JUL 25 1995

ENGINEERING DATA TRANSMITTAL

1. EDT № 612169

2. To: (Receiving Organization) Distribution	3. From: (Originating Organization) Characterization Plans, Coordination and Reports	4. Related EDT No.: N/A
5. Proj./Prog./Dept./Div.: Tank 241-A-102/Waste Management/CPCR/Technical Basis Characterization	6. Cog. Engr.: Jaiduk Jo	7. Purchase Order No.: N/A
8. Originator Remarks: This document is being released into the Supporting Document System for retrievability purposes.		9. Equip./Component No.: N/A
		10. System/Bldg./Facility: N/A
11. Receiver Remarks: For Release.		12. Major Assm. Dwg. No.: N/A
		13. Permit/Permit Application No.: N/A
		14. Required Response Date: 07/20/95

15. DATA TRANSMITTED

(A) Item No.	(B) Document/Drawing No.	(C) Sheet No.	(D) Rev. No.	(E) Title or Description of Data Transmitted	(F) Approval Designator	(G) Reason for Transmittal	(H) Originator Disposition	(I) Receiver Disposition
1	WHC-SD-WM-DP-136	N/A	0	45-Day Safety Screen Results and Final Report for Tank 241-A-102, Auger Sample 95-AUG-033	Q	2	1	

16. KEY

Approval Designator (F)	Reason for Transmittal (G)		Disposition (H) & (I)	
E, S, Q, D or N/A (see WHC-CM-3-5, Sec.12.7)	1. Approval 2. Release 3. Information	4. Review 5. Post-Review 6. Dist. (Receipt Acknow. Required)	1. Approved 2. Approved w/comment 3. Disapproved w/comment	4. Reviewed no/comment 5. Reviewed w/comment 6. Receipt acknowledged

17. SIGNATURE/DISTRIBUTION (See Approval Designator for required signatures)

(G) Reason	(H) Disp.	(J) Name	(K) Signature	(L) Date	(M) MSIN	(J) Name	(K) Signature	(L) Date	(M) MSIN	(G) Reason	(H) Disp.
2	1	Cog.Eng. J. Jo		7-18-95							
2	1	Cog. Mgr. J.G. Kristofzski		7/21/95							
2	1	QA E. W. Miller		7-19-95							
		Safety									
		Env.									

AUG 1995 RECEIVED EDMC

18. A.E. Young Signature of EDT Originator Date 7-18-95	19. Authorized Representative for Receiving Organization Date	20. J.G. Kristofzski Cognizant Manager Date 7/21/95	21. DOE APPROVAL (if required) [] Approved [] Approved w/comments [] Disapproved w/comments

BD-7400-172-2 (04/94) GEF097

BD-7400-172-1

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RELEASE AUTHORIZATION

Document Number:	WHC-SD-WM-DP-136, REV 0
Document Title:	45-Day Safety Screen Results and Final Report for Tank 241-A-102, Auger Sample 95-AUG-033
Release Date:	7/24/95

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 M. Broz 7/24/95

Kara M. Broz

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SUPPORTING DOCUMENT

1. Total Pages 58

2. Title

45-Day Safety Screen Results and Final Report for Tank 241-A-102, Auger Sample 95-AUG-033

3. Number

RMB 7/24/95

WHC-SD-WM-DP-~~033~~ 136

4. Rev No.

0

5. Key Words

45-Day, Safety Screen, Safety Screen Results, Final Report, Tank 241-A-102, Tank A-102, A-102, Auger Sample, 95-AUG-033

6. Author

Name: Jaiduk Jo

Signature

Organization/Charge Code 75310/MDR21

7. Abstract

N/A

8. RELEASE STAMP

OFFICIAL RELEASE BY WHC (2)

DATE JUL 25 1995

A-6400-073 (08/94) WEF124

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P.O. Box 1970 Richland, WA 99352

WHC-SD-WM-DP-136, REV. 0

ANALYTICAL SERVICES

45-DAY SAFETY SCREEN RESULTS AND FINAL REPORT FOR TANK 241-A-102, AUGER SAMPLE, 95-AUG-033

DATED: JULY 19, 1995

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NARRATIVE

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Summary

Based on the safety screening decision rules, the data from this sampling event indicates there is insufficient information from this auger sample to classify tank A-102 as "safe" or "not safe." However, no data were obtained which indicates the tank is "not safe."

Tank A-102 was auger sampled from Riser 19 on June 7, 1995 and received at the 222-S Laboratories on June 9, 1995. The sample was extruded and underwent safety screening analyses consisting of Differential Scanning Calorimetry (DSC), Thermogravimetric Analysis (TGA) and Alpha Total in accordance with reference (1) below. The single auger test results and the past sampling events indicate, with >90 % confidence, that no safety screening notification limits for DSC, TGA, and Alpha Total were exceeded.

The summary table (Table 1) includes only sample and duplicate results associated with the auger sample. Table 2 lists additional % water from sampling in 1980 and Table 4 lists additional total alpha from a core sample obtained from Riser 4 in 1986. Tables 2, 3, and 4 also give the results of a statistical analyses of the combined auger and core sample results. The tables give the mean, variance of the mean and the lower (LL) and upper (UL) limits to 95 % confidence interval of the mean. The variance of the mean was obtained using analysis of variance method.

The DQO required a minimum of two widely spaced vertical profiles to be used to classify the tank. However, a second riser was not found for auger sampling after inspecting all the available risers. Therefore, an upper (90%) confidence value can not be computed for comparison to the decision thresholds to classify the tank based on this sample event. Results from core sampling from Riser 4 obtained in 1986 for total alpha and sampling obtained in 1980 for percent water are available.

Sample Receipt and Extrusion

Auger 95-AUG-033 (Riser 19)

Auger 95-AUG-033 was sampled on 6/7/95, and received at the 222-S laboratory on 6/9/95. Extrusion took place on 6/15/95, with the total amount of solid material recovered being 96.5 grams. No drainable or liner liquid was recovered. Flutes 1-6 were clean except the edges. Flutes 7-19 contained hard small black pebbles throughout the sample. Overall, the appearance of the sample was consistent throughout with a gritty paste like composition. The black pebbles were archived. The Safety Program was contacted per telecon and approval was given to proceed. The sample was provided to the laboratory for analysis, and results appear in the Table 1 as sample numbers S95T001171 and S95T001174.

Analytical Results

TGA (Moisture)

The weight percent water by Thermogravimetric Analysis was performed using procedure LA-560-112, Rev. A-2 with a nitrogen purge. All results (33.6 and 30.7%) were above the notification limit of less than 17 percent water, therefore no notifications were made. An analysis of variance was performed using the data from this sampling event and sampling event from December of 1980 (Table 2). The lower limit to a 95% confidence interval of the mean is 18.8%. Since low limit is greater than 17%, the safety criteria has been satisfied. That is, we are 95% confident that the mean percent water in the tank is greater than 17%. All samples met the precision and accuracy criteria stated in reference (1).

DSC

Differential thermal analyses were performed using procedure LA-514-113, Rev. B-1 on a Mettler Model 20 Differential Scanning Calorimetry under a nitrogen purge. The results were 319 and 306 Joules/g which were below the safety screen notification limit of 481 Joules/g (dry). Therefore no notifications were made. An analysis of variance result indicates with 95% confidence that upper limit is 429.3 Joules/g (Table 3). All samples met the precision and accuracy criteria stated in reference (1). All DSC exthotherm values were converted to a dry-weight basis using the respective average percent water as determined by TGA.

Alpha Total

The Alpha Total analyses were performed using procedure LA-508-101, Rev. D-2. The results were roughly an order of magnitude less than the notification limit of 41 μCi/g with the highest observed value of any sample or duplicate being 4.55 μCi/g. At 22.5%, the RPD between sample and duplicate runs was outside of the 10% limit for sample S95T001174. A third re-run was performed due to low spike recovery for the second rerun. The first two run results are included in Table 4. The results from all three runs appear similar despite the spike recovery and RPD issues. The mean of the three runs (total of six analyses) is 3.77 μCi/g with a standard deviation of 0.5. An analysis of variance was performed using the data from this sampling event and using $^{239/240}$Pu and ^{241}Am analytical results from 1986 sampling event. The upper limit (UL) to the 95% confidence interval of the mean was 5.02 μCi/g. This indicates that we are 95% confident that the mean alpha activity in the tank is less than the safety limit of 41 μCi/g. The tank sampling and analysis plan accuracy criteria was met.

Reference: (1) WHC-SD-WM-TSAP-004, REV. 0, "Tank 241-A-102 Auger Sampling and Analysis Plan," dated May 15, 1995, Westinghouse Hanford Company, Richland, WA 99352

Project Coordinator: Jaiduk Jo

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SAMPLE DATA SUMMARY

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A-102

TABLE 1

CORE NUMBER: n/a
SEGMENT #: n/a

SEGMENT PORTION: n/a

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S95T001171			% Water by TGA using Mettler	%	100.8	n/a	33.59	30.66	32.12	9.12	n/a	n/a	n/a
S95T001171			DSC Exotherm Dry Calculated	Joules/g Dry	n/a	n/a	319.0	306.0	312.5	4.16	n/a	n/a	n/a
S95T001174			Alpha of Digested Solid	uCi/g	102.7	<6.22e-02	4.550	3.700	4.125	20.6	106.1	1.43e-01	7.8

Table 2: Percent Water (Analysis of Variance)

Sample #	Date	Results (% Water)	Mean	Variance of the Mean	LL(% water)	UL (% water)
S95T001171	1995	33.59				
Duplicate	1995	30.66				
Deep Sample	1980	47.6				
Shallow Sample	1980	41.5				
			38.3	20.5	18.8	57.8

Table 3: DSC (Analysis of Variance)

Sample #	Date	Results (J/g)	Mean (J/g)	Variance of the Mean	LL (J/g)	UL (J/g)
S95T001171	1995	319				
Duplicate	1995	306				
			312.5	84.5	195.7	429.3

Table 4: Alpha Total (Analysis of Variance)

Sample #	Date	Results (μCi/g)	Mean (μCi/g)	Variance of the Mean	LL (μCi/g)	UL (μCi/g)
S95T001174	1995	4.08				
Duplicate	1995	3.26				
Re-Run 1	1995	3.78				
Duplicate1	1995	3.26				
Re-Run 2	1995	4.55				
Duplicate2	1995	3.70				
91XCXXXX	1986	1.78				
			3.49	0.23	1.96	5.02

