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Document number: SD-WM-DP-103

Section 10 **of** 10

Title: Final Report for Tank 241BY106 Cores 64 & 65 & 121 [Pgs 3-1 Thru 4-210]

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PART III

WHC-SD-WM-DP-103, REV. 1

WHC-SD-WM-DP-103, REV 0A

ANALYTICAL SERVICES

90-DAY SAFETY SCREEN RESULTS FOR TANK 241-BY-106, ROTARY MODE CORE SAMPLES 64 AND 65

Date Printed: MAY 22, 1995

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WHC-SD-WM-DP-103, REV. 0A

NARRATIVE

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90-DAY SAFETY SCREEN RESULTS FOR TANK 241-BY-106 ROTARY-MODE CORE SAMPLES 64 AND 65

Introduction

This is the 90-Day report for the fiscal year 1995 tank 241-BY-106 (BY-106) rotary-mode characterization effort. It transmits additional primary analytical data and analytical results from secondary analyses performed when action limits, as defined in the BY-106 tank characterization plan (TCP), Reference 1, were exceeded. Tank BY-106 sample receipt, extrusion, breakdown, and the primary safety screening results, have been reported in Reference 2 and are not reproduced or discussed here. A final 216-Day report will be issued at a later date.

Discussed below are additional results for total organic carbon (TOC) analysis on the sludge sample from segment 13 of core 65. Secondary analyses were also required on this sample because the notification limit for energetics by differential scanning calorimetry (DSC) was exceeded (Reference 2). Although there was a potential to perform numerous secondary analyses, only analyses for ^{90}Sr, ^{60}Co, ^{154}Eu, ^{155}Eu, and $^{239/240}Pu$ were requested by the Ferrocyanide Program (Reference 3). No notification limits were exceeded for any of the secondary analyses.

Analytical Results

Analytical results for TOC and the secondary analytes are presented in Table 1, which includes the LabCore sample number and segment portion. Column 2 of the table indicates the sample preparation used, if any. As shown, analyses on fused samples are marked with "F".

Total Organic Carbon

Analytical results for TOC, performed by direct persulfate oxidation per procedure LA-342-100, Rev. A-0, on the sludge sample from segment 13 of core 65 were reported in Reference 2. It was reported there that the analyses were performed twice with very similar results on two samples taken from the same sample vial. The two samples are S95T000099 and S95T000734. The spike recovery result for sample S95T000099 was not previously reported and is reported here at 52.7%. The spike recovery for sample S95T000734 was also low at 55.5%. Subsequent analysis of a third aliquot and additional spike of sample S95T000099 gave the results of 11,400 ug C/g and a spike recovery of 148%. Investigation of the initial poor spike recoveries revealed that an adequate amount of the reagent persulfate was used despite the high TOC content of these samples. Small sample sizes were used due to the high TOC content. The conclusion is that the poor spike recoveries are most likely due to sample heterogeneity exacerbated by the small sample sizes required.

^{137}Cs, ^{60}Co, ^{154}Eu, and ^{155}Eu by Gamma Energy Analysis

Analyses for ^{60}Co, ^{154}Eu, and ^{155}Eu were performed using gamma energy analysis (GEA) per procedure LA-548-121, Rev. D-1. These analyses were secondary and were performed on a fusion digestion of the sludge from segment 13, core 65 (sample S95T000101) because the notification limit for energetics by DSC was exceeded. Results for ^{137}Cs are also reported for that sample since this analyte is determined by GEA as well and reporting the results requires little additional effort. Results for ^{60}Co, ^{154}Eu, and ^{155}Eu are all below the respective detection limits of 9.00E-03, 2.30E-02, and 1.70E-02 uCi/g. The samples were found to contain ^{137}Cs in activities of 394 and 621 uCi/g for sample and duplicate runs, respectively. The sample had been re-run due to the high relative percent difference between sample and duplicate runs and a contaminated preparation blank. A second aliquot of the preparation blank was also found to be contaminated. At 1.99E-04 uCi/mL for the original analysis and 1.46E-04 uCi/mL for the re-run, the contamination is very small relative to the sample results. The re-run results were not used and the original data appear in Table 1.

$^{239/240}Pu$

Analysis for ^{239}Pu plus ^{240}Pu was determined on a fusion digestion of sludge for segment 13, core 65 according to procedure LA-503-156, Rev. D-2. Results of the analysis give the combined activity of the two plutonium isotopes since the energies of the alpha particles emitted from the two isotopes are close enough such that the alpha energy analyzer used cannot resolve the two. As shown in Table 1, the average of sample and duplicate runs gives 0.0996E-02 uCi/g. This is much lower than the notification limit of 41 uCi/g. The total alpha results on the same sample (Reference 2) give 0.253 uCi/g, which indicates that an additional alpha emitter is present. This is most likely ^{241}Am although and analysis for this radionuclide was not performed.

^{90}Sr

Analysis for ^{90}Sr was performed on a fusion digestion of the sludge from segment 13, core 65 according to procedure LA-220-101, Rev. D-1. The average result from sample and duplicate runs is 763 uCi/g. No notification limit for this analyte is provided in Reference 1.

References: (1) WHC-SD-WM-TP-217, Rev. 1, "Tank 241-BY-106 Tank Characterization Plan", dated January 24, 1995, Westinghouse Hanford Company, Richland, WA 99352.

(2) WHC-SD-WM-DP-103, Rev. 0, "60-Day Safety Screen Results for Tank 241-BY-106, Rotary Mode, Cores 64 and 65", dated March 23, 1995, Westinghouse Hanford Company, Richland, Washington 99352.

(3) Internal Memo 74260-95-016, "Analyses of Tank 241-BY-106", dated February 17, 1995.

Table 1. BY-106 90-Day Report Analytical Summary
BY-106

CORE NUMBER: 65
SEGMENT #: 13

SEGMENT PORTION: U Upper Half of Segment

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S95T000099			TOC by Persulfate/Coulometry	ug/g	92.67	31.80	2.08e+04	2.17e4	2.12e+04	4.24	n/a	80.00	n/a
S95T000101		F	Strontium-89/90 High Level	uCi/g	80.45	1.900	783.0	7.43e+2	7.63e+02	5.24	n/a	2.470	1.7
S95T000101		F	Pu-239/240 by Ion Exchange	uCi/g	99.22	5.00e-03	1.05e-01	9.43e-2	9.96e-02	10.7	n/a	6.00e-03	1.9
S95T000101		F	Europium-155 by GEA	uCi/g	n/a	<1.68e-02	< 2.20e-1	<3.55e-1	n/a	n/a	n/a	1.70e-02	n/a
S95T000101		F	Europium-154 by GEA	uCi/g	n/a	<2.26e-02	< 6.34e-2	<1.03e-1	n/a	n/a	n/a	2.30e-02	n/a
S95T000101		F	Cesium-137 by GEA	uCi/g	104.2	1.04e-01	394.0	6.21e+2	5.08e+02	44.7	n/a	1.04e-01	.13
S95T000101		F	Cobalt-60 by GEA	uCi/g	101.0	<8.93e-03	< 1.29e-2	<1.82e-2	n/a	n/a	n/a	9.00e-03	n/a
S95T000734			TOC by Persulfate/Coulometry	ug/g	92.00	25.10	1.99e+04	1.92e4	1.96e+04	3.58	55.50	80.00	n/a

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PART IV

WHC-SD-WM-DP-103, REV. 0

ANALYTICAL SERVICES

60-DAY SAFETY SCREEN RESULTS FOR TANK 241-BY-106, ROTARY MODE, CORES 64 AND 65

Date Printed: APRIL 17, 1995

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WHC-SD-WM-DP-103, REV. 0

NARRATIVE

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60-DAY SAFETY SCREEN RESULTS FOR TANK 241-BY-106 ROTARY-MODE CORE SAMPLES 64 AND 65.

This is the 60-Day report for the fiscal year 1995 tank 241-BY-106 (BY-106) rotary-mode characterization effort. Included are copies of the differential scanning calorimetry (DSC) and thermogravimetric analysis (TGA) scans as requested in References 1 and 2. Also included are copies of any immediate notification documentation. Other pertinent documentation will be included in the BY-106 216-day report.

Summary

Core samples 64 and 65 from tank BY-106, obtained by the rotary-mode core sampling method, were received by the 222-S Laboratories. Core 64 was extruded, subsampled, and analyzed in accordance with Reference 1. Drainable liquid was analyzed at the segment level for energetics by DSC, percent water by TGA, and total organic carbon (TOC) by furnace oxidation. In addition, no separable liquid layers were observed. The entire drainable liquid samples from cores 64 and 65 were not filtered in accordance with References 1 and 2. The core 64 drainable liquid subsamples were filtered through a 0.45 um filter prior to analysis. The core 65 drainable liquid was not filtered since it appeared clear during subsampling. No analyses were performed on a drainable liquid composite. Before such analyses were run, Reference 1 was superseded by Reference 2, which does not require analysis of a drainable liquid composite. The solids from core 64 were analyzed at the half segment level for energetics by DSC, percent water by TGA, TOC by persulfate oxidation, and total cyanide. No sludge was recovered from core 64; all solids collected were saltcake. Some segments contained slurry, which appeared to be a mixture of finely divided saltcake and drainable liquid. No immediate notifications were necessary on samples from core 64.

Per direction of the Ferrocyanide Safety Program (Reference 3), only segments 11, 12, and 13 of core 65 were analyzed. Drainable liquids were analyzed at the segment level by DSC, and for lithium (Li) by inductively coupled plasma/atomic emission spectroscopy (ICP) where the respective chain of custody form indicated that hydrostatic head fluid was used to clear the drill string. Saltcake samples were analyzed at the half-segment level by DSC, TGA, and nickel (Ni) by ICP. Sludge samples were analyzed at the quarter-segment level by DSC, TGA, Ni by ICP, total cyanide, TOC, and total alpha activity. The action limit was exceeded for DSC on the sludge from segment 13 of core 65.

Sample Receipt and Extrusion

Core 64 was taken from riser 10B of tank BY-106. Sample removal, receipt, and extrusion data are summarized for core 64 in Table 1. Subsequently, an additional core sample was removed from riser 10B of tank BY-106. This second core sample was removed from the "hole" created during the initial sampling effort. At the request of the rotary-mode sampling cognizant engineer, the order of extrusions for this core sample was not in chronological order. This explains why some extrusions did not take place for several days following laboratory receipt of the sample. The core was extruded in the order: segment 4, 5, 8, 6, 7, 1, 2, 3, 5A, 13, 12, 11, 10, and 9. The fifth segment of core 65 was taken in two parts labeled 5 and 5A. According to the chain of custody forms, segment 5 was expected to contain 8 in. of sample and segment 5A was expected to contain 11 in. Sample removal, receipt, and extrusion data for core 65 are summarized in Table 2.

Table 1. Sample Receipt and Extrusion Information for BY-106, Core 64.

Segment	Date Sampled	Date Received	Date Extruded	Liner Liq. (g)	Drain. Liq. Recovered (g)	Solids Recovered (g)	Sample Description
1	11/17/94	11/21/94	11/30/94	0.0	0.0	15.95 (upper half)	Extruded was a light-yellow, creamy slurry followed by off-white saltcake with a slushy texture. Both were collected in a single jar.
2	11/21/94	11/21/94	11/30/94	0.0	0.0	125.06 (upper half)	Extruded was a greenish-grey slurry, followed by roughly 3 in. of off-white, chunky saltcake coated with the colored slurry. Both materials were collected in a single jar.
3	11/21/94	11/28/94	12/1/94	0.0	144.32	37.59 (slurry)	Collected pale olive-colored drainable liquid followed by an even paler colored slurry. The slurry was grainy from the presence of solids.
4	11/23/94	11/28/94	12/2/94	0.0	0.0	128.01 (lower half) 189.31 (upper half)	Collected from the upper and lower halves of the segment a grayish-brown, wet saltcake with a slushy, grainy texture. Mixed with the upper half saltcake was a darker colored slurry. The sample was partitioned into upper and lower halves.
5	12/2/94	12/5/94	12/6/94	0.0	0.0	2.43 (upper half)	The solids were wet, slush-like, and pale yellow in color. They only appeared at the very end of the extrusion.
6	12/2/94	12/5/94	12/7/94	0.0	17.23	2.83 (upper half)	Olive-green colored drainable liquid was obtained first, followed by no sample until the very end of the extrusion when a small amount of wet, slushy, pale yellow solids were observed.
7	12/5/94	12/6/94	12/8/94	0.0	0.0	0.0	The sampler piston was found lodged in the valve housing, which did not allow sample collection or valve closure.
8	12/5/94	12/6/94	12/8/94	0.0	0.0	114.83 (lower half) 110.82 (upper half) 162.52 (slurry)	The sample was a mixture of wet-saltcake and slurry. The grey, slushy saltcake was partitioned into upper and lower halves. The darker colored slurry, containing some lumps of saltcake, was placed into a separate container.
9	12/5/94	12/9/94	12/9/94	0.0	0.0	73.11 (upper half)	Collected from the upper half of the sampler was pale yellow, grainy, saltcake mixed with some slurry. All material was placed in one jar.
10	12/20/94	12/21/94	12/21/94	0.0	244	146 (lower half) 28 (upper half)	Pale green, drainable liquid was recovered first followed by light yellow, wet saltcake from the upper and lower halves of the sampler.
11	12/21/94	12/22/94	12/27/94	0.0	0.0	37.5 (upper half)	Collected from the upper half of the sampler were dry, hard, crystalline solids ranging in color from light gray to white. The entire sample was homogenized with a mortar and pestle.
12	12/21/94	12/22/94	12/27/94	5.0	0.0	96.0 (upper half)	Wet saltcake was collected from the upper and lower halves. It was moist and slush-like, appearing light gray to white in color. All of the sample was homogenized with a mortar and pestle.
13	12/21/94	12/22/94	12/27/94	0.0	0.0	12.8 (upper half)	The off-white solids were dry, crystalline, and hard similar to those in segment 11. All sample was homogenized with a mortar and pestle.
FB	12/21/94	12/21/94	12/27/94	0.0	287	0.0	Collected clear, colorless, drainable liquid in two sample jars.

FB = field blank

Table 2. Sample Receipt and Extrusion Information for BY-106, Core 65.

Segment	Date Sampled	Date Received	Date Extruded	Liner Liq. (g)	Drain. Liq. Recovered (g)	Solids Recovered (g)	Sample Description
1	1/18/95	1/20/95	1/27/95	0.0	438.46	11.70 (upper half)	Collected light yellow drainable liquid, which was less turbid than the liquid from segments 4, 5, 6, 7, and 8. Last to extrude from the sampler was slushy, light yellow saltcake.
2	1/19/95	1/20/95	1/27/95	0.0	428.10	22.40 (upper half)	Collected turbid, light yellow-green drainable liquid followed by slushy, light yellow saltcake from the upper half of the sampler.
3	1/19/95	1/20/95	1/30/95	0.0	429.70	21.43 (upper half)	Collected turbid, light yellow-green drainable liquid followed by slushy, light yellow saltcake from the upper half of the sampler.
4	1/20/95	1/20/95	1/25/95	0.0	411.74	42.01 (upper half)	Opaque, yellow drainable liquid was recovered from the sampler before slushy, light yellow saltcake was collected from the upper half of the sampler.
5	1/20/95	1/20/95	1/26/95	0.0	409.48	34.58 (upper half)	Turbid, yellow-green drainable liquid was recovered first. Slushy, light yellow saltcake was recovered next from the upper half.
5A	1/20/95	1/20/95	1/30/95	0.0	0.0	0.30 (upper half)	No material was extruded from the sampler. A small amount of white, crusty solids were recovered from the sampler piston.
6	1/20/95	1/23/95	1/26/95	0.0	423.08	29.38 (upper half)	The last material to extrude from the sampler was slushy, light yellow saltcake. Collected first was light yellow, drainable liquid.
7	1/20/95	1/23/95	1/27/95	0.0	422.54	26.74 (upper half)	The last material to extrude from the sampler was slushy, light yellow saltcake. Collected first was light yellow, drainable liquid.
8	1/20/95	1/23/95	1/26/95	0.0	394.25	44.15 (upper half)	The last material to extrude from the sampler was slushy, light yellow saltcake. Collected first was light yellow, drainable liquid.
9	1/23/95	1/25/95	2/7/95	0.0	0.0	9.56 (upper half)	Recovered from the upper half of the segment was light yellow-green saltcake and no drainable liquid.
10	1/24/95	1/25/95	2/6/95	0.0	363.65	90.32 (upper half)	Collected first was turbid, yellow-green drainable liquid. Solids were observed towards the end of the extrusion. The first solids to appear were hard, crystalline chunks that ranged in color from white to gray. Remaining solids were wet, yellow-green saltcake.
11	1/24/95	1/25/95	2/6/95	0.0	82.73	4.91 (upper half)	Recovered solids were crystalline and light yellow in color. The drainable liquid was yellow-green in color and turbid.
12	1/24/95	1/25/95	2/3/95	0.0	44.25	0.0	The light brown, turbid liquid was different in appearance than the light yellow-green liquid obtained from the previous segments.
13	1/24/95	1/25/95	2/3/95	0.0	<5 mL (not collected)	57.15 (sludge) 74.49 (saltcake)	Collected approx. 5 inches of solids from the upper half of the sampler. The first two inches was a dark brown sludge and the final three inches were compacted white salt cake material coated with sludge. The two types of material separated cleanly and were collected in separate jars.

Analytical Results

The safety screening analytical results are presented in Tables 3, 4, and 5, which include the LabCore sample number. Column 2 of the tables indicate the sample preparation used, if any. As shown, analyses on fused samples are marked with "F", and samples marked with "D" indicate an acid dilution was performed on the sample before analysis.

Segment 13 of core 65 contained sludge and saltcake waste types, although the analytical results for sub-samples of both types are reported in Table 4. Therefore, some description of the sample numbers is necessary. Sample S95T000098 represents undigested saltcake material and sample S95T000099 represents the undigested sludge. Sample S95T000100 is the fusion digest of a saltcake aliquot, while S95T000101 is the fusion digest of a sludge aliquot.

No separable, presumably organic, liquid layers were observed in any segments.

TGA (Moisture Content)

Weight percent water by TGA was performed under a nitrogen atmosphere using procedure LA-560-112, Rev. A-2. All results are above the notification limit. Percent water was measured on the saltcake from cores 64 and 65 (segments 11 and 13 only), on the sludge sample from core 65, and on drainable liquid from core 64. For the core 64 saltcake, the trend is decreasing percent water with tank depth. Saltcake from segments 11, 13, the lower half of segment 4, and the upper half of segment 8 are particularly dry, averaging less than 12% water. Values are much higher for segments 11 and 13 saltcake from core 65, while the core 65 sludge sample average 37.31% water. As expected, the highest percent water values are found in the drainable liquid from core 64. Here, the values are in the 54-69% range.

A number of saltcake samples have relative percent difference (RPD) values greater than 10%. This is not surprising given the slushy, heterogenous nature of the saltcake, as indicated in Tables 1 and 2, and the small sample sizes used in the TGA analysis. No re-runs were performed, although third samples were run on samples S94T000372 and S94T000373. These results are 23.54% and 11.66%, respectively, and are not shown in Table 3, although they are included in the attached raw data. The action limit for percent water is a function of the DSC exotherm such that the DSC action limit must be exceeded before the TGA limit can be exceeded. In all but two of the samples with high RPD values, there is no DSC exotherm. For those remaining two samples, the DSC exotherms are relatively small and the TGA values are greater than 21%.

DSC (Energetics Content)

Analyses by DSC were performed under a nitrogen atmosphere using procedure LA-514-113, Rev B-1. Exotherms, albeit small, are observed on all drainable liquid samples. Saltcake samples from segments 2, 3, 4, and 8 of core 64 also display exothermic behavior. The saltcake from segment 13 of core 65 shows no exotherm, while the sludge from this segment has a relatively large exotherm. A third sample was run since the RPD between the sample and duplicate is greater than 10%. The sample, duplicate, and second duplicate runs give 417.9, 855.4, and 421.4 J/g respectively. All these results exceed the DSC notification limit on a dry-weight basis and an immediate notification was made. In several instances, samples showed more than one exotherm. In these

cases, the value of the first exotherm is reported. A third DSC run was performed under an atmosphere of air on the saltcake from segment 1 of core 64 (sample S94T000305). The scan is very similar to the runs performed under nitrogen and there is no exotherm.

As with the TGA runs, the RPD between sample and duplicate is greater than 10% for several samples. This is attributed to the lumpy, heterogenous nature of many of the samples. Samples with the highest RPD values were run a third time. These include samples S94T000308, S94T000309, S94T000311, and S94T000355 with second duplicate values of 175.7, 108.4, 0, and 68.8 J/g respectively. Samples S94T000305 and S94T000308 were run to 450° C rather than the prescribed 500° C because there was evidence the DSC sensor was being damaged by volatilized material. It is believed this is the cause of poor baselines a number of samples display at temperatures greater than 400° C.

Total Alpha

Total alpha analyses were performed on fusion digestions of the sludge and saltcake samples from segment 13 of core 65 using procedure LA-508-101, Rev. D-2. All results are well below the notification limit of 41 uCi/g. Although the RPD is greater than 10% for the sample and duplicate of the sludge sample (S95T000101), no re-run was performed because the result is below 2 uCi/g and, per Reference 1, exempt from the precision and accuracy requirements listed therein. The spike recoveries on the sludge and saltcake samples are below 90% due to self adsorption resulting from a high solids content on the spike mounts. Re-runs were not performed for the reason given above.

Cyanide

Analyses for cyanide were performed directly on all saltcake samples from core 64 and on the sludge sample from segment 13 of core 65 (sample S95T000099) per procedure LA-695-102, Rev. C-0. Results from core 64 are roughly 1000 times below the action limit of 30,000 ug/g, although the results on segments 11 and 13 of core 64 are particularly low. The sludge from core 65 is about three times more concentrated in cyanide, averaging 93.9 ug/g. It is noted that these segments also have very little moisture. Per Reference 1, results below 0.5% by weight (5,000 ug/g) are exempt from the precision and accuracy requirements listed therein, therefore no re-runs were performed. The RPD on duplicate results for the cyanide analyses are generally less than 10%, although the RPD values are high on samples from segments 6, 8, and 11 of core 64 and the sludge from segment 13 of core 65 as shown in Tables 3 and 4. All spike recoveries are within ±10% except for the upper half of segments 9 and 10, which have slightly low recoveries at about 85%.

Total Organic Carbon

Analyses for TOC were performed by direct persulfate oxidation on all saltcake samples from core 64 and on the sludge sample from segment 13 of core 65 (sample S95T000099) per procedure LA-342-100. The furnace oxidation method using procedure LA-344-105, Rev. B-3 was used on the drainable liquid samples from core 64.

Similar to the percent water results, there appears to be a trend toward lower TOC values on saltcake with sample depth. Results from the first three segments are in the 2300 ug C/g range, while the highest value in the bottom

five segments is 1450 ug C/g. There are significant differences between the upper and lower halves of segment 4 and between the saltcake and slurry of segment 8. Some of these differences may be due to the heterogenous samples. This is also the most likely explanation for the high RPD values found between the sample and duplicate analyses on many saltcake samples. One standard recovery is slightly below the TCP ±10% limit at 89.33. No re-runs were performed since all results are below 1% by weight (10,000 ug C/g) and, per Reference 1, exempt from the precision and accuracy requirements listed therein.

Analysis for TOC on the sludge from segment 13, core 65 was performed twice with very similar results: once without a spiked sample (sample S95T000099) and once with a spiked sample (sample S95T000734). Sample S95T000734 is the same material as sample S95T000099; they were taken from the same sample vial. As shown in Table 4, the amount of TOC in the sludge is significantly higher than in any saltcake sample. The spike recovery for sample S95T000734 is low at 55.5%, therefore the TOC result is most likely biased low. An initial, but not reported, spike recovery on the same sample is also near 50%. Investigation of the reason(s) for the low recovery are ongoing. Any needed remediation is expected to be resolved in time for the BY-106 90-day report.

Results on the drainable liquid from segments 3 and 10 of core 64 are similar to those of the core 64 saltcake. A TOC result is not available on the liquid from segment 6, core 64 due to insufficient sample. Samples S95T000004 and S95T000228 (Table 5) are aliquots from the same parent sample jar. The TOC content of these two samples are comparable as expected.

Ni and Li by Inductively Coupled Plasma

Concentration of the metals Ni and Li were determined by ICP using procedure LA-505-151 or LA-505-161. Analyses for Ni were performed on fusion digestions of saltcake and sludge from segments 11 and 13 of core 65. Results from segment 11 are less than the detection limit of 215 ug/g. A large increase in the Ni concentration is seen with the segment 13 saltcake (S95T000100). Here the value averages 6959 ug/g. The concentration in the segment 13 sludge (S95T000101) is roughly four times higher; an average of 29,513 ug/g for the sample and duplicate runs. Note from Table 2 that the saltcake from segment 13 appeared to be coated with the sludge, therefore the Ni results in the saltcake may be biased high. The RPD values from segment 13 are slightly above the 10% TCP limit. It is unlikely that re-runs on the same fusion digests would improve the RPD, hence no re-runs were performed. Samples will be re-digested and re-run at the customer's request.

Analyses for Li were performed on the drainable liquid from segment 12, core 65, and the saltcake (S95T000322) and sludge (S95T000101) of segment 13, core 65. Of the segments analyzed, these are the only two in which the chain of custody forms indicated that hydrostatic head fluid containing LiBr tracer was used. Both results give less-than values, although the detection limit was significantly lower for the sludge sample.

REFERENCES

(1) WHC-SD-WM-TP-217, Rev. 0D, "Tank 241-BY-106 Tank Characterization Plan", Westinghouse Hanford Company, Richland, WA 99352, dated November 22, 1994.

(2) WHC-SD-WM-TP-217, Rev. 1, "Tank 241-BY-106 Tank Characterization Plan", Westinghouse Hanford Company, Richland, WA 99352, dated January 24, 1995.

(3) Internal Memo 71520-95-106, "Memorandum of Understanding for Tank 241-BY-106, Additional Core Sample", dated February 17, 1995.

SAMPLE DATA SUMMARY

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Table 3. BY-106 Analytical Summary - Core 64 Solids.
BY-106

CORE NUMBER: 64
SEGMENT #: 1

SEGMENT PORTION: U Upper Half of Segment

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S94T000305			% Water by TGA using Mettler	%	98.77	n/a	47.17	46.24	46.70	1.99	n/a	n/a	n/a
S94T000305			DSC Exotherm using Mettler	Joules/g	101.6	n/a	0	0	0.000	n/a	n/a	n/a	n/a
S94T000305			Cyanide by Microdist. & Spec.	ug/g	99.57	4.60e-01	30.5	29.9	30.20	1.99	92.20	1.980	n/a
S94T000305			TOC by Persulfate/Coulometry	ug/g	104.5 ~~n/a~~	37.6 ~~n/a~~	2.57e03	2.41E03	2.49e+03	6.43	n/a	80.00	n/a

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Table 3. BY-106 Analytical Summary - Core 64 Solids.
BY-106

CORE NUMBER: 64
SEGMENT #: 2

SEGMENT PORTION: U Upper Half of Segment

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S94T000308			% Water by TGA using Mettler	%	98.77	n/a	46.65	47.26	46.95	1.30	n/a	n/a	n/a
S94T000308			DSC Exotherm Dry Calculated	Joules/g Dry	n/a	n/a	447	219	333.0	68.5	n/a	1.00e-01	n/a
S94T000308			DSC Exotherm using Mettler	Joules/g	101.6	n/a	237.0	116.4	176.7	68.3	n/a	n/a	n/a
S94T000308			Cyanide by Microdist. & Spec.	ug/g	99.57	4.60e-01	34.5	36.8	35.65	6.45	n/a	2.390	n/a
S94T000308			TOC by Persulfate/Coulometry	ug/g	89.33	19.80	2.85e+3	2.27e+3	2.56e+03	22.7	n/a	80.00	n/a

Table 3. BY-106 Analytical Summary - Core 64 Solids.
BY-106

CORE NUMBER: 64
SEGMENT #: 3

SEGMENT PORTION: U Upper Half of Segment

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S94T000309			% Water by TGA using Mettler	%	99.34	n/a	38.31	32.2	35.26	17.3	n/a	n/a	n/a
S94T000309			DSC Exotherm Dry Calculated	Joules/g Dry	n/a	n/a	191	167	179.0	13.4	n/a	1.00e-01	n/a
S94T000309			DSC Exotherm using Mettler	Joules/g	105.1	n/a	123.4	74.5	98.95	49.4	n/a	n/a	n/a
S94T000309			Cyanide by Microdist. & Spec.	ug/g	99.36	3.00e-01	44.5	45.1	44.80	1.34	92.20	1.440	n/a
S94T000309			TOC by Persulfate/Coulometry	ug/g	89.33	19.80	2.31e+3	2.25e+3	2.28e+03	2.63	n/a	80.00	n/a

Table 3. BY-106 Analytical Summary - Core 64 Solids.
BY-106

CORE NUMBER: 64
SEGMENT #: 4

SEGMENT PORTION: U Upper Half of Segment

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S94T000310			% Water by TGA using Mettler	%	99.34	n/a	21.07	25.62	23.34	19.5	n/a	n/a	n/a
S94T000310			DSC Exotherm Dry Calculated	Joules/g Dry	n/a	n/a	28	19	23.50	38.3	n/a	1.00e-01	n/a
S94T000310			DSC Exotherm using Mettler	Joules/g	105.1	n/a	21.1	14.2	17.65	39.1	n/a	n/a	n/a
S94T000310			Cyanide by Microdist. & Spec.	ug/g	99.36	3.00e-01	55.2	53.3	54.25	3.50	n/a	2.700	n/a
S94T000310			TOC by Persulfate/Coulometry	ug/g	101.0	25.10	4.18e03	4.41e03	4.30e+03	5.36	n/a	80.00	n/a

SEGMENT PORTION: L Lower Half of Segment

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S94T000311			% Water by TGA using Mettler	%	99.11	n/a	9.70	9.78	9.740	0.82	n/a	n/a	n/a
S94T000311			DSC Exotherm Dry Calculated	Joules/g Dry	n/a	n/a	397	137	267.0	97.4	n/a	1.00e-01	n/a
S94T000311			DSC Exotherm using Mettler	Joules/g	98.42	n/a	358.7	123.4	241.1	97.6	n/a	n/a	n/a
S94T000311			Cyanide by Microdist. & Spec.	ug/g	105.0	2.30e-01	23.2	24.3	23.75	4.63	106.0	1.490	n/a
S94T000311			TOC by Persulfate/Coulometry	ug/g	101.0	25.10	1.31e03	1.23e03	1.27e+03	6.30	n/a	80.00	n/a

Table 3. BY-106 Analytical Summary - Core 64 Solids.
BY-106

CORE NUMBER: 64
SEGMENT #: 5

SEGMENT PORTION: U Upper Half of Segment

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S94T000326			% Water by TGA using Mettler	%	98.99	n/a	14.37	14.24	14.30	0.91	n/a	n/a	n/a
S94T000326			DSC Exotherm using Mettler	Joules/g	95.25	n/a	0	0	0.000	n/a	n/a	n/a	n/a
S94T000326			Cyanide by Microdist. & Spec.	ug/g	96.99	1.900	30.7	31.2	30.95	1.62	95.20	2.290	n/a
S94T000326			TOC by Persulfate/Coulometry	ug/g	95.67	37.60	7.33e02	9.94E02	8.64e+02	30.2	n/a	80.00	n/a

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Table 3. BY-106 Analytical Summary - Core 64 Solids.
BY-106

CORE NUMBER: 64
SEGMENT #: 6

SEGMENT PORTION: U Upper Half of Segment

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S94T000342			% Water by TGA using Mettler	%	98.60	n/a	18.01	15.64	16.83	14.1	n/a	n/a	n/a
S94T000342			DSC Exotherm using Mettler	Joules/g	101.9	n/a	0	0	0.000	n/a	n/a	n/a	n/a
S94T000342			Cyanide by Microdist. & Spec.	ug/g	96.99	1.900	22.1	18.7	20.40	16.7	n/a	1.730	n/a
S94T000342			TOC by Persulfate/Coulometry	ug/g	95.33	32.40	9.48E02	8.98e02	9.23e+02	5.42	n/a	80.00	n/a

Table 3. BY-106 Analytical Summary - Core 64 Solids.
BY-106

CORE NUMBER: 64
SEGMENT #: 8

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SEGMENT PORTION: ~~n/a~~ Slurry

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S94T000345			% Water by TGA using Mettler	%	99.43	n/a	43.17	43.45	43.31	0.65	n/a	n/a	n/a
S94T000345			DSC Exotherm Dry Calculated	Joules/g Dry	n/a	n/a	96	92	94.00	4.26	n/a	1.00e-01	n/a
S94T000345			DSC Exotherm using Mettler	Joules/g	95.25	n/a	54.3	52.4	53.35	3.56	n/a	n/a	n/a
S94T000345			Cyanide by Microdist. & Spec.	ug/g	103.0	9.50e-01	21.6	25.0	23.30	14.6	n/a	1.000	n/a
S94T000345			TOC by Persulfate/Coulometry	ug/g	95.33	32.40	2.86E03	3.02e03	2.94e+03	5.44	n/a	80.00	n/a

SEGMENT PORTION: U Upper Half of Segment

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S94T000343			% Water by TGA using Mettler	%	98.60	n/a	8.26	11.57	9.915	33.4	n/a	n/a	n/a
S94T000343			DSC Exotherm using Mettler	Joules/g	101.9	n/a	0	0	0.000	n/a	n/a	n/a	n/a
S94T000343			Cyanide by Microdist. & Spec.	ug/g	105.0	2.30e-01	11.7	10.6	11.15	9.87	n/a	1.690	n/a
S94T000343			TOC by Persulfate/Coulometry	ug/g	98.00	25.30	1.05e03	1.05e03	1.05e+03	0.00	n/a	80.00	n/a

SEGMENT PORTION: L Lower Half of Segment

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S94T000344			% Water by TGA using Mettler	%	99.43	n/a	17.65	20.47	19.06	14.8	n/a	n/a	n/a
S94T000344			DSC Exotherm using Mettler	Joules/g	95.25	n/a	0	0	0.000	n/a	n/a	n/a	n/a
S94T000344			Cyanide by Microdist. & Spec.	ug/g	103.0	9.50e-01	9.02	9.49	9.255	5.08	104.7	1.000	n/a
S94T000344			TOC by Persulfate/Coulometry	ug/g	98.00	25.30	9.40e02	8.23e02	8.82e+02	13.3	n/a	80.00	n/a

Table 3. BY-106 Analytical Summary - Core 64 Solids.
BY-106

CORE NUMBER: 64
SEGMENT #: 9

SEGMENT PORTION: U Upper Half of Segment

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S94T000346			% Water by TGA using Mettler	%	98.99	n/a	18.38	14.94	16.66	20.6	n/a	n/a	n/a
S94T000346			DSC Exotherm using Mettler	Joules/g	95.25	n/a	0	0	0.000	n/a	n/a	n/a	n/a
S94T000346			Cyanide by Microdist. & Spec.	ug/g	96.24	4.30e-01	28.1	29.7	28.90	5.54	85.50	1.950	n/a
S94T000346			TOC by Persulfate/Coulometry	ug/g	98.00	25.30	4.03e02	4.64e02	4.34e+02	14.1	n/a	80.00	n/a

Table 3. BY-106 Analytical Summary - Core 64 Solids.
BY-106

CORE NUMBER: 64
SEGMENT #: 10

SEGMENT PORTION: U Upper Half of Segment

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S94T000372			% Water by TGA using Mettler	%	99.11	n/a	25.39	14.24	19.82	56.3	n/a	n/a	n/a
S94T000372			DSC Exotherm using Mettler	Joules/g	99.82	n/a	0	0	0.000	n/a	n/a	n/a	n/a
S94T000372			Cyanide by Microdist. & Spec.	ug/g	93.13	<9.00e-01	13.8	13.0	13.40	5.97	85.20	1.000	n/a
S94T000372			TOC by Persulfate/Coulometry	ug/g	93.33	17.90	1.70e+3	1.20e+3	1.45e+03	34.5	n/a	80.00	n/a

SEGMENT PORTION: L Lower Half of Segment

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S94T000373			% Water by TGA using Mettler	%	99.11	n/a	20.10	17.41	18.76	14.3	n/a	n/a	n/a
S94T000373			DSC Exotherm using Mettler	Joules/g	99.82	n/a	0	0	0.000	n/a	n/a	n/a	n/a
S94T000373			Cyanide by Microdist. & Spec.	ug/g	96.24	4.30e-01	24.2	24.0	24.10	0.83	n/a	1.720	n/a
S94T000373			TOC by Persulfate/Coulometry	ug/g	93.33	17.90	1.34e+3	6.74e+2	1.01e+03	66.1	n/a	80.00	n/a

Table 3. BY-106 Analytical Summary - Core 64 Solids.
BY-106

CORE NUMBER: 64
SEGMENT #: 11

SEGMENT PORTION: U Upper Half of Segment

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S94T000381			% Water by TGA using Mettler	%	99.31	n/a	3.51	4.05	3.780	14.3	n/a	n/a	n/a
S94T000381			DSC Exotherm using Mettler	Joules/g	96.66	n/a	0	0	0.000	n/a	n/a	n/a	n/a
S94T000381			Cyanide by Microdist. & Spec.	ug/g	93.13	<9.00e-01	3.0	3.7	3.350	20.9	n/a	1.000	n/a
S94T000381			TOC by Persulfate/Coulometry	ug/g	95.33	32.40	5.96E02	4.00e02	4.98e+02	39.4	n/a	80.00	n/a

Table 3. BY-106 Analytical Summary - Core 64 Solids.
BY-106

CORE NUMBER: 64
SEGMENT #: 12

SEGMENT PORTION: U Upper Half of Segment

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S94T000390			% Water by TGA using Mettler	%	99.34	n/a	26.83	27.76	27.30	3.41	n/a	n/a	n/a
S94T000390			DSC Exotherm using Mettler	Joules/g	96.66	n/a	0	0	0.000	n/a	n/a	n/a	n/a
S94T000390			Cyanide by Microdist. & Spec.	ug/g	94.95	3.72e-01	2.14e1	2.19e1	2.16e+01	2.31	93.90	1.000	n/a
S94T000390			TOC by Persulfate/Coulometry	ug/g	93.33	29.80	1.86e+3	1.22e+3	1.54e+03	41.6	n/a	80.00	n/a

Table 3. BY-106 Analytical Summary - Core 64 Solids.
BY-106

CORE NUMBER: 64
SEGMENT #: 13

SEGMENT PORTION: U Upper Half of Segment

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S94T000391			% Water by TGA using Mettler	%	100.2	n/a	12.26	10.15	11.21	18.8	n/a	n/a	n/a
S94T000391			DSC Exotherm using Mettler	Joules/g	101.6	n/a	0	0	0.000	n/a	n/a	n/a	n/a
S94T000391			Cyanide by Microdist. & Spec.	ug/g	94.95	3.72e-01	2.27e0	2.42e0	2.34e+00	6.40	n/a	1.000	n/a
S94T000391			TOC by Persulfate/Coulometry	ug/g	93.33	29.80	1.11e+2	1.23e+2	1.17e+02	10.3	n/a	80.00	n/a

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Table 4. BY-106 Analytical Summary - Core 65 Solids.
BY-106

CORE NUMBER: 65
SEGMENT #: 11

SEGMENT PORTION: U Upper Half of Segment

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S95T000084			% Water by TGA using Mettler	%	98.82	n/a	25.28	20.63	22.95	20.3	n/a	n/a	n/a
S95T000084			DSC Exotherm using Mettler	Joules/g	101.2	n/a	0	0	0.000	n/a	n/a	n/a	n/a
S95T000085		F	Nickel -ICP-Fusion	ug/g	104.8	4.50e-02	< 215	<216	n/a	n/a	92.20	215.0	n/a

Table 4. BY-106 Analytical Summary - Core 65 Solids.
BY-106

CORE NUMBER: 65
SEGMENT #: 13

SEGMENT PORTION: U Upper Half of Segment

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S95T000098			% Water by TGA using Mettler	%	99.26	n/a	27.38	28.93	28.16	5.51	n/a	n/a	n/a
S95T000098			DSC Exotherm Dry Calculated	Joules/g Dry	n/a	n/a	0	0	0.000	n/a	n/a	n/a	n/a
S95T000098			DSC Exotherm using Mettler	Joules/g	100.2	n/a	0	0	0.000	n/a	n/a	n/a	n/a
S95T000099			% Water by TGA using Mettler	%	99.26	n/a	38.01	36.62	37.31	3.73	n/a	n/a	n/a
S95T000099			DSC Exotherm Dry Calculated	Joules/g Dry	n/a	n/a	667	1365	1016	68.7	n/a	n/a	n/a
S95T000099			DSC Exotherm using Mettler	Joules/g	100.2	n/a	417.9	855.4	636.6	68.7	n/a	n/a	n/a
S95T000099			Cyanide by Microdist. & Spec.	ug/g	106.0	1.040	98.9	88.9	93.90	10.6	93.00	17.90	n/a
S95T000099			TOC by Persulfate/Coulometry	ug/g	92.67	31.80	2.08e4	2.17e4	2.12e+04	4.24	n/a	80.00	n/a
S95T000100		F	Nickel -ICP-Fusion	ug/g	98.02	1.00e-02	6510.3073	7407.396	6959	12.9	n/a	102.0	n/a
S95T000100		F	Alpha of Digested Solid	uCi/g	92.75	<2.90e-03	< 4.82E-3	5.99e-3	n/a	n/a	68.10	7.00e-03	339.5
S95T000101		F	Lithium -ICP-Fusion	ug/g	104.3	7.00e-03	<52.5	<51.9	n/a	n/a	n/a	50.90	n/a
S95T000101		F	Nickel -ICP-Fusion	ug/g	98.02	10.08	31216.840	27809.59	29513	11.5	n/a	105.0	n/a
S95T000101		F	Alpha of Digested Solid	uCi/g	92.75	<2.90e-03	2.90E-1	2.15e-1	2.53e-01	29.7	85.90	2.32e-01	79
S95T000322		F	Lithium -ICP-Fusion	ug/g	98.22	2.00e-03	<439.1900	<439.190	n/a	n/a	85.82	439.0	n/a
S95T000734			TOC by Persulfate/Coulometry	ug/g	92.00	25.10	1.99e4	1.92e4	1.96e+04	3.58	55.50	80.00	n/a

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Table 5. BY-106 Analytical Summary - Cores 64 & 65 Liquids
BY-106

CORE NUMBER: 64
SEGMENT #: 3

SEGMENT PORTION: Drainable Liquid

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S95T000004			Tot. Organic Carbon by Coul.	ug/mL	102.0	<5.000	2.30e03	2.32e03	2.31e+03	0.87	89.80	55.00	n/a
S95T000004			% Water by TGA using Mettler	%	97.79	n/a	68.57	67.93	68.25	0.94	n/a	n/a	n/a
S95T000004			DSC Exotherm Dry Calculated	Joules/g Dry	n/a	n/a	98	97	97.50	1.03	n/a	1.00e-01	n/a
S95T000004			DSC Exotherm using Mettler	Joules/g	102.3	n/a	31.0	30.9	30.95	0.32	n/a	n/a	n/a
S95T000228			Tot. Organic Carbon by Coul.	ug/mL	100.3	<5.000	1.86E03	1.96E03	1.91e+03	5.24	95.30	55.00	n/a

Table 5. BY-106 Analytical Summary - Cores 64 & 65 Liquids
BY-106

CORE NUMBER: 64
SEGMENT #: 6

SEGMENT PORTION: Drainable Liquid

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S94T000355			Tot. Organic Carbon by Coul.	ug/mL	102.0	<5.000	n/a	n/a	n/a	n/a	n/a	55.00	n/a
S94T000355			% Water by TGA using Mettler	%	98.99	n/a	54.57	55.22	54.89	1.18	n/a	n/a	n/a
S94T000355			DSC Exotherm Dry Calculated	Joules/g Dry	n/a	n/a	78	193	135.5	84.9	n/a	1.00e-01	n/a
S94T000355			DSC Exotherm using Mettler	Joules/g	105.4	n/a	35.4	87.2	61.30	84.5	n/a	n/a	n/a

Table 5. BY-106 Analytical Summary - Cores 64 & 65 Liquids
BY-106

CORE NUMBER: 64
SEGMENT #: 10

SEGMENT PORTION: Drainable Liquid

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S94T000371			Tot. Organic Carbon by Coul.	ug/mL	102.0	<5.000	2.29e03	2.42e03	2.36e+03	5.52	n/a	55.00	n/a
S94T000371			% Water by TGA using Mettler	%	97.79	n/a	63.85	64.07	63.96	0.34	n/a	n/a	n/a
S94T000371			DSC Exotherm Dry Calculated	Joules/g Dry	n/a	n/a	123	122	122.5	0.82	n/a	1.00e-01	n/a
S94T000371			DSC Exotherm using Mettler	Joules/g	102.3	n/a	44.5	44.0	44.25	1.13	n/a	n/a	n/a

Table 5. BY-106 Analytical Summary - Cores 64 & 65 Liquids
BY-106

CORE NUMBER: 65
SEGMENT #: 11

SEGMENT PORTION: Drainable Liquid

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S95T000229			DSC Exotherm using Mettler	Joules/g	101.2	n/a	19.9	20.1	20.00	1.00	n/a	n/a	n/a

Table 5. BY-106 Analytical Summary - Cores 64 & 65 Liquids
BY-106

CORE NUMBER: 65
SEGMENT #: 12

SEGMENT PORTION: Drainable Liquid

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S95T000109			DSC Exotherm using Mettler	Joules/g	94.90	n/a	54.1	59.4	56.75	9.34	n/a	n/a	n/a
S95T000109		D	Lithium-ICP-Acid Dil.	ug/mL	96.20	2.00e-03	< 5.01	<5.01	n/a	n/a	97.00	5.010	n/a

WHC-SD-WM-DP-103, REV. 0

IMMEDIATE NOTIFICATION DOCUMENTATION

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WHC-SD-WM-DP-103, REV. 0

Author: Kevin E Bell at ~WHC103
Date: 3/29/95 3:14 PM
Priority: Normal
Subject: DSC ACTION LIMIT VIOLATED ON BY-106, CORE 65

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

The notification limit of >481 J/g (dry-weight basis) by differential scanning calorimetry (DSC) was violated on the upper half sludge from segment 13, core 65 of tank BY-106. As required by the BY-106 TCP (WHC-SD-WM-TP-217, Rev. 1), an immediate notification was made by Mr. D. Hardy of the 222-S Laboratory to the East Tank Farms Operations Shift Manager on 3/29/95. This cc:Mail is the required follow-up written notification of that initial, verbal notification.

The results for the segment 13 sludge sample are 667 J/g for the sample and 1365 J/g on the duplicate. A third run was performed with a result of 672 J/g. These results are on a dry-weight basis. They are corrected values calculated using the DSC value and the percent water by thermogravimetric analysis (TGA) on the respective wet sample. The average percent water value is 37.31%. It is interesting to note that saltcake collected from the upper half of the same segment displayed no exotherms. This material extruded immediately before the sludge material, and was collected in a separate jar.

Please call me at 373-1629 if you have any questions.

Kevin Bell,
BY-106 Project Coordinator

WHC-SD-WM-DP-103, REV. 0

UNDIGESTED SAMPLE RESULTS - DIRECT

WHC-SD-WM-DP-103, REV. 0

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BY106

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LABCORE Data Entry Template for Worklist# 206

Analyst: KLV **Instrument:** DSC01 **Method:** LA-514-113 B-1

WHC-SD-WM-DP-103, REV. 1

Worklist Comment: Please run BY-106 under N2. BDV

Seg	Type	Sample#	Rep	Al	Test	Matrix	Actual	Found	DL	Unit
1	STD	12N14A			DSC-01	SOLID	28.45	28.9	N/A	Joule/g
2	SAMPLE	S94T000305 N_2	0		DSC-01	SOLID	N/A	0		Joule/g
3	DUP	S94T000305 N_2	0		DSC-01	SOLID	0	0	N/A	Joule/g
	Std	12N14A					28.45	27.8		
4	DUP	S94T000305air	0		DSC-01	SOLID	0	0	N/A	Joule/g
5	SAMPLE	S94T000308	0		DSC-01	SOLID	N/A	237.0		Joule/g
6	DUP	S94T000308	0		DSC-01	SOLID	237.0	116.4	N/A	Joule/g
7	DUP	S94T000308	0		DSC-01	SOLID	237.0	175.7	N/A	Joule/g

KB 4/22/95

Final page for worklist # 206

Analyst Signature

12/29/94
Date

WHC-SD-WM-DP-103, REV. 0

Entered & Verified 12/22/94 JMFuge

See attached page for signatures

Data Entry Comments:
S94T000305 had two endotherms one at 128.1°C with a delta H of 1074.5 J/g and another at 266.5°C with a delta H of 45.3 J/g. The second duplicate of S94T000305 was run under air. S94T000308 had one endotherm at 133.6°C with a delta H of 946.5 J/g. S94T000308 first duplicate had one exotherm at 423.7°C with a delta H of 80 J/g

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

LABCORE Data Entry Template for Worklist# 206

Analyst: KLV **Instrument:** DSC01 _____ **Method:** LA-514-113

Worklist Comment: Please run BY-106 under N2. BDV

Seg	Type	Sample#	Rep	Al	Test	Matrix	Actual	Found	DL	Unit
1	STD	12N14A			DSC-01	SOLID	28.45	28.9	N/A	Joule/g
2	SAMPLE	S94T000305	0		DSC-01	SOLID	N/A			Joule/g
3	DUP	S94T000305	0		DSC-01	SOLID			N/A	Joule/g
4	SAMPLE	S94T000308	0		DSC-01	SOLID	N/A			Joule/g
5	DUP	S94T000308	0		DSC-01	SOLID			N/A	Joule/g

XB 4/28/95

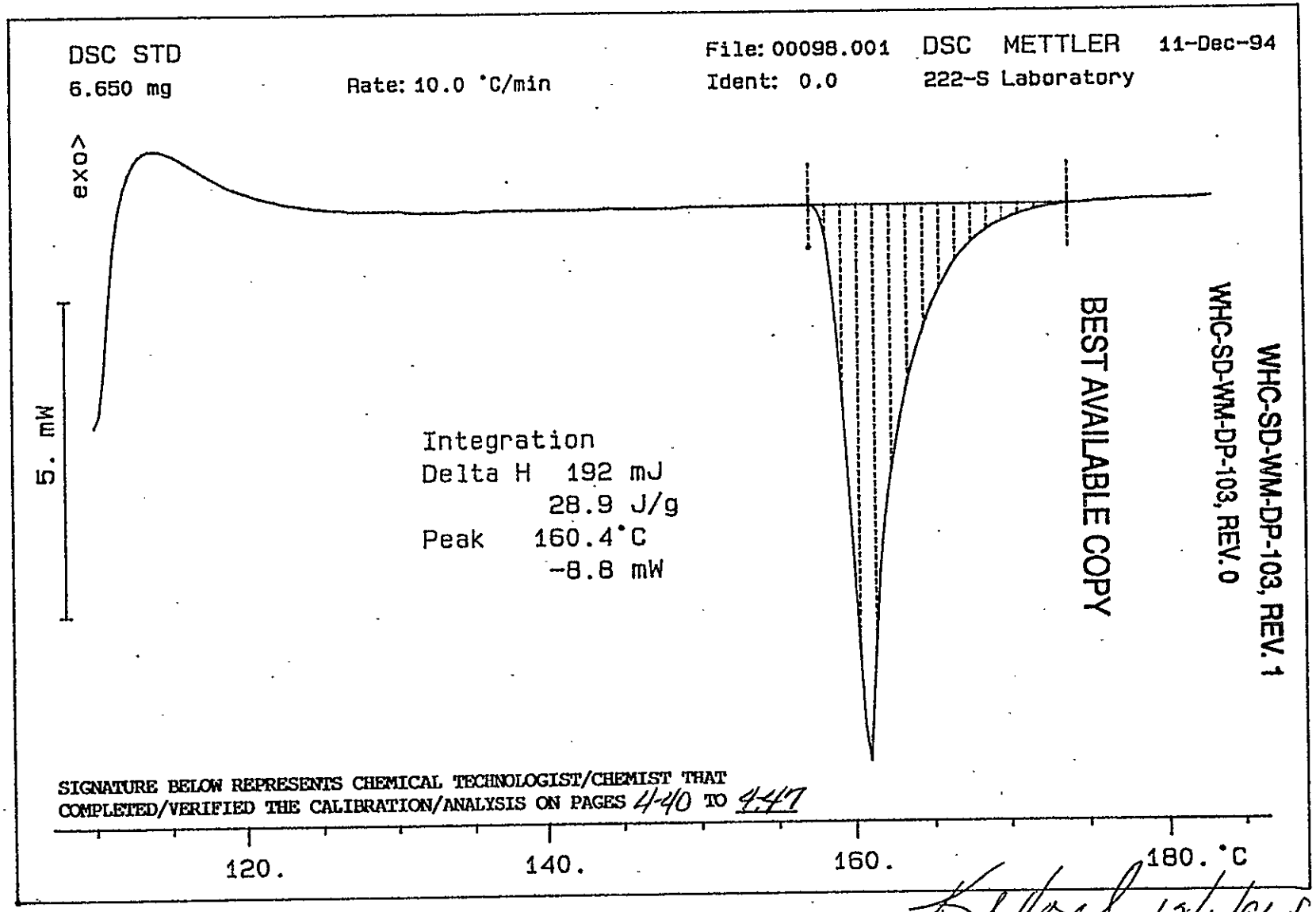
Final page for worklist # 206

KL Vogel
Analyst Signature

12/11/94
Date

Data Entry Comments:
Std # 12N14A

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



SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 4-40 TO 4-47

12/11/94

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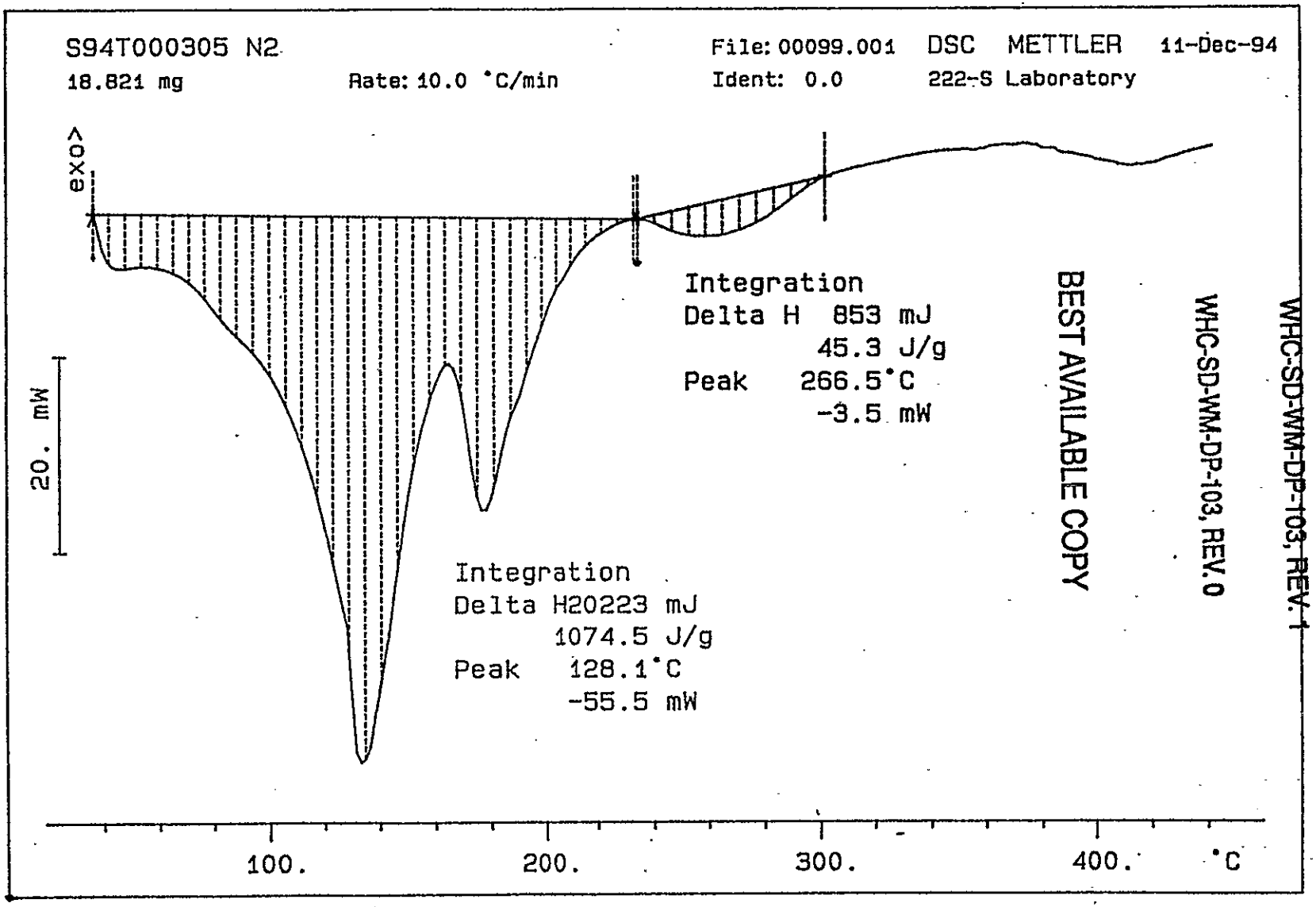
WHC-SD-WM-DP-103, REV. 1

WHC-SD-WM-DP-103, REV. 0



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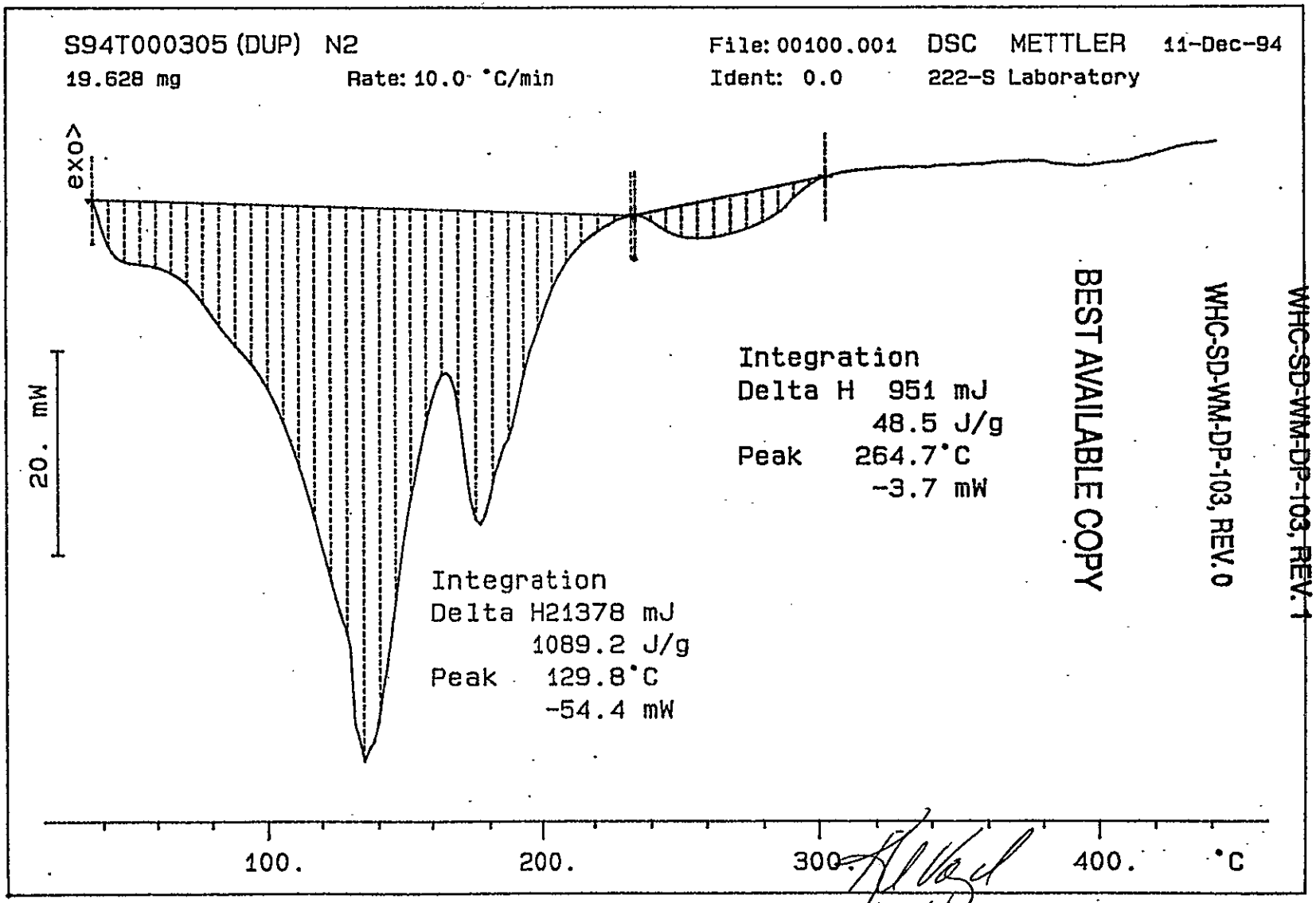

12/29/94

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WHC-SD-WM-DP-103, REV. 0

WHC-SD-WM-DP-103, REV. 1

WHC-SD-WM-DP-103, REV. 0

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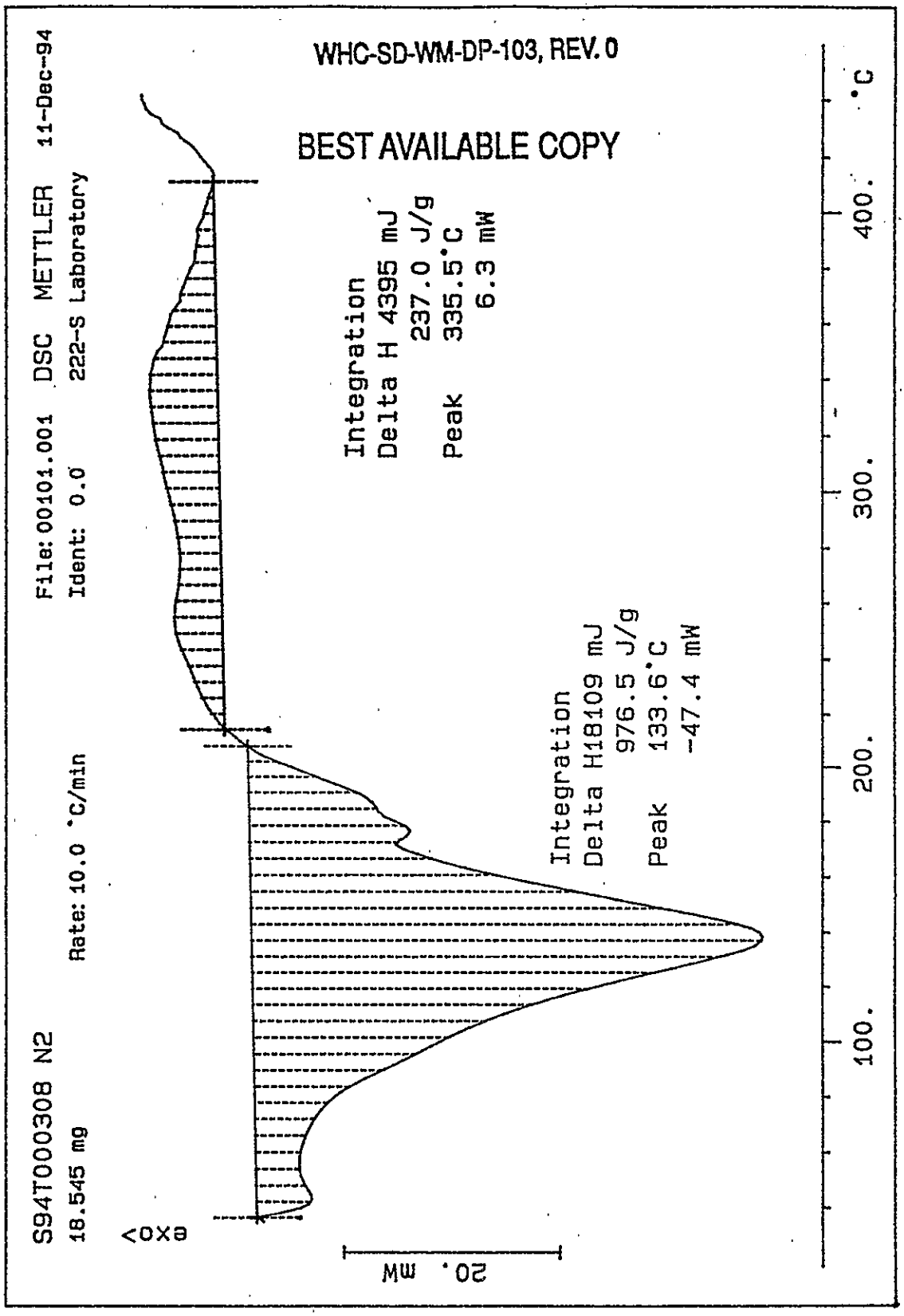

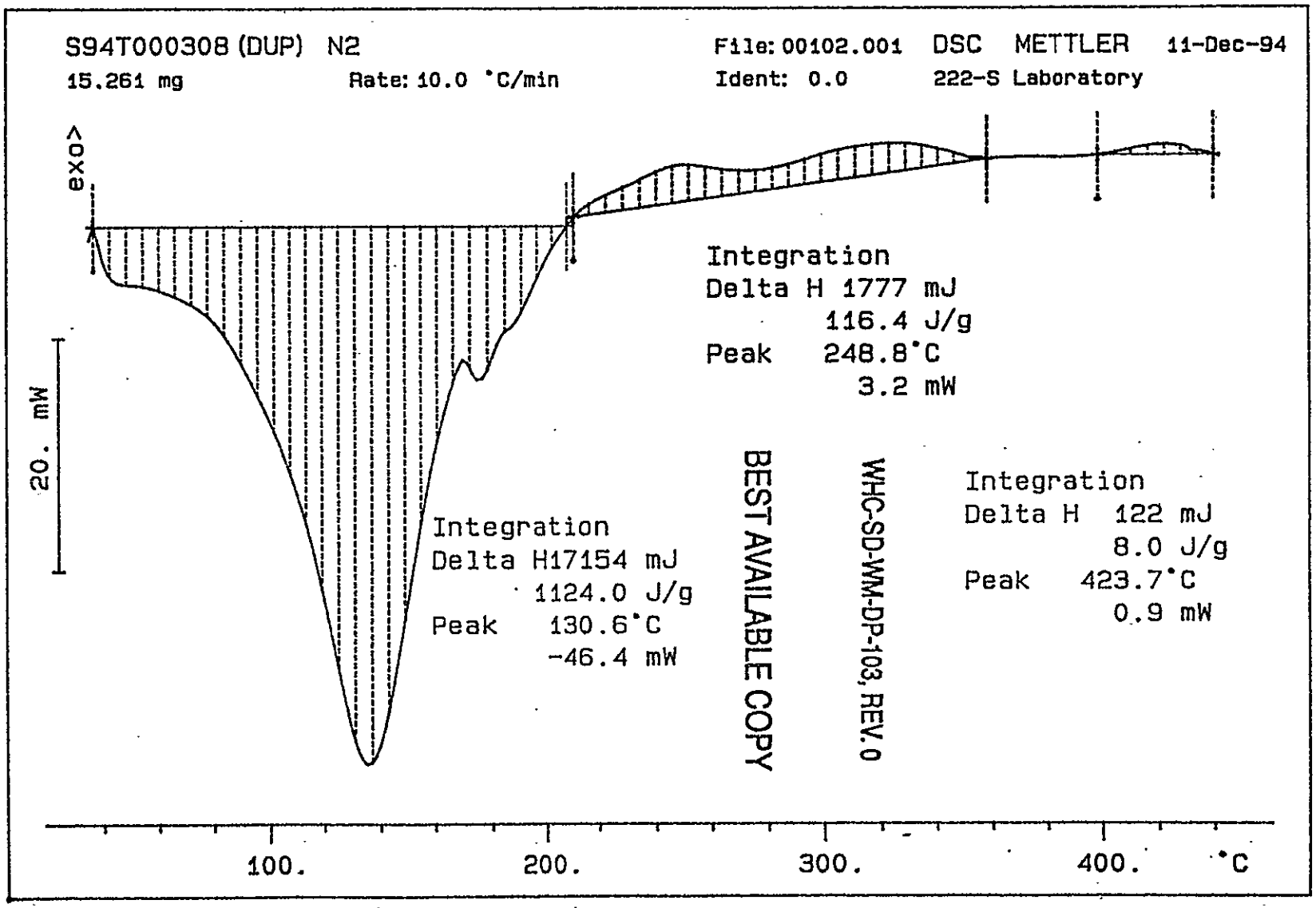

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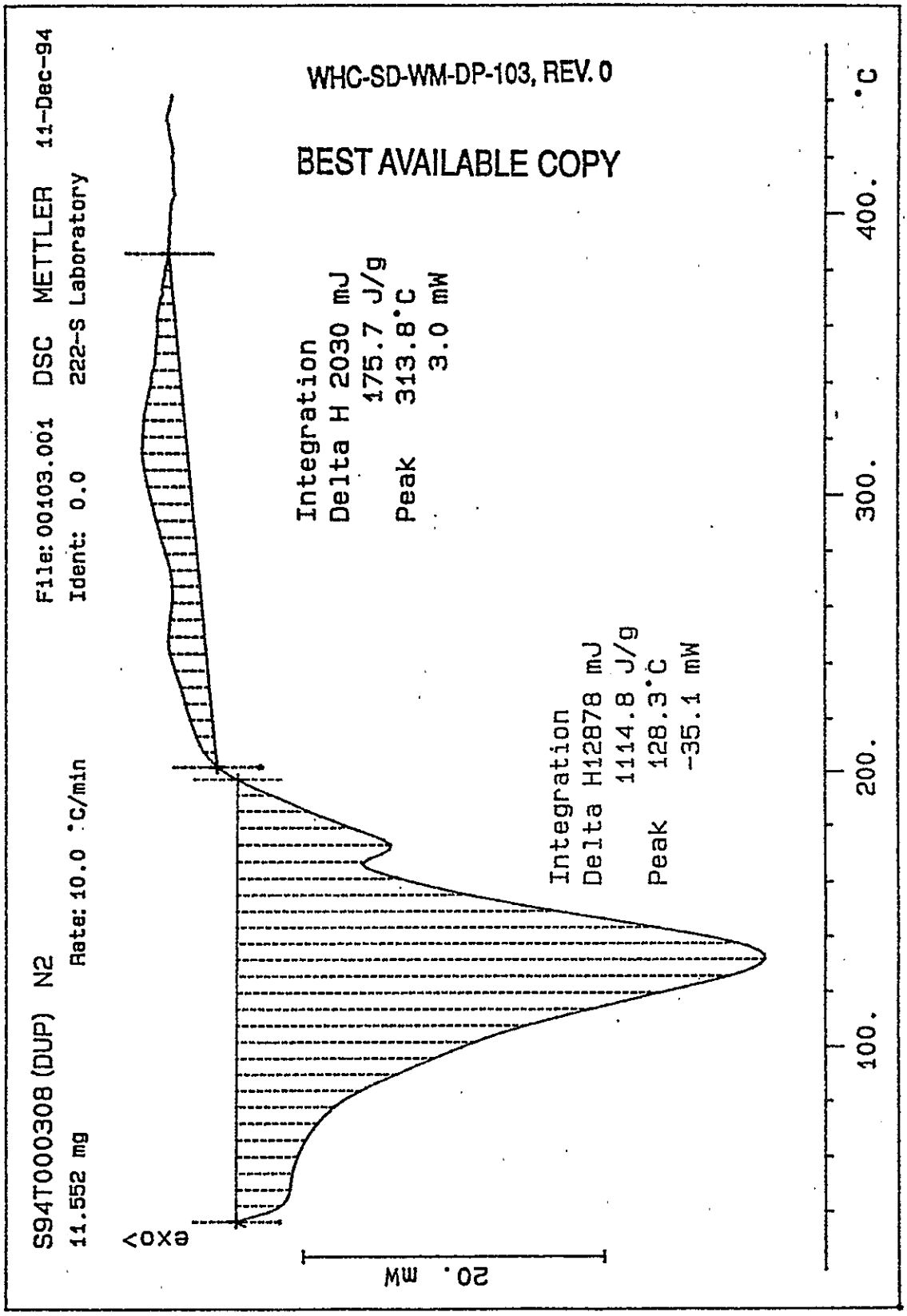

WHC-SD-WM-DP-103, REV. 0

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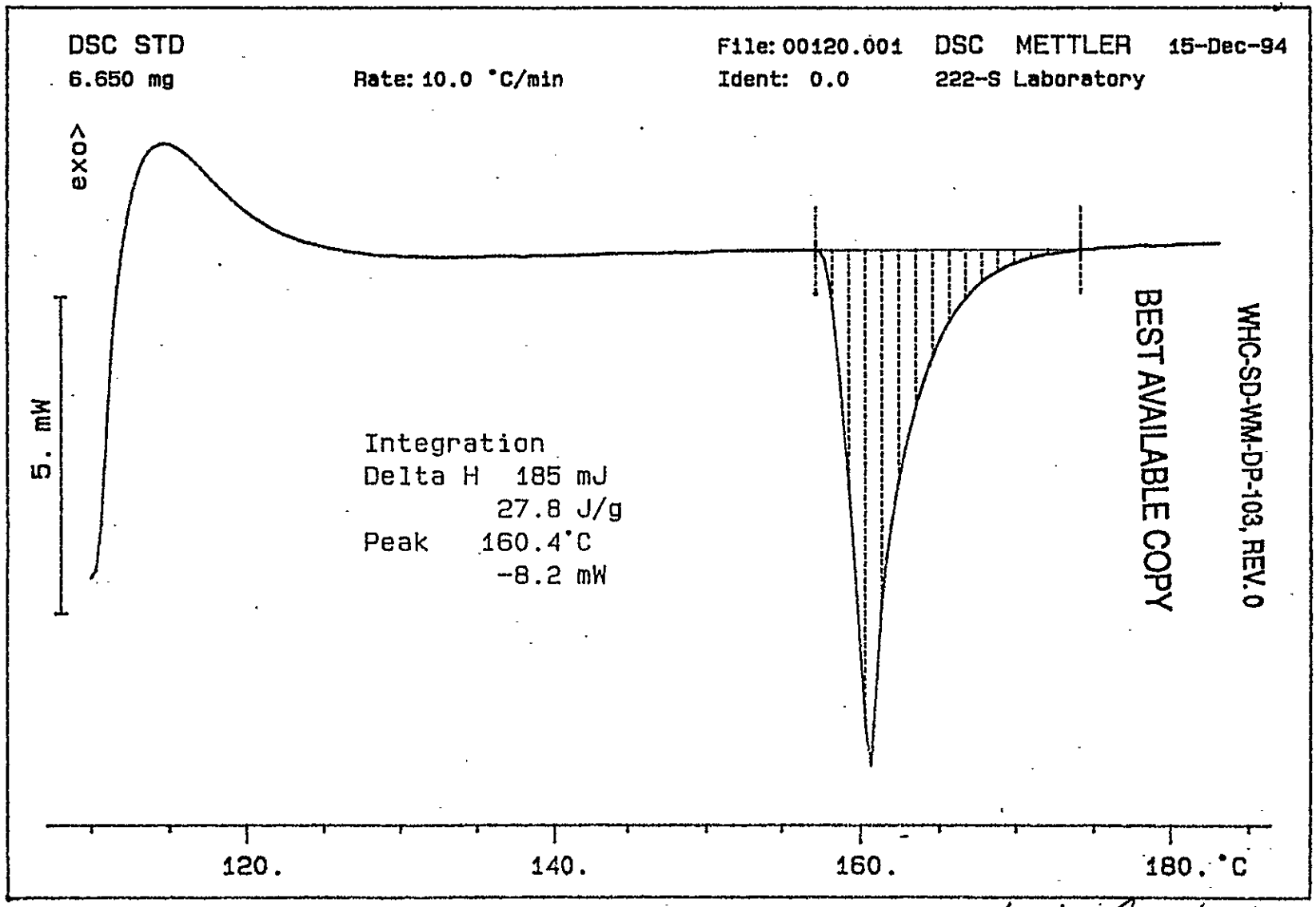

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WHC-SD-WM-DP-103, REV. 0

KL Vogel 12/15/94

WHC-SD-WM-DP-103, REV. 0

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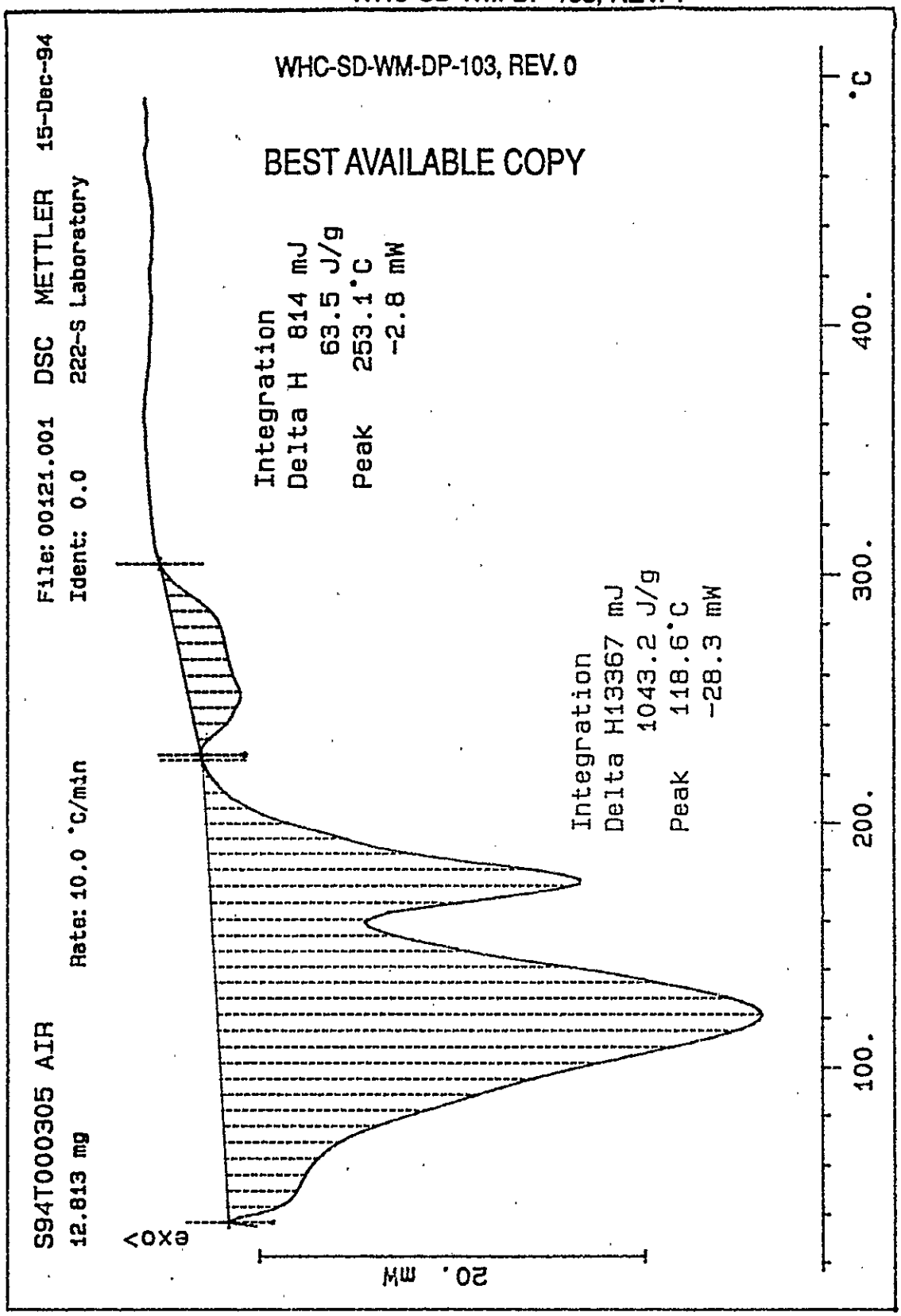


KB

WHC-SD-WM-DP-103, REV. 1 B/1M 10A

LABCORE Data Entry Template for Worklist# 207

Analyst: DWS **Instrument:** DSC01 **Method:** LA-514-113 B-1

Worklist Comment: Please run BY-106 under N2. BDV WHC-SD-WM-DP-103, REV. 0

Seg	Type	Sample#	Rep	Al	Test	Matrix	Actual	Found	DL	Unit
1	STD	12N14A			DSC-01	SOLID	28.45	29.1	N/A	Joule/g
2	SAMPLE	S94T000309	0		DSC-01	SOLID	N/A	123.4		Joule/g
3	DUP	S94T000309	0		DSC-01	SOLID	123.4	74.5	N/A	Joule/g
4	STD				DSC-01	SOLID	28.45	29.9	N/A	Joule/g
5	DUP	S94T000309	0		DSC-01	SOLID	123.4	108.4	N/A	Joule/g
6	SAMPLE	S94T000310	0		DSC-01	SOLID	N/A	21.1		Joule/g
7	DUP	S94T000310	0		DSC-01	SOLID	21.1	14.2	N/A	Joule/g

KB 1/21/95

Final page for worklist # 207

See attached page
Analyst Signature

Date 1/5/95

1/6/95

Verified by Blandina Valenzuela 1/16/95

Data Entry Comments: S94T000309 had one endotherm of 809.2 J/g at 121.4°C and another exotherm at 431.4°C with a delta H of 88.7 J/g. S94T000310 had an endotherm at 139.3°C with a delta H of 674.7 J/g and another exotherm at 321.3°C with a delta H of 53.9 J/g. 1/5/95 Blandina Valenzuela

Units shown for QC (SPK) may not reflect the actual units. *Page:* 1

LABCORE Data Entry Template for Worklist# 207

Analyst: DWS **Instrument:** DSC01 **Method:** LA-514-113 B-1

Worklist Comment: Please run BY-106 under N2. BDV.

