START

JUL 19 1995 58

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ENGINEERING DATA TRANSMITTAL

1. EDT № 612166

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-B-103/Waste Management/CPCR/Technical Basis Char.	6. Cog. Engr.: John M. Conner	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: 07/14/95

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-134	N/A	0	45-Day Safety Screen Results and Final Report for Tank 241-B-103, Auger Samples 95-AUG-031 and 95-AUG-032	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)

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2	1	Cog.Eng. J.M. Conner		7-14-95							
2	1	Cog. Mgr. J.G. Kristofzski									
2	1	QA E. W. Miller		7-18-95							
		Safety									
		Env.									

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18. A.E. Young Signature of EDT Originator	Date 7-14-95	19. Authorized Representative for Receiving Organization	Date
20. J.G. Kristofzski Cognizant Manager	Date 7/17/95	21. DOE APPROVAL (if required) Ctrl. No. [] Approved [] Approved w/comments [] Disapproved w/comments	

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BD-7400-172-1

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RELEASE AUTHORIZATION

Document Number:	WHC-SD-WM-DP-134, REV 0
Document Title:	45-Day Safety Screen Results and Final Report for Tank 241-B-103, Auger Samples 95-AUG-031 AND 95-AUG-032
Release Date:	7/18/95

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 7/18/95

Kara M. Broz

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SUPPORTING DOCUMENT

1. Total Pages 77

2. Title	3. Number	4. Rev No.
45-Day Safety Screen Results and Final Report for Tank 241-B-103, Auger Samples 95-AUG-031 and 95-AUG-032	WHC-SD-WM-DP-134	0

5. Key Words	6. Author
45-Day, Safety Screen Results, Safety Screen, Final Report, Tank 241-B-103, Tank B-103, B-103, Auger Sample, 95-AUG-031, 95-AUG-032	Name: John M. Conner Signature Organization/Charge Code 75310/MDR21

7. Abstract

N/A

8. RELEASE STAMP

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P.O. Box 1970 Richland, WA 99352

WHC-SD-WM-DP-134, REV. 0

ANALYTICAL SERVICES

45-DAY SAFETY SCREEN RESULTS AND FINAL REPORT FOR TANK 241-B-103, AUGER SAMPLES 95-AUG-031 AND 95-AUG-032

Date Printed: JUNE 14, 1995

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NARRATIVE

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45-DAY SAFETY SCREENING RESULTS AND FINAL REPORT FOR TANK 241-B-103, AUGER SAMPLES 95-AUG-031 AND 95-AUG-032

ANALYTICAL SUMMARY

Two auger samples from tank 241-B-103 (B-103) were received at the 222-S Laboratories and underwent safety screening analyses, consisting of differential scanning calorimetry (DSC), thermogravimetric analysis (TGA), and total alpha activity. A Total Organic Carbon (TOC) analysis was performed in support of the organic safety program, and a Total Inorganic Carbon (TIC) analysis was also performed.

None of the samples exceeded the limits stated in the Tank Characterization Plan (Schreiber 1995).

SCOPE

This document serves as the 45-day report deliverable for the tank B-103 auger samples collected on May 24 and June 1, 1995 (samples 95-AUG-31 and 95-AUG-032). As none of the results exceeded the screening limits in the TCP, this document will also serve as the final report for the auger sampling and analysis event.

Each sample was received, extruded, and analyzed by the 222-S Laboratories in accordance with the Tank Characterization Plan (TCP) referenced below. Included in this report are the results from primary safety screening analyses (DSC, TGA, and total alpha) and TOC analyses performed in support of the organic safety program. Total Inorganic Carbon (TIC) analyses, performed as an artifact of the TOC procedure, are reported as well.

Copies of all DSC and TGA raw data scans (as requested in the TCP) are included in the appendices. All laboratory worklists are included in this final report, along with photographs taken during sample extrusion.

SAMPLE RECEIPT, EXTRUSION, AND SUBSAMPLING

95-AUG-031

Sample 95-AUG-031 was collected from riser 7 of tank B-103 using a 20-inch auger sampler. The sample was taken on May 24, 1995 at 1033 hours. It was received into the 222-S Laboratories on May 26 and extruded on May 30. A few drops of drainable liquid dripped onto the extrusion tray (and were not recovered). Approximately 10 cm (4 inches) of wet solids were recovered from flutes 15 through 18 of the auger. The solids were described as damp, gray/black crystals, shaped like short fibers. Photographs and videotape of the extruded auger were taken. Because the sample was confined to just a few flutes of the auger, and only a limited amount of sample was recovered (45.0 g), the sample was not subsampled into half-segments per the TCP, but homogenized and submitted for analysis on a whole-segment basis. A portion of the sample (16.6 g) was segregated for pretreatment testing, and a small archive sample (12.4 g) was retained in the hot cell.

95-AUG-032

Sample 95-AUG-032 was received at the 222-S Laboratory on June 2 and extruded on June 8. A small amount of solids (6.7 g) was recovered from flutes 4 through 8 of the 10-inch auger. The material was described as moist yellow and brown solids. Photographs and videotape of the extruded auger were taken. The sample material was collected into one vial for homogenization and analysis at the whole-segment level. Due to insufficient sample, no material was made available for pretreatment testing, and no archive material could be retained in the 222-S Laboratory.

Table 1. B-103 Subsample Identification

Sample ID	Sample Description	Analyses
S95T000968	95-AUG-031 (riser 7) extrusion	extrusion
S95T000972	95-AUG-031 whole segment solids, direct analysis	DSC/TGA, TIC/TOC
S95T000973	95-AUG-031 whole segment solids, fusion/dilution	alpha
S95T000974	95-AUG-031 whole segment archive	n/a (archive)
S95T000975	95-AUG-031 whole segment auger subsample	n/a (used for subsampling)
S95T001011	95-AUG-032 (riser 2) extrusion	extrusion
S95T001058	95-AUG-032 whole segment solids, direct analysis	DSC/TGA
S95T001096	95-AUG-031 whole segment subsample for pretreatment studies	n/a (shipped for pretreatment studies)
S95T001117	95-AUG-032 whole segment solids, fusion/dilution	alpha

ANALYTICAL RESULTS

Analytical results are summarized in Tables 2 and 3. The applicable notification limits are stated. None of the limits were exceeded.

DSC (Energetics Content)

DSC analyses were performed under a nitrogen atmosphere using procedure LA-514-113, Rev. B-1. Neither of the samples exhibited any exotherms. Both Laboratory Measurement Control System (LMCS) standards run with these samples exhibited recoveries within the 90-110 percent range specified in the TCP. The relative percent difference (RPD) between sample and duplicate results for these samples were also acceptable (less than 10 percent). The results are shown in Tables 2 and 3.

TGA (Moisture Content)

Weight percent water is calculated from weight loss by TGA. These analyses were performed under a nitrogen atmosphere using procedure LA-560-112, Rev. A-2. Results for the two samples and their duplicates ranged in value from 38.76 to 50.26 percent water by weight. These results are well above the safety screening minumum of 17 weight percent. The RPDs for these samples were within the 10 percent criterion specified in the TCP. The standards run with these samples also exhibited acceptable recoveries. The results are presented in Tables 2 and 3.

Total Alpha Activity

Analyses for total alpha activity were performed on two samples. Samples were prepared by fusion using procedure LA-549-141, Rev. C-3, and analyses were performed using procedure LA-508-101, Rev. D-2. Duplicate fusions were performed. Sample and duplicate results ranged from 0.0865 to 0.345 μCi/g. The RPDs exceeded the TCP target of less than 10%. Since all of the results were less than one percent of the safety screening limit of 41 μCi/g, reruns to increase reproducibility were deemed unnecessary. The total alpha results are presented in Tables 2 and 3.

Two control standards were run, with recoveries of 92.23 and 109.6 percent, both within the TCP target of 90 to 110%. Spikes were performed on both samples, with spike recoveries of 118.5% and 85.90%. These spike recoveries were not within the TCP target of 90-110%. Since the sample results were far below the action limit, the poor spike recovery did not necessitate further testing.

Total Organic Carbon (TOC)

One sample from 95-AUG-031 was submitted for TOC analysis to support organic safety program objectives stated in the TCP. The TOC analysis was performed using procedure LA-342-100, Rev. A-0. As the recovery for auger 95-AUG-032 was very low, the organic safety program suggested performing safety screening analyses only (DSC, TGA, and total alpha) on this sample. The average of the sample and duplicate results was 677.5 μg C/g, or 1360 μg C/g on a dry basis. The dry basis result equates to 0.14% TOC, which is only 4.5% of the action limit of 30,000 μg C/g.

The TIC spike recovery and standard recovery were both within the range of 90-110% specified in the TCP. The RPD between the sample and duplicate results was 9.59%, within the 10% maximum specified in the TCP. The blank result for TOC was 22.90, which is 3.4% of the average sample result. The TOC results are presented in Table 2.

Total Inorganic Carbon (TIC)

The TIC analysis is performed along with TOC (the carbonate must be removed before the organic carbon can be measured). Consequently, one TIC analysis was performed on a subsample from auger sample 95-AUG-031. The TIC analysis was performed under laboratory procedure LA-342-100, Rev. A-0. There were no program requirements for the TIC analysis. The sample and duplicate results averaged 1845 μg C/g, with a RPD of 0.54%. The TIC standard recovery was 97.00%, and the TIC spike recovery was 107.0%. The blank result was 3.90, or 0.2% of the sample result. TIC results are presented in Table 2.

Responsible Project Coordinator: J. M. Conner

REFERENCE Schreiber, R. D., 1995, WHC-SD-WM-TP-250, Revision 0, "*Tank 241-B-103 Tank Characterization Plan*, Rev. 0A, dated February 6, 1995.

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SAMPLE DATA SUMMARY

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45-Day and Final Report
B-103

CORE NUMBER: n/a
SEGMENT #: 95-AUG-031

TABLE 2

SEGMENT PORTION: W Whole Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S95T000972			% Water by TGA using Mettler	%	17.00	115.0	98.73	n/a	50.08	50.26	50.17	0.36	n/a	n/a	n/a
S95T000972			DSC Exotherm using Mettler	Joules/g	-9.9e+01	481.0	101.2	n/a	0.00e+00	0.00e+00	0.00e+00	n/a	n/a	n/a	n/a
S95T000972			TOC by Persulfate/Coulometry	ug/g	-9.9e+01	3.0e+04	98.67	22.90	645.0	710.0	677.5	9.59	104.0	80.00	n/a
S95T000972			TIC by Acid/Coulometry	ug/g	None	None	97.00	3.900	1.85e+03	1.84e+03	1.84e+03	0.54	107.0	5.000	n/a
S95T000973	F		Alpha of Digested Solid	uCi/g	-9.9e+01	41.01	92.23	<5.24e-03	8.65e-02	1.25e-01	1.06e-01	36.4	118.5	1.20e-02	19.1

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45-Day and Final Report
B-103

TABLE 3

CORE NUMBER: n/a
SEGMENT #: 95-AUG-032

SEGMENT PORTION: W Whole Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S95T001058			% Water by TGA using Mettler	%	17.00	115.0	101.2	n/a	38.76	40.31	39.53	3.92	n/a	n/a	n/a
S95T001058			DSC Exotherm using Mettler	Joules/g	-9.9e+01	41.0	104.7	n/a	0.00e+00	0.00e+00	0.00e+00	n/a	n/a	n/a	n/a
S95T001117		F	Alpha of Digested Solid	uCi/g	-9.9e+01	41.01	109.6	<2.74e-03	2.99e-01	3.45e-01	3.22e-01	14.3	85.90	6.00e-03	6.1

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CHAIN OF CUSTODY FORMS

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CHAIN-OF-CUSTODY RECORD FOR AUGER SAMPLING

(1) Shipment Number 200W-08-TF (2) Sample Number 95-AUG-031 (3) Supervisor R.J. PERZNIK

(4) Tank B103 (5) Riser 7 (6) Cask Serial Number 1006C

Radiation Survey Data:	(7) FIELD	(31) LABORATORY
Over Top Dose Rate	<0.5 mR/hr	<.5 mR/hr
Side Dose Rate	<0.5 mR/hr	PHS 5-26-95 ~~<.5 mR~~ 0.5 mR/hr
Bottom Dose Rate	.1 mR/hr	0.5 mR/hr
Smearable Contamination	<20 dpm/100cm² (Alpha)	<20 dpm/100 cm² (Alpha)
	<1k dpm/100cm² (Beta-Gamma)	<1000 dpm/100cm² (Beta-Gamma)
RCT*	R J Manter 8552 (Signature)	RCT (Signature)

(8) Shipment Description

A. Work Package Number	ES-95-00268-0
B. Cask Seal Number	1042
C. Date and Time Sample Removed from Tank	5-24-95 / 1445 hrs
D. Expected Liquid Content *	90%
E. Expected Solid Content	10%
F. Dose Rate Through Drill String	32 mR/hr
G. Expected Sample Length	4½"

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

CC

(10) Field Comments

* SAMPLE MEDIUM WILL BE VERY MUCH LIQUIDITY SLUDGE LIKE. 5-26-95
* NOTE *

(32) Laboratory Comments

WHC-SD-WM-DP-134, REV. 0

9513360.1171

(11) Point of Origin	(12) Destination	(13) Sender Name (Sign and PRINT)	(14) Date/Time	(15) Sender Comments
B103 BSA#7	2225 LABS	DA KRAHN	5/26/95 1018	
(17) Relinquished By (Sign and PRINT)		(18) Received By (Sign and PRINT)	(19) Date/Time	(20) Receiver Comments
DA KRAHN		C E Byrd	5-26-95 10:18	
(21) Relinquished By (Sign and PRINT)		(22) Received By (Sign and PRINT)	(23) Date/Time	(24) Receiver Comments
C E Byrd		Atlee B. Bendy	5-26-95/1012	
(25) Relinquished By (Sign and PRINT)		(26) Received By (Sign and PRINT)	(27) Date/Time	(28) Receiver Comments

(28) 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)

COPY COPY

CHAIN-OF-CUSTODY RECORD FOR AUGER SAMPLING

(1) Shipment Number 200-W-08-TK ~~7515~~ 0N26-2-95 (2) Sample Number 95-AUG-032 (3) Supervisor R.S. PRAZNIK

(4) Tank B/03 (5) Riser 2 (6) Cask Serial Number C1024

Radiation Survey Data:	(7) FIELD	(31) LABORATORY
Over Top Dose Rate	<0.5	<0.5 MR/HR
Side Dose Rate	0.5	<0.5 MR/HR
Bottom Dose Rate	<0.5	<0.5 MR/H
Smearable Contamination	< 20 d/m α (Alpha)	< 20 DPM/100CM² (Alpha)
	< 1000 d/m β (Beta-Gamma)	< 1000 DPM/100CM² (Beta-Gamma)
RCT*	(Signature)	RCT* (Signature)

(8) Shipment Description	
A. Work Package Number	ES-95-00268-0
B. Cask Seal Number	1043
C. Date and Time Sample Removed from Tank	6-1-95 / 1033hrs
D. Expected Liquid Content	* 80%
E. Expected Solid Content	20%
F. Dose Rate Through Drill String	10 mR/hr
G. Expected Sample Length	9"

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

(10) Field Comments

* Sample contents ~~[illegible]~~ 6-2-95 is very soupy please exercise caution when extracting sample.

