This document was too large to scan as a whole document, therefore it required breaking into smaller sections.

DOCUMENT NUMBER: SD-WM-DP-139

SECTION 5 OF 5

TITLE: FINAL REPORT FOR TANK 241-B-101 PUSH MODE CORES 90 + 91

DATE: 11/06/95

ORIGINATOR: SCHREIBER RD

CO: WHC

RECIPIENT:

CO:

REFERENCES: ECN-625769

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Westinghouse
Hanford Company

P.O. Box 1970 Richland, WA 99352

PART III

WHC-SD-WM-DP-139, REV. 0

ANALYTICAL SERVICES

45-DAY SAFETY SCREEN RESULTS FOR TANK 241-B-101, PUSH-MODE CORES 90 AND 91

DATE PRINTED: AUGUST 1, 1995

54-7600-075

Hanford Operations and Engineering Contractor for the US Department of Energy

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45-DAY SAFETY SCREEN RESULTS FOR TANK-B-101, PUSH MODE, CORES 90 AND 91

Summary

Based on the safety screening decision rules (Ref. 2), the data from this sampling event indicate that tank B-101 can be classified as a "safe" tank. The hydrostatic head fluid (HHF) used during the sampling event may have biased the percent water results. However, the energetics results for these samples are at least an order of magnitude below the criterion, and therefore, these results do not constitute unsafe conditions.

Push-mode core samples were taken from risers 2 and 7 of tank B-101 between June 19 and June 23, 1995. Each core sample consisted of two segments. They were received at the 222-S laboratory between June 21 and June 26, 1995. These samples underwent safety screening analyses (differential scanning calorimetry [DSC], thermogravimetric analysis [TGA], and alpha total) per the Tank Characterization Plan (TCP) (Ref. 1). The test results indicate, at a 90% confidence level, that two of the samples submitted for TGA analysis were below the minimum criterion of 17% water. However, notifications were not necessary as neither of these samples exceeded the energetics criterion of 481 J/g. None of the samples submitted for energetics nor alpha total analyses exceeded the respective limits.

In addition to the safety screening analyses, the tank B-101 samples were analyzed for lithium in Inductively Coupled Plasma spectroscopy (ICP) to determine the extent of hydrostatic head fluid (HHF) contamination during the sampling event. Lithium bromide is used as a tracer in the HHF. Lithium intrusion was noted in five of the ten tank samples. However, the DSC results for these samples were an order of magnitude below the safety screening criterion or 481 J/g, therefore the moisture results for these samples are not necessary to demonstrate that no safety issue exists. No HHF blank was received from the field for analysis.

The data summary tables include the analytical results associated with these core samples. In addition, the results of the statistical analyses (calculation of the 90% confidence limits) are given in Tables 1, 2, and 3.

Sample Receipt and Extrusion

Core 90, Segment 1, Sample 95-099 (Riser 2)

Sample 95-099 was collected with the use of HHF from riser 2 of tank B-101 on June 19, 1995, and received at the 222-S laboratory on June 21, 1995. Extrusion took place on June 23, 1995. The total amount of solid material recovered was 388.3 grams, with no drainable liquid. There was less than 5 mL of liquid in the liner; this liquid was not retained. Sixteen inches of sludge were extruded. The sample was smooth, damp and retained its shape. The top 12.5 inches of sample was dark brown and was subsampled into half-segments. The upper half-segment solids measured 150.4 g, and the lower half-segment solids measured 168.1 g. The bottom 3.5 inches (69.8 g) of the sample was of a lighter brown color and was subsampled as a separate facie. Subsamples from this portion of the sample are noted in the summary tables as "facie" rather than half-segments. All analyses and archiving requirements

were performed in accordance with the tank characterization plan (TCP) for these solid subsamples.

Core 90, Segment 2, Sample 95-100 (Riser 2)

Sample 95-100 was collected with the use of HHF from riser 2 of tank B-101 on June 19, 1995, and received at the 222-S laboratory on June 21, 1995. Extrusion took place on June 23, 1995. The total amount of solid material recovered was 195 grams (approximately 8 in). Approximately 50 mL (74.2 g) of opaque, brown drainable liquid was recovered. The solid was divided into half segments. The lower half-segment (105.6 g) consisted of white crystalline flakes, while the upper half-segment (89.2 g) was a smooth, damp, light-brown sludge. Subsamples from the upper half-segment and from the decanted drainable liquid were submitted to the laboratory for analysis. At the request of the safety program, no analyses have been performed on the lower half-segment crystals due to uncertainty in laboratory homogenization capabilities (refer to Attachment 1). Once a decision has been reached on how to proceed with homogenization of the crystalline material, safety screening analyses will be initiated. The results will be included in a revision to this report. Archive samples of the upper half-segment and unfiltered drainable liquid were retained in the hot cell.

Core 91, Field Blank, Sample Field Blank (Riser 7)

The sample field blank was filled on June 23, 1995, and received at the 222-S laboratory on June 26, 1995. Extrusion took place on June 28, 1995. A total of 270.6 grams of clear, colorless liquid was recovered. There was less than 5 mL of liquid in the liner, which was not retained. Per the TCP, a subsample was submitted to the laboratory for analysis, and an archive sample was retained in the hot cell.

Core 91, Segment 1, Sample 95-101 (Riser 7)

Sample 95-101 was collected from riser 7 of tank B-101 on June 23, 1995, and received at the 222-S laboratory on June 26, 1995. Extrusion took place on June 28, 1995. The total amount of solid material recovered was 393.7 grams. No drainable liquid was recovered. There was less than 5 mLs of liquid in the liner; this liquid was not retained. The solids (about 16 inches in length) were smooth and varied in color from medium to dark brown. There was a 3-in gap in the upper segment of the sample. The bottom 4 inches of the sample was dark brown in color. This portion of the segment (99.9 g) was designated as lower half solids. The remaining 12 inches of medium brown solids (291.3 g) was designated as upper half solids. A piece of flat, hard material, approximately one-half inch long, was found in the upper half segment. This item was segregated and archived as sample number S95T001209. In accordance with the TCP, analyses have been performed and archive samples for each half-segment have been retained in the hot cell.

Core 91, Segment 2, Sample 95-102 (Riser 7)

Sample 95-102 was collected from riser 7 of tank B-101 on June 23, 1995, and received at the 222-S laboratory on June 26, 1995. Extrusion took place on June 28, 1995. The total amount of solid material recovered was 318.2 grams. Approximately 30 mL (47.1 g) of opaque, dark-brown drainable liquid was

recovered. The liner liquid (less than 5 mL) was not retained. Twelve inches of sample was extruded. The bottom 4 inches of the sample (72.9 g) appeared light brown in color and were crystalline and brittle. This material was identified as a separate facie. As with the lower half solids from core 90, segment 2, analyses for this material are on hold pending resulution of homogenization issues (see Attachment 1). The next 2 inches of sample resembled a light-brown sludge. This material (46.0 g) was subsampled as lower half solids. The remaining 6 inches appeared to be a dark brown, soft sludge. This material (152.2 g) was subsampled as upper half solids. Archive samples were retained in the hot cell for the upper and lower half-segment solids, as well as for the unfiltered liquid.

Analytical Results

THERMOGRAVIMETRIC ANALYSIS (Percent Moisture)

Analyses for percent water by TGA were performed using procedures LA-560-112, Rev. A-2, and LA-514-114, Rev. B-0. All samples were run under a nitrogen atmosphere. Notifications are typically made to the Tank Farms Operations shift manager and TWRS Safety Program personnel if the TGA results are less than 17% water. Sample and/or duplicate results for samples S95T001229 (core 90, segment 2, upper half) and S95T001241 (core 91, segment 2, lower half) were below the notification limit, but no notifications were made, as the DSC results for these samples were at least an order of magnitude below the DSC notification limit (TGA results alone do not constitute unsafe conditions).

The maximum acceptable precision per the TCP (Ref. 1) is a relative percent difference (RPD) of 10%. The TGA precision between the sample and duplicate for samples S95T001229, S95T001241, and S95T001244 exceeded the acceptance criterion, with RPD values of 11.1%, 104% and 22.0%, respectively. The sample result for S95T001229 was 16.42% water, with a duplicate result of 14.69% water. This sample will be analyzed gravimetrically to better determine the moisture content. The sample result for S95T001241 was 29.27% water, with a duplicate result of 9.2%. Since one result was above the notification limit and one was below the limit, an additional sample/duplicate pair was analyzed, with results of 26.79% and 25.55% water, respectively. The sample result for S95T001244 was 38.58% water, the duplicate 48.11%. A triplicate analysis was performed, with a result of 48.83% water. This triplicate result does not appear in the summary tables, but is included in the raw data.

Statistical analyses were performed on the TGA data per the requirements of the revised Data Quality Objective for Safety Screening (Ref. 2). This document requires comparison of sample data to the applicable limit (e.g. greater than 17% water by TGA) with a confidence level of 90%. The results for each sample submitted for TGA are presented in Table 1. The lower 90% confidence limit for samples S95T001235 and S95T001241 fall below the minimum criterion of 17% water stated in Reference 1. However, as the DSC results (presented below) for these samples are at least an order of magnitude below the criterion for energetics, the low moisture content of these samples does not constitute unsafe conditions.

Samples S95T001224, S95T001230, S95T001236, S95T001245, and S95T001248 were contaminated with lithium, indicating an incursion of water from the HHF used during sampling. These sample numbers correspond to upper half solids from segment 2 of core 90, the drainable liquid from segment 2 of core 90, the

lower half solids from segment 1 of core 91, the upper half solids from segment 2 of core 91, and the drainable liquid from segment 2 of core 91. Background information on the statistical methods used for this analsis are presented in Attachment 2.

Table 1. 90% Confidence Interval Lower Limits for Percent Water (Units are in %).

Sample Number and Description	$\hat{\mu}$	$\hat{\sigma}^2_{\hat{\mu}}$	LL
S95T001214 C90/S1 UH	33.08	0.0001	33.05
S95T001217 C90/S1 LH	42.00	0.24	40.49
S95T001220 C90/S1 facie	18.75	0.00003	18.73
S95T001229 C90/S2 UH	15.56	0.75	12.89
S95T001223 C90/S2 DL	49.52	0.01	49.18
S95T001238 C91/S1 UH	34.10	0.38	32.19
S95T001235 C91/S1 LH	42.91	1.5	32.13
S95T001244 C91/S2 UH	45.17	10.91	38.94
S95T001241 C91/S2 LH	22.70	20.86	15.22
S95T001247 C91/S2 Dr.Liq.	50.47	0.16	49.25

C = Core Number
S = Segment Number
UH = Upper Half
LH = Lower Half
Dr.Liq. = Drainable Liquid

DIFFERENTIAL SCANNING CALORIMETRY

Differential thermal analyses were performed using procedures LA-514-113, Rev. B-1, and LA-514-114, Rev B-0, under a nitrogen purge. All results were below the safety screen notification limit of 481 joules/g (dry); therefore, no notifications were made.

Samples S95T001214 and S95T001217 exceeded the precision criterion (RPD of less than 10%), with RPD values of 10.2% and 29.7% respectively. Sample S95T001214 was not rerun. A second sample and duplicate pair was run for sample S95T001217. The results are presented in the data summary tables.

Statistical analyses were performed on the DSC data per the requirements of the revised Data Quality Objective for Safety Screening (ref. 2). This document requires comparison of the data to the applicable limit (e.g. less than 481 J/g by DSC) with a confidence level of 90%. The results for each sample submitted for DSC are presented in Table 2. The upper 90% confidence limit for all samples was below the safety screening criterion (ref. 1). Background information on the statistical methods used for this analsis are presented in Attachment 2.

Table 2. 90% Confidence Interval Upper Limits for DSC (Units are in joules/gram).

Sample Number and Description	$\hat{\mu}$	$\hat{\sigma}^2_{\hat{\mu}}$	UL
S95T001214 C90/S1 UH	275.00	196.00	318.09
S95T001217 C90/S1 LH	317.50	370.92	349.05
S95T001220 C90/S1 facie	0.00	0.00	0.00
S95T001229 C90/S2 UH	0.00	0.00	0.00
S95T001223 C90/S2 Dr.Liq.	52.00	0.00	52.00
S95T001238 C91/S1 UH	249.50	2.25	254.12
S95T001235 C91/S1 LH	42.5	0.25	44.04
S95T001244 C91/S2 UH	5.00	0.00	5.00
S95T001241 C91/S2 LH	0.00	0.00	0.00
S95T001247 C91/S2 Dr.Liq.	6.00	0.00	6.00

C = Core Number
S = Segment Number
UH = Upper Half
LH = Lower Half
Dr.Liq. = Drainable Liquid

ALPHA TOTAL

The alpha total analyses were performed using procedure LA-508-101, Rev. D-2. Fusion dilutions were prepared using procedure LA-549-141, Rev. D-0. All alpha total results were below the notification limit. The spike results for two of the samples exceeded the TCP criterion of 90-110%. The spike recovery for sample S95T001215 was 111.4%. The sample and duplicate results for this sample averaged 4.57 μCi/g, with a RPD of 9.63%. The spike recovery for sample S95T001245 was only 61.6%. However, the sample and duplicate results for sample S95T001245 were below the detection limit of 7.71 E-04 μCi/g, which is almost 5 orders of magnitude below the limit of 41 μCi/g. This sample was rerun, with the result of the rerun retained. The original results were rejected, but will be included in the final report.

Samples S95T001221 and S95T001336 exceeded the precision criterion of less than 10% RPD. The average result for S95T001221 is 0.163 μCi/g. The results for S95T001336 averaged 4.15 μCi/g. The statistical analysis (presented in Table 3) indicates that none of the alpha total results exceeded the safety screening criterion of 41 μCi/g at an upper confidence level of 90%. Therefore, no additional analyses were necessary. Background information on the statistical methods used for this analsis are presented in Attachment 2.

Table 3. 90% Confidence Interval Upper Limits for Total Alpha (Units are in μCi/g).

Sample No., Description	$\hat{\mu}$	$\hat{\sigma}^2_{\hat{\mu}}$	UL
S95T001215 C90/S1 facie	4.57	0.05	5.25
S95T001218 C90/S1 UH	1.89	0.004	2.07
S95T001221 C90/S1 LH	0.16	0.002	0.28
S95T001230 C90/S2 UH	0.24	0.0001	0.27
S95T001336 C91/S1 UH	4.15	0.24	5.66
S95T001236 C91/S1 LH	14.00	0.04	14.62
S95T001245 C91/S2 UH	0.00	0.00	0.00
S95T001337 C91/S2 LH	0.45	0.01	0.70

C = Core Number S = Segment Number
UH = Upper Half LH = Lower Half

ICP (Lithium)

Lithium was determined by ICP analysis per procedure LA-505-151, Rev. A-1. Solid subsamples were prepared by fusion per procedure LA-549-141, Rev. D-0. Liquid subsamples were either analyzed directly or diluted with acid per procedure LA-505-158, Rev. A-4.

Samples S95T001224, S95T001230, S95T001236, S95T001245, and S95T001248 were contaminated with lithium, indicating an incursion of water from the HHF. These sample numbers correspond to upper half solids from segment 2 of core 90, the drainable liquid from segment 2 of core 90, the lower half solids from segment 1 of core 91, the upper half solids from segment 2 of core 91, and the drainable liquid from segment 2 of core 91.

Project Coordinator: Ruth Schreiber

References:

[1] R. D. Schreiber, "Tank 241-B-101 Tank Characterization Plan," WHC-SD-WM-TP-350, Rev. 0, dated April 28, 1995, Westinghouse Hanford Company, Richland, Washington.

[2] H. Babad, J. W. Hunt, and K. S. Redus, "Tank Safety Screening Data Quality Objective," WHC-SD-WM-SP-004, Rev. 1, dated April 27, 1995, Westinghouse Hanford Company, Richland, Washington.

Attachment 1

WHC-SD-WM-DP-139, REV. 1

Author: Joseph E Meecham at -WHC130
Date: 7/17/95 8:24 AM
Priority: Normal
CC: John G Kristofzski at -WHC168
CC: Andrew D Rice at -WHC168
TO: Ruth D Schreiber at -WHC163
TO: David A Turner at -WHC117
TO: Robert J (Bob) Cash
TO: Gary T Dukelow at -WHC128
TO: Gerald D (Jerry) Johnson
Subject: Re: B-101 Homogenization Issue

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

Ruth,

Correct!

Joe

---------- Reply Separator ----------

Subject: B-101 Homogenization Issue
Author: Ruth D Schreiber at -WHC163
Date: 7/14/95 4:05 PM

Joe --

Just to keep all my ducks in a row, I wanted to verify in writing that you DO NOT want me to homogenize or do any analyses on the crystalline material found in tank B-101 until a better homogenization process is in place (whenever that may be). Further, I wanted to make sure that you understood that by making this decision you are aware that this information will be missing from the 45 day report on this tank.

Please let me know if we are not in sync, OK?

Thanks,
Ruth

Attachment 2

The 90% confidence interval lower limit (LL) on the mean for percent water (TGA) data is

$$\hat{\mu} - t_{(n-1)} * \sqrt{\hat{\sigma}^2_{\hat{\mu}}}$$

The 90% confidence interval upper limit (UL) on the mean for DSC and total alpha data is

$$\hat{\mu} + t_{(n-1)} * \sqrt{\hat{\sigma}^2_{\hat{\mu}}}$$

where $\hat{\mu}$ is the ordinary sample mean and $\hat{\sigma}^2_{\hat{\mu}}$ is the variance of the sample mean (sample variance) and $t_{(n-1)}$ is a quantity from Student's t distribution with n-1 degrees of freedom. In these equations, n is the number of replicate analyses (2, 3, or 4, depending on whether the sample was run in duplicate, triplicate, or two sample/duplicate pairs). For a one-sided 90% confidence interval, $t_{(1)}$ is equal to 3.078, $t_{(2)}$ is equal to 1.886, and $t_{(3)}$ is equal to 1.638.

Table 1 of this report gives the LL to the 90% confidence interval on the percent water thermogravimetric analysis (TGA) for B-101. If the LL is greater than 17%, then we reject the null hypothesis that the percent water is less than or equal to 17 percent. As stated in the text, the LL for two samples submitted for TGA analysis fell below 17% water.

Table 2 of this report gives the UL to the 90% confidence interval for differential scanning calorimetry (DSC). If the UL is less than 481 joules/g, then we reject the null hypothesis that DSC is greater than or equal to 481 joules/g. The ULs for all samples submitted for DSC analysis from tank B-101 are less than 481 J/g.

Table 3 gives of the report the UL to the 90% confidence interval on the total alpha for samples from tank B-101. If the UL is less than 41 μCi/g, then we reject the null hypothesis that the total alpha is greater than or equal to 41 μCi/g. The ULs for all samples submitted for alpha total analysis from tank B-101 are less than 41 μCi/g.

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SAMPLE DATA SUMMARY

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B-101 SAFETY SCREENING RESULTS
B-101

CORE NUMBER: 90
SEGMENT #: 1

SEGMENT PORTION: Facie

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S95T001220			% Water by TGA using Mettler	%	17.00	100.0	96.35	n/a	18.75	18.74	18.74	0.05	n/a	n/a	n/a
S95T001220			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+03	481.0	n/a	n/a	0.00e+00	0.00e+00	0.00e+00	n/a	n/a	n/a	n/a
S95T001220			DSC Exotherm using Mettler	Joules/g	-1.0e+03	481.0	102.6	n/a	0.00e+00	0.00e+00	0.00e+00	n/a	n/a	n/a	n/a
S95T001221		F	Alpha of Digested Solid	uCi/g	-1.0e+03	41.00	105.0	<3.92e-02	2.02e-01	1.24e-01	1.63e-01	47.9	99.70	8.71e-02	40.0
S95T001221		F	Lithium -ICP-Fusion	ug/g	-1.0e+03	100.0	103.1	1.50e-03	< 44.8190	<45.2160	n/a	n/a	93.63	44.80	n/a

U Upper Half of Segment: U Upper Half of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S95T001214			% Water by TGA using Mettler	%	17.00	100.0	101.6	n/a	33.07	33.09	33.08	0.06	n/a	n/a	n/a
S95T001214			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+03	481.0	n/a	n/a	289.0	261.0	275.0	10.2	n/a	n/a	n/a
S95T001214			DSC Exotherm using Mettler	Joules/g	-1.0e+03	481.0	107.9	n/a	193.1	174.5	183.8	10.1	n/a	n/a	n/a
S95T001215		F	Alpha of Digested Solid	uCi/g	-1.0e+03	41.00	99.64	<3.97e-01	4.350	4.790	4.570	9.63	111.4	8.83e-01	20.3
S95T001215		F	Lithium -ICP-Fusion	ug/g	-1.0e+03	100.0	100.9	1.61e-02	< 45.4200	<46.2800	n/a	n/a	90.53	45.40	n/a

L Lower Half of Segment: L Lower Half of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S95T001217			% Water by TGA using Mettler	%	17.00	100.0	101.6	n/a	41.51	42.49	42.00	2.33	n/a	n/a	n/a
S95T001217	1		DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+03	481.0	n/a	n/a	322.0	314.0	318.0	2.52	n/a	n/a	n/a
S95T001217			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+03	481.0	n/a	n/a	364.0	270.0	317.0	29.7	n/a	n/a	n/a
S95T001217	1		DSC Exotherm using Mettler	Joules/g	-1.0e+03	481.0	109.0	n/a	186.7	182.3	184.5	2.38	n/a	n/a	n/a
S95T001217			DSC Exotherm using Mettler	Joules/g	-1.0e+03	481.0	107.9	n/a	211.0	156.6	183.8	29.6	n/a	n/a	n/a
S95T001218		F	Alpha of Digested Solid	uCi/g	-1.0e+03	41.00	99.64	<3.97e-01	1.950	1.830	1.890	6.35	109.8	9.13e-01	39.4
S95T001218		F	Lithium -ICP-Fusion	ug/g	-1.0e+03	100.0	100.9	1.61e-02	< 46.9800	<46.6600	n/a	n/a	90.73	47.00	n/a

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415

WHC-SD-WM-DP-139, REV. 1

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INTERIM

B-101 SAFETY SCREENING RESULTS
B-101

CORE NUMBER: 90
SEGMENT #: 2

SEGMENT PORTION: U Upper Half of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S95T001229			% Water by TGA using Mettler	%	17.00	100.0	103.6	n/a	16.42	14.69	15.55	11.1	n/a	n/a	n/a
S95T001229			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+03	481.0	n/a	n/a	0.00e+00	0.00e+00	0.00e+00	n/a	n/a	n/a	n/a
S95T001229			DSC Exotherm using Mettler	Joules/g.	-1.0e+03	481.0	103.3	n/a	0.00e+00	0.00e+00	0.00e+00	n/a	n/a	n/a	n/a
S95T001230		F	Alpha of Digested Solid	uCi/g	-1.0e+03	4.1.00	102.5	<6.26e-02	2.49e-01	2.28e-01	2.38e-01	8.81	104.3	8.39e-02	29.3
S95T001230		F	Lithium -ICP-Fusion	ug/g	-1.0e+03	100.0	96.47	2.28e-02	79.25	70.87	75.06	11.2	96.29	48.30	n/a

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INTERIM

416

WHC-SD-WM-DP-139, REV. 1

INTERIM

B-101 SAFETY SCREENING RESULTS
B-101

CORE NUMBER: 90
SEGMENT #: 2

SEGMENT PORTION: Drainable Liquid

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S95T001223			% Water by TGA using Mettler	%	17.00	100.0	101.0	n/a	49.63	49.41	49.52	0.44	n/a	n/a	n/a
S95T001223			DSC Exotherm Dry Calculated	Joules/g Dry	1.0e+03	481.0	n/a	n/a	52.00	52.00	52.00	0.00	n/a	n/a	n/a
S95T001223			DSC Exotherm using Mettler	Joules/g	1.0e+03	481.0	96.31	n/a	26.30	26.30	26.30	0.00	n/a	n/a	n/a
S95T001224		D	Lithium-ICP-Acid Dil.	ug/mL	1.0e+03	100.0	97.67	1.30e-03	147.0	144.7	145.8	1.65	93.00	1.00e-02	n/a

=> Limit violated
=> Selected Limit

INTERIM

417

WHC-SD-WM-DP-139, REV. 1

INTERIM

B-101 SAFETY SCREENING RESULTS
B-101

CORE NUMBER: 91
SEGMENT #: Field Blank

SEGMENT PORTION: n/a

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S95T001232			% Water by TGA using Mettler	%	17.00	100.0	101.0	n/a	99.76	99.89	99.83	0.13	n/a	n/a	n/a
S95T001232			DSC Exotherm Dry Calculated	Joules/g Dry	1.0e+03	481.0	n/a	n/a	0.00e+00	0.00e+00	0.00e+00	n/a	n/a	n/a	n/a
S95T001232			DSC Exotherm using Mettler	Joules/g	1.0e+03	481.0	96.31	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S95T001233		D	Lithium-ICP-Acid Dil.	ug/mL	1.0e+03	100.0	97.67	1.30e-03	2.48e-01	2.46e-01	2.47e-01	0.73	107.7	1.00e-02	n/a

=> Limit violated
=> Selected Limit

INTERIM

INTERIM

B-101 SAFETY SCREENING RESULTS
B-101

CORE NUMBER: 91
SEGMENT #: 1

SEGMENT PORTION: U Upper Half of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S95T001238			% Water by TGA using Mettler	%	17.00	100.0	103.8	n/a	33.48	34.72	34.10	3.64	n/a	n/a	n/a
S95T001238			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+03	481.0	n/a	n/a	248.0	251.0	249.5	1.20	n/a	n/a	n/a
S95T001238			DSC Exotherm using Mettler	Joules/g	-1.0e+03	481.0	102.3	n/a	163.6	165.4	164.5	1.09	n/a	n/a	n/a
S95T001336	F		Alpha of Digested Solid	uCi/g	-1.0e+03	71.00	109.0	<3.23e-01	3.660	4.640	4.150	23.6	106.9	7.55e-01	23.9
S95T001336	F		Lithium -ICP-Fusion	ug/g	-1.0e+03	100.0	99.68	4.60e-03	< 55.4324	<55.0661	n/a	n/a	92.14	55.40	n/a

L Lower Half of Segment: L Lower Half of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S95T001235			% Water by TGA using Mettler	%	17.00	100.0	103.6	n/a	41.68	44.13	42.91	5.71	n/a	n/a	n/a
S95T001235			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+03	481.0	n/a	n/a	42.00	43.00	42.50	2.35	n/a	n/a	n/a
S95T001235			DSC Exotherm using Mettler	Joules/g	-1.0e+03	481.0	103.3	n/a	24.00	24.80	24.40	3.28	n/a	n/a	n/a
S95T001236	F		Alpha of Digested Solid	uCi/g	-1.0e+03	71.00	102.5	6.26e-02	13.80	14.20	14.00	2.86	103.8	8.83e-01	10.7
S95T001236	F		Lithium -ICP-Fusion	ug/g	-1.0e+03	100.0	96.47	2.28e-02	84.70	74.83	79.77	12.4	94.90	50.80	n/a

=> Limit violated
=> Selected Limit

INTERIM

08-aug-1995 13:31:13
A-0002-1

INTERIM

B-101 SAFETY SCREENING RESULTS
B-101

CORE NUMBER: 91
SEGMENT #: 2

SEGMENT PORTION: U Upper Half of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S95T001244			% Water by TGA using Mettler	%	17.00	100.0	101.0	n/a	38.58	48.11	43.34	22.0	n/a	n/a	n/a
S95T001244			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+03	481.0	n/a	n/a	5.000	5.000	5.000	0.00	n/a	n/a	n/a
S95T001244			DSC Exotherm using Mettler	Joules/g	-1.0e+03	481.0	112.1	n/a	2.900	2.700	2.800	7.14	n/a	n/a	n/a
S95T001245	F		Alpha of Digested Solid	uCi/g	-1.0e+03	41.00	107.9	<4.50e-04	< 7.00e-4	<6.39e-4	n/a	n/a	61.60	7.71e-04	141.3
S95T001245	F		Lithium -ICP-Fusion	ug/g	-1.0e+03	100.0	103.1	1.50e-03	104.5	110.4	107.4	5.48	84.55	44.80	n/a

L Lower Half of Segment: L Lower Half of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S95T001241			% Water by TGA using Mettler	%	17.00	100.0	96.18	n/a	29.27	9.200	19.23	104	n/a	n/a	n/a
S95T001241	1		% Water by TGA using Mettler	%	17.00	100.0	95.31	n/a	26.79	25.55	26.17	4.74	n/a	n/a	n/a
S95T001241			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+03	481.0	n/a	n/a	0.00e+00	0.00e+00	0.00e+00	n/a	n/a	n/a	n/a
S95T001241			DSC Exotherm using Mettler	Joules/g	-1.0e+03	481.0	103.3	n/a	0.00e+00	0.00e+00	0.00e+00	n/a	n/a	n/a	n/a
S95T001337	F		Alpha of Digested Solid	uCi/g	-1.0e+03	41.00	109.0	<3.23e-01	< 5.27e-1	3.63e-01	n/a	n/a	108.1	5.86e-01	500
S95T001337	F		Lithium -ICP-Fusion	ug/g	-1.0e+03	100.0	99.68	4.60e-03	< 43.0441	<45.7875	n/a	n/a	93.00	43.00	n/a

=> Limit violated
=> Selected Limit

INTERIM

420

WHC-SD-WM-DP-139, REV. 1

INTERIM

B-101 SAFETY SCREENING RESULTS
B-101

CORE NUMBER: 91
SEGMENT #: 2

SEGMENT PORTION: Drainable Liquid

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S95T001247			% Water by TGA on Perkin Elmer	%	None	None	97.02	n/a	50.07	50.86	50.47	1.57	n/a	n/a	n/a
S95T001247			DSC Exotherm Dry Calculated	Joules/g Dry	1.0e+03	481.0	n/a	n/a	6.000	6.000	6.000	0.00	n/a	n/a	n/a
S95T001247			DSC Exotherm using Mettler	Joules/g	1.0e+03	481.0	101.2	n/a	3.100	3.200	3.150	3.17	n/a	n/a	n/a
S95T001248		D	Lithium-ICP-Acid Dil.	ug/mL	1.0e+03	100.0	97.67	1.30e-03	135.0	135.4	135.2	0.22	93.00	1.00e-02	n/a

=> Limit violated
=> Selected Limit

INTERIM

421

WHC-SD-WM-DP-139, REV. 1

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WHC-SD-WM-DP-139, REV. 0

INORGANIC ANALYSES

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LABCORE Data Entry Template for Worklist# 1796

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

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

Worklist Comment: Please run the B-101 DSCs under N2. bdv

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			DSC-01	SOLID	28.45	30.7	N/A	Joules/g
95000091	B-101	2 SAMPLE	S95T001214	0	DSC-01	SOLID	N/A	193.1		Joules/g
95000091	B-101	3 DUP	S95T001214	0	DSC-01	SOLID	193.1	174.5	N/A	Joules/g
95000091	B-101	4 SAMPLE	S95T001217	0	DSC-01	SOLID	N/A	211.0		Joules/g
95000091	B-101	5 DUP	S95T001217	0	DSC-01	SOLID	211.0	156.6	N/A	Joules/g

Final page for worklist # 1796

[signature] 7-26-95
Analyst Signature Date

[signature] 7-27-95
Analyst Signature Date

Verified by Blandina D. Valenzuela 7-28-95

S95T001214 produced two endothermic regions one at 105.7°C with a delta H of 736.2J/g and second at ~~13.7 J/g~~ 229.0°C with a delta H of 13.7J/g. 7-27-95 BDV

Data Entry Comments: S95T001217 produced two endothermic regions one at 121.9°C with a delta H of 1004.2J/g and the second at 229.2°C with a delta H of 28.7J/g. This sample is also being redone due to high RPD's.

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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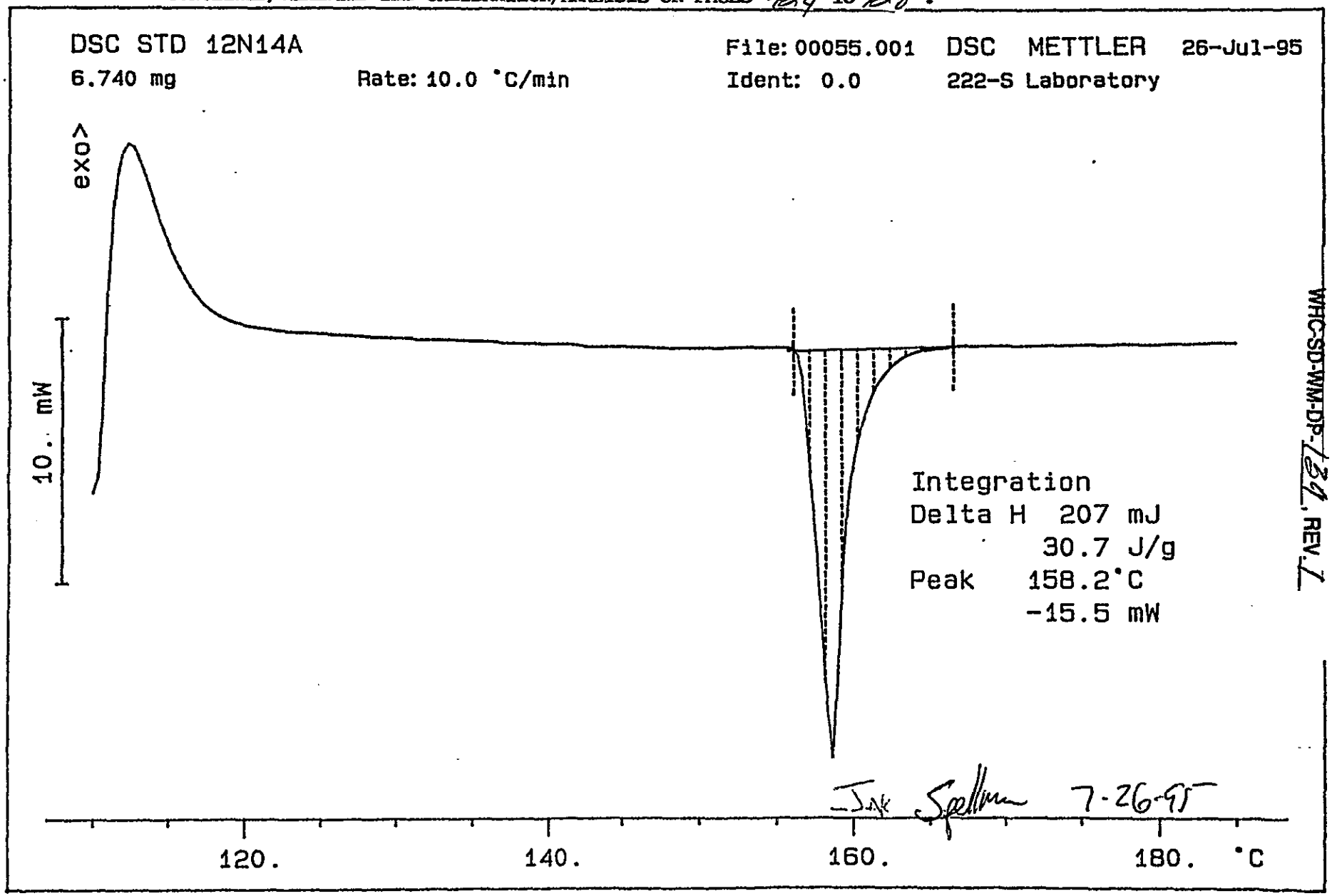
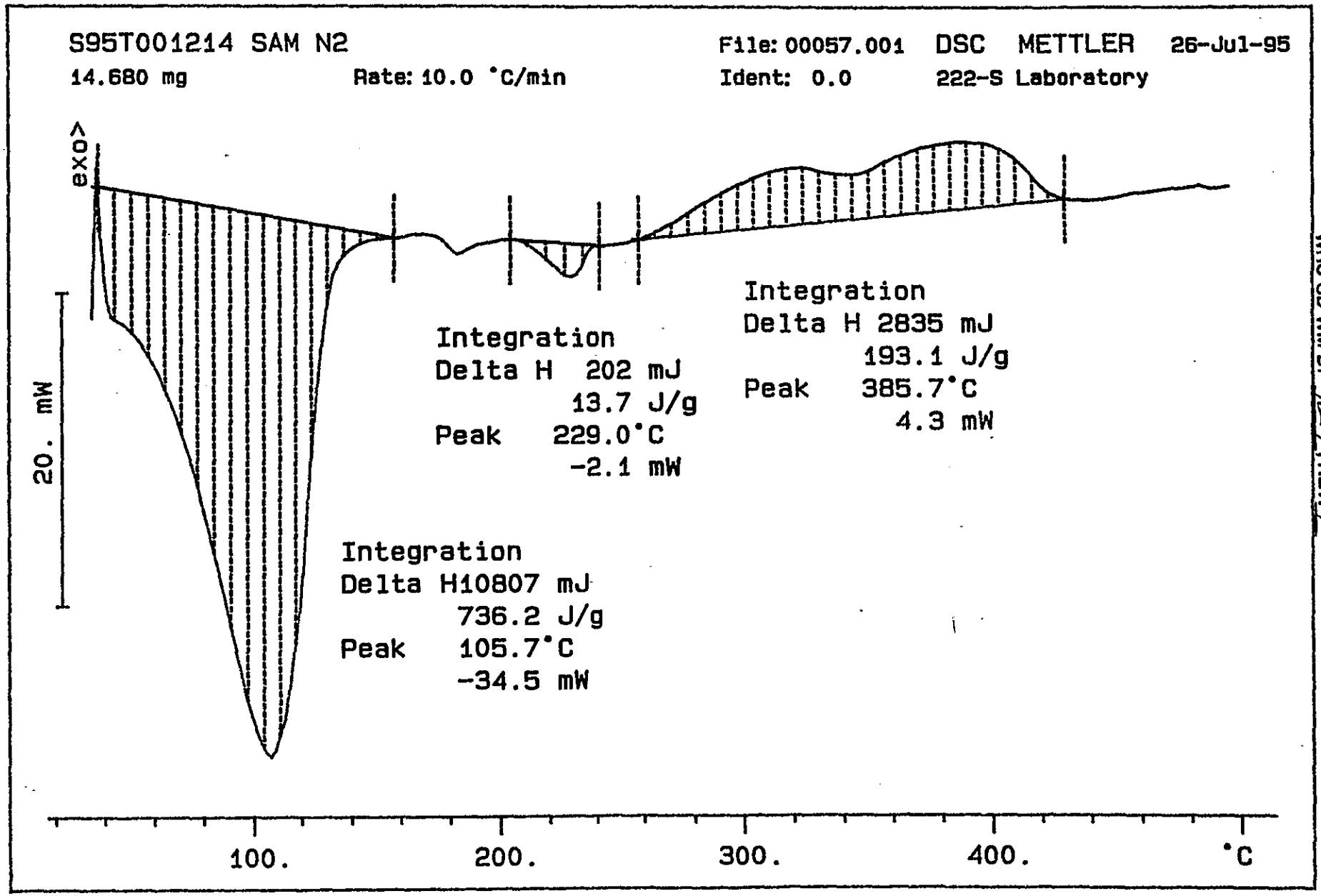
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 424 TO 428.