Seg	Type	Sample#	Rep	Al	Test	Matrix	Actual	Found	DL	Unit
1	STD	12N 14A			DSC-01	SOLID	28.45	29.1	N/A	Joule/g
2	SAMPLE	S94T000309	0		DSC-01	SOLID	N/A			Joule/g
3	DUP	S94T000309	0		DSC-01	SOLID			N/A	Joule/g
4	SAMPLE	S94T000310	0		DSC-01	SOLID	N/A			Joule/g
5	DUP	S94T000310	0		DSC-01	SOLID			N/A	Joule/g

KB 4/22/95

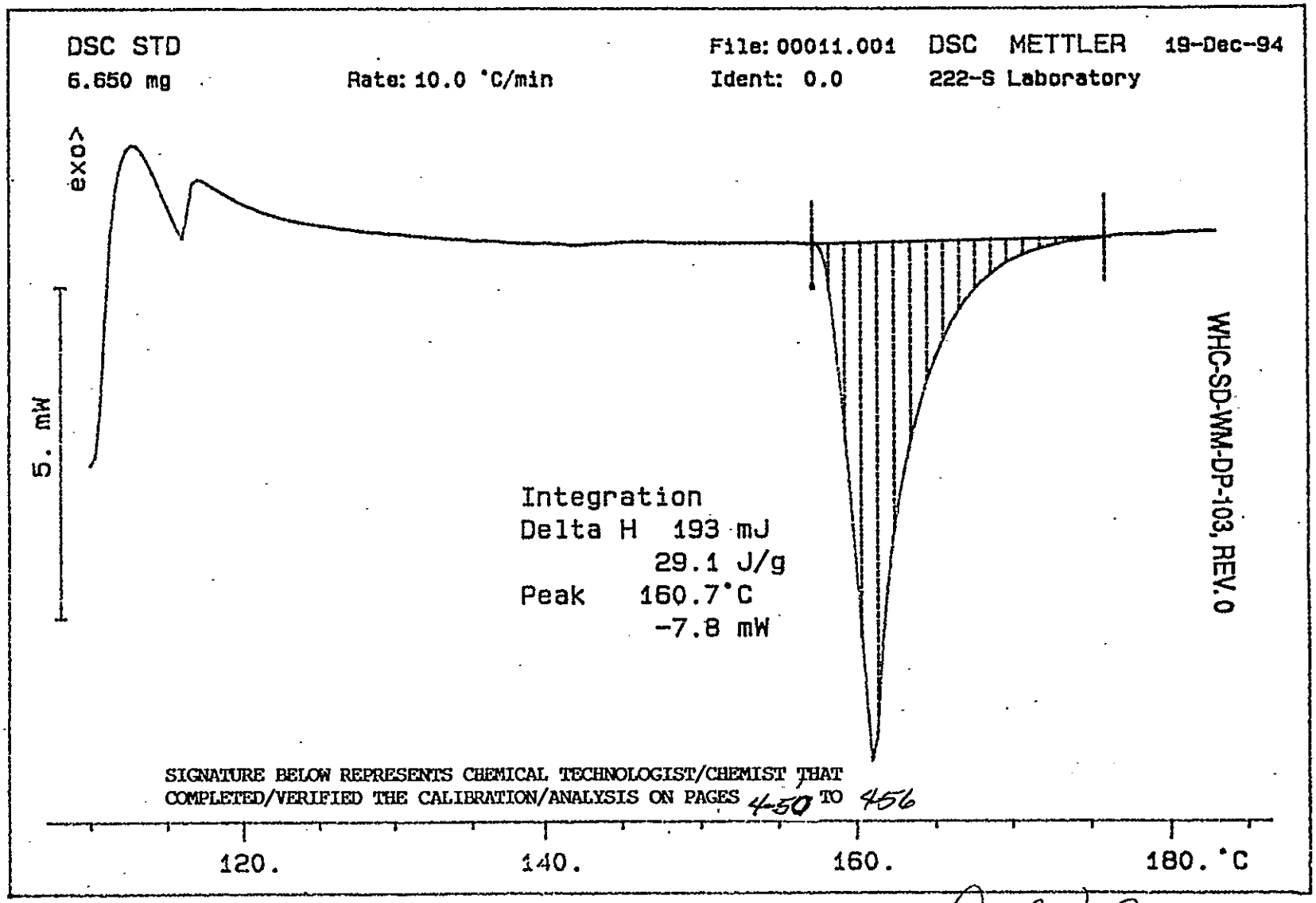
Final page for worklist # 207

Analyst Signature

12-19-94
Date

Data Entry Comments: Indium Std# 12N14-A

Units shown for QC (SPK) may not reflect the actual units. 4-49



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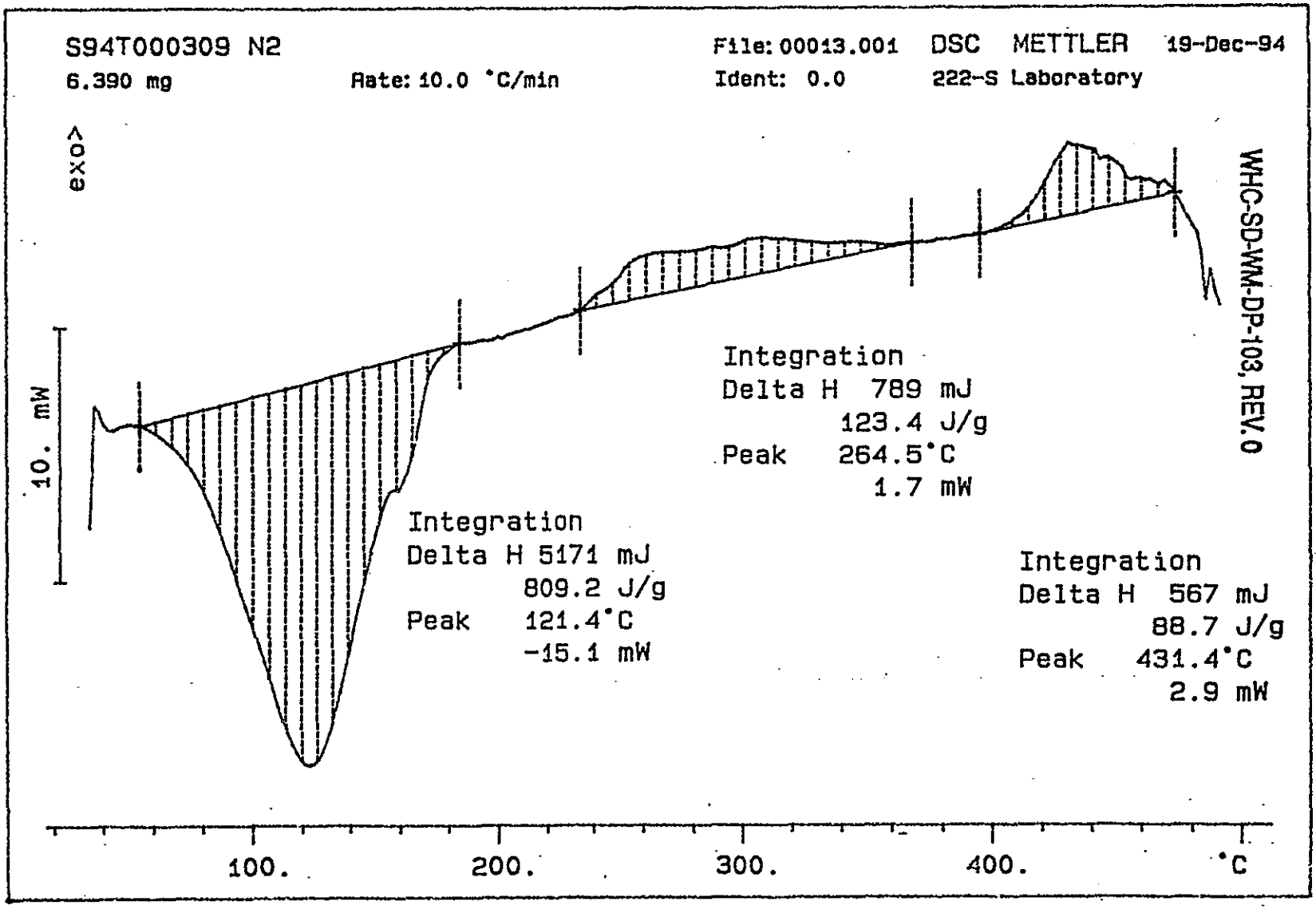
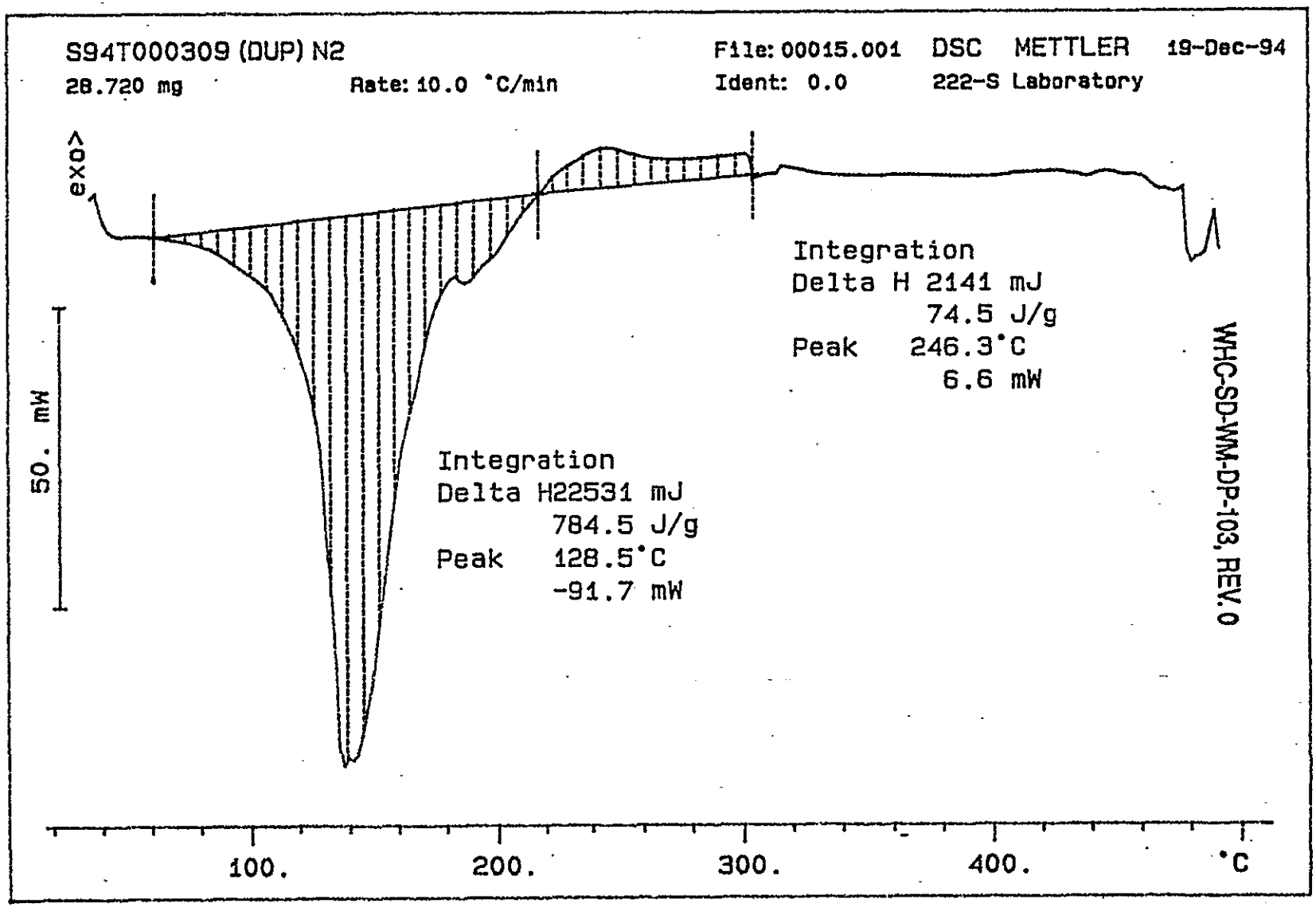
David W Smith 12-19-94



WHC-SD-WM-DP-103, REV. 0



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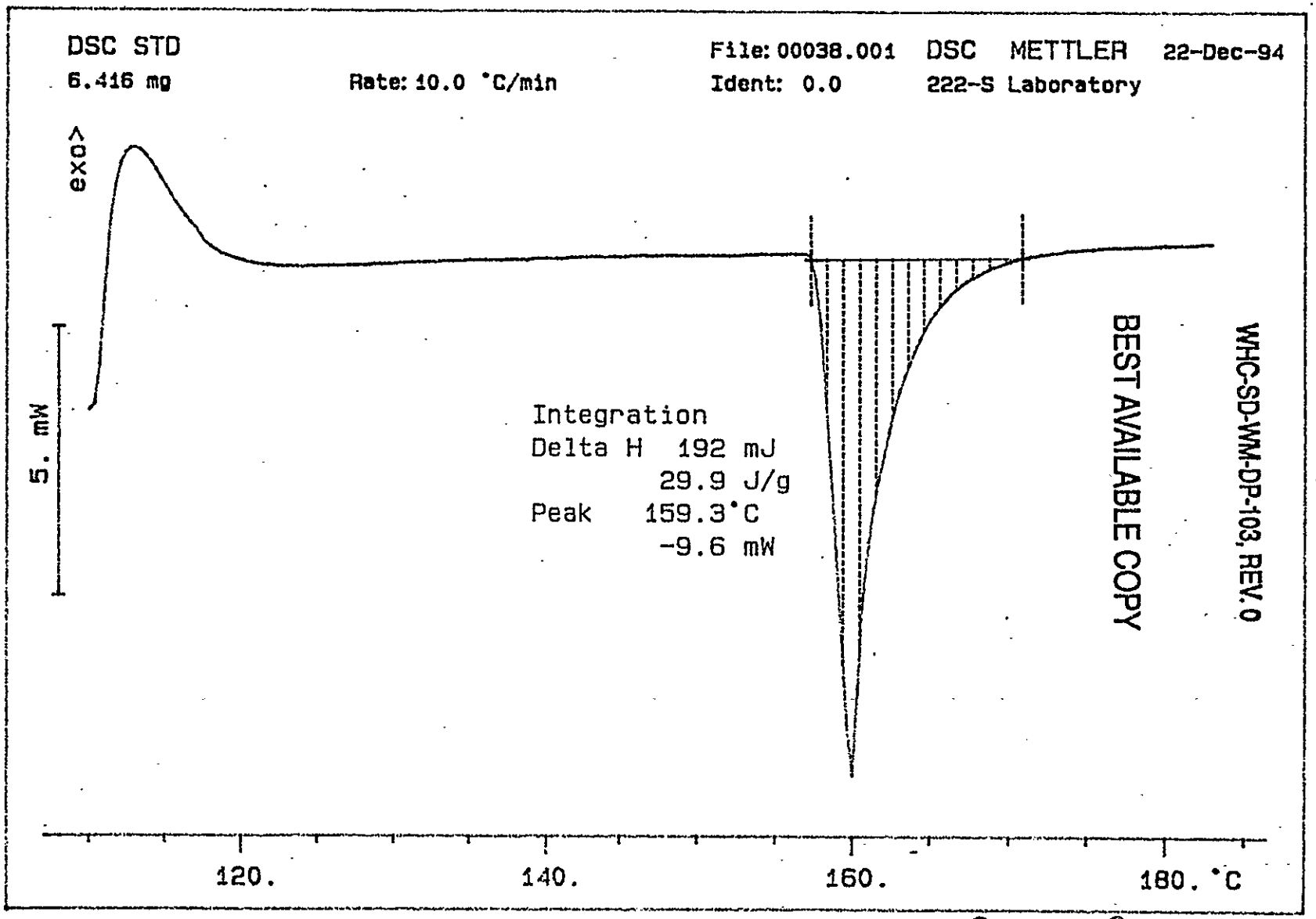

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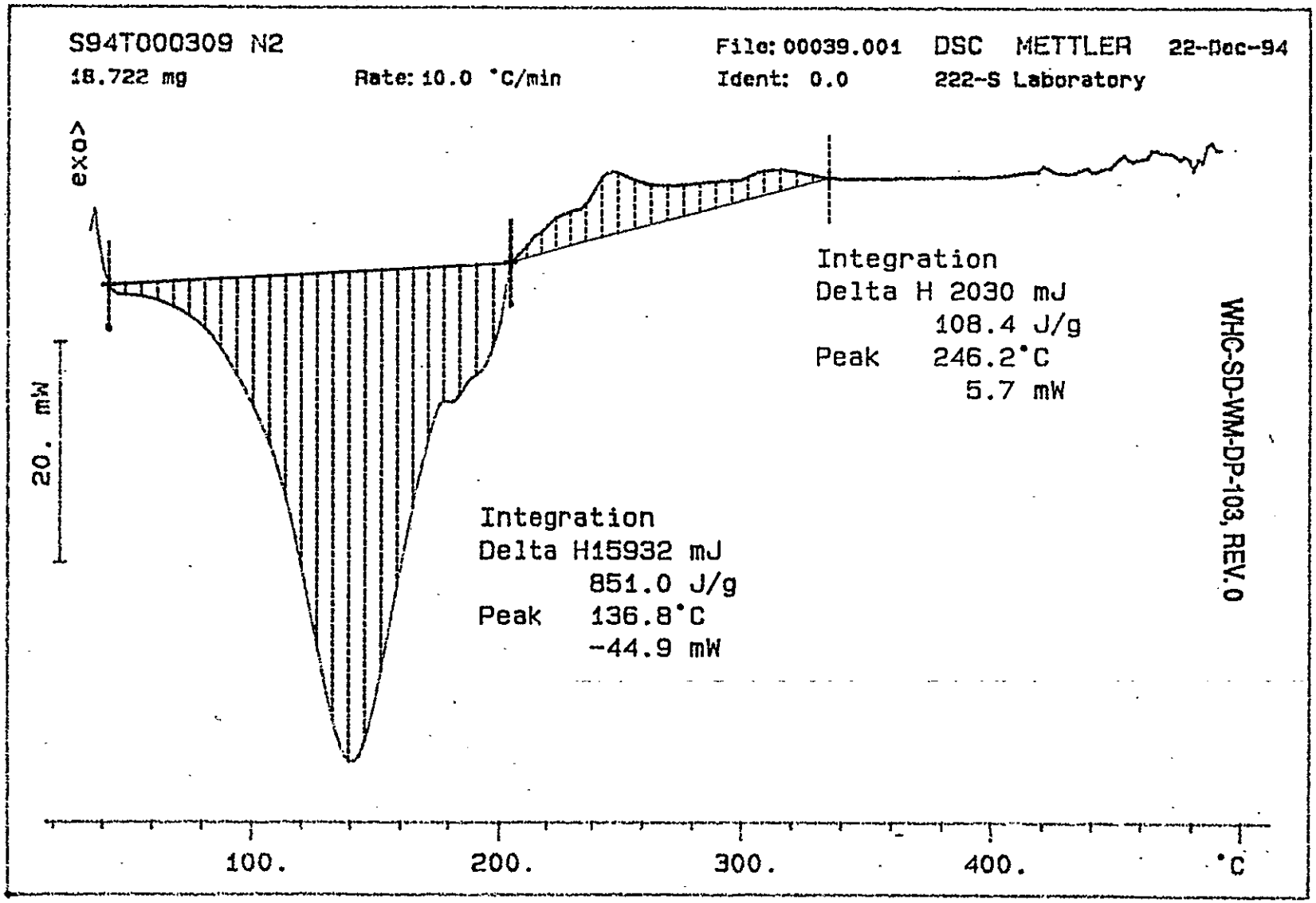
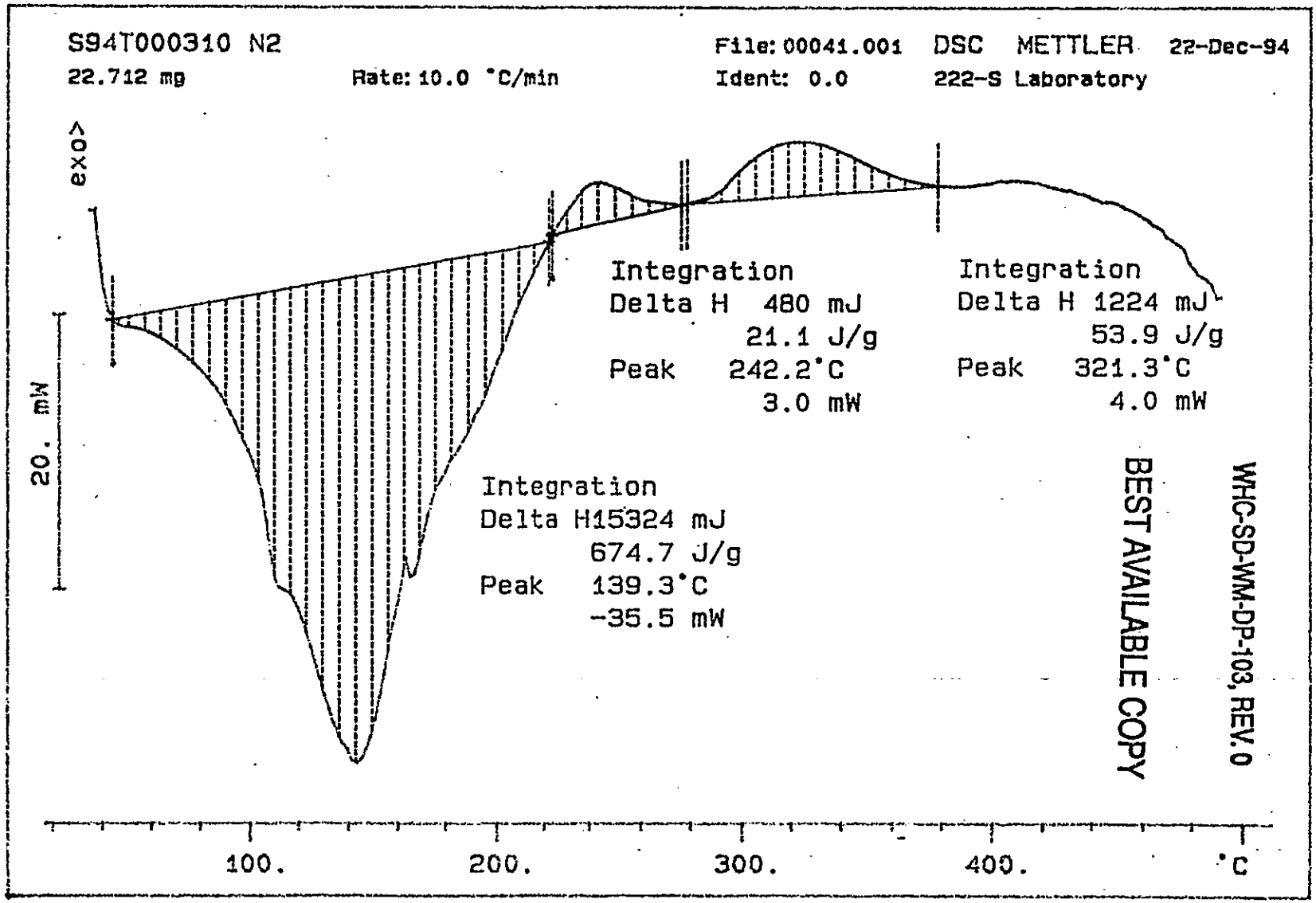
WHC-SD-WM-DP-103, REV. 0

12-22-94


S94T000309 N2
18.722 mg
Rate: 10.0 °C/min
File: 00039.001
Ident: 0.0
DSC METTLER
222-S Laboratory
22-Dec-94
exo>
20. mW
Integration
Delta H 2030 mJ
108.4 J/g
Peak 246.2°C
5.7 mW
Integration
Delta H15932 mJ
851.0 J/g
Peak 136.8°C
-44.9 mW
100.
200.
300.
400.
°C



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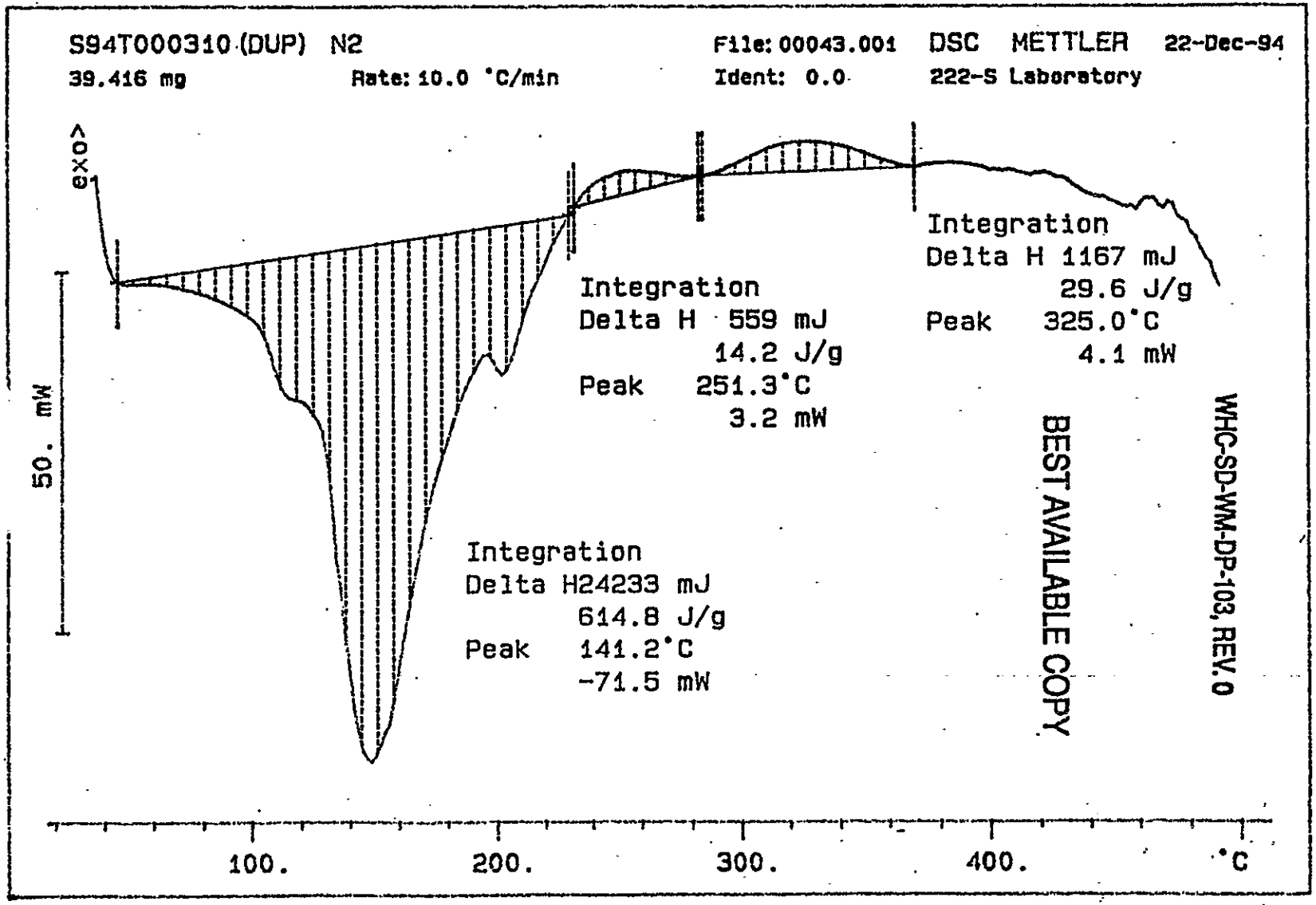

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KB

LABCORE Data Entry Template for Worklist# 208

Analyst: KLV **Instrument:** DSC01 **Method:** LA-514-113 B-1

Worklist Comment: Please run BY-106 under N2. BDV WHC-SD-WM-DP-103, REV. 0

Seg	Type	Sample#	Rep	Al	Test	Matrix	Actual	Found	DL	Unit
1	STD	12N14A			DSC-01	SOLID	28.45	28.0	N/A	Joule/g
2	SAMPLE	S94T000311	0		DSC-01	SOLID	N/A	358.7		Joule/g
3	DUP	S94T000311	0		DSC-01	SOLID	358.7	123.4	N/A	Joule/g
4	DUP	S94T000311	0		DSC-01	SOLID	358.7	0	N/A	Joule/g

KB 4/21/95

Final page for worklist # 208

Analyst Signature. Date

Entered and verified 12/22/94 J.M. Lizy

See attached page for signature

Data Entry Comments:
S94T000311 has 2 endotherms; one at 116.1°C with a Delta H of 377.4 J/g and the other at 278.4°C with a Delta H of 72.8 J/g. The second duplicate of S94T000311 contained an exotherm, however it was not integrated due to the fact it never returned back to the baseline.

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

Page: 1

B. Valenzuela
12/12/94

LABCORE Data Entry Template for Worklist# 208

Analyst: KLV **Instrument:** DSC01 _____ **Method:** LA-514-113 B-1

Worklist Comment: Please run BY-106 under N2. BDV WHC-SD-WM-DP-103, REV. 0

Seg	Type	Sample#	Rep	Al	Test	Matrix	Actual	Found	DL	Unit
1	STD	12N14A			DSC-01	SOLID			N/A	Joule/g
2	SAMPLE	S94T000311	0		DSC-01	SOLID	N/A			Joule/g
3	DUP	S94T000311	0		DSC-01	SOLID			N/A	Joule/g

KB 4/28/95

Final page for worklist # 208

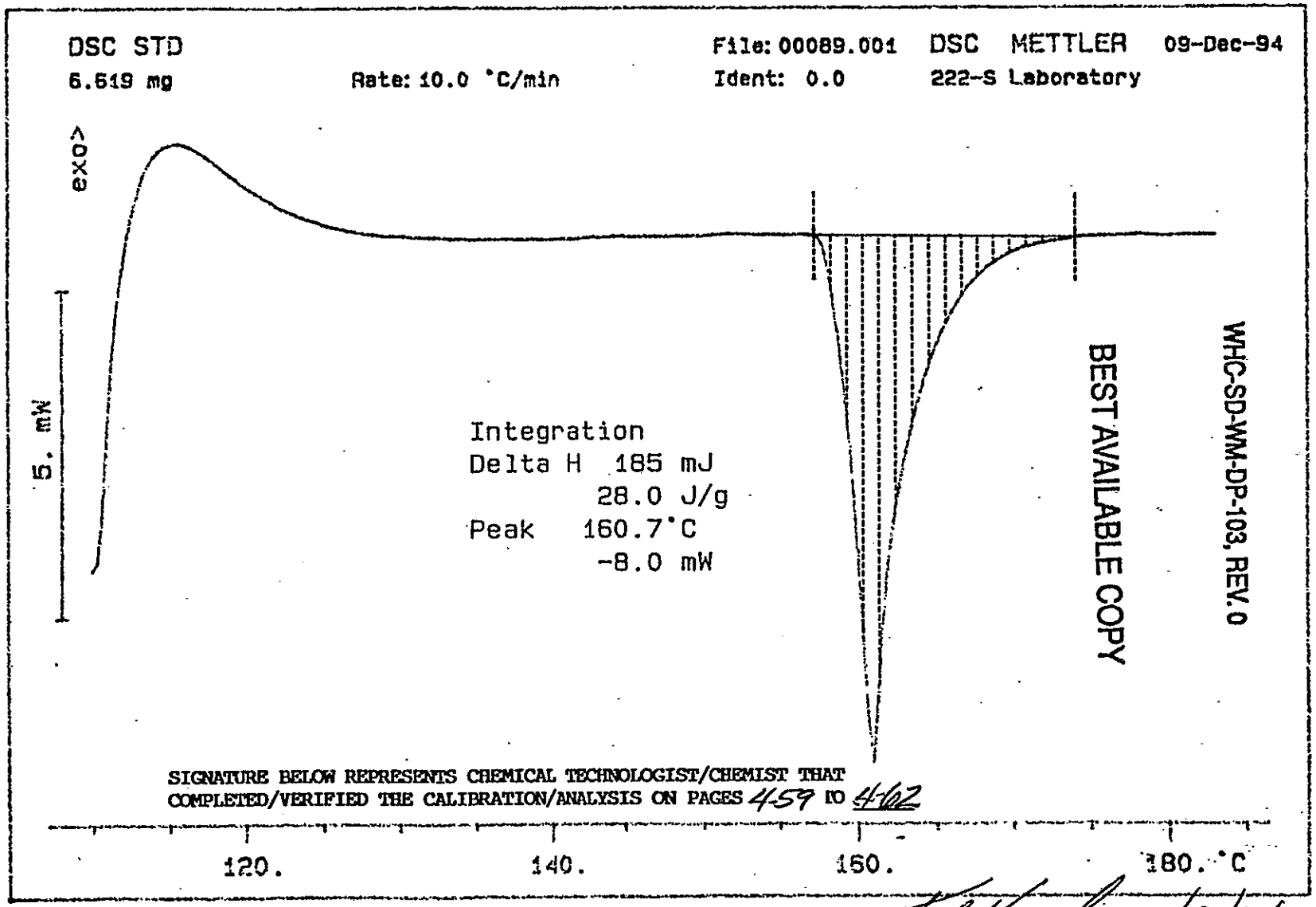
Analyst Signature

Date 12/9/94

Data Entry Comments:
Std # 12N14A

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

Page: 1



SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 4-59 TO 4-62

K. Vogel 12/9/94

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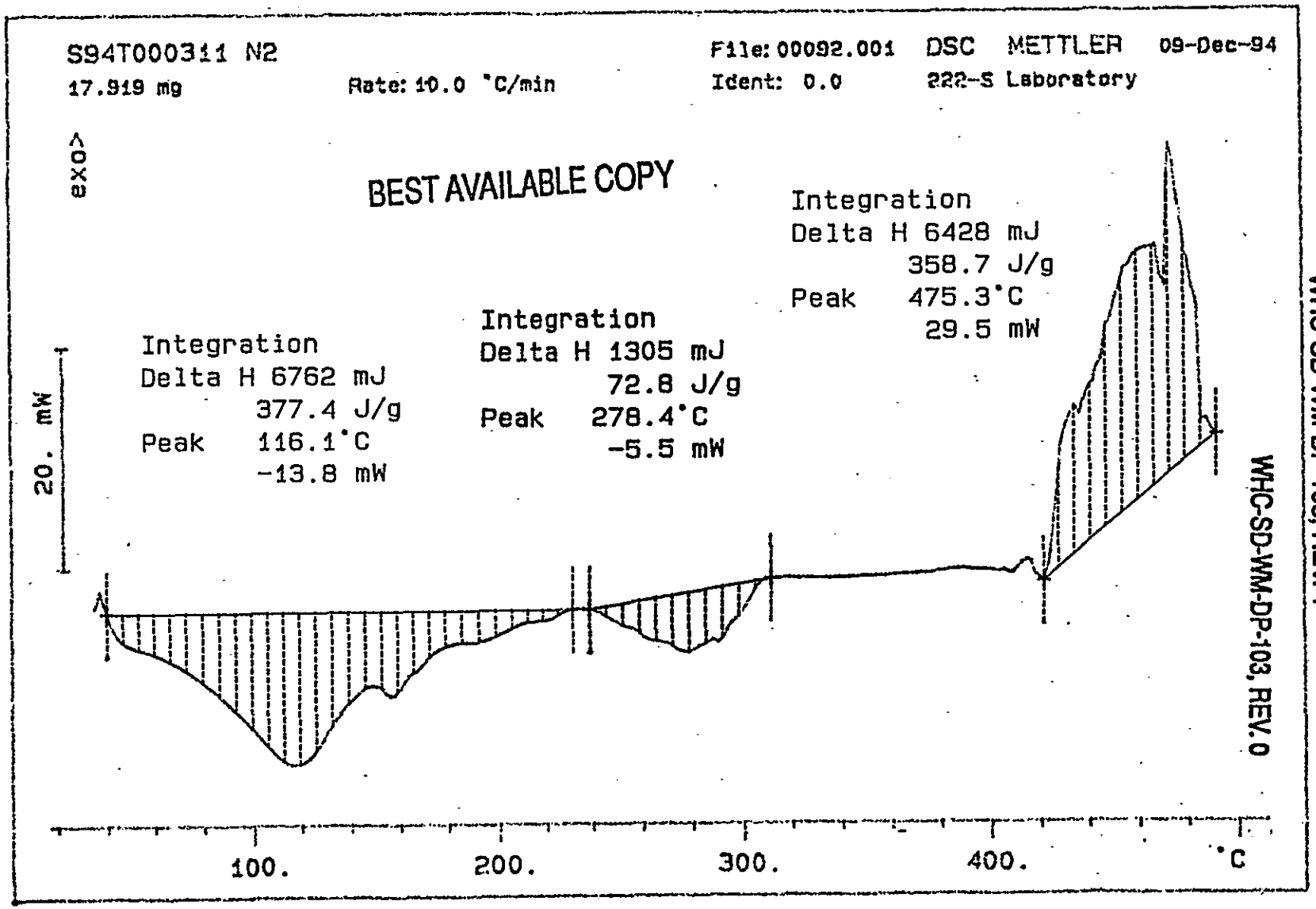
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17.919 mg
Rate: 10.0 °C/min
File: 00092.001
Ident: 0.0
DSC METTLER
222-S Laboratory
09-Dec-94
exo>
BEST AVAILABLE COPY
Integration
Delta H 6762 mJ
377.4 J/g
Peak 116.1°C
-13.8 mW
Integration
Delta H 1305 mJ
72.8 J/g
Peak 278.4°C
-5.5 mW
Integration
Delta H 6428 mJ
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Peak 475.3°C
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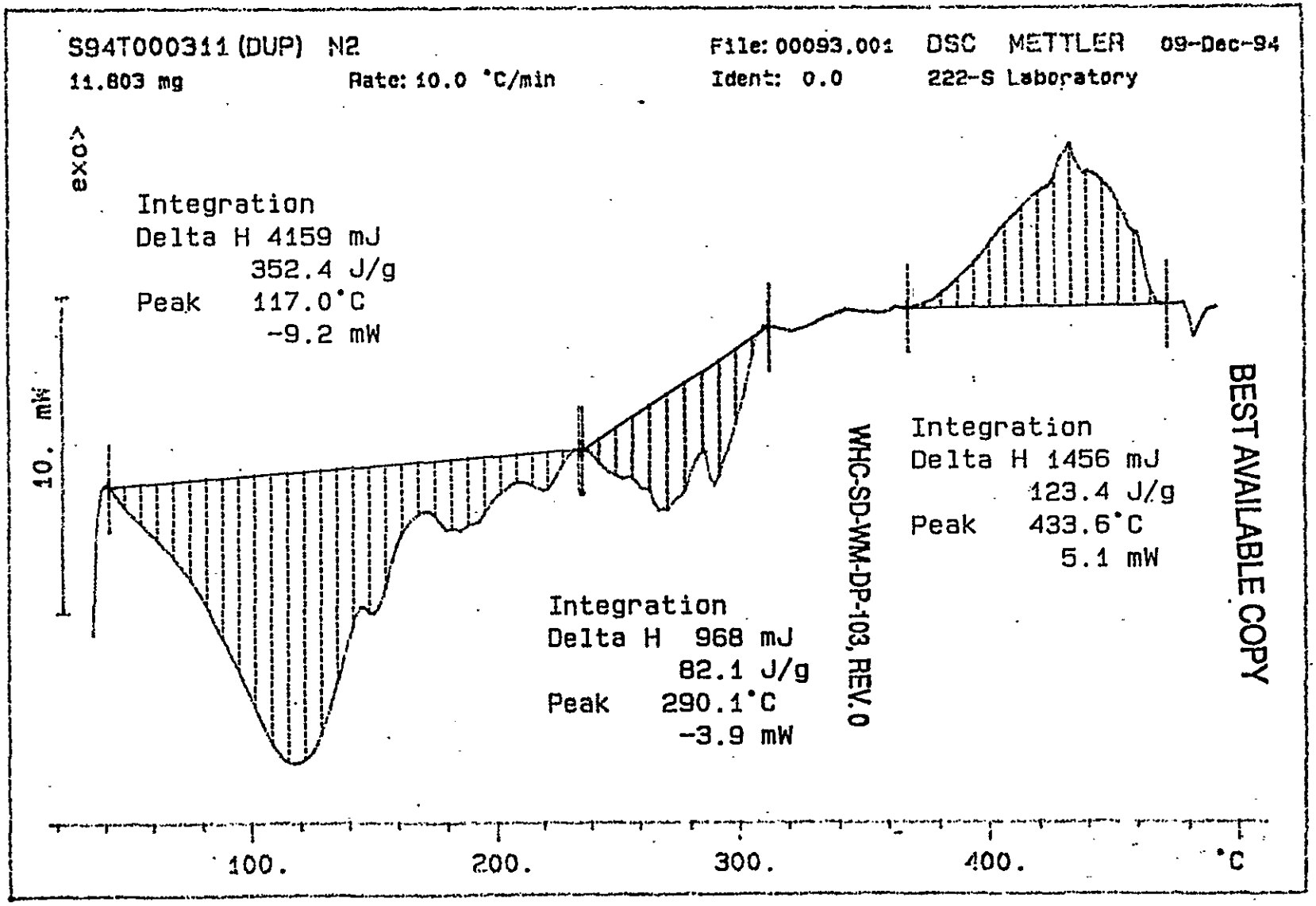
20. mW
100.
200.
300.
400.
°C



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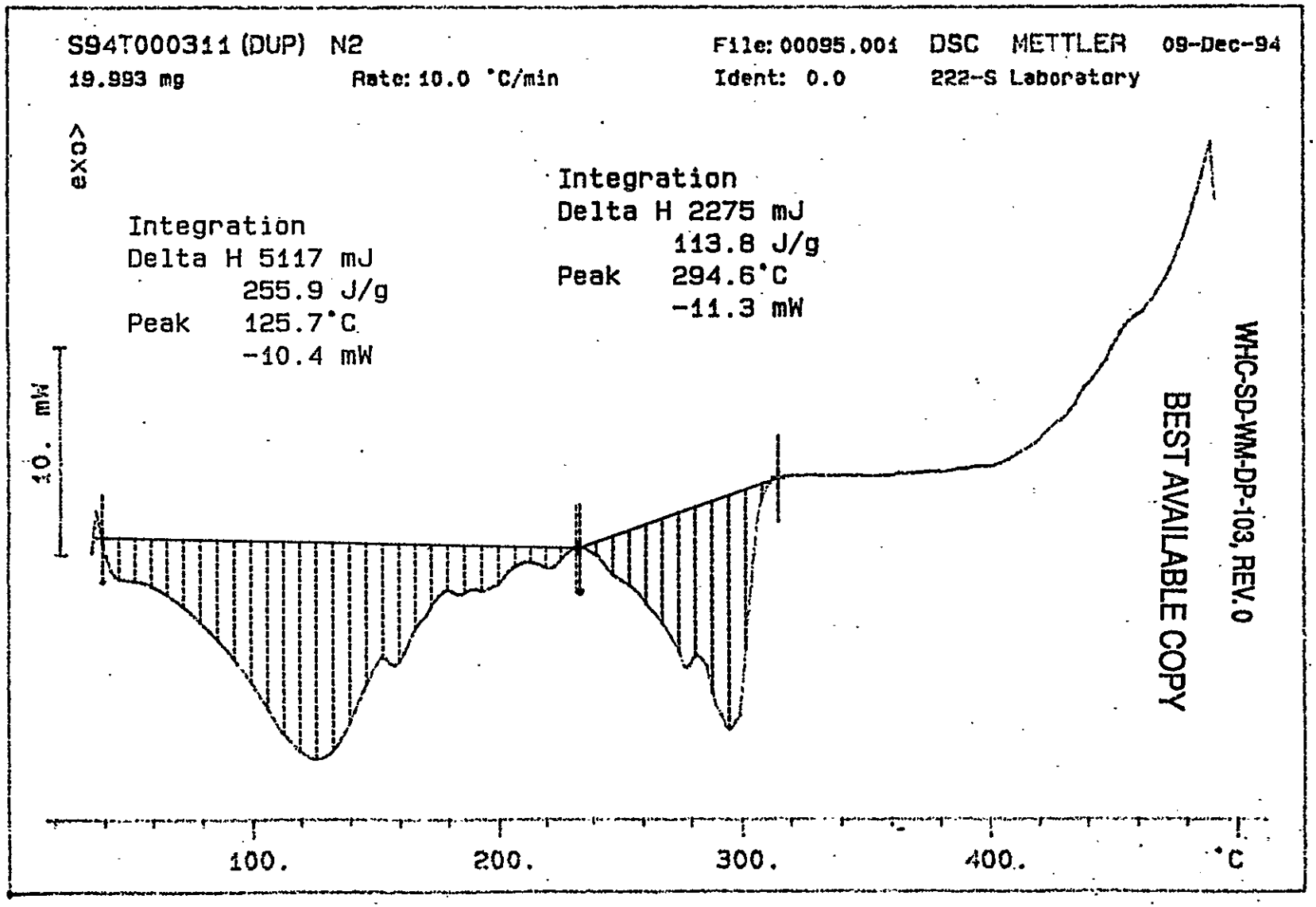


WHC-SD-WM-DP-103, REV. 0
BEST AVAILABLE COPY

KB

WHC-SD-WM-DP-103, REV. 1

LABCORE Data Entry Template for Worklist# 249

Analyst: SMF **Instrument:** DSC01 _____ **Method:** LA-514-113 B-1

Worklist Comment: PLEASE RUN BY-106 DSC UNDER N2. BDV WHC-SD-WM-DP-103, REV. 0

Seg	Type	Sample#	Rep Al	Test	Matrix	Actual	Found	DL	Unit
1	STD			DSC-01	SOLID	28.45	27.1	N/A	Joule/g
2	SAMPLE	S94T000326	0	DSC-01	SOLID	N/A	0		Joule/g
3	DUP	S94T000326	0	DSC-01	SOLID	0	0	N/A	Joule/g
4	SAMPLE	S94T000346	0	DSC-01	SOLID	N/A	0		Joule/g
5	DUP	S94T000346	0	DSC-01	SOLID	0	0	N/A	Joule/g

7/8 4/28/95

Final page for worklist # 249

See attached for signatures — 1/4/95
Analyst Signature — Date

1/10/95

Verified by Blandina Valenzuela — 1/11/95

Data Entry Comments: S94T000326 had two endotherms - one at 122°C with a delta H of 276.2 J/g and the second at 305.4°C with a delta H of 143.8 J/g. S94T000346 had two endotherms the first at 147.4°C with a delta H of 206.0 J/g and the second at 283.4 °C with a delta H of 96.7 J/g

Units shown for QC (SPK) may not reflect the actual units. *Page:* 1

LABCORE Data Entry Template for Worklist# 249

Analyst: SMF **Instrument:** DSC01 _____ **Method:** LA-514-113/B-1

Worklist Comment: PLEASE RUN BY-106 DSC UNDER N2. BDV WHC-SD-WM-DP-103, REV. 0

Seg	Type	Sample#	Rep	Al	Test	Matrix	Actual	Found	DL	Unit
1	STD	12 N14A			DSC-01	SOLID		27.1	N/A	Joule/g
2	SAMPLE	S94T000326	0		DSC-01	SOLID	N/A	142.9		Joule/g
3	DUP	S94T000326	0		DSC-01	SOLID		84.8	N/A	Joule/g
4	SAMPLE	S94T000346	0		DSC-01	SOLID	N/A			Joule/g
5	DUP	S94T000346	0		DSC-01	SOLID			N/A	Joule/g

4/28/95

Final page for worklist # 249

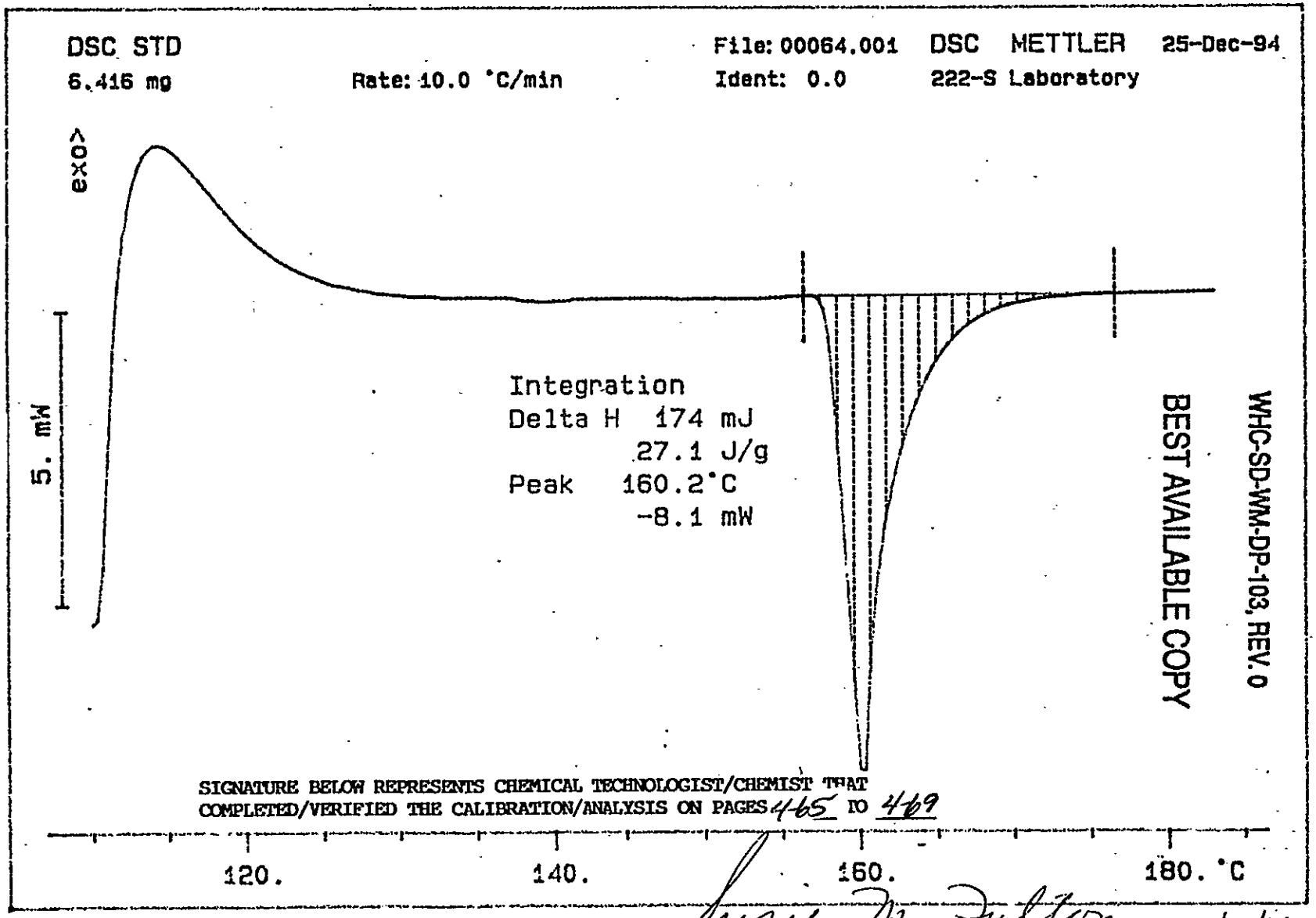
Susie M. Fulton
Analyst Signature

12-25-94
Date

Data Entry Comments:

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

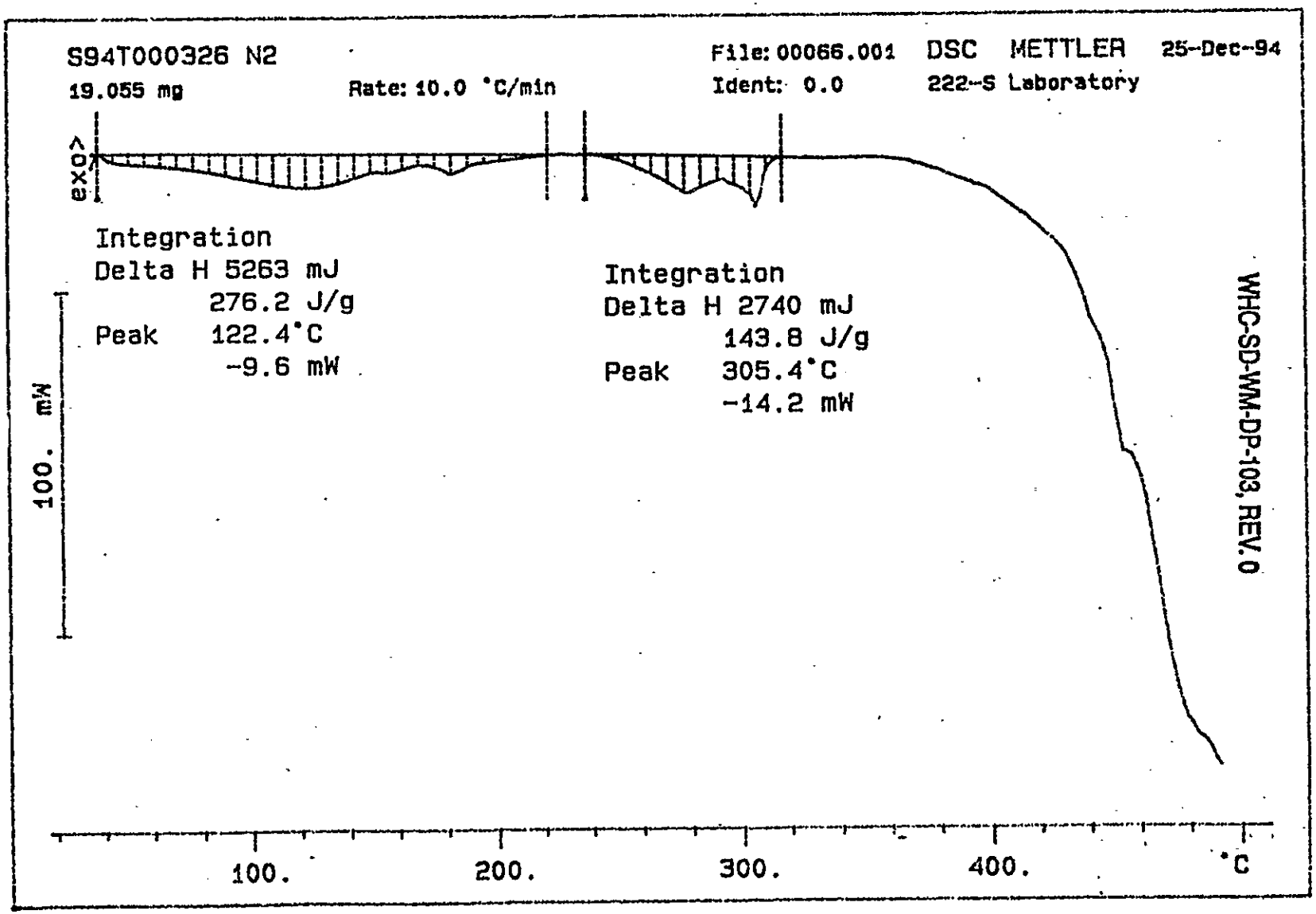
Page: 1

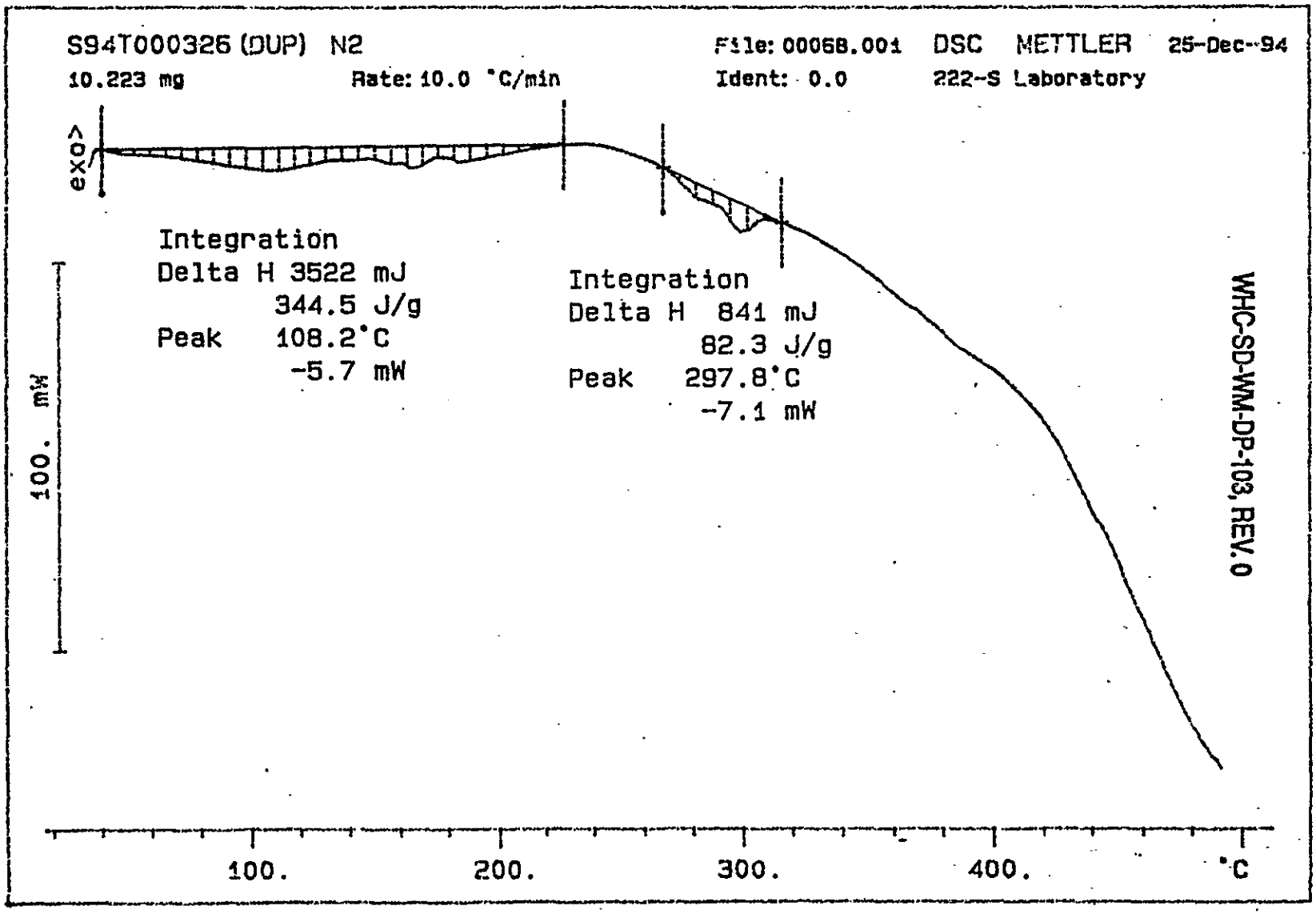


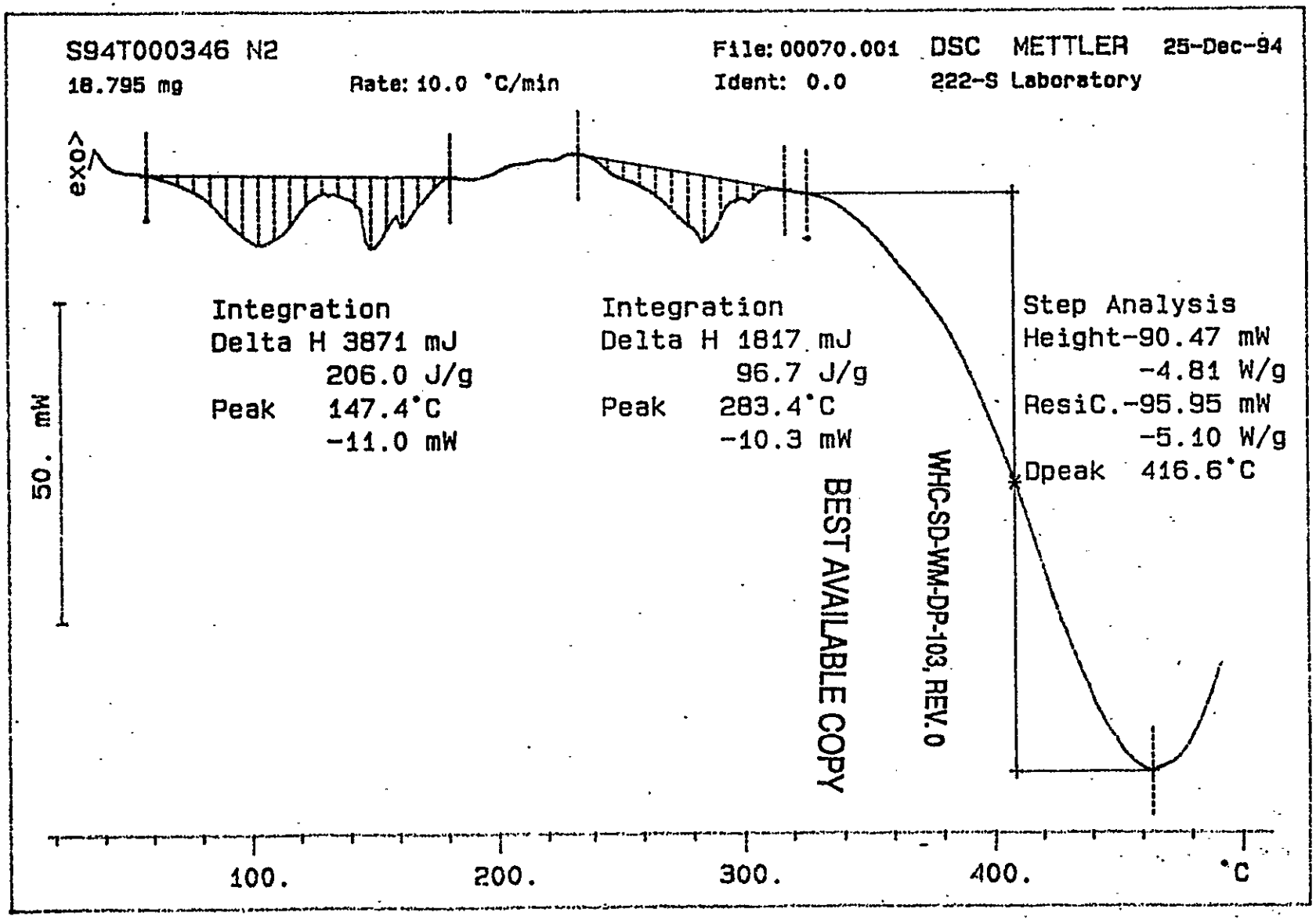
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 465 TO 469

Susie M. Fulton 12/25/94 MF

BEST AVAILABLE COPY

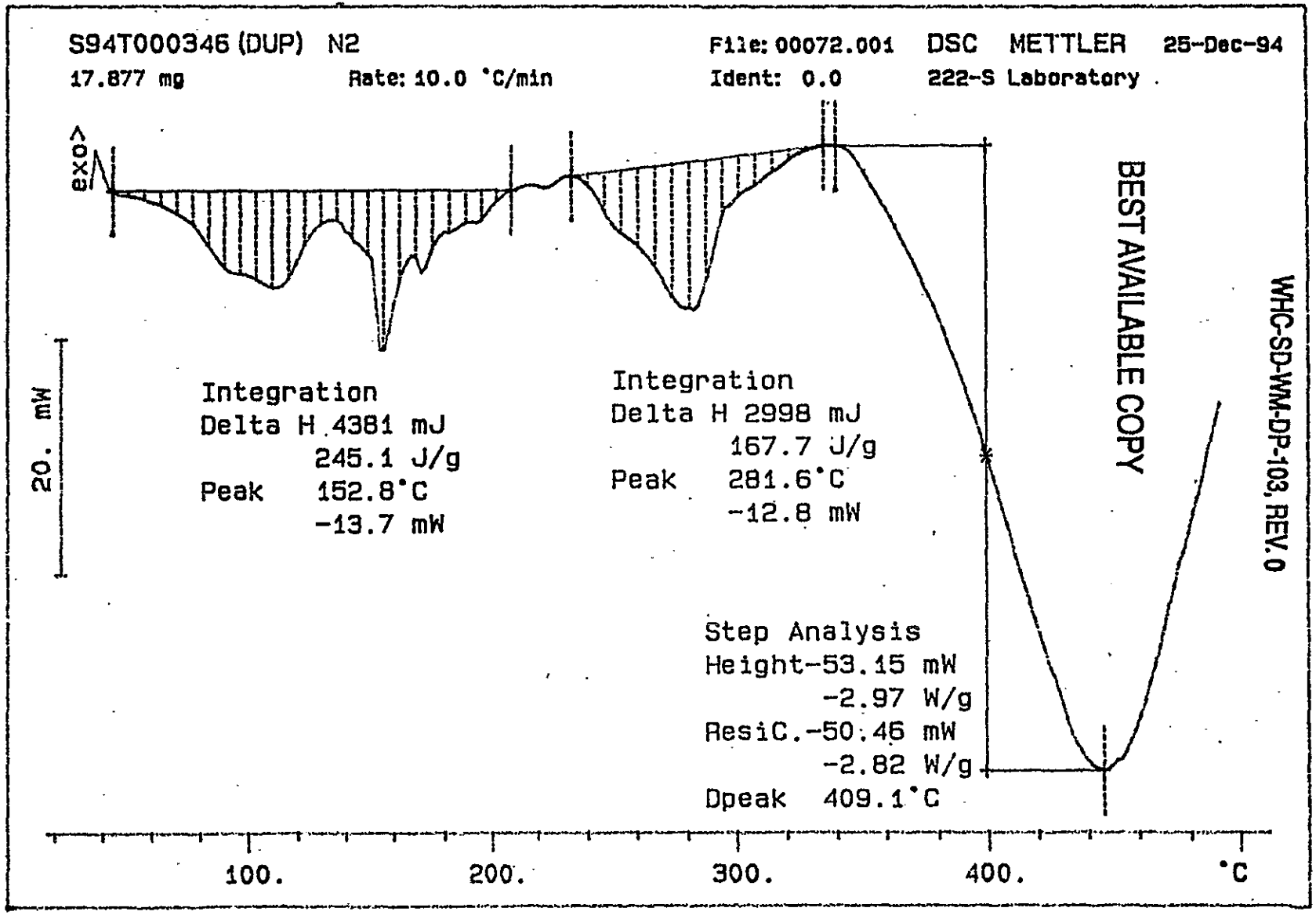

S94T000326 N2
19.055 mg
Rate: 10.0 °C/min
File: 00066.001
Ident: 0.0
DSC METTLER
222-S Laboratory
25-Dec-94
exo>
Integration
Delta H 5263 mJ
276.2 J/g
Peak 122.4°C
-9.6 mW
Integration
Delta H 2740 mJ
143.8 J/g
Peak 305.4°C
-14.2 mW
100. mW
100.
200.
300.
400.
°C


S94T000326 (DUP) N2
File: 00068.001 DSC METTLER 25-Dec-94
10.223 mg
Rate: 10.0 °C/min
Ident: 0.0
222-S Laboratory
exo>
Integration
Delta H 3522 mJ
344.5 J/g
Peak 108.2°C
-5.7 mW
Integration
Delta H 841 mJ
82.3 J/g
Peak 297.8°C
-7.1 mW
100. mW
100.
200.
300.
400.
°C



BEST AVAILABLE COPY

WHC-SD-WM-DP-103, REV. 0



BEST AVAILABLE COPY

KB

WHC-SD-WM-DP-103, REV. 1

LABCORE Data Entry Template for Worklist# 250

Analyst: KLV Instrument: DSC01 _____ Method: LA-514-113 ~~A-2~~ B-1 KV 1-22-95

Worklist Comment: Please run BY-106 DSC under N2. BDV

WHC-SD-WM-DP-103, REV. 0

Seg	Type	Sample#	Rep	Al	Test	Matrix	Actual	Found	DL	Unit
1	STD	12N14A			DSC-01	SOLID	28.45	29.0	N/A	Joule/g
2	SAMPLE	S94T000342	0		DSC-01	SOLID	N/A	Ø		Joule/g
3	DUP	S94T000342	0		DSC-01	SOLID	Ø	Ø	N/A	Joule/g
4	SAMPLE	S94T000343	0		DSC-01	SOLID	N/A	Ø		Joule/g
5	DUP	S94T000343	0		DSC-01	SOLID	Ø	Ø	N/A	Joule/g

KB 4/28/95

Final page for worklist # 250

Analyst Signature

Date 1-22/95

1-24-95

1-25-95

Verified by Blandina Valenzuela

Data Entry Comments: S94T000342 produced one endotherm at 156.7°C with a delta H of 558.0 J/g. S94T000343 produced one endotherm at 111°C with a delta H of ~~888~~ 866.7 J/g

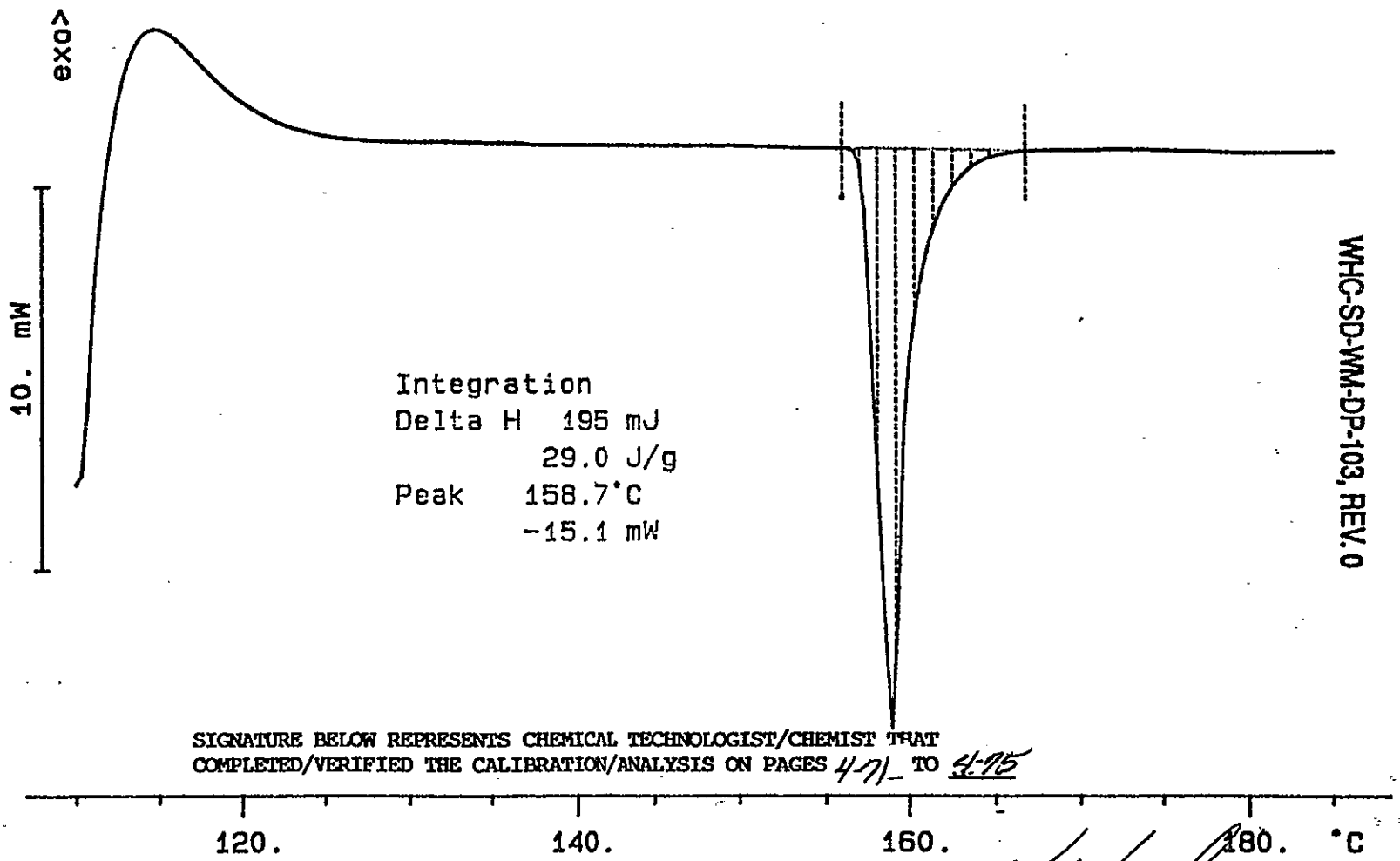
BDV 1/25/95

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

Page: 1

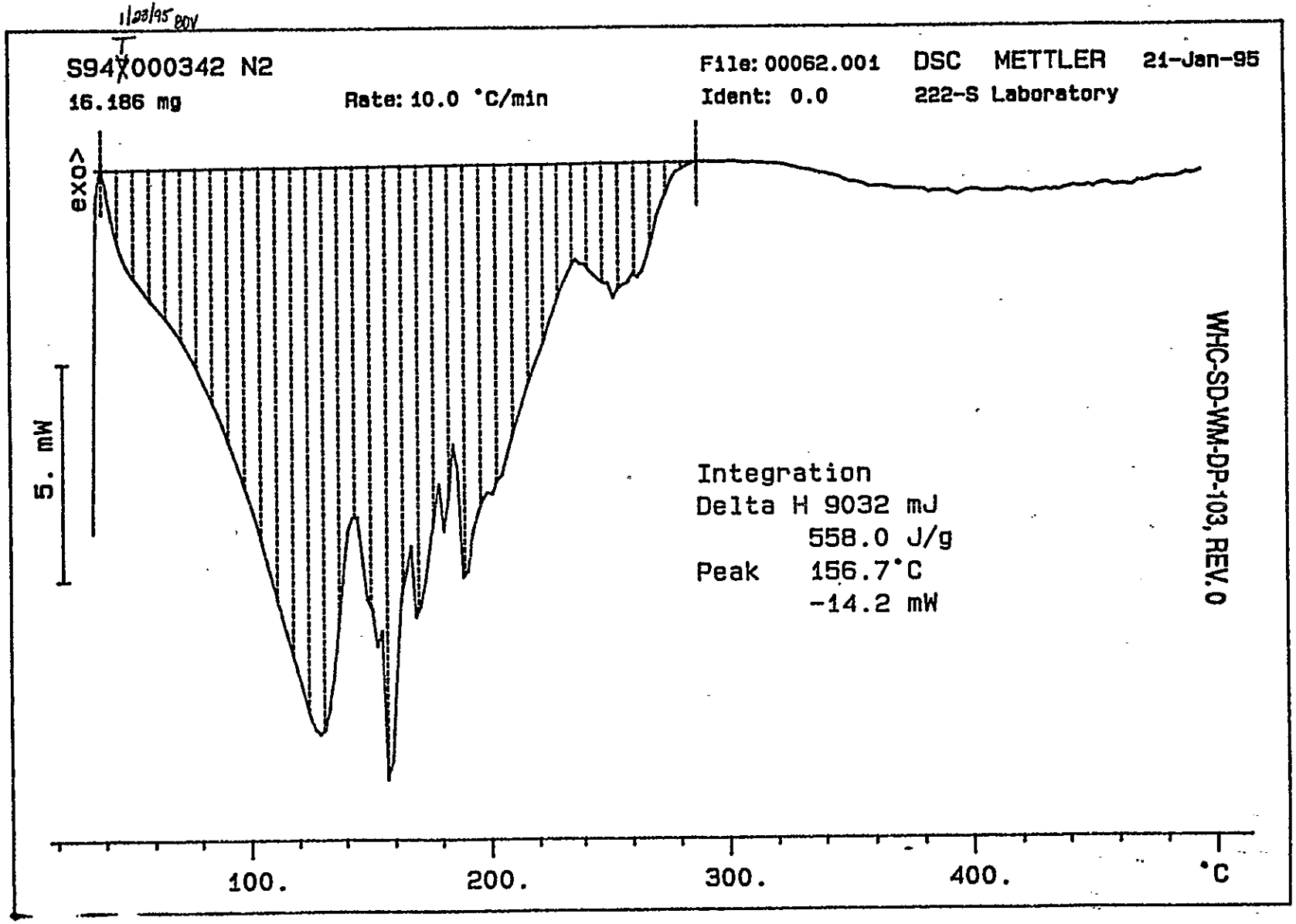
DSC STD Std# QMF 1/22/95
6.722 mg 12N14A Rate: 10.0 °C/min