(32) Laboratory Comments

(11) Point of Origin	(12) Destination	(13) Sender Name (Sign and PRINT)	(14) Date/Time	(15) Sender Comments
B/03 R/2	222 S	DA KRAHN	6-2-95	
(17) Relinquished By (Sign and PRINT)		**(18) Received By (Sign and PRINT)**	**(19) Date/Time**	**(20) Receiver Comments**
DA KRAHN		[illegible]	6-2-95 10:00	
(21) Relinquished By (Sign and PRINT)		**(22) Received By (Sign and PRINT)**	**(23) Date/Time**	**(24) Receiver Comments**
[illegible]		N LAPIERS	6-2-95 10:25	
(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?		
☒ Yes ☐ No	☒ Yes ☐ No	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)

WHC-SD-WM-DP-134, REV. 0

WESTINGHOUSE → LAB DATA MGMT ☎509 372 2929 06/02/95 13:53 001

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PHOTOGRAPHS

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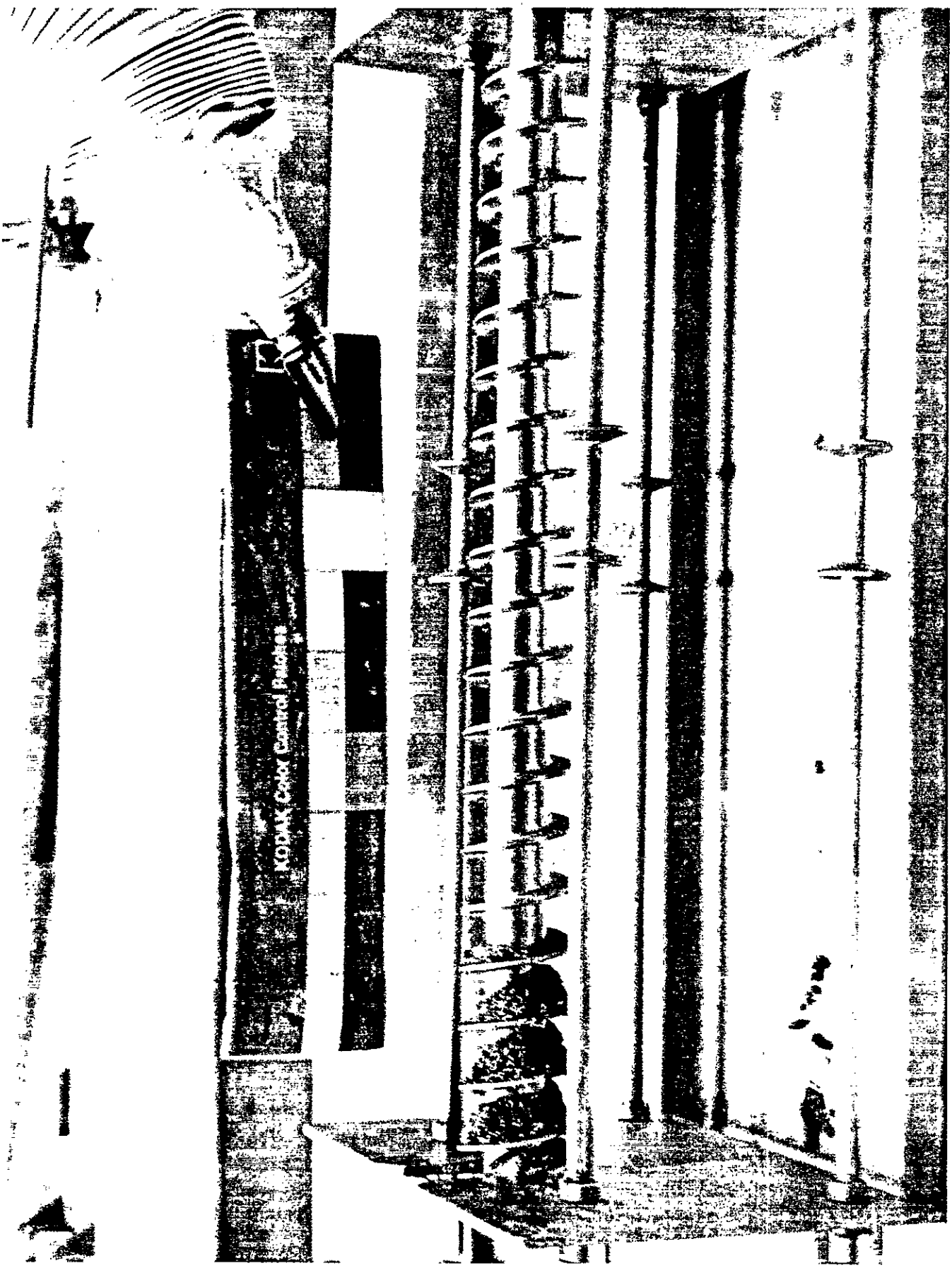
5/30/95

B-103 95-AUG-031



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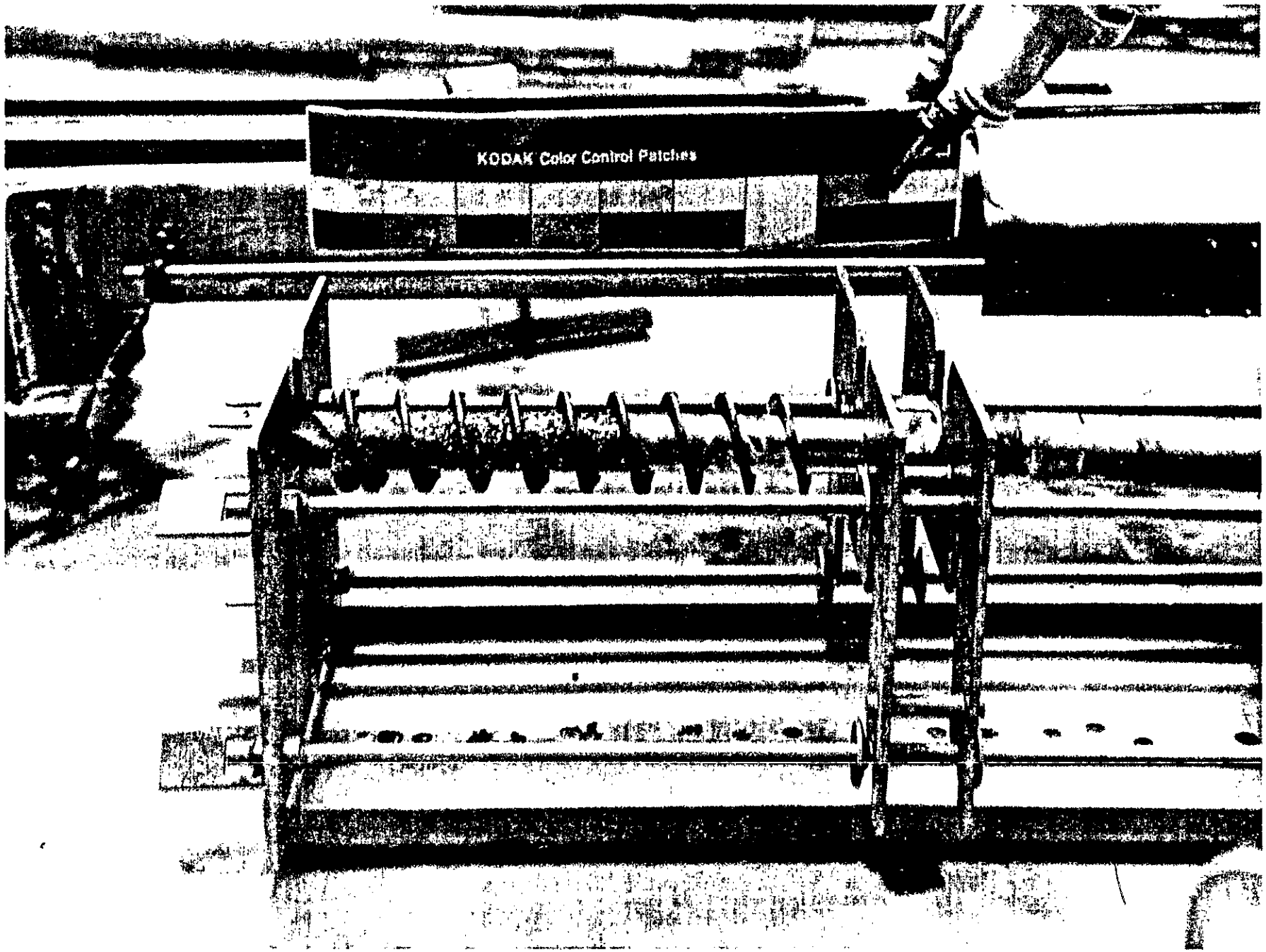
B-103 95-AUG-032 6-7-95



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HOTCELL LOGBOOK

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NOTEBOOK/LOGBOOK UNCLASSIFIED COVERSHEET

SECTION I	
RECORD COPY NOT FOR CIRCULATION FEB 2 2 1995 RECEIVED WHC BCSF DOCUMENT CONTROL	Notebook No. WHC-N-1128 1 Date of Issue 2-22-95 Copy 1 Title 241-B-103
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	67528	T6-31	FEB 2 2 1995

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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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3	B103	95-AUG-032	Riser #2	10-13
4	B103			

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CHAIN-OF-CUSTODY RECORD FOR AUGER SAMPLING

1) Shipment Number 200W-08-TF (2) Sample Number 95-AUG-031 (3) Supervisor R.J. PRAZNIK

4) Tank B103 (5) Riser 7 (6) Cask Serial Number 1006C

Radiation Survey Data:	(7) FIELD	(31) LABORATORY
Over Top Dose Rate	<0.5 mR/hr	<.5 mR/hr
Side Dose Rate	<0.5 mR/hr	PHS-26-95 <.5 mR 0.5 mR/hR
Bottom Dose Rate	41 MR/hr	0.5 mR/hR
Smearable Contamination	<20 dpm/100cm² (Alpha)	<20 dpm/100 cm² (Alpha)
	<1k dpm/100cm² (Beta-Gamma)	<1000 dpm/100cm² (Beta-Gamma)
RCT*	R Jamieson 83559 (Signature)	RCT Pitts (Signature)

(8) Shipment Description	
A. Work Package Number	ES-95-00268-0
B. Cask Seal Number	1042
C. Date and Time Sample Removed from Tank	5-24-95 / 1445 hrs
D. Expected Liquid Content	* 90%
E. Expected Solid Content	10%
F. Dose Rate Through Drill String	32 mR/hr
G. Expected Sample Length	4½"

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

B-103 95-AUG-031 Riser #7

10) Field Comments

* SAMPLE MEDIUM WILL BE VERY MUCH LIQUIDITY SLUDGE LIKE. 5-26-95

* NOTE *

(32) Laboratory Comments

COPY

(11) Point of Origin	(12) Destination	(13) Sender Name (Sign and PRINT)	(14) Date/Time	(15) Sender Comments
B103 Riser #7	222S LABS	DA KRAHN	5/26/95 1018	
(17) Relinquished By (Sign and PRINT)		(18) Received By (Sign and PRINT)	(19) Date/Time	(20) Receiver Comments
DAKRAHN		C E Byrd	5-26-95 10:18	
(21) Relinquished By (Sign and PRINT)		(22) Received By (Sign and PRINT)	(23) Date/Time	(24) Receiver Comments
C E Byrd		Arlee B. Bendy	5-26-95/1612	
(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?		
☒ Yes ☐ No	☒ Yes ☐ No	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)

WHC-SD-WM-DP-134, REV. 0

6

B103 95-AUG-031 Riser # 7

WEIGHTS 20g = 20.00 500g = 499.98
P.C. JOHN CONNER PHONE # 373-5743
Temp. 81.7°F Humidity 25%

VIDEO TAPE # 6 TITLE B-FARM

CASK Serial # 1006C (32mR/hr DOSE RATE THROUGH DRILL STRING)

WORKLIST # 1461 LABCORE # S95T000968
Dose Rate Through Drill String 32 mR/hr.

Sample Description:

Approximately 4 inches of material recovered from flutes 15-18. Some drainable liquid dripped from auger onto the tray (a few drops.) Sample is damp, crystalline, moist solids. Appeared to look like small fibers. Color is grey to black.

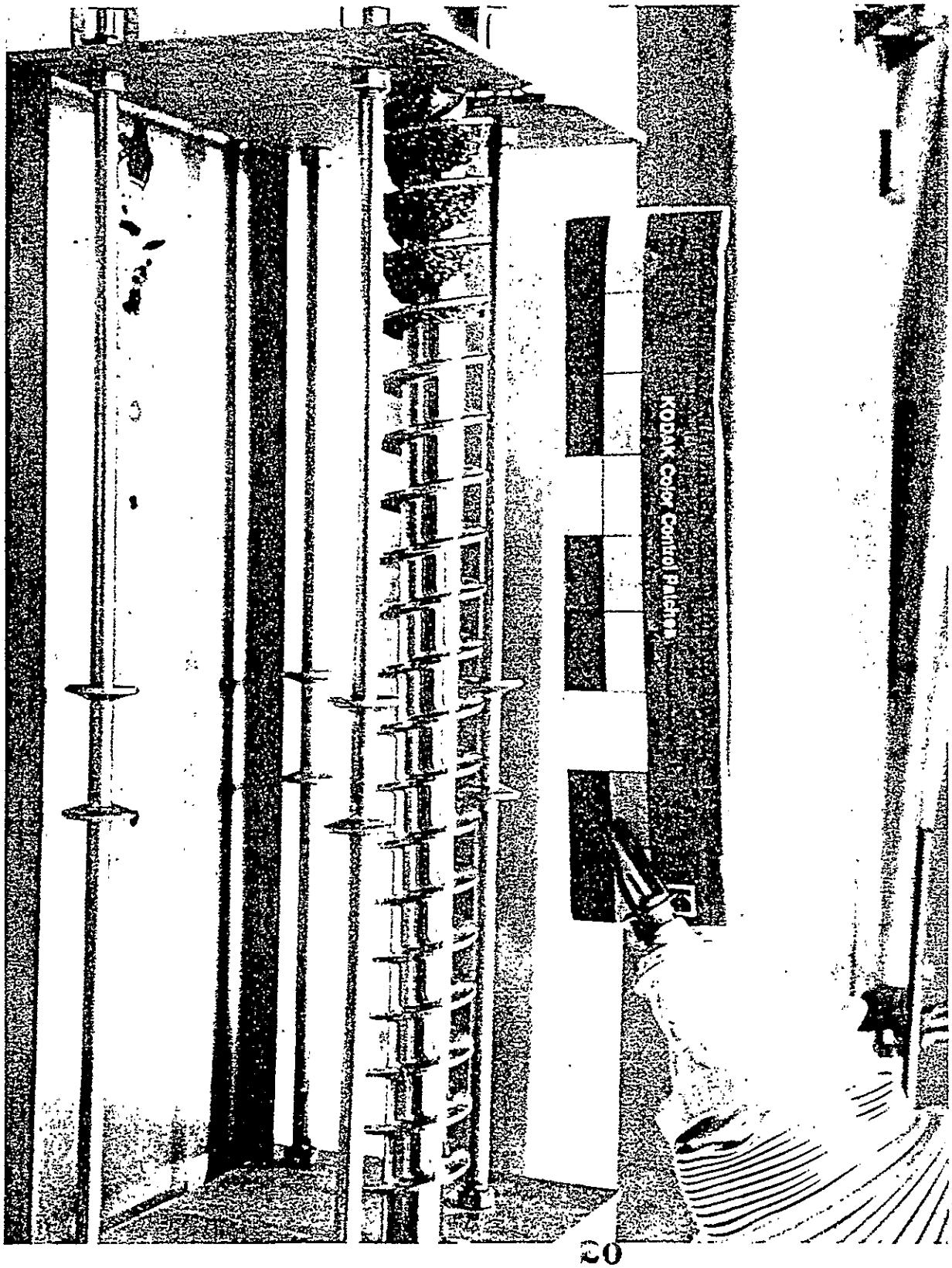
DMC

Subsample information:

Jar 6795, 125mL jar

Final wt: 174.165 g
Initial wt: 129.140 g
Net wt: 45.025 g

B-103 95-AUG-031 Riser #7



B-103 95-AUG-031

5/3/95

Log book

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10

COPY

200-W-08-TK

CHAIN-OF-CUSTODY RECORD FOR AUGER SAMPLING

(1) Shipment Number ~~75150N26-2-95~~ (2) Sample Number 95-AUG-032 (3) Supervisor R.S. PRAZNIK

(4) Tank B/03 (5) Riser 2 (6) Cask Serial Number C1024

Radiation Survey Data:	(7) FIELD	(31) LABORATORY
Over Top Dose Rate	<0.5	<0.5 MR/HR
Side Dose Rate	<0.5	<0.5 MR/HR
Bottom Dose Rate	<0.5	<0.5 MR/H
Smearable Contamination	< 20 d/m α (Alpha)	< 20 DPM/100CM² (Alpha)
	< 1000 d/m β (Beta-Gamma)	< 1000 DPM/100CM² (Beta-Gamma)
RCT*	(Signature)	RCT* (Signature)

(8) Shipment Description

A. Work Package Number	ES-95-00268-0
B. Cask Seal Number	1043
C. Date and Time Sample Removed from Tank	6-1-95 / 1033hrs
D. Expected Liquid Content	* 80%
E. Expected Solid Content	20%
F. Dose Rate Through Drill String	10 mR/hr
G. Expected Sample Length	9"

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

(10) Field Comments

* Sample contents ~~[illegible]~~ 6-2-95 is very soupy please exercise caution when extracting sample.