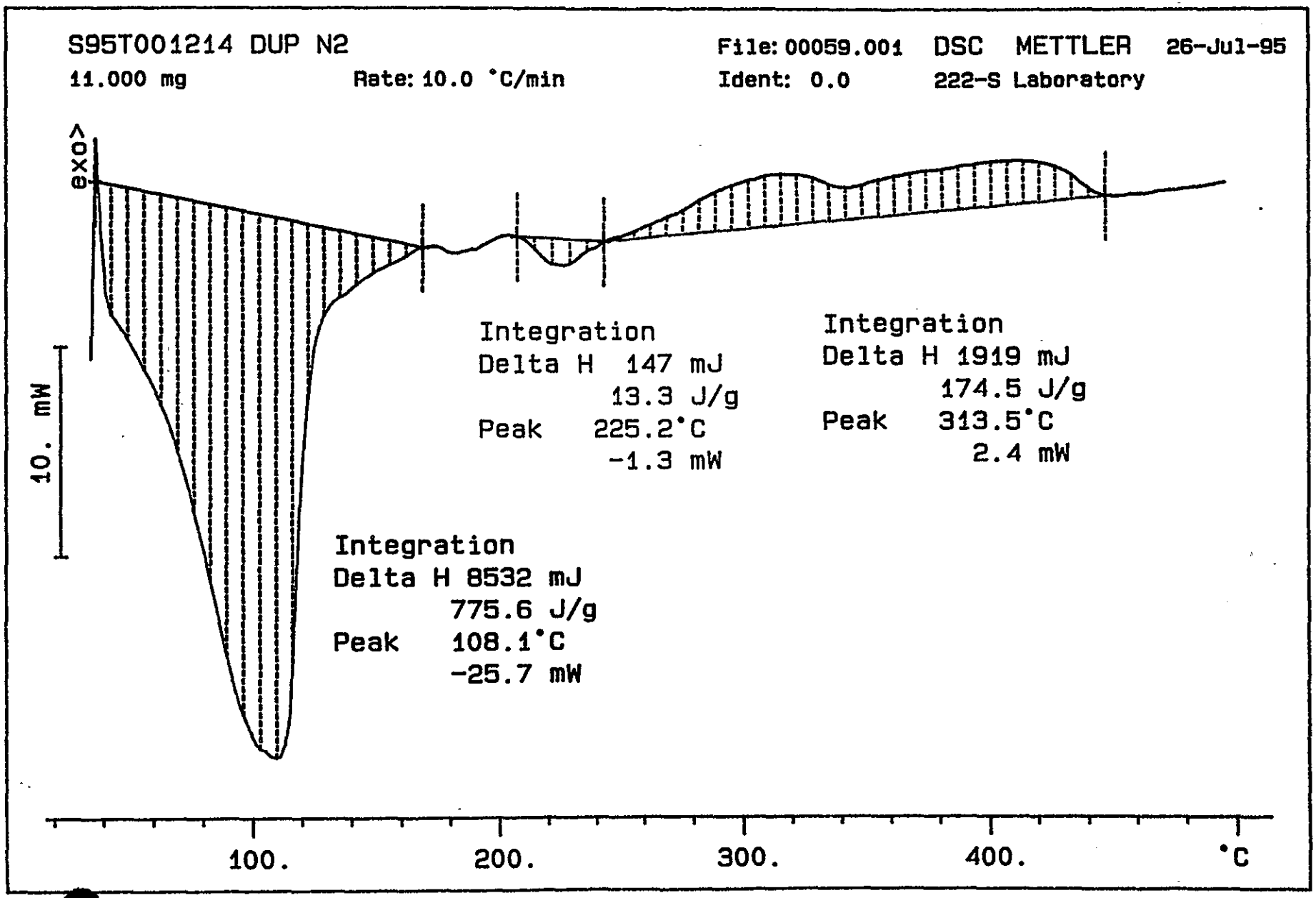


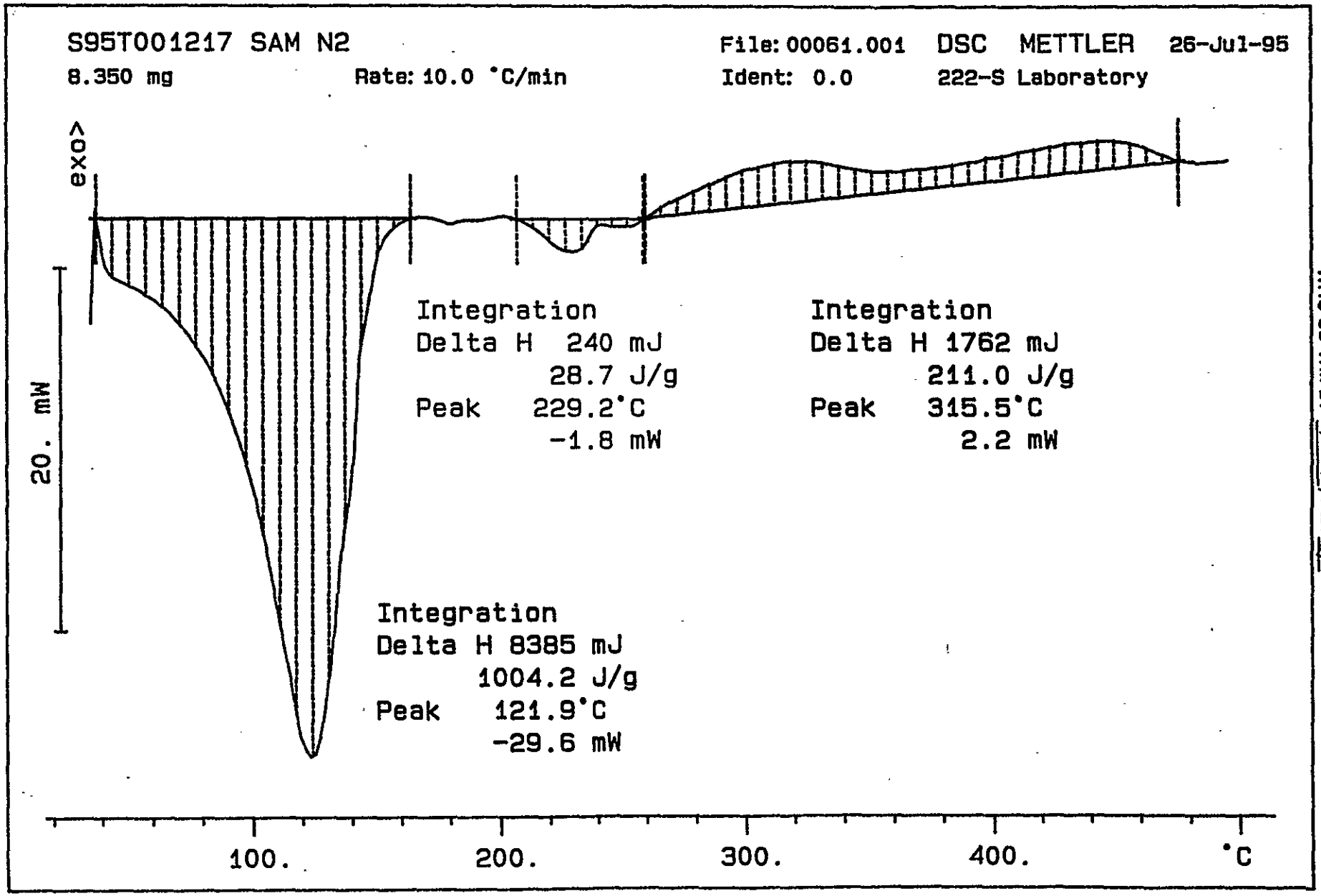
Jak Spellman 7-26-95

WHC-SD-WM-DP-134, REV. 1

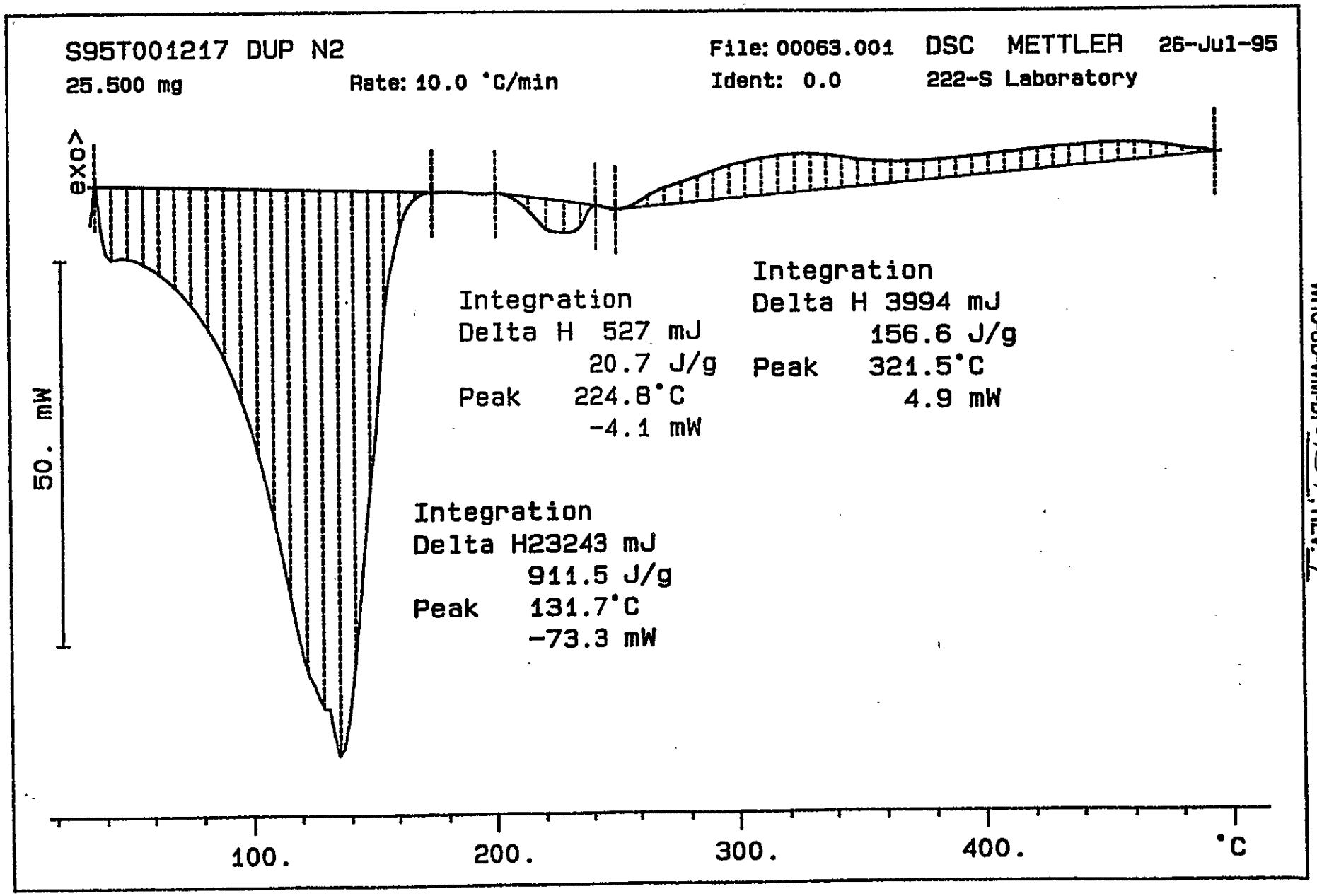


WHC-SD-WM-DP-130, REV. 1


S95T001214 DUP N2
11.000 mg
Rate: 10.0 °C/min
File: 00059.001
Ident: 0.0
DSC METTLER
222-S Laboratory
26-Jul-95
exo>
10. mW
Integration
Delta H 147 mJ
13.3 J/g
Peak 225.2°C
-1.3 mW
Integration
Delta H 1919 mJ
174.5 J/g
Peak 313.5°C
2.4 mW
Integration
Delta H 8532 mJ
775.6 J/g
Peak 108.1°C
-25.7 mW
100.
200.
300.
400.
°C



WHC-SD-WM-DP-132, REV. 1


S95T001217 DUP N2
25.500 mg
Rate: 10.0 °C/min
File: 00063.001
Ident: 0.0
DSC METTLER
222-S Laboratory
26-Jul-95
exo>
50. mW
Integration
Delta H 527 mJ
20.7 J/g
Peak 224.8°C
-4.1 mW
Integration
Delta H 3994 mJ
156.6 J/g
Peak 321.5°C
4.9 mW
Integration
Delta H23243 mJ
911.5 J/g
Peak 131.7°C
-73.3 mW
100.
200.
300.
400.
°C

LABCORE Data Entry Template for Worklist# 1797

7-26-95 BDV

Analyst: Jds **Instrument:** DSC0 B1 **Book #** 12N14A

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

Worklist Comment: Please run B-101 DSCs under N2. bdv

GROUP	PROJECT	S TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD				DSC-01	SOLID	28.45	29.2	N/A	Joules/g
95000091	B-101	2 SAMPLE	S95T001220		0	DSC-01	SOLID	N/A	Ø		Joules/g
95000091	B-101	3 DUP	S95T001220		0	DSC-01	SOLID	Ø	Ø	N/A	Joules/g

Final page for worklist # 1797

7-25-95
Analyst Signature Date

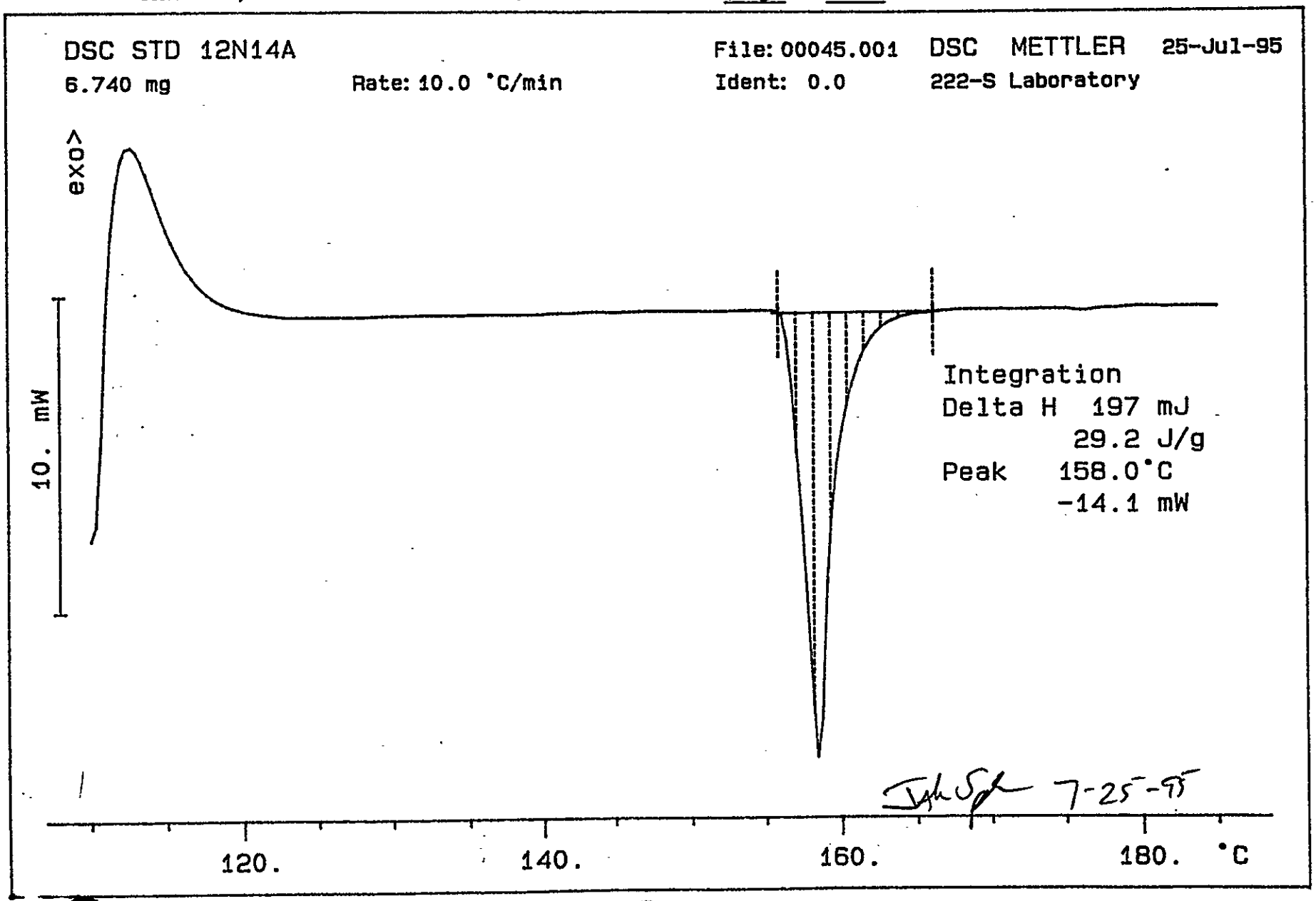
7-26-95
Analyst Signature Date

Verified by Blandina Valenzuela 7-26-95

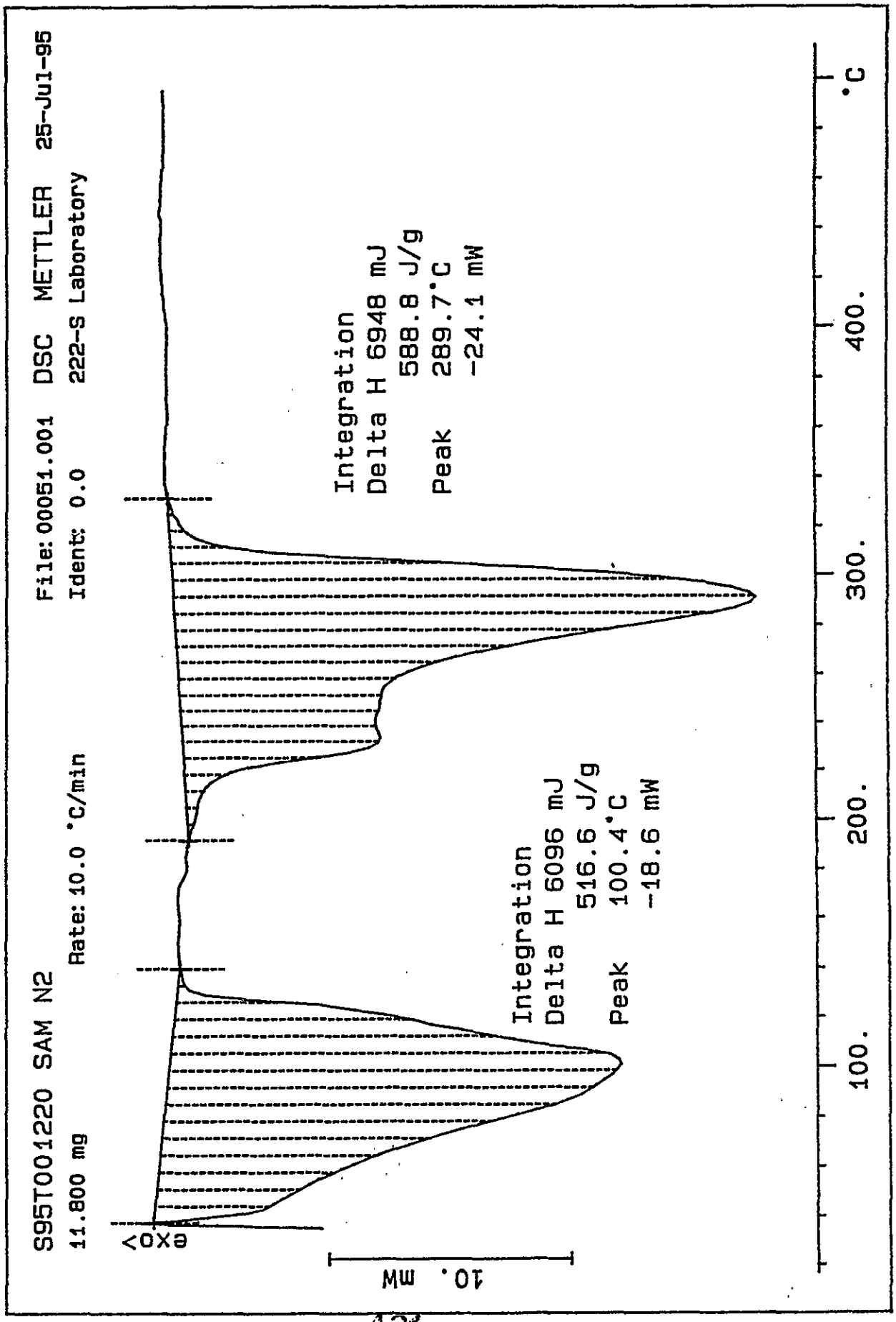
Data Entry Comments: Sample produced two large endothermic regions, one at 100.4°C with a delta H of 516.6 J/g and the second one at 289.7°C with a delta H of 588.8 J/g.

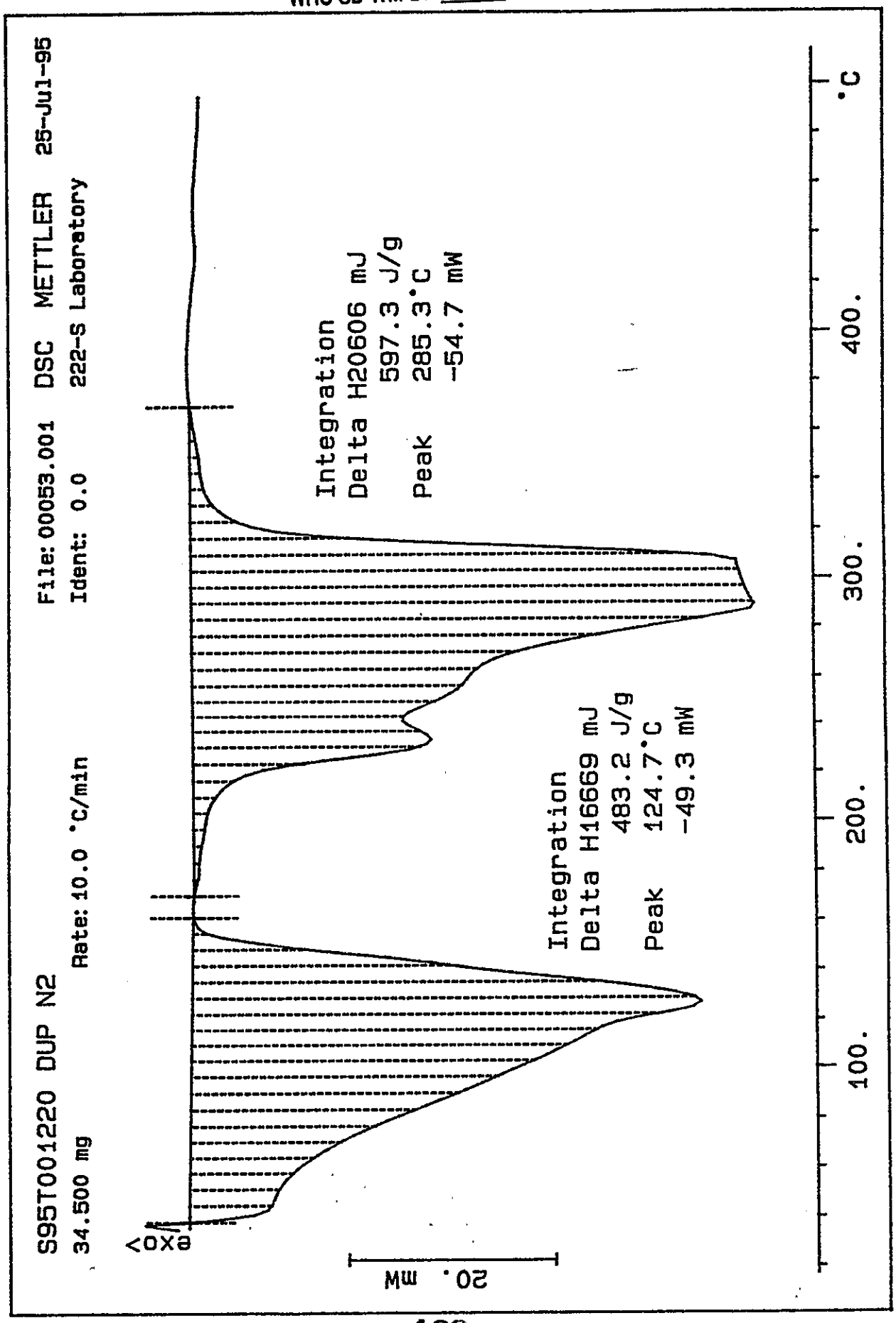
Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 430 TO 432.



7-25-95


S95T001220 SAM N2
11.800 mg
Rate: 10.0 °C/min
File: 00051.001 DSC METTLER 25-Jul-95
Ident: 0.0 222-S Laboratory
Integration
Delta H 6096 mJ
516.6 J/g
Peak 100.4°C
-18.6 mW
Integration
Delta H 6948 mJ
588.8 J/g
Peak 289.7°C
-24.1 mW
exo>
10. mW
100.
200.
300.
400.
°C


S95T001220 DUP N2
34.500 mg
Rate: 10.0 °C/min
File: 00053.001 DSC METTLER 25-Jul-95
Ident: 0.0 222-S Laboratory
Integration
Delta H20606 mJ
597.3 J/g
Peak 285.3°C
-54.7 mW
Integration
Delta H16669 mJ
483.2 J/g
Peak 124.7°C
-49.3 mW
exo>
20. mW
100.
200.
300.
400.
°C

worklistrpt Version 2.1 05/15/95
07/12/95 07:11

LABCORE Data Entry Template for Worklist# 1798

Analyst: JDS **Instrument:** DSC0 1 **Book #** ~~65N8-A~~ 12N14-A 8-1-95 BDV

Method: LA-514-113 Rev/Mod ~~A-2~~ B-1 8-1-95 BDV

Worklist Comment: Please run B-101 DSCs under N2. bdv

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			DSC-01	SOLID	28.45	29.4	N/A	Joules/g
95000091	B-101	2 SAMPLE	S95T001229	0	DSC-01	SOLID	N/A	Ø		Joules/g
95000091	B-101	3 DUP	S95T001229	0	DSC-01	SOLID	Ø	Ø 24.0	N/A	Joules/g
95000093	B-101	4 SAMPLE	S95T001235	0	DSC-01	SOLID	N/A	~~24.8~~ 7-20-95 BDV		Joules/g
95000093	B-101	5 DUP	S95T001235	0	DSC-01	SOLID	24.0	24.8	N/A	Joules/g

Final page for worklist # 1798

Analyst Signature 7-19-95 Date

Analyst Signature 7-20-95 Date

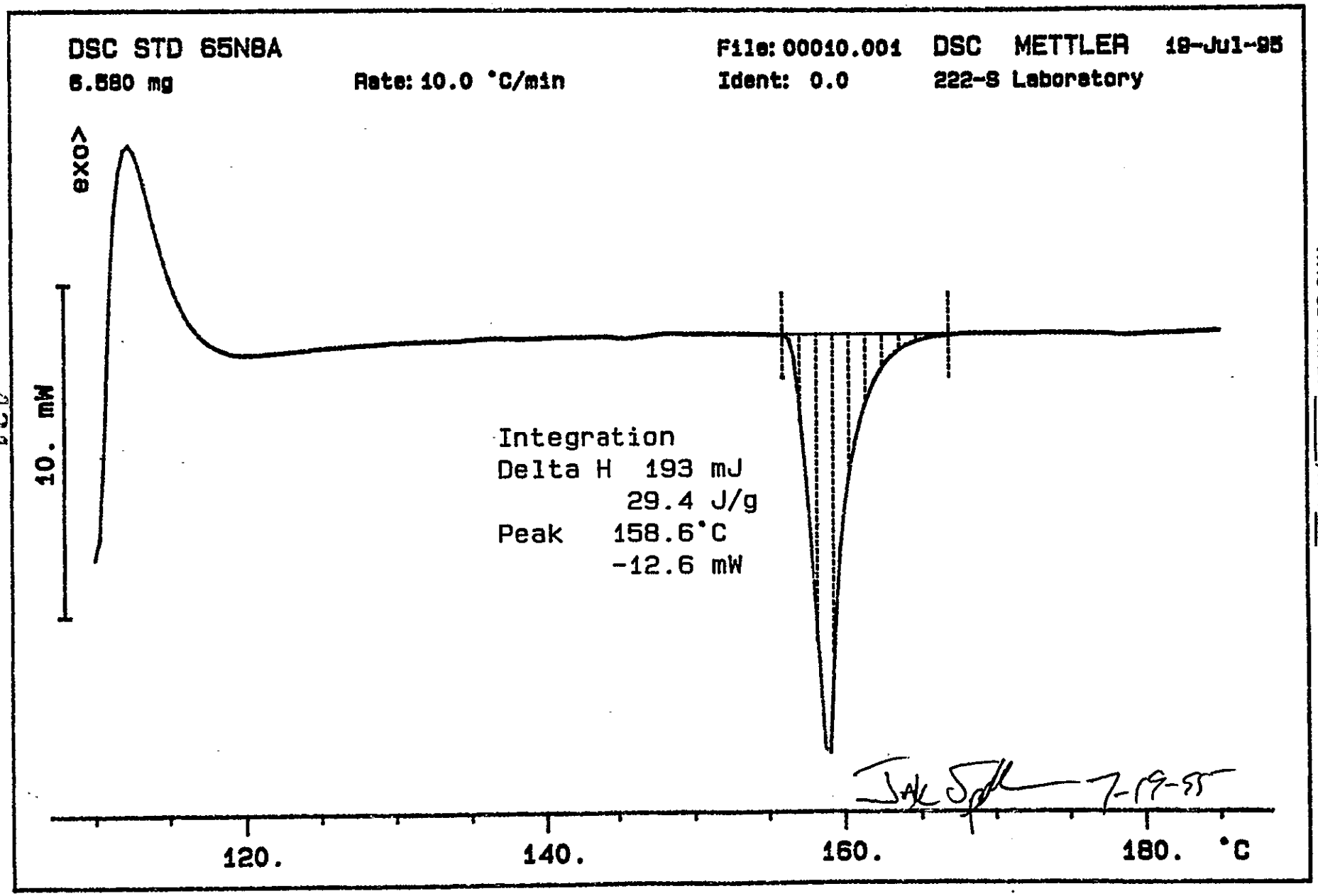
Verified by Blandina Valenzuela 7-24-95

Data Entry Comments: S95T001229 produced two endothermic regions one at 124.5°C with a delta H of 434.2 J/g and second at 295.4°C with a delta H of 472.5 J/g

S95T001235 produced three endothermic one at 126.6°C ~~971.3 J/g~~ 7-20-95 BDV with a delta H of 971.3 J/g the second at 231.0°C with a delta H of 21.5 J/g and third at 447.6°C with a delta H of 1.3 J/g

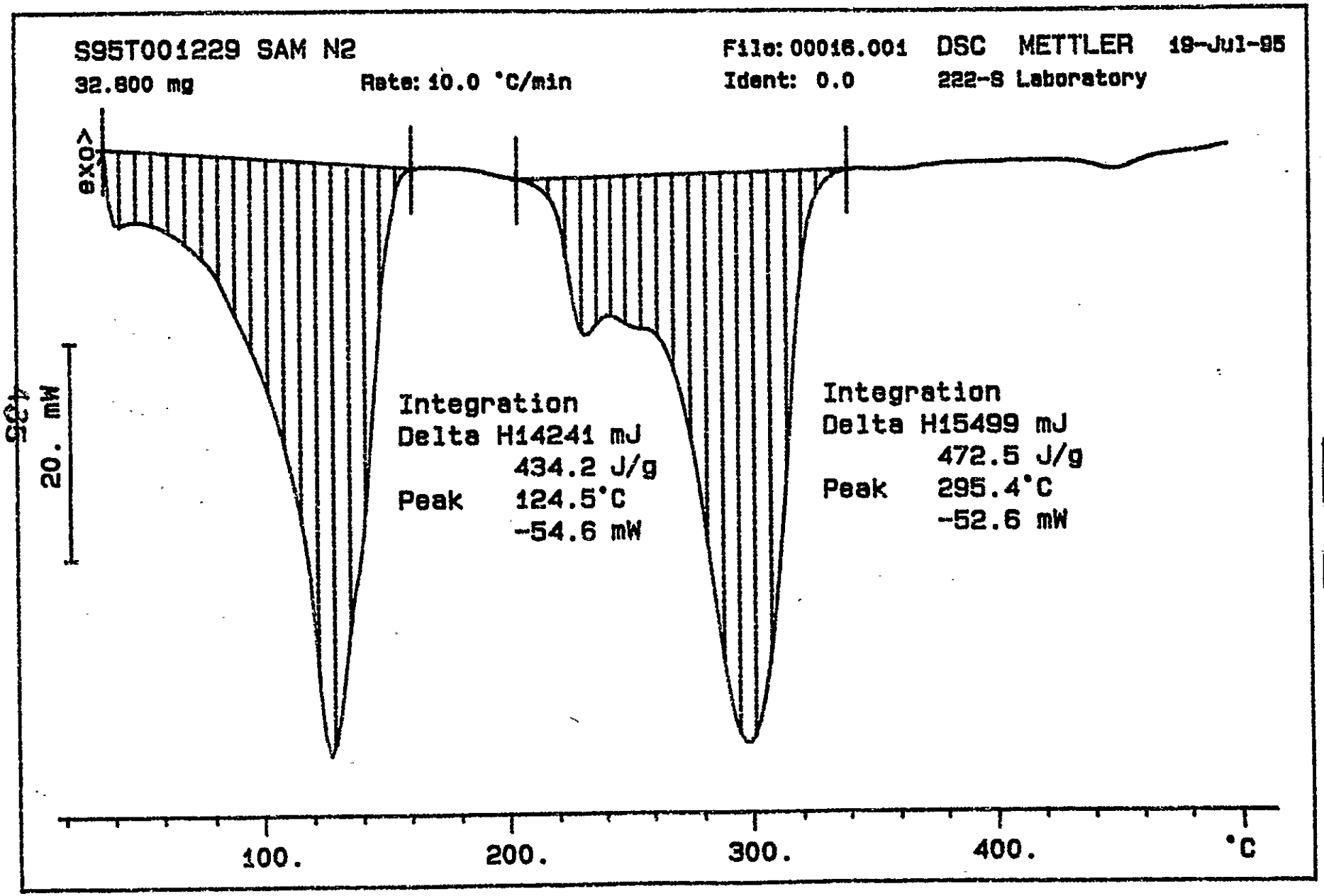
Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

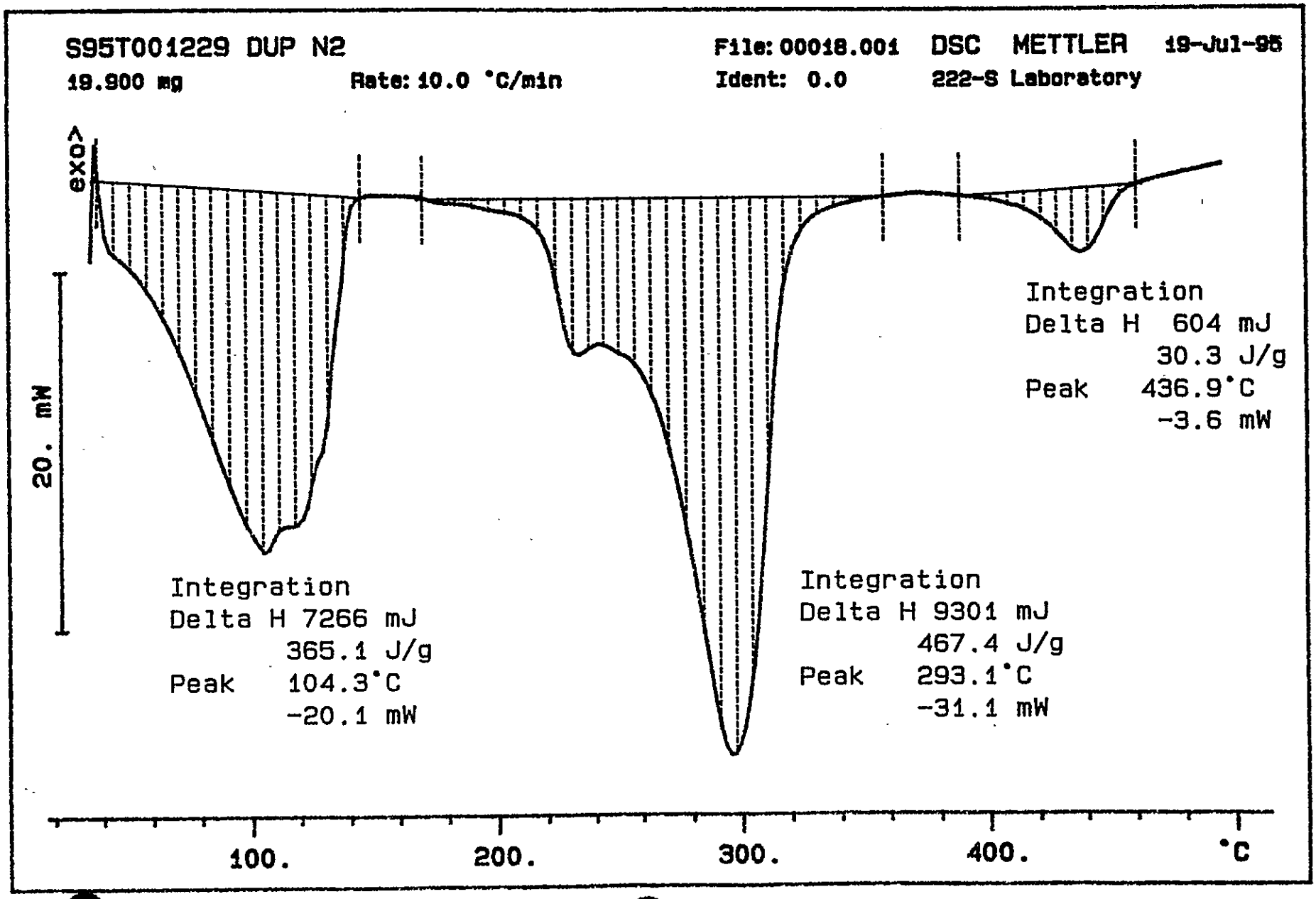
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 434 TO 438.

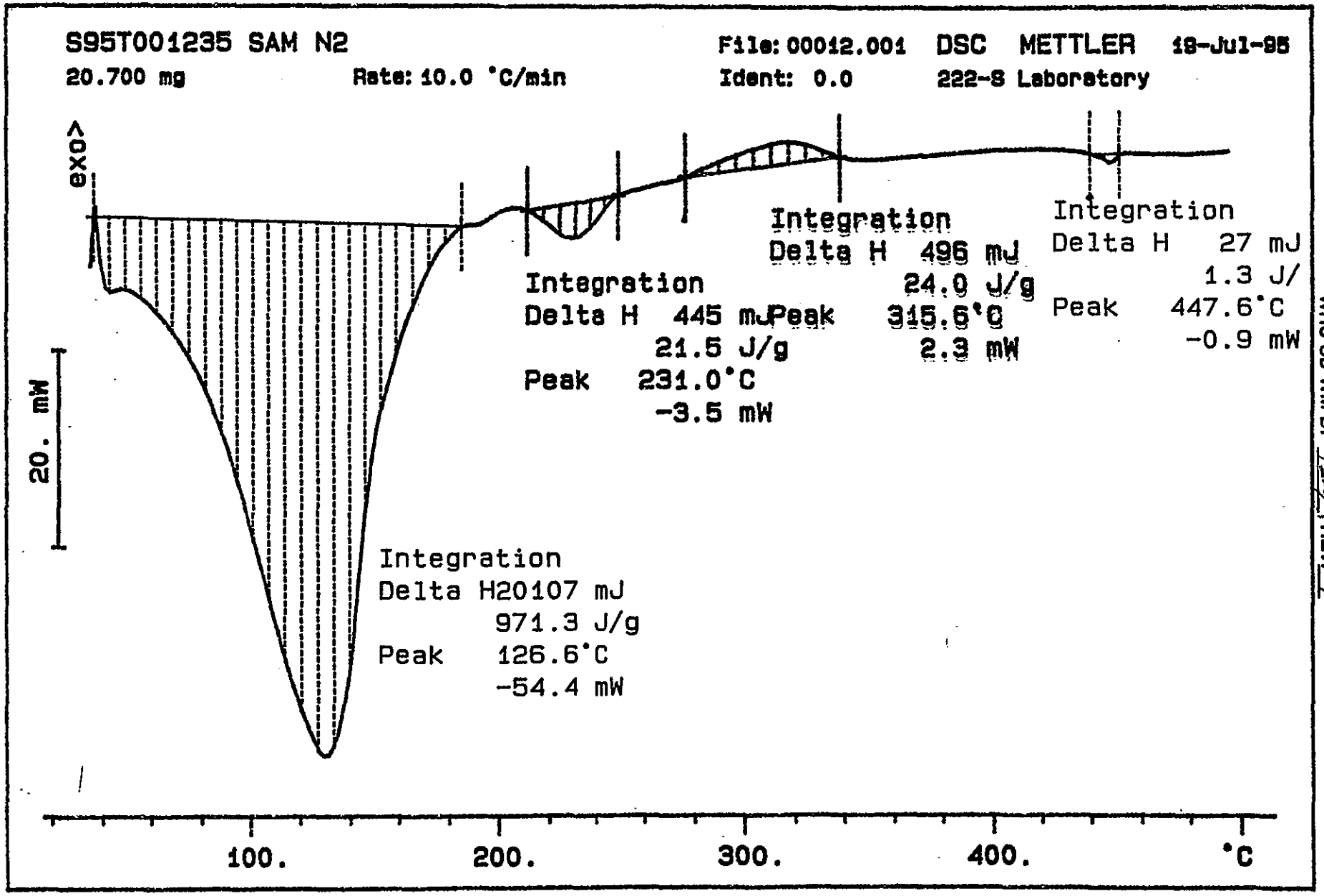


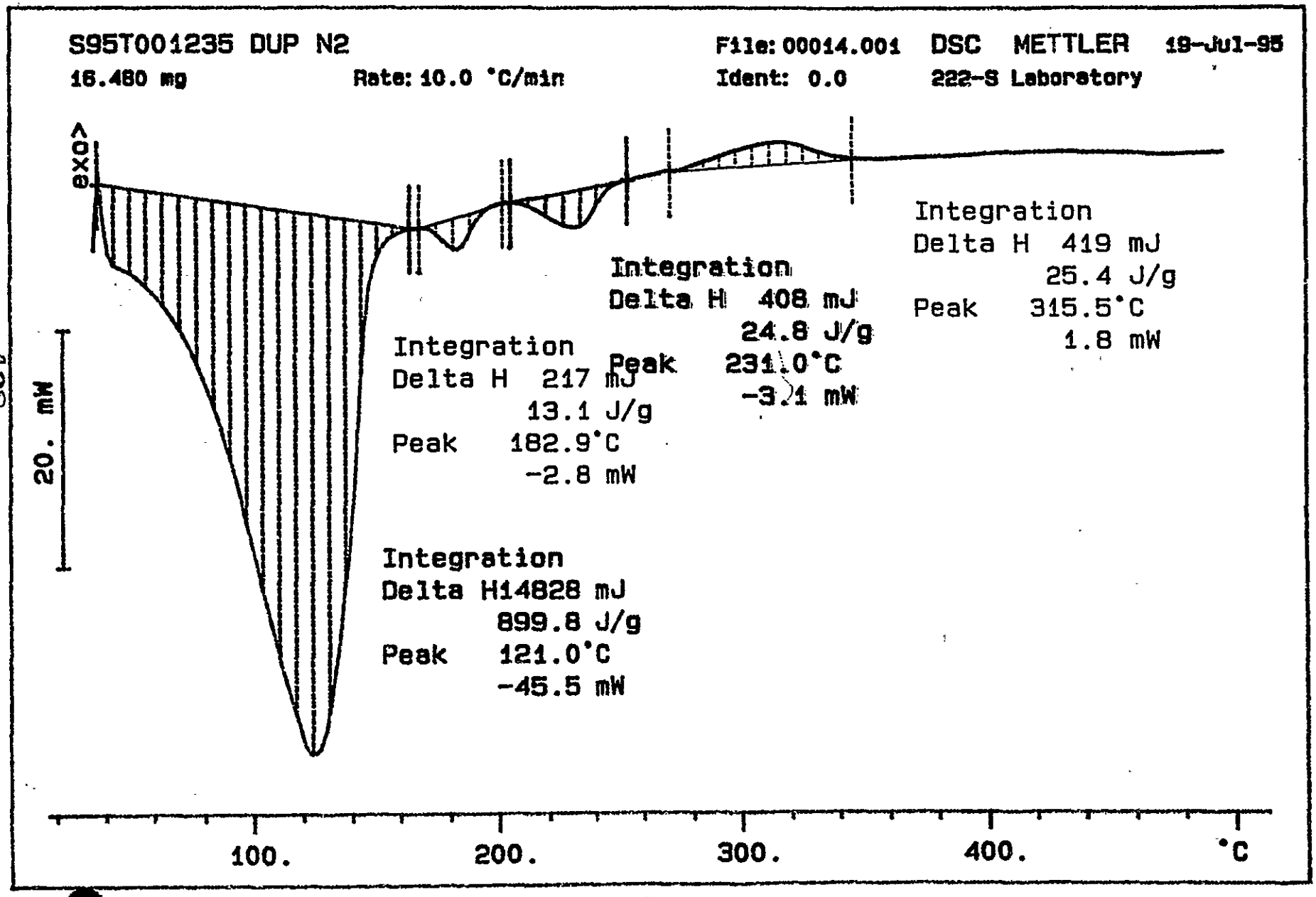
7-19-95

WHC-SD-WM-DP-139, REV. 1


S95T001229 SAM N2
32.800 mg
Rate: 10.0 °C/min
File: 00016.001
Ident: 0.0
DSC METTLER
222-S Laboratory
19-Jul-95
exo>
20. mW
Integration
Delta H14241 mJ
434.2 J/g
Peak 124.5°C
-54.6 mW
Integration
Delta H15499 mJ
472.5 J/g
Peak 295.4°C
-52.6 mW
100.
200.
300.
400.
°C


S95T001229 DUP N2
19.900 mg
Rate: 10.0 °C/min
File: 00018.001
Ident: 0.0
DSC METTLER
222-S Laboratory
19-Jul-95
exo>
20. mW
Integration
Delta H 7266 mJ
365.1 J/g
Peak 104.3°C
-20.1 mW
Integration
Delta H 9301 mJ
467.4 J/g
Peak 293.1°C
-31.1 mW
Integration
Delta H 604 mJ
30.3 J/g
Peak 436.9°C
-3.6 mW
100.
200.
300.
400.
°C


S95T001235 SAM N2
20.700 mg
Rate: 10.0 °C/min
File: 00012.001
DSC METTLER 18-Jul-95
Ident: 0.0
222-S Laboratory
exo>
20. mW
Integration
Delta H20107 mJ
971.3 J/g
Peak 126.6°C
-54.4 mW
Integration
Delta H 445 mJ
21.5 J/g
Peak 231.0°C
-3.5 mW
Integration
Delta H 496 mJ
24.0 J/g
Peak 315.6°C
2.3 mW
Integration
Delta H 27 mJ
1.3 J/
Peak 447.6°C
-0.9 mW
100.
200.
300.
400.
°C


S95T001235 DUP N2
16.480 mg
Rate: 10.0 °C/min
File: 00014.001
Ident: 0.0
DSC METTLER
222-S Laboratory
19-Jul-95
exo>
20. mW
Integration
Delta H 217 mJ
13.1 J/g
Peak 182.9°C
-2.8 mW
Integration
Delta H14828 mJ
899.8 J/g
Peak 121.0°C
-45.5 mW
Integration
Delta H 408 mJ
24.8 J/g
Peak 231.0°C
-3.1 mW
Integration
Delta H 419 mJ
25.4 J/g
Peak 315.5°C
1.8 mW
100.
200.
300.
400.
°C

LABCORE Data Entry Template for Worklist# 1799

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

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

Worklist Comment: Please run B-101 DSCs under N2. bdv

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				DSC-01	SOLID	28.45	29.1	N/A	Joules/g
95000093	B-101	2	SAMPLE	S95T001238	0		DSC-01	SOLID	N/A	163.6		Joules/g
95000093	B-101	3	DUP	S95T001238	0		DSC-01	SOLID	163.6	165.4	N/A	Joules/g
		4	STD				DSC-01	SOLID	28.45	29.4	N/A	Joules/g
95000093	B-101	5	SAMPLE	S95T001241	0		DSC-01	SOLID	N/A	Ø		Joules/g
95000093	B-101	6	DUP	S95T001241	0		DSC-01	SOLID	Ø	Ø	N/A	Joules/g

Final page for worklist # 1799

See attached for signatures
Analyst Signature **Date** 7-26-95

Data entered + verified by
Blandina Valenzuela 7-31-95
Analyst Signature **Date**

Data Entry Comments: S95T001238 produced two endothermic regions, one at 123.3°C with a delta H of 722.1 J/g and second at 224.8 °C with a delta H of 29.4 J/g

S95T001241 produced ~~two~~ three endothermic regions, one at 123.8°C, with a delta H of 644.2 J/g, second at 287.1°C with 279.6 J/g, and third at 395.0°C with a delta H of 42.4 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.

