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ANALYTICAL SERVICES

45-DAY SAFETY SCREENING RESULTS FOR TANK 241-BY-104, ROTARY MODE CORES 116 AND 117

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Prepared for the U.S. Department of Energy
Office of Environmental Restoration
and Waste Management

by

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NARRATIVE

45-DAY SAFETY SCREENING RESULTS FOR TANK 241-BY-104, ROTARY MODE CORES 116 AND 117

Summary

Two rotary mode core samples were received at the 222-S Laboratories and underwent safety screening analyses - differential scanning calorimetry (DSC), thermogravimetric analysis (TGA), total alpha analysis, and bulk density measurements - in accordance with the sampling and analysis plan (SAP) (Reference 6).

Notification letters were sent out for three BY-104 samples which exceeded the DSC notification limit. In addition, one sample exceeded the DSC notification limit with the upper limit of the one-sided 95% confidence interval. The upper limit of the one-sided 95% confidence intervals for total alpha activity results were below the notification limit. Tank headspace flammability was measured at 0 percent of the lower flammability limit (LFL).

Scope

This is the 45-day safety screening report for tank BY-104 rotary mode core samples which were taken from risers 5 and 11a. The samples were collected from riser 5 on October 31 through November 3, 1995 and from riser 11A on November 15 and 16, 1995. The samples were received, extruded, and analyzed by the 222-S Laboratory in accordance with the referenced SAP (Reference 6)

The samples underwent analyses identified in *Tank Safety Screening Data Quality Objective* (Reference 1). This report summarizes results from the safety screening analyses: differential scanning calorimetry (DSC), thermogravimetric analysis (TGA), total alpha analyses, and density analyses. The sample data summary tables in this report summarize the analytical results associated with each subsegment of these core samples. In addition, the results of the statistical analyses (calculation of the 95% confidence limits for DSC, TGA, and total alpha analyses) are given in Tables 4, 6, and 9 on a sample by sample basis.

Vapor and Flammable Gas Data

Prior to intrusion into a tank, the flammability of the tank headspace was measured to address the vapor flammability issue of the *Tank Safety Screening Data Quality Objective* (Reference 1). This measurement is conducted in the field and is recorded in the work package (Reference 7). Reference 1 requires that the flammable gas concentration found be less than the 25% of the lower flammability limit (LFL). The combustible gas meter reading was 0 percent of the LFL, indicating no flammability concerns with this tank at the time of the sampling event.

Sample Receipt and Extrusion

Table 1 summarizes the sample extrusion results for the tank BY-104 core segments. For each segment, the solid and liquid recoveries, and a description of the material as it was extruded are included. Table 2 provides the matrix for each subsegment from tank BY-104, as well as each subsegment's associated analytical sample numbers and analyses performed, as reported in the data summary tables.

Table 1:Tank BY-104 Core Segment Extrusion Summary

Riser/Core/ Segment	Solid (g)	Liquid (g)	Sample Description
5/116/1	0	0	No sample observed. Dose rate through drill string <.5 mR/hr.
5/116/2	127.5	0	No drainable liquid. Extruded ~ 7.5 inches of solids, facies present. First 2.5 inches of upper segment dry yellowish-green solid, crystalline in texture; subsampled as quarter segment, jar # 8490. Remaining 5 inches was slightly moist, brown saltcake/sludge mixture; subsampled as upper half segment, jar # 8194. Dose rate through drill string 440 mR/hr.
5/116/3	192.5	0	No drainable liquid. Extruded ~12 inches, facies present. First 2 inches of upper segment appeared dry, crystalline in texture, yellowish-green in color; subsampled as upper half segment, jar # 8191. Remaining 10 inches were slightly moist, yellowish/brown saltcake; subsampled as lower half segment, jar # 8471. Dose rate through drill string 100 mR/hr.
5/116/4	324.3	0	No drainable liquid. First 5 inches extruded were empty. The next ~4.5 inches were moist, brown sludge, subsampled as quarter segment C, jar # 8196, followed by 4.5 inches of the same, subsampled as quarter segment B, jar # 8197. The remaining 5 inches were a dry, brown saltcake/sludge mixture, subsampled as quarter segment A, jars # 8190. Dose rate through the drill string 1.2 R/hr.
5/116/5	402.5	0	No drainable liquid. Extruded ~17 inches; solids did not retain shape. Material was damp, granular, and brown in color. Appeared to be a mixture of saltcake & sludge. Subsampled into quarter segments A, jar # 8186; B, jar # 8185; C, jar # 8176; D, jar # 8178. Dose rate through drill string 800 mR/hr.
5/116/6	467.7	0	No drainable liquid. Extruded ~17 inches; solids did not retain shape. Material was damp, granular, and brown in color. Appeared to be a mixture of saltcake & sludge. Subsampled into quarter segments A, jar # 8182; B, jar # 8181; C, jar # 8180; D, jar # 8179. Dose rate through the drill string 1.3 R/hr.

5/116/7	468.4	0	No drainable liquid. Extruded ~18 inches; solids did not retain shape. Material was damp, granular and brown in color. Appeared to be a mixture of saltcake & sludge. Subsampled into quarter segments A, jar # 8188; B, jar # 8187; C, jar # 8184; D, jar # 8183. Dose rate through the drill string 1.3 R/hr.
5/116/8	258.3	0	No drainable liquid. Extruded ~10 inches; first 2-3 inches extruded were empty, followed by 5 inches of solid, then a 9 inch gap, followed by 5 inches of solids. Solids were very wet, dark rust colored and texture resembled sludge. Subsampled into quarter segments A, jar # 8193 and D, jar # 8192. Dose rate through the drill string 1 R/hr.
11a/117/1	15.4	158.4	Collected opaque, yellowish-green liquid; subsampled in jar # 8473. Extruded ~2.5 inches of saltcake; subsampled in jar # 8584. Dose rate through drill string 1.5 R/hr.
11a/117/2	216.4	98.5	Collected opaque, black-brown liquid; subsampled in jar # 8474. Extruded ~6 inches of solid; subsampled as quarter segment D, jar # 8481. After a 7.5 inch gap, 2 inches of solid was extruded, subsampled as quarter segment A, jar # 8220. Solids were a black-brown sludge. Dose rate through drill string 1.3 R/hr.
11a/117/3	251.5	0	No drainable liquid. Extruded ~12 inches of solid, first 6 inches were dark brown chunks of sludge; subsampled into quarter segments C & D, jar # 8221. The remaining 6 inches were wet, grainy, dark brown saltcake; subsampled into upper half segment, jar # 8478. Dose rate through drill string 1.2 R/hr.
11a/117/4	169.3	0	No drainable liquid. First 13 inches extruded were empty, followed by ~6 inches of dark brown solid, chunky saltcake in texture. Subsampled into upper half segment, jar # 8480. Dose rate through drill string 350 mR/hr.
11a/117/5	98.1	0	No drainable liquid. First ~5 inches extruded were empty, followed by ~3.5 inches of dark brown solids that resembled soft sludge; subsampled as quarter segment C, jar # 8223. After a 7 inch gap, 3.5 inches of the same type of solid followed; subsampled as quarter segment A, jar # 8222. Dose rate through the drill string 50 mR/hr.

Table 2: Tank BY-104 Subsample Matrices

Sample Numbers	Matrix	Core/Segment/Subsegment	Analyses
S95T003427	Empty	116/1/WS	None
S95T003528	Sludge	116/2/QA	DSC, TGA
S95T003525	Sludge	116/2/QA	Bulk Density
S95T003530	Sludge	116/2/QA	AT
S95T003529	Saltcake	116/2/UH	DSC, TGA
S95T003703	Saltcake	116/3/UH	DSC, TGA
S95T003700	Saltcake	116/3/UH	AT
S95T003702	Saltcake	116/3/LH	DSC, TGA
S95T003632	Sludge	116/4/QA	DSC, TGA
S95T003594	Sludge	116/4/QA	Bulk Density
S95T003637	Sludge	116/4/QB	DSC, TGA
S95T003595	Sludge	116/4/QB	Bulk Density
S95T003641	Sludge	116/4/QC	DSC, TGA
S95T003651	Sludge	116/4/QC	AT
S95T003596	Sludge	116/4/QC	Bulk Density
S95T003633	Sludge	116/5/QA	DSC, TGA
S95T003597	Sludge	116/5/QA	Bulk Density
S95T003638	Sludge	116/5/QB	DSC, TGA
S95T003598	Sludge	116/5/QB	Bulk Density
S95T003642	Sludge	116/5/QC	DSC, TGA
S95T003654	Sludge	116/5/QC	AT
S95T003599	Sludge	116/5/QC	Bulk Density
S95T003645	Sludge	116/5/QD	DSC, TGA
S95T003655	Sludge	116/5/QD	AT
S95T003600	Sludge	116/5/QD	Bulk Density
S95T003634	Sludge	116/6/QA	DSC, TGA
S95T003601	Sludge	116/6/QA	Bulk Density

S95T003639	Sludge	116/6/QB	DSC, TGA
S95T003602	Sludge	116/6/QB	Bulk Density
S95T003643	Sludge	116/6/QC	DSC, TGA
S95T003658	Sludge	116/6/QC	AT
S95T003603	Sludge	116/6/QC	Bulk Density
S95T003646	Sludge	116/6/QD	DSC, TGA
S95T003659	Sludge	116/6/QD	AT
S95T003604	Sludge	116/6/QD	Bulk Density
S95T003635	Sludge	116/7/QA	DSC, TGA
S95T003605	Sludge	116/7/QA	Bulk Density
S95T003640	Sludge	116/7/QB	DSC, TGA
S95T003606	Sludge	116/7/QB	Bulk Density
S95T003644	Sludge	116/7/QC	DSC, TGA
S95T003662	Sludge	116/7/QC	AT
S95T003607	Sludge	116/7/QC	Bulk Density
S95T003647	Sludge	116/7/QD	DSC, TGA
S95T003663	Sludge	116/7/QD	AT
S95T003636	Sludge	116/8/QA	DSC, TGA
S95T003648	Sludge	116/8/QD	DSC, TGA
S95T003665	Sludge	116/8/QD	AT
S95T003713	Liquid	116/FB	DSC, TGA
S95T003761	Liquid	117/1/DL	DSC, TGA
S95T003764	Saltcake	117/1/UH	DSC, TGA
S95T003775	Liquid	117/2/DL	DSC, TGA
S95T003781	Sludge	117/2/QA	DSC, TGA
S95T003786	Sludge	117/2/QA	AT
S95T003776	Sludge	117/2/QA	Bulk Density
S95T003782	Sludge	117/2/QD	DSC, TGA
S95T003787	Sludge	117/2/QD	AT

S95T003777	Sludge	117/2/QD	Bulk Density
S95T003809	Saltcake	117/3/UH	DSC, TGA
S95T003783	Sludge	117/3/QC&D	DSC, TGA
S95T003788	Sludge	117/3/QC&D	AT
S95T003778	Sludge	117/3/QC&D	Bulk Density
S95T003810	Saltcake	117/4/UH	DSC, TGA
S95T003784	Sludge	117/5/QA	DSC, TGA
S95T003789	Sludge	117/5/QA	AT
S95T003779	Sludge	117/5/QA	Bulk Density
S95T003785	Sludge	117/5/QC	DSC, TGA
S95T003790	Sludge	117/5/QC	AT

C = Core Number
S = Segment Number
UH = Upper Half
LH = Lower Half
DL = Drainable Liquid
WS = Whole Segment

QA = Qtr. Seg A
QB = Qtr. Seg B
QC = Qtr. Seg C
QD = Qtr. Seg D
FB = Field Blank
AT = Total Alpha

Analytical Results

DIFFERENTIAL SCANNING CALORIMETRY

Differential thermal analyses were performed on 31 subsegments and one field blank from tank BY-104. The analyses were performed under a nitrogen purge using procedures LA-514-113, Rev. C-1 (Mettler[1] instrument) and LA-514-114, Rev. C-1 (Perkin-Elmer[2] instrument). Since both instruments were used during the DSC analyses, it must be noted that the two instruments produce raw data scans which present exotherms differently. On the Mettler instrument, an exotherm is represented by a peak, while the Perkin-Elmer instrument shows an exotherm as a valley.

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Most of the samples analyzed fell below the safety screening notification limit of 480 J/g (dry weight basis) specified in Reference 1, with the exception of samples S95T003645, S95T003647, and S95T003636. These three samples were sludge, with moisture content exceeding 17% water. Of the samples that exhibited no energetics, 4 were saltcake, 13 were sludge, and 2 were liquid. The remaining 9 samples had DSC values ranging from 0 to 300. The upper limit (UL) to the 95% confidence interval for sample S95T003528 exceeded 480 J/g.

Table 3 summarizes the DSC results for tank BY-104 samples. For each matrix (sludge, saltcake, and liquid), the lower and upper bounds of the sample results and the average results are given.

Table 3: Summary of DSC Results for Tank 241-BY-104

Matrix	Differential Scanning Calorimetry Results		
	Lower Bound (J/g dry)	Upper Bound (J/g dry)	Average of All Runs(J/g dry)
Sludge	0	1294.4	133.3
Saltcake	0	30.0	4.7
Liquid	0	0.0	0.0

In Reference 6, the acceptable accuracy range is between 90 and 110 percent. For the DSC analysis, the accuracy is determined by the Laboratory Measurement Control System (LMCS) control standard recovery. All standard recoveries of tank BY-104 samples were within the specified accuracy requirements in Reference 6.

For the safety screening analyses, the maximum desirable precision per the Sampling and Analysis Plan (SAP) (Reference 6) is a relative percent difference (RPD) of 10% between the primary and duplicate sample results. The RPD values for the DSC results ranged from 0% to 200% RPD, with 9 of the samples having RPD values which exceeded the precision allowance. Three of the 9 samples were selected for reruns because of their high DSC values. Of these 9 samples, 2 of them were saltcake, 7 were sludge.

Reruns are analyses of a sample and duplicate from the same sample material as the original sample and duplicate. The RPDs did not improve appreciably, indicating the cause of the high RPD values is most likely due to the heterogeneity of tank BY-104 waste material. Results of rerun analyses are identified in the summary tables in Attachment A, by the number "1" in the Replicate or "R" column to the right of the sample number, and are also included in the raw data.

Statistical analyses were performed on the DSC data from tank BY-104 per the requirements of Reference 1, which requires comparison of sample data to the applicable notification limit (e.g. less than 480 J/g by DSC) with a 95% confidence level. For each sample submitted for DSC analysis (except the 19 which exhibited no energetics), the sample mean and the upper limit (UL) to the 95% confidence interval are presented in Table 4.

Table 4: Statistical Analyses for Tank 241-BY-104 DSC Results

Sample #	DSC Result (J/g)	DSC Duplicate (J/g)	DSC Average (J/g)	DSC (UL)	TGA (LL)
S95T003528	0.0	138.7	69.4	507.2	14.4
	R*	R*			
S95T003529	30.5	13.6	22.1	76.2	8.0
S95T003703	0.0	12.5	6.2	46.3	6.4
S95T003638	255.8	344.7	163.1	435.7	18.4
	R 0.0	R 52.0			
S95T003645	284.9	724.6	767.8	1620.8	14.4
		TR 1294			
S95T003634	32.6	50.0	41.3	96.2	19.8
S95T003639	104.1	95.8	100	126.6	24.3
S95T003635	140.8	134.9	137.9	156.8	25.4
S95T003640	389.6	309.8	220.6	475.5	22.5
	R 75.0	R 107.8			
S95T003647	484.1	436.6	460.4	612.7	17.9
S95T003636	736.4	875.7	806.0	1252.6	26.2
S95T003782	29.4	36.9	33.1	57.1	25.3

R = Rerun
TR = Triplicate
* = Rerun analysis has not been completed.

THERMOGRAVIMETRIC ANALYSIS (Percent Moisture)

Analyses for percent water by TGA were performed on the samples using procedures LA-560-112, Rev. B-1 (Mettler[3] instrument) and LA-514-114, Rev. C-1 (Perkin-Elmer[4] instrument). All samples were run under a nitrogen atmosphere.

The TGA notification limit of 17 weight percent water is no longer required by Reference 1, however Reference 2 requires the comparison of this value to the TGA results using a one-sided 95% confidence limit. This report includes a discussion of this comparison as well as the statistical analyses of the TGA results.

Out of the 31 subsegments analyzed, 8 samples yielded percent water results below 17 weight percent water, with 2 of these samples having primary and/or duplicate results of less than one percent water. In addition to these 8 samples, 4 samples fell below 17 weight percent water with the lower limit (LL) to the 95% confidence intervals .

Out of the 8 samples with low percent water, 4 were saltcake and 4 were sludge. None of the 8 samples with low percent moisture values exceeded the DSC notification limit of 480 J/g (dry weight basis), however one sample (S95T003528) exceeded this value with the upper limit to the 95% confidence interval. Three of the 4 samples with LL values below 17 weight percent water also had DSC results significantly less than the notification limit of 480 J/g, however sample S95T003645 exceeded the DSC notification limit. Moisture analysis by gravimetric analysis has been requested for all 8 samples with low moisture values and for sample S95T003645.

Table 5 summarizes the TGA results for the tank BY-104 samples. For each matrix (sludge, saltcake, and liquid), the lower and upper bounds of the subsegments results and the average result are given.

Table 5: Summary of TGA Results for Tank 241-BY-104

Matrix	Thermogravimetric Results		Average (wt %)
	Lower Bound (wt %)	Upper Bound (wt %)	
Sludge	0.75	37.8	24.9
Saltcake	6.0	37.5	20.1
Liquid	48.8	49.1	48.9

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In Reference 6, the acceptable accuracy range is between 90 and 110 percent. For the TGA analysis, the accuracy determined by the Laboratory Measurement Control System (LMCS) control standard recovery of tank BY-104 samples were within the specified accuracy requirements in Reference 6.

The maximum desirable precision for the TGA analysis per Reference 6 is an RPD of 10% between the primary and duplicate sample results. For TGA results, the RPD values ranged from 0% to 160%, with 10 of the samples having RPD values which exceeded the precision allowance. Reruns were performed on 3 of the 10 samples because of their low water content. Of these 10 samples, 3 of them were saltcake, 7 of them were sludge.

Statistical analyses for the 95% confidence interval were performed on the TGA data from tank BY-104, comparing the lower limit (LL) of the interval to the value of 17% water. For each sample submitted for TGA analysis, the sample mean and the lower limit (LL) to the 95% confidence interval are presented in Table 6. If the LL of any subsegment is greater than 17 weight percent water, it is assumed the subsegment's percent water is not less than or equal to 17 weight percent.

Table 6: Statistical Analyses of Tank 241-BY-104 TGA Results

Sample #	Result	Duplicate	Average	LL(mean,95%)
S95T003528	16.1	16.7	16.4	14.4
S95T003529	16.5	13.0	12.5	8.0
	R 7.3	R 13.4		
S95T003702	12.3	10.1	11.2	4.2
S95T003703	12.6	9.0	9.9	6.4
	R 11.9	R 6.1		
S95T003632	19.0	22.4	20.7	9.3
S95T003637	31.7	25.2	24.9	18.7
	R 18.7	R 24.2		
S95T003641	33.9	33.9	33.9	33.9
S95T003633	24.4	24.1	24.3	23.3
S95T003638	20.3	21.1	20.7	18.4
S95T003642	23.4	32.8	28.1	0.0
S95T003645	21.7	24.5	23.1	14.4

S95T003634	28.8	26.3	27.6	19.8
S95T003639	30.6	33.0	31.8	24.3
S95T003643	0.89	28.0	14.5	0.0
S95T003646	0.75	1.0	12.2	0.0
	R 23.0	R 24.2		
S95T003635	25.7	25.9	25.8	25.4
S95T003640	28.2	26.7	27.4	22.5
S95T003644	29.2	27.8	28.5	24.2
S95T003647	26.8	24.4	25.6	17.9
S95T003636	27.0	26.8	26.9	26.2
S95T003648	35.3	33.6	34.4	29.1
S95T003764	37.5	36.6	37.1	34.4
S95T003761	49.1	48.9	49.0	48.6
S95T003781	30.2	28.1	29.2	22.4
S95T003782	34.4	37.8	36.1	25.3
S95T003775	48.8	49.0	48.9	48.4
S95T003809	37.1	36.0	36.5	33.1
S95T003783	26.4	28.2	27.3	21.5
S95T003810	13.9	13.4	13.6	12.2
S95T003784	16.6	18.1	17.4	12.6
S95T003785	15.3	17.6	16.4	9.18

R = Rerun

BULK DENSITY

In accordance with Reference 1, measurements for bulk density were performed on the sludge samples. Procedure LO-160-103, Rev. B-0 was used to perform the bulk density measurements. Table 7 summarizes the upper and lower bounds of the density results and the average result obtained.

Table 7: Summary of Bulk Density Results for Tank 241-BY-110

Matrix	Bulk Density Results		Average (g/mL)
	Lower Bound (g/mL)[1]	Upper Bound (g/mL)[1]	
Sludge	1.63	1.83	1.75

[1] Units in attached summary tables are sometimes in grams per mass (G/M).

It should by noted that density measurements could not be made on 4 of the subsegments, generally for two reasons:

(1) Insufficient recovery was obtained for the segment. In these situations, the density analysis was not performed in order to have sufficient material with which to run the chemical and radiological analyses required.

(2) For some of the sludge samples, the material was too sticky to maneuver into the centrifuge tube, making it very difficult or impossible to perform the bulk density analysis.

In all four instances, either lack of material or the consistency of the samples was not determined until later in the process, after the analyses had been requested. The density requests were deleted, and no analyses will appear on the data summary tables of this report for these samples.

No duplicate analyses were performed as part of the bulk density measurements, so no estimate of precision can be made. Further, no standard or spike is run with this analysis, so there is no accuracy evaluation possible.

TOTAL ALPHA

The alpha total analyses were performed on the saltcake and sludge samples using procedure LA-508-101, Rev. D-2. Fusion digestions on the saltcake and sludge were prepared using procedure LA-549-141, Rev. D-0. Since tank BY-104 is on the Ferrocyanide Watch List, a zirconium crucible rather than a nickel crucible was used to perform the fusion preparation, and is identified by a "Z" in the aliquot or "A" column of the data summary tables.

In order to determine the notification limit for this analysis, the limit of 1 g/L as specified in References 1 and 6 was converted to units of microcuries per gram using the density of the BY-104 waste material. The highest density result obtained for the subsegments (1.83 g/mL) was used in this calculation, which yielded a notification limit of 33.6 uCi/g. By using the highest density result, the lowest notification limit in uCi/g was obtained, thereby

providing the most conservative estimate with respect to criticality evaluation.

Of the 31 subsegments from tank BY-104, 1 saltcake sample and 14 sludge samples were analyzed for total alpha activity. None of these 15 samples produced results which exceeded the limit of 33.6 uCi/g, with the highest result being 0.845 uCi/g. Table 8 summarizes the lower and upper bound results and the average total alpha result for each matrix.

Table 8: Summary of Total Alpha Analysis Results for Tank 241-BY-104

Matrix	Total Alpha Analysis Results		Average[1]
	Lower Bound	Upper Bound	
Sludge (μCi/g)	1.35×10^{-2}	8.45×10^{-1}	1.22×10^{-1}
Saltcake (μCi/g)	6.14×10^{-3}	6.59×10^{-3}	6.36×10^{-3}

[1] Results below the detection limit were not factored into the average values.

The range of RPD values for the 12 subsegments with results greater than the detection limit was from 3.5% to 36.4%, with 6 of the samples above the acceptable precision requirement of 10% RPD. The high RPD values are being attributed to the inhomogeneity in the tank BY-104 sample material and/or low sample activity. Since none of the sample results were greater than 0.845 uCi/g, approximately 40 times lower than the notification limit of 33.6 uCi/g), no repreparations or reruns were requested.

Statistical analyses for the 95% confidence interval were performed on the total alpha data from tank BY-104 per the requirements of Reference 1, and the UL of the interval was compared to the notification limit of 33.6 uCi/g. For each subsegment submitted for total alpha analysis, the sample mean and the UL to the 95% confidence interval are represented in Table 9. If the UL of any subsegment is less than 33.6 uCi/g of total alpha activity, the hypothesis that the subsegment's activity is greater than or equal to the notification limit is rejected. None of the 15 subsamples analyzed for total alpha activity produced upper limit results which exceeded the notification criteria, indicating that tank BY-104 may be considered "safe" from a criticality perspective.

Table 9: Statistical Analyses for Tank 241-BY-104 Total Alpha Results

Sample #	Result (uCi/g)	Duplicate (uCi/g)	Average (uCi/g)	UL(mean)
S95T003530	1.68E-02	1.37E-02	1.52E-02	2.50E-02
S95T003700	6.59E-03	6.14E-03	6.36E-03	7.78E-03
S95T003651	2.04E-02	1.97E-02	2.00E-02	2.22E-02
S95T003654	3.30E-02	3.49E-02	3.40E-02	4.00E-02
S95T003655	2.79E-02	2.59E-02	2.69E-02	3.32E-02
S95T003658	2.28E-02	2.06E-02	2.17E-02	2.86E-02
S95T003659	3.14E-02	2.50E-02	2.82E-02	4.84E-02
S95T003662	3.25E-02	3.61E-02	3.43E-02	4.57E-02
S95T003663	3.05E-01	2.11E-01	2.58E-01	5.55E-01
S95T003665	9.74E-02	1.28E-01	1.13E-01	2.10E-01
S95T003788	7.14E-01	8.45E-01	7.79E-01	1.19E-00
S95T003789	1.57E-02	1.35E-02	1.46E-02	2.15E-02

Project Coordinator: Cheryl J. Benar

References:

(1) Babad, H., J. W. Hunt, and K. S. Redus, *Tank Safety Screening Data Quality Objective*, WHC-SD-WM-SP-004, Rev. 2, dated August 31, 1995, Westinghouse Hanford Company, Richland, Washington.

(2) Buckley, L. L. and D. G. Baide, *Data Quality Objective to Support Resolution of the Organic Fuel Rich Tank Safety Issue*, WHC-SD-WM-DQO-006, Rev. 1, dated April 26, 1995, Westinghouse Hanford Company, Richland, Washington.

(3) Meacham, J. E., R. J. Cash, B. A. Pulsipher, and G. Chen, *Data Requirements for the Ferrocyanide Safety Issue Developed through the Data Quality Objectives Process*, WHC-SD-WM-DQO-007, Rev. 2, dated July 13, 1995, Westinghouse Hanford Company, Richland, Washington.

(4) Meacham, J. E., *Test Plan for Samples from Hanford Waste Tanks 241-BY-103, BY-104, BY-105, BY-106, BY-108, BY-110, TY-103, U-105, U-107, U-108, and U-109*, WHC-SD-WM-TP-378, Rev. 0, dated June 27, 1995, Westinghouse Hanford Company, Richland, Washington.

(5) Simpson, B. C., D. J. McCain, *Historical Model Evaluation Data Requirements*, WHC-SD-WM-DQO-018, Rev. 0, dated May 8, 1995, Westinghouse Hanford Company, Richland, Washington.

(6) Benar, C. J., *Tank 241-BY-104 Rotary Core Sampling and Analysis Plan*, WHC-SD-WM-TSAP-040, Rev. 0, dated September 7, 1995, Westinghouse Hanford Company, Richland, Washington.

(7) Tank Farms Operations, work package ES-95-00468, Westinghouse Hanford Company, Richland, Washington.

SAMPLE DATA SUMMARY

INTERIM

45-Day Report
BY104 ROTARY

CORE NUMBER: 116
SEGMENT #: 2

SEGMENT PORTION: A Top Quarter of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S95T003525			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.630	n/a	n/a	n/a	n/a	5.00e-01	n/a
S95T003528			% Water by TGA on Perkin Elmer	%	None	None	101.3	n/a	16.08	16.71	16.39	3.84	n/a	n/a	n/a
S95T003528			DSC Exotherm on Perkin Elmer	Joules/g	*1.0e+00	480.0	99.02	n/a	0.00e+00	116.0	58.00	117	n/a	n/a	n/a
S95T003528			DSC Exotherm Dry Calculated	Joules/g Dry	*1.0e+00	480.0	n/a	n/a	0.00e+00	138.7	69.35	200	n/a	n/a	n/a
S95T003530	Z		Alpha of Digested Solid	uCi/g	*1.0e+00	41.00	92.19	<6.90e-04	1.68e-02	1.37e-02	1.52e-02	20.3	30.87	1.22e-03	1.33E+01

U Upper Half of Segment: U Upper Half of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S95T003529			% Water by TGA on Perkin Elmer	%	None	None	101.7	n/a	7.290	13.40	10.35	59.1	n/a	n/a	n/a
S95T003529			% Water by TGA using Mettler	%	None	None	100.0	n/a	16.52	12.96	14.74	24.2	n/a	n/a	n/a
S95T003529			DSC Exotherm Dry Calculated	Joules/g Dry	*1.0e+00	480.0	n/a	n/a	30.50	13.60	22.05	76.6	n/a	n/a	n/a
S95T003529			DSC Exotherm using Mettler	Joules/g	*1.0e+00	480.0	102.3	n/a	26.00	11.60	18.80	76.6	n/a	n/a	n/a

=> Limit violated
=> Selected Limit

INTERIM

INTERIM

45-Day Report
BY104 ROTARY

CORE NUMBER: 116
SEGMENT #: 3

SEGMENT PORTION: U Upper Half of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S95T003700		F	Alpha of Digested Solid	uCi/g	*1.0e+00	41.00	111.7	<2.71e-03	6.59e-03	6.14e-03	6.36e-03	7.07	87.50	4.68e-03	6.66E+01
S95T003703	1		% Water by TGA using Mettler	%	None	None	100.3	n/a	11.86	6.130	8.995	63.7	n/a	n/a	n/a
S95T003703			% Water by TGA using Mettler	%	None	None	101.3	n/a	12.61	8.980	10.79	33.6	n/a	n/a	n/a
S95T003703			DSC Exotherm on Perkin Elmer	Joules/g	*1.0e+00	480.0	99.02	n/a	0.00e+00	11.14	5.570	11.1	n/a	n/a	n/a
S95T003703			DSC Exotherm Dry Calculated	Joules/g Dry	*1.0e+00	480.0	n/a	n/a	0.00e+00	12.48	6.240	200	n/a	n/a	n/a

L Lower Half of Segment: L Lower Half of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S95T003702			% Water by TGA using Mettler	%	None	None	101.3	n/a	12.32	10.10	11.21	19.8	n/a	n/a	n/a
S95T003702			DSC Exotherm on Perkin Elmer	Joules/g	*1.0e+00	480.0	98.31	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S95T003702			DSC Exotherm Dry Calculated	Joules/g Dry	*1.0e+00	480.0	n/a	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a

=> Limit violated
=> Selected Limit

INTERIM

INTERIM

45-Day Report
BY104 ROTARY

CORE NUMBER: 116
SEGMENT #: 4

SEGMENT PORTION: A Top Quarter of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S95T003594			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.810	n/a	n/a	n/a	n/a	5.00e-01	n/a
S95T003632			% Water by TGA on Perkin Elmer	%	None	None	101.3	n/a	19.00	22.41	20.70	16.5	n/a	n/a	n/a
S95T003632			DSC Exotherm on Perkin Elmer	Joules/g	-1.0e+00	480.0	99.96	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S95T003632			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+00	480.0	n/a	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a

B Second Quarter of Segment: B Second Quarter of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S95T003595			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.790	n/a	n/a	n/a	n/a	5.00e-01	n/a
S95T003637	1		% Water by TGA using Mettler	%	None	None	101.9	n/a	18.71	24.20	21.45	25.6	n/a	n/a	n/a
S95T003637			% Water by TGA using Mettler	%	None	None	99.73	n/a	31.67	25.16	28.41	22.9	n/a	n/a	n/a
S95T003637			DSC Exotherm on Perkin Elmer	Joules/g	-1.0e+00	480.0	100.7	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S95T003637			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+00	480.0	n/a	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a

C Third Quarter of Segment: C Third Quarter of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S95T003596			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.820	n/a	n/a	n/a	n/a	5.00e-01	n/a
S95T003641			% Water by TGA using Mettler	%	None	None	99.73	n/a	33.92	33.91	33.91	0.03	n/a	n/a	n/a
S95T003641			DSC Exotherm on Perkin Elmer	Joules/g	-1.0e+00	480.0	100.7	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S95T003641			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+00	480.0	n/a	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S95T003651		Z	Alpha of Digested Solid	uCi/g	-1.0e+00	41.00	84.38	<6.41e-03	2.04e-02	1.97e-02	2.00e-02	3.49	69.90	9.08e-03	4.35E+01

=> Limit violated
=> Selected Limit

INTERIM

INTERIM

45-Day Report
BY104 ROTARY

CORE NUMBER: 116
SEGMENT #: 5

SEGMENT PORTION: A Top Quarter of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S95T003597			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.790	n/a	n/a	n/a	n/a	5.00e-01	n/a
S95T003633			% Water by TGA using Mettler	%	None	None	96.59	n/a	24.42	24.11	24.27	1.28	n/a	n/a	n/a
S95T003633			DSC Exotherm on Perkin Elmer	Joules/g	-1.0e+00	480.0	99.96	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S95T003633			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+00	480.0	n/a	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a

B Second Quarter of Segment: B Second Quarter of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S95T003598			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.740	n/a	n/a	n/a	n/a	5.00e-01	n/a
S95T003638			% Water by TGA using Mettler	%	None	None	99.77	n/a	20.34	21.08	20.71	3.57	n/a	n/a	n/a
S95T003638			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+00	480.0	n/a	n/a	255.8	344.7	300.2	29.6	n/a	n/a	n/a
S95T003638	1		DSC Exotherm using Mettler	Joules/g	-1.0e+00	480.0	98.77	n/a	0.00e+00	41.20	20.60	200	n/a	n/a	n/a
S95T003638			DSC Exotherm using Mettler	Joules/g	-1.0e+00	480.0	102.6	n/a	202.8	273.3	238.1	29.6	n/a	n/a	n/a

C Third Quarter of Segment: C Third Quarter of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S95T003599			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.720	n/a	n/a	n/a	n/a	5.00e-01	n/a
S95T003642			% Water by TGA using Mettler	%	None	None	100.8	n/a	23.36	32.83	28.09	33.7	n/a	n/a	n/a
S95T003642			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+00	480.0	n/a	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S95T003642			DSC Exotherm using Mettler	Joules/g	-1.0e+00	480.0	100.5	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S95T003654		Z	Alpha of Digested Solid	uCi/g	-1.0e+00	41.00	89.58	1.050	3.30e-02	3.49e-02	3.40e-02	5.60	n/a	1.06e-02	3.27E+01

D Bottom Quarter of Segment: D Bottom Quarter of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S95T003600			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.730	n/a	n/a	n/a	n/a	5.00e-01	n/a
S95T003645			% Water by TGA using Mettler	%	None	None	100.8	n/a	21.70	24.45	23.07	11.9	n/a	n/a	n/a
S95T003645			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+00	480.0	n/a	n/a	284.9	724.6	504.8	87.1	n/a	n/a	n/a
S95T003645			DSC Exotherm using Mettler	Joules/g	-1.0e+00	480.0	100.5	n/a	219.2	557.4	388.3	87.1	n/a	n/a	n/a
S95T003655		Z	Alpha of Digested Solid	uCi/g	-1.0e+00	41.00	89.58	1.050	2.79e-02	2.59e-02	2.69e-02	7.43	81.12	1.04e-02	3.61E+01

=> Limit violated
=> Selected Limit

INTERIM

45-Day Report
BY104 ROTARY

CORE NUMBER: 116
SEGMENT #: 6

SEGMENT PORTION: A Top Quarter of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S95T003601			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.76 G/M	n/a	n/a	n/a	n/a	5.00e-01	n/a
S95T003634			% Water by TGA using Mettler	%	None	None	102.1	n/a	28.77	26.33	27.55	8.86	n/a	n/a	n/a
S95T003634			DSC Exotherm using Mettler	Joules/g	-1.0e+00	480.0	106.2	n/a	23.60	36.20	29.90	42.1	n/a	n/a	n/a

B Second Quarter of Segment: B Second Quarter of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S95T003602			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.75 G/M	n/a	n/a	n/a	n/a	5.00e-01	n/a
S95T003639			% Water by TGA using Mettler	%	None	None	101.3	n/a	30.64	33.01	31.82	7.45	n/a	n/a	n/a
S95T003639			DSC Exotherm using Mettler	Joules/g	-1.0e+00	480.0	95.61	n/a	71.00	65.30	68.15	8.36	n/a	n/a	n/a

C Third Quarter of Segment: C Third Quarter of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S95T003603			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.75 G/M	n/a	n/a	n/a	n/a	5.00e-01	n/a
S95T003643			% Water by TGA on Perkin Elmer	%	None	None	101.3	n/a	8.94e-01	28.00	14.45	200	n/a	n/a	n/a
S95T003643			DSC Exotherm on Perkin Elmer	Joules/g	-1.0e+00	480.0	99.33	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S95T003643			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+00	480.0	n/a	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S95T003658		Z	Alpha of Digested Solid	uCi/g	-1.0e+00	41.00	85.94	<6.61e-03	2.28e-02	2.06e-02	2.17e-02	10.1	n/a	9.36e-03	3.80E+01

D Bottom Quarter of Segment: D Bottom Quarter of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S95T003604			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.75 G/M	n/a	n/a	n/a	n/a	5.00e-01	n/a
S95T003646			% Water by TGA on Perkin Elmer	%	None	None	101.3	n/a	7.52e-01	9.97e-01	8.75e-01	28.0	n/a	n/a	n/a
S95T003646			% Water by TGA using Mettler	%	None	None	100.3	n/a	22.97	24.24	23.60	5.38	n/a	n/a	n/a
S95T003646			DSC Exotherm on Perkin Elmer	Joules/g	-1.0e+00	480.0	99.33	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S95T003646			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+00	480.0	n/a	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S95T003659		Z	Alpha of Digested Solid	uCi/g	-1.0e+00	41.00	85.94	<6.61e-03	3.14e-02	2.50e-02	2.82e-02	22.7	78.32	1.01e-02	3.62E+01

=> Limit violated
=> Selected Limit

22

INTERIM

45-Day Report
BY104 ROTARY

CORE NUMBER: 116
SEGMENT #: 7

SEGMENT PORTION: A Top Quarter of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S95T003605			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.690	n/a	n/a	n/a	n/a	5.00e-01	n/a
S95T003635			% Water by TGA using Mettler	%	None	None	96.59	n/a	25.73	25.85	25.79	0.47	n/a	n/a	n/a
S95T003635			DSC Exotherm on Perkin Elmer	Joules/g	>1.0e+00	480.0	99.96	n/a	104.5	100.1	102.3	4.30	n/a	n/a	n/a
S95T003635			DSC Exotherm Dry Calculated	Joules/g Dry	>1.0e+00	480.0	n/a	n/a	149.8	134.9	137.9	4.28	n/a	n/a	n/a

B Second Quarter of Segment: B Second Quarter of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S95T003606			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.680	n/a	n/a	n/a	n/a	5.00e-01	n/a
S95T003640			% Water by TGA using Mettler	%	None	None	99.77	n/a	28.21	26.65	27.43	5.69	n/a	n/a	n/a
S95T003640			DSC Exotherm Dry Calculated	Joules/g Dry	>1.0e+00	480.0	n/a	n/a	389.6	309.8	349.7	22.8	n/a	n/a	n/a
S95T003640	1		DSC Exotherm using Mettler	Joules/g	>1.0e+00	480.0	98.77	n/a	54.40	78.20	66.30	35.9	n/a	n/a	n/a
S95T003640			DSC Exotherm using Mettler	Joules/g	>1.0e+00	480.0	102.6	n/a	282.7	224.8	253.8	22.8	n/a	n/a	n/a

C Third Quarter of Segment: C Third Quarter of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S95T003607			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.640	n/a	n/a	n/a	n/a	5.00e-01	n/a
S95T003644			% Water by TGA using Mettler	%	None	None	100.7	n/a	29.20	27.83	28.52	4.80	n/a	n/a	n/a
S95T003644			DSC Exotherm on Perkin Elmer	Joules/g	>1.0e+00	480.0	99.19	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S95T003662		Z	Alpha of Digested Solid	uCi/g	>1.0e+00	41.00	85.42	<4.93e-03	3.25e-02	3.61e-02	3.43e-02	10.5	n/a	1.01e-02	3.33E+01

D Bottom Quarter of Segment: D Bottom Quarter of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S95T003647			% Water by TGA using Mettler	%	None	None	101.4	n/a	26.81	24.36	25.59	9.58	n/a	n/a	n/a
S95T003647			DSC Exotherm Dry Calculated	Joules/g Dry	>1.0e+00	480.0	n/a	n/a	484.1	436.6	460.4	10.3	n/a	n/a	n/a
S95T003647			DSC Exotherm using Mettler	Joules/g	>1.0e+00	480.0	97.72	n/a	360.2	324.9	342.5	10.3	n/a	n/a	n/a
S95T003663		Z	Alpha of Digested Solid	uCi/g	>1.0e+00	41.00	85.42	<4.93e-03	3.05e-01	2.11e-01	2.58e-01	36.4	77.04	2.22e-01	5.66E+01

=> Limit violated
=> Selected Limit

23

INTERIM

45-Day Report
BY104 ROTARY

CORE NUMBER: 116
SEGMENT #: 8

SEGMENT PORTION: A Top Quarter of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S95T003636			% Water by TGA using Mettler	%	None	None	103.2	n/a	26.96	26.76	26.86	0.74	n/a	n/a	n/a
S95T003636			DSC Exotherm on Perkin Elmer	Joules/g	1.0e+00	480.0	99.96	n/a	538.6	640.5	589.5	17.3	n/a	n/a	n/a
S95T003636			DSC Exotherm Dry Calculated	Joules/g Dry	1.0e+00	480.0	n/a	n/a	736.4	875.7	806.0	17.3	n/a	n/a	n/a

D Bottom Quarter of Segment: D Bottom Quarter of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S95T003648			% Water by TGA using Mettler	%	None	None	100.0	n/a	35.26	33.59	34.42	4.85	n/a	n/a	n/a
S95T003648			DSC Exotherm Dry Calculated	Joules/g Dry	1.0e+00	480.0	n/a	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S95T003648			DSC Exotherm using Mettler	Joules/g	1.0e+00	480.0	102.3	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S95T003665	Z		Alpha of Digested Solid	uCi/g	1.0e+00	41.00	85.42	<4.93e-03	9.74e-02	1.28e-01	1.13e-01	27.2	79.59	1.19e-01	9.17E+01

=> Limit violated
=> Selected Limit

INTERIM

24

45-Day Report
BY104 ROTARY

CORE NUMBER: 116
SEGMENT #: n/a

SEGMENT PORTION: Field Blank

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S95T003713			% Water by TGA using Mettler	%	None	None	96.89	n/a	100.2	100.3	100.2	0.10	n/a	n/a	n/a
S95T003713			DSC Exotherm on Perkin Elmer	Joules/g	1.0e+00	480.0	100.6	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a

=> Limit violated
=> Selected Limit

INTERIM

45-Day Report
BY104 ROTARY

CORE NUMBER: 117
SEGMENT #: 1

SEGMENT PORTION: U Upper Half of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S95T003764			% Water by TGA using Mettler	%	None	None	100.6	n/a	37.49	36.64	37.06	2.29	n/a	n/a	n/a
S95T003764			DSC Exotherm using Mettler	Joules/g	1.0e+00	480.0	95.96	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a

=> Limit violated
=> Selected Limit

INTERIM

45-Day Report
BY104 ROTARY

CORE NUMBER: 117
SEGMENT #: 1

SEGMENT PORTION: Drainable Liquid

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S95T003761			% Water by TGA using Mettler	%	None	None	101.4	n/a	49.05	48.93	48.99	0.24	n/a	n/a	n/a
S95T003761			DSC Exotherm using Mettler	Joules/g	1.00e+00	480.0	108.3	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a

=> Limit violated
=> Selected Limit

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INTERIM

45-Day Report
BY104 ROTARY

CORE NUMBER: 117
SEGMENT #: 2

SEGMENT PORTION: A Top Quarter of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S95T003776			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.740	n/a	n/a	n/a	n/a	5.00e-01	n/a
S95T003781			% Water by TGA using Mettler	%	None	None	100.6	n/a	30.24	28.11	29.17	7.30	n/a	n/a	n/a
S95T003781			DSC Exotherm using Mettler	Joules/g	1.0e+00	480.0	101.6	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S95T003786		Z	Alpha of Digested Solid	uCi/g	1.0e+00	41.00	83.77	<6.47e-02	<6.47E-02	<6.49E-2	n/a	n/a	75.26	1.47e-01	5.00E+02

D Bottom Quarter of Segment: D Bottom Quarter of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S95T003777			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.830	n/a	n/a	n/a	n/a	5.00e-01	n/a
S95T003782			% Water by TGA using Mettler	%	None	None	100.9	n/a	34.40	37.81	36.11	9.44	n/a	n/a	n/a
S95T003782			DSC Exotherm using Mettler	Joules/g	1.0e+00	480.0	100.5	n/a	18.80	23.60	21.20	22.6	n/a	n/a	n/a
S95T003787		Z	Alpha of Digested Solid	uCi/g	1.0e+00	41.00	83.77	<6.47e-02	<1.26E-01	<1.53E-1	n/a	n/a	78.06	2.87e-01	5.00E+02

=> Limit violated
=> Selected Limit

INTERIM

45-Day Report
BY104 ROTARY

CORE NUMBER: 117
SEGMENT #: 2

SEGMENT PORTION: Drainable Liquid

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S95T003775			% Water by TGA using Mettler	%	None	None	101.4	n/a	48.80	48.95	48.88	0.31	n/a	n/a	n/a
S95T003775			DSC Exotherm using Mettler	Joules/g	1.0e+03	680.0	108.3	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a

=> Limit violated
=> Selected Limit

23

INTERIM

45-Day Report
BY104 ROTARY

CORE NUMBER: 117
SEGMENT #: 3

SEGMENT PORTION: U Upper Half of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S95T003809			% Water by TGA on Perkin Elmer	%	None	None	100.3	n/a	37.06	35.97	36.52	2.99	n/a	n/a	n/a
S95T003809			DSC Exotherm on Perkin Elmer	Joules/g	>1.0e+00	400.0	100.7	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a

C Third Quarter of Segment: C Third Quarter of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S95T003778			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.780	n/a	n/a	n/a	n/a	5.00e-01	n/a
S95T003783			% Water by TGA on Perkin Elmer	%	None	None	100.3	n/a	26.37	28.19	27.28	6.67	n/a	n/a	n/a
S95T003783			DSC Exotherm on Perkin Elmer	Joules/g	>1.0e+00	400.0	100.7	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S95T003788		Z	Alpha of Digested Solid	uCi/g	>1.0e+00	<1.00	85.06	<3.64e-01	7.14e-01	8.45e-01	7.79e-01	16.8	79.34	4.44e-01	5.01E+01

=> Limit violated
=> Selected Limit

INTERIM

30

INTERIM

45-Day Report
BY104 ROTARY

CORE NUMBER: 117
SEGMENT #: 4

SEGMENT PORTION: U Upper Half of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S95T003810			% Water by TGA using Mettler	%	None	None	100.9	n/a	13.86	13.40	13.63	3.37	n/a	n/a	n/a
S95T003810			DSC Exotherm using Mettler	Joules/g	*1.0e+00	*80.0	100.5	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a

=> Limit violated
=> Selected Limit

INTERIM

INTERIM

45-Day Report
BY104 ROTARY

CORE NUMBER: 117
SEGMENT #: 5

SEGMENT PORTION: A Top Quarter of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S95T003779			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.800	n/a	n/a	n/a	n/a	5.00e-01	n/a
S95T003784			% Water by TGA using Mettler	%	None	None	103.2	n/a	16.61	18.13	17.37	8.75	n/a	n/a	n/a
S95T003784			DSC Exotherm on Perkin Elmer	Joules/g	-1.0e+00	480.0	99.02	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S95T003789		Z	Alpha of Digested Solid	uCi/g	-1.0e+00	41.00	85.06	<3.64e-01	1.57e-02	1.35e-02	1.46e-02	15.1	65.56	4.51e-03	3.13E+01

C Third Quarter of Segment: C Third Quarter of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S95T003785			% Water by TGA using Mettler	%	None	None	103.2	n/a	15.26	17.55	16.41	14.0	n/a	n/a	n/a
S95T003785			DSC Exotherm on Perkin Elmer	Joules/g	-1.0e+00	480.0	99.02	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S95T003790		Z	Alpha of Digested Solid	uCi/g	-1.0e+00	41.00	83.77	<6.47e-02	<6.16E-02	<7.76E-2	n/a	n/a	81.38	1.40e-01	5.00E+02

=> Limit violated
=> Selected Limit

INTERIM

32

INORGANIC ANALYSES

LABCORE Data Entry Template for Worklist# 3417

Analyst: SMF **Instrument:** DSC0 3 **Book #** 12N143

Method: LA-514-114 Rev/Mod C-1

Worklist Comment: Please run BY-104 DSC under N2. bdv

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				DSC-03	SOLID	28.45	28.44	N/A	Joules/g
95000180	BY104 ROTARY	2	SAMPLE	S95T003632	0		DSC-03	SOLID	N/A	Ø		Joules/g
95000180	BY104 ROTARY	3	DUP	S95T003632	0		DSC-03	SOLID	Ø	Ø	N/A	Joules/g
95000180	BY104 ROTARY	4	SAMPLE	S95T003633	0		DSC-03	SOLID	N/A	Ø		Joules/g
95000180	BY104 ROTARY	5	DUP	S95T003633	0		DSC-03	SOLID	Ø	Ø	N/A	Joules/g
95000180	BY104 ROTARY	6	SAMPLE	S95T003635	0		DSC-03	SOLID	N/A	104.46		Joules/g
95000180	BY104 ROTARY	7	DUP	S95T003635	0		DSC-03	SOLID	104.46	100.13	N/A	Joules/g
95000180	BY104 ROTARY	8	SAMPLE	S95T003636	0		DSC-03	SOLID	N/A	538.6		Joules/g
95000180	BY104 ROTARY	9	DUP	S95T003636	0		DSC-03	SOLID	538.6	640.5	N/A	Joules/g
		10	STD				DSC-03	SOLID	28.45	27.97	N/A	Joules/g
95000180	BY104 ROTARY	11	SAMPLE	S95T003702	0		DSC-03	SOLID	N/A	Ø		Joules/g
95000180	BY104 ROTARY	12	DUP	S95T003702	0		DSC-03	SOLID	Ø	Ø	N/A	Joules/g

Final page for worklist # 3417

See attached for signatures

Analyst Signature **Date**

[signature] 1-12-96

Analyst Signature **Date**

Verified by Blandina Valenzuela 1/12/96

Data Entry Comments:

S95T003632 produced two endotherms one at 104.13°C with a delta H of 581.28 J/g and the second at 277.39°C with a delta H of 76.79 J/g

S95T003633 produced 3 endotherms one at 103.2°C with a delta H of 661.9 J/g second at 291.9°C with a delta H of 66.07 J/g and third at 422.1°C with a delta H of 182.9 J/g

S95T003635 produced an endotherm at 136.15°C with a delta H of 793.55 J/g

S95T003636 produced an endotherm at 142.95°C with a delta H of 655.62 J/g

S95T003702 produced ~~two~~ two endotherms one at 104.42°C with a delta H of 190.62 J/g and second at 295.9°C with a delta H of 110.17 J/g

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

LABCORE Data Entry Template for Worklist# 3417

Analyst: SMF **Instrument:** DSC0 1 **Book #** 12N/4B

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

Worklist Comment: Please run BY-104 DSC under N2. bdv

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				DSC-01	SOLID	28.45	28.44	N/A	Joules/g
95000180	BY104 ROTARY	2	SAMPLE	S95T003632	0		DSC-01	SOLID	N/A	Ø		Joules/g
95000180	BY104 ROTARY	3	DUP	S95T003632	0		DSC-01	SOLID	Ø	Ø	N/A	Joules/g
95000180	BY104 ROTARY	4	SAMPLE	S95T003633	0		DSC-01	SOLID	N/A	Ø		Joules/g
95000180	BY104 ROTARY	5	DUP	S95T003633	0		DSC-01	SOLID	Ø	Ø	N/A	Joules/g
95000180	BY104 ROTARY	6	SAMPLE	S95T003635	0		DSC-01	SOLID	N/A	104.46		Joules/g
95000180	BY104 ROTARY	7	DUP	S95T003635	0		DSC-01	SOLID	104.46	100.13	N/A	Joules/g
95000180	BY104 ROTARY	8	SAMPLE	S95T003636	0		DSC-01	SOLID	N/A			Joules/g
95000180	BY104 ROTARY	9	DUP	S95T003636	0		DSC-01	SOLID			N/A	Joules/g
95000180	BY104 ROTARY	10	SAMPLE	S95T003702	0		DSC-01	SOLID	N/A			Joules/g
95000180	BY104 ROTARY	11	DUP	S95T003702	0		DSC-01	SOLID			N/A	Joules/g

Final page for worklist # 3417

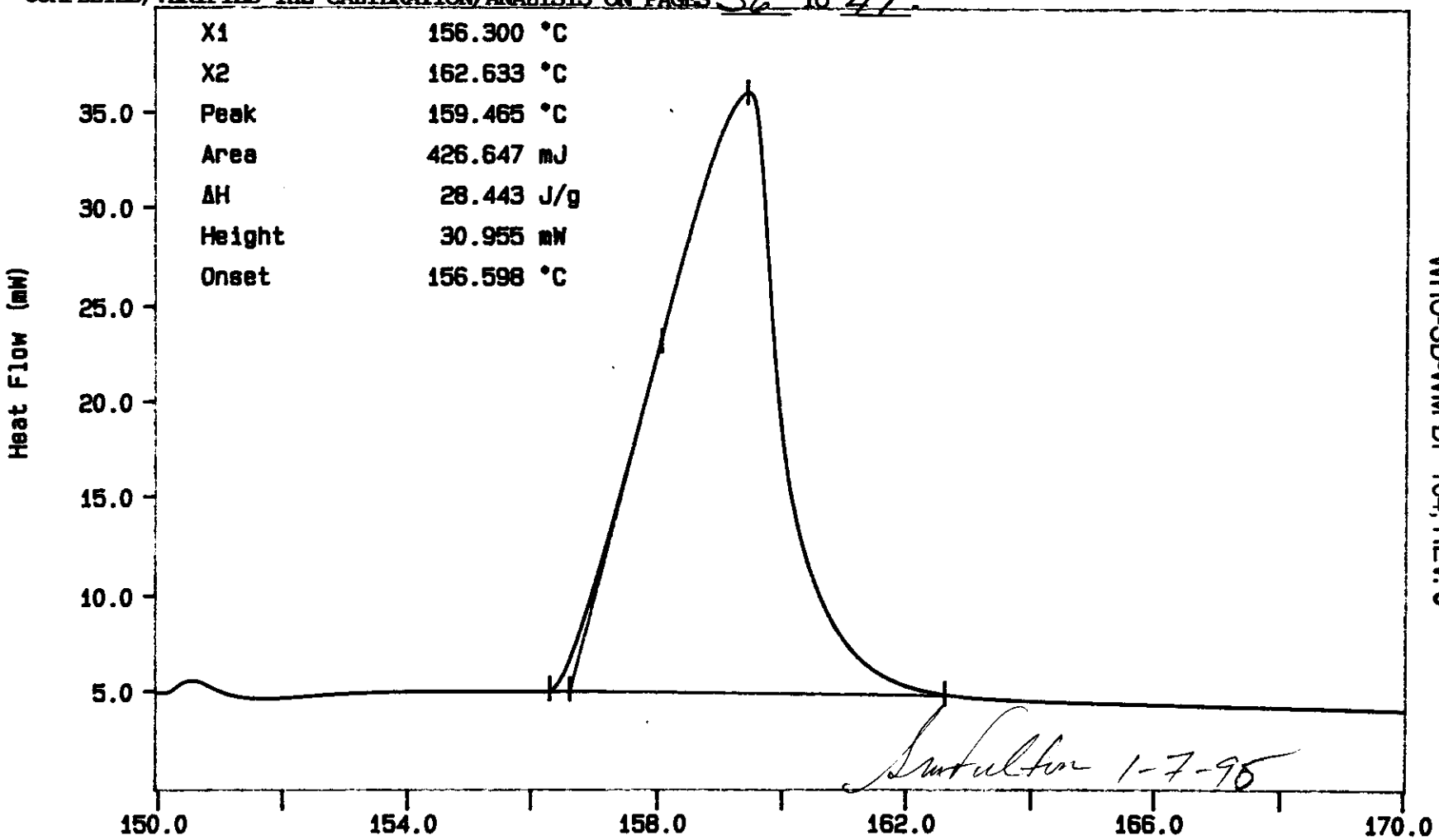
SMFulton 1-9-96 0400
Analyst Signature **Date** **Analyst Signature** **Date**

Data Entry Comments: S95T003632 produced two endotherms one at 104.13°C with a delta H of 581.28 J/g and the second at 277.39°C with a delta H of 76.79 J/g
S95T003633 produced three endotherms one at 103.22°C with a delta H of 661.9 J/g second at 291.91°C with a delta H of 66.07 J/g and third at 422.08°C with a delta H of 132.93 J/g
S95T003635 produced an endotherm at 136.15°C with a delta H of 793.55
S95T003636

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

Curve 1: DSC
File info: IND010701 Sun Jan 7 18:30:51 1996
Sample Weight: 15.000 mg
12N14B Indium at 10C/min

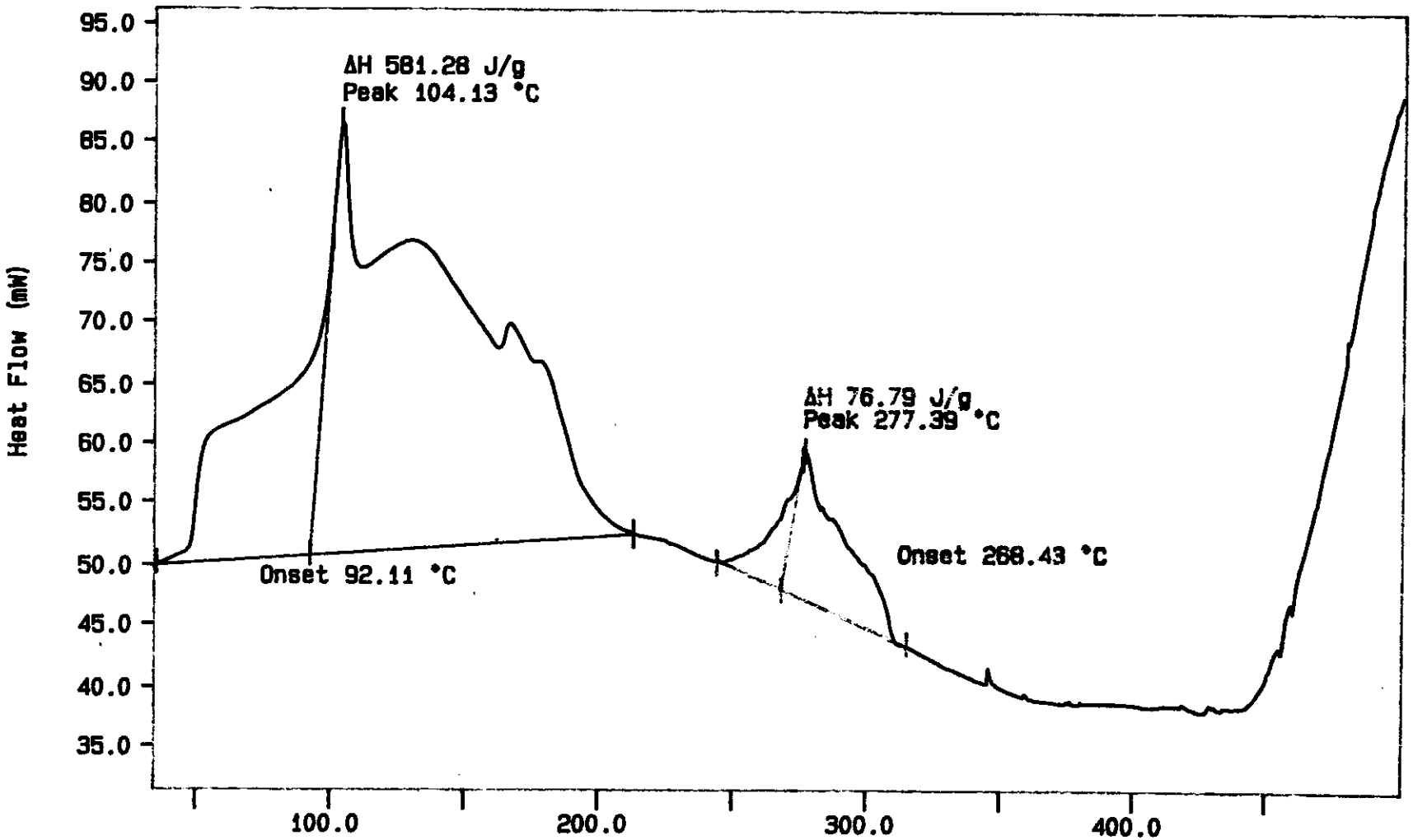
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 36 TO 47.