(32) Laboratory Comments

(11) Point of Origin	(12) Destination	(13) Sender Name (Sign and PRINT)	(14) Date/Time	(15) Sender Comments
B/03 R/2	222S	DA KRAHN	6-2-95 1300	
(17) Relinquished By (Sign and PRINT)		**(18) Received By (Sign and PRINT)**	**(19) Date/Time**	**(20) Receiver Comments**
DA KRAHN			6-2-95 10:00	
(21) Relinquished By (Sign and PRINT)		**(22) Received By (Sign and PRINT)**	**(23) Date/Time**	**(24) Receiver Comments**
		N LAPIERS	6-2-95 10:2[illegible]	
(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?		
☒ Yes ☐ No	☒ Yes ☐ No	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)

B-103 95-AUG-032 - Riser #2

WHC-SD-WM-DP-134, REV. 0

9513360.1180

B-103 95-AUG-032 Riser #2

DATE 06-07-95

WEIGHTS 20g = 19.99 500g = 499.98
TAPE # 6 TITLE B-FARM
Temperature = 79.7°F HUMIDITY = 34%
P.C. JOHN CONNER
CASK Serial # C1024
Dose rate Through drill STRING 10 mR/hr.
WORKWST # 1512

Sample Description:

- Sample collected from a 10" auger. Sample occupied flutes 4 through 8; flutes 1 through 3 were clean.

- Solids:
Sample had some yellow solids mixed in with some light brown solids and is Damp (Moist).

Subsample Information:

Vial number: #6994
Vial size: 20 ml
Final wt: 33.460 grams
Initial wt: 27.722 grams
Net wt: 6.738 grams ≅ 6.74 grams.

12

B103 95-AUG-032 Riser #2

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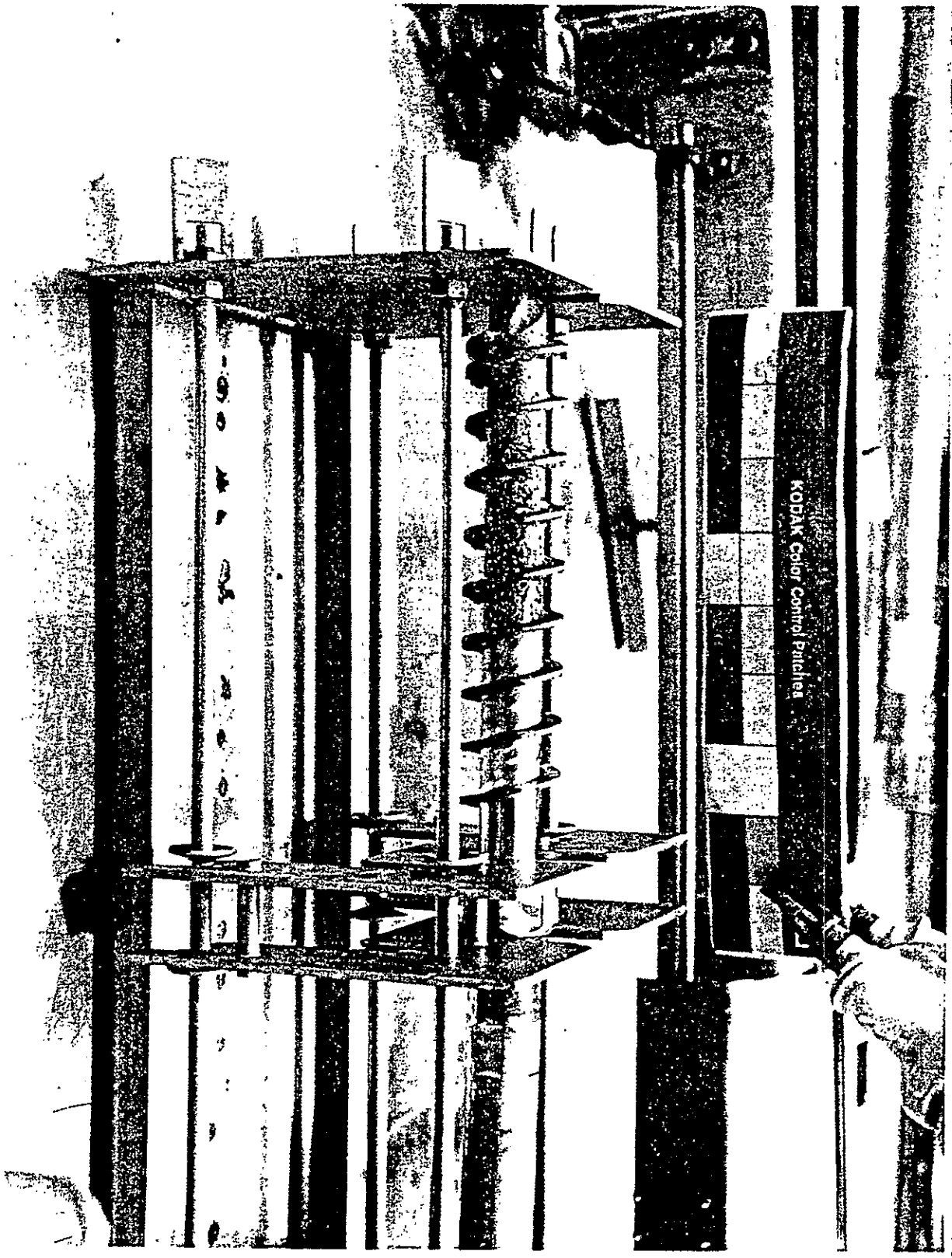
B-103 95-AUG-032 Riser #2
(PHOTOGRAPHY)



B-103 95-AUG-032

Logbook
6-7-95

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6-14-95

Homogenization + Subsampling
Tank B103 Auger 95-AUG-031 Riser 7

Homogenization time 10 min

Jar# 6795 (125 ml)
Initial WT
Final WT
Net WT

Lab sample

Jar# 7066 (20 ml)
Initial WT 27.21 gms
Final WT 36.50 gms
Net WT 9.29 gms

Jar# 7067 (20 ml)
Ship to PNL.
Initial WT 27.13 gms
Final WT 43.79 gms
Net WT ~~16.66~~ gms
16.6 RKT 6/28/95

Jar# 7203 (40 ml)
Archive
Initial WT 25.23 gms
Final WT 37.63 gms
Net WT ~~12.40~~ gms
RKT 6/28/95 12.4

Note – jar 6795 was open a total of 31 minutes for Homogenization and Subsampling.
We need to reduce the variability in our samples.

Alan Campbell 6/19/95

SAMPLE HANDLING

LABCORE Data Entry Template for Worklist# 1461

Analyst: TC **Instrument:** BA000 _____ **Book #** NA

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

Worklist Comment: B-103 95-AUG-031 Riser 7 Extrusion

GROUP	PROJECT	S TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 INSTCHK01				EXTRUD01	SOLID	20g	20.00	N/A	
		2 INSTCHK02				EXTRUD01	SOLID	500g	499.98	N/A	
95000079	B-103	3 SAMPLE	S95T000968	0		DLIQVOL1	SOLID	N/A	0		mL
95000079	B-103	4 SAMPLE	S95T000968	0		DLIQWT01	SOLID	N/A	0		g
95000079	B-103	5 SAMPLE	S95T000968	0		EST.G/ML	SOLID	N/A	0		g/mL
95000079	B-103	6 SAMPLE	S95T000968	0		EXTRUD01	SOLID	N/A	complete		
95000079	B-103	7 SAMPLE	S95T000968	0		LLIQWT01	SOLID	N/A	0		g
95000079	B-103	8 SAMPLE	S95T000968	0		NOTEBOOK	SOLID	N/A	WHC-N-1128		
95000079	B-103	9 SAMPLE	S95T000968	0		SLDVOL01	SOLID	N/A	45		mL
95000079	B-103	10 SAMPLE	S95T000968	0		SLDWT-01	SOLID	N/A	45		g
95000079	B-103	11 SAMPLE	S95T000968	0		ORGVOL01	SOLID	N/A	0		mL

Final page for worklist # 1461

[signature] 5-30-95
Analyst Signature **Date**

[signature] 5-30-95
Analyst Signature **Date**

Data Entry Comments:

Reviewed by RK 5/30/95

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# 1512

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

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

Worklist Comment: B-103 95-AUG-032 Riser 2 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	499.98	N/A	
95000079	B-103	3	SAMPLE	S95T001011	0		DLIQVOL1	SOLID	N/A	0		mL
95000079	B-103	4	SAMPLE	S95T001011	0		DLIQWT01	SOLID	N/A	0		g
95000079	B-103	5	SAMPLE	S95T001011	0		EST.G/ML	SOLID	N/A	0		g/mL
95000079	B-103	6	SAMPLE	S95T001011	0		EXTRUD01	SOLID	N/A	Complete		
95000079	B-103	7	SAMPLE	S95T001011	0		LLIQWT01	SOLID	N/A	0		g
95000079	B-103	8	SAMPLE	S95T001011	0		NOTEBOOK	SOLID	N/A	N-1128		
95000079	B-103	9	SAMPLE	S95T001011	0		SLDVOL01	SOLID	N/A	6		mL
95000079	B-103	10	SAMPLE	S95T001011	0		SLDWT-01	SOLID	N/A	6		g
95000079	B-103	11	SAMPLE	S95T001011	0		ORGVOL01	SOLID	N/A	0		mL

Final page for worklist # 1512

EC 6-8-95
Analyst Signature **Date**

EC 6-8-95
Analyst Signature **Date**

Reviewed by Arlin B. Berg 6-8-95

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# 1624

Analyst: RKF **Instrument:** BA000 _____ **Book #** _____

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

Worklist Comment: B-103 95-AUG-031

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 INSTCHK01			EXTRUD01	SOLID	20.00	19.99	N/A	
		2 INSTCHK02			EXTRUD01	SOLID	500.00	499.74	N/A	
95000079	B-103	3 SAMPLE	S95T000974	0 X	ARCHIV01	SOLID	N/A	~~12.40~~ 12.4 g	RKF 6/28/95	g
95000079	B-103	4 SAMPLE	S95T001096	0 P ·1067	SHIP-PNL	SOLID	N/A	~~16.66~~ 16.6 g	RK Fuller 6/28/95	

Final page for worklist # 1624

Keith Fuller 6/28/95
Analyst Signature **Date**

Keith Fuller 6/28/95
Analyst Signature **Date**

Data Entry Comments:

Reviewed by RK Fuller 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.

SAMPLE PREPARATION

LABCORE Data Entry Template for Worklist# 1504

Analyst: [illegible] **Instrument:** FUS01 AC110166 **Book #** 111

Method: LA-549-141 Rev/Mod C-3

Worklist Comment: B-103 FUSION - 972->973

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 BLNK-PREP			FUSION01	SOLID	250ml		N/A	g/L
95000079	B-103	2 SAMPLE	S95T000973	0 F	FUSION01	SOLID	N/A	.9736		g/L
		.2434g -> 250ml								
95000079	B-103	3 DUP	S95T000973	0 F	FUSION01	SOLID	.9736	.9748	N/A	g/L
		.2437g -> 250ml								

Final page for worklist # 1504

[illegible] 6-20-95
Analyst Signature **Date**

[illegible] 6-20-95
Analyst Signature **Date**

Data Entry Comments: Scale calibrated - 149.998. Sample & dup have <.1% solids. Sample & dup are clear. 30ml HCl. HPT was Jim Evans. Dose Rate was .5mR/HR

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# 1736

Analyst: JAM **Instrument:** FUS01 AL110666 **Book #** N/A

Method: LA-549-141 Rev/Mod D-0

Worklist Comment: B-103 FUSION - 1058->1117

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	BLNK-PREP				FUSION01	SOLID		250ml	N/A	g/L
95000079	B-103	2	SAMPLE	S95T001117	0	F	FUSION01	SOLID	N/A	2.3348		g/L
			.5837g -> 250ml									
95000079	B-103	3	SAMPLE	S95T001117	0		DOSE-02	SOLID	N/A	75	~~75~~	mrad/hour
95000079	B-103	4	DUP	S95T001117	0	F	FUSION01	SOLID	2.3348	2.3408	N/A	g/L
			.5852g -> 250ml									
95000079	B-103	5	DUP	S95T001117	0		DOSE-02	SOLID	75 ~~75~~	100	N/A	mrad/hour

Final page for worklist # 1736

JAMurphy 6-30-95
Analyst Signature Date

Bertrand D. Hitkin II 6-30-95
Analyst Signature Date

Data Entry Comments: Sam 1117 - 20ml HCl, 45ml HNO3, <1% solids; dup 1117 - 20ml HCl, 50ml HNO3, <1% solids; blank - 20ml HCl, 20ml HNO3. Dose rate was <5 mrad/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.

Bertrand D. Hitkin II
6-30-95

INORGANIC ANALYSES

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LABCORE Data Entry Template for Worklist# 1525

Analyst: RH McCown **Instrument:** DSC0 1 **Book #** 12N14A

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

Worklist Comment: Please run B-103 DSCs under N2. bdv

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				DSC-01	SOLID	28.45	28.8	N/A	Joules/g
95000079	B-103	2	SAMPLE	S95T000972	0		DSC-01	SOLID	N/A	Ø		Joules/g
95000079	B-103	3	DUP	S95T000972	0		DSC-01	SOLID	Ø	Ø	N/A	Joules/g

Final page for worklist # 1525

RH McCown 6/23/95
Analyst Signature **Date**

6-23-95
Analyst Signature **Date**

Verified by Blandina Valenzuela 6/26/95

Data Entry Comments: Sample produced two endothermic regions, one at 115.3C with a delta H of 875.4 J/g and second at 221.0C with a delta H of 39.4 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.