LABCORE Data Entry Template for Worklist# 1799

Analyst: Jds **Instrument:** DSC0 _____ **Book #** 12N144

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

Worklist Comment: Please run B-101 DSCs under N2. bdv

GROUP	PROJECT	S TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD				DSC-01	SOLID			N/A	Joules/g
95000093	B-101	2 SAMPLE	S95T001238	0		DSC-01	SOLID	N/A			Joules/g
95000093	B-101	3 DUP	S95T001238	0		DSC-01	SOLID			N/A	Joules/g
95000093	B-101	4 SAMPLE	S95T001241	0		DSC-01	SOLID	N/A			Joules/g
95000093	B-101	5 DUP	S95T001241	0		DSC-01	SOLID			N/A	Joules/g

Final page for worklist # 1799

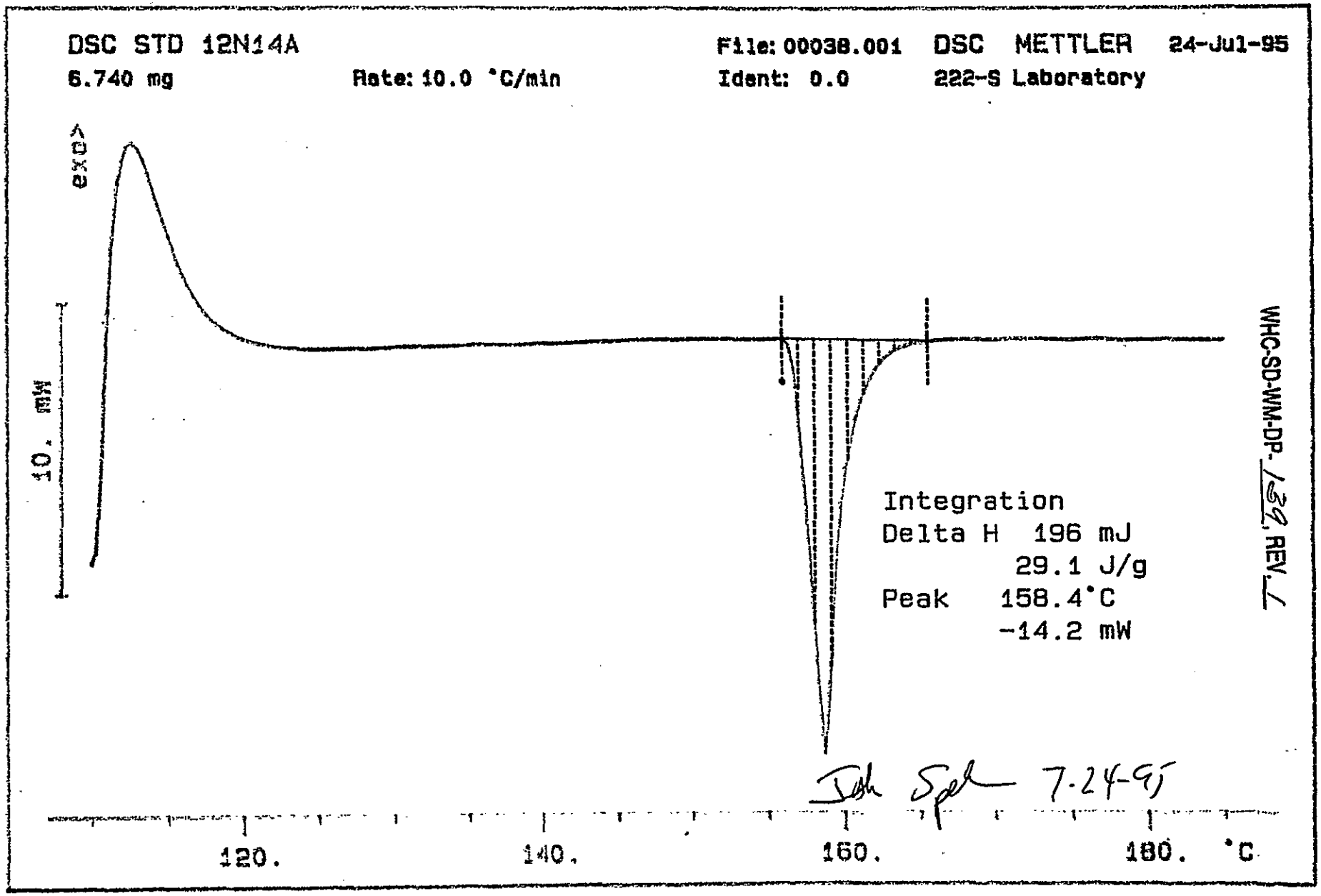
Jds 7-25-95

Analyst Signature **Date** **Analyst Signature** **Date**

Data Entry Comments:

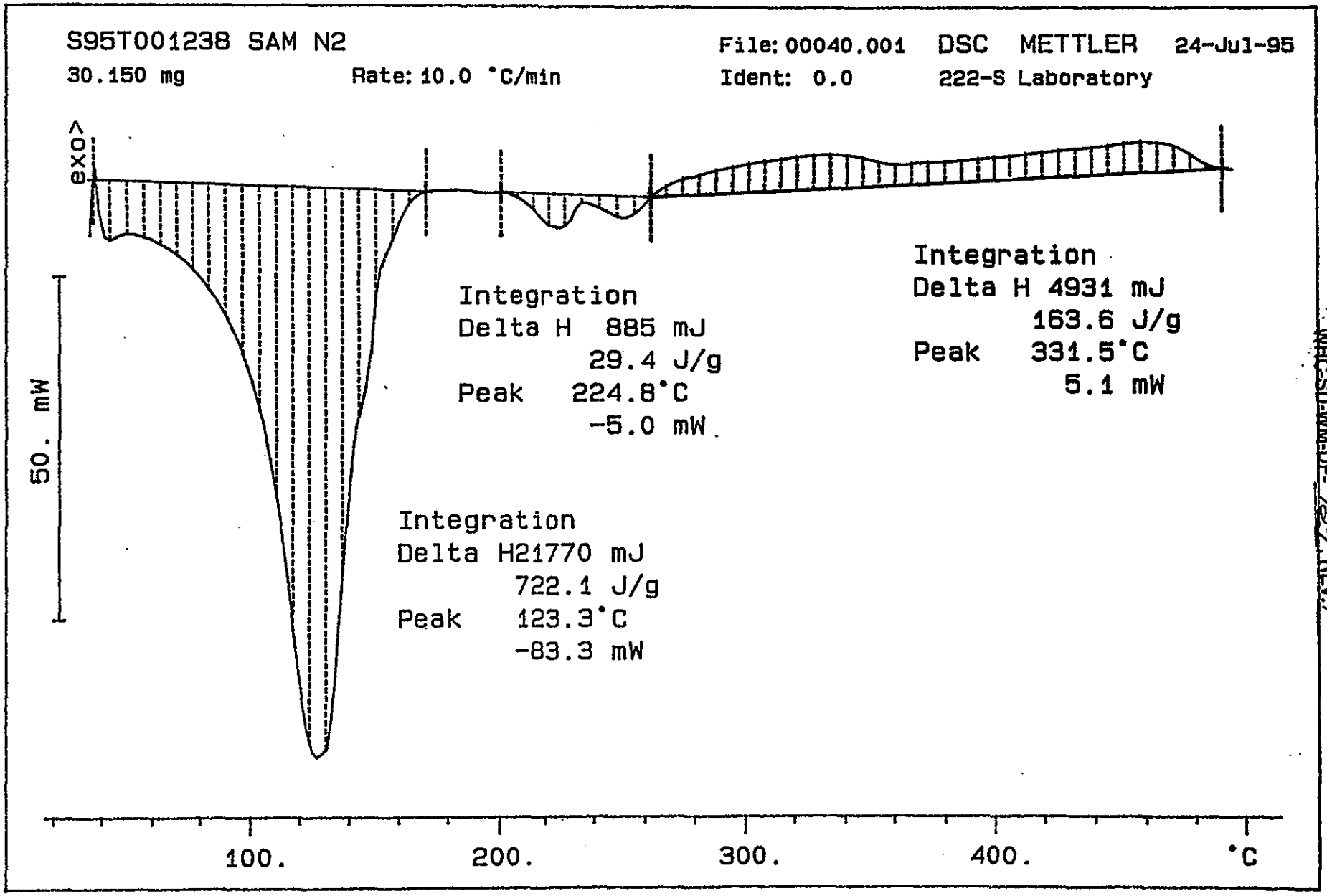
Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 441 TO 446.

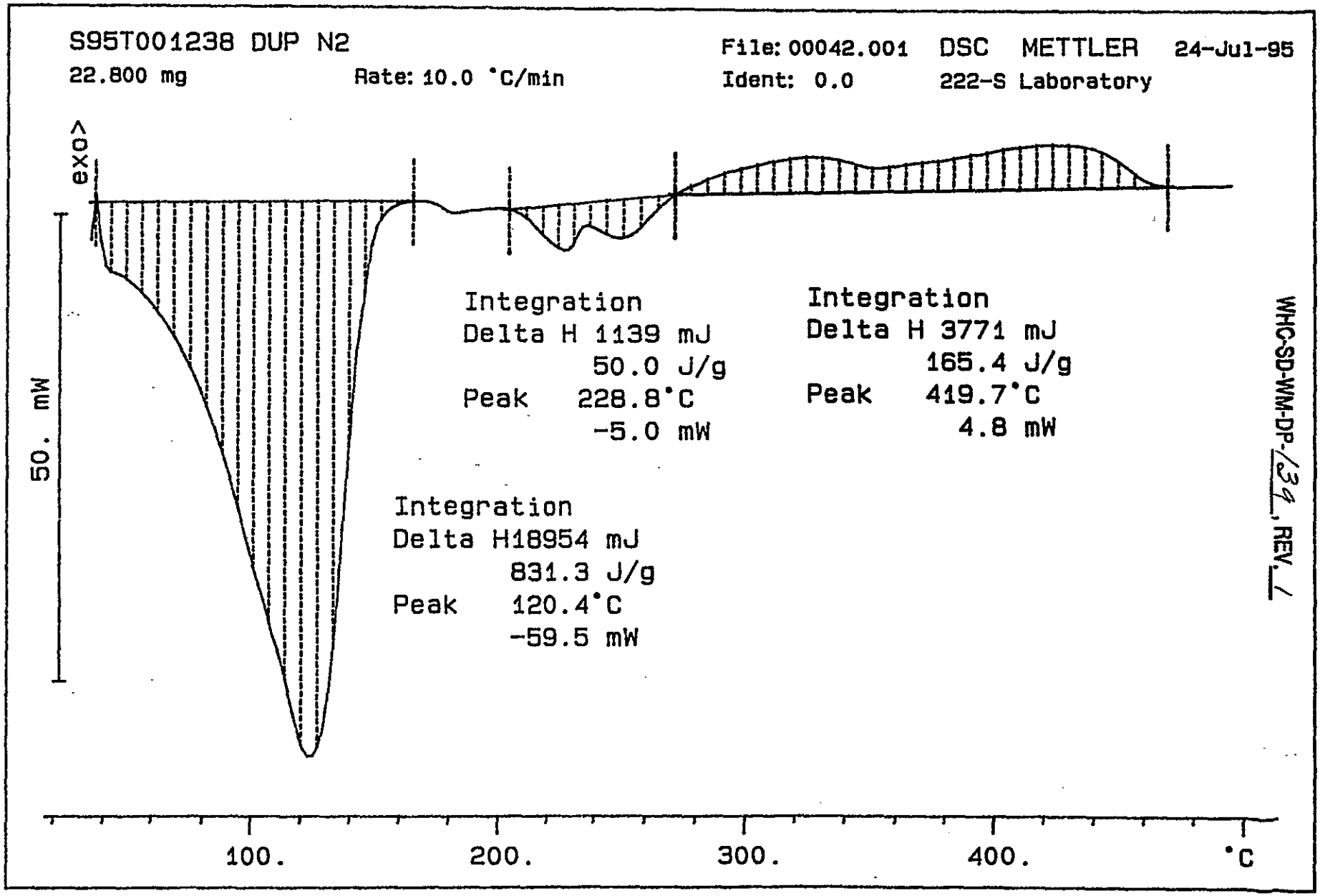


Josh Spel 7-24-95

WHC-SD-WM-DP-139, REV. 1

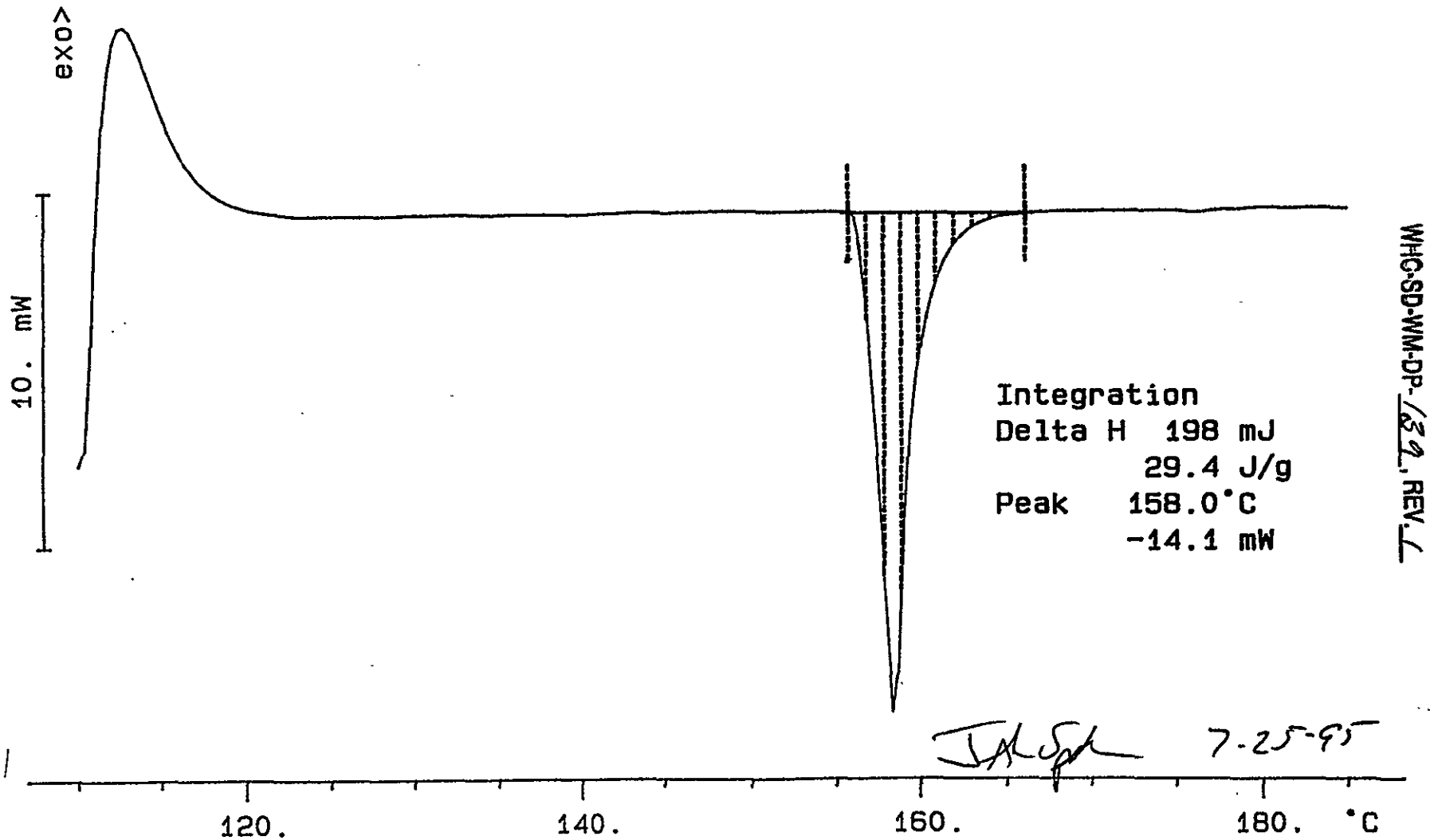


WHC-SD-WM-DP-134, REV.1



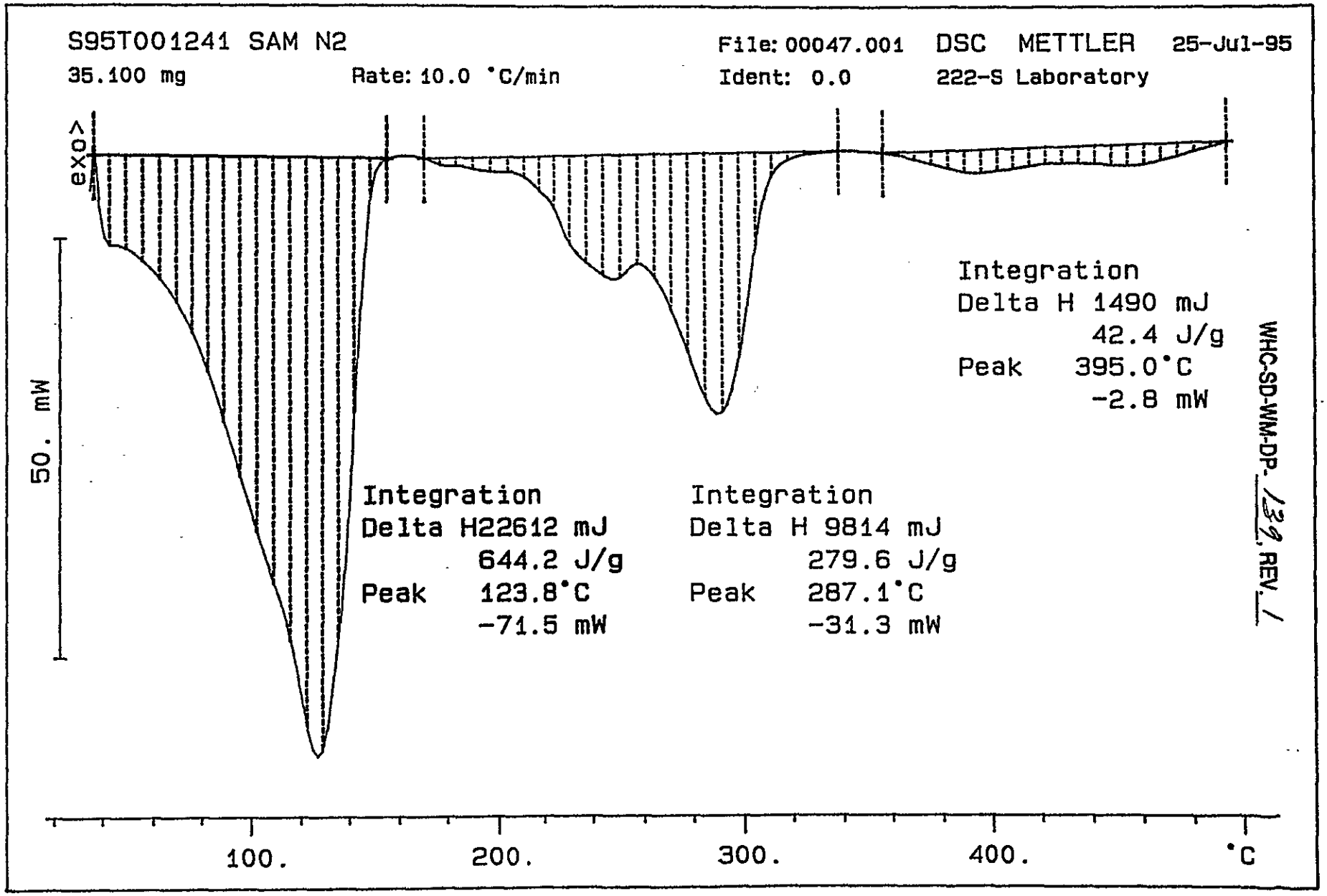
WHC-SD-WM-DP-139, REV. 1

DSC STD 12N14A
6.740 mg
Rate: 10.0 °C/min
File: 00045.001
Ident: 0.0
DSC METTLER
222-S Laboratory
25-Jul-95

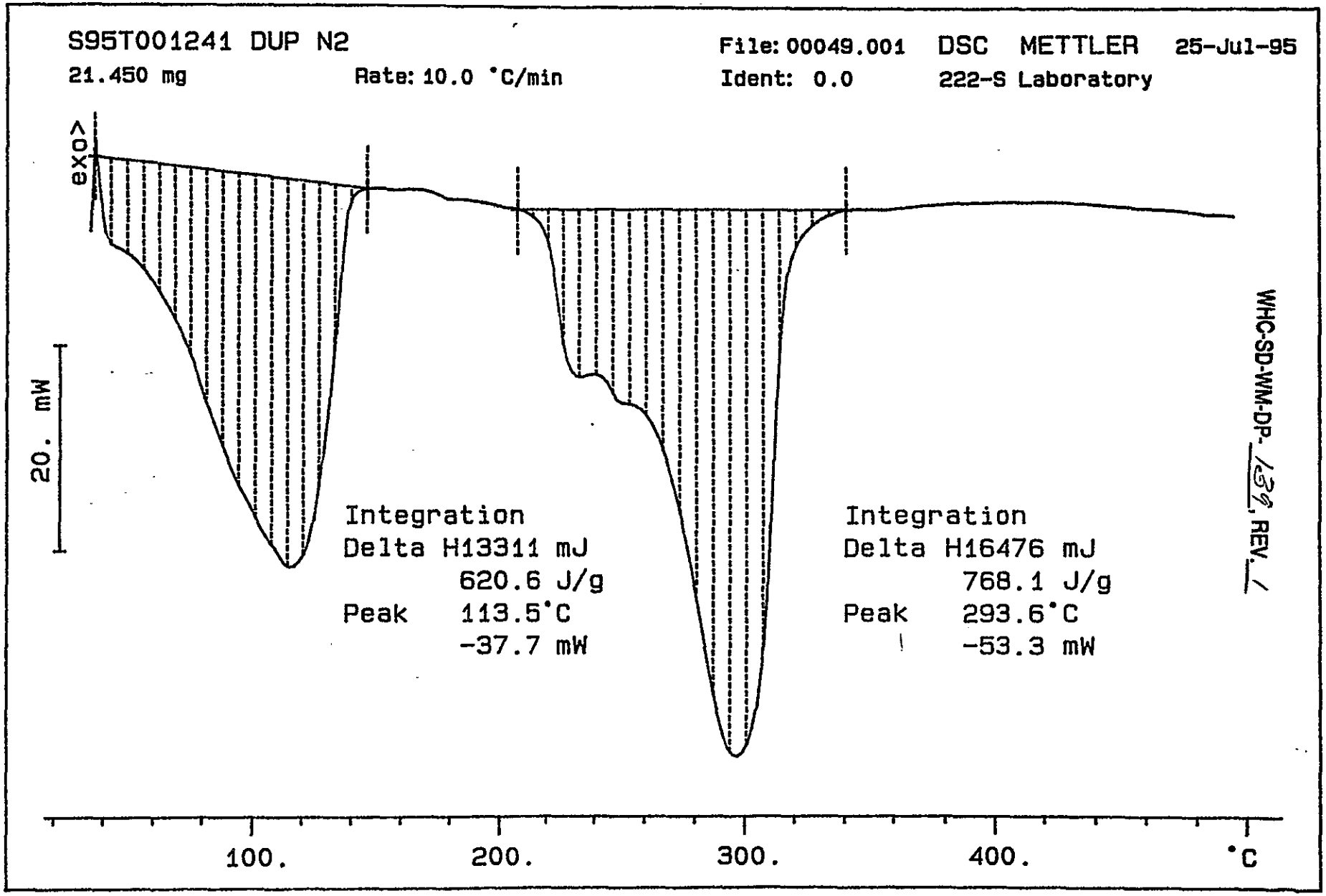


7-25-95

WHC-SD-WM-DP-138, REV. 1



WHC-SD-WM-DP-139, REV. 1



WHC-SD-WM-DP-159, REV. 1

LABCORE Data Entry Template for Worklist# 1800

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

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

Worklist Comment: Please run B-101 DSCs under N2. bdv

GROUP	PROJECT	S TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD				DSC-01	SOLID	28.45	31.9	N/A	Joules/g
95000093	B-101	2 SAMPLE	S95T001244	0		DSC-01	SOLID	N/A	2.9		Joules/g
95000093	B-101	3 DUP	S95T001244	0		DSC-01	SOLID	2.9	2.7	N/A	Joules/g

Final page for worklist # 1800

Blandina Valenzuela 7-17-95
Analyst Signature Date
for JD Spellman.

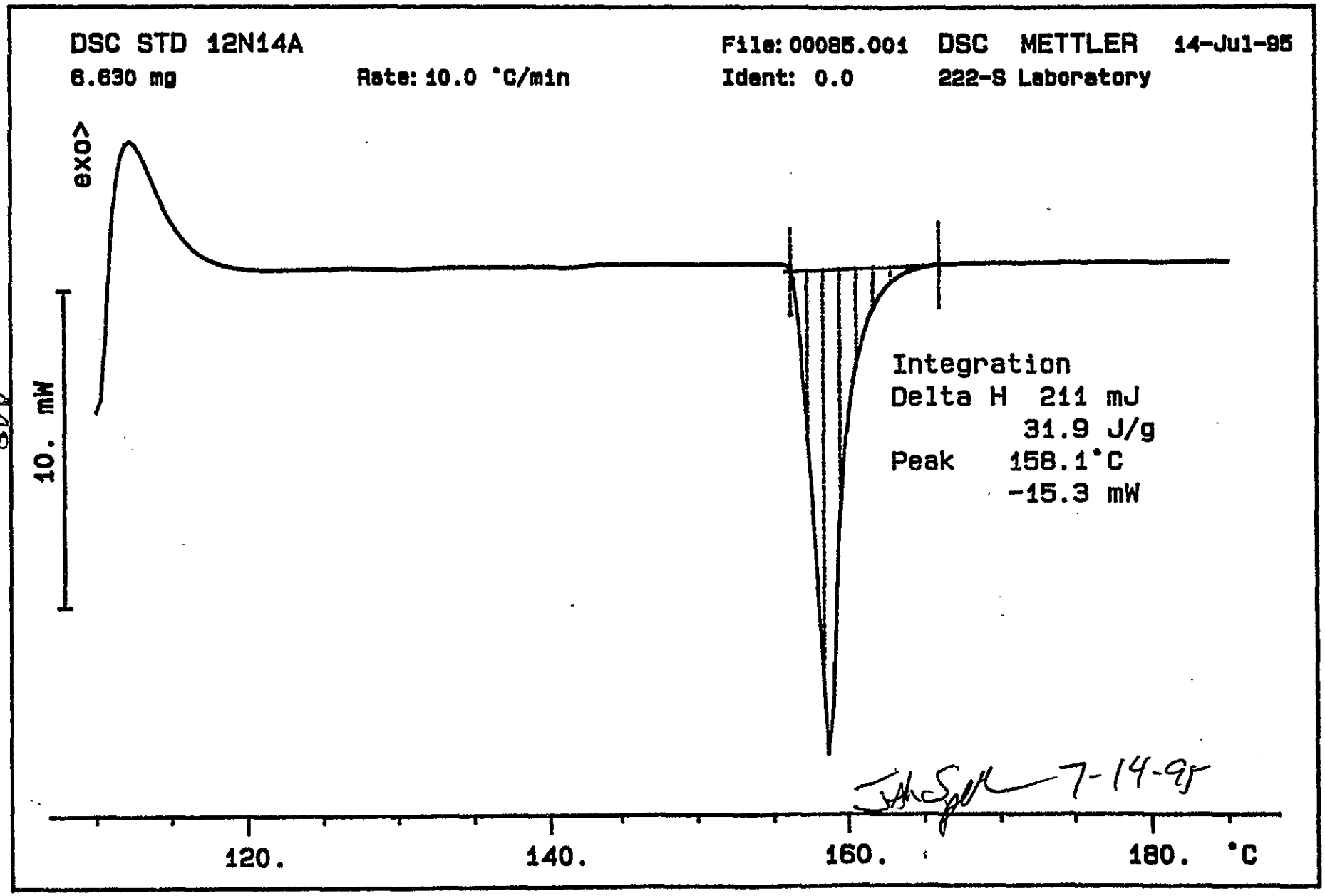
[signature] 7-17-95
Analyst Signature Date

Verified by Blandina Valenzuela 7-19-95

Data Entry Comments: The sample produced two endothermic regions, one at 122.7°C with a delta H of 1162.0 J/g and second at 229.0°C with a delta H of 48.7 J/g.

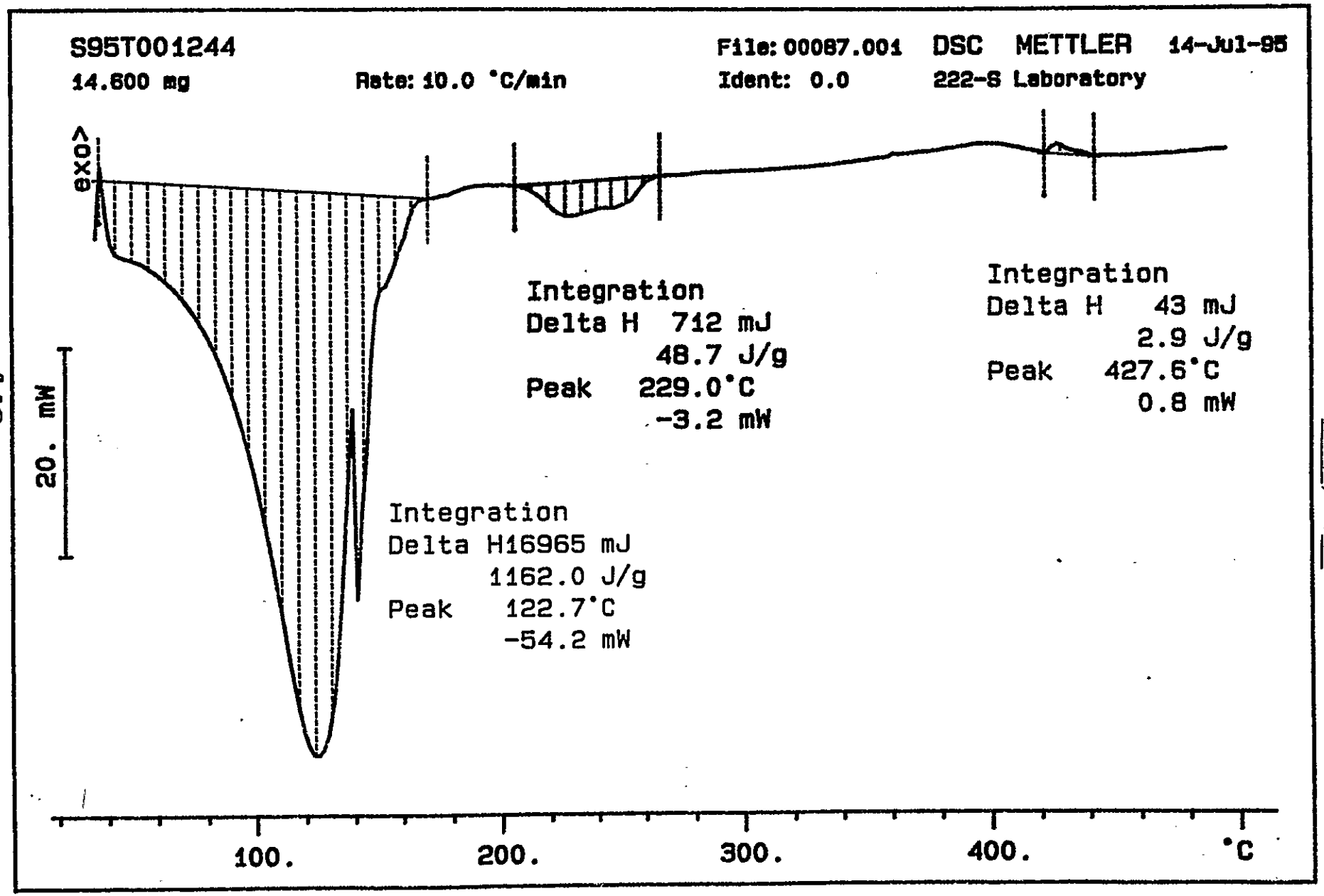
Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

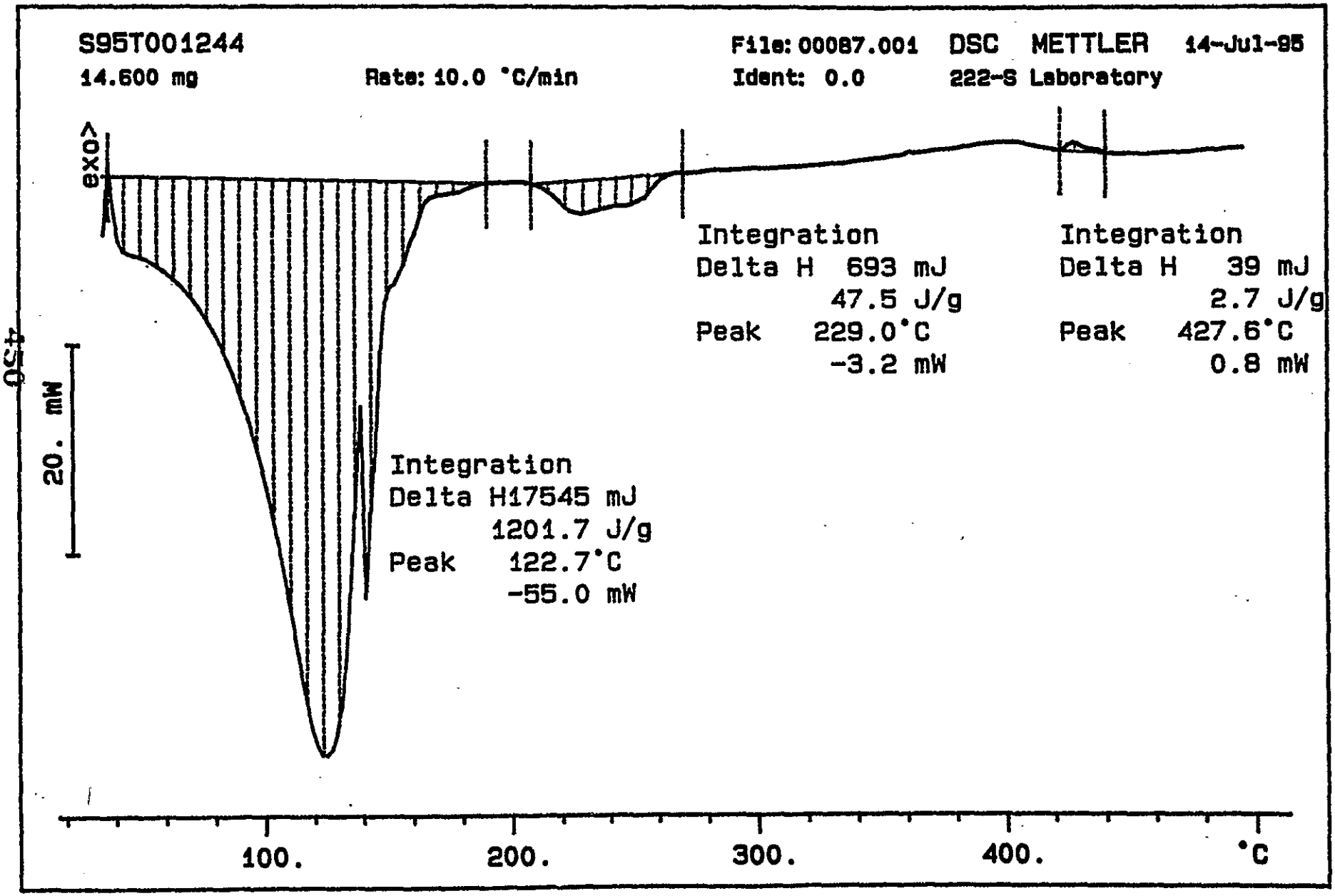
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 448 TO 450.



7-14-95

WHC-SD-WM-DP-130, REV. 1


S95T001244
14.600 mg
Rate: 10.0 °C/min
File: 00087.001
Ident: 0.0
DSC METTLER 14-Jul-95
222-S Laboratory
exo>
20. mW
Integration
Delta H 712 mJ
48.7 J/g
Peak 229.0°C
-3.2 mW
Integration
Delta H 43 mJ
2.9 J/g
Peak 427.6°C
0.8 mW
Integration
Delta H16965 mJ
1162.0 J/g
Peak 122.7°C
-54.2 mW
100.
200.
300.
400.
°C



450

WHC-SD-WM-DP-139, REV. 1

LABCORE Data Entry Template for Worklist# 1801

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

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

Worklist Comment: Please run B-101 DSCs under N2. bdv

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				DSC-01	LIQUID	28.45	~~27.6~~ 27.4 7-26-95 BDV	N/A	Joules/g
95000091	B-101	2	SAMPLE	S95T001223	0		DSC-01	LIQUID	N/A	~~Ø~~ 26.3 7-26-95 BDV		Joules/g
95000091	B-101	3	DUP	S95T001223	0		DSC-01	LIQUID	~~Ø~~ 26.3	~~Ø~~ 26.3 7-26-95 BDV	N/A	Joules/g
		4	STD				DSC-01	LIQUID	28.45	27.46 7-26-95 BDV	N/A	Joules/g
95000093	B-101	5	SAMPLE	S95T001232	0		DSC-01	LIQUID	N/A	~~26.3~~ Ø 7-26-95 BDV		Joules/g
95000093	B-101	6	DUP	S95T001232	0		DSC-01	LIQUID	~~26.3~~ Ø	~~26.3~~ Ø 7-26-95 BDV	N/A	Joules/g

Final page for worklist # 1801

See attached for signatures 7-24-95 — 7-24-95
Analyst Signature Date — Analyst Signature Date

Verified by Blandina Valenzuela BDV 7-26-95

S95T001232 produced one endothermic regions at 101.3°C with a delta H of 1781.4 J/g.

Data Entry Comments: Sample S95T001223 produced two endothermic regions one at 124.7°C with a delta H of 1091.3 J/g and second at 227.1°C with a delta H of 49.7 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.