PHOTOGRAPH

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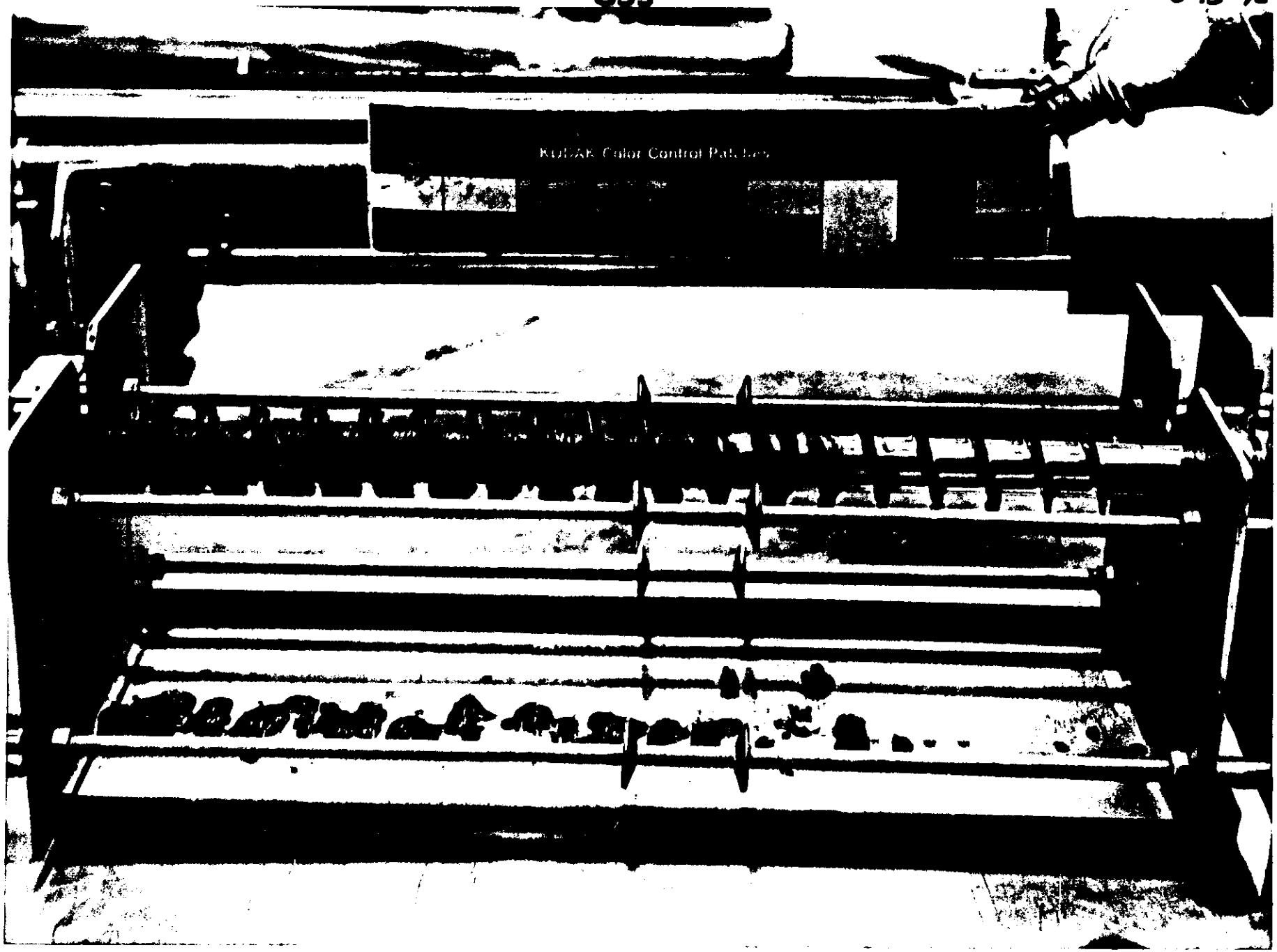
A-102 95-AUG-08 033 AEY 7-18-95

6-15-95



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CHAIN OF CUSTODY FORM

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COPY

CHAIN-OF-CUSTODY RECORD FOR AUGER SAMPLING

(1) Shipment Number 200W-08-TF (2) Sample Number 95-AUG-033 (3) Supervisor R.J. PRAZNIK

(4) Tank A102 (5) Riser 19 (6) Cask Serial Number C1039

Radiation Survey Data:	(7) FIELD	(31) LABORATORY
Over Top Dose Rate	<0.5 mR/hr	<0.5 mR/hr
Side Dose Rate	12 mR/hr	12 mR/hr
Bottom Dose Rate	4 mR/hr	6 mR/hr
Smearable Contamination (Alpha)	<20 dpm	<20 dpm
(Beta-Gamma)	<1000 dpm	<1K dpm
RCT* (Signature)	[signature]	RCT* (Signature) [signature]

(8) Shipment Description

A. Work Package Number	ES-95-00255-0
B. Cask Seal Number	1044
C. Date and Time Sample Removed from Tank	6-7-95 / 1125hrs
D. Expected Liquid Content	* 90%
E. Expected Solid Content	10%
F. Dose Rate Through Drill String	400mR/hr
G. Expected Sample Length	12"

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

(10) Field Comments (NOTE)
* Sample MEDIUM WAS Gritty SAND Like.

(32) Laboratory Comments

(11) Point of Origin	(12) Destination	(13) Sender Name (Sign and PRINT)	(14) Date/Time	(15) Sender Comments
A102 R/19	222S LAB	[signature] DA KRAHN	6-9-95 / 1233	
(17) Relinquished By (Sign and PRINT)		**(18) Received By (Sign and PRINT)**	**(19) Date/Time**	**(20) Receiver Comments**
[signature] DA KRAHN		[signature] Jubal D Helms	6/9/95/1233	
(21) Relinquished By (Sign and PRINT)		**(22) Received By (Sign and PRINT)**	**(23) Date/Time**	**(24) Receiver Comments**
[signature] Jubal D. Helms		[signature] EE Dubes	6-9-95 1300	
(25) Relinquished By (Sign and PRINT)		**(26) Received By (Sign and PRINT)**	**(27) Date/Time**	**(28) Receiver Comments**

(16) Seal Intact Upon Release?	(29) Seal Intact Upon Receipt?	(30) Seal Data Consistent with this Record?		
		Shipment No.	Cask Seal No.	Sample No.
☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No

DISTRIBUTION: White - Office of Sample Management Yellow - Recipient of Sample Pink - Waste Tank Sampling, F7-12 Goldenrod - Tank Farm Operations, T4-01 BC-6001-326 (03/94)

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HOT CELL LOGBOOK

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NOTEBOOK/LOGBOOK UNCLASSIFIED COVERSHEET

SECTION I	
RECORD COPY NOT FOR CIRCULATION MAY 3 1 1995 RECEIVED WHC BCSR DOCUMENT CONTROL	Notebook No. WHC-N-1175 Date of Issue 5-31-95 Copy 1 Title 241-A-102
Author R. K. Fuller	If continued from another notebook give the notebook number

This is a Controlled Notebook. The assigned custodian is responsible for this book. When the book is completed, contact your Records Management Specialist for a Retention Schedule. Complete Section II of this form and return the Notebook to Unclassified Document Control, A4-18.

Responsible Custodian	Payroll No.	MSIN	Date Assigned
Keith Fuller	607528	T6-31	MAY 3 1 1995

SECTION II Complete this section prior to returning notebook to Unclassified Document Control, A4-18

Abstract: (Give brief description of notebook contents)

Period Covered: (Inclusive dates - Month/Day/Year)

Certification Statement: This notebook does ☐ does not ☐ contain any Quality Assurance Record Material (as described in Section 9.0 of WHC-CM-3-5) and has been verified to be a complete and legible record.

Custodian's Signature and Date

Retention Schedule:	Specialist Concurrence Name	Custodian's Manager's Name

BD-6001-256 (10/93)

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② A-102 95-AUG-033 Riser #19	(6-9)
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~~A-106~~ 06-15-95 A-102 95-AUG-033 Riser 19

WHC-SD-WM-DP-136, REV

COPY

CHAIN-OF-CUSTODY RECORD FOR AUGER SAMPLING

(1) Shipment Number 200W-08-TF (2) Sample Number 95-AUG-033 (3) Supervisor R.J. PRAZNIK

(4) Tank A102 (5) Riser 19 (6) Cask Serial Number C1039

Radiation Survey Data:	(7) FIELD	(31) LABORATORY
Over Top Dose Rate	<0.5 mR/hr	<0.5 mR/hr
Side Dose Rate	12 mR/hr	12 mR/hr
Bottom Dose Rate	4 mR/hr	6 mR/hr
Smearable Contamination	<20 dpm (Alpha)	<20 dpm (Alpha)
	<1000 dpm (Beta-Gamma)	<1K dpm (Beta-Gamma)
RCT*	[signature] (Signature)	[signature] (Signature)

(8) Shipment Description

A. Work Package Number	ES-95-00255-0
B. Cask Seal Number	1044
C. Date and Time Sample Removed from Tank	6-7-95 / 1125hrs
D. Expected Liquid Content	* 90%
E. Expected Solid Content	10%
F. Dose Rate Through Drill String	400mR/hr
G. Expected Sample Length	12"

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

14

(10) Field Comments (NOTE)

* Sample MEDIUM WAS Gritty SAND Like.

(32) Laboratory Comments

(11) Point of Origin	(12) Destination	(13) Sender Name (Sign and PRINT)	(14) Date/Time	(15) Sender Comments
A102 R/19	222S LAB	[signature] DA KRAHN	6-9-95 / 1233	
(17) Relinquished By (Sign and PRINT)		(18) Received By (Sign and PRINT)	(19) Date/Time	(20) Receiver Comments
[signature] DA KRAHN		[signature] Jubal D Helms	6/9/95/1233	
(21) Relinquished By (Sign and PRINT)		(22) Received By (Sign and PRINT)	(23) Date/Time	(24) Receiver Comments
[signature] Jubal D. Helms		[signature] EE Dubes	6-9-95 1300	
(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

DISTRIBUTION: White - Office of Sample Management Yellow - Recipient of Sample Pink - Waste Tank Sampling, F7-12 Goldenrod - Tank Farm Operations, T4-01 BC-6001-326 (03/94)

Riser #19

TEMP. 79.4°F HUMIDITY 33%

500g = 499.99 grams
CASK SEAL # 1044
P.C. JAIDUK JO
Dose Rate Through Drill string 400mR/hr.
CASK # 1039
LABCORE # S95T001086
WORKLIST # 1583
FRAME # 11-12

Sample Description: OF SOLIDS (A-102 95-AUG-033 Riser 19)

Sample was Black, chunky, and wet. Sample was Gritty. Flutes 1-6 was clean except the edges. Flutes 7-19 contained grainy Black chunky (small pebbles) There was hard grainy pebble type chunks throughout the sample. Constant all through the sample with pasty consistency.

Sample Description: (A-102 95-AUG-033 riser 19)

JAR # 7074 (125mLS)
FINAL WT. 226.52 grams
INITIAL WT. 130.03 grams
NET WT. 96.49 grams

TRO
06-15-95

A-102 95-AUG-033 Riser #19

NOTES: START TIME WHEN SAMPLE WAS VIDEO TAPED 13:20
FINISH TIME SAMPLE IN JAR 13:45.