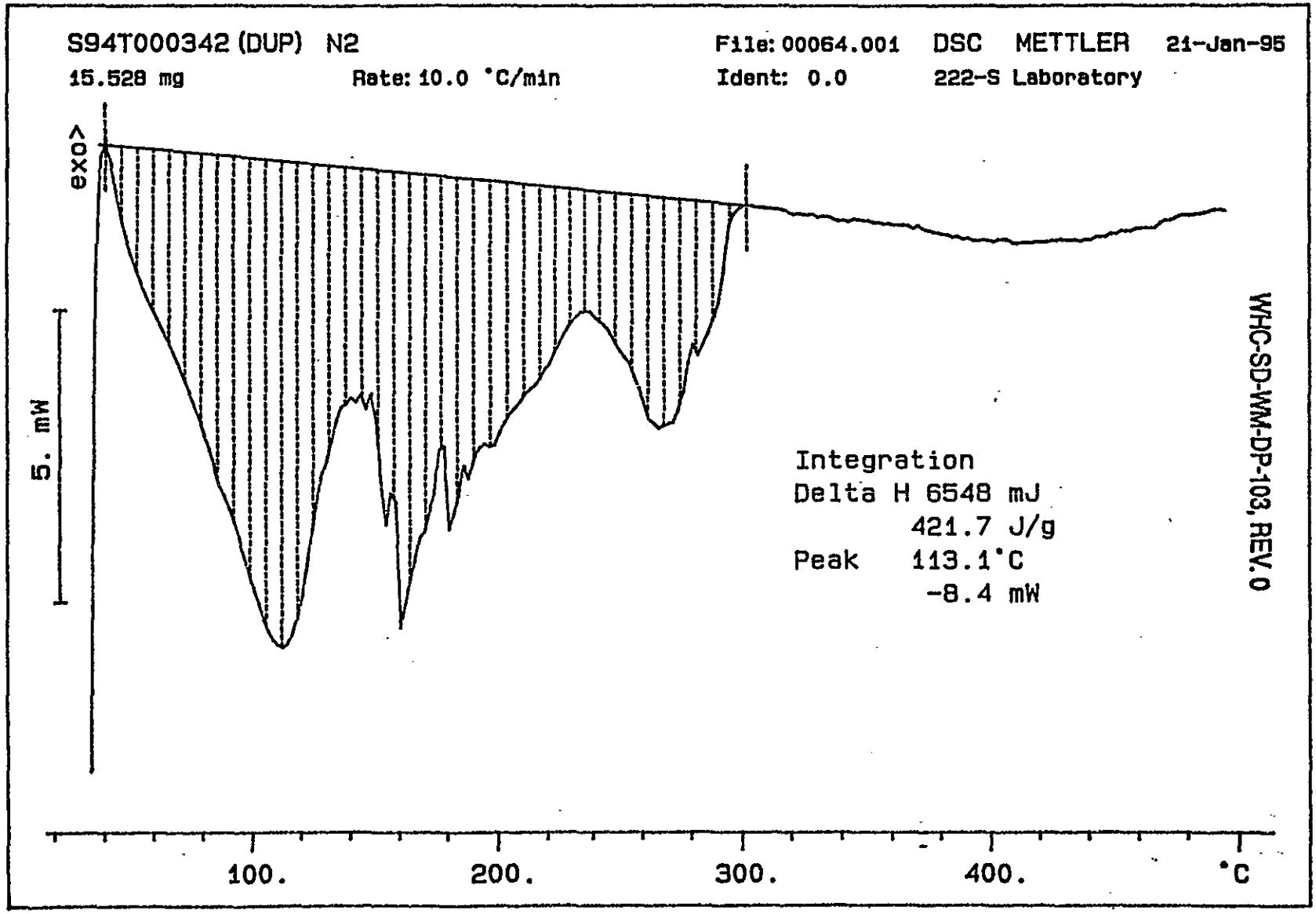
File: 00061.001 DSC METTLER 21-Jan-95
Ident: 0.0 222-S Laboratory

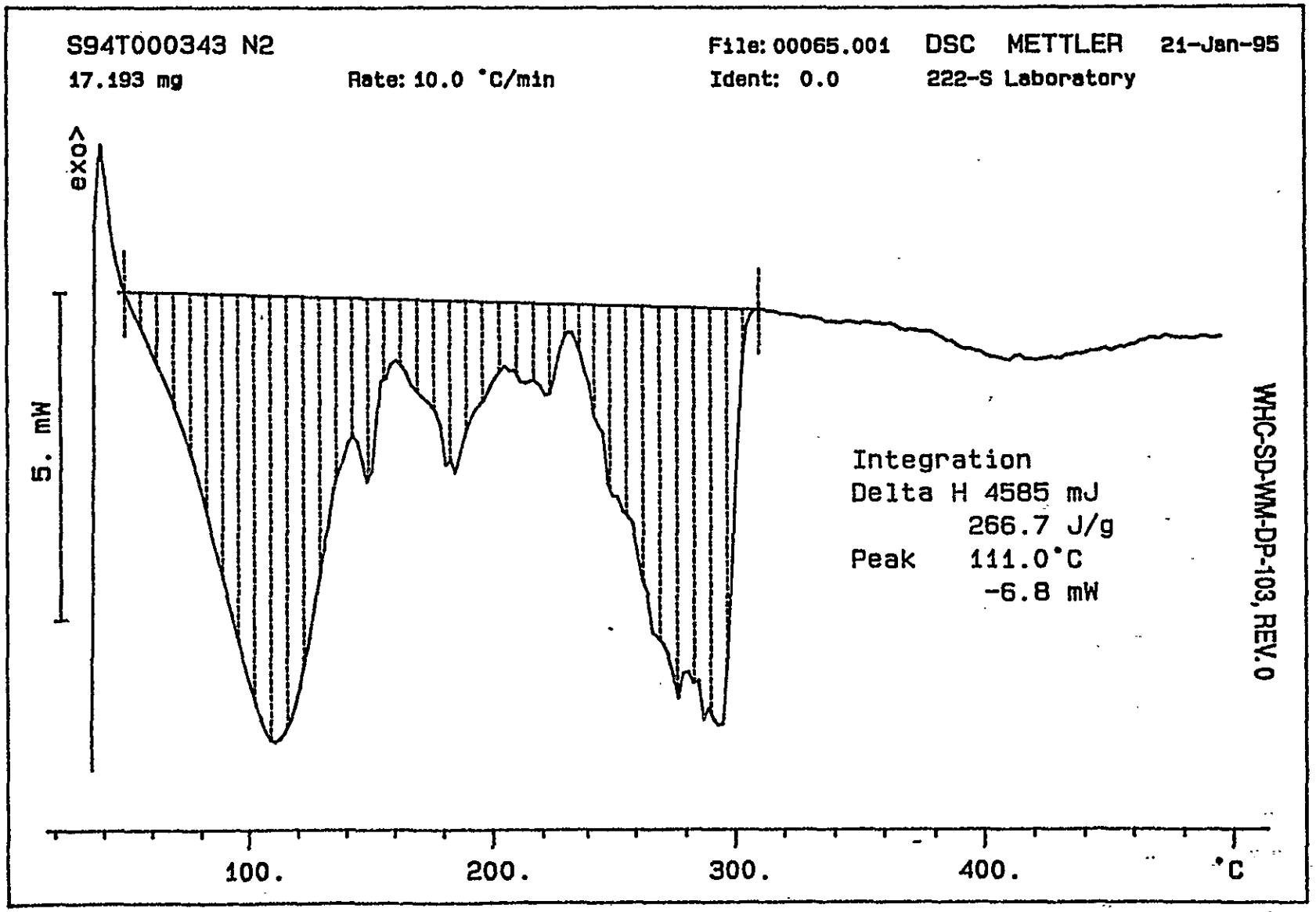


SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 4-71 TO 4-75

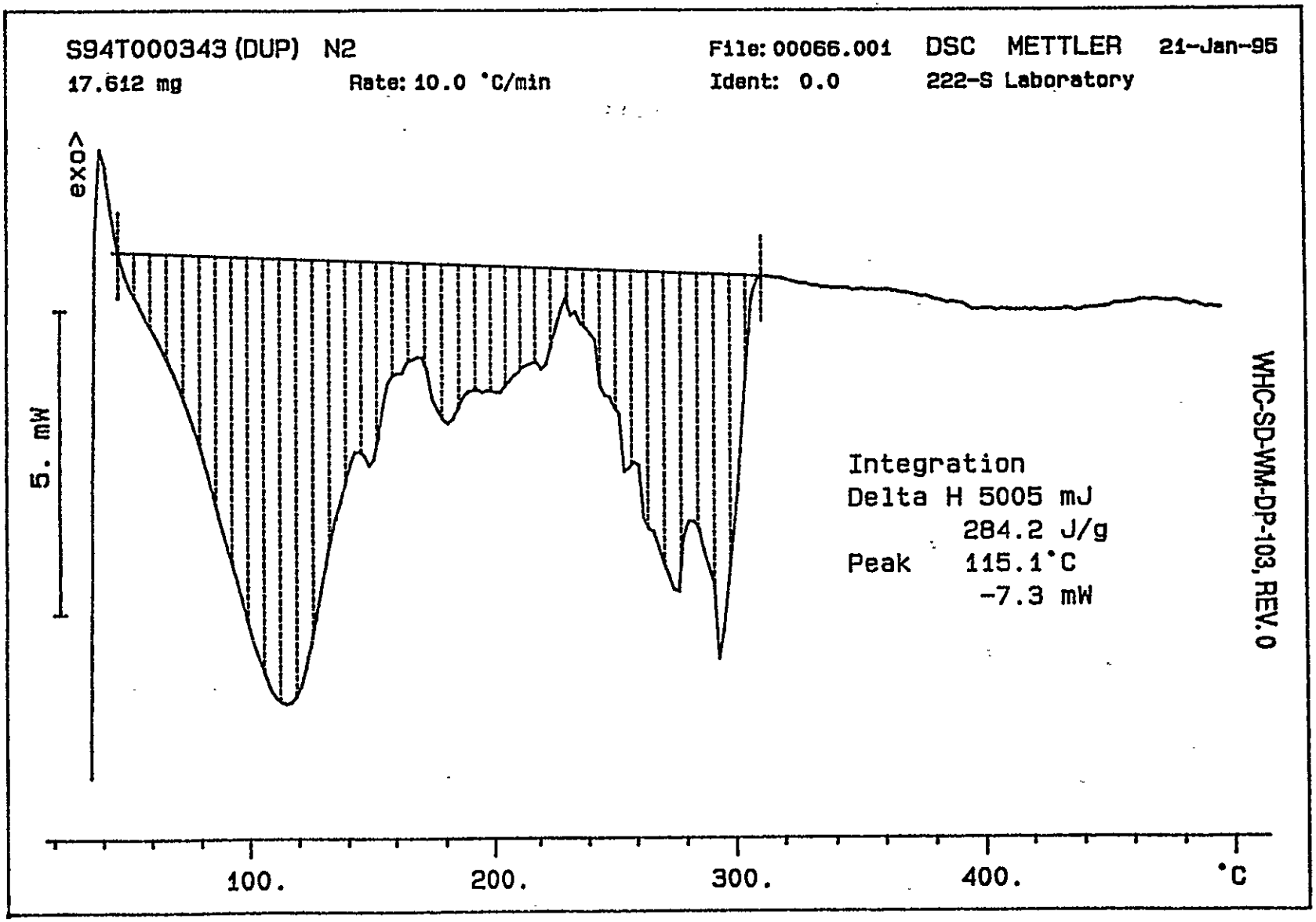
1-22-95


1/23/95 BOV
S94X000342 N2
16.186 mg
Rate: 10.0 °C/min
File: 00062.001
Ident: 0.0
DSC METTLER
222-S Laboratory
21-Jan-95
exo>
5. mW
Integration
Delta H 9032 mJ
558.0 J/g
Peak 156.7°C
-14.2 mW
100.
200.
300.
400.
°C


S94T000342 (DUP) N2
15.528 mg
Rate: 10.0 °C/min
File: 00064.001
Ident: 0.0
DSC METTLER
222-S Laboratory
21-Jan-95
exo>
5. mW
Integration
Delta H 6548 mJ
421.7 J/g
Peak 113.1°C
-8.4 mW
100.
200.
300.
400.
°C



WHC-SD-WM-DP-103, REV. 0


S94T000343 (DUP) N2
17.612 mg
Rate: 10.0 °C/min
File: 00066.001
Ident: 0.0
DSC METTLER 21-Jan-95
222-S Laboratory
exo>
5. mW
Integration
Delta H 5005 mJ
284.2 J/g
Peak 115.1°C
-7.3 mW
100.
200.
300.
400.
°C

.B

LABCORE Data Entry Template for Worklist# 253

Analyst: _____ **Instrument:** DSC01 _____ **Method:** LA-514-113 B-1

Worklist Comment: Please run BY-106 DSC under N2; upper temp limit 450. BDV WHC-SD-WM-DP-103, REV. 1

Seg	Type	Sample#	Rep	Al	Test	Matrix	Actual	Found	DL	Unit
1	STD	12N14A			DSC-01	SOLID	28.45	27.1	N/A	Joule/g
2	SAMPLE	S94T000344	0		DSC-01	SOLID	N/A	Ø		Joule/g
3	DUP	S94T000344	0		DSC-01	SOLID	Ø	Ø	N/A	Joule/g
4	SAMPLE	S94T000345	0		DSC-01	SOLID	N/A	54.3		Joule/g
5	DUP	S94T000345	0		DSC-01	SOLID	54.3	52.4	N/A	Joule/g

XR 4/22/95

Final page for worklist # 253

Analyst Signature — Date 1-23-95

1-24-95

1-25-95

Verified by Blandina Valenzuela

WHC-SD-WM-DP-103, REV. 0

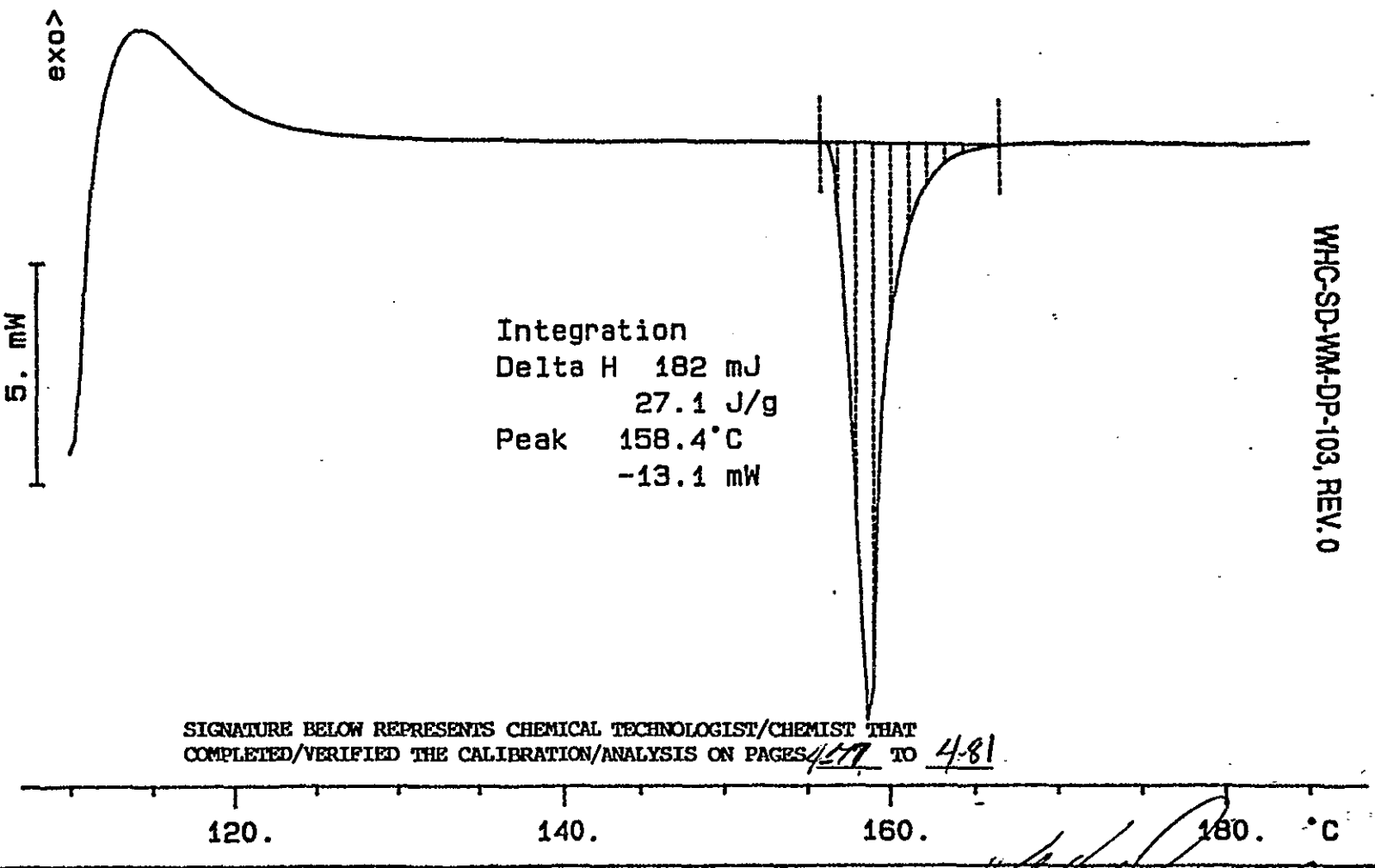
Data Entry Comments: S94T000344 produced one endotherm at 121.6°C with a delta H of 410.4 J/g. S94T000345 produced one endotherm at 134.9°C with a delta H of 870.5 J/g. S94T000345 also produced a second smaller exotherm at 223.7°C with a ΔH of 5.8 J/g.

Units shown for QC (SPK) may not reflect the actual units. *Page:* 1

DSC STD 12N14A Std # 9mE 12B5

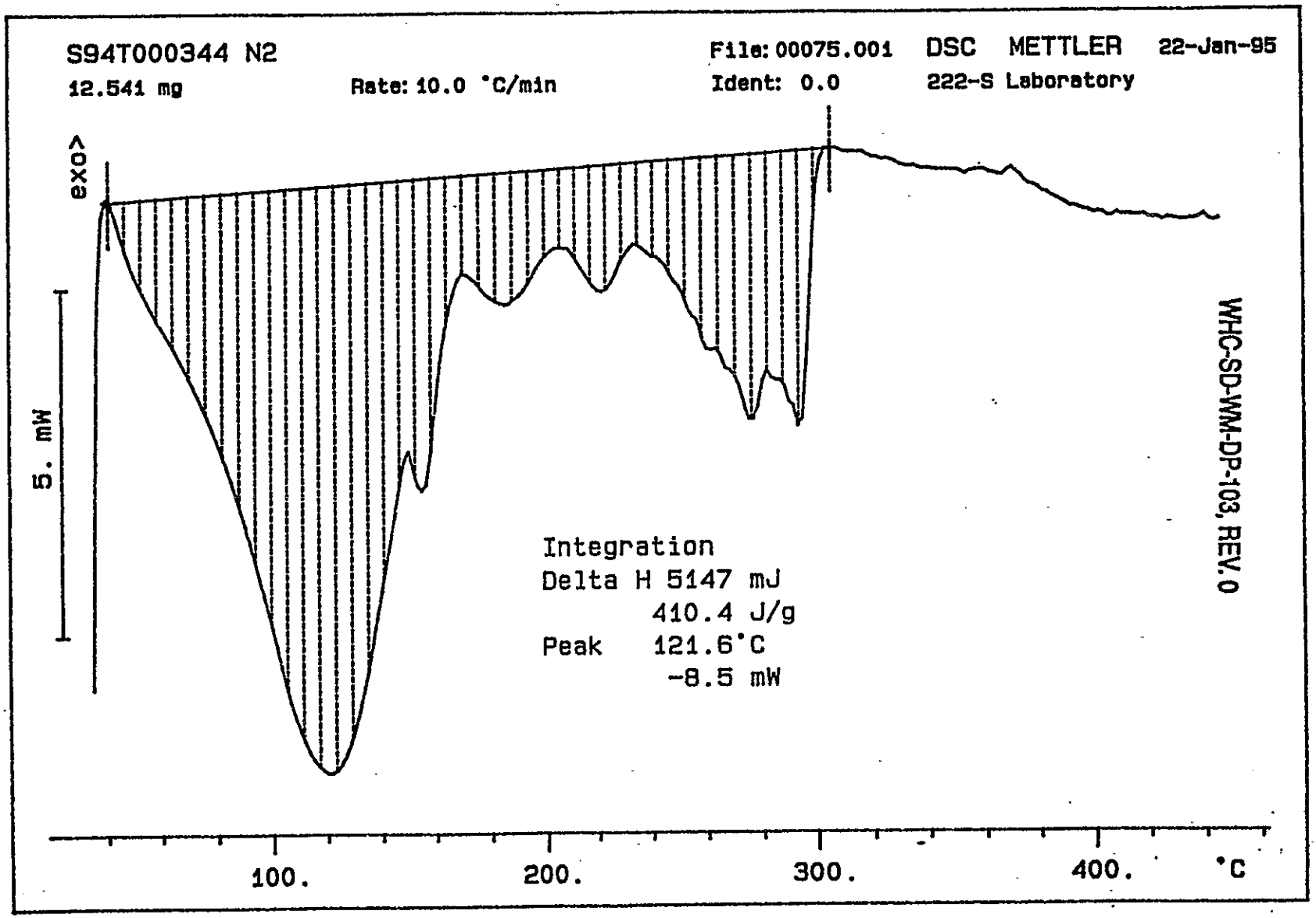
File: 00074.001 DSC METTLER 22-Jan-95

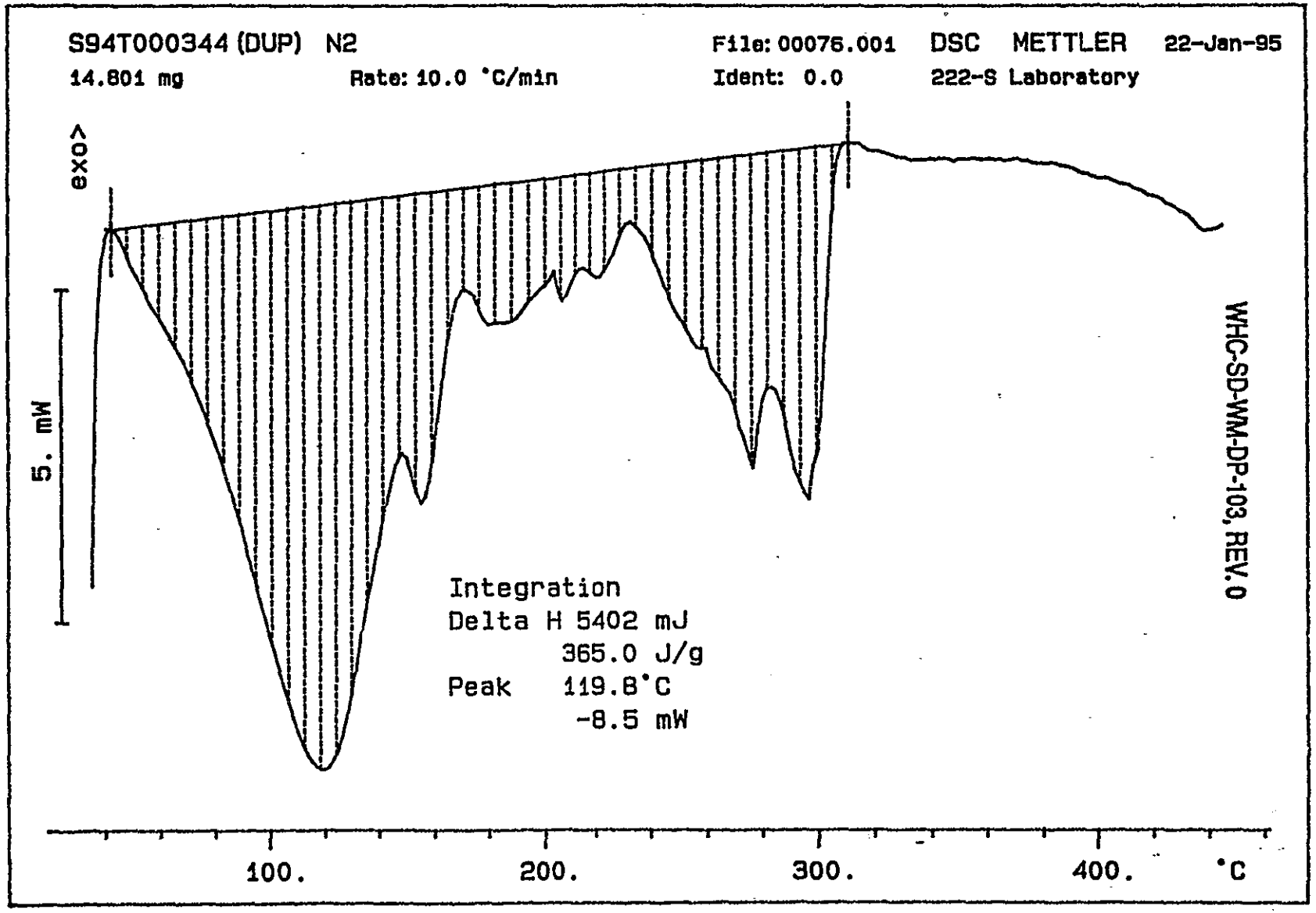
6.722 mg Rate: 10.0 °C/min Ident: 0.0 222-S Laboratory



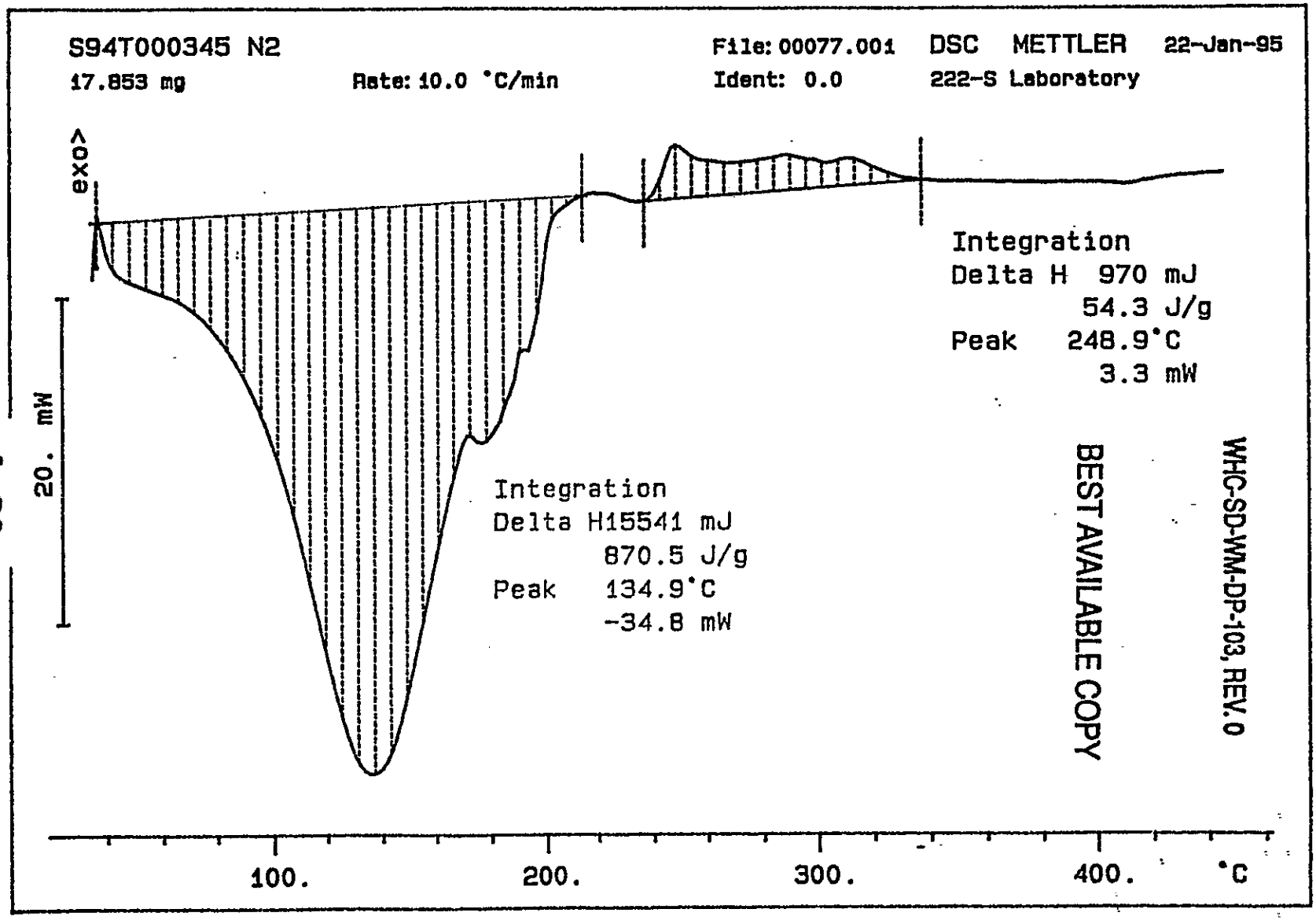
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 4.77 TO 4.81

1-23-95


S94T000344 N2
12.541 mg
Rate: 10.0 °C/min
File: 00075.001
Ident: 0.0
DSC METTLER
222-S Laboratory
22-Jan-95
exo>
5. mW
Integration
Delta H 5147 mJ
410.4 J/g
Peak 121.6°C
-8.5 mW
100.
200.
300.
400.
°C



WHC-SD-WM-DP-103, REV. 0



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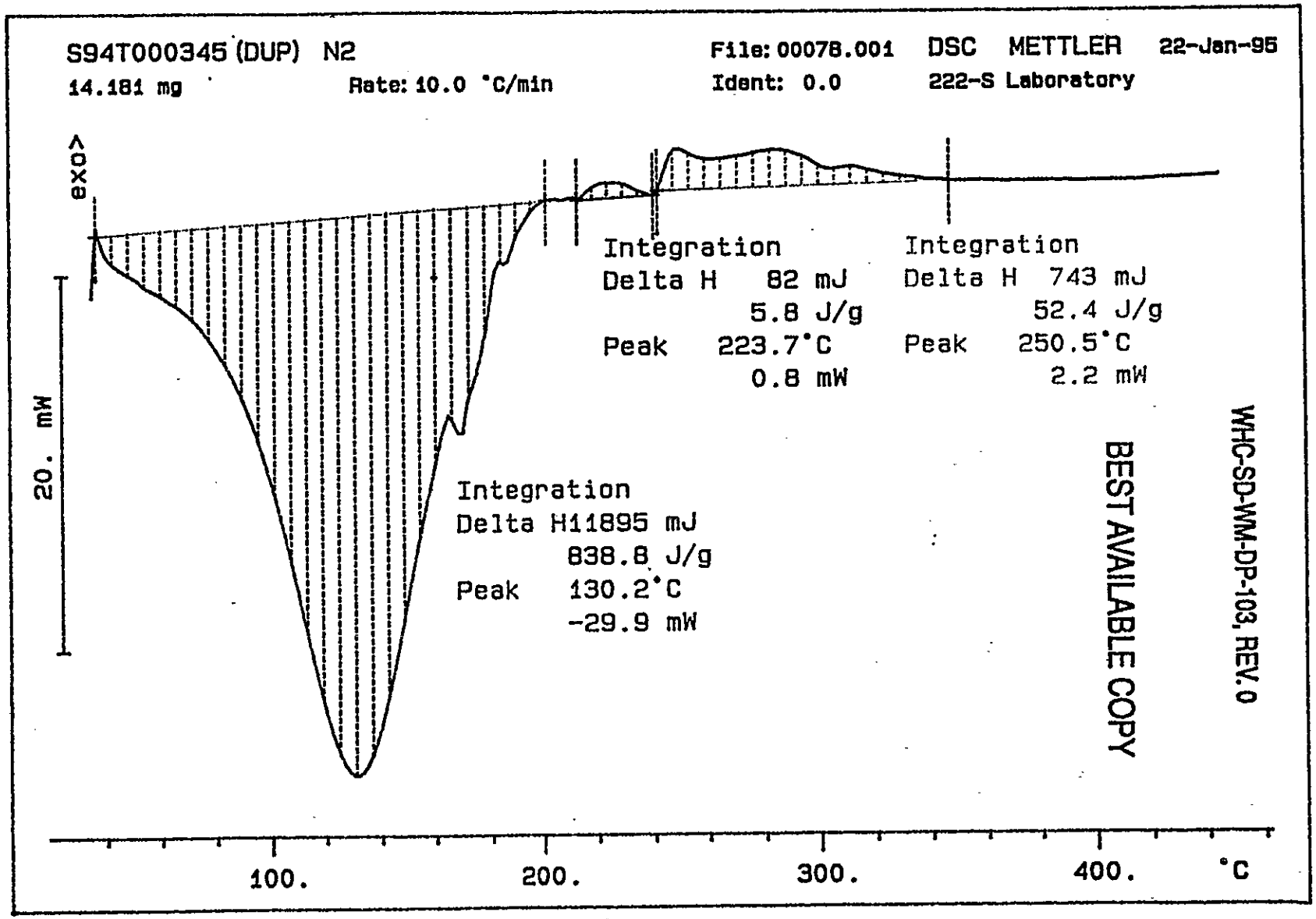
WHC-SD-WM-DP-103, REV. 0



BEST AVAILABLE COPY

LABCORE Data Entry Template for Worklist# 290

Analyst: DWS/KLV **Instrument:** DSC01 _____ **Method:** LA-514-113 B-1 WHC-SD-WM-DP-103, REV. 1

Worklist Comment: Please run BY-106 DSC under N2, upper temp limit 450. bdv

Seg	Type	Sample#	Rep	Al	Test	Matrix	Actual	Found	DL	Unit
1	STD	12N14A			DSC-01	LIQUID	28.45	30.00	N/A	Joule/g
2	SAMPLE	S94T000355	0		DSC-01	LIQUID	N/A	35.4		Joule/g
3	DUP	S94T000355	0		DSC-01	LIQUID	35.4	87.2	N/A	Joule/g
4	STD				DSC-01	LIQUID	28.45	27.8	N/A	Joule/g
5	DUP	S94T000355	0		DSC-01	LIQUID	35.4	68.8	N/A	Joule/g

KLV 4/22/95

Final page for worklist # 290

See attached for signatures
Analyst Signature

2/2/95
Date

RC Jones 2-3-95

Verified by Blandina Valenzuela 2-6-95

WHC-SD-WM-DP-103, REV. 0

Data Entry Comments: S94T000355 produced one endotherm at 119.5°C - with a delta H of 1254.5 J/g.

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

Page: 1

LABCORE Data Entry Template for Worklist# 290

Analyst: DWS **Instrument:** DSC01 _____ **Method:** LA-514-113 B-1

Worklist Comment: Please run BY-106 DSC under N2, upper temp limit 450. bdv WHC-SD-WM-DP-103, REV. 1

Seq	Type	Sample#	Rep	Al	Test	Matrix	Actual	Found	DL	Unit
1	STD	12W14A			DSC-01	LIQUID	28.45	30.0	N/A	Joule/g
2	SAMPLE	S94T000355		0	DSC-01	LIQUID	N/A	35.4		Joule/g
3	DUP	S94T000355		0	DSC-01	LIQUID	35.4	87.2	N/A	Joule/g

KR 4/28/95

Final page for worklist # 290

Analyst Signature 1/31/95

1-28-95
Date

WHC-SD-WM-DP-103, REV. 0

Data Entry Comments:

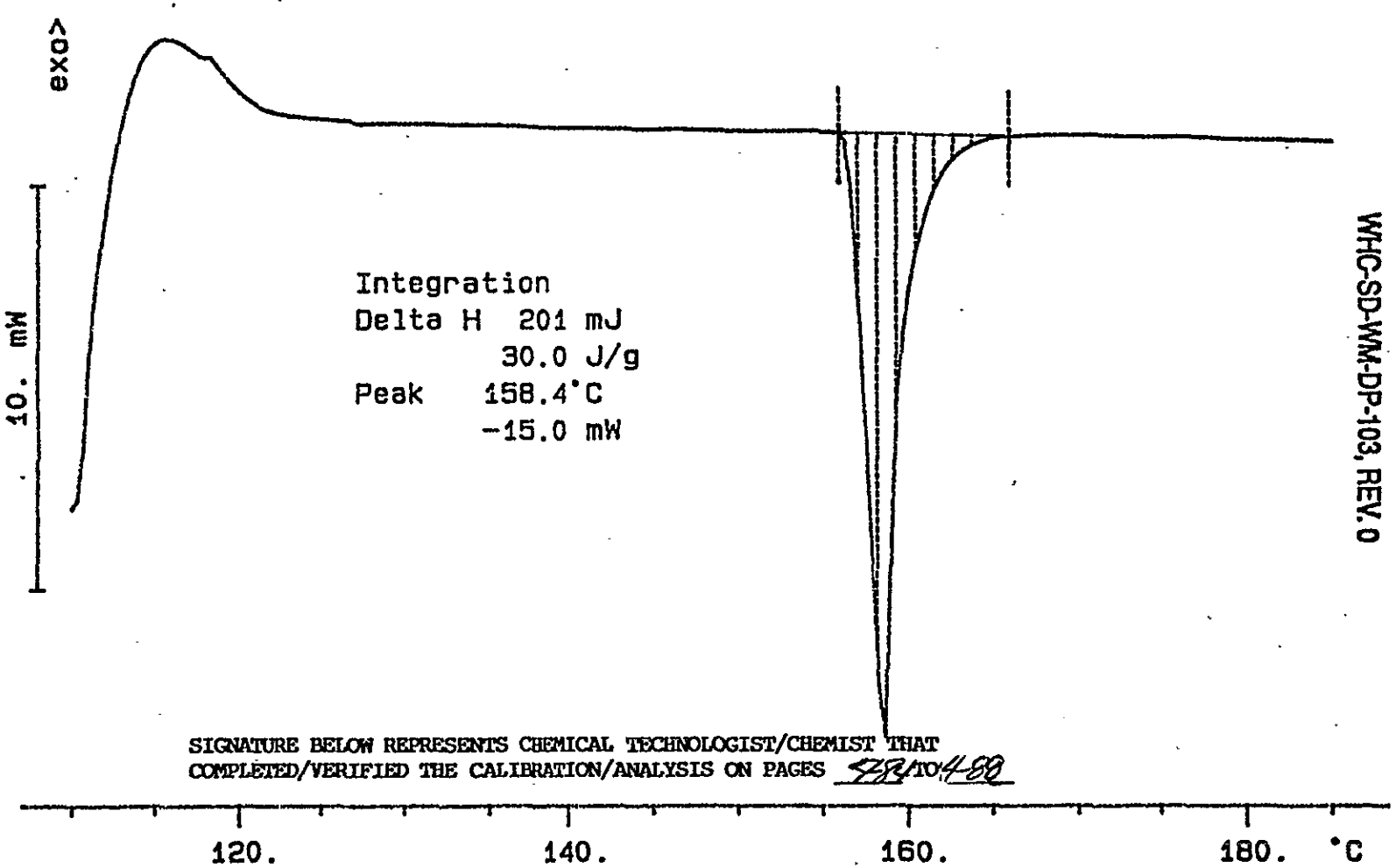
Units shown for QC (SPK) may not reflect the actual units.

Page: 1

0

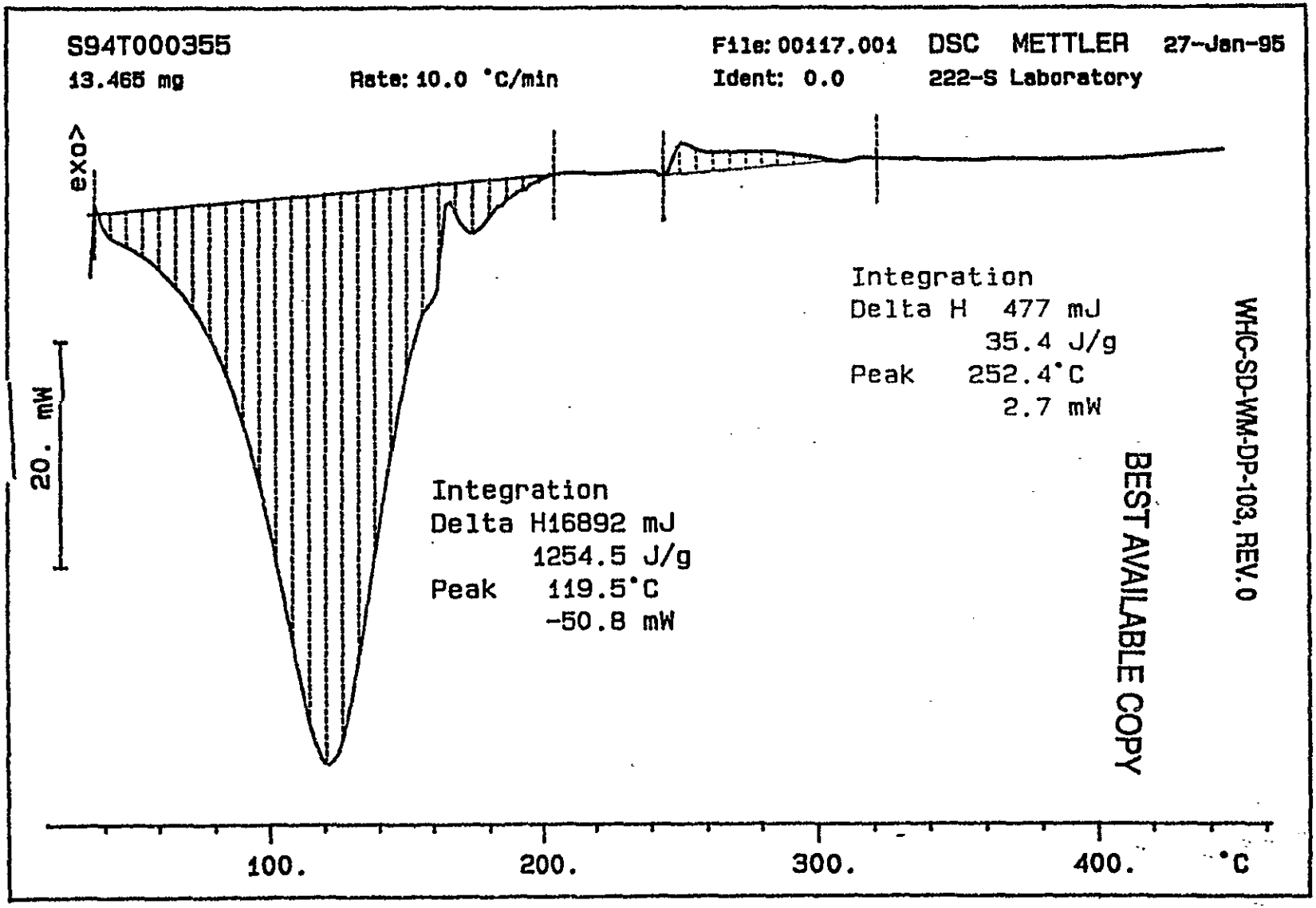
DSC STD 12N14A
6.722 mg gmf 1/28/95 Rate: 10.0 °C/min

File: 00113.001 DSC METTLER 27-Jan-95
Ident: 0.0 222-S Laboratory



SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 488 TO 488

1-28-95 David A. Smith



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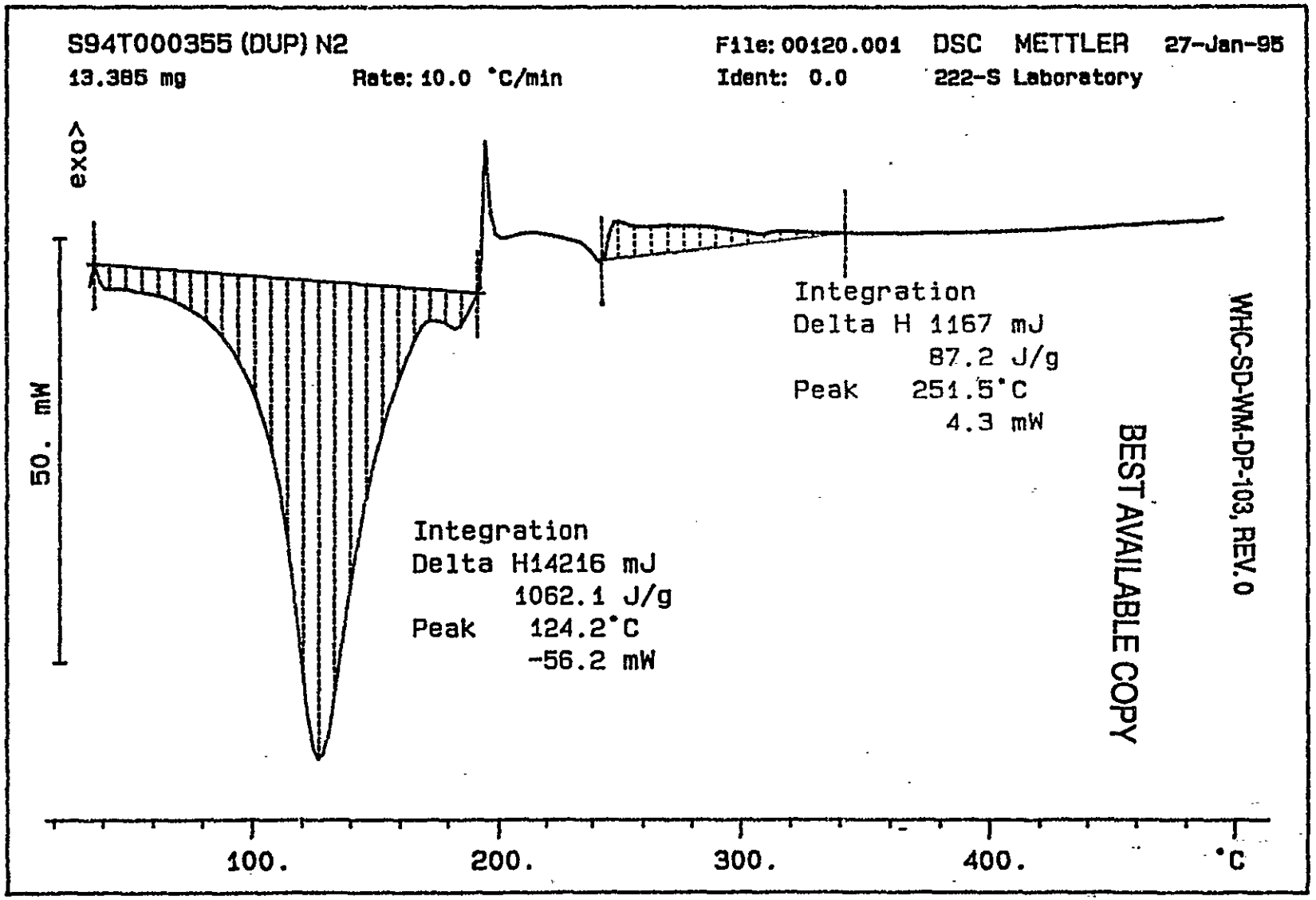
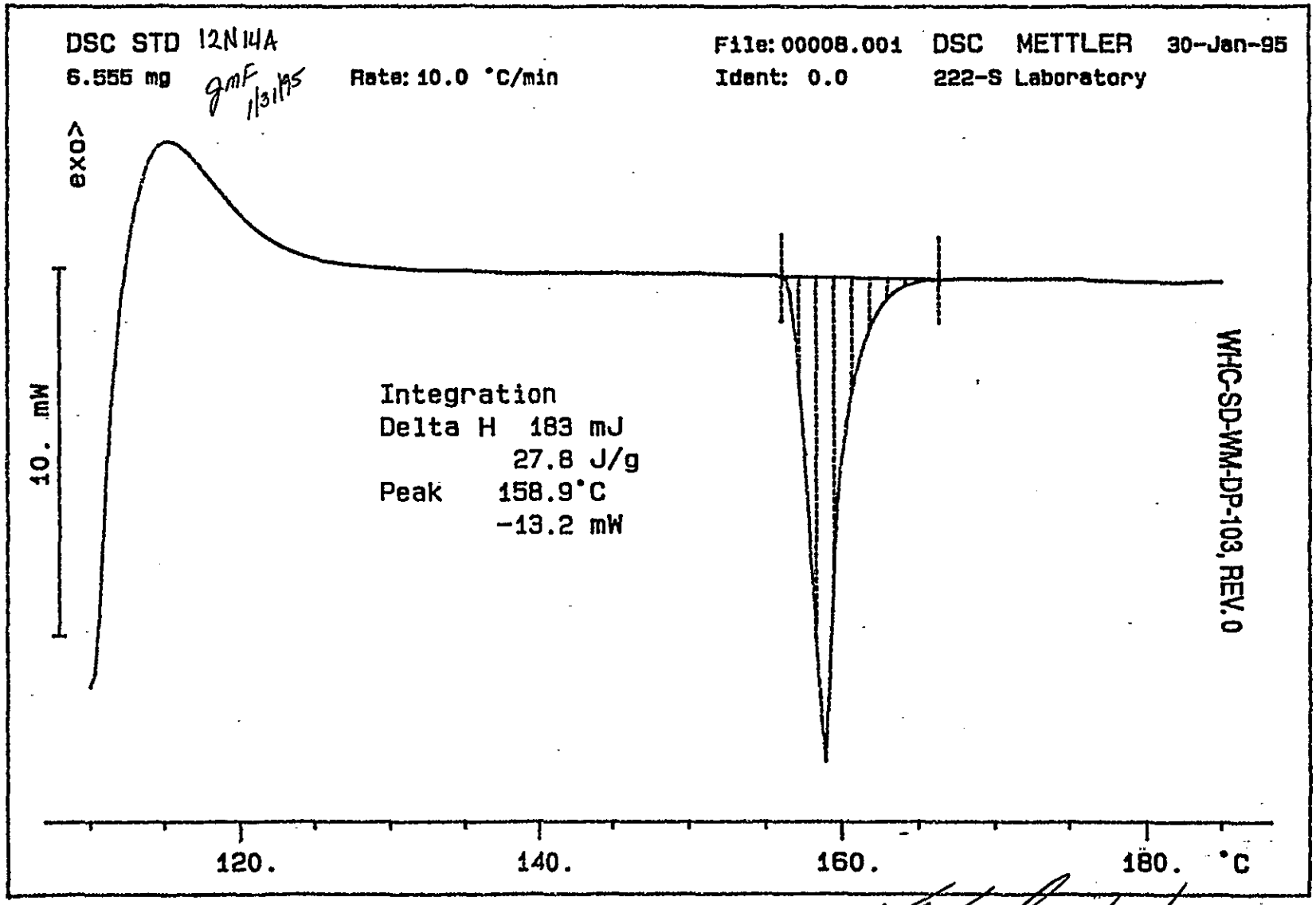
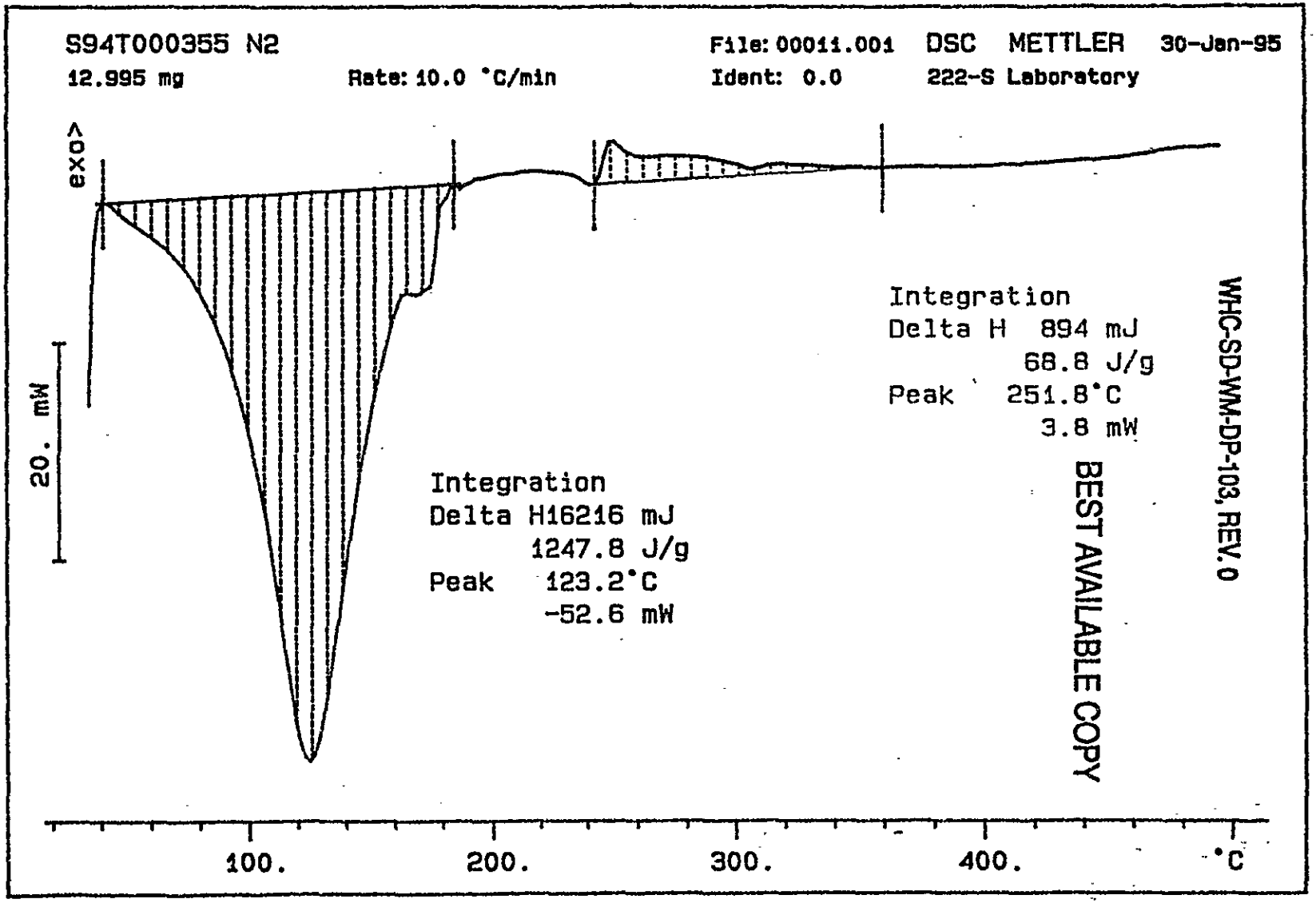


BEST AVAILABLE COPY


DSC STD 12N14A
6.555 mg
gmF 1/31/95
Rate: 10.0 °C/min
File: 00008.001
Ident: 0.0
DSC METTLER
222-S Laboratory
30-Jan-95
exo>
10. mW
Integration
Delta H 183 mJ
27.8 J/g
Peak 158.9°C
-13.2 mW
120.
140.
160.
180.
°C

1/31/95



BEST AVAILABLE COPY

KB

LABCORE Data Entry Template for Worklist# 347

Analyst: DWS **Instrument:** DSC01 **Method:** LA-514-113 B-1

Worklist Comment: Please run BY-106 DSC under N2. bdv WHC-SD-WM-DP-103, REV. 0

Seg	Type	Sample#	Rep Al	Test	Matrix	Actual	Found	DL	Unit
1	STD	12N14-A		DSC-01	SOLID	28.45	28.4	N/A	Joule/g
2	SAMPLE	S94T000372	0	DSC-01	SOLID	N/A	Ø		Joule/g
3	DUP	S94T000372	0	DSC-01	SOLID	Ø	Ø	N/A	Joule/g
4	SAMPLE	S94T000373	0	DSC-01	SOLID	N/A	Ø		Joule/g
5	DUP	S94T000373	0	DSC-01	SOLID	Ø	Ø	N/A	Joule/g

KB 4/28/94

Final page for worklist # 347

Analyst/Signature — Date 1-22-95

1-24-95

Verified by Blandina Valenzuela 1-25-95

gmF 1/25/95

Data Entry Comments: S94T000372 produced one endotherm at 127.8°C with a delta H of 587.7 J/g. S94T000373 produced one endotherm at 148.5°C with a delta H of 565.6 J/g.

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

Page: 1

Stat# GMF 1/22/95

DSC STD 12N14A

6.722 mg

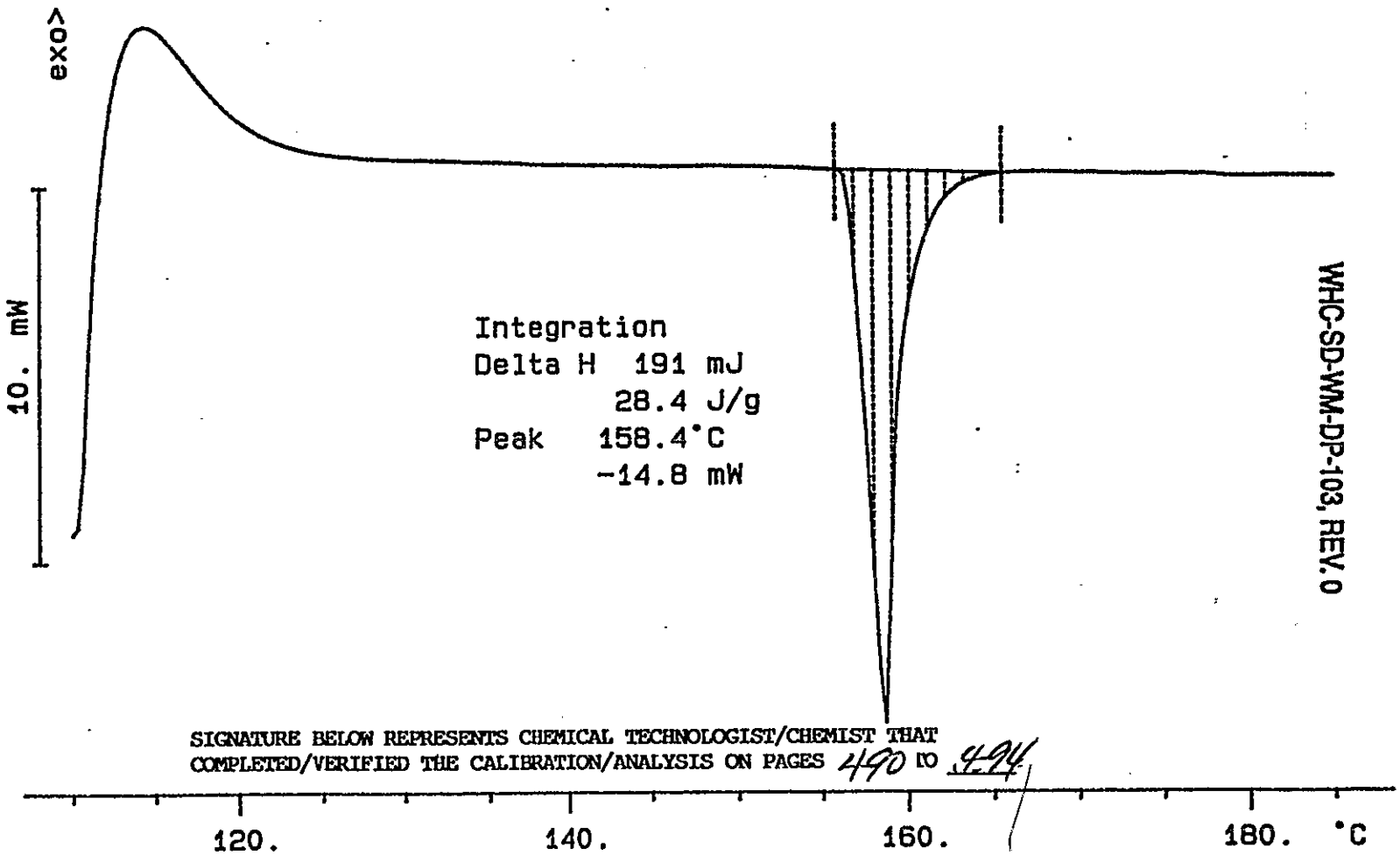
Rate: 10.0 °C/min

File: 00068.001

Ident: 0.0

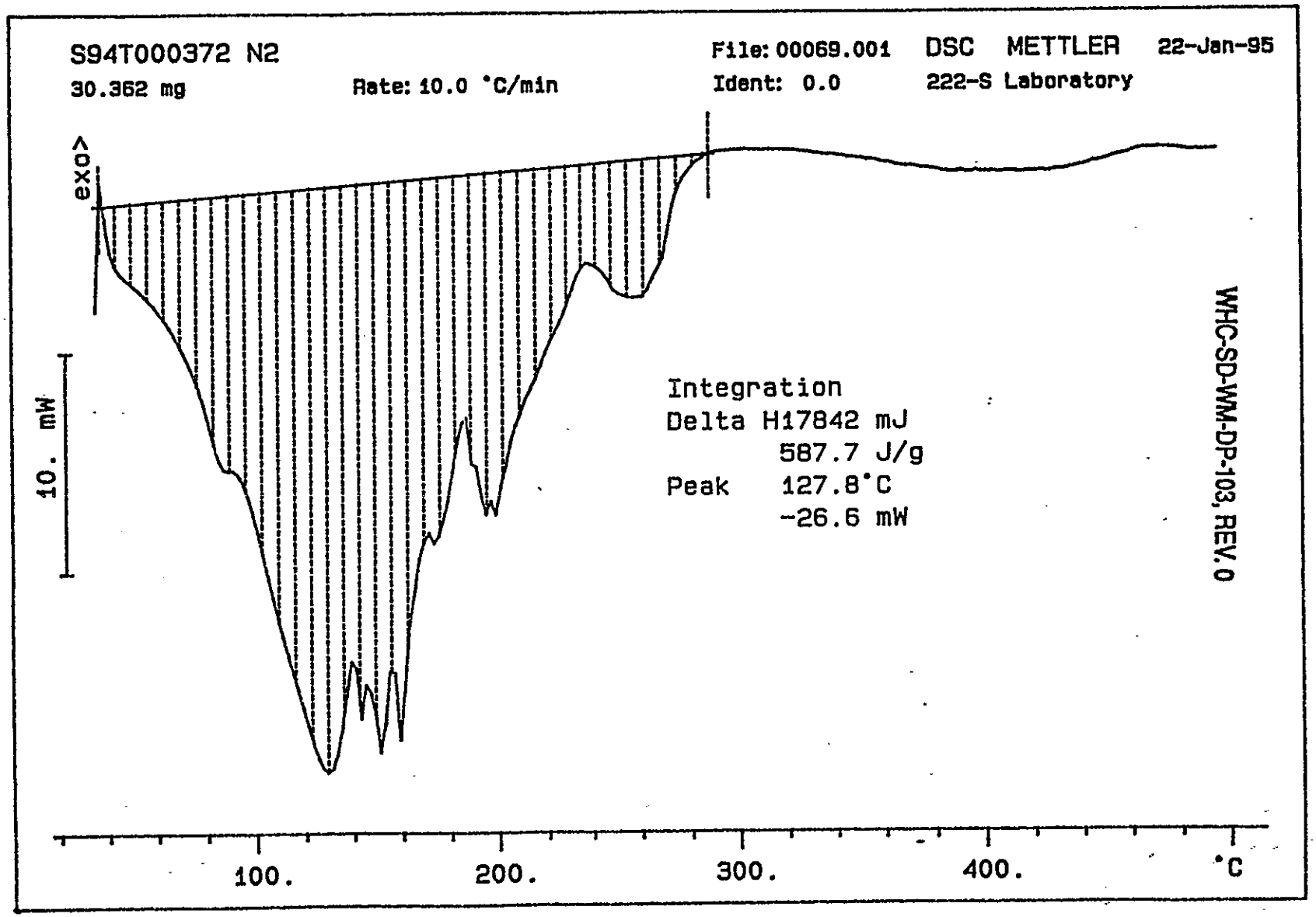
DSC METTLER 22-Jan-95

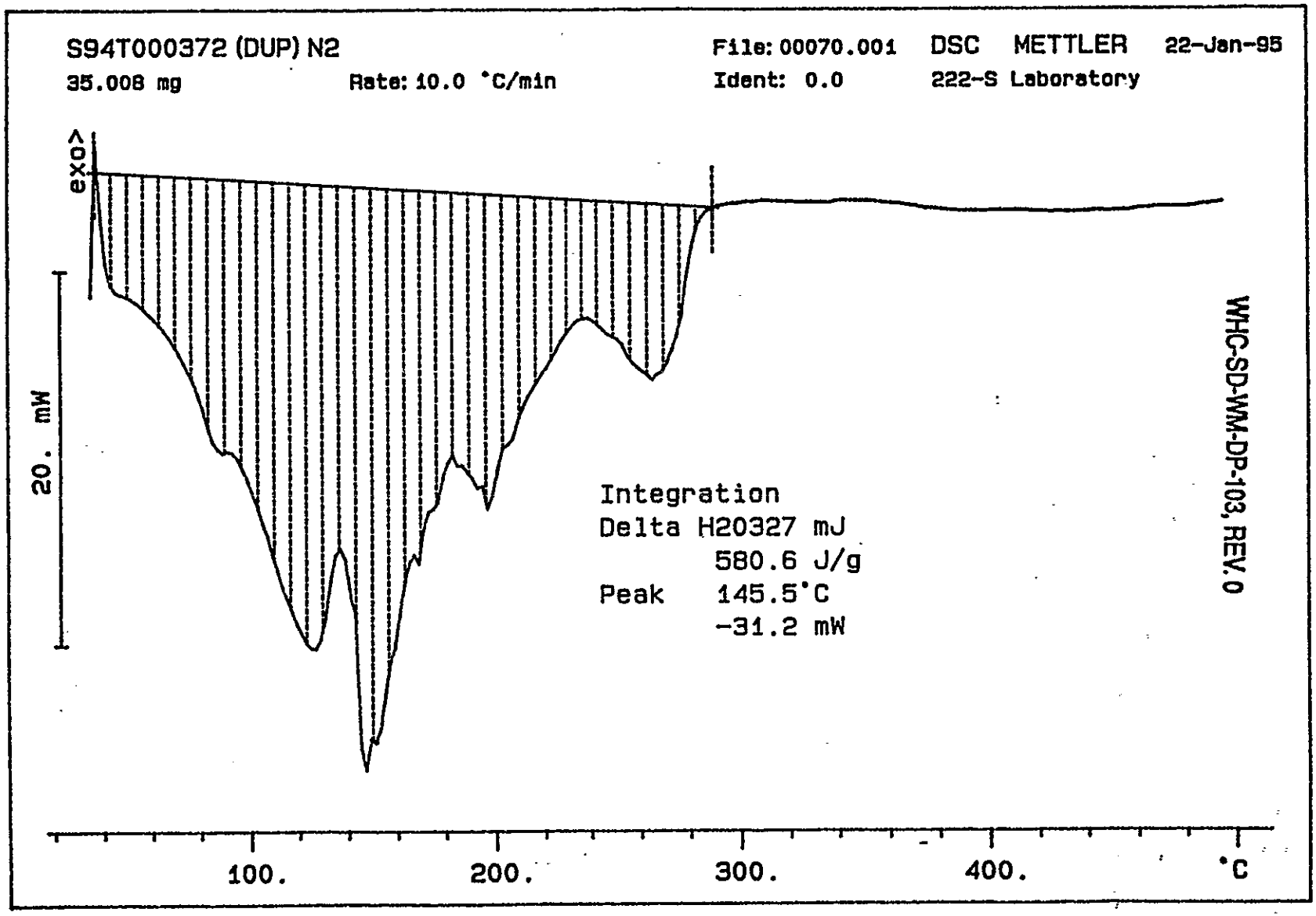
222-S Laboratory



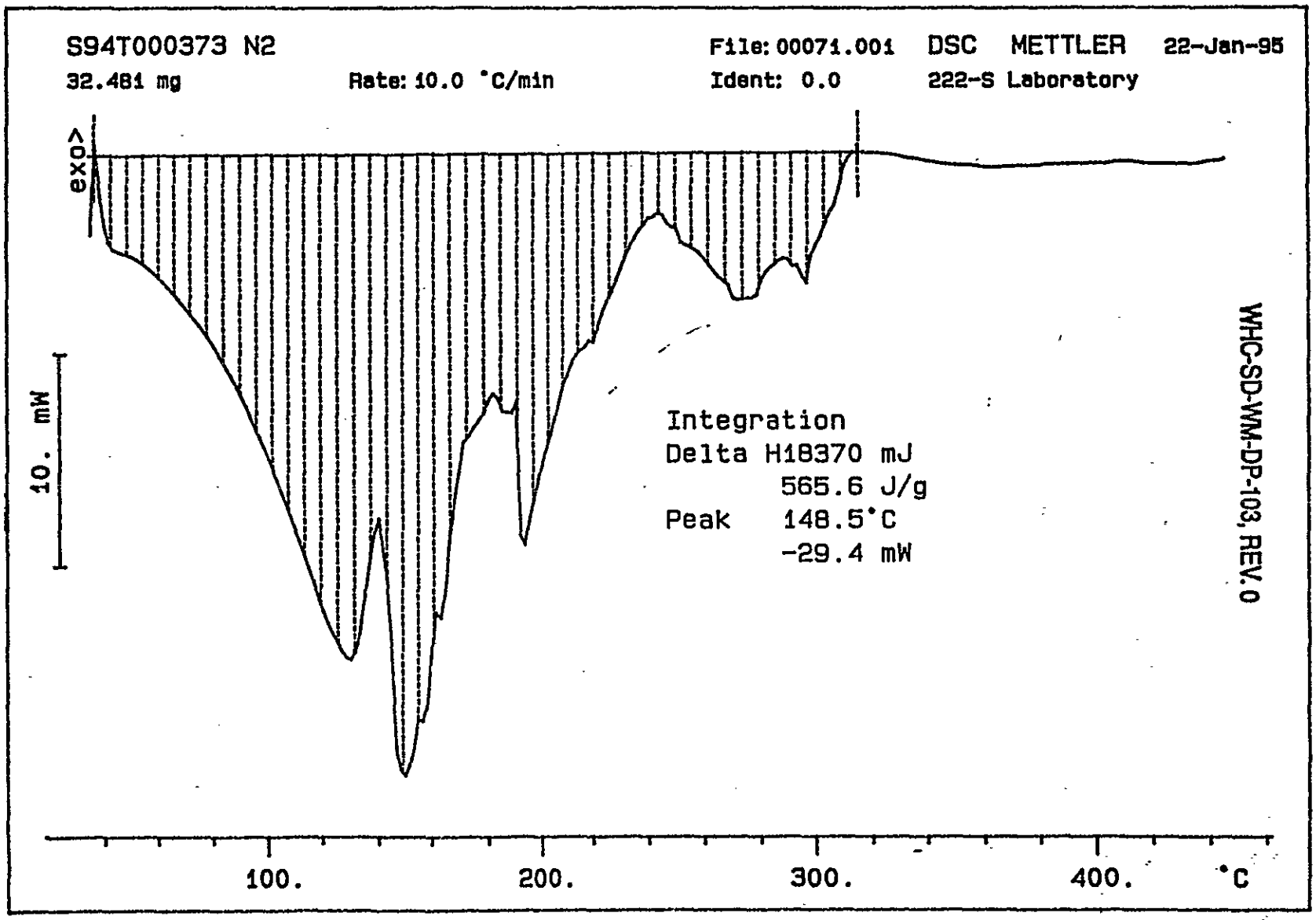
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 490 TO 494

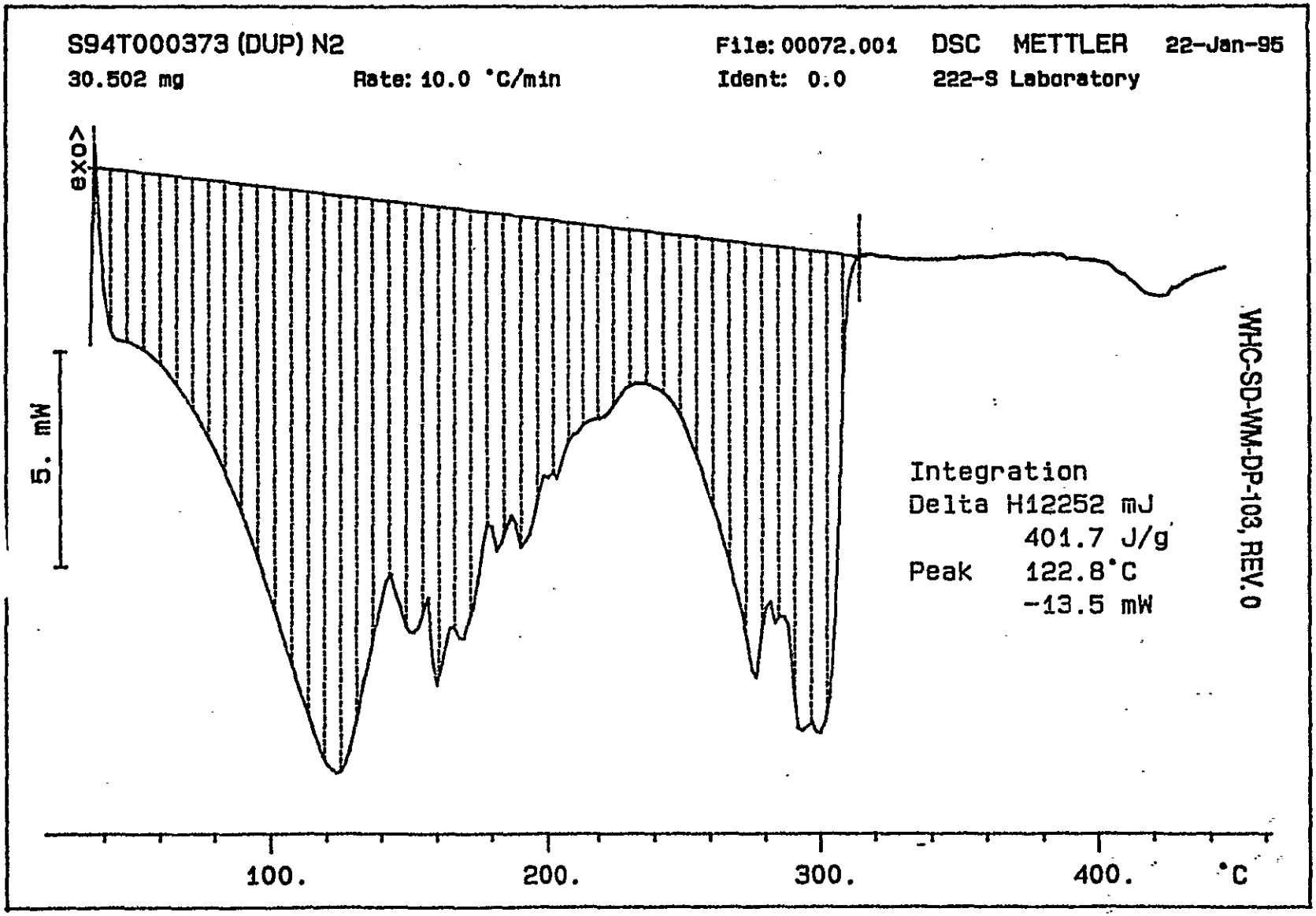
David W Smith 1-22-95


S94T000372 N2
30.362 mg
Rate: 10.0 °C/min
File: 00069.001
Ident: 0.0
DSC METTLER
222-S Laboratory
22-Jan-95
exo>
10. mW
Integration
Delta H17842 mJ
587.7 J/g
Peak 127.8°C
-26.6 mW
100.
200.
300.
400.
°C



WHC-SD-WM-DP-103, REV. 0


S94T000373 N2
32.481 mg
Rate: 10.0 °C/min
File: 00071.001
Ident: 0.0
DSC METTLER
222-S Laboratory
22-Jan-95
exo>
10. mW
Integration
Delta H18370 mJ
565.6 J/g
Peak 148.5°C
-29.4 mW
100.
200.
300.
400.
°C


S94T000373 (DUP) N2
30.502 mg
Rate: 10.0 °C/min
File: 00072.001
Ident: 0.0
DSC METTLER
222-S Laboratory
22-Jan-95
exo>
5. mW
Integration
Delta H12252 mJ
401.7 J/g
Peak 122.8°C
-13.5 mW
100.
200.
300.
400.
°C

LABCORE Data Entry Template for Worklist# 349

Analyst: KLV **Instrument:** DSC01 _____ **Method:** LA-514-113 B-1

Worklist Comment: Please run BY-106 DSC under N2. bdv WHC-SD-WM-DP-103, REV. 0

Seg	Type	Sample#	Rep	Al	Test	Matrix	Actual	Found	DL	Unit
1	STD	12N14A			DSC-01	SOLID	28.45	27.5	N/A	Joule/g
2	SAMPLE	S94T000381	0		DSC-01	SOLID	N/A	Ø		Joule/g
3	DUP	S94T000381	0		DSC-01	SOLID	Ø	Ø	N/A	Joule/g
4	SAMPLE	S94T000390	0		DSC-01	SOLID	N/A	Ø		Joule/g
5	DUP	S94T000390	0		DSC-01	SOLID	Ø	Ø	N/A	Joule/g

KB 4/28/95

Final page for worklist # 349

Analyst Signature — Date: 1-12-95

1-24-95

Verified by Blandina Valenzuela 1-25-95

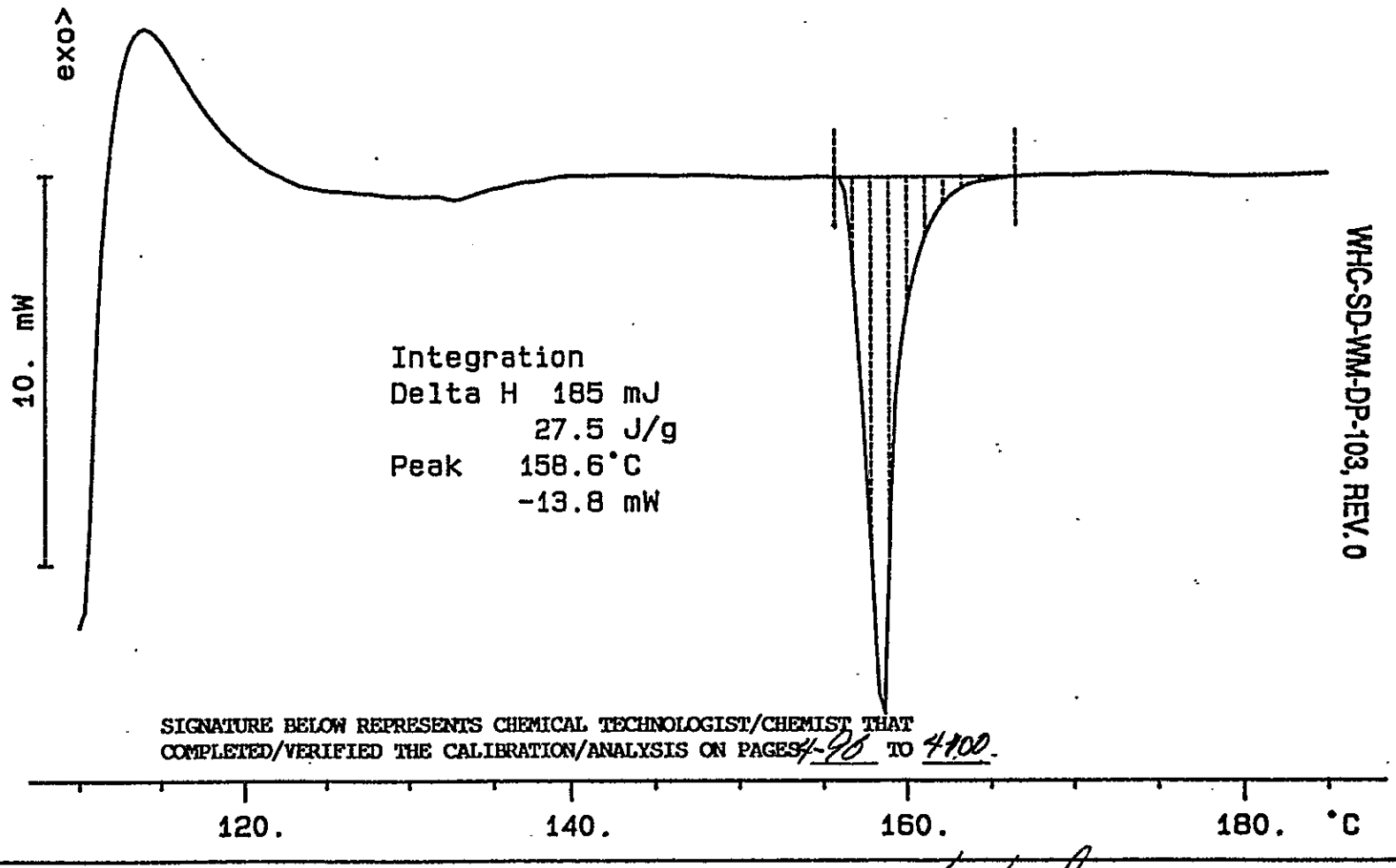
Data Entry Comments: S94T000381 produced three endotherms one at 103.3°C with a delta H of 61.4 J/g; second at 147.5°C with a delta H of 5.0 J/g and third at 300.6°C with a delta H of 159.7 J/g. S94T000390 produced two endotherms one at 128.1°C w/ a delta H of 597.8 J/g and the second at 255.6°C with a delta H of 6.2 J/g.