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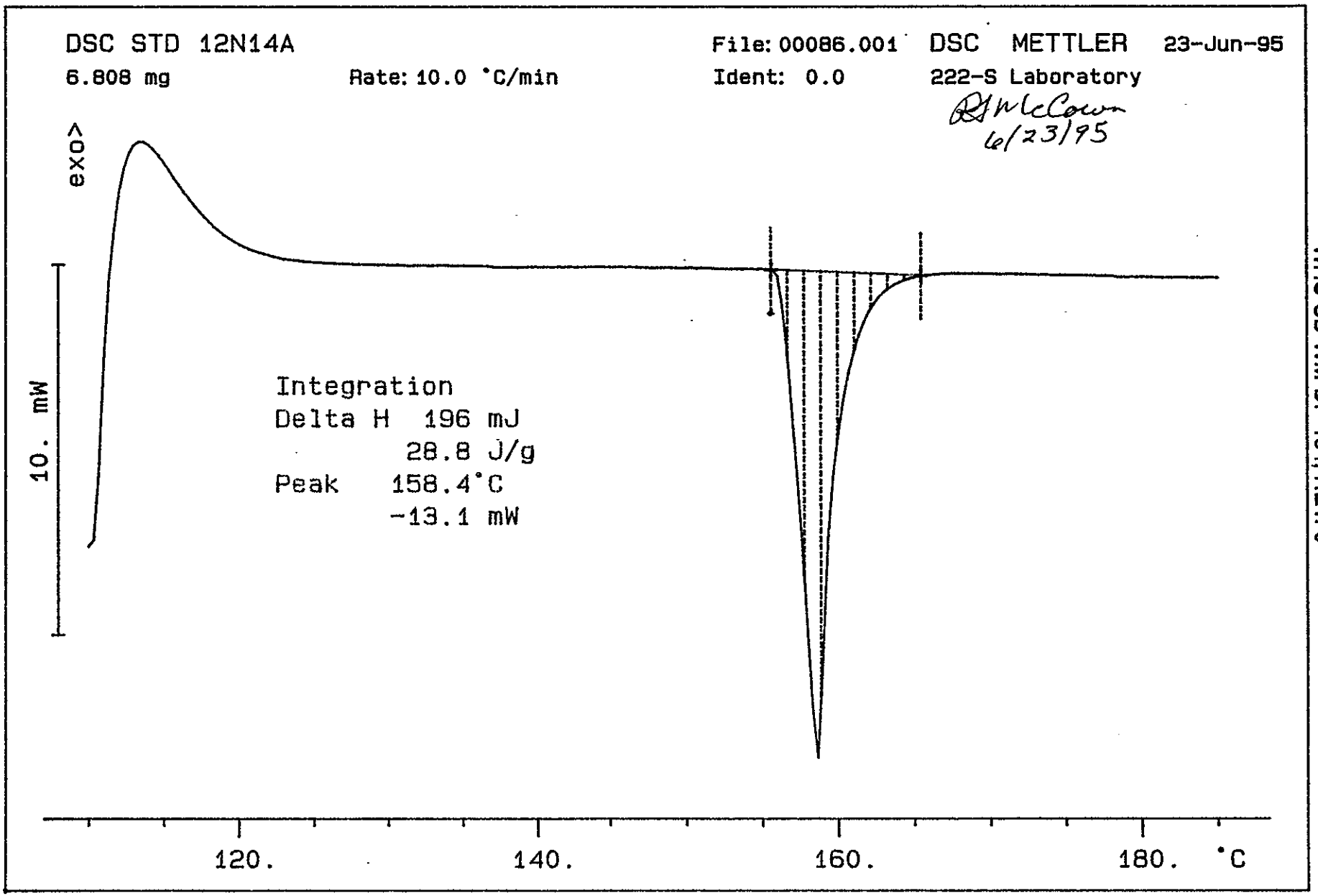

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S95T000972 SAM N2

30.337 mg

Rate: 10.0 °C/min

File: 00087.001

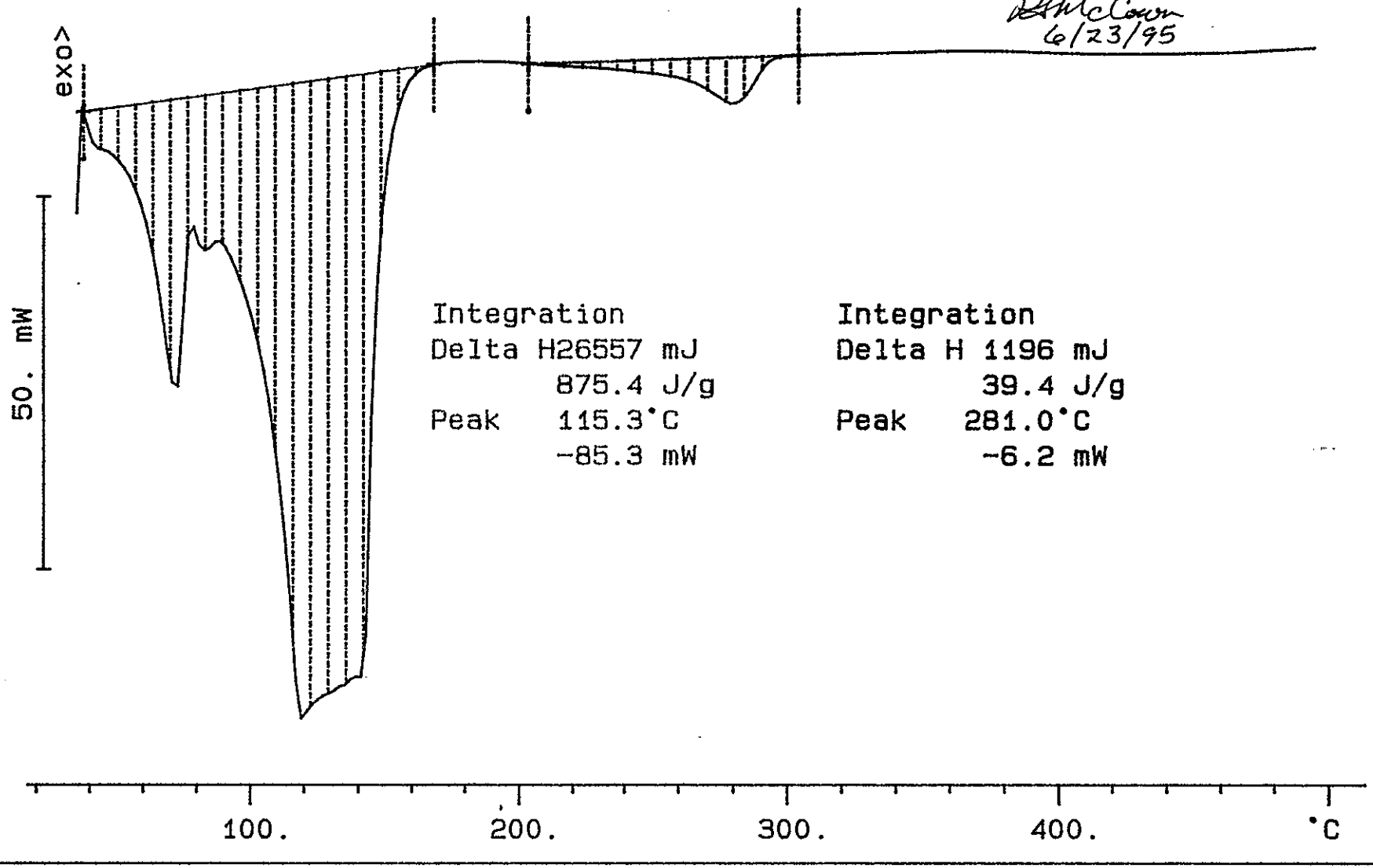
Ident: 0.0

DSC METTLER

222-S Laboratory

23-Jun-95

R.H. McCown 6/23/95



Integration
Delta H26557 mJ
875.4 J/g
Peak 115.3°C
-85.3 mW

Integration
Delta H 1196 mJ
39.4 J/g
Peak 281.0°C
-6.2 mW

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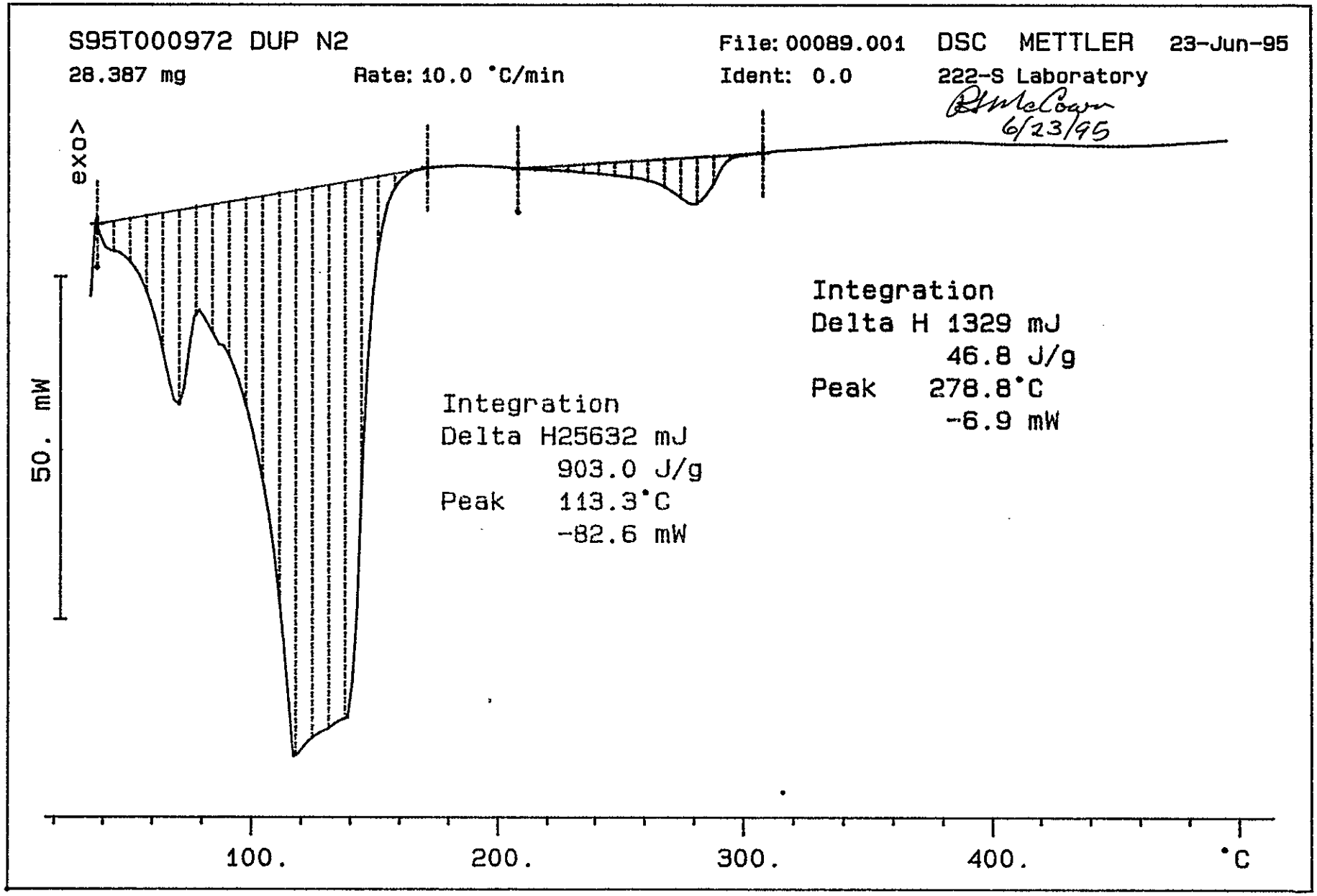

LABCORE Data Entry Template for Worklist# 1626

Analyst: SMF **Instrument:** DSC0 1 **Book #** 12N14-A

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

Worklist Comment: Please run B-103 DSCs under N2. bdv

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				DSC-01	SOLID	28.45	29.8	N/A	Joules/g
95000079	B-103	2	SAMPLE	S95T001058	0		DSC-01	SOLID	N/A	Ø		Joules/g
95000079	B-103	3	DUP	S95T001058	0		DSC-01	SOLID	Ø	Ø	N/A	Joules/g

Final page for worklist # 1626

Sm Fulton 6-24-95
Analyst Signature **Date**

[illegible] 6-27-95
Analyst Signature **Date**

Verified by Blandina Valenzuela 6-28-95

Data Entry Comments: thick, gritty dark brown sludge
Sample produced two endothermic regions, one at 113.3°C with a delta H of 881.8 J/g and second at ~~121.4 J/g~~ 272.3°C with a delta H of 121.4 J/g.
6/29/95 BDV

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 39 TO 41.

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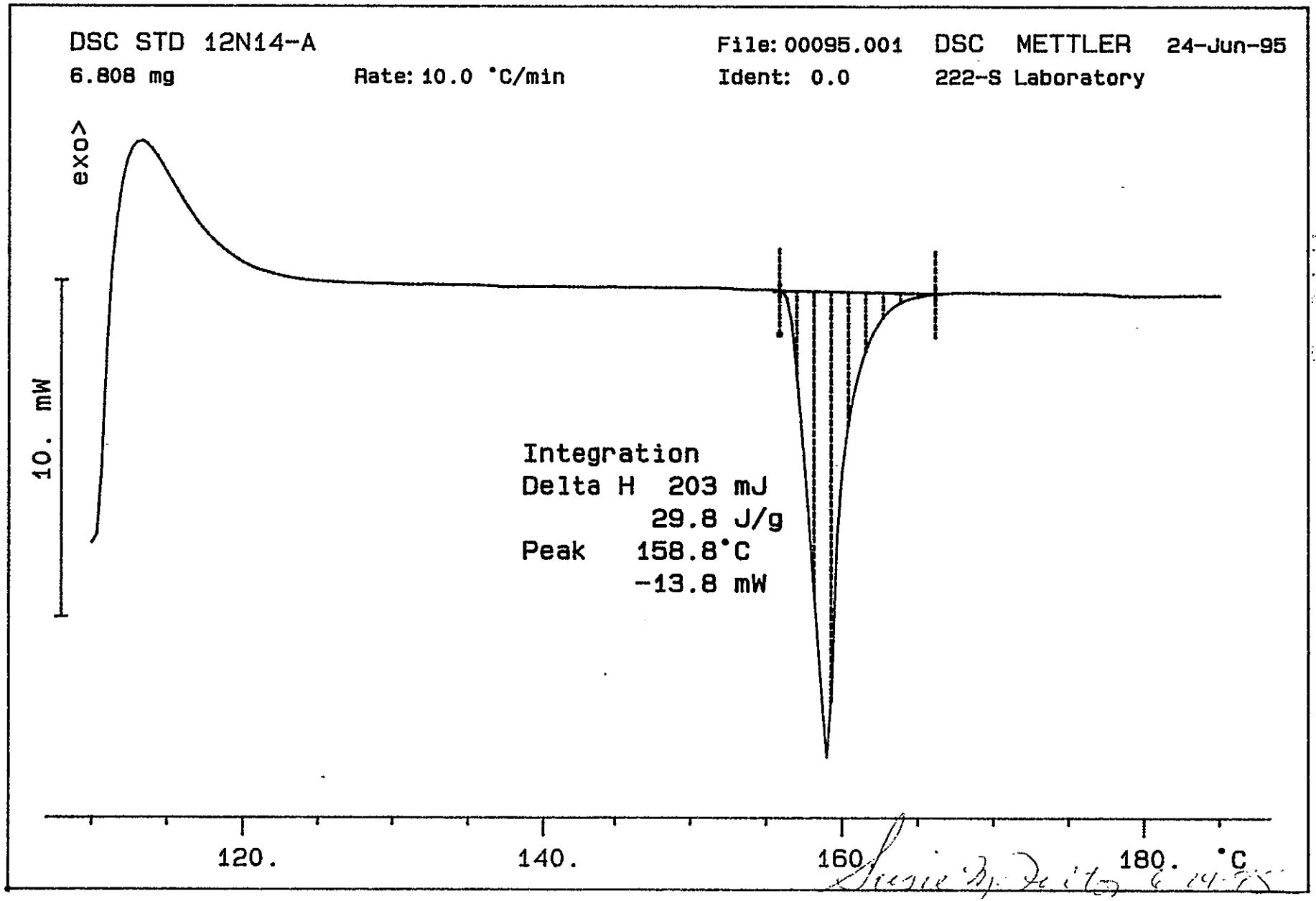

