/g}$	< 3.2630E-01	
Analyst			
JMV	Rs (Sample Count Rate) = (TC / CT) - BKG		
Date	ALPHA TOTAL $\mu\text{Ci/g}$ = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/ μCi)		
10/28/94			
Time	Relative Counting Error = [(The Square Root of TC + BKG * CT) / (TC - BKG * CT)] * 1.96 * 100		
01:00 PM	Detection Levels and Less Than Values are determined from Procedure LA-508-002.		

v RESULTS v

ALPHA TOTAL	in $\mu\text{Ci/g}$	(Maximum) =	< 3.26E-01	DETECTION LEVEL
LESS Than Value was Determined from Lc.				7.51E-01
RELATIVE COUNTING ERROR		=	114.9%	$\mu\text{Ci/g}$

Data Entry by: <i>MB</i>	Date: 10/31/94
Approved by: <i>MB</i>	Date: 10/31/94

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

WHC-SD-WM-DP-077, REV. 0

AT : LA-508-101 (D-2) SOLIDS

		SAMPLE	REPLICATE
Type	DETECTOR NUMBER	15	15
SAMPLE	DISH SIZE 1, 2, or 5 (MS)	2	2
Work List	TOTAL COUNTS (TC)	11	8
115	COUNT TIME in MINUTES (CT)	30	30
AT or TB ?	BACKGROUND in cpm (BKG)	0.5	0.5
AT	SAMPLE SIZE in mL (SS)	0.100	0.100
Test Code	DILUTION FACTOR (DF)	101	101
ALPHA01	DIGEST GRAMS of SOLIDS/L (Dg/L)	1.7648	1.7648
Matrix	EFFICIENCY FACTOR (EFF)	0.2380	0.2380
SOLID	Lc, Rmax, or Rs, (SAMPLE RATE) as APPROPRIATE	0.301	0.301
Sample #	Sample Concentration in $\mu\text{Ci/g}$	< 3.26E-01	
S94T000192	Replicate Concentration in $\mu\text{Ci/g}$	< 3.26E-01	
Instrument Code			
WB26872	Maximum Concentration in $\mu\text{Ci/g}$	< 3.2630E-01	
Analyst			
JMV	Rs (Sample Count Rate) = $(TC / CT) - BKG$		
Date	ALPHA TOTAL $\mu\text{Ci/g}$ = $Rs * 1000\text{mL/L} * DF / (EFF * SS * Dg/L * 2220000\text{dpm}/\mu\text{Ci})$		
10/28/94			
Time	Relative Counting Error = $[(The\ Square\ Root\ of\ TC + BKG * CT) / (TC - BKG * CT)] * 1.96 * 100$		
01:00 PM	Detection Levels and Less Than Values are determined from Procedure LA-508-002.		

v RESULTS v

ALPHA TOTAL in $\mu\text{Ci/g}$ (Maximum) =	< 3.26E-01	DETECTION LEVEL
LESS Than Value was Determined from Lc.		7.51E-01 $\mu\text{Ci/g}$
RELATIVE COUNTING ERROR =	249.9%	

Data Entry by: <i>[Signature]</i>	Date: 10/31/94
Approved by: <i>[Signature]</i>	Date: 10/31/94

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

WHC-SD-WM-DP-077, REV. 0

AT : LA-508-101 (D-2)

SOLIDS

		SAMPLE	REPLICATE
Type	DETECTOR NUMBER	15	15
DUPLICATE	DISH SIZE 1, 2, or 5 (MS)	2	2
Work List	TOTAL COUNTS (TC)	12	16
115	COUNT TIME in MINUTES (CT)	30	30
AT or TB ?	BACKGROUND in cpm (BKG)	0.5	0.5
AT	SAMPLE SIZE in mL (SS)	0.100	0.100
Test Code	DILUTION FACTOR (DF)	101	101
ALPHA01	DIGEST GRAMS of SOLIDS/L (Dg/L)	1.756	1.756
Matrix	EFFICIENCY FACTOR (EFF)	0.2380	0.2380
SOLID	Lc, Rmax, or Rs, (SAMPLE RATE) as APPROPRIATE	0.301	0.340
Sample #	Sample Concentration in $\mu\text{Ci/g}$	< 3.28E-01	
S94T000192	Replicate Concentration in $\mu\text{Ci/g}$	< 3.70E-01	
Instrument Code			
WB26872	Maximum Concentration in $\mu\text{Ci/g}$	< 3.6964E-01	
Analyst			
JMV	Rs (Sample Count Rate) = (TC / CT) - BKG		
Date	ALPHA TOTAL $\mu\text{Ci/g}$ = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/ μCi)		
10/28/94			
Time	Relative Counting Error = [(The Square Root of TC + BKG * CT) / (TC - BKG * CT)] * 1.96 * 100		
01:00 PM	Detection Levels and Less Than Values are determined from Procedure LA-508-002.		