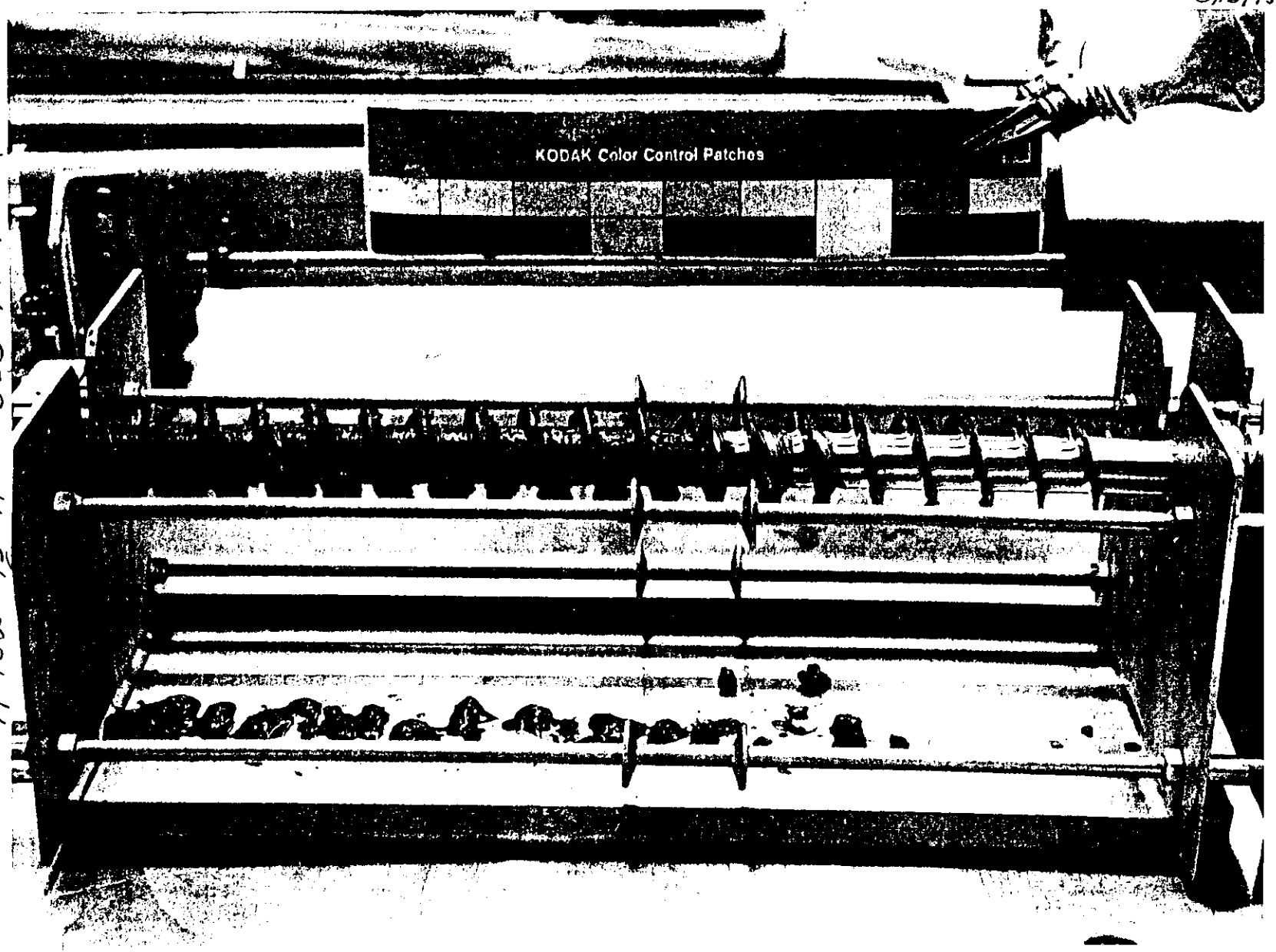
TRO
06-05-95

EAL 6-28-95

Logbook

A-102 95-AUG-033

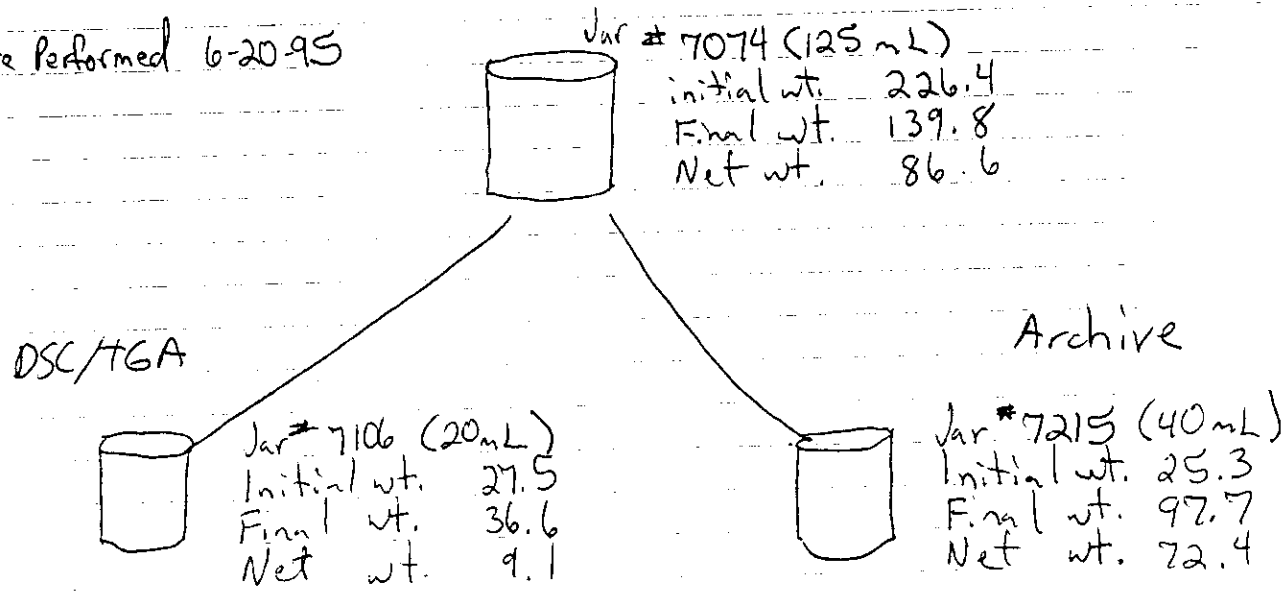
6/15/95



A-102 95-AUG-033 Riser #19

6-28-95 A-102 95-AUG-033 Homogenization

Date Performed 6-20-95



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6/28/95

SAMPLE HANDLING

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LABCORE Data Entry Template for Worklist# 1583

Analyst: EC **Instrument:** BA000 **Book #** NA

Method: LO-160-103 Rev/Mod A-7

Worklist Comment: A-102 95-AUG-033 Riser 19 Extrusion

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	INSTCHK01				EXTRUD01	SOLID	20g	19.99	N/A	
		2	INSTCHK02				EXTRUD01	SOLID	500g	499.99	N/A	
95000087	A-102	3	SAMPLE	S95T001086	0		DLIQVOL1	SOLID	N/A	0		mL
95000087	A-102	4	SAMPLE	S95T001086	0		DLIQWT01	SOLID	N/A	0		g
95000087	A-102	5	SAMPLE	S95T001086	0		EST.G/ML	SOLID	N/A	0		g/mL
95000087	A-102	6	SAMPLE	S95T001086	0		EXTRUD01	SOLID	N/A	complete		
95000087	A-102	7	SAMPLE	S95T001086	0		LLIQWT01	SOLID	N/A	0		g
95000087	A-102	8	SAMPLE	S95T001086	0		NOTEBOOK	SOLID	N/A	N-175		
95000087	A-102	9	SAMPLE	S95T001086	0		SLDVOL01	SOLID	N/A	96		mL
95000087	A-102	10	SAMPLE	S95T001086	0		SLDWT-01	SOLID	N/A	96		g
95000087	A-102	11	SAMPLE	S95T001086	0		ORGVOL01	SOLID	N/A	0		mL

Final page for worklist # 1583

EC 6-16-95 **Analyst Signature** **Date**

EC 6-16-95 **Analyst Signature** **Date**

Reviewed by [illegible] 6/16/95

Data Entry Comments:

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

LABCORE Data Entry Template for Worklist# 1664

Analyst: EC **Instrument:** BA000 **Book #** NA

Method: LO-160-103 Rev/Mod A-7

Worklist Comment: A-102 95-AUG-033 HOMOGENIZATION

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	INSTCHK01				EXTRUD01	SOLID	20	19.99	N/A	
		2	INSTCHK02				EXTRUD01	SOLID	500	499.79	N/A	
95000087	A-102	3	SAMPLE	S95T001171	0		SUBSMPL1	SOLID	N/A	9.1		g
95000087	A-102	4	SAMPLE	S95T001172	0	X	ARCHIV01	SOLID	N/A	72.4		g
95000087	A-102	5	SAMPLE	S95T001173	0	X	ARCHIV01	SOLID	N/A	0		g

Final page for worklist # 1664

EKA 6-28-95
Analyst Signature **Date**

EKA 6-28-95
Analyst Signature **Date**

Data Entry Comments:

Reviewed by RK Hills 6/28/95

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

LABCORE Data Entry Template for Worklist# 1754

Analyst: EC **Instrument:** BA000 **Book #** NA

Method: LO-160-103 Rev/Mod A-7

Worklist Comment: A-102 95-AUG-033 Homogenization

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	INSTCHK01				EXTRUD01	SOLID	20	19.99	N/A	
		2	INSTCHK02				EXTRUD01	SOLID	500	499.79	N/A	
95000087	A-102	3	SAMPLE	S95T001170	0		HOMGNZ01	SOLID	N/A	Complete		

Final page for worklist # 1754

EC 6-28-95
Analyst Signature **Date**

EC 6-28-95
Analyst Signature **Date**

Data Entry Comments: Reviewed by RK Zeller 6/28/95

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

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SAMPLE PREPARATIONS

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worklistrpt Version 2.1 05/15/95
06/28/95 11:02

LABCORE Data Entry Template for Worklist# 1742

Analyst: [illegible] **Instrument:** FUS01 AL11066 **Book #** N/4

Method: LA-549-141 Rev/Mod D-C

Worklist Comment: A-102 FUSION - 1171->1174

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 BLNK-PREP			FUSION01	SOLID	250ml		N/A	g/L
95000087	A-102	2 SAMPLE .5237 g → 250 ml	S95T001174	0 F	FUSION01	SOLID	N/A	2.0948		g/L
95000087	A-102	3 SAMPLE	S95T001174	0	DOSE-02	SOLID	N/A	50C	~~50C~~ 6-30-95	mrad/hour
95000087	A-102	4 DUP .5285 → 250 ml	S95T001174	0 F	FUSION01	SOLID	2.0948	2.1140	N/A	g/L
95000087	A-102	5 DUP	S95T001174	0	DOSE-02	SOLID		50C	N/A	mrad/hour

Final page for worklist # 1742

Teresa Murphy 6-30-95
Analyst Signature **Date**

Analyst Signature **Date**

Data Entry Comments: Scale calibrated 150.0001g. Sam 1174-20ml HCl, 80ml HNO3 <1% solids. Dup 1174-20ml HCl, 90ml HNO3, <1% solids. Blank-20ml HCl, 40ml HNO3. Dose rate was 70mrad/hr. HPT was Sam Shemel.