LABCORE Data Entry Template for Worklist# 1801

Analyst: Sds **Instrument:** DSC0 _____ **Book #** 12 N 144

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

Worklist Comment: Please run B-101 DSCs under N2. bdv

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				DSC-01	LIQUID			N/A	Joules/g
95000091	B-101	2	SAMPLE	S95T001223	0		DSC-01	LIQUID	N/A			Joules/g
95000091	B-101	3	DUP	S95T001223	0		DSC-01	LIQUID			N/A	Joules/g
95000093	B-101	4	SAMPLE	S95T001232	0		DSC-01	LIQUID	N/A			Joules/g
95000093	B-101	5	DUP	S95T001232	0		DSC-01	LIQUID			N/A	Joules/g

Final page for worklist # 1801

SDS 7-21-95

Analyst Signature **Date**

Analyst Signature **Date**

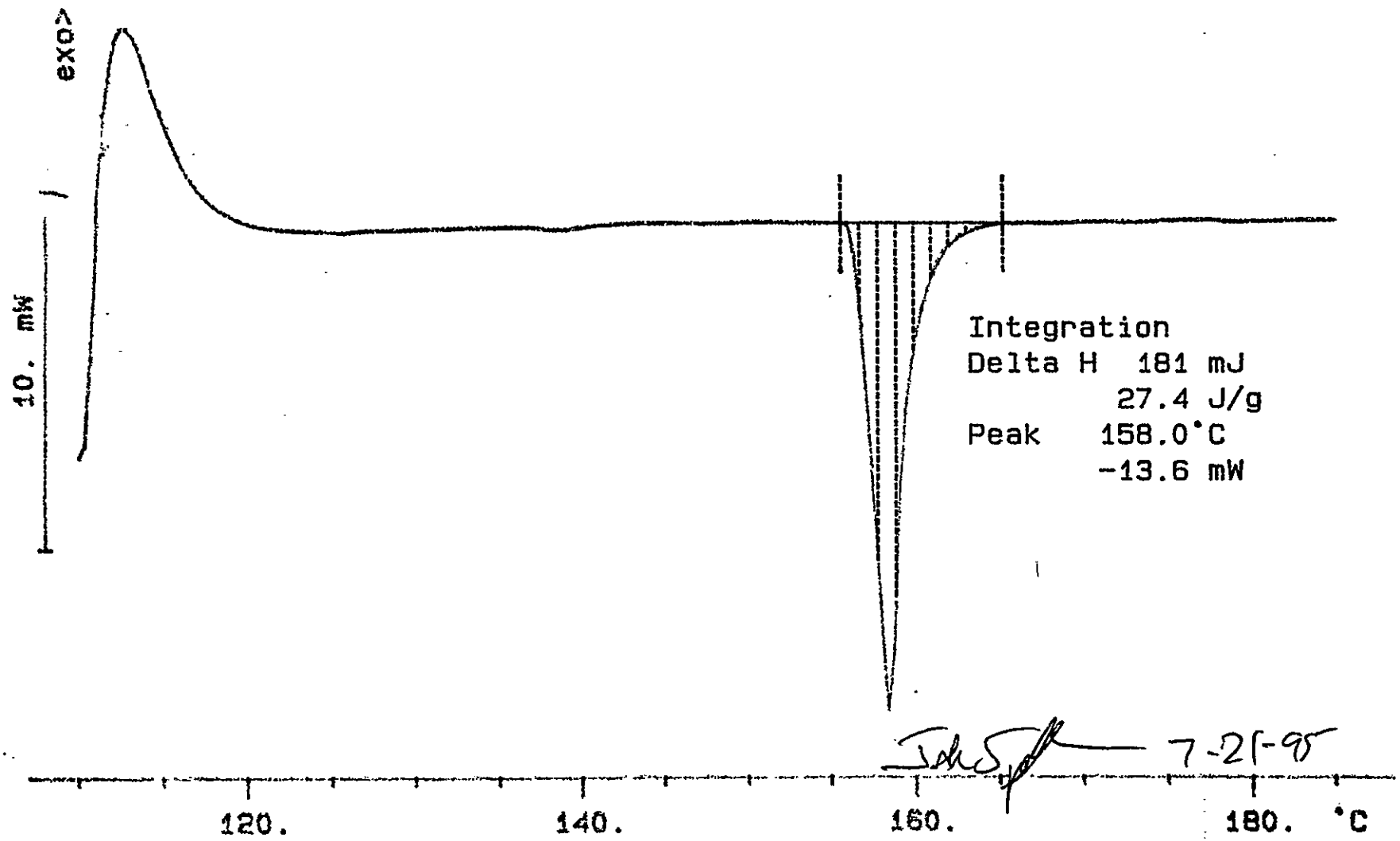
Data Entry Comments:

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.

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 453 TO 458.

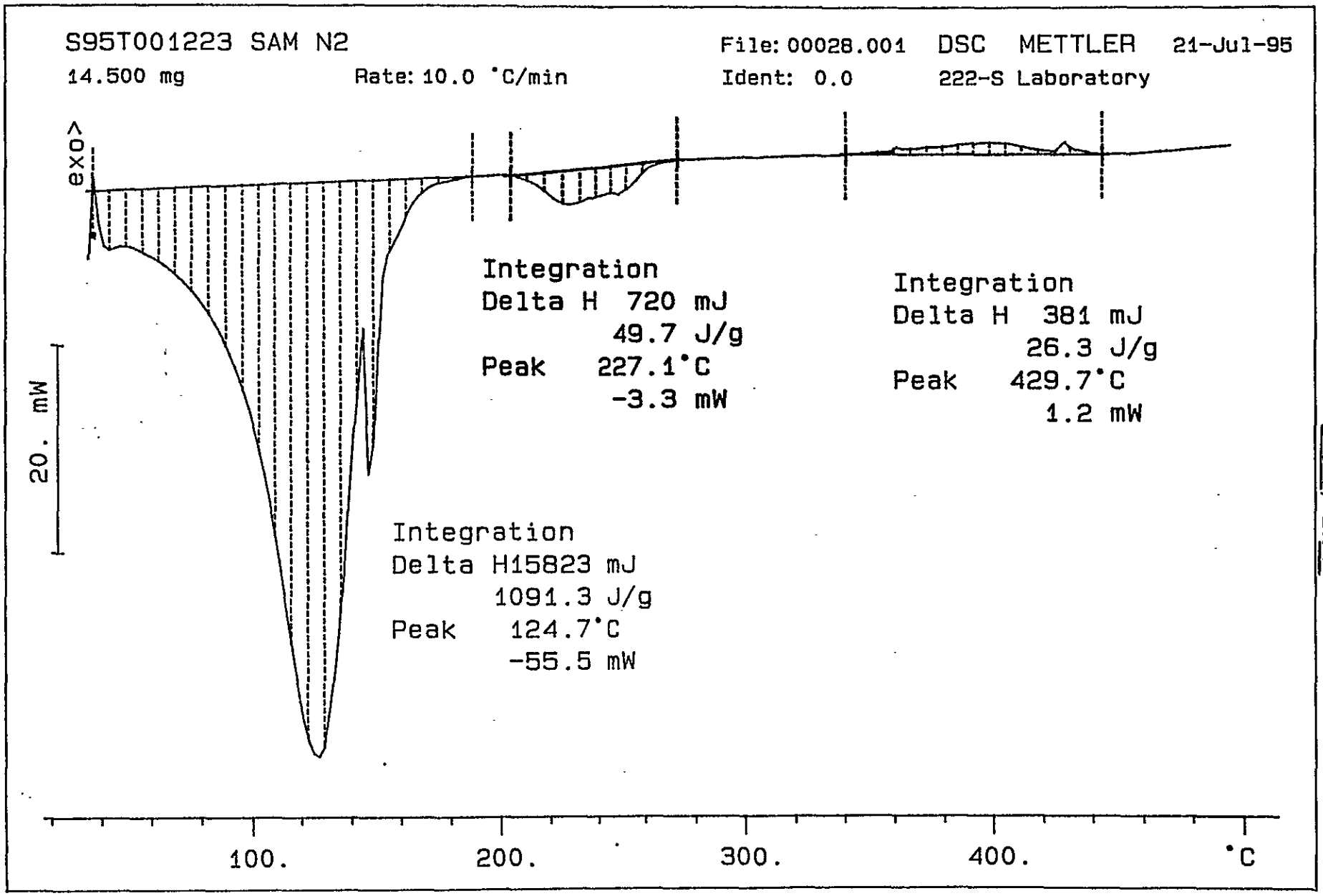
DSC STD 12N14A File: 00026.001 DSC METTLER 21-Jul-95

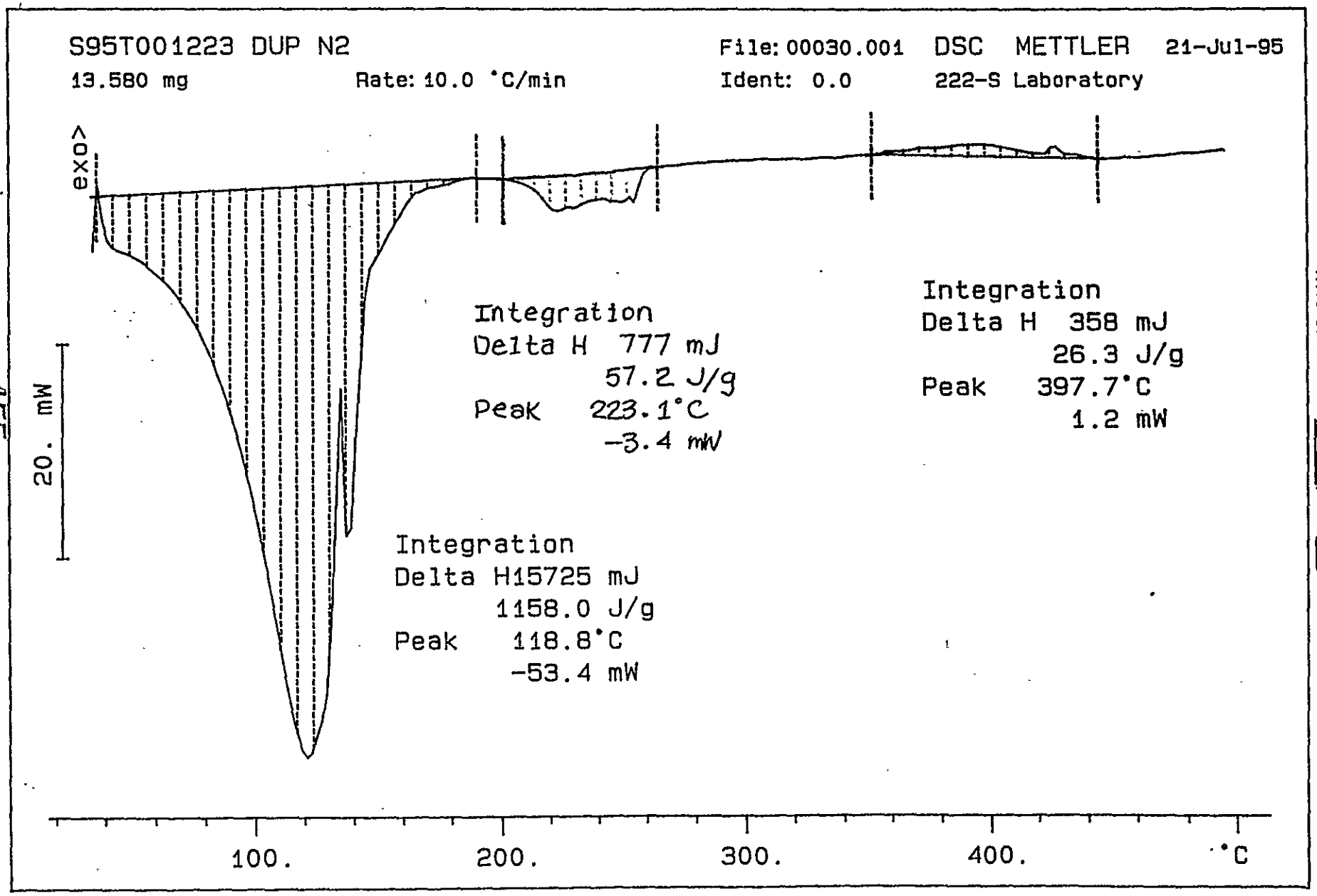
6.580 mg Rate: 10.0 °C/min Ident: 0.0 222-S Laboratory



7-21-95

WHC-SD-WM-DP-139, REV. 1

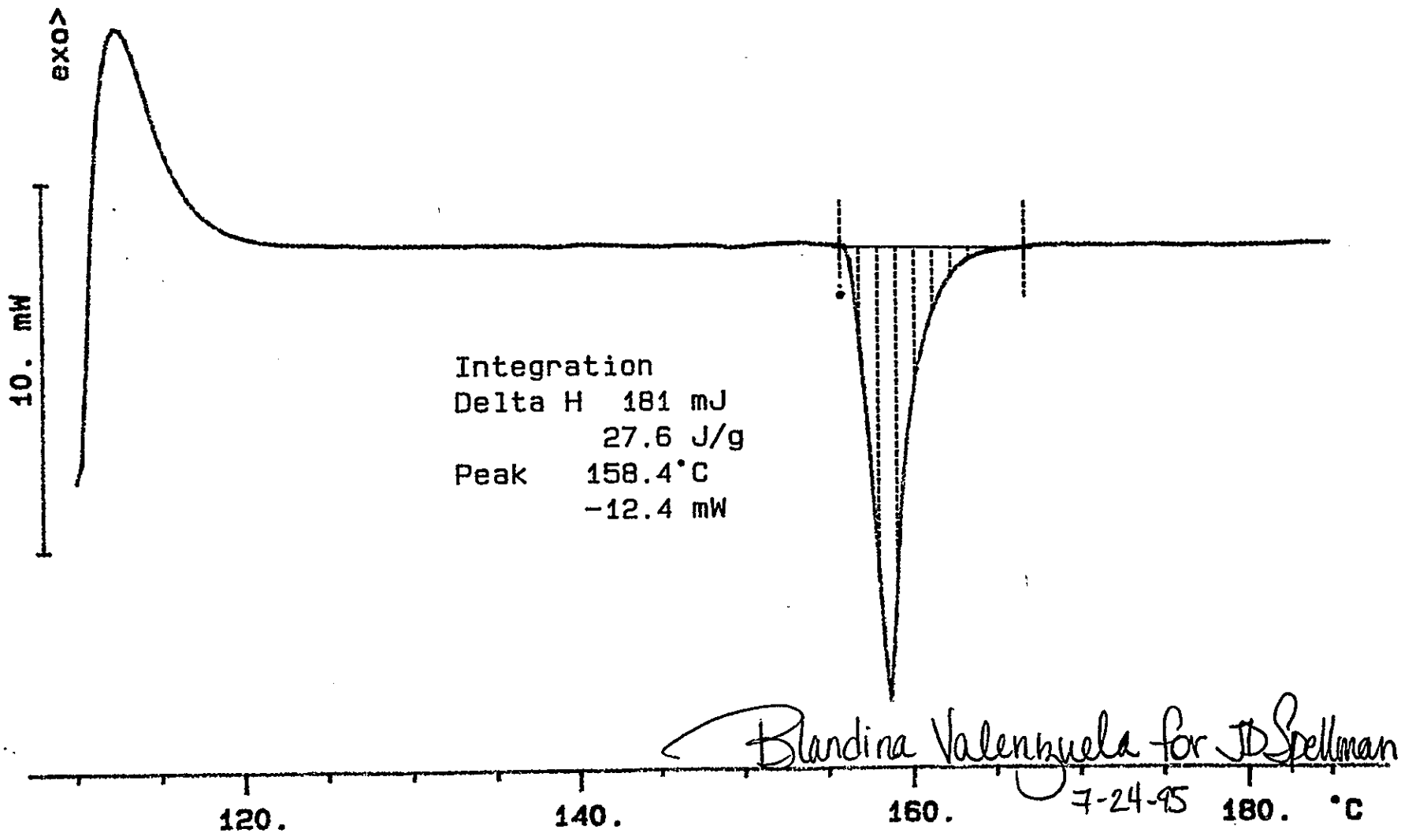

S95T001223 SAM N2
14.500 mg
Rate: 10.0 °C/min
File: 00028.001
DSC METTLER
21-Jul-95
Ident: 0.0
222-S Laboratory
exo>
20. mW
Integration
Delta H 720 mJ
49.7 J/g
Peak 227.1°C
-3.3 mW
Integration
Delta H 381 mJ
26.3 J/g
Peak 429.7°C
1.2 mW
Integration
Delta H15823 mJ
1091.3 J/g
Peak 124.7°C
-55.5 mW
100.
200.
300.
400.
°C



455

WHC-SD-WM-DP-139, REV. 1

DSC STD 12N14A
6.580 mg
Rate: 10.0 °C/min
File: 00020.001
Ident: 0.0
DSC METTLER 20-Jul-95
222-S Laboratory



Blandina Valenzuela for JD Spellman
7-24-95

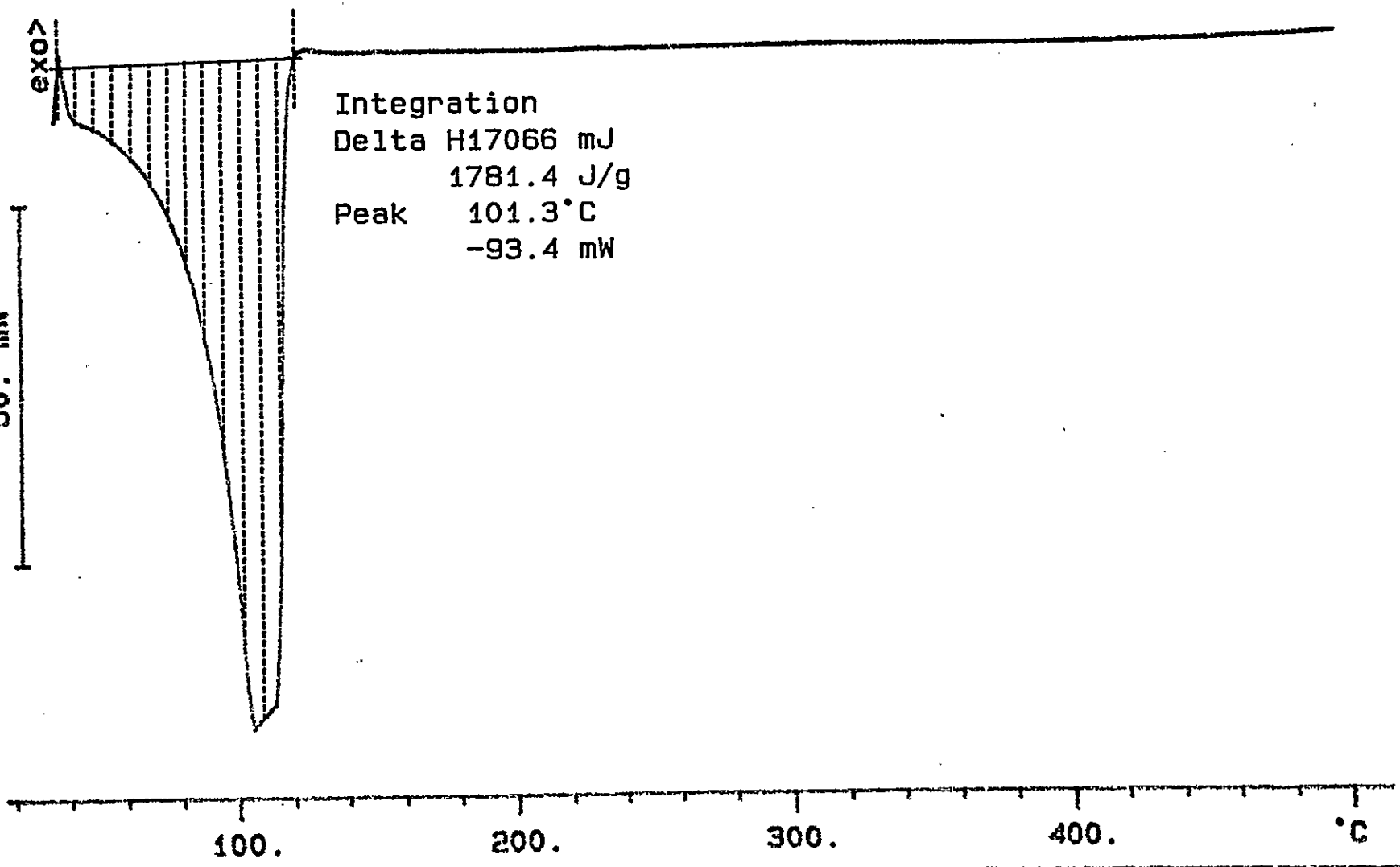
S95T001232 SAM N2

9.580 mg

Rate: 10.0 °C/min

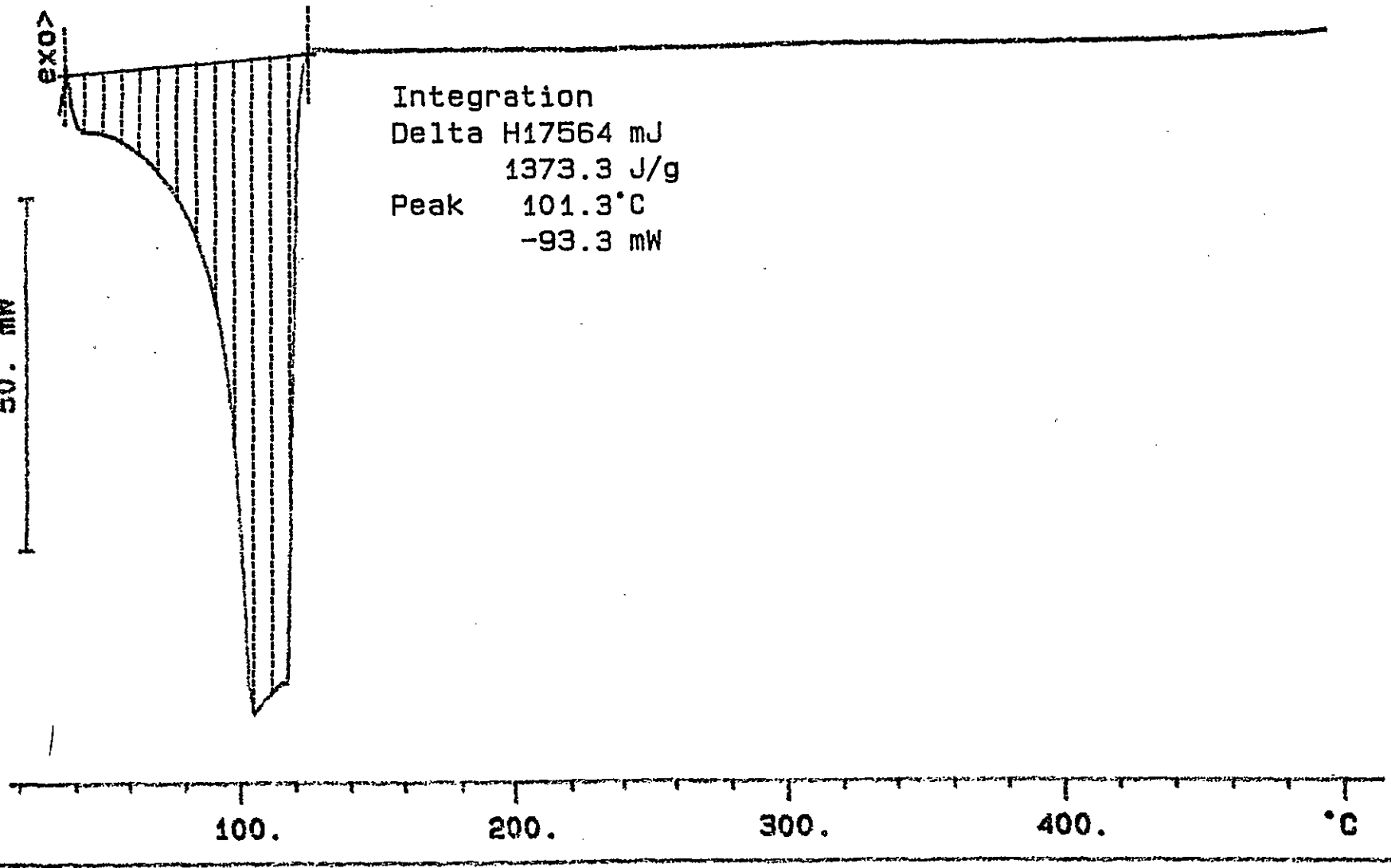
File: 00022.001 DSC METTLER 20-Jul-95

Ident: 0.0 222-S Laboratory



S95T001232 DUP N2 File: 00024.001 DSC METTLER 20-Jul-95

12.790 mg Rate: 10.0 °C/min Ident: 0.0 222-S Laboratory



LABCORE Data Entry Template for Worklist# 1802

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

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

Worklist Comment: Please run B-101 DSCs under N2. bdv

GROUP	PROJECT	S TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD				DSC-01	LIQUID	28.45	28.8	N/A	Joules/g
95000093	B-101	2 SAMPLE	S95T001247	0		DSC-01	LIQUID	N/A	3.1		Joules/g
95000093	B-101	3 DUP	S95T001247	0		DSC-01	LIQUID	3.1	3.2	N/A	Joules/g

Final page for worklist # 1802

JDS 7-14-95
Analyst Signature Date

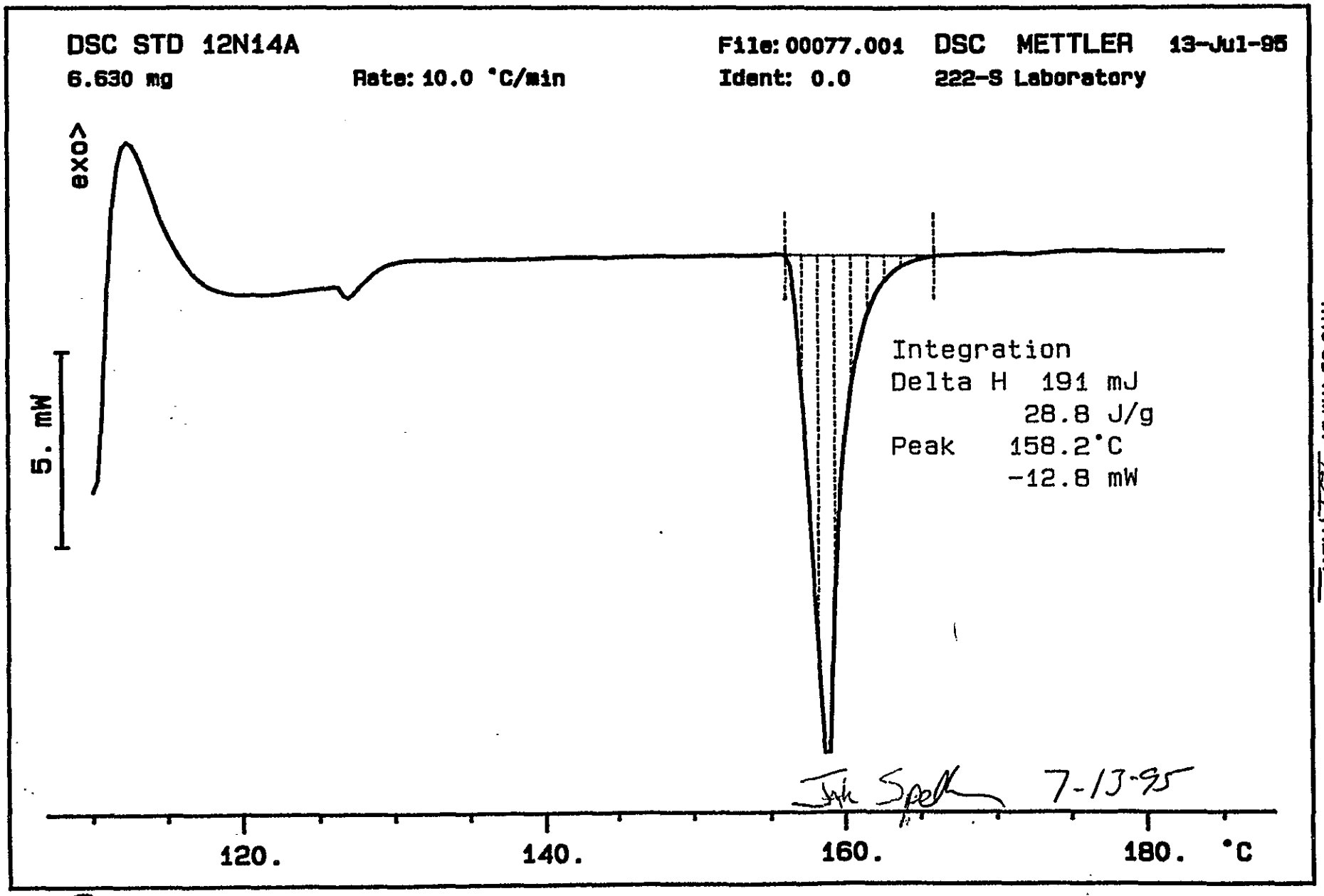
7-14-95
Analyst Signature Date

Verified ~~by~~ 7-19-95 BDV by Blandina Valenzuela 7-19-95

Data Entry Comments: The sample produced two ~~DK~~ 7-19-95 BDV endothermic regions one at 120.1°C with a delta H of 1231.6 J/g and second at 222.9°C with a delta H of 48.9 J/g

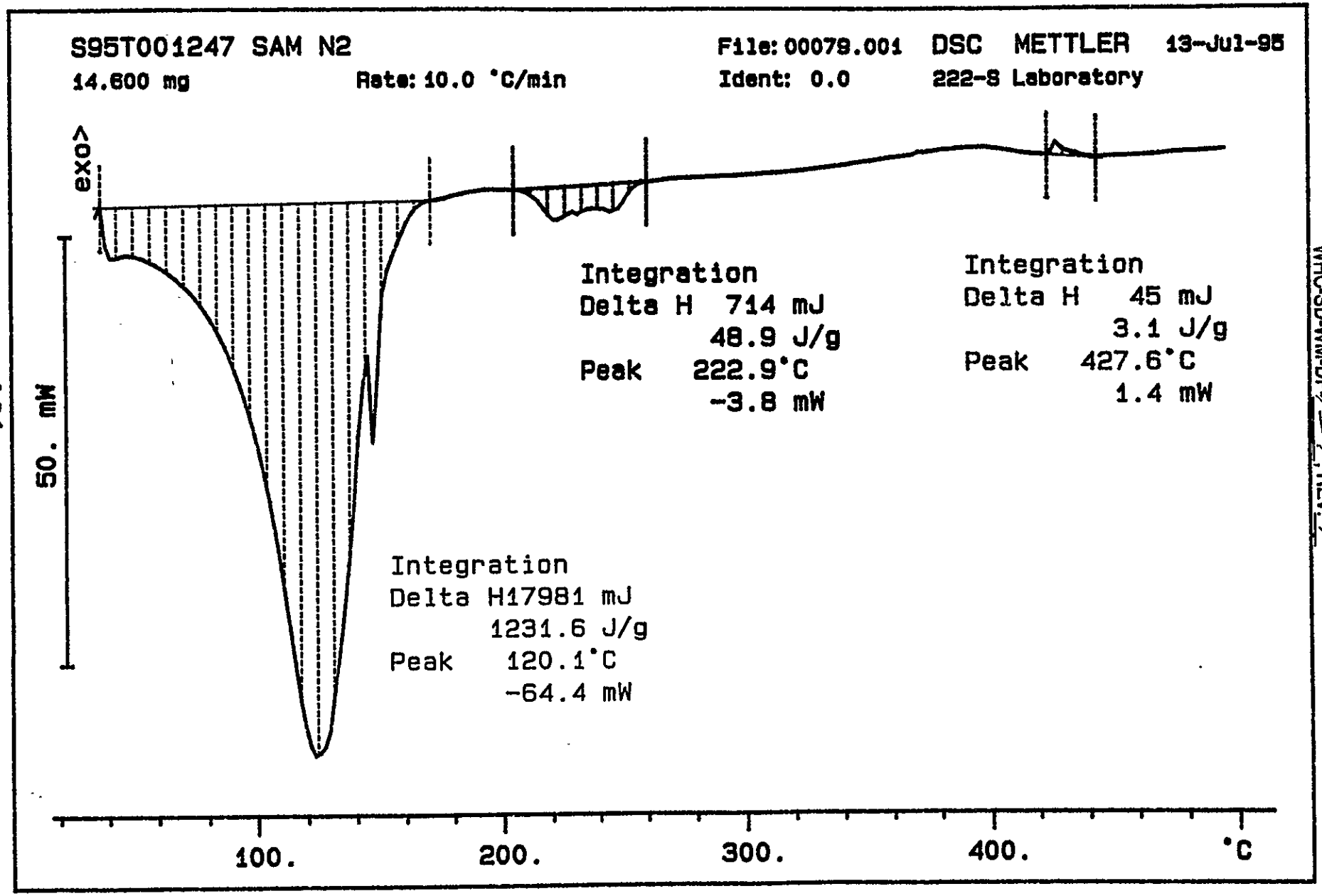
Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 460 TO 462.

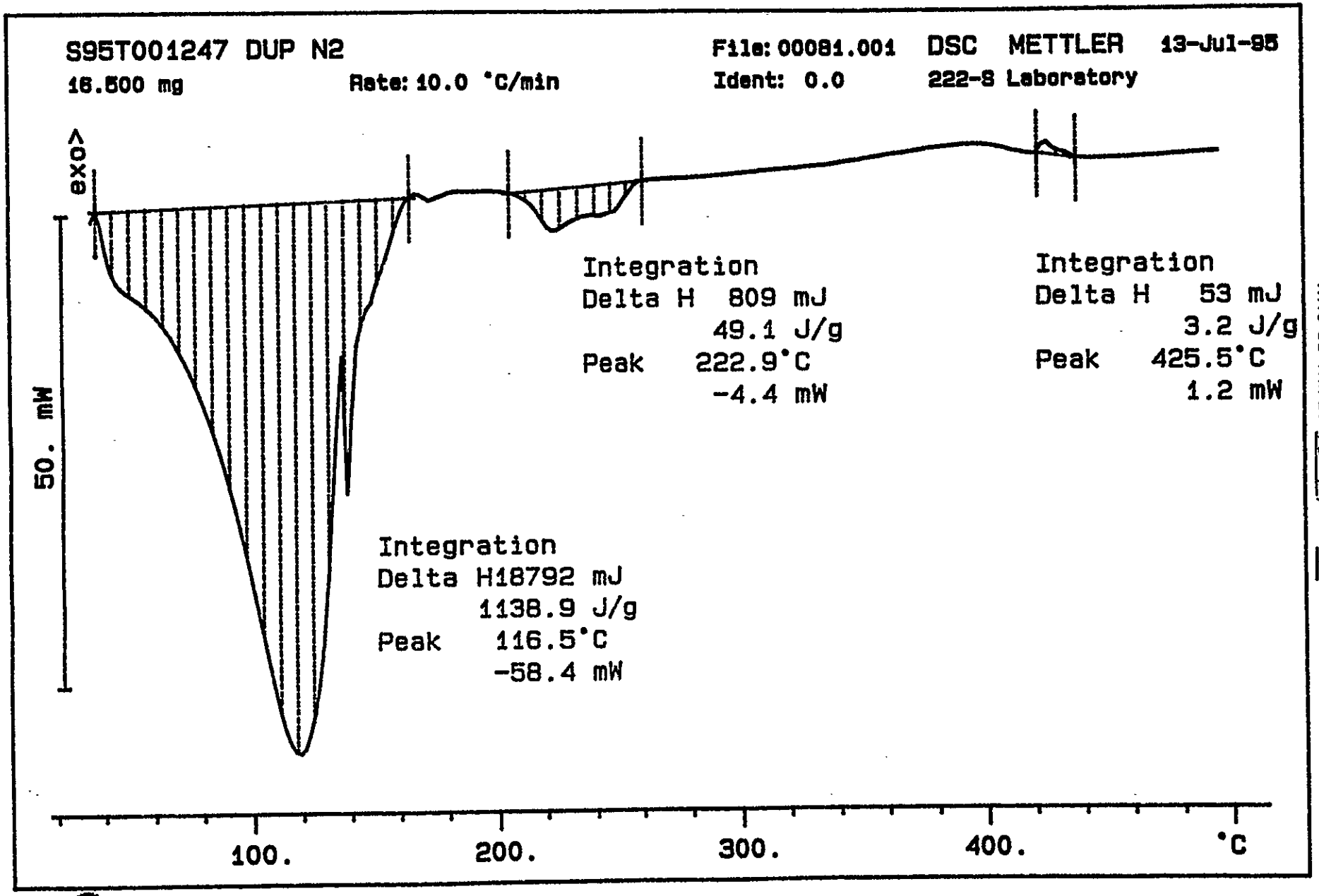


Jth Spell 7-13-95

WHC-SD-WM-DP-139, REV. 1



WHC-SD-WM-DP-139, REV. 1



WHC-SD-WM-DP-131, REV. 1

LABCORE Data Entry Template for Worklist# 1918

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

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

Worklist Comment: Please run B-101 DSCs under N2. bdv

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				DSC-01	SOLID	28.45	31.0	N/A	Joules/g
95000091	B-101	2	SAMPLE	S95T001217	1		DSC-01	SOLID	N/A	186.7		Joules/g
95000091	B-101	3	DUP	S95T001217	1		DSC-01	SOLID	186.7	182.3	N/A	Joules/g

Final page for worklist # 1918

Jah Spell 7-27-95
Analyst Signature Date

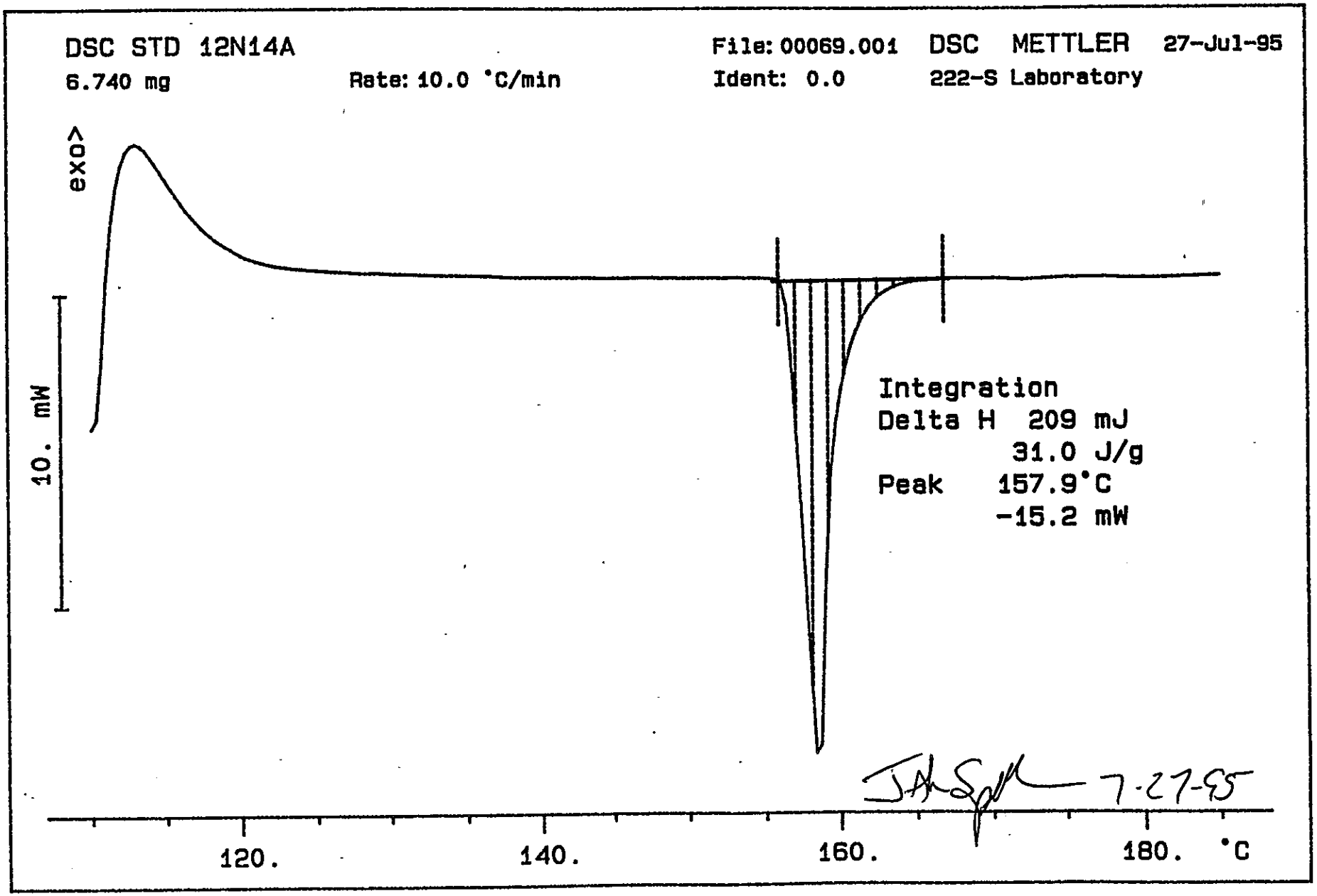
[illegible] 7-27-95
Analyst Signature Date

Verified by Blandina Valenzuela 7-28-95

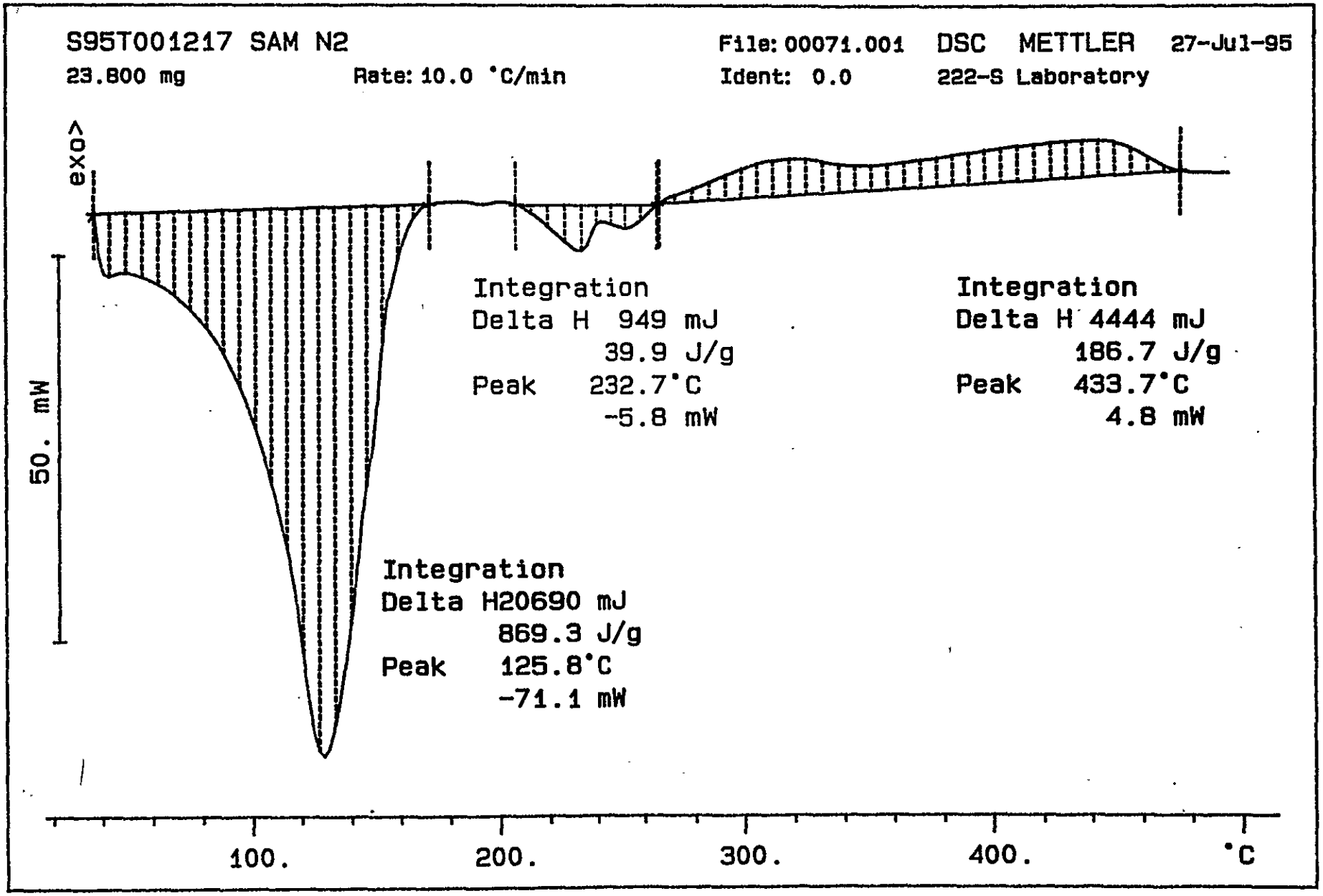
Data Entry Comments: Sample produced two endothermic regions one at 128.5°C with a delta H of 862.8 J/g and second at 232.8°C with a delta H of 41.8 J/g.