RESULTS

ALPHA TOTAL in $\mu\text{Ci/g}$ (Maximum) =	< 3.70E-01	DETECTION LEVEL
LESS THAN Value was Determined from Rmax.		7.55E-01 $\mu\text{Ci/g}$
RELATIVE COUNTING ERROR =	500.0%	

Data Entry by: <i>[Signature]</i>	Date: 10/31/94
Approved by: <i>[Signature]</i>	Date: 10/31/94

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

WHC-SD-WM-DP-077, REV. 0

AT : LA-508-101 (D-2) SPIKED SAMPLE

			SPIKE	REPLICATE
Type	DETECTOR NUMBER		15	15
SPIKE	DISH SIZE 1, 2, or 5 (MS)		2	2
Work List	TOTAL COUNTS (TC)		55318	52993
115	COUNT TIME in MINUTES (CT)		30	30
AT or TB ?	BACKGROUND in cpm (BKG)		0.5	0.5
AT	SAMPLE VOLUME in mL (Spiked Vial) (SS)		0.100	0.100
Test Code	SAMPLE DILUTION FACTOR (Spiked Vial) (DF)		101	101
ALPHA01	DIGEST GRAMS of SOLIDS/L (Dg/L)		1.7648	1.7648
Matrix	SPIKE VOLUME in mL (SVol)		0.100	0.100
SOLID	SPIKE DILUTION FACTOR (SDF)		1	1
Sample #	SPIKE VALUE in µCi/L (SVal)		36.4	36.4
S94T000192	INSTRUMENT EFFICIENCY FACTOR (EFF)		0.238	0.238
Instrument Code	SAMPLE + SPIKE µCi/g (S+S)		2.00E+03	1.91E+03
WB26872	AVERAGE or MAXIMUM µCi/g from FORM C		<3.26E-1	
Analyst				
JMV	Rs (Sample Count Rate) = (TC / CT) - BKG			
Date	SAMPLE + SPIKE µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)			
10/28/94	PERCENT SPIKE RECOVERY = (((S+S µCi/g - SAMPLE µCi/g) * ((SDF/SVol)/(DF/SS/Dg/L)))/(SVal))*100			
Time				
01:00 PM				

RESULT AVG. PERCENT SPIKE RECOVERY = 93.8%

Data Entry by: <i>[Signature]</i>	Date: 31-Oct-94
Approved by: <i>[Signature]</i>	Date: 10/31/94

Form 508101_X Rev. 1.1

Page 1 of 1

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

WHC-SD-WM-DP-077, REV. 0

AT : LA-508-101 (D-2) SOLIDS

		SAMPLE	REPLICATE
Type	DETECTOR NUMBER	15	15
SAMPLE	DISH SIZE 1, 2, or 5 (MS)	2	2
Work List	TOTAL COUNTS (TC)	13	17
115	COUNT TIME in MINUTES (CT)	30	30
AT or TB ?	BACKGROUND in cpm (BKG)	0.5	0.5
AT	SAMPLE SIZE in mL (SS)	0.100	0.100
Test Code	DILUTION FACTOR (DF)	101	101
ALPHA01	DIGEST GRAMS of SOLIDS/L (Dg/L)	1.7768	1.7768
Matrix	EFFICIENCY FACTOR (EFF)	0.2380	0.2380
SOLID	Lc, Rmax, or Rs, (SAMPLE RATE) as APPROPRIATE	0.301	0.378
Sample #	Sample Concentration in $\mu\text{Ci/g}$	< 3.24E-01	
S94T000194	Replicate Concentration in $\mu\text{Ci/g}$	< 4.06E-01	
Instrument Code			
WB26872	Maximum Concentration in $\mu\text{Ci/g}$	< 4.0645E-01	
Analyst			
JMV	$R_s \text{ (Sample Count Rate)} = (TC / CT) - BKG$		
Date	$ALPHA \text{ TOTAL } \mu\text{Ci/g} = R_s * 1000\text{mL/L} * DF / (EFF * SS * Dg/L * 2220000\text{dpm}/\mu\text{Ci})$		
10/28/94			
Time	Relative Counting Error = $[(The \text{ Square Root of } TC + BKG * CT) / (TC - BKG * CT)] * 1.96 * 100$		
01:00 PM	Detection Levels and Less Than Values are determined from Procedure LA-508-002.		