N2, EXOTHERM DOWN
TEMP1: 150.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 170.0 C

SM FULTON
PERKIN-ELMER
7 Series Thermal Analysis System
Sun Jan 7 18:34:52 1996

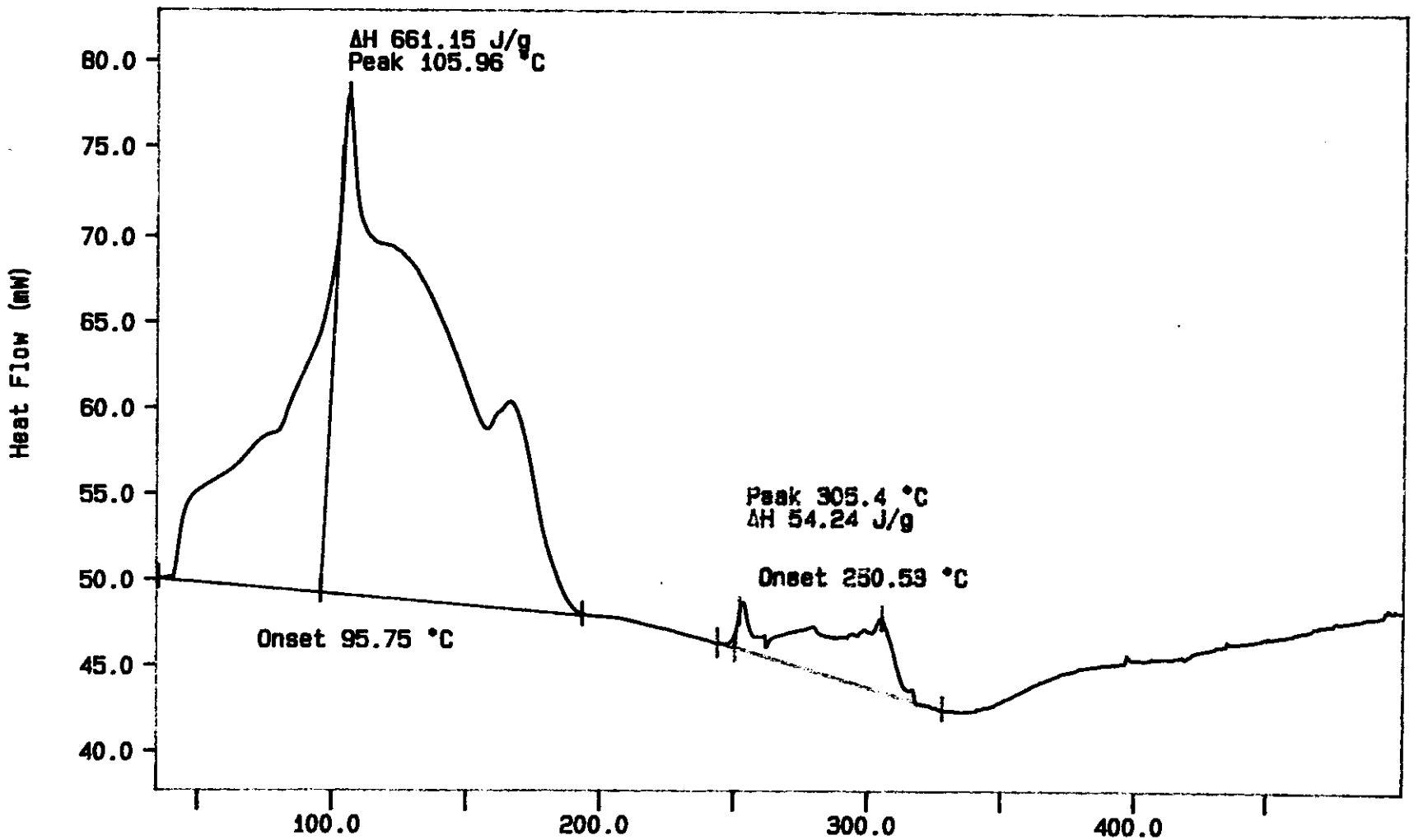
Curve 1: DSC
File info: SAM010701 Sun Jan 7 19:27:38 1996
Sample Weight: 26.740 mg
~~S95T004043~~ SMF1-7-95
S95T003632



exotherm down, N2 purge gas
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 500.0 C

SM FULTON
PERKIN-ELMER
7 Series Thermal Analysis System
Sun Jan 7 19:29:56 1996

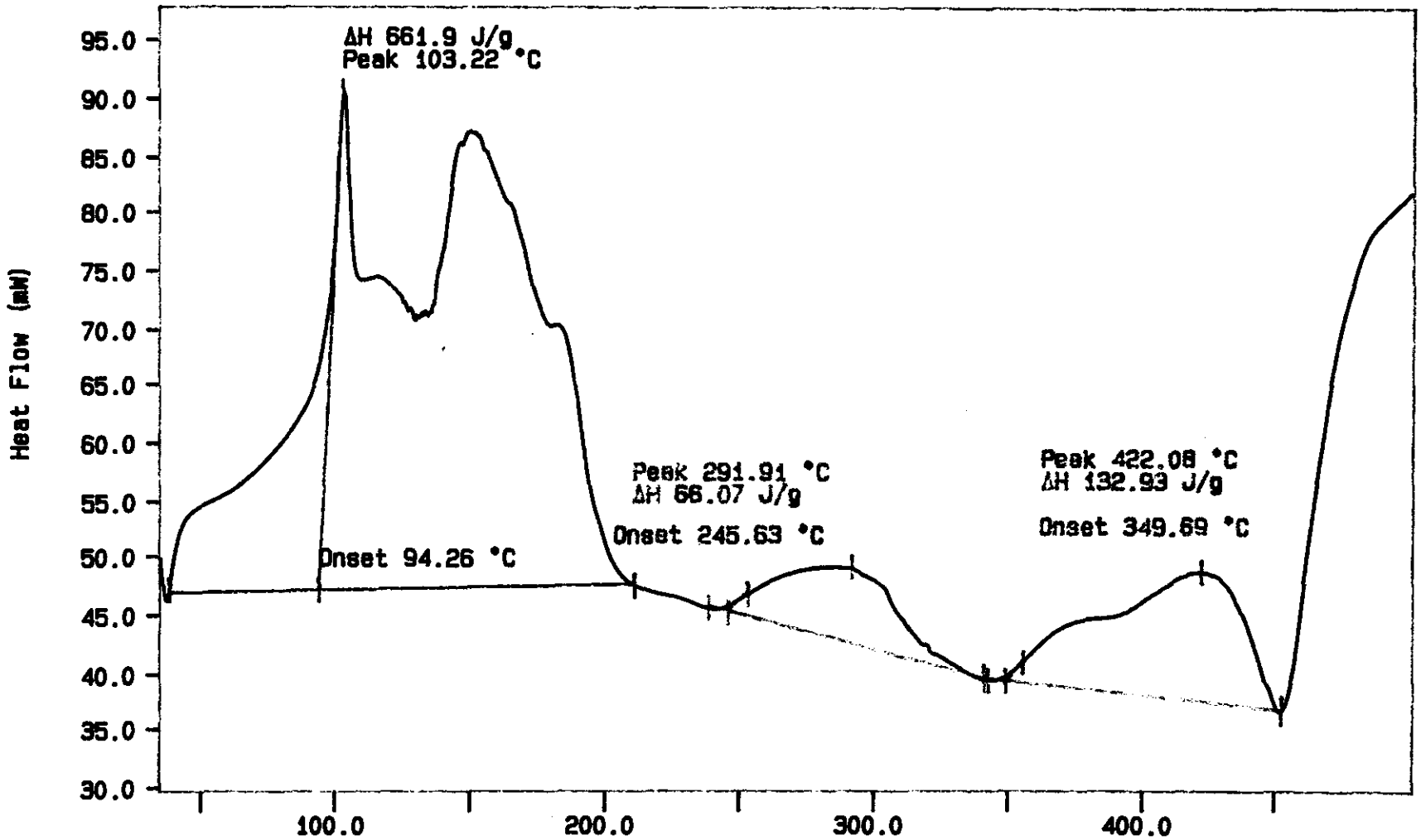
Curve 1: DSC
File info: SAM010702 Sun Jan 7 20:24:26 1996
Sample Weight: 16.510 mg
S95T003632 DUP



exotherm down, N2 purge gas
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 600.0 C

SM FULTON
PERKIN-ELMER
7 Series Thermal Analysis System
Sun Jan 7 21:00:46 1996

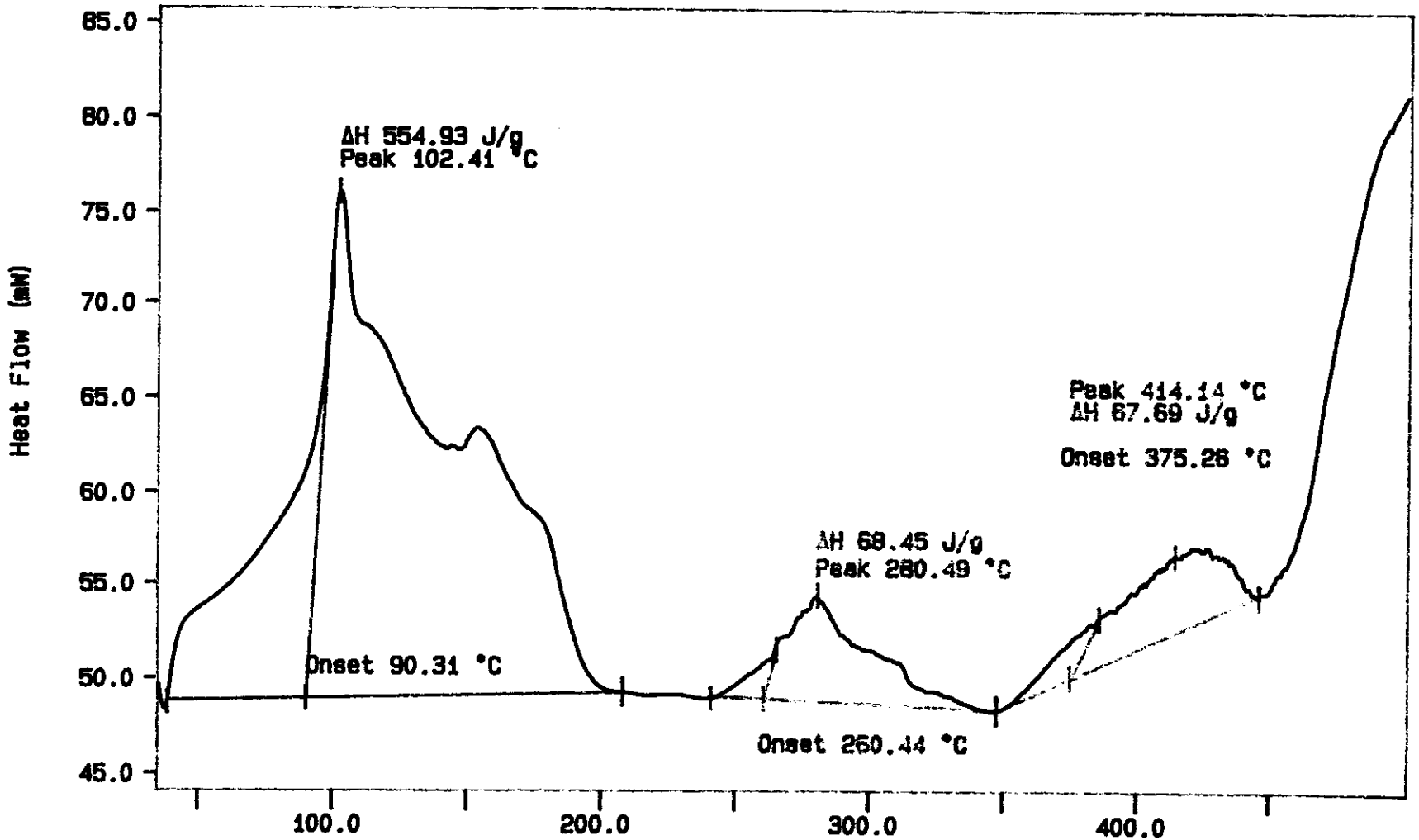
Curve 1: DSC
File info: SAM010703 Sun Jan 7 22:04:28 1996
Sample Weight: 31.310 mg
S95T003633



exotherm down, N2 purge gas
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 600.0 C

SM FULTON
PERKIN-ELMER
7 Series Thermal Analysis System
Wed Jan 10 15:18:06 1996

Curve 1: DSC
File info: SAM010704 Sun Jan 7 23:03:54 1996
Sample Weight: 19.670 mg
S95T003633 DUP

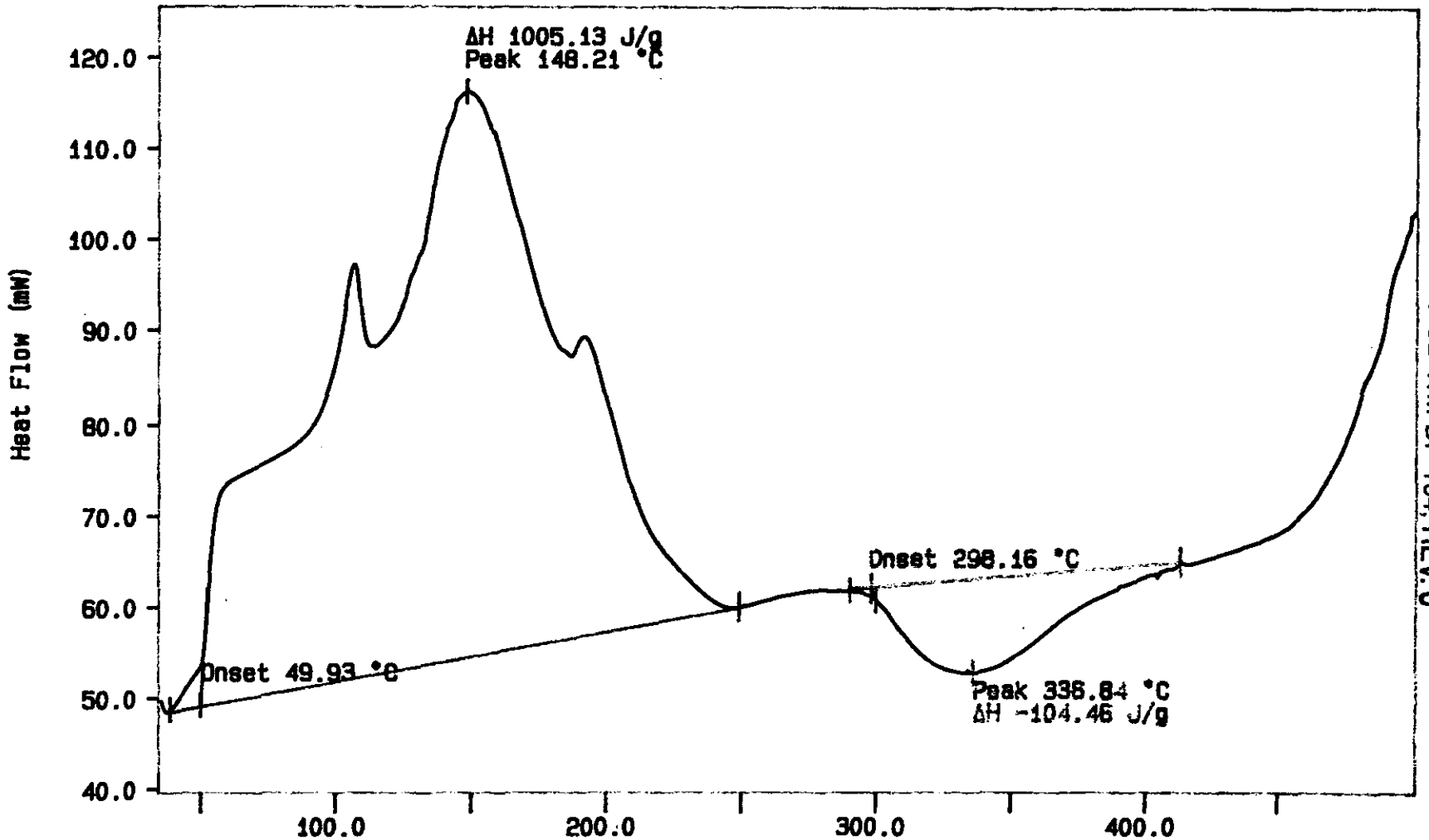


exotherm down, N2 purge gas
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 600.0 C

SM FULTON
PERKIN-ELMER
7 Series Thermal Analysis System
Wed Jan 10 15:38:01 1996

WHC-SD-WM-DP-164, REV. 0

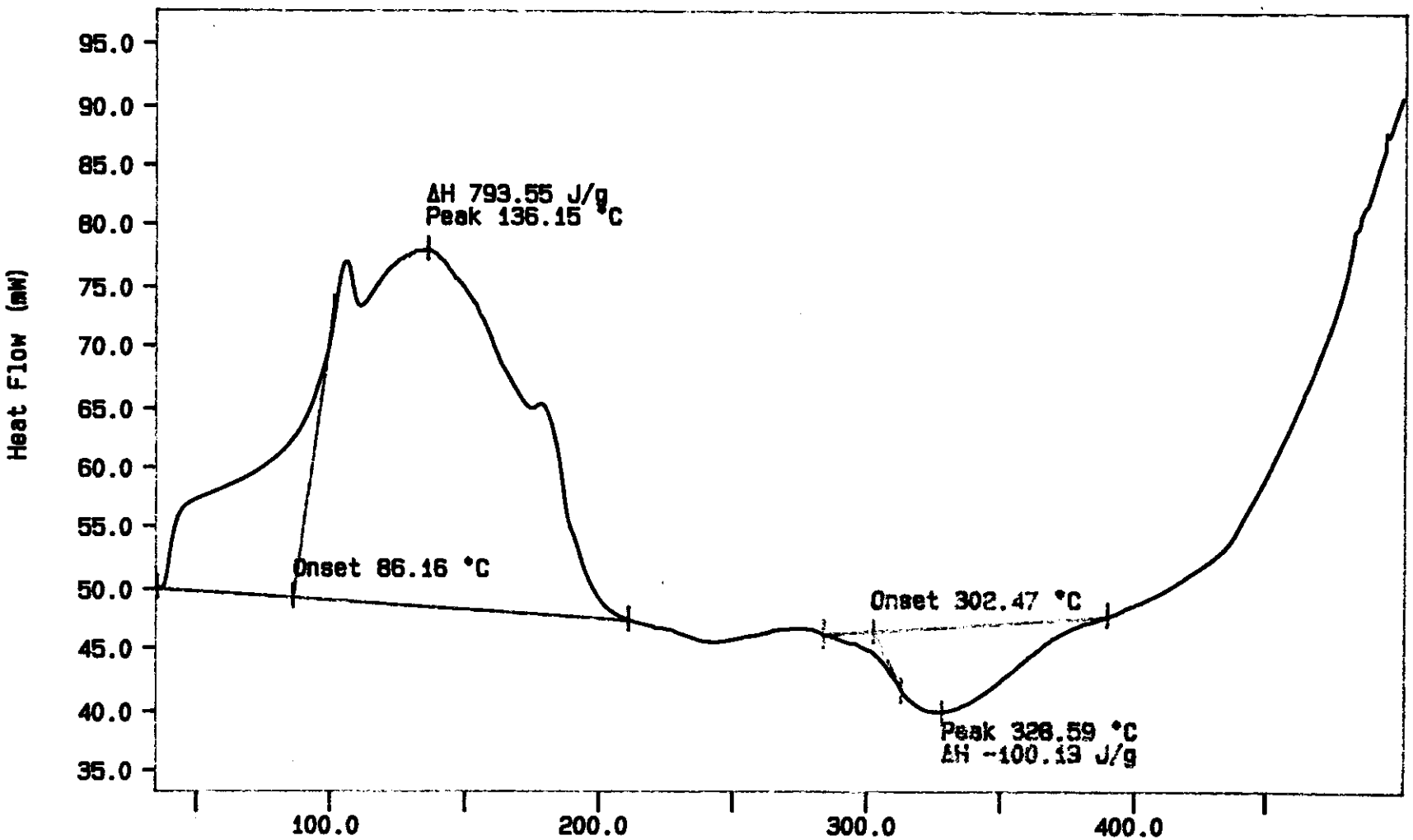
Curve 1: DSC
File info: SAM010705 Sun Jan 7 23:54:39 1996
Sample Weight: 36.000 mg
S95T03635



exotherm down, N2 purge gas
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 500.0 C

SM FULTON
PERKIN-ELMER
7 Series Thermal Analysis System
Wed Jan 10 14:36:05 1996

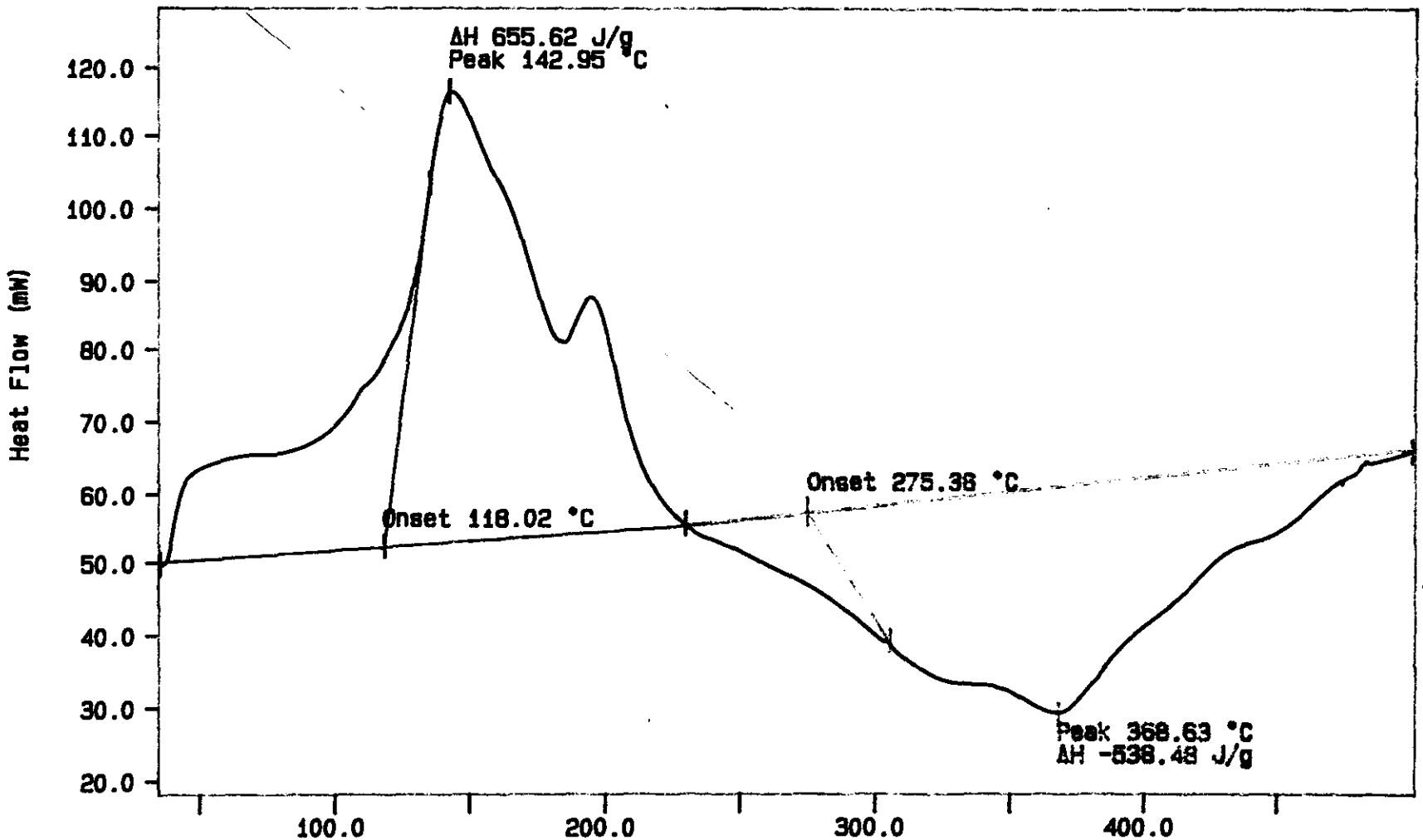
Curve 1: DSC
File info: SAM010709 Mon Jan 8 01:59:03 1996
Sample Weight: 21.300 mg
S95T003635 DUP



exotherm down, N2 purge gas
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 600.0 C

SM FULTON
PERKIN-ELMER
7 Series Thermal Analysis System
Wed Jan 10 14:56:39 1996

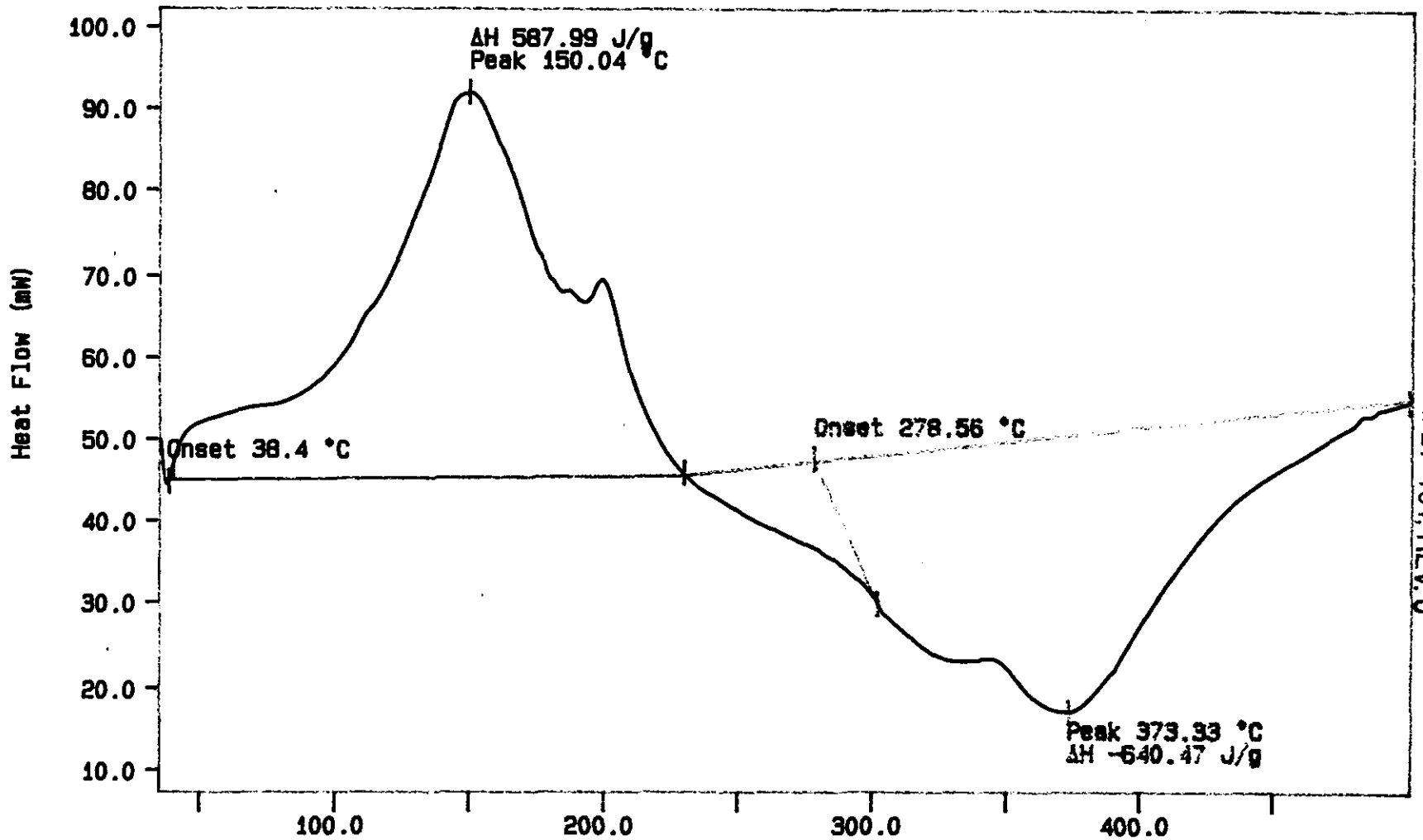
Curve 1: DSC
File info: SAM010710 Mon Jan 8 02:55:47 1996
Sample Weight: 45.500 mg
S965T003636



exotherm down, N2 purge gas
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 600.0 C

SM FULTON
PERKIN-ELMER
7 Series Thermal Analysis System
Mon Jan 8 11:51:34 1996

Curve 1: DSC
File info: SAM010711 Mon Jan 8 05:05:48 1996
Sample Weight: 39.150 mg
S95T003636 DUP

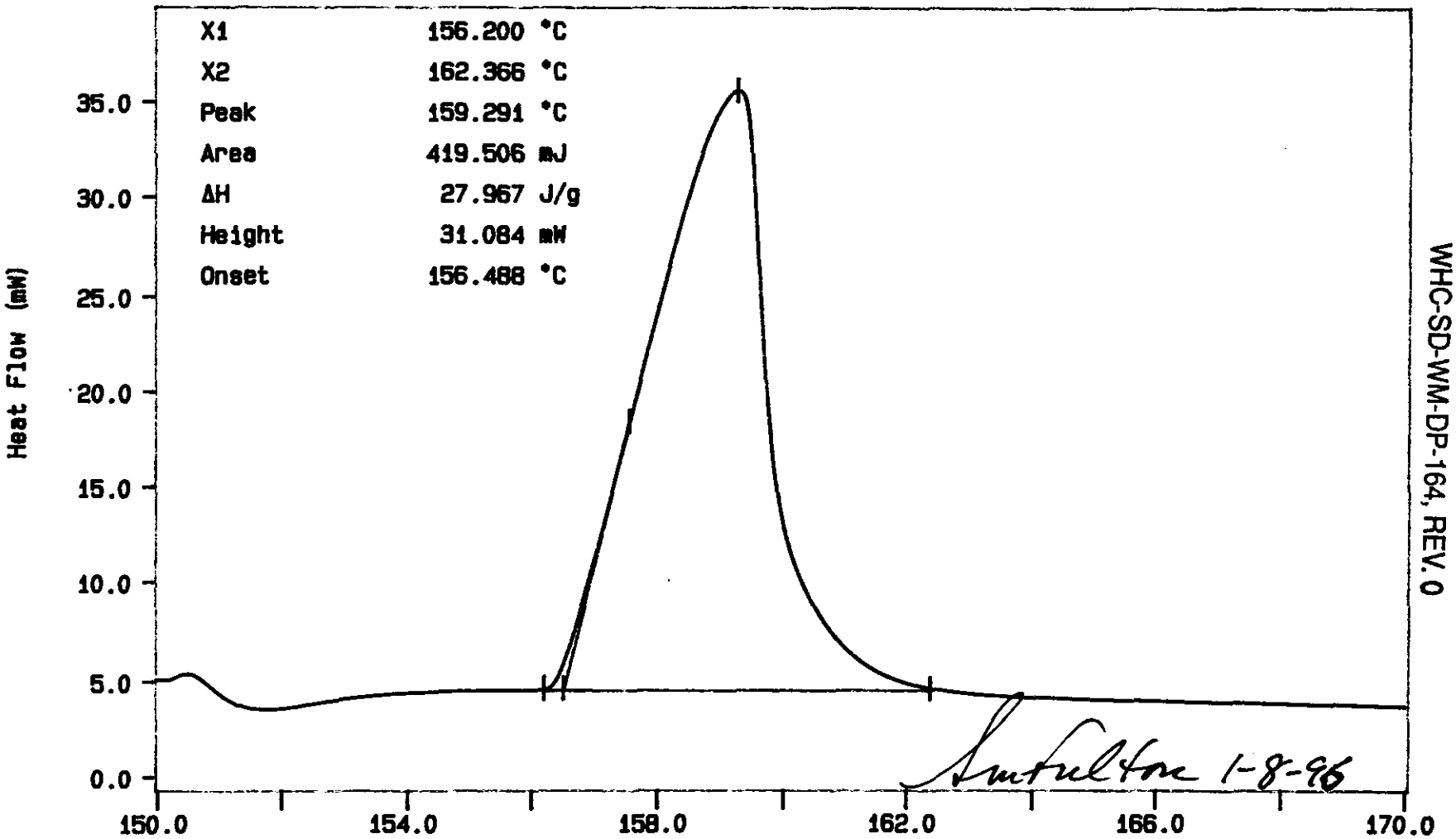


exotherm down, N2 purge gas
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 600.0 C

SM FULTON
PERKIN-ELMER
7 Series Thermal Analysis System
Mon Jan 8 11:20:43 1996

WHC-SD-WM-DP-164, REV. 0

Curve 1: DSC
File info: IND010801 Tue Jan 9 01:10:35 1996
Sample Weight: 15.000 mg
12N14B Indium at 10C/min

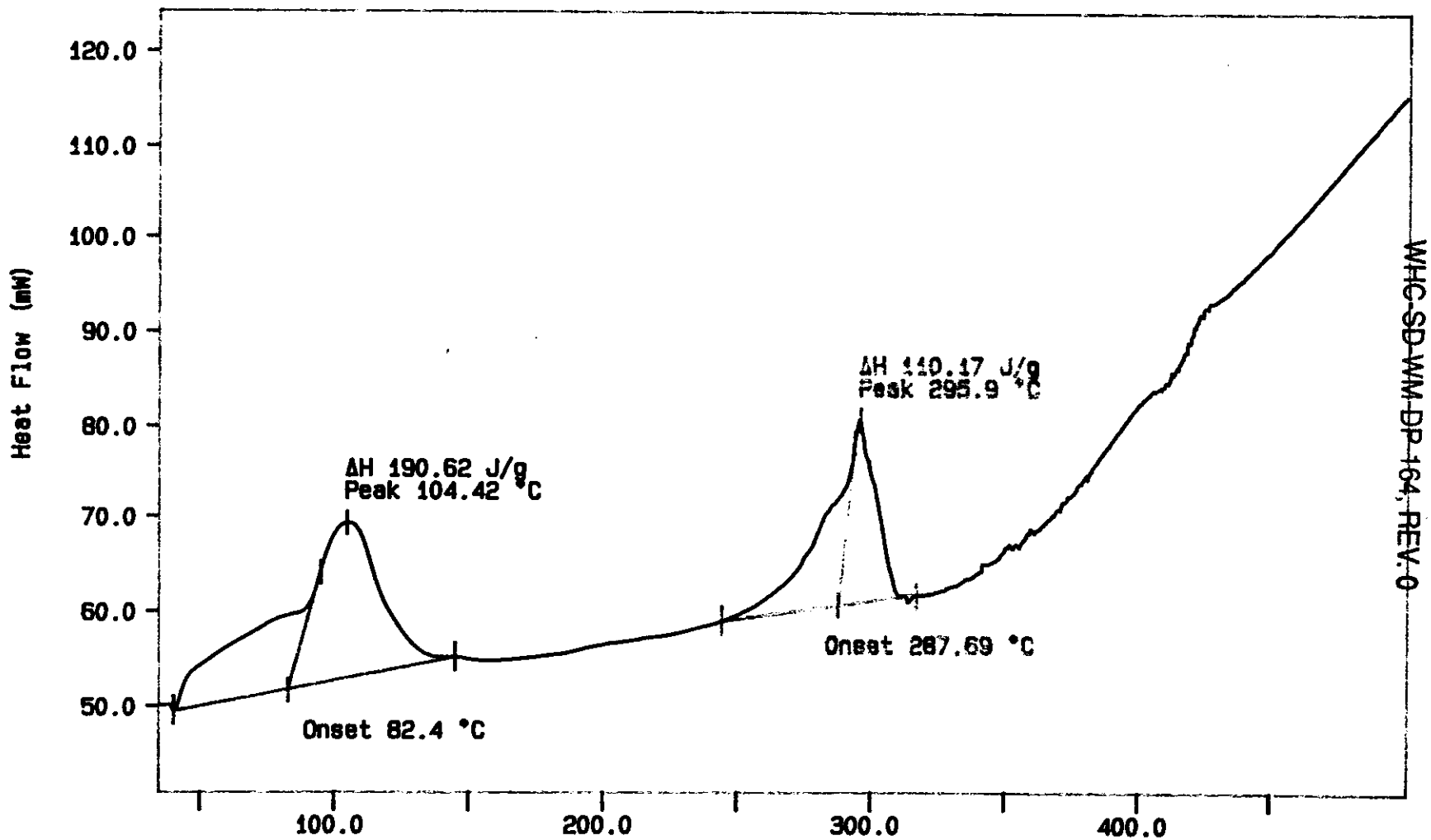


N2, EXOTHERM DOWN
TEMP1: 150.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 170.0 C

SM FULTON
PERKIN-ELMER
7 Series Thermal Analysis System
Tue Jan 9 01:17:50 1996

WHC-SD-WM-DP-164, REV. 0

Curve 1: DSC
File info: SAM010801 Tue Jan 9 02:13:48 1996
Sample Weight: 22.870 mg
S95T003702

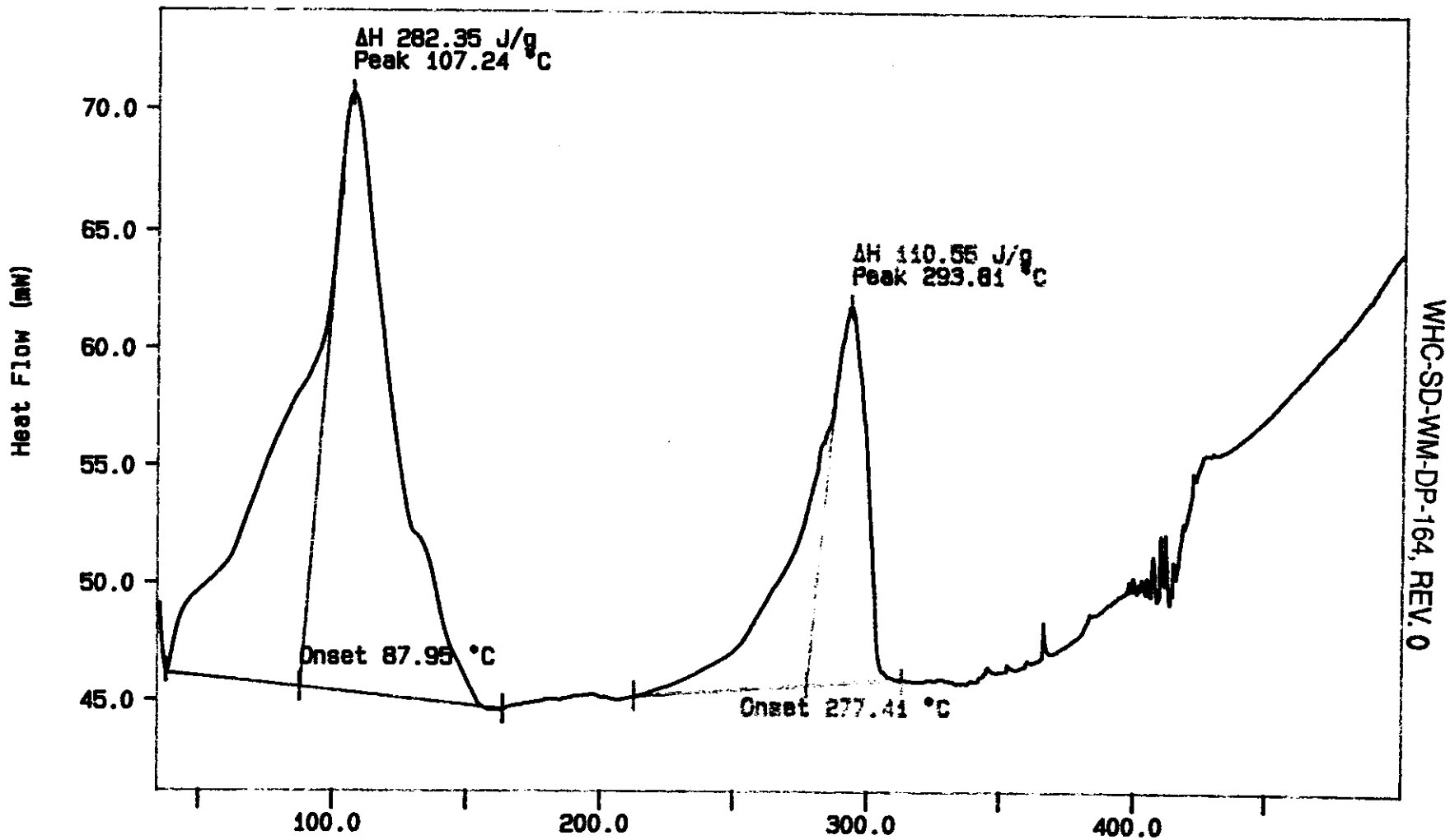


exotherm down, N2 purge gas
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 600.0 C

SM FULTON
PERKIN-ELMER
7 Series Thermal Analysis System
Tue Jan 9 02:33:03 1996

WHC-SD-WM-DP-164, REV.0

Curve 1: DSC
File info: SAM010802 Tue Jan 9 03:29:44 1996
Sample Weight: 23.350 mg
S95T003702 DUP



exotherm down, N2 purge gas
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 500.0 C

SM FULTON
PERKIN-ELMER
7 Series Thermal Analysis System
Tue Jan 9 04:06:46 1996

LABCORE Data Entry Template for Worklist# 3825

Analyst: PJM **Instrument:** DSC0 3 **Book #** 12N14B

Method: LA-514-114 Rev/Mod C-1

Worklist Comment: Please run BY-104 rotary DSCs under N2. bdv

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				DSC-03	LIQUID	28.45	28.63	N/A	Joules/g
95000180	BY104 ROTARY	2	SAMPLE	S95T003713	0		DSC-03	LIQUID	N/A	Ø		Joules/g
95000180	BY104 ROTARY	3	DUP	S95T003713	0		DSC-03	LIQUID	Ø	Ø	N/A	Joules/g

Final page for worklist # 3825

See attached for signatures
Analyst Signature **Date** 11/28/95 BDV

Sharon L Hall 11-28-95
Analyst Signature **Date**

Verified by Blandina Valenzuela 12/1/95
12/1/95 BDV

for data entry purposes the batch was attached to ~~2421~~ 12/1/95 BDV Worklist 2421.

Data Entry Comments: Sample produced an endotherm at 117.9 °C with a delta H of 1837.4 J/g

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

LABCORE Data Entry Template for Worklist# 3421

Analyst: ADP **Instrument:** DSC0 **Book #** _____

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

Worklist Comment: Please run DSCs under N2. bdv

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				DSC-01	LIQUID			N/A	Joules/g
95000158	B-204	2	SAMPLE	S95T002976	0		DSC-01	LIQUID	N/A			Joules/g
95000158	B-204	3	DUP	S95T002976	0		DSC-01	LIQUID			N/A	Joules/g
95000158	B-204	4	SAMPLE	S95T002984	0		DSC-01	LIQUID	N/A			Joules/g
95000158	B-204	5	DUP	S95T002984	0		DSC-01	LIQUID			N/A	Joules/g
95000189	TX-244 GRAB	6	SAMPLE	S95T003708	0		DSC-01	LIQUID	N/A			Joules/g
95000189	TX-244 GRAB	7	DUP	S95T003708	0		DSC-01	LIQUID			N/A	Joules/g
95000189	TX-244 GRAB	8	SAMPLE	S95T003709	0		DSC-01	LIQUID	N/A			Joules/g
95000189	TX-244 GRAB	9	DUP	S95T003709	0		DSC-01	LIQUID			N/A	Joules/g
95000180	BY104 ROTARY	10	SAMPLE	S95T003713	0		DSC-01	LIQUID	N/A			Joules/g
95000180	BY104 ROTARY	11	DUP	S95T003713	0		DSC-01	LIQUID			N/A	Joules/g

Final page for worklist # 3421

Analyst Signature **Date**

Susie M. Fulton 11.21.95
R M McCown 11/25/95
Anthony Purnton 11-22-95

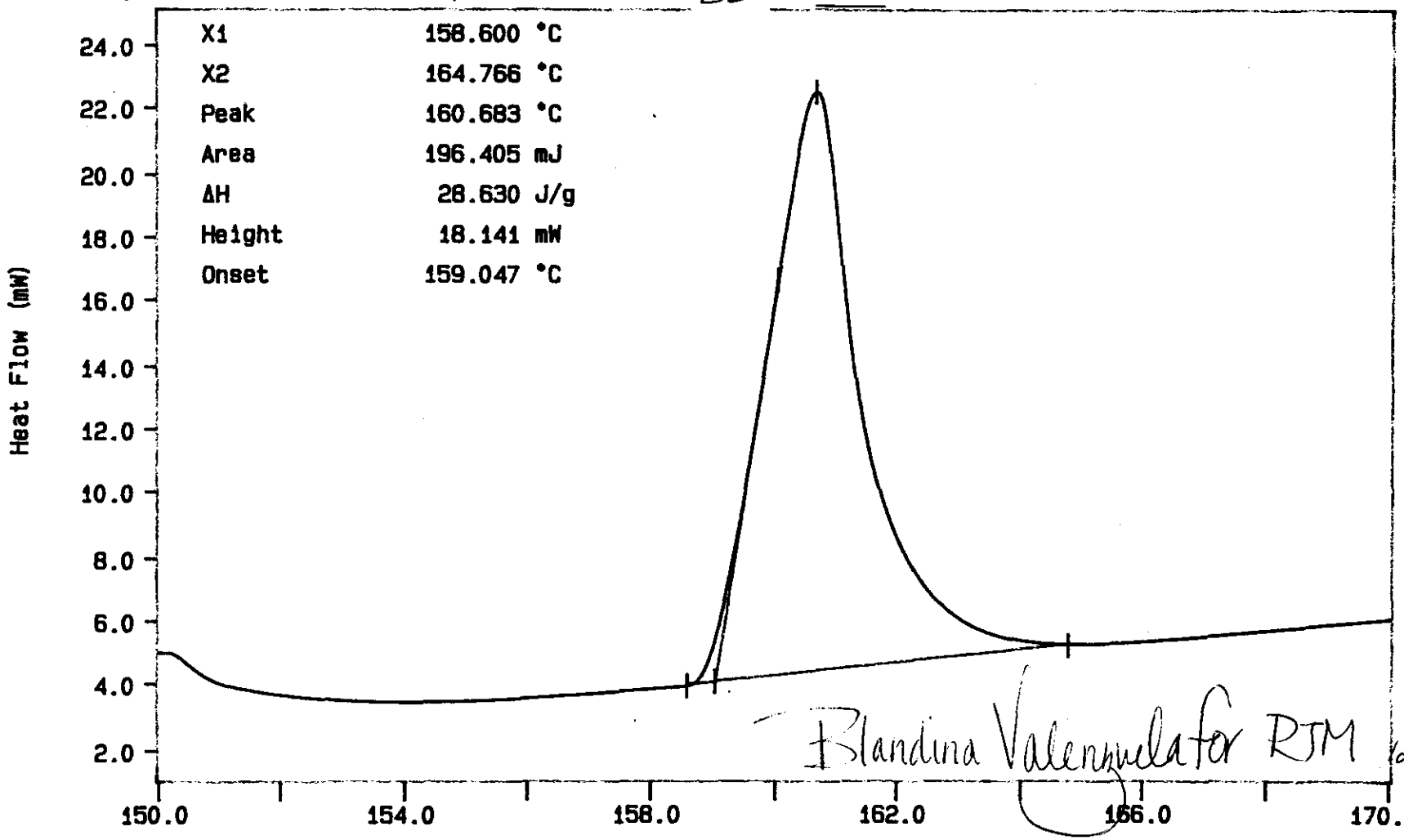
Analyst Signature **Date**

Data Entry Comments: Worklist had to be broken down to accomodate the different tanks.

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

Curve 1: DSC
File info: IND112404 Fri Nov 24 22:37:54 1995
Sample Weight: 6.860 mg
12N14A Indium at 10C/min

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 50 TO 52

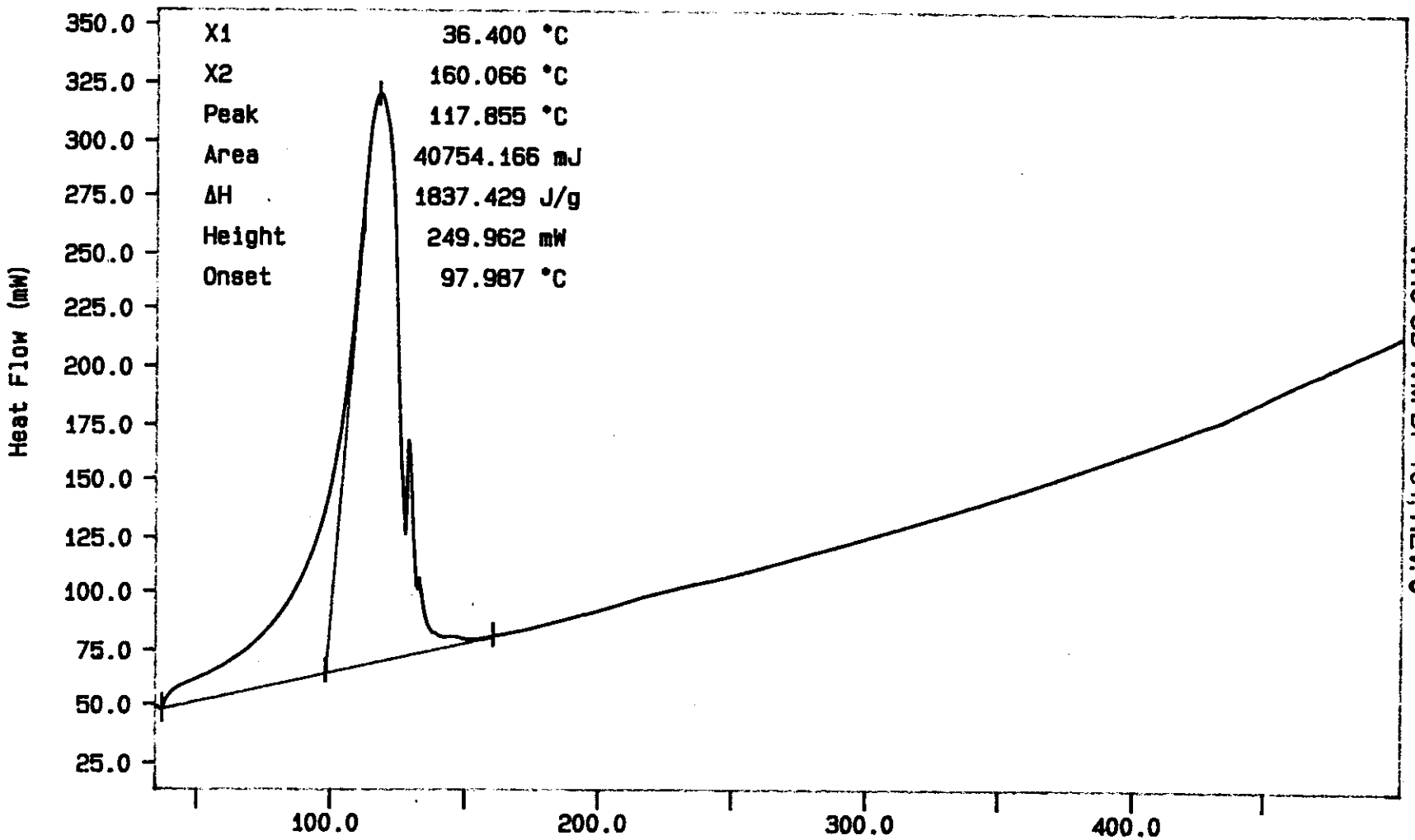


Blandina Valenzuela for RJM 12/01/95

N2, EXOTHERM DOWN
TEMP1: 150.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 170.0 C

PJ MCCOWN
PERKIN-ELMER
7 Series Thermal Analysis System
Fri Nov 24 22:38:42 1995

Curve 1: DSC
File info: SAM112501 Sat Nov 25 02:14:18 1995
Sample Weight: 22.180 mg
S95T003713 SAM

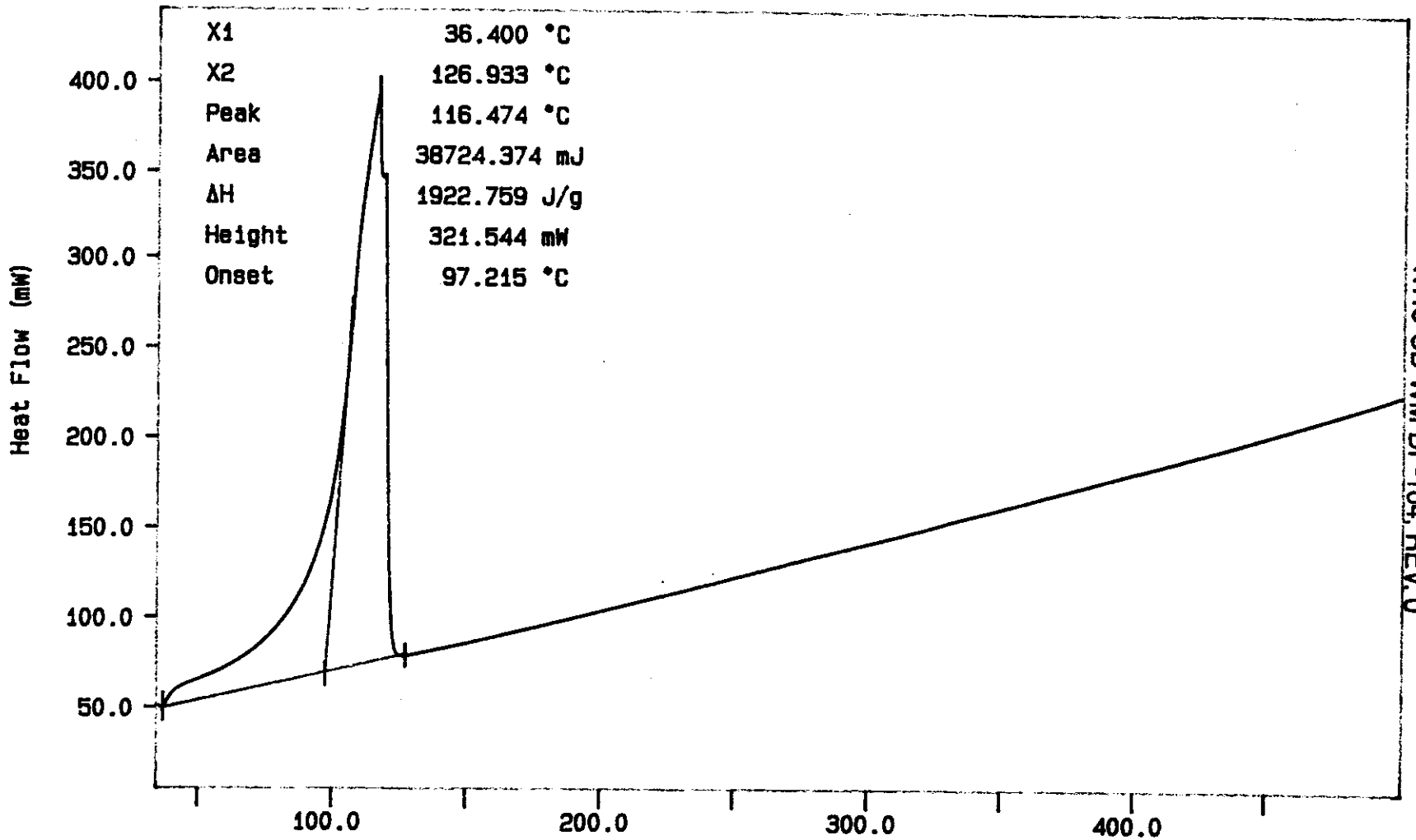


exotherm down, N2 purge gas
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 600.0 C

PJ MCCOWN
PERKIN-ELMER
7 Series Thermal Analysis System
Sat Nov 25 02:14:47 1995

WHC-SD-WM-DP-164, REV. 0

Curve 1: DSC
File info: SAM112502 Sat Nov 25 03:38:53 1995
Sample Weight: 20.140 mg
S95T003713 DUP



exotherm down, N2 purge gas
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 500.0 C

PJ MCCOWN
PERKIN-ELMER
7 Series Thermal Analysis System
Sat Nov 25 03:39:33 1995

WHC-SD-WM-DP-164, REV. 0

LABCORE Data Entry Template for Worklist# 4112

Analyst: ADP **Instrument:** DSC0 1 **Book #** 12N14B

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

Worklist Comment: Please run BY-104 DSCs under N2. bdv

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				DSC-01	SOLID	28.45	28.6	N/A	Joules/g
95000180	BY104 ROTARY	2	SAMPLE	S95T003642	0		DSC-01	SOLID	N/A	Ø		Joules/g
95000180	BY104 ROTARY	3	DUP	S95T003642	0		DSC-01	SOLID	Ø	Ø	N/A	Joules/g
95000180	BY104 ROTARY	4	SAMPLE	S95T003645	0		DSC-01	SOLID	N/A	219.2		Joules/g
95000180	BY104 ROTARY	5	DUP	S95T003645	0		DSC-01	SOLID	219.2	557.4	N/A	Joules/g
95000180	BY104 ROTARY	6	TRIPL	S95T003645	0		DSC-01	SOLID	219.2	995.7	N/A	Joules/g

Final page for worklist # 4112

See attached for signatures
Analyst Signature **Date** 12/19/95

Verified 12/21/95 JM Fuge

12-20-95
Analyst Signature **Date**

Data Entry Comments:

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

LABCORE Data Entry Template for Worklist# 4112

Analyst: ADP **Instrument:** DSC0 _____ **Book #** 12N14B

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

Worklist Comment: Please run BY-104 DSCs under N2. bdv

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				DSC-01	SOLID			N/A	Joules/g
95000180	BY104 ROTARY	2	SAMPLE	S95T003642	0		DSC-01	SOLID	N/A			Joules/g
95000180	BY104 ROTARY	3	DUP	S95T003642	0		DSC-01	SOLID			N/A	Joules/g
95000180	BY104 ROTARY	4	SAMPLE	S95T003645	0		DSC-01	SOLID	N/A			Joules/g
95000180	BY104 ROTARY	5	DUP	S95T003645	0		DSC-01	SOLID			N/A	Joules/g

Final page for worklist # 4112

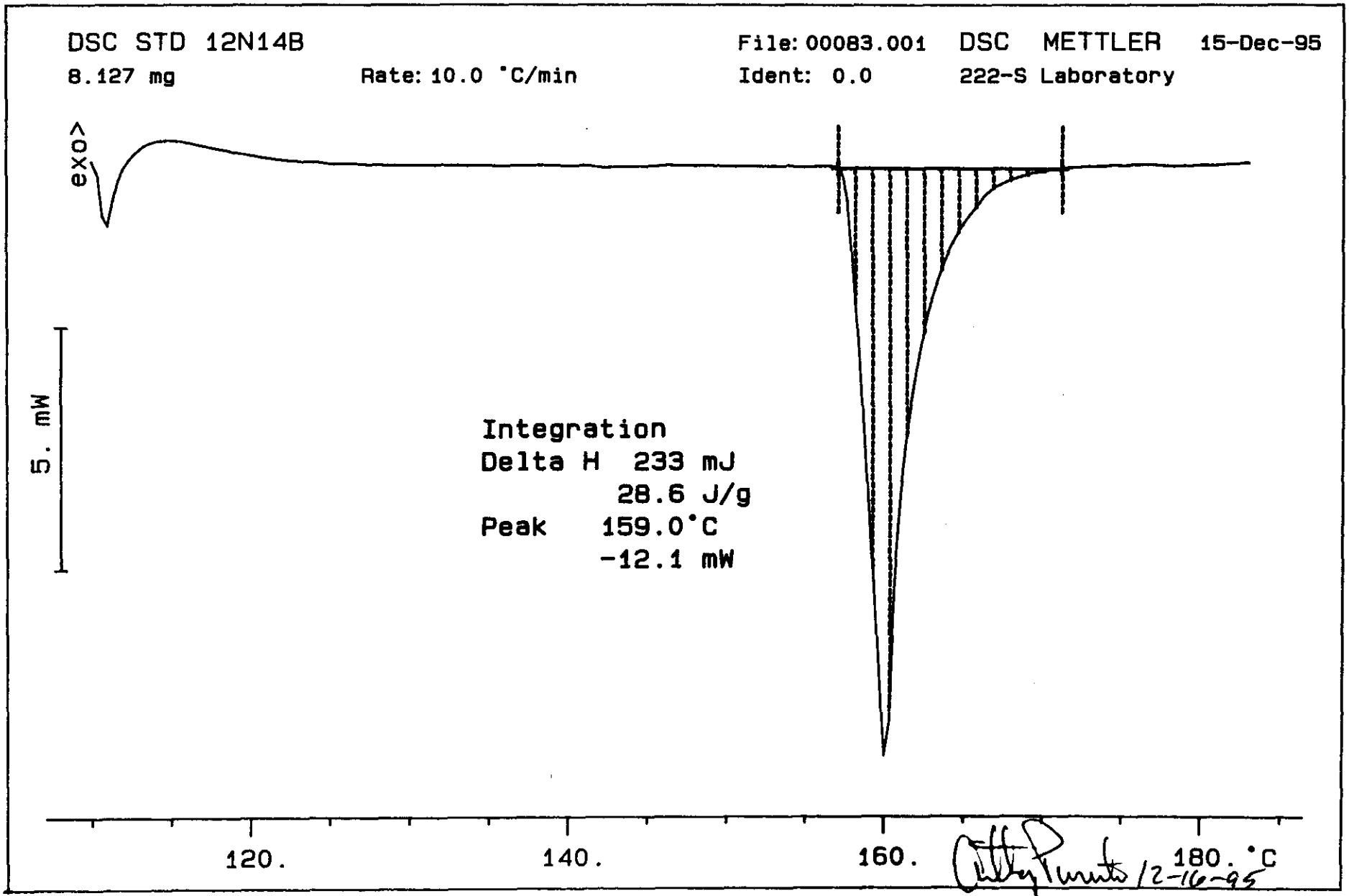
Anthony Punator 12-17-95

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

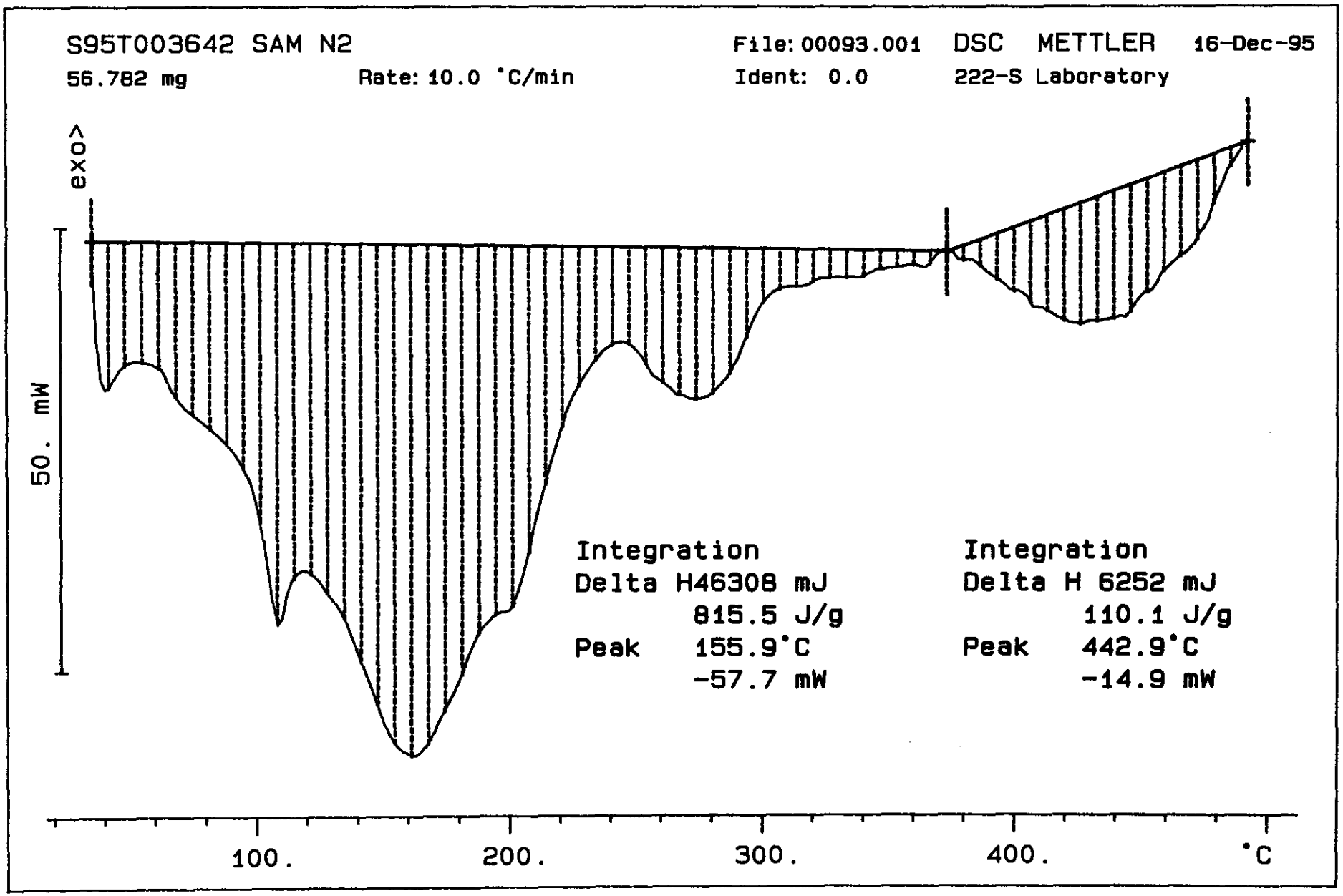
Data Entry Comments:

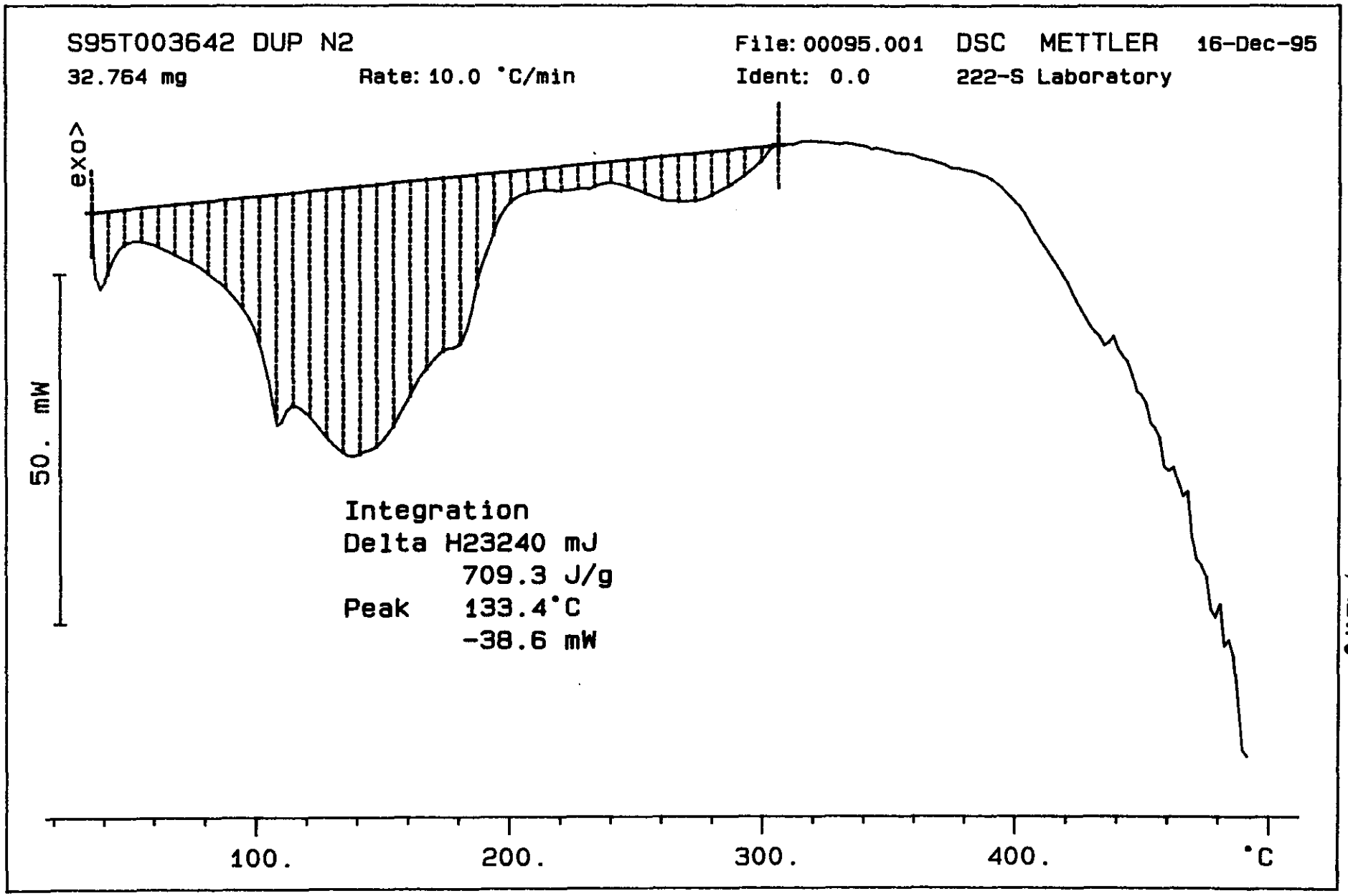
Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

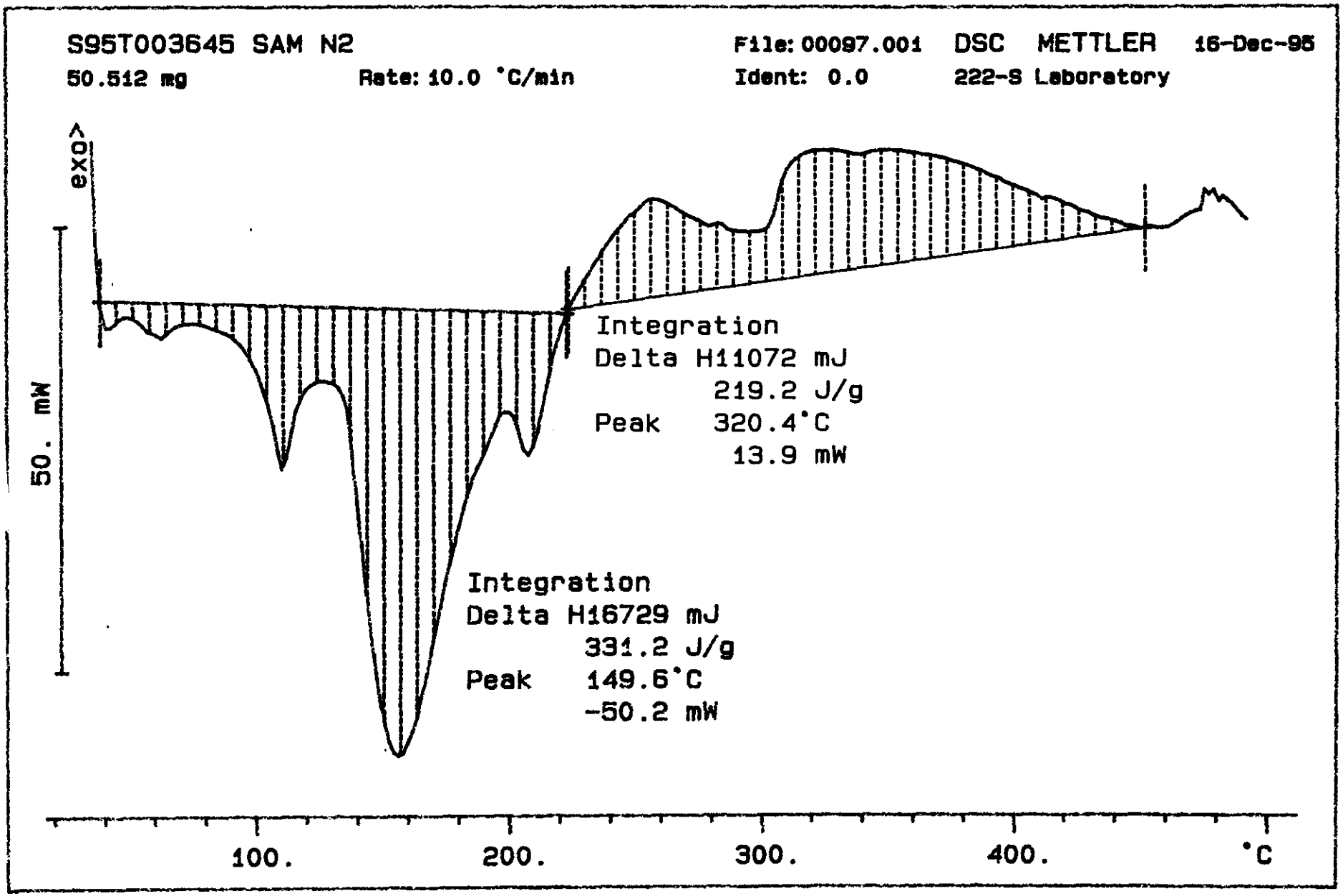
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 55 TO 60