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

[illegible] 6-30-95

INORGANIC ANALYSES

LABCORE Data Entry Template for Worklist# 1671

Analyst: SMF **Instrument:** DSC0 1 **Book #** 12N14A

Method: LA-514-113 Rev/Mod B-1

Worklist Comment: Please run A-102 DSCs under N2. bdv

GROUP	PROJECT	S TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD				DSC-01	SOLID	28.40	2[illegible]	N/A	Joules/g
95000087	A-102	2 SAMPLE	S95T001171	0		DSC-01	SOLID	N/A	216.4		Joules/g
95000087	A-102	3 DUP	S95T001171	0		DSC-01	SOLID	216.4	207.4	N/A	Joules/g

Final page for worklist # 1671

Initialed 7-10-95
Analyst Signature **Date**

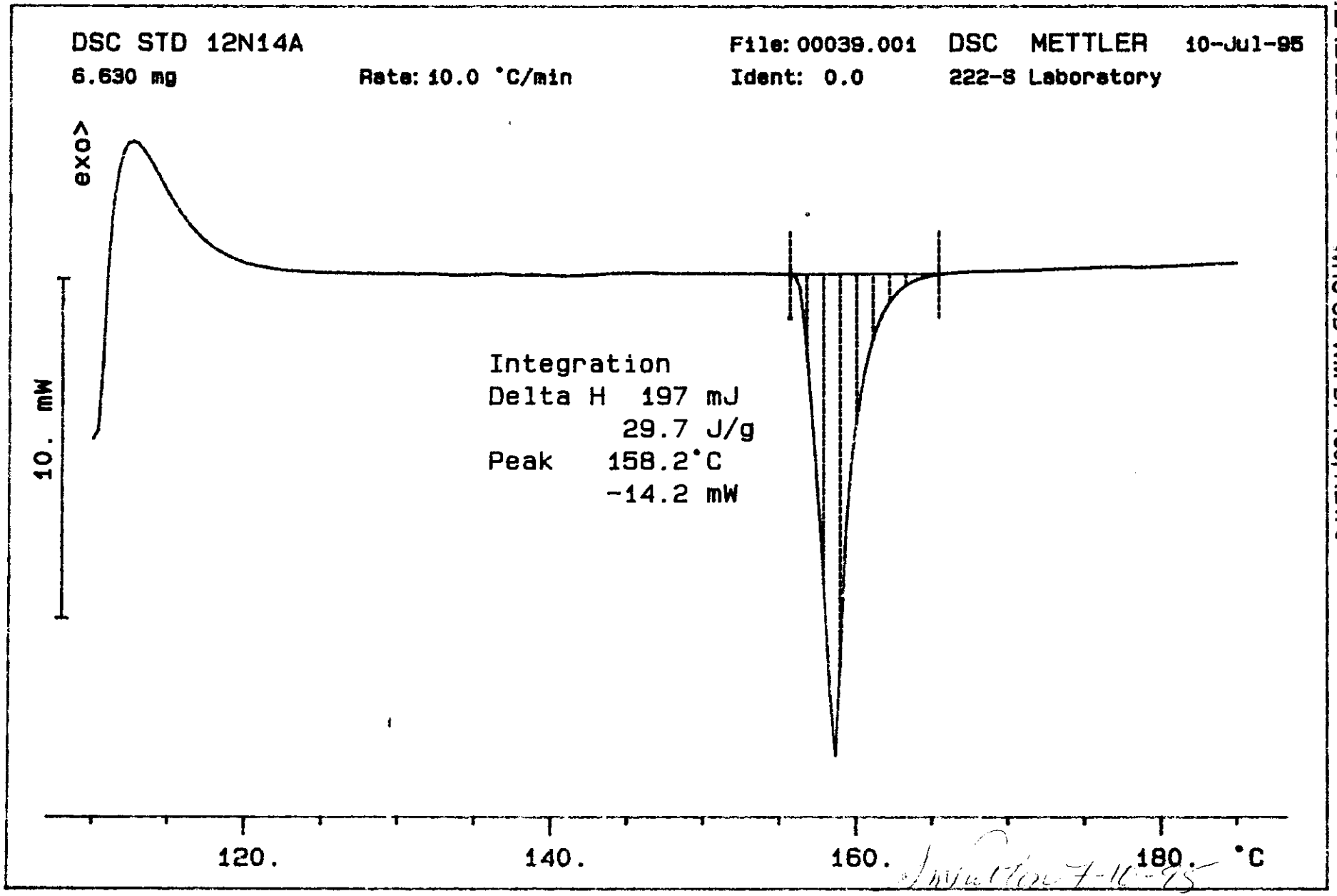
[illegible] 7-10-95
Analyst Signature **Date**

Verified by Blandina Valenzuela 7-12-95

Data Entry Comments: Dark Brown Sludge
Sample produced one endothermic region at 133.3°C with a delta H of 825.9 J/g

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 27 TO 29.



Signature 7-10-95

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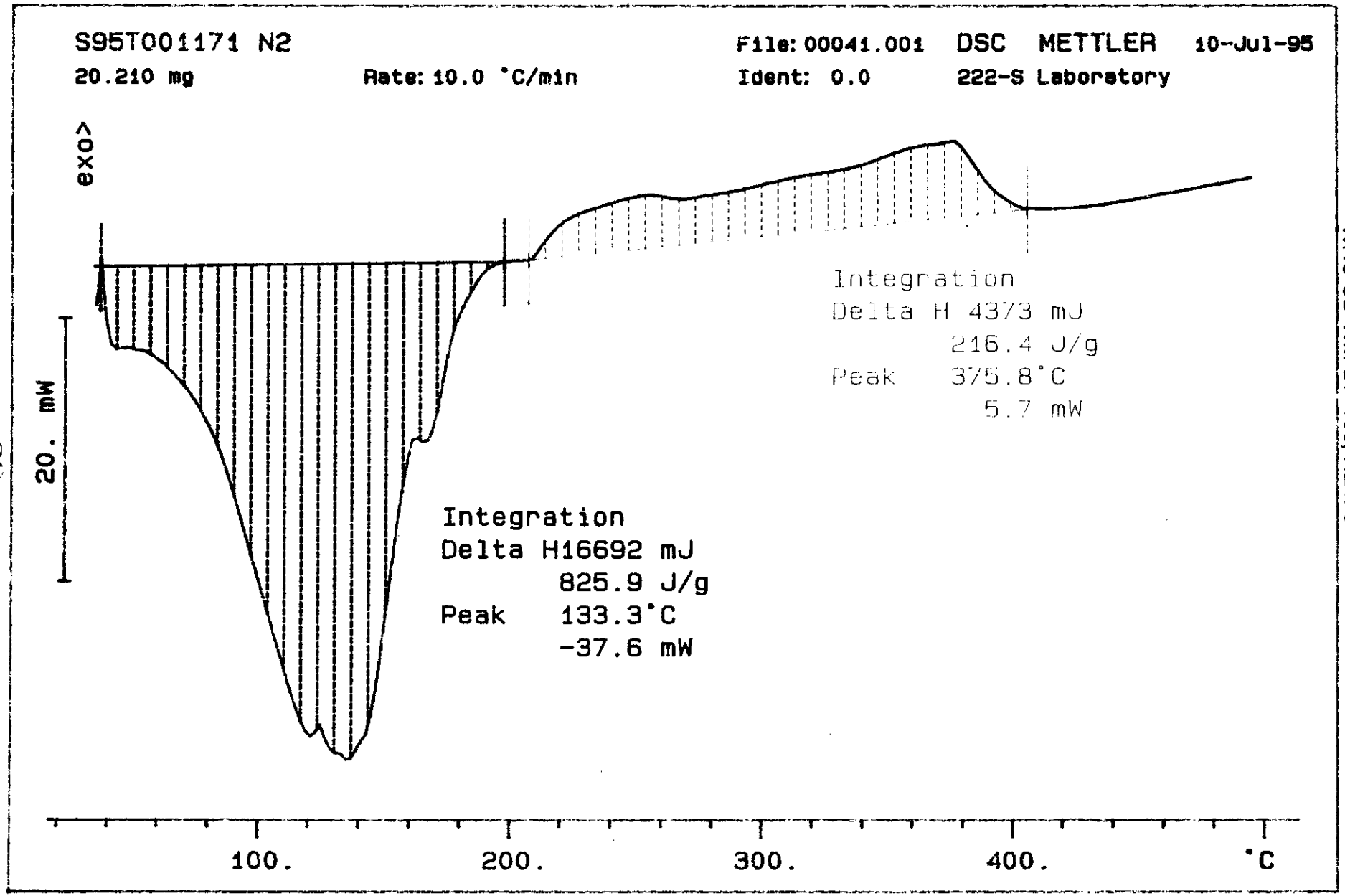