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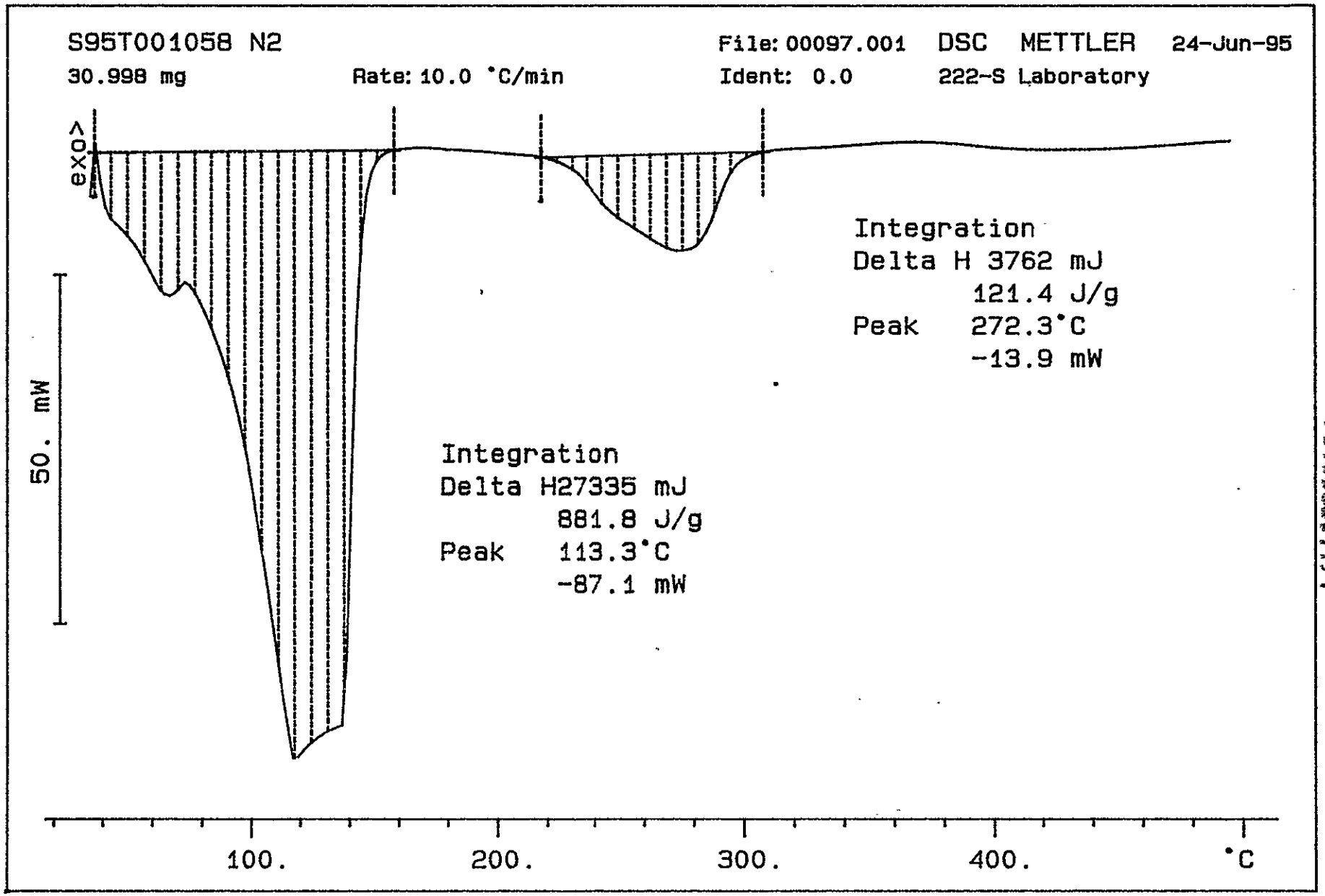

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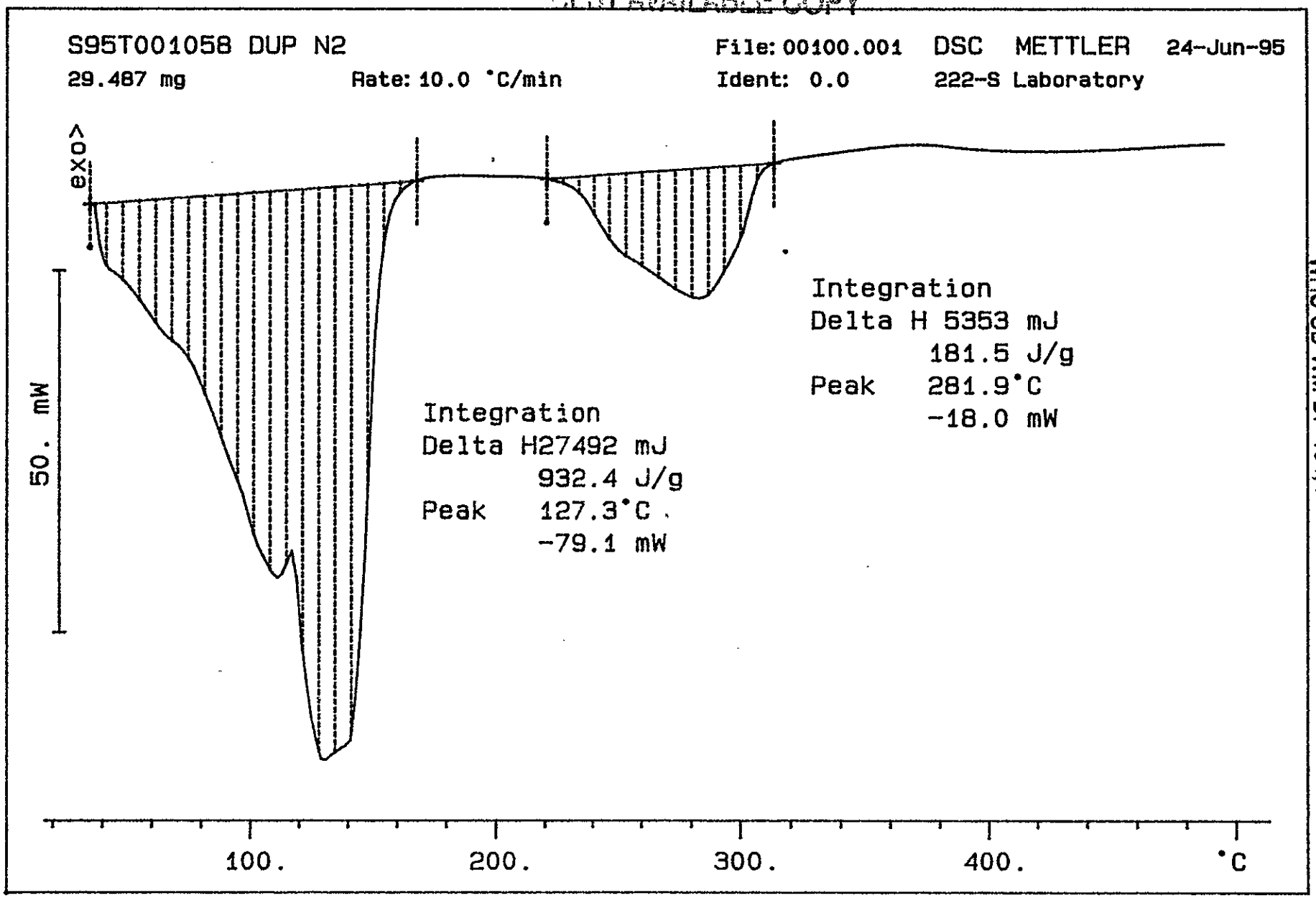


worklistrpt Version 2.0 02/21/95
06/08/95 06:36

LABCORE Data Entry Template for Worklist# 1533

Analyst: RMcCown **Instrument:** TGA0 1 **Book #** 42U8A

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

Worklist Comment: Please run B-103 TGAs under N2. bdv

GROUP	PROJECT	S TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD				TGA-01	SOLID	~~58.44~~ 59.19	58.44 6/26/95 BDV	N/A	%
95000079	B-103	2 SAMPLE	S95T000972	0		TGA-01	SOLID	N/A	50.08		%
95000079	B-103	3 DUP	S95T000972	0		TGA-01	SOLID	50.08	50.26	N/A	%

Final page for worklist # 1533

RMcCown 6/23/95
Analyst Signature **Date**

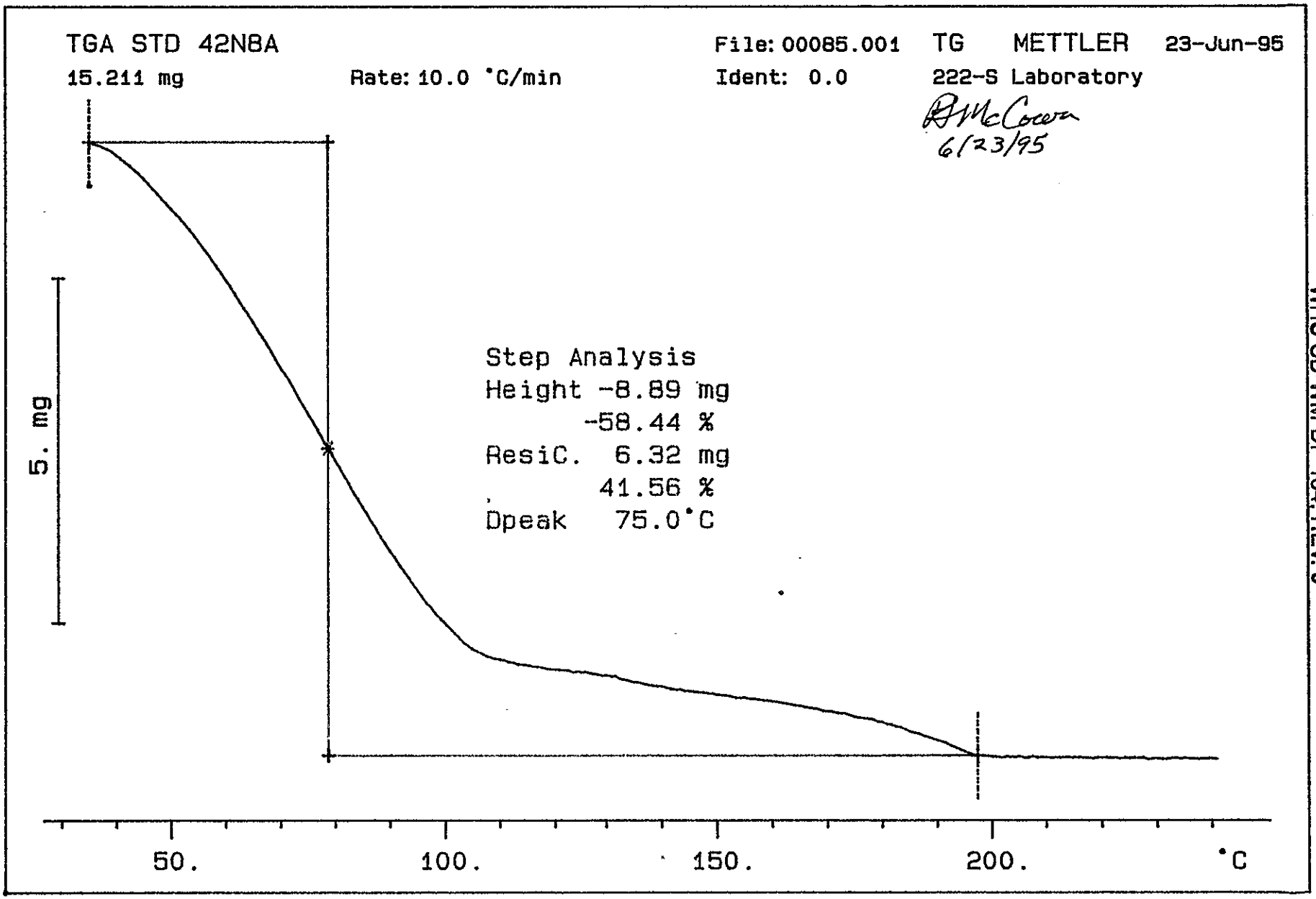
Analyst Signature 6-23-95 **Date**

Verified by Blanclina Valenzuela 6/26/95

Data Entry Comments: The sample appears to have several distinct weight loss steps, however the ~~entire~~ total weight loss ~~was considered percent water.~~ 6/26/95 BDV between the temperature range of 75-150°C was assumed to be loss of water. 6/26/95 BDV 6/26/95 BDV

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 43 TO 45. BEST AVAILABLE COPY



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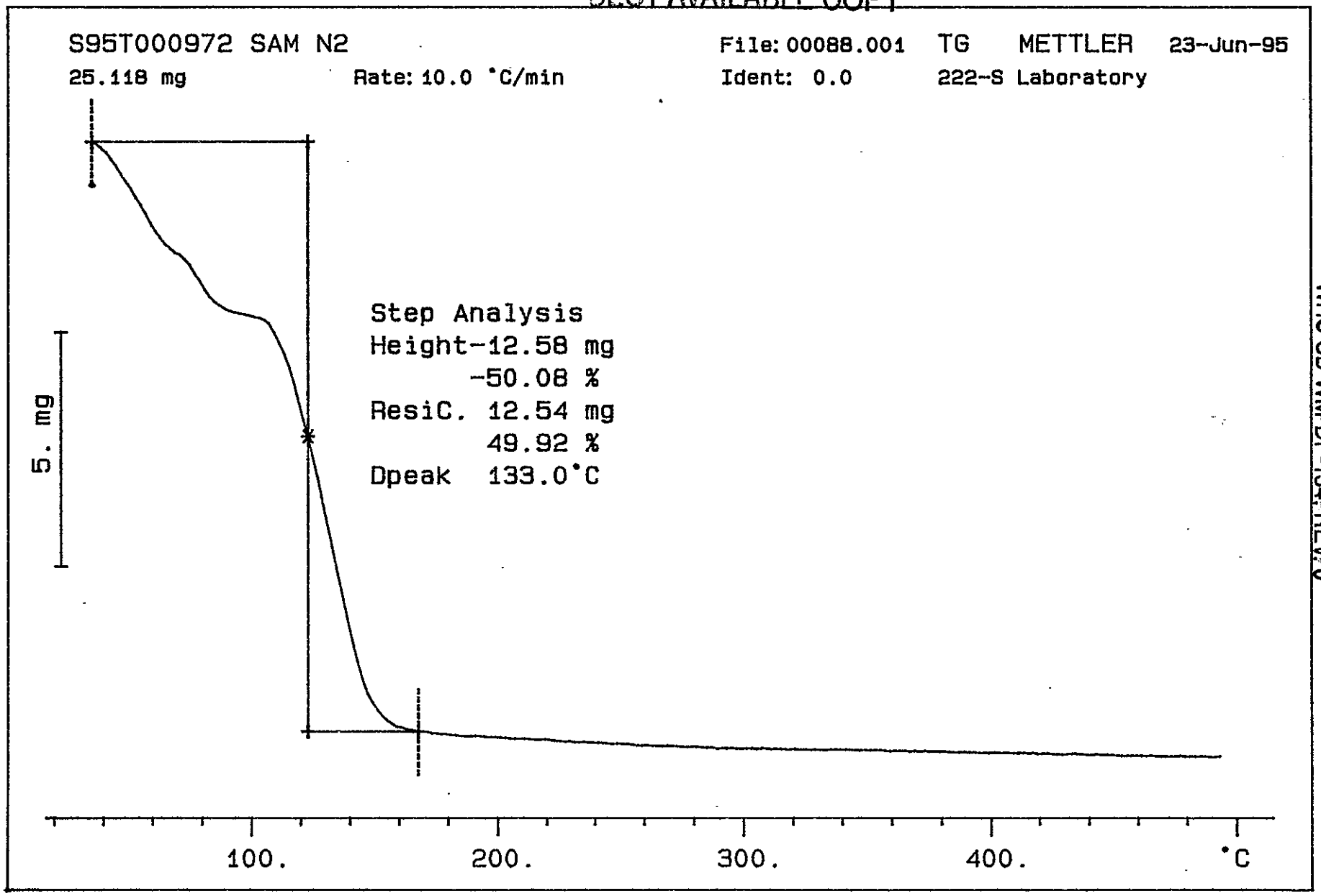