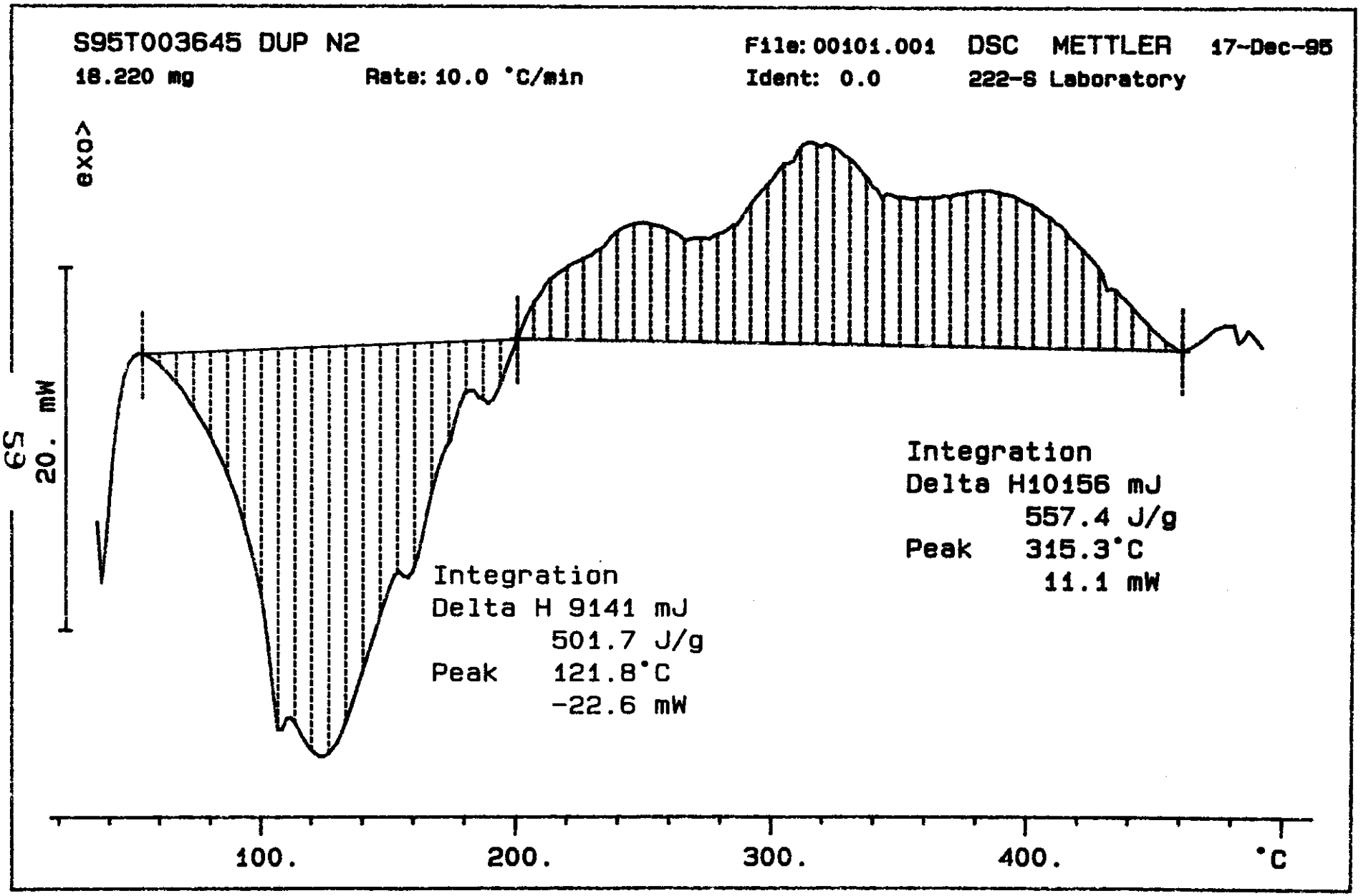


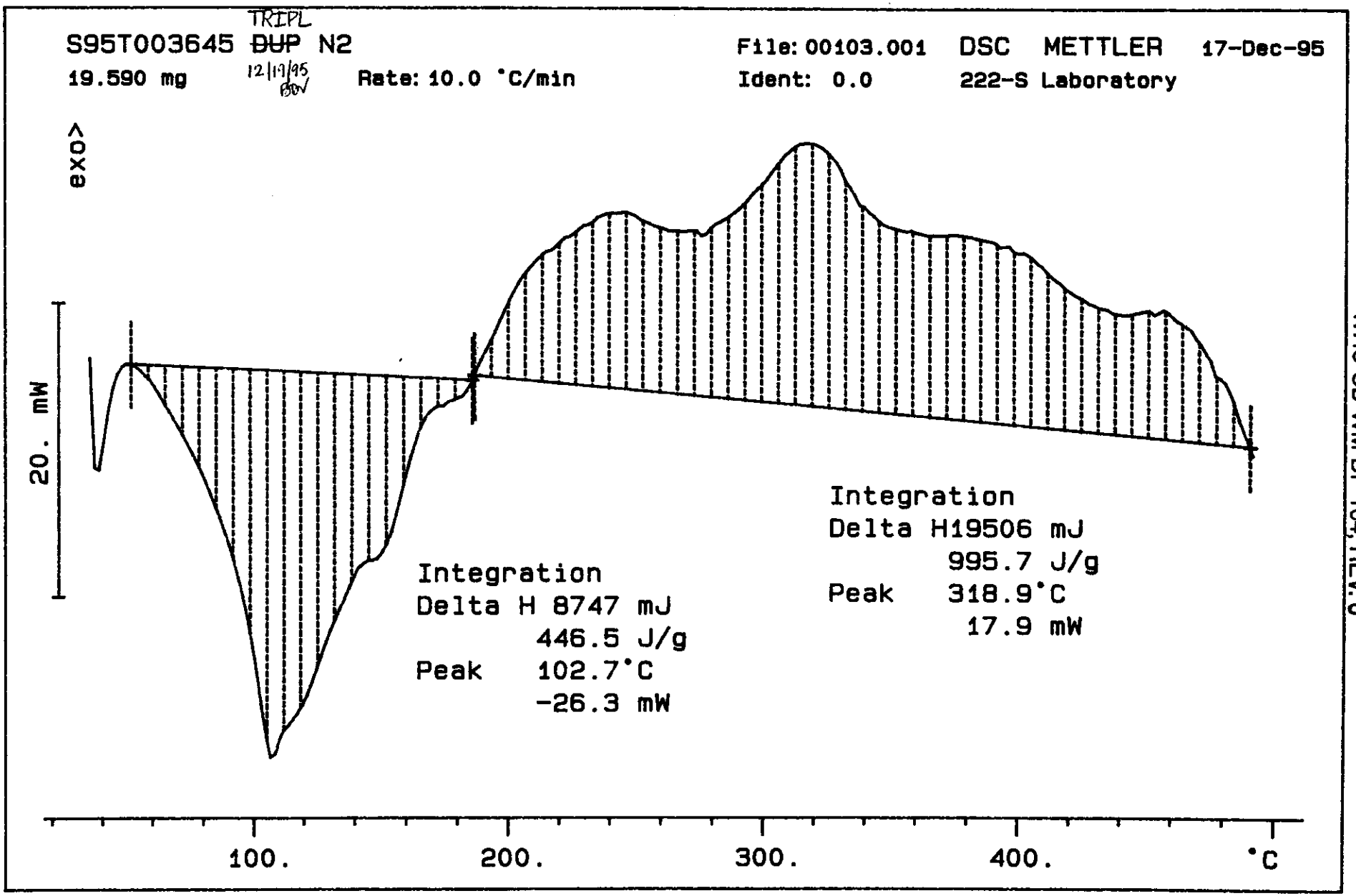
Cathy Pruitt 12-16-95


S95T003642 SAM N2
56.782 mg
Rate: 10.0 °C/min
File: 00093.001
Ident: 0.0
DSC METTLER
222-S Laboratory
16-Dec-95
exo>
50. mW
Integration
Delta H46308 mJ
815.5 J/g
Peak 155.9°C
-57.7 mW
Integration
Delta H 6252 mJ
110.1 J/g
Peak 442.9°C
-14.9 mW
100.
200.
300.
400.
°C


S95T003642 DUP N2
32.764 mg
Rate: 10.0 °C/min
File: 00095.001
Ident: 0.0
DSC METTLER
222-S Laboratory
16-Dec-95
exo>
.05 mW
Integration
Delta H23240 mJ
709.3 J/g
Peak 133.4°C
-38.6 mW
100.
200.
300.
400.
°C


S95T003645 SAM N2
50.512 mg
Rate: 10.0 °C/min
File: 00097.001
Ident: 0.0
DSC METTLER
222-S Laboratory
16-Dec-95
exo>
50. mW
Integration
Delta H11072 mJ
219.2 J/g
Peak 320.4°C
13.9 mW
Integration
Delta H16729 mJ
331.2 J/g
Peak 149.6°C
-50.2 mW
100.
200.
300.
400.
°C


S95T003645 DUP N2
18.220 mg
Rate: 10.0 °C/min
File: 00101.001
Ident: 0.0
DSC METTLER
222-S Laboratory
17-Dec-95
exo>
20. mW
Integration
Delta H 9141 mJ
501.7 J/g
Peak 121.8°C
-22.6 mW
Integration
Delta H10156 mJ
557.4 J/g
Peak 315.3°C
11.1 mW
100.
200.
300.
400.
°C


S95T003645 ~~DUP~~ TRIPL N2
12/19/95 BOV
19.590 mg
Rate: 10.0 °C/min
File: 00103.001
Ident: 0.0
DSC METTLER
222-S Laboratory
17-Dec-95
exo>
20. mW
Integration
Delta H 8747 mJ
446.5 J/g
Peak 102.7°C
-26.3 mW
Integration
Delta H19506 mJ
995.7 J/g
Peak 318.9°C
17.9 mW
100.
200.
300.
400.
°C

LABCORE Data Entry Template for Worklist# 4113

Analyst: ADP **Instrument:** DSC0 3 **Book #** 12N14B

Method: LA-514-114 Rev/Mod C-1

Worklist Comment: Please run BY-104 DSCs under N2. bdv

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				DSC-03	SOLID	28.45	28.22	N/A	Joules/g
95000180	BY104 ROTARY	2	SAMPLE	S95T003644	0		DSC-03	SOLID	N/A	Ø		Joules/g
95000180	BY104 ROTARY	3	DUP	S95T003644	0		DSC-03	SOLID	Ø	Ø	N/A	Joules/g
		4	STD				DSC-01	SOLID	28.45	27.8	N/A	Joules/g
95000180	BY104 ROTARY	5	SAMPLE	S95T003647	0		DSC-01	SOLID	N/A	360.2		Joules/g
95000180	BY104 ROTARY	6	DUP	S95T003647	0		DSC-01	SOLID	360.2	324.9	N/A	Joules/g

Final page for worklist # 4113

See attached for signatures

Analyst Signature **Date** 1/2/96

Verified by Blandina Valenzuela 1-8-96

[signature] 1-4-96

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# 4113

Analyst: ADP **Instrument:** DSC0 _____ **Book #** ~~12N14A~~ 1/2/96 BDV

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

Worklist Comment: Please run BY-104 DSCs under N2. bdv

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				DSC-01	SOLID			N/A	Joules/g
95000180	BY104 ROTARY	2	SAMPLE	S95T003644	0		DSC-01	SOLID	N/A			Joules/g
95000180	BY104 ROTARY	3	DUP	S95T003644	0		DSC-01	SOLID			N/A	Joules/g
95000180	BY104 ROTARY	4	SAMPLE	S95T003647	0		DSC-01	SOLID	N/A			Joules/g
95000180	BY104 ROTARY	5	DUP	S95T003647	0		DSC-01	SOLID			N/A	Joules/g

Final page for worklist # 4113

Anthony Purnton
Analyst Signature **Date**

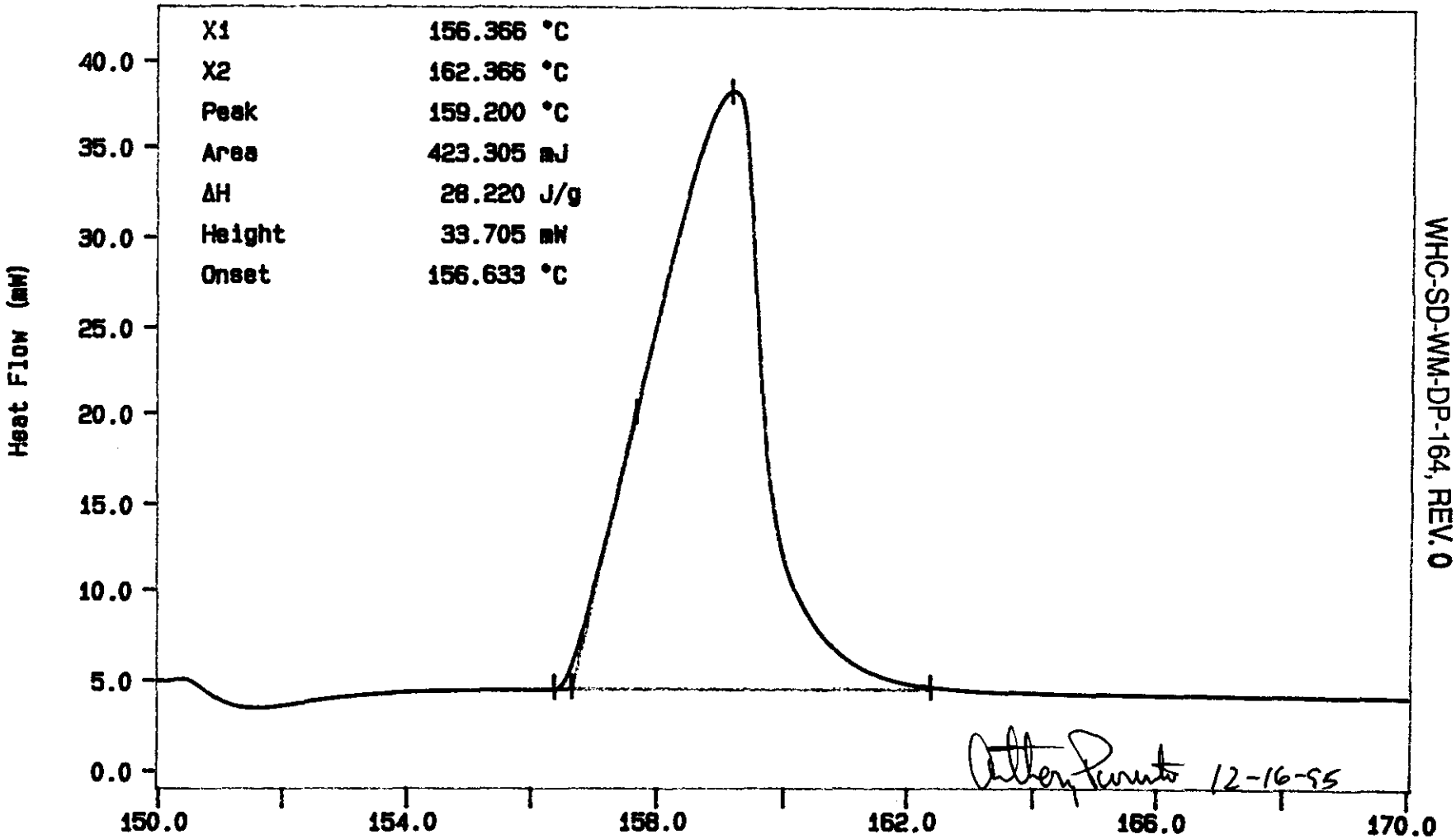
JA Sym 12-27-95

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.

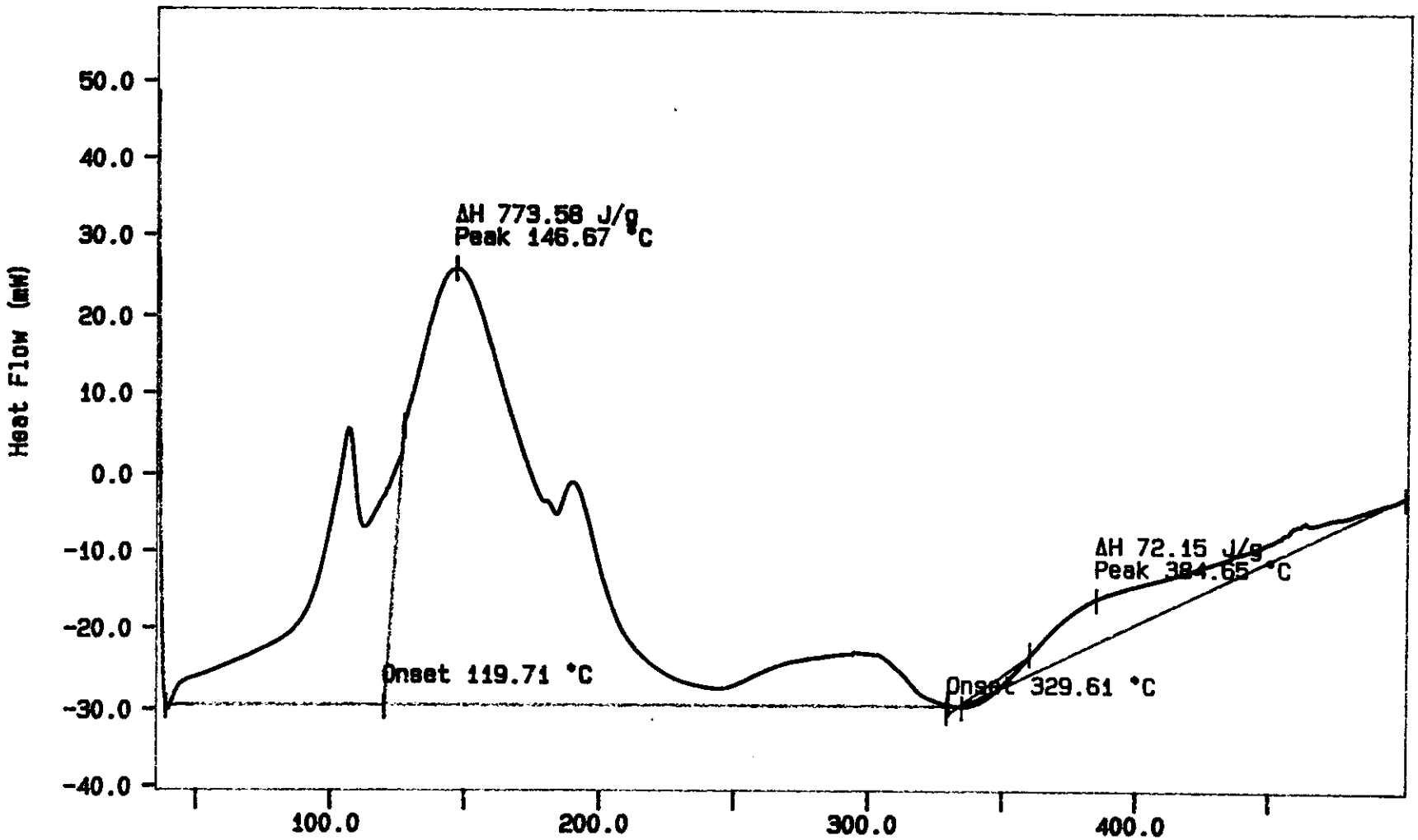
Curve 1: DSC
File info: IND121503 Fri Dec 15 23:22:35 1995
Sample Weight: 15.000 mg
1/3/96 ~~12N14A~~ Indium at 10C/min
12N14B SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 63 TO 68.



N2, EXOTHERM DOWN
TEMP1: 150.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 170.0 C

AD PURINTON
PERKIN-ELMER
7 Series Thermal Analysis System
Sat Dec 16 01:24:50 1995

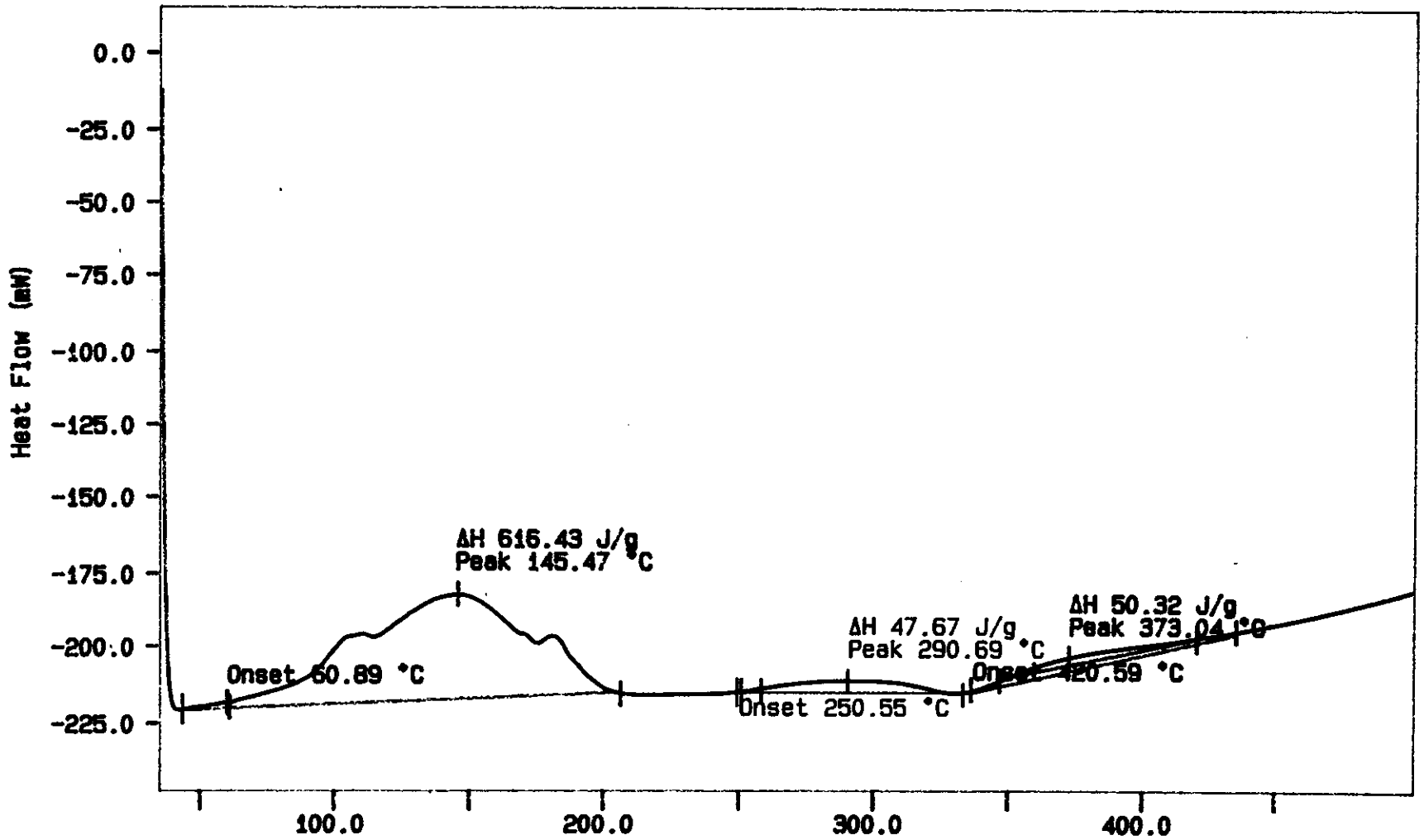
Curve 1: DSC
File info: SAM121601 Sat Dec 16 03:13:49 1995
Sample Weight: 36.210 mg
S95T003644 SAM N2



exotherm down, N2 purge gas
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 600.0 C

AD PURINTON
PERKIN-ELMER
7 Series Thermal Analysis System
Sat Dec 16 03:17:33 1995

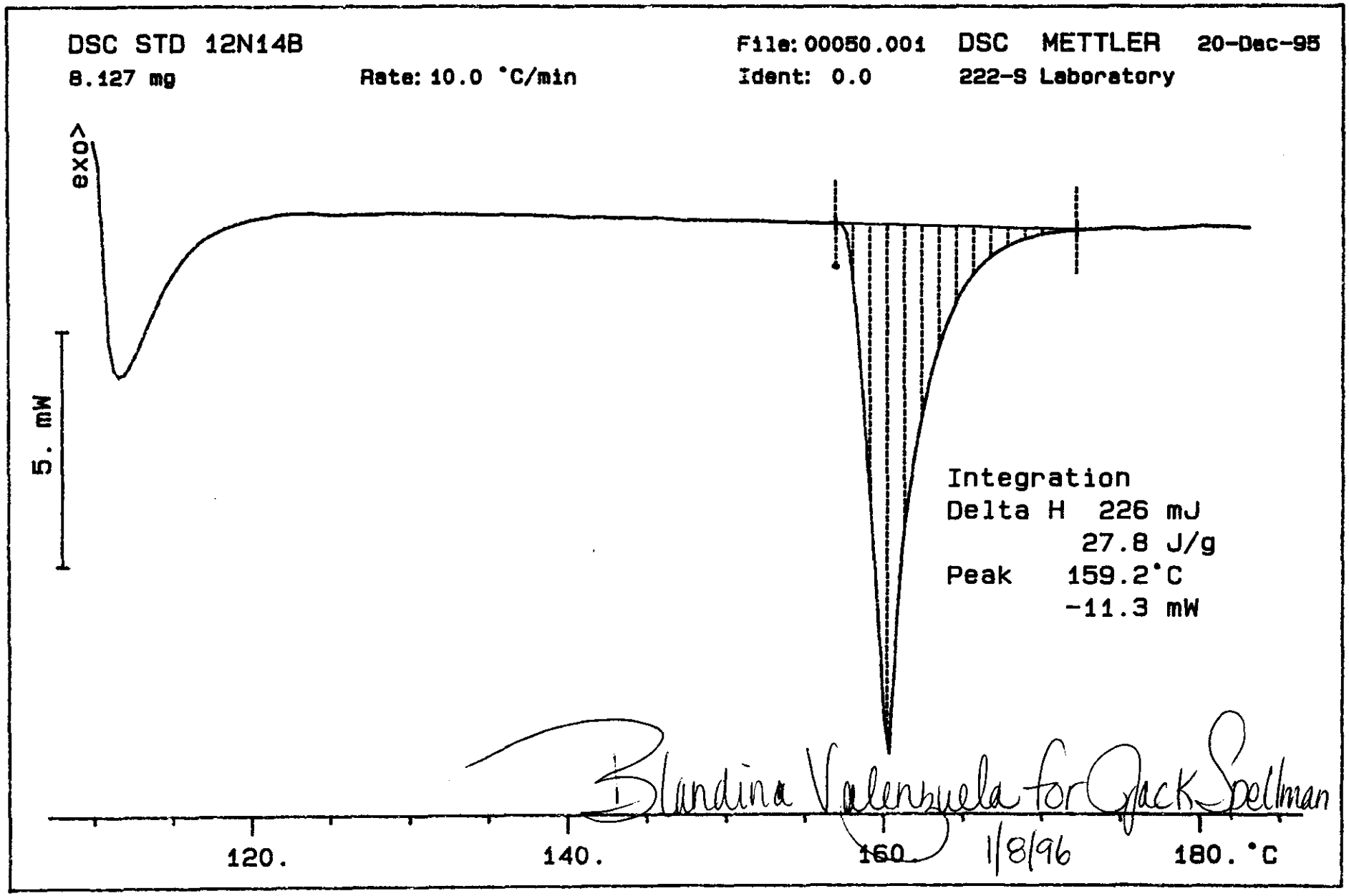
Curve 1: DSC
File info: SAM121602 Sat Dec 16 04:14:24 1995
Sample Weight: 26.160 mg
S95T003644 DUP N2



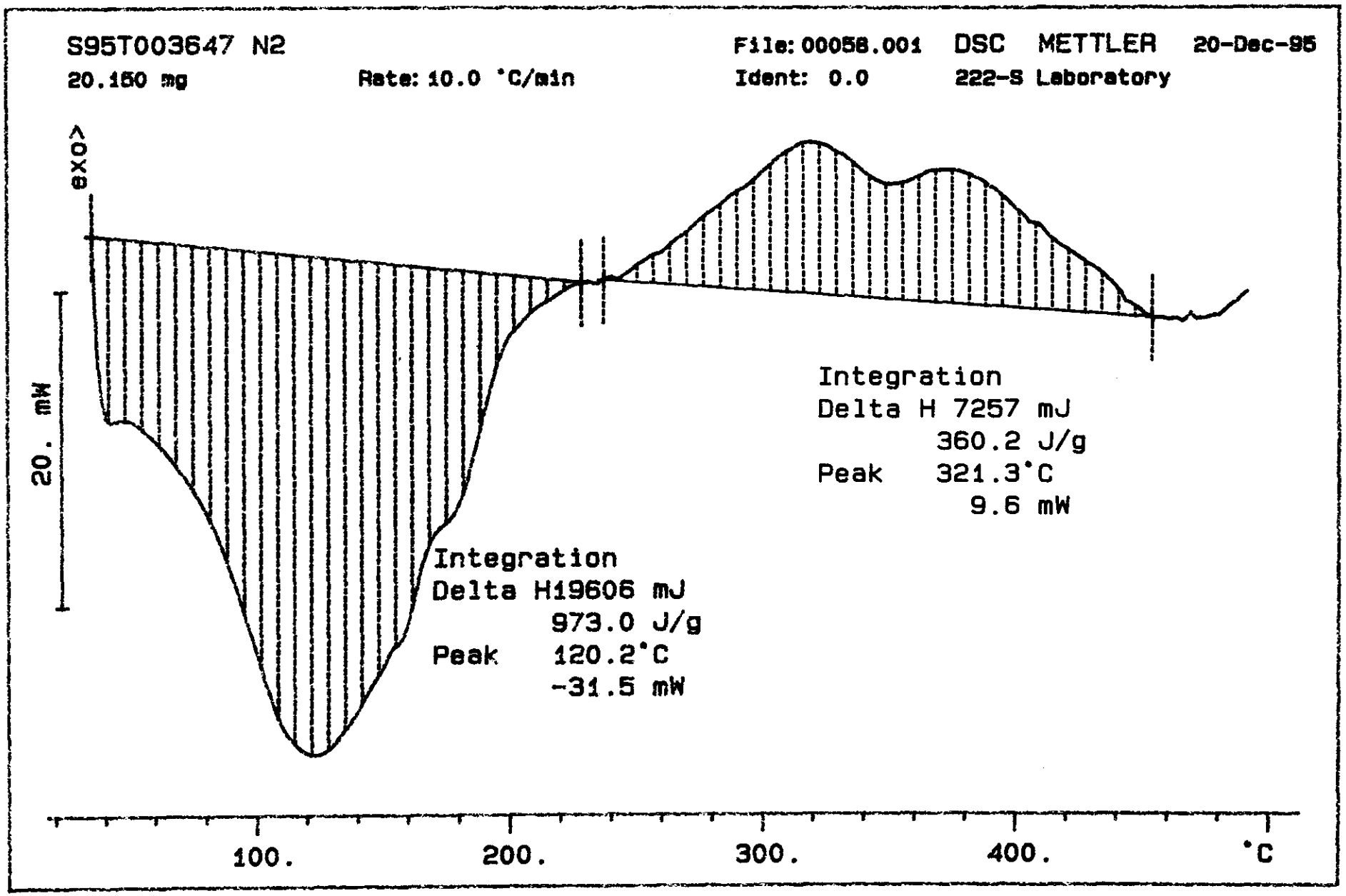
exotherm down, N2 purge gas
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 500.0 C

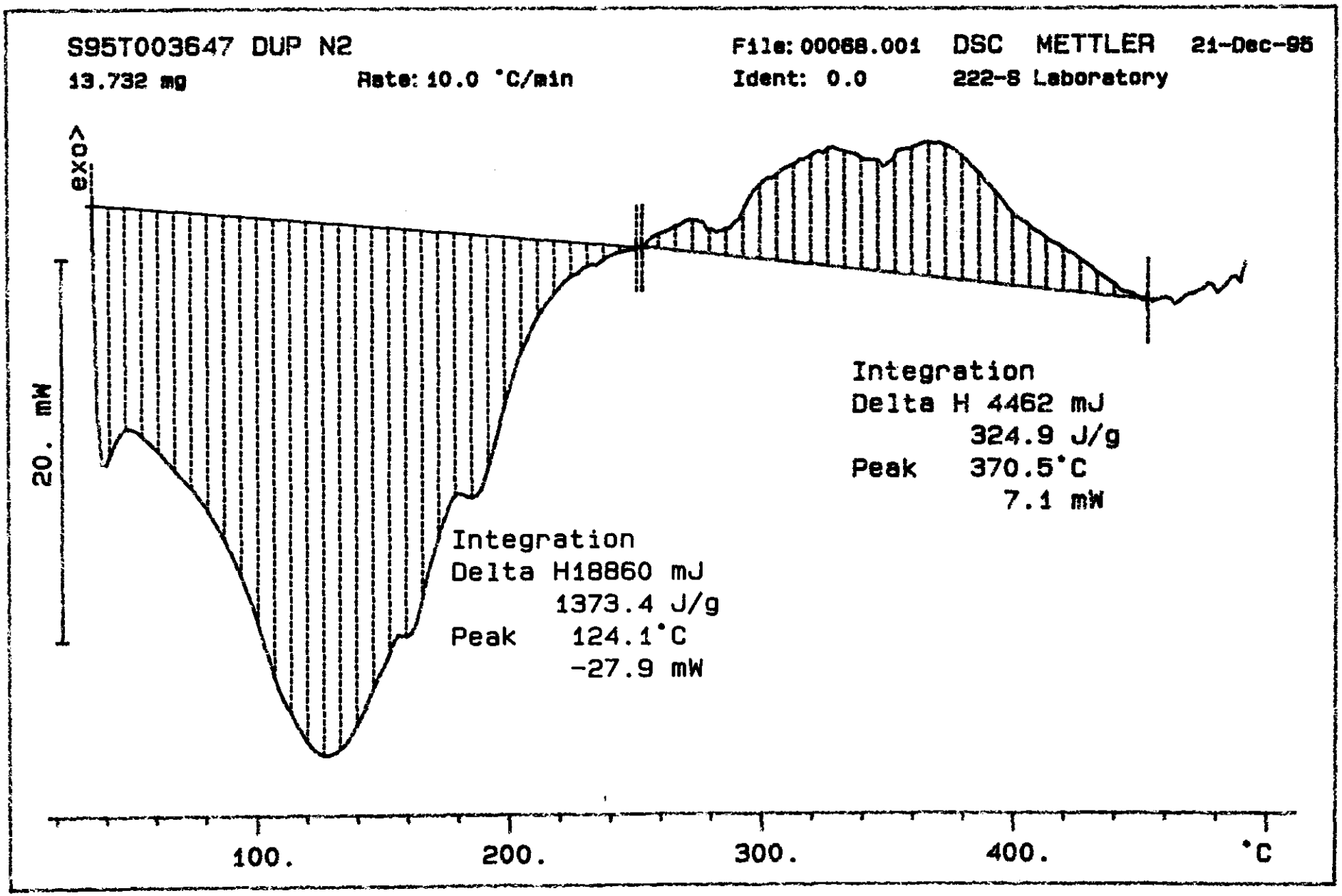
AD PURINTON
PERKIN-ELMER
7 Series Thermal Analysis System
Sat Dec 16 04:37:25 1995

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 66 TO 68.



Blandina Valenzuela for Jack Spellman 1/8/96


S95T003647 N2
20.150 mg
Rate: 10.0 °C/min
File: 00058.001
DSC METTLER
20-Dec-95
Ident: 0.0
222-S Laboratory
exo>
20. mW
Integration
Delta H 7257 mJ
360.2 J/g
Peak 321.3°C
9.6 mW
Integration
Delta H19606 mJ
973.0 J/g
Peak 120.2°C
-31.5 mW
100.
200.
300.
400.
°C


S95T003647 DUP N2
13.732 mg
Rate: 10.0 °C/min
File: 00068.001
Ident: 0.0
DSC METTLER
222-S Laboratory
21-Dec-95
exo>
20. mW
Integration
Delta H 4462 mJ
324.9 J/g
Peak 370.5°C
7.1 mW
Integration
Delta H18860 mJ
1373.4 J/g
Peak 124.1°C
-27.9 mW
100.
200.
300.
400.
°C

LABCORE Data Entry Template for Worklist# 4114

Analyst: ADP **Instrument:** DSC0 3 **Book #** 12N14B

Method: LA-514-114 Rev/Mod C-1

Worklist Comment: Please run BY-104 DSCs under N2. bdv

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				DSC-03	SOLID	28.45	28.26*	N/A	Joules/g
95000180	BY104 ROTARY	2	SAMPLE	S95T003643	0		DSC-03	SOLID	N/A	Ø		Joules/g
95000180	BY104 ROTARY	3	DUP	S95T003643	0		DSC-03	SOLID	Ø	Ø	N/A	Joules/g
95000180	BY104 ROTARY	4	SAMPLE	S95T003646	0		DSC-03	SOLID	N/A	Ø		Joules/g
95000180	BY104 ROTARY	5	DUP	S95T003646	0		DSC-03	SOLID	Ø	Ø	N/A	Joules/g

Final page for worklist # 4114

See attached for signatures
Analyst Signature **Date** 12/19/95 BDV

Dany Hammett 12-20-95
Analyst Signature **Date**

Verified 12/21/95 JMFrye

S95T003643 produced two endotherms one at 153.03°C with a ΔH of 532.18J/g and second at 296.29°C with a delta H of 34.73J/g.

Data Entry Comments: S95T003646 produced two endotherms one at 159.2°C with a delta H of 450.39J/g and second at 278.54°C with a delta H of 32.88J/g

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

LABCORE Data Entry Template for Worklist# 4114

Analyst: ADP **Instrument:** DSC0 _____ **Book #** ~~12N14A~~ 12/14/95 BDV

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

Worklist Comment: Please run BY-104 DSCs under N2. bdv

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				DSC-01	SOLID			N/A	Joules/g
95000180	BY104 ROTARY	2	SAMPLE	S95T003643	0		DSC-01	SOLID	N/A			Joules/g
95000180	BY104 ROTARY	3	DUP	S95T003643	0		DSC-01	SOLID			N/A	Joules/g
95000180	BY104 ROTARY	4	SAMPLE	S95T003646	0		DSC-01	SOLID	N/A			Joules/g
95000180	BY104 ROTARY	5	DUP	S95T003646	0		DSC-01	SOLID			N/A	Joules/g

Final page for worklist # 4114

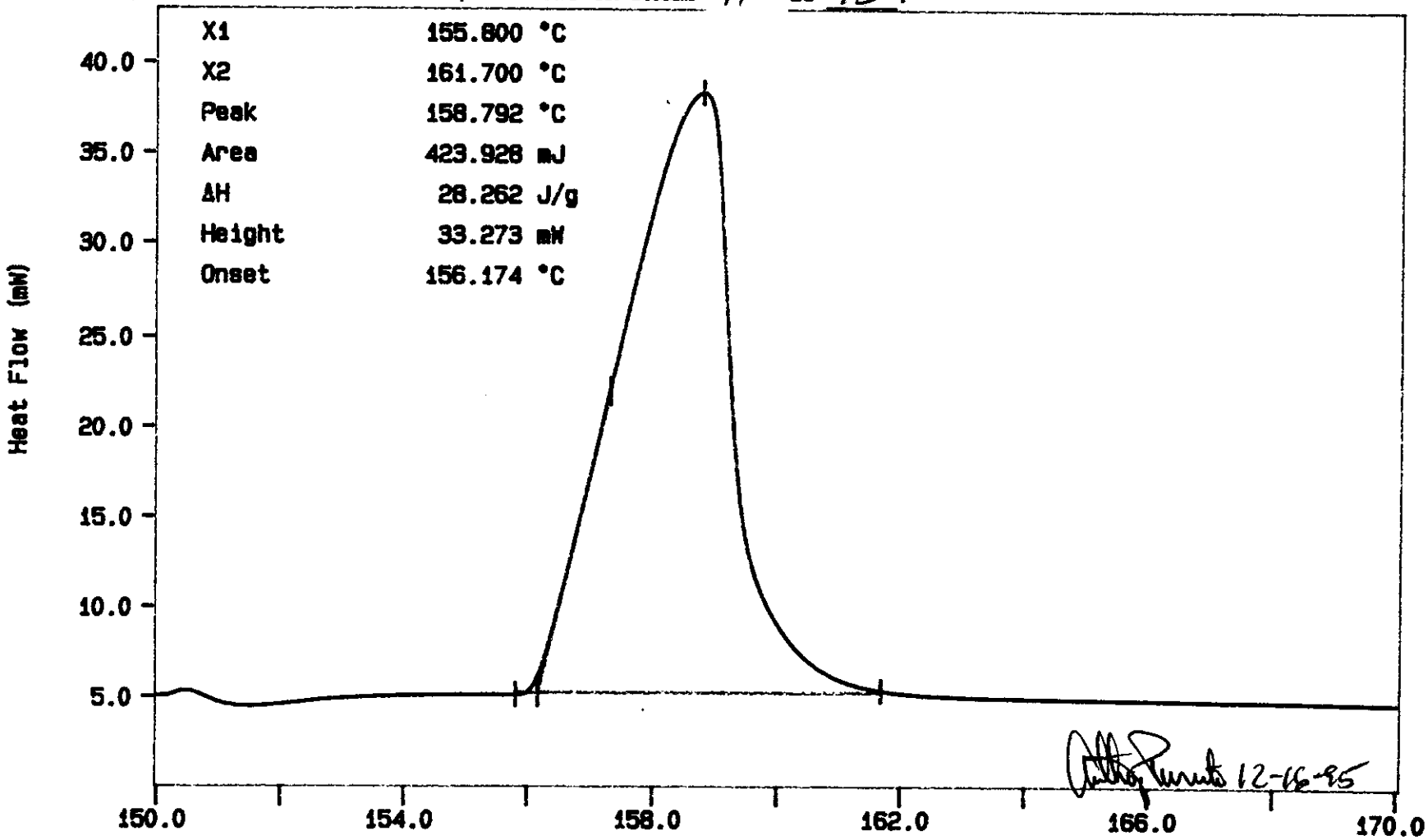
Analyst Signature **Date** **Analyst Signature** **Date**

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.

Curve 1: DSC
File info: IND121602 Sat Dec 16 19:59:11 1995
Sample Weight: 15.000 mg
12N14A Indium at 10C/min

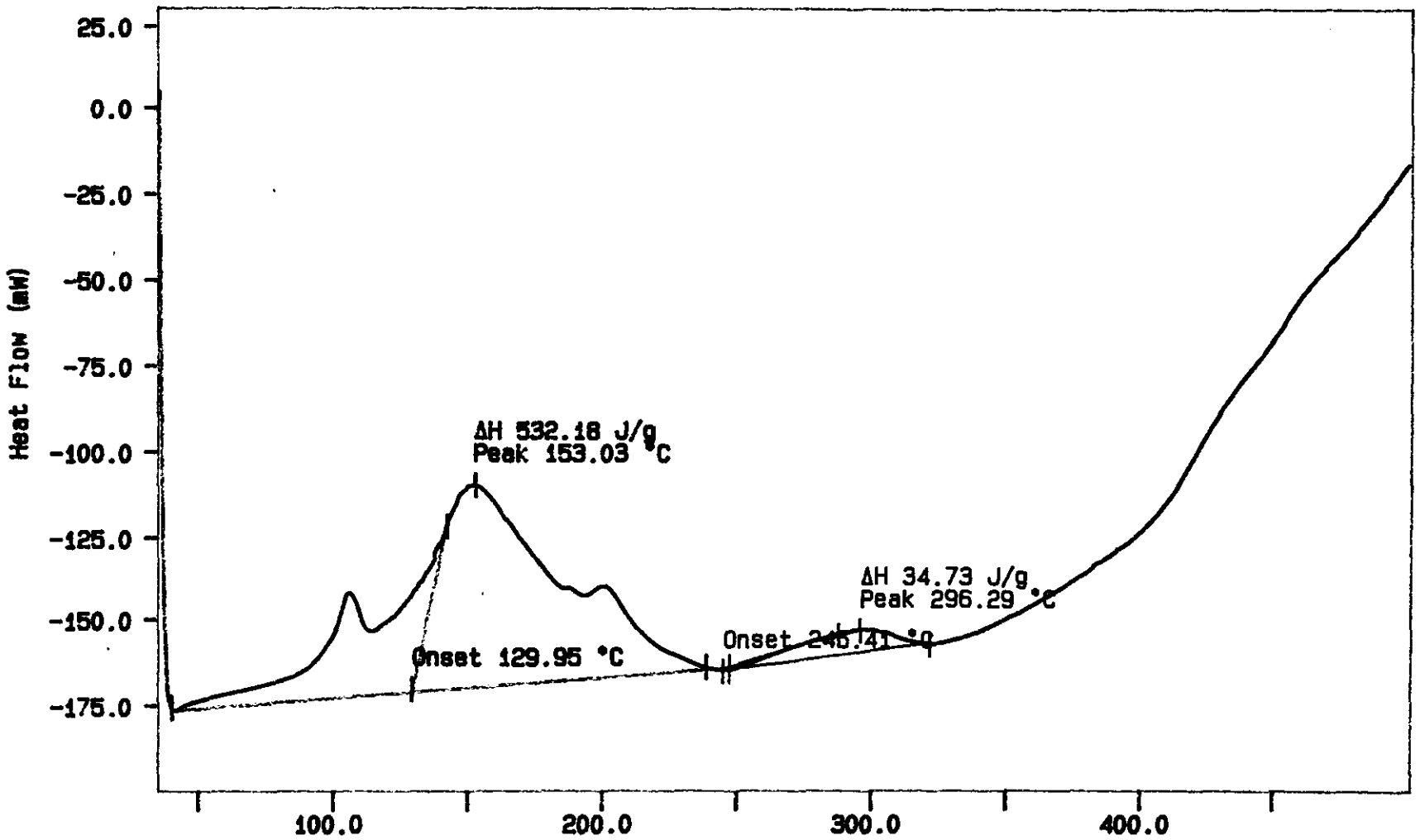
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 71 TO 75.



N2, EXOTHERM DOWN
TEMP1: 150.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 170.0 C

AD PURINTON
PERKIN-ELMER
7 Series Thermal Analysis System
Sat Dec 16 20:02:10 1995

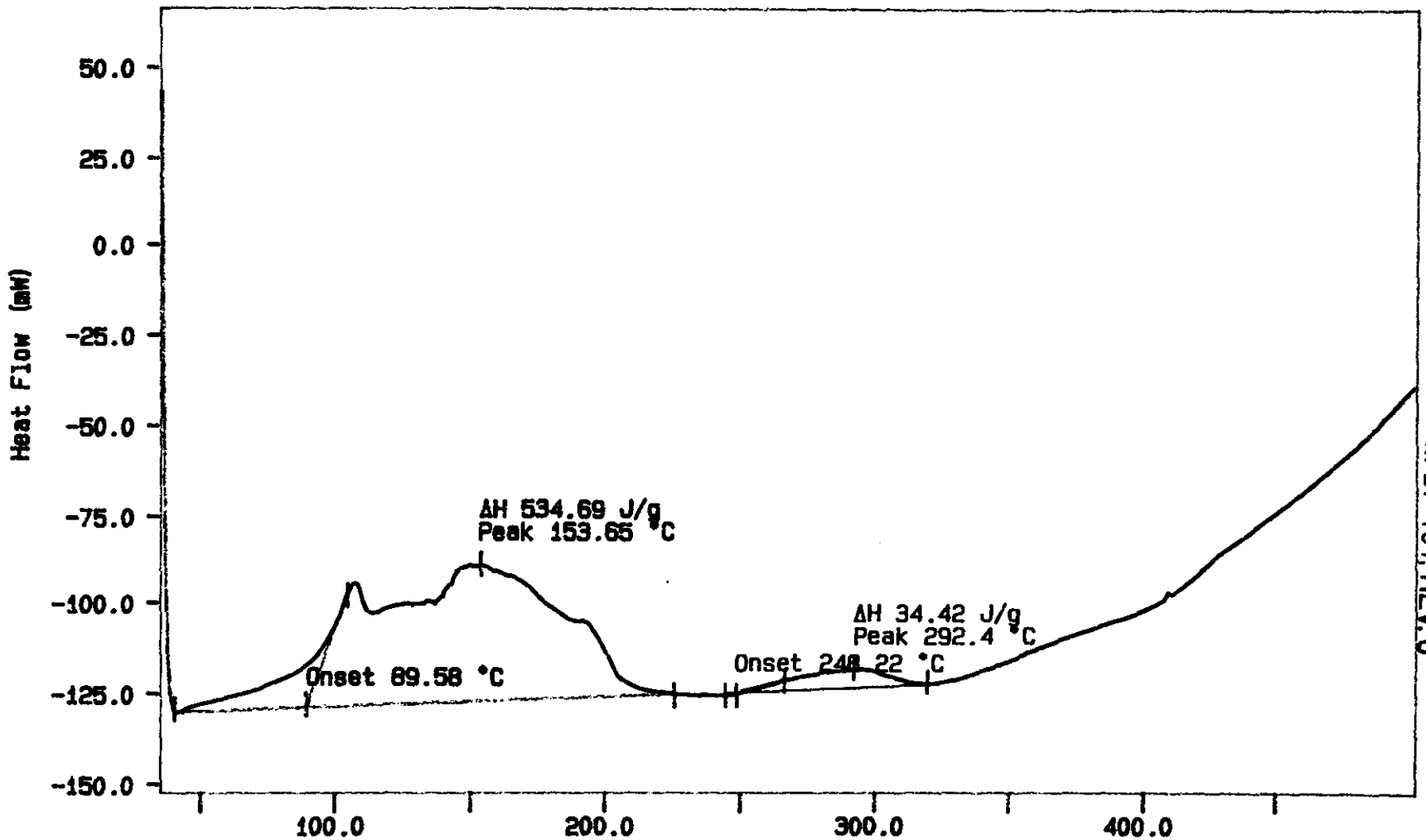
Curve 1: DSC
File info: SAM121603 Sun Dec 17 00:03:08 1995
Sample Weight: 47.630 mg
S95T003643 SAM N2



exotherm down, N2 purge gas
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 600.0 C

AD PURINTON
PERKIN-ELMER
7 Series Thermal Analysis System
Sun Dec 17 00:54:34 1995

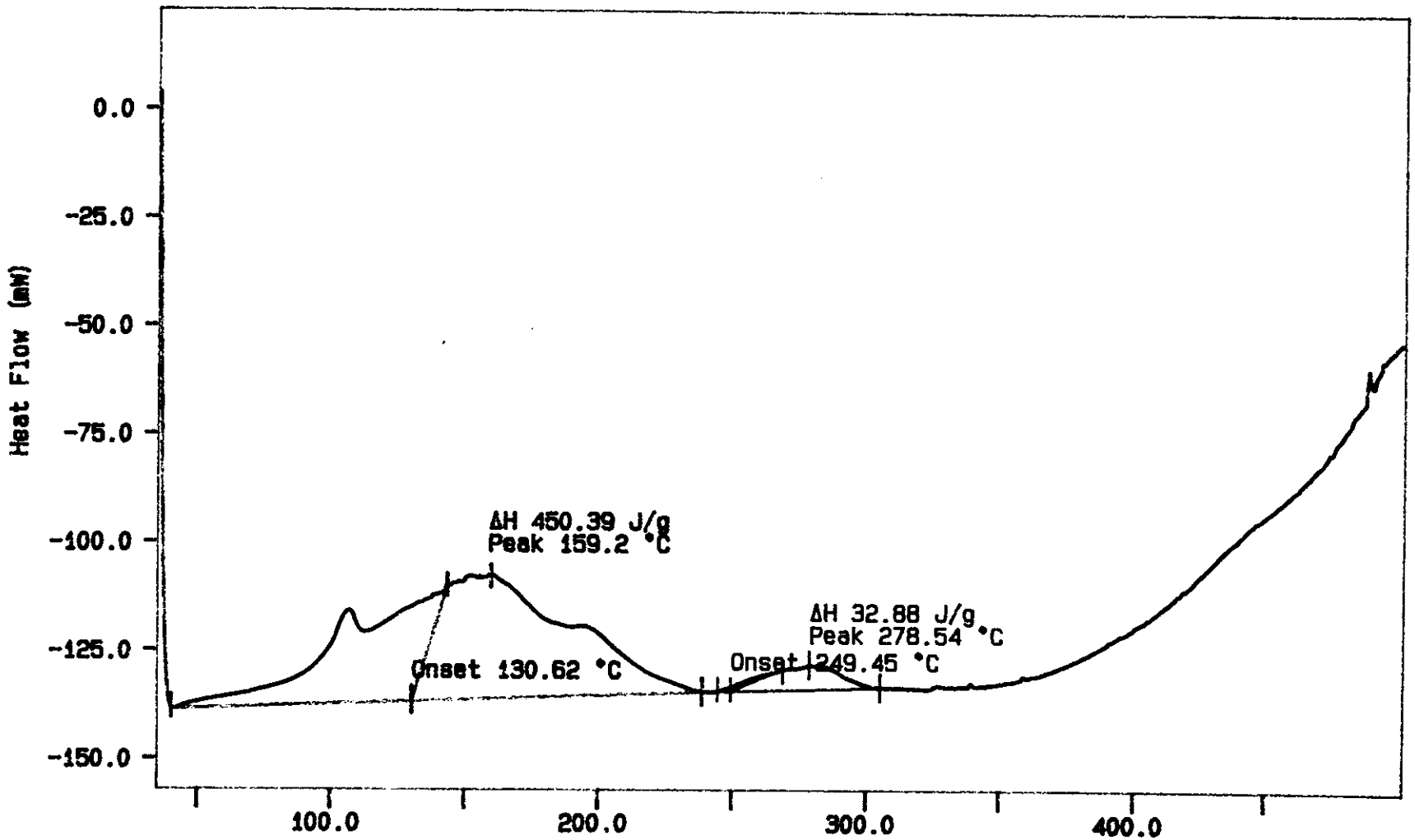
Curve 1: DSC
File info: SAM121604 Sun Dec 17 01:56:06 1995
Sample Weight: 37.710 mg
S95T003643 DUP N2



exotherm down, N2 purge gas
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 500.0 C

AD PURINTON
PERKIN-ELMER
7 Series Thermal Analysis System
Sun Dec 17 02:29:12 1995

Curve 1: DSC
File info: 121605 Sun Dec 17 03:31:20 1995
Sample Weight: 34.000 mg
S95T003646 SAM N2

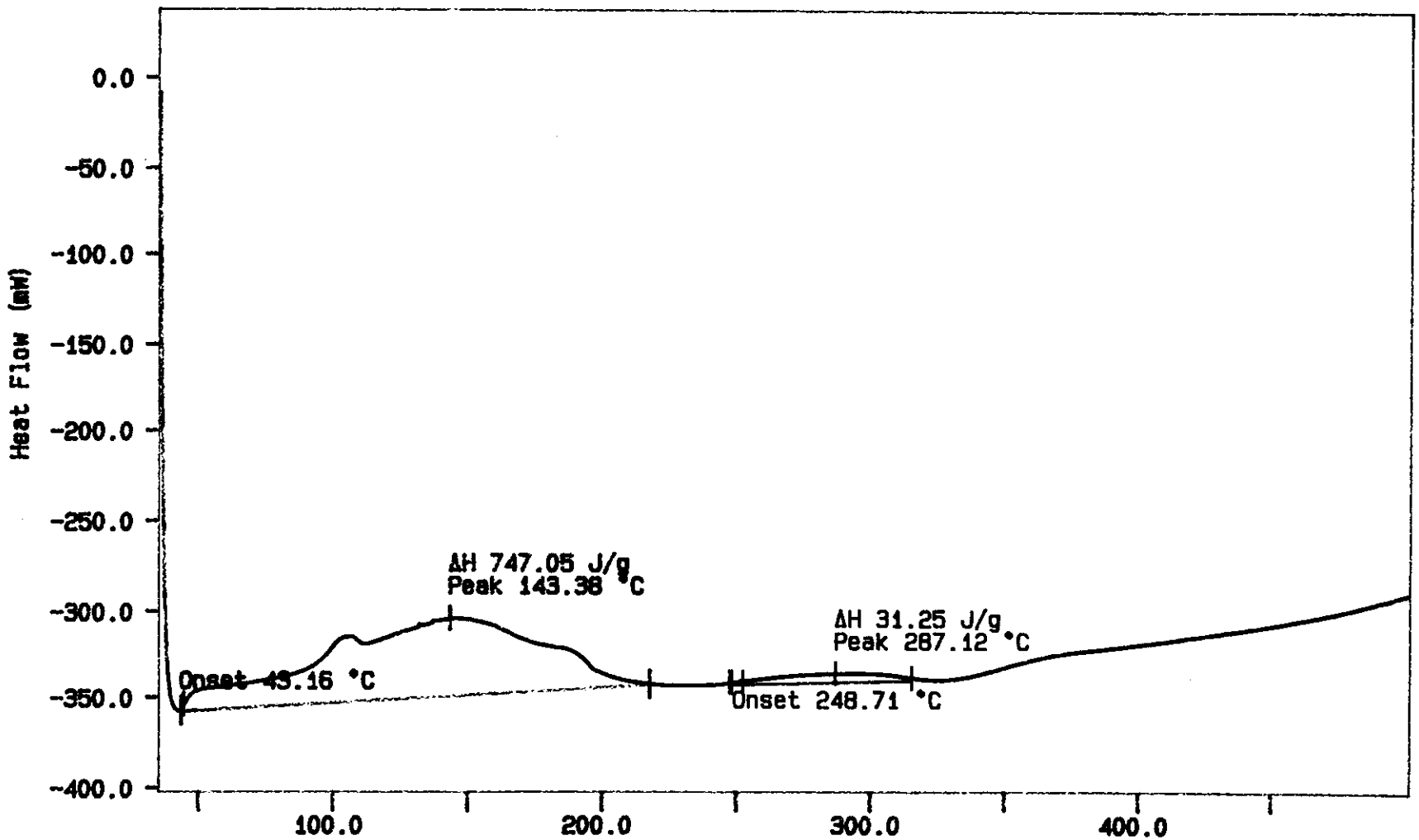


exotherm down, N2 purge gas
TEMP1: 25.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 500.0 C

AD PURINTON
PERKIN-ELMER
7 Series Thermal Analysis System
Sun Dec 17 03:33:16 1995

WHC-SD-WM-DP-164, REV. 0

Curve 1: DSC
File info: SAM121606 Sun Dec 17 04:24:40 1995
Sample Weight: 33.750 mg
S95T003646 DUP N2



exotherm down, N2 purge gas
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 600.0 C

AD PURINTON
PERKIN-ELMER
7 Series Thermal Analysis System
Sun Dec 17 04:58:20 1995

LABCORE Data Entry Template for Worklist# 4115

Analyst: SMF **Instrument:** DSC0 1 **Book #** 12N14B

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

Worklist Comment: Please run BY-104 DSCs under N2. bdv

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				DSC-01	SOLID	28.45	29.2	N/A	Joules/g
95000180	BY104 ROTARY	2	SAMPLE	S95T003638	0		DSC-01	SOLID	N/A	202.8		Joules/g
95000180	BY104 ROTARY	3	DUP	S95T003638	0		DSC-01	SOLID	202.8	273.3	N/A	Joules/g
95000180	BY104 ROTARY	4	SAMPLE	S95T003640	0		DSC-01	SOLID	N/A	282.7		Joules/g
95000180	BY104 ROTARY	5	DUP	S95T003640	0		DSC-01	SOLID	282.7	224.8	N/A	Joules/g

Final page for worklist # 4115

Susie M. Fulton 12-17-95
Analyst Signature **Date**

[illegible] 12-19-95
Analyst Signature **Date**

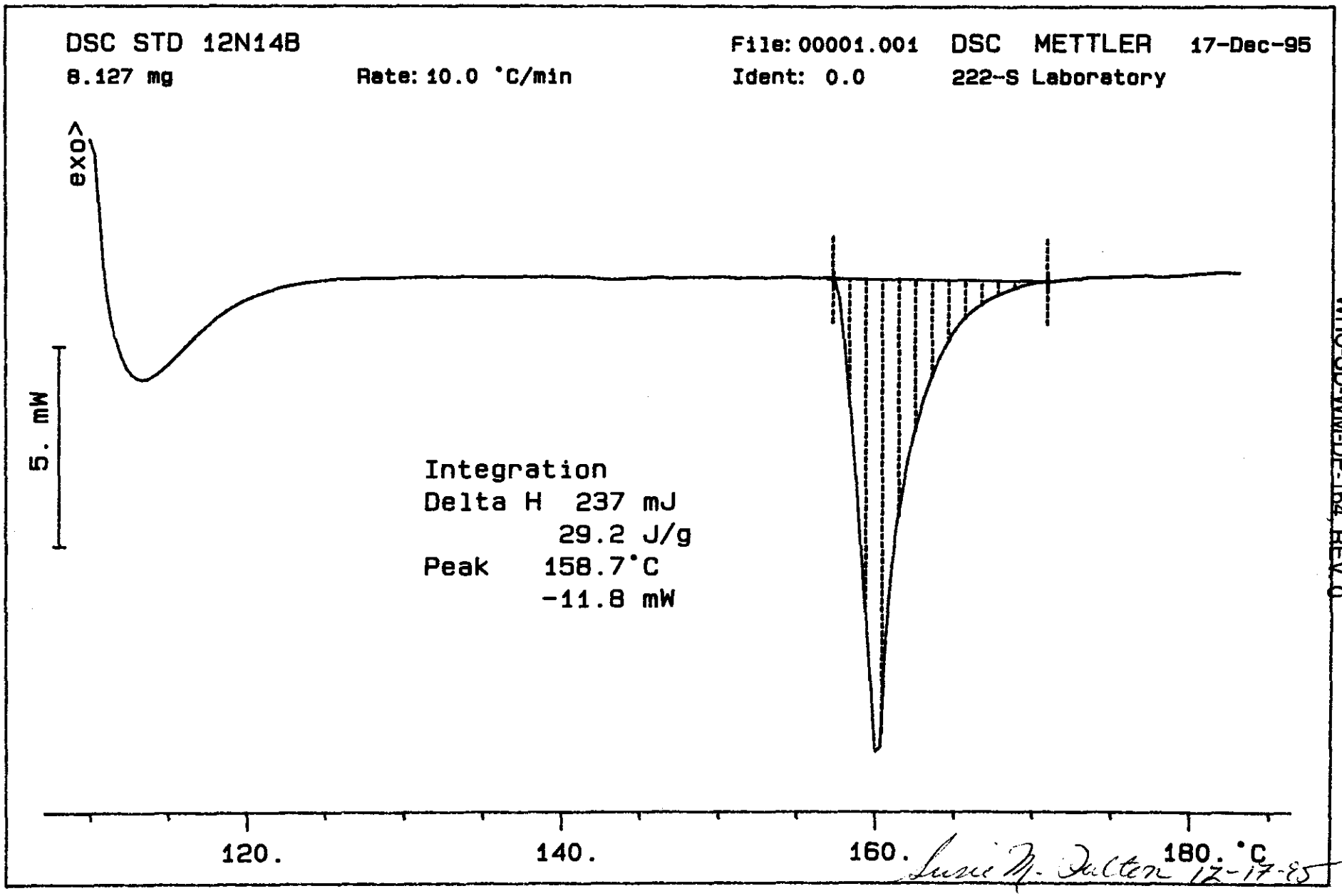
Verified 12/21/95 J.M. [illegible]

S95T003638 produced an endotherm at 151.4°C with a delta H of 702.9J/g.