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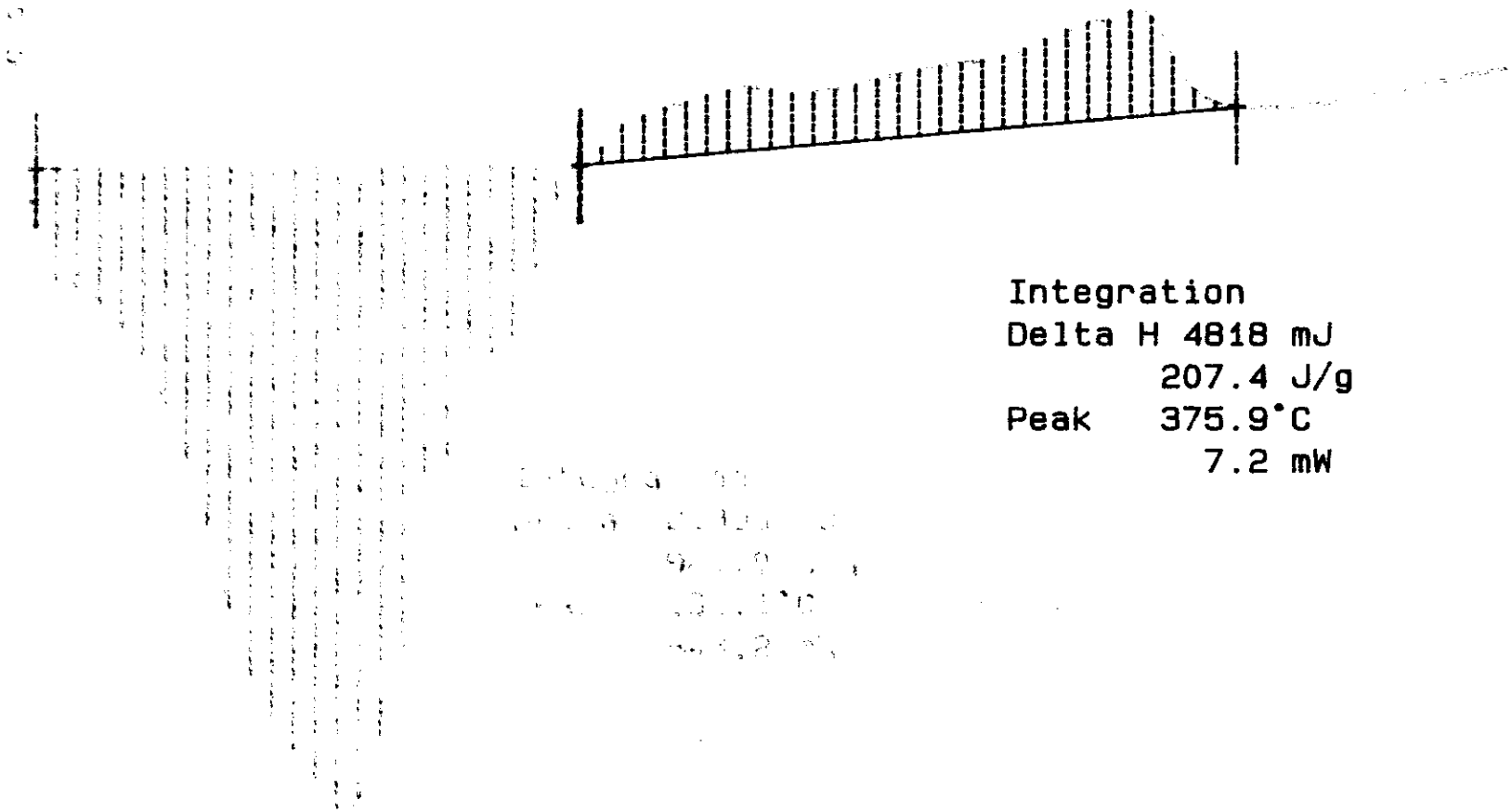
S95T001171OUP N2 File: 00043.001 DSC METTLER 10-Jul-95

23.225 mg Rate: 10.0 [illegible] Ident: 0.0 222-S Laboratory



Integration
Delta H 4818 mJ
207.4 J/g
Peak 375.9°C
7.2 mW

23.1

~~225~~ [illegible] 9/30/95

LABCORE Data Entry Template for Worklist# 1838

Analyst: BDV **Instrument:** DSC01 **Book #** —

Method: LA-514-113 Rev/Mod —

Worklist Comment: Calculated dry DSC for A-102. bdv

GROUP	PROJECT	S TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
95000087	A-102	1 SAMPLE	S95T001171	0		DSC-02	SOLID	N/A	319		Joules/g Dry
95000087	A-102	2 DUP	S95T001171	0		DSC-02	SOLID	319	306	N/A	Joules/g Dry

Data entered + verified by **Final page for worklist # 1838**

Blandina Valenzuela 7-17-95
Analyst Signature **Date**

Blandina Valenzuela 7-17-95
Analyst Signature **Date**

Data Entry Comments:

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

worklistrpt Version 2.0 02/21/95
06/21/95 11:33

LABCORE Data Entry Template for Worklist# 1679

Analyst: SMF **Instrument:** . TGA0 1 **Book #** 65NCIY

Method: LA-560-112 Rev/Mod A-2

Worklist Comment: Please run A-102 TGAs under N2. bdv

GROUP	PROJECT	S TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD				TGA-01	SOLID	59.74	60.21	N/A	%
95000087	A-102	2 SAMPLE	S95T001171	0		TGA-01	SOLID	N/A 33.59	33.59 ~~37.29~~	7-14-95 BDV	%
95000087	A-102	3 DUP	S95T001171	0		TGA-01	SOLID	~~37.29~~ 7-14-95 BDV	30.66 ~~46.66~~ 7-14-95 BDV	N/A	%

Final page for worklist # 1679

Sutton 7-10-95
Analyst Signature **Date**

7-10-95
Analyst Signature **Date**

Verified by Blandina Valenzuela 7-17-95

Data Entry Comments: Dark Brown Sludge

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 31 TO 33.

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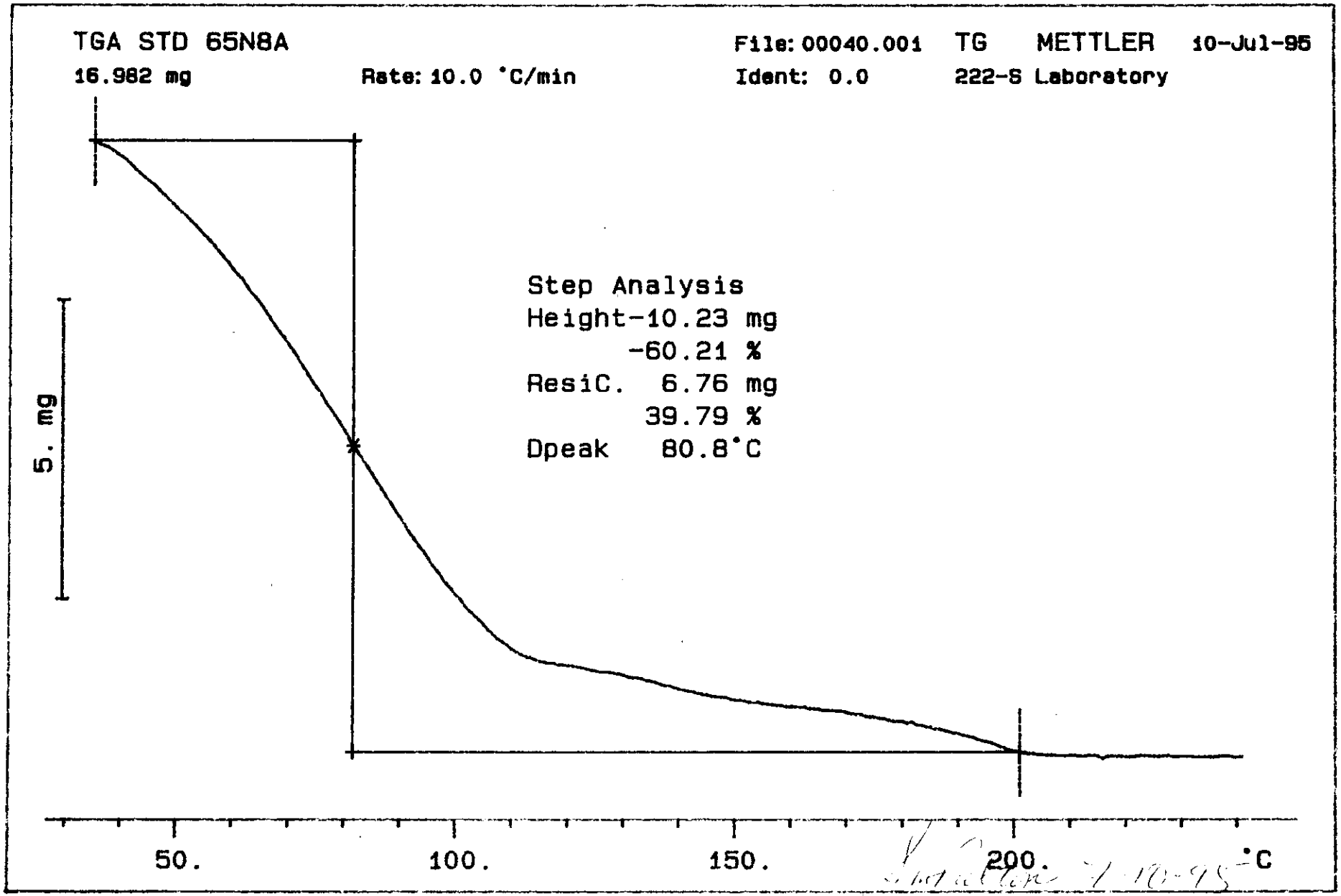

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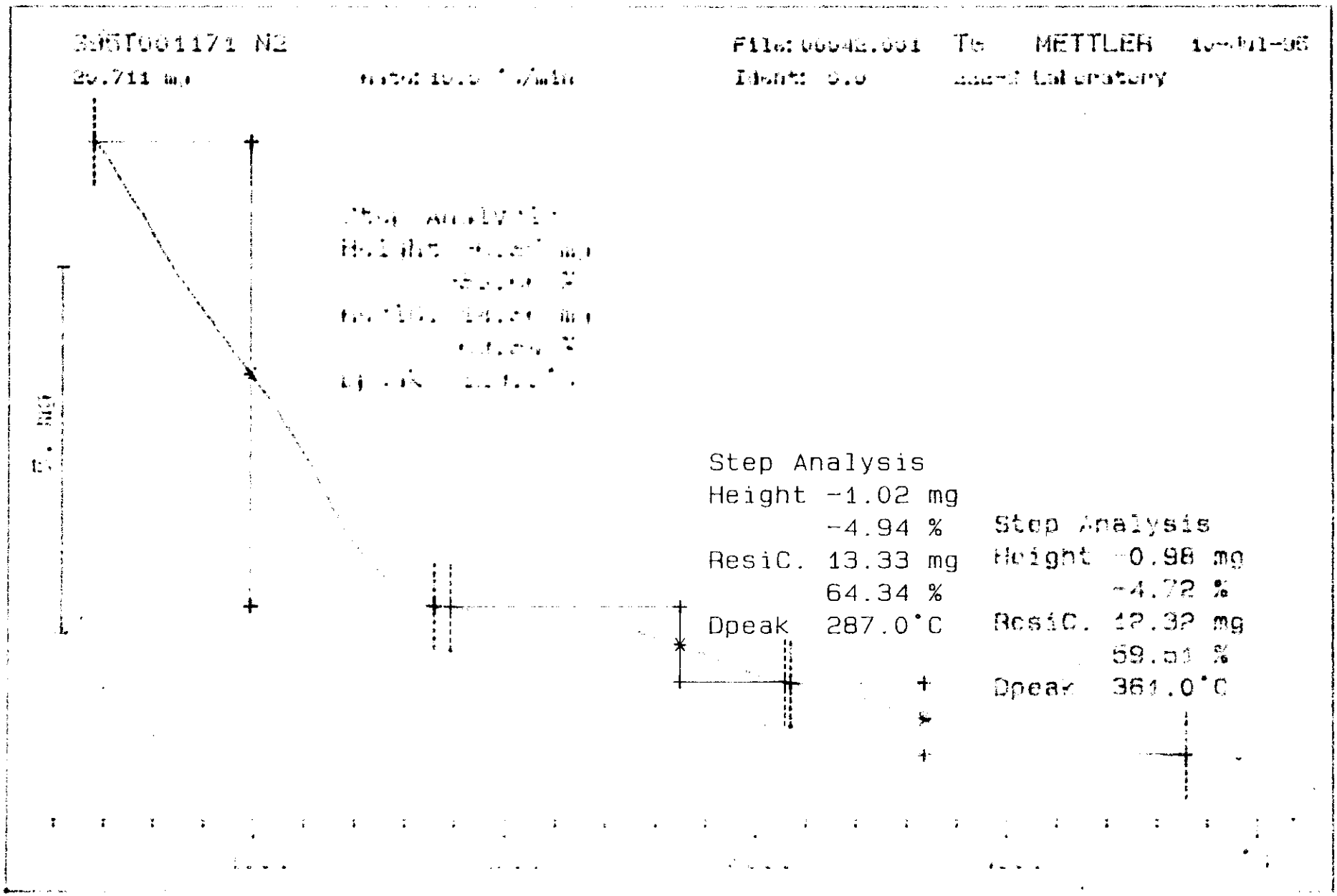