v RESULTS v

ALPHA TOTAL in $\mu\text{Ci/g}$ (Maximum) = < 4.06E-01			DETECTION LEVEL
LESS THAN Value was Determined from Rmax.			
RELATIVE COUNTING ERROR = 500.0%			
			7.46E-01 $\mu\text{Ci/g}$

Data Entry by: <i>MRS. J. H. ...</i>	Date: 10/31/94
Approved by: <i>[Signature]</i>	Date: 10/31/94

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

WHC-SD-WM-DP-077, REV. 0

AT : LA-508-101 (D-2)

SOLIDS

AT : LA-508-101 (D-2)		SOLIDS		SAMPLE	REPLICATE
Type	DETECTOR NUMBER			15	15
DUPLICATE	DISH SIZE 1, 2, or 5 (MS)			2	2
Work List	TOTAL COUNTS (TC)			9	11
115	COUNT TIME in MINUTES (CT)			30	30
AT or TB ?	BACKGROUND in cpm (BKG)			0.5	0.5
AT	SAMPLE SIZE in mL (SS)			0.100	0.100
Test Code	DILUTION FACTOR (DF)			101	101
ALPHA01	DIGEST GRAMS of SOLIDS/L (Dg/L)			1.7916	1.7916
Matrix	EFFICIENCY FACTOR (EFF)			0.2380	0.2380
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE			0.301	0.301
Sample #	Sample Concentration in $\mu\text{Ci/g}$		<	3.21E-01	
S94T000194	Replicate Concentration in $\mu\text{Ci/g}$		<	3.21E-01	
Instrument Code					
WB26872	Maximum Concentration in $\mu\text{Ci/g}$		<	3.2142E-01	
Analyst					
JMV	Rs (Sample Count Rate) = (TC / CT) - BKG				
Date	ALPHA TOTAL $\mu\text{Ci/g}$ = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/ μCi)				
10/28/94					
Time	Relative Counting Error = [(The Square Root of TC + BKG * CT) / (TC - BKG * CT)] * 1.96 *				
01:00 PM	Detection Levels and Less Than Values are determined from Procedure LA-508-002.				

RESULTS

ALPHA TOTAL	in $\mu\text{Ci/g}$	(Maximum) =	< 3.21E-01	DETECTION LEVEL
LESS Than Value was Determined from Lc.				7.40E-01
RELATIVE COUNTING ERROR		=	249.9%	$\mu\text{Ci/g}$

Data Entry by: <i>MCS</i>	Date: 10/31/94
Approved by: <i>[Signature]</i>	Date: 10/31/94

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

WHC-SD-WM-DP-077, REV. 0

AT : LA-508-101 (D-2) SPIKED SAMPLE

		SPIKE	REPLICATE
Type	DETECTOR NUMBER	15	15
SPIKE	DISH SIZE 1, 2, or 5 (MS)	2	2
Work List	TOTAL COUNTS (TC)	56102	55100
115	COUNT TIME in MINUTES (CT)	30	30
AT or TB ?	BACKGROUND in cpm (BKG)	0.5	0.5
AT	SAMPLE VOLUME in mL (Spiked Vial) (SS)	0.100	0.100
Test Code	SAMPLE DILUTION FACTOR (Spiked Vial) (DF)	101	101
ALPHA01	DIGEST GRAMS of SOLIDS/L (Dg/L)	1.7768	1.7768
Matrix	SPIKE VOLUME in mL (SVol)	0.100	0.100
SOLID	SPIKE DILUTION FACTOR (SDF)	1	1
Sample #	SPIKE VALUE in $\mu\text{Ci/L}$ (SVal)	36.4	36.4
S94T000194	INSTRUMENT EFFICIENCY FACTOR (EFF)	0.238	0.238
Instrument Code	SAMPLE + SPIKE $\mu\text{Ci/g}$ (S+S)	2.01E+03	1.98E+03
WB26872	AVERAGE or MAXIMUM $\mu\text{Ci/g}$ from FORM C	<4.06E-1	
Analyst			
JMV	Rs (Sample Count Rate) = (TC / CT) - BKG		
Date	SAMPLE + SPIKE $\mu\text{Ci/g}$ = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/ μCi)		
10/28/94	PERCENT SPIKE RECOVERY = (((S+S $\mu\text{Ci/g}$ - SAMPLE $\mu\text{Ci/g}$) * ((SDF/SVol)/(DF/SS/Dg/L)))/(SVal)*100		
Time			
01:00 PM			

RESULT AVG. PERCENT SPIKE RECOVERY = 96.3%

Data Entry by: *M. S. [Signature]* Date: 31-Oct-94
 Approved by: *[Signature]* Date: 10/31/94
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