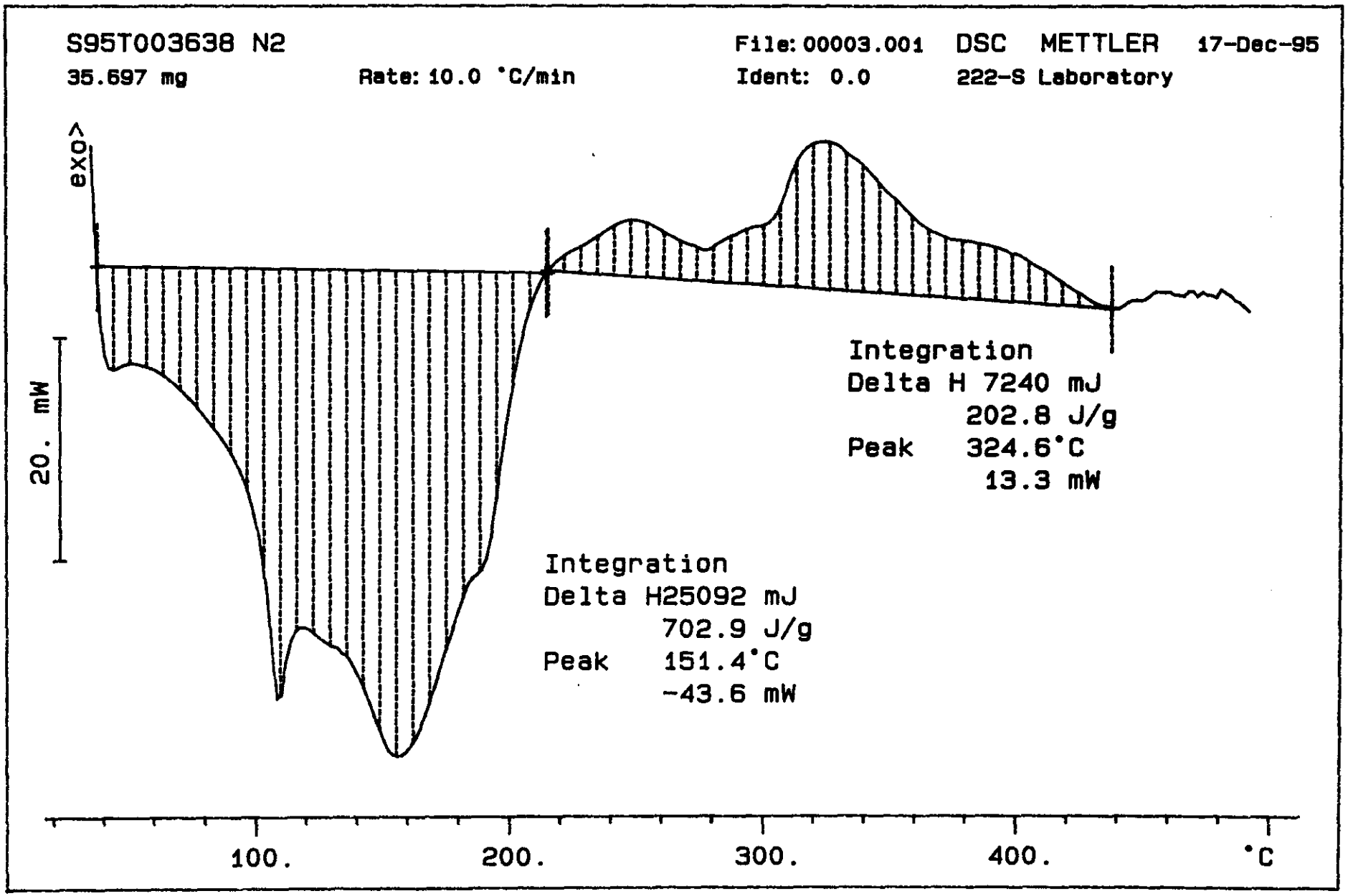
Data Entry Comments: S95T003640 produced an endotherm at 152.8°C with a delta H of 546.7J/g

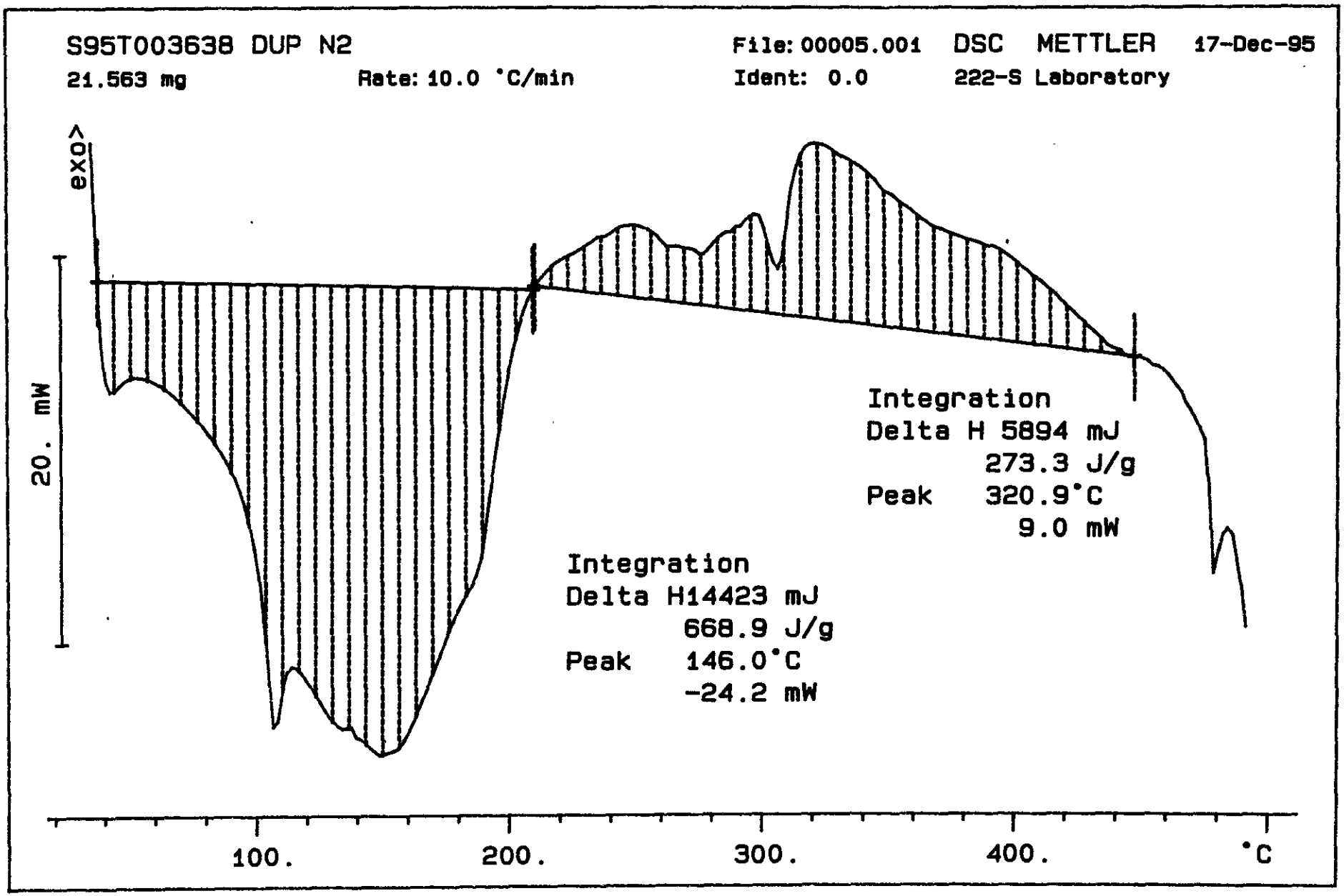
Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

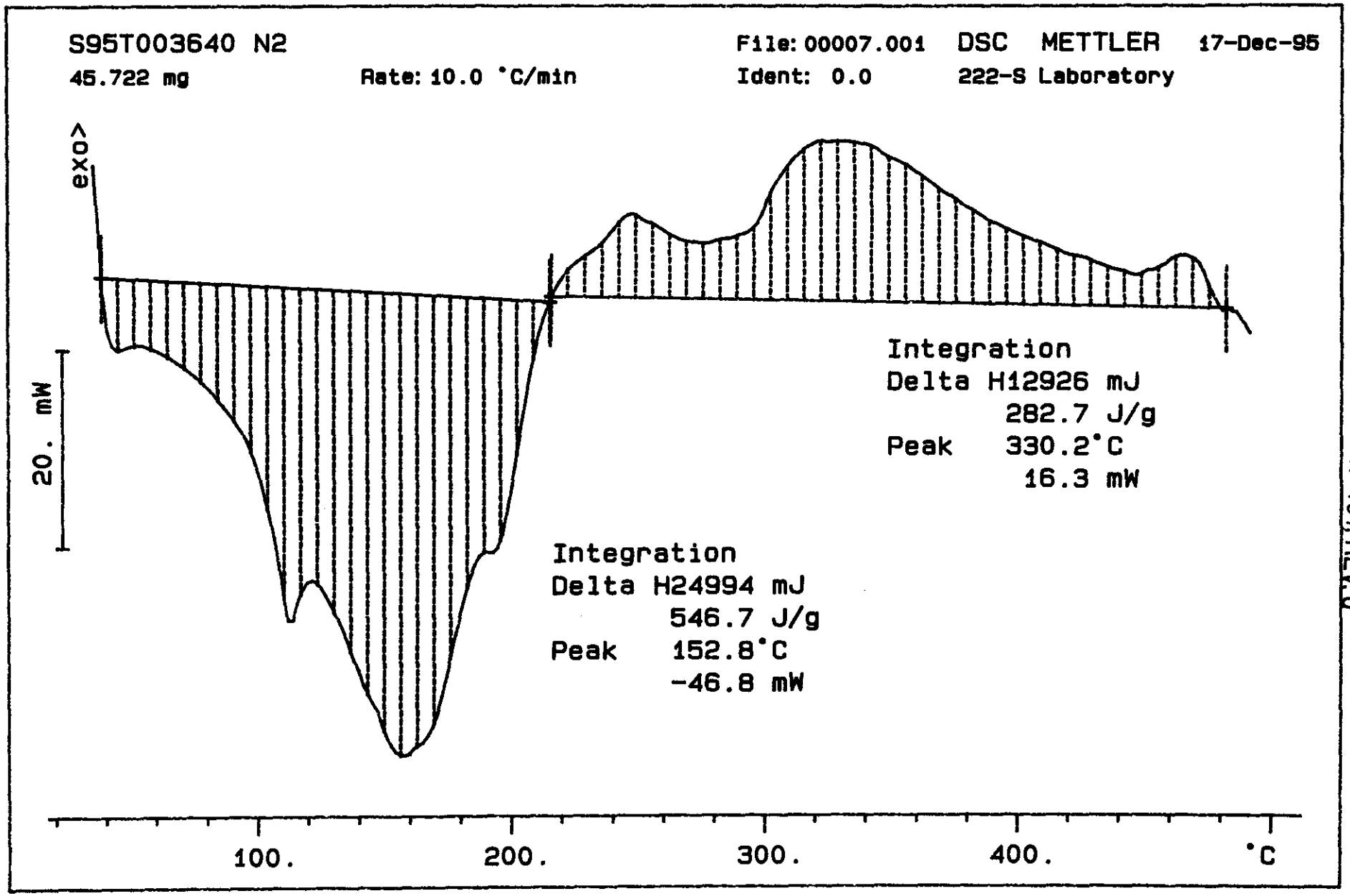
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 77 TO 81

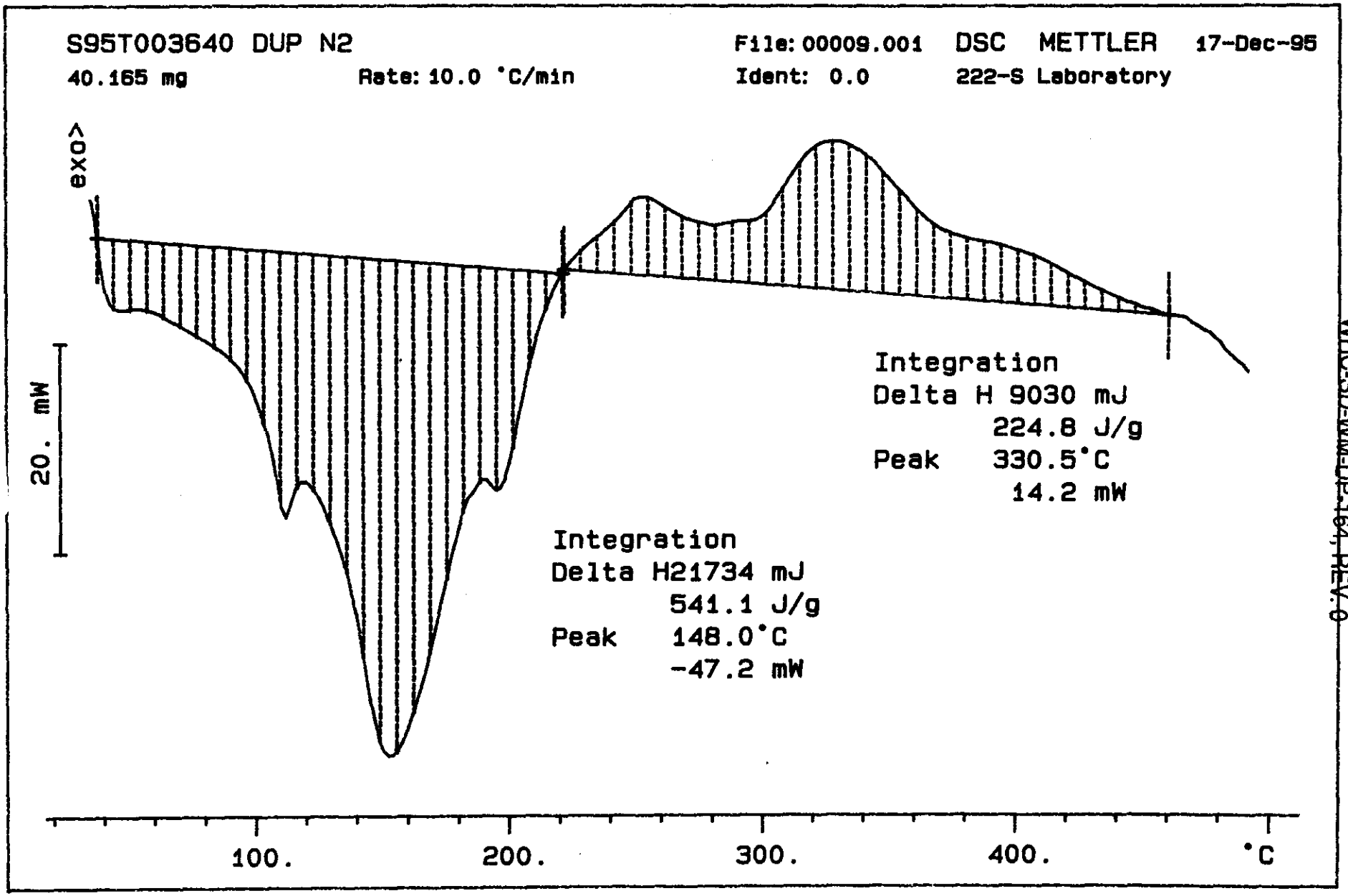


Susie M. Dalton 12-17-95


S95T003638 N2
35.697 mg
Rate: 10.0 °C/min
File: 00003.001
Ident: 0.0
DSC METTLER
222-S Laboratory
17-Dec-95
exo>
20. mW
Integration
Delta H 7240 mJ
202.8 J/g
Peak 324.6°C
13.3 mW
Integration
Delta H25092 mJ
702.9 J/g
Peak 151.4°C
-43.6 mW
100.
200.
300.
400.
°C


S95T003638 DUP N2
21.563 mg
Rate: 10.0 °C/min
File: 00005.001
Ident: 0.0
DSC METTLER
222-S Laboratory
17-Dec-95
exo>
20. mW
Integration
Delta H 5894 mJ
273.3 J/g
Peak 320.9°C
9.0 mW
Integration
Delta H14423 mJ
668.9 J/g
Peak 146.0°C
-24.2 mW
100.
200.
300.
400.
°C


S95T003640 N2
45.722 mg
Rate: 10.0 °C/min
File: 00007.001
Ident: 0.0
DSC METTLER
222-S Laboratory
17-Dec-95
exo>
20. mW
Integration
Delta H12926 mJ
282.7 J/g
Peak 330.2°C
16.3 mW
Integration
Delta H24994 mJ
546.7 J/g
Peak 152.8°C
-46.8 mW
100.
200.
300.
400.
°C


S95T003640 DUP N2
40.165 mg
Rate: 10.0 °C/min
File: 00009.001
Ident: 0.0
DSC METTLER
222-S Laboratory
17-Dec-95
exo>
20. mW
Integration
Delta H 9030 mJ
224.8 J/g
Peak 330.5°C
14.2 mW
Integration
Delta H21734 mJ
541.1 J/g
Peak 148.0°C
-47.2 mW
100.
200.
300.
400.
°C

LABCORE Data Entry Template for Worklist# 4116

Analyst: ADP **Instrument:** DSC0 1 **Book #** 12N14B

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

Worklist Comment: Please run BY-104 DSCs under N2. bdv

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				DSC-01	SOLID	28.45	29.1	N/A	Joules/g
95000180	BY104 ROTARY	2	SAMPLE	S95T003529	0		DSC-01	SOLID	N/A	26.0		Joules/g
95000180	BY104 ROTARY	3	DUP	S95T003529	0		DSC-01	SOLID	26.0	11.6	N/A	Joules/g
95000180	BY104 ROTARY	4	SAMPLE	S95T003648	0		DSC-01	SOLID	N/A	Ø		Joules/g
95000180	BY104 ROTARY	5	DUP	S95T003648	0		DSC-01	SOLID	Ø	Ø	N/A	Joules/g

Final page for worklist # 4116

[signature] 12-18-95
Analyst Signature **Date**

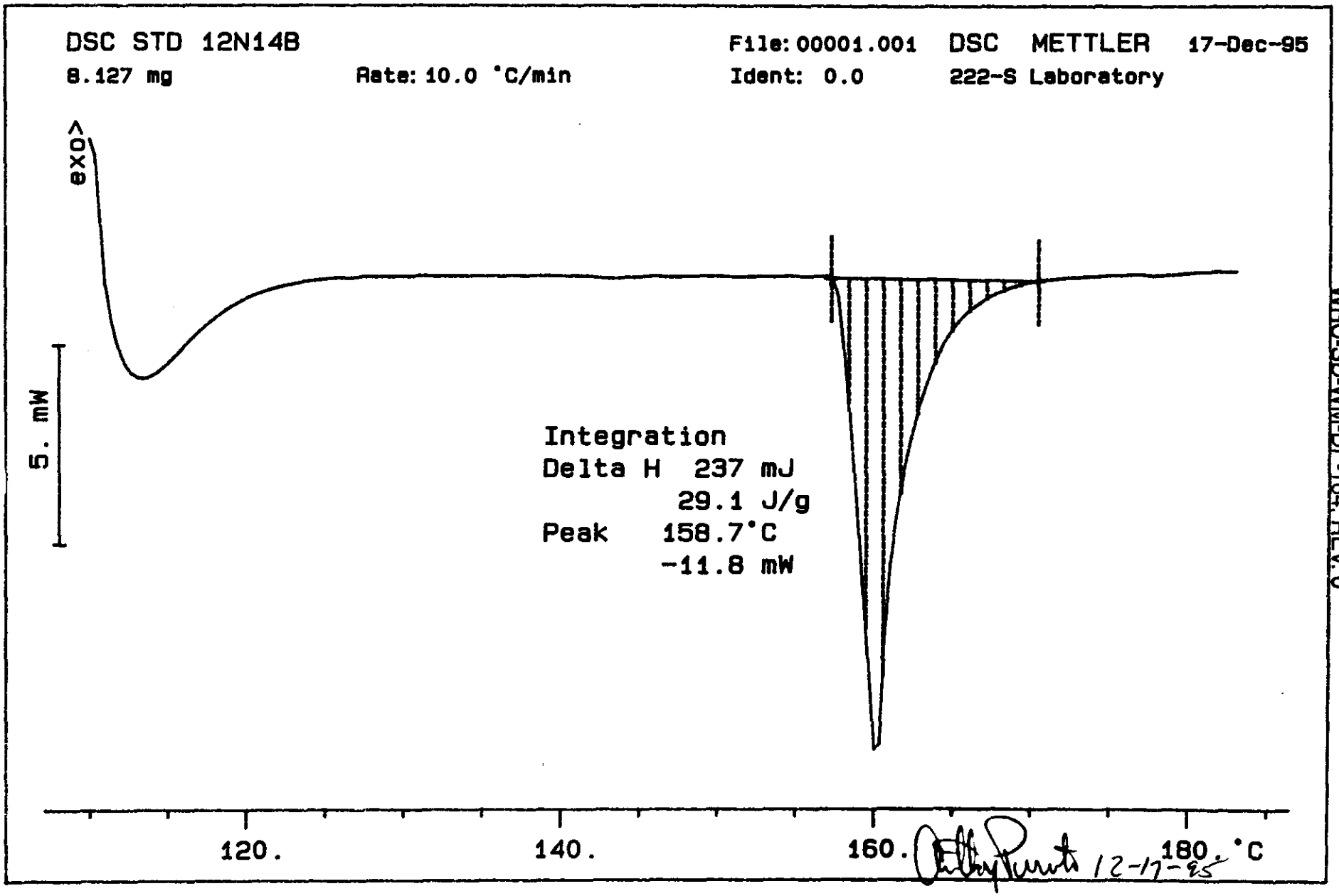
[signature] 12-19-95
Analyst Signature **Date**

Verified 12/21/95 [signature]

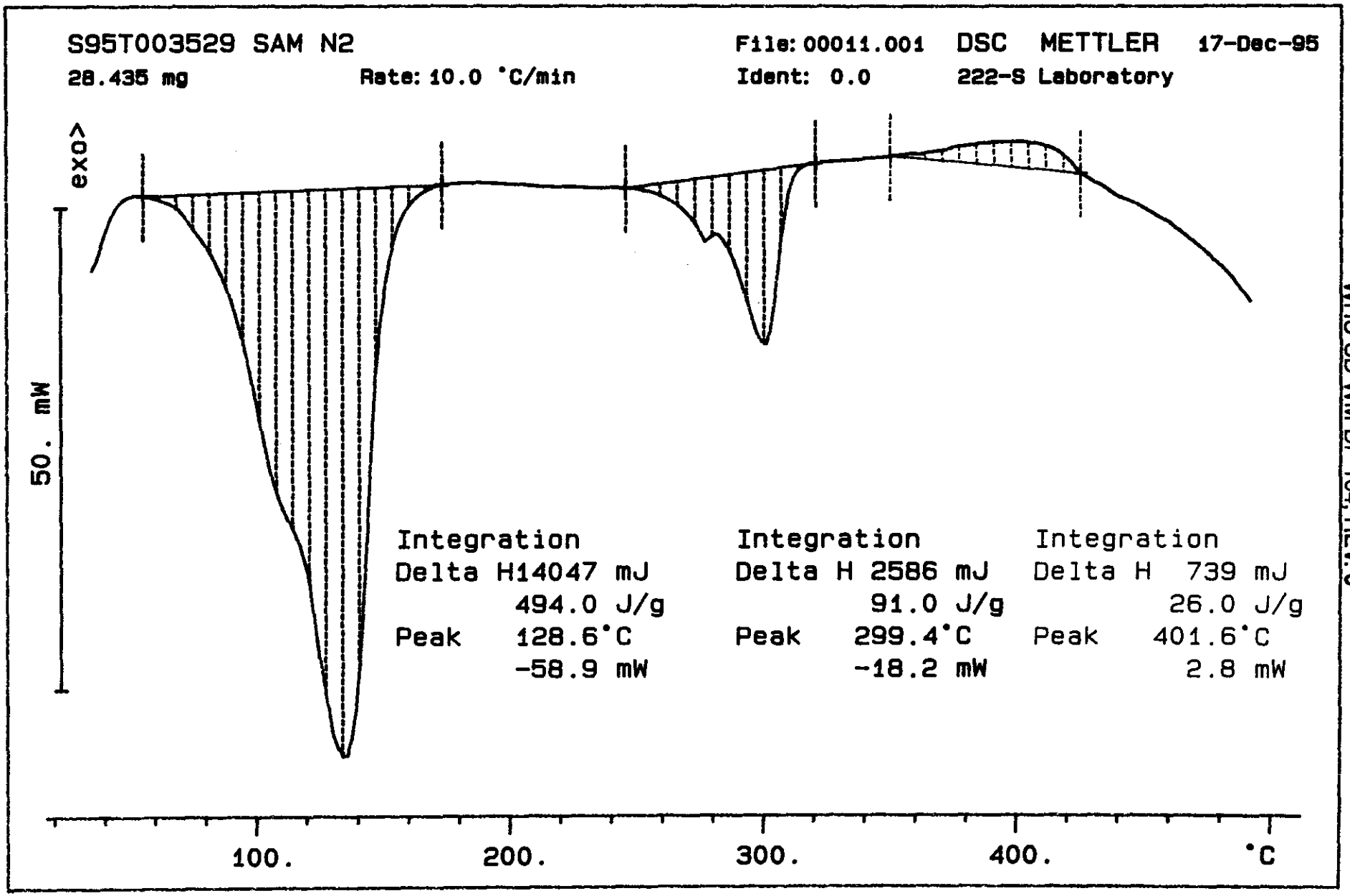
Data Entry Comments: S95T003529 produced two endotherms, one at 128.6°C with a delta H of 494.0J/g, and second at 299.4°C with a delta H of 91.0J/g.
S95T003648 produced two endotherms, one at 151.2°C with a delta H of 639.1J/g and second at 434.4°C with a delta H of 83.4J/g.

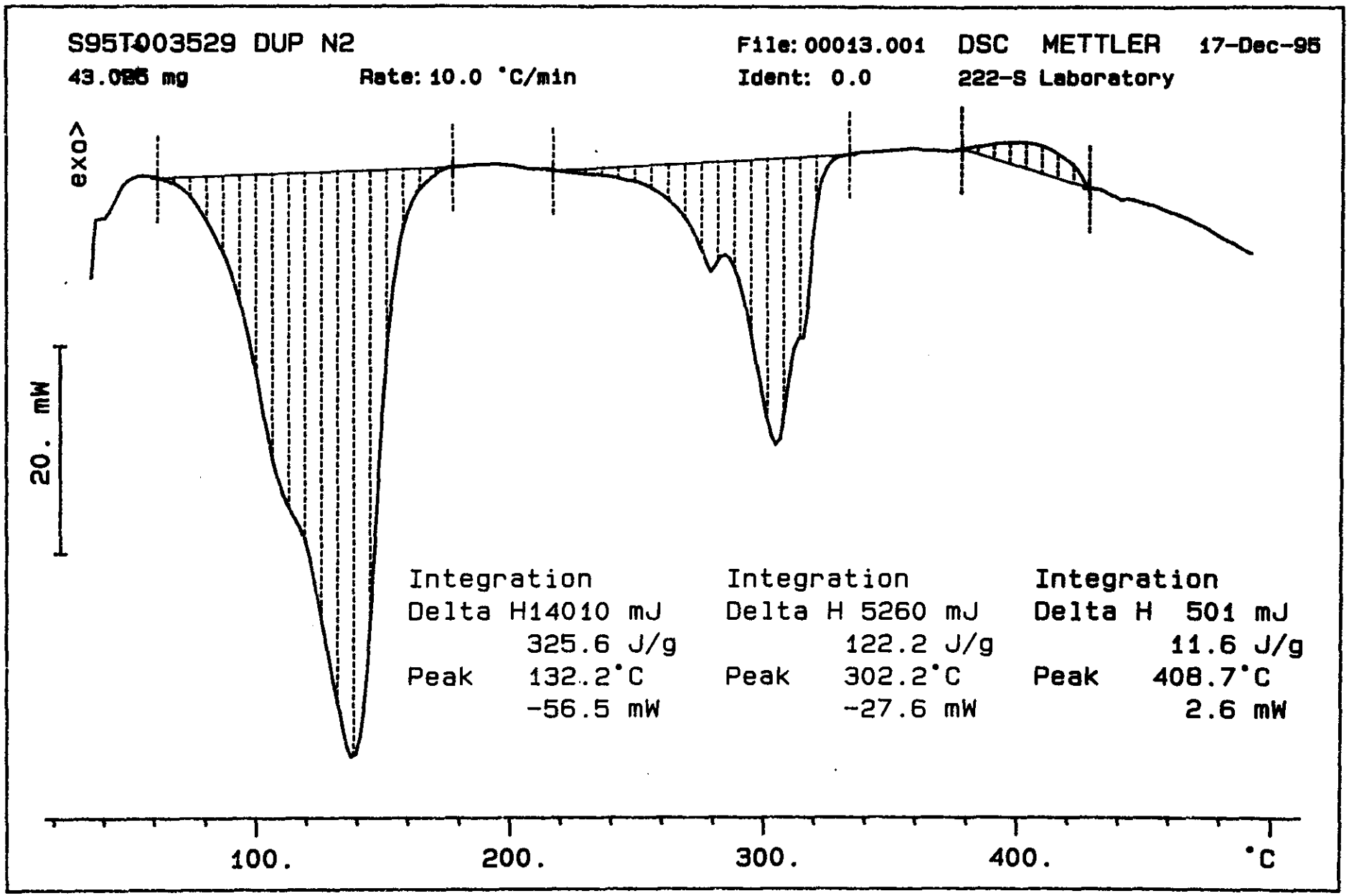
Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

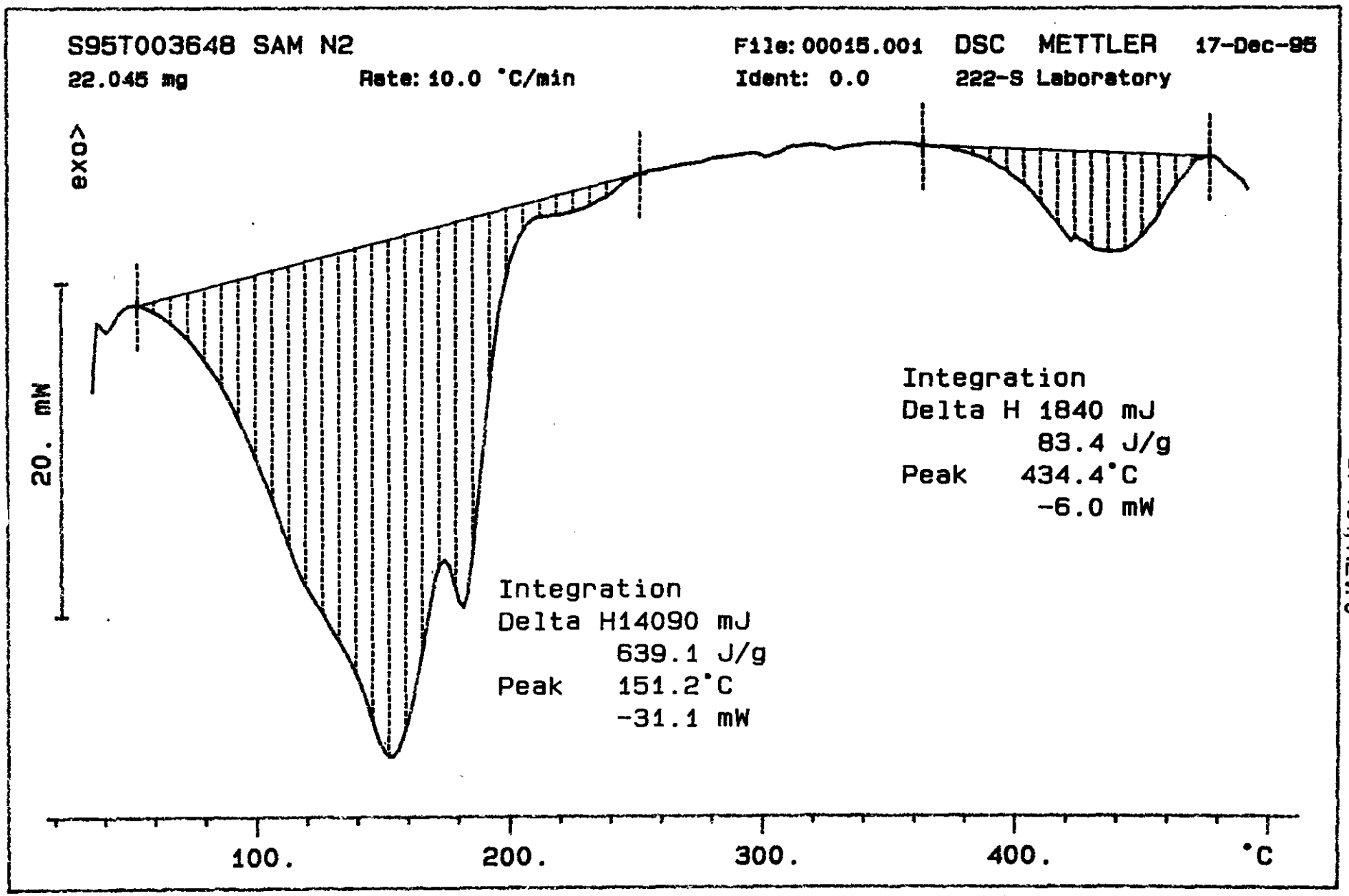
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 83 TO 87

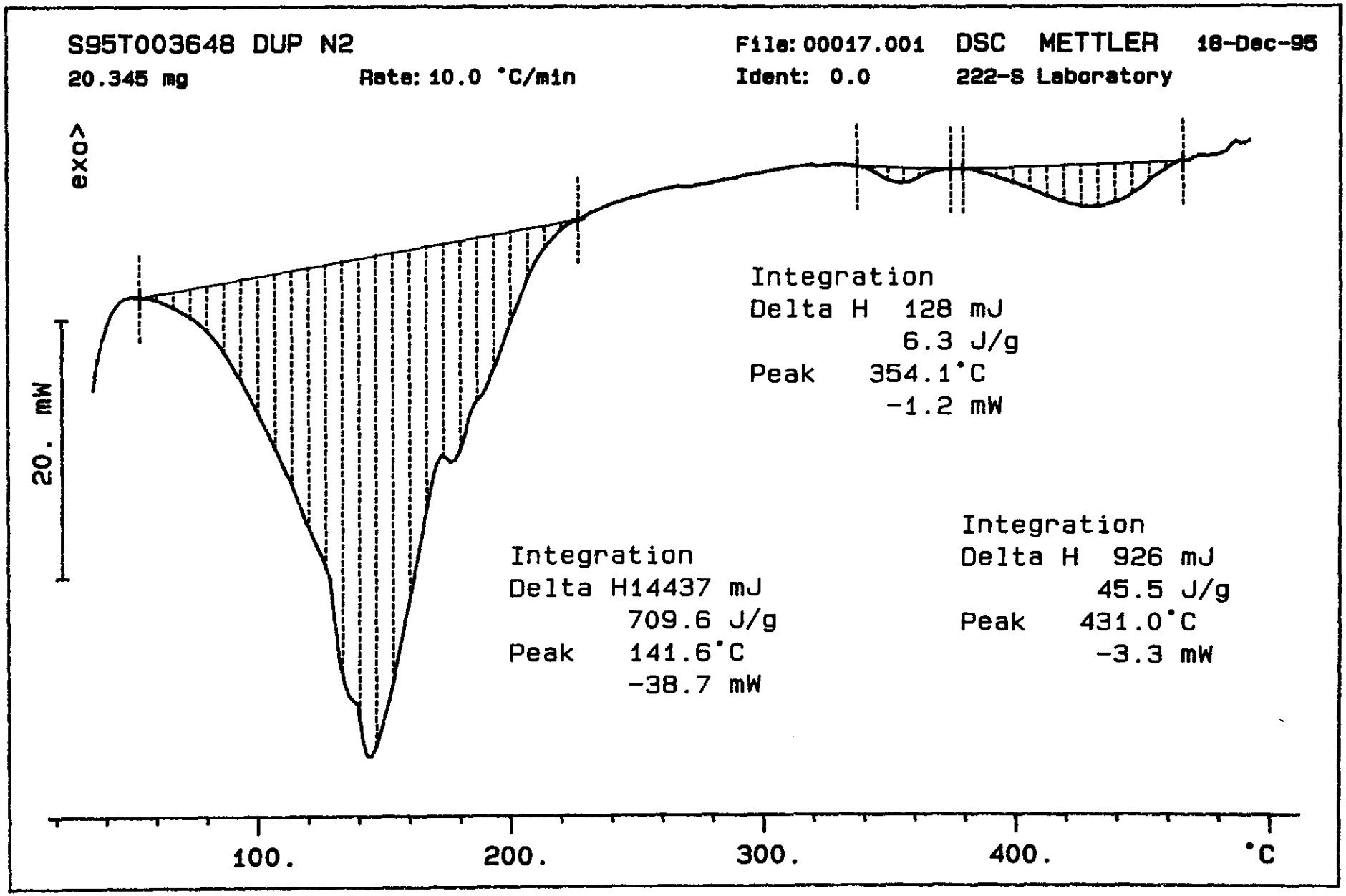


Cathy Punch 12-17-95


S95T003529 SAM N2
28.435 mg
Rate: 10.0 °C/min
File: 00011.001
Ident: 0.0
DSC METTLER
222-S Laboratory
17-Dec-95
<exo
50. mW
Integration
Delta H14047 mJ
494.0 J/g
Peak 128.6°C
-58.9 mW
Integration
Delta H 2586 mJ
91.0 J/g
Peak 299.4°C
-18.2 mW
Integration
Delta H 739 mJ
26.0 J/g
Peak 401.6°C
2.8 mW
100.
200.
300.
400.
°C


S95T003529 DUP N2
43.025 mg
Rate: 10.0 °C/min
File: 00013.001
Ident: 0.0
DSC METTLER
222-S Laboratory
17-Dec-95
exo>
20. mW
Integration
Delta H14010 mJ
325.6 J/g
Peak 132.2°C
-56.5 mW
Integration
Delta H 5260 mJ
122.2 J/g
Peak 302.2°C
-27.6 mW
Integration
Delta H 501 mJ
11.6 J/g
Peak 408.7°C
2.6 mW
100.
200.
300.
400.
°C


S95T003648 SAM N2
22.045 mg
Rate: 10.0 °C/min
File: 00015.001
Ident: 0.0
DSC METTLER
222-S Laboratory
17-Dec-95
exo>
20. mW
Integration
Delta H 1840 mJ
83.4 J/g
Peak 434.4°C
-6.0 mW
Integration
Delta H14090 mJ
639.1 J/g
Peak 151.2°C
-31.1 mW
100.
200.
300.
400.
°C


S95T003648 DUP N2
20.345 mg
Rate: 10.0 °C/min
File: 00017.001
Ident: 0.0
DSC METTLER
222-S Laboratory
18-Dec-95
exo>
20. mW
Integration
Delta H 128 mJ
6.3 J/g
Peak 354.1°C
-1.2 mW
Integration
Delta H14437 mJ
709.6 J/g
Peak 141.6°C
-38.7 mW
Integration
Delta H 926 mJ
45.5 J/g
Peak 431.0°C
-3.3 mW
100.
200.
300.
400.
°C

LABCORE Data Entry Template for Worklist# 4117

Analyst: ADP **Instrument:** DSC0 3 **Book #** 12N14B

Method: LA-514-114 Rev/Mod C-1

Worklist Comment: Please run BY-104 DSCs under N2. bdv

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				DSC-03	SOLID	28.45	28.65	N/A	Joules/g
95000180	BY104 ROTARY	2	SAMPLE	S95T003637	0		DSC-03	SOLID	N/A	Ø		Joules/g
95000180	BY104 ROTARY	3	DUP	S95T003637	0		DSC-03	SOLID	Ø	Ø	N/A	Joules/g
95000180	BY104 ROTARY	4	SAMPLE	S95T003641	0		DSC-03	SOLID	N/A	Ø		Joules/g
95000180	BY104 ROTARY	5	DUP	S95T003641	0		DSC-03	SOLID	Ø	Ø	N/A	Joules/g

Final page for worklist # 4117

See attached for signatures

Analyst Signature **Date**

[signature] 12-20-95

Analyst Signature **Date**

Verified 12/21/95 JM Fuge

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# 4117

Analyst: ABP **Instrument:** DSC0 _____ **Book #** 12N14A

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

Worklist Comment: Please run BY-104 DSCs under N2. bdv

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				DSC-01	SOLID			N/A	Joules/g
95000180	BY104 ROTARY	2	SAMPLE	S95T003637	0		DSC-01	SOLID	N/A			Joules/g
95000180	BY104 ROTARY	3	DUP	S95T003637	0		DSC-01	SOLID			N/A	Joules/g
95000180	BY104 ROTARY	4	SAMPLE	S95T003641	0		DSC-01	SOLID	N/A			Joules/g
95000180	BY104 ROTARY	5	DUP	S95T003641	0		DSC-01	SOLID			N/A	Joules/g

Final page for worklist # 4117

12-18-95

Analyst Signature **Date**

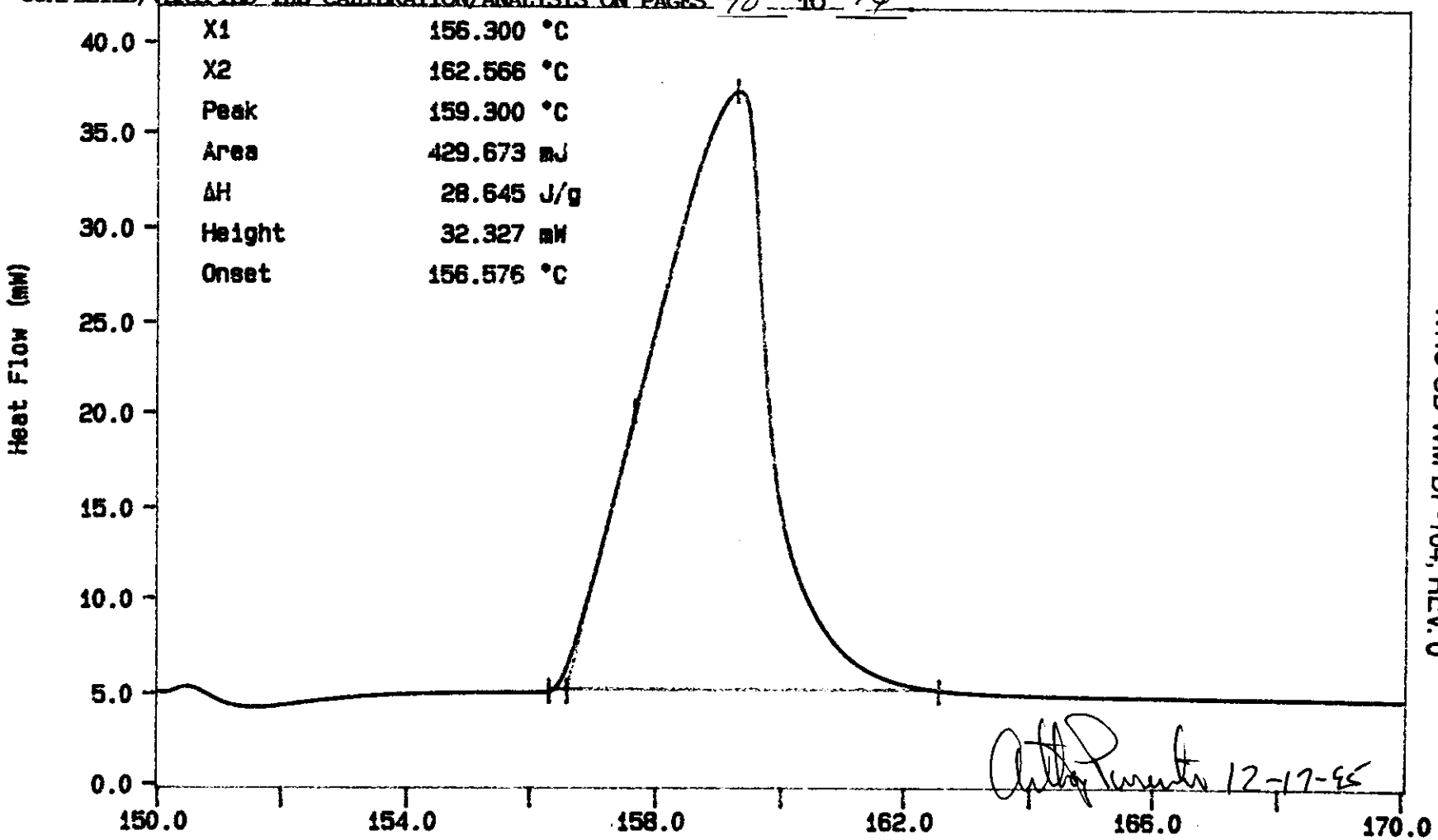
Analyst Signature **Date**

Data Entry Comments:

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

Curve 1: DSC
File info: IND121703 Sun Dec 17 19:35:24 1995
Sample Weight: 15.000 mg
12N14A Indium at 10C/min

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 90 TO 94

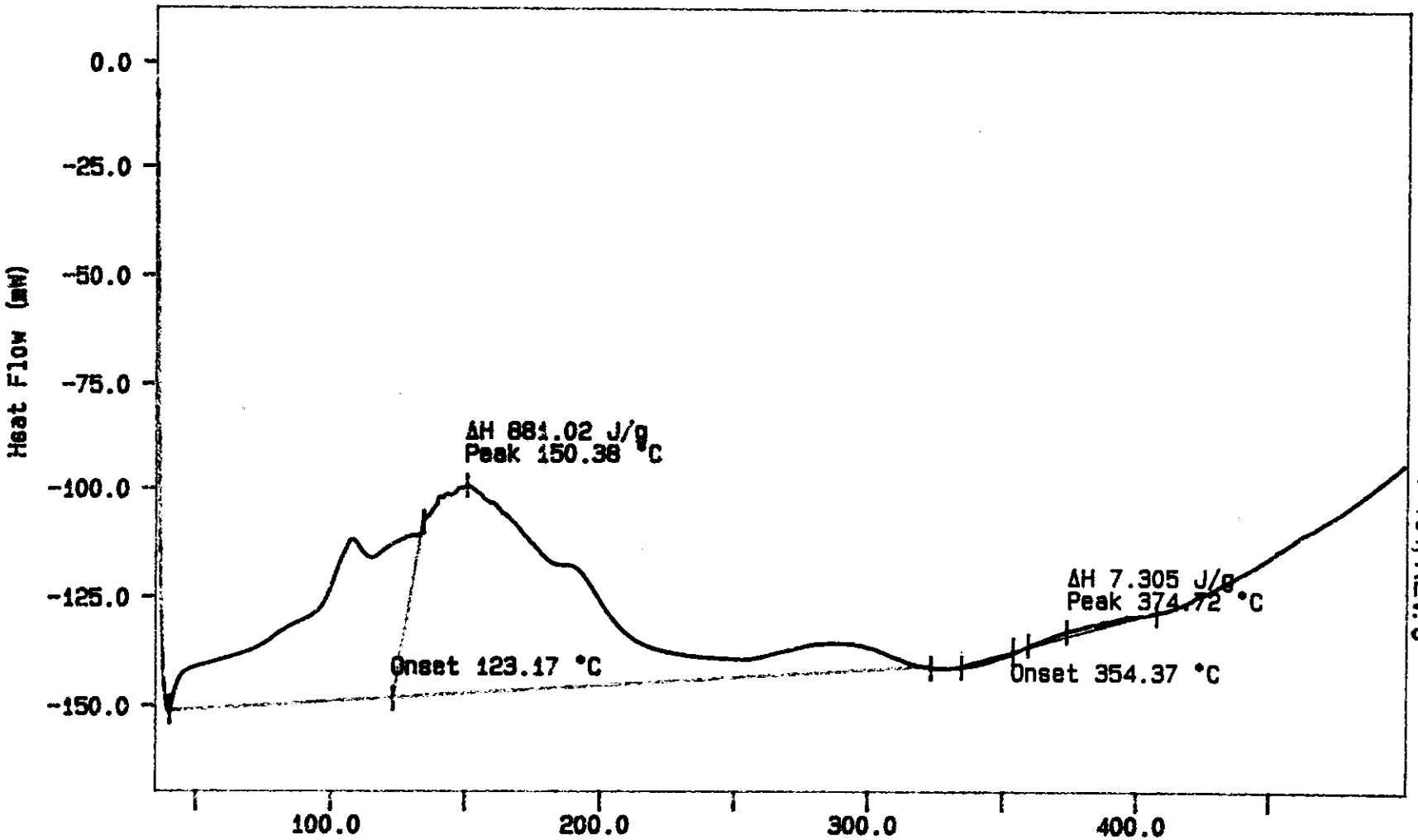


Arthur Purinton 12-17-95

N2, EXOTHERM DOWN
TEMP1: 150.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 170.0 C

AD PURINTON
PERKIN-ELMER
7 Series Thermal Analysis System
Sun Dec 17 19:40:40 1995

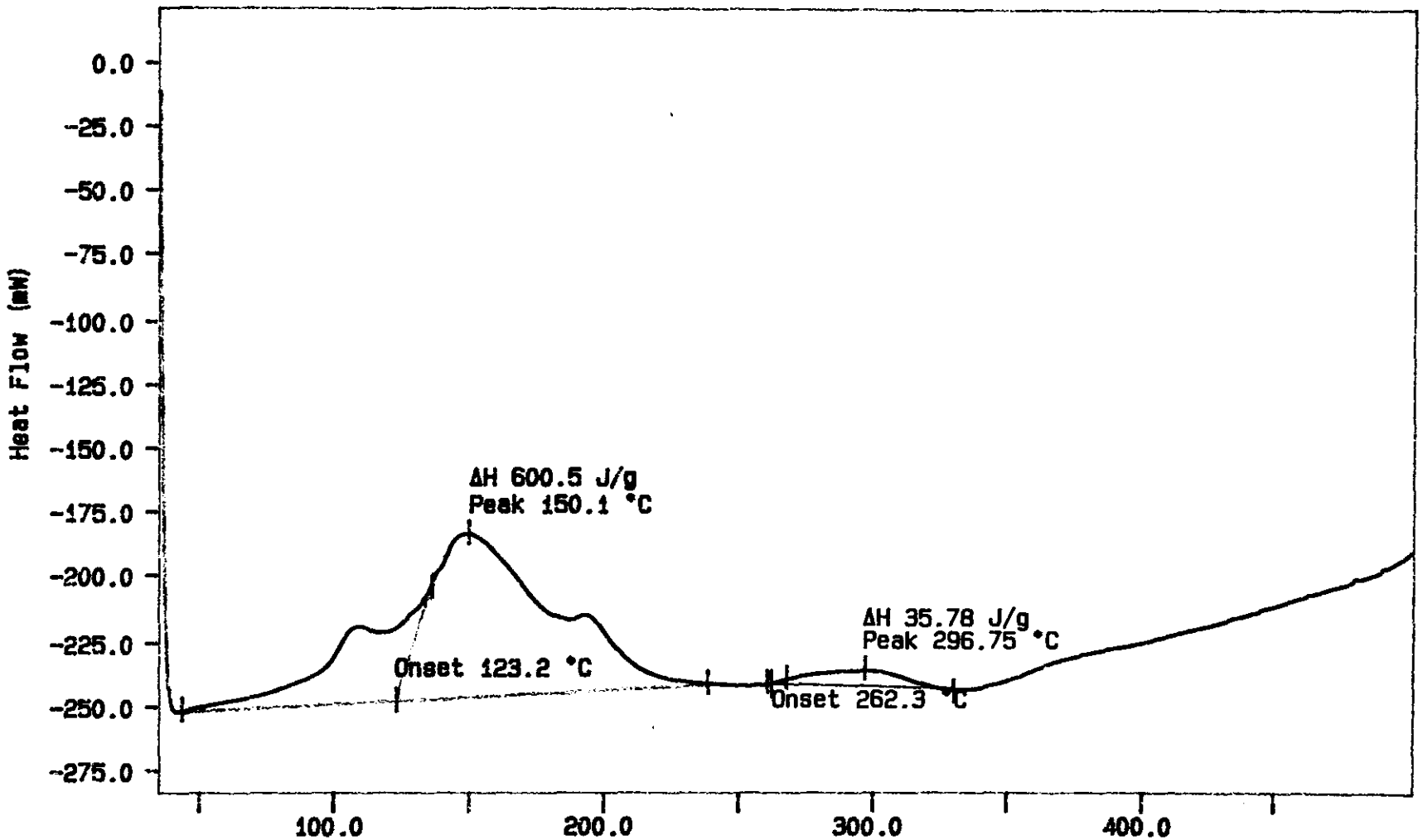
Curve 1: DSC
File info: SAM121701 Sun Dec 17 20:34:38 1995
Sample Weight: 35.990 mg
S95T003637 SAM N2



exotherm down, N2 purge gas
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 600.0 C

AD PURINTON
PERKIN-ELMER
7 Series Thermal Analysis System
Sun Dec 17 20:57:42 1995

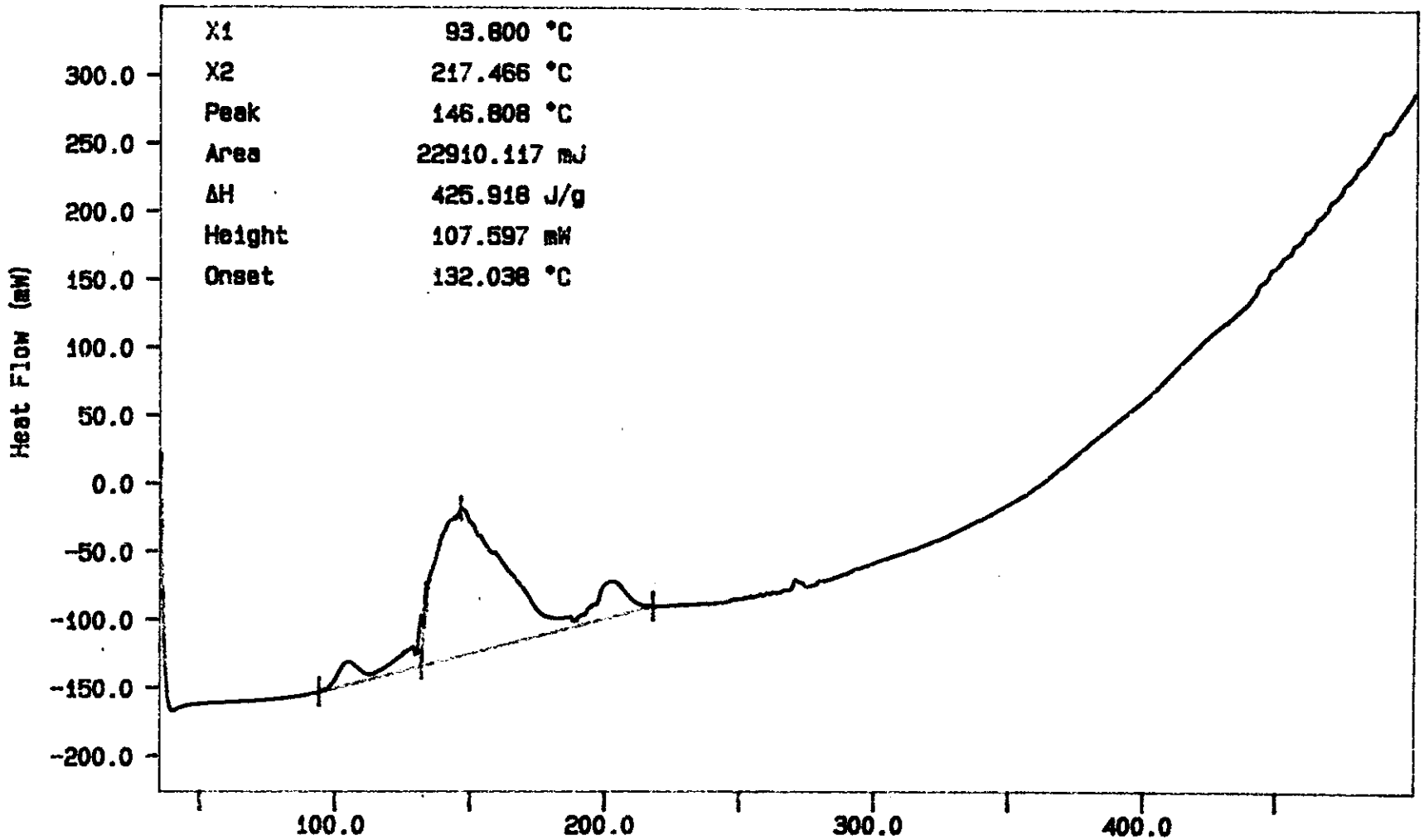
Curve 1: DSC
File info: SAM121702 Sun Dec 17 21:55:30 1995
Sample Weight: 44.100 mg
S95T003637 DUP N2



exotherm down, N2 purge gas
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 600.0 C

AD PURINTON
PERKIN-ELMER
7 Series Thermal Analysis System
Sun Dec 17 22:04:47 1995

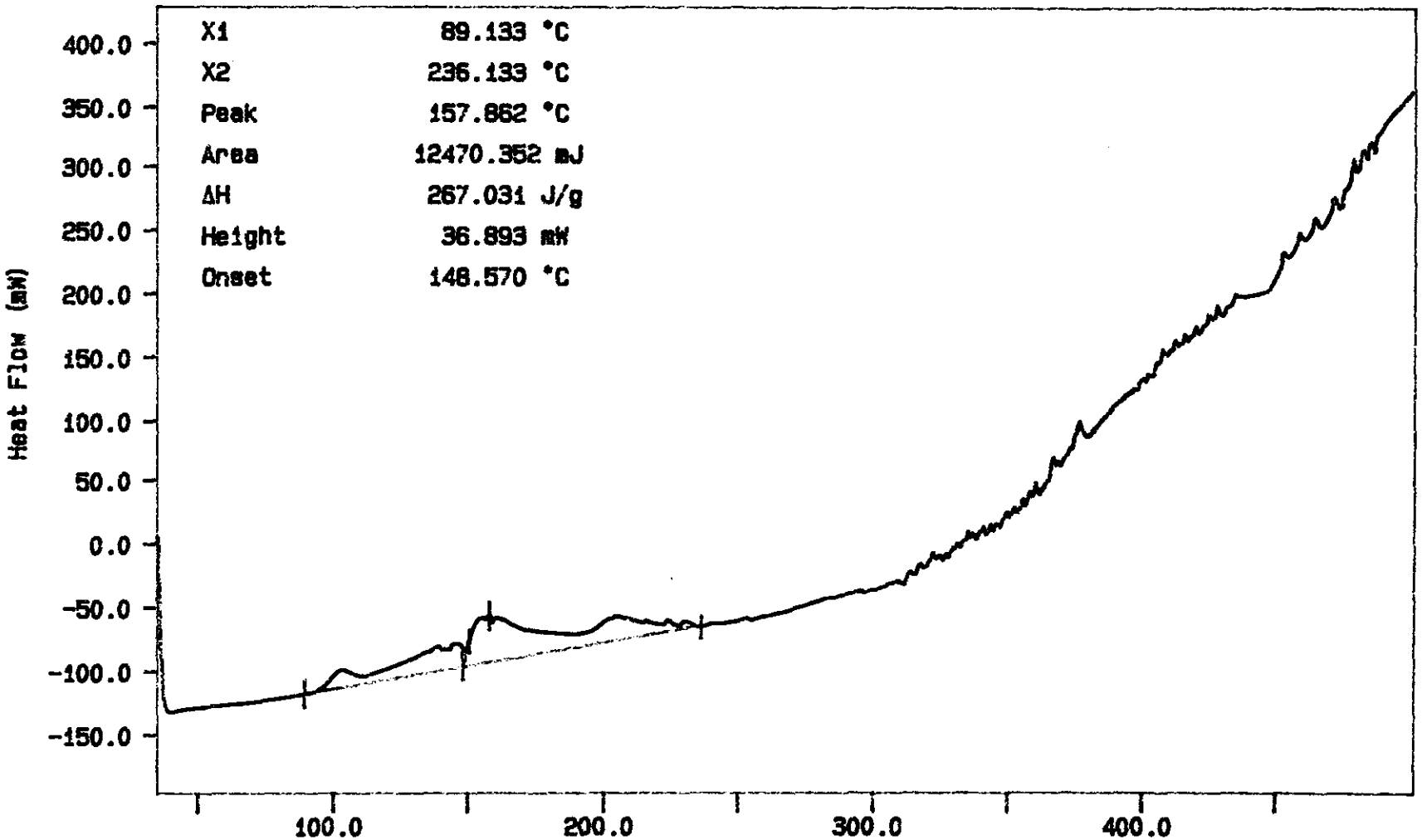
Curve 1: DSC
File info: SAM121703 Sun Dec 17 22:58:16 1995
Sample Weight: 53.790 mg
S95T003641 SAM N2



exotherm down, N2 purge gas
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 600.0 C

AD PURINTON
PERKIN-ELMER
7 Series Thermal Analysis System
Sun Dec 17 23:02:07 1995

Curve 1: DSC
File info: SAM121704 Mon Dec 18 00:00:33 1995
Sample Weight: 46.700 mg
S95T003641 DUP N2



exotherm down, N2 purge gas
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 600.0 C

AD PURINTON
PERKIN-ELMER
7 Series Thermal Analysis System
Mon Dec 18 00:54:20 1995

LABCORE Data Entry Template for Worklist# 4118

Analyst: ADP **Instrument:** DSC0 3 **Book #** 12N14B

Method: LA-514-114 Rev/Mod C-1

Worklist Comment: Please run BY-104 DSCs under N2. bdv

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				DSC-03	SOLID	28.45	28.17	N/A	Joules/g
95000180	BY104 ROTARY	2	SAMPLE	S95T003528	0		DSC-03	SOLID	N/A	Ø		Joules/g
95000180	BY104 ROTARY	3	DUP	S95T003528	0		DSC-03	SOLID	Ø	~~Ø~~ 116.0 12/19/95 BDV	N/A	Joules/g
95000180	BY104 ROTARY	4	SAMPLE	S95T003703	0		DSC-03	SOLID	N/A	Ø		Joules/g
95000180	BY104 ROTARY	5	DUP	S95T003703	0		DSC-03	SOLID	Ø	~~Ø~~ 11.14 J/g 12/19/95 BDV	N/A	Joules/g

Final page for worklist # 4118

See attached for signatures
Analyst Signature **Date** 12/19/95

Analyst Signature **Date** 12-20-95

Verified 12/21/95 J M Fuge

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# 4118

Analyst: ADP **Instrument:** DSC0 _____ **Book #** 12N14A

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

Worklist Comment: Please run BY-104 DSCs under N2. bdv

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				DSC-01	SOLID			N/A	Joules/g
95000180	BY104 ROTARY	2	SAMPLE	S95T003528	0		DSC-01	SOLID	N/A			Joules/g
95000180	BY104 ROTARY	3	DUP	S95T003528	0		DSC-01	SOLID			N/A	Joules/g
95000180	BY104 ROTARY	4	SAMPLE	S95T003703	0		DSC-01	SOLID	N/A			Joules/g
95000180	BY104 ROTARY	5	DUP	S95T003703	0		DSC-01	SOLID			N/A	Joules/g

Final page for worklist # 4118

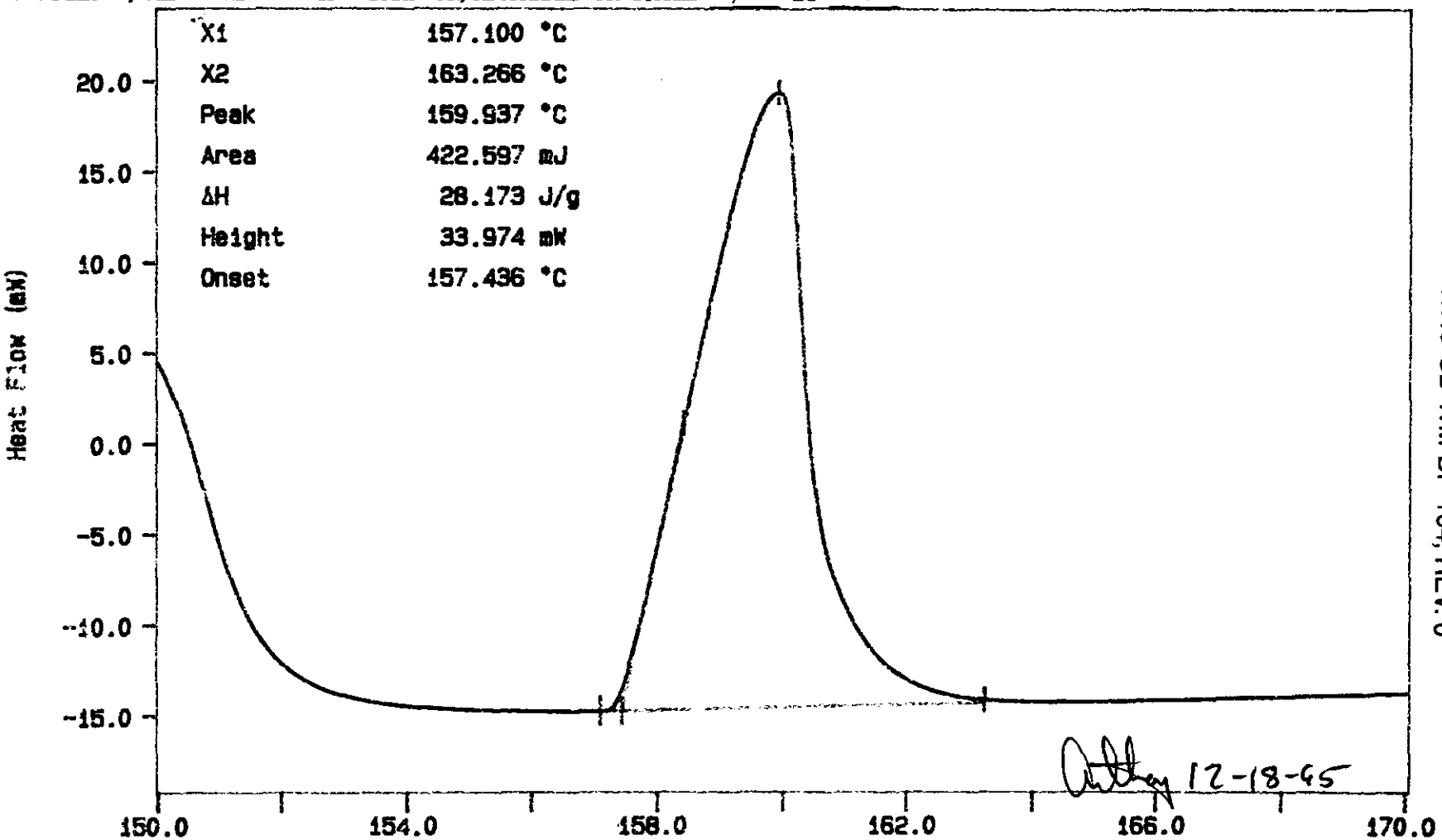
Analyst Signature **Date** **Analyst Signature** **Date**

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.