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

4-95

DSC STD #12N14A
6.722 mg *gmF 1/20/95 Rate: 10.0 °C/min

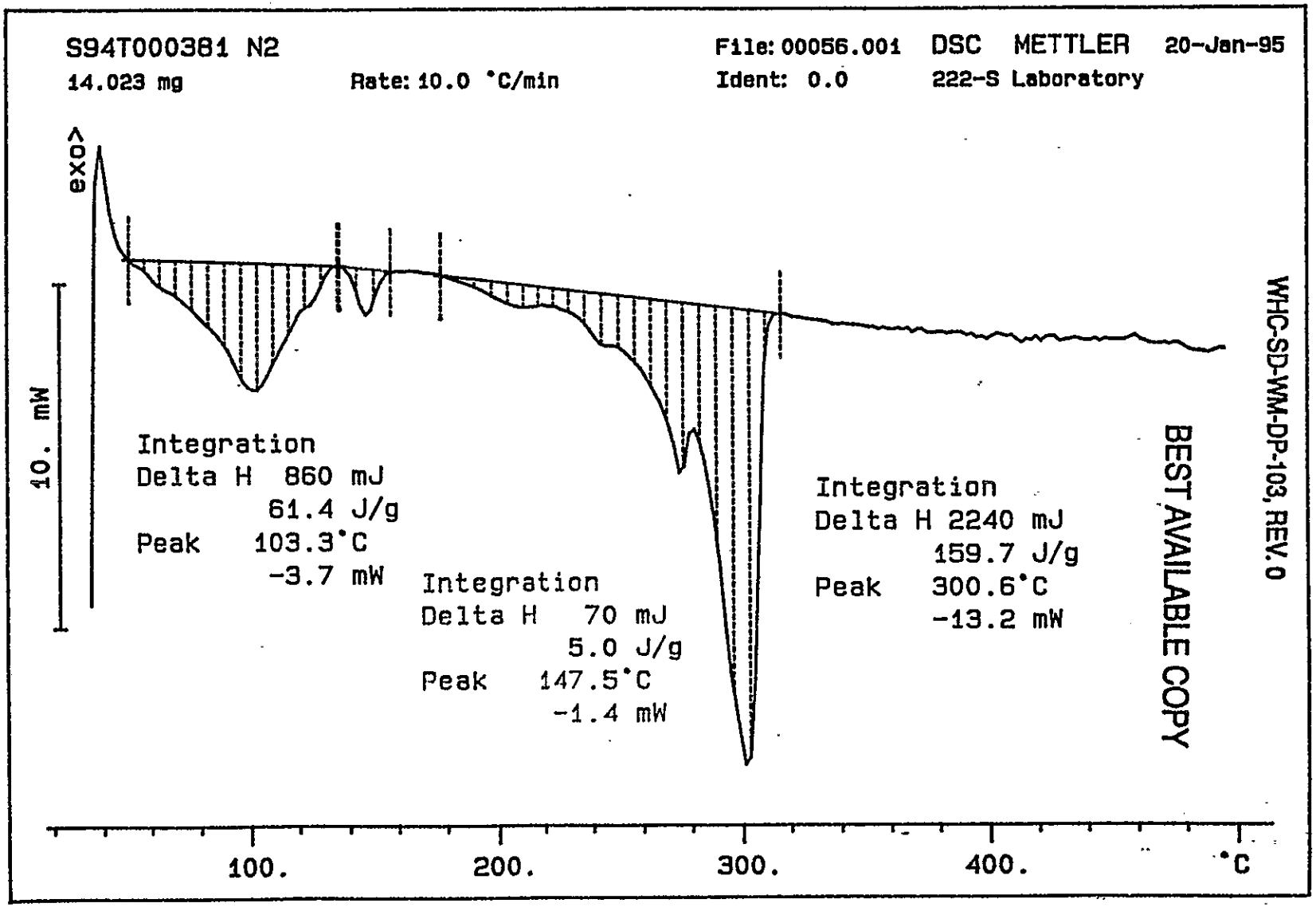
File: 00054.001 DSC METTLER 20-Jan-95
Ident: 0.0 222-S Laboratory



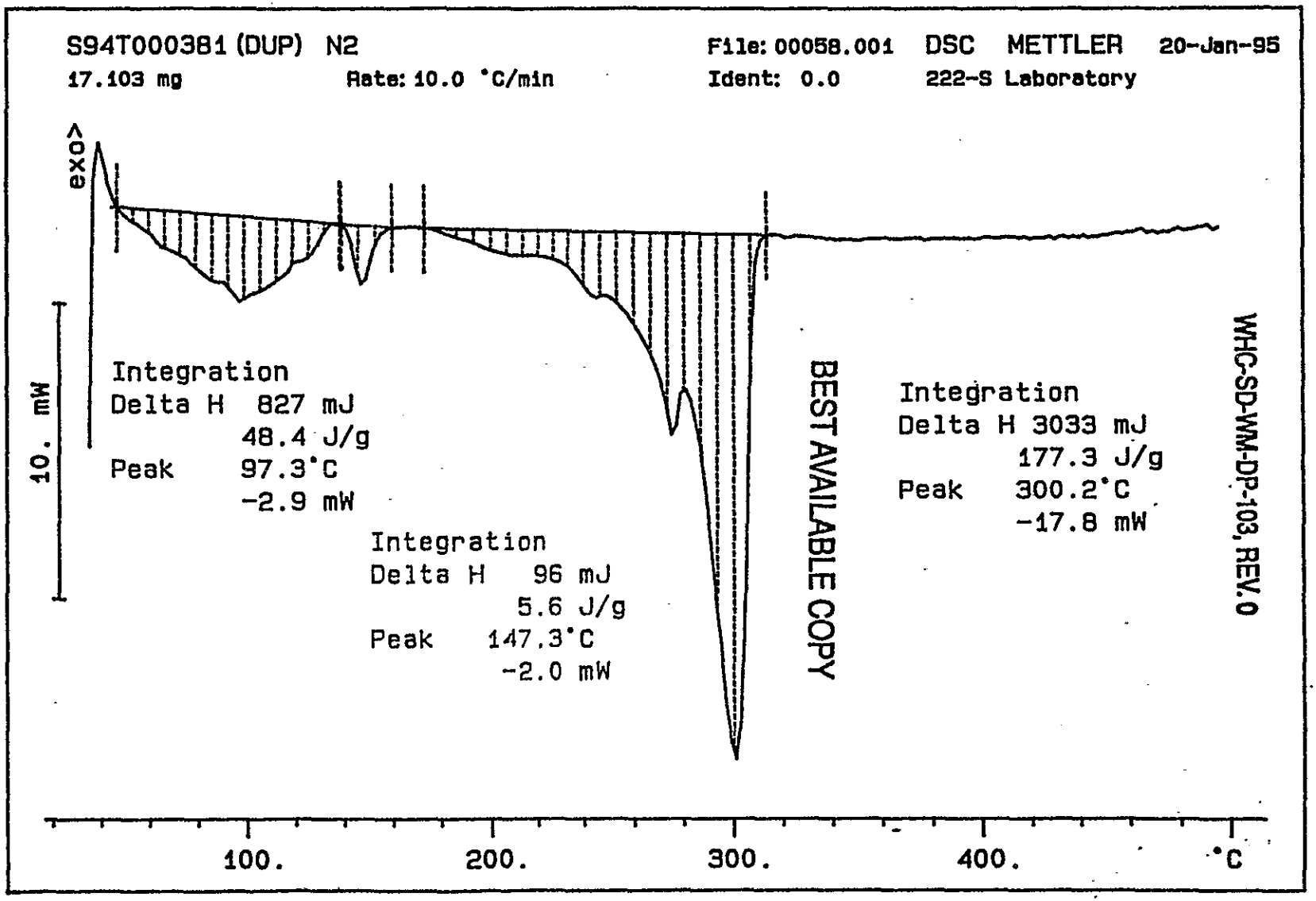
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 4-96 TO 4100.

Std# 12N14A *

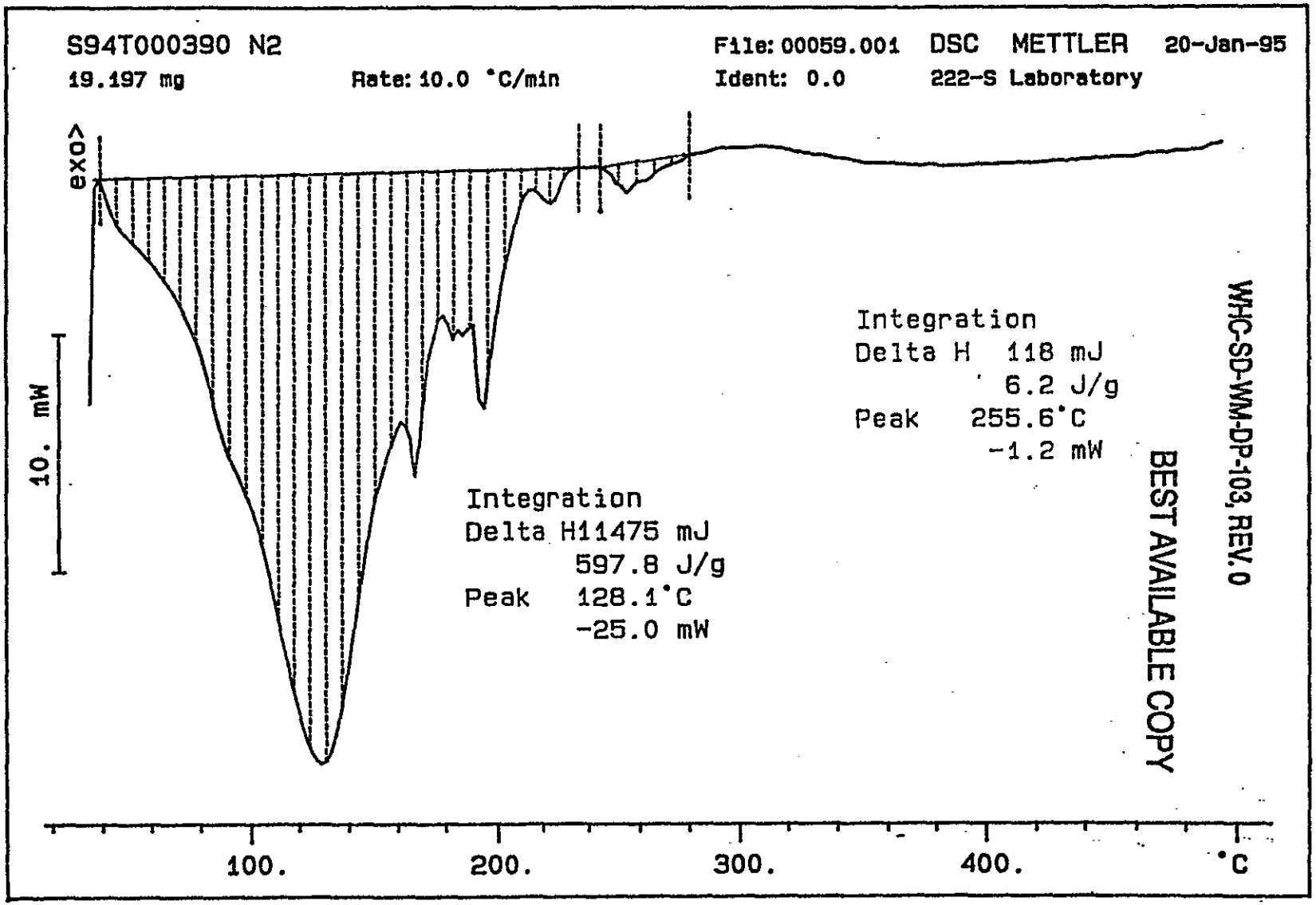
K L Vogel 1/20/95 BDV



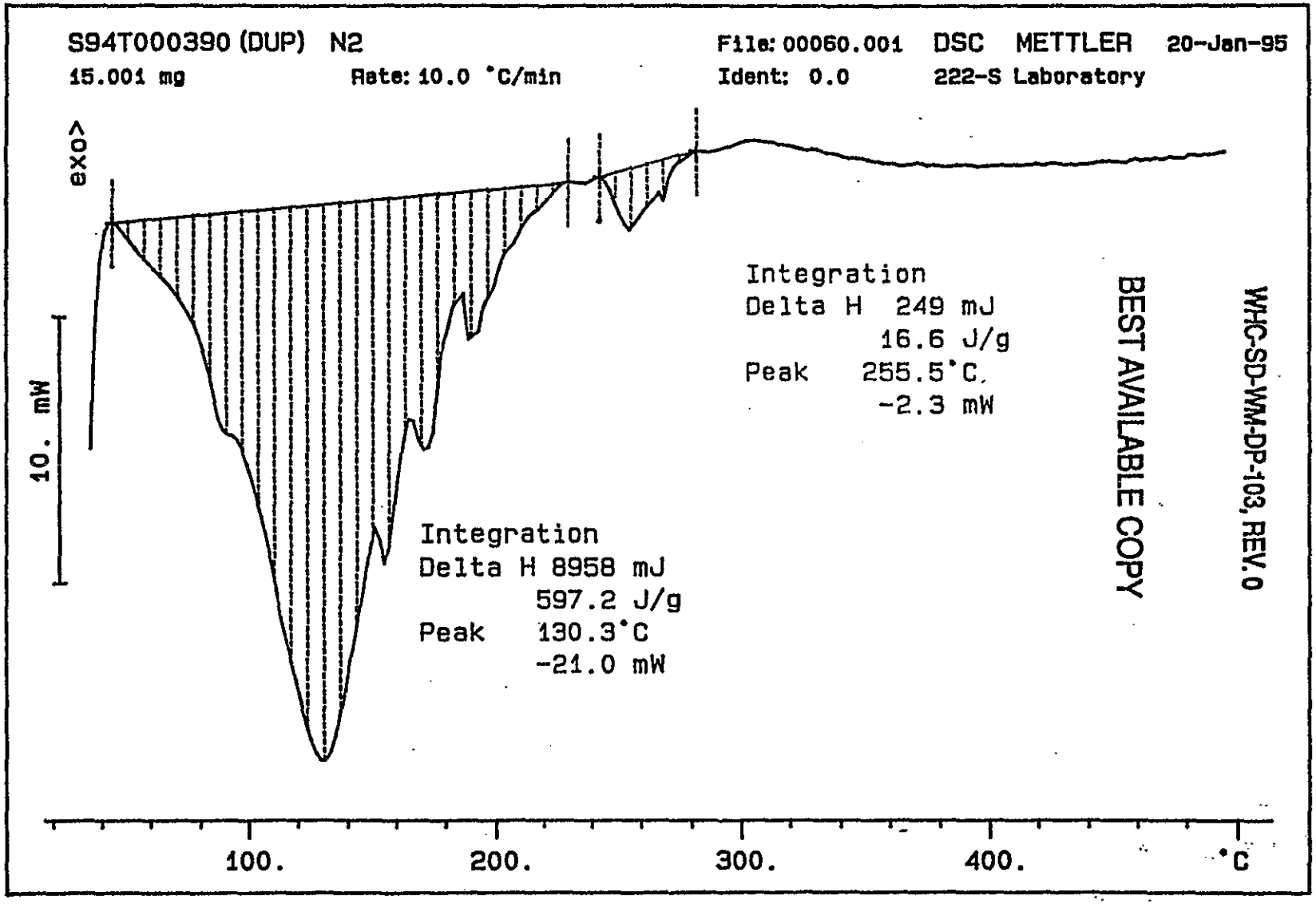
BEST AVAILABLE COPY



BEST AVAILABLE COPY



BEST AVAILABLE COPY



BEST AVAILABLE COPY

KB

WHC-SD-WM-DP-103, REV. 1

LABCORE Data Entry Template for Worklist# 353

Analyst: KLV **Instrument:** DSC01 _____ **Method:** LA-514-113 B-1

Worklist Comment: Please run under N2. JMF WHC-SD-WM-DP-103, REV. 0

Seg	Type	Sample#	Rep	Al	Test	Matrix	Actual	Found	DL	Unit
1	STD	12N14A			DSC-01	SOLID	28.45	28.9	N/A	Joule/g
2	SAMPLE	S94T000391	0		DSC-01	SOLID	N/A	Ø		Joule/g
3	DUP	S94T000391	0		DSC-01	SOLID	Ø	Ø	N/A	Joule/g

XR 4/22/95

Final page for worklist # 353

Analyst Signature

1-5-95
Date

1-13-95

1-17-95

Verified by Blandina Valenzuela

Data Entry Comments: S94T000391 ~~Ad~~ produced three endotherms one at 99.9°C with a delta H of 299.8 J/g; second one at 209.5°C with a delta H of 14.6 J/g; and the third one at 299.9°C with a delta H of 144.2 J/g.

JMF 1/5/95

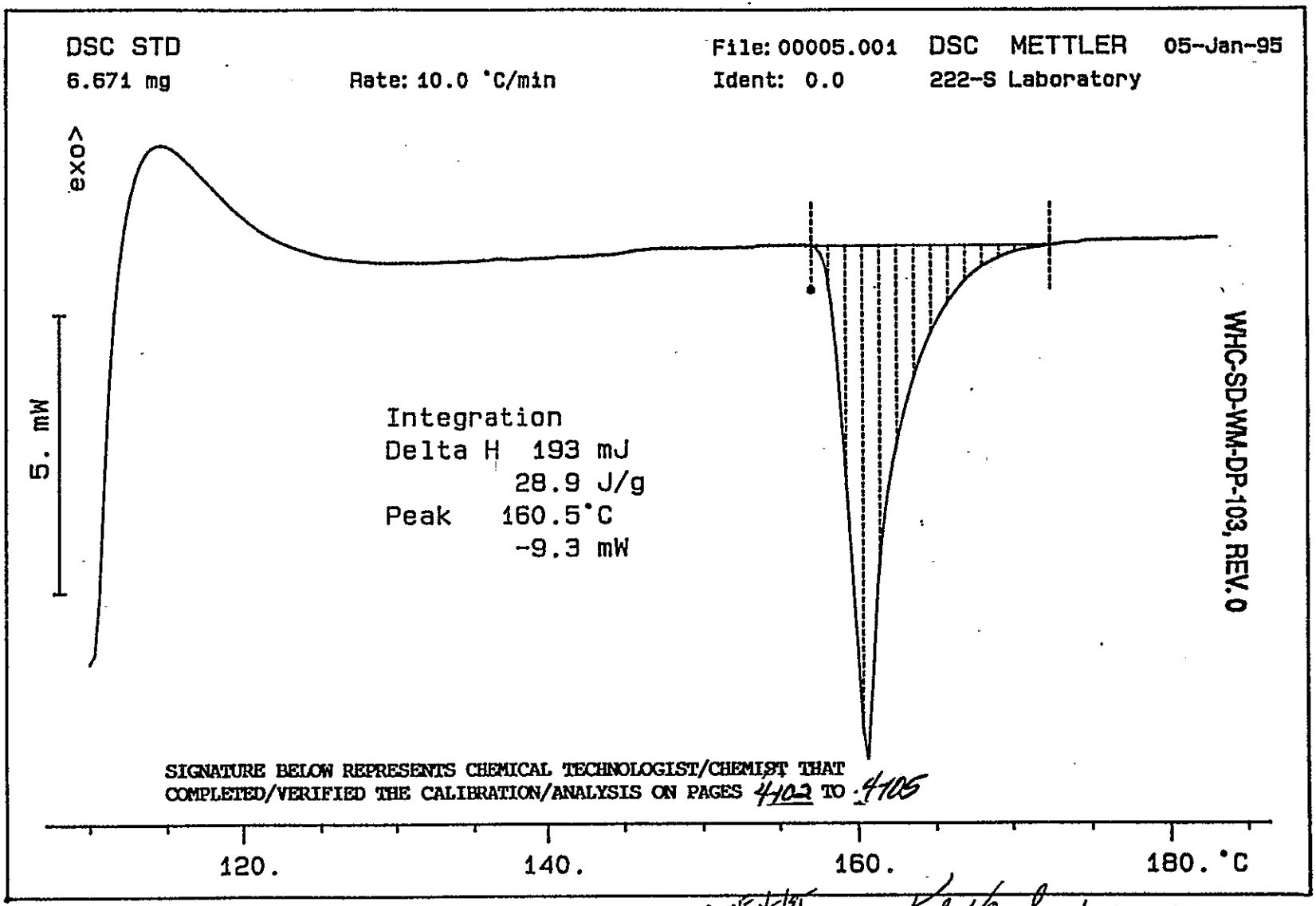
Units shown for QC (SPK) may not reflect the actual units.

Page: 1

1/5/95

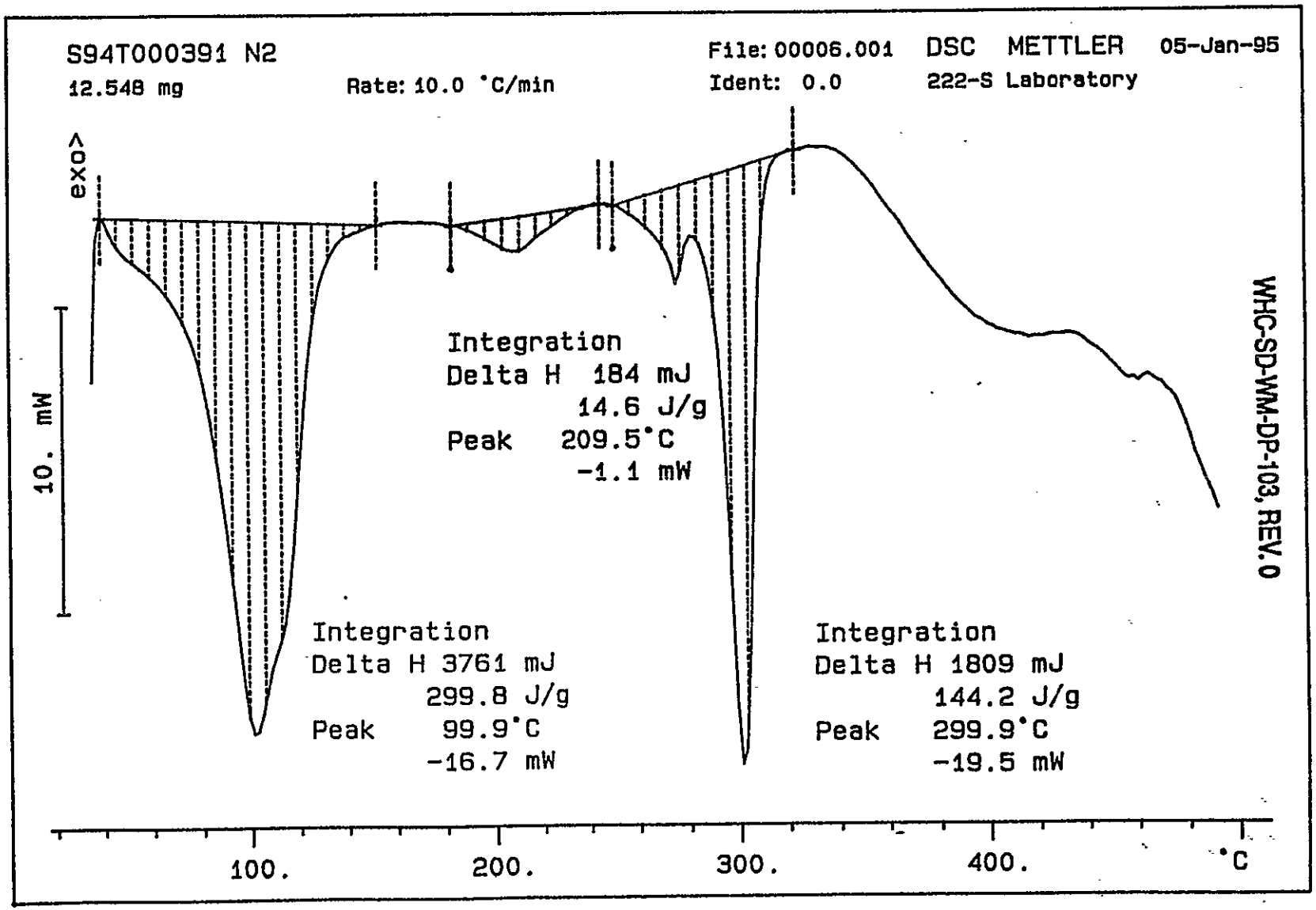
4-101

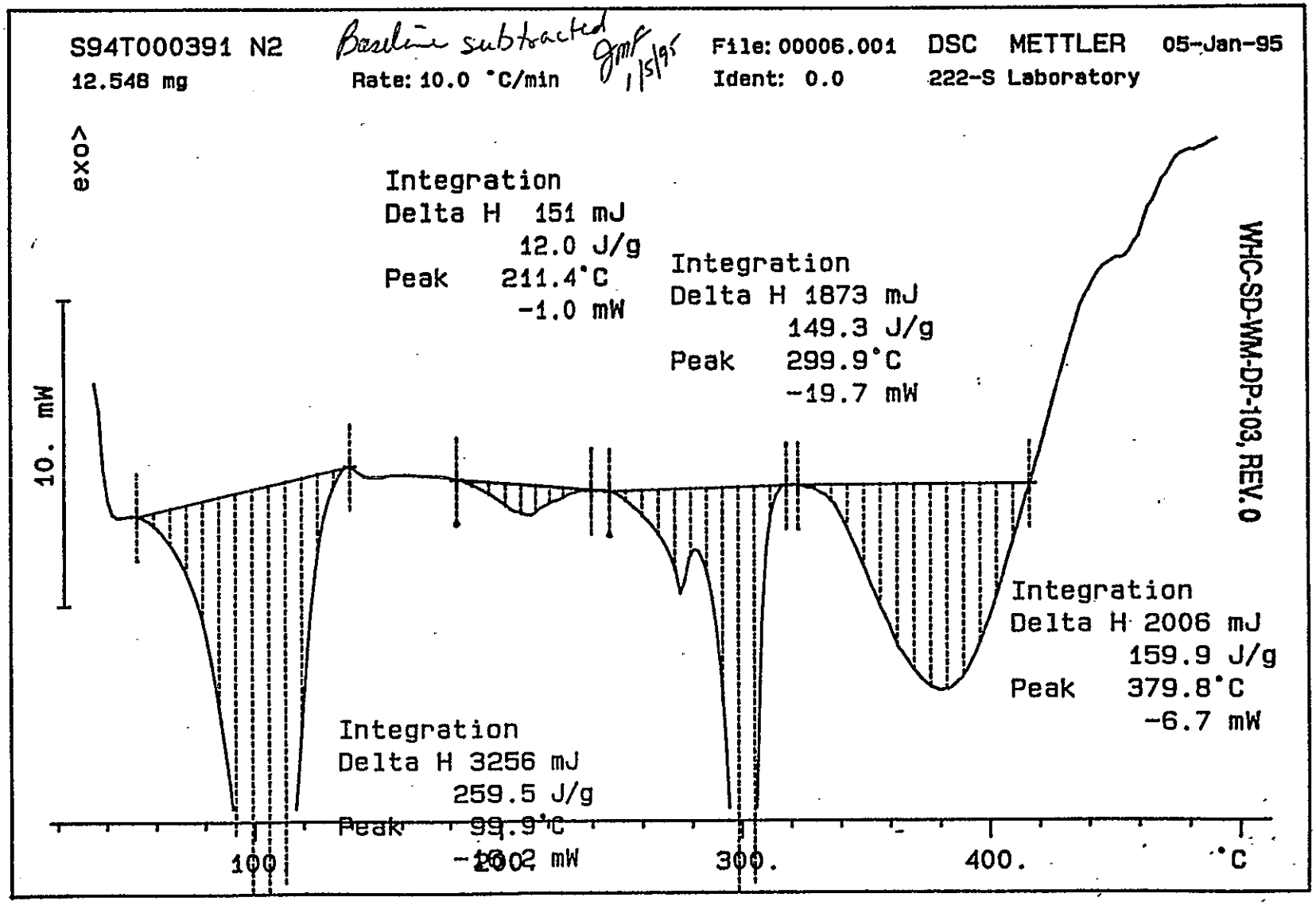
Blandina Valenzuela



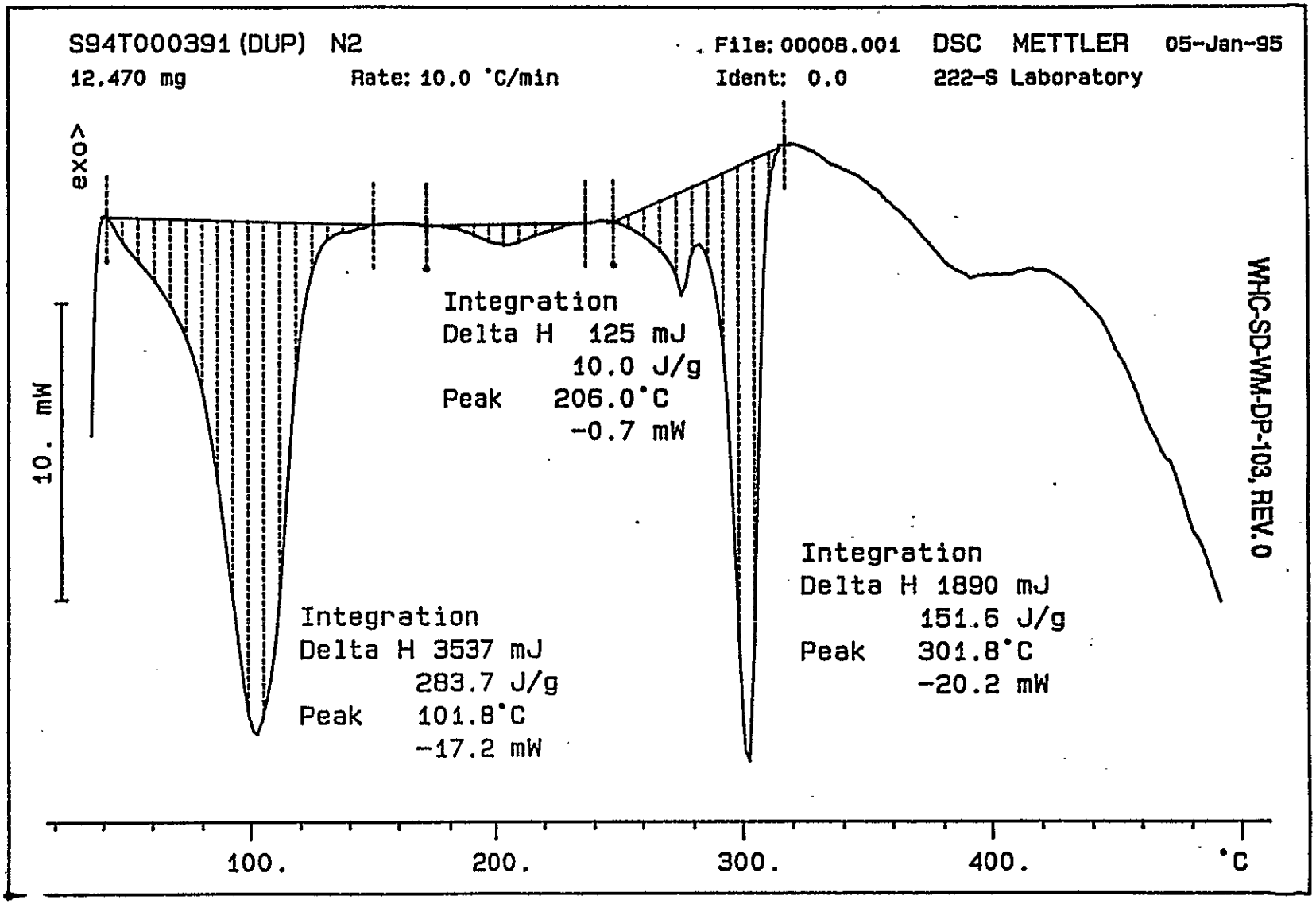
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 4102 TO 4105

Std # 12N14A gmf 1/5/95 1.5.95


S94T000391 N2
12.548 mg
Rate: 10.0 °C/min
File: 00006.001
Ident: 0.0
DSC METTLER
222-S Laboratory
05-Jan-95
exo>
10. mW
Integration
Delta H 184 mJ
14.6 J/g
Peak 209.5°C
-1.1 mW
Integration
Delta H 3761 mJ
299.8 J/g
Peak 99.9°C
-16.7 mW
Integration
Delta H 1809 mJ
144.2 J/g
Peak 299.9°C
-19.5 mW
100.
200.
300.
400.
°C



WHC-SD-WM-DP-103, REV.0


S94T000391 (DUP) N2
12.470 mg
Rate: 10.0 °C/min
File: 00008.001
Ident: 0.0
DSC METTLER
222-S Laboratory
05-Jan-95
exo>
10. mW
Integration
Delta H 125 mJ
10.0 J/g
Peak 206.0°C
-0.7 mW
Integration
Delta H 3537 mJ
283.7 J/g
Peak 101.8°C
-17.2 mW
Integration
Delta H 1890 mJ
151.6 J/g
Peak 301.8°C
-20.2 mW
100.
200.
300.
400.
°C

LABCORE Data Entry Template for Worklist# 368

Analyst: KLV **Instrument:** DSC01 **Method:** LA-514-113 B-1

Worklist Comment: Please run BY-106 DSC under N2. bdv WHC-SD-WM-DP-103, REV. 0

Seg	Type	Sample#	Rep Al	Test	Matrix	Actual	Found	DL	Unit
1	STD	12N14A		DSC-01	LIQUID	28.45	29.1	N/A	Joule/g
2	SAMPLE	S94T000371	0	DSC-01	LIQUID	N/A	44.5		Joule/g
3	DUP	S94T000371	0	DSC-01	LIQUID	44.5	44.0	N/A	Joule/g
4	SAMPLE	S95T000004	0	DSC-01	LIQUID	N/A	31.0		Joule/g
5	DUP	S95T000004	0	DSC-01	LIQUID	31.0	30.9	N/A	Joule/g

KB 4/28/95

Final page for worklist # 368

Analyst Signature 1-27-95 Date

1-31-95

2/1/95

Verified by Blandina Valenzuela

Data Entry Comments: S94T000371 produced one endotherm at 122.5°C with a delta H of 1185.0 J/g. S95T000004 produced one endotherm at ~~2~~ 120.0°C with a delta H of 1263.5 J/g.

1-27-95 BDV 1-27-95 BDV

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

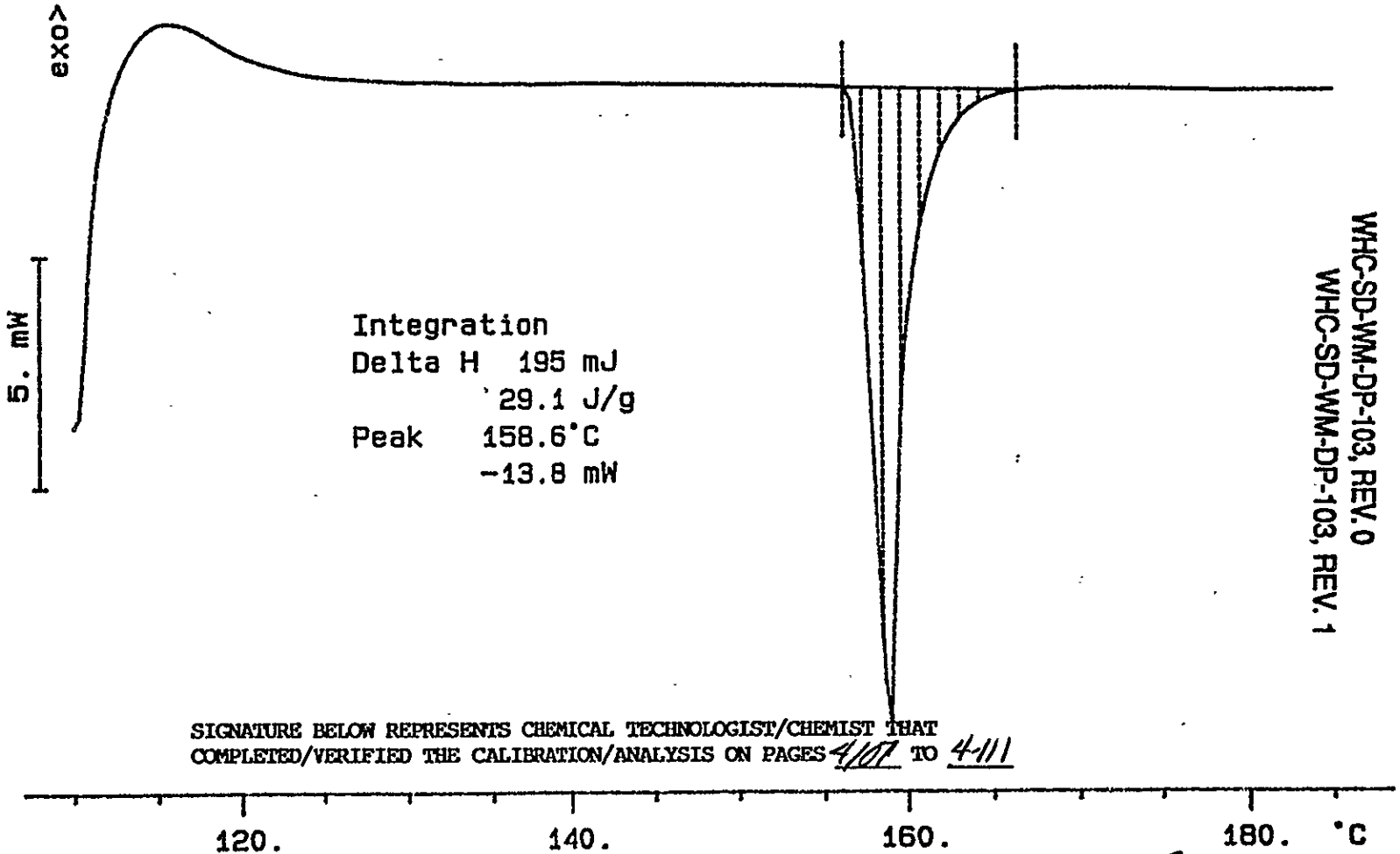
Page: 1

DSC STD 12N14A JMF 1/27/95

6.722 mg Rate: 10.0 °C/min

File: 00103.001 DSC METTLER 26-Jan-95

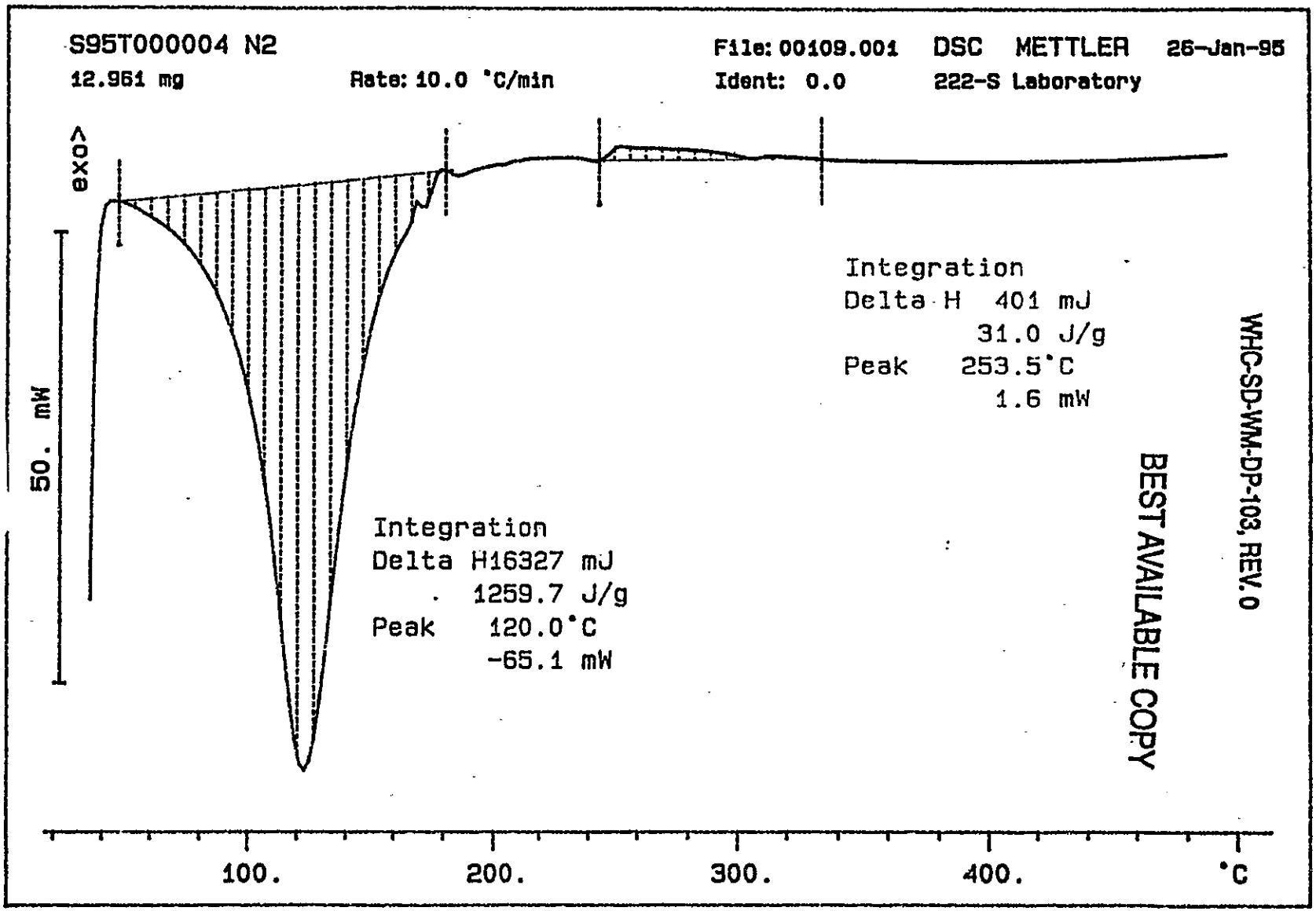
Ident: 0.0 222-S Laboratory



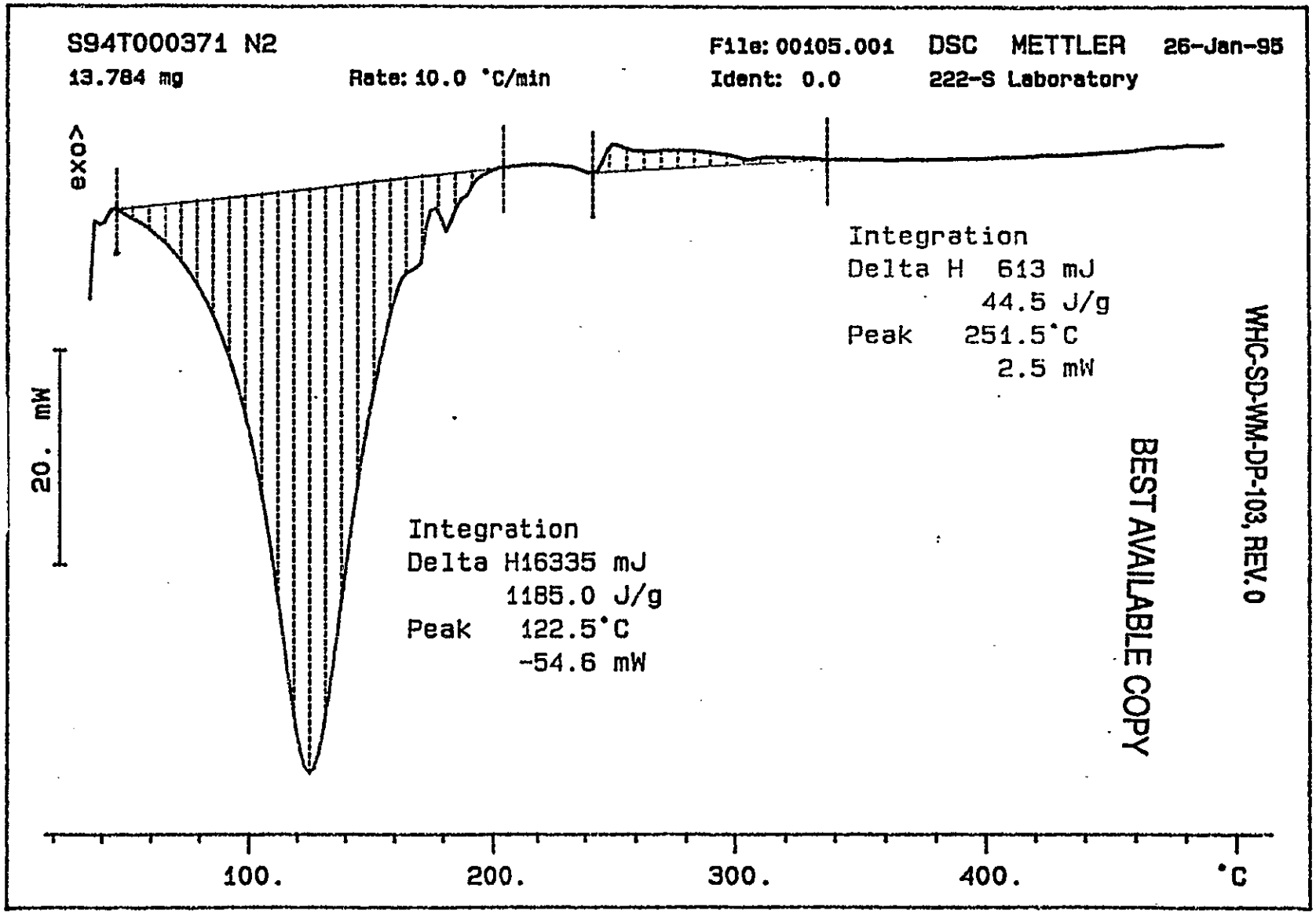
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 4-107 TO 4-111

1-27-95

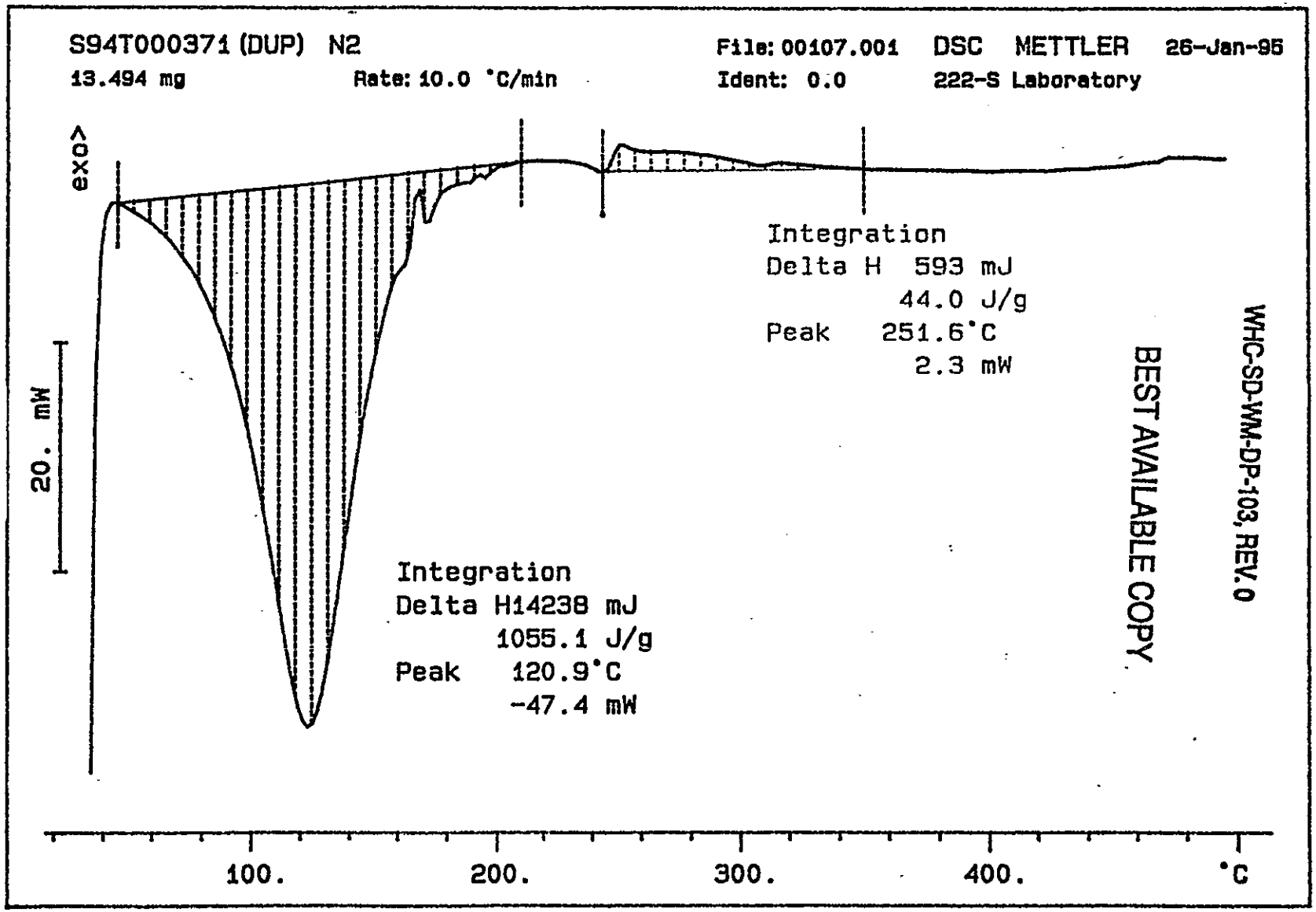
WHC-SD-WM-DP-103, REV. 0
WHC-SD-WM-DP-103, REV. 1



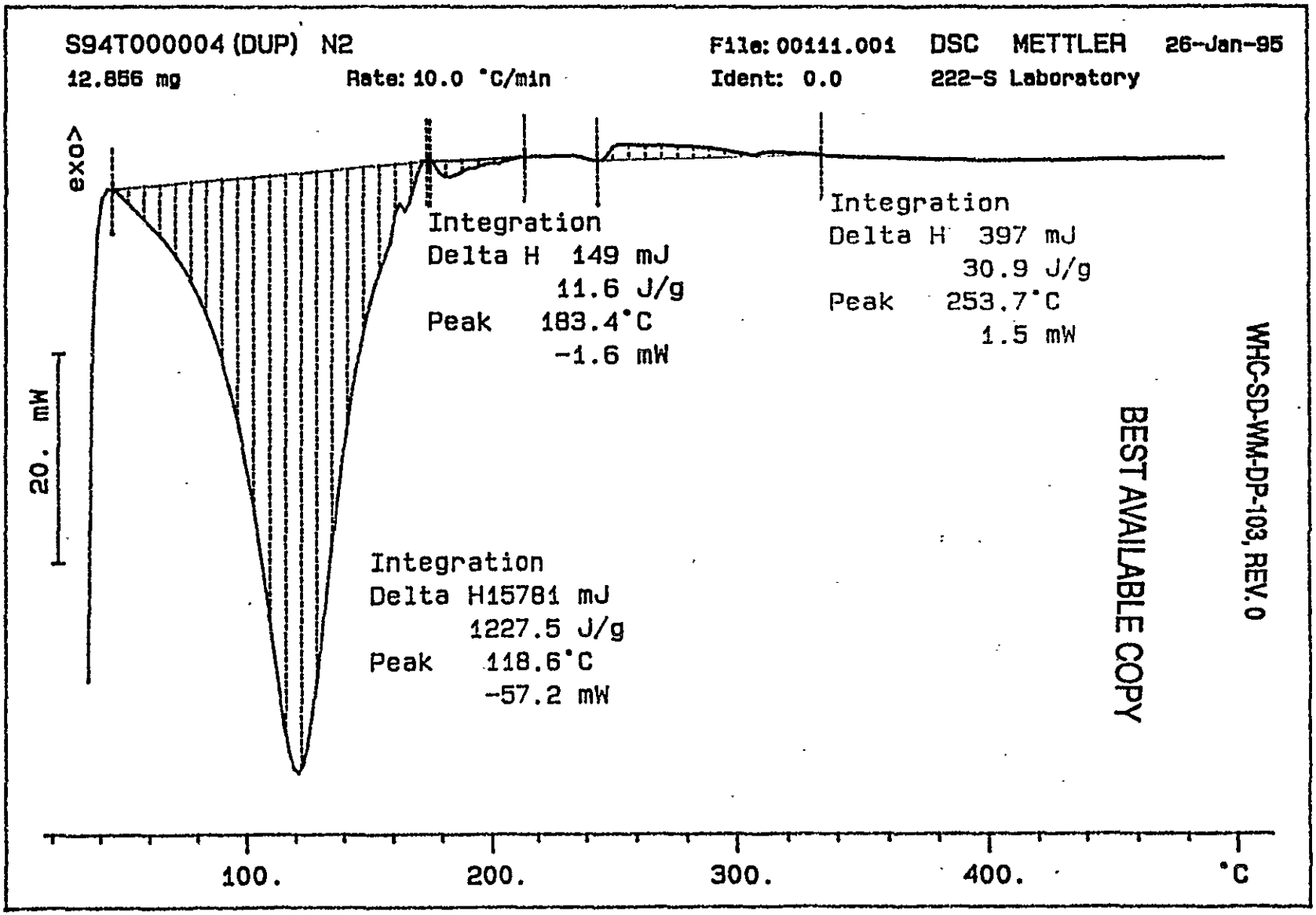
BEST AVAILABLE COPY



BEST AVAILABLE COPY



BEST AVAILABLE COPY



BEST AVAILABLE COPY

LABCORE Data Entry Template for Worklist# 652

Analyst: DWS Instrument: DSC01 Book # 12N14-A

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

WHC-SD-WM-DP-103, REV. 0

Worklist Comment: Please run BY-106 DSC 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
95000007	BY-106	2 SAMPLE	S95T000229	0	DSC-01	LIQUID	N/A	19.9		Joules/g
95000007	BY-106	3 DUP	S95T000229	0	DSC-01	LIQUID	19.9	20.1	N/A	Joules/g

Final page for worklist # 652

Analyst Signature Date 3-16-95

Analyst Signature Date 3-17-95

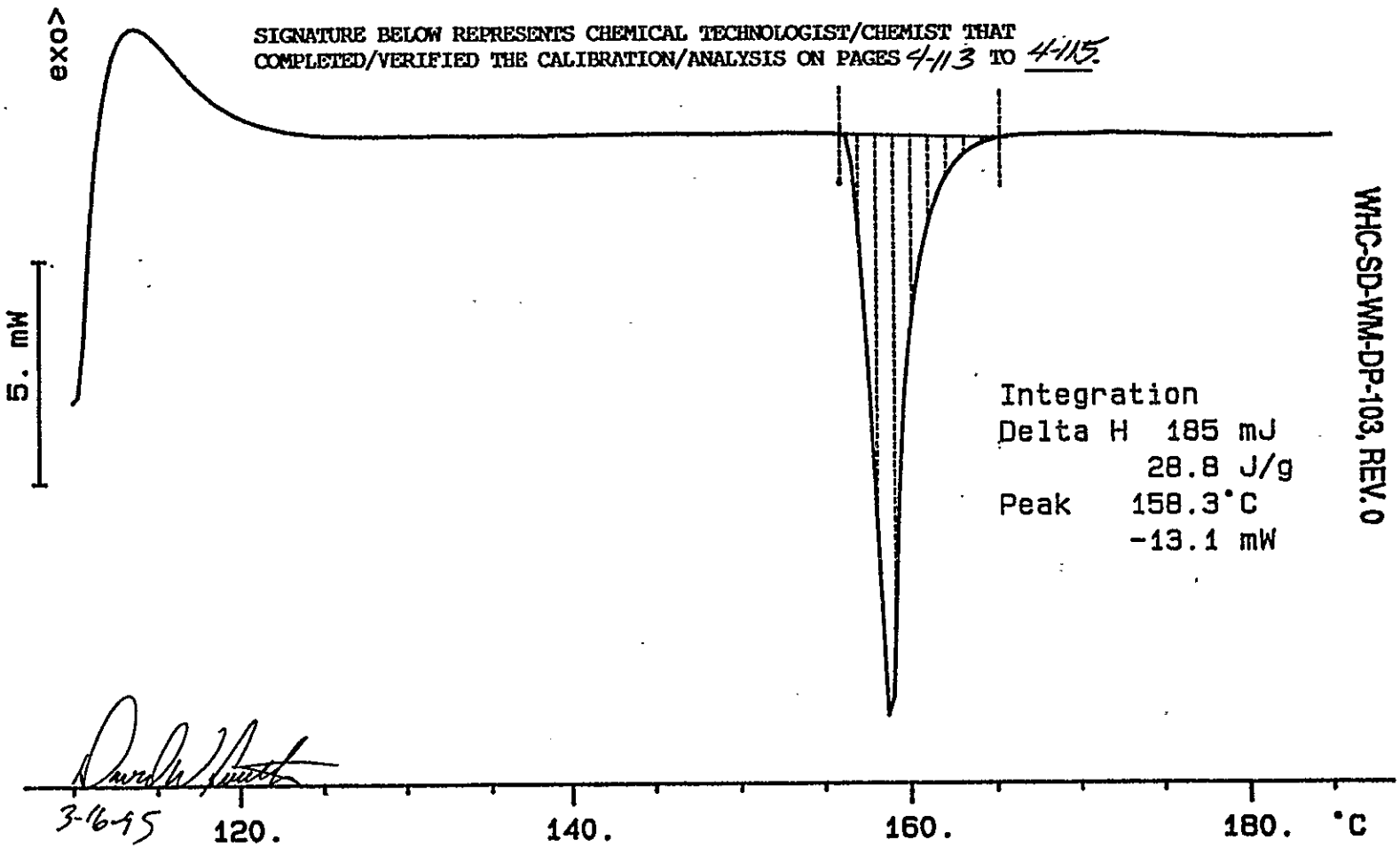
Verified by Blandina Valenzuela 3/22/95

Data Entry Comments: S95T000229 produced an endotherm at 131.6°C with a delta H of 1091.3 J/g

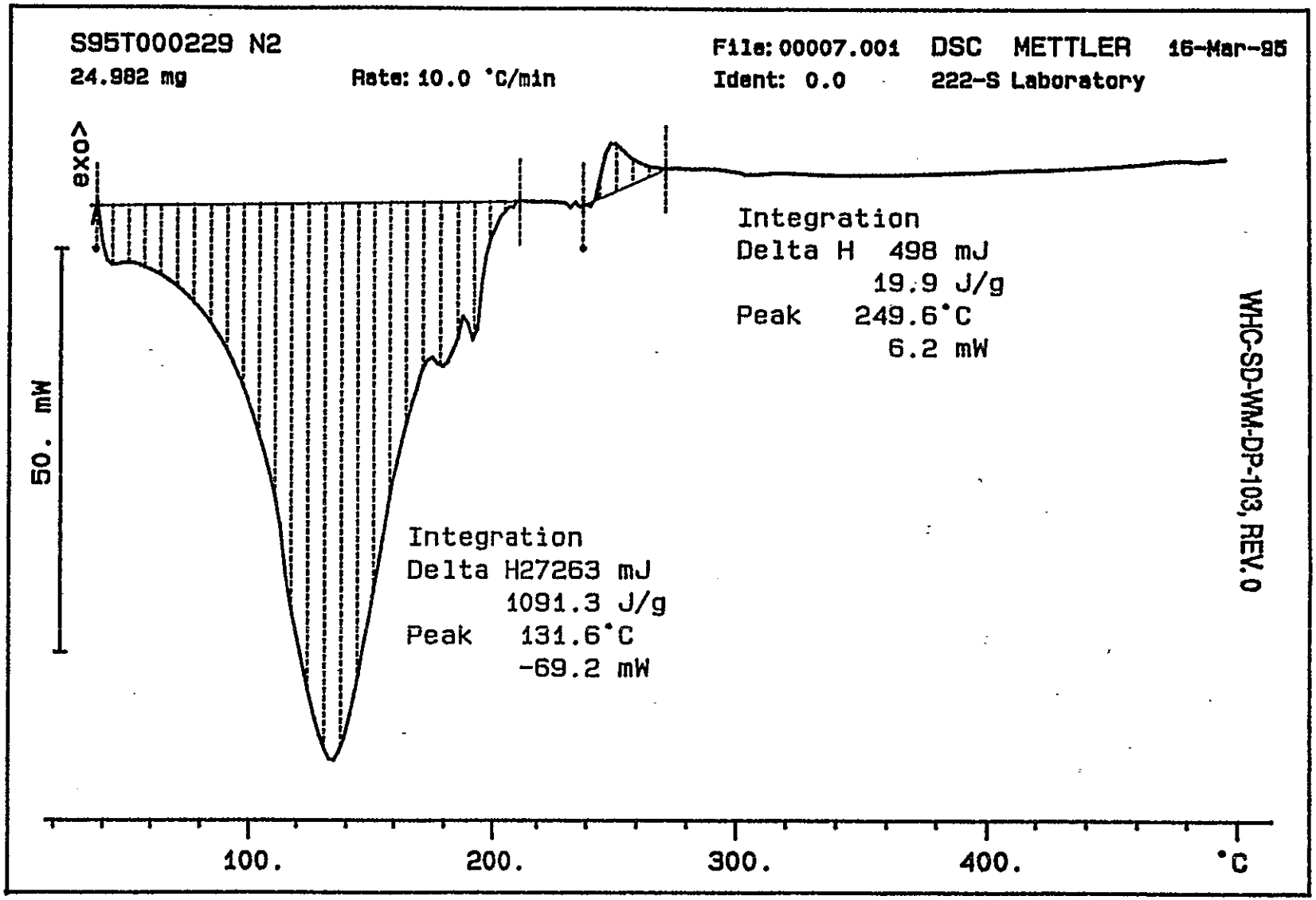
Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

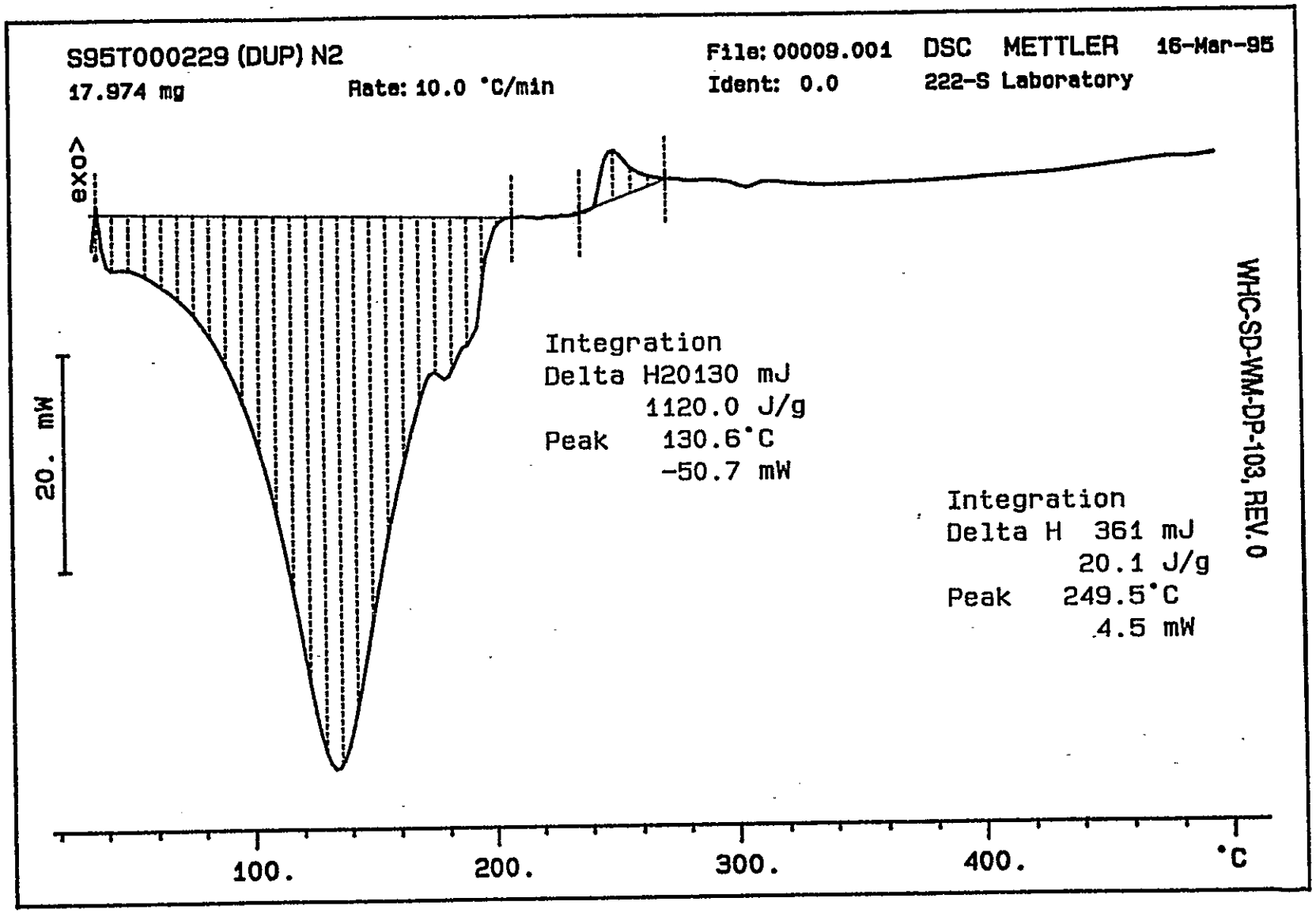
DSC STD 12N14-A
6.438 mg
Rate: 10.0 °C/min
File: 00001.001
Ident: 0.0
DSC METTLER
222-S Laboratory
16-Mar-95

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 4-113 TO 4-115.



3-16-95


S95T000229 N2
24.982 mg
Rate: 10.0 °C/min
File: 00007.001
Ident: 0.0
DSC METTLER
222-S Laboratory
16-Mar-95
<exo
50. mW
Integration
Delta H 498 mJ
19.9 J/g
Peak 249.6°C
6.2 mW
Integration
Delta H27263 mJ
1091.3 J/g
Peak 131.6°C
-69.2 mW
100.
200.
300.
400.
°C


S95T000229 (DUP) N2
17.974 mg
Rate: 10.0 °C/min
File: 00009.001
Ident: 0.0
DSC METTLER 16-Mar-95
222-S Laboratory
exo>
20. mW
Integration
Delta H20130 mJ
1120.0 J/g
Peak 130.6°C
-50.7 mW
Integration
Delta H 361 mJ
20.1 J/g
Peak 249.5°C
4.5 mW
100.
200.
300.
400.
°C

LABCORE Data Entry Template for Worklist# 484

Analyst: DJS Instrument: DSC01 _____ Book # 12W14-A

Method: LA-514-113 Rev/Mod B-1 WHC-SD-WM-DP-103, REV. 0

Worklist Comment: Please run BY-106 DSC 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
95000007	BY-106	2 SAMPLE	S95T000084	0		DSC-01	SOLID	N/A	Ø		Joules/g
95000007	BY-106	3 DUP	S95T000084	0		DSC-01	SOLID	Ø	Ø	N/A	Joules/g

Final page for worklist # 484

Analyst Signature Date 3-16-95

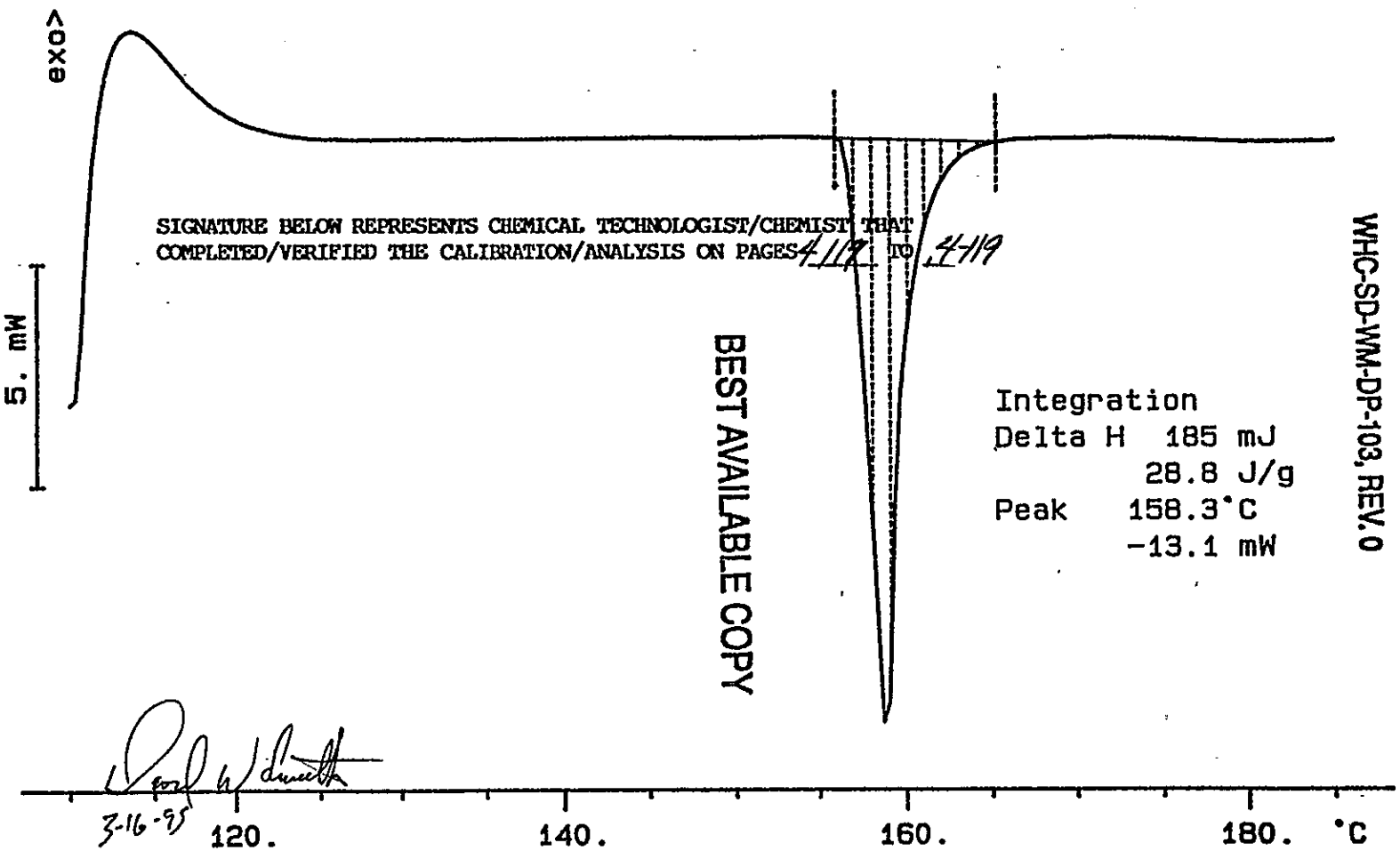
Analyst Signature Date 3-17-95

Verified by Blandina Valenzuela 3/22/95

Data Entry Comments: S95T000084 produced an ~~exotherm~~ endotherm at 147.2°C with a delta H of 633.1 J/g.
3/22/95 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.