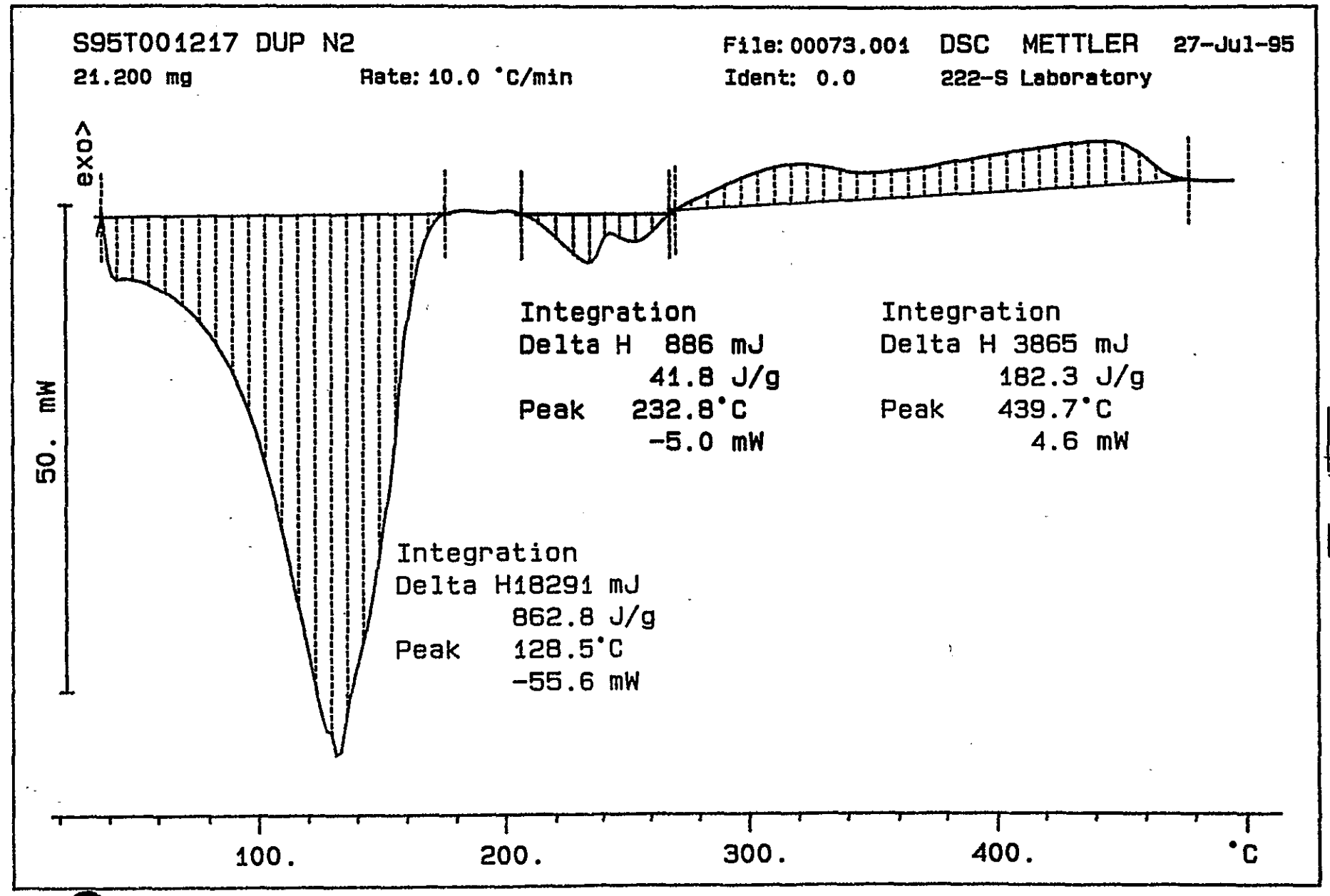
Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 464 TO 466.



7-27-95


S95T001217 SAM N2
23.800 mg
Rate: 10.0 °C/min
File: 00071.001
Ident: 0.0
DSC METTLER
222-S Laboratory
27-Jul-95
exo>
50. mW
Integration
Delta H 949 mJ
39.9 J/g
Peak 232.7°C
-5.8 mW
Integration
Delta H 4444 mJ
186.7 J/g
Peak 433.7°C
4.8 mW
Integration
Delta H20690 mJ
869.3 J/g
Peak 125.8°C
-71.1 mW
100.
200.
300.
400.
°C



WHC-SD-WM-DP-139, REV. 1

LABCORE Data Entry Template for Worklist# 1955

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

Method: LA-514-113 Rev/Mod —

Worklist Comment: Calculated dry DSC for B-101. bdv

GROUP	PROJECT	S TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
95000091	B-101	1 SAMPLE	S95T001214	0		DSC-02	SOLID	N/A	289		Joules/g Dry
95000091	B-101	2 DUP	S95T001214	0		DSC-02	SOLID	289	261	N/A	Joules/g Dry
95000091	B-101	3 SAMPLE	S95T001217	0		DSC-02	SOLID	N/A	~~364~~ 322 8-2-95 BDV		Joules/g Dry
95000091	B-101	4 DUP	S95T001217	0		DSC-02	SOLID	~~364~~ 322	~~270~~ 314 8-2-95 BDV	N/A	Joules/g Dry
95000091	B-101	5 SAMPLE	S95T001220	0		DSC-02	SOLID	N/A	Ø		Joules/g Dry
95000091	B-101	6 DUP	S95T001220	0		DSC-02	SOLID	Ø	Ø	N/A	Joules/g Dry
95000091	B-101	7 SAMPLE	S95T001229	0		DSC-02	SOLID	N/A	Ø		Joules/g Dry
95000091	B-101	8 DUP	S95T001229	0		DSC-02	SOLID	Ø	Ø	N/A	Joules/g Dry
95000093	B-101	9 SAMPLE	S95T001235	0		DSC-02	SOLID	N/A	28		Joules/g Dry
95000093	B-101	10 DUP	S95T001235	0		DSC-02	SOLID	28	29	N/A	Joules/g Dry
95000093	B-101	11 SAMPLE	S95T001238	0		DSC-02	SOLID	N/A	248		Joules/g Dry
95000093	B-101	12 DUP	S95T001238	0		DSC-02	SOLID	248	251	N/A	Joules/g Dry
95000093	B-101	13 SAMPLE	S95T001241	0		DSC-02	SOLID	N/A	Ø		Joules/g Dry
95000093	B-101	14 DUP	S95T001241	0		DSC-02	SOLID	Ø	Ø	N/A	Joules/g Dry
95000093	B-101	15 SAMPLE	S95T001244	0		DSC-02	SOLID	N/A	5		Joules/g Dry
95000093	B-101	16 DUP	S95T001244	0		DSC-02	SOLID	5	5	N/A	Joules/g Dry

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# 1955

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT

Final page for worklist # 1955

Data entered + verified by
Blandina Valenzuela 8-2-95

Analyst Signature Date

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.

LABCORE Data Entry Template for Worklist# 1956

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

Method: LA-514-113 Rev/Mod —

Worklist Comment: Calculated dry DSC for B-101. bdv

GROUP	PROJECT	S TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
95000091	B-101	1 SAMPLE	S95T001223	0		DSC-02	LIQUID	N/A	52		Joules/g Dry
95000091	B-101	2 DUP	S95T001223	0		DSC-02	LIQUID	52	52	N/A	Joules/g Dry
95000093	B-101	3 SAMPLE	S95T001232	0		DSC-02	LIQUID	N/A	Ø		Joules/g Dry
95000093	B-101	4 DUP	S95T001232	0		DSC-02	LIQUID	Ø	Ø	N/A	Joules/g Dry
95000093	B-101	5 SAMPLE	S95T001247	0		DSC-02	LIQUID	N/A	6		Joules/g Dry
95000093	B-101	6 DUP	S95T001247	0		DSC-02	LIQUID	6	6	N/A	Joules/g Dry

Final page for worklist # 1956

Data entered + verified by
Blandina Valenzuela 8-2-95

Analyst Signature **Date**

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.

LABCORE Data Entry Template for Worklist# 1975

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

Method: LA-514-113 Rev/Mod —

Worklist Comment: Calculated dry DSC for B-101. bdv

GROUP	PROJECT	S TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
95000091	B-101	1 SAMPLE	S95T001217	1		DSC-02	SOLID	N/A	~~364~~ 322	8-10-95 BDV	Joules/g Dry
95000091	B-101	2 DUP	S95T001217	1		DSC-02	SOLID	8-10-95 BDV ~~364~~ 322	~~270~~ 314	8-10-95 BDV N/A	Joules/g Dry

Final page for worklist # 1975

Data entered + verified by

Blandina Valenzuela ~~8-4-~~ 8-8-94 BDV

Analyst Signature Date 8-8-94

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.

CALCULATED DRY DSC			
SAMPLE NO.	DSC RESULT (J/g)	TGA RESULT (% water)	DRY DSC RESULT
S95T001214	193.1	33.08	289
1214D	174.5	33.08	261
1217	211.0	42.00	364
1217D	156.6	42.00	270
1217	186.7	8-2-95 BDV ~~18.75~~ 42.00	322
1217D	182.3	42.00	314
1220	Ø	18.75	Ø
1220D	Ø	18.75	Ø
1223	26.3	49.52	52
1223D	26.3	49.52	52
1229	Ø	~~48.31~~ 15.56 8-8-95 BDV	Ø
1229D	Ø	~~48.31~~ 15.56 8-8-95	Ø
1232	Ø	99.83	Ø
1232D	Ø	99.83	Ø
1235	8-2-95 BDV ~~24.4~~ 24.0	BDV 8-8-95 ~~15.56~~ 42.91	28.~~0~~ 8-2-95 BDV 46
1235D	8-2-95 ~~24.8~~ 24.8	BDV 8-8-95 ~~15.56~~ 42.91	29.~~0~~ 8-2-95 BDV 48
1238	163.6	34.10	248
1238D	165.4	34.10	257
1241	Ø	22.70 *	Ø
1241D	Ø	22.70*	Ø
1244	2.9	45.17•	5
1244D	2.7	45.17•	5
1247	3.1	50.47	6
1247D	3.2	50.47	6

* Takes into account 4 results

• Takes into account 3 results

LABCORE Data Entry Template for Worklist# 1803

Analyst: ADP **Instrument:** TGA0 **Book #** 65N8-A

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

Worklist Comment: Please run B-101 TGAs under N2. bdv

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				TGA-01	SOLID	59.74	60.69	N/A	%
95000091	B-101	2	SAMPLE	S95T001214	0		TGA-01	SOLID	N/A	33.07		%
95000091	B-101	3	DUP	S95T001214	0		TGA-01	SOLID	33.07	33.09	N/A	%
95000091	B-101	4	SAMPLE	S95T001217	0		TGA-01	SOLID	N/A	41.51		%
95000091	B-101	5	DUP	S95T001217	0		TGA-01	SOLID	41.51	42.49	N/A	%

Final page for worklist # 1803

Anthony Purentor 7-16-95
Analyst Signature Date

[signature] 7-17-95
Analyst Signature Date

Verified by Blandina Valenzuela (7-19-95)

Data Entry Comments:

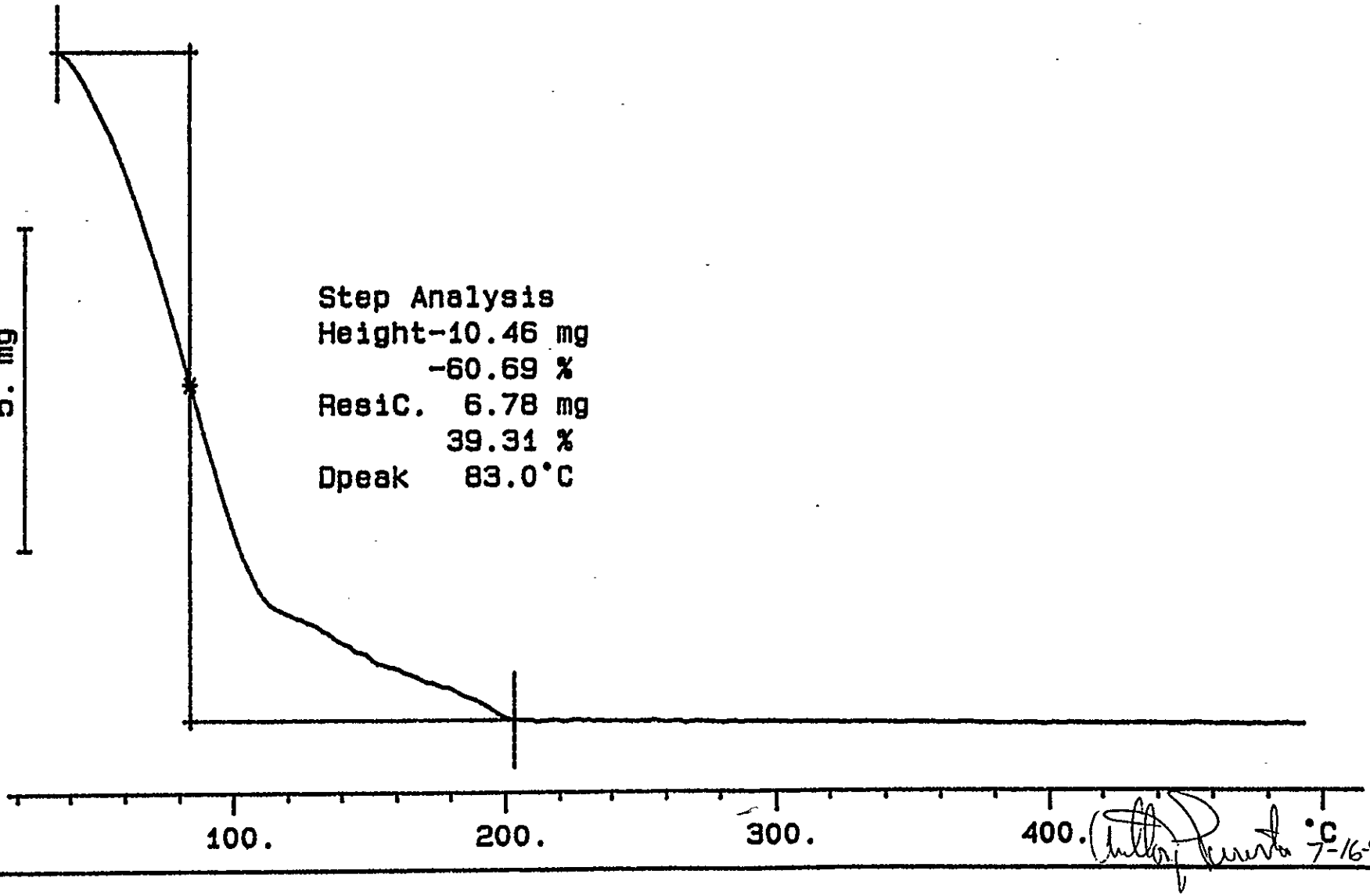
Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

BEST AVAILABLE COPY

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 473 TO 477

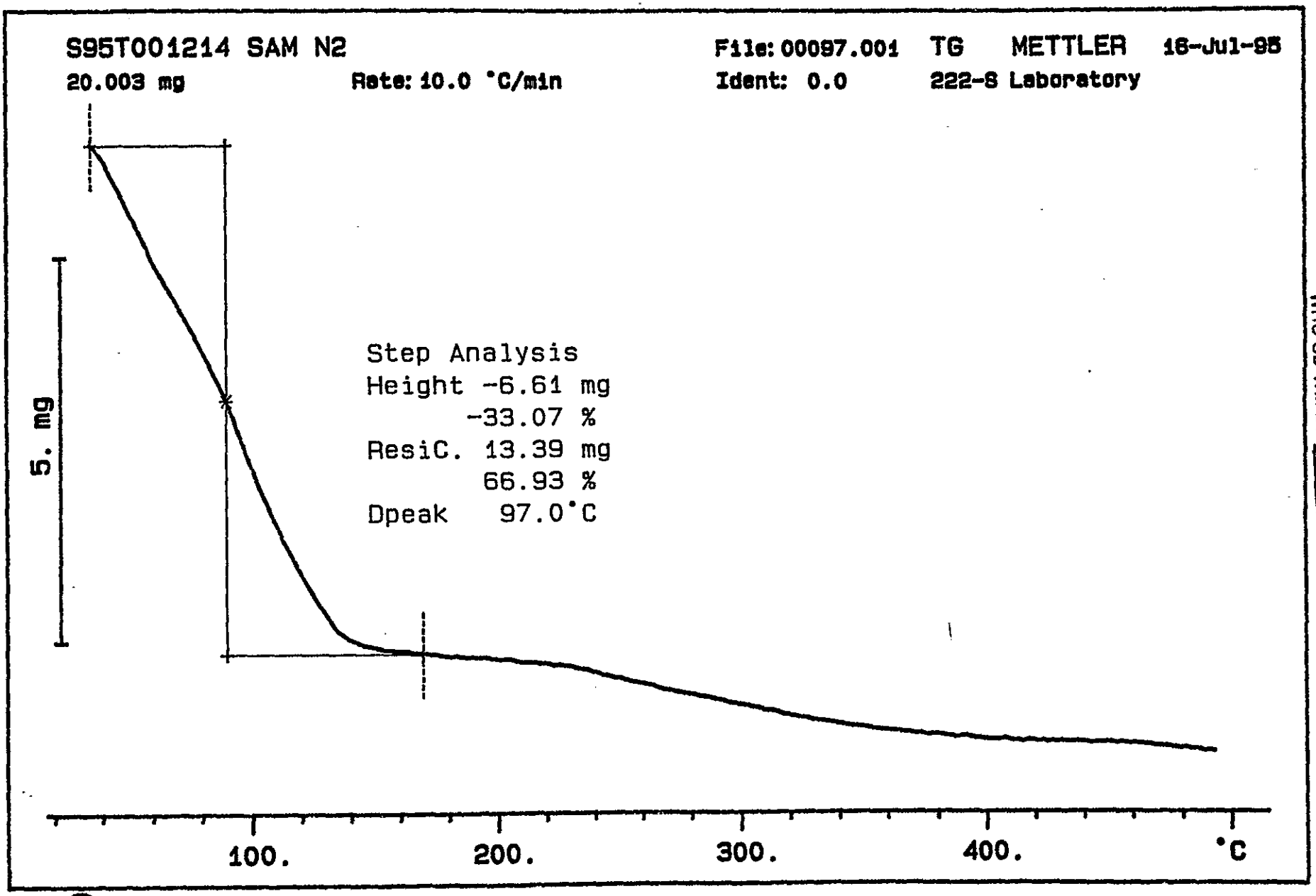
TGA STD 65N8-A N2 File: 00096.001 TG METTLER 16-Jul-95

17.243 mg Rate: 10.0 °C/min Ident: 0.0 222-S Laboratory



7-16-95

WHC-SD-WM-DP-139, REV. 1


S95T001214 SAM N2
20.003 mg
Rate: 10.0 °C/min
File: 00097.001
Ident: 0.0
TG
METTLER
222-S Laboratory
16-Jul-95
Step Analysis
Height -6.61 mg
-33.07 %
ResiC. 13.39 mg
66.93 %
Dpeak 97.0°C
5. mg
100.
200.
300.
400.
°C

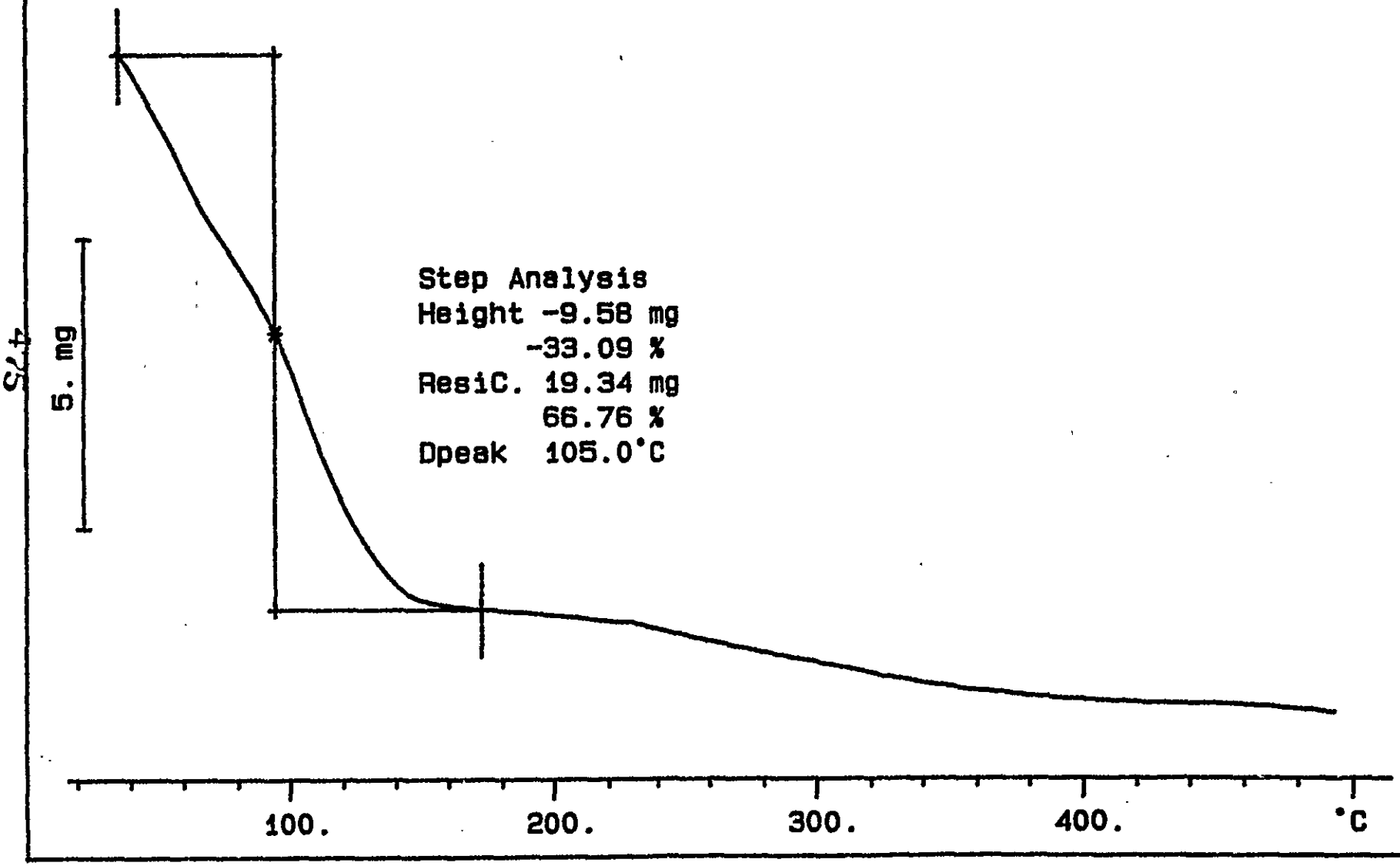
S95T001214 DUP N2

28.966 mg

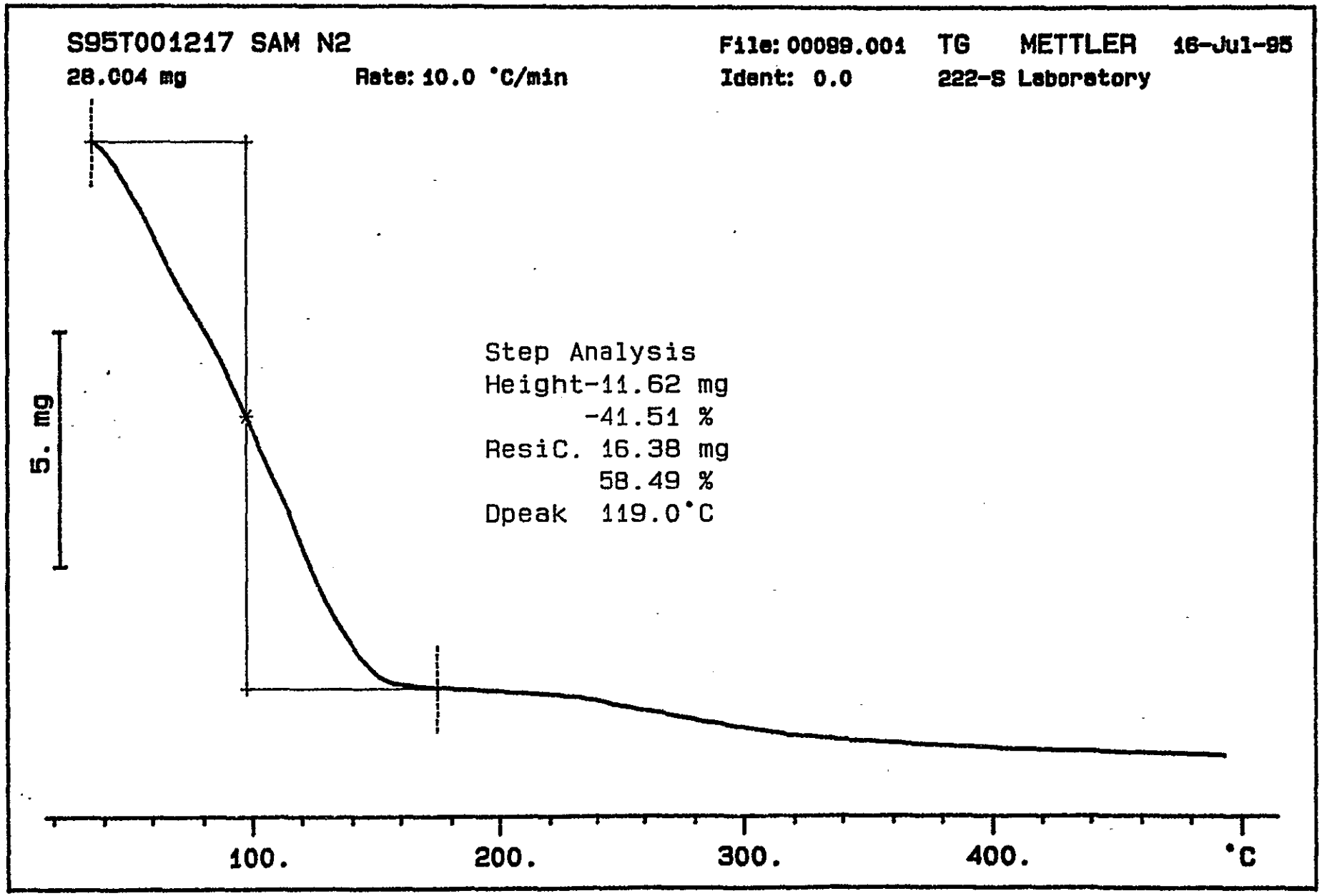
Rate: 10.0 °C/min

File: 00098.001 TG METTLER 16-Jul-95

Ident: 0.0 222-S Laboratory



WHC-SD-WM-DP-132, REV. 1


S95T001217 SAM N2
28.004 mg
Rate: 10.0 °C/min
File: 00089.001
Ident: 0.0
TG
METTLER
222-S Laboratory
16-Jul-95
Step Analysis
Height-11.62 mg
-41.51 %
ResiC. 16.38 mg
58.49 %
Dpeak 119.0°C
5. mg
100.
200.
300.
400.
°C

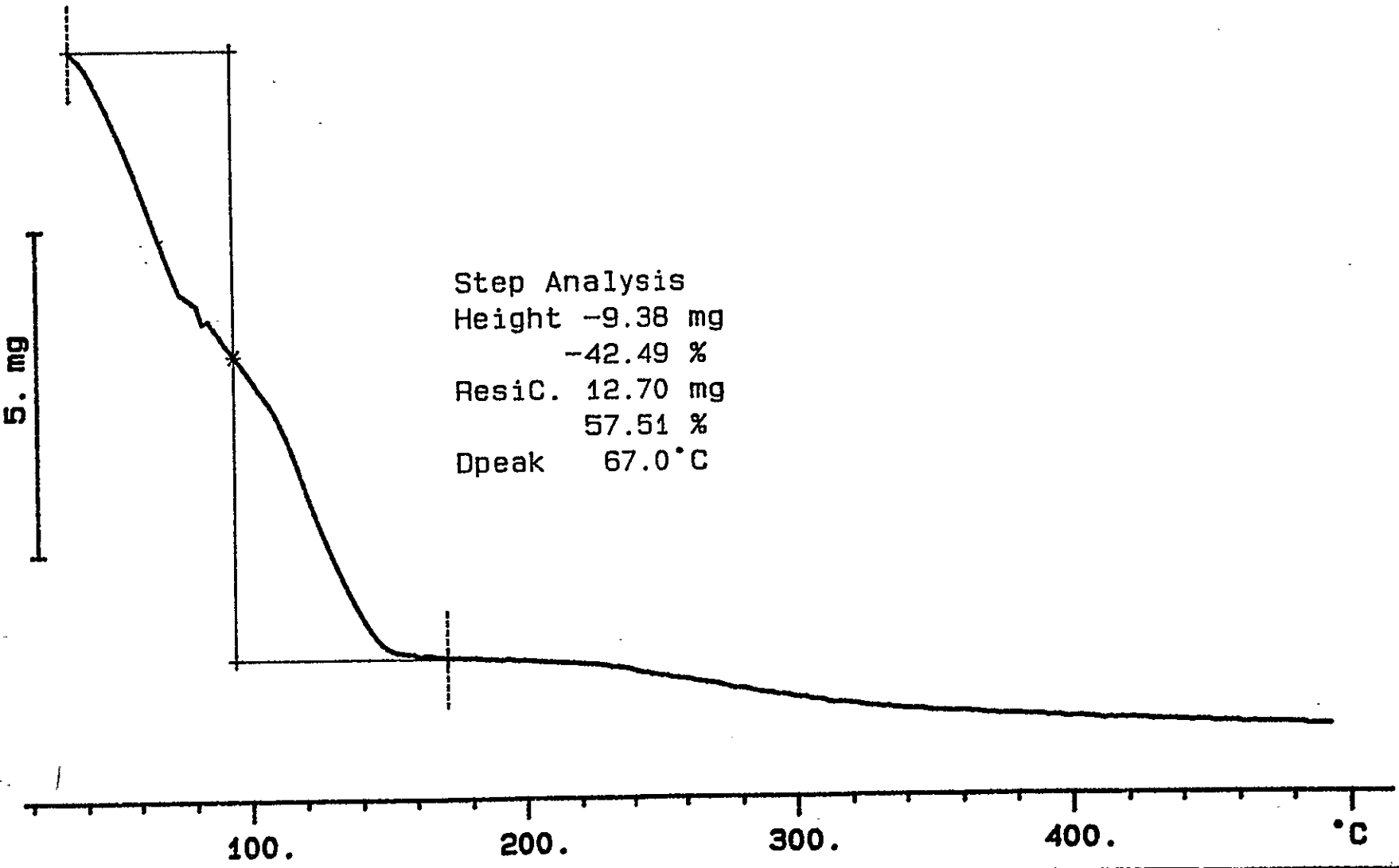
S95T001217 DUP N2

22.077 mg

Rate: 10.0 °C/min

File: 00100.001 TG METTLER 16-Jul-95

Ident: 0.0 222-S Laboratory



Step Analysis
Height -9.38 mg
-42.49 %
ResiC. 12.70 mg
57.51 %
Dpeak 67.0°C

LABCORE Data Entry Template for Worklist# 1804

Analyst: Jds **Instrument:** TGA0 1 **Book #** 65N8A

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

Worklist Comment: Please run B-101 TGAs under N2. bdv

GROUP	PROJECT	S TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD				TGA-01	SOLID	59.74	57.56	N/A	%
95000091	B-101	2 SAMPLE	S95T001220	0		TGA-01	SOLID	N/A	18.75		%
95000091	B-101	3 DUP	S95T001220	0		TGA-01	SOLID	18.75	18.74	N/A	%

Final page for worklist # 1804

Jds 7-25-95
Analyst Signature Date

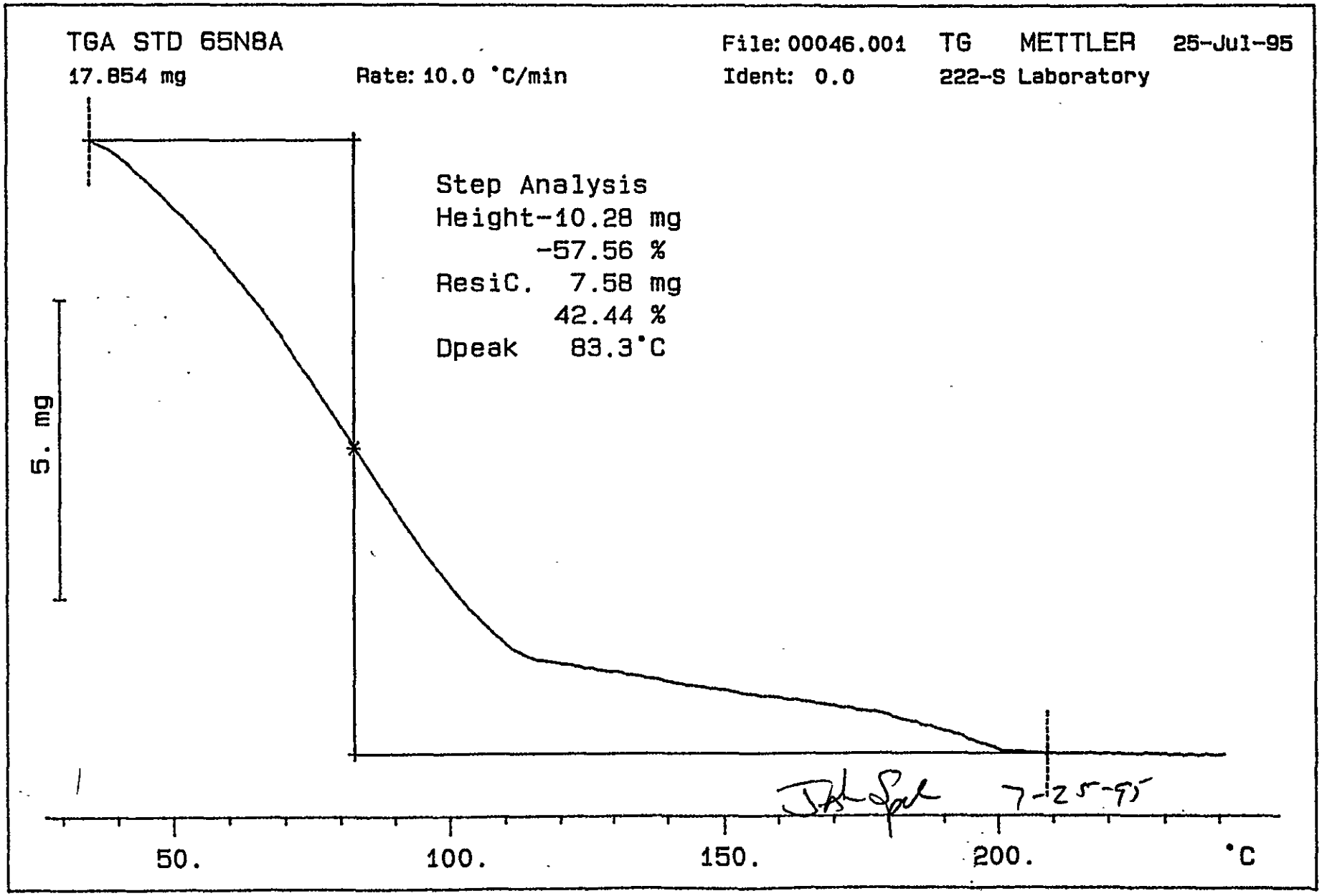
7-27-95
Analyst Signature Date

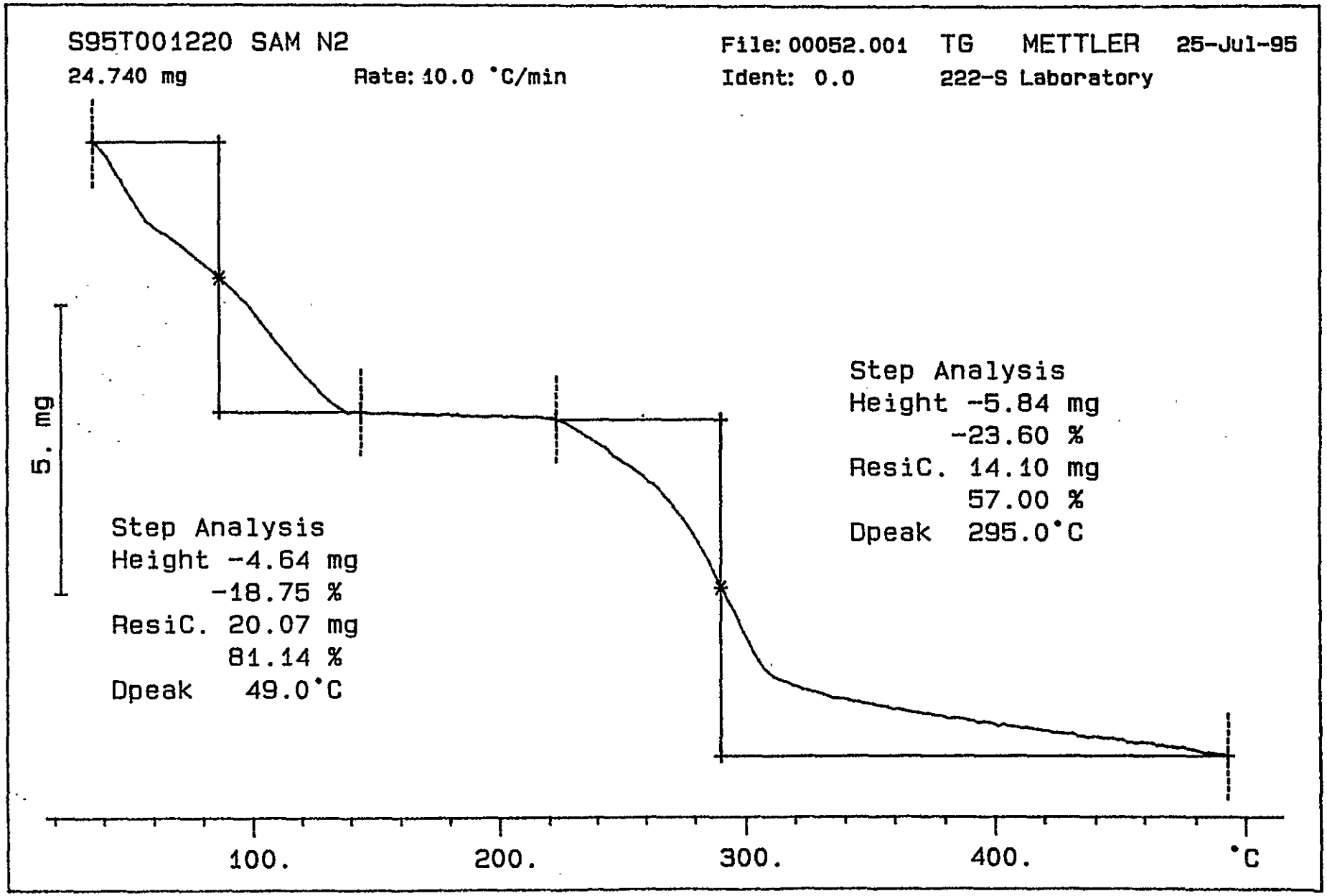
Verified by Blandina D. Valenzuela 7-28-95

Data Entry Comments: Sample produced ~~two~~ 7-26-95 another weight loss step at approximately 290°C with a weight loss of 23.60%

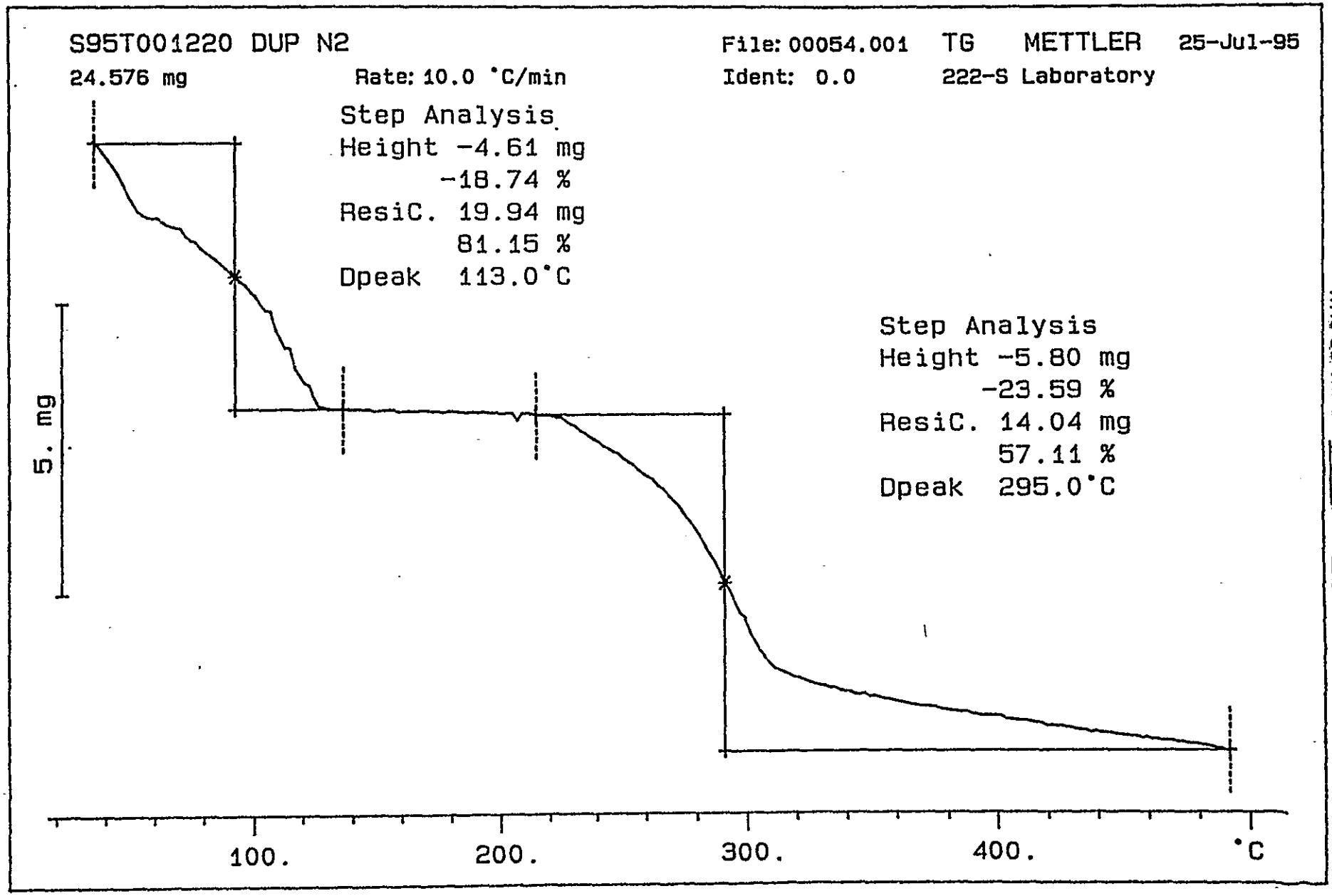
Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 479 TO 481.