Curve 1: DSC
File info: IND121801 Mon Dec 18 01:17:10 1995
Sample Weight: 15.000 mg
12N14A Indium at 10C/min

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 97 TO 101

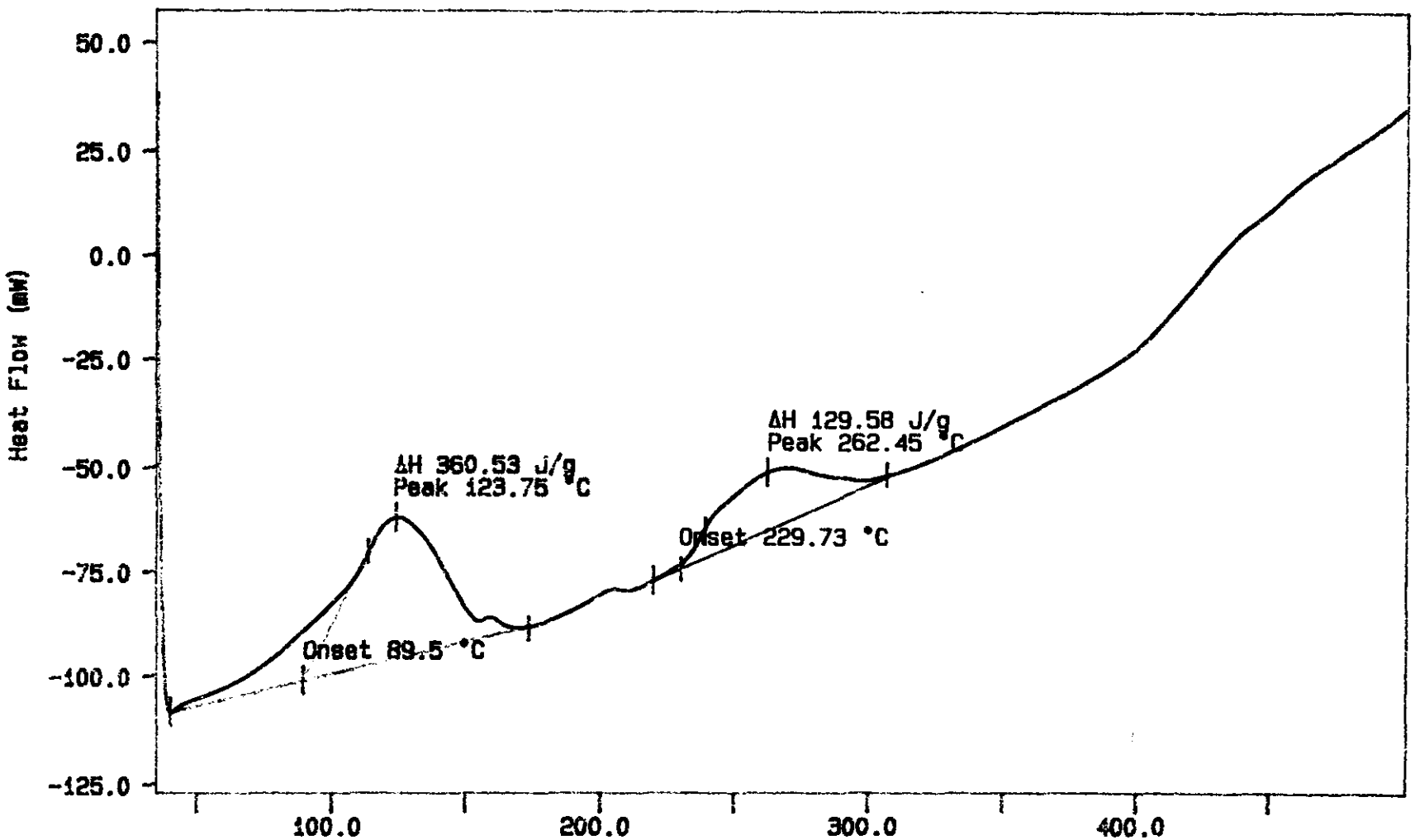


12-18-95

N2, EXOTHERM DOWN
TEMP1: 150.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 170.0 C

AJ PURINTON
PERKIN-ELMER
7 Series Thermal Analysis System
Mon Dec 18 01:22:35 1995

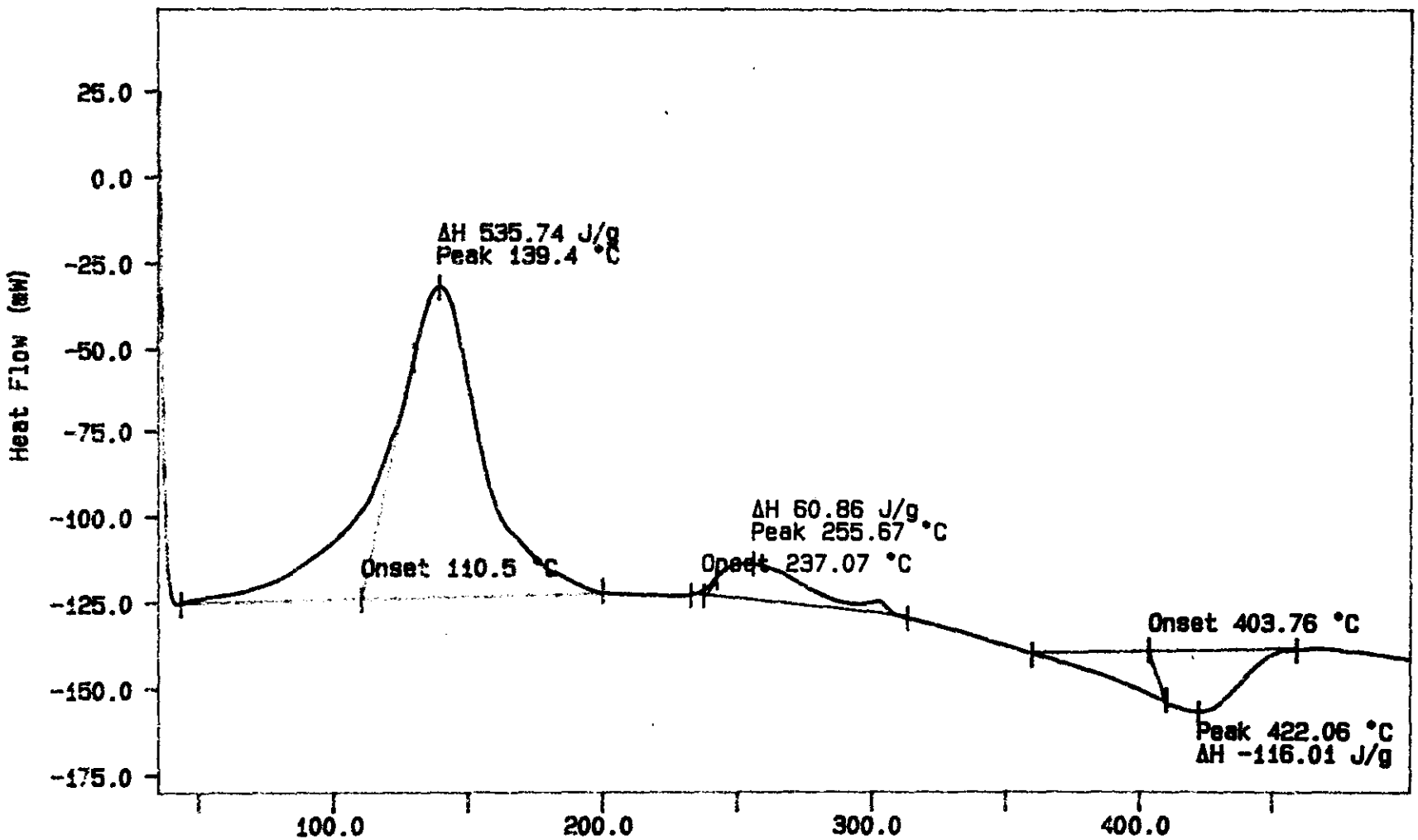
Curve 1: DSC
File info: SAM121801 Mon Dec 18 02:18:02 1995
Sample Weight: 27.250 mg
S95T003528 SAM N2



exotherm down, N2 purge gas
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 500.0 C

AD PURINTON
PERKIN-ELMER
7 Series Thermal Analysis System
Mon Dec 18 06:29:45 1995

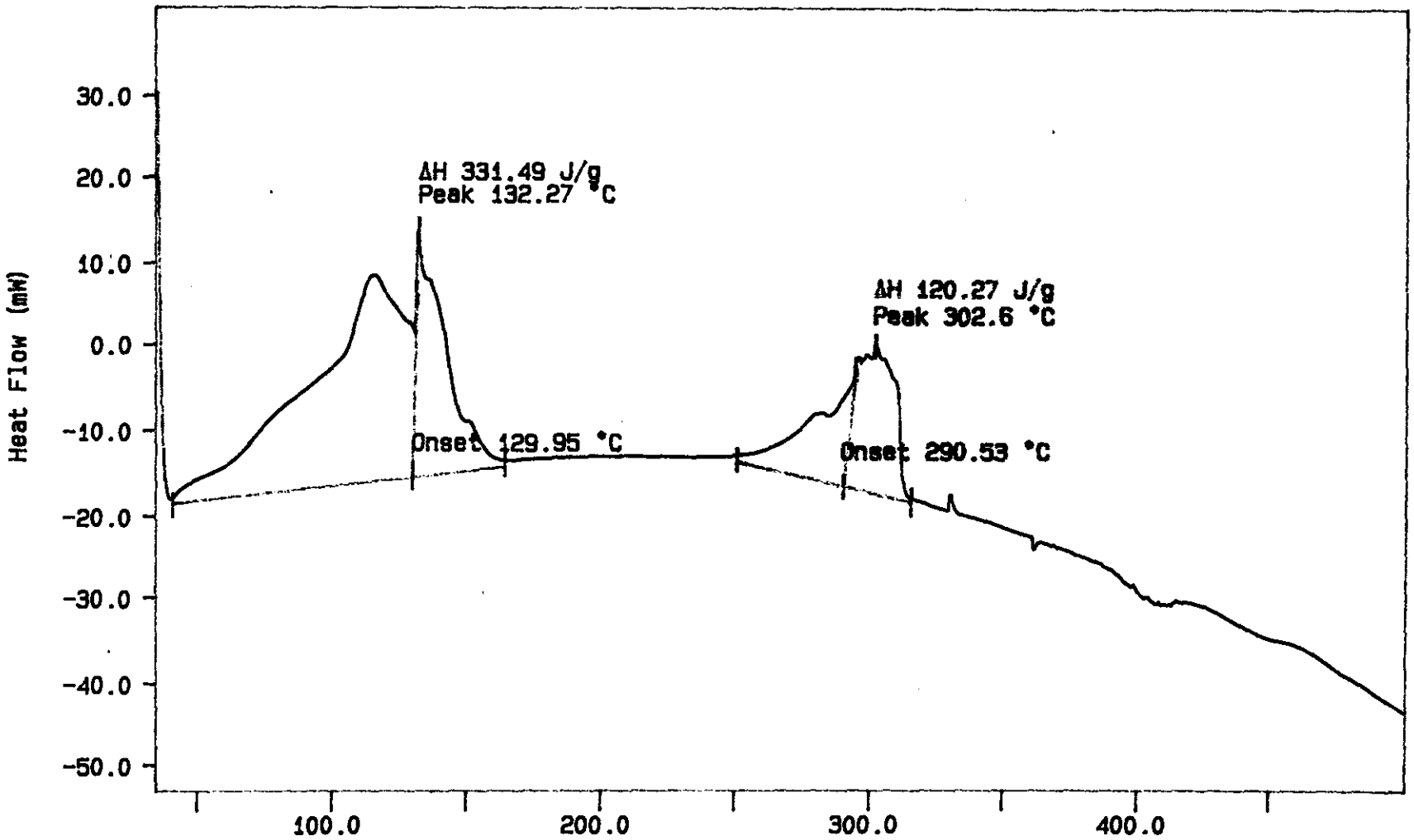
Curve 1: DSC
File info: SAM121802 Mon Dec 18 20:25:37 1995
Sample Weight: 43.260 mg
S95T003528 DUP N2



exotherm down, N2 purge gas
TEMP1: 25.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 500.0 C

AD PURINTON
PERKIN-ELMER
7 Series Thermal Analysis System
Mon Dec 18 20:54:09 1995

Curve 1: DSC
File info: SAM121803 Mon Dec 18 22:03:29 1995
Sample Weight: 23.750 mg
S95T003703 SAM N2

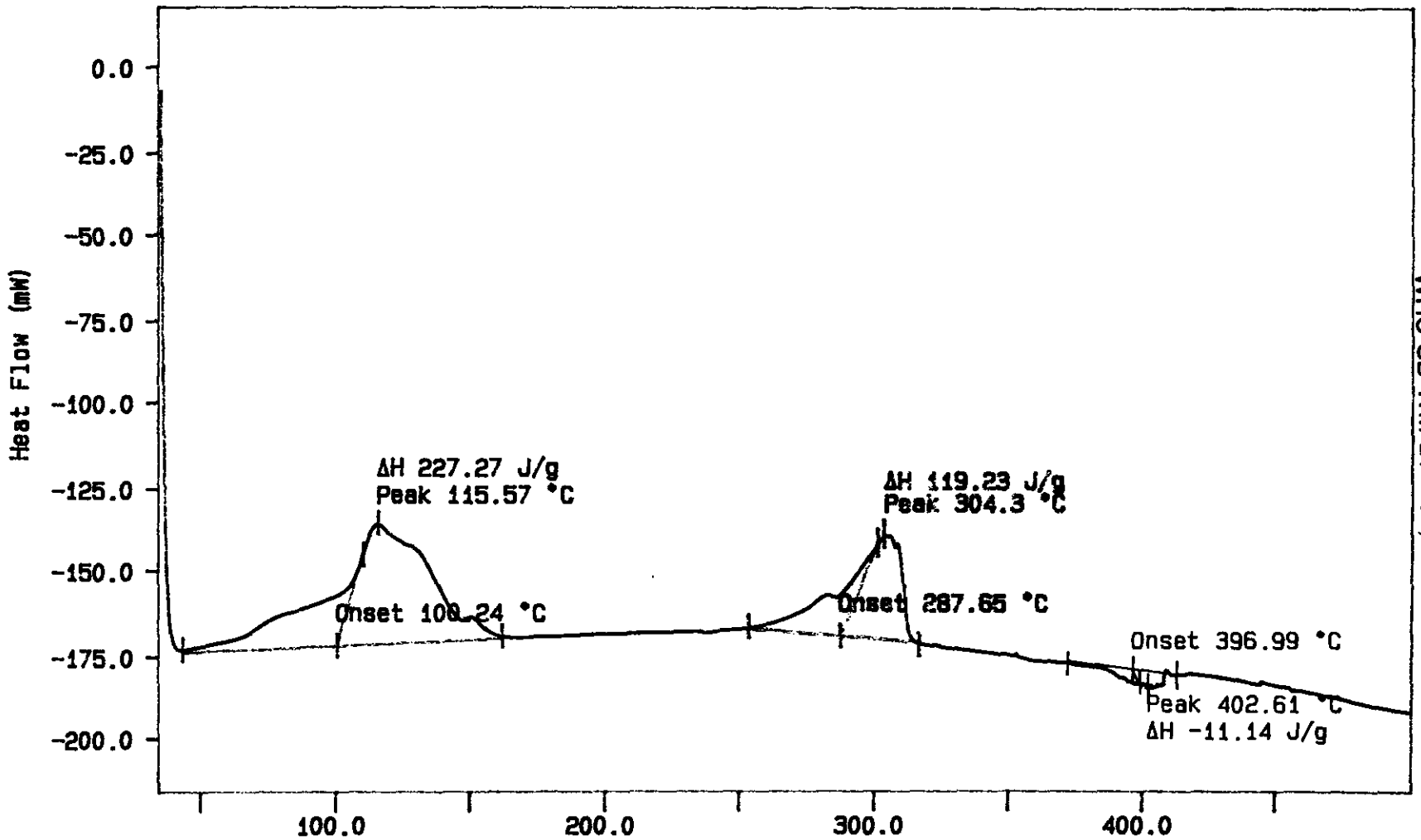


exotherm down, N2 purge gas

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

AD PURINTON
PERKIN-ELMER
7 Series Thermal Analysis System
Mon Dec 18 22:21:13 1995

Curve 1: DSC
File info: SAM121804 Mon Dec 18 23:18:58 1995
Sample Weight: 39.040 mg
S95T003703 DUP N2



exotherm down, N2 purge gas
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 500.0 C

AD PURINTON
PERKIN-ELMER
7 Series Thermal Analysis System
Mon Dec 18 23:24:51 1995

LABCORE Data Entry Template for Worklist# 4457

Analyst: ADP **Instrument:** DSC0 1 **Book #** ~~65N84~~ ADP 12-22-95 12N14B

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

Worklist Comment: Please run ~~BY-105~~ BY-104 12/28/95 BDV DSCs under N2. bdv

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				DSC-01	SOLID	28.45	27.2 *	N/A	Joules/g
95000180	BY104 ROTARY	2	SAMPLE	S95T003639	0		DSC-01	SOLID	N/A	71.0		Joules/g
95000180	BY104 ROTARY	3	DUP	S95T003639	0		DSC-01	SOLID	71.0	65.3	N/A	Joules/g

Final page for worklist # 4457

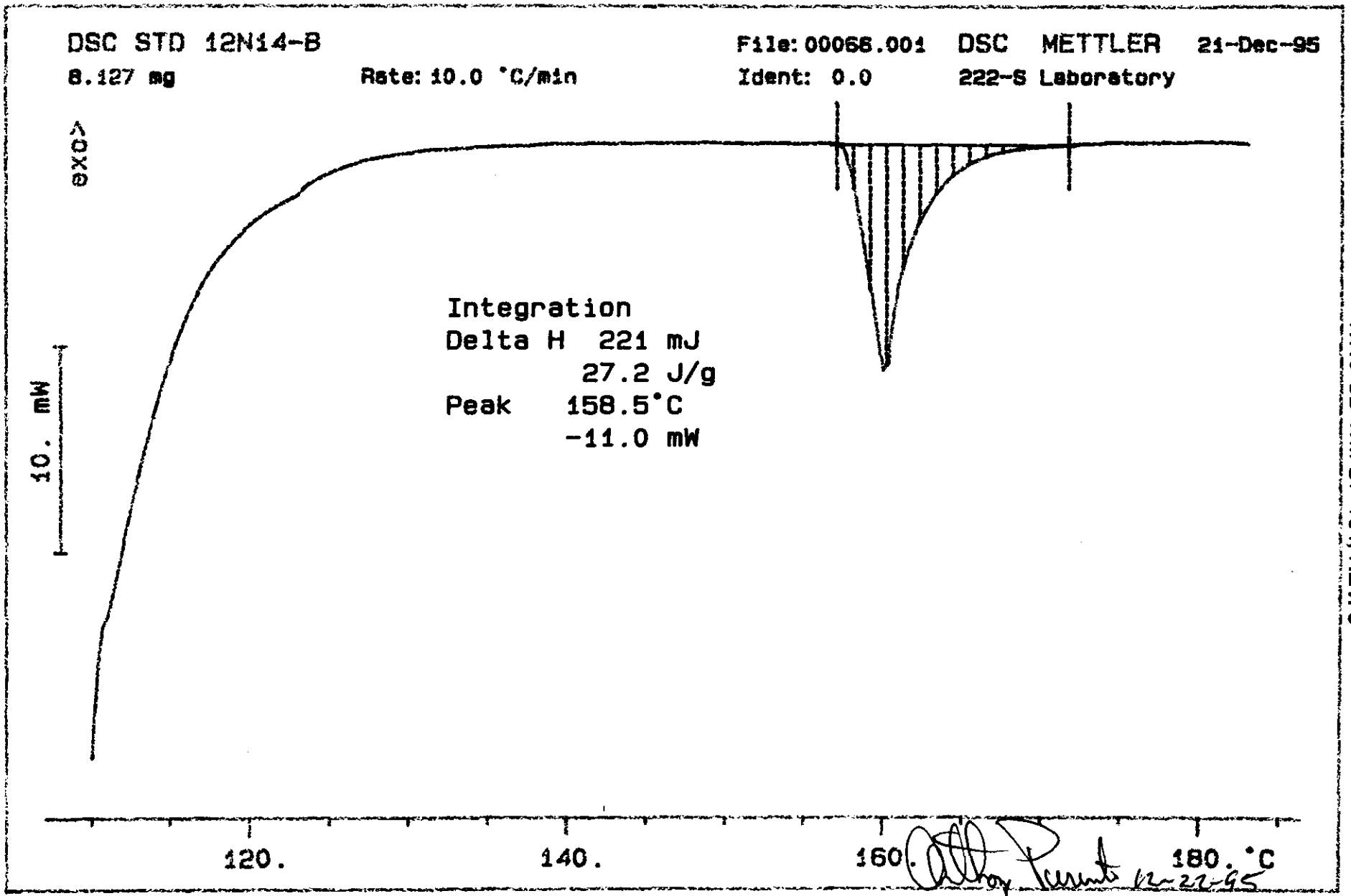
Anthony Pirrunto 12-22-95
Analyst Signature **Date**

R. [illegible] 12/29/95
Analyst Signature **Date**

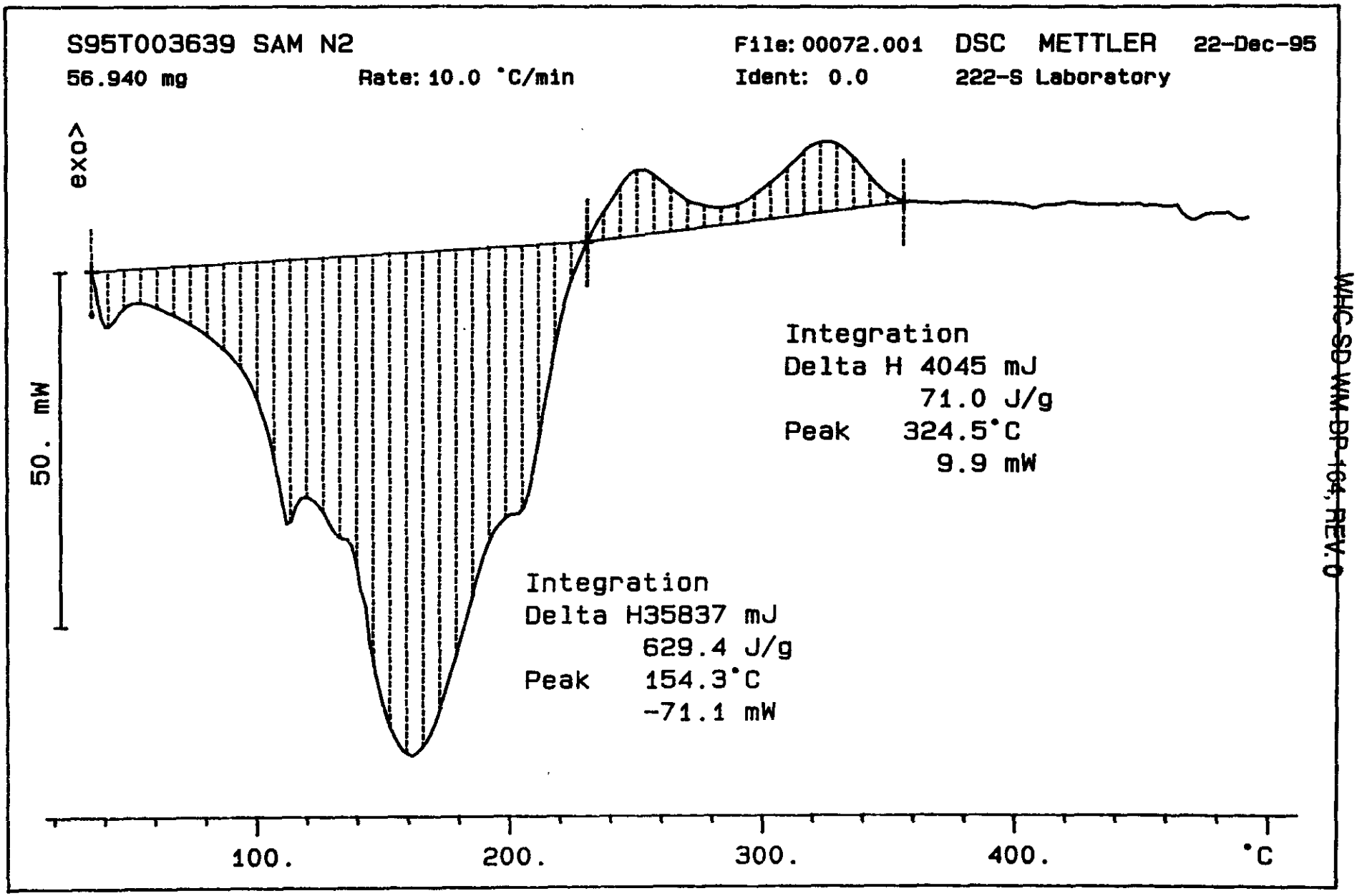
Data Entry Comments: Sample produced one endotherm at 154.3°C with a delta H of 629.4 J/g. The beginning of a peak seen at approximately 460°C is due to contamination left on the sensor from the previously run sample

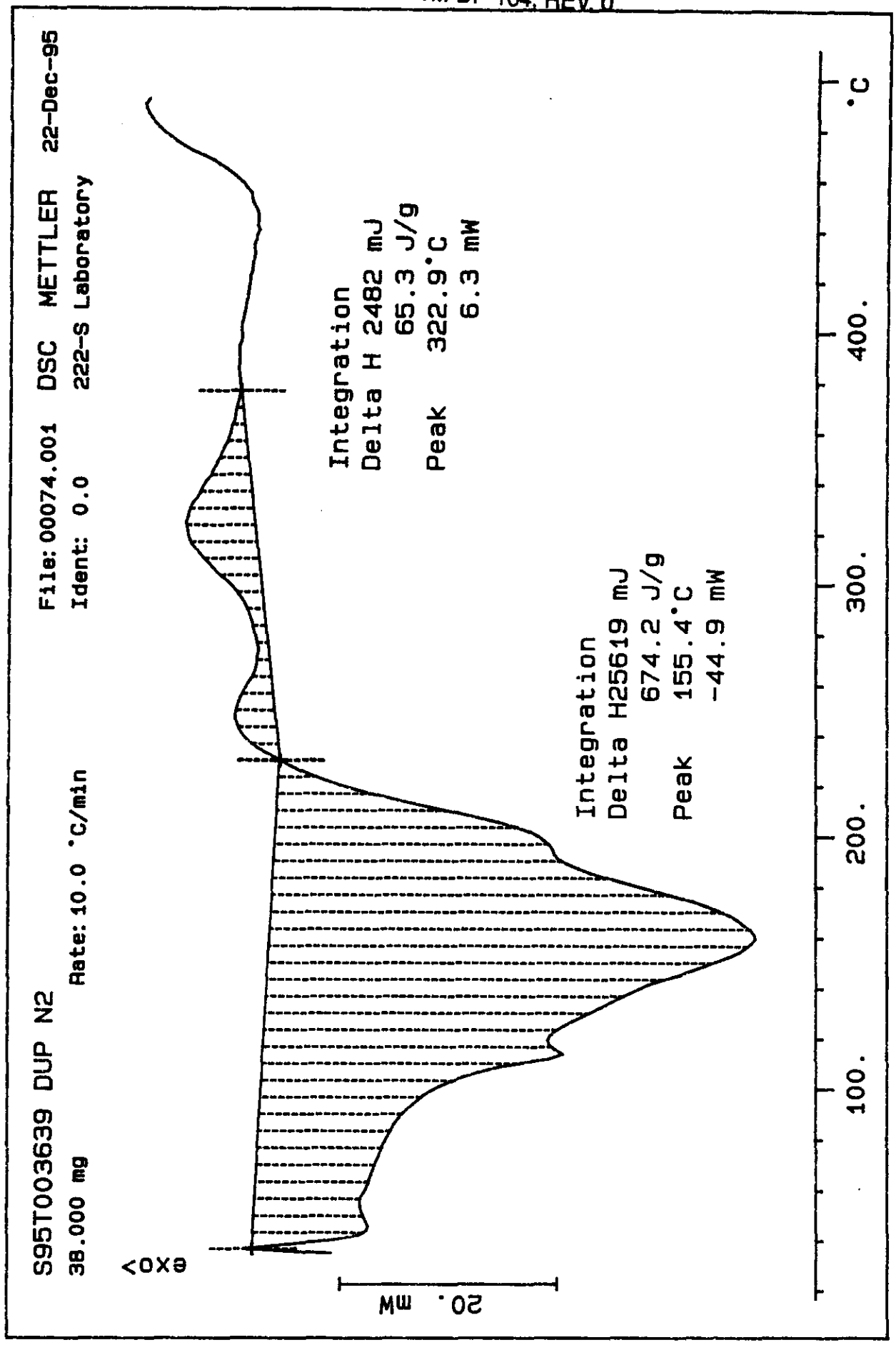
Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 103 TO 105.



Anthony Pesaresi 12-22-95


S95T003639 SAM N2
56.940 mg
Rate: 10.0 °C/min
File: 00072.001
Ident: 0.0
DSC METTLER
222-S Laboratory
22-Dec-95
exo>
50. mW
Integration
Delta H 4045 mJ
71.0 J/g
Peak 324.5°C
9.9 mW
Integration
Delta H35837 mJ
629.4 J/g
Peak 154.3°C
-71.1 mW
100.
200.
300.
400.
°C


S95T003639 DUP N2
38.000 mg
Rate: 10.0 °C/min
File: 00074.001 DSC METTLER 22-Dec-95
Ident: 0.0 222-S Laboratory
Integration
Delta H 2482 mJ
65.3 J/g
Peak 322.9°C
6.3 mW
Integration
Delta H25619 mJ
674.2 J/g
Peak 155.4°C
-44.9 mW
exo>
20. mW
100.
200.
300.
400.
°C

LABCORE Data Entry Template for Worklist# 4489

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

Method: LA-514-113 Rev/Mod ——

Worklist Comment: Dry DSC for BY104. JMF

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
95000180	BY104 ROTARY	1	SAMPLE	S95T003529	0		DSC-02	SOLID	N/A	30.5		Joules/g Dry
95000180	BY104 ROTARY	2	DUP	S95T003529	0		DSC-02	SOLID	30.5	13.6	N/A	Joules/g Dry
95000180	BY104 ROTARY	3	SAMPLE	S95T003637	0		DSC-02	SOLID	N/A	0		Joules/g Dry
95000180	BY104 ROTARY	4	DUP	S95T003637	0		DSC-02	SOLID	0	0	N/A	Joules/g Dry
95000180	BY104 ROTARY	5	SAMPLE	S95T003638	0		DSC-02	SOLID	N/A	255.8		Joules/g Dry
95000180	BY104 ROTARY	6	DUP	S95T003638	0		DSC-02	SOLID	255.8	344.7	N/A	Joules/g Dry
95000180	BY104 ROTARY	7	SAMPLE	S95T003640	0		DSC-02	SOLID	N/A	389.6		Joules/g Dry
95000180	BY104 ROTARY	8	DUP	S95T003640	0		DSC-02	SOLID	389.6	309.8	N/A	Joules/g Dry
95000180	BY104 ROTARY	9	SAMPLE	S95T003641	0		DSC-02	SOLID	N/A	0		Joules/g Dry
95000180	BY104 ROTARY	10	DUP	S95T003641	0		DSC-02	SOLID	0	0	N/A	Joules/g Dry
95000180	BY104 ROTARY	11	SAMPLE	S95T003642	0		DSC-02	SOLID	N/A	0		Joules/g Dry
95000180	BY104 ROTARY	12	DUP	S95T003642	0		DSC-02	SOLID	0	0	N/A	Joules/g Dry
95000180	BY104 ROTARY	13	SAMPLE	S95T003643	0		DSC-02	SOLID	N/A	0		Joules/g Dry
95000180	BY104 ROTARY	14	DUP	S95T003643	0		DSC-02	SOLID	0	0	N/A	Joules/g Dry
95000180	BY104 ROTARY	15	SAMPLE	S95T003645	0		DSC-02	SOLID	N/A	284.9		Joules/g Dry
95000180	BY104 ROTARY	16	DUP	S95T003645	0		DSC-02	SOLID	284.9	724.6	N/A	Joules/g Dry
95000180	BY104 ROTARY	17	TRIPL	S95T003645	0		DSC-02	SOLID	284.9	1294.4	N/A	Joules/g Dry
95000180	BY104 ROTARY	18	SAMPLE	S95T003646	0		DSC-02	SOLID	N/A	0		Joules/g Dry

Data Entry Comments:

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

LABCORE Data Entry Template for Worklist# 4489

GROUP	PROJECT	S TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
95000180	BY104 ROTARY	19 DUP	S95T003646	0		DSC-02	SOLID	0	0	N/A	Joules/g Dry
95000180	BY104 ROTARY	20 SAMPLE	S95T003648	0		DSC-02	SOLID	N/A	0		Joules/g Dry
95000180	BY104 ROTARY	21 DUP	S95T003648	0		DSC-02	SOLID	0	0	N/A	Joules/g Dry
95000180	BY104 ROTARY	22 SAMPLE	S95T003703	0		DSC-02	SOLID	N/A	0		Joules/g Dry
95000180	BY104 ROTARY	23 DUP	S95T003703	0		DSC-02	SOLID	0	12.48	N/A	Joules/g Dry

Final page for worklist # 4489

Analyst Signature Date 12/22/95

Analyst Signature Date

Verified 12/22/95 JM Lyn

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.

Dry DSC calculations

S95T003645	BY-104			
	% H_2O	Avg % H_2O	Wet DSC	Dry DSC
	21.70	23.075	219.2 J/g	284.9 J/g
	24.45		557.4 J/g	724.6
			995.7 J/g	1294.4
S95T003638				
	20.34	20.71	202.8	255.8
	21.08		273.3	344.7
S95T003640				
	28.21	27.43	282.7	389.6
	26.65		224.8	309.8
S95T003529	16.52	14.74	26.0	30.5
	12.96		11.6	13.6
S95T003648				
	35.26		0	0
	33.59		0	0
S95T003637				
			0	0
			0	0
S95T003641				
			0	0
			0	0
S95T003528				
	tga not done		0	0
			116.0	
S95T003703				
	12.61	10.795	0	0
	8.98		11.14	12.48
S95T003642				
			0	0
			0	0
S95T003643				
			0	0
			0	0
S95T003646				
			0	0
			0	0

22.8% RPD

not get

Project limit violation on dup & trip
S95T003645 BY104 C110 55 QTR-D Direct

Notification sent to Mike Cook 10:15, 12/22/95
J M Fuge

LABCORE Data Entry Template for Worklist# 4497

Analyst: RAG **Instrument:** DSC0 1 **Book #** 12N14B

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

Worklist Comment: BY-104 DSC Run under Nitrogen glw

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				DSC-01	SOLID	28.45	27.3*	N/A	Joules/g
95000200	BY104 ROTARY	2	SAMPLE	S95T003764	0		DSC-01	SOLID	N/A	Ø		Joules/g
95000200	BY104 ROTARY	3	DUP	S95T003764	0		DSC-01	SOLID	Ø	Ø	N/A	Joules/g
		4	STD				DSC-01	SOLID	28.45	28.9*	N/A	Joules/g
95000200	BY104 ROTARY	5	SAMPLE	S95T003781	0		DSC-01	SOLID	N/A	Ø		Joules/g
95000200	BY104 ROTARY	6	DUP	S95T003781	0		DSC-01	SOLID	Ø	Ø	N/A	Joules/g

Final page for worklist # 4497

See attached for signatures
Analyst Signature **Date** 12/28/95 BGV

[illegible] 12/29/95
Analyst Signature **Date**

Data Entry Comments: S95T003764 produced two large endotherms, first at 144.6°C with a delta H of 857.3J/g and second at 358.6°C with a delta H of 1342.1J/g. S95T003781 produced two large endotherms, one at 144.8°C with a delta H of 717.0J/g and second at 360.8°C with a delta H of 2013.9J/g.

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

LABCORE Data Entry Template for Worklist# 4497

Analyst: RG **Instrument:** DSC0 _____ **Book #** 12 N 148

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

Worklist Comment: BY-104 DSC Run under Nitrogen glw

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				DSC-01	SOLID			N/A	Joules/g
95000200	BY104 ROTARY	2	SAMPLE	S95T003764	0		DSC-01	SOLID	N/A			Joules/g
95000200	BY104 ROTARY	3	DUP	S95T003764	0		DSC-01	SOLID			N/A	Joules/g
95000200	BY104 ROTARY	4	SAMPLE	S95T003781	0		DSC-01	SOLID	N/A			Joules/g
95000200	BY104 ROTARY	5	DUP	S95T003781	0		DSC-01	SOLID			N/A	Joules/g

Final page for worklist # 4497

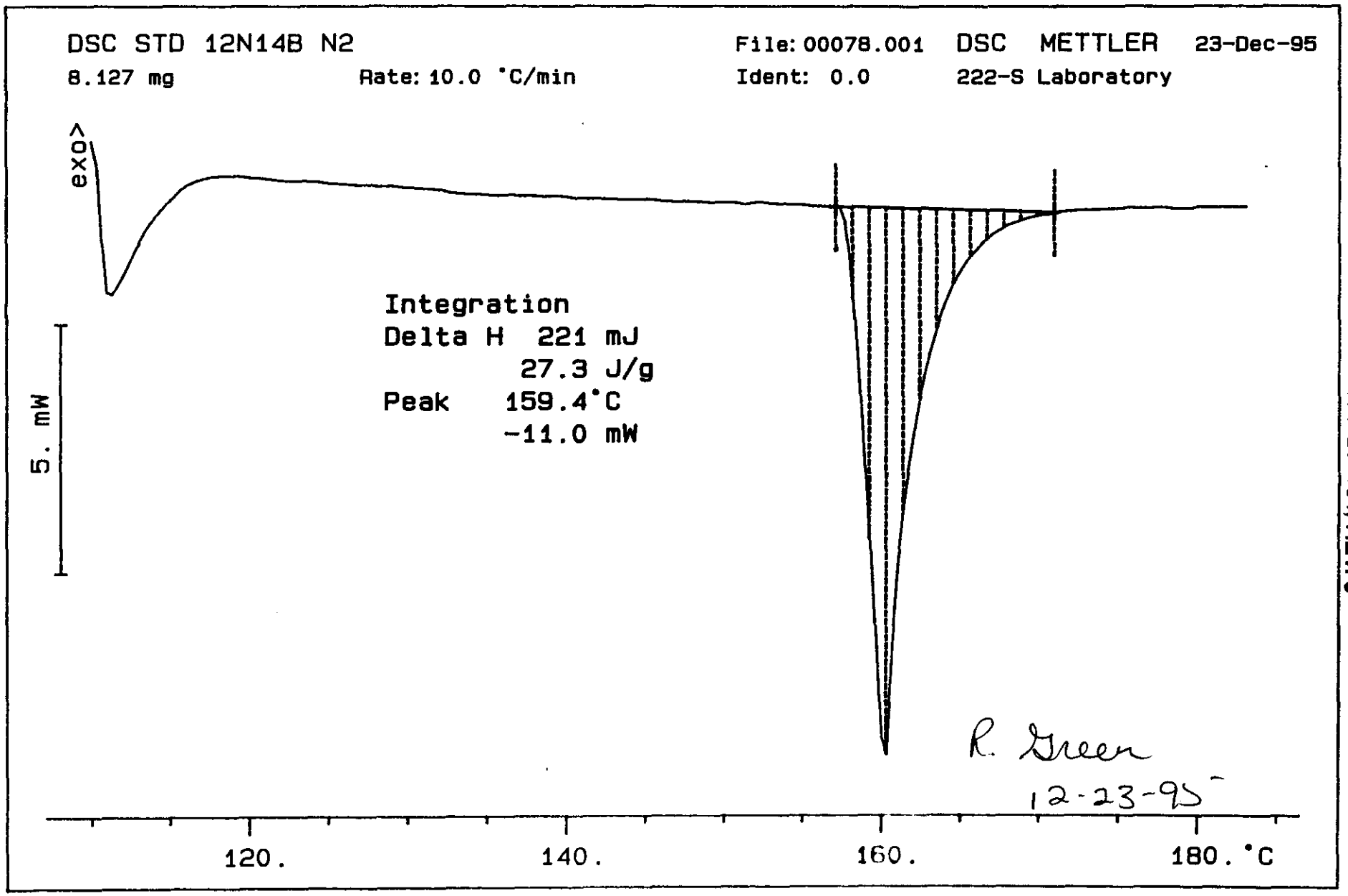
Rae Ann Green 12-23-95
Analyst Signature **Date**

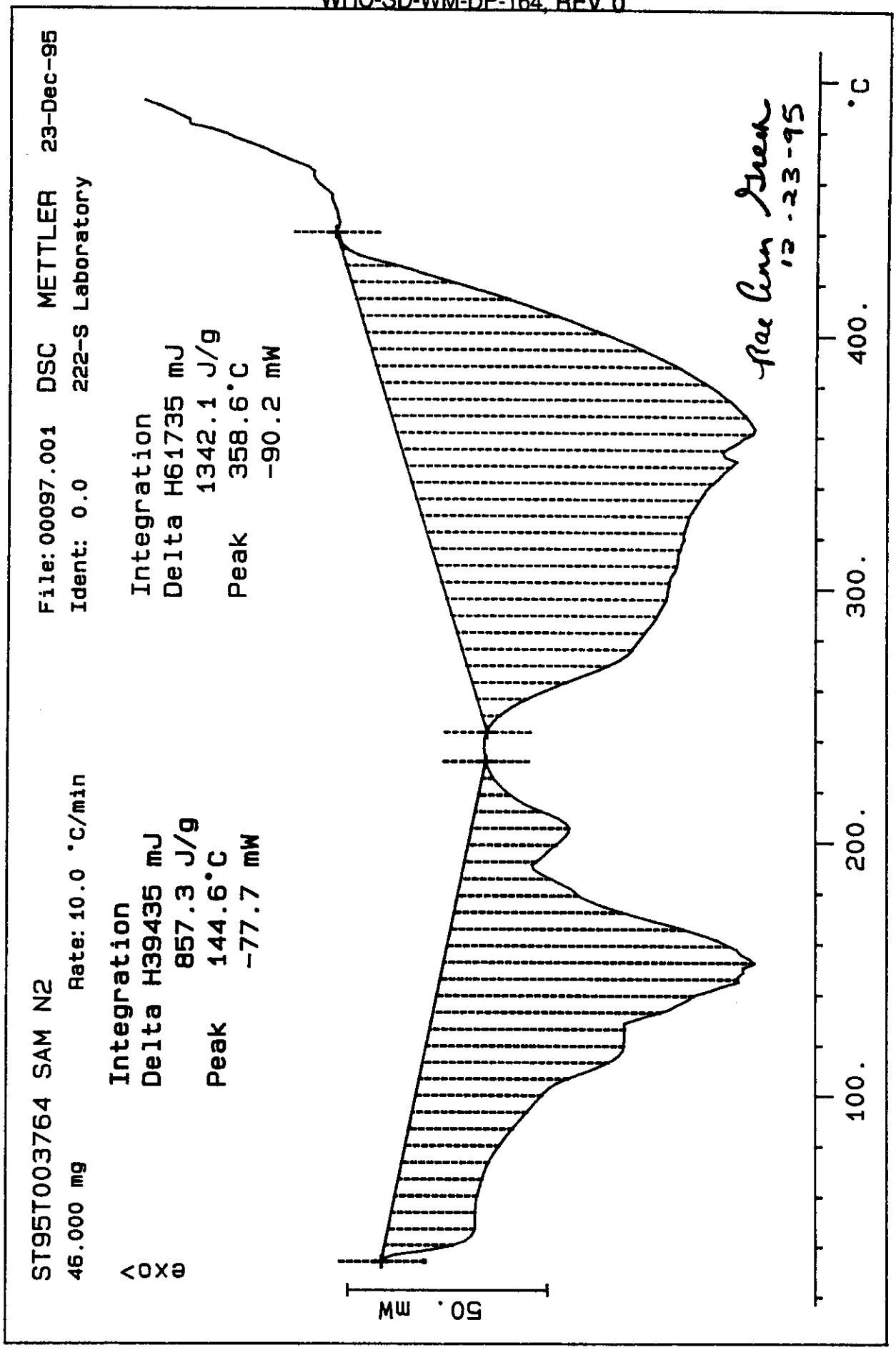
[illegible] 12-24-95
Analyst Signature **Date**

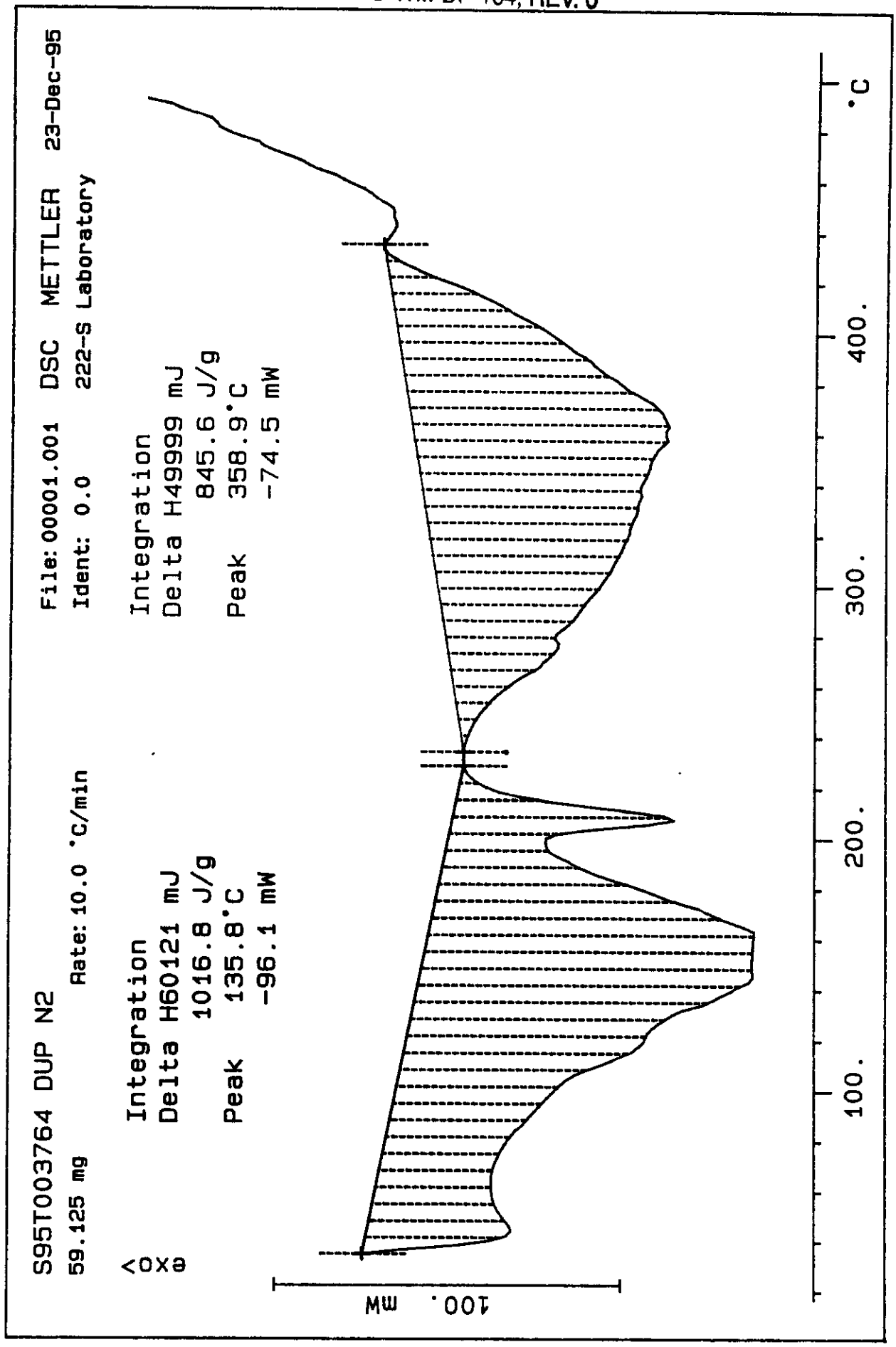
Data Entry Comments:

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.

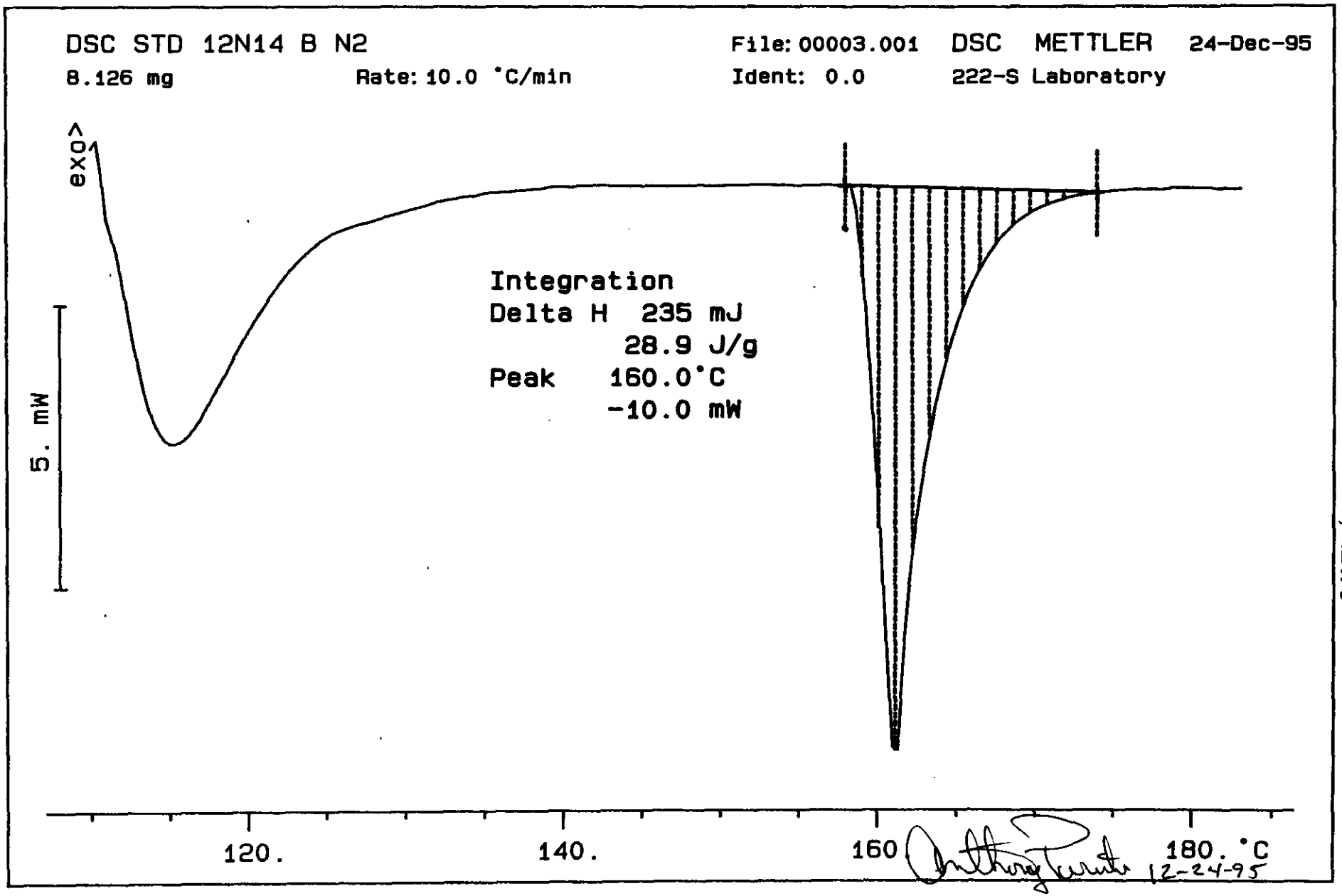
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 111 TO 116.



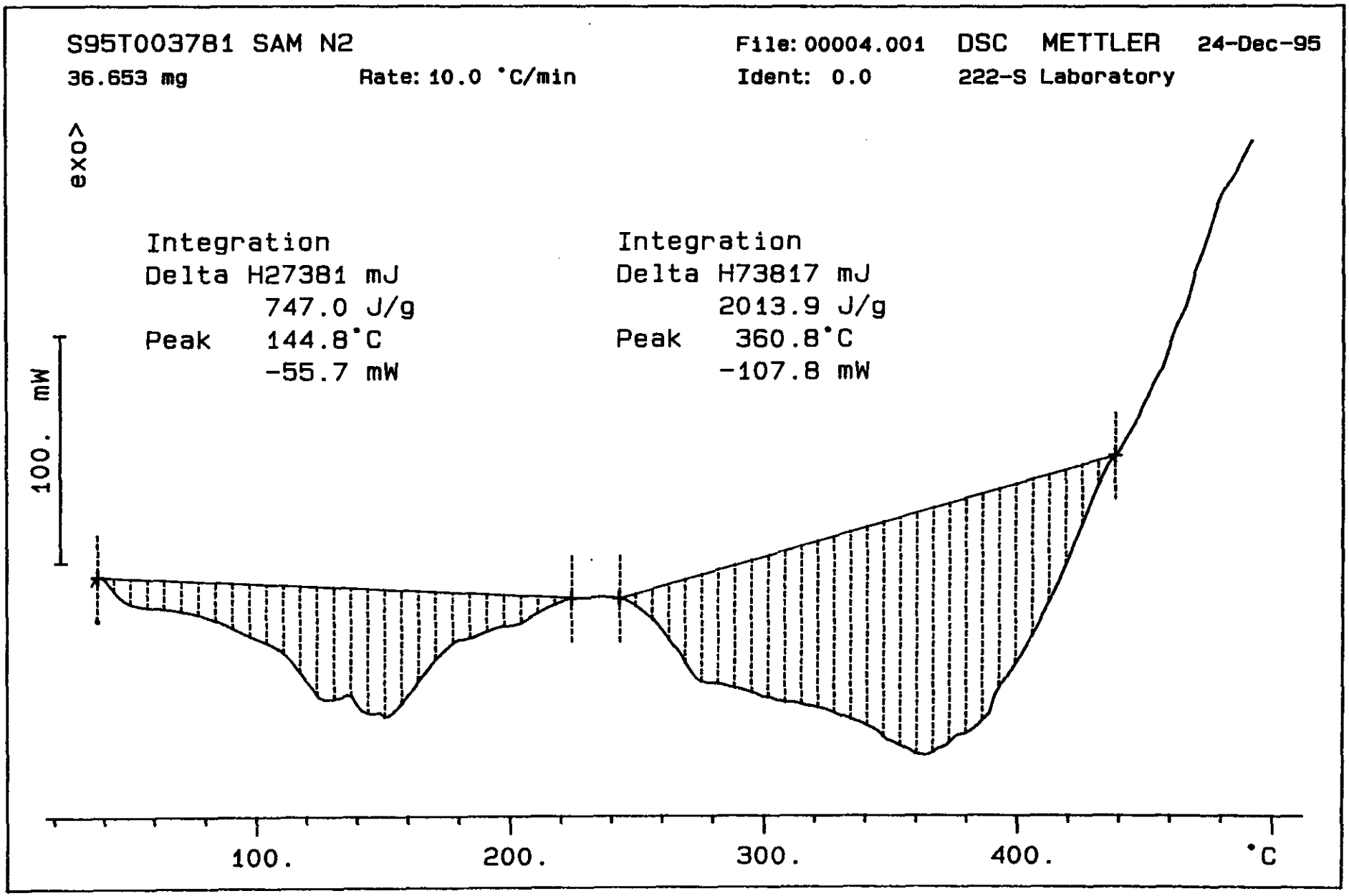

ST95T003764 SAM N2
46.000 mg
Rate: 10.0 °C/min
File: 00097.001 DSC METTLER 23-Dec-95
Ident: 0.0 222-S Laboratory
Integration
Delta H39435 mJ
857.3 J/g
Peak 144.6°C
-77.7 mW
Integration
Delta H61735 mJ
1342.1 J/g
Peak 358.6°C
-90.2 mW
exo>
50. mW
100.
200.
300.
400.
°C
Rae Linn Green
12-23-95

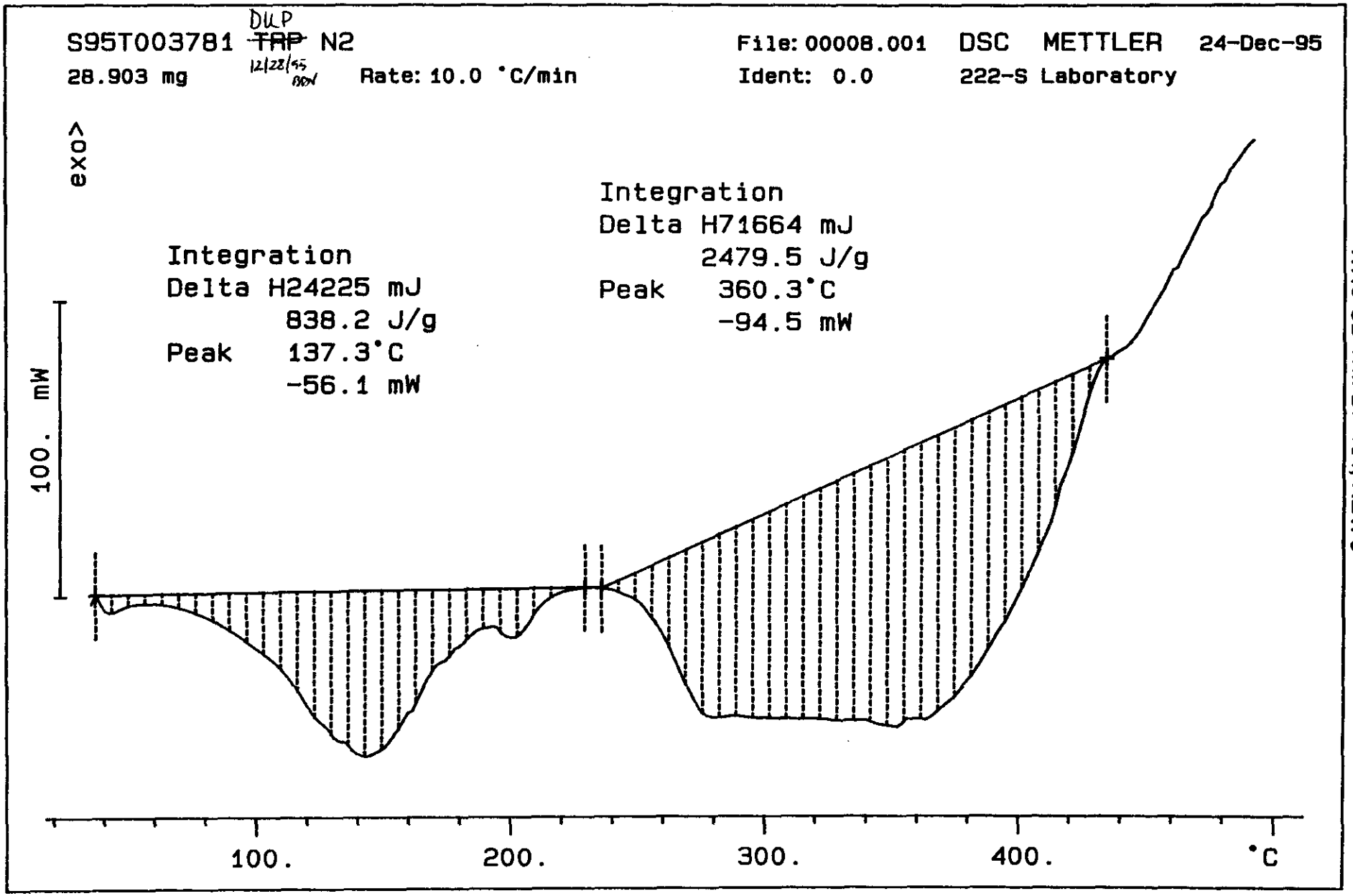

S95T003764 DUP N2
59.125 mg
Rate: 10.0 °C/min
File: 00001.001
Ident: 0.0
DSC METTLER 23-Dec-95
222-S Laboratory
Integration
Delta H60121 mJ
1016.8 J/g
Peak 135.8°C
-96.1 mW
Integration
Delta H49999 mJ
845.6 J/g
Peak 358.9°C
-74.5 mW
exo>
100. mW
100.
200.
300.
400.
°C

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 114 TO 116.



Anthony Turuta 12-24-95


S95T003781 SAM N2
36.653 mg
Rate: 10.0 °C/min
File: 00004.001
Ident: 0.0
DSC METTLER
222-S Laboratory
24-Dec-95
<exo
Integration
Delta H27381 mJ
747.0 J/g
Peak 144.8°C
-55.7 mW
Integration
Delta H73817 mJ
2013.9 J/g
Peak 360.8°C
-107.8 mW
100. mW
100.
200.
300.
400.
°C


S95T003781 DUP ~~TRP~~ N2
12/28/95 BDN
28.903 mg
Rate: 10.0 °C/min
File: 00008.001
Ident: 0.0
DSC METTLER
222-S Laboratory
24-Dec-95
exo>
100. mW
Integration
Delta H24225 mJ
838.2 J/g
Peak 137.3°C
-56.1 mW
Integration
Delta H71664 mJ
2479.5 J/g
Peak 360.3°C
-94.5 mW
100.
200.
300.
400.
°C

LABCORE Data Entry Template for Worklist# 4504

Analyst: PJM **Instrument:** DSC0 3 **Book #** 12N14B

Method: LA-514-114 Rev/Mod C-1

Worklist Comment: BY-104 DSC Run under Nitrogen dlh

GROUP	PROJECT	S TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD				DSC-03	SOLID	28.45	28.64	N/A	Joules/g
95000200	BY104 ROTARY	2 SAMPLE	S95T003809	0		DSC-03	SOLID	N/A	Ø		Joules/g
95000200	BY104 ROTARY	3 DUP	S95T003809	0		DSC-03	SOLID	Ø	Ø	N/A	Joules/g
95000200	BY104 ROTARY	4 SAMPLE	S95T003783	0		DSC-03	SOLID	N/A	Ø		Joules/g
95000200	BY104 ROTARY	5 DUP	S95T003783	0		DSC-03	SOLID	Ø	Ø	N/A	Joules/g

Final page for worklist # 4504

See attached for signatures
Analyst Signature **Date** 12/29/95 BDV

Linda Conlin 12/29/95
Analyst Signature **Date**

S95T003809 produced a large endotherm at 142.5°C with a delta H of 725.5 J/g.

Data Entry Comments: S95T003783 produced a large endotherm at 150.18°C with a delta H of 955.4 J/g

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

LABCORE Data Entry Template for Worklist# 4504

Analyst: RJ McCown **Instrument:** DSC0 _____ **Book #** 12N148

Method: LA-514-~~113~~ 114 Rev/Mod C-1
RJM 12/25/95

Worklist Comment: BY-104 DSC Run under Nitrogen dlh

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				DSC-01	SOLID			N/A	Joules/g
95000200	BY104 ROTARY	2	SAMPLE	S95T003809	0		DSC-01	SOLID	N/A			Joules/g
95000200	BY104 ROTARY	3	DUP	S95T003809	0		DSC-01	SOLID			N/A	Joules/g
95000200	BY104 ROTARY	4	SAMPLE	S95T003783	0		DSC-01	SOLID	N/A			Joules/g
95000200	BY104 ROTARY	5	DUP	S95T003783	0		DSC-01	SOLID			N/A	Joules/g

Final page for worklist # 4504

RJ McCown 12/25/95
Analyst Signature **Date**

Analyst Signature **Date**

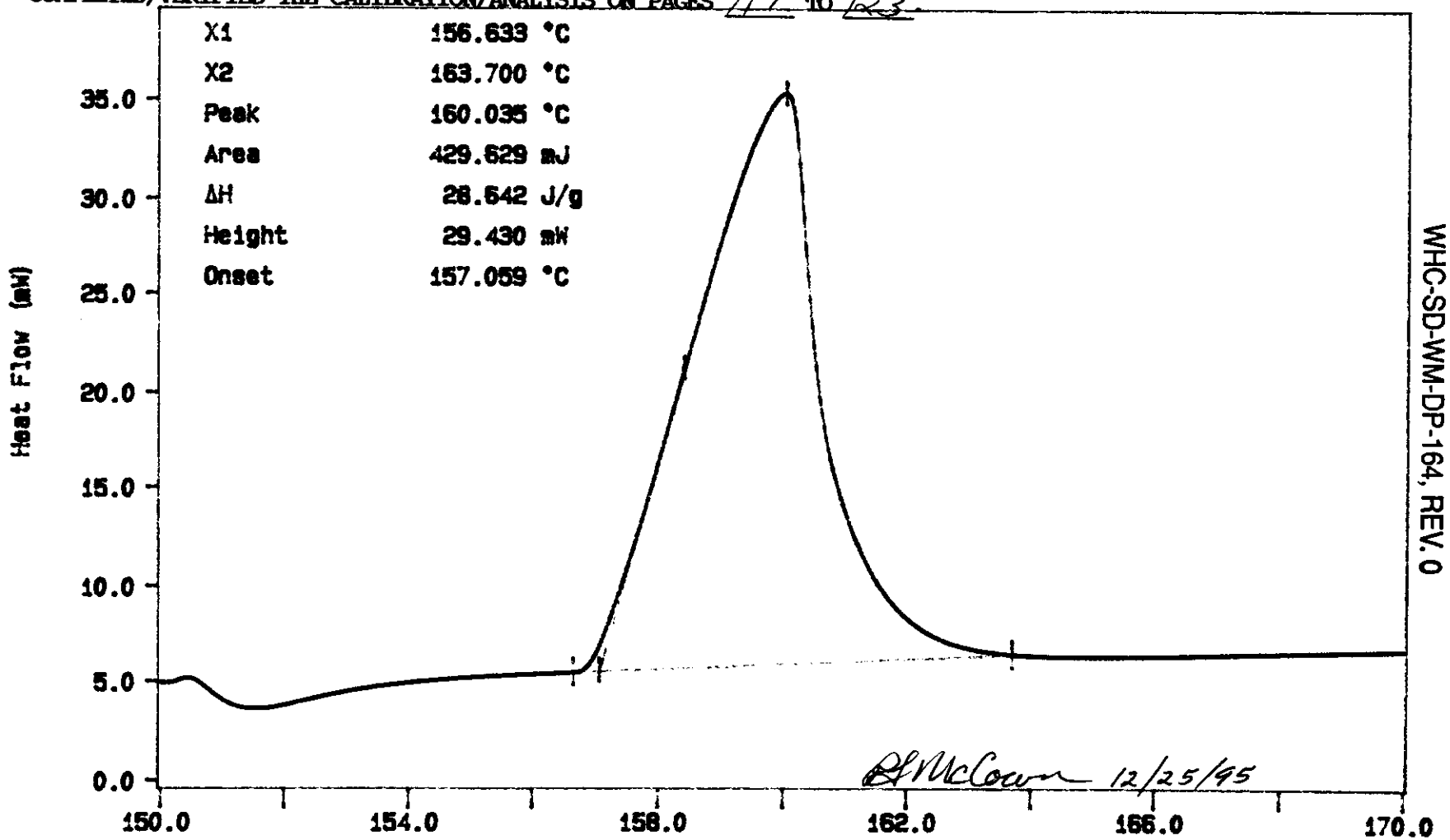
Other instrument was used
12/29/95
BVN

Data Entry Comments:

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

Curve 1: DSC
File info: IND122403 Sun Dec 24 19:45:59 1995
Sample Weight: 15.000 mg
12N148 Indium at 10C/min

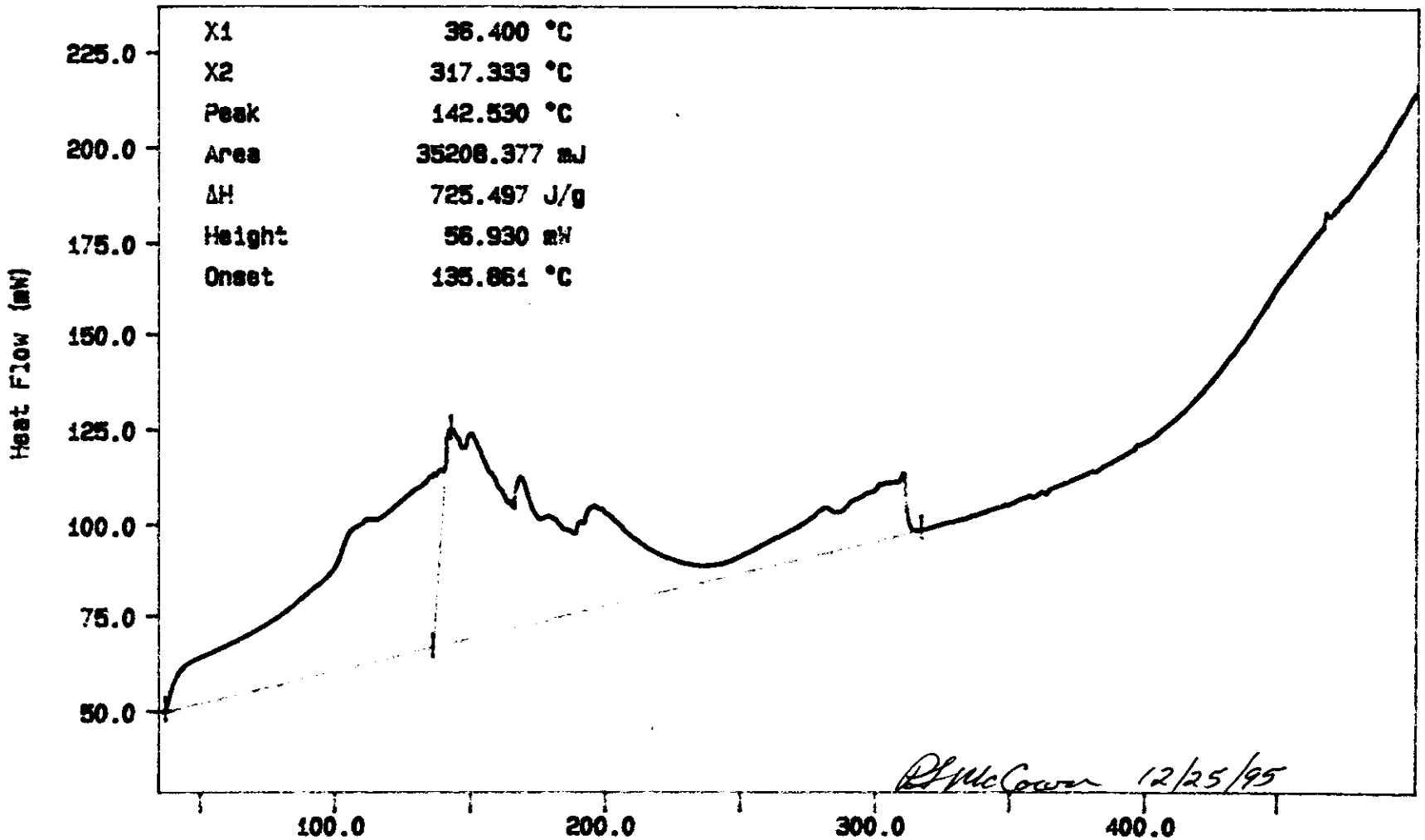
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 119 TO 123.