DSC STD 12N14-A
6.438 mg
Rate: 10.0 °C/min
File: 00001.001
Ident: 0.0
DSC METTLER
222-S Laboratory
16-Mar-95

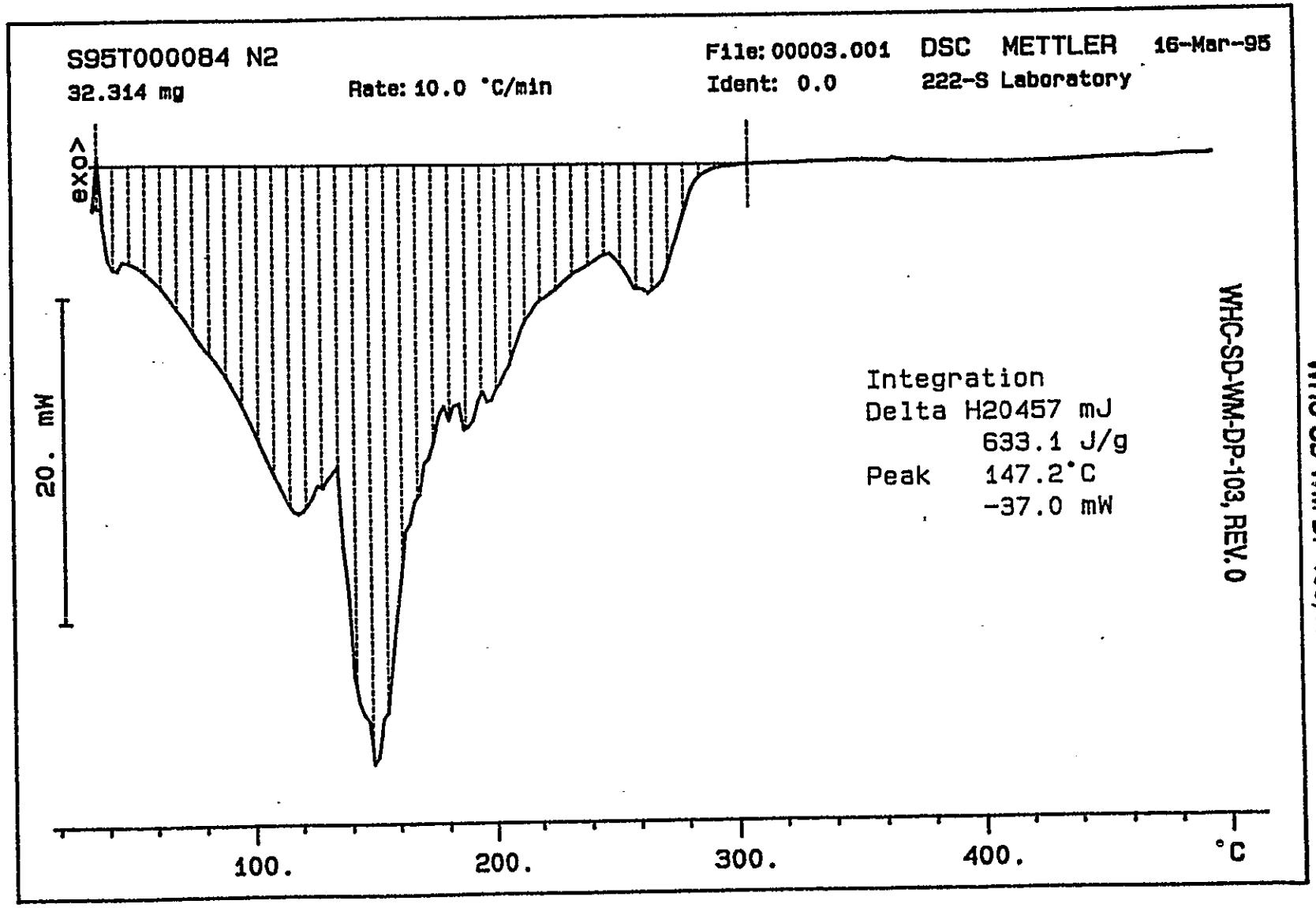


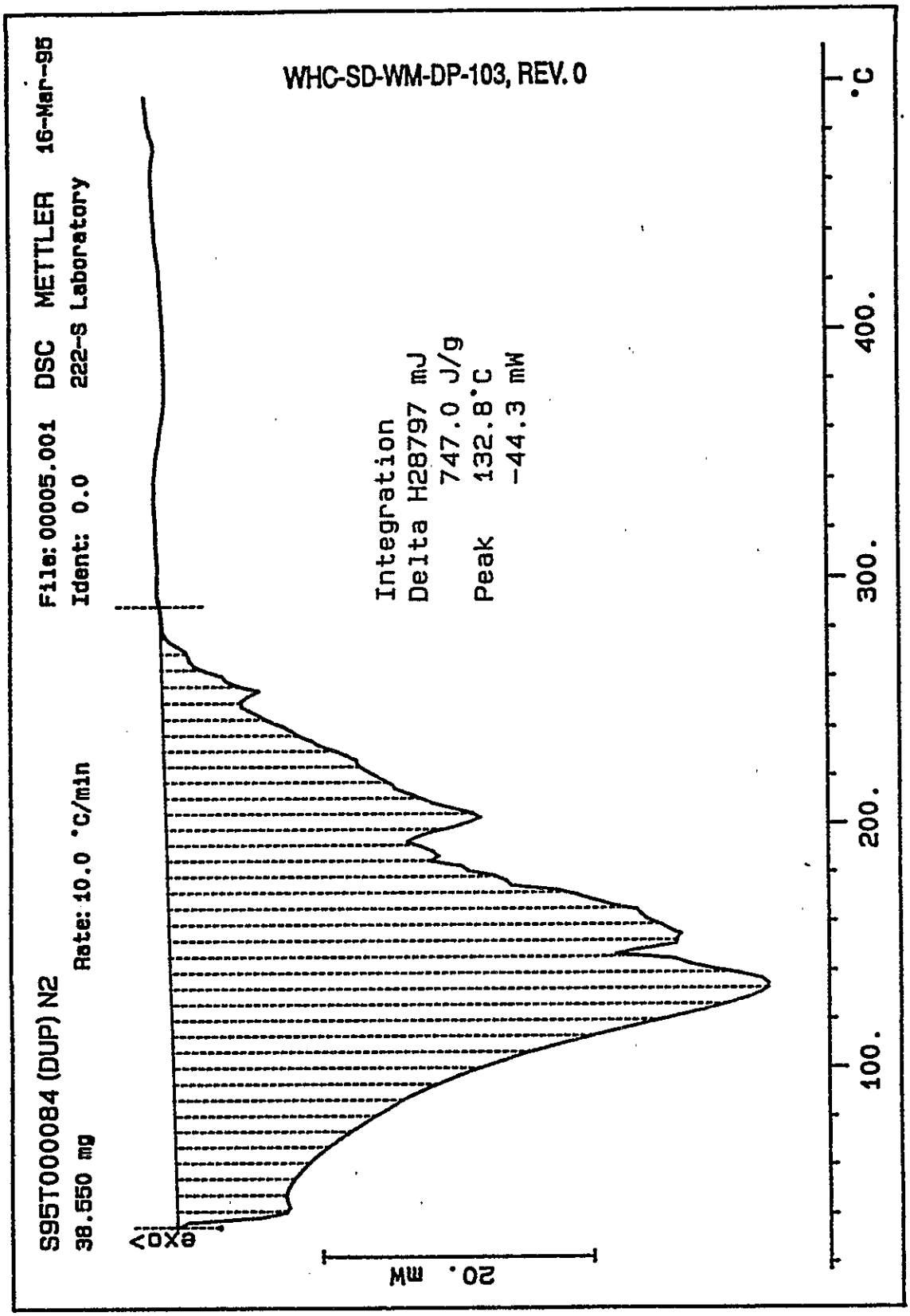
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 4-118 TO 4-119

Integration
Delta H 185 mJ
28.8 J/g
Peak 158.3°C
-13.1 mW

3-16-95

BEST AVAILABLE COPY


S95T000084 N2
32.314 mg
Rate: 10.0 °C/min
File: 00003.001
Ident: 0.0
DSC METTLER
222-S Laboratory
16-Mar-95
<exo
20. mW
Integration
Delta H20457 mJ
633.1 J/g
Peak 147.2°C
-37.0 mW
100.
200.
300.
400.
°C


WHC-SD-WM-DP-103, REV. 0
S95T000084 (DUP) N2
38.550 mg
Rate: 10.0 °C/min
File: 00005.001
Ident: 0.0
DSC METTLER 16-Mar-95
222-S Laboratory
Integration
Delta H28797 mJ
747.0 J/g
Peak 132.8°C
-44.3 mW
exo>
20. mW
100.
200.
300.
400.
°C

LABCORE Data Entry Template for Worklist# 542

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

WHC-SD-WM-DP-103, REV. 0

Worklist Comment: Please under BY-106 under N2. bdv

Seg	Type	Sample#	Rep	Al	Test	Matrix	Actual	Found	DL	Unit
1	STD	12M4A.			DSC-01	LIQUID	28.45	27.0	N/A	Joule/g
2	SAMPLE	S95T000109	0		DSC-01	LIQUID	N/A	54.1		Joule/g
3	DUP	S95T000109	0		DSC-01	LIQUID	54.1	59.4	N/A	Joule/g

DWS 4/28/95

Final page for worklist # 542

Analyst Signature

Date 2-25-95

Data entered and ~~verify~~ verified by Blandina Valenzuela 3-2-95

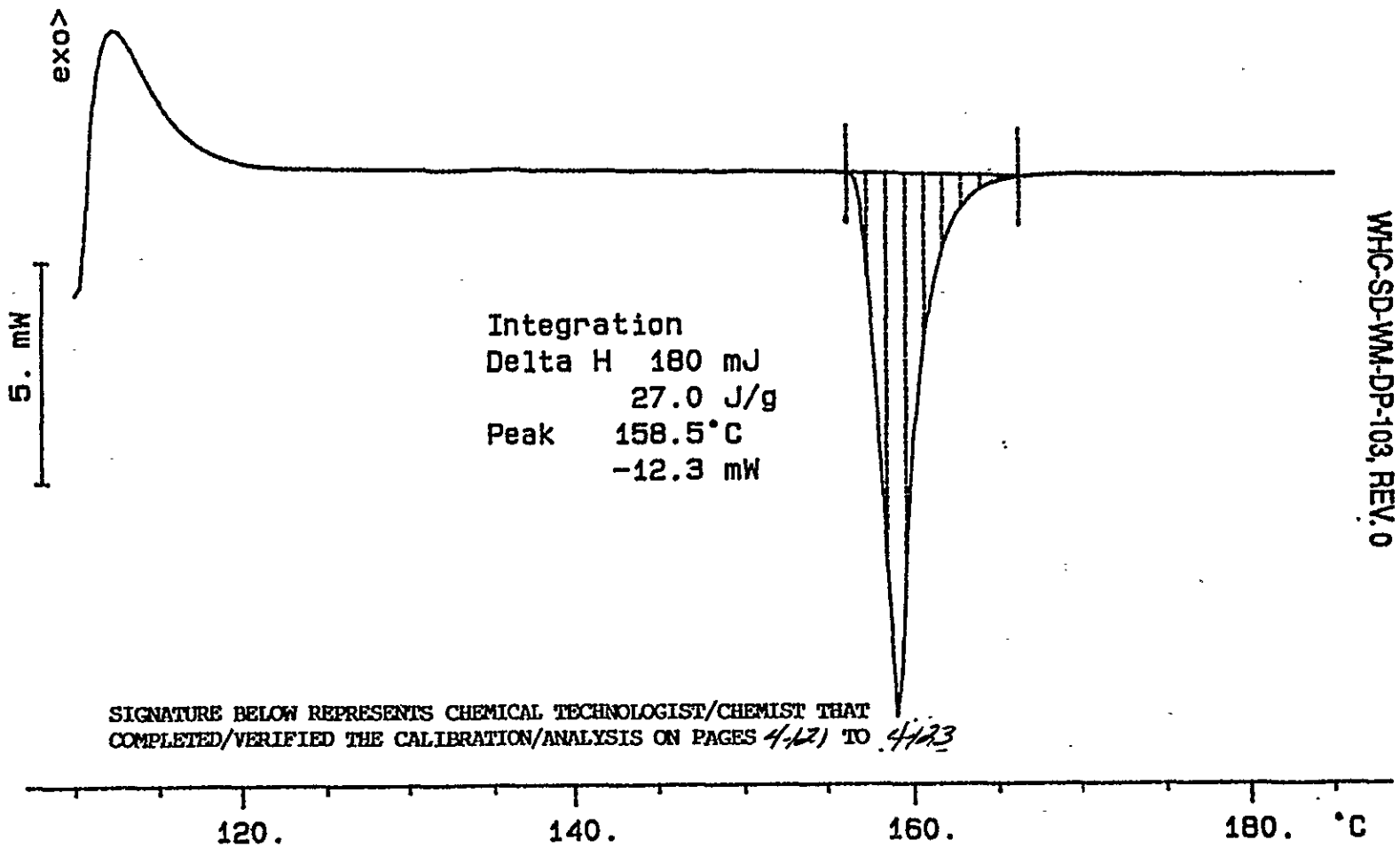
3-2-95 BDV

Data Entry Comments: S95T000109 produced one endotherm with a delta H of 1104.9 J/g.

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

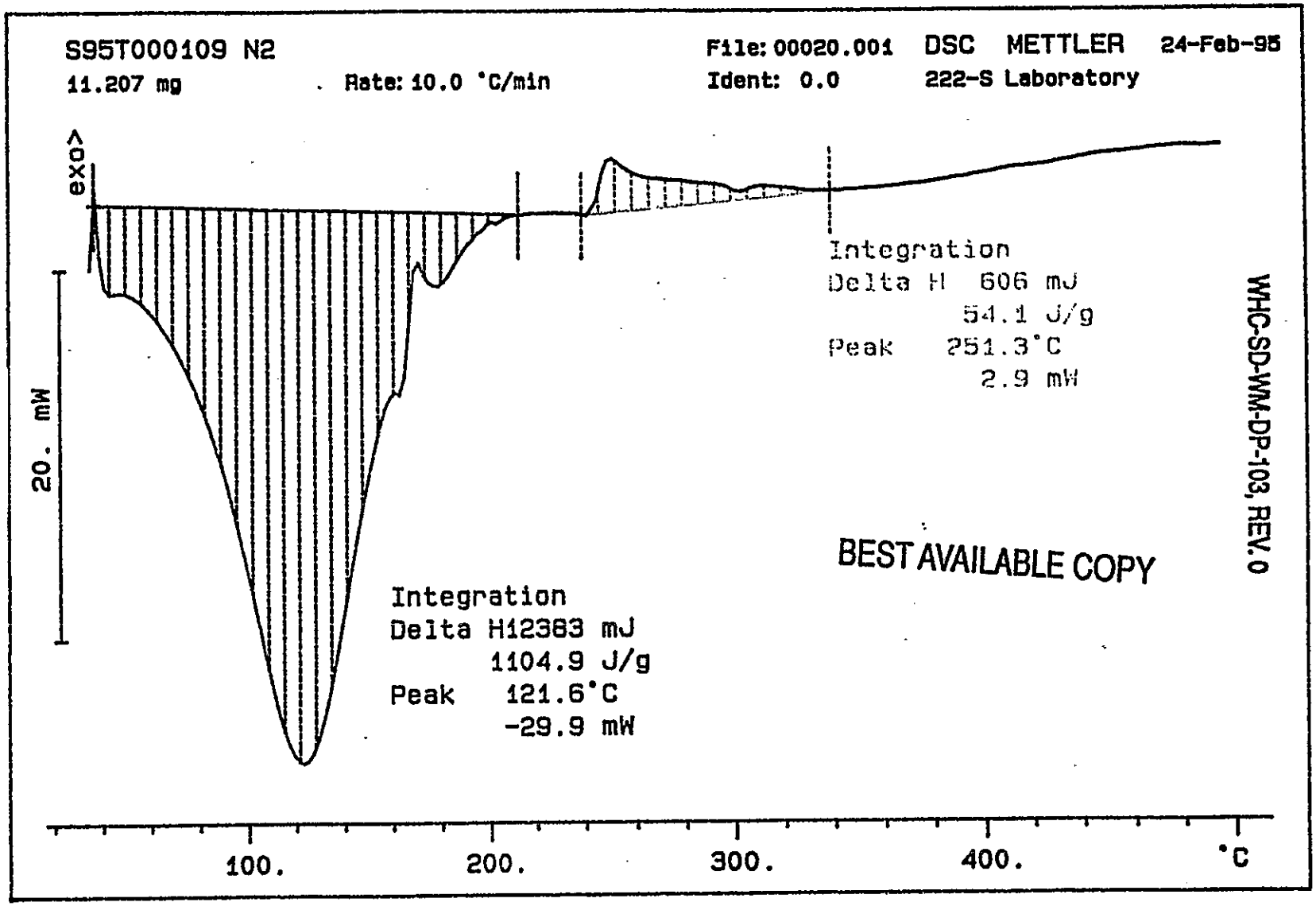
Page: 1

DSC STD 12N14-A
6.688 mg
Rate: 10.0 °C/min
File: 00018.001
Ident: 0.0
DSC METTLER
222-S Laboratory
24-Feb-95

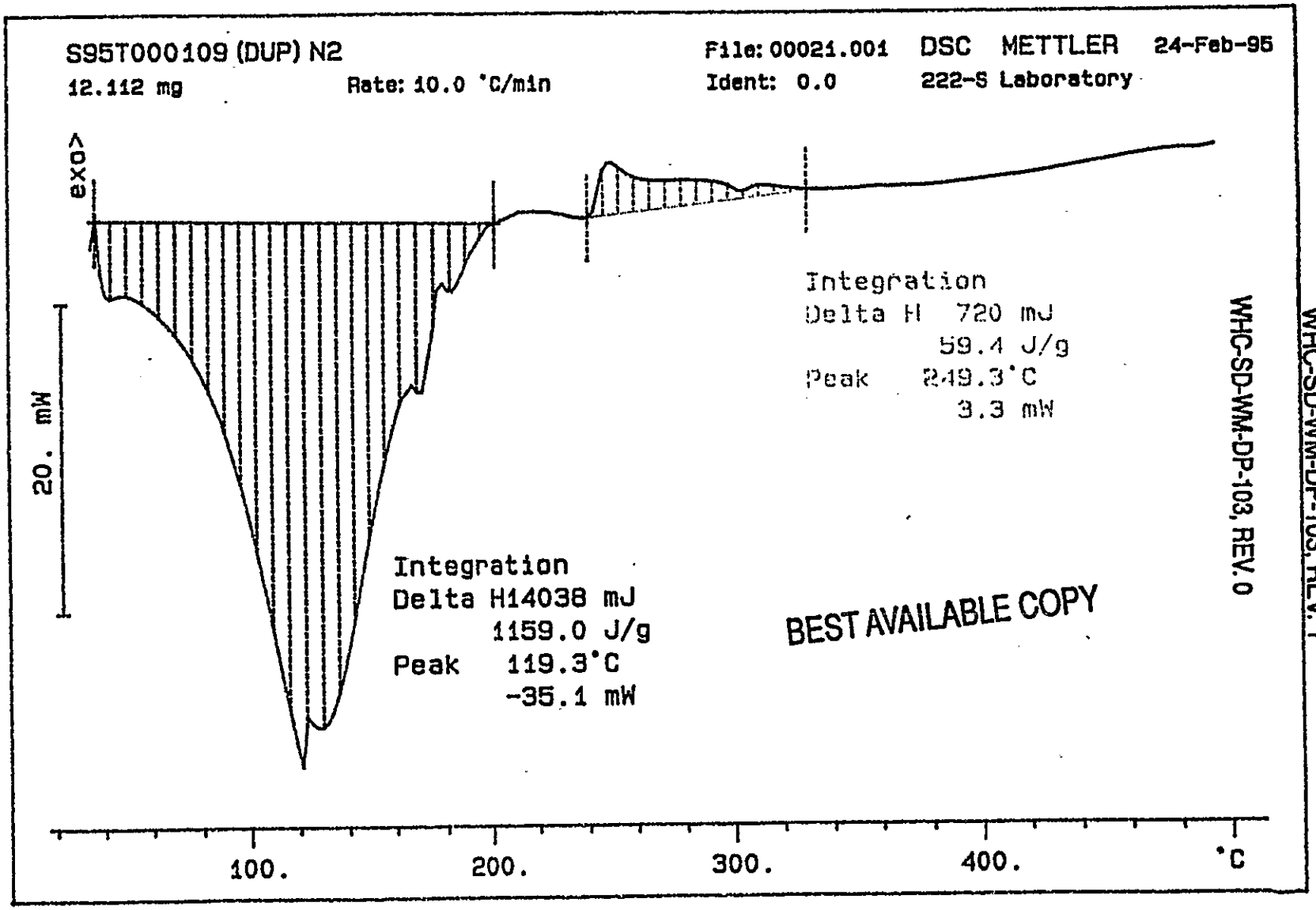


SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 4-121 TO 4-123

David W Smith 2-25-95



BEST AVAILABLE COPY



BEST AVAILABLE COPY

LABCORE Data Entry Template for Worklist# 544

Analyst: SMF **Instrument:** DSC01 _____ **Book #** 12N14-A

Method: LA-514-113 Rev/Mod B-1 WHC-SD-WM-DP-103, REV. 0

Worklist Comment: Please run BY-106 under N2. bdv

GROUP	PROJECT	S TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD				DSC-01	SOLID	28.45	28.5	N/A	Joules/g
95000007	BY-106	2 SAMPLE	S95T000098	0		DSC-01	SOLID	N/A	Ø		Joules/g
95000007	BY-106	3 DUP	S95T000098	0		DSC-01	SOLID	Ø	Ø	N/A	Joules/g
95000007	BY-106	4 SAMPLE	S95T000099	0		DSC-01	SOLID	N/A	417.9		Joules/g
95000007	BY-106	5 DUP	S95T000099	0		DSC-01	SOLID	417.9	855.4	N/A	Joules/g
95000007	BY-106	6 DUP2	S95T000099	0		DSC-01	SOLID	417.9	421.4	N/A	Joules/g

Final page for worklist # 544

See attached for signatures 3/22/95
Analyst Signature Date

Data entered and verified by Blandina Valenzuela 3/22/95
Analyst Signature Date

Data Entry Comments: Sample S95T000098- light brown grainy, like brown sugar with dark brown grains. S95T000098 produced three endotherms; one at ~~103.0°C~~ 101.5°C 3/22/95 BDV with a delta H of ~~882.2~~ 987.7 3/22/95 BDV J/g, second at ~~212.9~~ 213.1 3/22/95 BDV °C with a delta H of ~~39.5~~ 31.4 3/22/95 BDV J/g, and third at ~~275.2~~ 265.3 3/22/95 BDV °C with a delta H of ~~46.9~~ 24.5 J/g. 3/22/95 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.

S95T000099 - dark brown clay like material. S95T000099 produced an endotherm at 116.6°C with a delta H of 853.5 J/g.

LABCORE Data Entry Template for Worklist# 544

Analyst: SMF Instrument: DSC01 _____ Method: LA-514-113/B 1

WHC-SD-WM-DP-103, REV. 0

Worklist Comment: Please run BY-106 under N2. bdv

Seg	Type	Sample#	Rep	Al	Test	Matrix	Actual	Found	DL	Unit
1	STD	12NICI-A			DSC-01	SOLID	~~28.45~~	~~28.5~~ 3/22/95 BDV	N/A	Joule/g
2	SAMPLE	S95T000098	0		DSC-01	SOLID	N/A	~~Ø~~ 3/22/95 BDV		Joule/g
3	DUP	S95T000098	0		DSC-01	SOLID	~~Ø~~	~~Ø~~ 3/22/95 BDV	N/A	Joule/g
4	SAMPLE	S95T000099	0		DSC-01	SOLID	N/A			Joule/g
5	DUP	S95T000099	0		DSC-01	SOLID			N/A	Joule/g

7/B 4/28/95

Final page for worklist # 544

Susie M. Dullon
Analyst Signature

3-15-95
Date

with dark brown grains

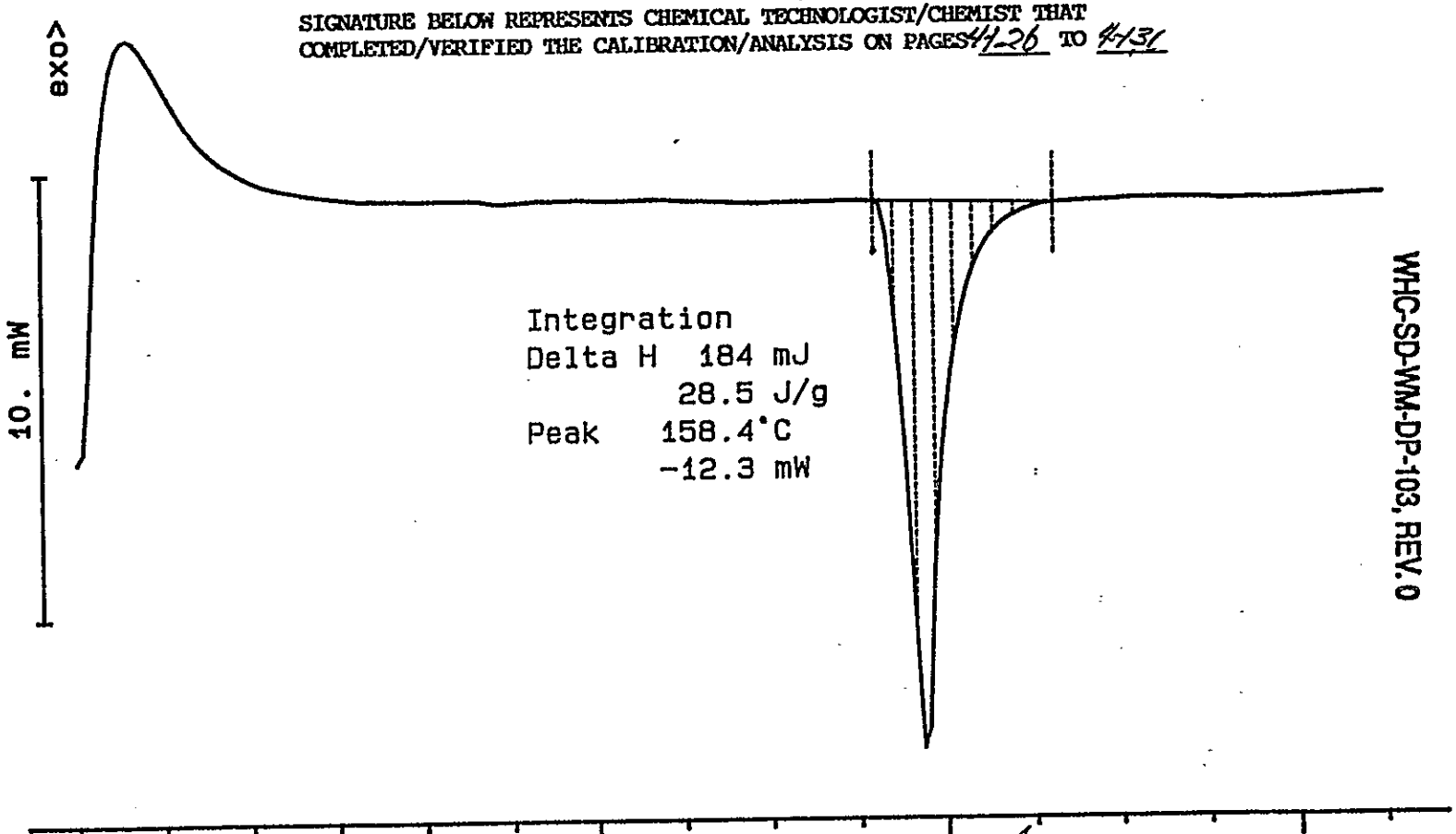
Data Entry Comments:
Sample S95T000098 - light brown grainy, like brown sugar
Sample S95T000099 - dark brown clay-like material

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

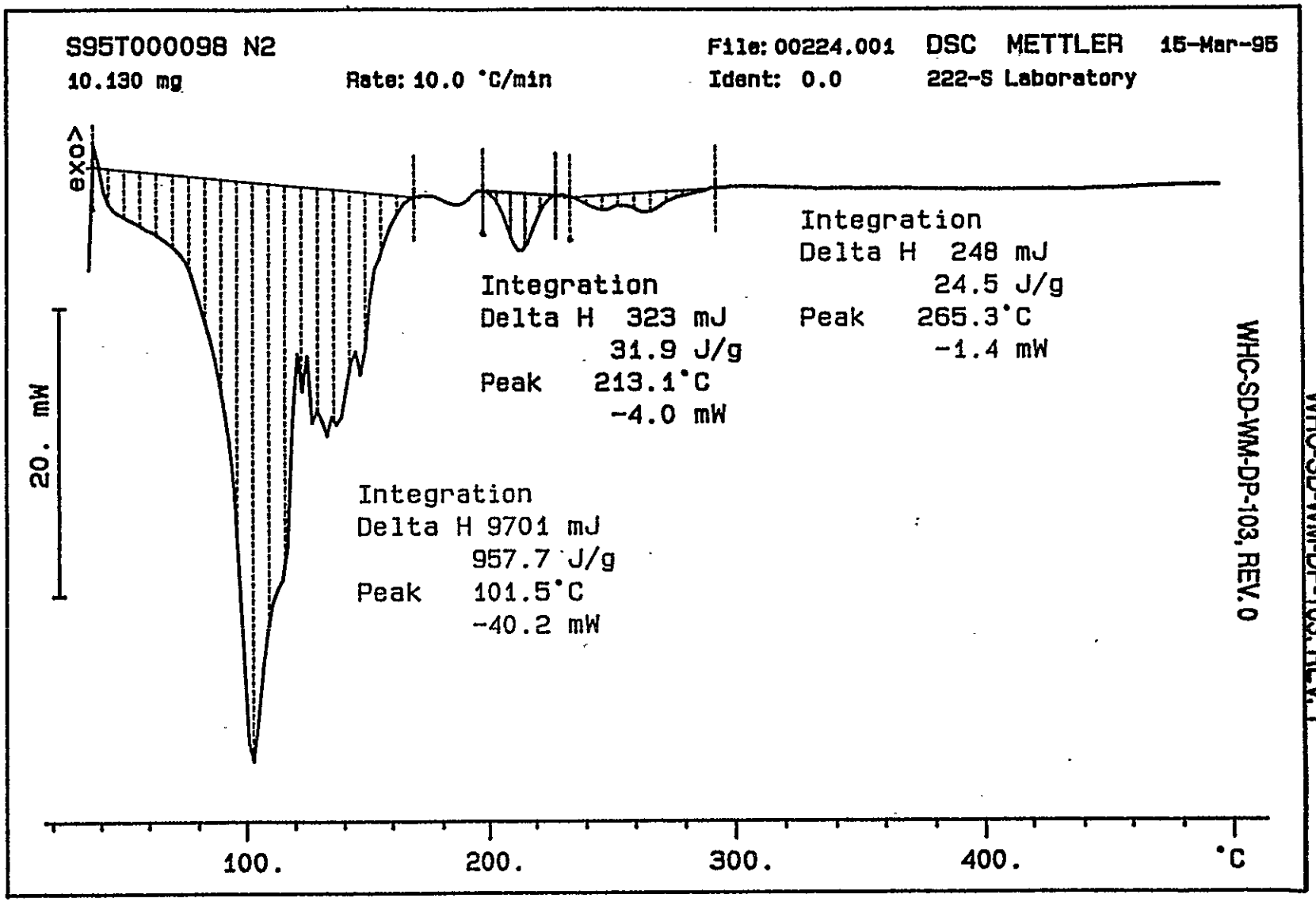
Page: 1

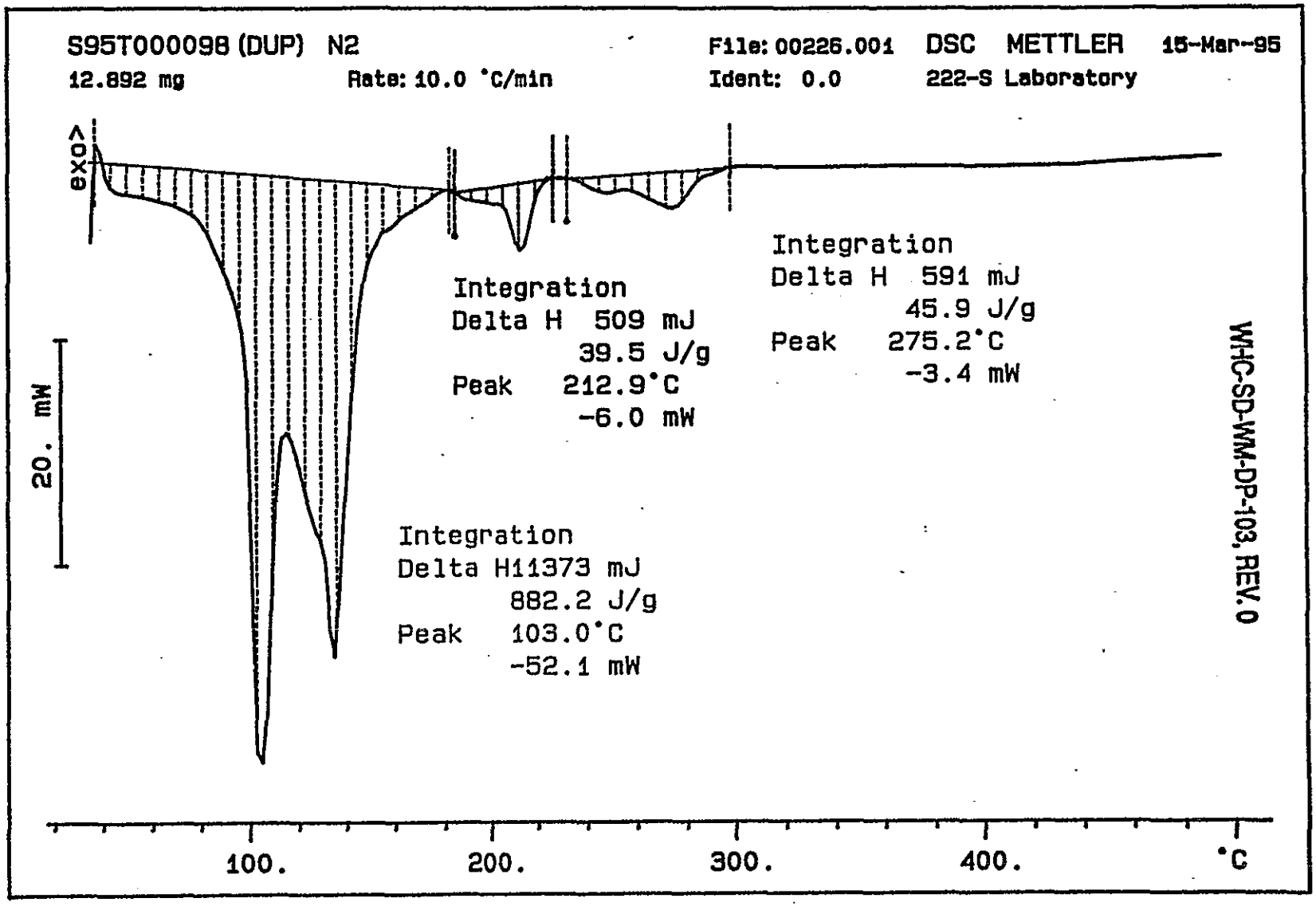
DSC STD 12N14-A
6.438 mg
Rate: 10.0 °C/min
File: 00222.001
Ident: 0.0
DSC METTLER
222-S Laboratory
15-Mar-95

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 4-26 TO 4-31

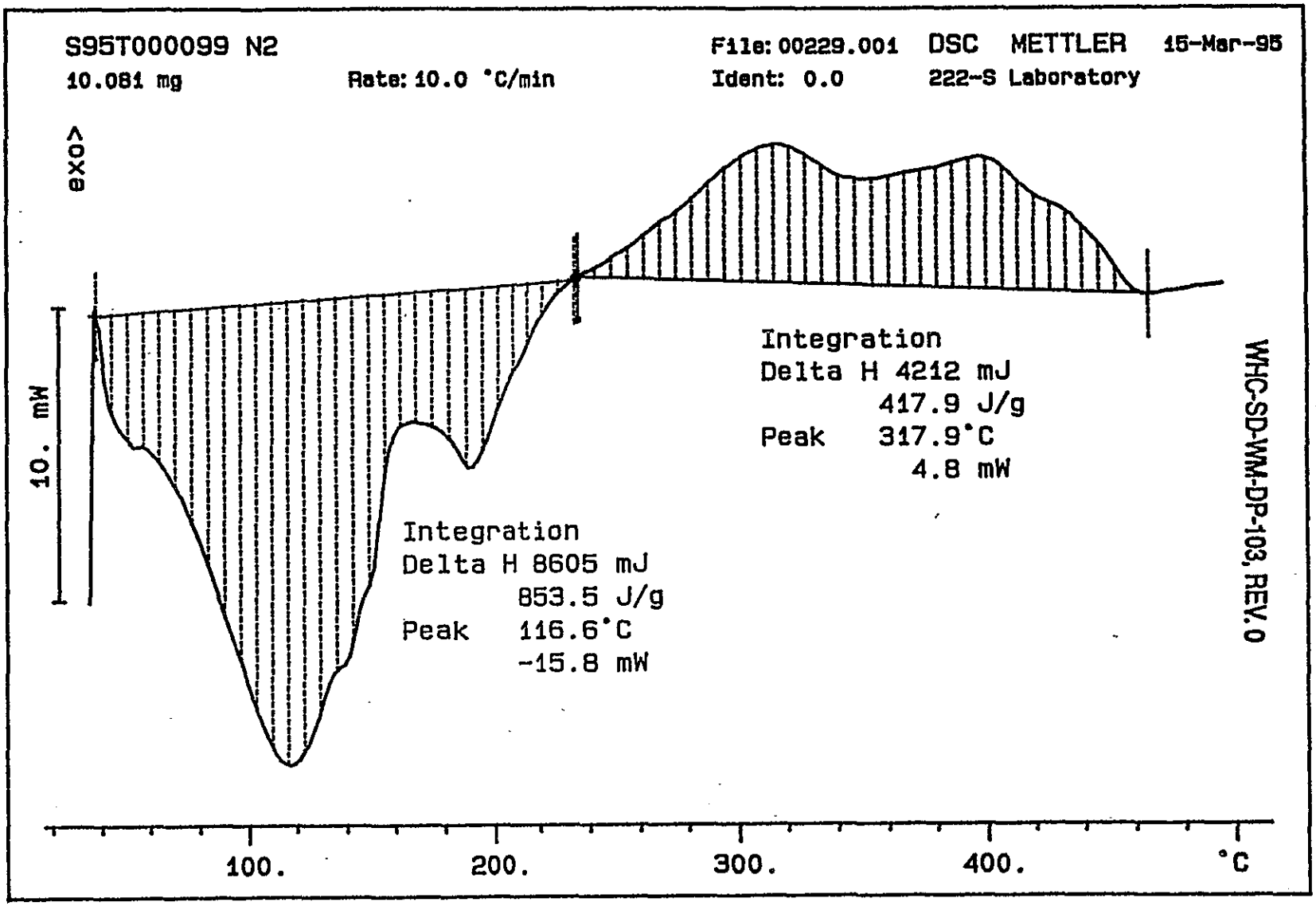


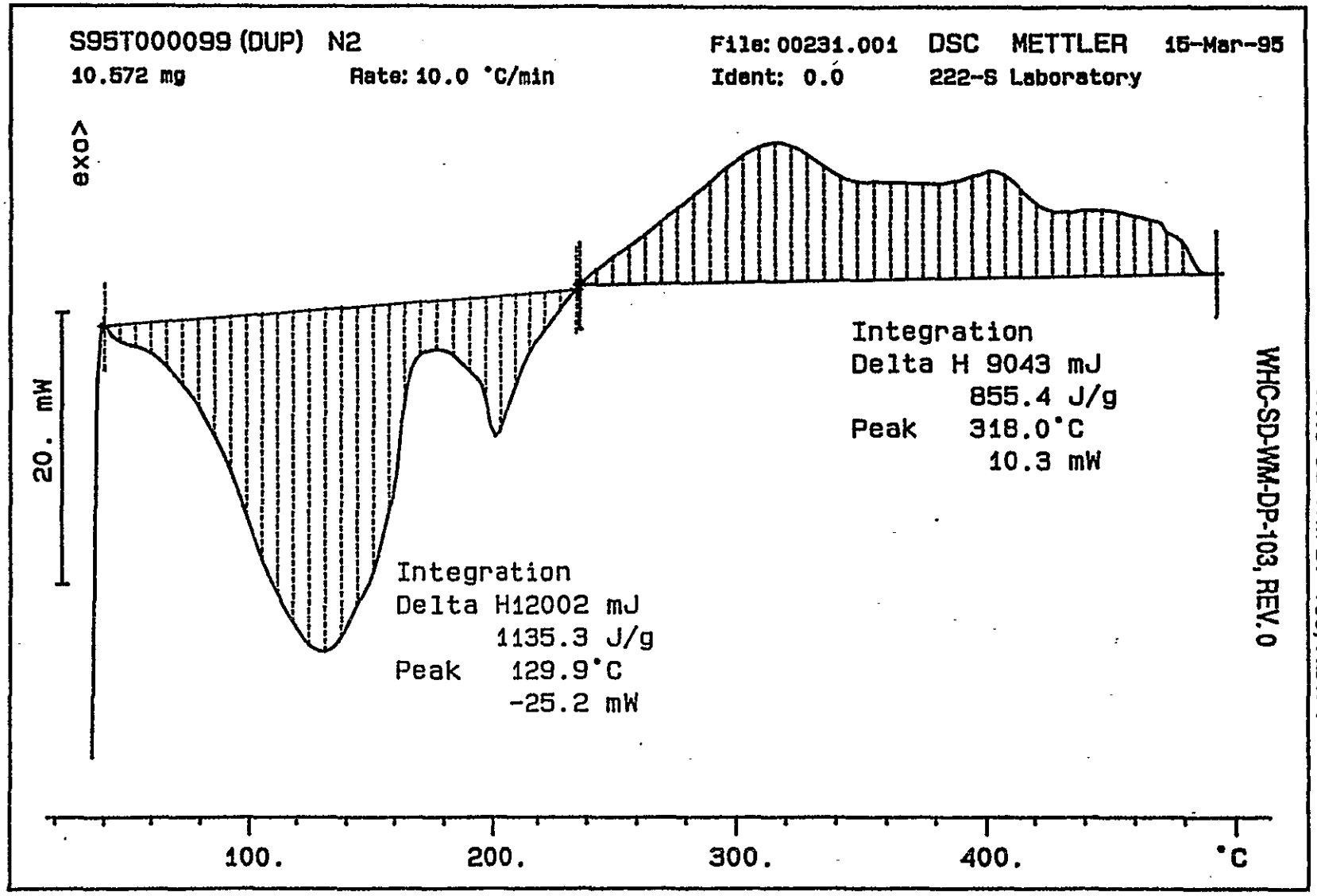
Susie M. Fulton 3/16/95

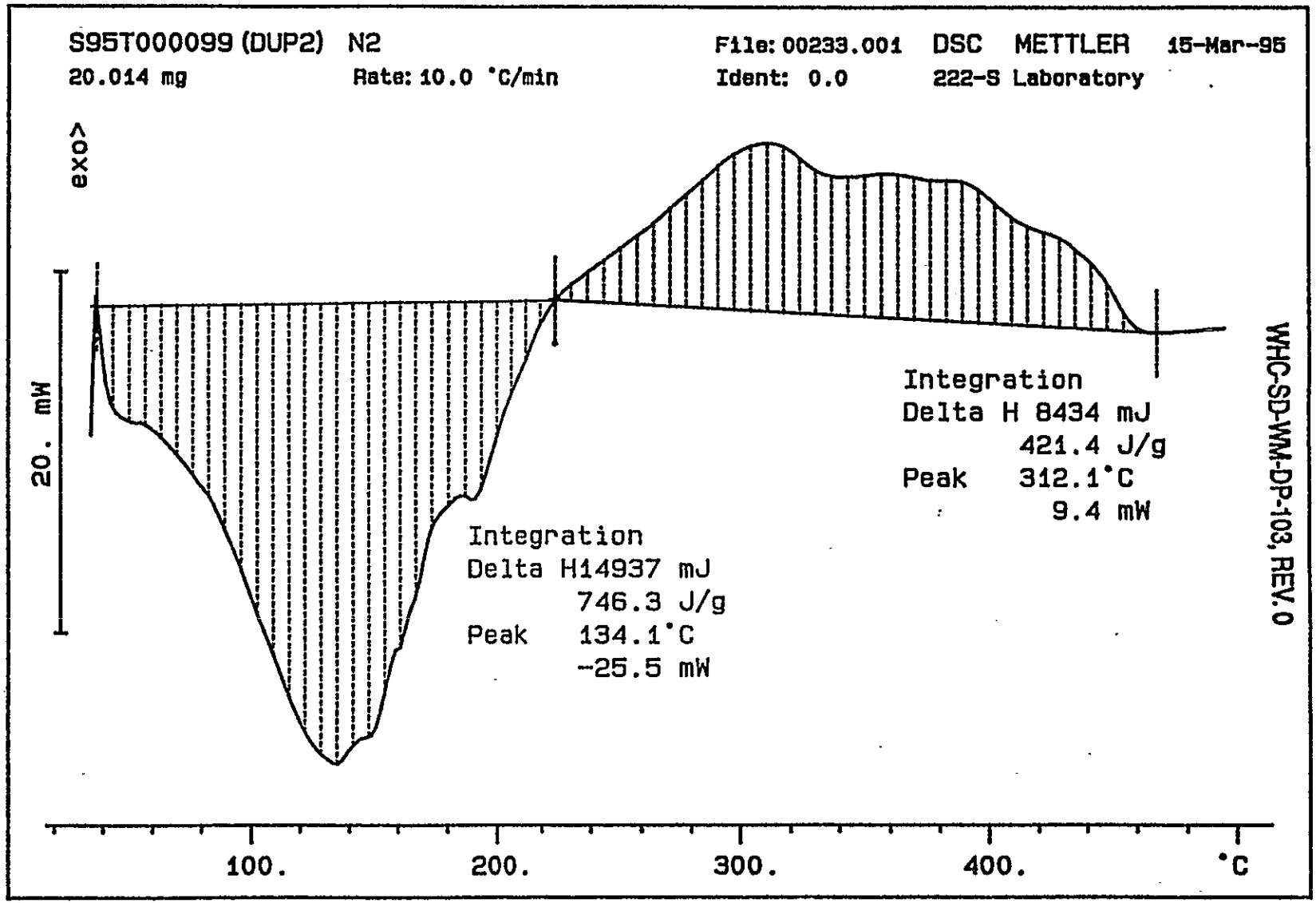

S95T000098 N2
10.130 mg
Rate: 10.0 °C/min
File: 00224.001
Ident: 0.0
DSC METTLER
222-S Laboratory
15-Mar-95
exo>
20. mW
Integration
Delta H 248 mJ
24.5 J/g
Peak 265.3°C
-1.4 mW
Integration
Delta H 323 mJ
31.9 J/g
Peak 213.1°C
-4.0 mW
Integration
Delta H 9701 mJ
957.7 J/g
Peak 101.5°C
-40.2 mW
100.
200.
300.
400.
°C



WHC-SD-WM-DP-103, REV. 0


S95T000099 N2
10.081 mg
Rate: 10.0 °C/min
File: 00229.001
Ident: 0.0
DSC METTLER
222-S Laboratory
15-Mar-95
exo>
10. mW
Integration
Delta H 8605 mJ
853.5 J/g
Peak 116.6°C
-15.8 mW
Integration
Delta H 4212 mJ
417.9 J/g
Peak 317.9°C
4.8 mW
100.
200.
300.
400.
°C


S95T000099 (DUP) N2
10.572 mg
Rate: 10.0 °C/min
File: 00231.001
Ident: 0.0
DSC METTLER
222-S Laboratory
15-Mar-95
exo>
20. mW
Integration
Delta H 9043 mJ
855.4 J/g
Peak 318.0°C
10.3 mW
Integration
Delta H12002 mJ
1135.3 J/g
Peak 129.9°C
-25.2 mW
100.
200.
300.
400.
°C


S95T000099 (DUP2) N2
20.014 mg
Rate: 10.0 °C/min
File: 00233.001
Ident: 0.0
DSC METTLER
222-S Laboratory
15-Mar-95
exo>
20. mW
Integration
Delta H14937 mJ
746.3 J/g
Peak 134.1°C
-25.5 mW
Integration
Delta H 8434 mJ
421.4 J/g
Peak 312.1°C
9.4 mW
100.
200.
300.
400.
°C

LABCORE Data Entry Template for Worklist# 960

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

Method: LA-514-113 Rev/Mod _____ WHC-SD-WM-DP-103, REV. 0

Worklist Comment: Calculated BY-106 dry DSC. bdv

GROUP	PROJECT	S TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
94000019	BY-106	1 SAMPLE	S94T000308	0		DSC-02	SOLID	N/A	447		Joules/g Dry
94000019	BY-106	2 DUP	S94T000308	0		DSC-02	SOLID	447	219	N/A	Joules/g Dry
94000019	BY-106	3 DUP2	S94T000308	0		DSC-02	SOLID	447	231	N/A	Joules/g Dry
94000019	BY-106	4 SAMPLE	S94T000309	0		DSC-02	SOLID	N/A	191		Joules/g Dry
94000019	BY-106	5 DUP	S94T000309	0		DSC-02	SOLID	191	167	N/A	Joules/g Dry
94000019	BY-106	6 SAMPLE	S94T000310	0		DSC-02	SOLID	N/A	28		Joules/g Dry
94000019	BY-106	7 DUP	S94T000310	0		DSC-02	SOLID	28	19	N/A	Joules/g Dry
94000019	BY-106	8 SAMPLE	S94T000311	0		DSC-02	SOLID	N/A	397		Joules/g Dry
94000019	BY-106	9 DUP	S94T000311	0		DSC-02	SOLID	397	137	N/A	Joules/g Dry
94000019	BY-106	10 DUP2	S94T000311	0		DSC-02	SOLID	397	Ø	N/A	Joules/g Dry
94000019	BY-106	11 SAMPLE	S94T000345	0		DSC-02	SOLID	N/A	96		Joules/g Dry
94000019	BY-106	12 DUP	S94T000345	0		DSC-02	SOLID	96	92	N/A	Joules/g Dry

Data entered + verified by **Final page for worklist # 960**

Blandina Valenzuela 4/4/95
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# 585

Analyst: BDV **Instrument:** DSC01 **Book #** N/A

Method: LA-514-113 Rev/Mod N/A WHC-SD-WM-DP-103, REV. 0

Worklist Comment: Calculated BY-106 dry DSC. bdv

GROUP	PROJECT	S TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	DSC ~~ACTUAL~~	TGA ~~FOUND~~	DRY DSC ~~DL~~	UNIT
95000007	BY-106	1 SAMPLE	S95T000098	0		DSC-02	SOLID	3/29/95 BDV Ø ~~N/A~~	28.16	Ø	Joules/g Dry
95000007	BY-106	2 DUP	S95T000098	0		DSC-02	SOLID	Ø	28.16	Ø ~~N/A~~ 3/29/95	Joules/g Dry
95000007	BY-106	3 SAMPLE	S95T000099	0		DSC-02	SOLID	3/29/95 BDV 417.9 ~~N/A~~	37.32	667	Joules/g Dry
95000007	BY-106	4 DUP	S95T000099	0		DSC-02	SOLID	855.4	37.32	1365 ~~N/A~~ 3/29/95 BDV	Joules/g Dry
95000007	BY-106	5 DUP2	S95T000099	0		DSC-02	SOLID	4214	37.32	672 ~~N/A~~ 3/29/95 BDV	Joules/g Dry

Final page for worklist # 585

Blandina Valenzuela 3/29/95
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.

worklistrpt Version 2.0 02/21/95
04/04/95 08:36

LABCORE Data Entry Template for Worklist# 961

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

Method: LA-514-113 Rev/Mod _____

Worklist Comment: Calculated BY-106 dry DSC. bdv

GROUP	PROJECT	S TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
94000019	BY-106	1 SAMPLE	S94T000355	0		DSC-02	LIQUID	N/A	78		Joules/g Dry
94000019	BY-106	2 DUP	S94T000355	0		DSC-02	LIQUID	78	193	N/A	Joules/g Dry
94000019	BY-106	3 DUP2	S94T000355	0		DSC-02	LIQUID	78	153	N/A	Joules/g Dry
94000019	BY-106	4 SAMPLE	S94T000371	0		DSC-02	LIQUID	N/A	123		Joules/g Dry
94000019	BY-106	5 DUP	S94T000371	0		DSC-02	LIQUID	123	122	N/A	Joules/g Dry
94000019	BY-106	6 SAMPLE	S95T000004	0		DSC-02	LIQUID	N/A	98		Joules/g Dry
94000019	BY-106	7 DUP	S95T000004	0		DSC-02	LIQUID	98	97	N/A	Joules/g Dry

Data entered and verified by **Final page for worklist # 961**

Blandina Valenzuela 4/4/95

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# 235

Analyst: SMF **Instrument:** TGA01 **Method:** LA-560-112 A2

Worklist Comment: Please run under N2, JMF.BY-106 WHC-SD-WM-DP-103, REV. 0

Seg	Type	Sample#	Rep	Al	Test	Matrix	Actual	Found	DL	Unit
1	STD	42N8-A			TGA-01	SOLID	59.19	-58.46	N/A	%
2	SAMPLE	S94T000305	0		TGA-01	SOLID	N/A	-47.17		%
3	DUP	S94T000305	0		TGA-01	SOLID	47.17	-46.24	N/A	%
4	SAMPLE	S94T000308	0		TGA-01	SOLID	N/A	-46.65		%
5	DUP	S94T000308	0		TGA-01	SOLID	46.65	-47.26	N/A	%

Final page for worklist # 235

Susie M. Fulton — 12-24-94
Analyst Signature — Date

1-11-95

Verified by Blandina Valenzuela — 1-12-95

Data Entry Comments:

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

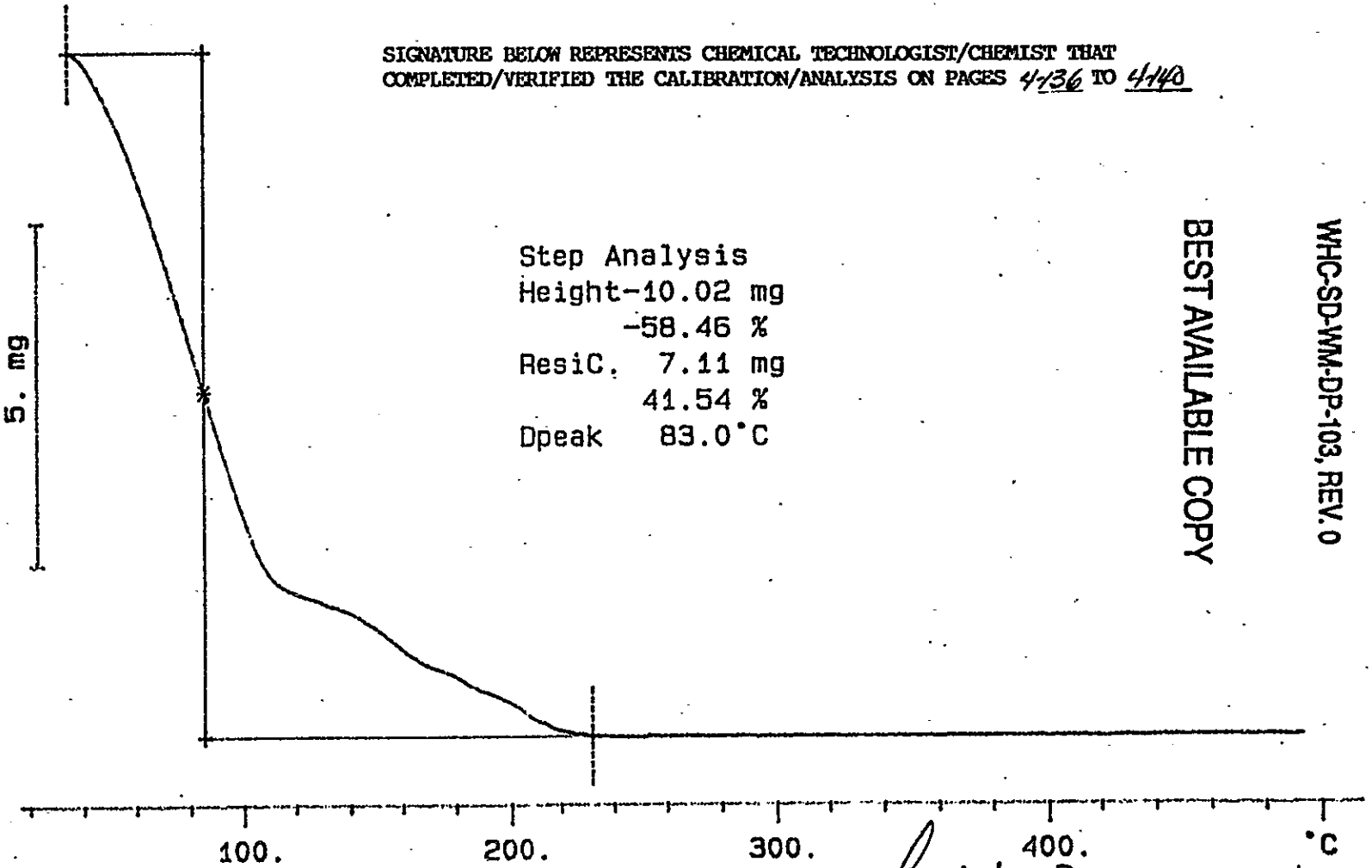
BEST AVAILABLE COPY

TGA STD
17.130 mg

Rate: 10.0 °C/min

File: 00056.001 TG METTLER 24-Dec-94
Ident: 0.0 222-S Laboratory

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 4-136 TO 4-140



Step Analysis
Height -10.02 mg
-58.46 %
ResiC. 7.11 mg
41.54 %
Dpeak 83.0°C

Std Sample # 42N8A gmf 1/24/94 Susie M. Dalton gmf 1/24/94

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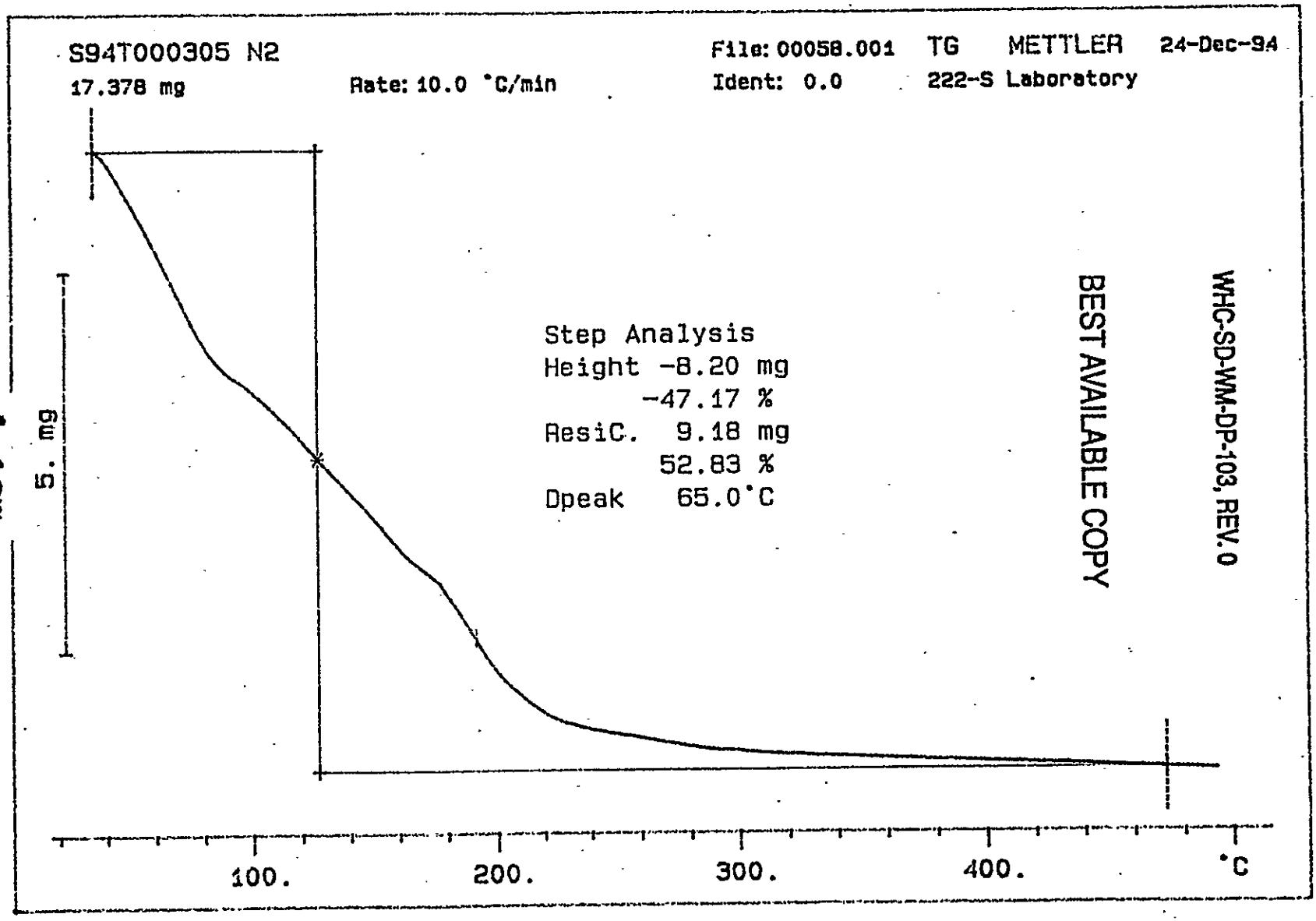

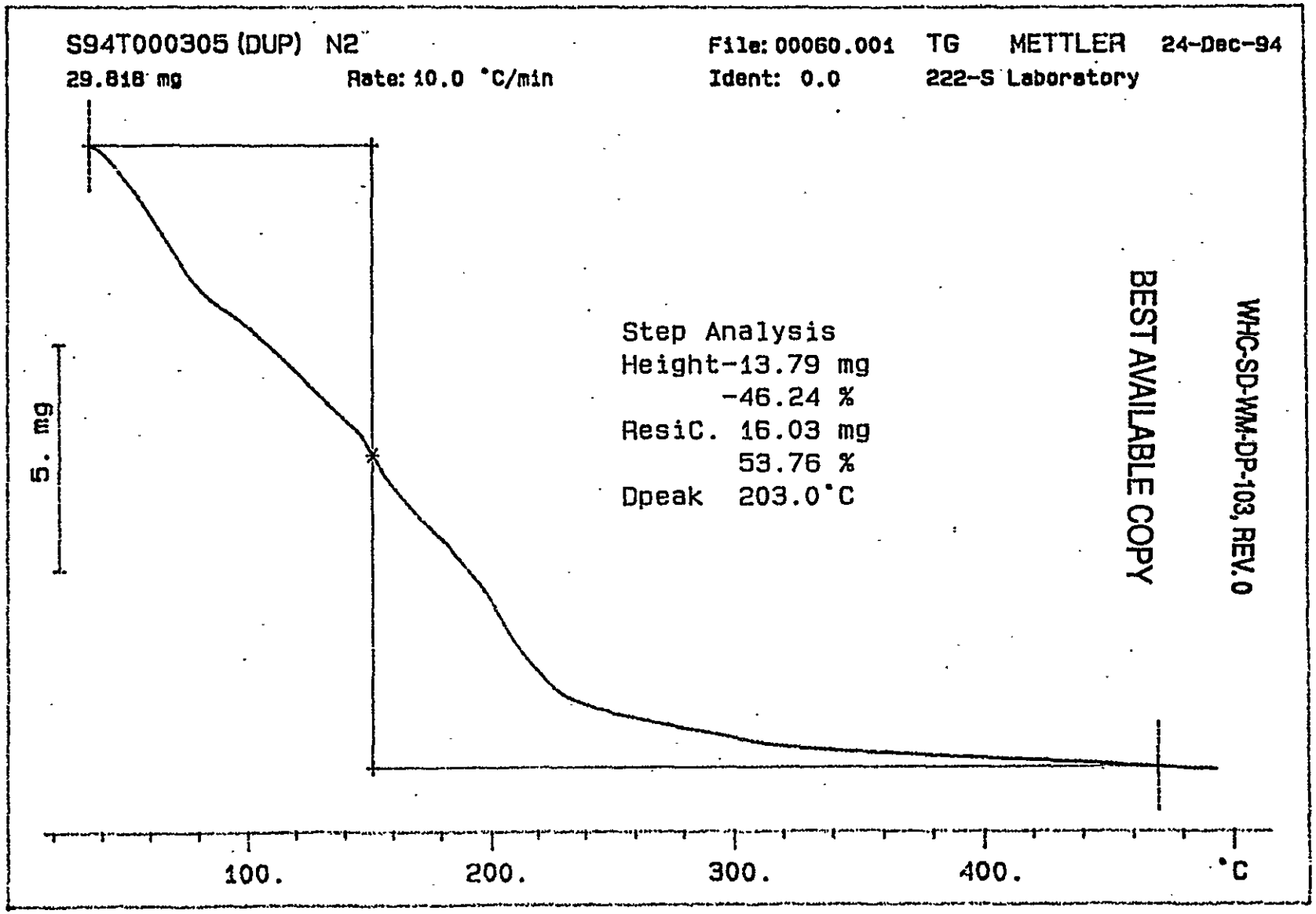

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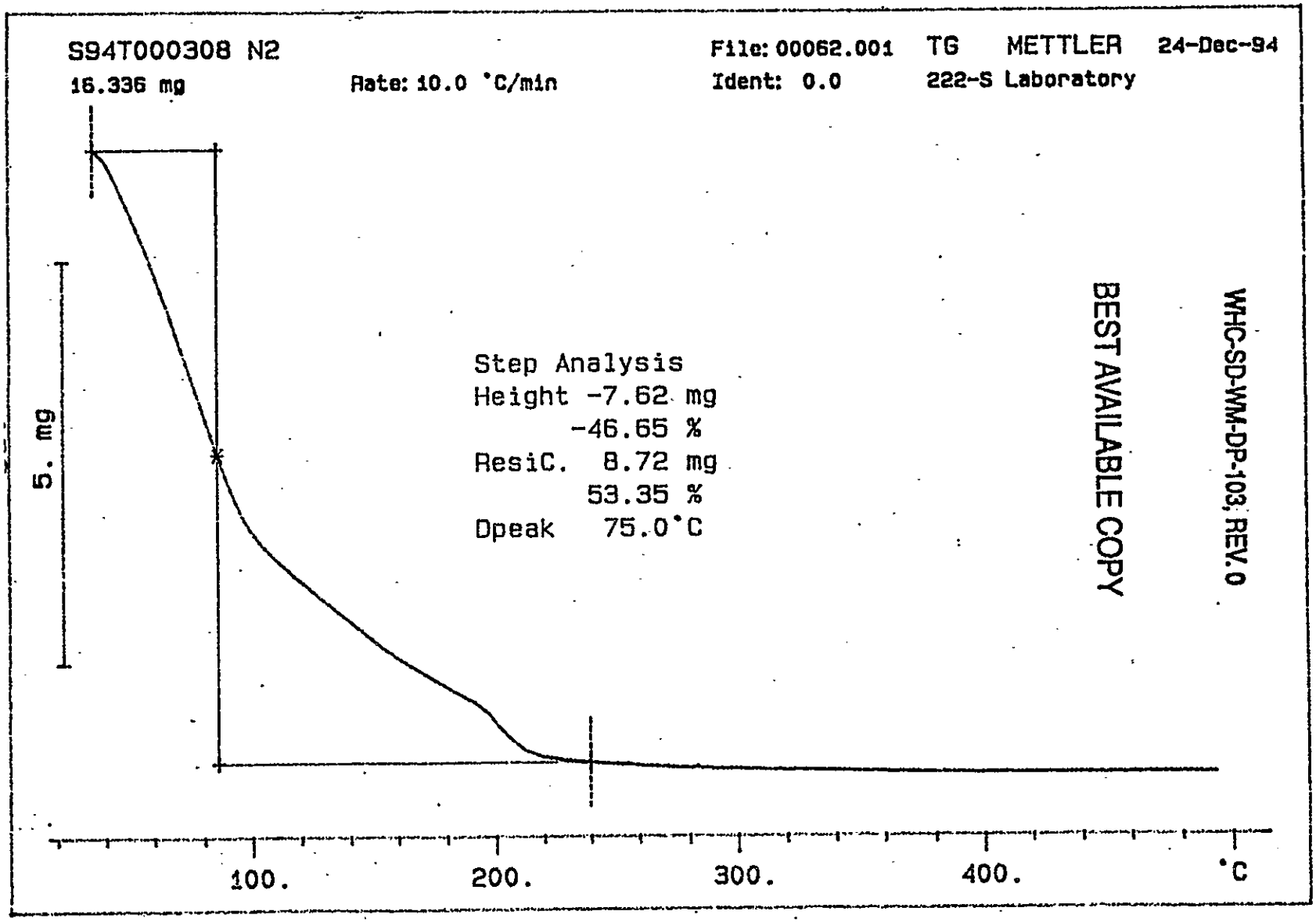

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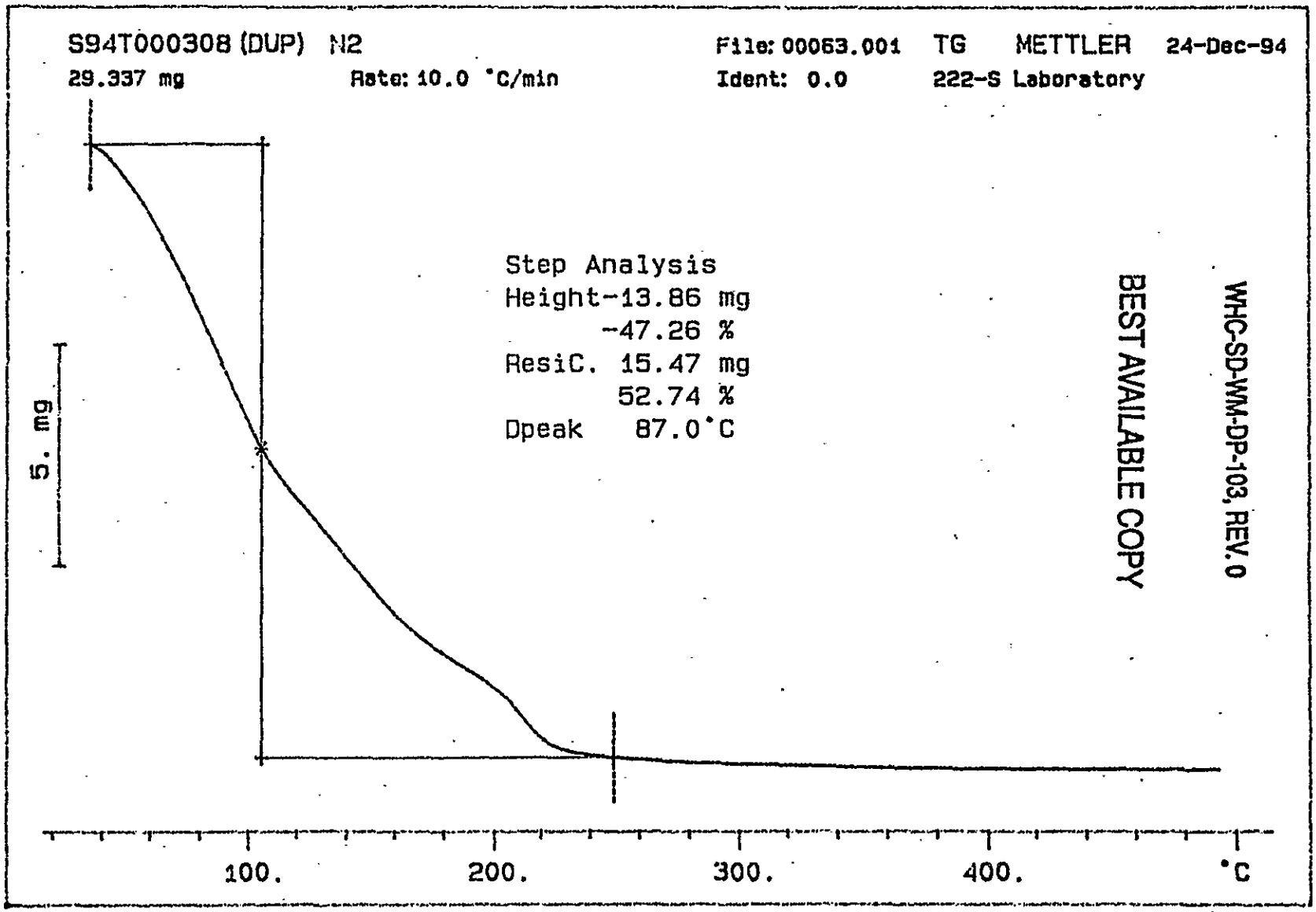
WHC-SD-WM-DP-103, REV. 0



WHC-SD-WM-DP-103, REV. 1 By/106

LABCORE Data Entry Template for Worklist# 236

Analyst: DWS **Instrument:** TGA01 _____ **Method:** LA-560-112 A-2

Worklist Comment: BY-106, run under N2. JMF WHC-SD-WM-DP-103, REV. 0

Seg	Type	Sample#	Rep	Al	Test	Matrix	Actual	Found	DL	Unit
1	STD	42N8A			TGA-01	SOLID	59.19	58.80	N/A	%
2	SAMPLE	S94T000309	0		TGA-01	SOLID	N/A	38.31		%
3	DUP	S94T000309	0		TGA-01	SOLID	38.31	32.20	N/A	%
4	STD				TGA-01	SOLID	59.19	58.64	N/A	%
5	SAMPLE	S94T000310	0		TGA-01	SOLID	N/A	21.07		%
6	DUP	S94T000310	0		TGA-01	SOLID	21.07	25.62	N/A	%

Final page for worklist # 236

See attached page
Analyst Signature

1/5/95
Date

1/6/95

Verified by Blandina Valenzuela 1/16/95

Data Entry Comments:

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

WHC-SD-WM-DP-103, REV. 1

LABCORE Data Entry Template for Worklist# 236

Analyst: DWS **Instrument:** TGA01 _____ **Method:** LA-560-112 A-2

Worklist Comment: BY-106, run under N2. JMF WHC-SD-WM-DP-103, REV. 0

Seg	Type	Sample#	Rep	Al	Test	Matrix	Actual	Found	DL	Unit
1	STD				TGA-01	SOLID			N/A	%
2	SAMPLE	S94T000309	0		TGA-01	SOLID	N/A			%
3	DUP	S94T000309	0		TGA-01	SOLID			N/A	%
4	SAMPLE	S94T000310	0		TGA-01	SOLID	N/A			%
5	DUP	S94T000310	0		TGA-01	SOLID			N/A	%

Final page for worklist # 236

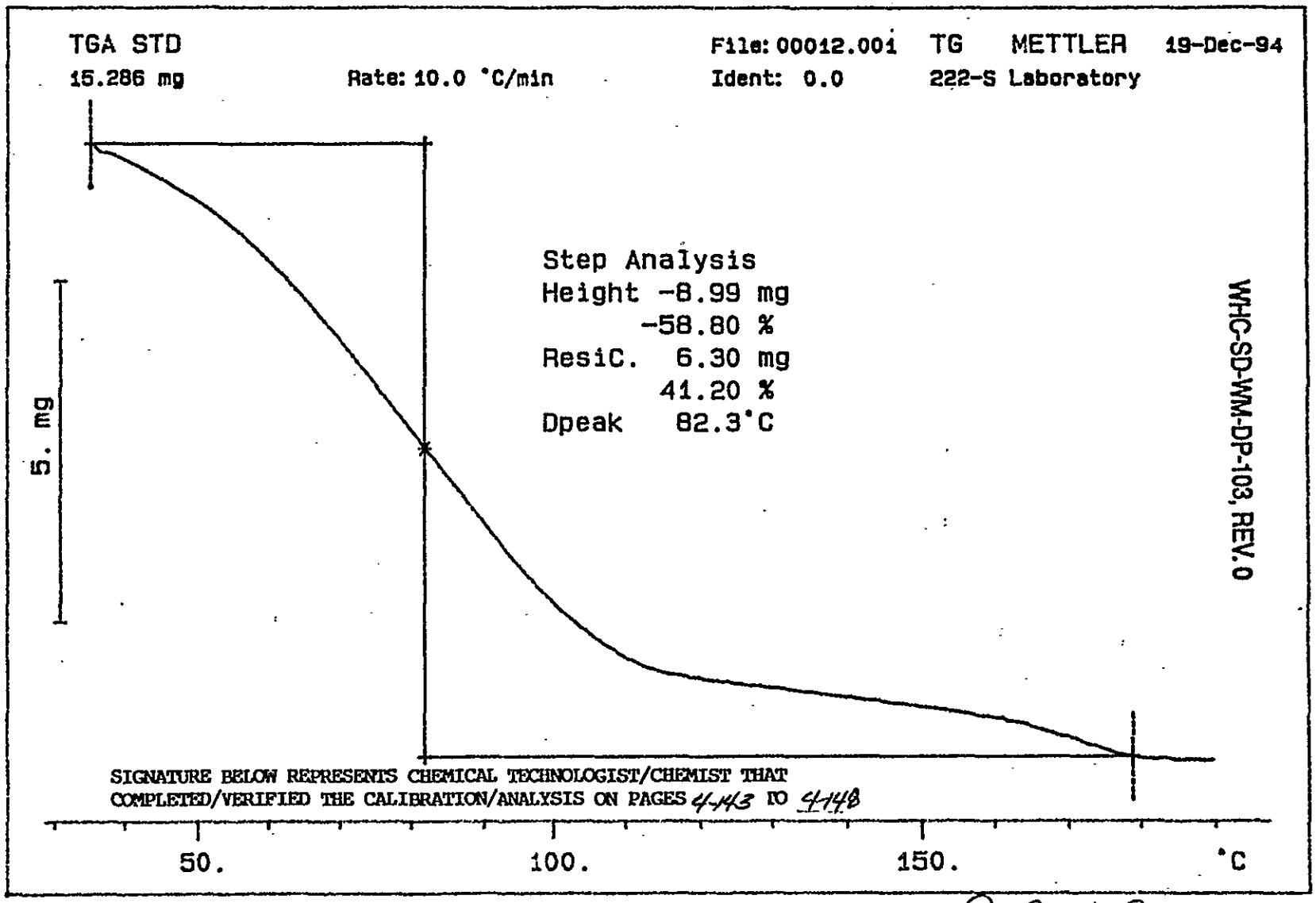
Analyst Signature

12-19-94
Date

Data Entry Comments: TERIQU STD # 42WB-A

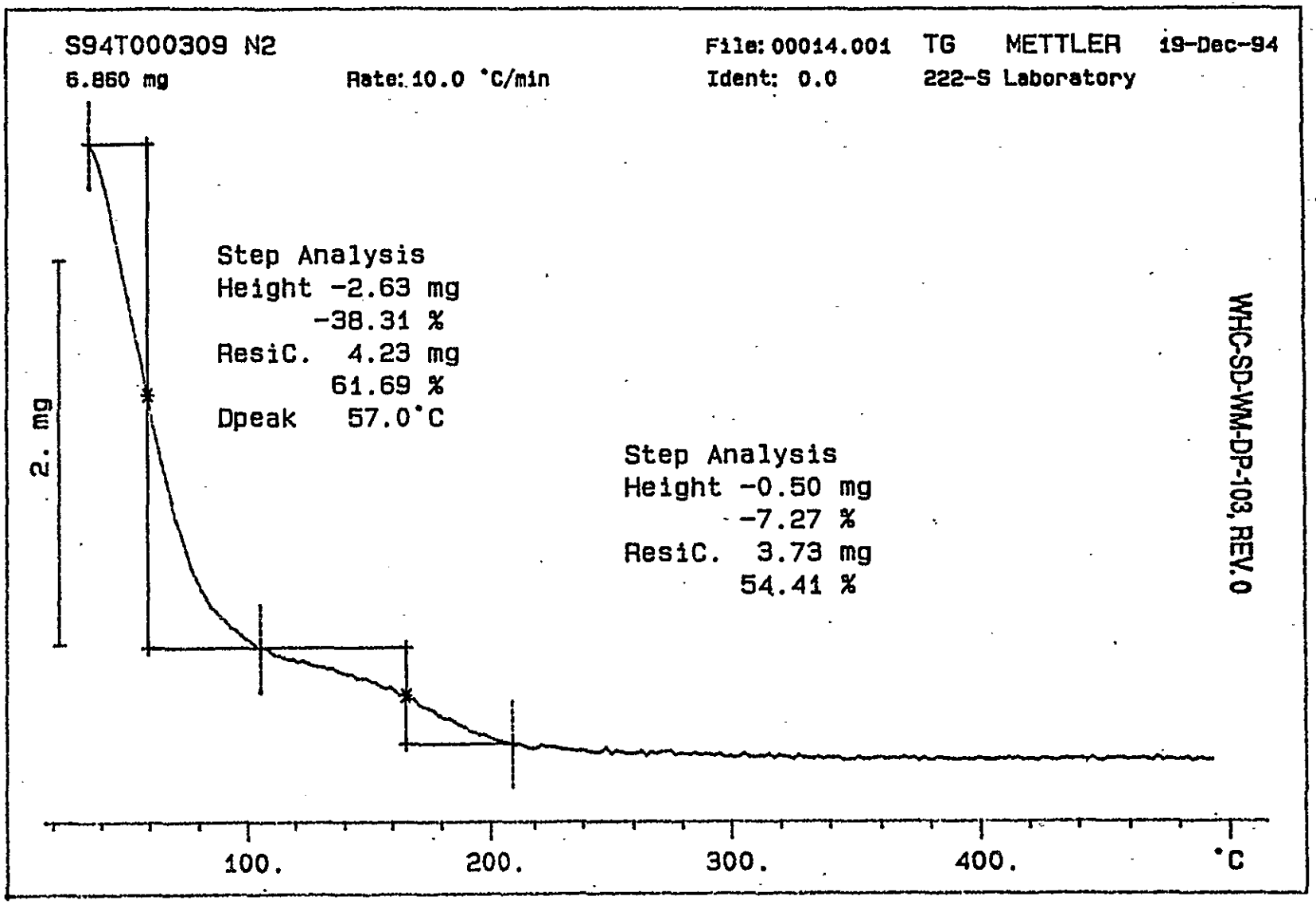
Units shown for QC (SPK) may not reflect the actual units.