S95T001220 SAM N2
24.740 mg
Rate: 10.0 °C/min
File: 00052.001
TG
METTLER
25-Jul-95
Ident: 0.0
222-S Laboratory
5. mg
Step Analysis
Height -4.64 mg
-18.75 %
ResiC. 20.07 mg
81.14 %
Dpeak 49.0°C
Step Analysis
Height -5.84 mg
-23.60 %
ResiC. 14.10 mg
57.00 %
Dpeak 295.0°C
100.
200.
300.
400.
°C

BEST AVAILABLE COPY



WHC-SD-WM-DP-130, REV. 1

LABCORE Data Entry Template for Worklist# 1805

Analyst: JDS **Instrument:** TGA0 1 **Book #** ~~12N14A~~ 65N8A 8-1-95 BDV

Method: LA-560-112 Rev/Mod ~~B-1~~ A-2 8-1-95 BDV

Worklist Comment: Please run B-101 TGAs under N2. bdv WHC-SD-WM-DP-139, REV. 1

GROUP	PROJECT	S TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD				TGA-01	SOLID	59.74	61.88	N/A	%
95000091	B-101	2 SAMPLE	S95T001229	0		TGA-01	SOLID	N/A 16.42	~~17.80~~ 14.69	16.42 8-8-95 BDV	%
95000091	B-101	3 DUP	S95T001229	0		TGA-01	SOLID	~~17.80~~	~~48.62~~ 41.68	8-8-95 BDV N/A	%
95000093	B-101	4 SAMPLE	S95T001235	0		TGA-01	SOLID	N/A 41.68	~~16.42~~ 44.13	8-8-95 BDV	%
95000093	B-101	5 DUP	S95T001235	0		TGA-01	SOLID	~~16.42~~	~~14.69~~	8-8-95 BDV N/A	%

Final page for worklist # 1805

Analyst Signature 7-19-95 Date

Analyst Signature 7-20-95 Date

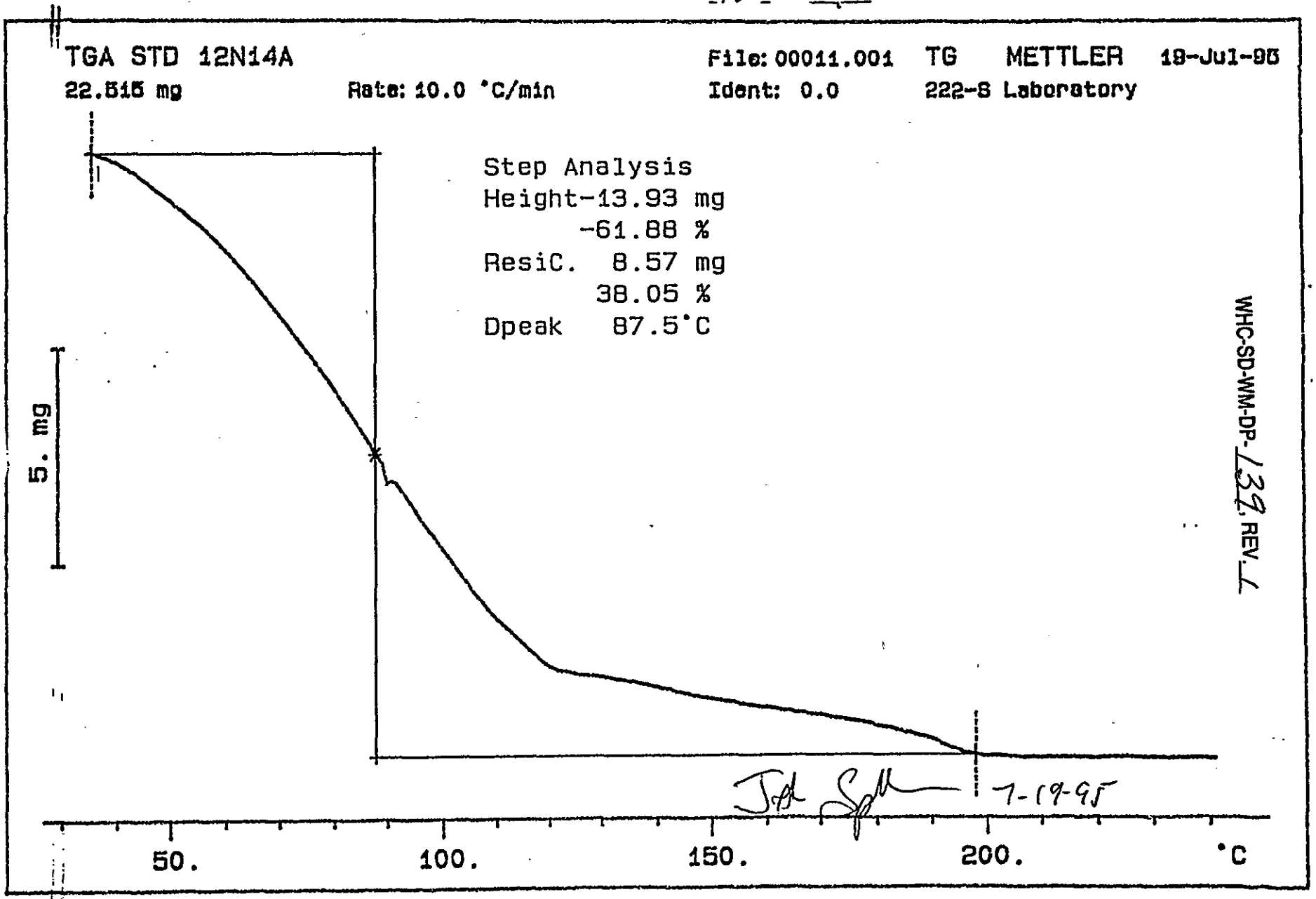
Verified by Blandina Valenzuela 7-24-95

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.

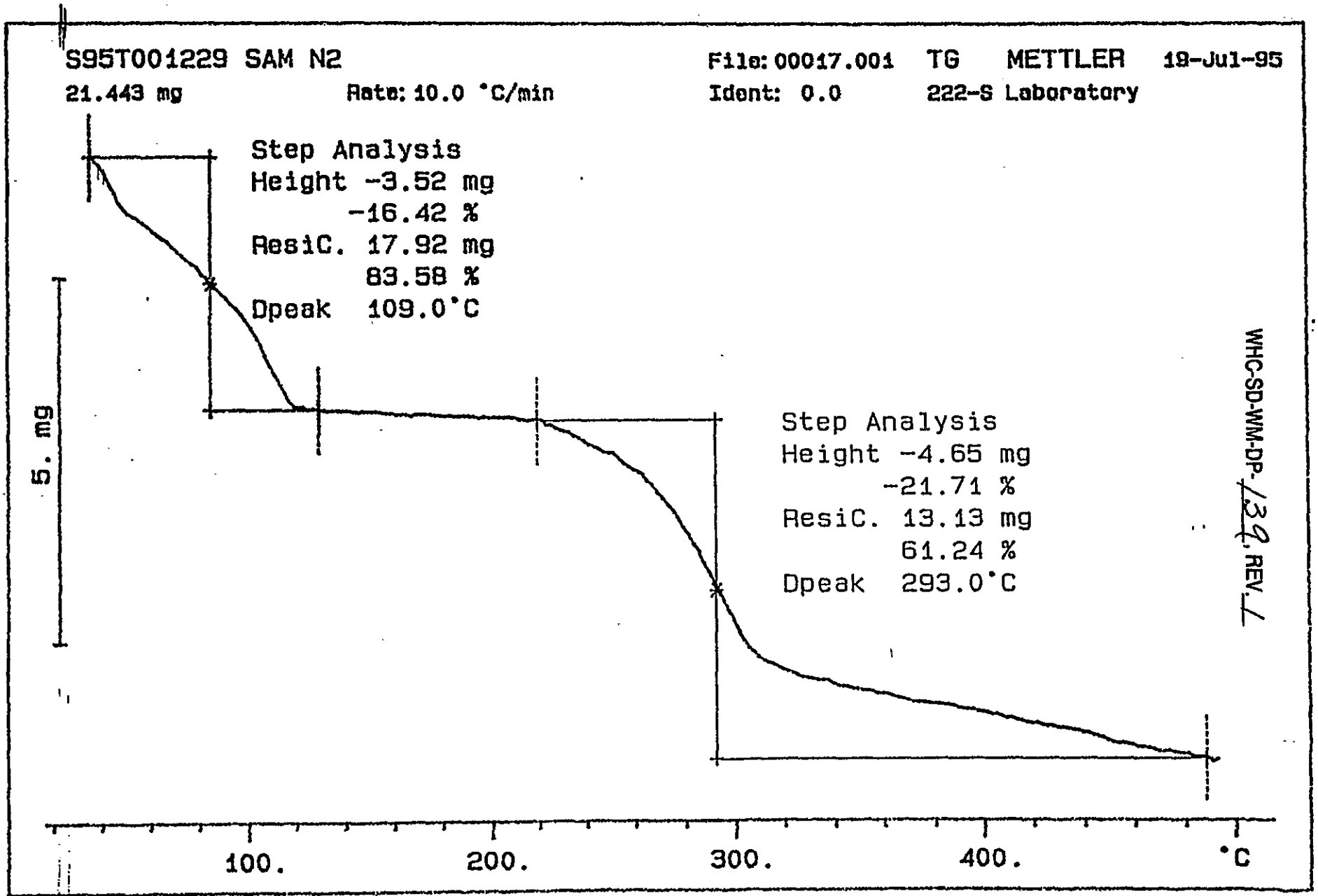
BEST AVAILABLE COPY

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 483 TO 487.



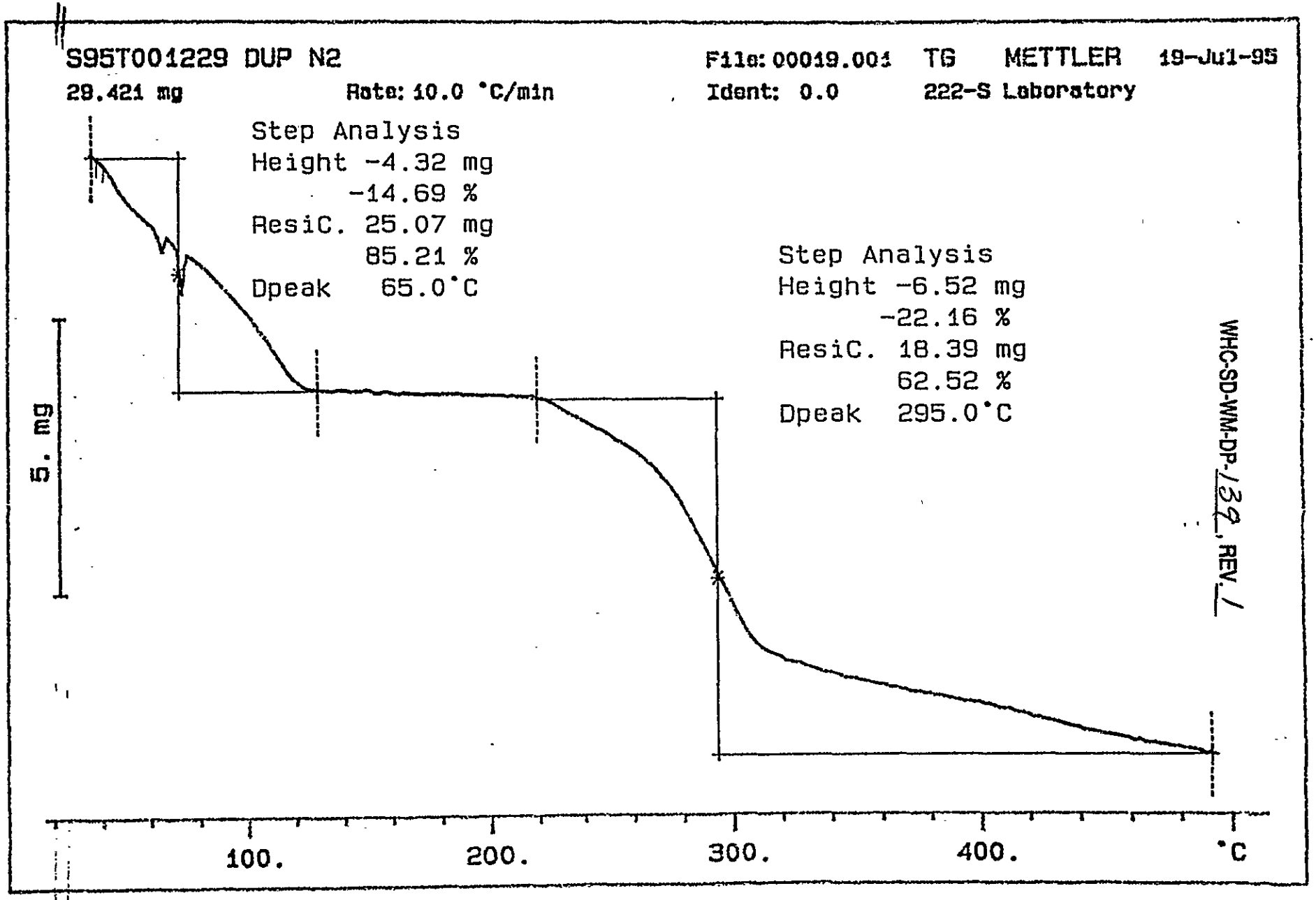
WHC-SD-WM-DP-139, REV. 1

BEST AVAILABLE COPY

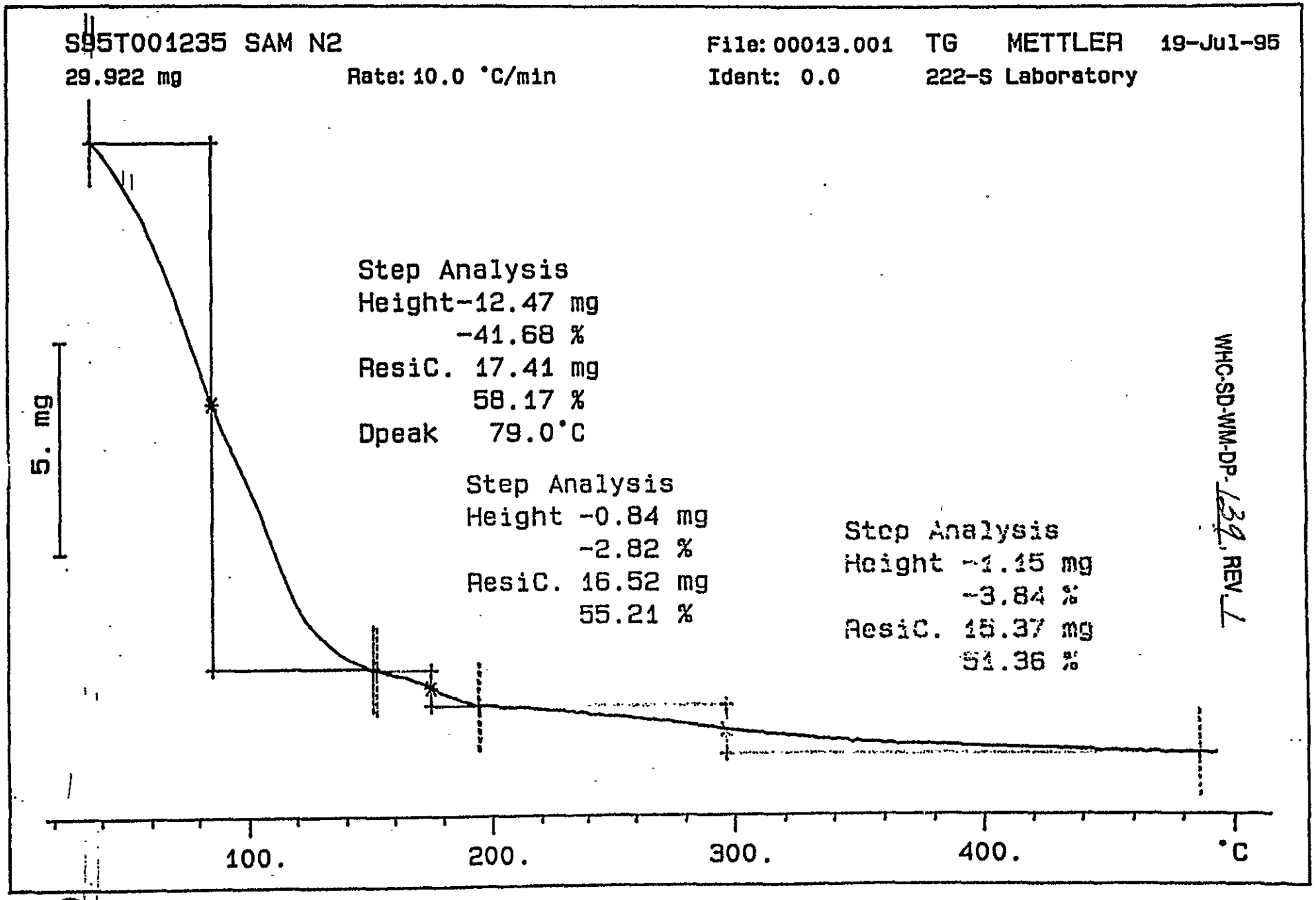


WHC-SD-WM-DP-139, REV. 1

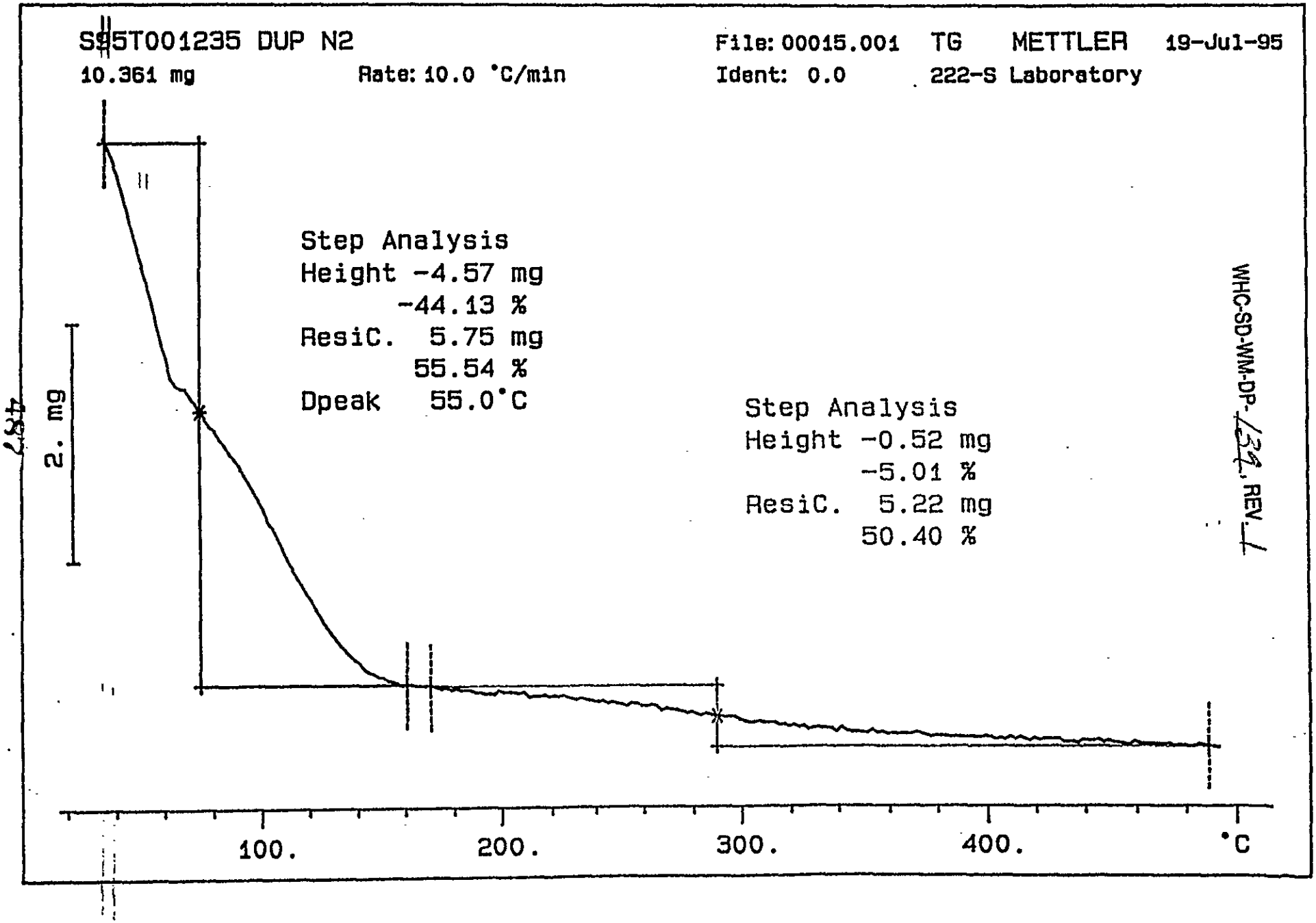
BEST AVAILABLE COPY



WHC-SD-WM-DP-139, REV. 1



WHC-SD-WM-DP-139, REV. 1



WHC-SD-WM-DP-139, REV. 1

LABCORE Data Entry Template for Worklist# 1806

Analyst: JDS **Instrument:** TGA0 1 **Book #** 65N8-A

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

Worklist Comment: Please run B-101 TGAs under N2. bdv

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				TGA-01	SOLID	59.74	61.99	N/A	%
95000093	B-101	2	SAMPLE	S95T001238	0		TGA-01	SOLID	N/A	33.48		%
95000093	B-101	3	DUP	S95T001238	0		TGA-01	SOLID	33.48	34.72	N/A	%
		4	STD				TGA-01	SOLID	59.74	57.46	N/A	%
95000093	B-101	5	SAMPLE	S95T001241	0		TGA-01	SOLID	N/A	29.27		%
95000093	B-101	6	DUP	S95T001241	0		TGA-01	SOLID	29.27	9.20	N/A	%

Final page for worklist # 1806

See attached for signatures
Analyst Signature Date 7-26-95 BDV

Verified by Blandina Valenzuela 8-1-95

[illegible] 7-29-95
Analyst Signature Date

S95T001238 ~~[illegible]~~ 7-26-95 produced an artifact which the chemist cannot explain.

Data Entry Comments: S95T001241 produced a second weight loss step at approximately 292°C with a loss of 14.53%. The RPD is greater than 10% therefore a rerun will be performed.

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# 1806

Analyst: Jds **Instrument:** TGA0 _____ **Book #** 65N84

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

Worklist Comment: Please run B-101 TGAs under N2. bdv

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				TGA-01	SOLID			N/A	%
95000093	B-101	2	SAMPLE	S95T001238	0		TGA-01	SOLID	N/A			%
95000093	B-101	3	DUP	S95T001238	0		TGA-01	SOLID			N/A	%
95000093	B-101	4	SAMPLE	S95T001241	0		TGA-01	SOLID	N/A			%
95000093	B-101	5	DUP	S95T001241	0		TGA-01	SOLID			N/A	%

Final page for worklist # 1806

Jds 7-25-95

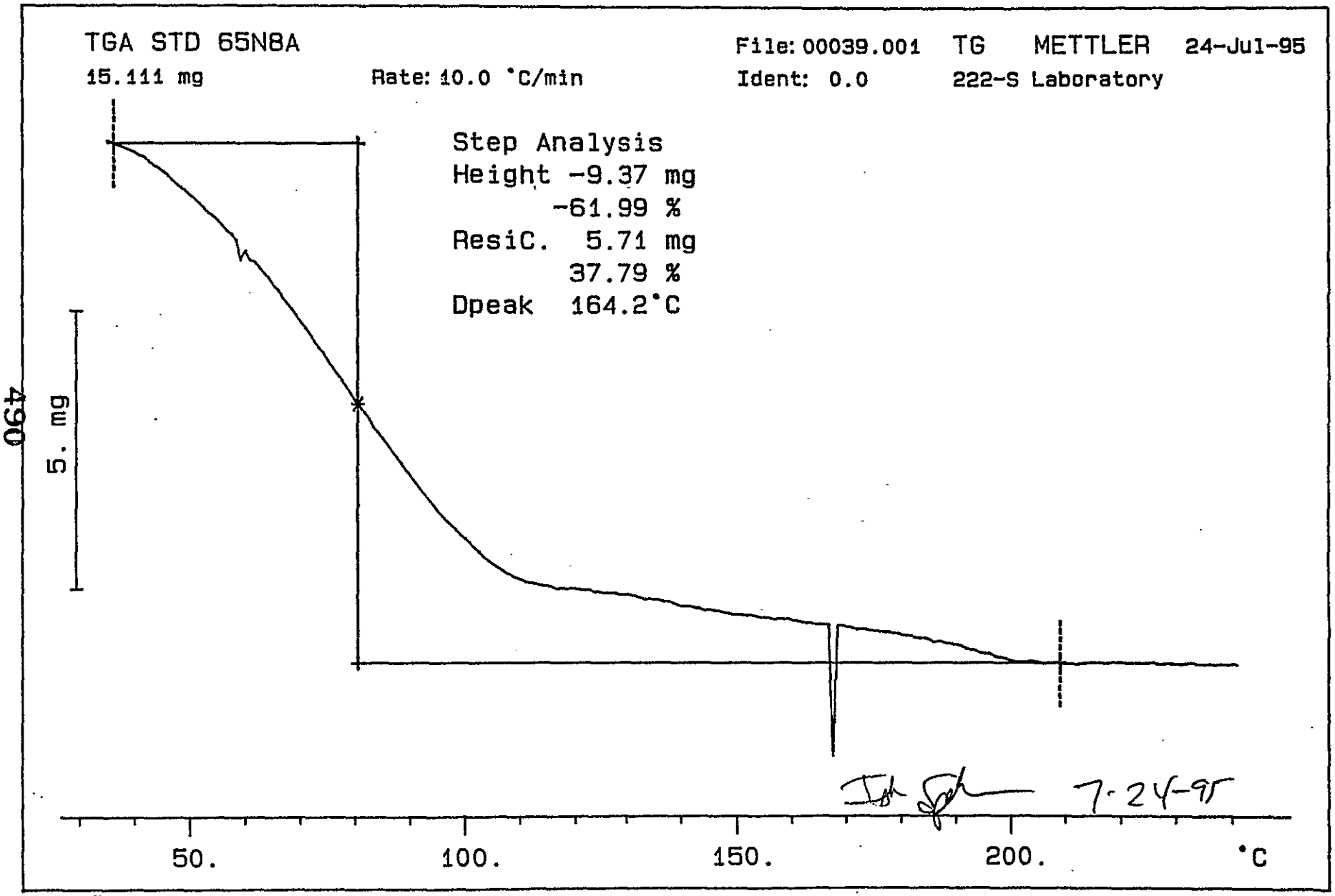
Analyst Signature Date

Analyst Signature Date

Data Entry Comments:

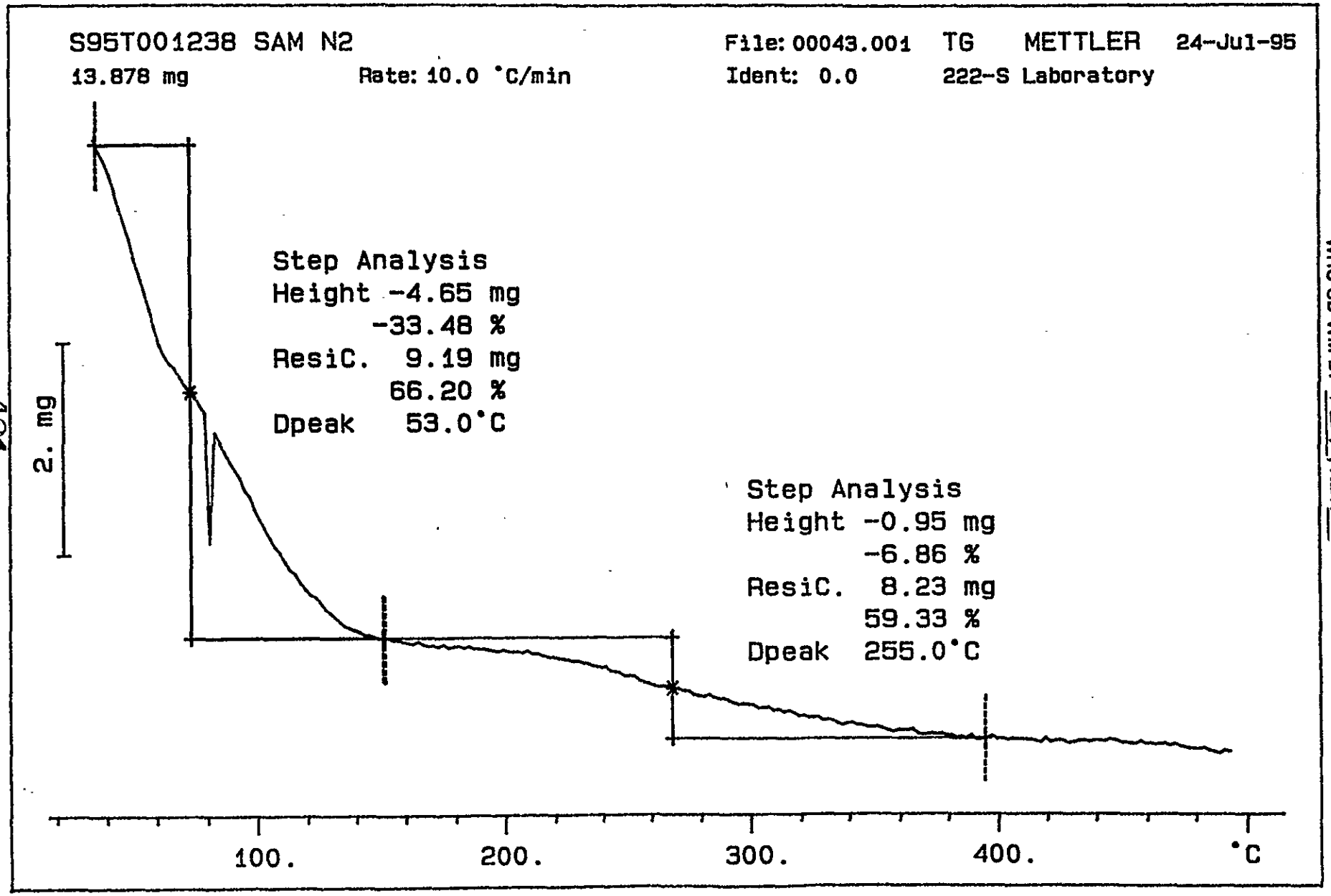
Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

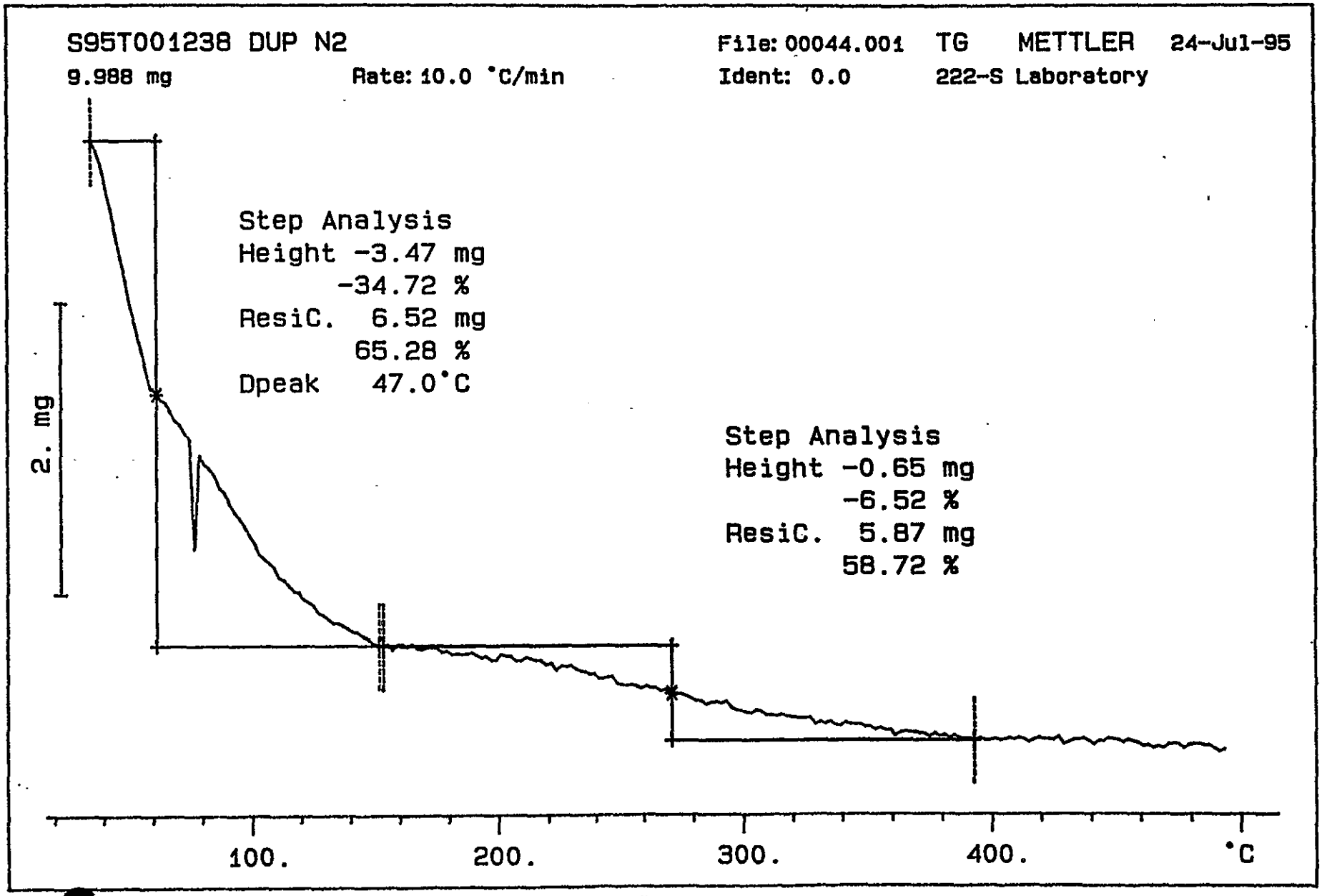
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 490 TO 495.



7-24-95

WHC-SD-WM-DP-130, REV. 1


S95T001238 SAM N2
13.878 mg
Rate: 10.0 °C/min
File: 00043.001
TG METTLER 24-Jul-95
Ident: 0.0
222-S Laboratory
Step Analysis
Height -4.65 mg
-33.48 %
ResiC. 9.19 mg
66.20 %
Dpeak 53.0°C
Step Analysis
Height -0.95 mg
-6.86 %
ResiC. 8.23 mg
59.33 %
Dpeak 255.0°C
2. mg
100.
200.
300.
400.
°C


S95T001238 DUP N2
9.988 mg
Rate: 10.0 °C/min
File: 00044.001
TG
METTLER
24-Jul-95
Ident: 0.0
222-S Laboratory
Step Analysis
Height -3.47 mg
-34.72 %
ResiC. 6.52 mg
65.28 %
Dpeak 47.0°C
Step Analysis
Height -0.65 mg
-6.52 %
ResiC. 5.87 mg
58.72 %
2. mg
100.
200.
300.
400.
°C

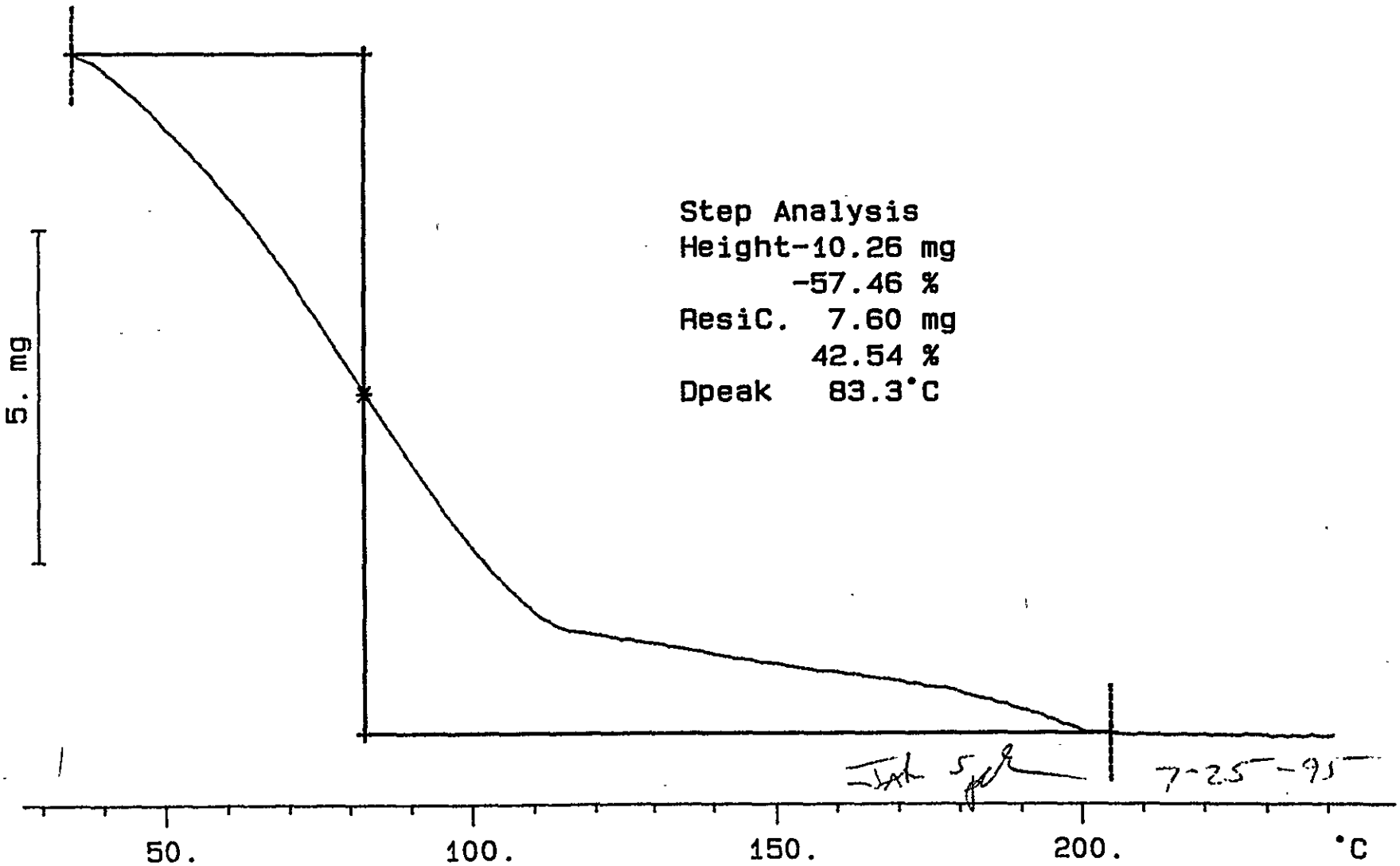
TGA STD 65N8A

17.854 mg

Rate: 10.0 °C/min

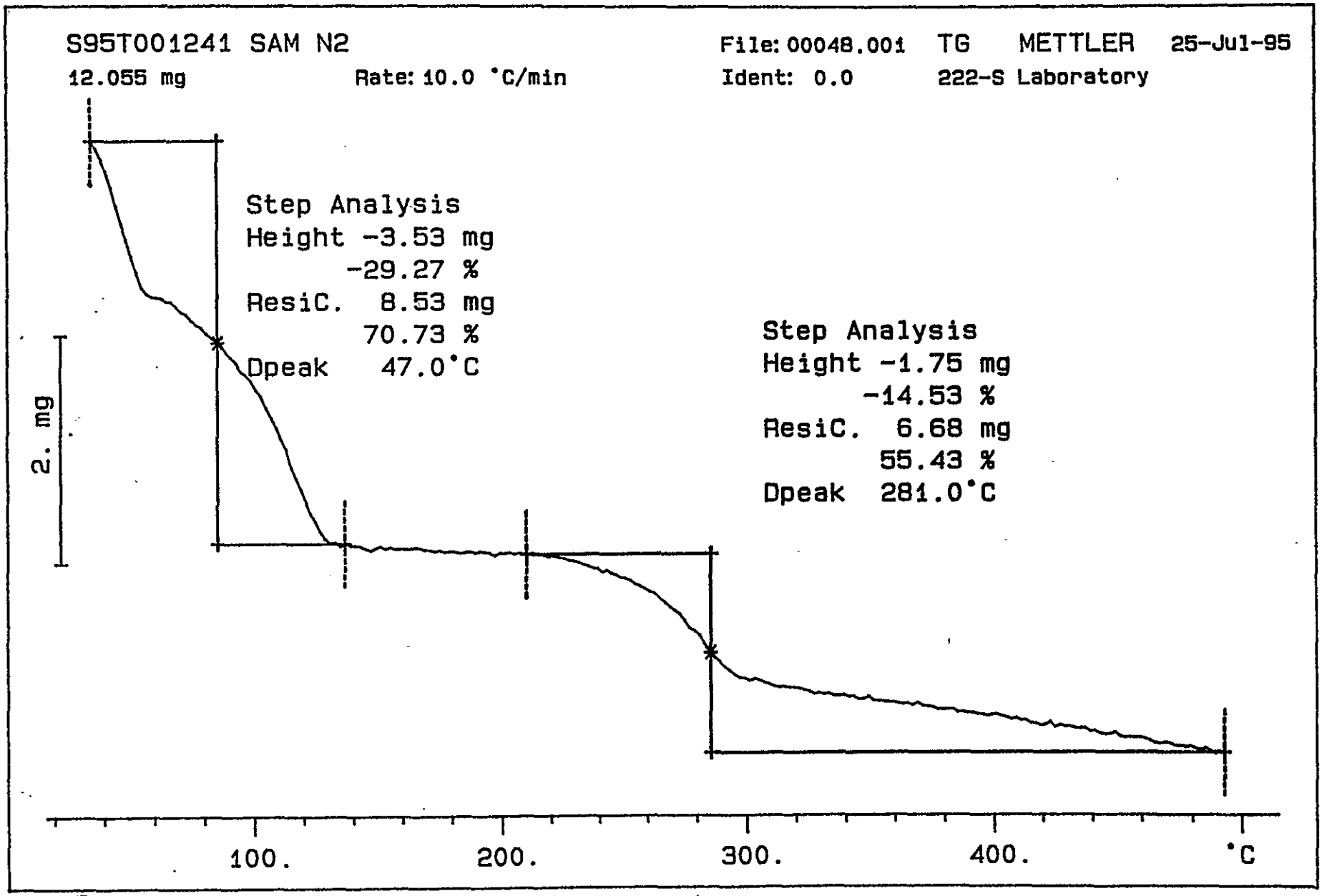
File: 00046.001 TG METTLER 25-Jul-95

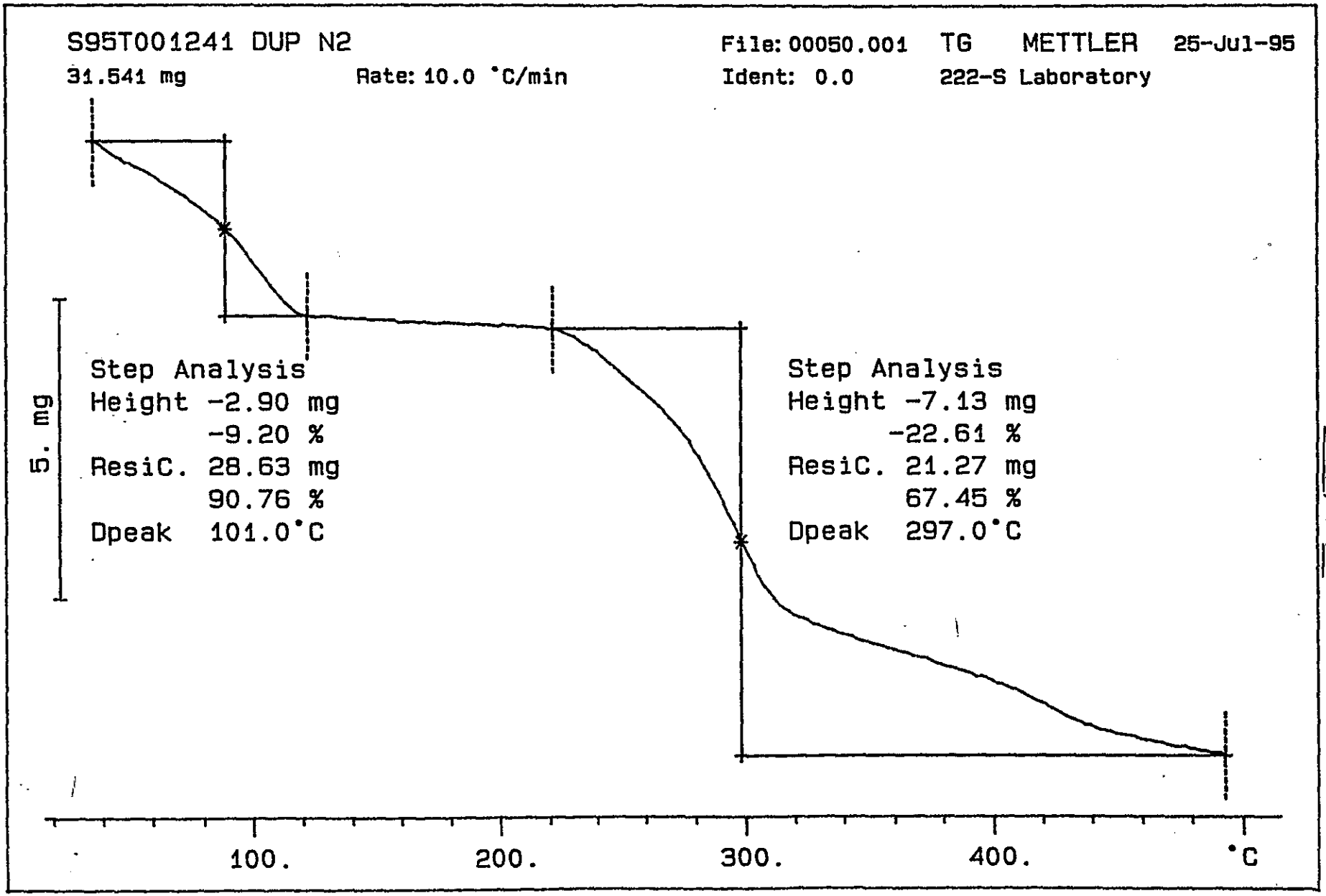
Ident: 0.0 222-S Laboratory



Step Analysis
Height-10.26 mg
-57.46 %
ResiC. 7.60 mg
42.54 %
Dpeak 83.3°C

7-25-95


S95T001241 SAM N2
12.055 mg
Rate: 10.0 °C/min
File: 00048.001 TG METTLER 25-Jul-95
Ident: 0.0 222-S Laboratory
Step Analysis
Height -3.53 mg
-29.27 %
ResiC. 8.53 mg
70.73 %
Dpeak 47.0°C
Step Analysis
Height -1.75 mg
-14.53 %
ResiC. 6.68 mg
55.43 %
Dpeak 281.0°C
2. mg
100.
200.
300.
400.
°C