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RADIOCHEMICAL ANALYSES

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LABCORE Data Entry Template for Worklist# 1766

Analyst: S. C. L. **Instrument:** AB00 15 LUG 26 872 **Book #** 115 B 52

Method: LA-508-101 Rev/Mod D-2

Worklist Comment: Determine sample size using Ludlum. --LLF

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				@ALPHA01 ALPHA01	SOLID			N/A	uCi/g
		1	STD				@ALPHA01 ALPHA01E	SOLID			N/A	% Ct. Error
		2	BLNK-PREP				@ALPHA01 ALPHA01	SOLID			N/A	uCi/g
		2	BLNK-PREP				@ALPHA01 ALPHA01E	SOLID			N/A	% Ct. Error
		3	BLNK/BKG	0.29			@ALPHA01 ALPHA01	SOLID			N/A	uCi/g
95000087	A-102	4	SAMPLE	S95T001174	0		@ALPHA01 ALPHA01	SOLID	N/A			uCi/g
95000087	A-102	4	SAMPLE	S95T001174	0		@ALPHA01 ALPHA01E	SOLID	N/A			% Ct. Error
95000087	A-102	5	DUP	S95T001174	0		@ALPHA01 ALPHA01	SOLID			N/A	uCi/g
95000087	A-102	5	DUP	S95T001174	0		@ALPHA01 ALPHA01E	SOLID			N/A	% Ct. Error
95000087	A-102	6	SPK	S95T001174	0		@ALPHA01 ALPHA01	SOLID			N/A	uCi/g

Final page for worklist # 1766

Sue C Lai 7-5-95
Analyst Signature **Date**

[illegible] 7-10-95
Analyst Signature **Date**

Data Entry Comments:
Sample RPD is out of protocol limits. Batch will be rerun. [illegible] 7/14/95

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

AT : LA-508-101 (D-2)
LA-548-101 (A-3) LIQUIDS

			STANDARD	REPLICATE
Type	DETECTOR NUMBER		15	15
STANDARD	DISH SIZE 1 , 2 , or 5	(MS)	2	2
Work List	TOTAL COUNTS	(TC)	4032	4194
1766	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.4	0.4
AT	SAMPLE SIZE in mL	(SS)	10.000	10.000
Test Code	DILUTION FACTOR	(DF)	1	1
@ALPHA-01	DIGEST DILUTION FACTOR	(DDF)	1	1
Matrix	EFFICIENCY FACTOR	(EFF)	0.2380	0.2380
LIQUID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		134.000	139.400
Sample #	Sample Concentration in µCi/L		2.54E-02	BOOK#
WORKLIST#1766	Replicate Concentration in µCi/L		2.64E-02	115b52
Instrument Code				
WB26872	Average Concentration in µCi/L		2.5873E-02	
Analyst				
SCL	Rs (Sample Count Rate) = (TC / CT) - BKG			
Date	ALPHA TOTAL µCi/L = Rs * 1000mL/L * DF * DDF / (EFF * SS * 2220000dpm/µCi)			
07/05/95	ALPHA TOTAL µCi/mL = ALPHA TOTAL µCi/L / 1000mL/L			
Time	Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100			
03:30 PM	Detection Levels and Less Than Values are determined from Procedure LA-508-002.			

v RESULTS v

ALPHA TOTAL in µCi/mL (Average) =	2.59E-05	DETECTION LEVEL	
RELATIVE COUNTING ERROR =	3.1%	1.19E-07 µCi/mL	

Data Entry by:	Sharon L Halden	Date:	07/06/95
Approved by:	S A Catton	Date:	JUL 7 1995

Form 508101_C Rev. 1.3

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER WHC-SD-WM-DP-136, REV. 0

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

LA-548-101 (A-3) SOLIDS

			BLANK	REPLICATE
Type	DETECTOR NUMBER		15	15
BLANK	DISH SIZE 1 , 2 , or 5	(MS)	2	2
Work List	TOTAL COUNTS	(TC)	3	4
1766	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.4	0.4
AT	SAMPLE SIZE in mL	(SS)	0.500	0.500
Test Code	DILUTION FACTOR	(DF)	101	101
@ALPHA-01	DIGEST GRAMS of SOLIDS/L	(Dg/L)	2.0948	2.0948
Matrix	EFFICIENCY FACTOR	(EFF)	0.2380	0.2380
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		0.269	0.269
Sample #	Sample Concentration in µCi/g	<	4.92E-02	BOOK#
S95T1174	Replicate Concentration in µCi/g	<	4.92E-02	
Instrument Code				
WB26872	Maximum Concentration in µCi/g	<	4.9175E-02	
Analyst				
SCL				
Date				
07/05/95				
Time				
03:30 PM				

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

v RESULTS v

ALPHA TOTAL	in µCi/g	(Maximum) =	< 4.92E-02	DETECTION LEVEL
LESS Than Value was Determined from Lc.				1.15E-01 µCi/g
RELATIVE COUNTING ERROR		=	98.0%	

Data Entry by: [signature] Date: 07/06/95

Approved by: [signature] Date: JUL 7 1995

Form 508101_C Rev. 1.3

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

LA-548-101 (A-3) SOLIDS

			SAMPLE	REPLICATE
Type	DETECTOR NUMBER		15	15
SAMPLE	DISH SIZE 1, 2, or 5	(MS)	2	2
Work List	TOTAL COUNTS	(TC)	696	669
1766	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.4	0.4
AT	SAMPLE SIZE in mL	(SS)	0.500	0.500
Test Code	DILUTION FACTOR	(DF)	101	101
@ALPHA-01	DIGEST GRAMS of SOLIDS/L	(Dg/L)	2.0948	2.0948
Matrix	EFFICIENCY FACTOR	(EFF)	0.2380	0.2380
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		22.800	21.900
Sample #	Sample Concentration in µCi/g		4.16E+00	BOOK#
S95T1174	Replicate Concentration in µCi/g		4.00E+00	
Instrument Code				
WB26872	Average Concentration in µCi/g		4.0790E+00	
Analyst				
SCL				
Date				
07/05/95				
Time				
03:30 PM				

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

v RESULTS v

ALPHA TOTAL	in µCi/g	(Average) =	4.08E+00	DETECTION LEVEL
RELATIVE COUNTING ERROR		=	7.8%	1.15E-01 µCi/g

Data Entry by:	Shyrgo L Hallin	Date:	07/06/95
Approved by:	[illegible]	Date:	JUL 7 1995

Form 508101_C Rev. 1.3

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

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

LA-548-101 (A-3) SOLIDS

			SAMPLE	REPLICATE
Type	DETECTOR NUMBER		15	15
DUPLICATE	DISH SIZE 1 , 2 , or 5	(MS)	2	2
Work List	TOTAL COUNTS	(TC)	553	551
1766	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.4	0.4
AT	SAMPLE SIZE in mL	(SS)	0.500	0.500
Test Code	DILUTION FACTOR	(DF)	101	101
@ALPHA-01	DIGEST GRAMS of SOLIDS/L	(Dg/L)	2.114	2.114
Matrix	EFFICIENCY FACTOR	(EFF)	0.2380	0.2380
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		18.033	17.967
Sample #	Sample Concentration in µCi/g		3.26E+00	BOOK#
S95T1174	Replicate Concentration in µCi/g		3.25E+00	
Instrument Code				
WB26872	Average Concentration in µCi/g		3.2553E+00	
Analyst				
SCL	Rs (Sample Count Rate) = (TC / CT) - BKG			
Date	ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)			
07/05/95				
Time	Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100			
03:30 PM	Detection Levels and Less Than Values are determined from Procedure LA-508-002.			

v RESULTS v

ALPHA TOTAL	in µCi/g	(Average) =	3.26E+00	DETECTION LEVEL
RELATIVE COUNTING ERROR		=	8.6%	1.14E-01 µCi/g

Data Entry by:	Shaylin L Wade	Date:	07/06/95
Approved by:	J A Cates	Date:	JUL 7 1995

Form 508101_C Rev. 1.3

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

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

LA-548-101 (A-3) SOLIDS

Type				SPIKE	REPLICATE
SPIKE	DETECTOR NUMBER			15	15
Work List	DISH SIZE 1 , 2 , or 5		(MS)	2	2
1766	TOTAL COUNTS		(TC)	52999	56862
AT or TB ?	COUNT TIME in MINUTES		(CT)	30	30
AT	BACKGROUND in cpm		(BKG)	0.4	0.4
Test Code	SAMPLE VOLUME in mL	(Spiked Vial)	(SS)	0.500	0.500
@ALPHA-01	SAMPLE DILUTION FACTOR	(Spiked Vial)	(DF)	101	101
Matrix	DIGEST GRAMS of SOLIDS/L		(Dg/L)	2.0948	2.0948
SOLID	SPIKE VOLUME in mL		(SVol)	0.100	0.100
Sample #	SPIKE DILUTION FACTOR		(SDF)	1	1
S95T1174	SPIKE VALUE in µCi/L		(SVal)	36.359	36.359
Instrument Code	INSTRUMENT EFFICIENCY FACTOR		(EFF)	0.238	0.238
WB26872	SAMPLE + SPIKE µCi/g		(S+S)	3.22E+02	3.46E+02
Analyst	AVERAGE or MAXIMUM µCi/g from FORM C			4.0790E+00	
SCL	BOOK#			94B43	
Date					
07/05/95					
Time					
03:30 PM					

Rs (Sample Count Rate) = (TC / CT) - BKG

SAMPLE + SPIKE µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L *2220000dpm/µCi)

PERCENT SPIKE RECOVERY = (((S+S µCi/g - SAMPLE µCi/g) * ((SDF/SVol)/(DF/SS/Dg/L)))/SVal)*100