Page: 1

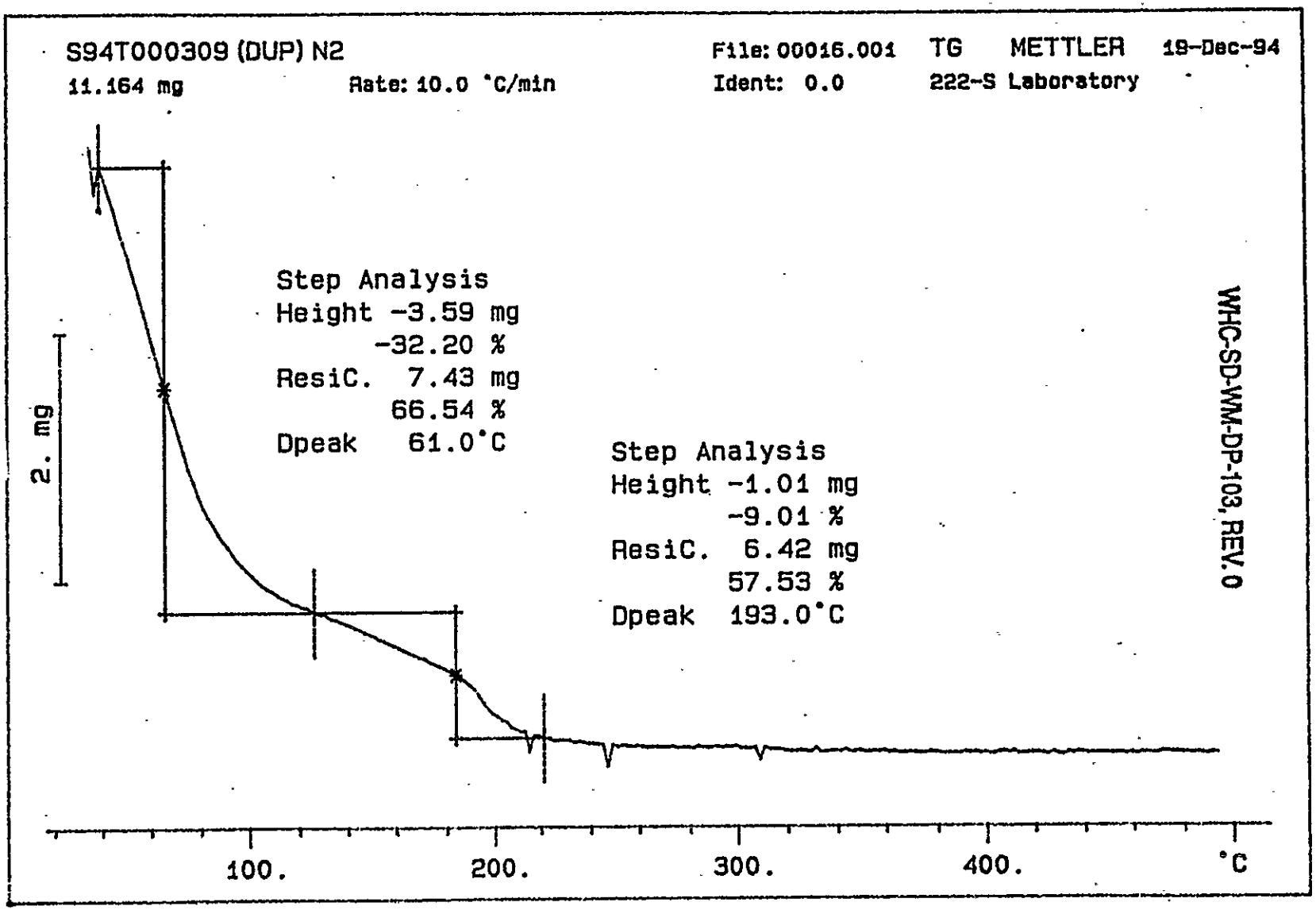


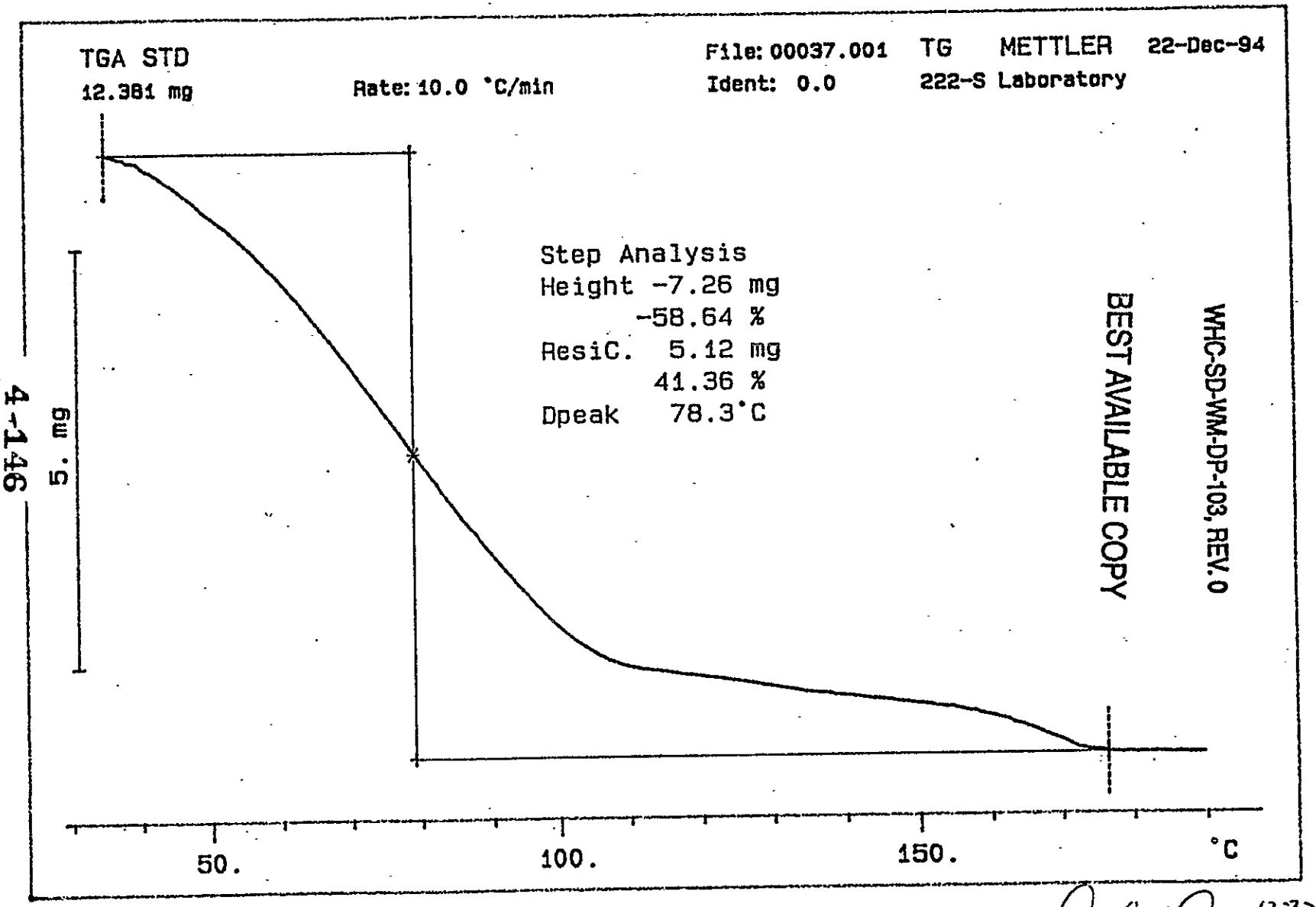
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 4-143 TO 4-148

12-19-94



WHC-SD-WM-DP-103, REV.0


S94T000309 (DUP) N2
11.164 mg
Rate: 10.0 °C/min
File: 00016.001
Ident: 0.0
TG METTLER 19-Dec-94
222-S Laboratory
Step Analysis
Height -3.59 mg
-32.20 %
ResiC. 7.43 mg
66.54 %
Dpeak 61.0°C
Step Analysis
Height -1.01 mg
-9.01 %
ResiC. 6.42 mg
57.53 %
Dpeak 193.0°C
2. mg
100.
200.
300.
400.
°C



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12-22-94

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BDV 1/5/94 1/6/95 gmF

S94 T000310

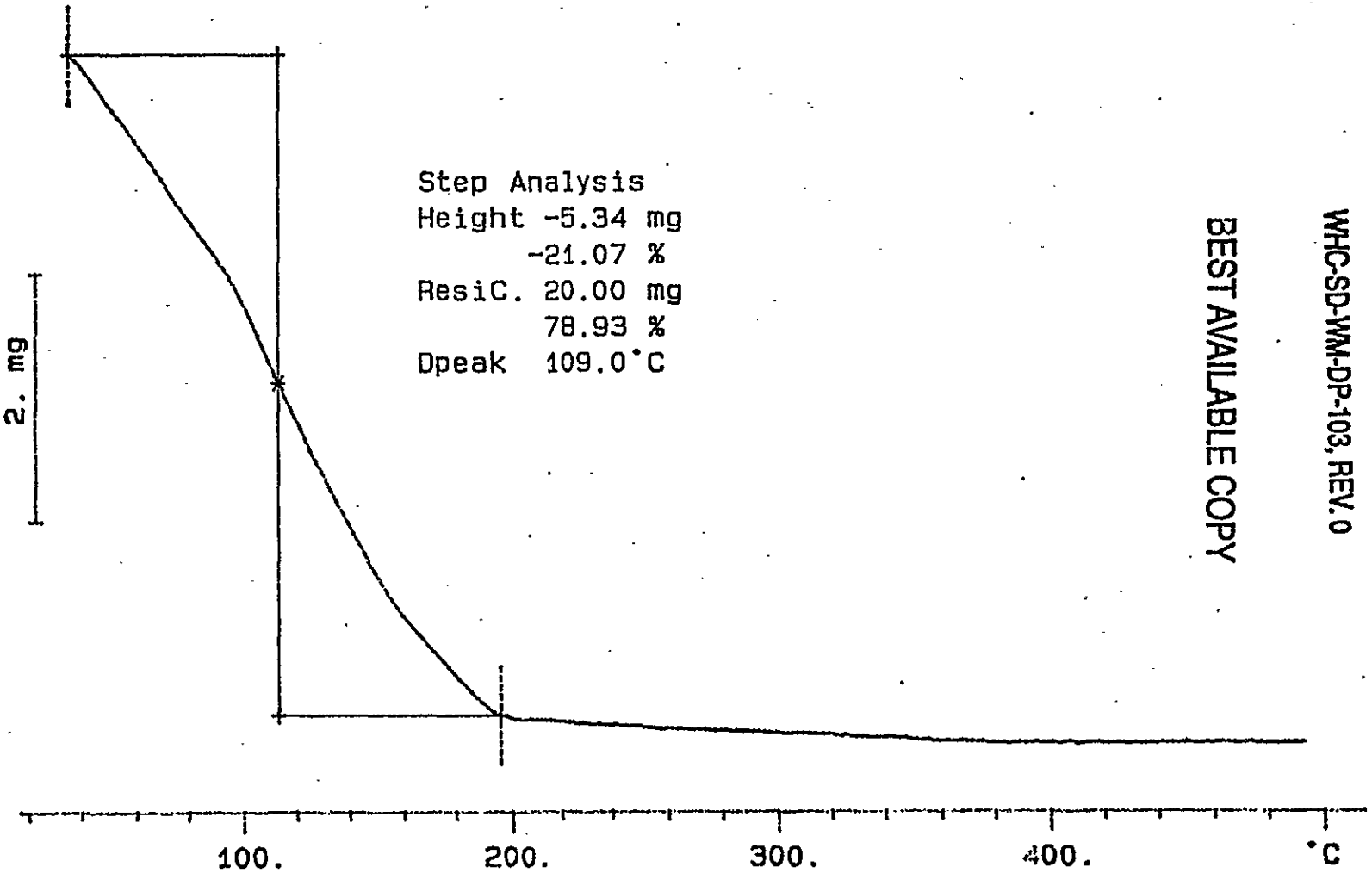
~~S94T00010~~ N2

25.338 mg

Rate: 10.0 °C/min

File: 00040.001 TG METTLER 22-Dec-94

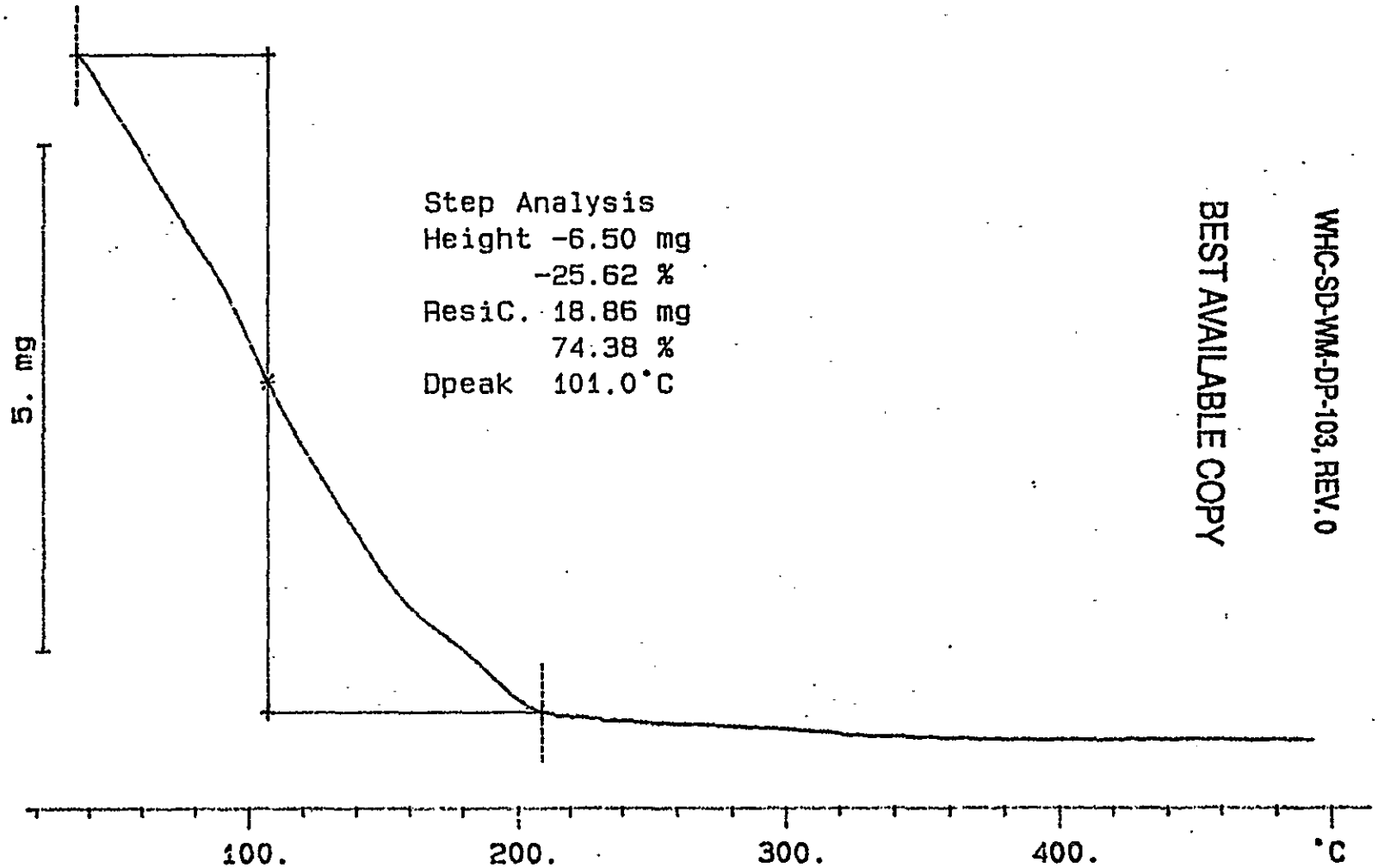
Ident: 0.0 222-S Laboratory



BDV 1/5/95
1/5/945

S94T000310
~~S94T00010~~ (DUP) N2

File: 00042.001 TG METTLER 22-Dec-94
25.357 mg Rate: 10.0 °C/min Ident: 0.0 222-S Laboratory



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LABCORE Data Entry Template for Worklist# 237

Analyst: SLHB **Instrument:** TGA01 _____ **Method:** LA-560-112 A-2

Worklist Comment: BY-106, run under N2. JMF WHC-SD-WM-DP-103, REV. 0

Seg	Type	Sample#	Rep	Al	Test	Matrix	Actual	Found	DL	Unit
1	STD				TGA-01	SOLID	59.19	58.66	N/A	%
2	SAMPLE	S94T000311	0		TGA-01	SOLID	N/A	9.70		%
3	DUP	S94T000311	0		TGA-01	SOLID	9.70	9.78	N/A	%

Final page for worklist # 237

Sandra L Hood Boatright
Analyst Signature

12-12-94
Date

CQ Clark (Data Entered) 12/19/94

Verified 12/22/94. J. M. Lyon

Data Entry Comments: STD 42N8A

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

Page: 1

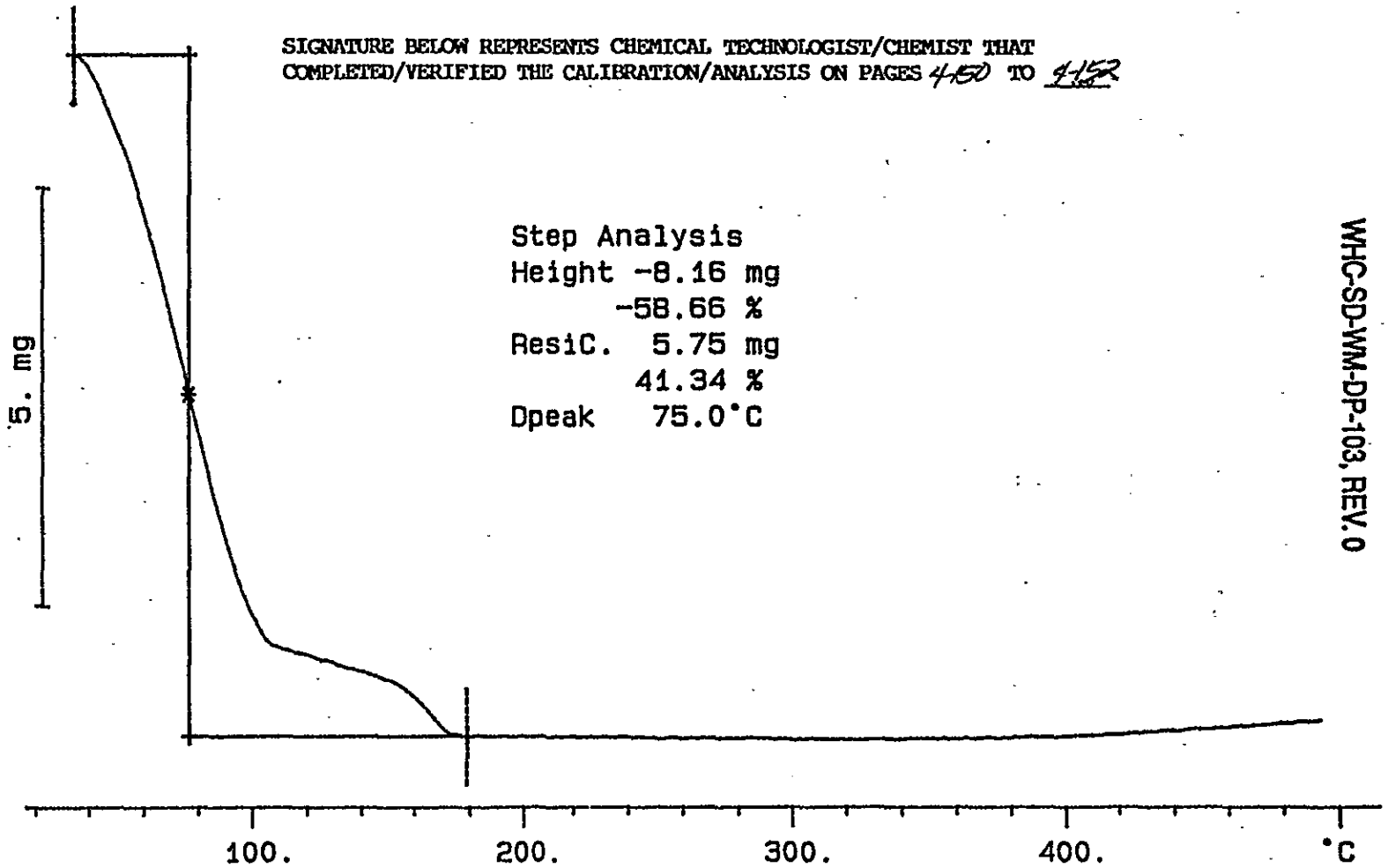
Worklist #237 JMF 12/12/94

TGA STD
13.903 mg

Rate: 10.0 °C/min

File: 00104.001 TG METTLER 12-Dec-94
Ident: 0.0 222-S Laboratory

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 4-150 TO 4-152

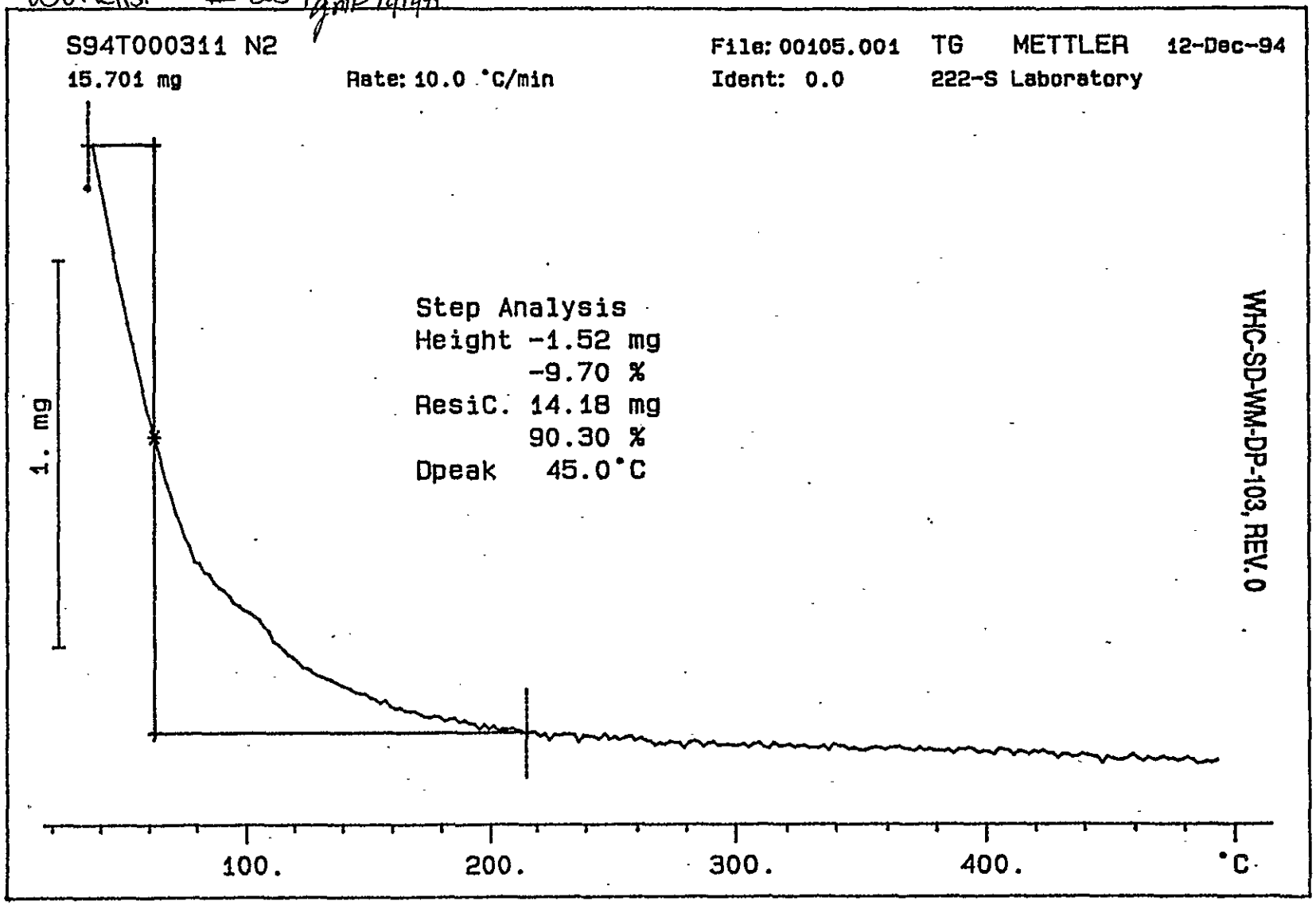


Step Analysis
Height -8.16 mg
-58.66 %
ResiC. 5.75 mg
41.34 %
Dpeak 75.0°C

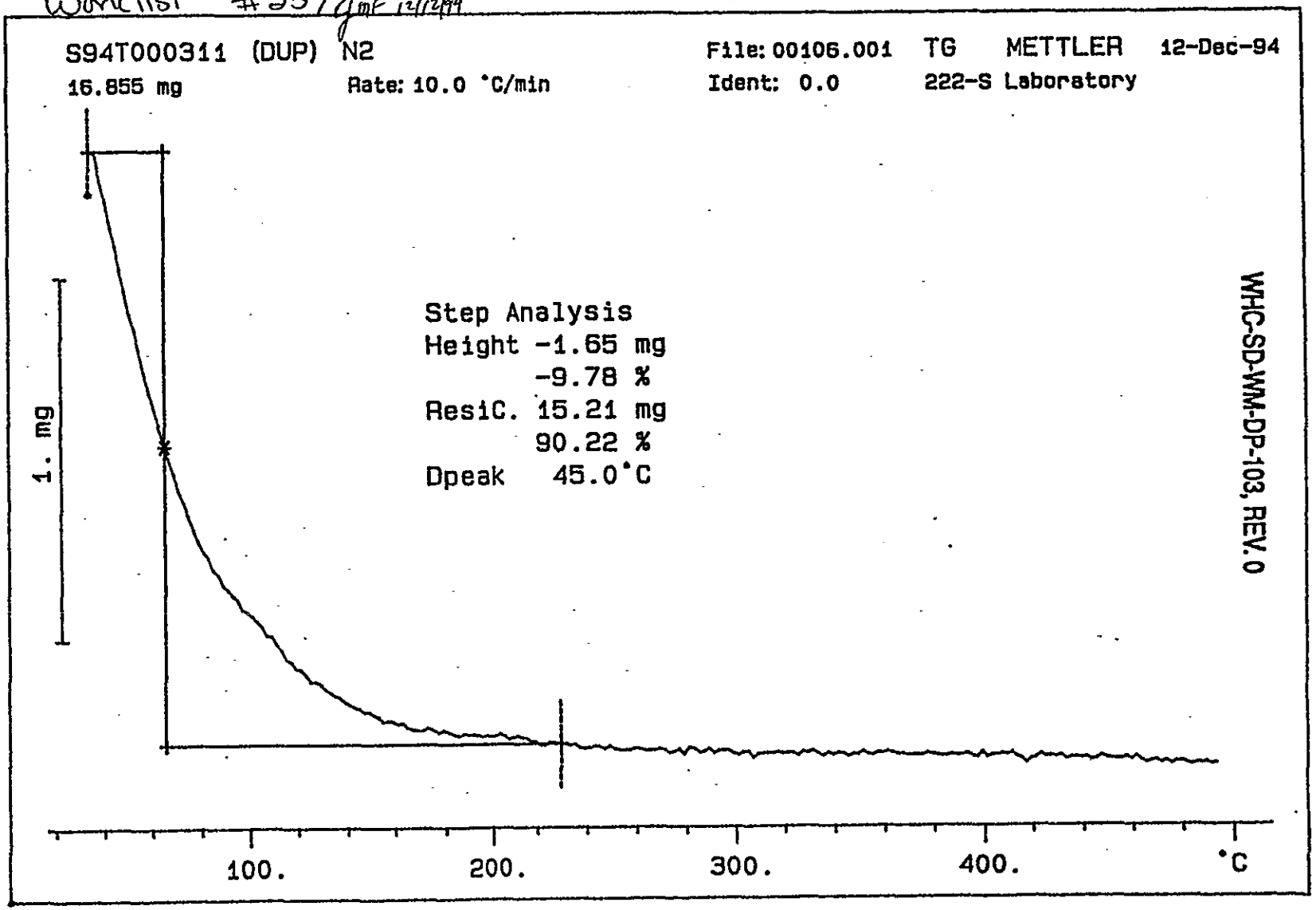
SL Hood Boatright 12-12-94

WHC-SD-WM-DP-103, REV. 1

Worklist # 237 TgmE 12/12/94



Worklist #237 gmf 12/12/94



KB

WHC-SD-WM-DP-103, REV. 1 By/DL

LABCORE Data Entry Template for Worklist# 240

Analyst: SMF **Instrument:** TGA01 _____ **Method:** LA-560-112/~~A-2~~ WHC-SD-WM-DP-103, REV. 0

Worklist Comment: Please run TGA under N2. JMF

Seg	Type	Sample#	Rep	Al	Test	Matrix	Actual	Found	DL	Unit
1	STD	42N8-A			TGA-01	SOLID	59.19	-58.59	N/A	%
2	SAMPLE	S94T000326	0		TGA-01	SOLID	N/A	-14.37		%
3	DUP	S94T000326	0		TGA-01	SOLID	14.37	-14.24	N/A	%
4	SAMPLE	S94T000346	0		TGA-01	SOLID	N/A	-18.38		%
5	DUP	S94T000346	0		TGA-01	SOLID	18.38	14.94	N/A	%

Final page for worklist # 240

Susie M. Fulton
Analyst Signature

~~12-24~~ 12-25-94
Date SMF

R S Jones 1-4-95

Verified 1/9/94 B.D. Valenzuela

Data Entry Comments:

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

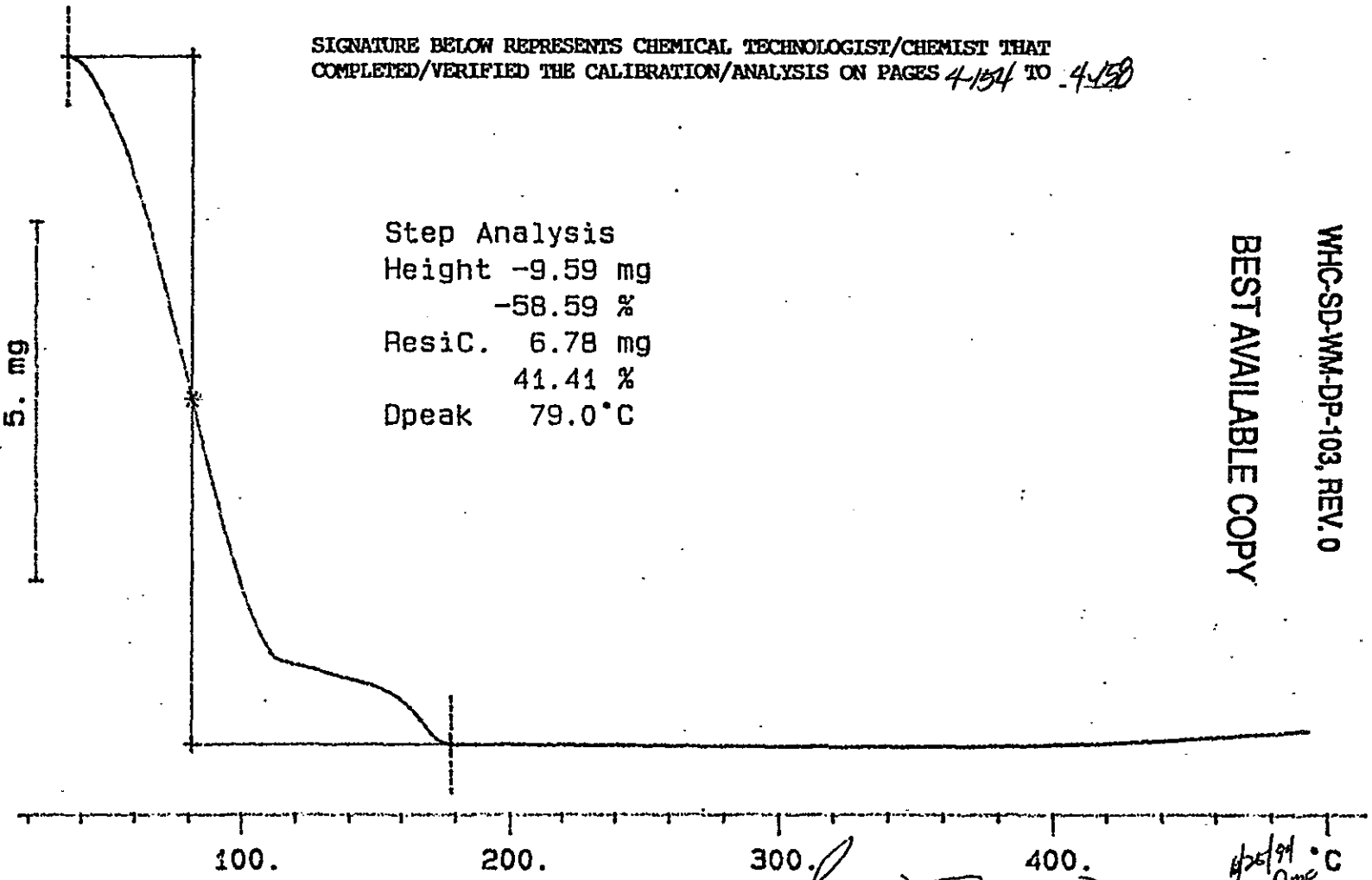
Page: 1

TGA STD
16.364 mg

Rate: 10.0 °C/min

File: 00065.001 TG METTLER 25-Dec-94
Ident: 0.0 222-S Laboratory

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 4-154 TO 4-158



Step Analysis
Height -9.59 mg
-58.59 %
ResiC. 6.78 mg
41.41 %
Dpeak 79.0°C

4/26/94 Susie M. Dutton

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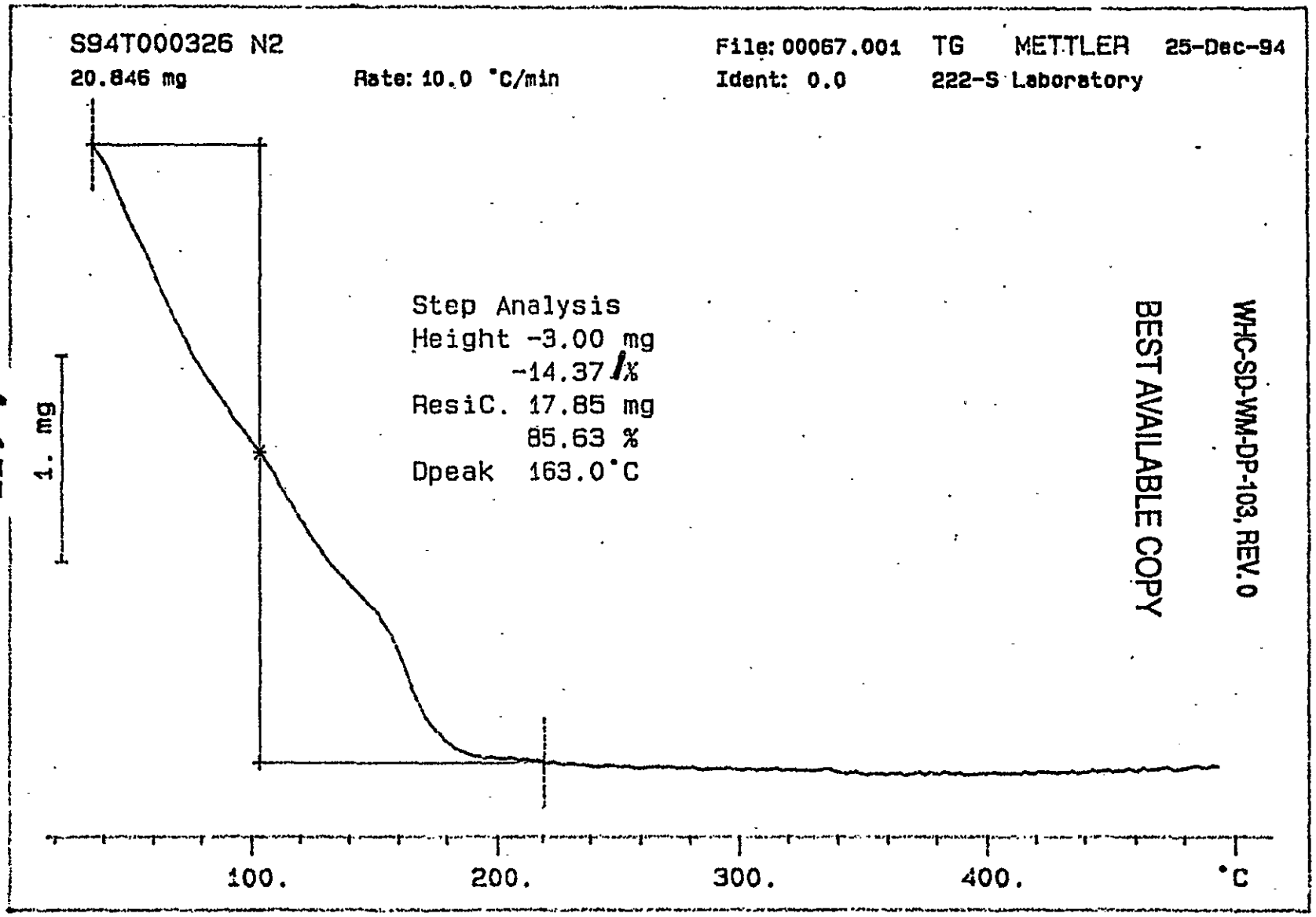

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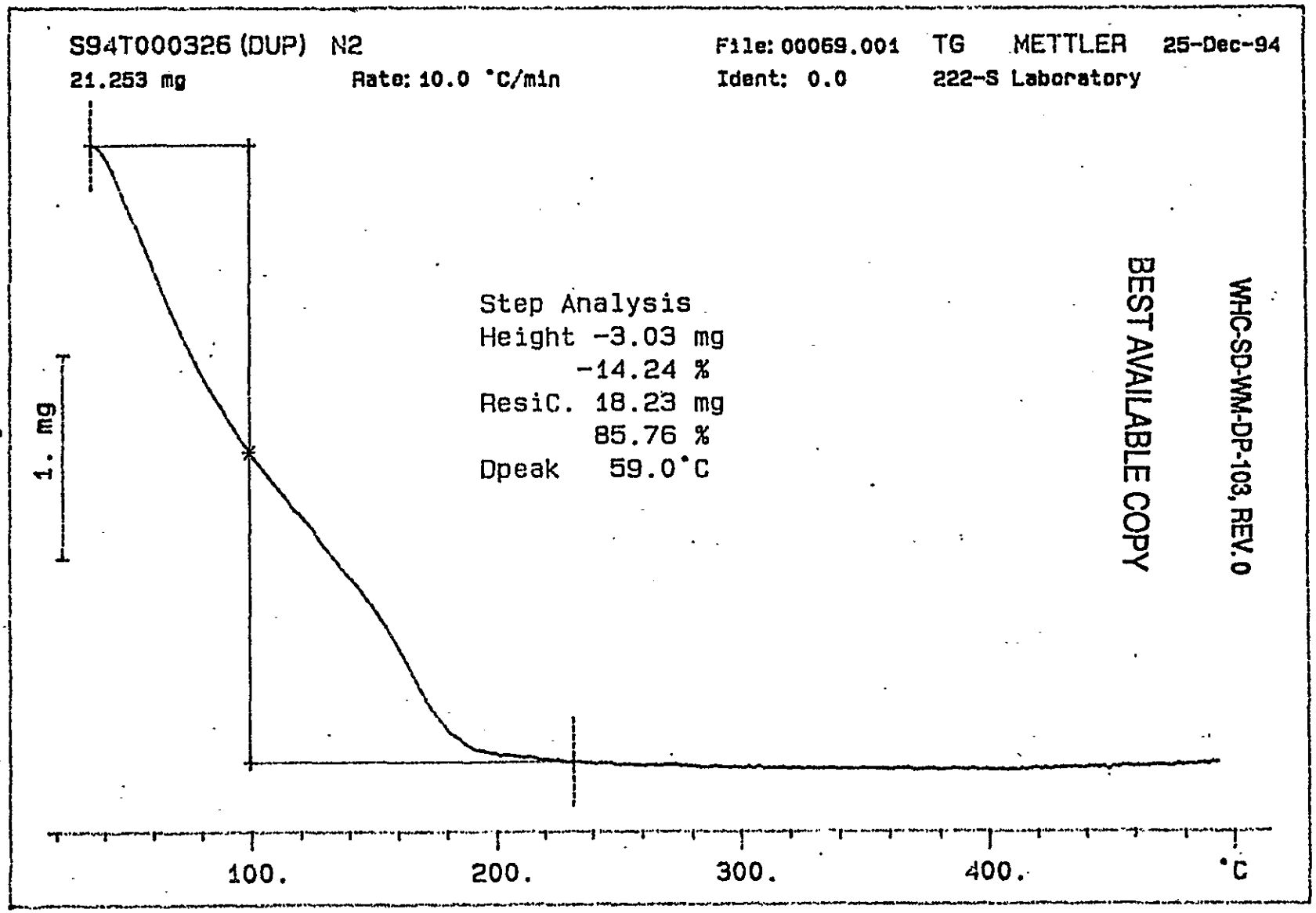
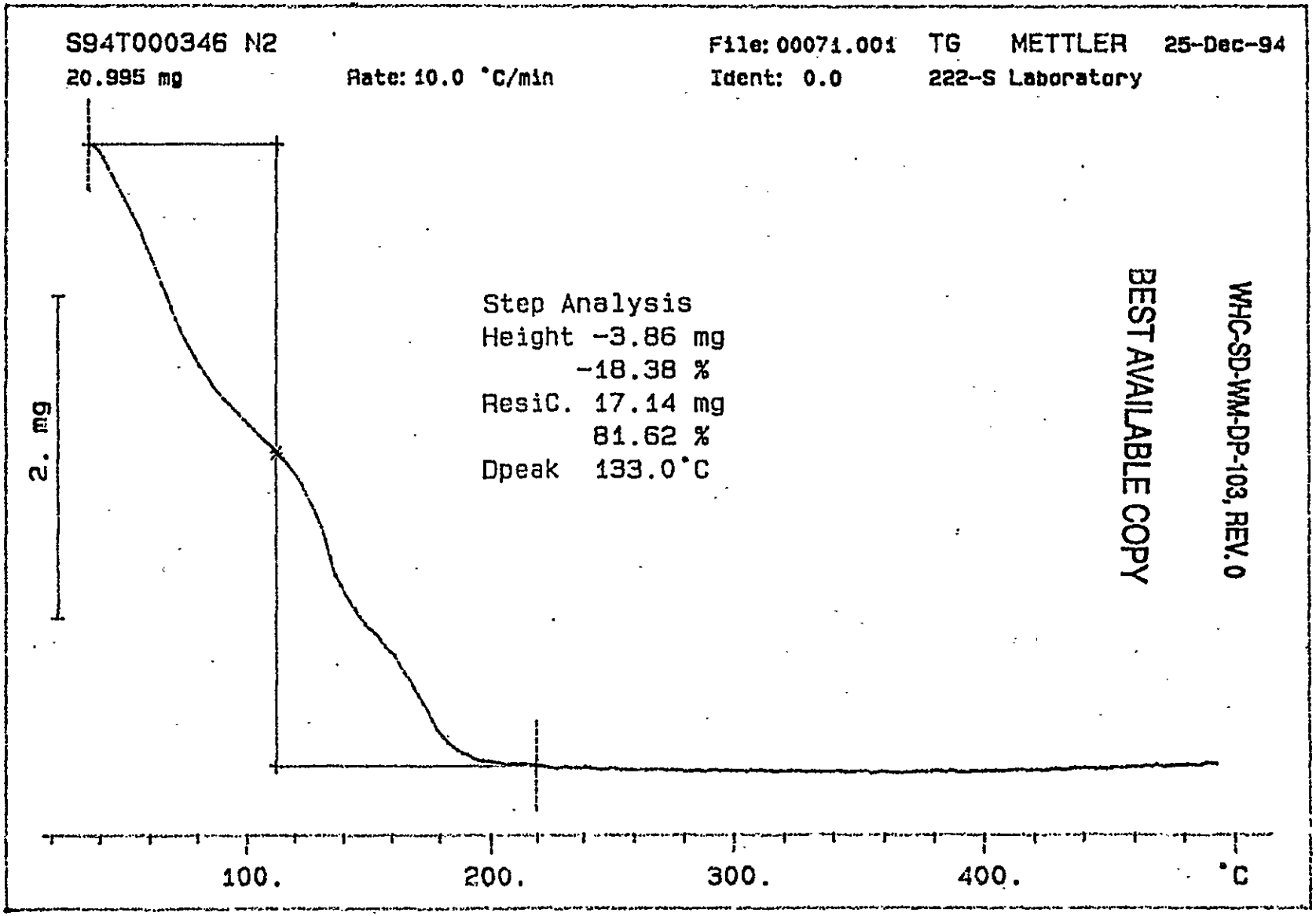
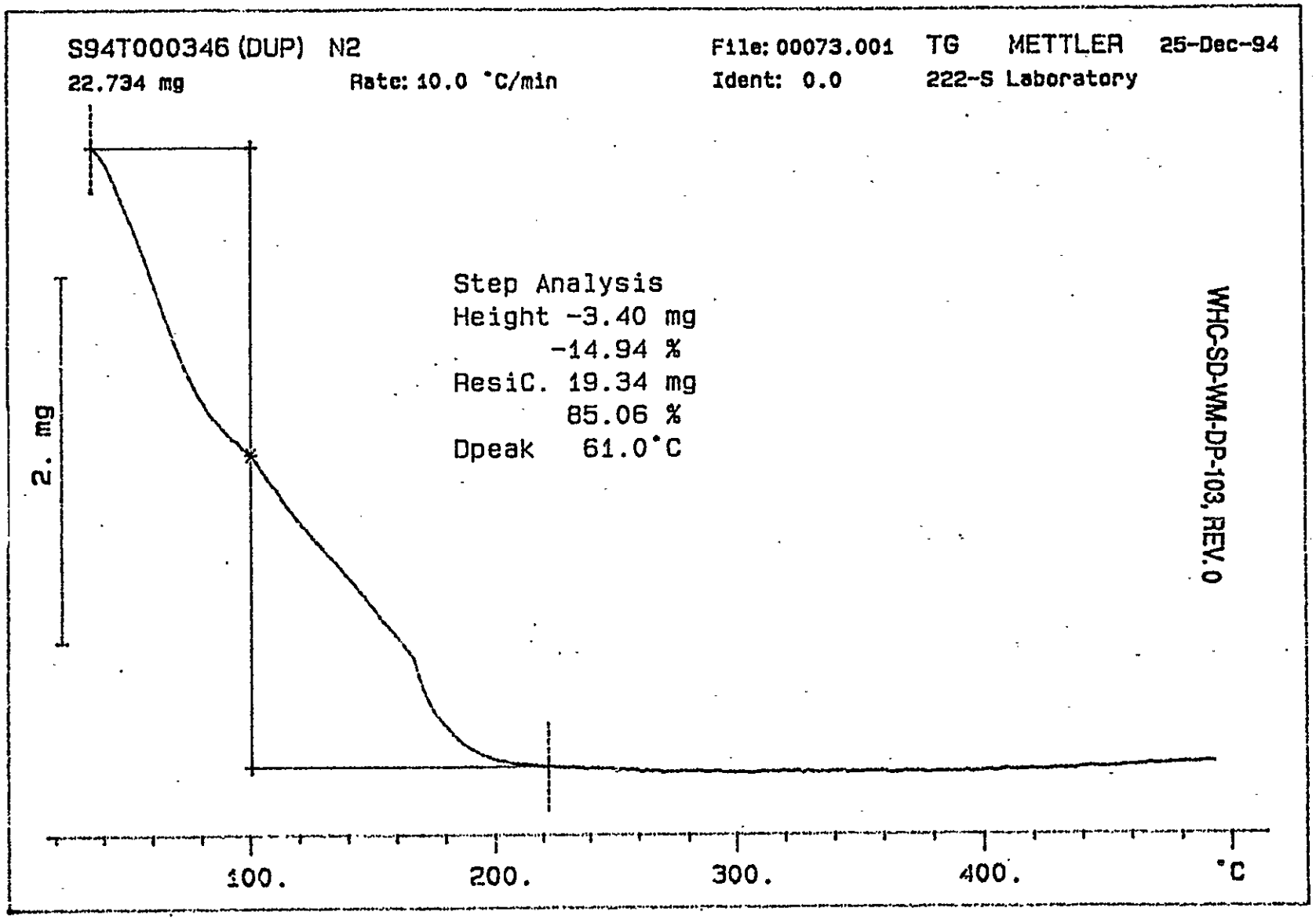


BEST AVAILABLE COPY




S94T000346 (DUP) N2
22.734 mg
Rate: 10.0 °C/min
File: 00073.001 TG METTLER 25-Dec-94
Ident: 0.0 222-S Laboratory
Step Analysis
Height -3.40 mg
-14.94 %
ResiC. 19.34 mg
85.06 %
Dpeak 61.0°C
2. mg
100.
200.
300.
400.
°C

LABCORE Data Entry Template for Worklist# 251

Analyst: DWS Instrument: TGA01 Method: LA-560-112 ~~A~~ A-2 1/26/95 BDV

Worklist Comment: Please run BY-106 TGA under N2. BDV

Seg	Type	Sample#	Rep	Al	Test	Matrix	Actual	Found	DL	Unit
1	STD	42N8A			TGA-01	SOLID	59.19	58.36	N/A	%
2	SAMPLE	S94T000342	0		TGA-01	SOLID	N/A	18.01		%
3	DUP	S94T000342	0		TGA-01	SOLID	18.01	15.64	N/A	%
4	SAMPLE	S94T000343	0		TGA-01	SOLID	N/A	8.26		%
5	DUP	S94T000343	0		TGA-01	SOLID	8.26	11.57	N/A	%

Final page for worklist # 251

Analyst Signature

12-23-94
Date

Verified by Blandina Valenzuela

1/19/95
1/19/95
BDV

Data Entry Comments: TEK(1,2) = STD # 42N8-A

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

Page: 1

BEST AVAILABLE COPY

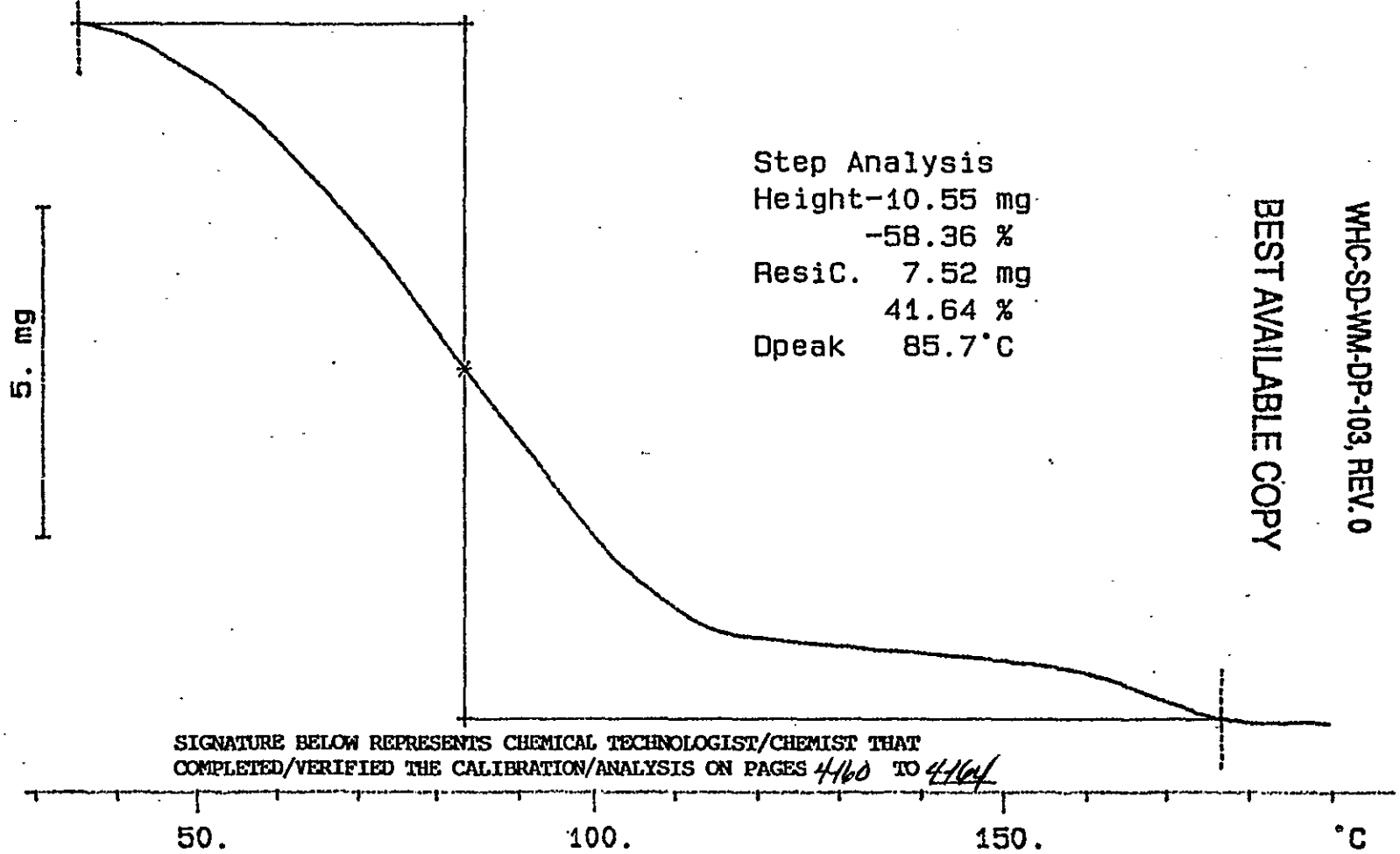
TGA STD 42N8A 12/22/94 gmf

18.072 mg

Rate: 10.0 °C/min

File: 00045.001 TG METTLER 23-Dec-94

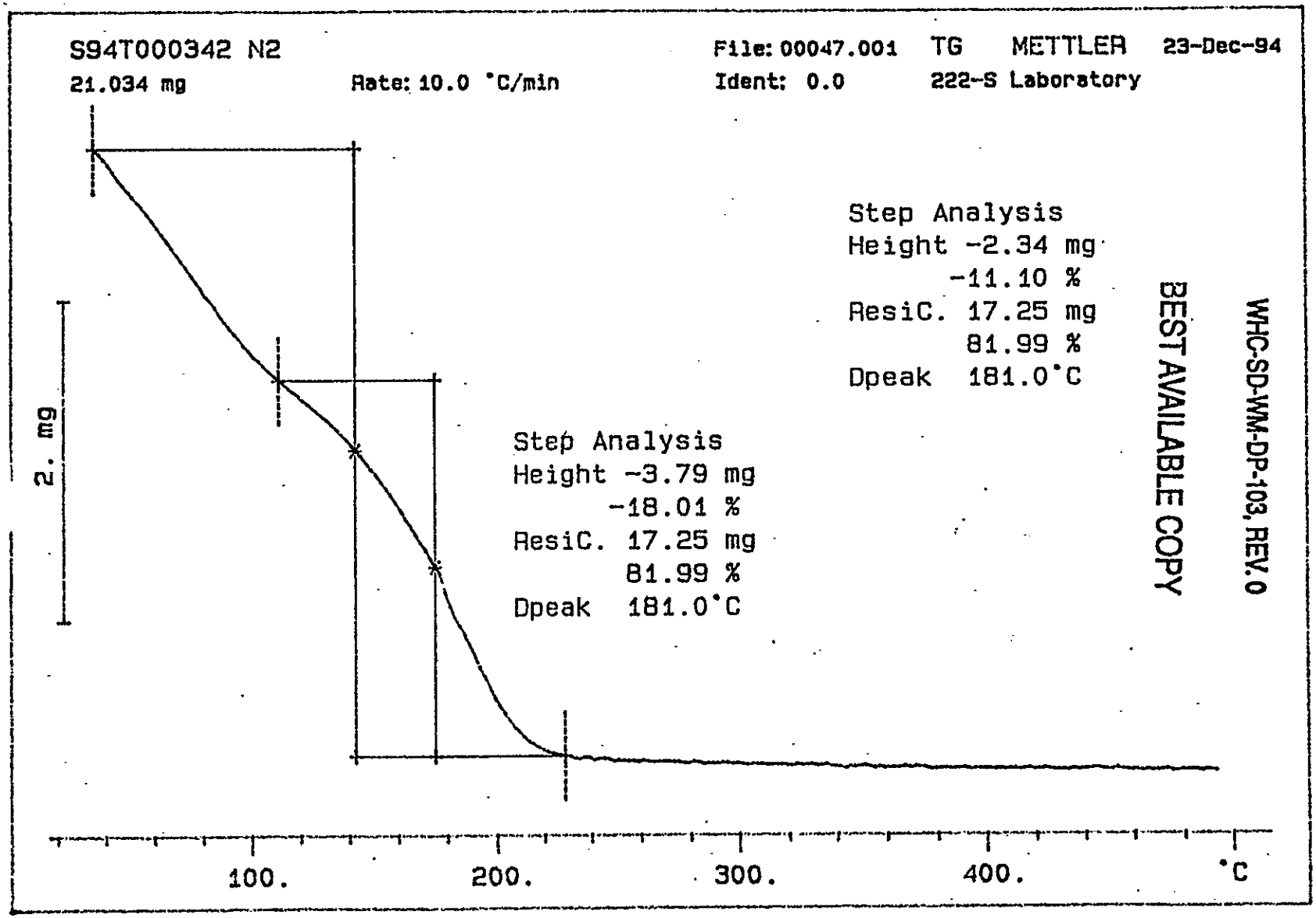
Ident: 0.0 222-S Laboratory



Step Analysis
Height-10.55 mg
-58.36 %
ResiC. 7.52 mg
41.64 %
Dpeak 85.7°C

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 4160 TO 4164

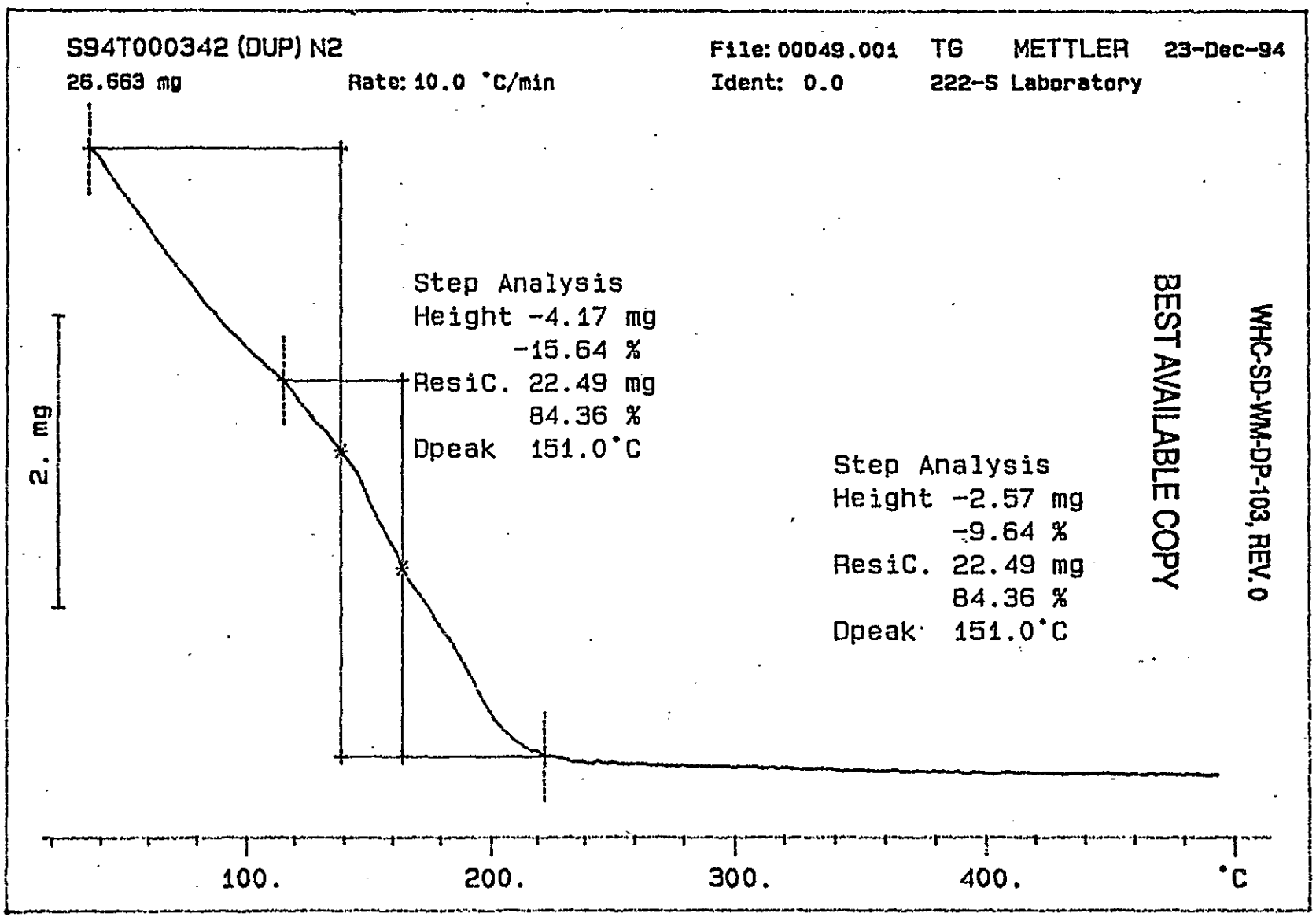
David W Smith 12-23-94

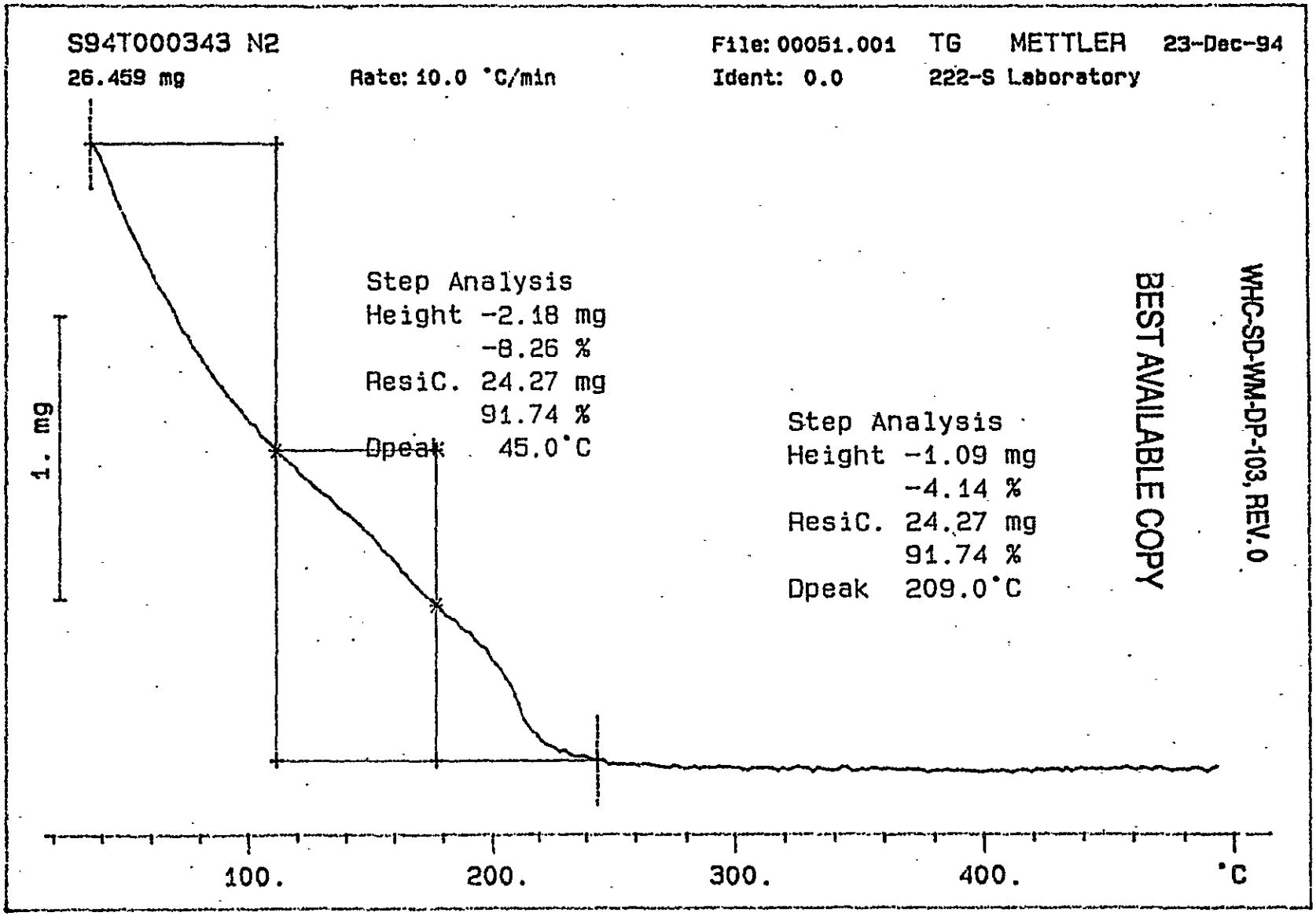


BEST AVAILABLE COPY

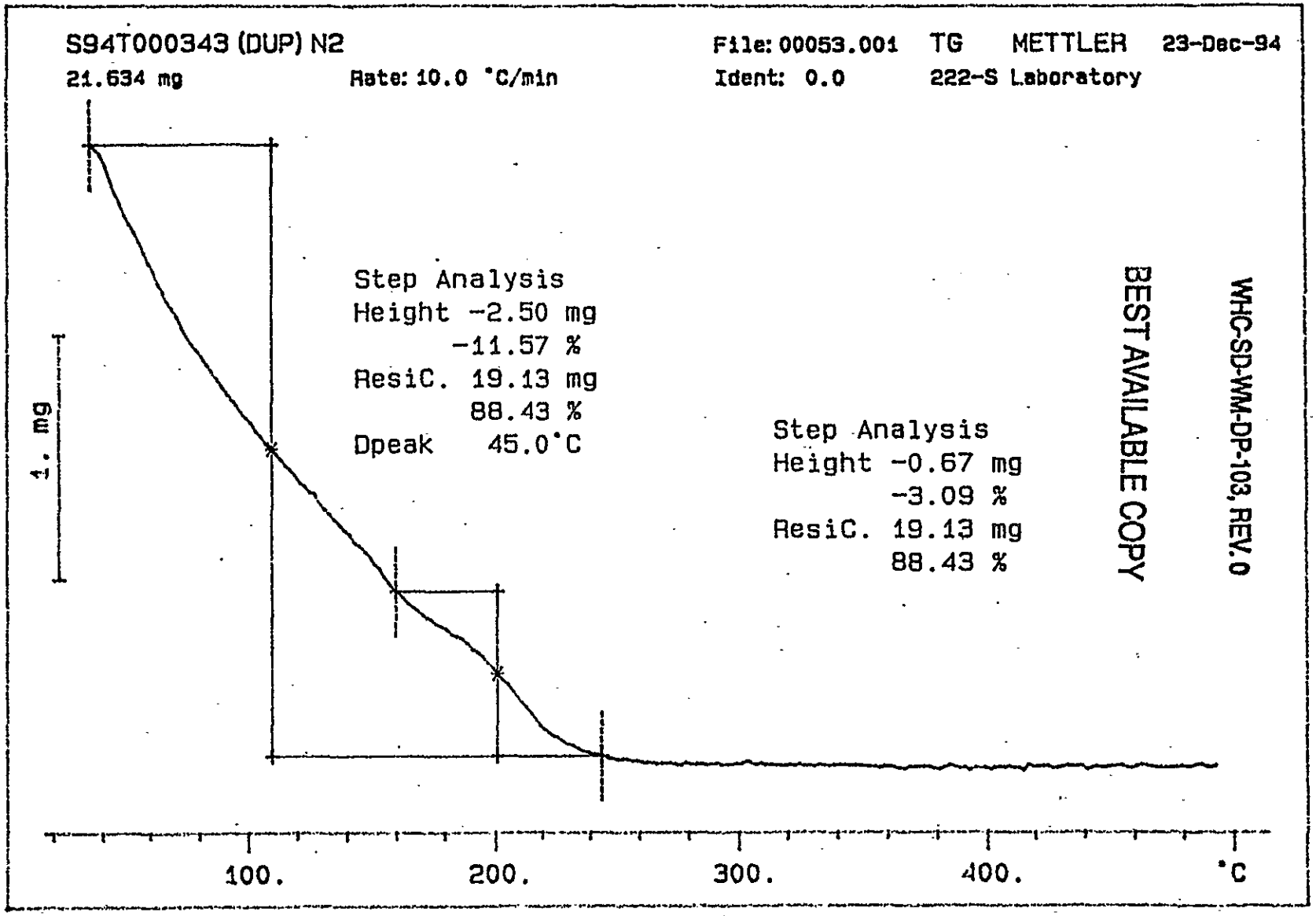
BEST AVAILABLE COPY

WHC-SD-WM-DP-103, REV. 0





BEST AVAILABLE COPY



BEST AVAILABLE COPY

KB

LABCORE Data Entry Template for Worklist# 252

Analyst: KLV **Instrument:** TGA01 **Method:** LA-560-112 A-2

Worklist Comment: Please run BY-106 under N2. Upper temp. limit 450. BDV

Seg	Type	Sample#	Rep	Al	Test	Matrix	Actual	Found	DL	Unit
1	STD	42N8A			TGA-01	SOLID	59.19	58.85	N/A	%
2	SAMPLE	S94T000344	0		TGA-01	SOLID	N/A	17.65		%
3	DUP	S94T000344	0		TGA-01	SOLID	17.65	20.47	N/A	%
4	SAMPLE	S94T000345	0		TGA-01	SOLID	N/A	43.17		%
5	DUP	S94T000345	0		TGA-01	SOLID	43.17	43.45	N/A	%

Final page for worklist # 252

Analyst Signature — Date 1-25-95

Verified by Blandina Valenzuela — 1-26-95

1-26-95

Data Entry Comments:

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

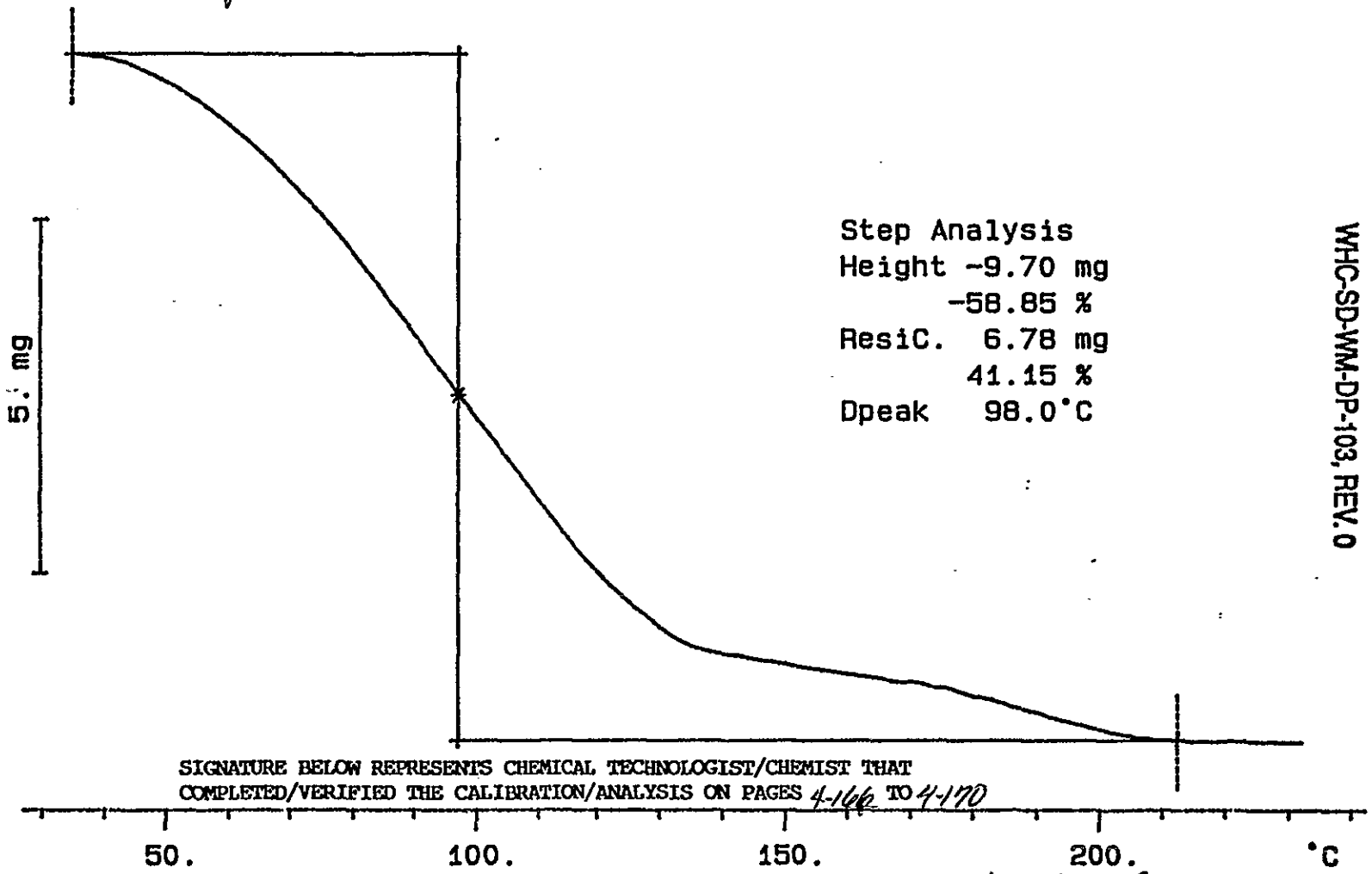
Page: 1

TGA STD H2N8A

16.482 mg gmOF 1/25/95 Rate: 20.0 °C/min

File: 00086.001 TG METTLER 25-Jan-95

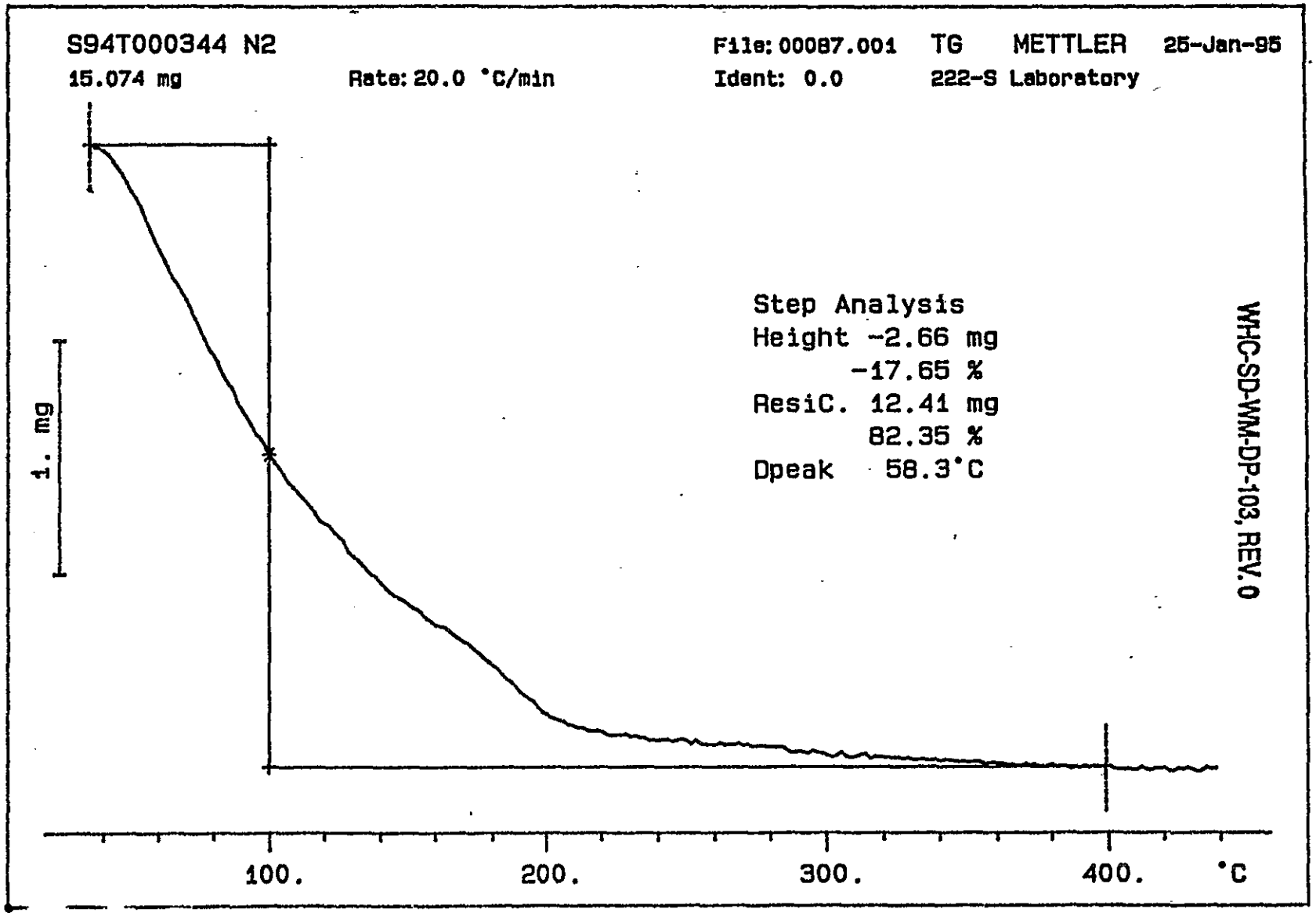
Ident: 0.0 222-S Laboratory

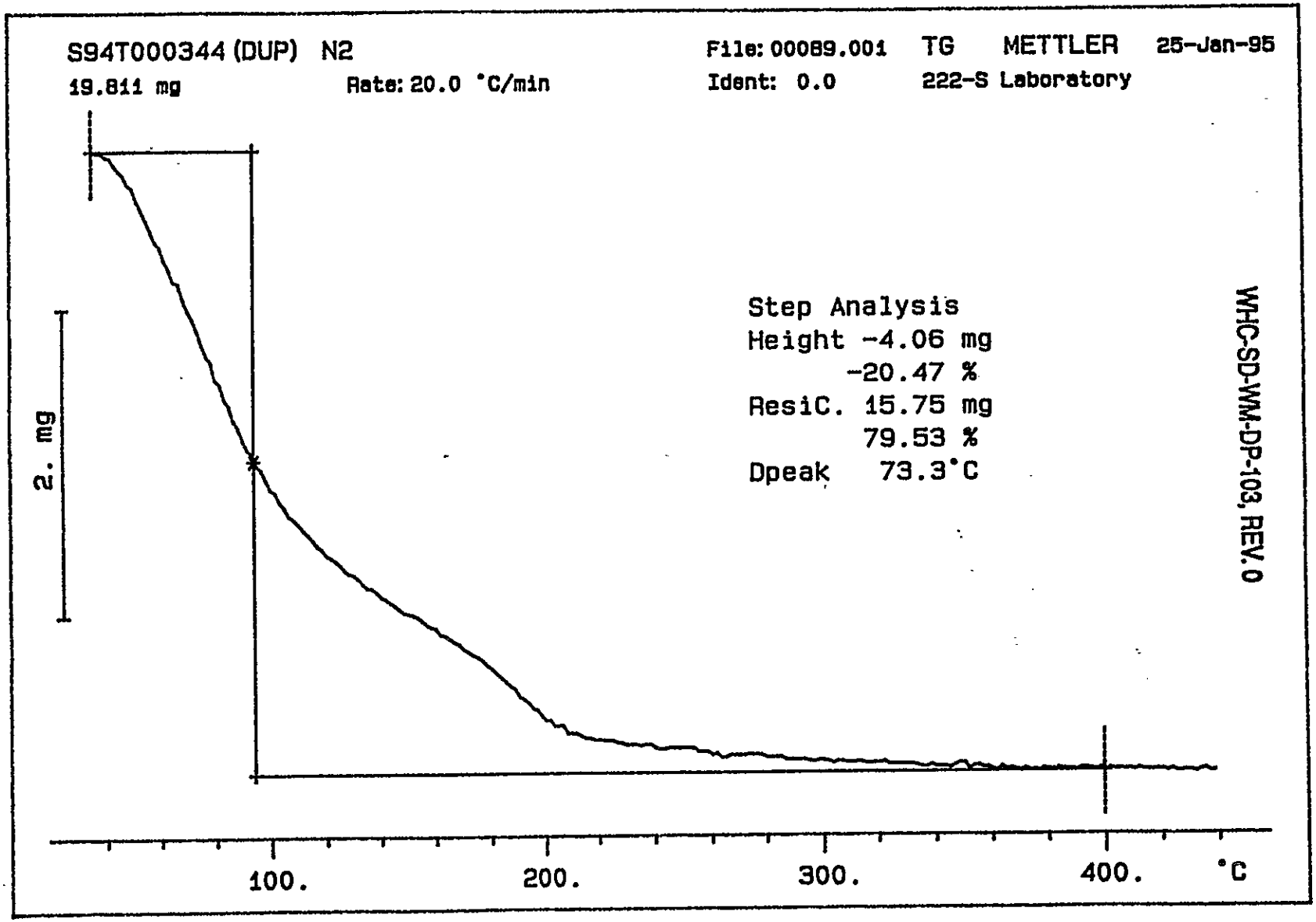


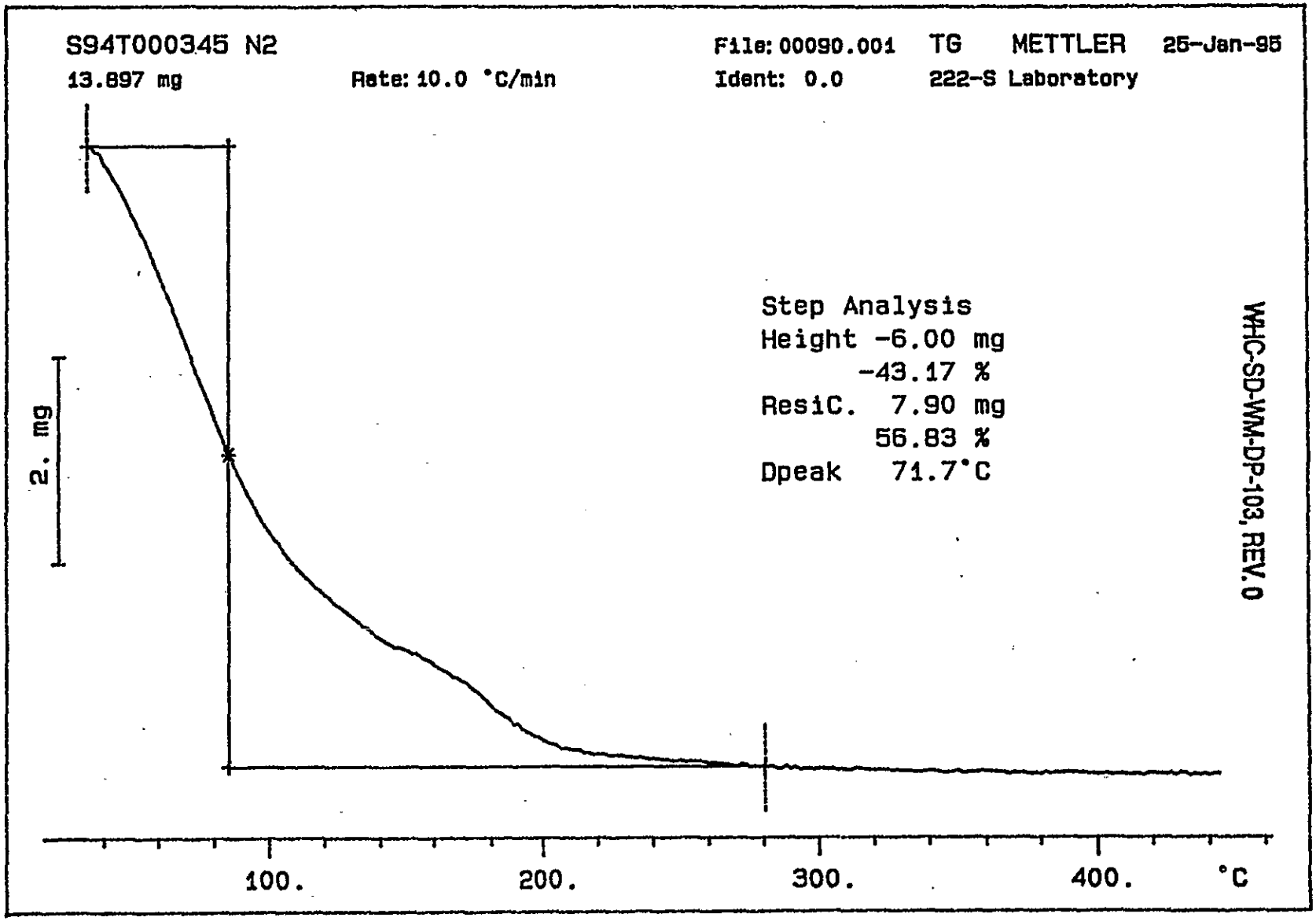
Step Analysis
Height -9.70 mg
-58.85 %
ResiC. 6.78 mg
41.15 %
Dpeak 98.0°C

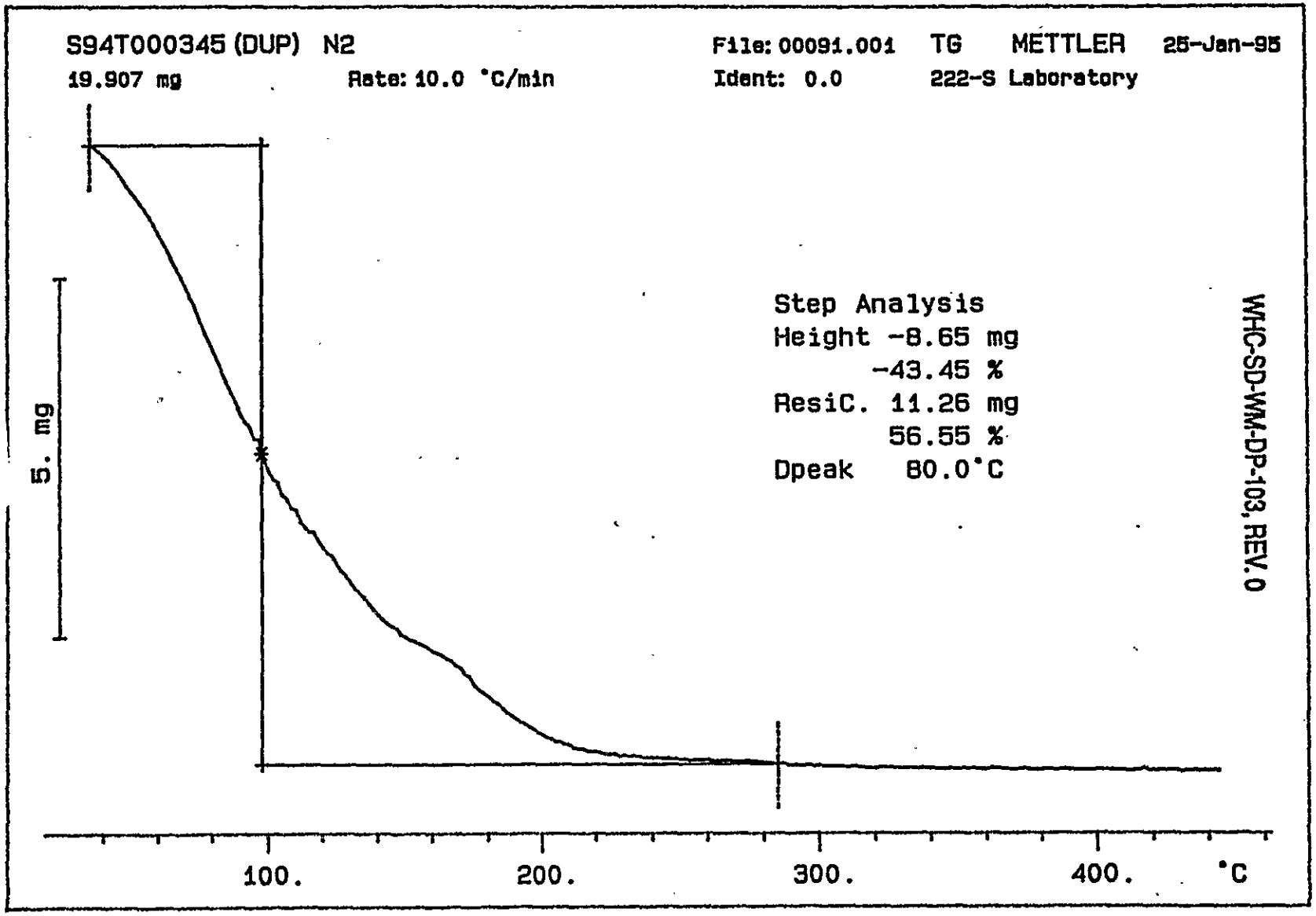
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 4-166 TO 4-170

1-25-95


S94T000344 N2
15.074 mg
Rate: 20.0 °C/min
File: 00087.001
TG METTLER
25-Jan-95
Ident: 0.0
222-S Laboratory
Step Analysis
Height -2.66 mg
-17.65 %
ResiC. 12.41 mg
82.35 %
Dpeak 58.3°C
1. mg
100.
200.
300.
400.
°C


S94T000344 (DUP) N2
19.811 mg
Rate: 20.0 °C/min
File: 00089.001 TG METTLER 25-Jan-95
Ident: 0.0 222-S Laboratory
Step Analysis
Height -4.06 mg
-20.47 %
ResiC. 15.75 mg
79.53 %
Dpeak 73.3°C
2. mg
100.
200.
300.
400.
°C


S94T000345 N2
13.897 mg
Rate: 10.0 °C/min
File: 00090.001
Ident: 0.0
TG
METTLER
222-S Laboratory
25-Jan-95
Step Analysis
Height -6.00 mg
-43.17 %
ResiC. 7.90 mg
56.83 %
Dpeak 71.7°C
2. mg
100.
200.
300.
400.
°C


S94T000345 (DUP) N2
19.907 mg
Rate: 10.0 °C/min
File: 00091.001 TG METTLER 25-Jan-95
Ident: 0.0 222-S Laboratory
Step Analysis
Height -8.65 mg
-43.45 %
ResiC. 11.26 mg
56.55 %
Dpeak 80.0°C
5. mg
100.
200.
300.
400.
°C

LABCORE Data Entry Template for Worklist# 291

2/1/95 BDV

Analyst: DWS **Instrument:** TGA01 _____ **Method:** LA-560-112 ~~A~~ A-2

Worklist Comment: Please run BY-106 TGA under N2. bdv WHC-SD-WM-DP-103, REV. 0

Seg	Type	Sample#	Rep	Al	Test	Matrix	Actual	Found	DL	Unit
1	STD	42NB-R			TGA-01	LIQUID	59.19	58.59	N/A	%
2	SAMPLE	S94T000355	0		TGA-01	LIQUID	N/A	54.57		%
3	DUP	S94T000355	0		TGA-01	LIQUID	54.57	55.22	N/A	%

Final page for worklist # 291

Analyst Signature

1-30-95
Date

1-31-95

2/1/95

Verified by Blandina Valenzuela

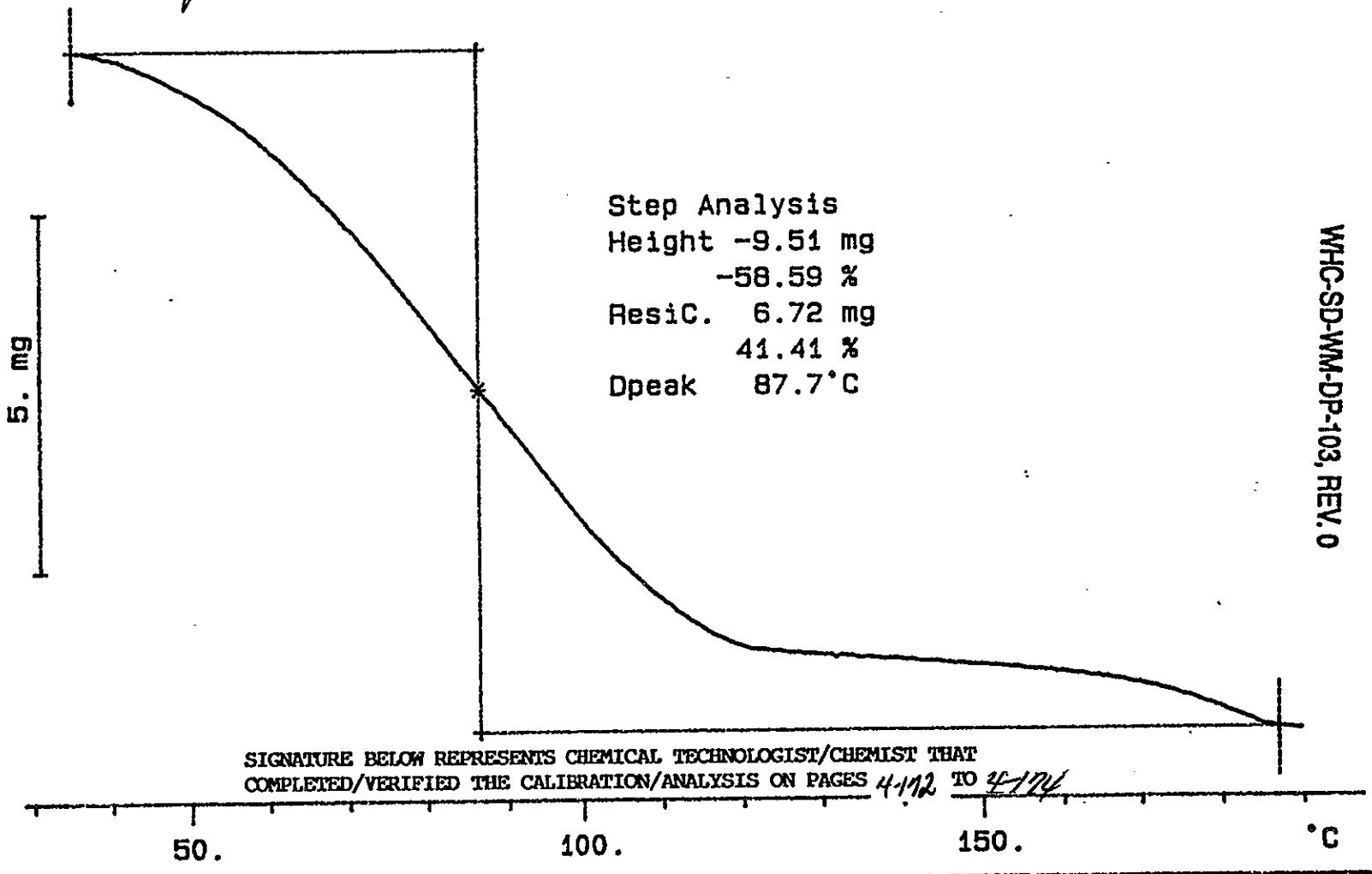
Data Entry Comments:

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

Page: 1

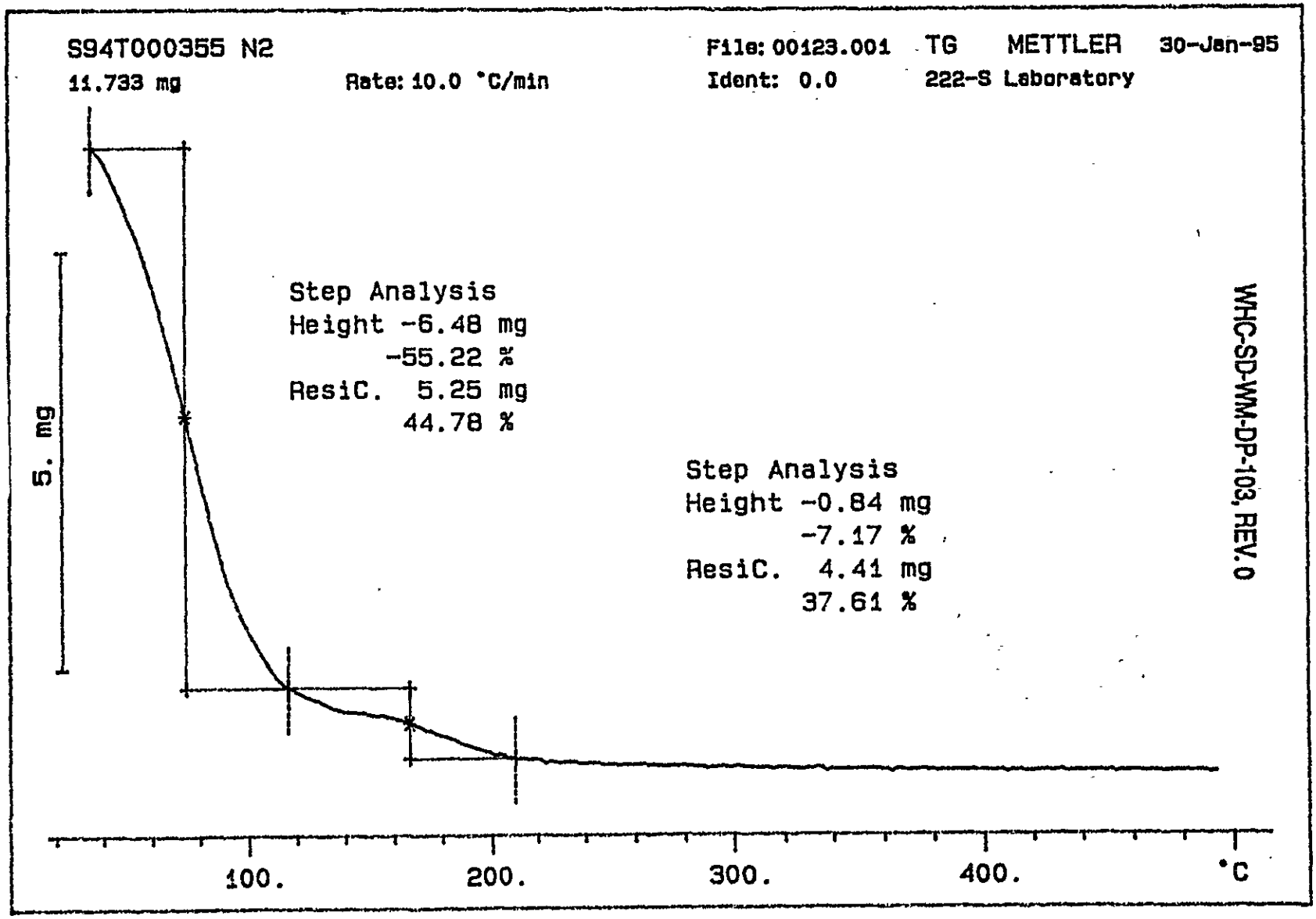
TGA STD 42N8A
16.228 mg gmf 1/30/95 Rate: 10.0 °C/min

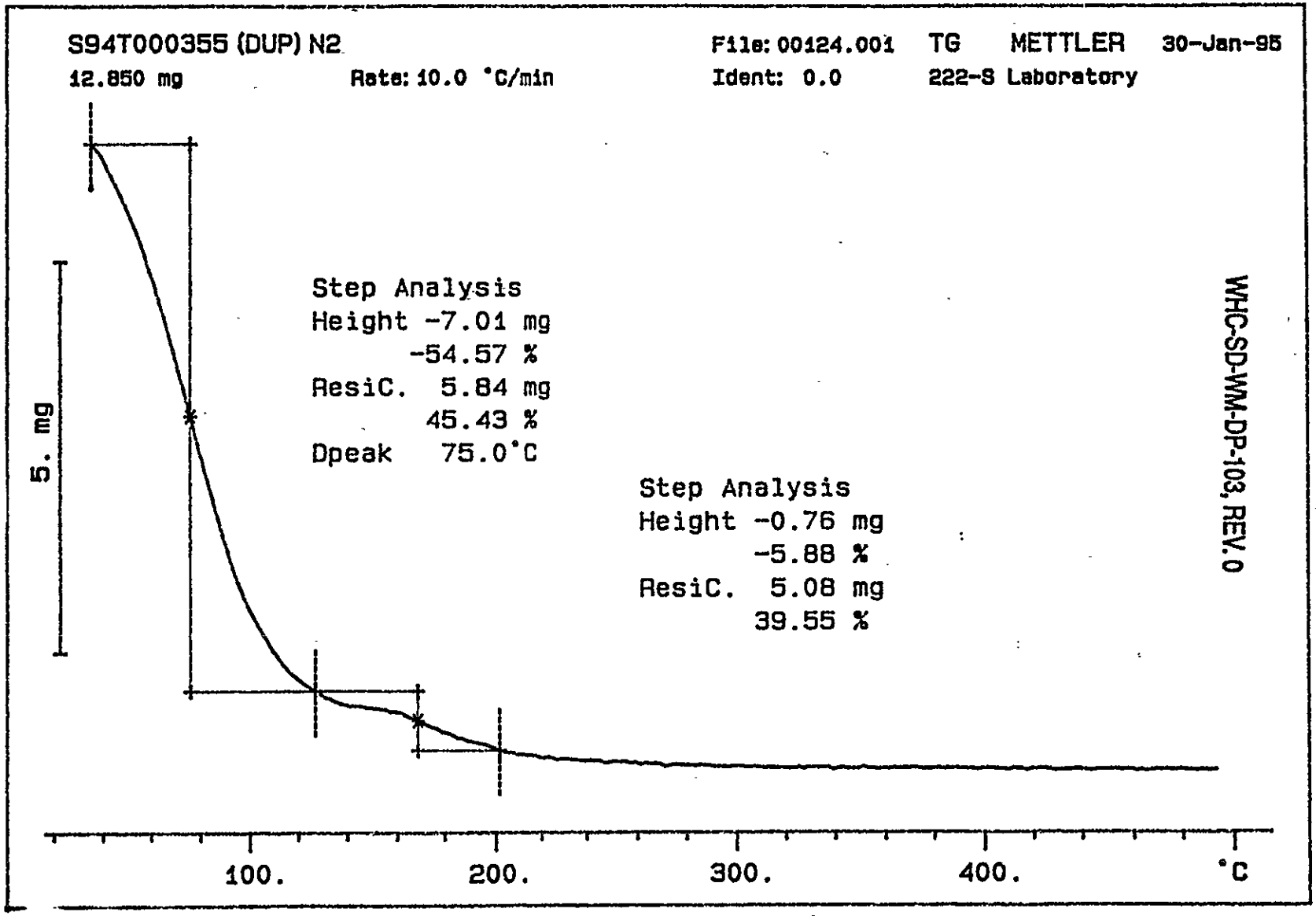
File: 00122.001 TG METTLER 30-Jan-95
Ident: 0.0 222-S Laboratory



SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 4-172 TO 4-174

Ronald W Smith
1-30-95


S94T000355 N2
11.733 mg
Rate: 10.0 °C/min
File: 00123.001 TG METTLER 30-Jan-95
Ident: 0.0 222-S Laboratory
Step Analysis
Height -6.48 mg
-55.22 %
ResiC. 5.25 mg
44.78 %
Step Analysis
Height -0.84 mg
-7.17 %
ResiC. 4.41 mg
37.61 %
5. mg
100.
200.
300.
400.
°C


S94T000355 (DUP) N2
12.850 mg
Rate: 10.0 °C/min
File: 00124.001
Ident: 0.0
TG
METTLER
222-S Laboratory
30-Jan-95
Step Analysis
Height -7.01 mg
-54.57 %
ResiC. 5.84 mg
45.43 %
Dpeak 75.0°C
Step Analysis
Height -0.76 mg
-5.88 %
ResiC. 5.08 mg
39.55 %
5. mg
100.
200.
300.
400.
°C

LABCORE Data Entry Template for Worklist# 350

Analyst: KLV **Instrument:** TGA01 _____ **Method:** LA-560-112 A-2

Worklist Comment: Please run BY-106 TGA under N2. bdv WHC-SD-WM-DP-103, REV. 0

Seg	Type	Sample#	Rep	Al	Test	Matrix	Actual	Found	DL	Unit
1	STD	42N8A			TGA-01	SOLID	59.19	58.72 8 1-24-95 BDV	N/A	%
2	SAMPLE	S94T000381	0		TGA-01	SOLID	N/A	3.51		%
3	DUP	S94T000381	0		TGA-01	SOLID	3.51	4.05	N/A	%
4	SAMPLE	S94T000390	0		TGA-01	SOLID	N/A	26.83		%
5	DUP	S94T000390	0		TGA-01	SOLID	26.83	27.76	N/A	%

Final page for worklist # 350

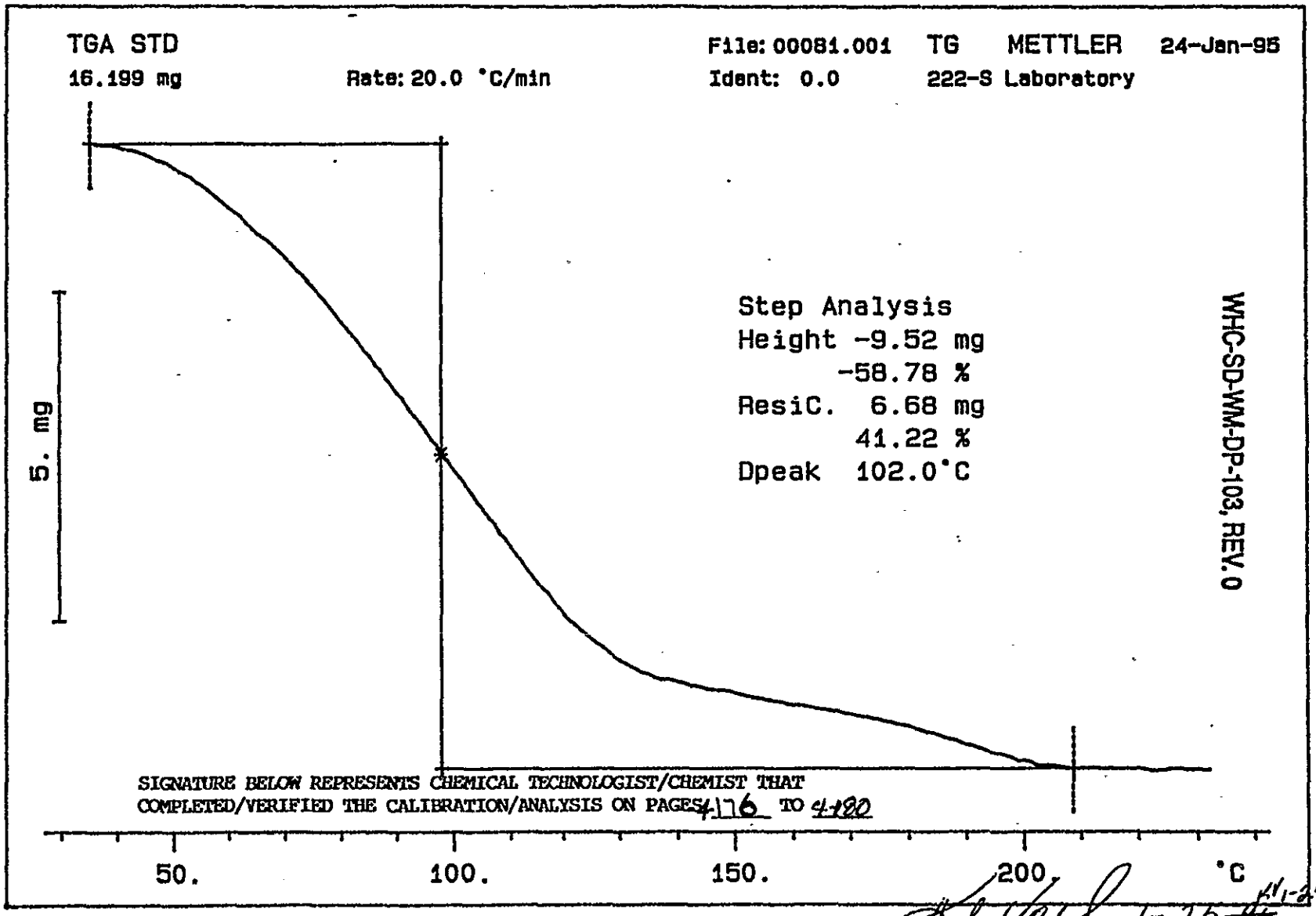
Analyst Signature

~~1-12-95~~ KV 1-24-95 1-24-95
Date

RE Wright
Verified by Blandina Valenzuela 1/26/95

BEST AVAILABLE COPY

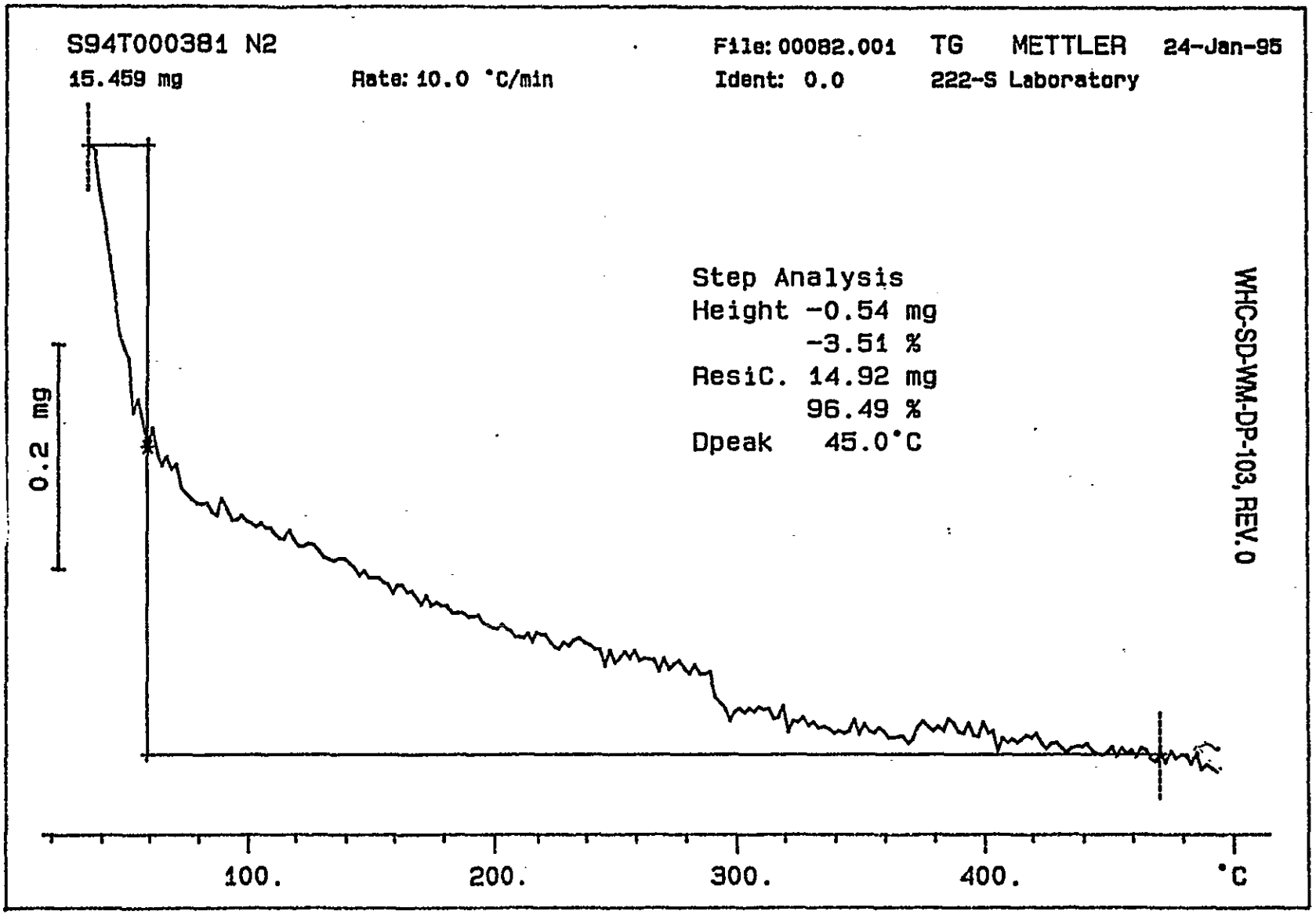
Data Entry Comments: Scan rate for S94T000381 was 20°C/minute this was due to a tech error. The analysis and data will not be ~~of~~ affected.
Scan rate for S94T000390 was 20°C/min, for the dup it was ~~30°C/min~~ 10°C/min 1/26/95 BDV
Units shown for QC (SPK) may not reflect the actual units. The results are very similar. The data should not be affected

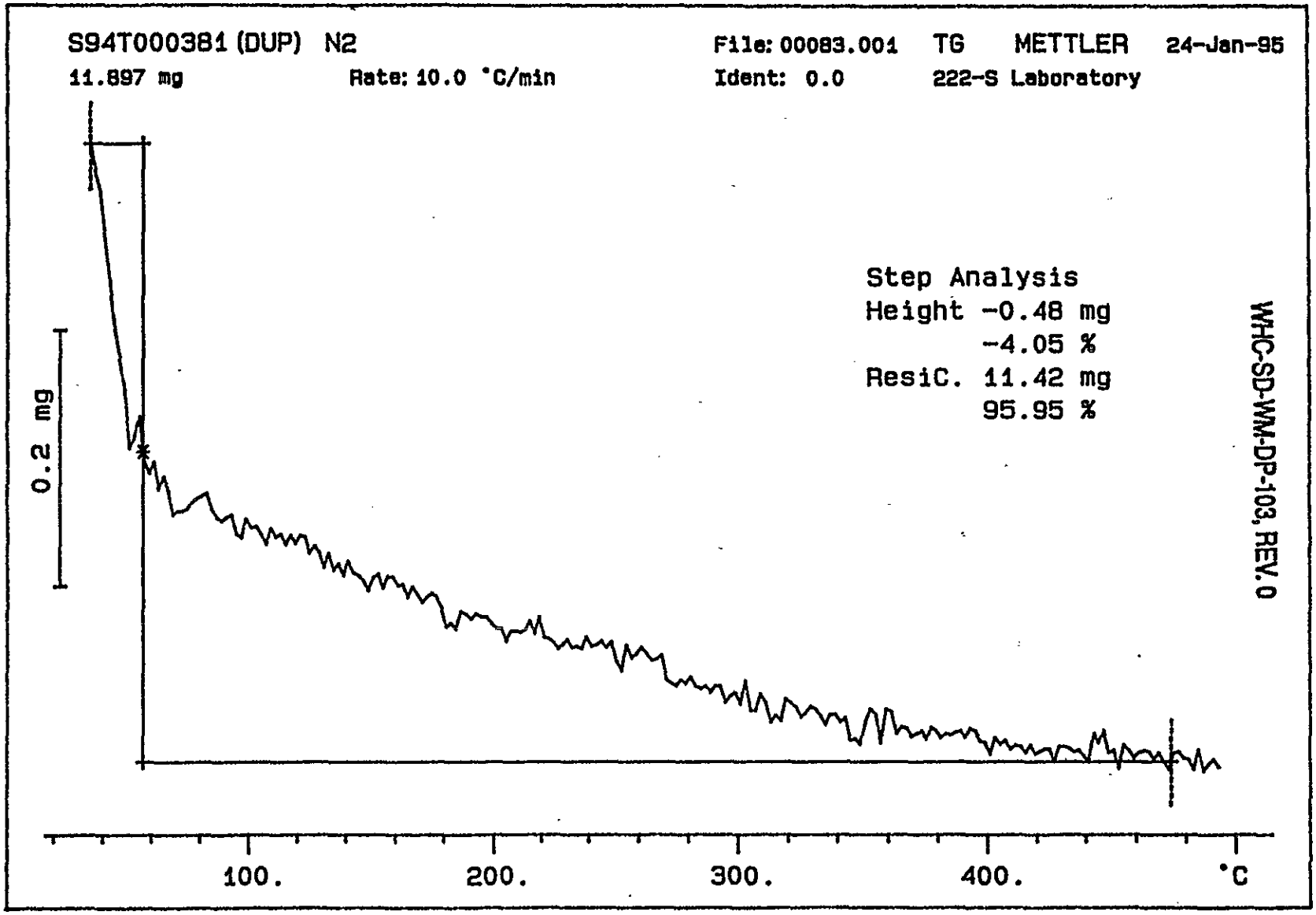


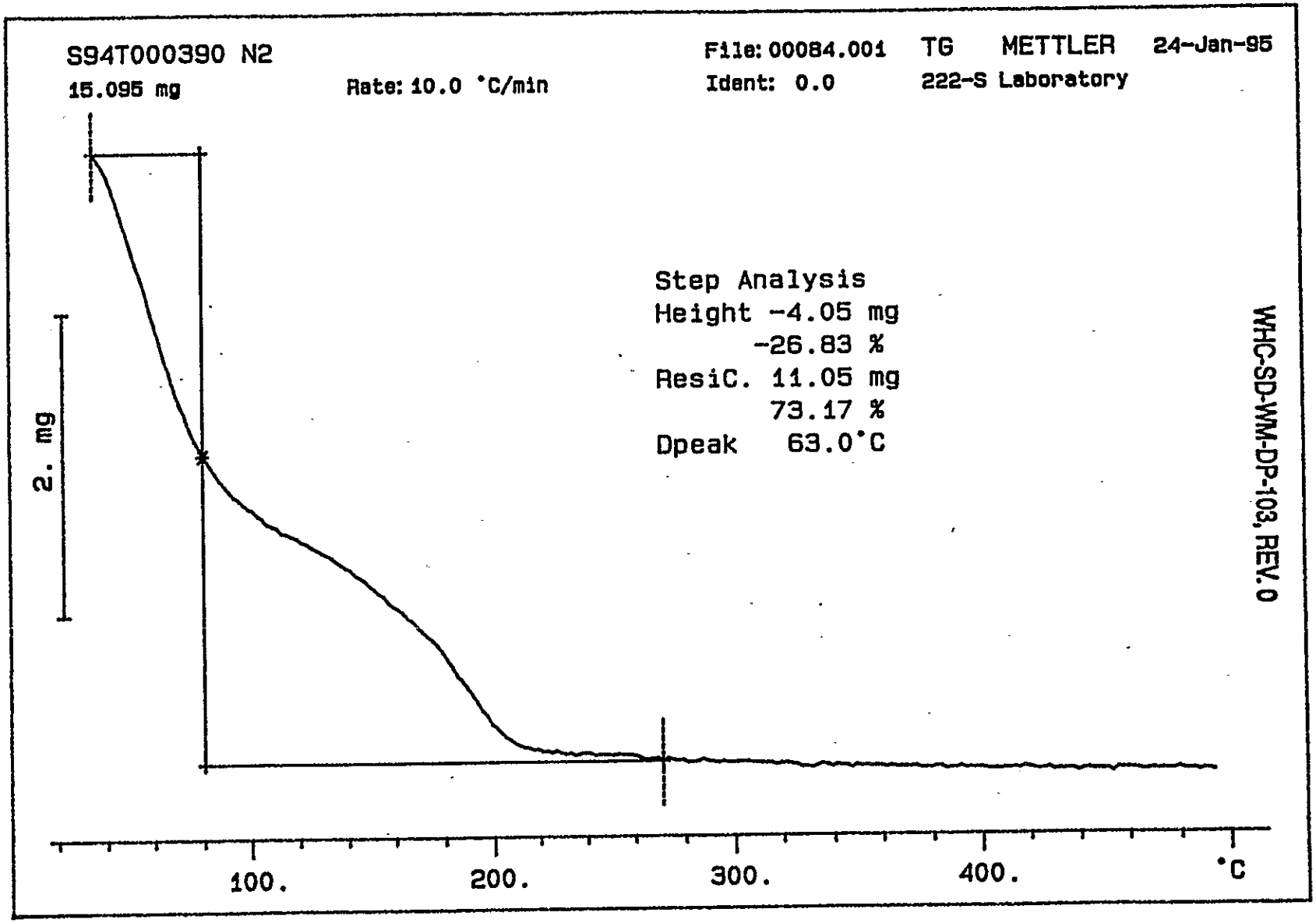
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 4-176 TO 4-180

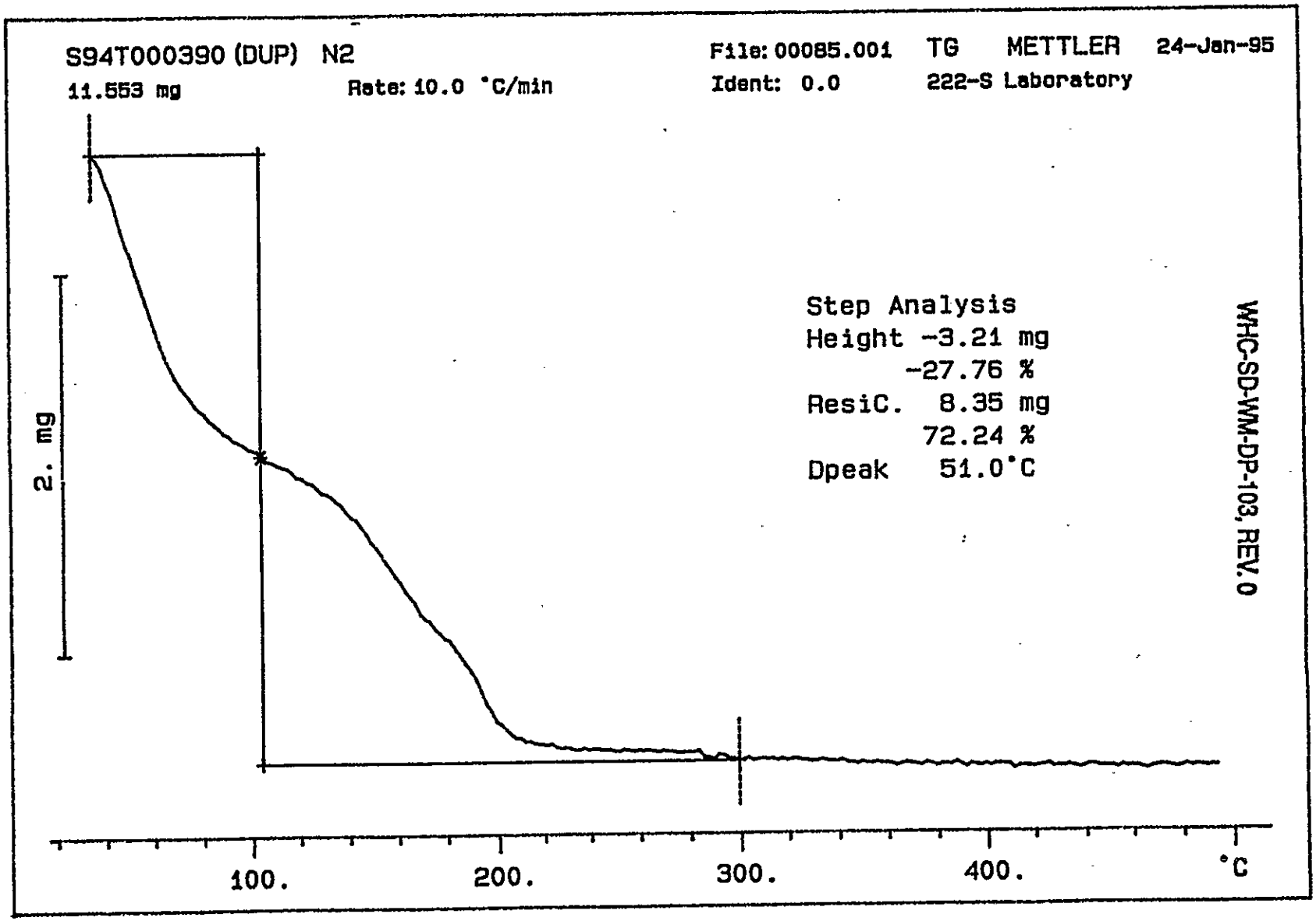
1-24-95

1-24-95


S94T000381 N2
15.459 mg
Rate: 10.0 °C/min
File: 00082.001
TG METTLER
24-Jan-95
Ident: 0.0
222-S Laboratory
Step Analysis
Height -0.54 mg
-3.51 %
ResiC. 14.92 mg
96.49 %
Dpeak 45.0°C
0.2 mg
100.
200.
300.
400.
°C


S94T000381 (DUP) N2
11.897 mg
Rate: 10.0 °C/min
File: 00083.001 TG METTLER 24-Jan-95
Ident: 0.0 222-S Laboratory
Step Analysis
Height -0.48 mg
-4.05 %
ResiC. 11.42 mg
95.95 %
0.2 mg
100.
200.
300.
400.
°C


S94T000390 N2
15.095 mg
Rate: 10.0 °C/min
File: 00084.001
Ident: 0.0
TG
METTLER
24-Jan-95
222-S Laboratory
Step Analysis
Height -4.05 mg
-26.83 %
ResiC. 11.05 mg
73.17 %
Dpeak 63.0°C
2. mg
100.
200.
300.
400.
°C


S94T000390 (DUP) N2
11.553 mg
Rate: 10.0 °C/min
File: 00085.001 TG METTLER 24-Jan-95
Ident: 0.0 222-S Laboratory
Step Analysis
Height -3.21 mg
-27.76 %
ResiC. 8.35 mg
72.24 %
Dpeak 51.0°C
2. mg
100.
200.
300.
400.
°C

LABCORE Data Entry Template for Worklist# 351

Analyst: DWS **Instrument:** TGA01 **Method:** LA-560-112 A-2

Worklist Comment: Please run BY-106 TGA under N2. bdv

Seg	Type	Sample#	Rep Al	Test	Matrix	Actual	Found	DL	Unit
1	STD	42N8A		TGA-01	SOLID	59.19	58.60	N/A	%
2	SAMPLE	S94T000372	0	TGA-01	SOLID	N/A	25.39		%
3	DUP	S94T000372	0	TGA-01	SOLID	25.39	14.24	N/A	%
4	DUP2	S94T000372	0	TGA-01	SOLID	25.39	23.54	N/A	%
5	SAMPLE	S94T000373	0	TGA-01	SOLID	N/A	20.10		%
6	DUP	S94T000373	0	TGA-01	SOLID	20.10	17.41	N/A	%
7	DUP2	S94T000373	0	TGA-01	SOLID	20.10	11.66	N/A	%
8	STD			TGA-01	SOLID	59.19	58.66	N/A	%

Final page for worklist # 351

See attached for signatures
Analyst Signature

2-9-95
Date

Entered and verified by Blandina Valenzuela 2-9-95

Data Entry Comments: The second standard corresponds with both DUP2's

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

LABCORE Data Entry Template for Worklist# 351

Analyst: PWS Instrument: TGA01 _____ Method: LA-560-112 ~~D-0~~ A-2 2/9/95 BDV

Worklist Comment: Please run BY-106 TGA under N2. bdv

Seg	Type	Sample#	Rep	Al	Test	Matrix	Actual	Found	DL	Unit
1	STD	4/2W8-A			TGA-01	SOLID	59.19	58.60	N/A	%
2	SAMPLE	S94T000372	0		TGA-01	SOLID	N/A			%
3	DUP	S94T000372	0		TGA-01	SOLID			N/A	%
4	SAMPLE	S94T000373	0		TGA-01	SOLID	N/A			%
5	DUP	S94T000373	0		TGA-01	SOLID			N/A	%

Final page for worklist # 351

Analyst Signature

1-30-95
Date

WHC-SD-WM-DP-103, REV. 0

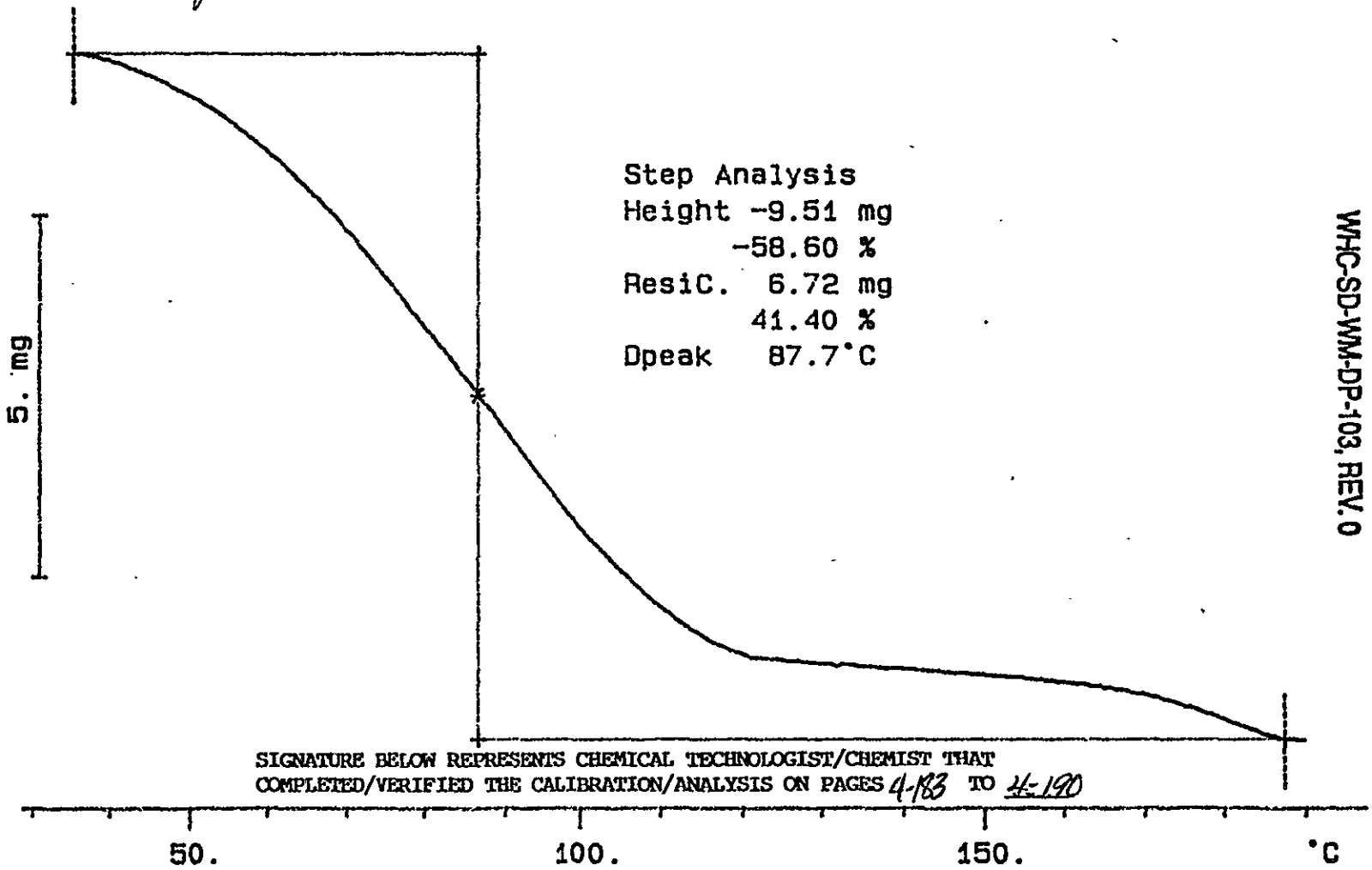
Data Entry Comments:

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

Page: 1

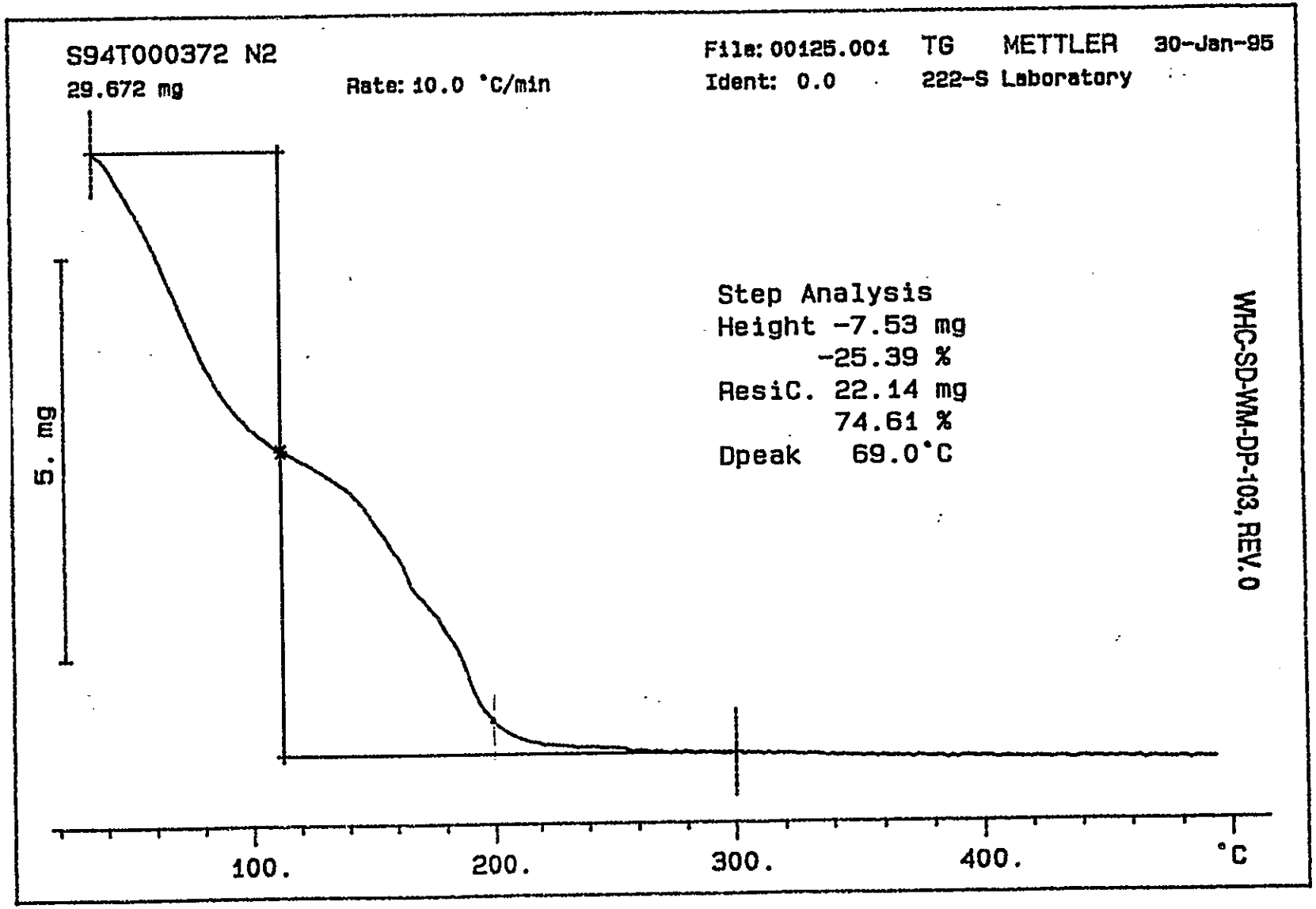
TGA STD 42N8A
16.228 mg gmF 1/20/95 Rate: 10.0 °C/min

File: 00122.001 TG METTLER 30-Jan-95
Ident: 0.0 222-S Laboratory

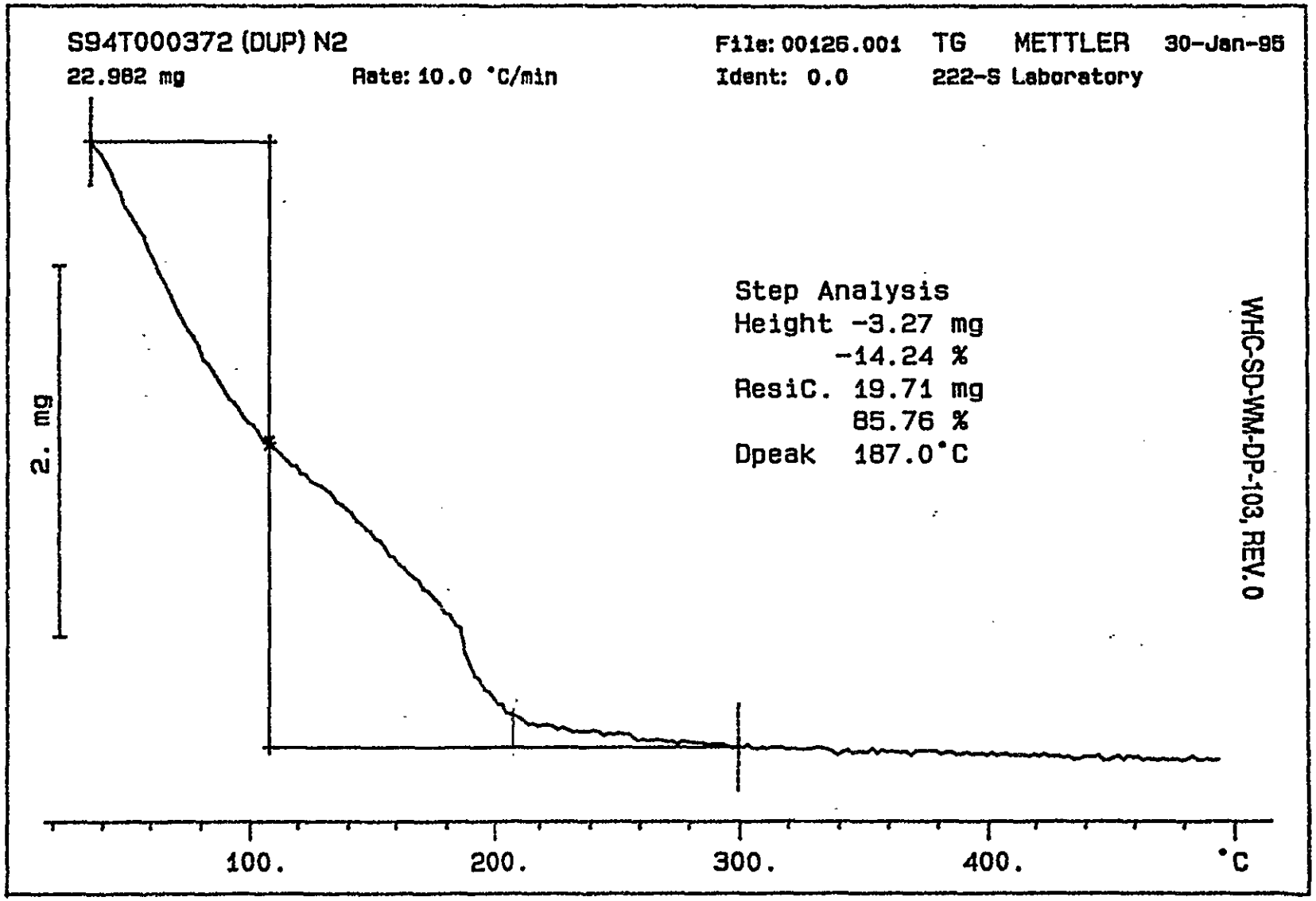


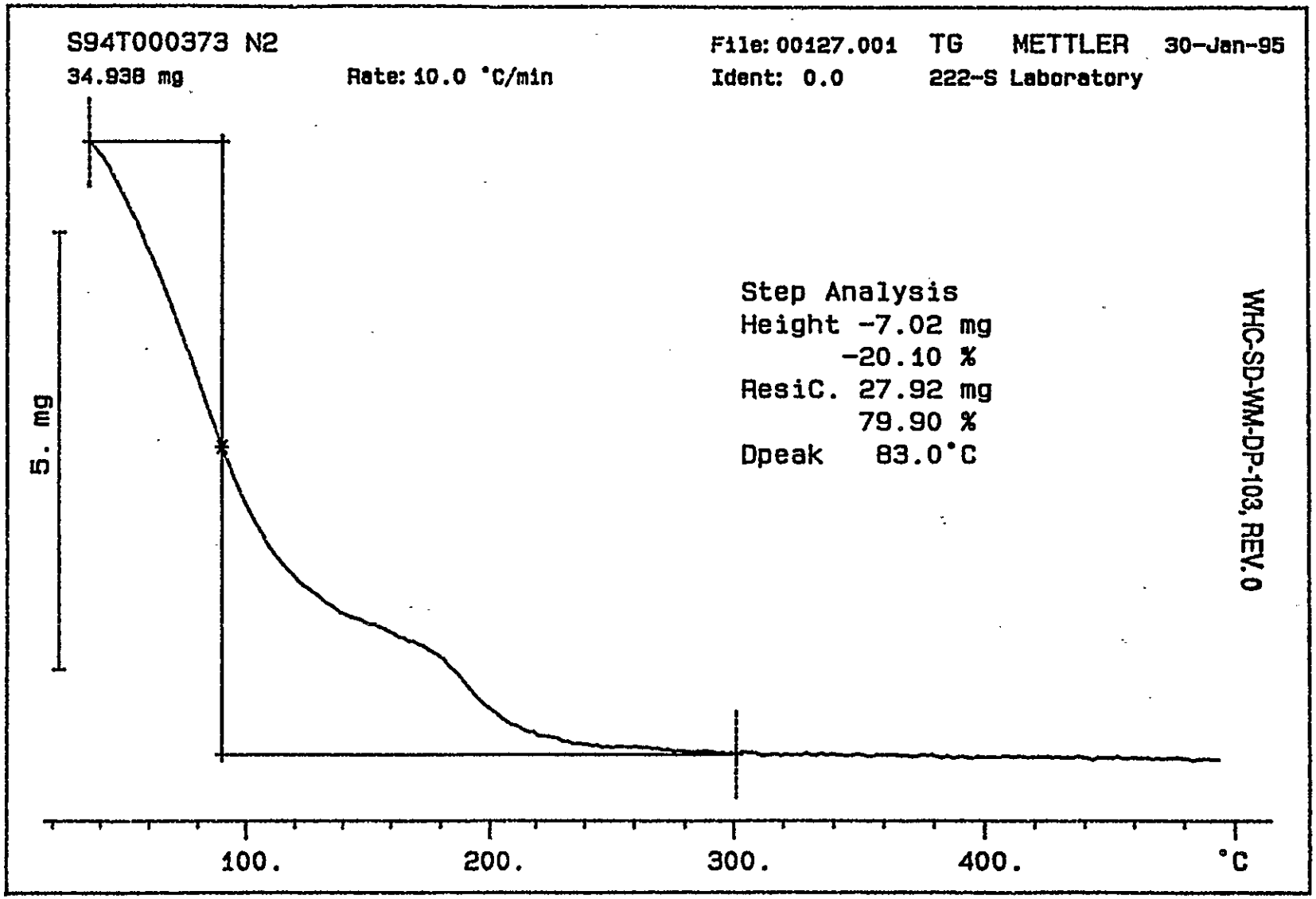
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 4-183 TO 4-190

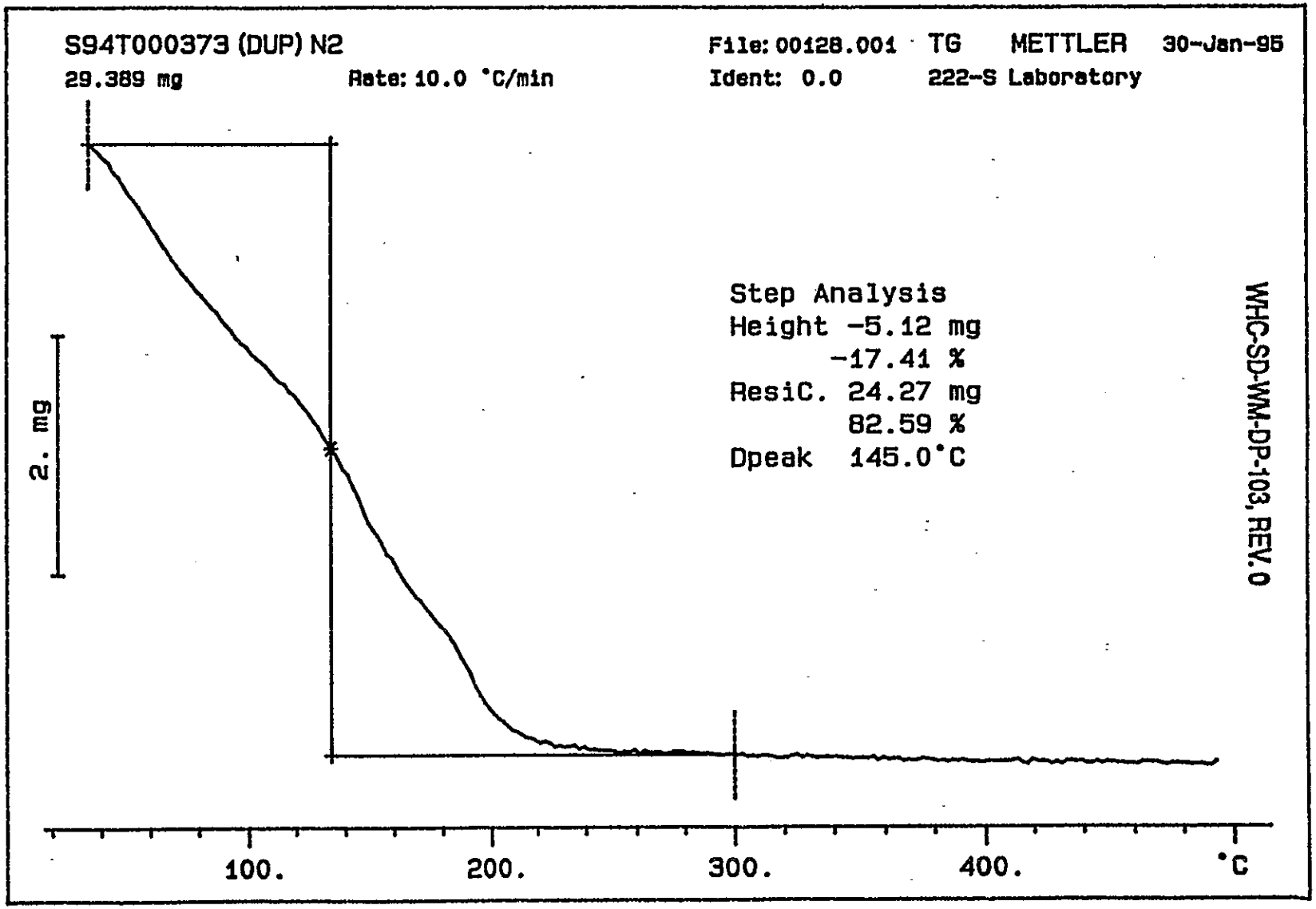
David W. Sunnett 1-30-95

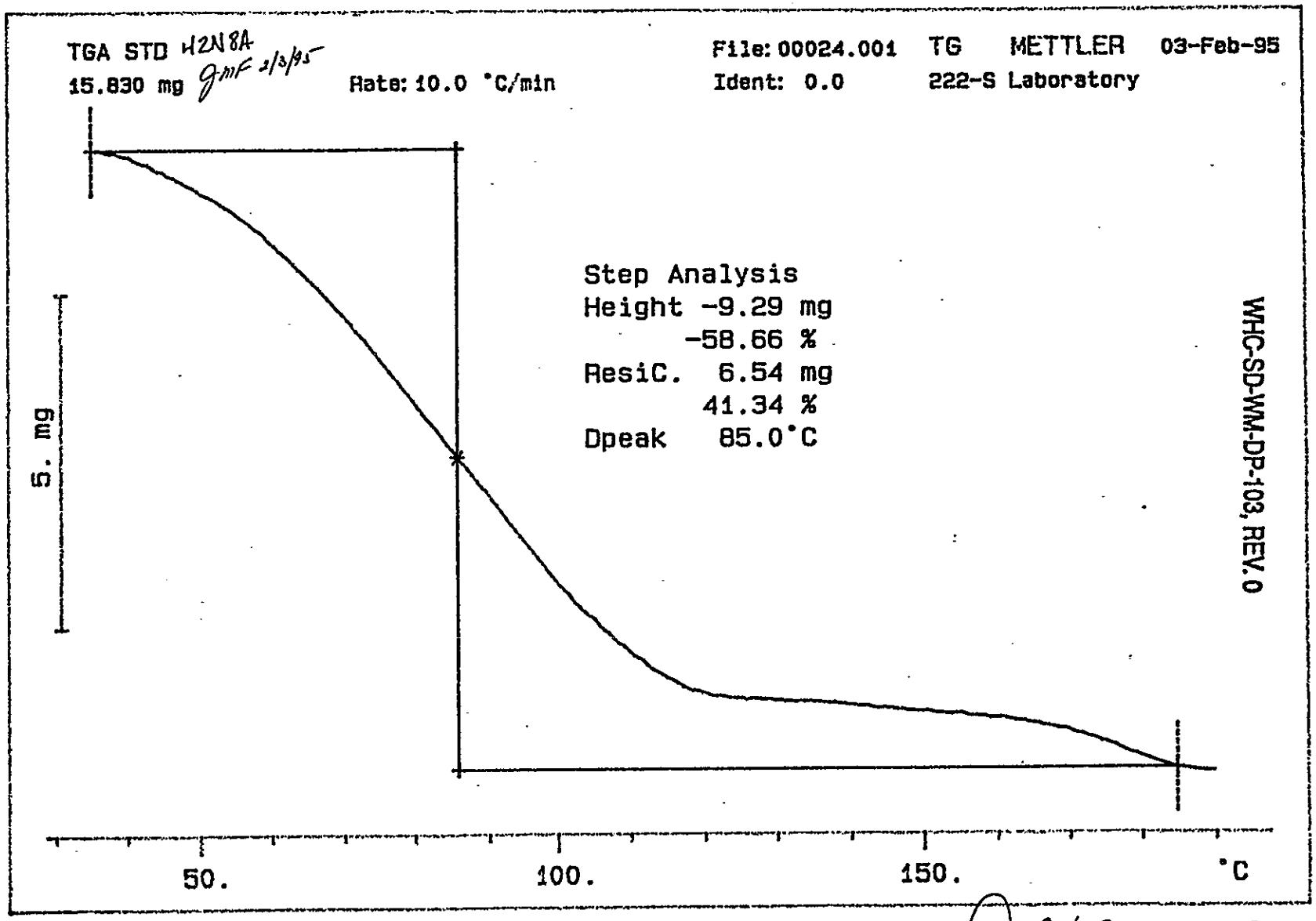


WHC-SD-WM-DP-103, REV. 0

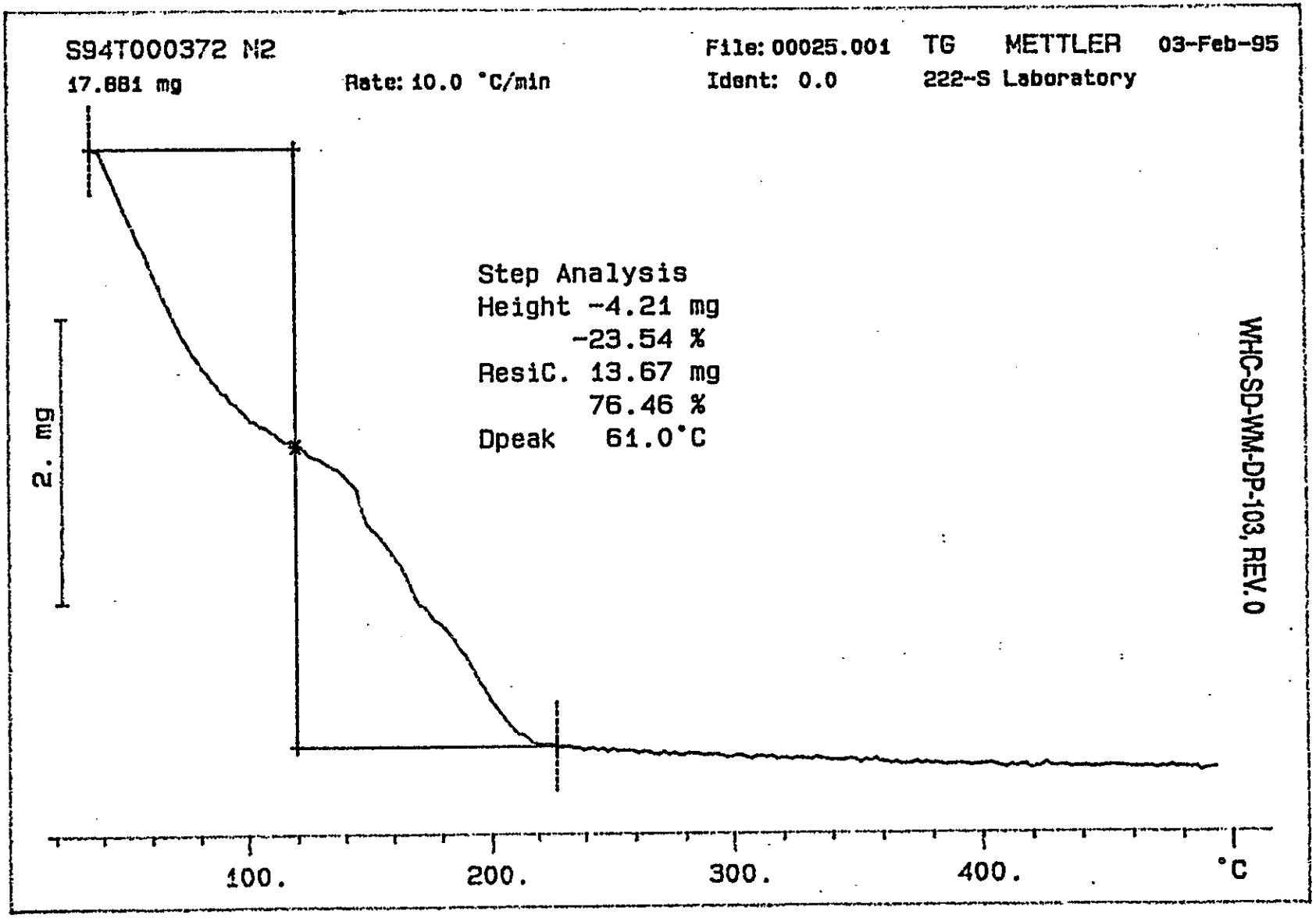

S94T000372 (DUP) N2
22.982 mg
Rate: 10.0 °C/min
File: 00126.001 TG METTLER 30-Jan-95
Ident: 0.0 222-S Laboratory
Step Analysis
Height -3.27 mg
-14.24 %
ResiC. 19.71 mg
85.76 %
Dpeak 187.0°C
2. mg
100.
200.
300.
400.
°C