WHC-SD-WM-DP-134, REV. 0

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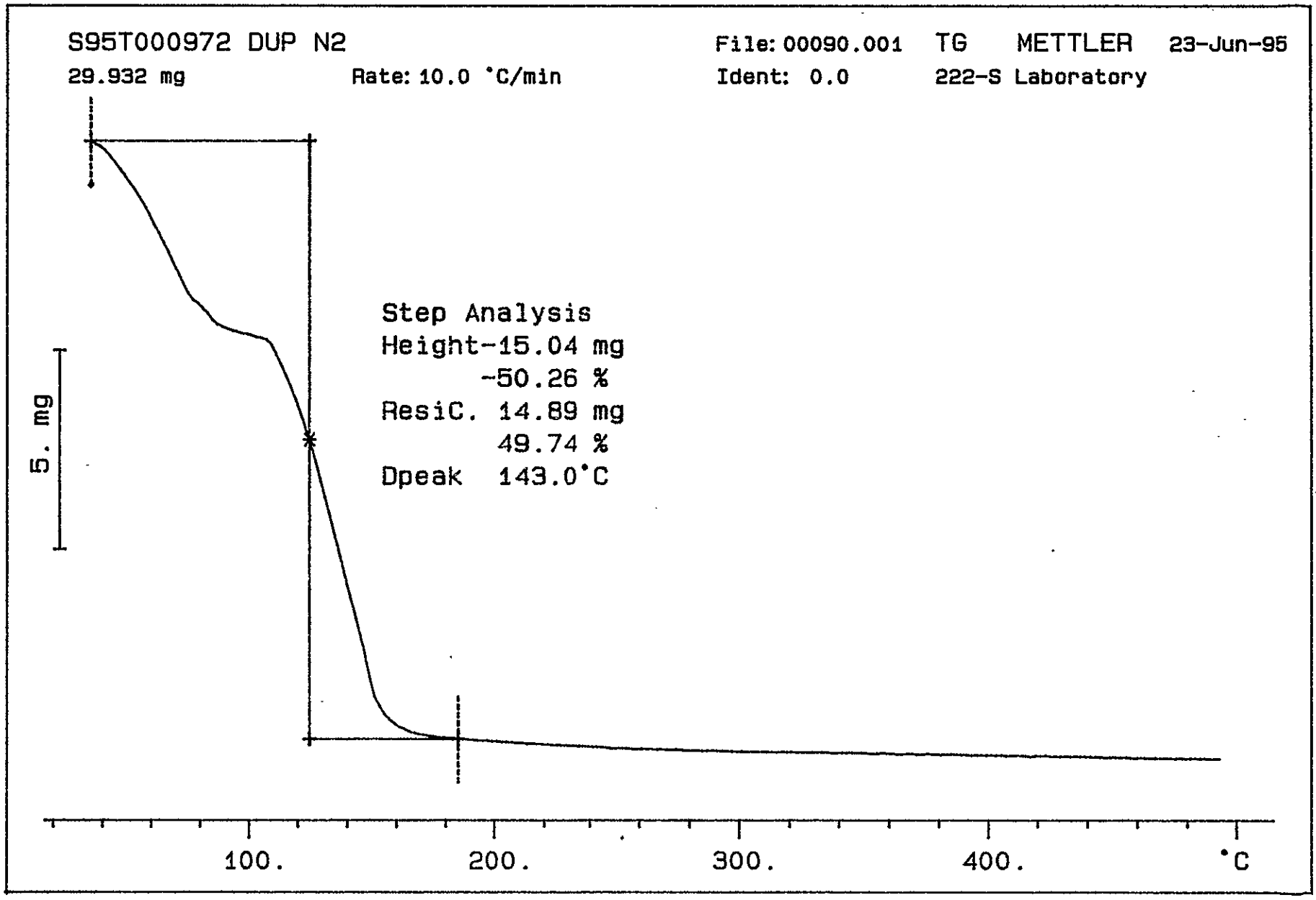

LABCORE Data Entry Template for Worklist# 1630

Analyst: SMF **Instrument:** TGA0 1 **Book #** 42N8-A

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

Worklist Comment: Please run B-103 TGA under N2. bdv

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				TGA-01	SOLID	59.19	59.88	N/A	%
95000079	B-103	2	SAMPLE	S95T001058	0		TGA-01	SOLID	N/A	38.76		%
95000079	B-103	3	DUP	S95T001058	0		TGA-01	SOLID	38.76	40.31	N/A	%

Final page for worklist # 1630

Smfulton 6-24-95
Analyst Signature **Date**

[illegible] 6-27-95
Analyst Signature **Date**

Verified by Blandina Valenzuela 6-22-95

Data Entry Comments: thick, gritty dark brown sludge. Sample produced a second weight loss step at approximately 260°C with a loss of 3.17%.

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 47 TO 49.

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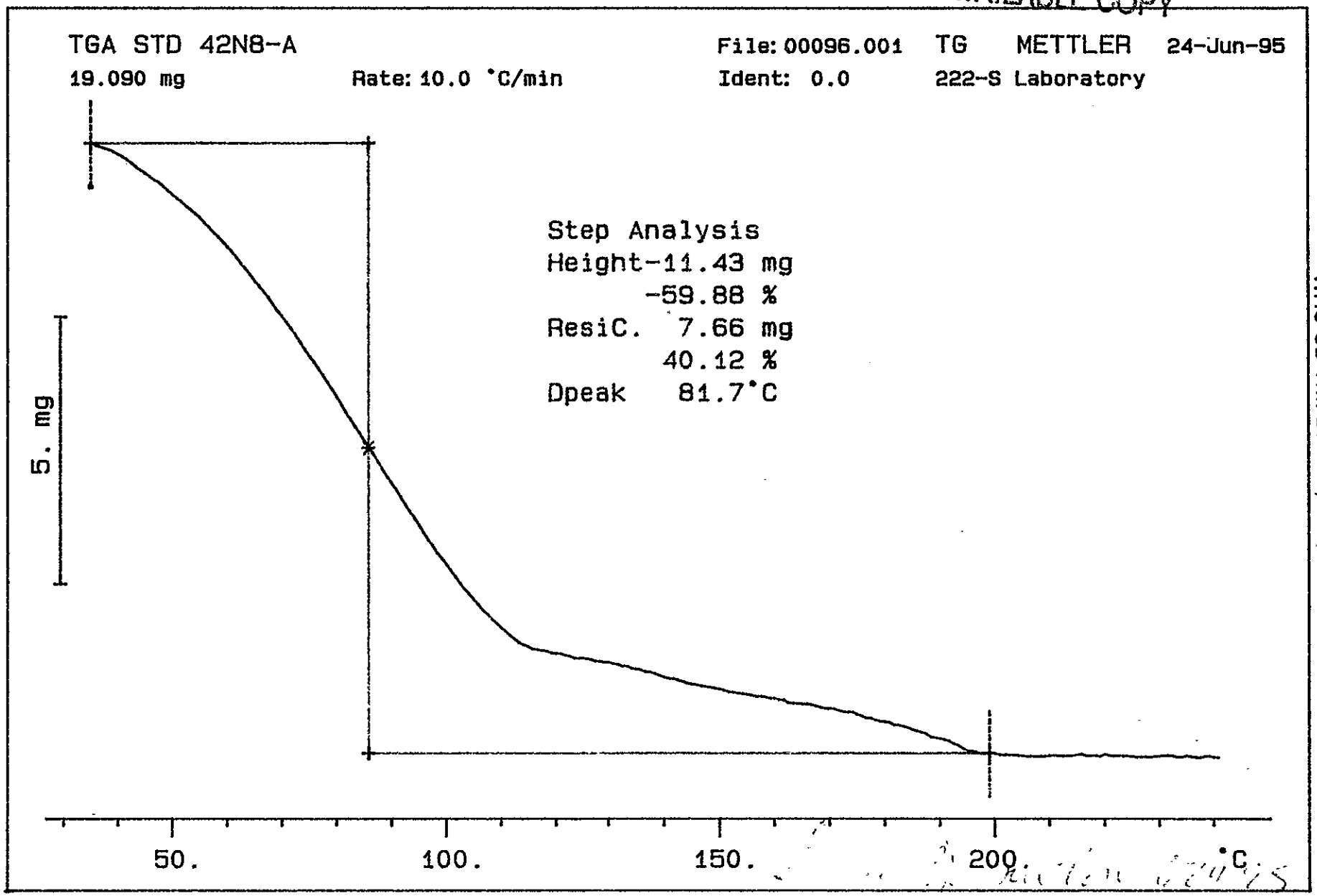

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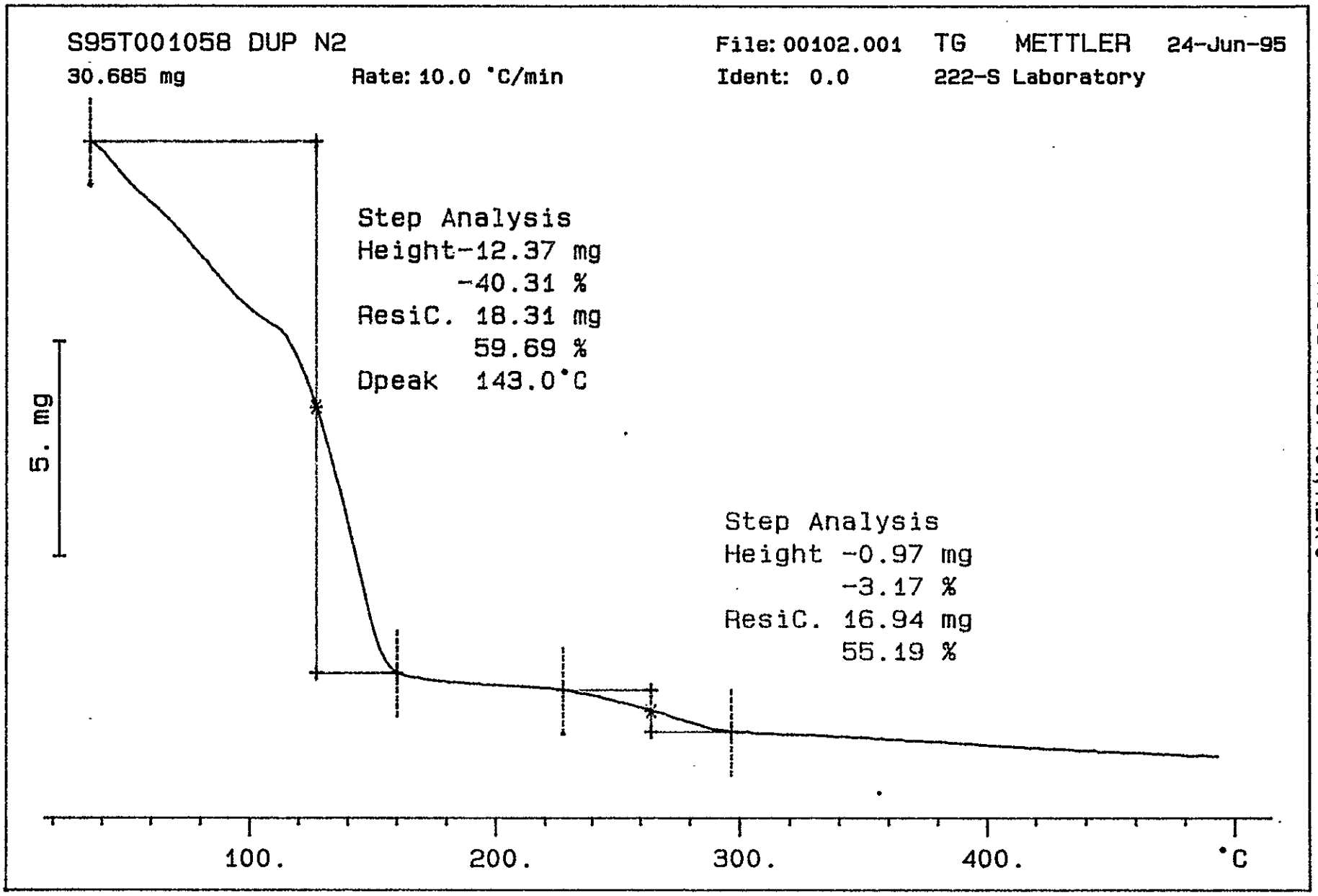
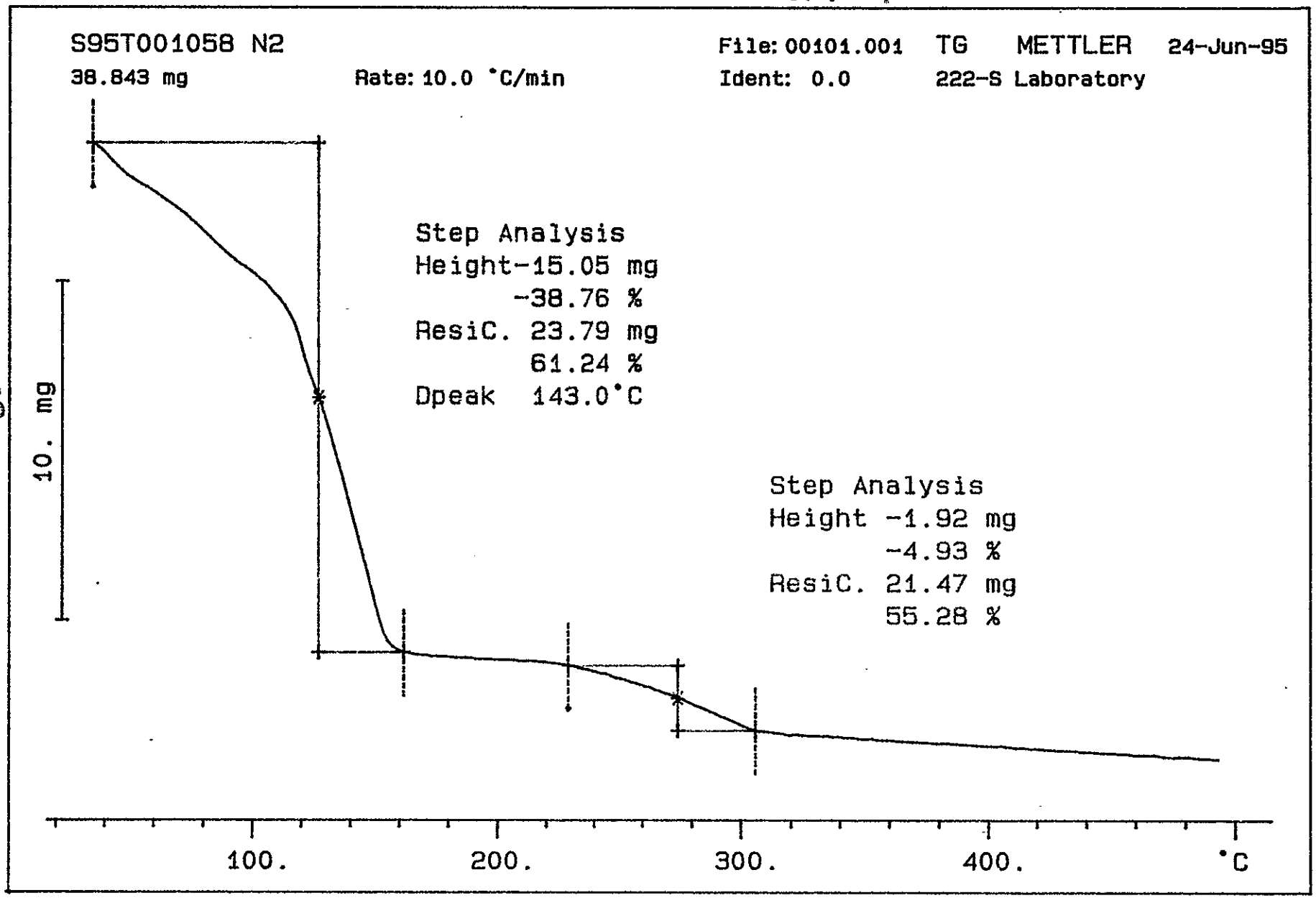