RESULT | AVG. PERCENT SPIKE RECOVERY = 94.1%

Data Entry by: [signature] Date: 06-Jul-95

Approved by: [signature] Date: JUL 7 1995

Form 508101_X Rev. 1.3

LABCORE Data Entry Template for Worklist# 1787

Analyst: DPB **Instrument:** AB00 5 **Book #** 130B52

Method: LA-508-101 Rev/Mod D-2

Worklist Comment: Use .100-10-.500 mL sample size. Rerun 1. SLF

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				@ALPHA01 ALPHA01	SOLID			N/A	uCi/g
		1	STD				@ALPHA01 ALPHA01E	SOLID			N/A	% Ct. Error
		2	BLNK-PREP				@ALPHA01 ALPHA01	SOLID			N/A	uCi/g
		2	BLNK-PREP				@ALPHA01 ALPHA01E	SOLID			N/A	% Ct. Error
		3	BLNK/BKG	.61			@ALPHA01 ALPHA01	SOLID			N/A	uCi/g
95000087	A-102	4	SAMPLE	S95T001174	0		@ALPHA01 ALPHA01	SOLID	N/A			uCi/g
95000087	A-102	4	SAMPLE	S95T001174	0		@ALPHA01 ALPHA01E	SOLID	N/A			% Ct. Error
95000087	A-102	5	DUP	S95T001174	0		@ALPHA01 ALPHA01	SOLID			N/A	uCi/g
95000087	A-102	5	DUP	S95T001174	0		@ALPHA01 ALPHA01E	SOLID			N/A	% Ct. Error
95000087	A-102	6	SPK	S95T001174	0		@ALPHA01 ALPHA01	SOLID			N/A	uCi/g

Final page for worklist # 1787

Daniel P. Bromley / 7/11/95
Analyst Signature **Date**

Analyst Signature **Date**

Data Entry Comments:
BINK / BKG = 10mL H_2O DSM
SPK recovery is out of Protocol limits. Batch will be rerun. [signature] 7-14-95

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

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

LA-548-101 (A-3) LIQUIDS

			STANDARD	REPLICATE
Type	DETECTOR NUMBER		15	15
STANDARD	DISH SIZE 1 , 2 , or 5	(MS)	2	2
Work List	TOTAL COUNTS	(TC)	3590	3771
1787	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.3	0.3
AT	SAMPLE SIZE in mL	(SS)	10.000	10.000
Test Code	DILUTION FACTOR	(DF)	1	1
@ALPHA-01	DIGEST DILUTION FACTOR	(DDF)	1	1
Matrix	EFFICIENCY FACTOR	(EFF)	0.2380	0.2380
LIQUID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		119.367	125.400
Sample #	Sample Concentration in µCi/L		2.26E-02	BOOK#
WRK LST #1787	Replicate Concentration in µCi/L		2.37E-02	130B52
Instrument Code				
WB26872	Average Concentration in µCi/L		2.3163E-02	
Analyst				
DPB				
Date				
07/11/95				
Time				
04:00 AM				

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL µCi/L = Rs * 1000mL/L * DF * DDF / (EFF * SS * 2220000dpm/µCi)

ALPHA TOTAL µCi/mL = ALPHA TOTAL µCi/L / 1000mL/L

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

v RESULTS v

ALPHA TOTAL	in µCi/mL	(Average) =	2.32E-05	DETECTION LEVEL
RELATIVE COUNTING ERROR		=	3.3%	1.05E-07 µCi/mL

Data Entry by: [signature] Date: 07/11/95

Approved by: [signature] Date: 7/12/95

Form 508101_C Rev. 1.3

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

WHC-SD-WM-DP-136, REV. 0

AT : LA-508-101 (D-2)
LA-548-101 (A-3) SOLIDS

			BLANK	REPLICATE
Type	DETECTOR NUMBER		15	15
BLANK	DISH SIZE 1 , 2 , or 5	(MS)	2	2
Work List	TOTAL COUNTS	(TC)	3	8
1787	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.3	0.3
AT	SAMPLE SIZE in mL	(SS)	0.500	0.500
Test Code	DILUTION FACTOR	(DF)	101	101
@ALPHA-01	DIGEST GRAMS of SOLIDS/L	(Dg/L)	2.0948	2.0948
Matrix	EFFICIENCY FACTOR	(EFF)	0.2380	0.2380
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		0.233	0.233
Sample #	Sample Concentration in µCi/g	<	4.26E-02	BOOK#
WRK LST #1787	Replicate Concentration in µCi/g	<	4.26E-02	
Instrument Code				
WB26872	Maximum Concentration in µCi/g	<	4.2587E-02	
Analyst				
DPB	Rs (Sample Count Rate) = (TC / CT) - BKG			
Date	ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)			
07/11/95				
Time	Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100			
04:00 AM	Detection Levels and Less Than Values are determined from Procedure LA-508-002.			

v RESULTS v

ALPHA TOTAL	in µCi/g	(Maximum) =	< 4.26E-02	DETECTION LEVEL
	LESS Than Value was Determined from Lc.			
RELATIVE COUNTING ERROR		=	500.0%	1.02E-01 µCi/g

Data Entry by:	[signature]	Date:	07/11/95
Approved by:	[signature]	Date:	7/12/95

Form 508101_C Rev. 1.3

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AT : LA-508-101 (D-2)
LA-548-101 (A-3) SOLIDS

			SAMPLE	REPLICATE
Type	DETECTOR NUMBER		15	15
SAMPLE	DISH SIZE 1 , 2 , or 5	(MS)	2	2
Work List	TOTAL COUNTS	(TC)	599	662
1787	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.3	0.3
AT	SAMPLE SIZE in mL	(SS)	0.500	0.500
Test Code	DILUTION FACTOR	(DF)	101	101
@ALPHA-01	DIGEST GRAMS of SOLIDS/L	(Dg/L)	2.0948	2.0948
Matrix	EFFICIENCY FACTOR	(EFF)	0.2380	0.2380
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		19.667	21.767
Sample #	Sample Concentration in µCi/g		3.59E+00	BOOK#
S95T1174	Replicate Concentration in µCi/g		3.97E+00	
Instrument Code				
WB26872	Average Concentration in µCi/g		3.7809E+00	
Analyst				
DPB				
Date				
07/11/95				
Time				
04:00 AM				

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

v RESULTS v

ALPHA TOTAL	in µCi/g	(Average) =	3.78E+00	DETECTION LEVEL
RELATIVE COUNTING ERROR		=	8.2%	1.02E-01 µCi/g

Data Entry by:	[signature]	Date:	07/11/95
Approved by:	[signature]	Date:	7/12/95

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

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

LA-548-101 (A-3) SOLIDS

			SAMPLE	REPLICATE
Type	DETECTOR NUMBER		15	15
DUPLICATE	DISH SIZE 1 , 2 , or 5	(MS)	2	2
Work List	TOTAL COUNTS	(TC)	600	500
1787	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.3	0.3
AT	SAMPLE SIZE in mL	(SS)	0.500	0.500
Test Code	DILUTION FACTOR	(DF)	101	101
@ALPHA-01	DIGEST GRAMS of SOLIDS/L	(Dg/L)	2.114	2.114
Matrix	EFFICIENCY FACTOR	(EFF)	0.2380	0.2380
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		19.700	16.367
Sample #	Sample Concentration in µCi/g		3.56E+00	BOOK#
S95T1174	Replicate Concentration in µCi/g		2.96E+00	
Instrument Code				
WB26872	Average Concentration in µCi/g		3.2613E+00	
Analyst				
DPB				
Date				
07/11/95				
Time				
04:00 AM				

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

v RESULTS v

ALPHA TOTAL	in µCi/g	(Average) =	3.26E+00	DETECTION LEVEL
RELATIVE COUNTING ERROR		=	9.0%	1.01E-01 µCi/g

Data Entry by:		Date:	07/11/95
Approved by:		Date:	7/12/95

Form 508101_C Rev. 1.3

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

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

LA-548-101 (A-3) SOLIDS

			SPIKE	REPLICATE
DETECTOR NUMBER			15	15
DISH SIZE 1 , 2 , or 5		(MS)	2	2
TOTAL COUNTS		(TC)	44263	47827
COUNT TIME in MINUTES		(CT)	30	30
BACKGROUND in cpm		(BKG)	0.3	0.3
SAMPLE VOLUME in mL	(Spiked Vial)	(SS)	0.500	0.500
SAMPLE DILUTION FACTOR	(Spiked Vial)	(DF)	101	101
DIGEST GRAMS of SOLIDS/L		(Dg/L)	2.0948	2.0948
SPIKE VOLUME in mL		(SVol)	0.100	0.100
SPIKE DILUTION FACTOR		(SDF)	1	1
SPIKE VALUE in µCi/L		(SVal)	36.359	36.359
INSTRUMENT EFFICIENCY FACTOR		(EFF)	0.238	0.238
SAMPLE + SPIKE µCi/g		(S+S)	2.69E+02	2.91E+02
AVERAGE or MAXIMUM µCi/g from FORM C			3.7809E+00	
BOOK#			94B43	

Type	Work List	AT or TB ?	Test Code	Matrix	Sample #	Instrument Code	Analyst	Date	Time
SPIKE	1787	AT	@ALPHA-01	SOLID	S95T1174	WB26872	DPB	07/11/95	04:00 AM

Rs (Sample Count Rate) = (TC / CT) - BKG

SAMPLE + SPIKE µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L *2220000dpm/µCi)

PERCENT SPIKE RECOVERY = (((S+S µCi/g - SAMPLE µCi/g) * ((SDF/SVol)/(DF/SS/Dg/L)))/SVal)*100

RESULT AVG. PERCENT SPIKE RECOVERY = 78.8%

Data Entry by: M S Bright Date: 11-Jul-95

Approved by: [signature] Date: 7-12-95

Form 508101_X Rev. 1.3

LABCORE Data Entry Template for Worklist# 1823

Analyst: RAG **Instrument:** AB00 #16 ~~WB27806~~ **Book #** 130 B52

Method: LA-508-101 Rev/Mod D-2

Worklist Comment: Use .100-10-.500 mL sample size. Use .100 mL A-SPK. ~~RR#1~~ Rerun #2 SLF 7-14-95

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				@ALPHA01 ALPHA01	SOLID			N/A	uCi/g
		1	STD				@ALPHA01 ALPHA01E	SOLID			N/A	% Ct. Error
		2	BLNK-PREP				@ALPHA01 ALPHA01	SOLID			N/A	uCi/g
		2	BLNK-PREP				@ALPHA01 ALPHA01E	SOLID			N/A	% Ct. Error
		3	BLNK/BKG	0.43			@ALPHA01 ALPHA01	SOLID			N/A	uCi/g
95000087	A-102	4	SAMPLE	S95T001174	0		@ALPHA01 ALPHA01	SOLID	N/A			uCi/g
95000087	A-102	4	SAMPLE	S95T001174	0		@ALPHA01 ALPHA01E	SOLID	N/A			% Ct. Error
95000087	A-102	5	DUP	S95T001174	0		@ALPHA01 ALPHA01	SOLID			N/A	uCi/g
95000087	A-102	5	DUP	S95T001174	0		@ALPHA01 ALPHA01E	SOLID			N/A	% Ct. Error
95000087	A-102	6	SPK	S95T001174	0		@ALPHA01 ALPHA01	SOLID			N/A	uCi/g