N2, EXOTHERM DOWN
TEMP1: 150.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 170.0 C

PJ MCCOWN
PERKIN-ELMER
7 Series Thermal Analysis System
Sun Dec 24 20:00:13 1995

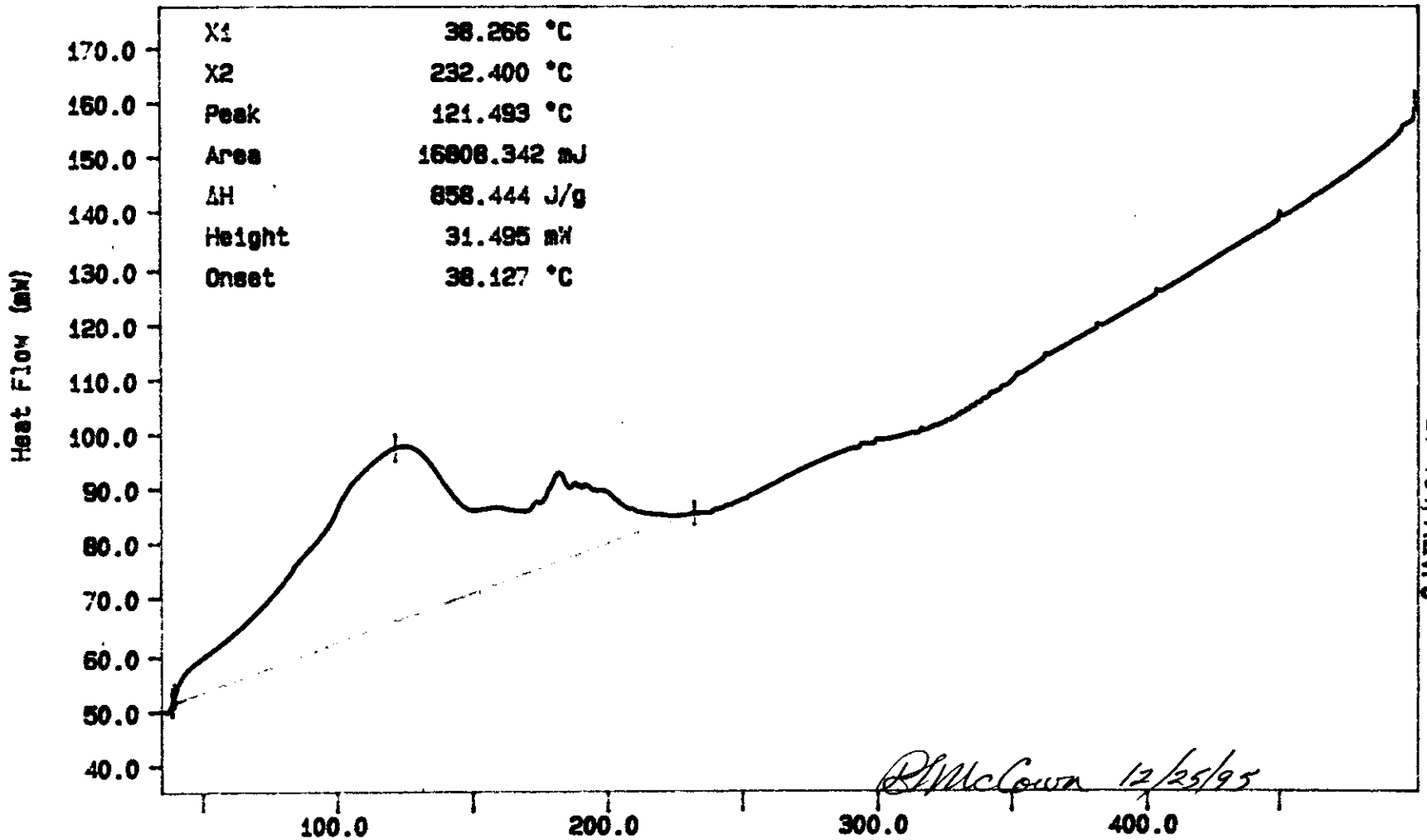
Curve 1: DSC
File info: SAM122405 Sun Dec 24 21:32:40 1995
Sample Weight: 48.530 mg
S95T003809 SAM N2



exotherm down, N2 purge gas
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 400.0 C

PJ MCCOWN
PERKIN-ELMER
7 Series Thermal Analysis System
Sun Dec 24 22:18:19 1995

Curve 1: DSC
File info: SAM122406 Sun Dec 24 23:32:17 1995
Sample Weight: 19.580 mg
S95T003809 DUP N2

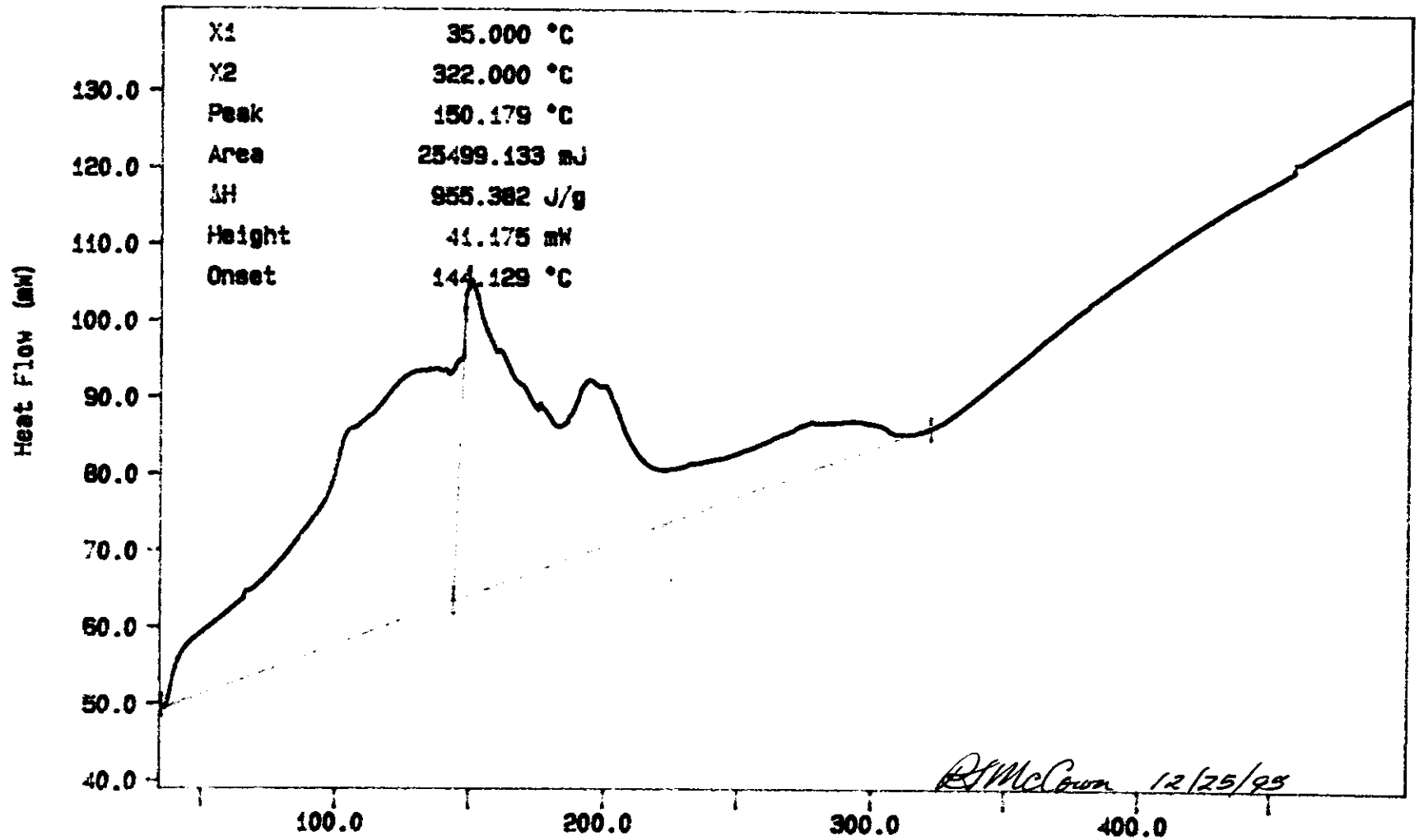


exotherm down, N2 purge gas

TEMP1: 25.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 500.0 C

PJ MCCOWN
PERKIN-ELMER
7 Series Thermal Analysis System
Sun Dec 24 23:46:25 1995

Curve 1: DSC
File info: SAM122501 Mon Dec 25 00:52:04 1995
Sample Weight: 26.690 mg
S95T003783 SAM N2



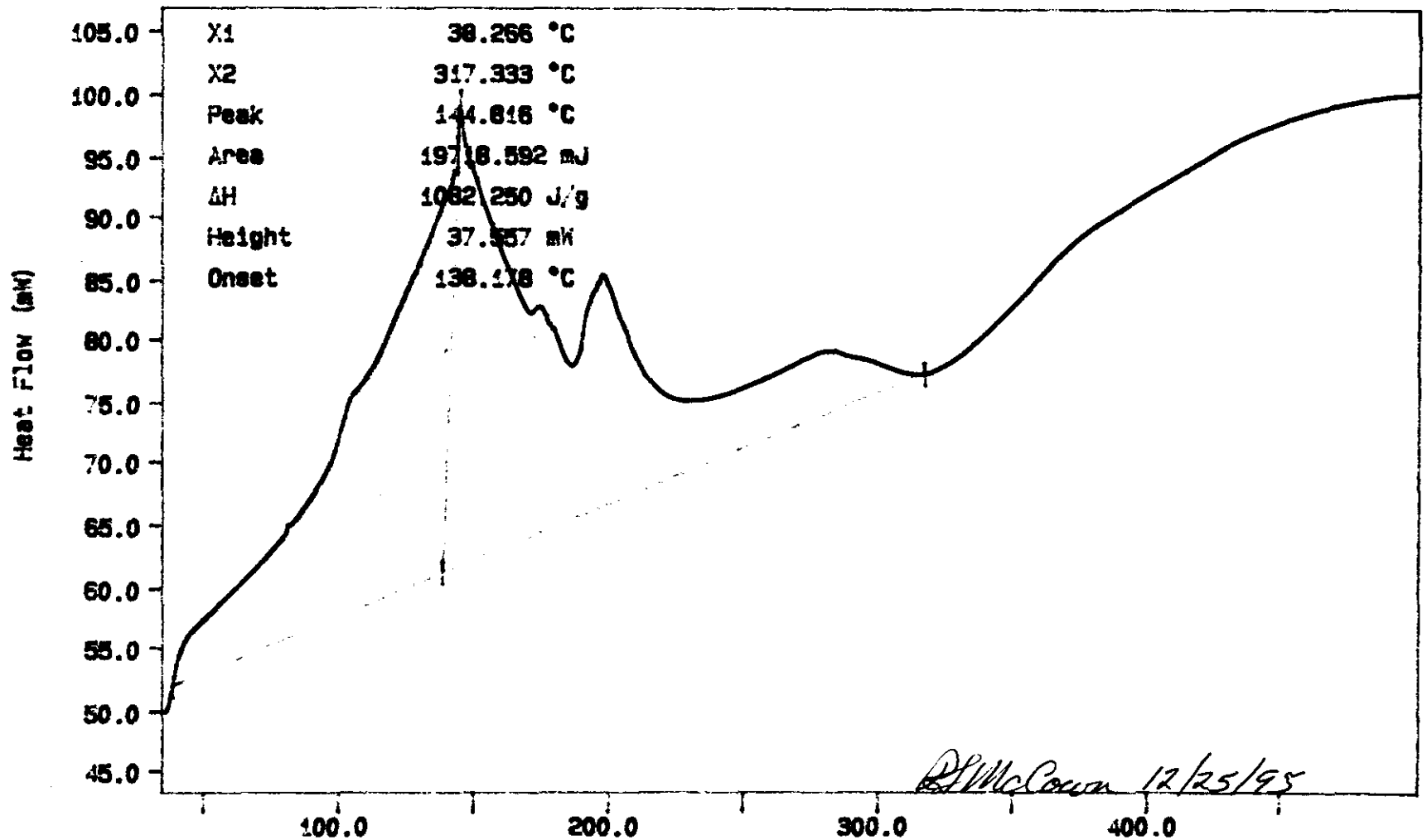
exotherm down, N2 purge gas
TEMP1: 30.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 350.0 C

PJ MCCOWN
PERKIN-ELMER
7 Series Thermal Analysis System
Mon Dec 25 01:29:53 1995

122

WHC-SD-WM-DP-164, REV. 0

Curve 1: DSC
File info: SAM122502 Mon Dec 25 02:50:07 1995
Sample Weight: 18.220 mg
S95T003783 DUP N2



exotherm down, N2 purge gas
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 400.0 C

PJ MCCOWN
PERKIN-ELMER
7 Series Thermal Analysis System
Mon Dec 25 03:13:54 1995

LABCORE Data Entry Template for Worklist# 4505

Analyst: ADP **Instrument:** DSC0 1 **Book #** 12N14B

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

Worklist Comment: BY-104 DSC Run under Nitrogen dlh

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				DSC-01	SOLID	28.45	28.6	N/A	Joules/g
95000200	BY104 ROTARY	2	SAMPLE	S95T003810	0		DSC-01	SOLID	N/A	Ø		Joules/g
95000200	BY104 ROTARY	3	DUP	S95T003810	0		DSC-01	SOLID	Ø	Ø	N/A	Joules/g
95000200	BY104 ROTARY	4	SAMPLE	S95T003782	0		DSC-01	SOLID	N/A	18.8		Joules/g
95000200	BY104 ROTARY	5	DUP	S95T003782	0		DSC-01	SOLID	18.8	23.6	N/A	Joules/g

Final page for worklist # 4505

Anthony Peruntor
Analyst Signature **Date**

Linda Conlin 1/10/96
Analyst Signature **Date**

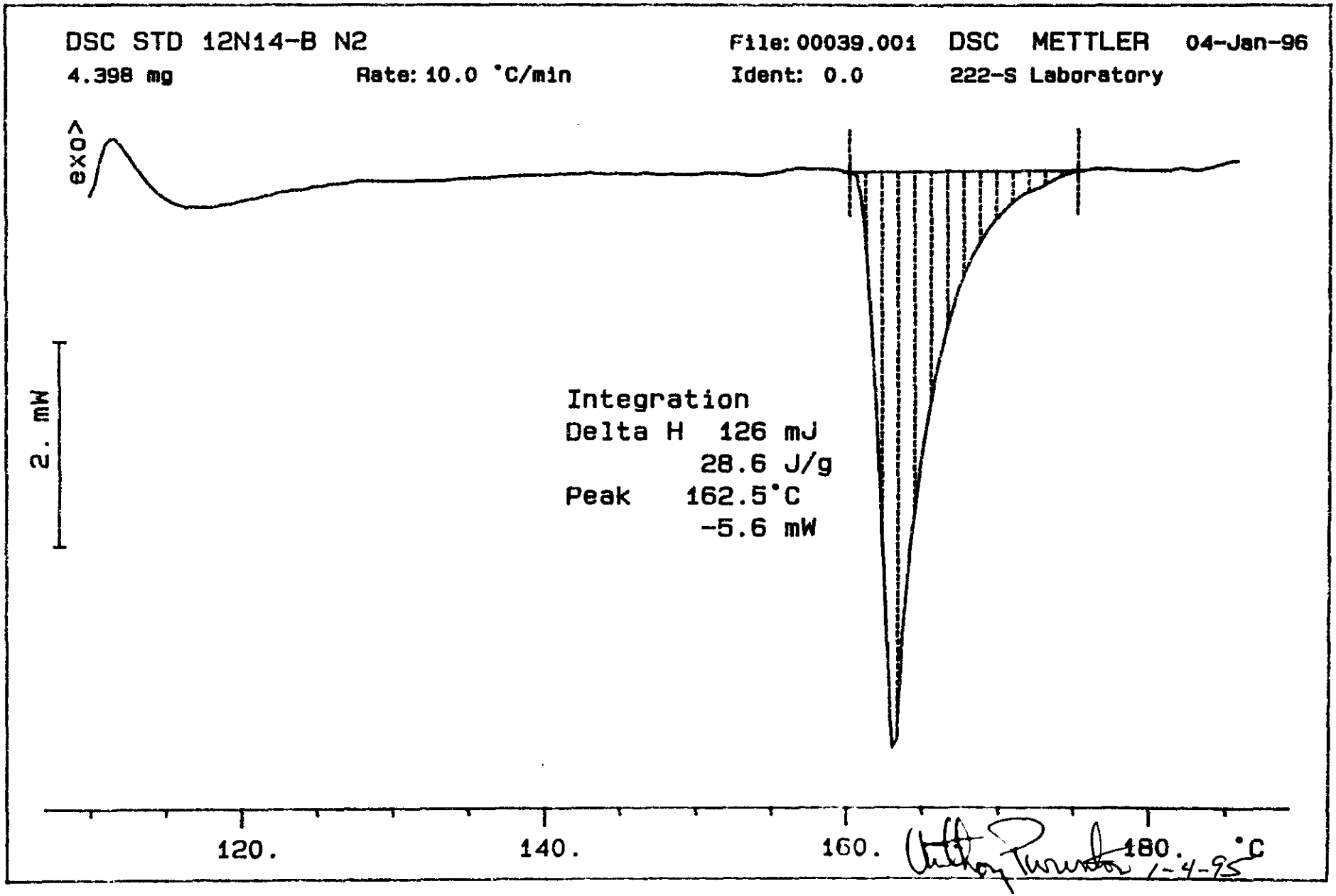
Verified by Blandina Valenzuela
1-11-96

Data Entry Comments: S95T003810 produced a large endotherm with two distinct peaks beginning at 50°C and ending at 340°C with a delta H of 447.7 J/g. The jagged peaks toward the end of the run is due to the sample. The chemist has no explaination.

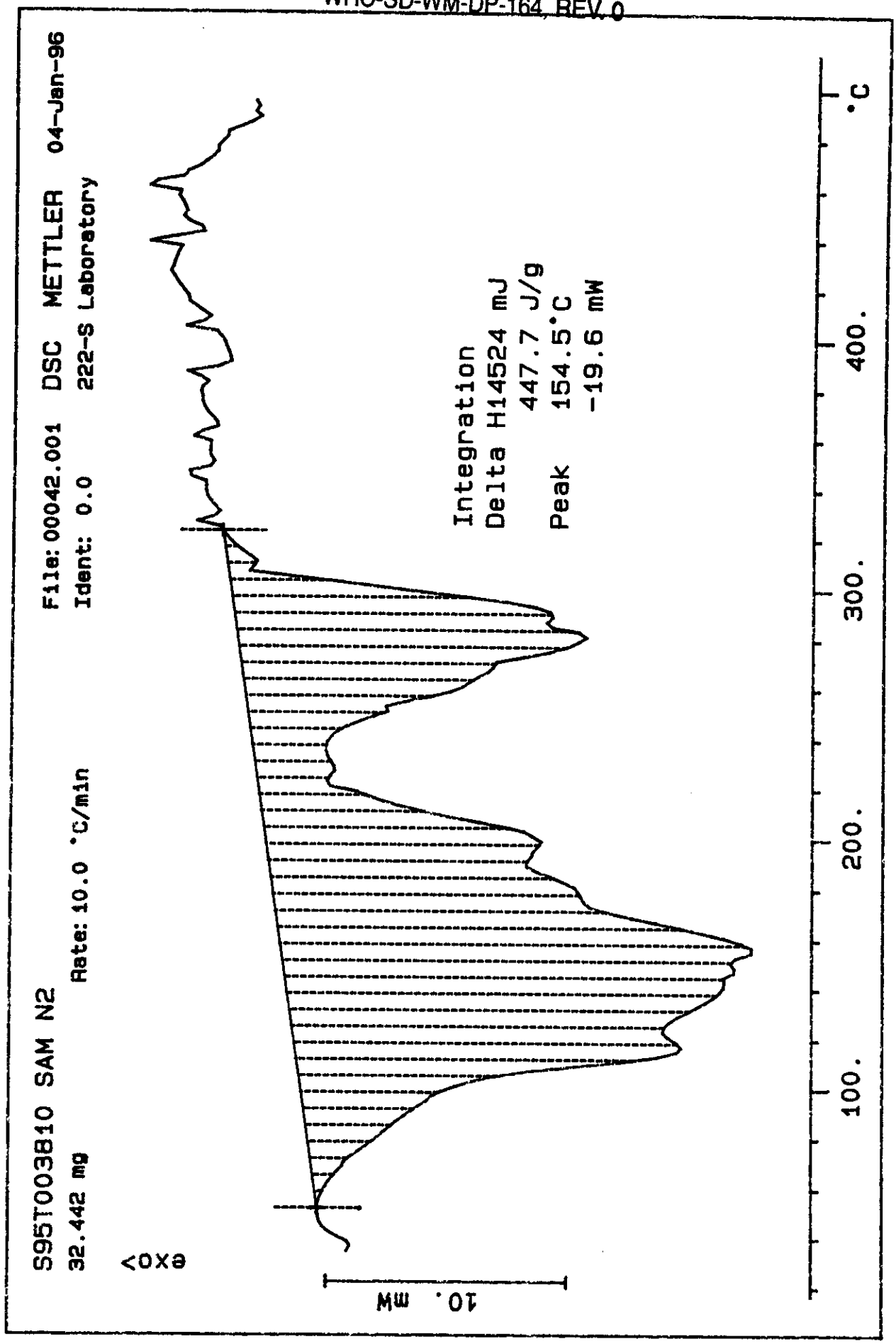
Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

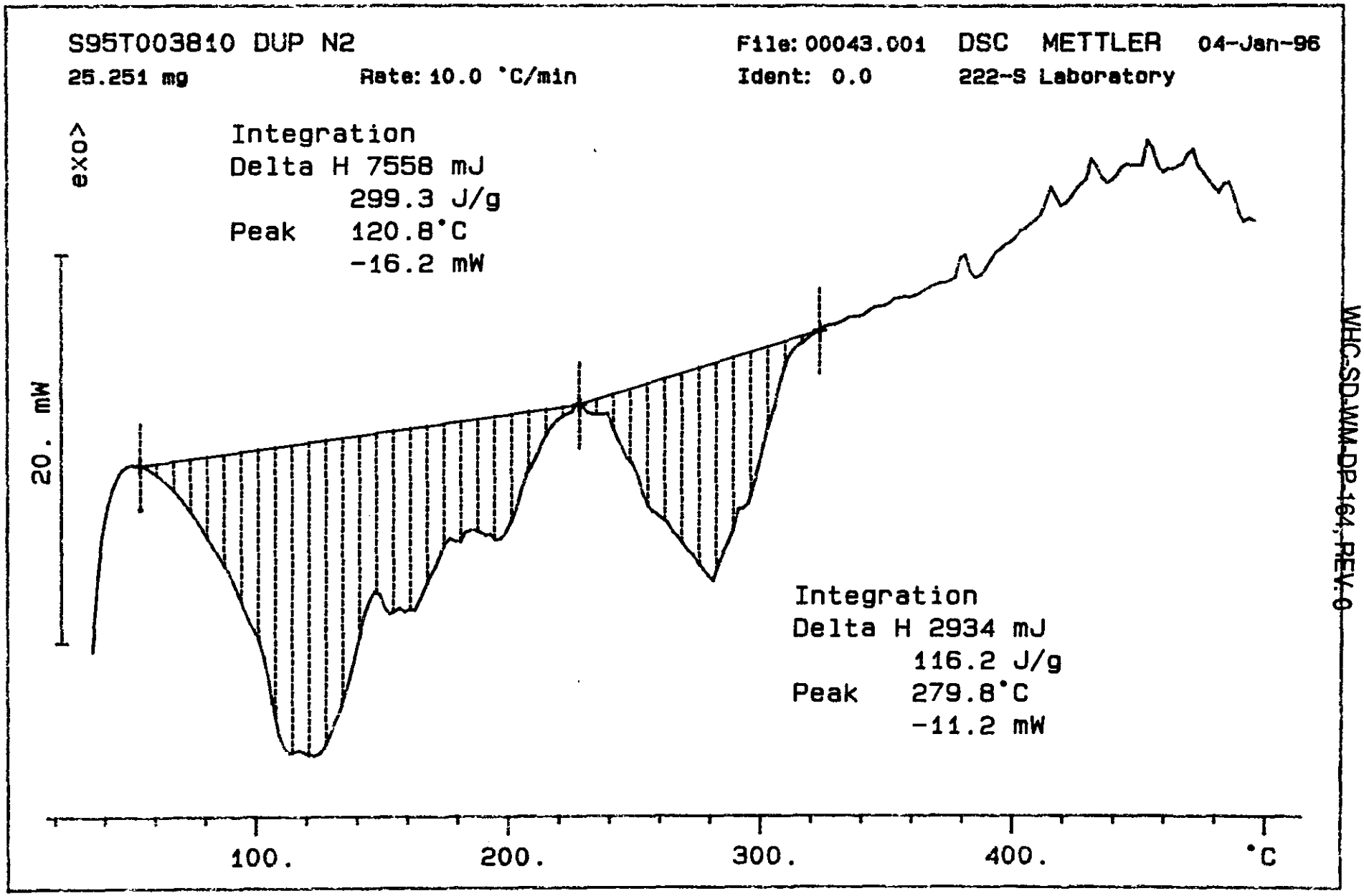
S95T003782 produced an endotherm at 143.9°C with a delta H of 930.4 J/g.

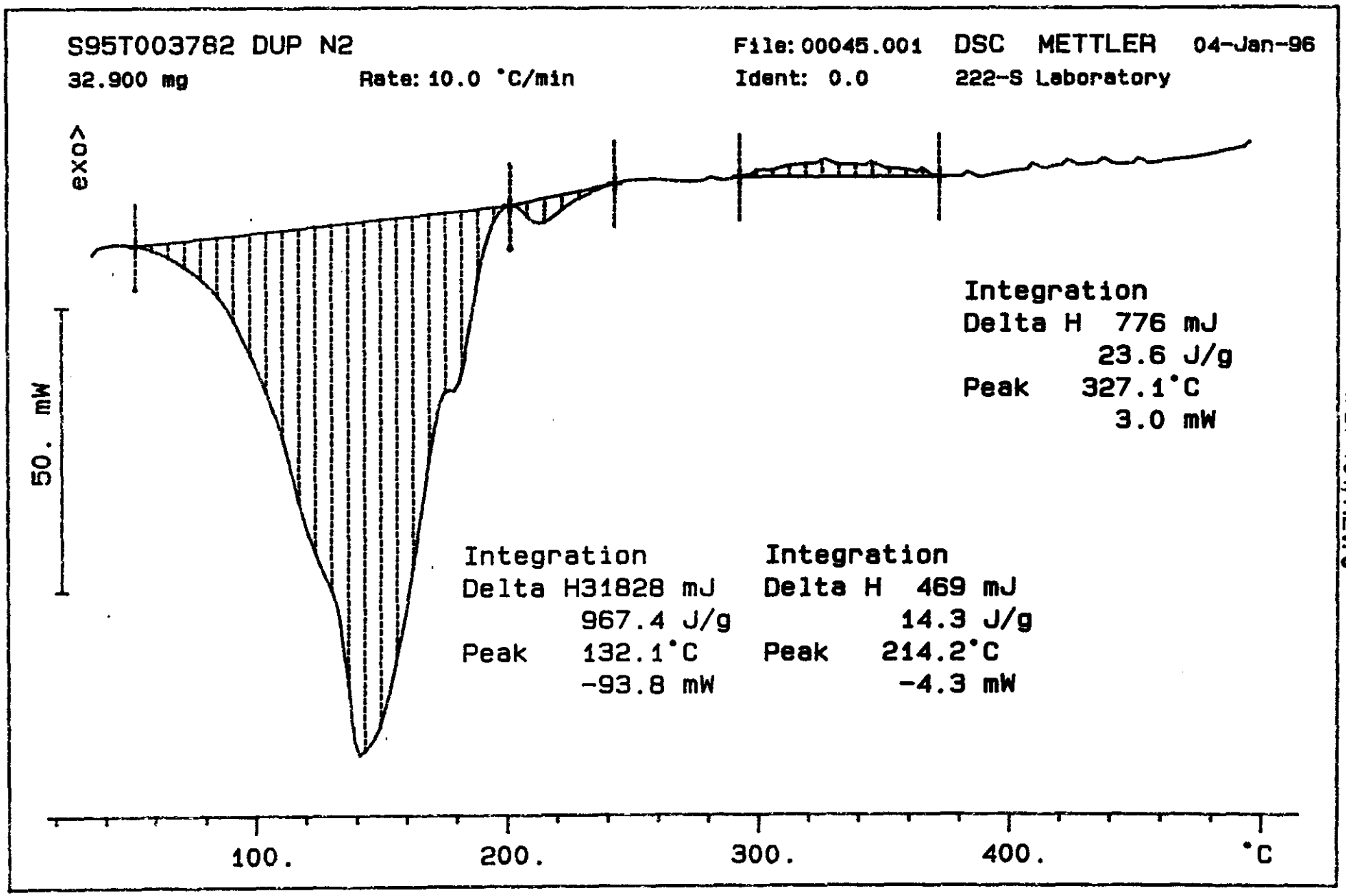
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 125 TO 129.

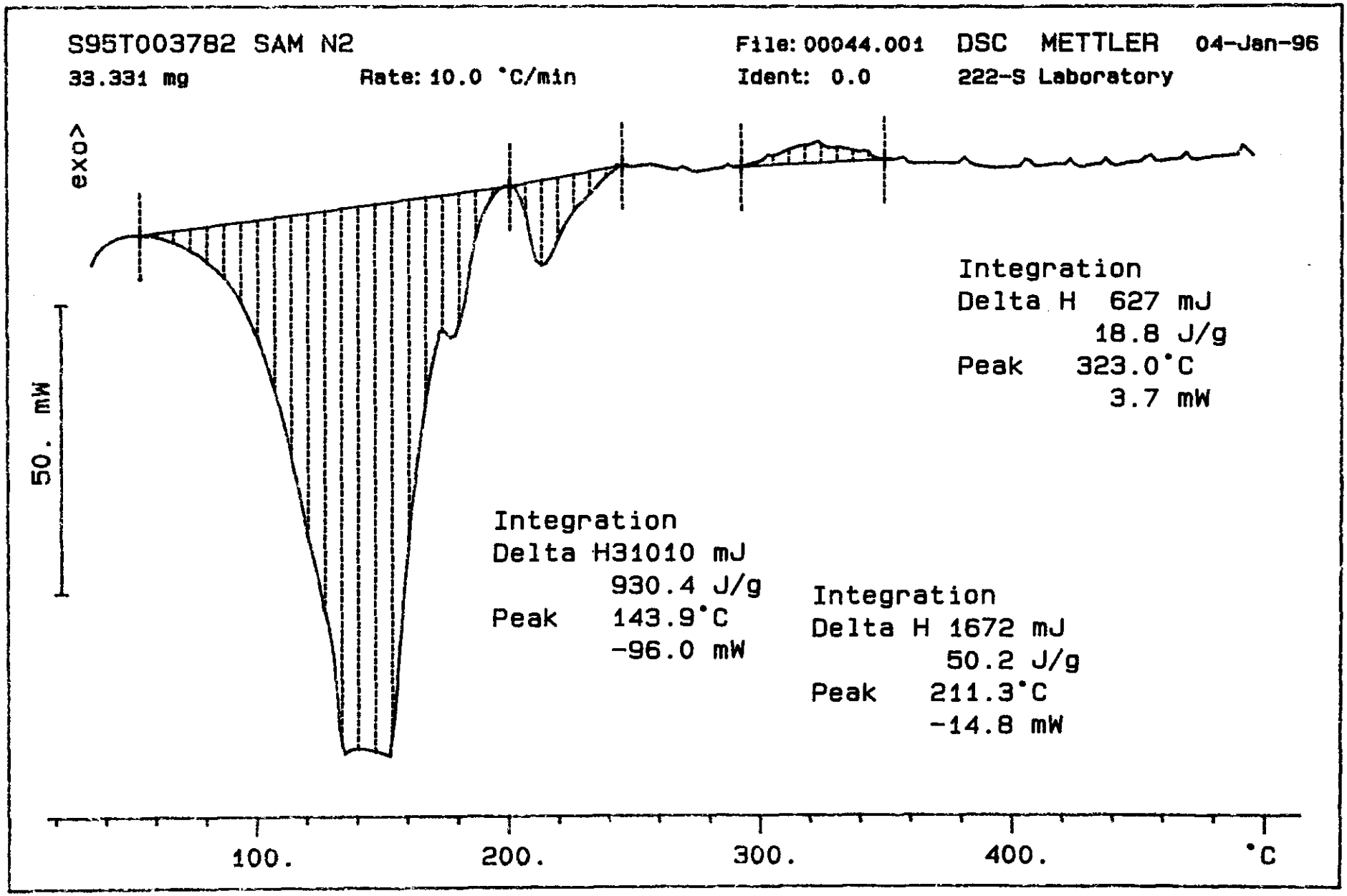


Anthony Turner 1-4-95


S95T003810 SAM N2
32.442 mg
Rate: 10.0 °C/min
File: 00042.001 DSC METTLER 04-Jan-96
Ident: 0.0 222-S Laboratory
Integration
Delta H14524 mJ
447.7 J/g
Peak 154.5°C
-19.6 mW
exo>
10. mW
100.
200.
300.
400.
°C


S95T003810 DUP N2
25.251 mg
Rate: 10.0 °C/min
File: 00043.001
Ident: 0.0
DSC METTLER
222-S Laboratory
04-Jan-96
exo>
Integration
Delta H 7558 mJ
299.3 J/g
Peak 120.8°C
-16.2 mW
20. mW
Integration
Delta H 2934 mJ
116.2 J/g
Peak 279.8°C
-11.2 mW
100.
200.
300.
400.
°C


S95T003782 DUP N2
32.900 mg
Rate: 10.0 °C/min
File: 00045.001
Ident: 0.0
DSC METTLER
222-S Laboratory
04-Jan-96
exo>
50. mW
Integration
Delta H 776 mJ
23.6 J/g
Peak 327.1°C
3.0 mW
Integration
Delta H31828 mJ
967.4 J/g
Peak 132.1°C
-93.8 mW
Integration
Delta H 469 mJ
14.3 J/g
Peak 214.2°C
-4.3 mW
100.
200.
300.
400.
°C


S95T003782 SAM N2
33.331 mg
Rate: 10.0 °C/min
File: 00044.001
Ident: 0.0
DSC METTLER 04-Jan-96
222-S Laboratory
exo>
50. mW
Integration
Delta H 627 mJ
18.8 J/g
Peak 323.0°C
3.7 mW
Integration
Delta H31010 mJ
930.4 J/g
Peak 143.9°C
-96.0 mW
Integration
Delta H 1672 mJ
50.2 J/g
Peak 211.3°C
-14.8 mW
100.
200.
300.
400.
°C

LABCORE Data Entry Template for Worklist# 4506

Analyst: ADP **Instrument:** DSC0 3 **Book #** 12N14B

Method: LA-514-114 Rev/Mod C-1

Worklist Comment: BY-104 DSC Run under Nitrogen dlh

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				DSC-03	SOLID	28.45	28.17	N/A	Joules/g
95000200	BY104 ROTARY	2	SAMPLE	S95T003784	0		DSC-03	SOLID	N/A	Ø		Joules/g
95000200	BY104 ROTARY	3	DUP	S95T003784	0		DSC-03	SOLID	Ø	Ø	N/A	Joules/g
95000200	BY104 ROTARY	4	SAMPLE	S95T003785	0		DSC-03	SOLID	N/A	Ø		Joules/g
95000200	BY104 ROTARY	5	DUP	S95T003785	0		DSC-03	SOLID	Ø	Ø	N/A	Joules/g

Final page for worklist # 4506

See attached for signatures
Analyst Signature **Date** 1/2/96
Verified by Blandina Valenzuela 1-8-96

Analyst Signature **Date** 1-7-96

Data Entry Comments: S95T003784 produced one large endotherm at 161.1°C with a delta H of 404.07 J/g
S95T003785 produced two endotherms one at ~~314.3 J/g~~ 150.45°C and a delta H of 314.3 J/g second at 286.6°C with a delta H of 77.8 J/g 1-6-96

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# 4506

Analyst: ABP **Instrument:** DSC0 _____ **Book #** 12N14B

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

Worklist Comment: BY-104 DSC Run under Nitrogen dlh

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				DSC-01	SOLID			N/A	Joules/g
95000200	BY104 ROTARY	2	SAMPLE	S95T003784	0		DSC-01	SOLID	N/A			Joules/g
95000200	BY104 ROTARY	3	DUP	S95T003784	0		DSC-01	SOLID			N/A	Joules/g
95000200	BY104 ROTARY	4	SAMPLE	S95T003785	0		DSC-01	SOLID	N/A			Joules/g
95000200	BY104 ROTARY	5	DUP	S95T003785	0		DSC-01	SOLID			N/A	Joules/g

Final page for worklist # 4506

Anthony Pruntz 12-26-95

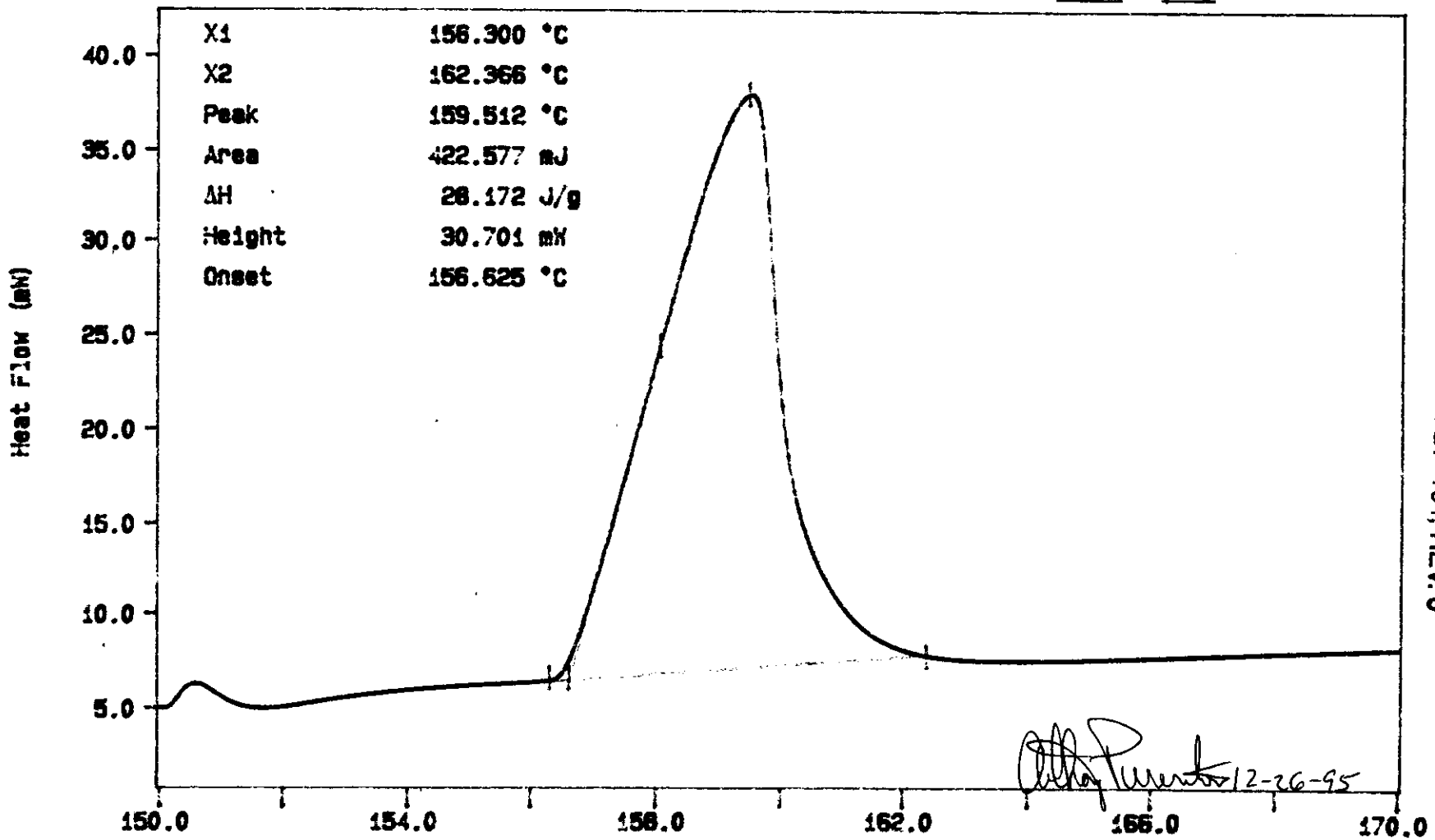
Analyst Signature **Date** **Analyst Signature** **Date**

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.

Curve 1: DSC
File info: IND122601 Tue Dec 26 19:07:33 1995
Sample Weight: 15.000 mg
12N14B Indium at 10C/min

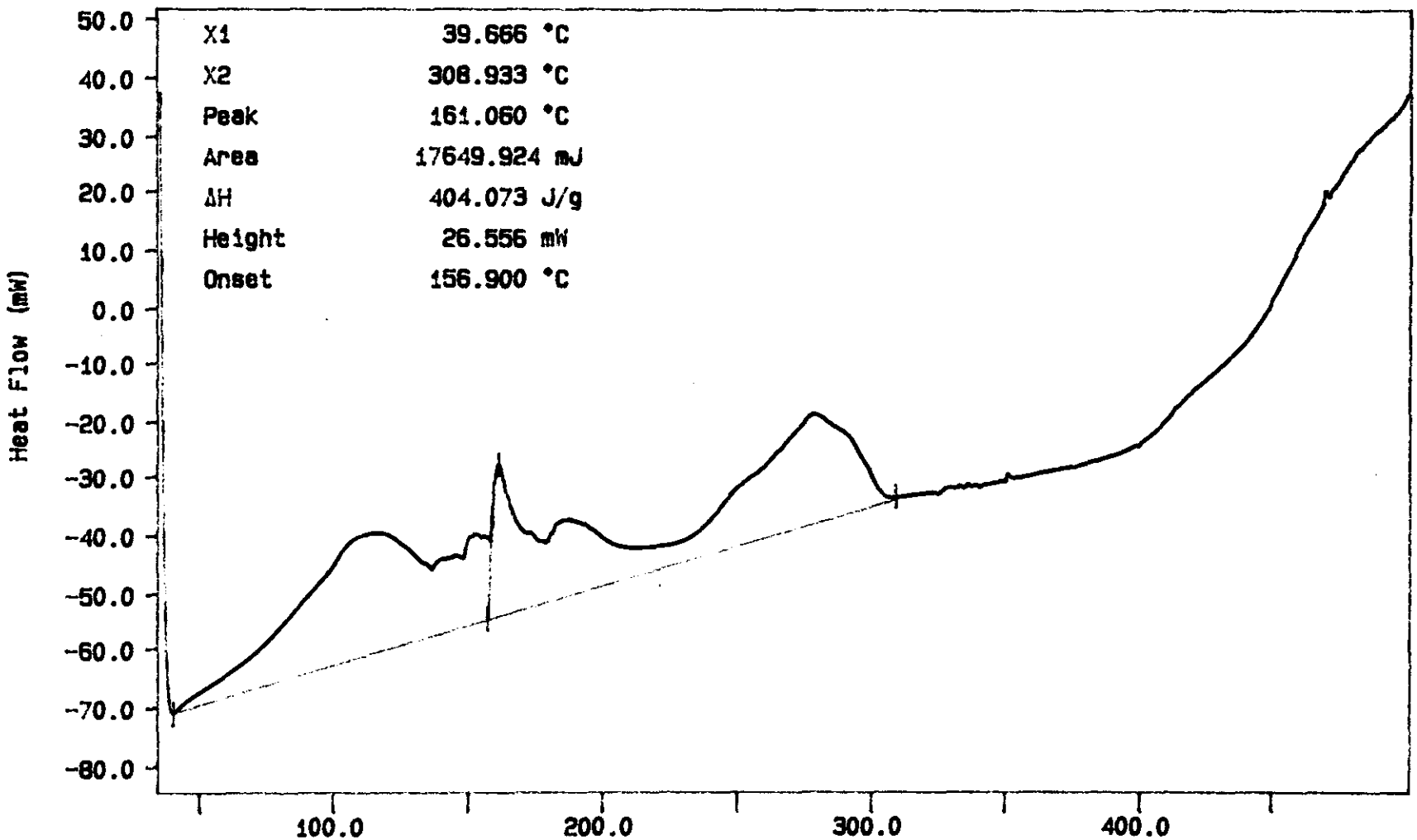
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 132 TO 136



N2, EXOTHERM DOWN
TEMP1: 150.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 170.0 C

AD PURINTON
PERKIN-ELMER
7 Series Thermal Analysis System
Tue Dec 26 19:18:27 1995

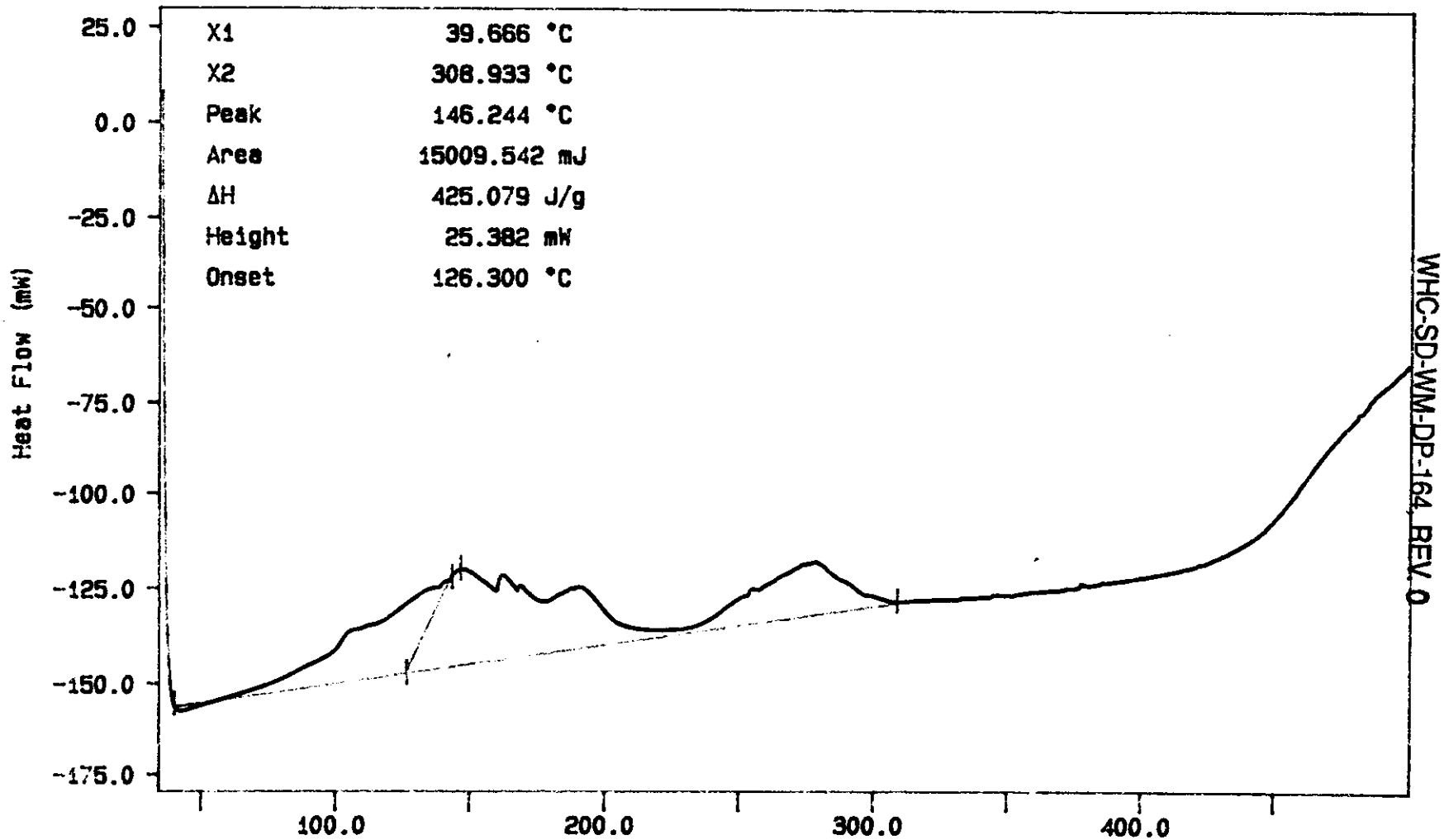
Curve 1: DSC
File info: SAM122601 Tue Dec 26 20:17:48 1995
Sample Weight: 43.680 mg
S95T003784 SAM N2



exotherm down, N2 purge gas
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 600.0 C

AD PURINTON
PERKIN-ELMER
7 Series Thermal Analysis System
Tue Dec 26 21:12:49 1995

Curve 1: DSC
File info: SAM122602 Tue Dec 26 22:14:08 1995
Sample Weight: 35.310 mg
S95T003784 DUP N2

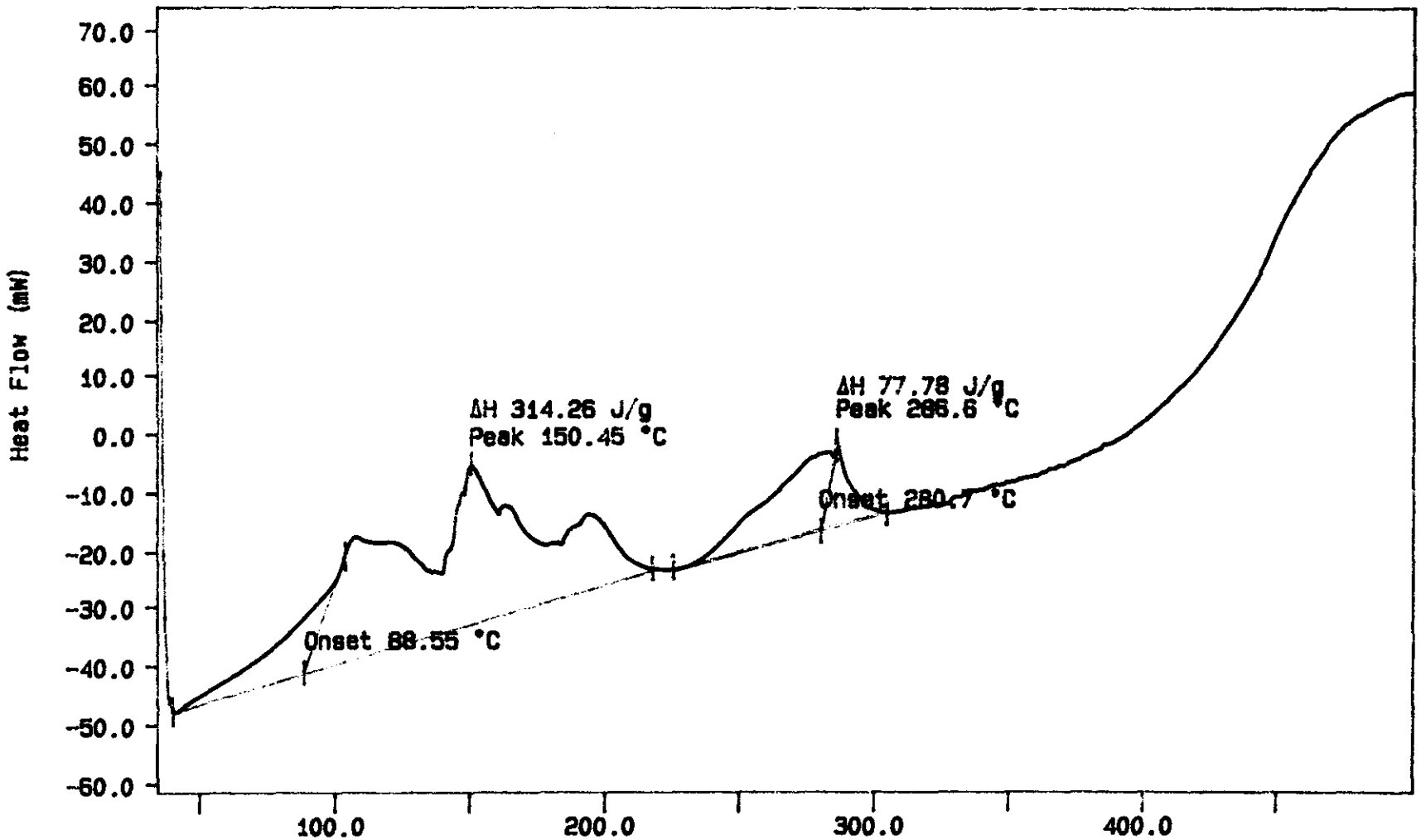


exotherm down, N2 purge gas
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 600.0 C

AD PURINTON
PERKIN-ELMER
7 Series Thermal Analysis System
Tue Dec 26 22:25:10 1995

WHC-SD-WM-DP-164, REV. 0

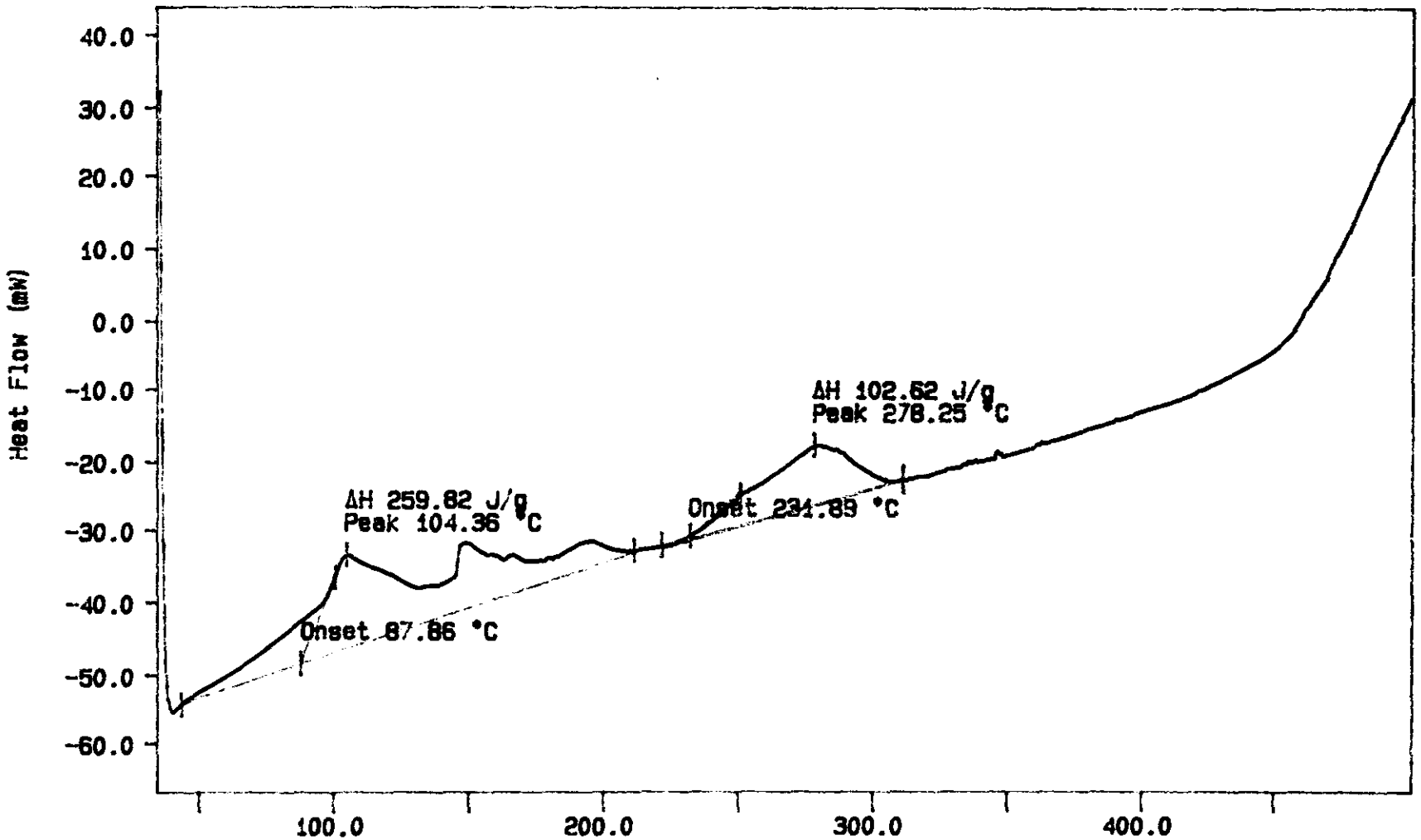
Curve 1: DSC
File info: SAM122603 Tue Dec 26 23:27:53 1995
Sample Weight: 37.050 mg
S95T9003785 SAM N2



exotherm down, N2 purge gas
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 500.0 C

AD PURINTON
PERKIN-ELMER
7 Series Thermal Analysis System
Tue Dec 26 23:34:44 1995

Curve 1: DSC
File info: SAM122604 Wed Dec 27 00:26:35 1995
Sample Weight: 19.460 mg
S95T003785 DUP N2



exotherm down, N2 purge gas
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 500.0 C

AD PURINTON
PERKIN-ELMER
7 Series Thermal Analysis System
Wed Dec 27 00:46:56 1995

LABCORE Data Entry Template for Worklist# 4799

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

Method: LA-514-113 Rev/Mod —

Worklist Comment: Dry DSCs for BY-104. bdv

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
95000180	BY104 ROTARY	1	SAMPLE	S95T003528	0		DSC-02	SOLID	N/A	Ø		Joules/g Dry
95000180	BY104 ROTARY	2	DUP	S95T003528	0		DSC-02	SOLID	Ø	138.7	N/A	Joules/g Dry
95000180	BY104 ROTARY	3	SAMPLE	S95T003647	0		DSC-02	SOLID	N/A	484.1		Joules/g Dry
95000180	BY104 ROTARY	4	DUP	S95T003647	0		DSC-02	SOLID	484.1	436.6	N/A	Joules/g Dry

Data entered + verified

Final page for worklist # 4799

Blundina Valenzuela 1/10/95

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# 4864

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

Method: LA-514-113 Rev/Mod —

Worklist Comment: Dry DSC for BY-104. bdv

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
95000180	BY104 ROTARY	1	SAMPLE	S95T003632	0		DSC-02	SOLID	N/A	Ø		Joules/g Dry
95000180	BY104 ROTARY	2	DUP	S95T003632	0		DSC-02	SOLID	Ø	Ø	N/A	Joules/g Dry
95000180	BY104 ROTARY	3	SAMPLE	S95T003633	0		DSC-02	SOLID	N/A	Ø		Joules/g Dry
95000180	BY104 ROTARY	4	DUP	S95T003633	0		DSC-02	SOLID	Ø	Ø	N/A	Joules/g Dry
95000180	BY104 ROTARY	5	SAMPLE	S95T003635	0		DSC-02	SOLID	N/A	140.8		Joules/g Dry
95000180	BY104 ROTARY	6	DUP	S95T003635	0		DSC-02	SOLID	140.8	134.9	N/A	Joules/g Dry
95000180	BY104 ROTARY	7	SAMPLE	S95T003636	0		DSC-02	SOLID	N/A	736.4		Joules/g Dry
95000180	BY104 ROTARY	8	DUP	S95T003636	0		DSC-02	SOLID	736.4	875.7	N/A	Joules/g Dry
95000180	BY104 ROTARY	9	SAMPLE	S95T003702	0		DSC-02	SOLID	N/A	Ø		Joules/g Dry
95000180	BY104 ROTARY	10	DUP	S95T003702	0		DSC-02	SOLID	Ø	Ø	N/A	Joules/g Dry

Data entered and verified by **Final page for worklist # 4864**

Blandina Valenzuela 1/15/96

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# 5121

Analyst: ADP **Instrument:** DSC0 1 **Book #** 12N74B

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

Worklist Comment: Please run BY-104 DSC under N2. bdv

GROUP	PROJECT	S TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD				DSC-01	LIQUID	28.45	30.8*	N/A	Joules/g
95000200	BY104 ROTARY	2 SAMPLE	S95T003761	0		DSC-01	LIQUID	N/A	Ø		Joules/g
95000200	BY104 ROTARY	3 DUP	S95T003761	0		DSC-01	LIQUID	Ø	Ø	N/A	Joules/g
95000200	BY104 ROTARY	4 SAMPLE	S95T003775	0		DSC-01	LIQUID	N/A	Ø		Joules/g
95000200	BY104 ROTARY	5 DUP	S95T003775	0		DSC-01	LIQUID	Ø	Ø	N/A	Joules/g

Final page for worklist # 5121

Anthony Purnton 1-23-96
Analyst Signature **Date**

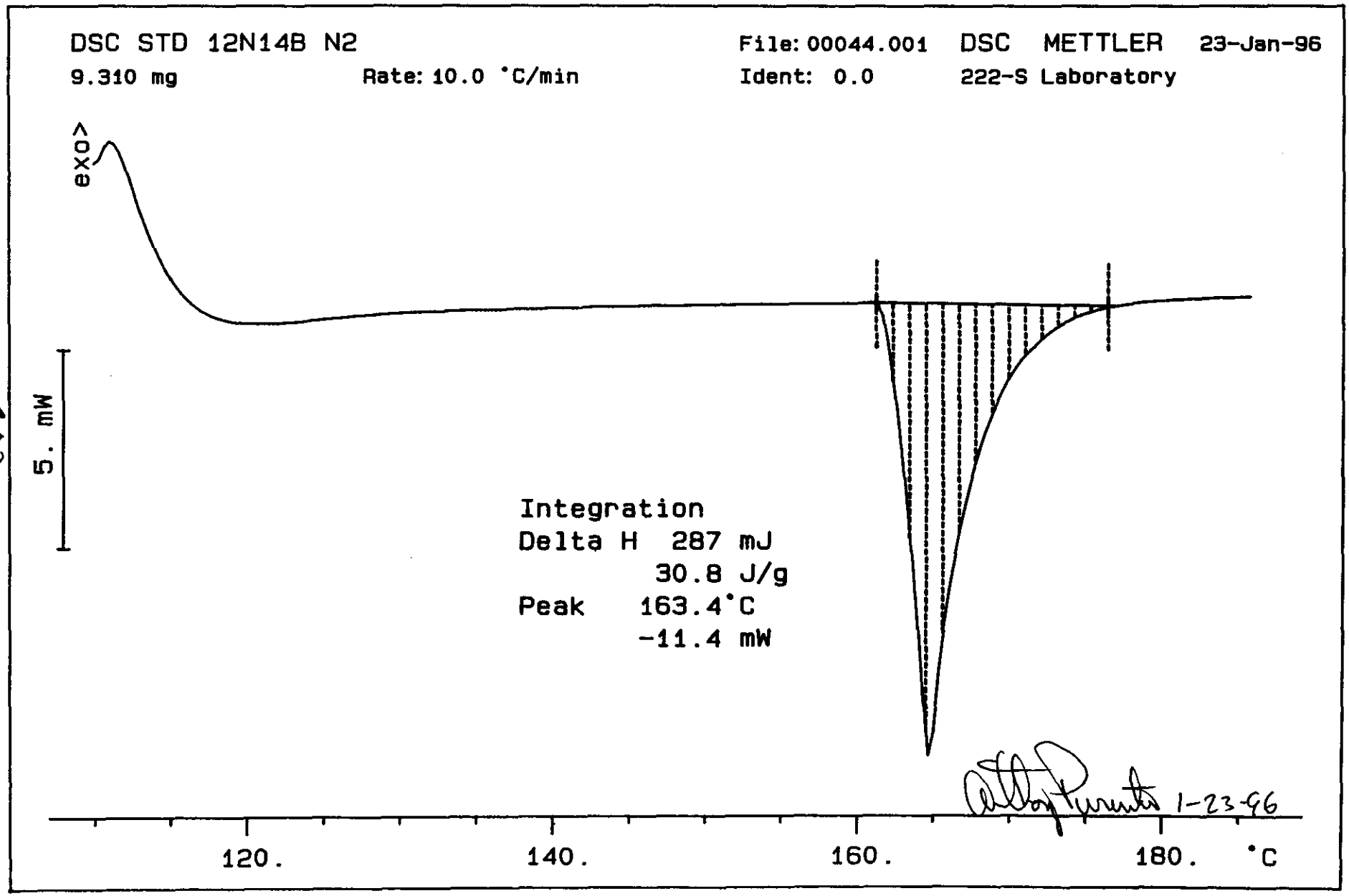
Verified by Blandina Valenzuela 1/26/96

Steve Peters 1-24-96
Analyst Signature **Date**

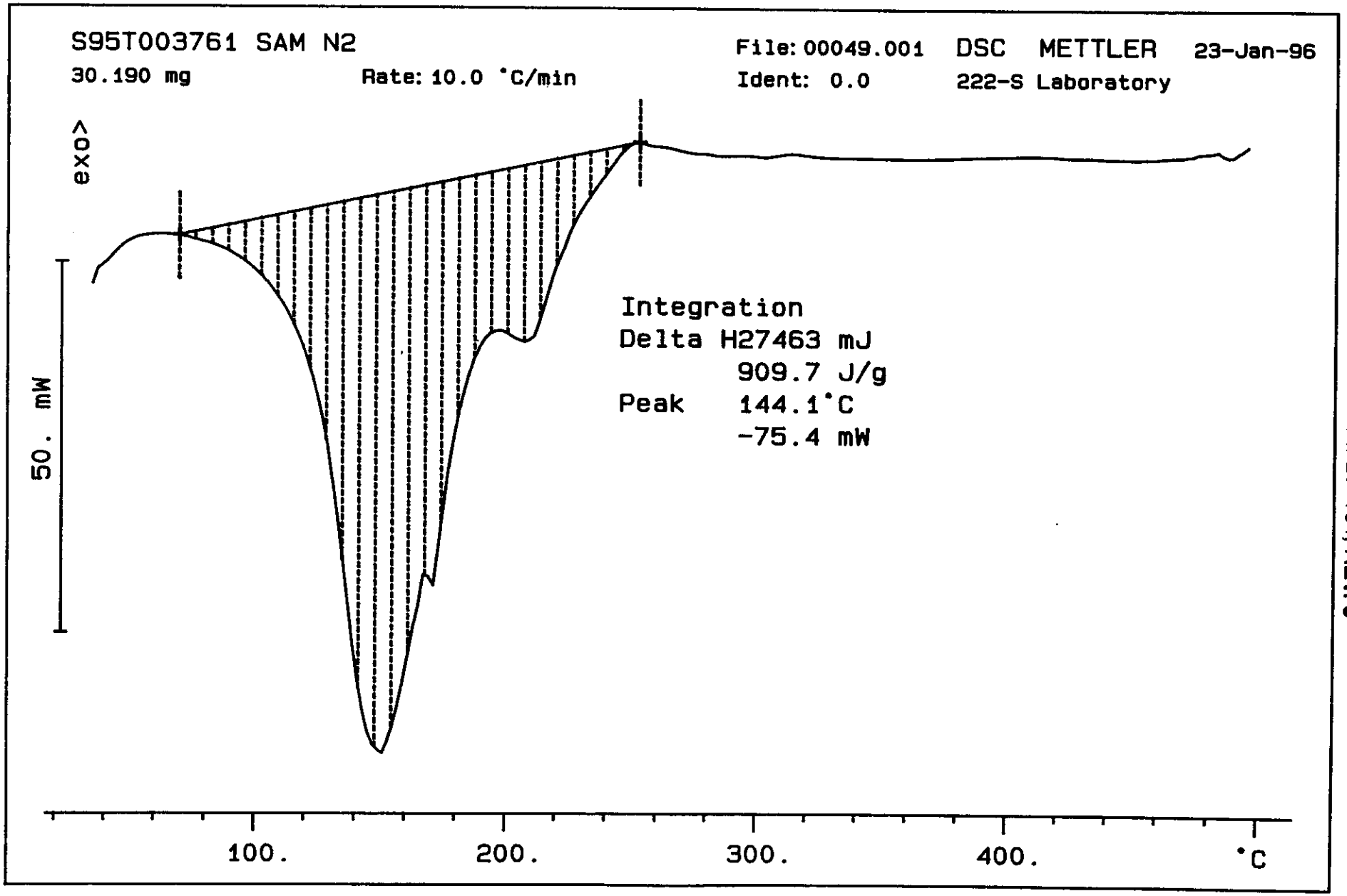
Data Entry Comments: S95T003761 produced an endotherm at 144.1°C with a delta H of 909.7 J/g
S95T003775 produced an endotherm at 165.8°C with a delta H of 1259.4 J/g.
The strong upward swing on the thermogram is probably due to contamination on the sensor and not an exotherm.