S95T001241 DUP N2
31.541 mg
Rate: 10.0 °C/min
File: 00050.001
Ident: 0.0
TG
METTLER
222-S Laboratory
25-Jul-95
Step Analysis
Height -2.90 mg
-9.20 %
ResiC. 28.63 mg
90.76 %
Dpeak 101.0°C
Step Analysis
Height -7.13 mg
-22.61 %
ResiC. 21.27 mg
67.45 %
Dpeak 297.0°C
5. mg
100.
200.
300.
400.
°C

LABCORE Data Entry Template for Worklist# 1807

Analyst: JDS **Instrument:** TGA0 1 **Book #** 65N8-A

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

Worklist Comment: Please run B-101 TGAs under N2. bdv

GROUP	PROJECT	S TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD				TGA-01	SOLID	59.74	60.52	N/A	%
95000093	B-101	2 SAMPLE	S95T001244	0		TGA-01	SOLID	N/A	38.58		%
		3 STD				TGA-01	SOLID	59.74	60.32	N/A	%
95000093	B-101	4 DUP	S95T001244	0		TGA-01	SOLID	38.58	48.11	N/A	%
		5 STD				TGA-01	SOLID	59.74	60.60	N/A	%
95000093	B-101	6 TRIPL	S95T001244	0		TGA-01	SOLID	38.58	48.83	N/A	%

Final page for worklist # 1807

See attached for signatures 7-24-95 BDV
Analyst Signature Date

[signature] 7-24-95
Analyst Signature Date

Verified by Blandina Valenzuela 7-26-95

Data Entry Comments: The sample was run three times. The first time the sample was analyzed the analysis was stopped at 250°C. The sample was run two more times out to 500°C, however the RPD was > than ±10% therefore the original run was used as a triplicate. The sample was a 30 Rad sample.

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# 1807

Analyst: JDS **Instrument:** TGA0 _____ **Book #** ~~12N144~~ 7-19-95 BDY

Method: LA-560-112 Rev/Mod A2

Worklist Comment: Please run B-101 TGAs under N2. bdv

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				TGA-01	SOLID			N/A	%
95000093	B-101	2	SAMPLE	S95T001244	0		TGA-01	SOLID	N/A			%
95000093	B-101	3	DUP	S95T001244	0		TGA-01	SOLID			N/A	%

Final page for worklist # 1807

7-18-95

Analyst Signature **Date** **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.

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 498 TO 503.

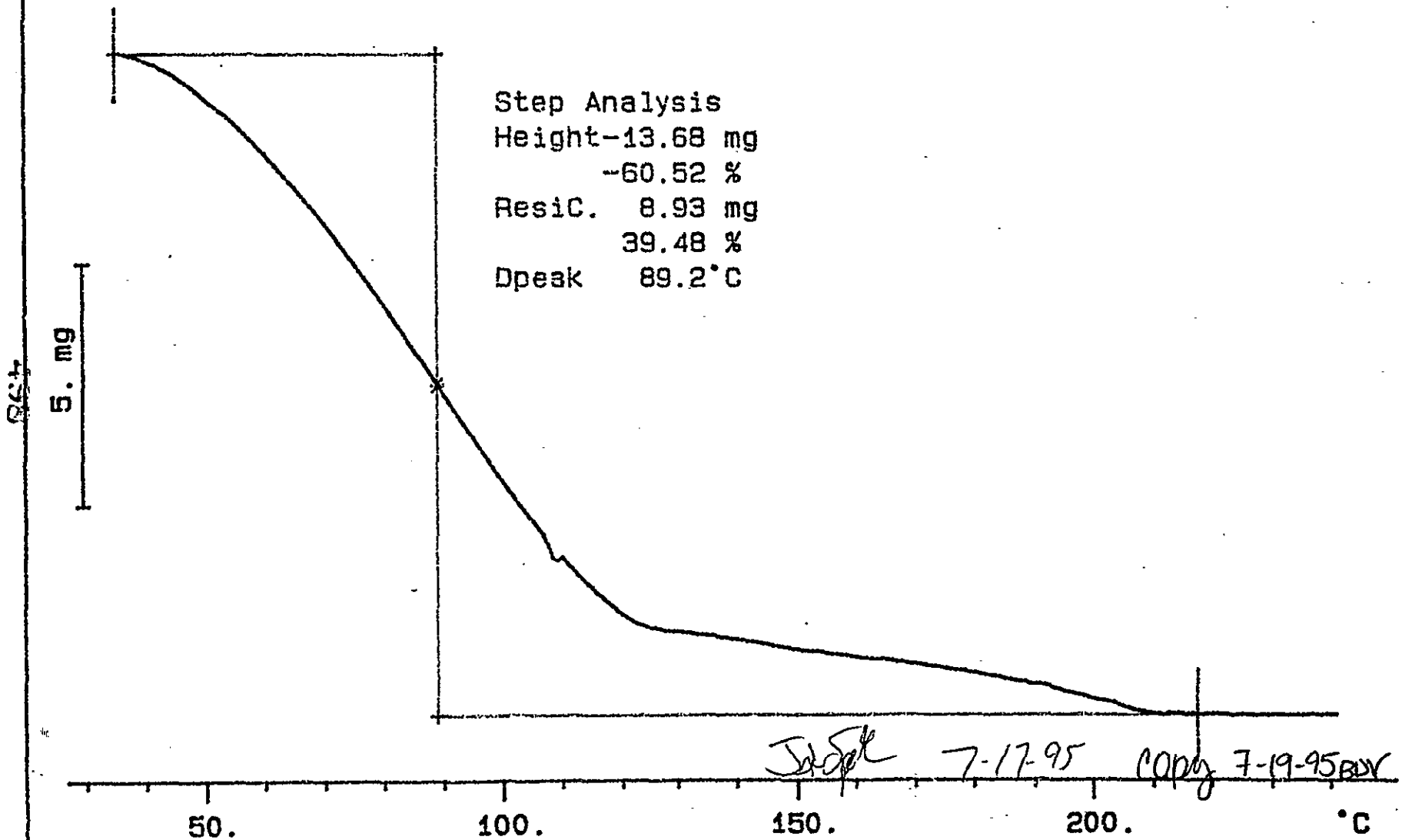
TGA STD 65N8A

22.608 mg

Rate: 10.0 °C/min

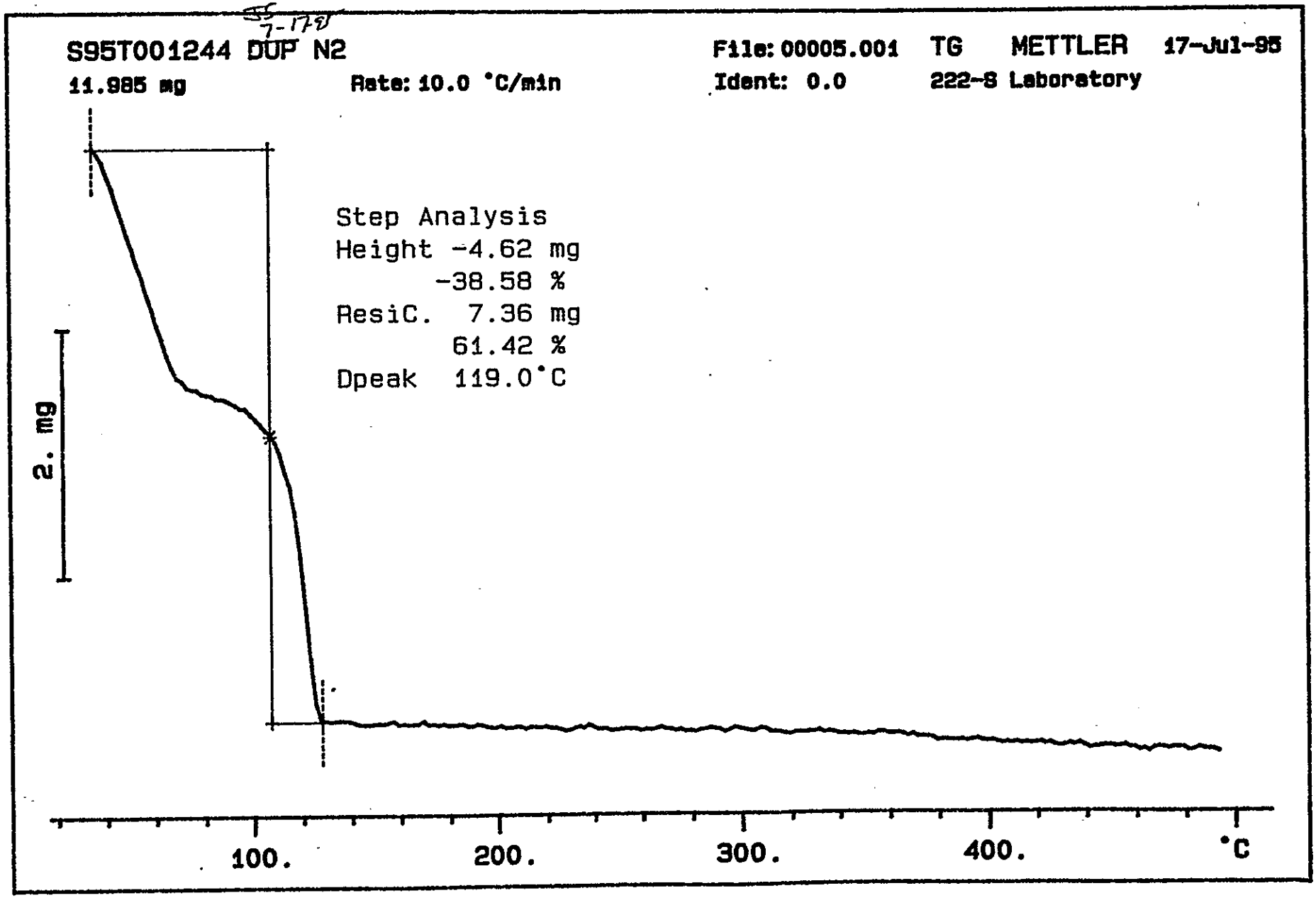
File: 00102.001 TG METTLER 17-Jul-95

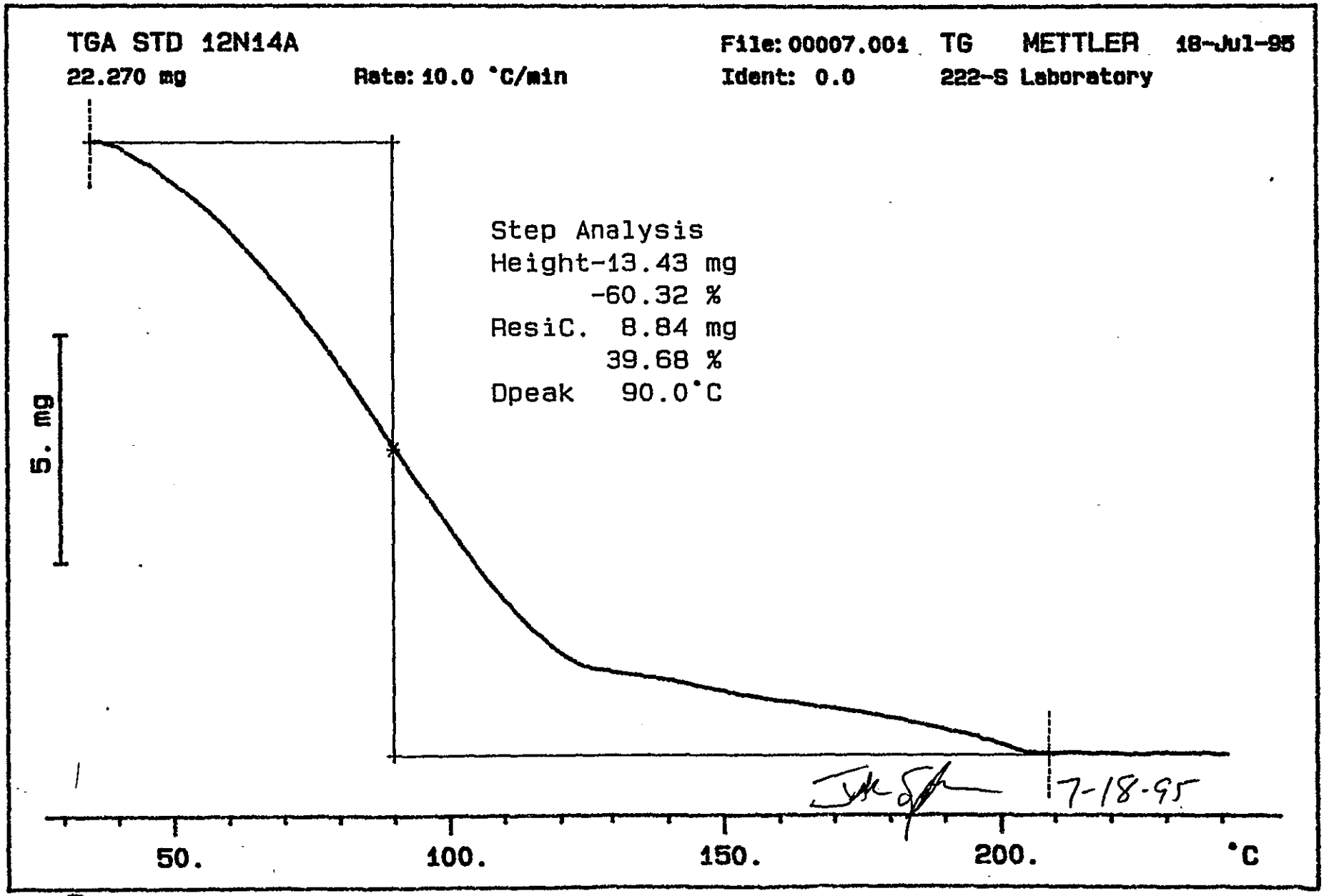
Ident: 0.0 222-S Laboratory



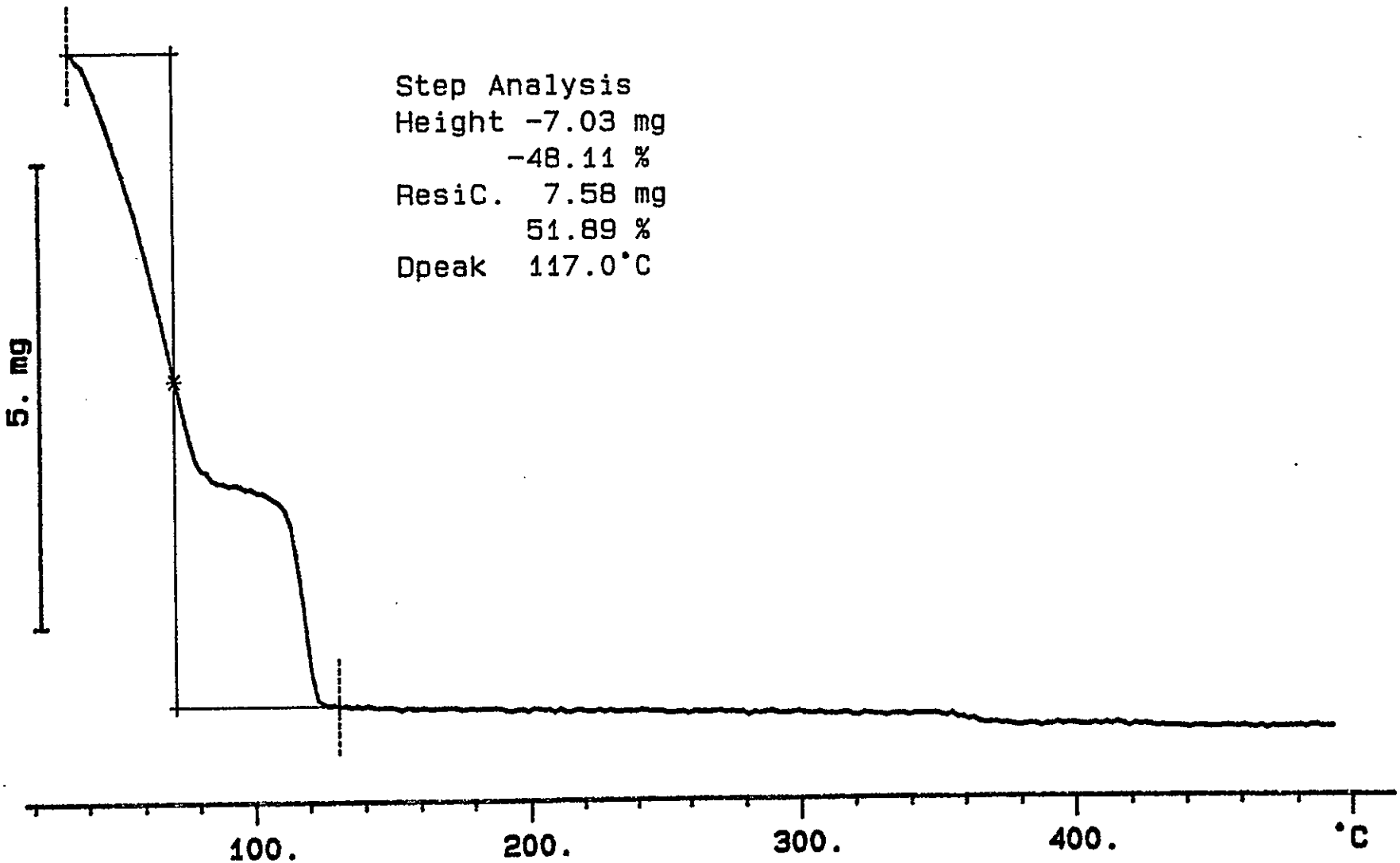
7-17-95 Copy 7-19-95 BDV

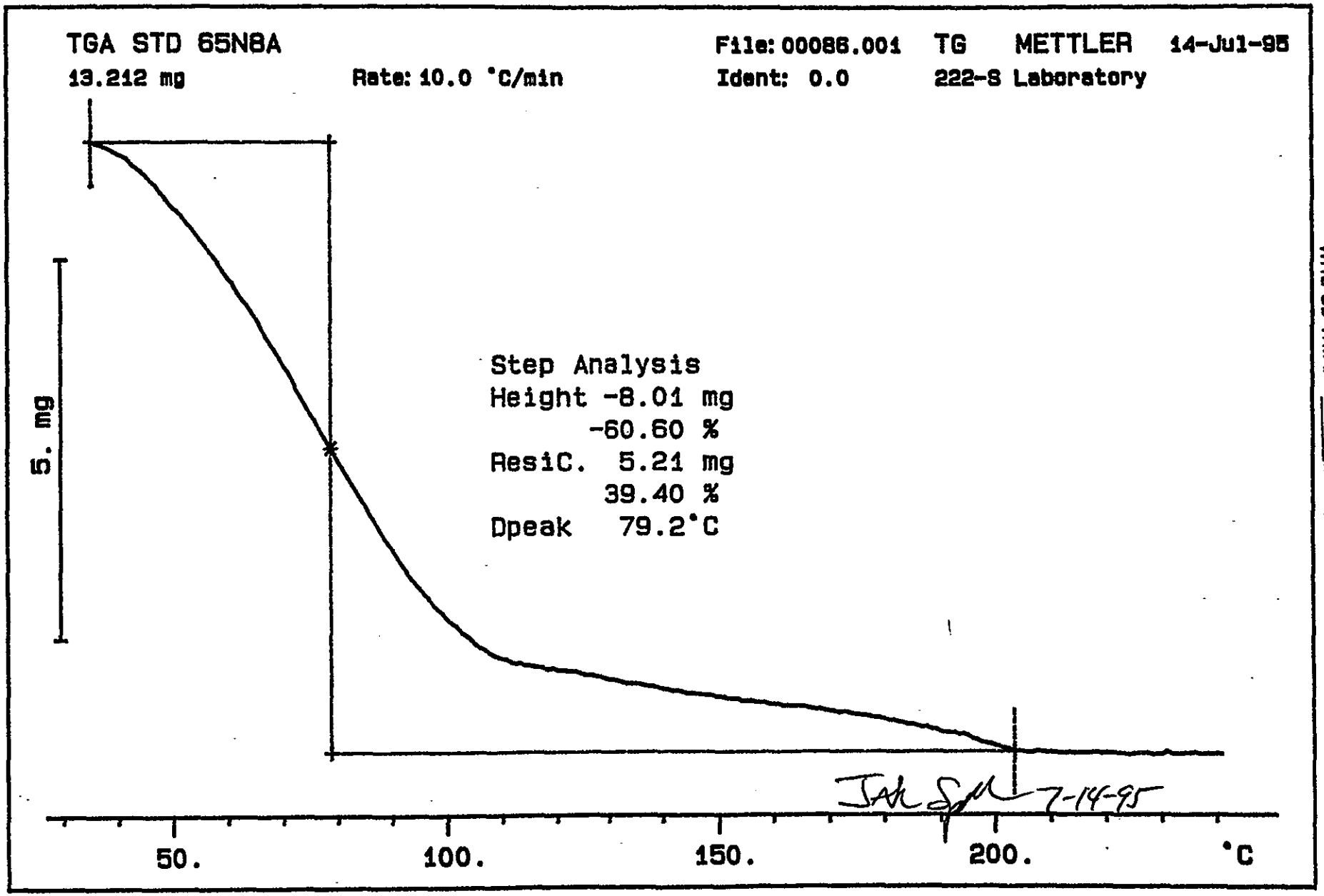
WHC-SD-WM-DP-132, REV. 1


S95T001244 DUP N2
7-178
11.985 mg
Rate: 10.0 °C/min
File: 00005.001
Ident: 0.0
TG
METTLER
222-S Laboratory
17-Jul-95
Step Analysis
Height -4.62 mg
-38.58 %
ResiC. 7.36 mg
61.42 %
Dpeak 119.0°C
2. mg
100.
200.
300.
400.
°C

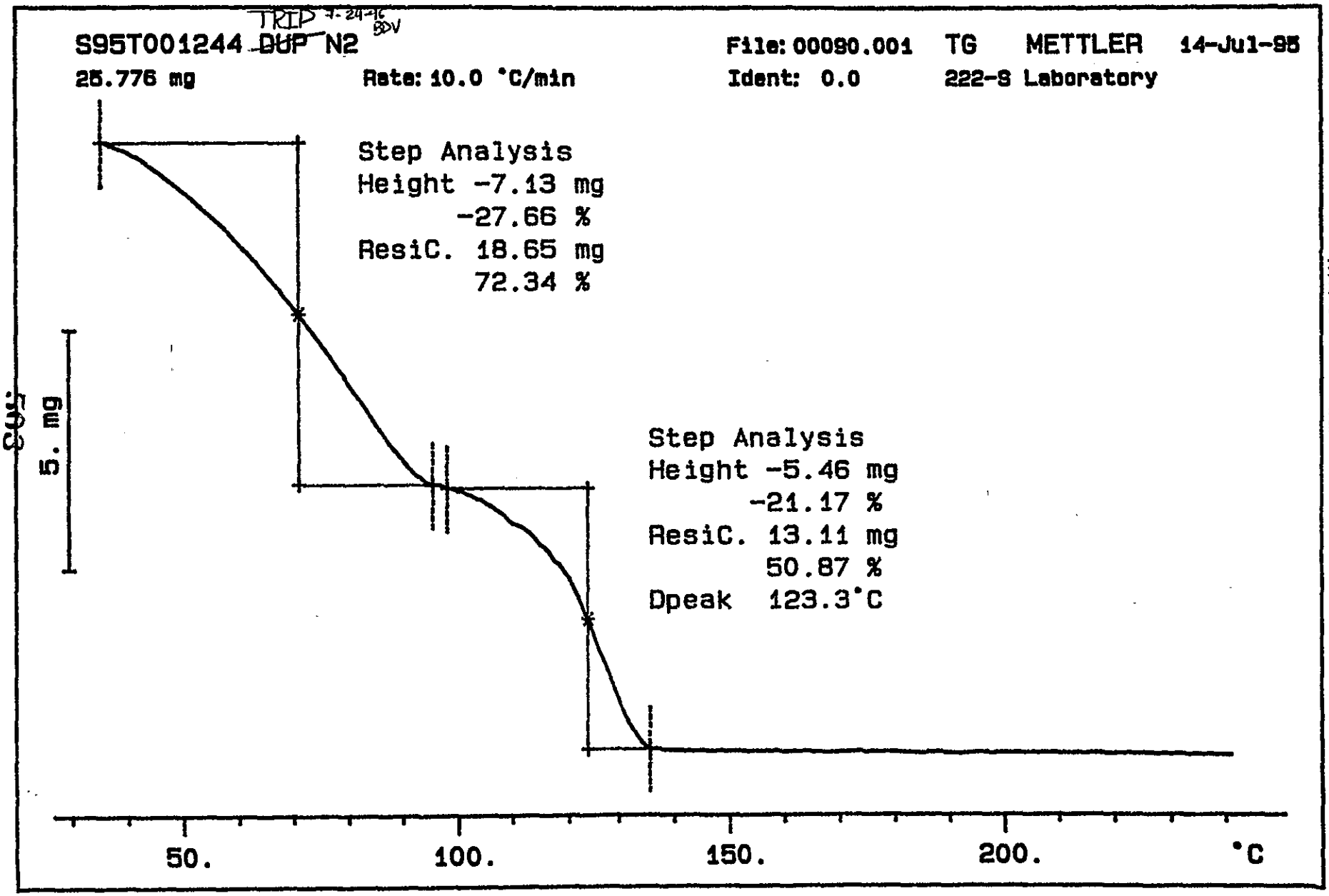

TGA STD 12N14A
22.270 mg
Rate: 10.0 °C/min
File: 00007.001
TG METTLER 18-Jul-95
Ident: 0.0
222-S Laboratory
Step Analysis
Height-13.43 mg
-60.32 %
ResiC. 8.84 mg
39.68 %
Dpeak 90.0°C
5. mg
50.
100.
150.
200.
°C
7-18-95

S95T001244dup N2
14.613 mg
Rate: 10.0 °C/min
File: 00008.001 TG METTLER 18-Jul-95
Ident: 0.0 222-S Laboratory




TGA STD 65N8A
13.212 mg
Rate: 10.0 °C/min
File: 00086.001
Ident: 0.0
TG
METTLER
222-S Laboratory
14-Jul-95
Step Analysis
Height -8.01 mg
-60.60 %
ResiC. 5.21 mg
39.40 %
Dpeak 79.2°C
5. mg
50.
100.
150.
200.
°C
7-14-95

WHC-SD-WM-DP-139, REV. 1



503

LABCORE Data Entry Template for Worklist# 1808

Analyst: JDS **Instrument:** TGA0 1 **Book #** 65N8-A

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

Worklist Comment: Please run B-101 TGA under N2. bdv

GROUP	PROJECT	S TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD				TGA-01	LIQUID	59.74	~~60.33~~ 60.71	7-26-95 BDV N/A	%
95000091	B-101	2 SAMPLE	S95T001223	0		TGA-01	LIQUID	N/A 49.63	~~99.76~~ 49.41	49.63 7-26-95 BDV	%
95000091	B-101	3 DUP	S95T001223	0		TGA-01	LIQUID	~~99.76~~ 7-26-95 BDV	~~99.89~~ 7-26-95 BDV	N/A	%
		4 STD				TGA-01	LIQUID	59.74	60.71 99.76	33 7-26-95 BDV N/A	%
95000093	B-101	5 SAMPLE	S95T001232	0		TGA-01	LIQUID	N/A 99.76	~~49.63~~ 99.89	7-26-95 BDV	%
95000093	B-101	6 DUP	S95T001232	0		TGA-01	LIQUID	~~49.63~~	~~49.41~~	7-26-95 BDV N/A	%

Final page for worklist # 1808

See attached for signatures 7-24-95 BDV
Analyst Signature Date

Analyst Signature Date 7-24-95

Verified by Blandina Valenzuela 7-26-95

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# 1808

Analyst: JDS **Instrument:** TGA0 _____ **Book #** 65N8A

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

Worklist Comment: Please run B-101 TGA under N2. bdv

GROUP	PROJECT	S TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD				TGA-01	LIQUID			N/A	%
95000091	B-101	2 SAMPLE	S95T001223	0		TGA-01	LIQUID	N/A			%
95000091	B-101	3 DUP	S95T001223	0		TGA-01	LIQUID			N/A	%
95000093	B-101	4 SAMPLE	S95T001232	0		TGA-01	LIQUID	N/A			%
95000093	B-101	5 DUP	S95T001232	0		TGA-01	LIQUID			N/A	%

Final page for worklist # 1808

JDS 7-21-95

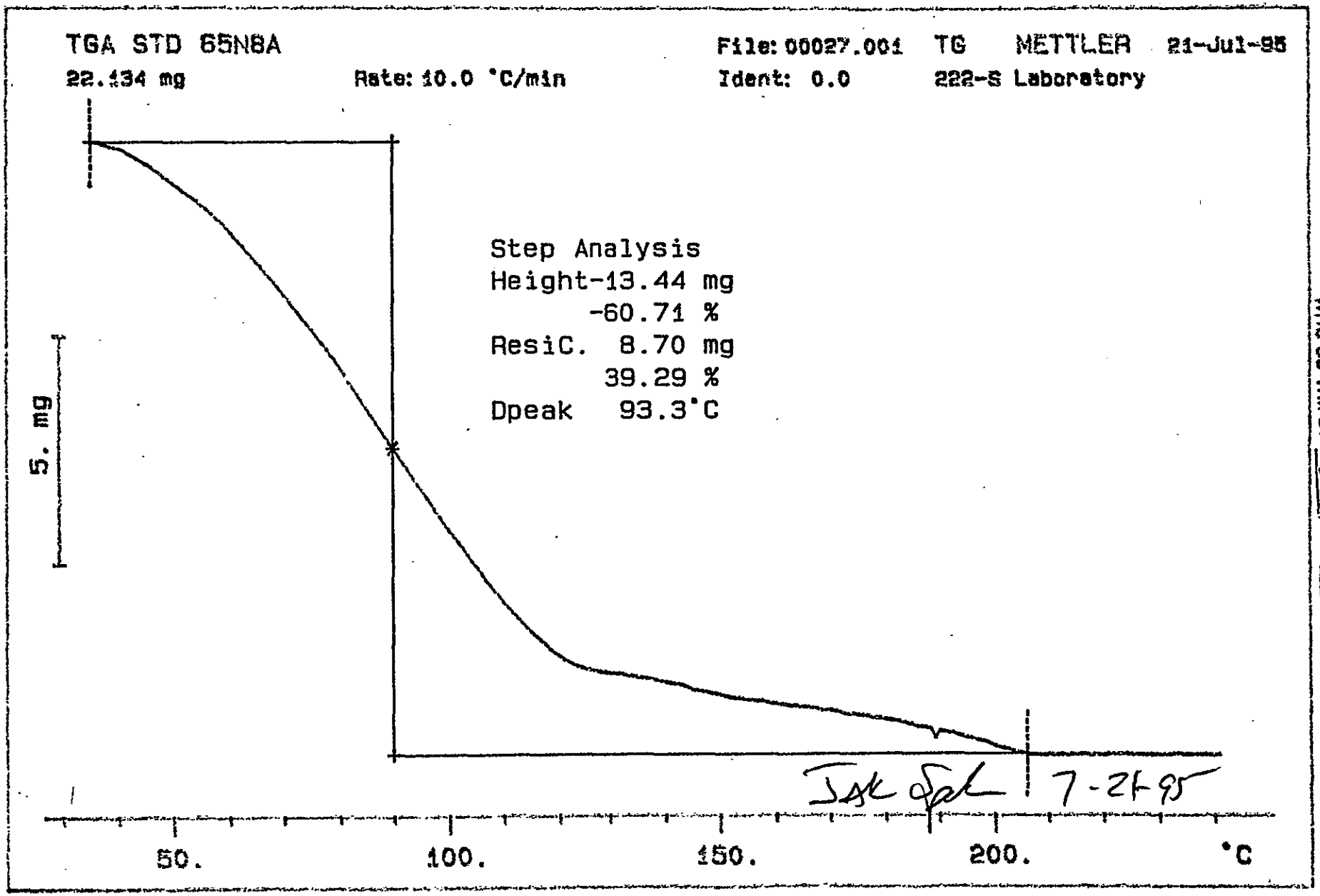
Analyst Signature Date

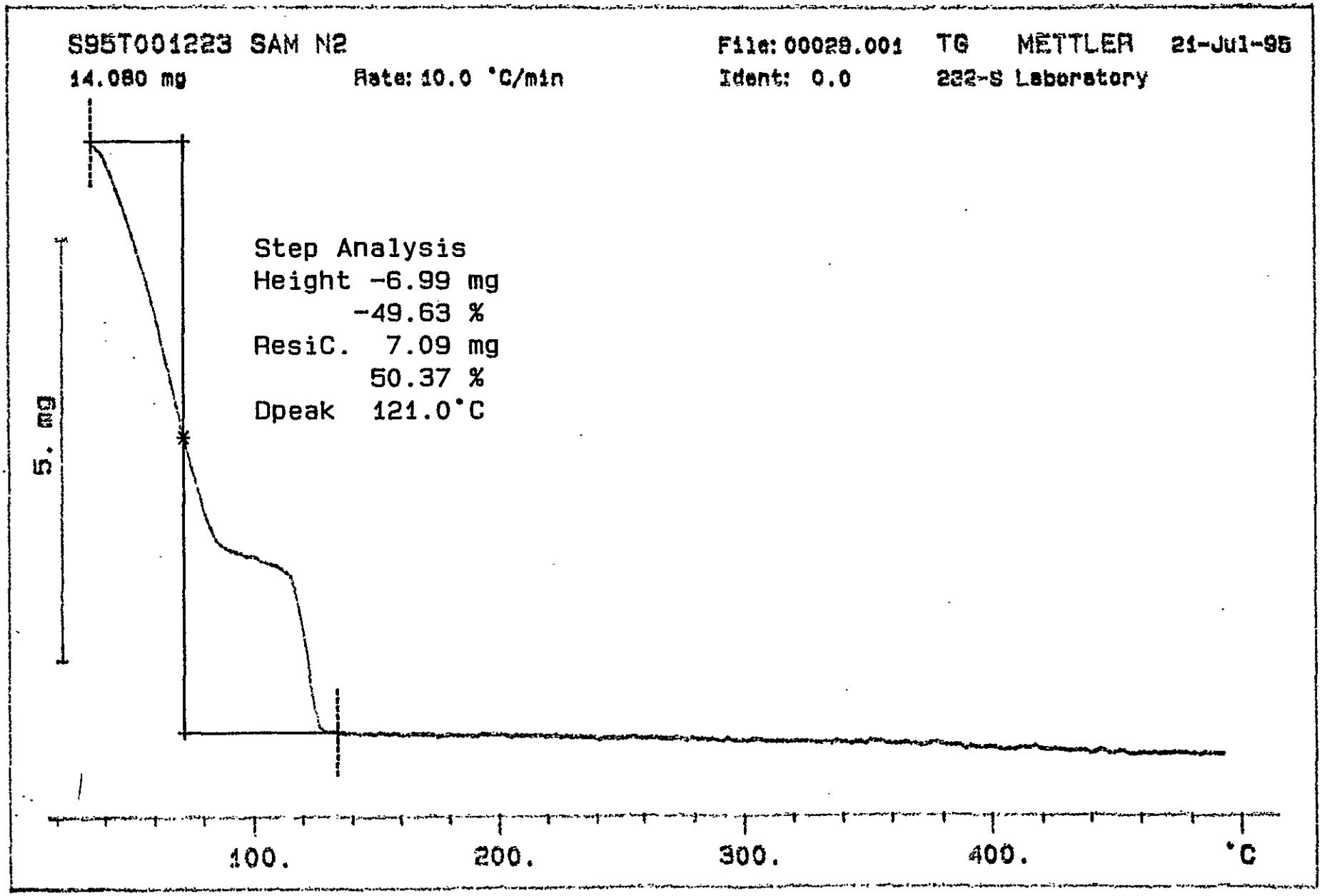
Analyst Signature Date

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.

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 506 TO 511.