BEST AVAILABLE COPY



worklistrpt Version 2.1 05/15/95
06/30/95 03:15

LABCORE Data Entry Template for Worklist# 1759

Analyst: KRM **Instrument:** TIC01 **Book #** 15N12 F TIC
16N12 TOC

Method: LA-342-100 Rev/Mod A-0

Worklist Comment: B-103 TICTOC KRM

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	BLNK				@TICTOC1 TIC-02	SOLID	1	3.9	N/A	ug/g
		1	BLNK				@TICTOC1 TOC-02	SOLID	1	22.9	N/A	ug/g
		2	STD				@TICTOC1 TIC-02	SOLID	6.00E2	5.82E2	N/A	ug/g
		2	STD				@TICTOC1 TOC-02	SOLID	3.00E3	2.96E3	N/A	ug/g
95000079	B-103	3	SAMPLE	S95T000972	0		@TICTOC1 TIC-02	SOLID	N/A	1.85E3	5.00E+0	ug/g
95000079	B-103	3	SAMPLE	S95T000972	0		@TICTOC1 TOC-02	SOLID	N/A	6.45E2	8.00E+1	ug/g
95000079	B-103	4	DUP	S95T000972	0		@TICTOC1 TIC-02	SOLID	1.85E3	1.84E3	N/A	ug/g
95000079	B-103	4	DUP	S95T000972	0		@TICTOC1 TOC-02	SOLID	6.45E2	7.10E2	N/A	ug/g
95000079	B-103	5	SPK	S95T000972	0		@TICTOC1 TIC-02	SOLID	100	107	N/A	ug/g
95000079	B-103	5	SPK	S95T000972	0		@TICTOC1 TOC-02	SOLID	100	104	N/A	ug/g

Final page for worklist # 1759

Analyst Signature Date

Analyst Signature Date 6/30/95

Reviewed RW Schroeder 7/5/95

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.

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0
<<< BLANK ANALYSIS >>>

Sample: BLK Date: 06/29/95 Time: 23:25:35

Sample Size = 1 uL
Dil Factor = 1
Blank ID # = BLK
Blank Value = N/A

Analyst : KR MONTEITH
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.10	0.00
2	1.01	0.40	75.00
3	1.50	0.70	42.86
4	2.00	1.00	30.00
5	2.50	1.20	16.67
6	3.00	1.50	20.00
7	3.50	1.60	6.25
8	4.00	1.90	15.79
9	4.50	2.00	5.00
10	5.00	2.20	9.09
11	5.50	2.30	4.35
12	6.00	2.50	8.00
13	6.50	2.60	3.85
14	7.00	2.80	7.14
15	7.50	2.90	3.45
16	8.00	3.10	6.45
17	8.50	3.20	3.13
18	9.00	3.30	3.03
19	9.50	3.50	5.71
20	10.00	3.60	2.78
21	10.50	3.80	5.26
22	11.00	3.90	2.56

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 51 TO 60.

BLANK VALUE = 3.9 micrograms carbon
BLANK FACTOR = 3.9 / 10.99695 = +3.5E-01 ug/min Carbon

Sample Run By: [signature] 6-30-95
KR MONTEITH 00000

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0
<<< BLANK ANALYSIS >>>

Sample: BLK Date: 06/29/95 Time: 23:09:45

Sample Size = 1 uL
Dil Factor = 1
Blank ID # = BLK
Blank Value = N/A

Analyst : KR MONTEITH
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.00	0.00
2	1.01	1.20	100.00
3	1.51	6.70	82.09
4	2.00	11.00	39.09
5	2.50	13.40	17.91
6	3.00	14.90	10.07
7	3.50	16.10	7.45
8	4.00	17.10	5.85
9	4.50	17.70	3.39
10	5.00	18.50	4.32
11	5.50	19.00	2.63
12	6.00	19.60	3.06
13	6.50	20.00	2.00
14	7.00	20.50	2.44
15	7.50	20.90	1.91
16	8.00	21.20	1.42
17	8.50	21.50	1.40
18	9.00	21.80	1.38
19	9.50	22.20	1.80
20	10.00	22.50	1.33
21	10.50	22.70	0.88
22	11.00	22.90	0.87

BLANK VALUE = 22.9 micrograms carbon
BLANK FACTOR = 22.9 / 10.99988 = +2.08E+00 ug/min Carbon

<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: _____
KR MONTEITH 00000

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: STD Date: 06/30/95 Time: 01:13:07

Sample Size = 1000 uL
Dil Factor = 1
Blank ID # =
Blank Value = .35 ug/minute C

Analyst : KR MONTEITH
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	69.40	0.00
2	1.01	209.80	66.92
3	1.51	355.30	40.95
4	2.00	464.10	23.44
5	2.50	524.40	11.50
6	3.00	554.20	5.38
7	3.50	568.70	2.55
8	4.00	574.10	0.94
9	4.50	576.90	0.49
10	5.00	578.50	0.28
11	5.50	579.70	0.21
12	6.00	580.70	0.17
13	6.50	581.60	0.15
14	7.00	582.20	0.10
15	7.50	582.80	0.10
16	8.00	583.40	0.10
17	8.50	584.00	0.10
18	9.00	584.30	0.05
19	9.50	584.80	0.09
20	10.00	585.20	0.07
21	10.50	585.70	0.09
22	11.00	586.10	0.07

USER INPUT BLANK VALUE
BLANK VALUE = 3.848932 micrograms carbon
BLANK FACTOR = 3.848932 / 10.99695 = +3.5E-01 ug/min Carbon

SAMPLE RESULTS:
(586.1 - 3.849882)(1)/(1000) = +5.823E-01 g/L Carbon
(586.1 - 3.849882)(1)/(1000)(12) = +4.852E-02 Molar Carbon

Sample Run By: _____
KR MONTEITH 00000

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: STD Date: 06/30/95 Time: 00:58:46

Sample Size = 300 uL
Dil Factor = 1
Blank ID # =
Blank Value = 2.08 ug/minute C

Analyst : KR MONTEITH
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.00	0.00
2	1.01	30.90	100.00
3	1.51	243.20	87.29
4	2.00	611.00	60.20
5	2.50	805.40	24.14
6	3.00	864.30	6.81
7	3.50	886.40	2.49
8	4.00	893.50	0.79
9	4.50	897.60	0.46
10	5.00	900.30	0.30
11	5.50	902.10	0.20
12	6.00	903.50	0.15
13	6.50	904.50	0.11
14	7.00	905.90	0.15
15	7.50	906.50	0.07
16	8.00	907.40	0.10
17	8.50	908.00	0.07
18	9.00	908.70	0.08
19	9.50	909.30	0.07
20	10.00	909.80	0.05
21	10.50	910.30	0.05
22	11.00	910.70	0.04

USER INPUT BLANK VALUE
BLANK VALUE = 22.87365 micrograms carbon
BLANK FACTOR = 22.87365 / 10.99695 = +2.1E+00 ug/min Carbon

SAMPLE RESULTS:
(910.7 - 22.87975)(1)/(300) = +2.959E+00 g/L Carbon
(910.7 - 22.87975)(1)/(300)(12) = +2.466E-01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: _____
KR MONTEITH 00000

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 972 Date: 06/30/95 Time: 01:25:35

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .35 ug/minute C

Analyst : KR MONTEITH
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.00	0.00
2	1.01	12.10	100.00
3	1.51	77.70	84.43
4	2.01	140.30	44.62
5	2.51	181.10	22.53
6	3.00	203.60	11.05
7	3.50	214.90	5.26
8	4.00	220.50	2.54
9	4.50	223.30	1.25
10	5.00	225.20	0.84
11	5.50	226.20	0.44
12	6.00	227.50	0.57
13	6.50	228.30	0.35
14	7.00	229.10	0.35
15	7.50	229.70	0.26
16	8.00	230.40	0.30
17	8.50	231.00	0.26
18	9.00	231.70	0.30
19	9.50	232.10	0.17
20	10.00	232.60	0.21
21	10.50	233.10	0.21
22	11.00	233.60	0.21

USER INPUT BLANK VALUE
BLANK VALUE = 3.848932 micrograms carbon
BLANK FACTOR = 3.848932 / 10.99695 = +3.5E-01 ug/min Carbon

SAMPLE RESULTS:
(233.6 - 3.849589)(1)/(1) = +2.298E+02 g/L Carbon
(233.6 - 3.849589)(1)/(1)(12) = +1.915E+01 Molar Carbon

Sample Run By: KR MONTEITH 00000

.1243g = 1.85E3

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 972 Date: 06/30/95 Time: 01:38:29

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 2.08 ug/minute C

Analyst : KR MONTEITH
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.00	0.00
2	1.01	7.00	100.00
3	1.50	29.20	76.03
4	2.00	49.00	40.41
5	2.50	62.10	21.10
6	3.00	68.40	9.21
7	3.50	74.60	8.31
8	4.00	78.70	5.21
9	4.50	82.80	4.95
10	5.00	85.60	3.27
11	5.50	87.70	2.39
12	6.00	89.90	2.45
13	6.50	91.80	2.07
14	7.00	93.50	1.82
15	7.50	95.00	1.58
16	8.00	96.80	1.86
17	8.50	97.90	1.12
18	9.00	99.20	1.31
19	9.50	100.40	1.20
20	10.00	101.30	0.89
21	10.50	102.20	0.88
22	11.00	103.00	0.78

USER INPUT BLANK VALUE
BLANK VALUE = 22.87365 micrograms carbon
BLANK FACTOR = 22.87365 / 10.99695 = +2.1E+00 ug/min Carbon

SAMPLE RESULTS:
(103 - 22.87756)(1)/(1) = +8.012E+01 g/L Carbon
(103 - 22.87756)(1)/(1)(12) = +6.677E+00 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: _____
KR MONTEITH 00000

.1243g = 6.45E²

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 972 Date: 06/30/95 Time: 01:52:39

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .35 ug/minute C

Analyst : KR MONTEITH
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.10	0.00
2	1.01	113.90	99.91
3	1.50	258.60	55.96
4	2.00	341.50	24.28
5	2.50	392.50	12.99
6	3.00	424.10	7.45
7	3.50	441.50	3.94
8	4.00	450.50	2.00
9	4.50	455.00	0.99
10	5.00	458.70	0.81
11	5.50	461.20	0.54
12	6.00	463.40	0.47
13	6.50	465.10	0.37
14	7.00	467.00	0.41
15	7.50	468.20	0.26
16	8.00	469.50	0.28
17	8.50	470.80	0.28
18	9.00	471.90	0.23
19	9.50	472.70	0.17
20	10.00	473.60	0.19
21	10.50	474.50	0.19
22	11.00	475.30	0.17

USER INPUT BLANK VALUE
BLANK VALUE = 3.848932 micrograms carbon
BLANK FACTOR = 3.848932 / 10.99695 = +3.5E-01 ug/min Carbon

SAMPLE RESULTS:
(475.3 - 3.849589)(1)/(1) = +4.715E+02 g/L Carbon
(475.3 - 3.849589)(1)/(1)(12) = +3.929E+01 Molar Carbon

Sample Run By: _____
KR MONTEITH 00000

.2564g = 1.84e3

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 972 Date: 06/30/95 Time: 02:06:15

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 2.08 ug/minute C

Analyst : KR MONTEITH
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.00	0.00
2	1.01	13.80	100.00
3	1.50	58.10	76.25
4	2.00	99.80	41.78
5	2.50	126.30	20.98
6	3.00	143.10	11.74
7	3.50	153.20	6.59
8	4.00	162.50	5.72
9	4.50	169.90	4.36
10	5.00	174.90	2.86
11	5.50	179.70	2.67
12	6.00	183.60	2.12
13	6.50	186.80	1.71
14	7.00	189.40	1.37
15	7.50	192.10	1.41
16	8.00	194.30	1.13
17	8.50	196.60	1.17
18	9.00	198.40	0.91
19	9.50	200.30	0.95
20	10.00	202.00	0.84
21	10.50	203.40	0.69
22	11.00	205.00	0.78

USER INPUT BLANK VALUE
BLANK VALUE = 22.87365 micrograms carbon
BLANK FACTOR = 22.87365 / 10.99695 = +2.1E+00 ug/min Carbon

SAMPLE RESULTS:
(205 - 22.87963)(1)/(1) = +1.821E+02 g/L Carbon
(205 - 22.87963)(1)/(1)(12) = +1.518E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: _____
KR MONTEITH 00000

.2564g = 7.10e-2

PP

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 972 + SPK Date: 06/30/95 Time: 02:25:06

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .35 ug/minute C

Analyst : KR MONTEITH
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.10	0.00
2	1.01	213.40	99.95
3	1.50	479.90	55.53
4	2.00	652.80	26.49
5	2.50	774.20	15.68
6	3.00	853.20	9.26
7	3.50	901.70	5.38
8	4.00	931.70	3.22
9	4.50	950.20	1.95
10	5.00	959.50	0.97
11	5.50	966.00	0.67
12	6.00	970.60	0.47
13	6.50	974.70	0.42
14	7.00	977.90	0.33
15	7.50	980.50	0.27
16	8.00	982.90	0.24
17	8.50	984.80	0.19
18	9.00	986.80	0.20
19	9.50	988.50	0.17
20	10.00	990.30	0.18
21	10.50	991.70	0.14
22	11.00	993.30	0.16

USER INPUT BLANK VALUE
BLANK VALUE = 3.848932 micrograms carbon
BLANK FACTOR = 3.848932 / 10.99695 = +3.5E-01 ug/min Carbon

SAMPLE RESULTS:
(993.3 - 3.849589)(1)/(1) = +9.895E+02 g/L Carbon
(993.3 - 3.849589)(1)/(1)(12) = +8.245E+01 Molar Carbon

Sample Run By: KR MONTEITH 00000

.3318g + .5 mL 15N12F = 107.5 % REC

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 972 + SPK Date: 06/30/95 Time: 02:37:50

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 2.08 ug/minute C

Analyst : KR MONTEITH
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.50	0.00
2	1.01	29.70	98.32
3	1.51	167.80	82.30
4	2.00	356.70	52.96
5	2.50	451.40	20.98
6	3.00	493.50	8.53
7	3.50	515.90	4.34
8	4.00	530.90	2.83
9	4.50	541.90	2.03
10	5.00	550.70	1.60
11	5.50	557.80	1.27
12	6.00	564.60	1.20
13	6.50	569.90	0.93
14	7.00	574.70	0.84
15	7.50	578.90	0.73
16	8.00	583.20	0.74
17	8.50	586.80	0.61
18	9.00	590.00	0.54
19	9.50	593.00	0.51
20	10.00	595.50	0.42
21	10.50	597.90	0.40
22	11.00	600.30	0.40

USER INPUT BLANK VALUE
BLANK VALUE = 22.87365 micrograms carbon
BLANK FACTOR = 22.87365 / 10.99695 = +2.1E+00 ug/min Carbon

SAMPLE RESULTS:
(600.3 - 22.87549)(1)/(1) = +5.774E+02 g/L Carbon
(600.3 - 22.87549)(1)/(1)(12) = +4.812E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: _____
KR MONTEITH 00000

60

.3318g + .1mL 16N12 = 104.4 % REC.