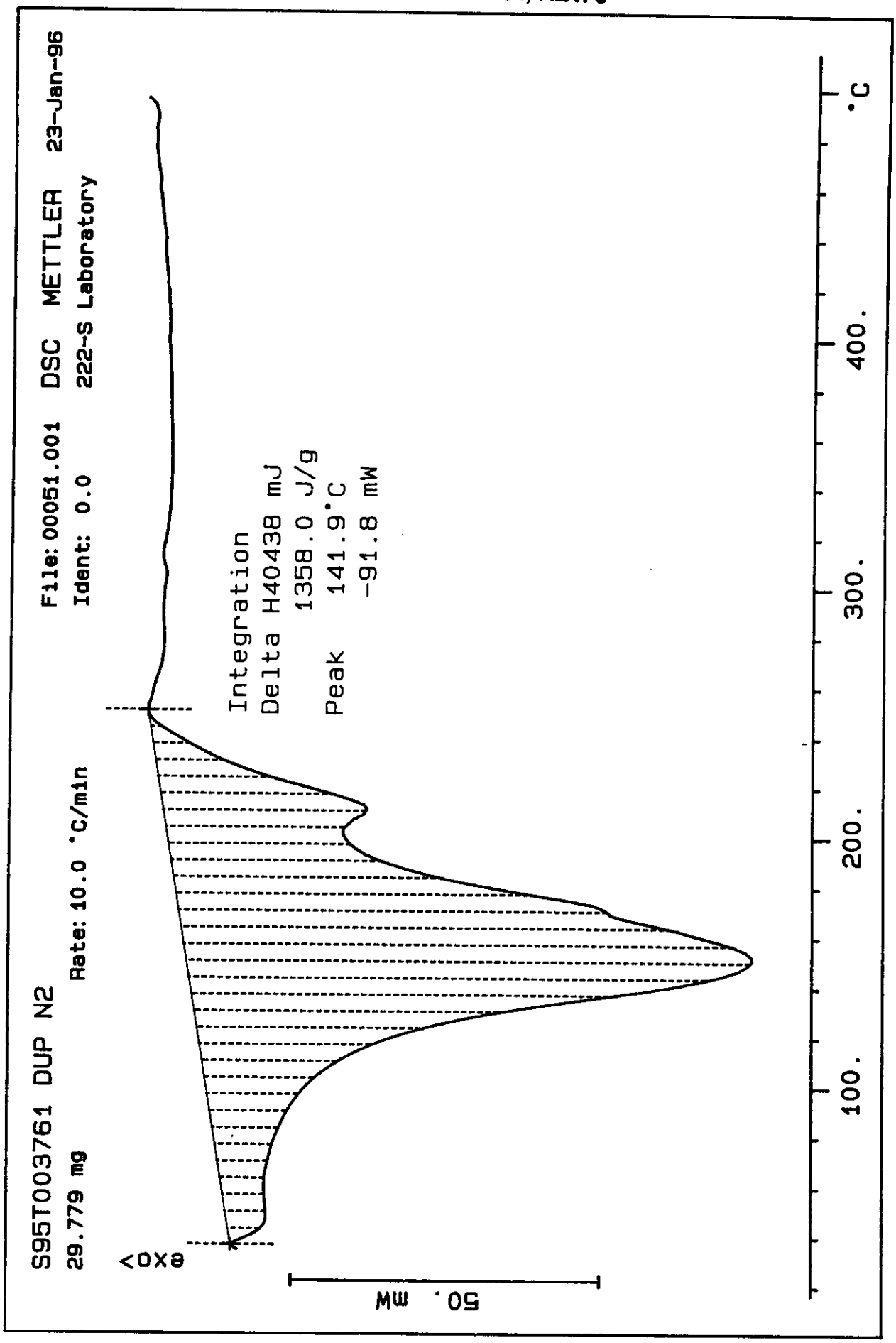
Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

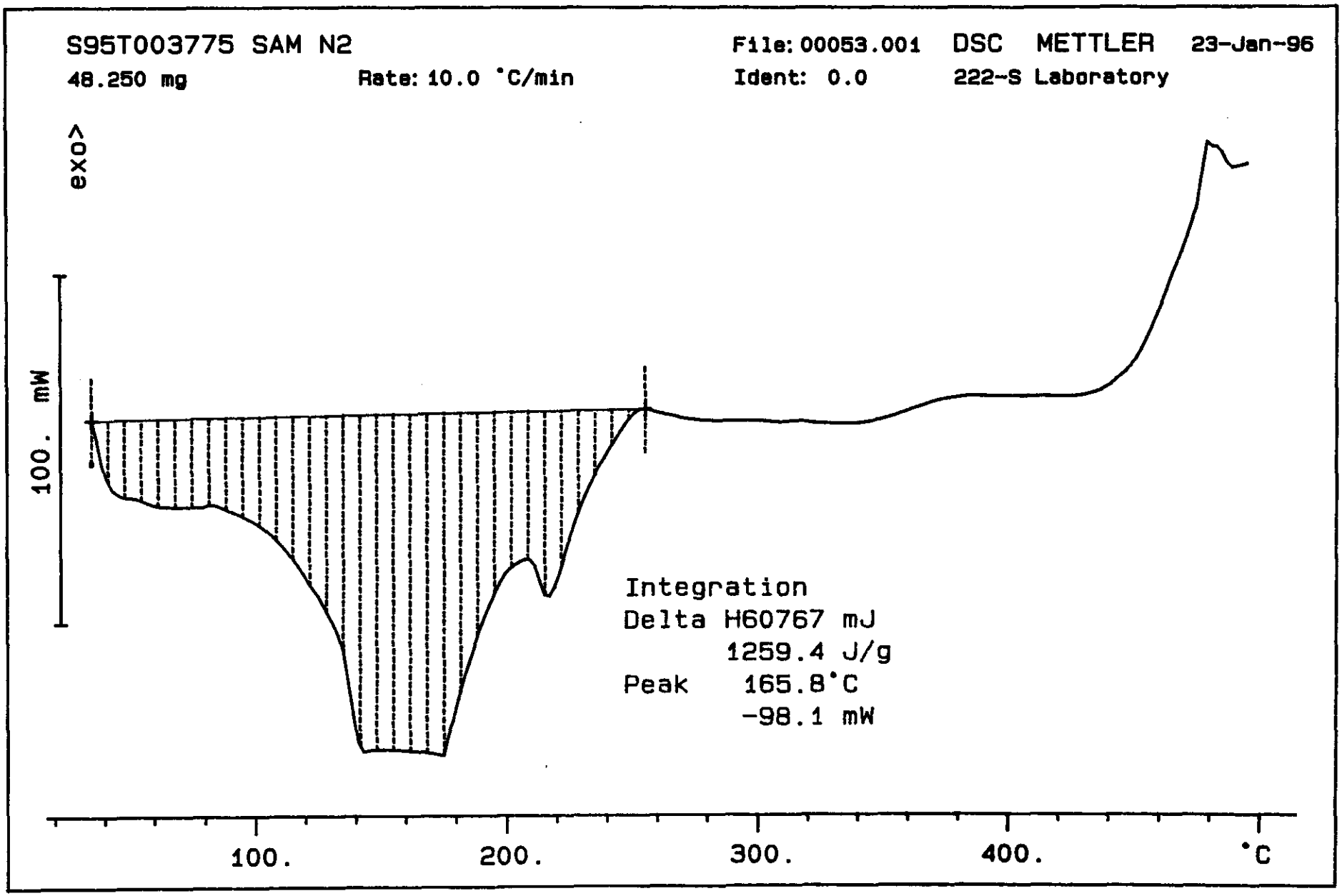
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 140 TO 144.

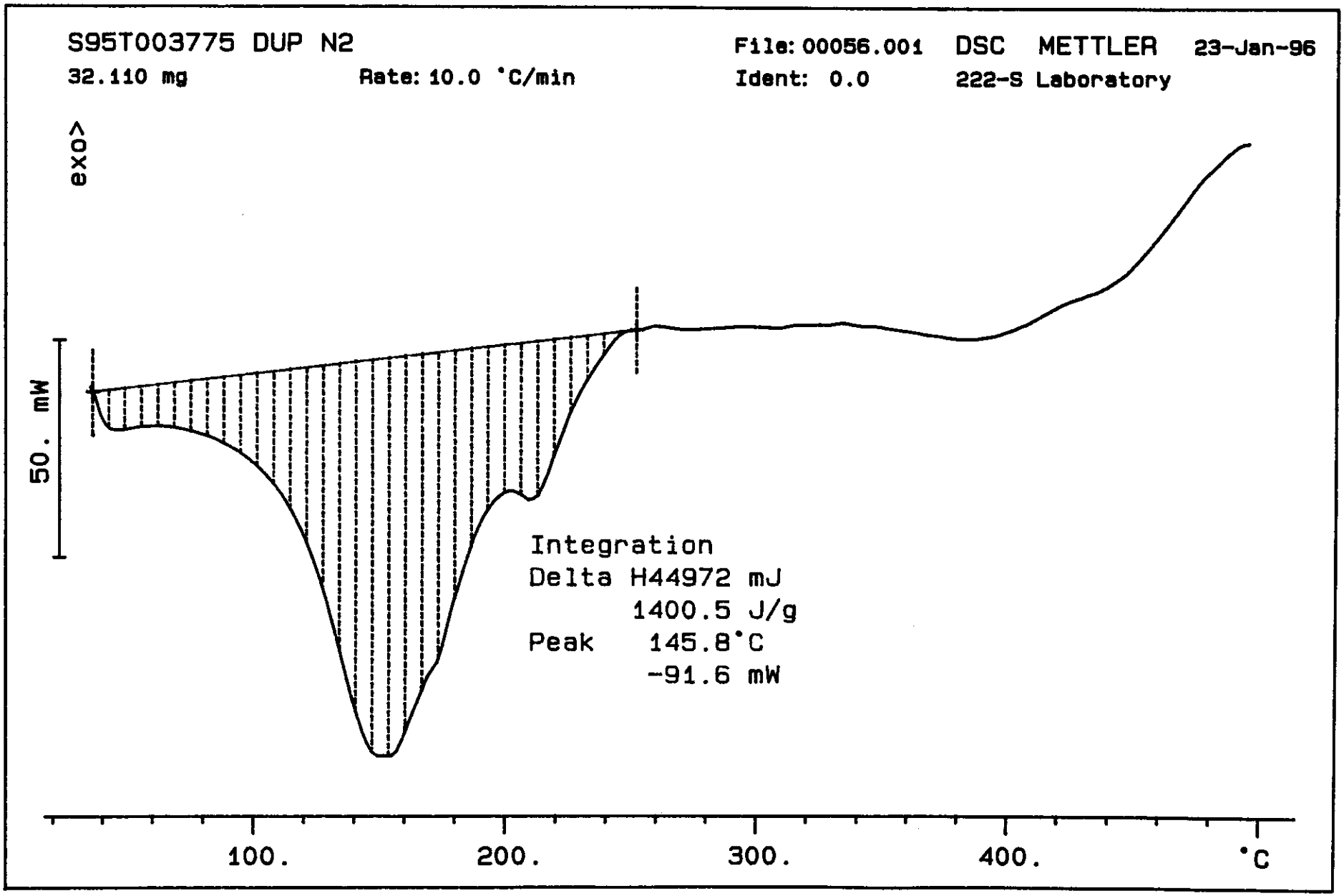


1-23-96


S95T003761 SAM N2
30.190 mg
Rate: 10.0 °C/min
File: 00049.001
Ident: 0.0
DSC METTLER
222-S Laboratory
23-Jan-96
exo>
50. mW
Integration
Delta H27463 mJ
909.7 J/g
Peak 144.1°C
-75.4 mW
100.
200.
300.
400.
°C


S95T003761 DUP N2
29.779 mg
Rate: 10.0 °C/min
File: 00051.001
Ident: 0.0
DSC METTLER 23-Jan-96
222-S Laboratory
Integration
Delta H40438 mJ
1358.0 J/g
Peak 141.9°C
-91.8 mW
exo>
50. mW
100.
200.
300.
400.
°C


S95T003775 SAM N2
48.250 mg
Rate: 10.0 °C/min
File: 00053.001
Ident: 0.0
DSC METTLER
222-S Laboratory
23-Jan-96
exo>
mW .001
Integration
Delta H60767 mJ
1259.4 J/g
Peak 165.8°C
-98.1 mW
100.
200.
300.
400.
°C


S95T003775 DUP N2
32.110 mg
Rate: 10.0 °C/min
File: 00056.001
Ident: 0.0
DSC METTLER
222-S Laboratory
23-Jan-96
exo>
50. mW
Integration
Delta H44972 mJ
1400.5 J/g
Peak 145.8°C
-91.6 mW
100.
200.
300.
400.
°C

LABCORE Data Entry Template for Worklist# 5289

Analyst: ADP **Instrument:** DSC0 1 **Book #** 12N14-B

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

Worklist Comment: Please run BY-104 DSCs under N2. bdv

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				DSC-01	SOLID	28.45	30.2	N/A	Joules/g
95000180	BY104 ROTARY	2	SAMPLE	S95T003634	0		DSC-01	SOLID	N/A	23.6		Joules/g
95000180	BY104 ROTARY	3	DUP	S95T003634	0		DSC-01	SOLID	23.6	36.2	N/A	Joules/g

Final page for worklist # 5289

Anthony Pucinta 1-31-96
Analyst Signature **Date**

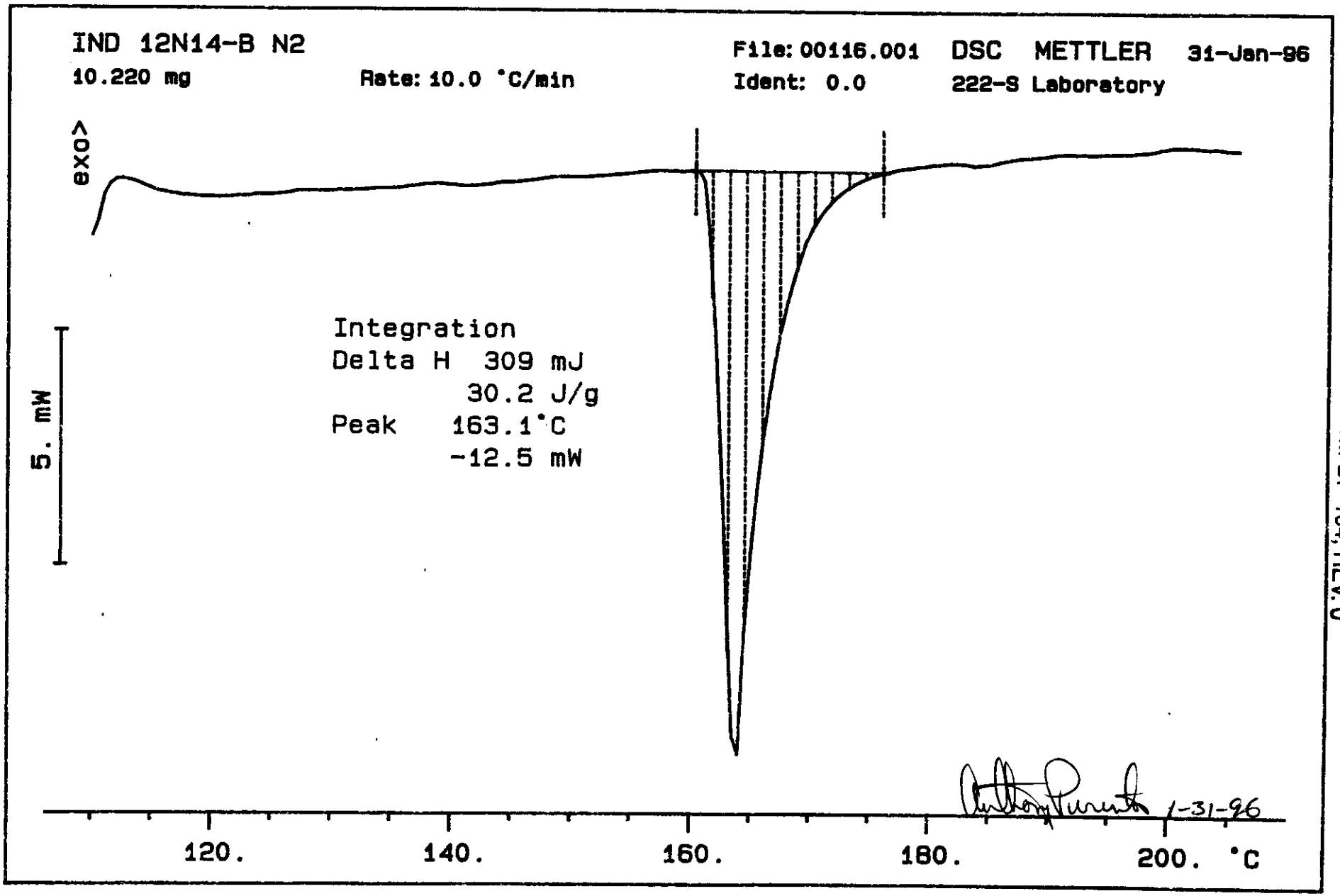
R C Wright 2/2/96
Analyst Signature **Date**

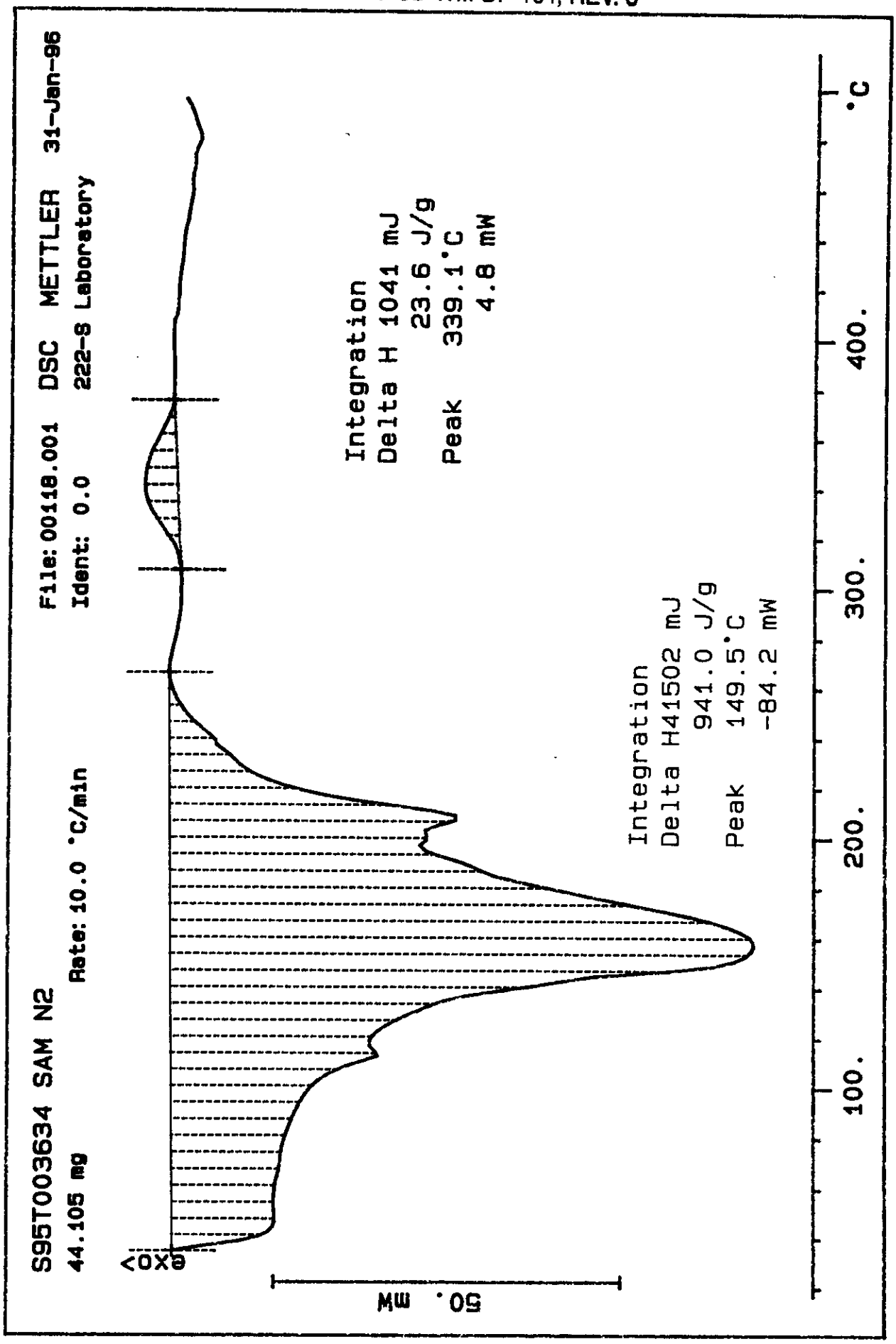
Verified by Blandina Valenzuela 2/5/96

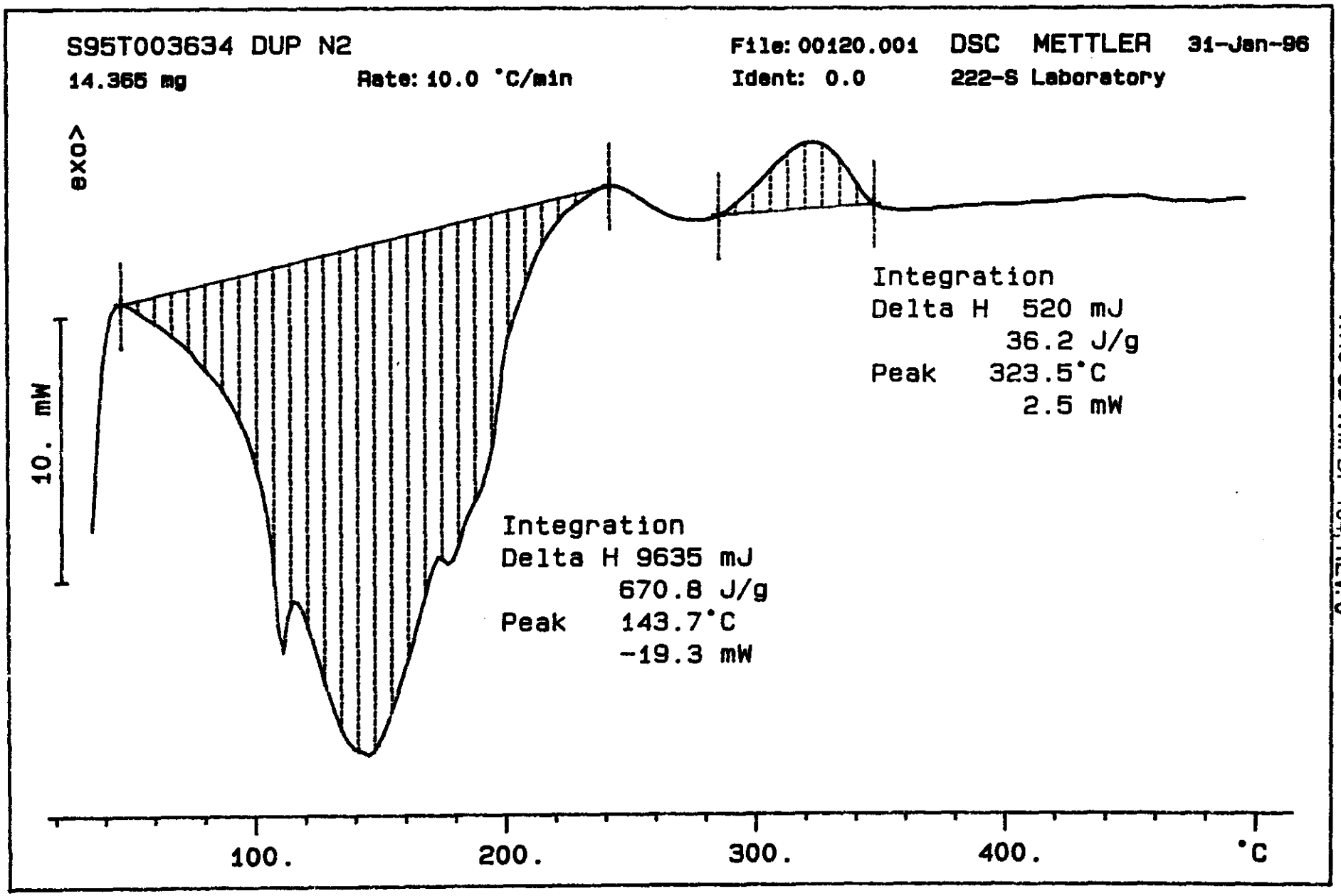
Data Entry Comments: Sample produced a larg endotherm at 149.5°C with a delta H of 941.0J/g.

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

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 146 TO 148.




S95T003634 SAM N2
44.105 mg
Rate: 10.0 °C/min
File: 00118.001 DSC METTLER 31-Jan-96
Ident: 0.0 222-S Laboratory
Integration
Delta H 1041 mJ
23.6 J/g
Peak 339.1°C
4.8 mW
Integration
Delta H41502 mJ
941.0 J/g
Peak 149.5°C
-84.2 mW
exo>
50. mW
100.
200.
300.
400.
°C


S95T003634 DUP N2
14.365 mg
Rate: 10.0 °C/min
File: 00120.001
Ident: 0.0
DSC METTLER
222-S Laboratory
31-Jan-96
exo>
10. mW
Integration
Delta H 520 mJ
36.2 J/g
Peak 323.5°C
2.5 mW
Integration
Delta H 9635 mJ
670.8 J/g
Peak 143.7°C
-19.3 mW
100.
200.
300.
400.
°C

LABCORE Data Entry Template for Worklist# 5323

Analyst: ADP **Instrument:** DSC0 1 **Book #** 12N14B

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

Worklist Comment: Please run BY-104 DSCs under N2. bdv

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				DSC-01	SOLID	28.45	28.1 *	N/A	Joules/g
95000180	BY104 ROTARY	2	SAMPLE	S95T003638	1		DSC-01	SOLID	N/A	Ø		Joules/g
		3	STD				DSC-01	SOLID	28.45	30.7	N/A	Joules/g
95000180	BY104 ROTARY	4	DUP	S95T003638	1		DSC-01	SOLID	Ø	41.2	N/A	Joules/g
95000180	BY104 ROTARY	5	SAMPLE	S95T003640	1		DSC-01	SOLID	N/A	54.4		Joules/g
95000180	BY104 ROTARY	6	DUP	S95T003640	1		DSC-01	SOLID	54.4	78.2	N/A	Joules/g

Final page for worklist # 5323

See attached for Signatures.
Analyst Signature **Date** 2/5/96

Analyst Signature **Date** 2/5/96

Verified by Blandina Valenzuela 2/7/96

Data Entry Comments: S95T003638 produced three endotherms one at 106.8°C with a delta H of 427.8 J/g; second at 290.5°C with a delta H of 70.1 J/g; third at 466.9°C with a delta H of 124.8 J/g. The duplicate did not resemble the sample, in that it had an exotherm.

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.

S95T003640 produced an endotherm at 163.8°C with a delta H of 905.2 J/g.

LABCORE Data Entry Template for Worklist# 5323

Analyst: ADP **Instrument:** DSC0 1 **Book #** 12N14B

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

Worklist Comment: Please run BY-104 DSCs under N2. bdv

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				DSC-01	SOLID			N/A	Joules/g
95000180	BY104 ROTARY	2	SAMPLE	S95T003638	1		DSC-01	SOLID	N/A			Joules/g
95000180	BY104 ROTARY	3	DUP	S95T003638	1		DSC-01	SOLID			N/A	Joules/g
95000180	BY104 ROTARY	4	SAMPLE	S95T003640	1		DSC-01	SOLID	N/A			Joules/g
95000180	BY104 ROTARY	5	DUP	S95T003640	1		DSC-01	SOLID			N/A	Joules/g

Final page for worklist # 5323

B. Valenzuela for ADP 2/5/96
Analyst Signature Date

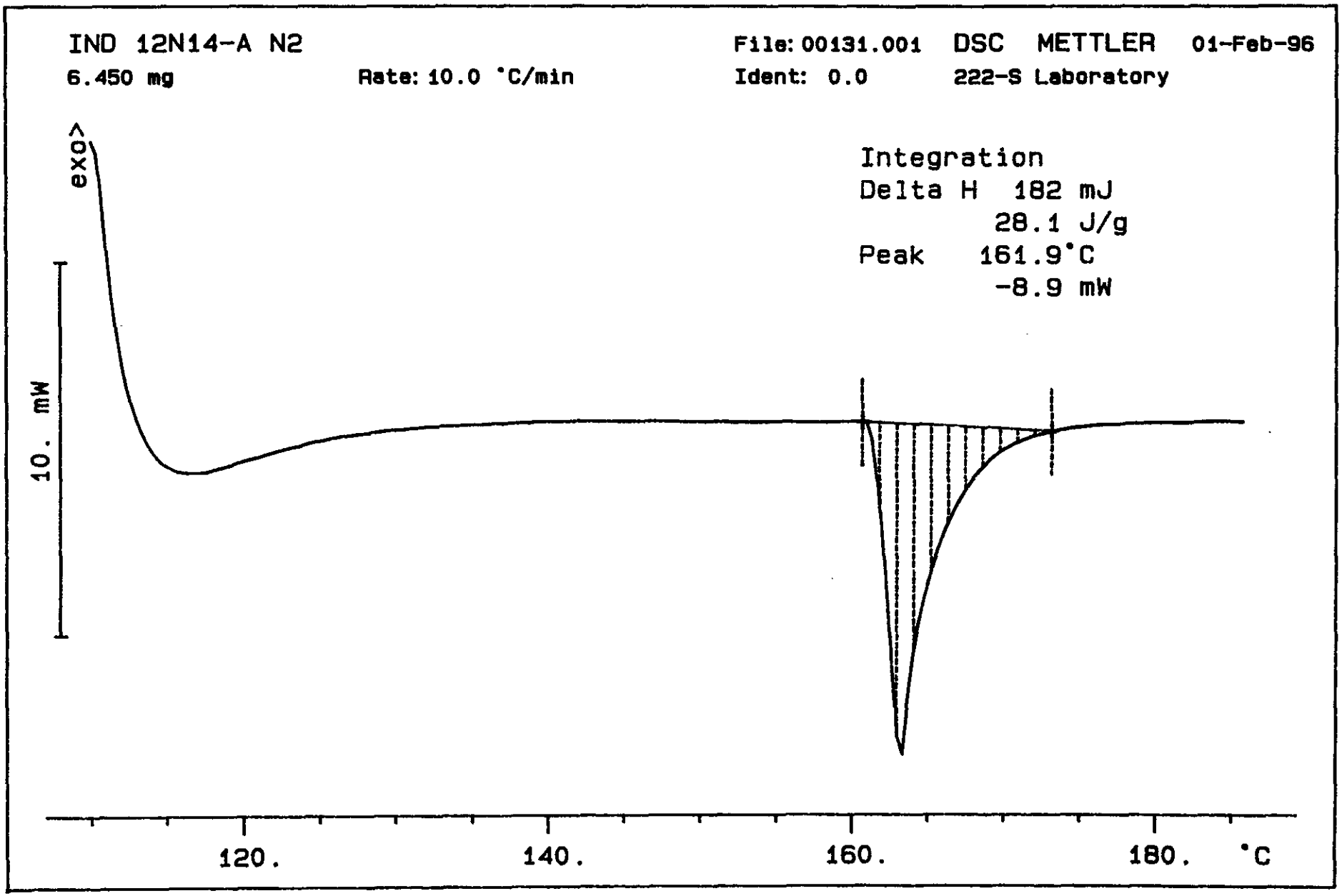
K. Myers 2/2/96

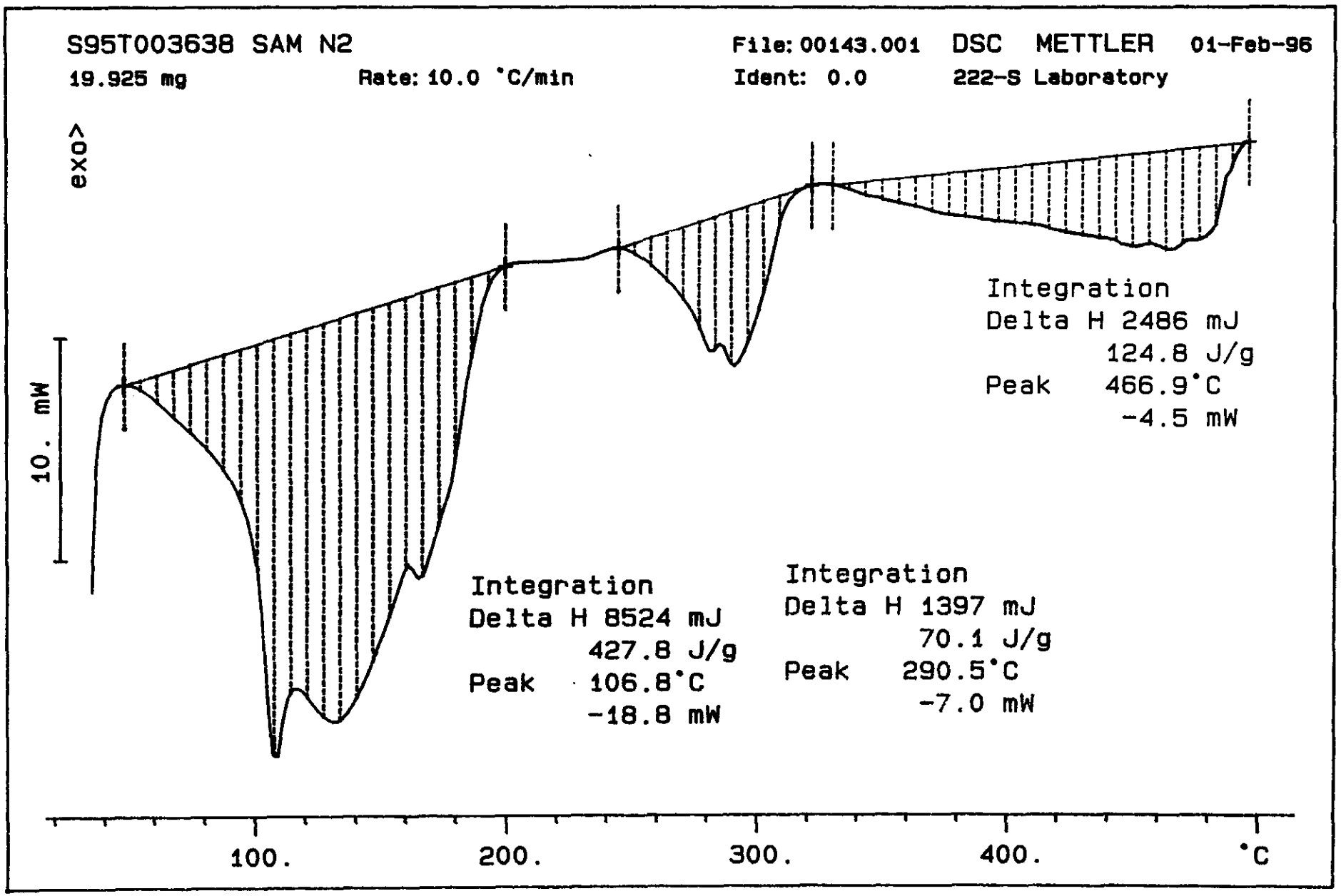
Analyst Signature Date

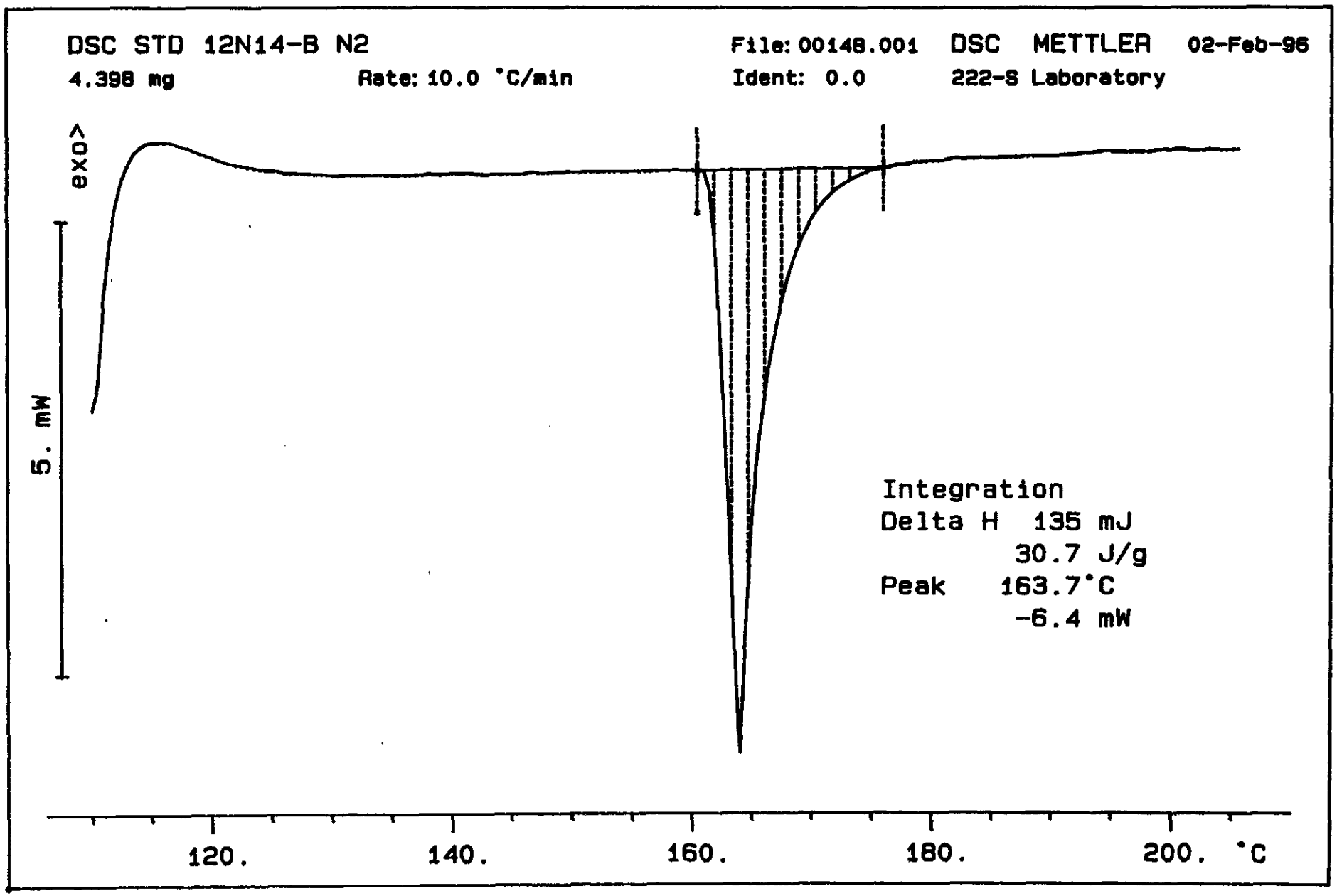
Data Entry Comments:

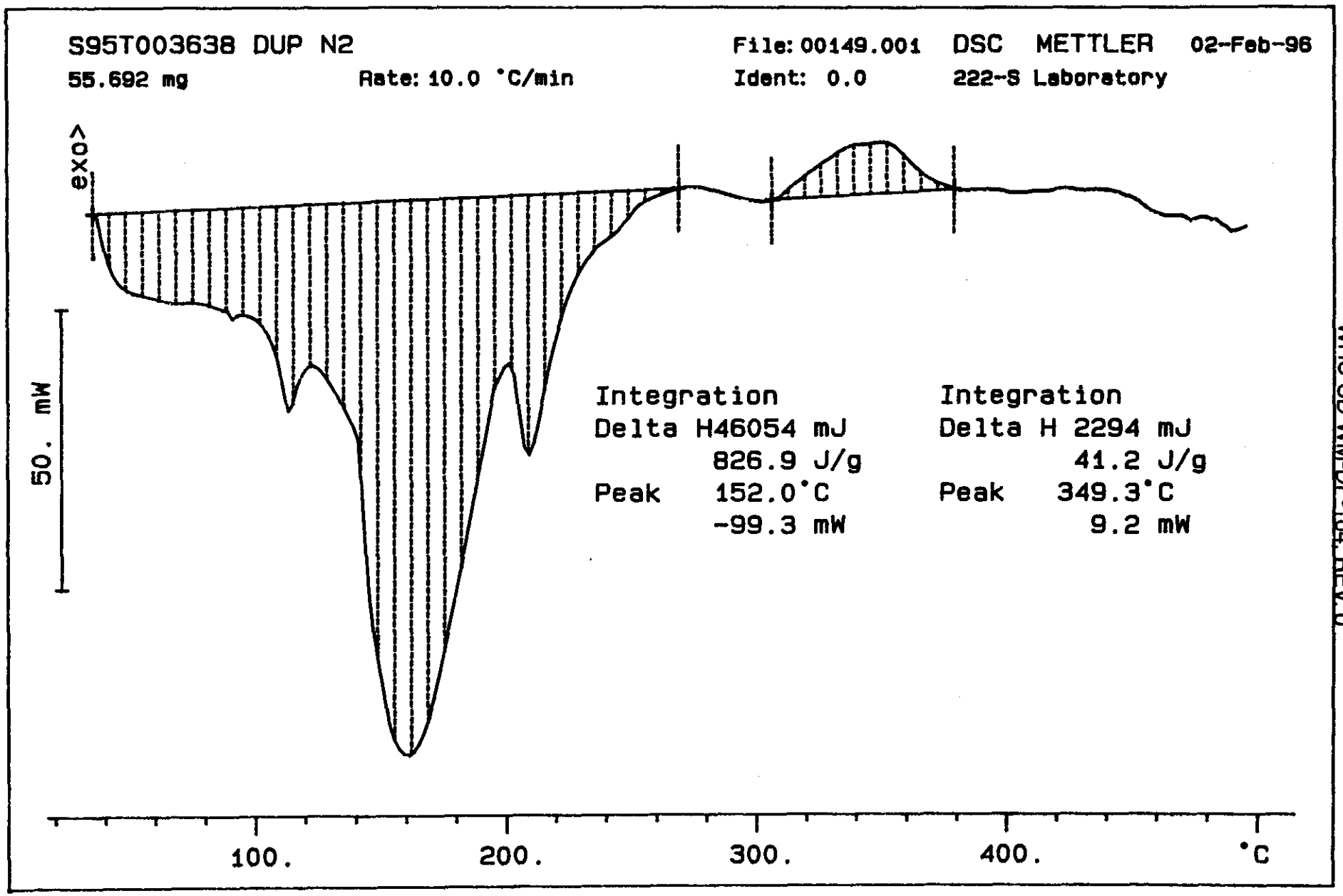
Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

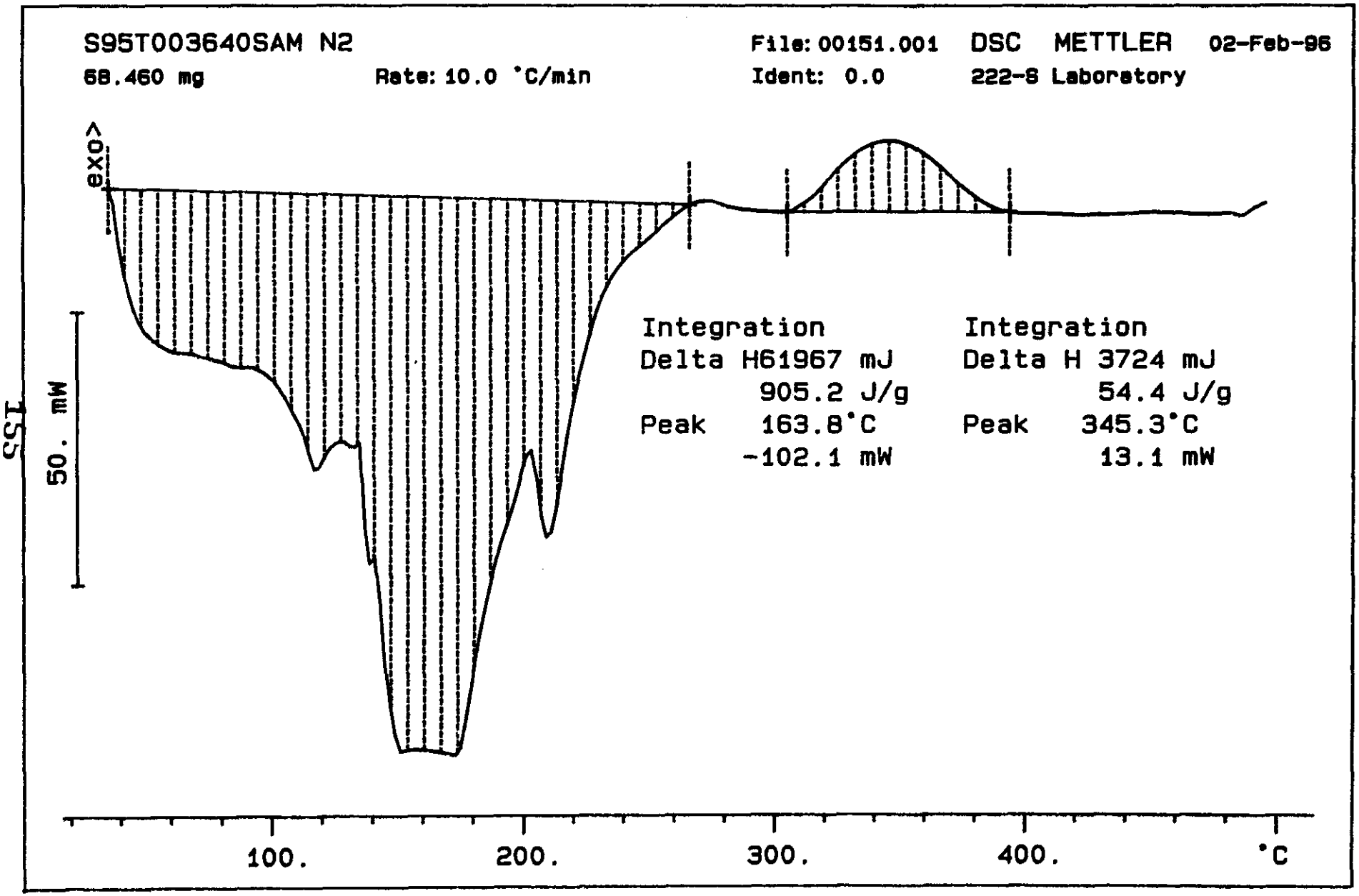
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 151 TO 156.

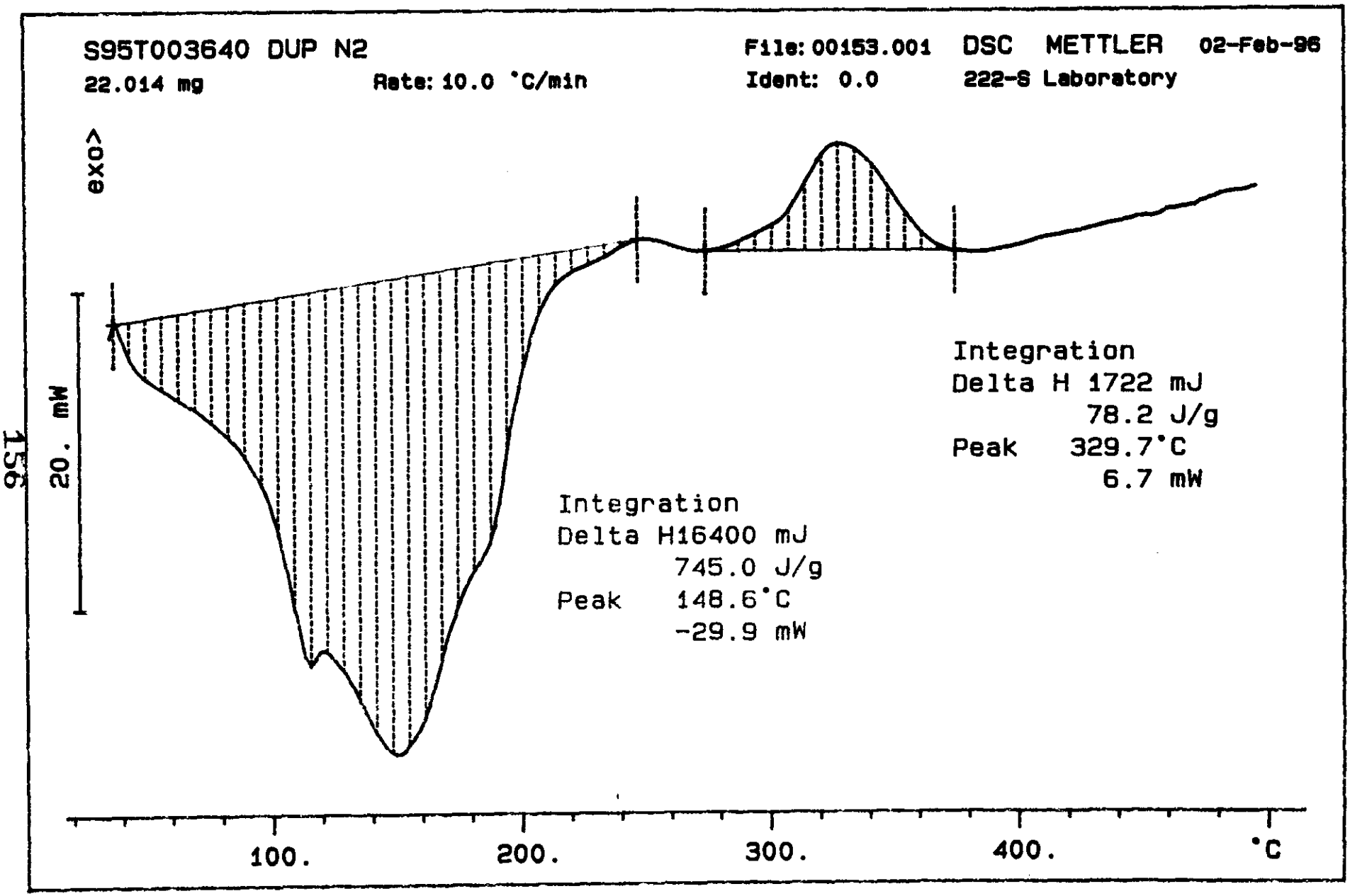



S95T003638 SAM N2
19.925 mg
Rate: 10.0 °C/min
File: 00143.001
Ident: 0.0
DSC METTLER
222-S Laboratory
01-Feb-96
exo>
10. mW
Integration
Delta H 2486 mJ
124.8 J/g
Peak 466.9°C
-4.5 mW
Integration
Delta H 8524 mJ
427.8 J/g
Peak 106.8°C
-18.8 mW
Integration
Delta H 1397 mJ
70.1 J/g
Peak 290.5°C
-7.0 mW
100.
200.
300.
400.
°C


DSC STD 12N14-B N2
4.398 mg
Rate: 10.0 °C/min
File: 00148.001
Ident: 0.0
DSC METTLER
222-S Laboratory
02-Feb-96
<exo
mW
Integration
Delta H 135 mJ
30.7 J/g
Peak 163.7°C
-6.4 mW
120.
140.
160.
180.
200.
°C


S95T003638 DUP N2
55.692 mg
Rate: 10.0 °C/min
File: 00149.001
Ident: 0.0
DSC METTLER
222-S Laboratory
02-Feb-96
exo>
50. mW
Integration
Delta H46054 mJ
826.9 J/g
Peak 152.0°C
-99.3 mW
Integration
Delta H 2294 mJ
41.2 J/g
Peak 349.3°C
9.2 mW
100.
200.
300.
400.
°C


S95T003640SAM N2
68.460 mg
Rate: 10.0 °C/min
File: 00151.001
Ident: 0.0
DSC METTLER
222-S Laboratory
02-Feb-96
exo>
50. mW
Integration
Delta H61967 mJ
905.2 J/g
Peak 163.8°C
-102.1 mW
Integration
Delta H 3724 mJ
54.4 J/g
Peak 345.3°C
13.1 mW
100.
200.
300.
400.
°C


S95T003640 DUP N2
22.014 mg
Rate: 10.0 °C/min
File: 00153.001
Ident: 0.0
DSC METTLER 02-Feb-96
222-S Laboratory
exo>
20. mW
Integration
Delta H 1722 mJ
78.2 J/g
Peak 329.7°C
6.7 mW
Integration
Delta H16400 mJ
745.0 J/g
Peak 148.6°C
-29.9 mW
100.
200.
300.
400.
°C

LABCORE Data Entry Template for Worklist# 4123

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

Method: LA-560-112 Rev/Mod B-1

Worklist Comment: Please run BY-104 TGAs under N2. bdv

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				TGA-01	SOLID	59.74	60.36*	N/A	%
95000180	BY104 ROTARY	2	SAMPLE	S95T003642	0		TGA-01	SOLID	N/A	23.36		%
95000180	BY104 ROTARY	3	DUP	S95T003642	0		TGA-01	SOLID	23.36	32.83	N/A	%
95000180	BY104 ROTARY	4	SAMPLE	S95T003645	0		TGA-01	SOLID	N/A	21.70		%
		5	STD				TGA-01	SOLID	59.74	60.20	N/A	%
95000180	BY104 ROTARY	6	DUP	S95T003645	0		TGA-01	SOLID	21.70	24.45	N/A	%

Final page for worklist # 4123

Analyst Signature Date

Analyst Signature Date 12-20-95

Verified 12/21/95 JMFuge

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# 4123

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

Method: LA-560-112 Rev/Mod B-1

Worklist Comment: Please run BY-104 TGAs under N2. bdv

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				TGA-01	SOLID	59.74	60.36*	N/A	%
95000180	BY104 ROTARY	2	SAMPLE	S95T003642	0		TGA-01	SOLID	N/A	~~23.36~~	12/19/95 BDV	%
95000180	BY104 ROTARY	3	DUP	S95T003642	0		TGA-01	SOLID	~~23.36~~	~~32.83~~	12/19/95 N/A BDV	%
95000180	BY104 ROTARY	4	SAMPLE	S95T003645	0		TGA-01	SOLID	N/A	~~21.70~~	12/19/95 BDV	%
95000180	BY104 ROTARY	5	DUP	S95T003645	0		TGA-01	SOLID	~~21.70~~	12/19/95 BDV	N/A	%

Final page for worklist # 4123

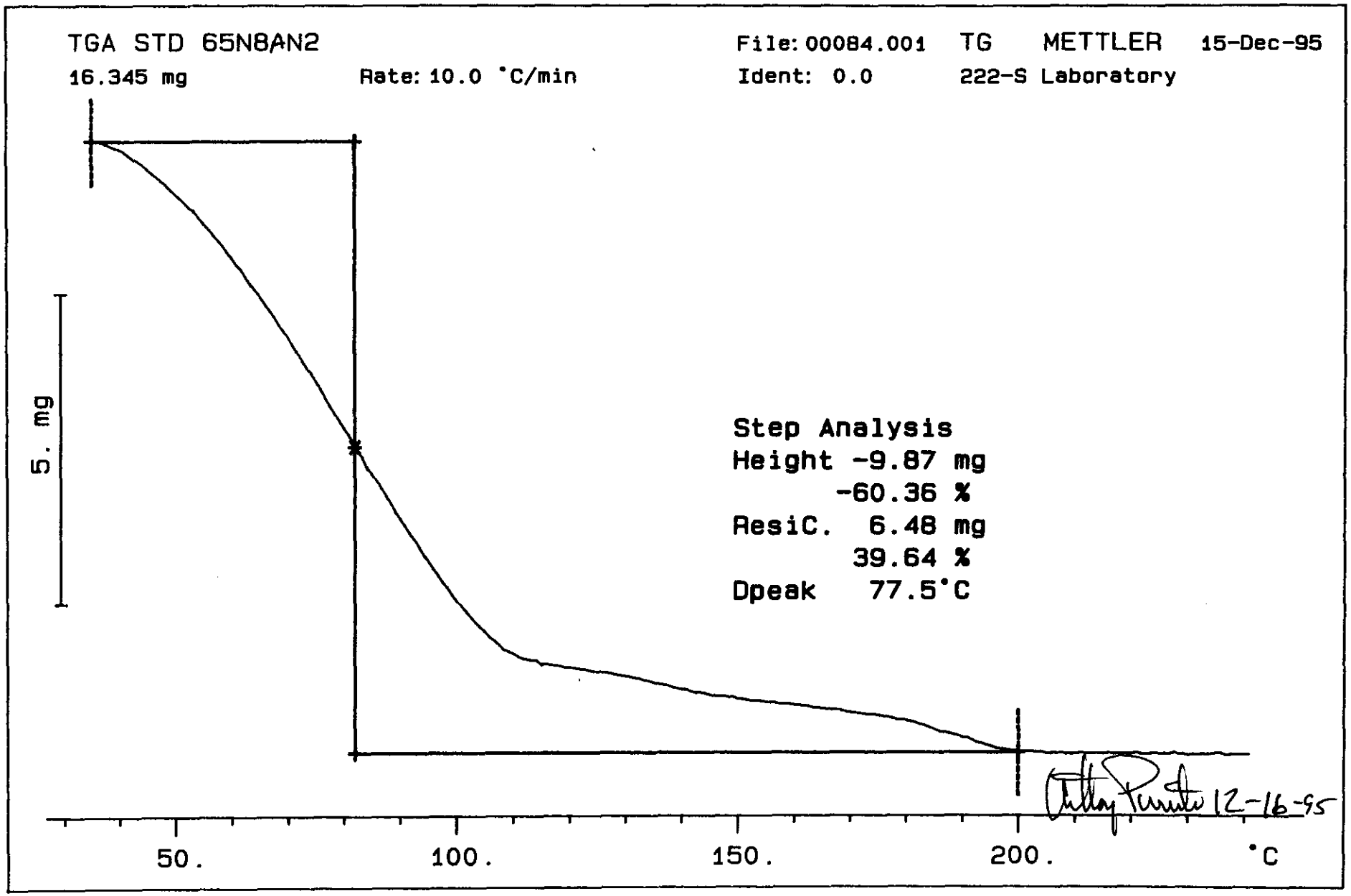
Anthony Pucciarelli 12-17-95
Analyst Signature **Date**

Analyst Signature **Date**

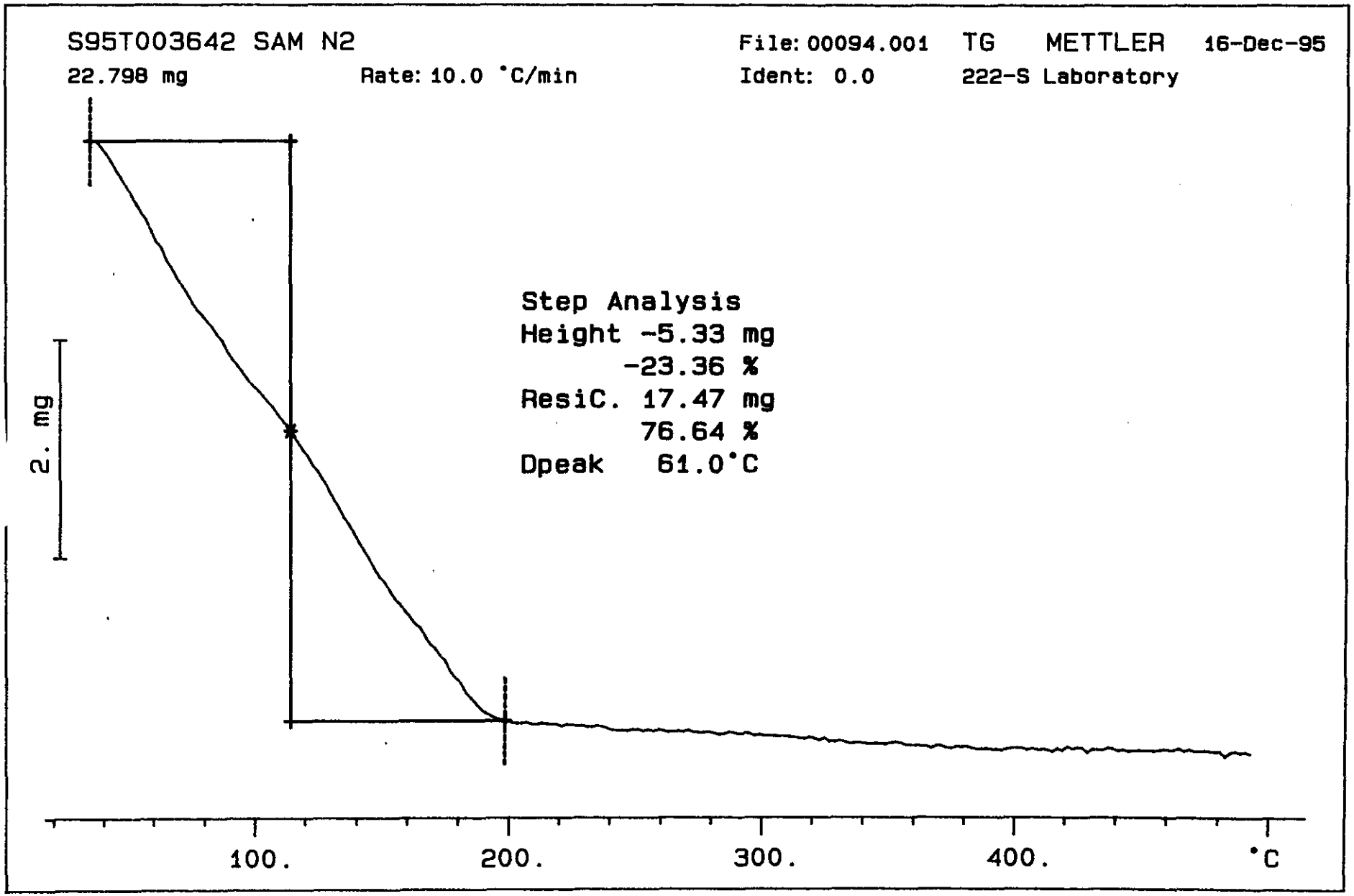
Data Entry Comments:

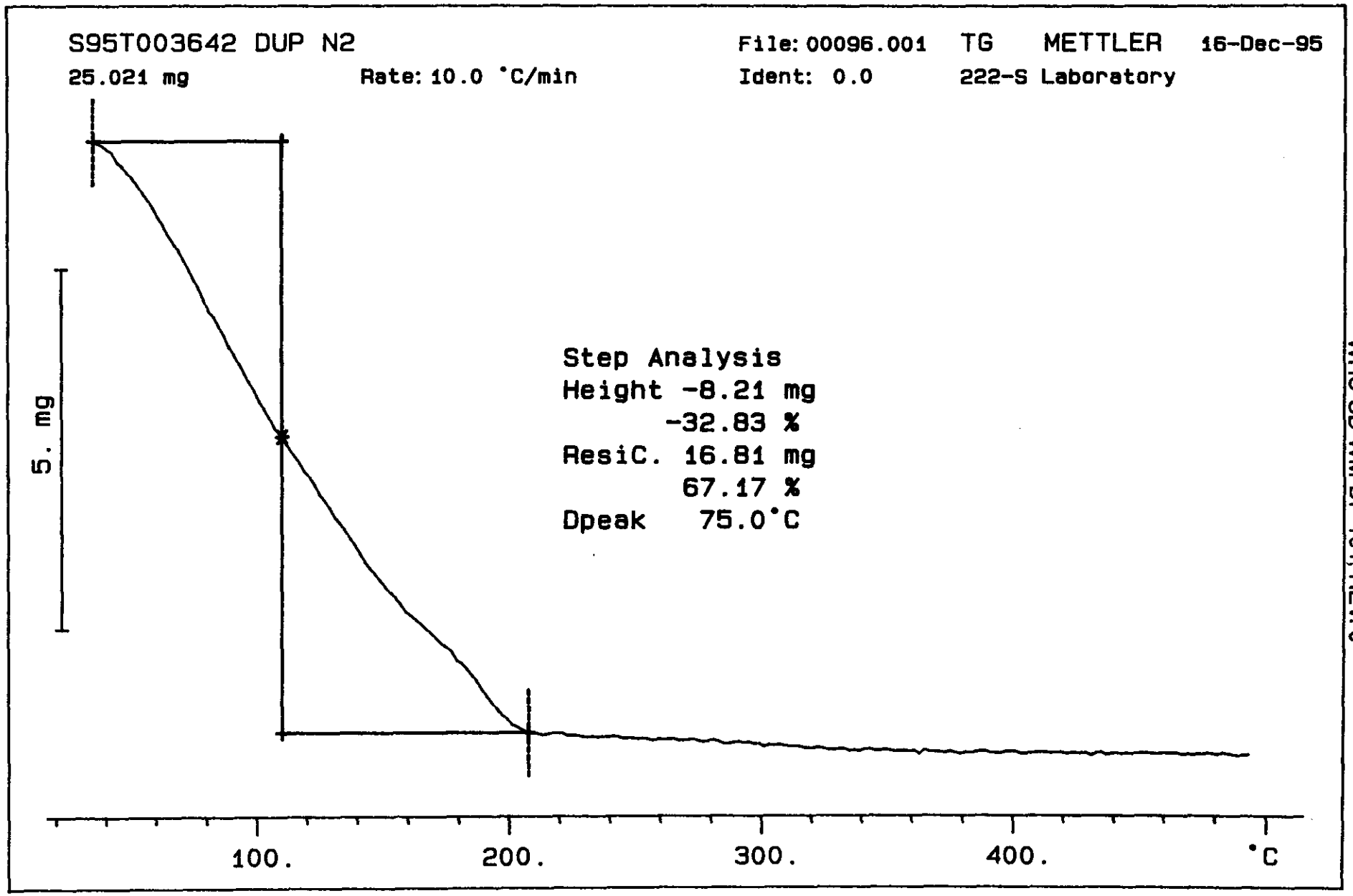
Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