Final page for worklist # 1823

Rae Ann Green 07-16-95
Analyst Signature Date

Sharon L Hall 7/17/95
Analyst Signature Date

Data Entry Comments:
The elevated RPD for sample 1174 is due to sample inhomogeneity. No further reruns are required.
[illegible] 7/18/95

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

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

LA-548-101 (A-3) LIQUIDS

			STANDARD	REPLICATE
Type	DETECTOR NUMBER		16	16
STANDARD	DISH SIZE 1 , 2 , or 5	(MS)	2	2
Work List	TOTAL COUNTS	(TC)	4159	4386
1823	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)	0.2104	0.2104
LIQUID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		138.133	145.700
Sample #	Sample Concentration in µCi/L		2.96E-02	BOOK#
WORKLIST#1823	Replicate Concentration in µCi/L		3.12E-02	130B52
Instrument Code				
WB27806	Average Concentration in µCi/L		3.0383E-02	
Analyst				
RAG	Rs (Sample Count Rate) = (TC / CT) - BKG			
Date	ALPHA TOTAL µCi/L = Rs * 1000mL/L * DF * DDF / (EFF * SS * 2220000dpm/µCi)			
07/16/95	ALPHA TOTAL µCi/mL = ALPHA TOTAL µCi/L / 1000mL/L			
Time	Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100			
06:00 AM	Detection Levels and Less Than Values are determined from Procedure LA-508-002.			

v RESULTS v

				DETECTION LEVEL
ALPHA TOTAL	in µCi/mL	(Average) =	3.04E-05	
RELATIVE COUNTING ERROR		=	3.1%	1.48E-07 µCi/mL

Data Entry by: [signature] Date: 07/17/95
Approved by: [signature] Date: 7/17/95

Form 508101_C Rev. 1.3

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

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

LA-548-101 (A-3) SOLIDS

			BLANK	REPLICATE
Type	DETECTOR NUMBER		16	16
BLANK	DISH SIZE 1 , 2 , or 5	(MS)	2	2
Work List	TOTAL COUNTS	(TC)	9	4
1823	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.5	0.5
AT	SAMPLE SIZE in mL	(SS)	0.500	0.500
Test Code	DILUTION FACTOR	(DF)	101	101
@ALPHA01	DIGEST GRAMS of SOLIDS/L	(Dg/L)	2.0948	2.0948
Matrix	EFFICIENCY FACTOR	(EFF)	0.2104	0.2104
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		0.301	0.301
Sample #	Sample Concentration in µCi/g	<	6.22E-02	BOOK#
S95T1174	Replicate Concentration in µCi/g	<	6.22E-02	
Instrument Code				
WB27806	Maximum Concentration in µCi/g	<	6.2192E-02	
Analyst				
RAG	Rs (Sample Count Rate) = (TC / CT) - BKG			
Date	ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)			
07/16/95				
Time	Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100			
06:00 AM	Detection Levels and Less Than Values are determined from Procedure LA-508-002.			

v RESULTS v

ALPHA TOTAL	in µCi/g	(Maximum) =	< 6.22E-02	DETECTION LEVEL
	LESS Than Value was Determined from Lc.			
RELATIVE COUNTING ERROR		=	160.0%	1.43E-01 µCi/g

Data Entry by:	Sharon [signature]	Date:	07/17/95
Approved by:	[signature]	Date:	7/17/95

Form 508101_C Rev. 1.3

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

LA-548-101 (A-3) SOLIDS

			SAMPLE	REPLICATE
Type	DETECTOR NUMBER		16	16
SAMPLE	DISH SIZE 1 , 2 , or 5	(MS)	2	2
Work List	TOTAL COUNTS	(TC)	672	679
1823	COUNT TIME in MINUTES	(CT)	30	30
AT or 19 ?	BACKGROUND in cpm	(BKG)	0.5	0.5
AT	SAMPLE SIZE in mL	(SS)	0.500	0.500
Test Code	DILUTION FACTOR	(DF)	101	101
@ALPHA01	DIGEST GRAMS of SOLIDS/L	(Dg/L)	2.0948	2.0948
Matrix	EFFICIENCY FACTOR	(EFF)	0.2104	0.2104
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		21.900	22.133
Sample #	Sample Concentration in µCi/g		4.52E+00	BOOK#
S95T1174	Replicate Concentration in µCi/g		4.57E+00	
Instrument Code				
WB27806	Average Concentration in µCi/g		4.5453E+00	
Analyst				
RAG	Rs (Sample Count Rate) = (TC / CT) - BKG			
Date	ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)			
07/16/95				
Time	Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100			
06:00 AM	Detection Levels and Less Than Values are determined from Procedure LA-508-002.			

v RESULTS v

			DETECTION LEVEL
ALPHA TOTAL in µCi/g (Average)	=	4.55E+00	
RELATIVE COUNTING ERROR	=	7.8%	1.43E-01 µCi/g

Data Entry by: [signature] Date: 07/17/95
Approved by: [signature] Date: 7/17/95

Form 508101_C Rev. 1.3

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

AT : LA-508-101 (D-2)
LA-548-101 (A-3) SOLIDS

			SAMPLE	REPLICATE
Type	DETECTOR NUMBER		16	16
DUPLICATE	DISH SIZE 1 , 2 , or 5	(MS)	2	2
Work List	TOTAL COUNTS	(TC)	544	572
1823	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.5	0.5
AT	SAMPLE SIZE in mL	(SS)	0.500	0.500
Test Code	DILUTION FACTOR	(DF)	101	101
@ALPHA01	DIGEST GRAMS of SOLIDS/L	(Dg/L)	2.114	2.114
Matrix	EFFICIENCY FACTOR	(EFF)	0.2104	0.2104
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		17.633	18.567
Sample #	Sample Concentration in µCi/g		3.61E+00	BOOK#
S95T1174	Replicate Concentration in µCi/g		3.80E+00	
Instrument Code				
WB27806	Average Concentration in µCi/g		3.7028E+00	
Analyst				
RAG	Rs (Sample Count Rate) = (TC / CT) - BKG			
Date	ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)			
07/16/95				
Time	Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100			
06:00 AM	Detection Levels and Less Than Values are determined from Procedure LA-508-002.			

v RESULTS v

ALPHA TOTAL in µCi/g (Average) =	3.70E+00	DETECTION LEVEL	
RELATIVE COUNTING ERROR =	8.8%	1.42E-01 µCi/g	

Data Entry by:	Sharon H Malik	Date:	07/17/95
Approved by:	[signature]	Date:	7/17/95

Form 508101_C Rev. 1.3

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

AT : LA-508-101 (D-2)
LA-548-101 (A-3) SOLIDS

			SPIKE	REPLICATE
Type	DETECTOR NUMBER		16	16
SPIKE	DISH SIZE 1 , 2 , or 5	(MS)	2	2
Work List	TOTAL COUNTS	(TC)	56488	53018
1823	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)	0.500	0.500
Test Code	SAMPLE DILUTION FACTOR (Spiked Vial)	(DF)	101	101
@ALPHA01	DIGEST GRAMS of SOLIDS/L	(Dg/L)	2.0948	2.0948
Matrix	SPIKE VOLUME in mL	(SVol)	0.100	0.100
SOLID	SPIKE DILUTION FACTOR	(SDF)	1	1
Sample #	SPIKE VALUE in µCi/L	(SVal)	36.358	36.358
S95T1174	INSTRUMENT EFFICIENCY FACTOR	(EFF)	0.2104	0.2104
Instrument Code	SAMPLE + SPIKE µCi/g	(S+S)	3.89E+02	3.65E+02
WB27806	AVERAGE or MAXIMUM µCi/g from FORM C		4.5453E+00	
Analyst	BOOK#		94B43	
RAG	Rs (Sample Count Rate) = (TC / CT) - BKG			
Date	SAMPLE + SPIKE µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L *2220000dpm/µCi)			
07/16/95	PERCENT SPIKE RECOVERY = (((S+S µCi/g - SAMPLE µCi/g) * ((SDF/SVol)/(DF/SS/Dg/L)))/SVal)*100			
Time				
06:00 AM				

RESULT **AVG. PERCENT SPIKE RECOVERY = 106.1%**

Data Entry by:	Sharon L. Liaid	Date:	17-Jul-95
Approved by:	[signature]	Date:	7/17/95

Form 508101_X Rev. 1.3

DISTRIBUTION SHEET

To Distribution	From Characterization Plans, Coordination and Reports	Page 1 of 2
		Date: 07/18/95
Project Title/Work Order WHC-SD-WM-DP-136, Rev. 0, "45-Day Safety Screen Results and Final Report for Tank 241-A-102, Auger Sample 95-AUG-033"		EDT NO.: EDT-612169
		ECN NO.: N/A

Name	MSIN	Text With all Attach	EDT/ECN ONLY	
Pacific Northwest Laboratory				
J. R. Gormsen	K7-28		X	
S. J. Harris	K7-22	X		
K. L. Silvers	P7-27		X	
U.S. Department of Energy, RL				
C. A. Babel	S7-54	X		
Westinghouse Hanford Company				
J. N. Appel	G3-21		X	
H. Babad	S7-30	X		
R. J. Cash	S7-15	X		
G. D. Forehand	S7-31		X	
C. E. Golberg	H5-49		X	
V. W. Hall	H4-21		X	
D. C. Hetzer	S6-31		X	
L. Jensen	T6-07	X		
J. Jo	R2-12	X		
G. D. Johnson	S7-15	X		
N. W. Kirch	R2-11	X		
J. G. Kristofzski	T6-06	X		
M. J. Kupfer	H5-49	X		
E. J. Lipke	S7-14		X	
N. G. McDuffie	S7-15	X		
J. E. Meacham	S7-15	X		
P. M. Morant	H4-25	X		
B. C. Simpson	R2-12		X	
D. A. Turner	S7-15	X		
J. A. Voogd	R4-01		X	
Central Files	~~A3-88~~	2		
EDMC	H6-08	X		
LTIC	T6-03		X	
TCRC	R2-12	X		
TFIC (Tank Farm Information Center)	R1-20		X	

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DISTRIBUTION SHEET

To Distribution	From Characterization Plans, Coordination and Reports	Page 2 of 2
		Date: 07/18/95
Project Title/Work Order WHC-SD-WM-DP-136, Rev. 0, "45-Day Safety Screen Results and Final Report for Tank 241-A-102, Auger Sample 95-AUG-033"		EDT NO.: EDT-612169
		ECN NO.: N/A

Name	MSIN	Text With all Attach	EDT/ECN ONLY	
Washington State Department of Ecology Single-Shell Tank Unit Manager S. E. McKinney P.O. Box 47600 Olympia, Washington 98504-7600		X		
Environmental Protection Agency Single-Shell Tank Unit Manager D. R. Einan 712 Swift Boulevard, Suite 5 Richland, Washington 99352		X		
U. S. Department of Energy Jim Poppiti 12800 Middlebrook Rd. Trevion II, EM-36 Germantown, MD 20874			X	
Los Alamos Technical Associates A. T. DiCenso 750 Swift Boulevard Suite # 4 Richland, WA 99352		X		

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