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RADIOCHEMICAL ANALYSES

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LABCORE Data Entry Template for Worklist# 1765

Analyst: S. C. L **Instrument:** AB00 13 WB27810 **Book #** 11585-2

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	0.42			@ALPHA01 ALPHA01	SOLID			N/A	uCi/g
95000079	B-103	4	SAMPLE	S95T001117	0		@ALPHA01 ALPHA01	SOLID	N/A			uCi/g
95000079	B-103	4	SAMPLE	S95T001117	0		@ALPHA01 ALPHA01E	SOLID	N/A			% Ct. Error
95000079	B-103	5	DUP	S95T001117	0		@ALPHA01 ALPHA01	SOLID			N/A	uCi/g
95000079	B-103	5	DUP	S95T001117	0		@ALPHA01 ALPHA01E	SOLID			N/A	% Ct. Error
95000079	B-103	6	SPK	S95T001117	0		@ALPHA01 ALPHA01	SOLID			N/A	uCi/g

Final page for worklist # 1765

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

Shawn Ludlum 7-7-95
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.

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		13	13
STANDARD	DISH SIZE 1, 2, or 5	(MS)	2	2
Work List	TOTAL COUNTS	(TC)	4433	4443
1765	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.6	0.6
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)	0.2322	0.2322
LIQUID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		147.167	147.500
Sample #	Sample Concentration in µCi/L		2.85E-02	BOOK#
WORKLIST#1765	Replicate Concentration in µCi/L		2.86E-02	115b52
Instrument Code				
WB27810	Average Concentration in µCi/L		2.8582E-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) =	2.86E-05	DETECTION LEVEL
RELATIVE COUNTING ERROR		=	3.0%	1.46E-07 µCi/mL

Data Entry by:	[signature]	Date:	07/06/95
Approved by:	[signature]	Date:	JUL 7 1995

Form 508101_C Rev. 1.3

9513360.1204

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER ~~WHC-SD-WM-DP-134, REV. 0~~

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

LA-548-101 (A-3) SOLIDS

			BLANK	REPLICATE
Type	DETECTOR NUMBER		13	13
BLANK	DISH SIZE 1 , 2 , or 5	(MS)	2	2
Work List	TOTAL COUNTS	(TC)	9	6
1765	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.6	0.6
AT	SAMPLE SIZE in mL	(SS)	0.100	0.100
Test Code	DILUTION FACTOR	(DF)	1	1
@ALPHA-01	DIGEST GRAMS of SOLIDS/L	(Dg/L)	2.3348	2.3348
Matrix	EFFICIENCY FACTOR	(EFF)	0.2322	0.2322
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		0.330	0.330
Sample #	Sample Concentration in µCi/g	<	2.74E-03	BOOK#
S95T1117	Replicate Concentration in µCi/g	<	2.74E-03	
Instrument Code				
WB27810	Maximum Concentration in µCi/g	<	2.7419E-03	
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) =	< 2.74E-03	DETECTION LEVEL
LESS Than Value was Determined from Lc.				6.24E-03 µCi/g
RELATIVE COUNTING ERROR		=	113.2%	

Data Entry by: Shawna Hale		Date:	07/06/95
Approved by: J A Cobb		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		13	13
SAMPLE	DISH SIZE 1, 2, or 5	(MS)	2	2
Work List	TOTAL COUNTS	(TC)	1106	1087
1765	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.6	0.6
AT	SAMPLE SIZE in mL	(SS)	0.100	0.100
Test Code	DILUTION FACTOR	(DF)	1	1
@ALPHA-01	DIGEST GRAMS of SOLIDS/L	(Dg/L)	2.3348	2.3348
Matrix	EFFICIENCY FACTOR	(EFF)	0.2322	0.2322
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		36.267	35.633
Sample #	Sample Concentration in µCi/g		3.01E-01	BOOK#
S95T1117	Replicate Concentration in µCi/g		2.96E-01	
Instrument Code				
WB27810	Average Concentration in µCi/g		2.9870E-01	
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) =	2.99E-01	DETECTION LEVEL
				6.24E-03 µCi/g
RELATIVE COUNTING ERROR		=	6.1%	

Data Entry by: Shirand Kalb Date: 07/06/95

Approved by: S A Cotton 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		13	13
DUPLICATE	DISH SIZE 1, 2, or 5	(MS)	2	2
Work List	TOTAL COUNTS	(TC)	1295	1236
1765	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.6	0.6
AT	SAMPLE SIZE in mL	(SS)	0.100	0.100
Test Code	DILUTION FACTOR	(DF)	1	1
@ALPHA-01	DIGEST GRAMS of SOLIDS/L	(Dg/L)	2.3408	2.3408
Matrix	EFFICIENCY FACTOR	(EFF)	0.2322	0.2322
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		42.567	40.600
Sample #	Sample Concentration in µCi/g		3.53E-01	BOOK#
S95T1117	Replicate Concentration in µCi/g		3.36E-01	
Instrument Code				
WB27810	Average Concentration in µCi/g		3.4462E-01	
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

				DETECTION LEVEL
ALPHA TOTAL	in µCi/g	(Average) =	3.45E-01	
RELATIVE COUNTING ERROR		=	5.7%	6.22E-03 µCi/g

Data Entry by:	Sharon L Walker	Date:	07/06/95
Approved by:	S A Cobb	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

			SPIKE	REPLICATE
DETECTOR NUMBER			13	13
DISH SIZE 1 , 2 , or 5		(MS)	2	2
TOTAL COUNTS		(TC)	49837	48938
COUNT TIME in MINUTES		(CT)	30	30
BACKGROUND in cpm		(BKG)	0.6	0.6
SAMPLE VOLUME in mL	(Spiked Vial)	(SS)	0.100	0.100
SAMPLE DILUTION FACTOR	(Spiked Vial)	(DF)	1	1
DIGEST GRAMS of SOLIDS/L		(Dg/L)	2.3348	2.3348
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)	0.2322	0.2322
SAMPLE + SPIKE µCi/g		(S+S)	1.38E+01	1.35E+01
AVERAGE or MAXIMUM µCi/g from FORM C			2.9870E-01	
BOOK#			94B43	

Type	Work List	AT or TB ?	Test Code	Matrix	Sample #	Instrument Code	Analyst	Date	Time
SPIKE	1765	AT	@ALPHA-01	SOLID	S95T1117	WB27810	SCL	07/05/95	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 = 85.9%**

Data Entry by: Shirley L Hall Date: 06-Jul-95

Approved by: D A Carter Date: JUL 7 1995

Form 508101_X Rev. 1.3

worklistrpt Version 2.1 05/15/95
06/23/95 10:08

LABCORE Data Entry Template for Worklist# 1675

Analyst: SLHB **Instrument:** AB00 15 WB26872 **Book #** 130B52

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

Worklist Comment: Use .100 mL sample size. Use .100 mL A-SPK. 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	0.50			@ALPHA01 ALPHA01	SOLID			N/A	uCi/g
95000079	B-103	4	SAMPLE	S95T000973	0	F	@ALPHA01 ALPHA01	SOLID	N/A			uCi/g
95000079	B-103	4	SAMPLE	S95T000973	0	F	@ALPHA01 ALPHA01E	SOLID	N/A			% Ct. Error
95000079	B-103	5	DUP	S95T000973	0	F	@ALPHA01 ALPHA01	SOLID			N/A	uCi/g
95000079	B-103	5	DUP	S95T000973	0	F	@ALPHA01 ALPHA01E	SOLID			N/A	% Ct. Error
95000079	B-103	6	SPK	S95T000973	0	F	@ALPHA01 ALPHA01	SOLID			N/A	uCi/g

Final page for worklist # 1675

Sandra P Hood Boatright
Analyst Signature **Date** 6-24-95

Sharon L Uhl 6-26-95
Analyst Signature **Date**

Data Entry Comments:
The high RPD value for the sample and Dup. is acceptable ~~due to~~ due SLF 6-26-95 to the low alpha activity. 6-26-95

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)	4580	4097
1675	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
@ALPHA01	DIGEST DILUTION FACTOR	(DDF)	1	1
Matrix	EFFICIENCY FACTOR	(EFF)	0.2380	0.2380
LIQUID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		152.267	136.167
Sample #	Sample Concentration in µCi/L		2.88E-02	BOOK#
WORKLIST#1675	Replicate Concentration in µCi/L		2.58E-02	130B52
Instrument Code				
WB26872	Average Concentration in µCi/L		2.7295E-02	
Analyst				
SLH	Rs (Sample Count Rate) = (TC / CT) - BKG			
Date	ALPHA TOTAL µCi/L = Rs * 1000mL/L * DF * DDF / (EFF * SS * 2220000dpm/µCi)			
06/24/95	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			
11:10 PM	Detection Levels and Less Than Values are determined from Procedure LA-508-002.			

v RESULTS v

ALPHA TOTAL	in µCi/mL	(Average) =	2.73E-05	DETECTION LEVEL
RELATIVE COUNTING ERROR		=	3.1%	1.19E-07 µCi/mL

Data Entry by:	[signature]	Date:	06/26/95
Approved by:	[signature]	Date:	6/26/95

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			15	15
BLANK	DISH SIZE 1, 2, or 5	(MS)		2	2
Work List	TOTAL COUNTS	(TC)		4	8
1675	COUNT TIME in MINUTES	(CT)		30	30
AT or TB ?	BACKGROUND in cpm	(BKG)		0.4	0.4
AT	SAMPLE SIZE in mL	(SS)		0.100	0.100
Test Code	DILUTION FACTOR	(DF)		1	1
@ALPHA01	DIGEST GRAMS of SOLIDS/L	(Dg/L)		0.9736	0.9736
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		<	5.24E-03	BOOK#
S95T973	Replicate Concentration in µCi/g		<	5.24E-03	
Instrument Code					
WB26872	Maximum Concentration in µCi/g		<	5.2379E-03	
Analyst					
SLH	Rs (Sample Count Rate) = (TC / CT) - BKG				
Date	ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)				
06/24/95					
Time	Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100				
11:10 PM	Detection Levels and Less Than Values are determined from Procedure LA-508-002.				

v RESULTS v

ALPHA TOTAL	in µCi/g	(Maximum) =	< 5.24E-03	DETECTION LEVEL
LESS Than Value was Determined from Lc.				1.22E-02 µCi/g
RELATIVE COUNTING ERROR		=	219.1%	

Data Entry by:	Stephen L. Gelge	Date:	06/26/95
Approved by:	[signature]	Date:	6/26/95

Form 508101_C Rev. 1.3

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER WHC-SD-WM-DP-134, REV. 0

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)	154	137
1675	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.4	0.4
AT	SAMPLE SIZE in mL	(SS)	0.100	0.100
Test Code	DILUTION FACTOR	(DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS/L	(Dg/L)	0.9736	0.9736
Matrix	EFFICIENCY FACTOR	(EFF)	0.2380	0.2380
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		4.733	4.167
Sample #	Sample Concentration in µCi/g		9.20E-02	BOOK#
S95T973	Replicate Concentration in µCi/g		8.10E-02	
Instrument Code				
WB26872	Average Concentration in µCi/g		8.6507E-02	
Analyst				
SLH				
Date				
06/24/95				
Time				
11:10 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) =	8.65E-02	DETECTION LEVEL
				1.22E-02 µCi/g
RELATIVE COUNTING ERROR		=	19.1%	

Data Entry by:	[signature]	Date:	06/26/95
Approved by:	[signature]	Date:	6/26/95

Form 508101_C Rev. 1.3

9513360.1208

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER ~~WHC-SD-WM-DP-134, REV. 0~~

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)	157	252
1675	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.4	0.4
AT	SAMPLE SIZE in mL	(SS)	0.100	0.100
Test Code	DILUTION FACTOR	(DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS/L	(Dg/L)	0.9748	0.9748
Matrix	EFFICIENCY FACTOR	(EFF)	0.2380	0.2380
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		4.833	8.000
Sample #	Sample Concentration in µCi/g		9.38E-02	BOOK#
S95T973	Replicate Concentration in µCi/g		1.55E-01	
Instrument Code				
WB26872	Average Concentration in µCi/g		1.2458E-01	
Analyst				
SLH	Rs (Sample Count Rate) = (TC / CT) - BKG			
Date	ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)			
06/24/95				
Time	Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100			
11:10 PM	Detection Levels and Less Than Values are determined from Procedure LA-508-002.			

v RESULTS v

ALPHA TOTAL	in µCi/g	(Average) =	1.25E-01	DETECTION LEVEL
RELATIVE COUNTING ERROR		=	17.6%	1.22E-02 µCi/g

Data Entry by:	[signature]	Date:	06/26/95
Approved by:	[signature]	Date:	6/26/95

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

Type			SPIKE	REPLICATE
SPIKE	DETECTOR NUMBER		15	15
Work List	DISH SIZE 1 , 2 , or 5	(MS)	2	2
1675	TOTAL COUNTS	(TC)	68265	68672
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)	0.100	0.100
@ALPHA01	SAMPLE DILUTION FACTOR (Spiked Vial)	(DF)	1	1
Matrix	DIGEST GRAMS of SOLIDS/L	(Dg/L)	0.9736	0.9736
SOLID	SPIKE VOLUME in mL	(SVol)	0.100	0.100
Sample #	SPIKE DILUTION FACTOR	(SDF)	1	1
S95T973	SPIKE VALUE in µCi/L	(SVal)	36.361	36.361
Instrument Code	INSTRUMENT EFFICIENCY FACTOR	(EFF)	0.238	0.238
WB26872	SAMPLE + SPIKE µCi/g	(S+S)	4.42E+01	4.45E+01
Analyst	AVERAGE or MAXIMUM µCi/g from FORM C		8.6507E-02	
SLH	BOOK#		94B43	
Date				
06/24/95				
Time				
11:10 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 = 118.5%**

Data Entry by:	[signature]	Date:	26-Jun-95
Approved by:	[signature]	Date:	6/26/95

9513360.1209

DISTRIBUTION SHEET

To Distribution	From Characterization Plans, Coordination and Reports	Page 1 of 2
		Date: 07/14/95
Project Title/Work Order WHC-SD-WM-DP-134, Rev. 0, "45-Day Safety Screen Results and Final Report for Tank 241-B-103, Auger Samples 95-AUG-031 and 95-AUG-032"		EDT NO.: EDT-612166
		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	
J. M. Conner	R2-12	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	
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: 07/14/95
Project Title/Work Order WHC-SD-WM-DP-134, Rev. 0, "45-Day Safety Screen Results and Final Report for Tank 241-B-103, Auger Samples 95-AUG-031 and 95-AUG-032"		EDT NO.: EDT-612166
		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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