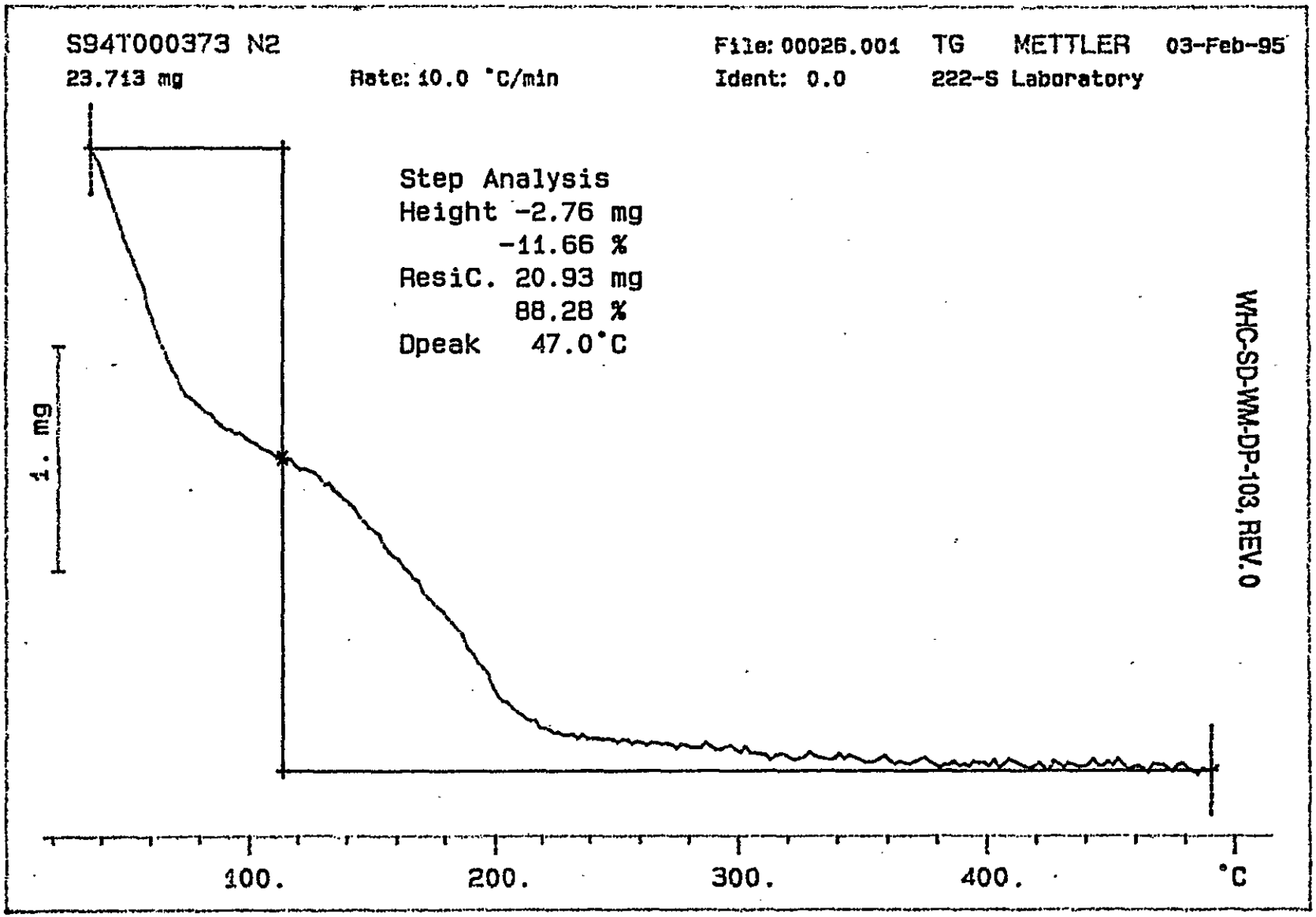

S94T000373 N2
34.938 mg
Rate: 10.0 °C/min
File: 00127.001 TG METTLER 30-Jan-95
Ident: 0.0 222-S Laboratory
Step Analysis
Height -7.02 mg
-20.10 %
ResiC. 27.92 mg
79.90 %
Dpeak 83.0°C
5. mg
100.
200.
300.
400.
°C


S94T000373 (DUP) N2
29.389 mg
Rate: 10.0 °C/min
File: 00128.001 TG METTLER 30-Jan-95
Ident: 0.0 222-S Laboratory
Step Analysis
Height -5.12 mg
-17.41 %
ResiC. 24.27 mg
82.59 %
Dpeak 145.0°C
2. mg
100.
200.
300.
400.
°C


TGA STD H2N8A
15.830 mg
Rate: 10.0 °C/min
File: 00024.001
TG METTLER 03-Feb-95
Ident: 0.0
222-S Laboratory
Step Analysis
Height -9.29 mg
-58.66 %
ResiC. 6.54 mg
41.34 %
Dpeak 85.0°C
5. mg
50.
100.
150.
°C

2-3-95


S94T000372 N2
17.881 mg
Rate: 10.0 °C/min
File: 00025.001
Ident: 0.0
TG
METTLER
03-Feb-95
222-S Laboratory
Step Analysis
Height -4.21 mg
-23.54 %
ResiC. 13.67 mg
76.46 %
Dpeak 61.0°C
2. mg
100.
200.
300.
400.
°C


S94T000373 N2
23.713 mg
Rate: 10.0 °C/min
File: 00026.001
TG METTLER 03-Feb-95
Ident: 0.0
222-S Laboratory
Step Analysis
Height -2.76 mg
-11.66 %
ResiC. 20.93 mg
88.28 %
Dpeak 47.0°C
1. mg
100.
200.
300.
400.
°C

KB

By/OC WHC-SD-WM-DP-103, REV. 1

LABCORE Data Entry Template for Worklist# 355

Analyst: KLV **Instrument:** TGA01 _____ **Method:** LA-560-112 A -2

Worklist Comment: PLease run under N2. JMF WHC-SD-WM-DP-103, REV. 0

Seg	Type	Sample#	Rep	Al	Test	Matrix	Actual	Found	DL	Unit
1	STD	42W8A			TGA-01	SOLID	59.19	59.28	N/A	%
2	SAMPLE	S94T000391	0		TGA-01	SOLID	N/A	12.26		%
3	DUP	S94T000391	0		TGA-01	SOLID	12.26	10.15	N/A	%

Final page for worklist # 355

Analyst Signature

1-5-95
Date

1-13-95

1-17-95

Verified by Blandina Valenzuela

Data Entry Comments:

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

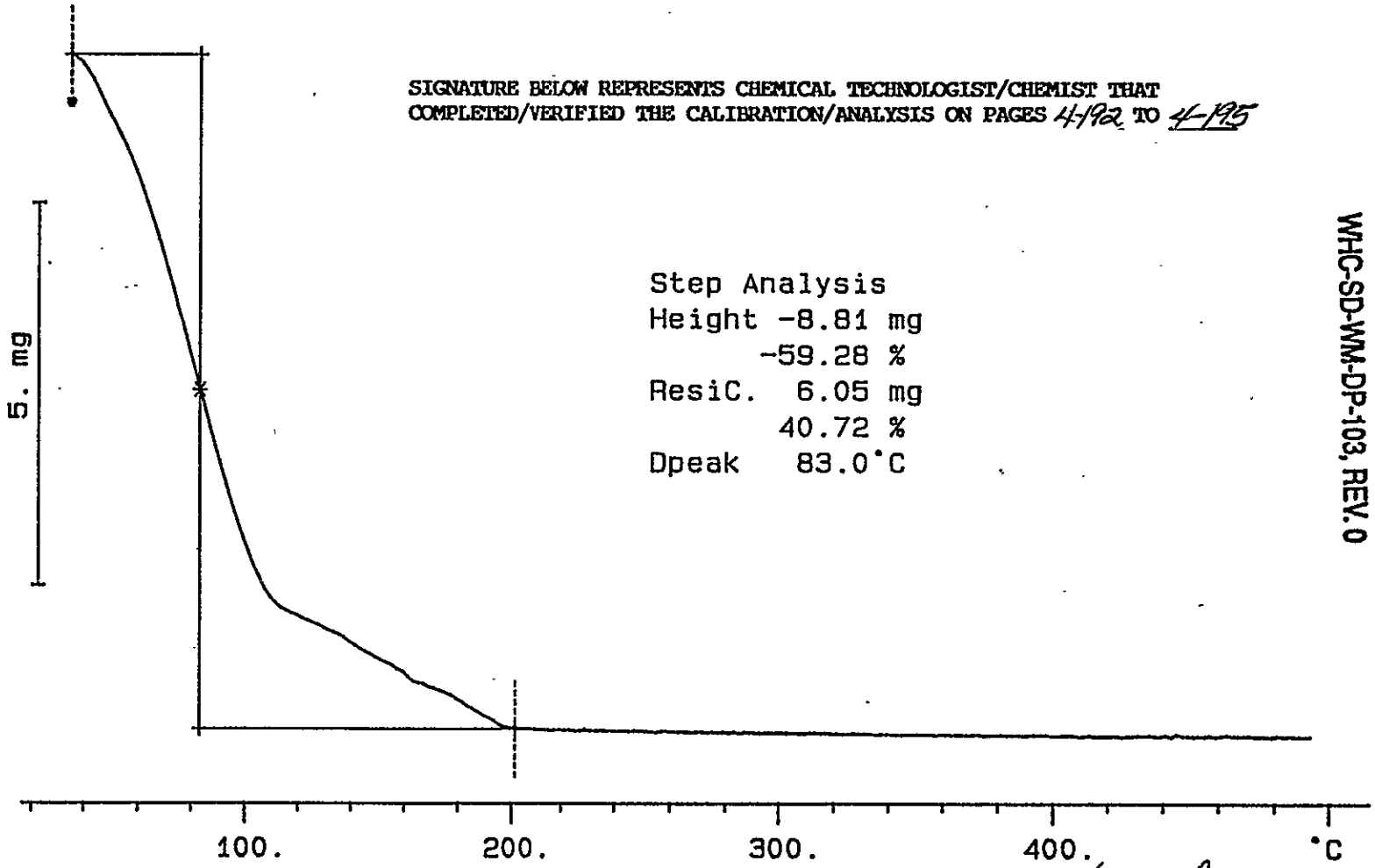
Page: 1

TGA STD
14.860 mg

Rate: 10.0 °C/min

File: 00002.001 TG METTLER 05-Jan-95
Ident: 0.0 · 222-S Laboratory

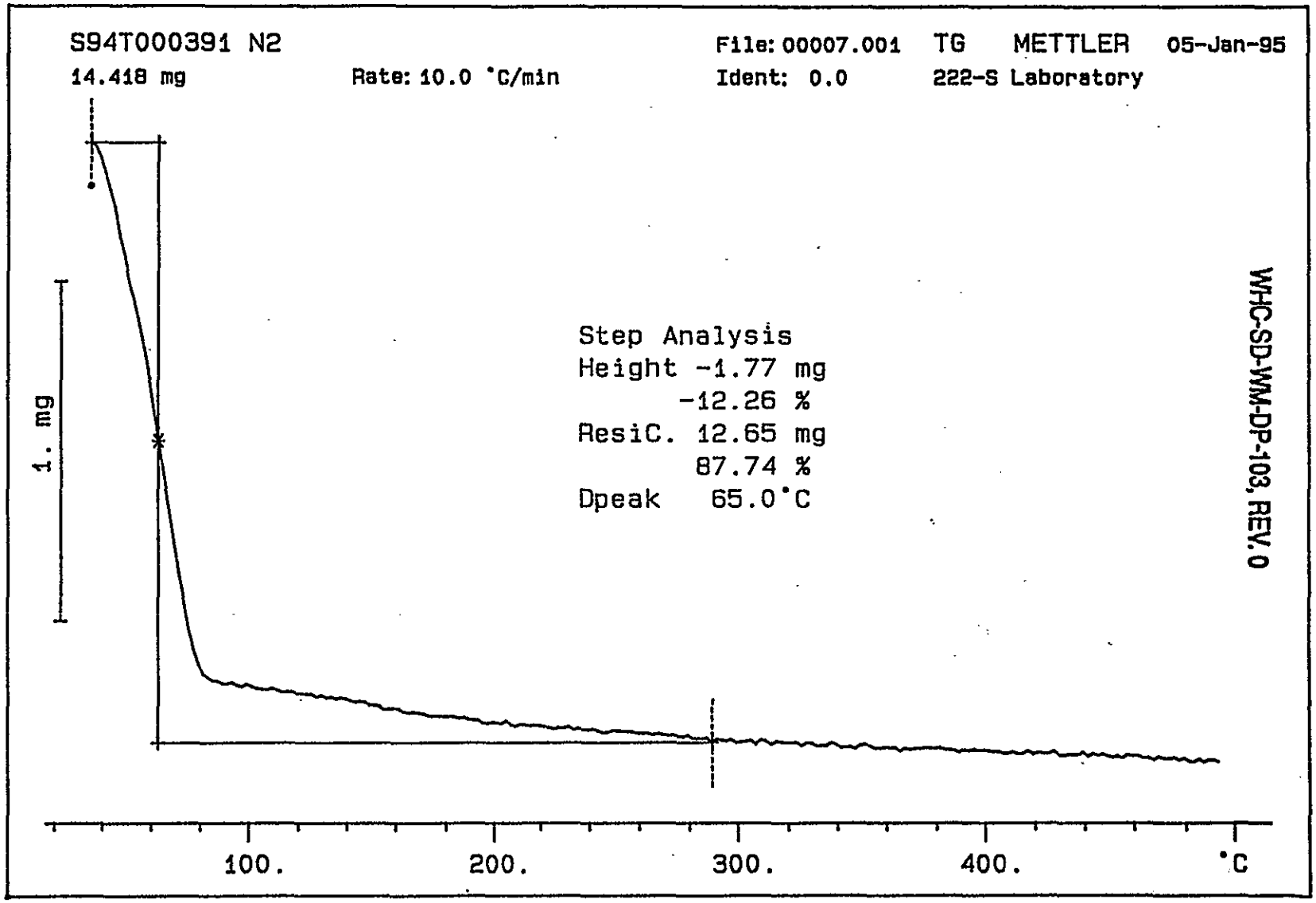
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 4-192 TO 4-195

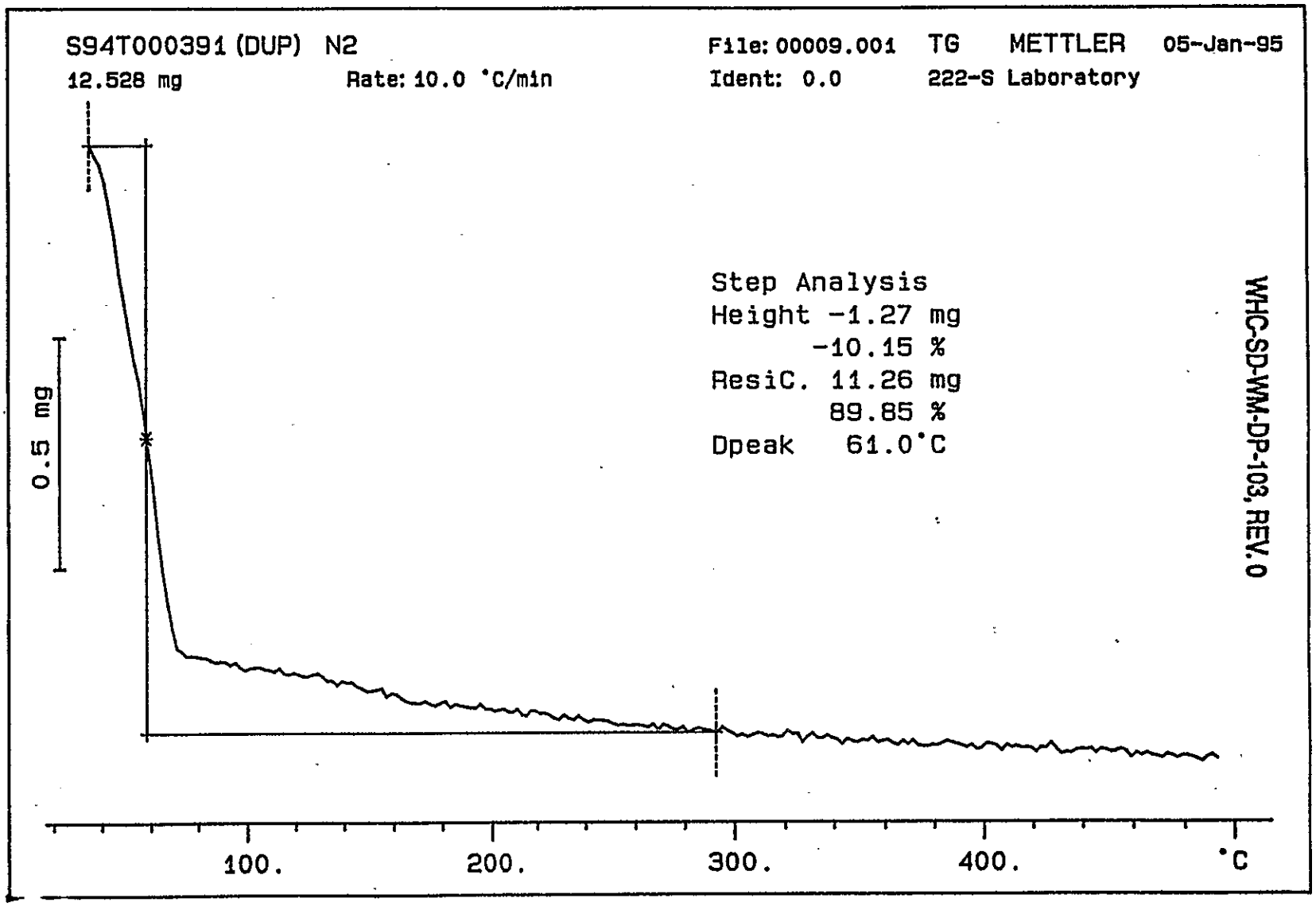


Step Analysis
Height -8.81 mg
-59.28 %
ResiC. 6.05 mg
40.72 %
Dpeak 83.0°C

Std # 42N8A gmf 1/5/95

KL Vogel 1-5-95


S94T000391 N2
14.418 mg
Rate: 10.0 °C/min
File: 00007.001
Ident: 0.0
TG
METTLER
05-Jan-95
222-S Laboratory
Step Analysis
Height -1.77 mg
-12.26 %
ResiC. 12.65 mg
87.74 %
Dpeak 65.0°C
1. mg
100.
200.
300.
400.
°C


S94T000391 (DUP) N2
12.528 mg
Rate: 10.0 °C/min
File: 00009.001 TG METTLER 05-Jan-95
Ident: 0.0 222-S Laboratory
Step Analysis
Height -1.27 mg
-10.15 %
ResiC. 11.26 mg
89.85 %
Dpeak 61.0°C
5.0 mg
100.
200.
300.
400.
°C

LABCORE Data Entry Template for Worklist# 369

Analyst: KLV **Instrument:** TGA01 _____ **Method:** LA-560-112 A-2

Worklist Comment: Please run BY-106 under N2. bdv WHC-SD-WM-DP-103, REV. 0

Seg	Type	Sample#	Rep	Al	Test	Matrix	Actual	Found	DL	Unit
1	STD	42N8A			TGA-01	LIQUID	1-27-95 BDV ~~57.88~~ 59.19	57.88	N/A	%
2	SAMPLE	S94T000371	0		TGA-01	LIQUID	N/A	63.85		%
3	DUP	S94T000371	0		TGA-01	LIQUID	1-27-95 BDV ~~64.07~~ 63.25	64.07	N/A	%
4	SAMPLE	S95T000004	0		TGA-01	LIQUID	N/A	68.57		%
5	DUP	S95T000004	0		TGA-01	LIQUID	68.57	67.93	N/A	%

Final page for worklist # 369

Analyst Signature _____ Date 1-27-95

1-31-95

Verified by Blandina Valenzuela 2/1/95

Data Entry Comments:

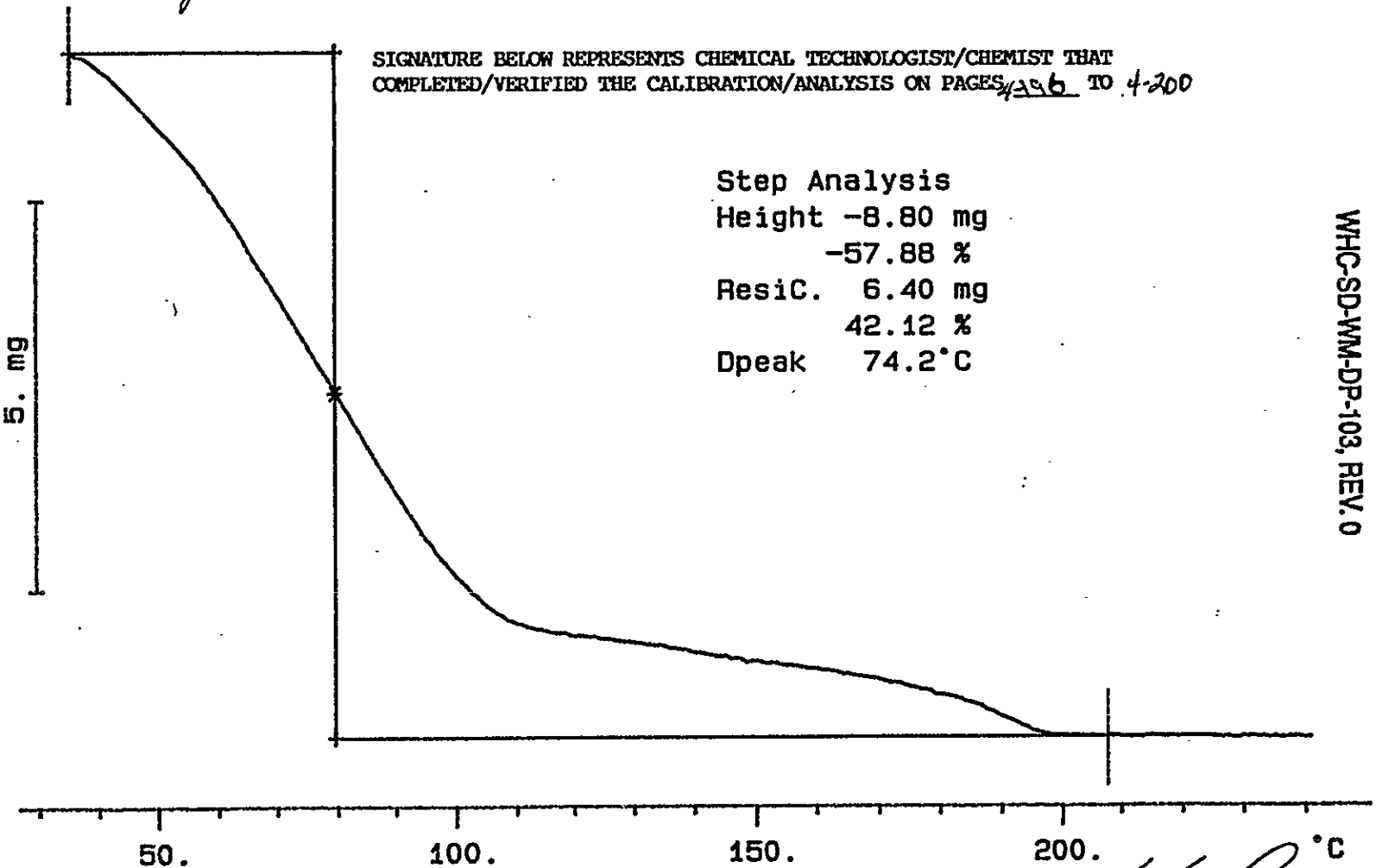
Units shown for QC (SPK) may not reflect the actual units.

TGA STD 42N8A
15.199 mg gmf 1/27/95

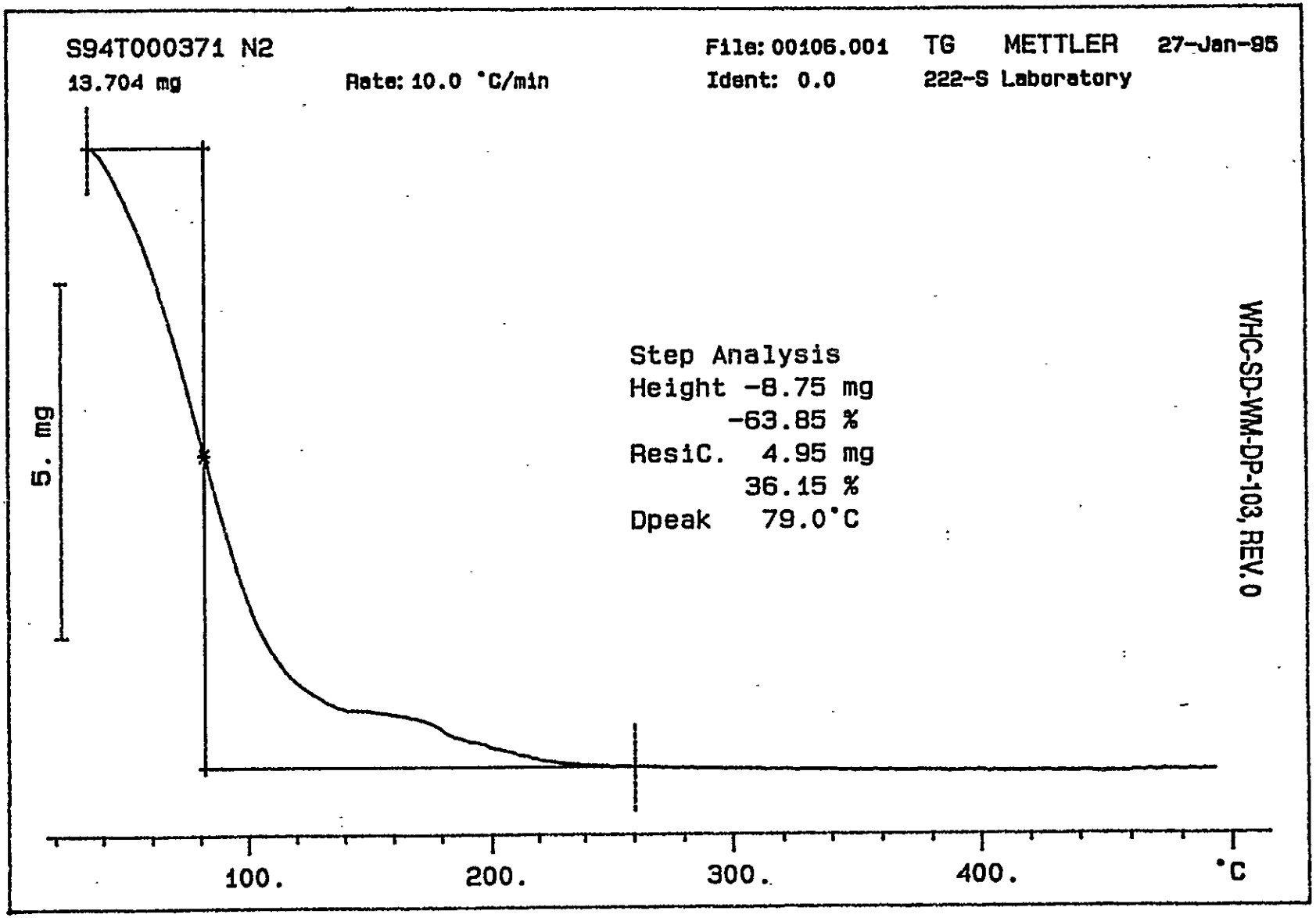
Rate: 10.0 °C/min

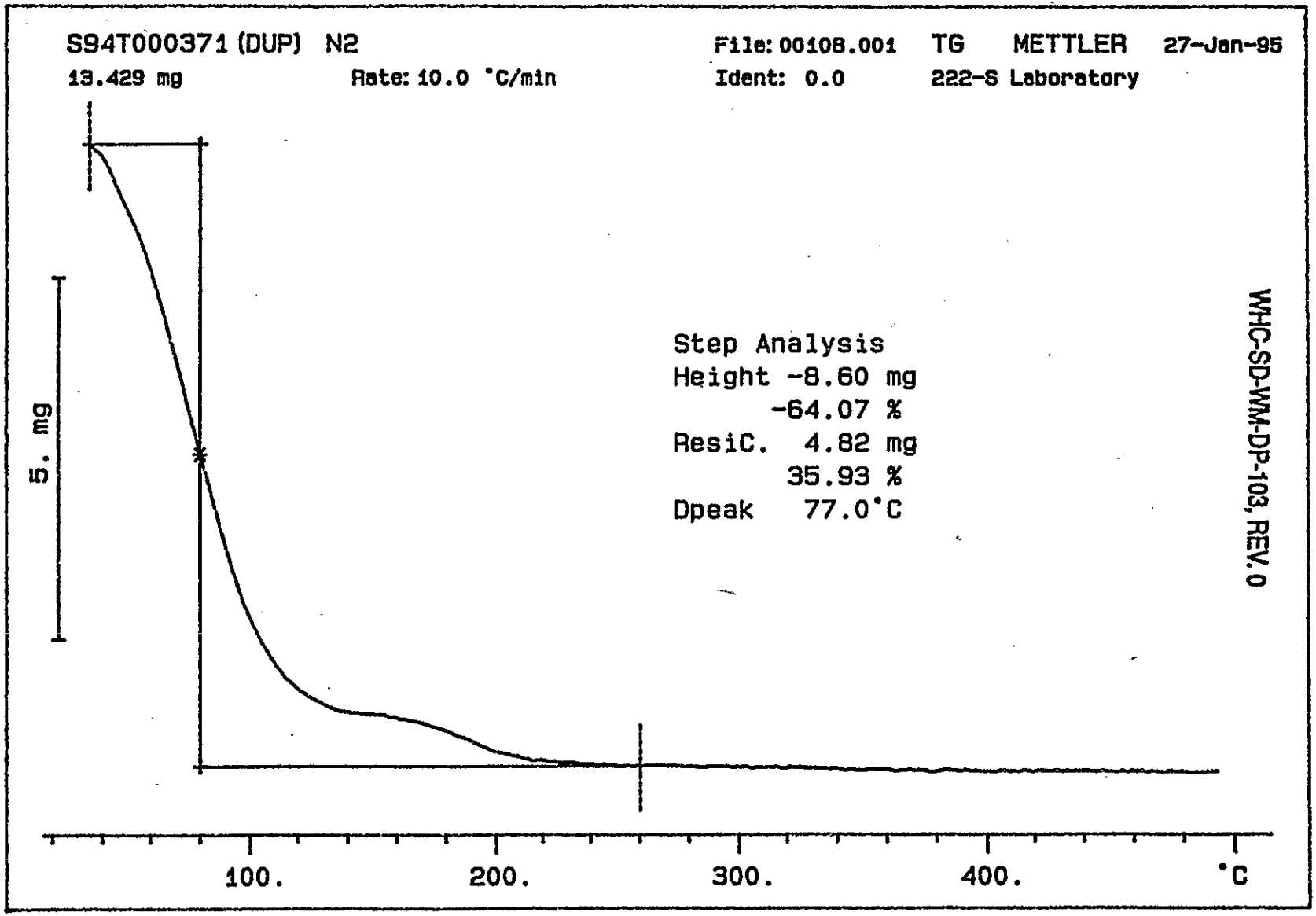
File: 00104.001 TG METTLER 27-Jan-95
Ident: 0.0 222-S Laboratory

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 4-196 TO 4-200

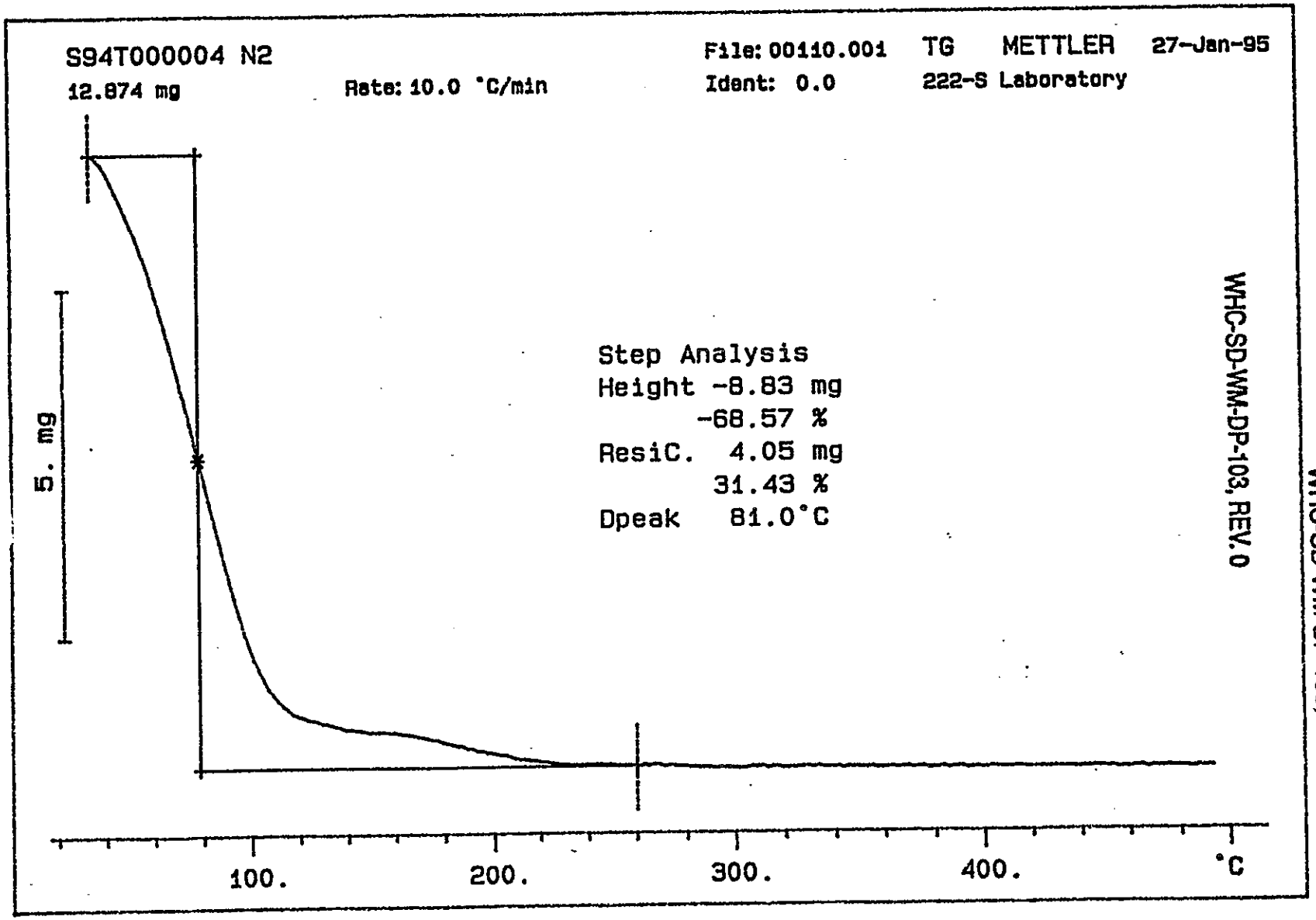


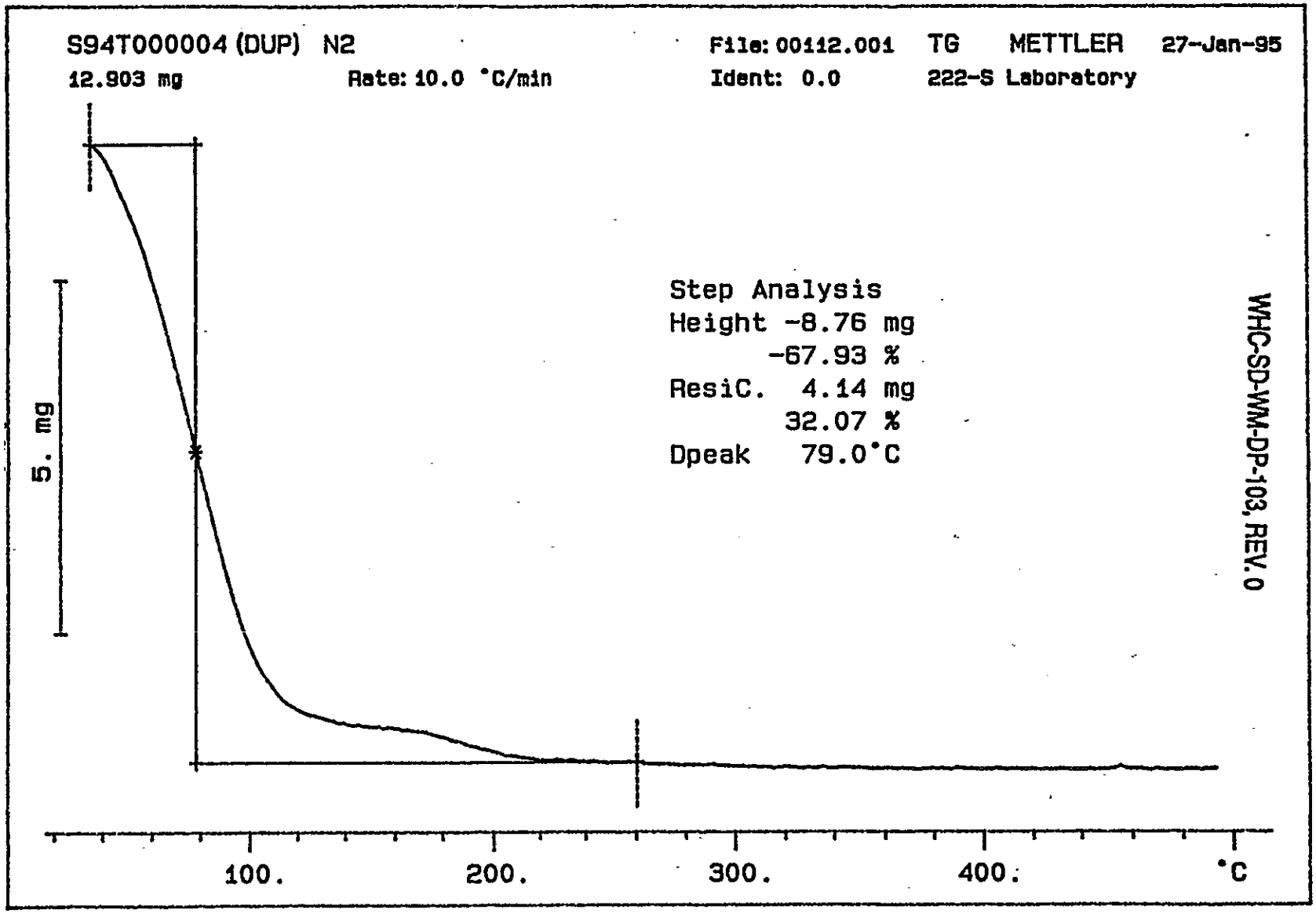
1-27-95


S94T000371 N2
13.704 mg
Rate: 10.0 °C/min
File: 00106.001
Ident: 0.0
TG METTLER 27-Jan-95
222-S Laboratory
5. mg
Step Analysis
Height -8.75 mg
-63.85 %
ResiC. 4.95 mg
36.15 %
Dpeak 79.0°C
100.
200.
300.
400.
°C



WHC-SD-WM-DP-103, REV. 0


S94T000004 N2
12.874 mg
Rate: 10.0 °C/min
File: 00110.001
Ident: 0.0
TG METTLER 27-Jan-95
222-S Laboratory
Step Analysis
Height -8.83 mg
-68.57 %
ResiC. 4.05 mg
31.43 %
Dpeak 81.0°C
5. mg
100.
200.
300.
400.
°C


S94T000004 (DUP) N2
12.903 mg
Rate: 10.0 °C/min
File: 00112.001
TG METTLER 27-Jan-95
Ident: 0.0
222-S Laboratory
Step Analysis
Height -8.76 mg
-67.93 %
ResiC. 4.14 mg
32.07 %
Dpeak 79.0°C
5. mg
100.
200.
300.
400.
°C

worklistrpt Version 2.0 02/21/95
03/15/95 10:42

LABCORE Data Entry Template for Worklist# 497

Analyst: DWS **Instrument:** TGA01 **Book #** 42NB-A

Method: LA-560-112 Rev/Mod 4-2

WHC-SD-WM-DP-103, REV. 0

Worklist Comment: Please run BY-106 TGA under N2. bdv

GROUP	PROJECT	S TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD				TGA-01	SOLID	59.19	58.49	N/A	%
95000007	BY-106	2 SAMPLE	S95T000084	0		TGA-01	SOLID	N/A	25.28		%
95000007	BY-106	3 DUP	S95T000084	0		TGA-01	SOLID	25.28	20.63	N/A	%

Final page for worklist # 497

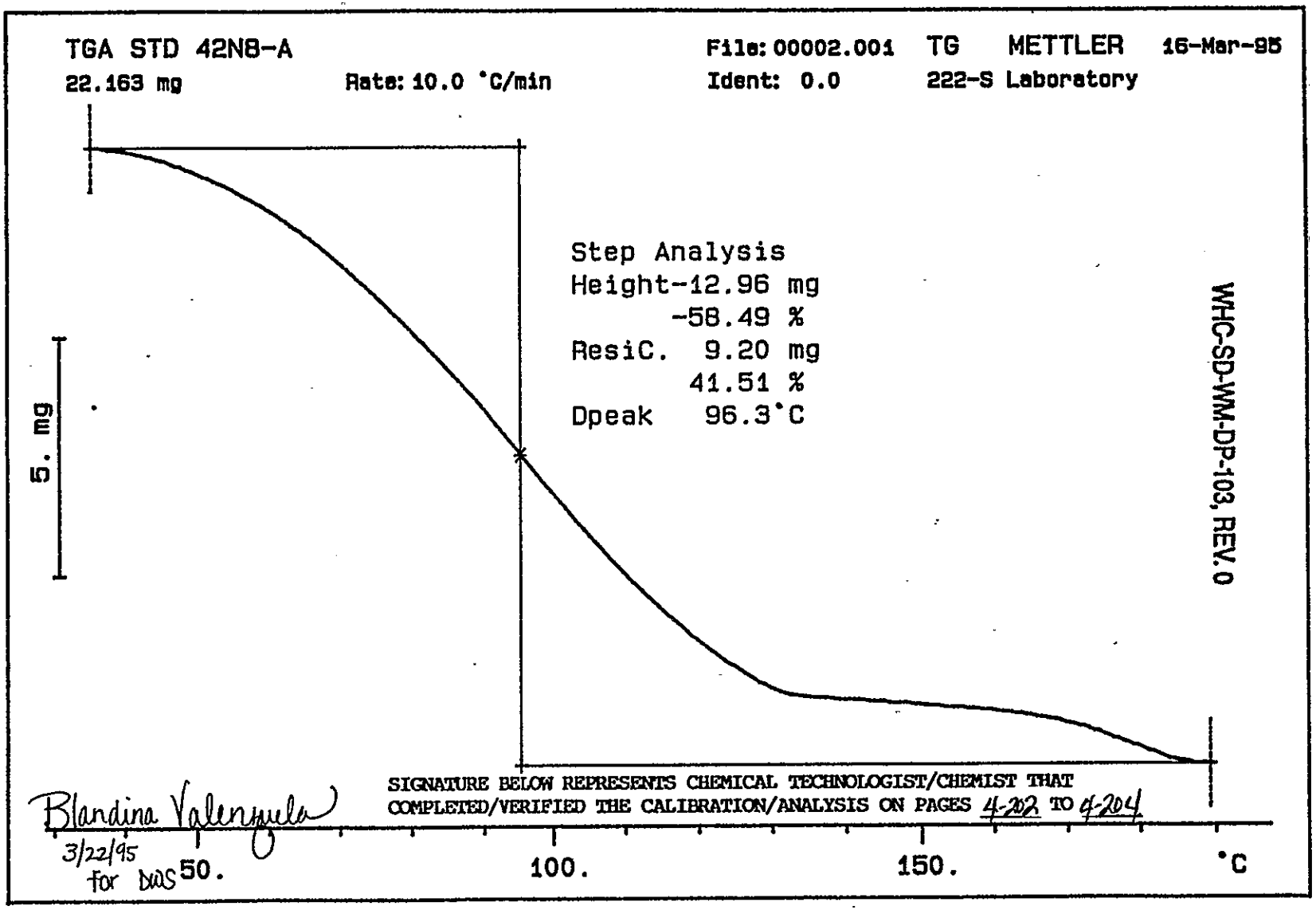
Data entered and verified by

Analyst Signature 3-16-95 Date

Blandina Valenzuela 3/22/95
Analyst Signature Date

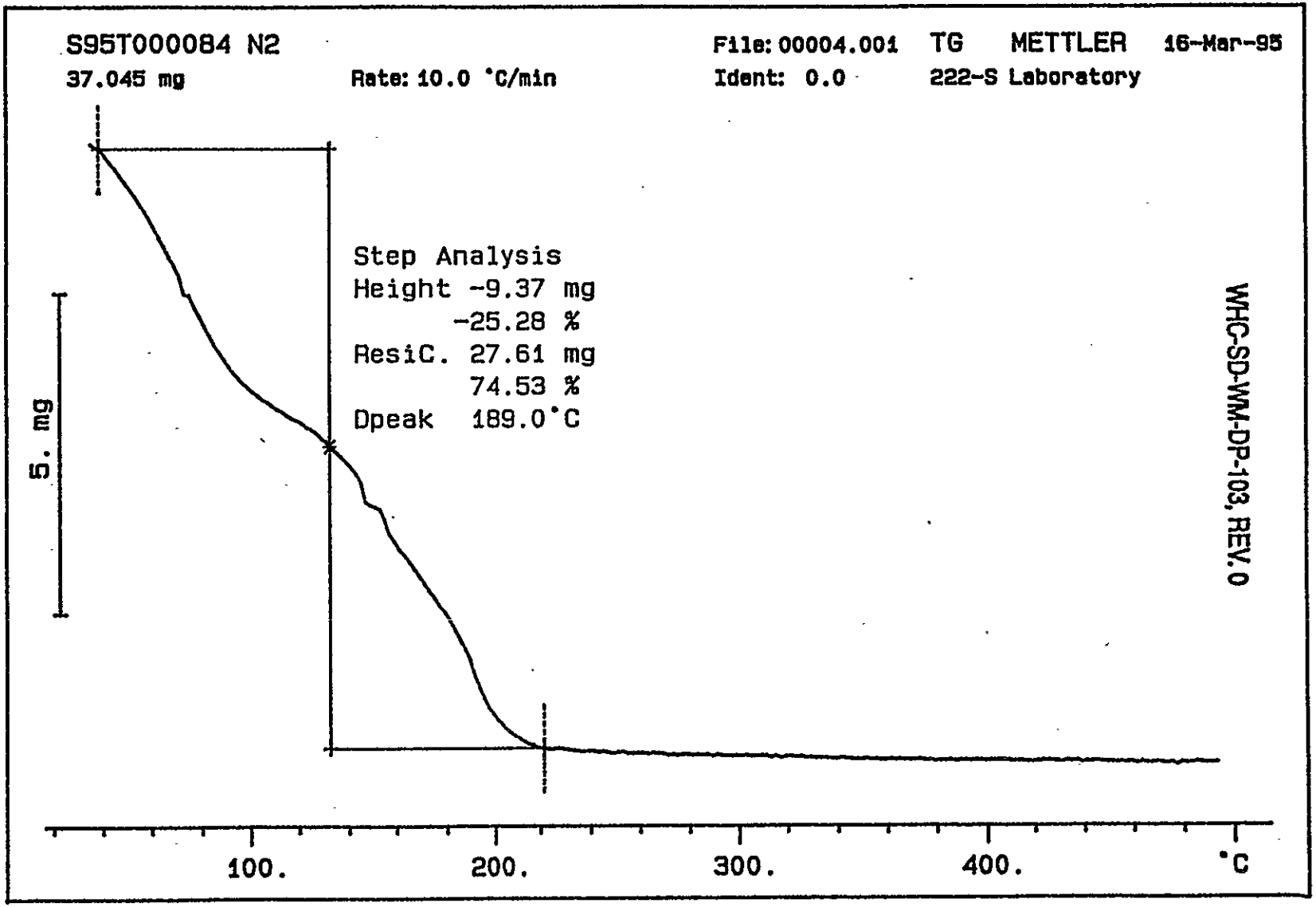
Data Entry Comments:

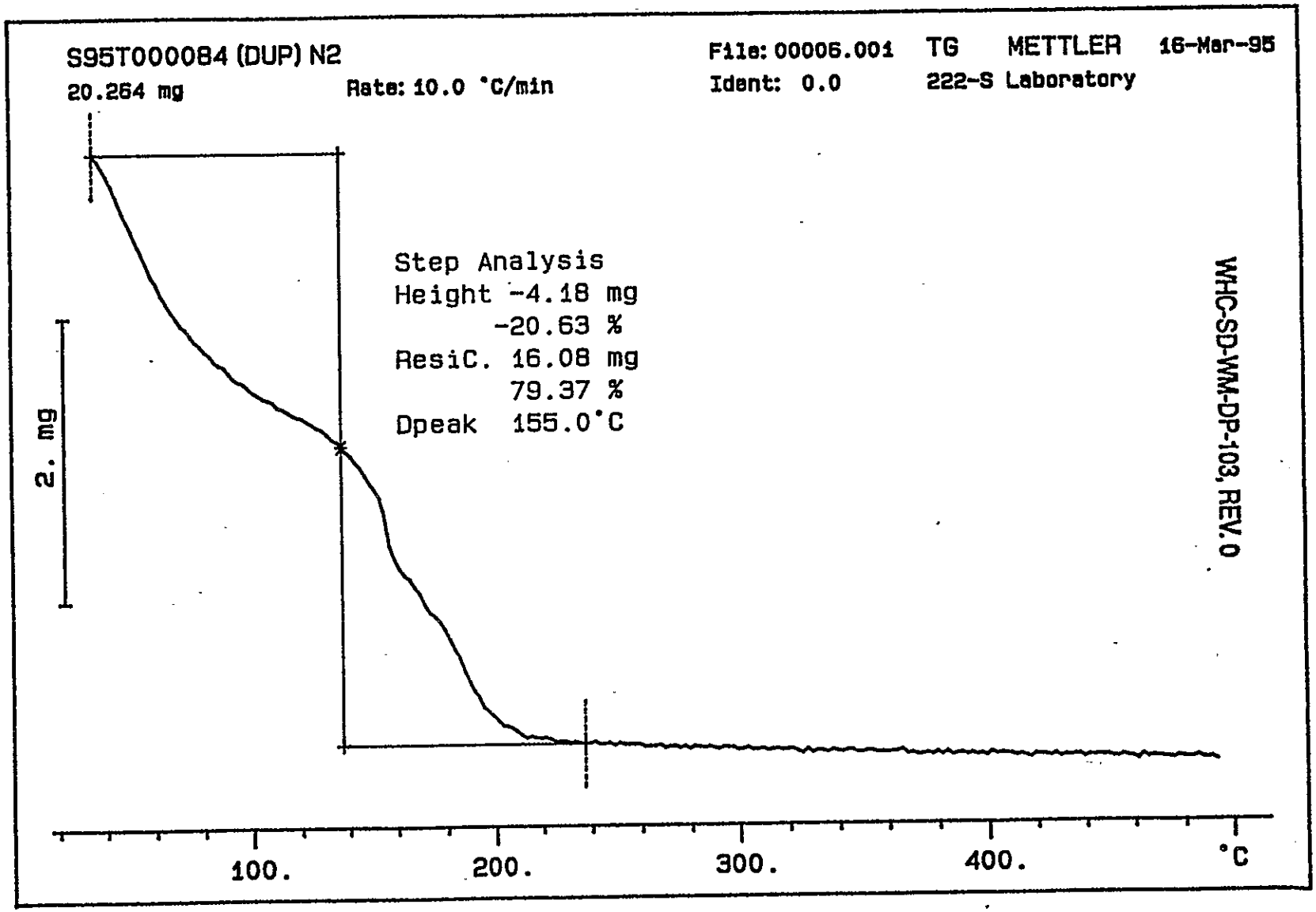
Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.



SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 4-202 TO 4-204

Blandina Valenzuela
3/22/95
for DAS


S95T000084 N2
37.045 mg
Rate: 10.0 °C/min
File: 00004.001
Ident: 0.0
TG
METTLER
222-S Laboratory
16-Mar-95
Step Analysis
Height -9.37 mg
-25.28 %
ResiC. 27.61 mg
74.53 %
Dpeak 189.0°C
5. mg
100.
200.
300.
400.
°C


S95T000084 (DUP) N2
20.264 mg
Rate: 10.0 °C/min
File: 00006.001
Ident: 0.0
TG
METTLER
222-S Laboratory
16-Mar-95
Step Analysis
Height -4.18 mg
-20.63 %
ResiC. 16.08 mg
79.37 %
Dpeak 155.0°C
2. mg
100.
200.
300.
400.
°C

LABCORE Data Entry Template for Worklist# 554

Analyst: SMF **Instrument:** TGA01 _____ **Method:** LA-560-112/A2

Worklist Comment: Please run BY-106 TGA under N2. bdv WHC-SD-WM-DP-103, REV. 0

Seg	Type	Sample#	Rep	Al	Test	Matrix	Actual	Found	DL	Unit
1	STD	42N8-A			TGA-01	SOLID	59.19	58.75	N/A	%
2	SAMPLE	S95T000098	0		TGA-01	SOLID	N/A	27.38		%
3	DUP	S95T000098	0		TGA-01	SOLID	27.38	28.93	N/A	%
4	SAMPLE	S95T000099	0		TGA-01	SOLID	N/A	38.01		%
5	DUP	S95T000099	0		TGA-01	SOLID	38.01	36.62	N/A	%

Final page for worklist # 554

Susie M. Fulton — 3-15-95
Analyst Signature — **Date**

3-16-95

Verified by Blandina Valenzuela — 3-22-95

Data Entry Comments:
Sample S95T000098: light brown & grainy - like brown sugar) also with dark brown grains
Sample S95T000099: dark brown clay like material

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

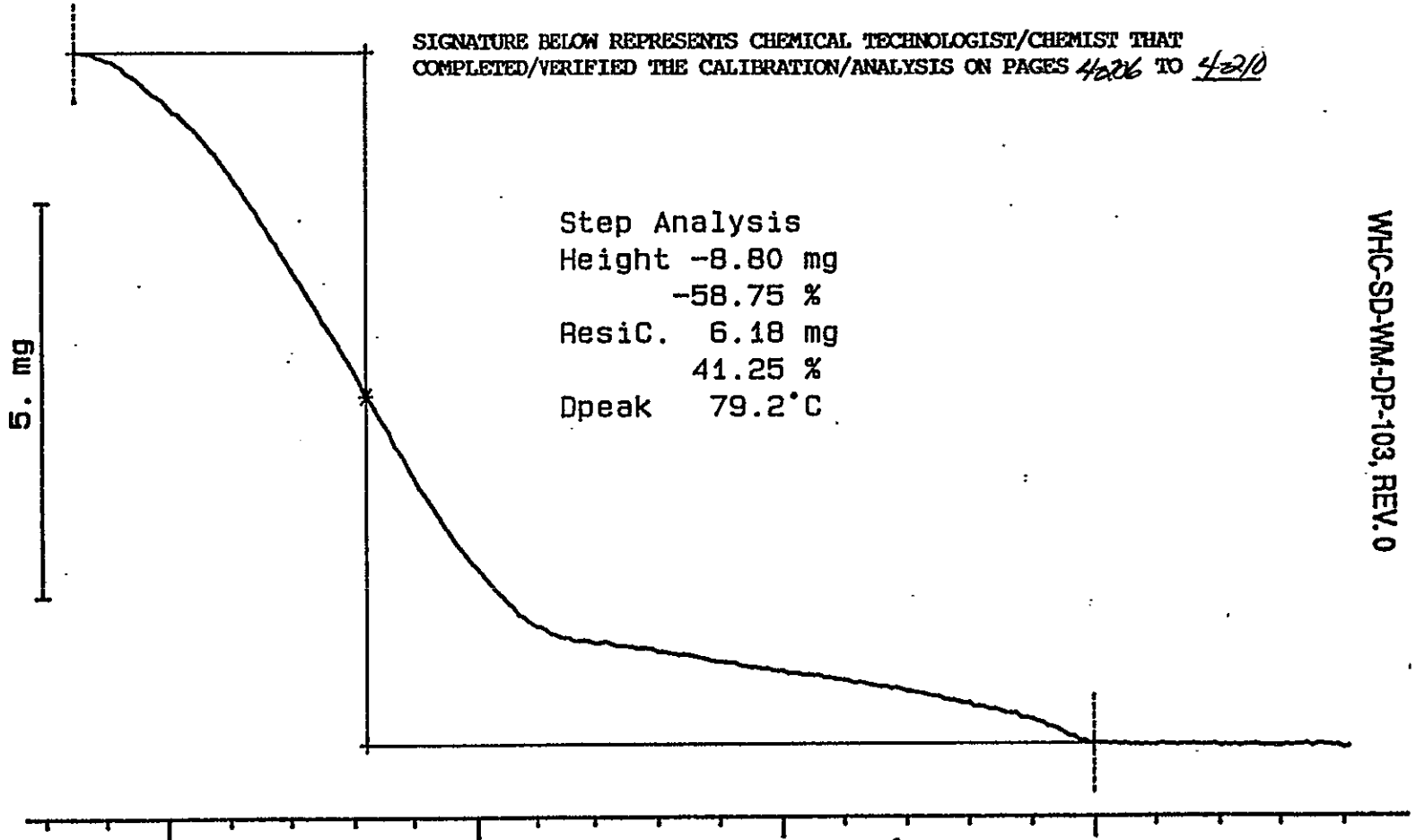
Page: 1

TGA STD 42N8-A
14.982 mg

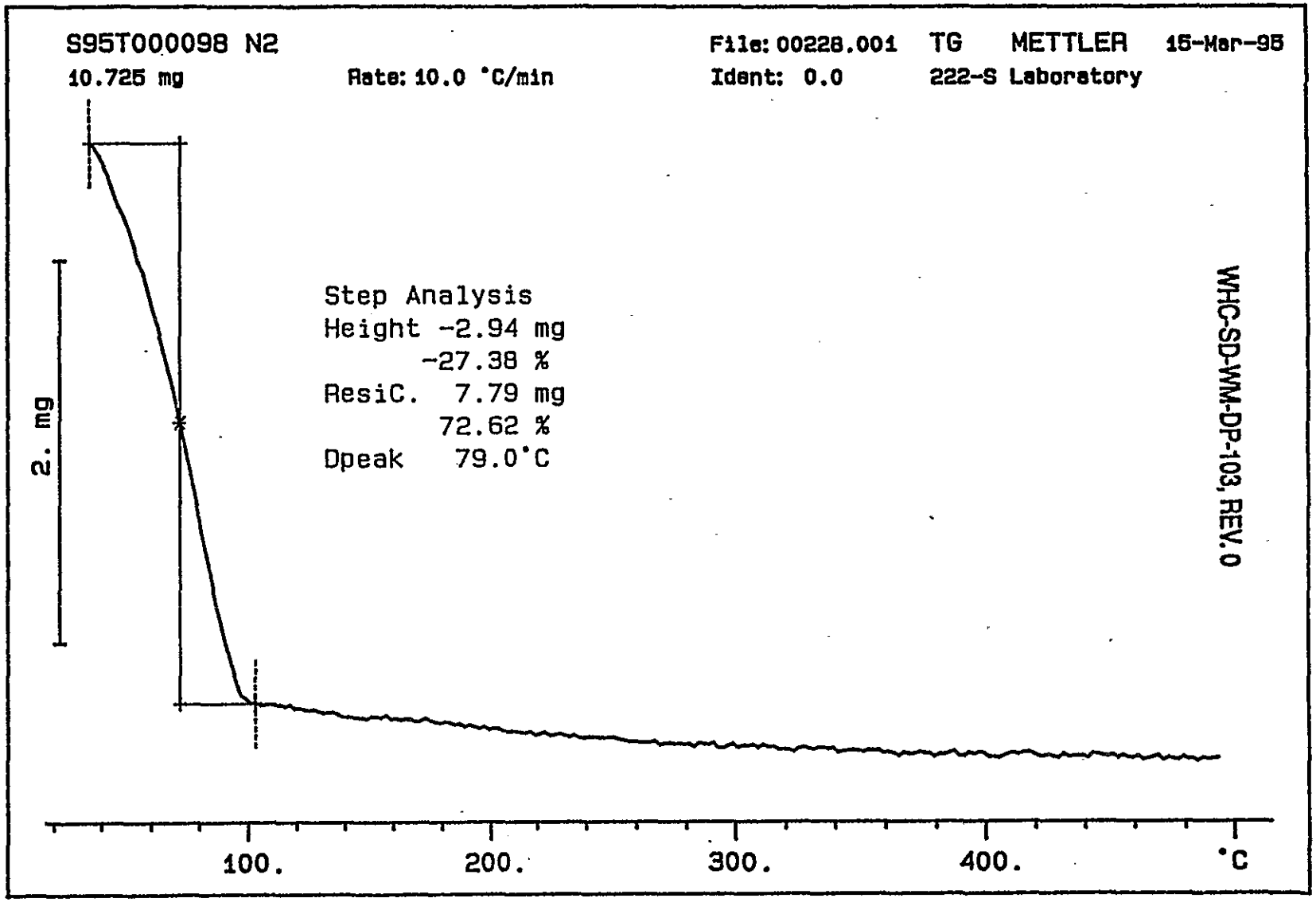
Rate: 10.0 °C/min

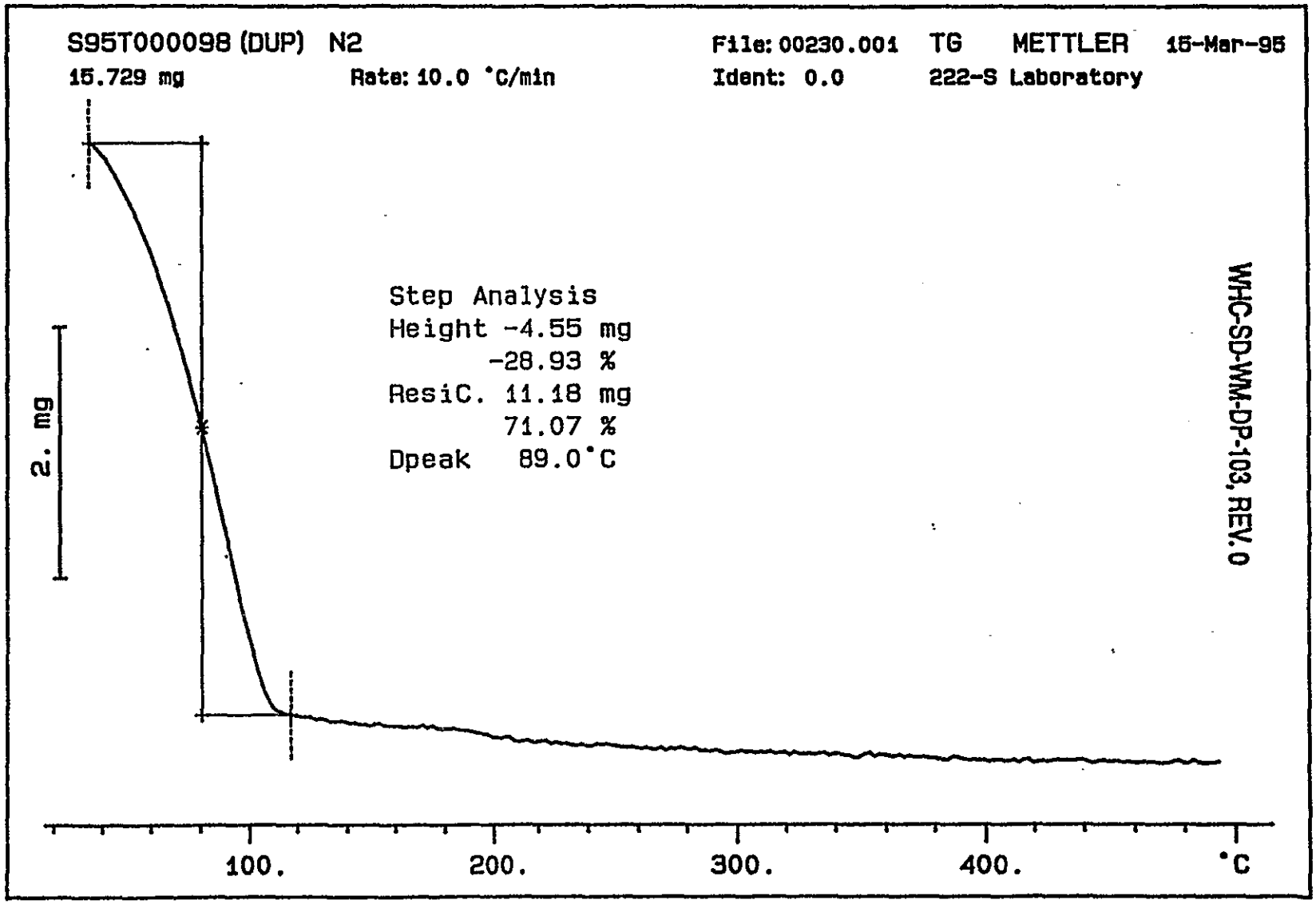
File: 00223.001 TG METTLER 15-Mar-95
Ident: 0.0 222-S Laboratory

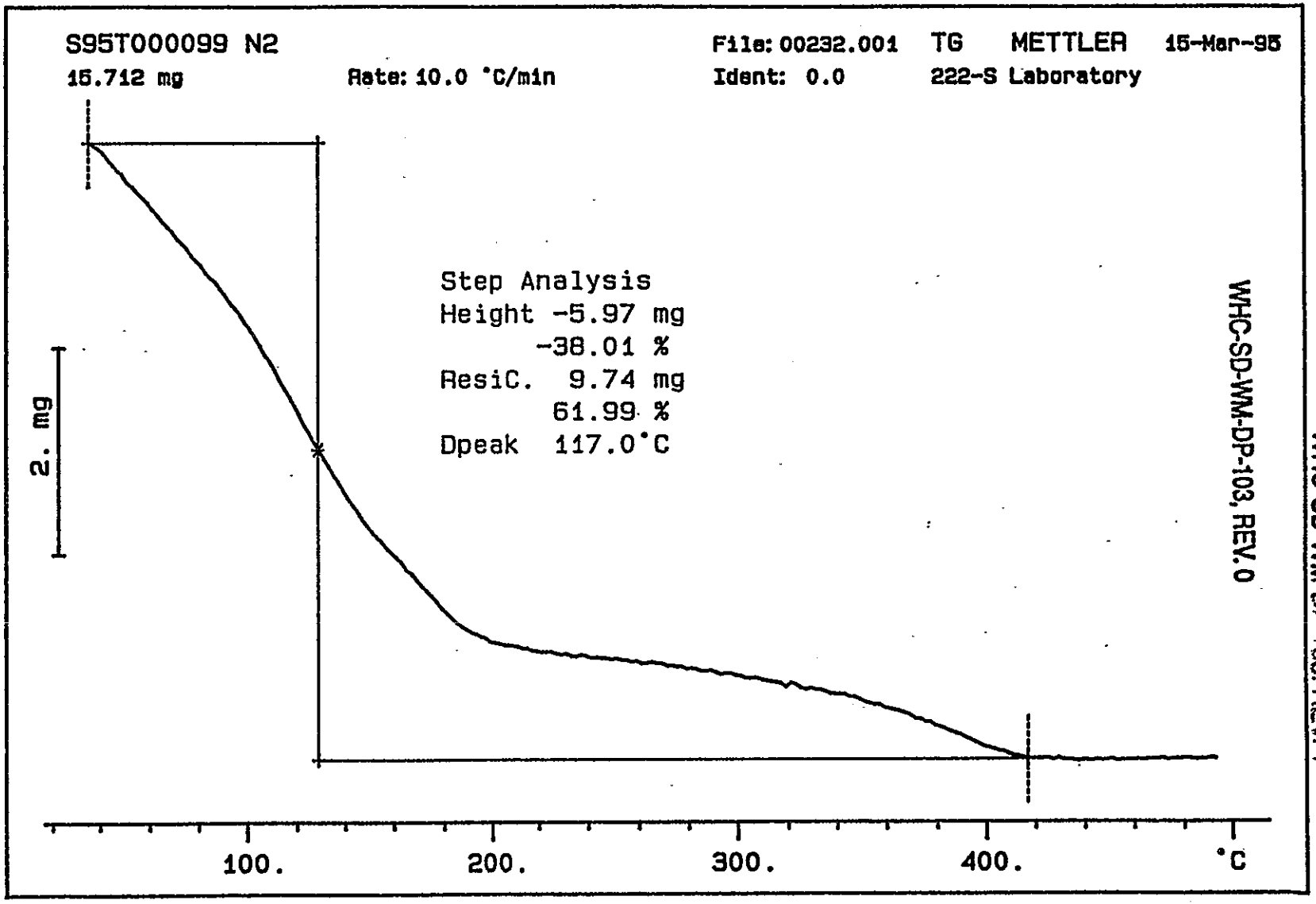
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 4-206 TO 4-210

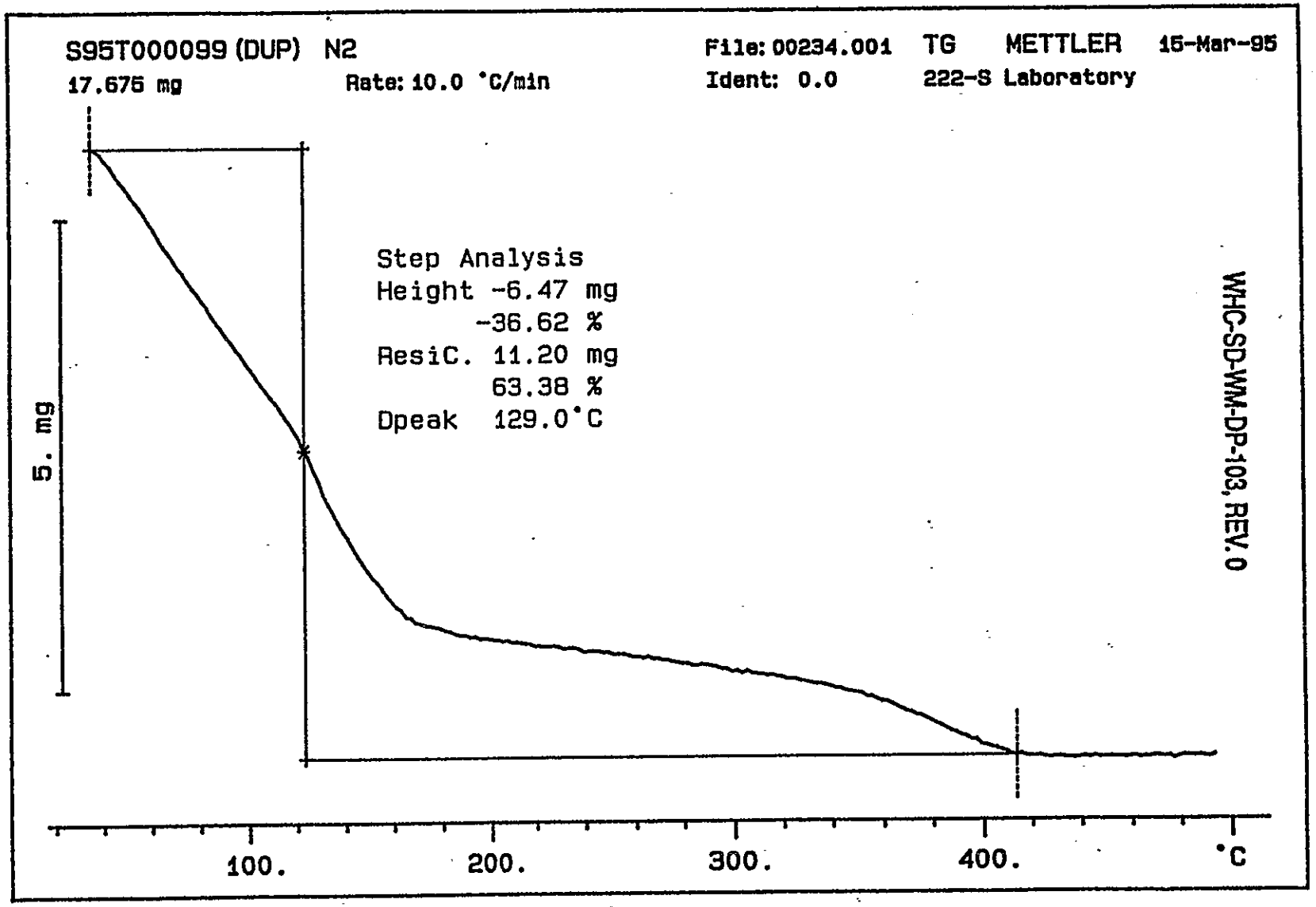


Susie M. Dalton 3/16/95 BDN


S95T000098 N2
10.725 mg
Rate: 10.0 °C/min
File: 00228.001
TG METTLER
15-Mar-95
Ident: 0.0
222-S Laboratory
Step Analysis
Height -2.94 mg
-27.38 %
ResiC. 7.79 mg
72.62 %
Dpeak 79.0°C
2. mg
100.
200.
300.
400.
°C


S95T000098 (DUP) N2
15.729 mg
Rate: 10.0 °C/min
File: 00230.001 TG METTLER 15-Mar-95
Ident: 0.0 222-S Laboratory
Step Analysis
Height -4.55 mg
-28.93 %
ResiC. 11.18 mg
71.07 %
Dpeak 89.0°C
2. mg
100.
200.
300.
400.
°C


S95T000099 N2
15.712 mg
Rate: 10.0 °C/min
File: 00232.001
Ident: 0.0
TG
METTLER
222-S Laboratory
15-Mar-95
Step Analysis
Height -5.97 mg
-38.01 %
ResiC. 9.74 mg
61.99 %
Dpeak 117.0°C
2. mg
100.
200.
300.
400.
°C


S95T000099 (DUP) N2
17.675 mg
Rate: 10.0 °C/min
File: 00234.001 TG METTLER 15-Mar-95
Ident: 0.0 222-S Laboratory
Step Analysis
Height -6.47 mg
-36.62 %
ResiC. 11.20 mg
63.38 %
Dpeak 129.0°C
5. mg
100.
200.
300.
400.
°C

DISTRIBUTION SHEET

To Distribution	From Data Assessment and Interpretation	Page 1 of 1
		Date 07-02-96
Project Title/Work Order **WHC-SD-WM-DP-103, REV. 1** "Final Report for Tank 241-BY-106, Rotary Mode Cores 64 and 65		EDT NO.: NA
		ECN NO.: 629027

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