S95T001223 SAM N2
14.080 mg
Rate: 10.0 °C/min
File: 00029.001
Ident: 0.0
TG
METTLER
21-Jul-95
232-S Laboratory
Step Analysis
Height -6.99 mg
-49.63 %
ResiC. 7.09 mg
50.37 %
Dpeak 121.0°C
5. mg
100.
200.
300.
400.
°C

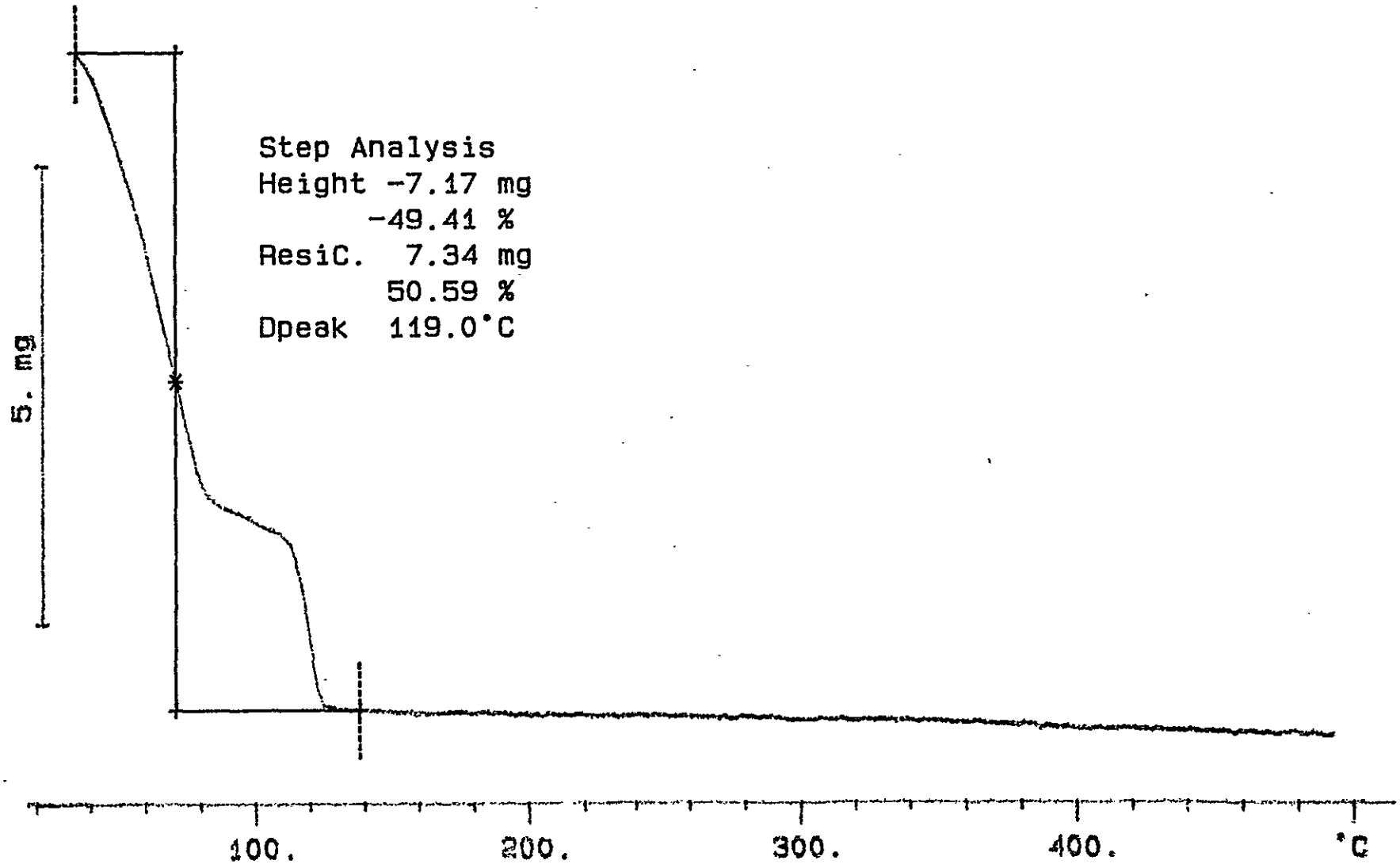
S95T001223 DUP N2

14.506 mg

Rate: 10.0 °C/min

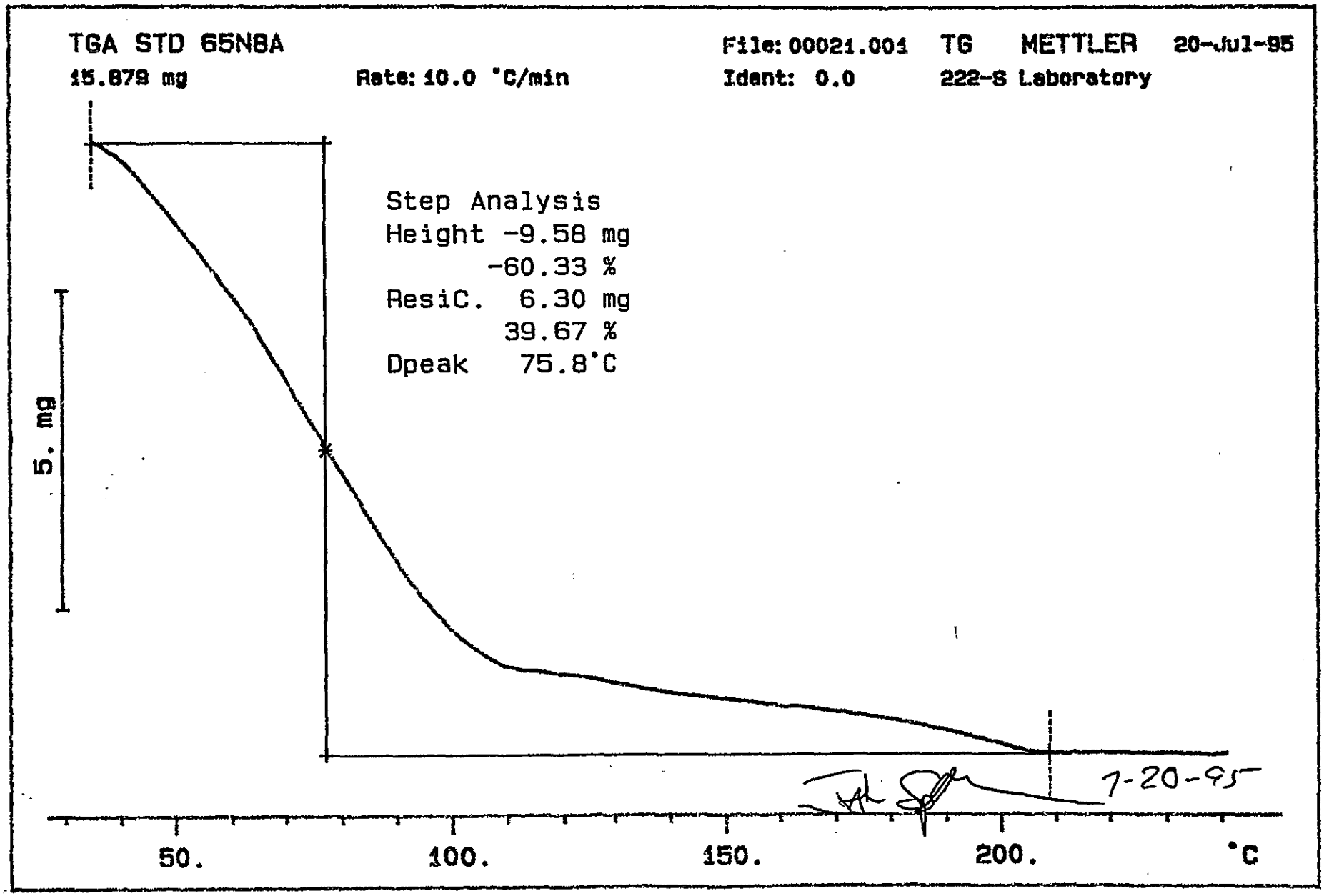
File: 00031.001 TG METTLER 21-Jul-95

Ident: 0.0 222-S Laboratory



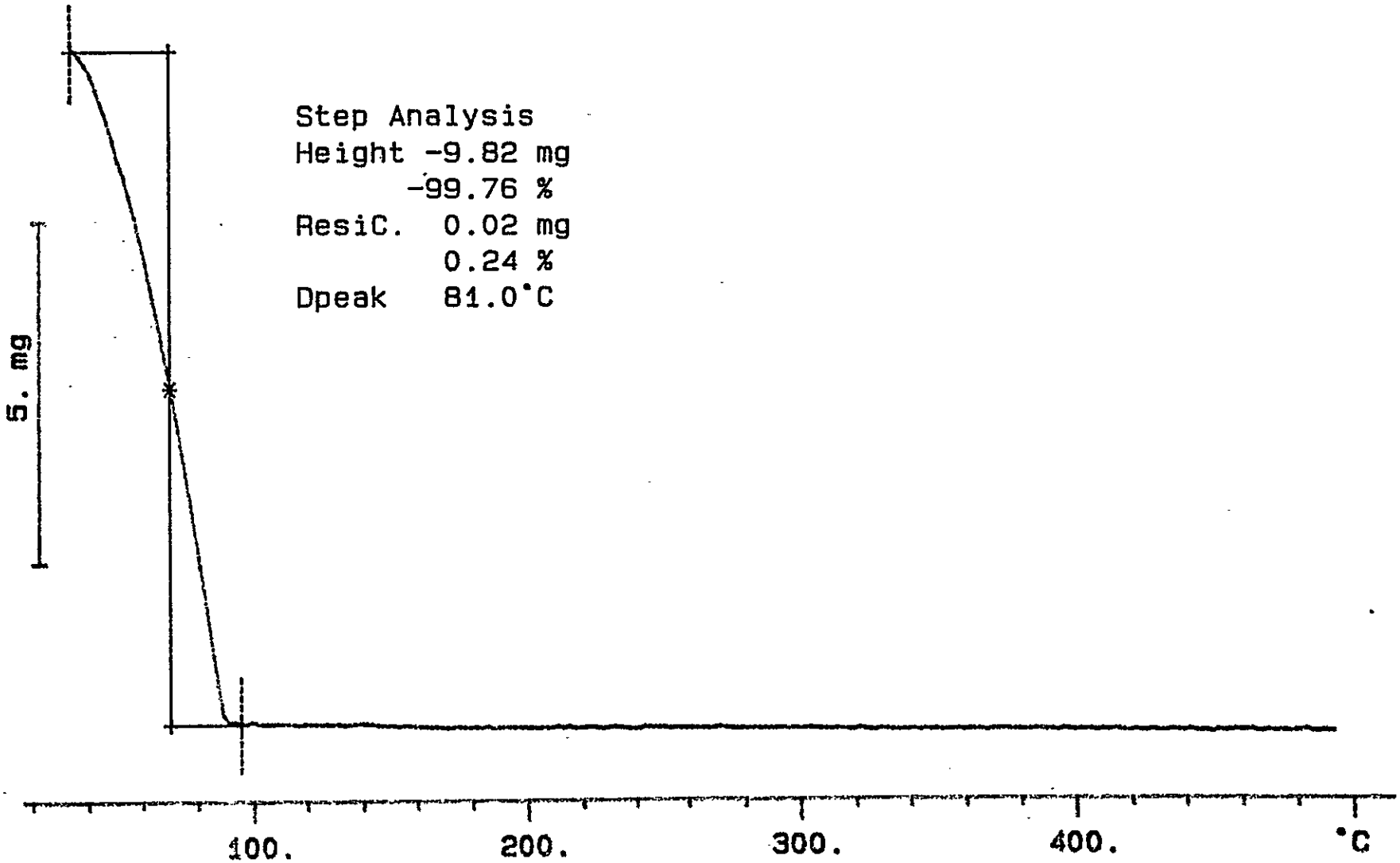
508

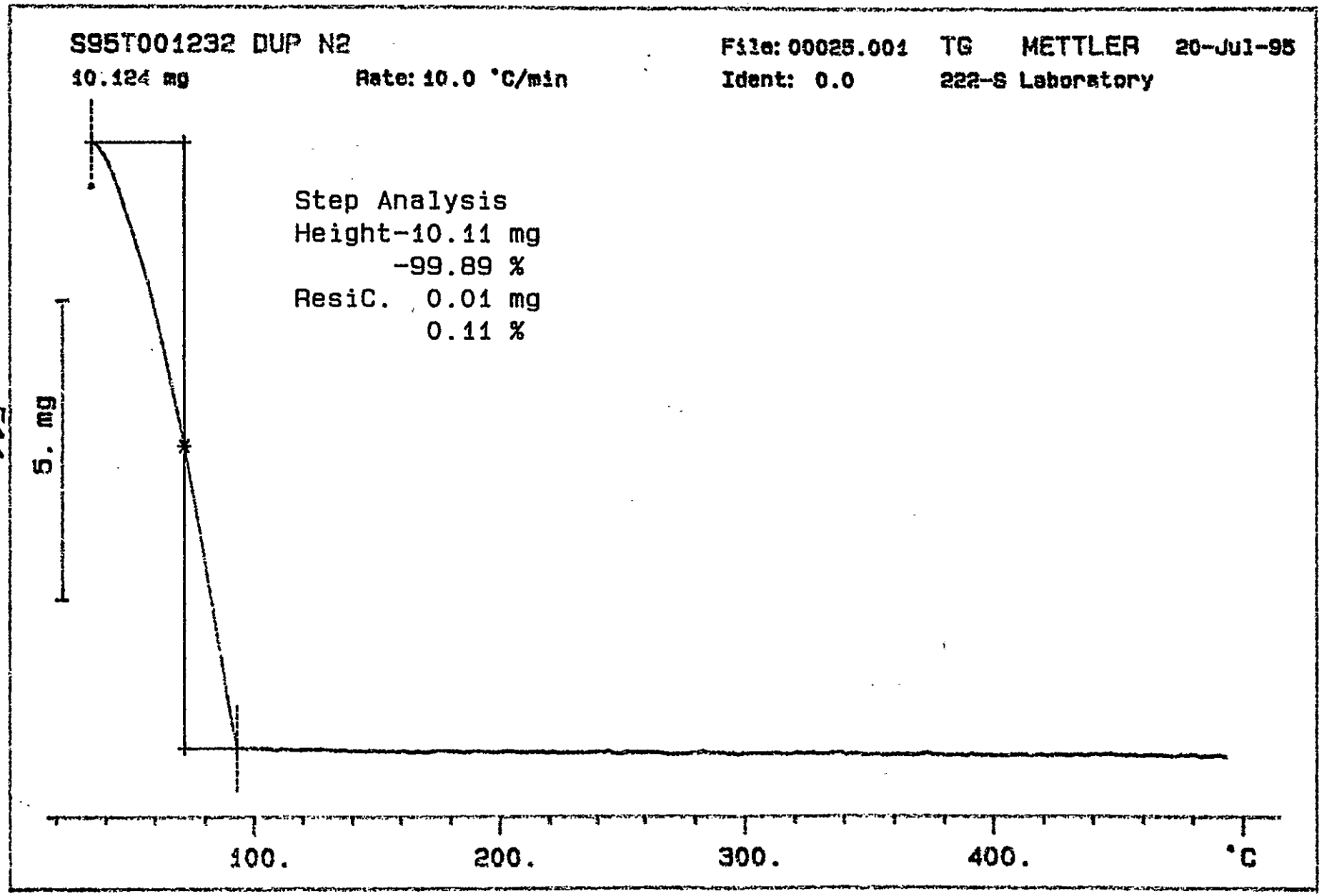
WHC-SD-WM-DP-139, REV. 1


TGA STD 65N8A
15.878 mg
Rate: 10.0 °C/min
File: 00021.001
Ident: 0.0
TG
METTLER
222-S Laboratory
20-Jul-95
Step Analysis
Height -9.58 mg
-60.33 %
ResiC. 6.30 mg
39.67 %
Dpeak 75.8°C
5. mg
50.
100.
150.
200.
°C
7-20-95

S95T001232 SAM N2 File: 00023.001 TG METTLER 20-Jul-95

9.846 mg Rate: 10.0 °C/min Ident: 0.0 222-S Laboratory




S95T001232 DUP N2
10.124 mg
Rate: 10.0 °C/min
File: 00025.001
TG METTLER 20-Jul-95
Ident: 0.0
222-S Laboratory
Step Analysis
Height-10.11 mg
-99.89 %
ResiC. 0.01 mg
0.11 %
5. mg
100.
200.
300.
400.
°C

LABCORE Data Entry Template for Worklist# 1809

Analyst: SMF **Instrument:** TGA0 3 **Book #** 65N8A

Method: LA-514-114 Rev/Mod B-0

Worklist Comment: Please run B-101 TGAs under N2. bdv

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				TGA-03	LIQUID	59.74	57.96	N/A	%
95000093	B-101	2	SAMPLE	S95T001247	0		TGA-03	LIQUID	N/A	50.07		%
95000093	B-101	3	DUP	S95T001247	0		TGA-03	LIQUID	50.07	50.86	N/A	%

Final page for worklist # 1809

See attached for signatures
Analyst Signature Date 7-26-95

Verified by Blandina Valenzuela BDV 7-26-95

[signature] 7-26-95
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.

LABCORE Data Entry Template for Worklist# 1809

Analyst: SMF **Instrument:** TGA0 **Book #** 6508-7

Method: ~~LA-560-112 Rev/Mod~~ LA-514-114/B-0 SMF

Worklist Comment: Please run B-101 TGAs under N2. bdv

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				TGA-01	LIQUID			N/A	%
95000093	B-101	2	SAMPLE	S95T001247	0		TGA-01	LIQUID	N/A			%
95000093	B-101	3	DUP	S95T001247	0		TGA-01	LIQUID			N/A	%

Final page for worklist # 1809

S M Sutton 7/24/95

Analyst Signature **Date**

Analyst Signature **Date**

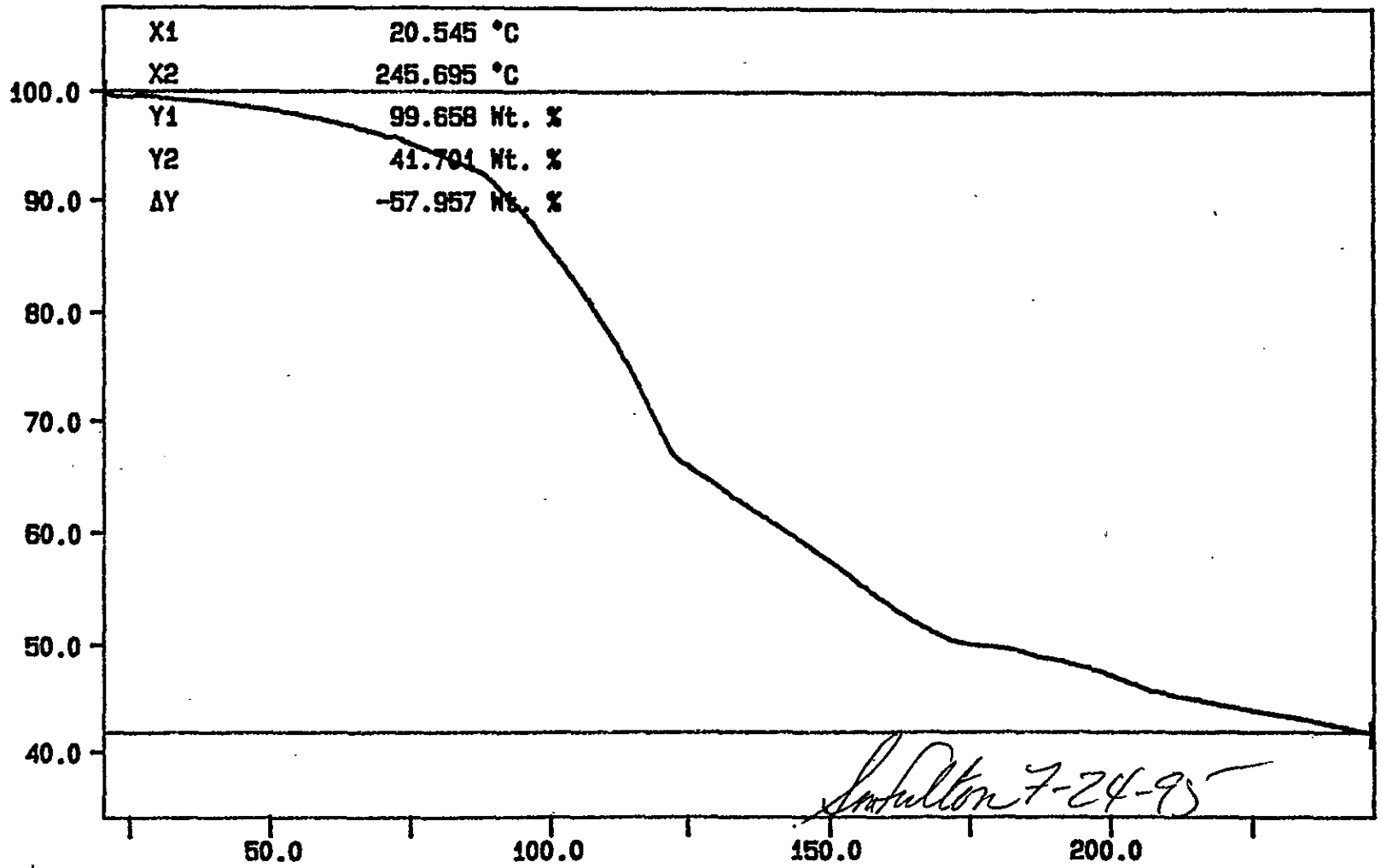
Other instrument was used.
7-28-95
BDV

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.

Curve 1: TGA
File info: TER072401 Mon Jul 24 10:20:52 1995
Sample Weight: 13.507 mg
65N8-A Terliq

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 514 TO 516.



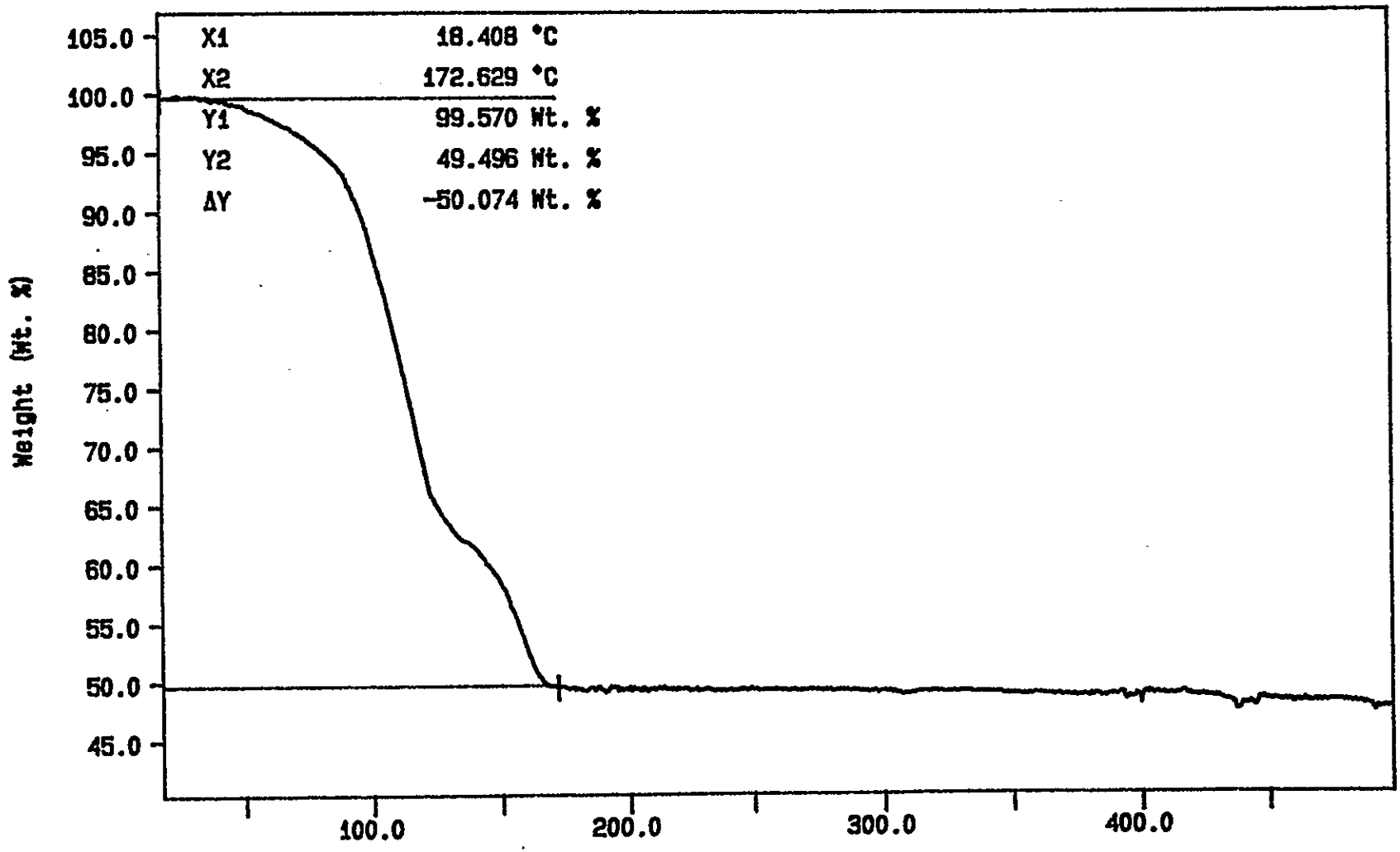
SMFulton 7-24-95

N2

TEMP1: 25.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 250.0 C

SM Fulton
PERKIN-ELMER
7 Series Thermal Analysis System
Mon Jul 24 10:44:21 1995

Curve 1: TGA
File info: SAM072401 Mon Jul 24 13:57:10 1995
Sample Weight: 11.994 mg
S95T001247, 10C/min

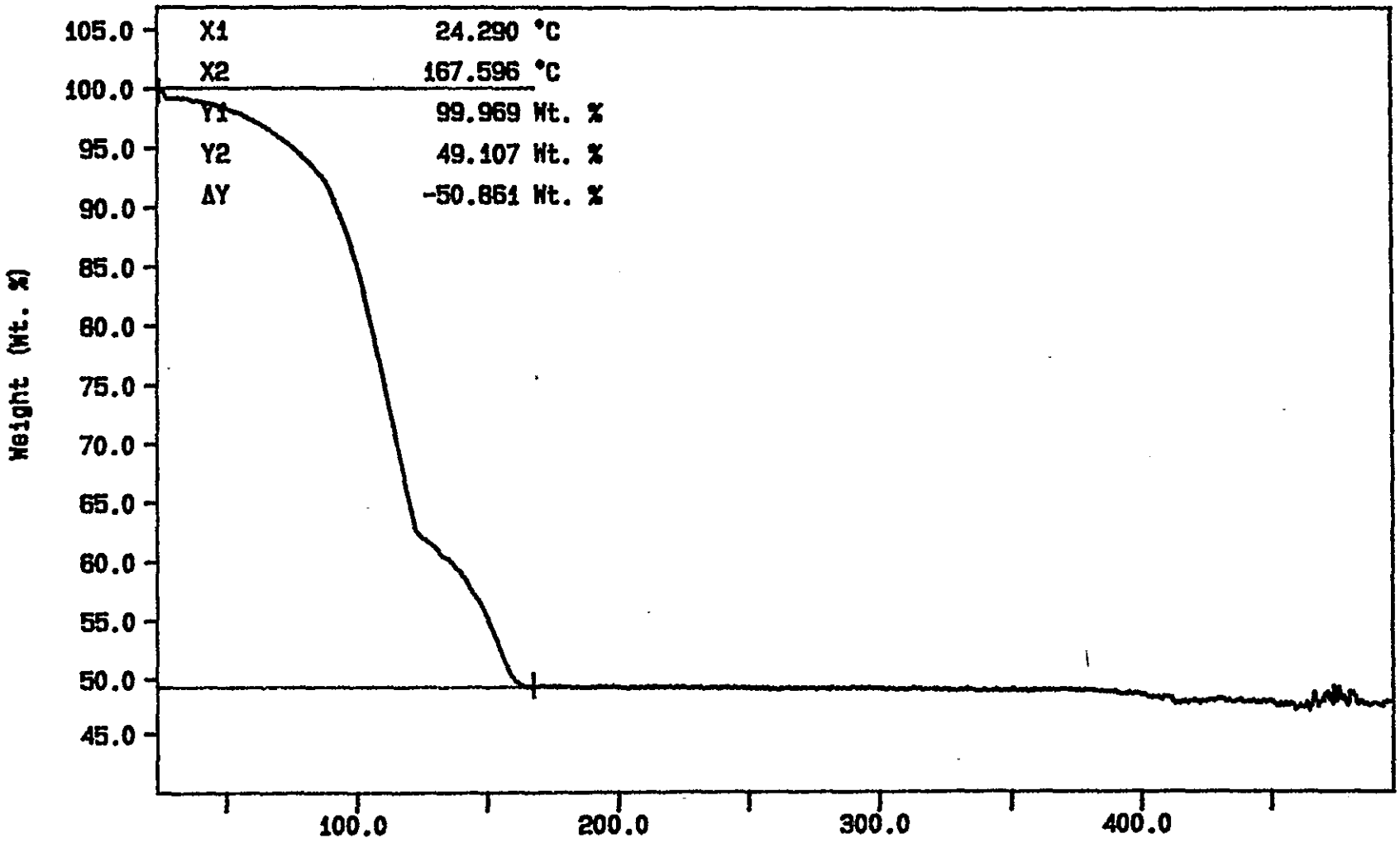


N2
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 500.0 C

SM FULTON
PERKIN-ELMER
7 Series Thermal Analysis System
Mon Jul 24 14:25:24 1995

WHC-SD-WM-DP-139, REV. 1

Curve 1: TGA
File info: SAM072402 Mon Jul 24 15:15:43 1995
Sample Weight: 10.802 mg
S95T001247DUP, 10C/min



N2
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 500.0 C

SM FULTON
PERKIN-ELMER
7 Series Thermal Analysis System
Tue Jul 25 07:39:50 1995

516

WHC-SD-WM-DP-139, REV. 1

LABCORE Data Entry Template for Worklist# 1916

Analyst: Jds **Instrument:** TGA0 1 **Book #** 65N8A

Method: LA-560-112 Rev/Mod ~~A~~ ~~B-0~~ A2 7-26-95

Worklist Comment: Please run B-101 TGAs under N2. bdv

GROUP	PROJECT	S TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD				TGA-01	SOLID	59.74	56.94	N/A	%
95000093	B-101	2 SAMPLE	S95T001241	1		TGA-01	SOLID	N/A	26.79		%
95000093	B-101	3 DUP	S95T001241	1		TGA-01	SOLID	26.79	25.55	N/A	%

Final page for worklist # 1916

7-26-95
Analyst Signature Date

7-27-95
Analyst Signature Date

Verified by Blandina Valenzuela 7-28-95

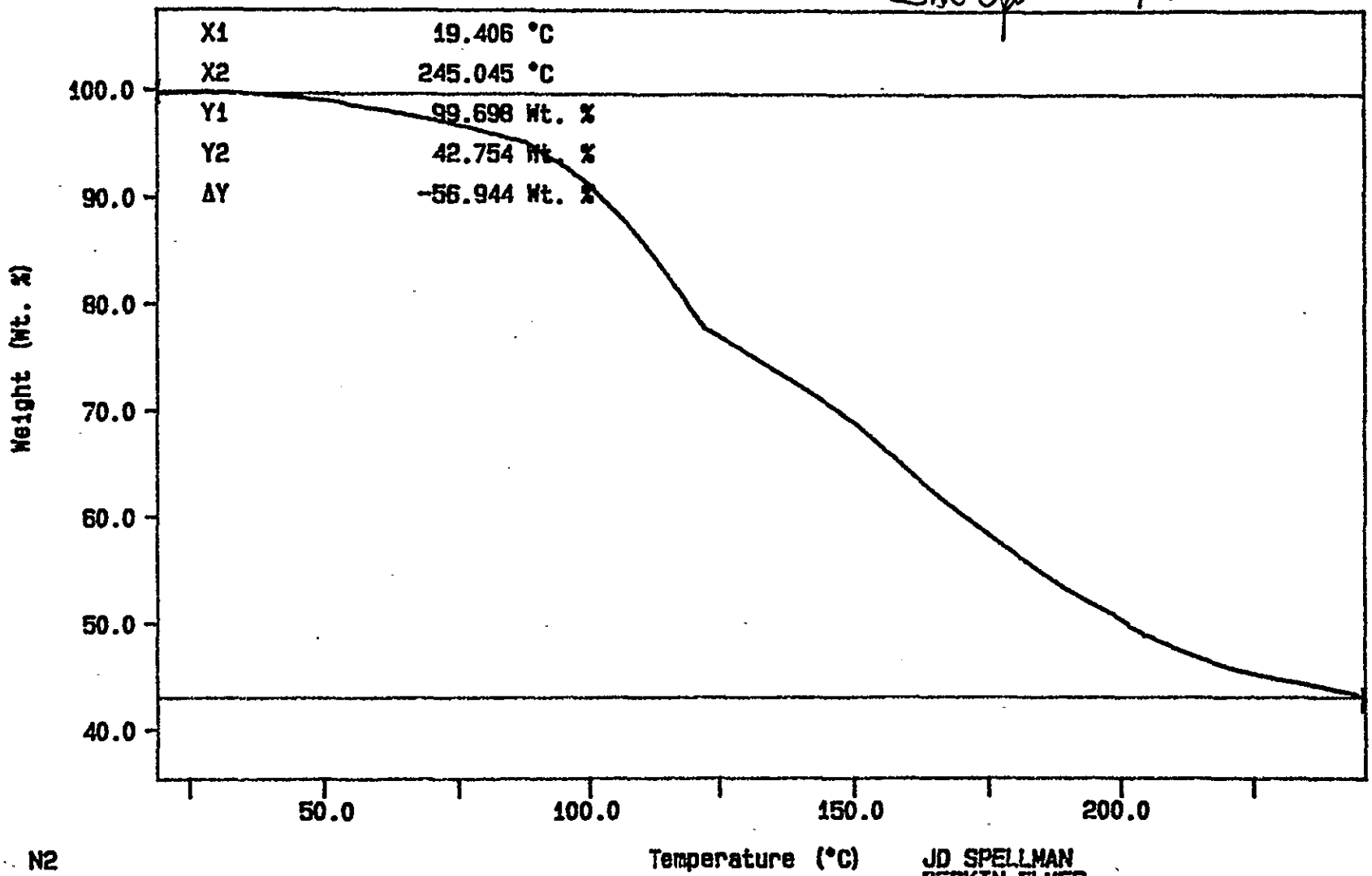
Data Entry Comments: The sample produced a second weight loss step of 12.63% at approximately 325°C.

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.

Curve 1: TGA
File info: TER072601 Wed Jul 26 13:31:24 1995
Sample Weight: 27.827 mg
65N8-A Terliq

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 518 TO 520.

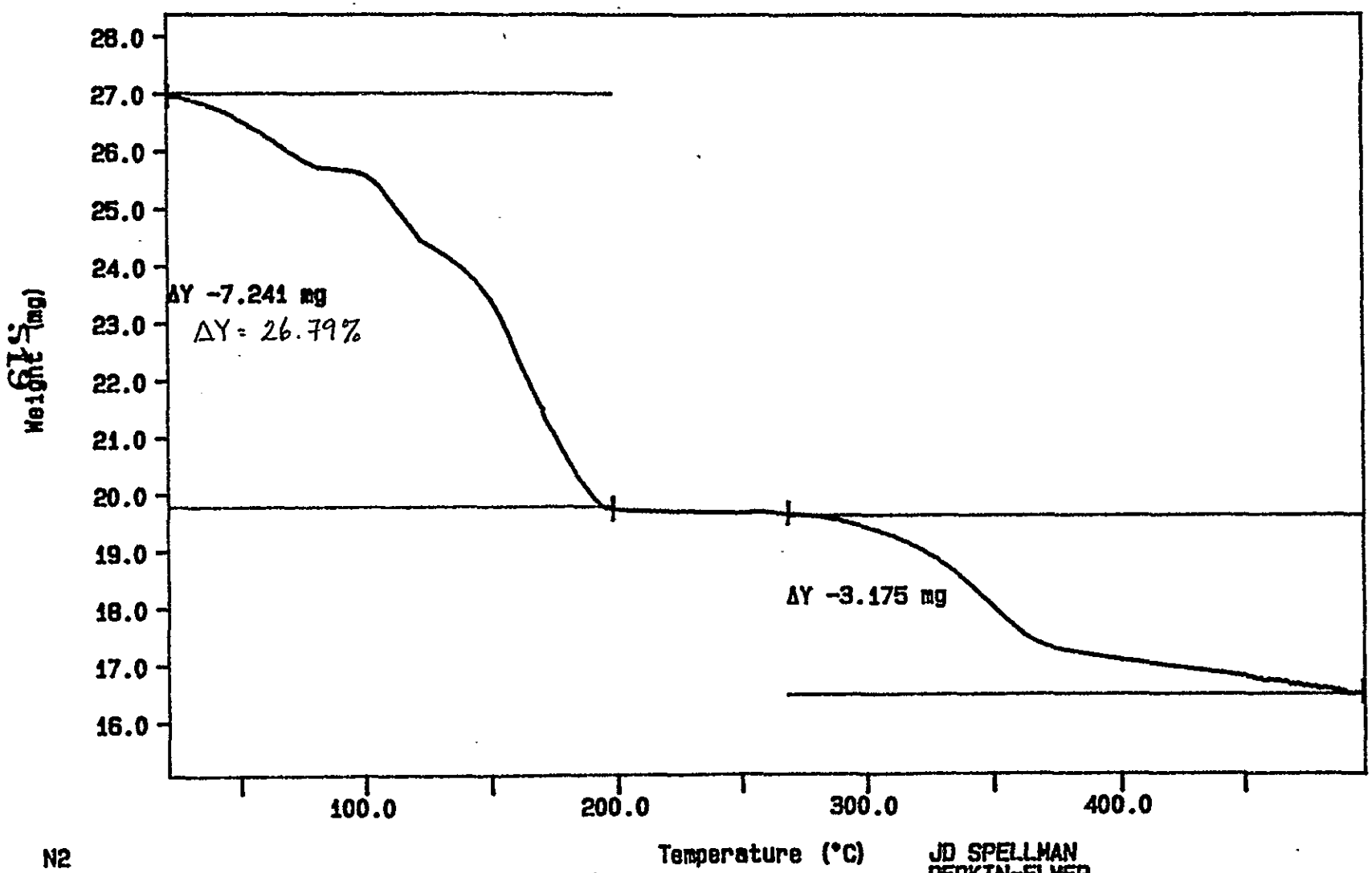
JD Spellman 7-26-95



N2
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 250.0 C

JD SPELLMAN
PERKIN-ELMER
7 Series Thermal Analysis System
Wed Jul 26 13:31:58 1995

Curve 1: TGA
File info: SAM072601 Wed Jul 26 14:42:25 1995
Sample Weight: 27.026 mg
S95T001241SAM, 10C/MIN



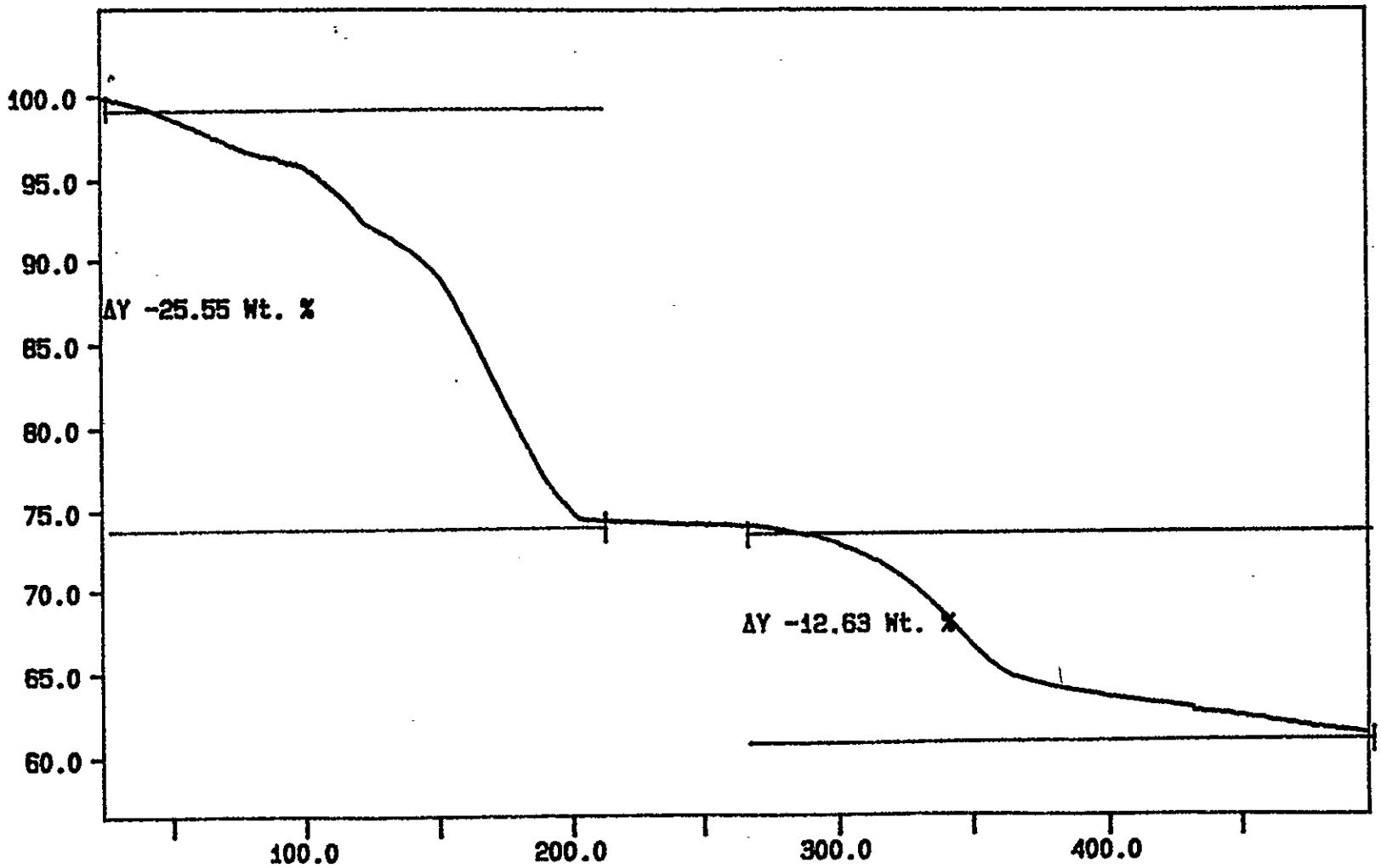
N2
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 500.0 C

JD SPELLMAN
PERKIN-ELMER
7 Series Thermal Analysis System
Wed Jul 26 14:47:00 1995

S15

WHC-SD-WM-DP-132, REV. 1

Curve 1: TGA
File info: SAM072602 Wed Jul 26 15:53:38 1995
Sample Weight: 36.413 mg
S95T001241DUP



N2

TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 500.0 C

JD SPELLMAN
PERKIN-ELMER
7 Series Thermal Analysis System
Thu Jul 27 06:05:02 1995

520

WHC-SD-WM-DP-139, REV. 1

DISTRIBUTION SHEET

To Distribution	From Characterization Plans, Coordination and Reports	Page 1 of 2
		Date: 10/31/95
Project Title/Work Order WHC-SD-WM-DP-139, Rev. 1, "Final Report for Tank 241-B-101, Push Mode Cores 90 and 91"		EDT NO.: N/A
		ECN NO.: ECN-625769

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	T6-03	X	
D. C. Hetzer	S6-31		X
L. Jensen	T6-07	X	
G. D. Johnson	S7-15	X	
N. W. Kirch	R2-11	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	
K. L. Powell	T6-06		X
R. D. Schreiber	R2-12	X	
B. C. Simpson	R2-12		X
D. A. Turner	S7-15	X	
J. A. Voogd	H5-03		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: 10/31/95
Project Title/Work Order WHC-SD-WM-DP-139, Rev. 1, "Final Report for Tank 241-B-101, Push Mode Cores 90 and 91"		EDT NO.: N/A
		ECN NO.: ECN-625769

Name	MSIN	Text With all Attach	EDT/ECN ONLY	
Washington State Department of Ecology Single-Shell Tank Unit Manager A. B. Stone	B5-18	X		
Environmental Protection Agency Single-Shell Tank Unit Manager D. R. Einan	B5-01	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 309 Bradley Blvd. Richland, WA 99352		X		

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