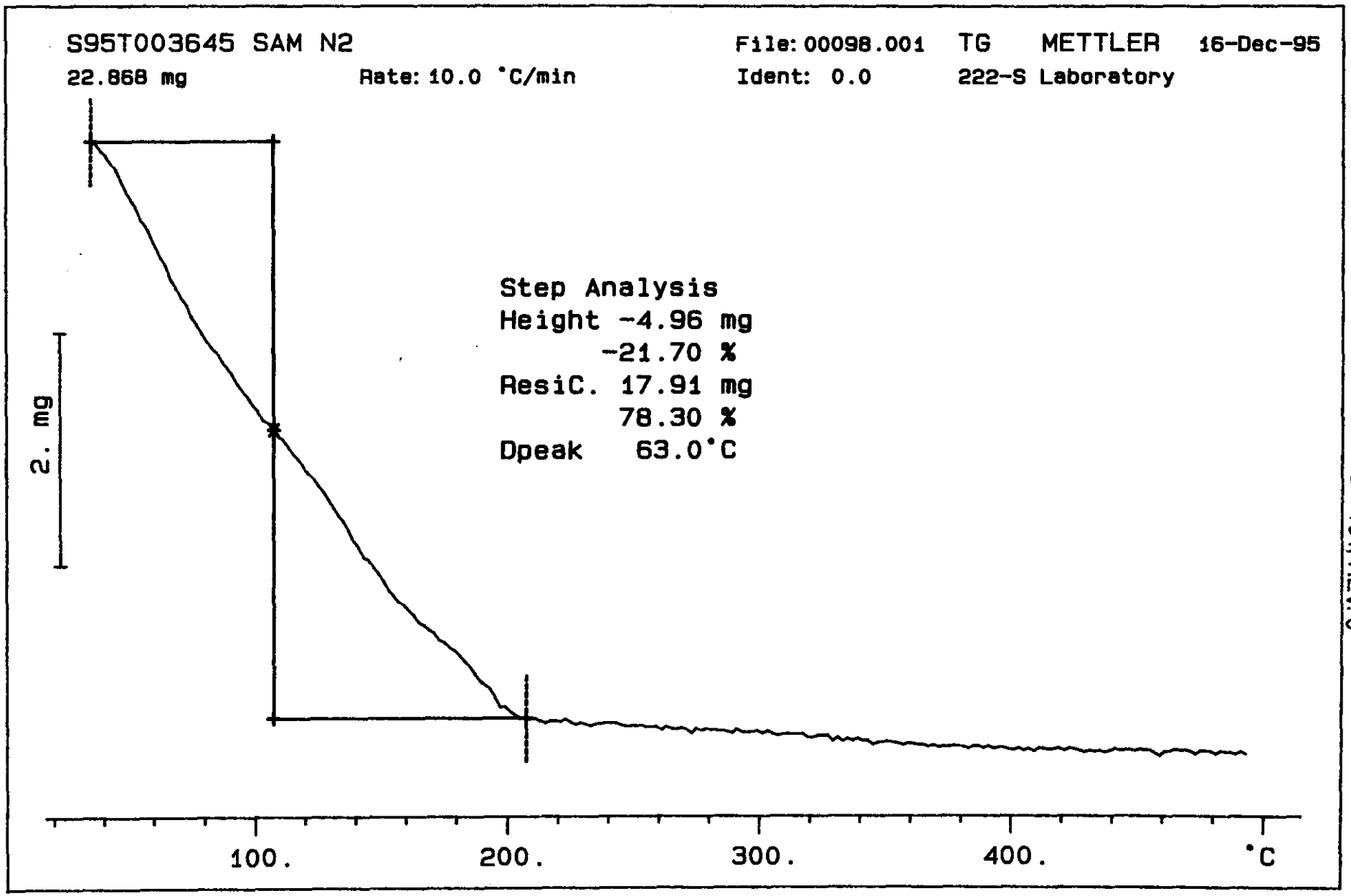
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 159 TO 164

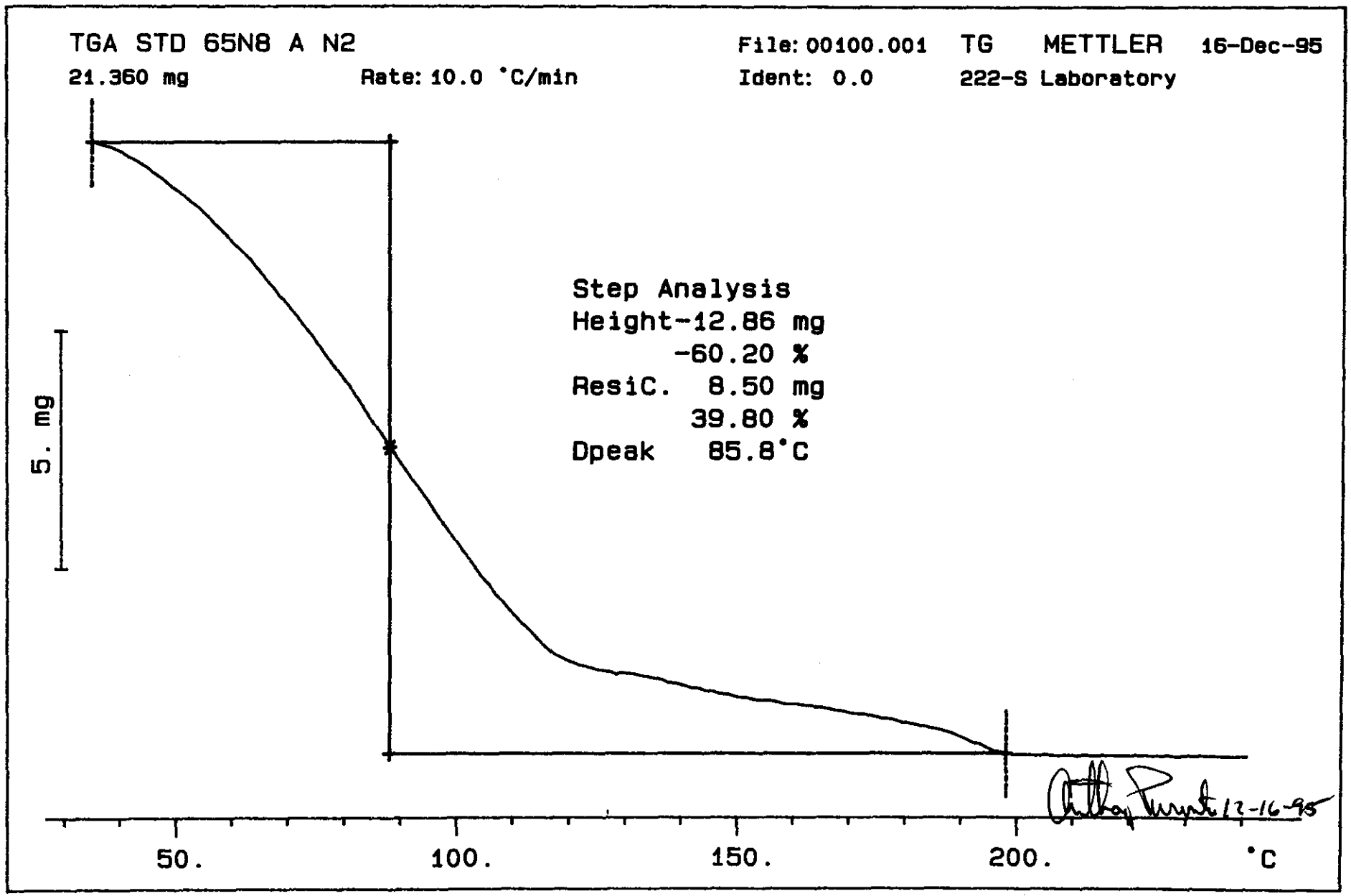


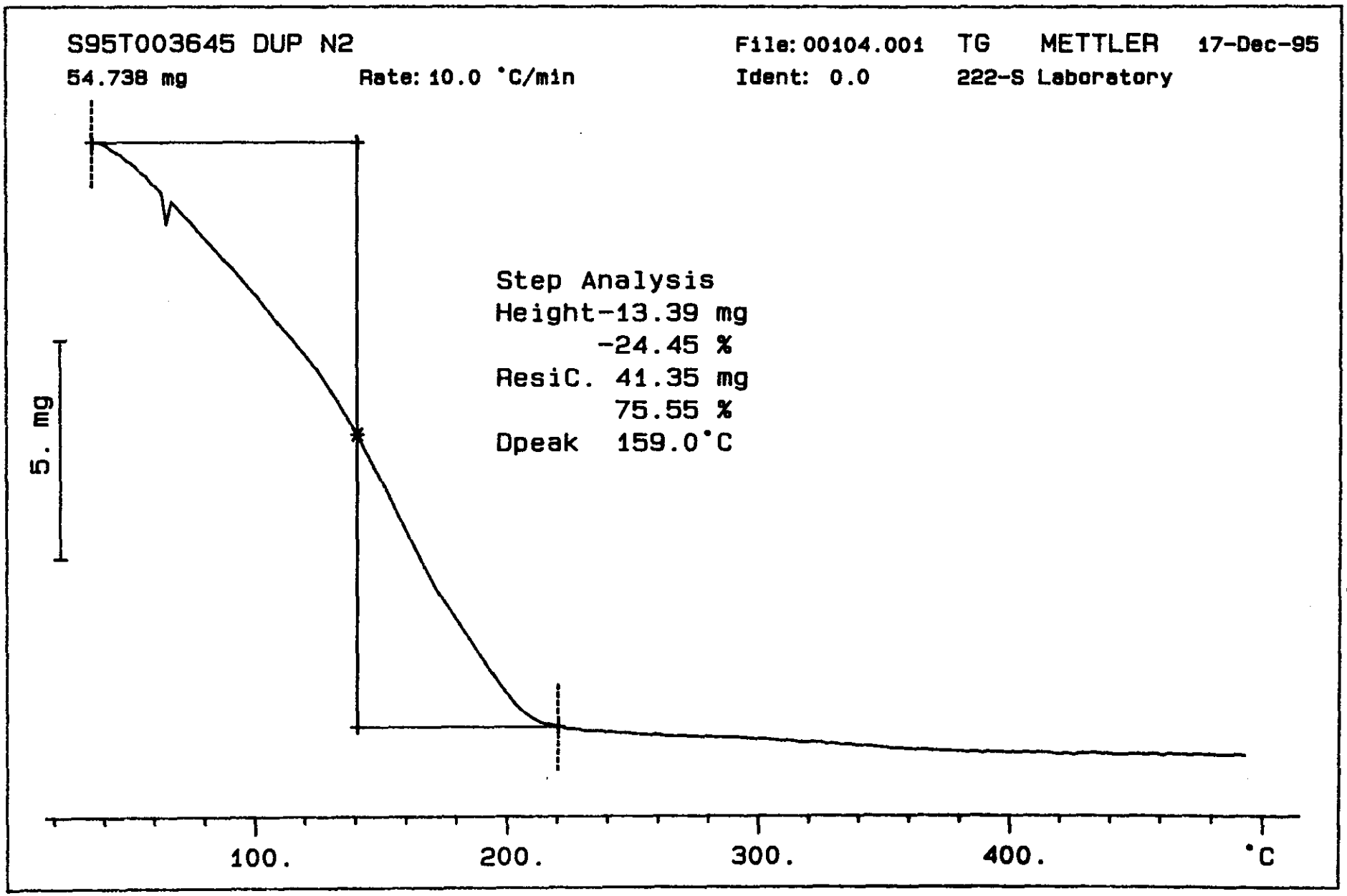
Tiffany Pinto 12-16-95


S95T003642 SAM N2
22.798 mg
Rate: 10.0 °C/min
File: 00094.001
Ident: 0.0
TG METTLER 16-Dec-95
222-S Laboratory
Step Analysis
Height -5.33 mg
-23.36 %
ResiC. 17.47 mg
76.64 %
Dpeak 61.0°C
2. mg
100.
200.
300.
400.
°C


S95T003642 DUP N2
25.021 mg
Rate: 10.0 °C/min
File: 00096.001
TG METTLER 16-Dec-95
Ident: 0.0
222-S Laboratory
5. mg
Step Analysis
Height -8.21 mg
-32.83 %
ResiC. 16.81 mg
67.17 %
Dpeak 75.0°C
100.
200.
300.
400.
°C


S95T003645 SAM N2
22.868 mg
Rate: 10.0 °C/min
File: 00098.001
Ident: 0.0
TG METTLER 16-Dec-95
222-S Laboratory
Step Analysis
Height -4.96 mg
-21.70 %
ResiC. 17.91 mg
78.30 %
Dpeak 63.0°C
2. mg
100.
200.
300.
400.
°C


TGA STD 65N8 A N2
21.360 mg
Rate: 10.0 °C/min
File: 00100.001
TG METTLER
16-Dec-95
Ident: 0.0
222-S Laboratory
Step Analysis
Height-12.86 mg
-60.20 %
ResiC. 8.50 mg
39.80 %
Dpeak 85.8°C
5. mg
50.
100.
150.
200.
°C


S95T003645 DUP N2
54.738 mg
Rate: 10.0 °C/min
File: 00104.001
Ident: 0.0
TG
METTLER
222-S Laboratory
17-Dec-95
Step Analysis
Height -13.39 mg
-24.45 %
ResiC. 41.35 mg
75.55 %
Dpeak 159.0°C
5. mg
100.
200.
300.
400.
°C

LABCORE Data Entry Template for Worklist# 4124

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

Method: LA-560-112 Rev/Mod B-1

Worklist Comment: Please run BY-104 TGAs under N2. bdv

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				TGA-01	SOLID	59.74	60.56	N/A	%
95000180	BY104 ROTARY	2	SAMPLE	S95T003647	0		TGA-01	SOLID	N/A	26.81		%
95000180	BY104 ROTARY	3	DUP	S95T003647	0		TGA-01	SOLID	26.81	24.36	N/A	%

Final page for worklist # 4124

See attached for signatures

Analyst Signature **Date**

Verified by Blandina Valenzuela 1/8/96

Frank Conlin 1/6/96

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# 4124

Analyst: ABP **Instrument:** TGA0 _____ **Book #** 65N81

Method: LA-560-112 Rev/Mod ~~C-1~~ 1/8/96 BDV

Worklist Comment: Please run BY-104 TGAs under N2. bdv

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				TGA-01	SOLID			N/A	%
95000180	BY104 ROTARY	2	SAMPLE	S95T003644	0		TGA-01	SOLID	N/A			%
95000180	BY104 ROTARY	3	DUP	S95T003644	0		TGA-01	SOLID			N/A	%
95000180	BY104 ROTARY	4	SAMPLE	S95T003647	0		TGA-01	SOLID	N/A			%
95000180	BY104 ROTARY	5	DUP	S95T003647	0		TGA-01	SOLID			N/A	%

Final page for worklist # 4124

Anthony Pucciarelli 12-21-95
Analyst Signature **Date**

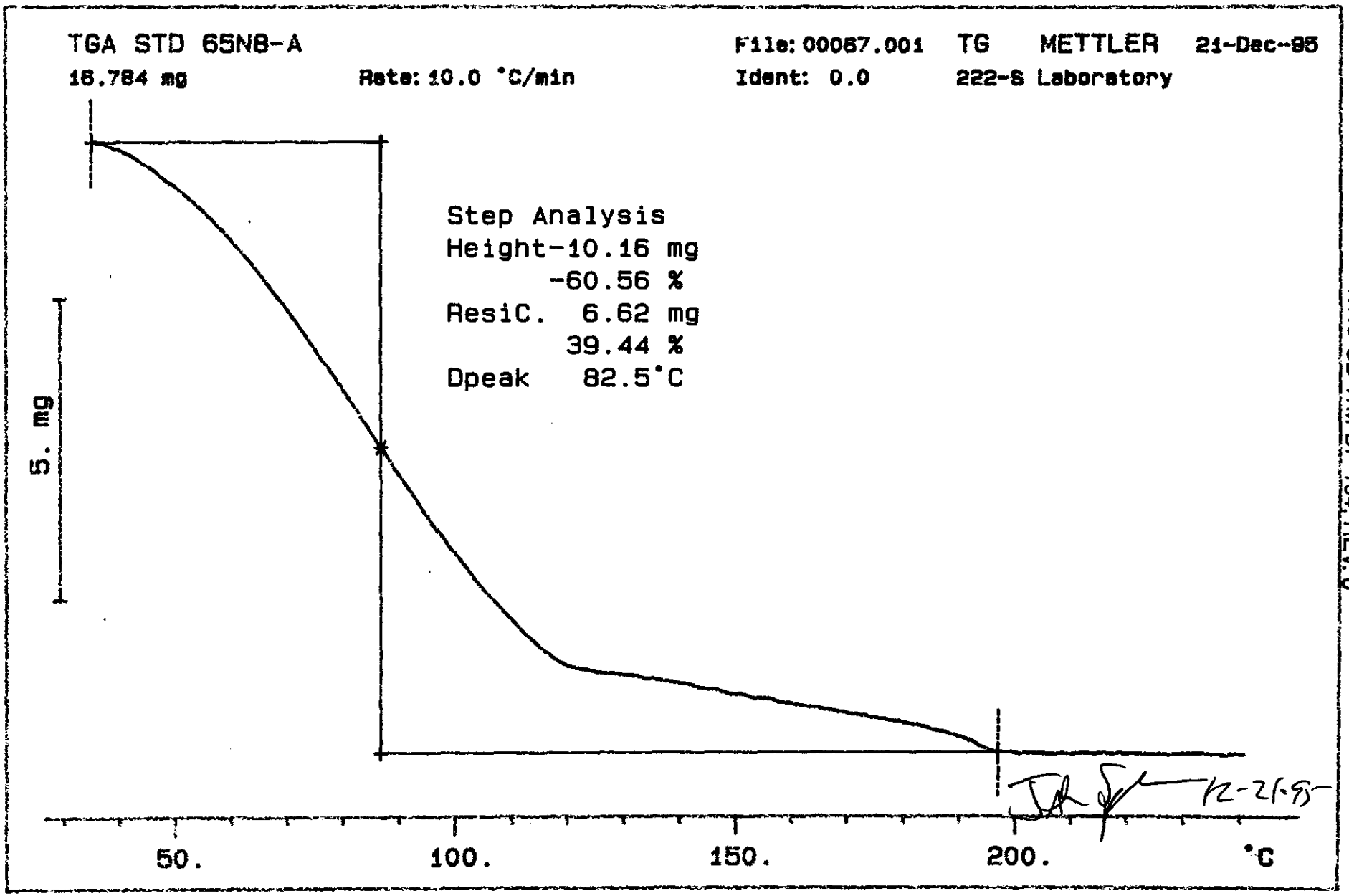
Analyst Signature **Date**

JA Spa 12-21-95

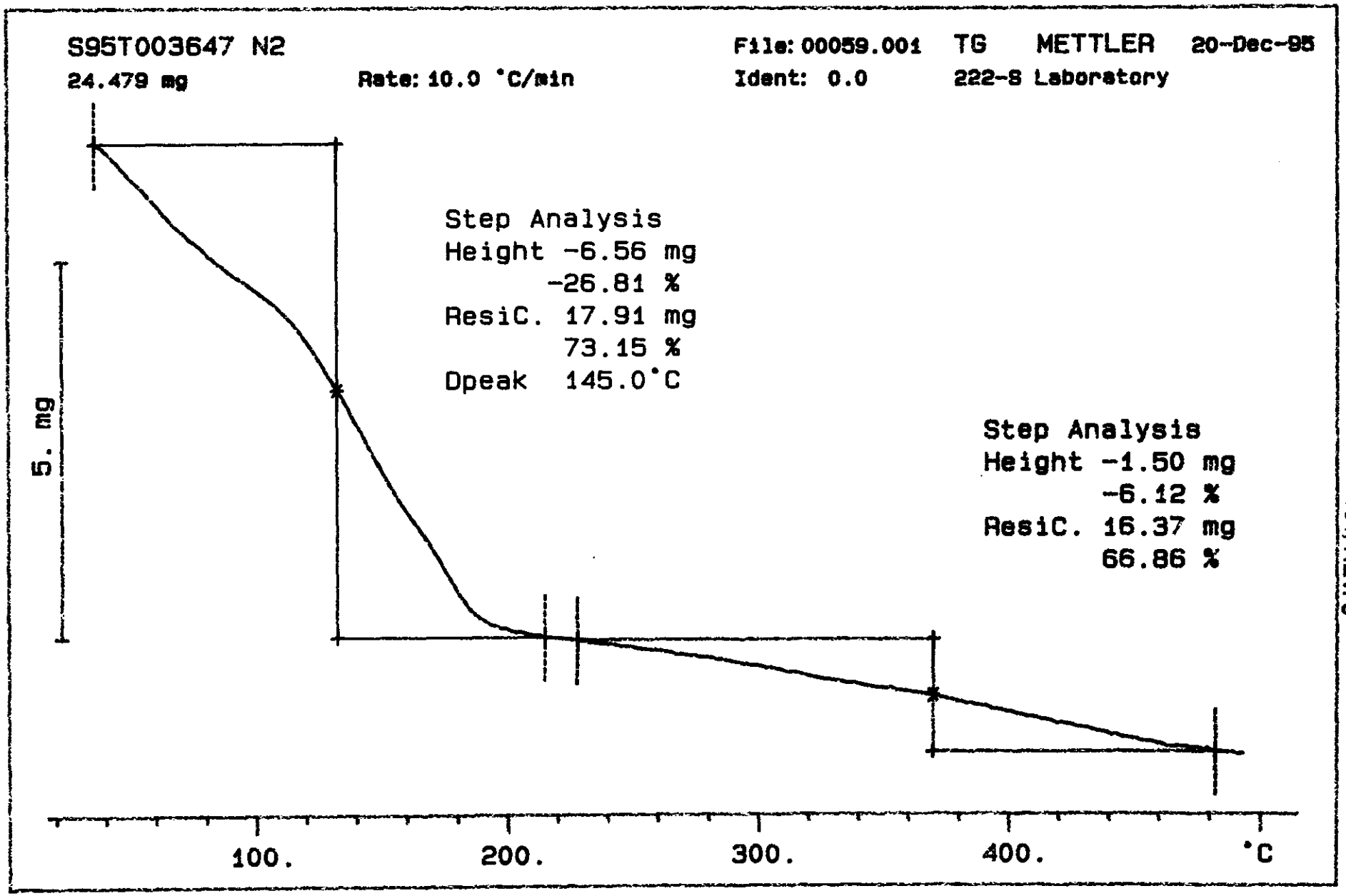
Data Entry Comments:

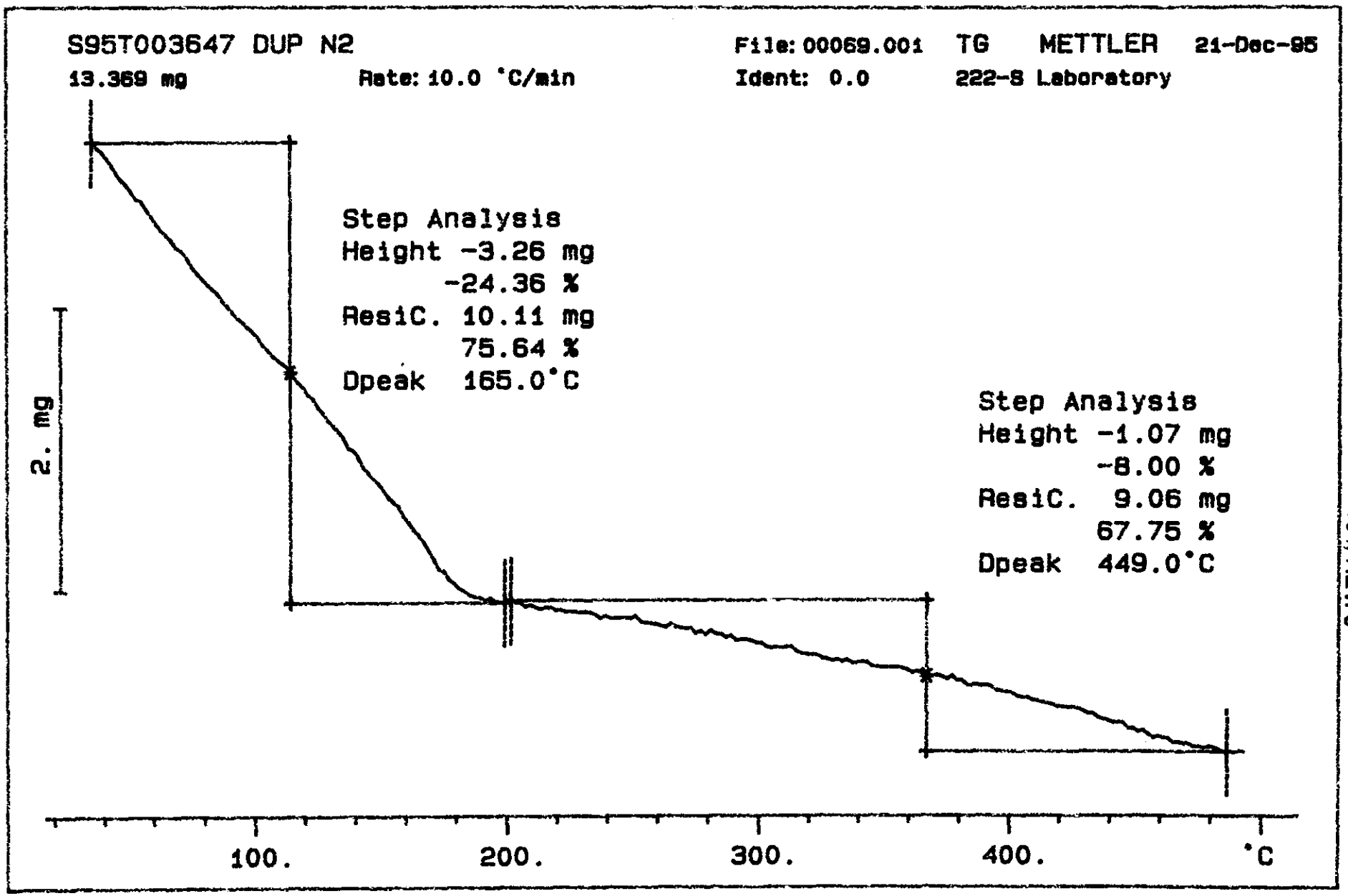
Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 167 TO 169.



12-21-95


S95T003647 N2
24.479 mg
Rate: 10.0 °C/min
File: 00059.001
TG METTLER 20-Dec-95
Ident: 0.0
222-S Laboratory
Step Analysis
Height -6.56 mg
-26.81 %
ResiC. 17.91 mg
73.15 %
Dpeak 145.0°C
Step Analysis
Height -1.50 mg
-6.12 %
ResiC. 16.37 mg
66.86 %
5. mg
100.
200.
300.
400.
°C


S95T003647 DUP N2
13.369 mg
Rate: 10.0 °C/min
File: 00069.001
TG
METTLER
21-Dec-95
Ident: 0.0
222-S Laboratory
Step Analysis
Height -3.26 mg
-24.36 %
ResiC. 10.11 mg
75.64 %
Dpeak 165.0°C
Step Analysis
Height -1.07 mg
-8.00 %
ResiC. 9.06 mg
67.75 %
Dpeak 449.0°C
2. mg
100.
200.
300.
400.
°C

LABCORE Data Entry Template for Worklist# 4125

Analyst: ADP **Instrument:** TGA0 3 **Book #** 65N8-A

Method: LA-514-114 Rev/Mod C-1

Worklist Comment: Please run BY-104 TGAs under N2. bdv

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				TGA-03	SOLID	59.74	60.49	N/A	%
95000180	BY104 ROTARY	2	SAMPLE	S95T003643	0		TGA-03	SOLID	N/A	.894		%
95000180	BY104 ROTARY	3	DUP	S95T003643	0		TGA-03	SOLID	.894	~~8.105~~ 28.005	~~N/A~~ BDV	%
95000180	BY104 ROTARY	4	TRIPL	S95T003643	0		TGA-03	SOLID	.894	.963	N/A	%
		5	STD				TGA-03	SOLID	59.74	60.60	N/A	%
95000180	BY104 ROTARY	6	SAMPLE	S95T003646	0		TGA-03	SOLID	N/A	.752		%
95000180	BY104 ROTARY	7	DUP	S95T003646	0		TGA-03	SOLID	.752	.997	N/A	%

Final page for worklist # 4125

See attached for signatures

Analyst Signature **Date**

Verified 12/21/95 JM Fuge

[signature] 12-20-95

Analyst Signature **Date**

Data Entry Comments:

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

LABCORE Data Entry Template for Worklist# 4125

Analyst: ALP **Instrument:** TGA0 _____ **Book #** 65N8-A

Method: LA-560-112 Rev/Mod C-1

Worklist Comment: Please run BY-104 TGAs under N2. bdv

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				TGA-01	SOLID			N/A	%
95000180	BY104 ROTARY	2	SAMPLE	S95T003643	0		TGA-01	SOLID	N/A			%
95000180	BY104 ROTARY	3	DUP	S95T003643	0		TGA-01	SOLID			N/A	%
95000180	BY104 ROTARY	4	SAMPLE	S95T003646	0		TGA-01	SOLID	N/A			%
95000180	BY104 ROTARY	5	DUP	S95T003646	0		TGA-01	SOLID			N/A	%

Final page for worklist # 4125

Anthony Purnto 12-17-95
Analyst Signature **Date**

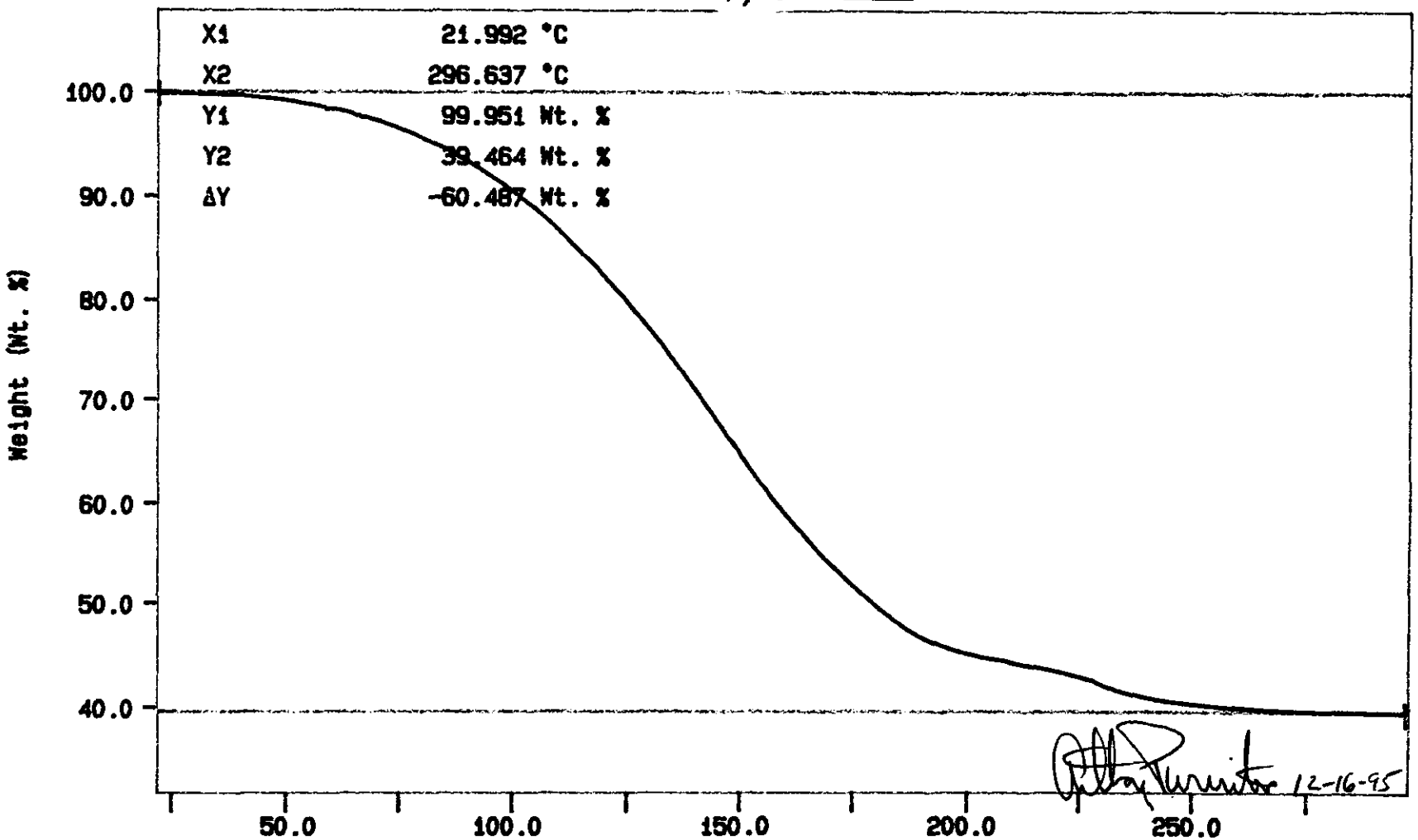
Susie M. Fulton 12-17-95
Analyst Signature **Date**

Data Entry Comments:

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

Curve 1: TGA
File info: TER121602 Sat Dec 16 20:23:27 1995
Sample Weight: 28.732 mg
65N8-A Terlig

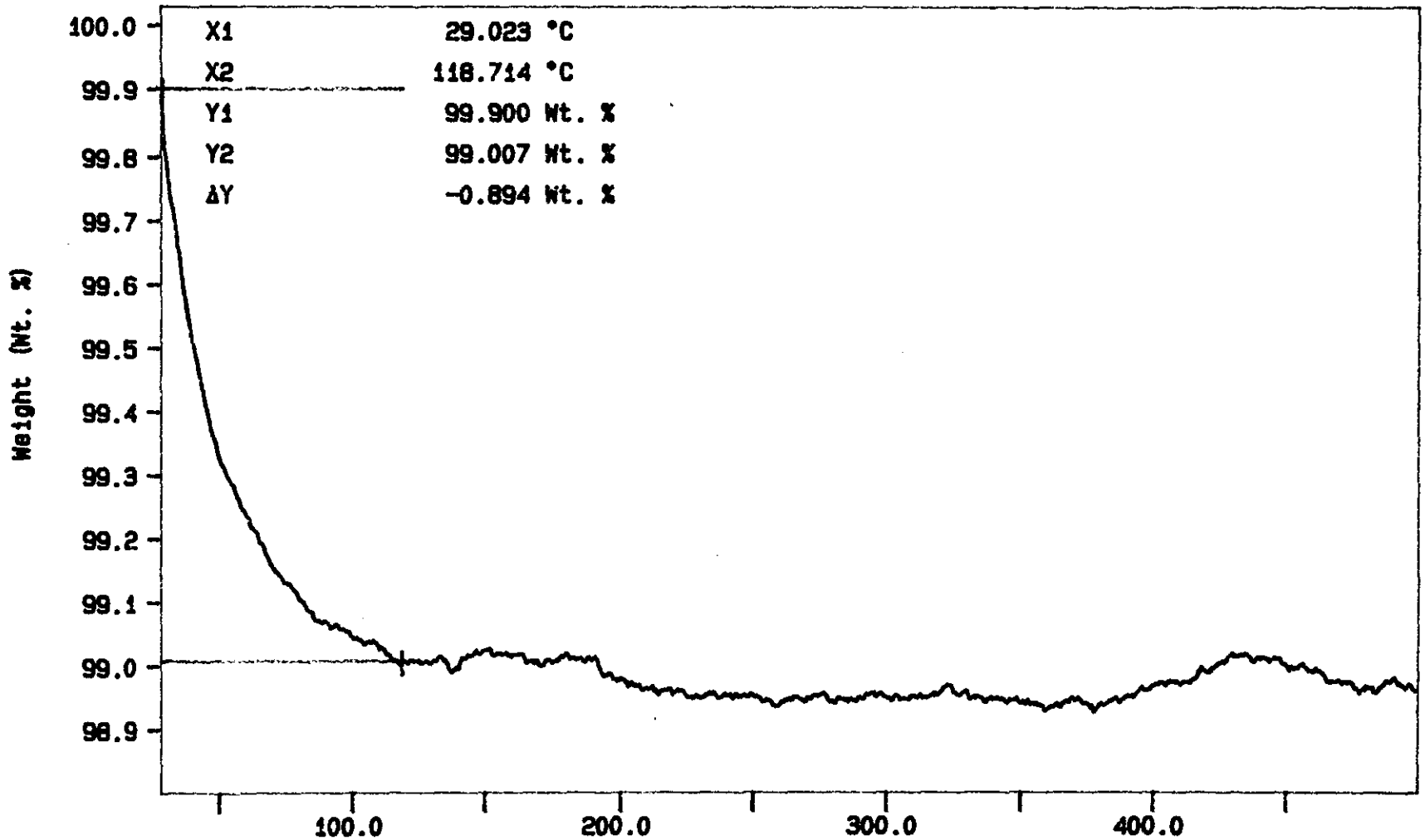
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 172 TO 178



N2 10C/MIN
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 300.0 C

AD PURINTON
PERKIN-ELMER
7 Series Thermal Analysis System
Sat Dec 16 20:37:08 1995

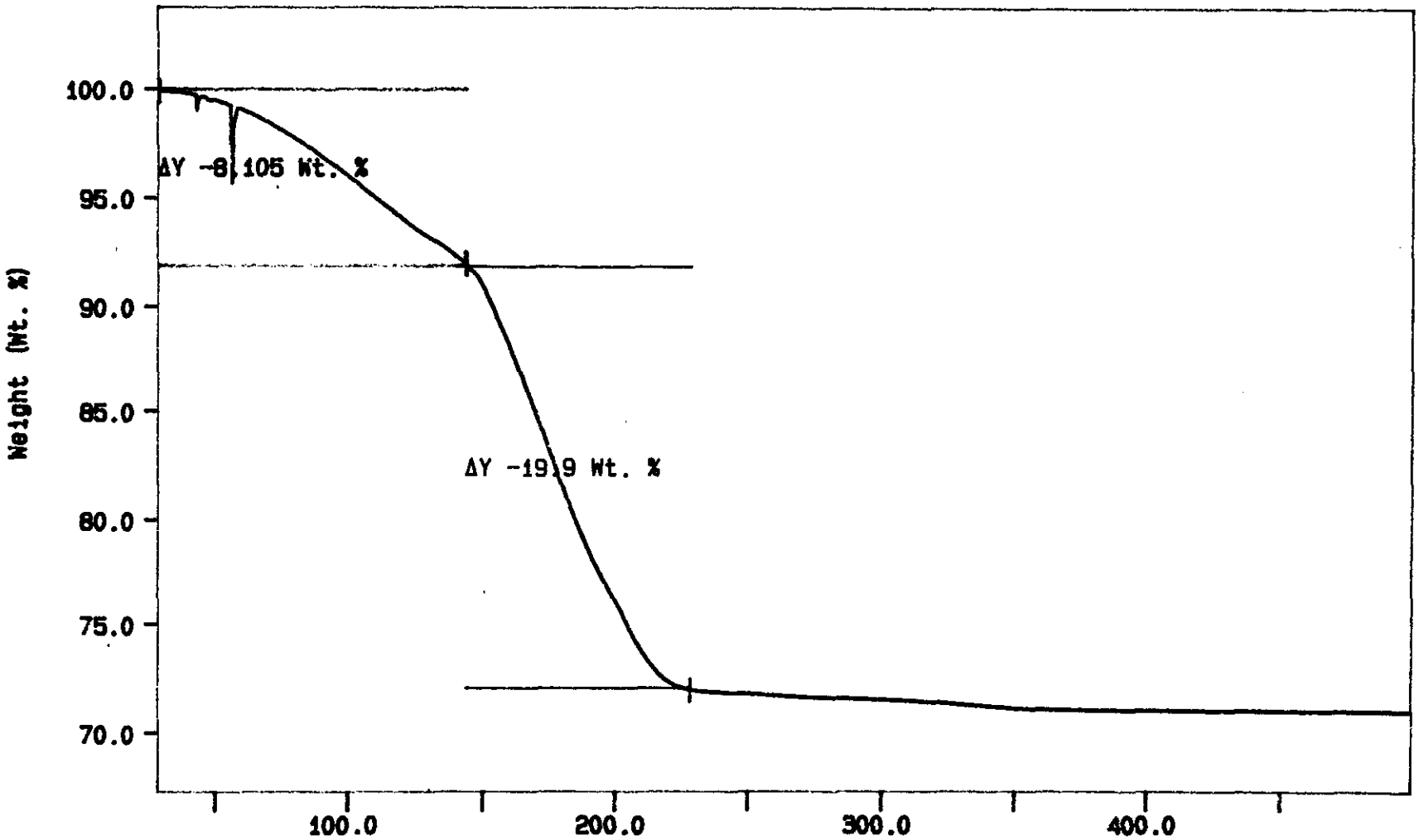
Curve 1: TGA
File info: SAM121604 Sun Dec 17 02:01:00 1995
Sample Weight: 19.129 mg
S95T003643 SAM N2



10C/MIN N2
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 500.0 C

AD PURINTON
PERKIN-ELMER
7 Series Thermal Analysis System
Sun Dec 17 02:20:28 1995

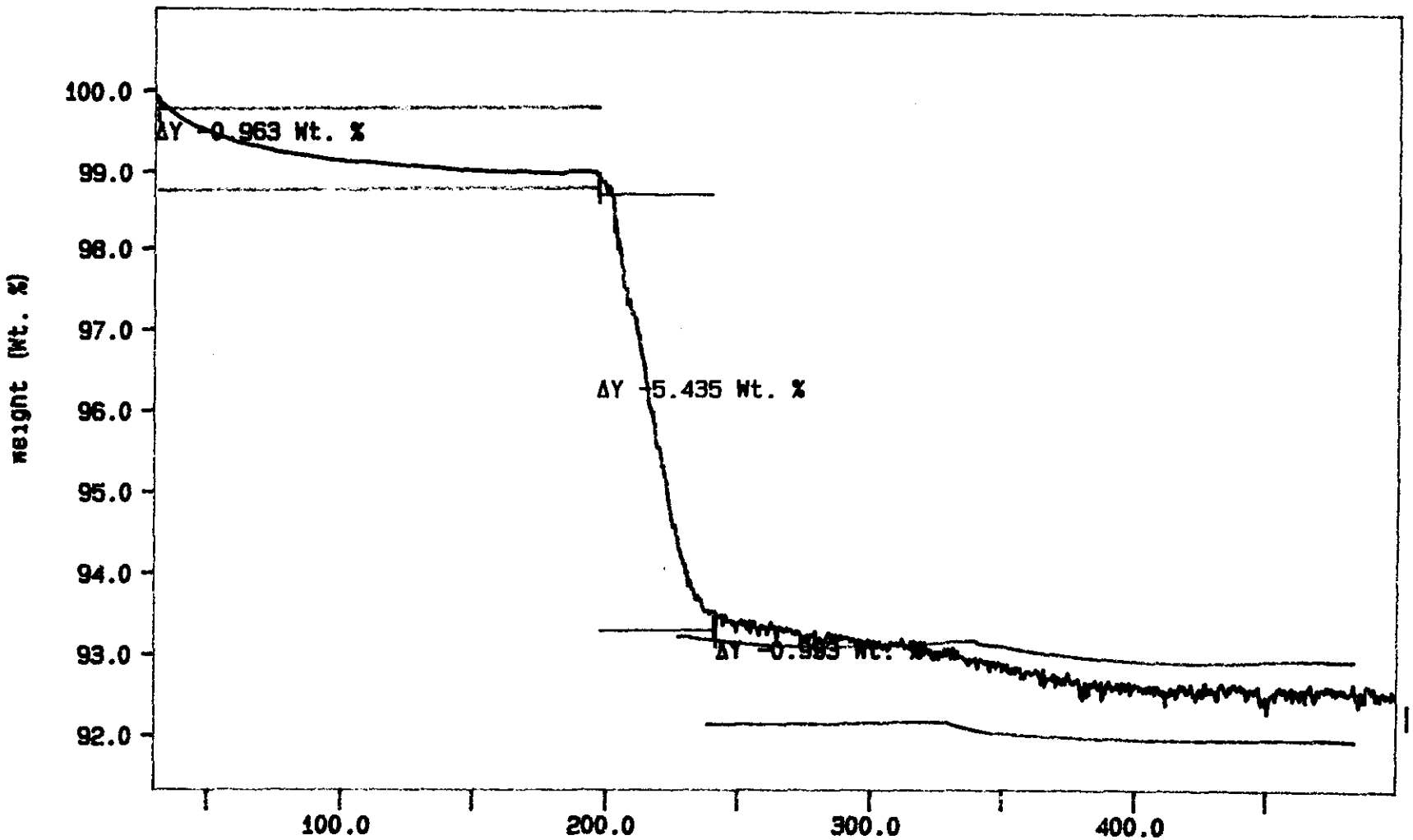
Curve 1: TGA
File info: SAM121605 Sun Dec 17 03:26:40 1995
Sample Weight: 25.625 mg
S95T003643 DUP N2



10C/MIN N2
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 600.0 C

AD PURINTON
PERKIN-ELMER
7 Series Thermal Analysis System
Sun Dec 17 03:39:42 1995

Curve 1: TGA
File info: SAM121606 Sun Dec 17 04:35:54 1995
Sample Weight: 28.675 mg
S95T003643 TRP N2

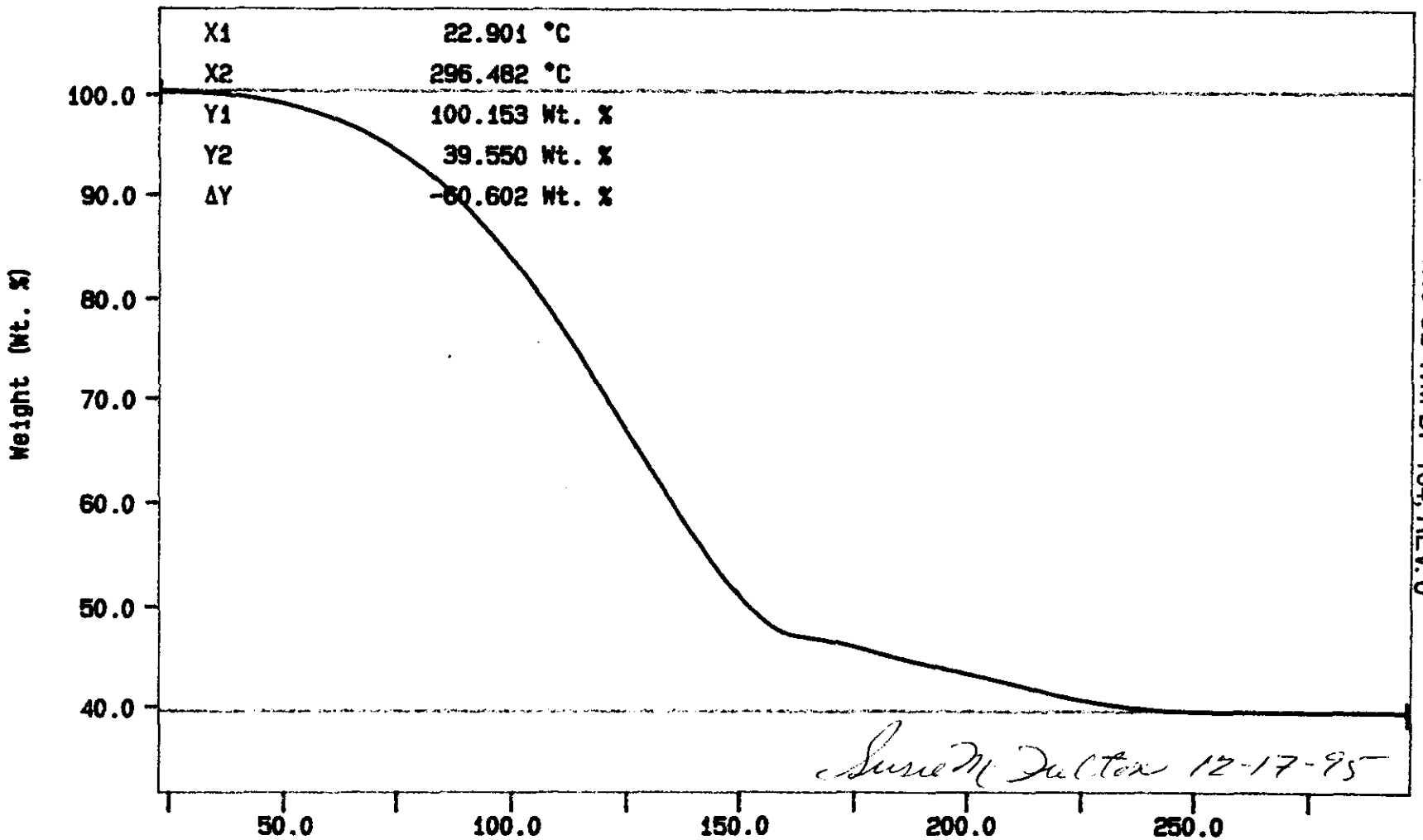


10C/MIN N2

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

AD PURINTON
PERKIN-ELMER
7 Series Thermal Analysis System
Sun Dec 17 04:51:37 1995

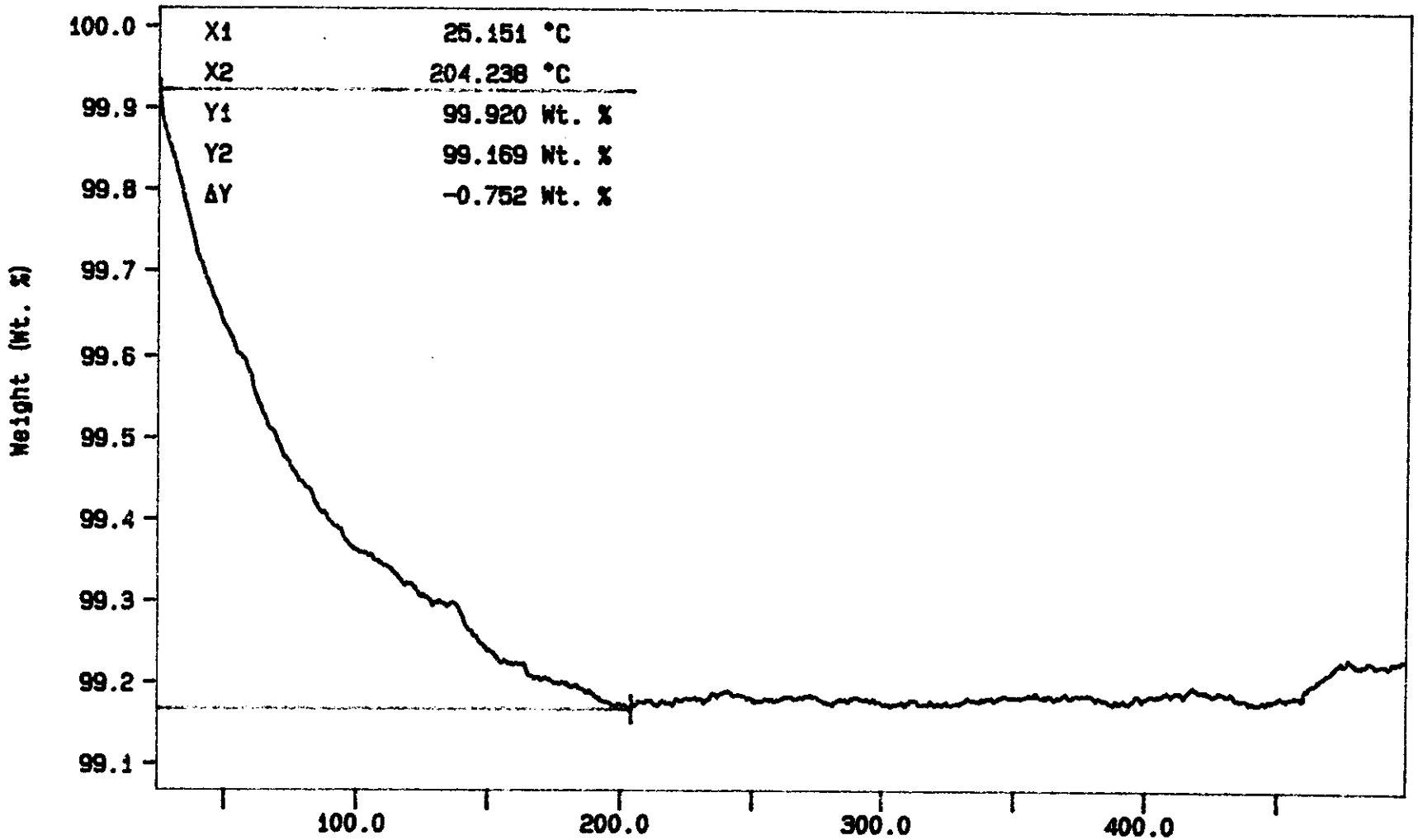
Curve 1: TGA
File info: TER121701 Sun Dec 17 07:11:06 1995
Sample Weight: 13.623 mg
65N8-A Terliq



N2 10C/MIN
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 300.0 C

SM FULTON
PERKIN-ELMER
7 Series Thermal Analysis System
Sun Dec 17 07:16:50 1995

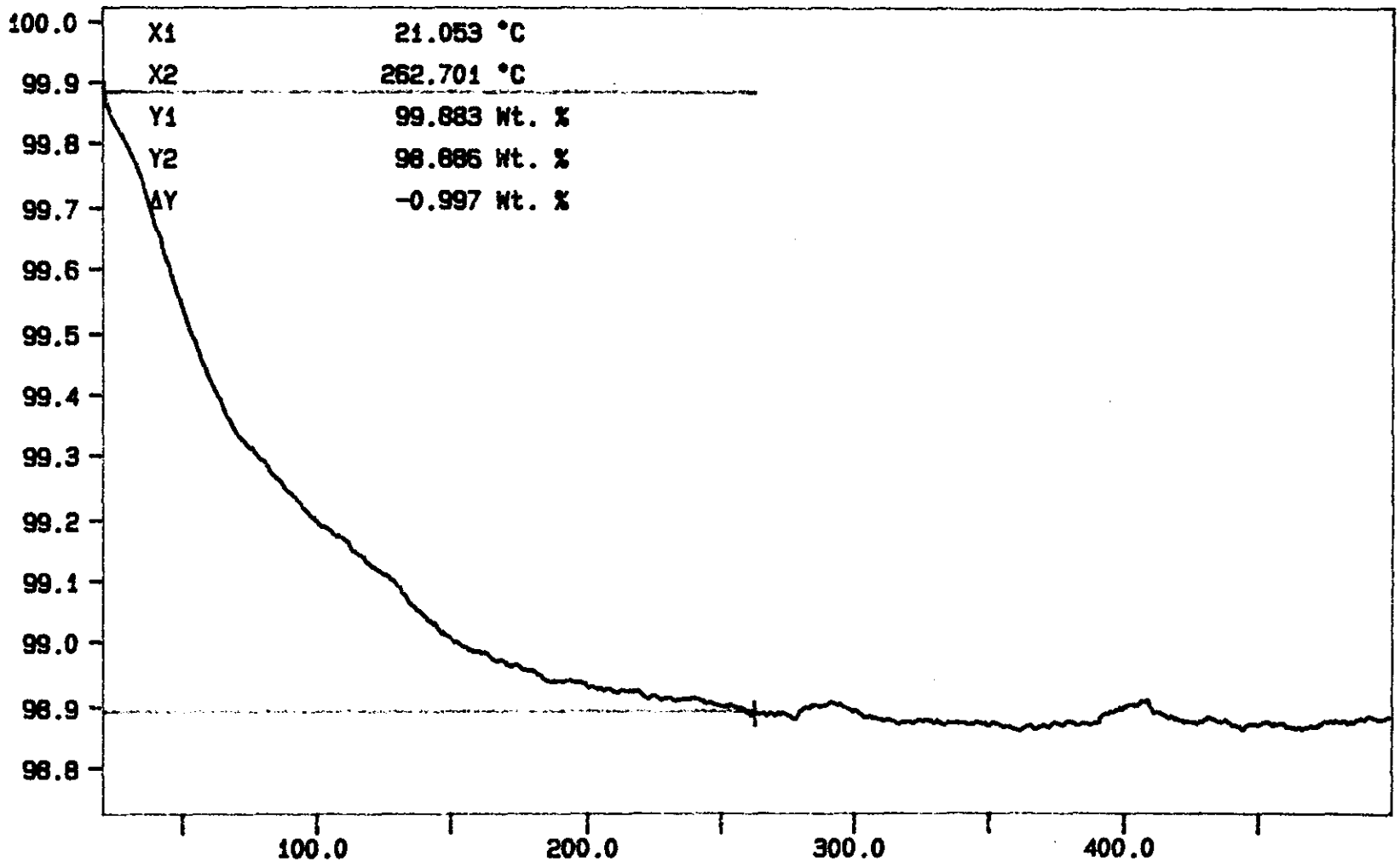
Curve 1: TGA
File info: SAM121701 Sun Dec 17 10:25:59 1995
Sample Weight: 30.713 mg
S95T003646



10C/MIN N2
TEMP1: 25.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 600.0 C

SM FULTON
PERKIN-ELMER
7 Series Thermal Analysis System
Sun Dec 17 10:33:48 1995

Curve 1: TGA
File info: SAM121702 Sun Dec 17 12:03:51 1995
Sample Weight: 34.405 mg
S95T003646 DUP



10C/MIN N2
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 500.0 C

SM FULTON
PERKIN-ELMER
7 Series Thermal Analysis System
Sun Dec 17 13:19:16 1995

LABCORE Data Entry Template for Worklist# 4126

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

Method: LA-560-112 Rev/Mod B-1

Worklist Comment: Please run BY-104 TGAs under N2. bdv

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				TGA-01	SOLID	59.74	59.60	N/A	%
95000180	BY104 ROTARY	2	SAMPLE	S95T003638	0		TGA-01	SOLID	N/A	20.34		%
95000180	BY104 ROTARY	3	DUP	S95T003638	0		TGA-01	SOLID	20.34	21.08	N/A	%
95000180	BY104 ROTARY	4	SAMPLE	S95T003640	0		TGA-01	SOLID	N/A	28.21		%
95000180	BY104 ROTARY	5	DUP	S95T003640	0		TGA-01	SOLID	28.21	26.65	N/A	%

Final page for worklist # 4126

Susie M. Fulton 12-17-95
Analyst Signature **Date**

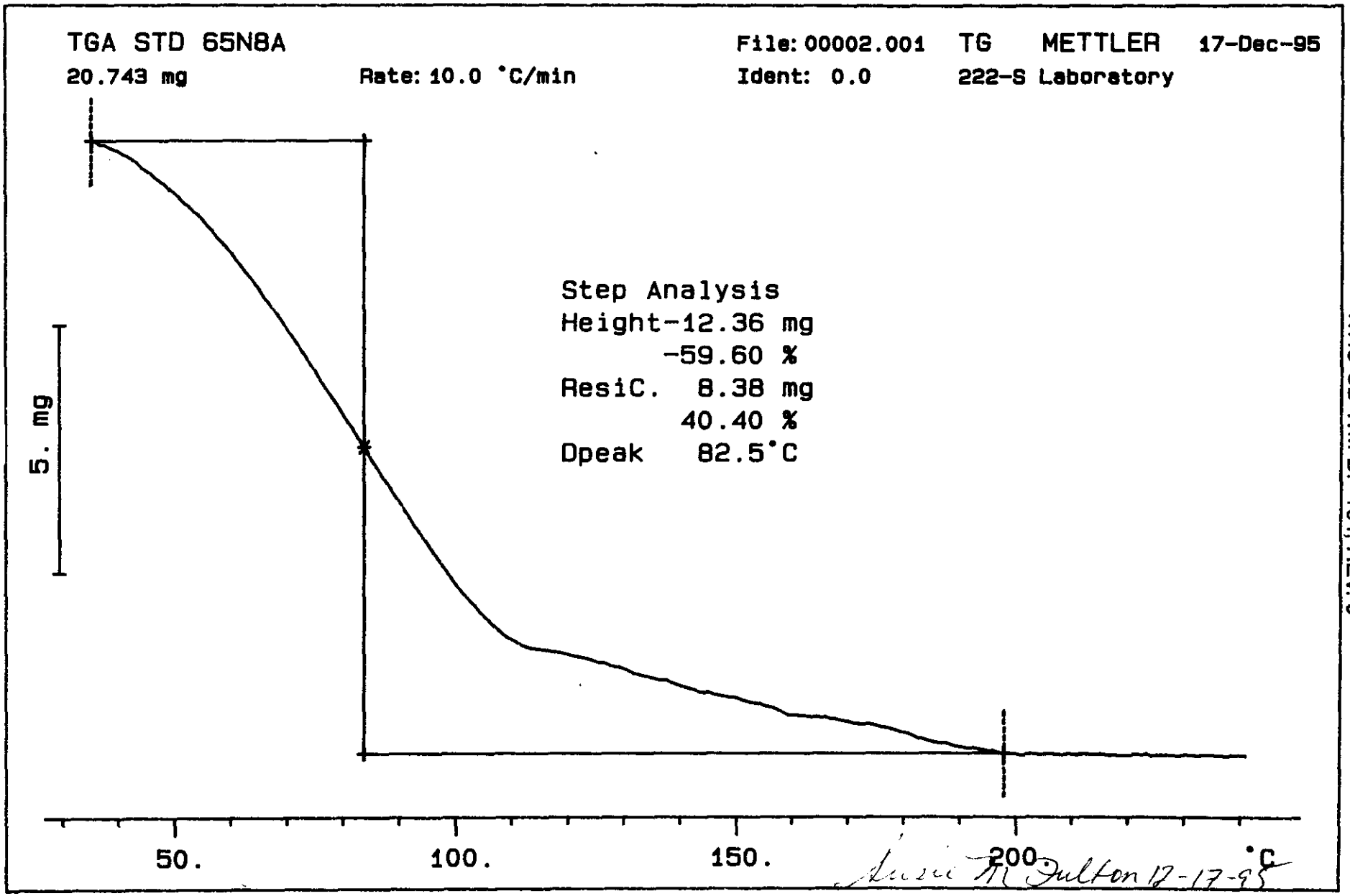
R Jones 12-19-95
Analyst Signature **Date**

Verified 12/21/95 JM Fuge

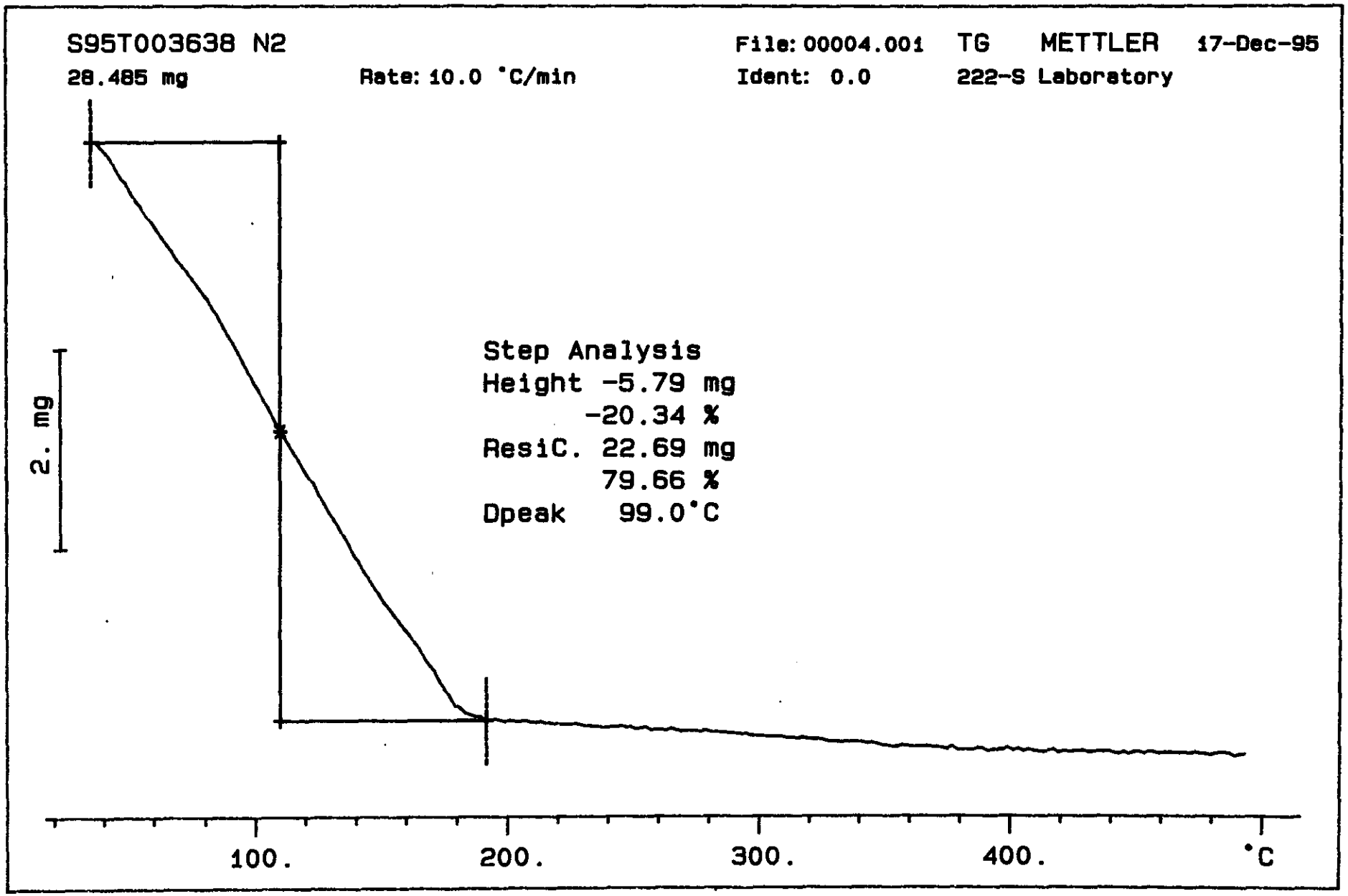
Data Entry Comments:

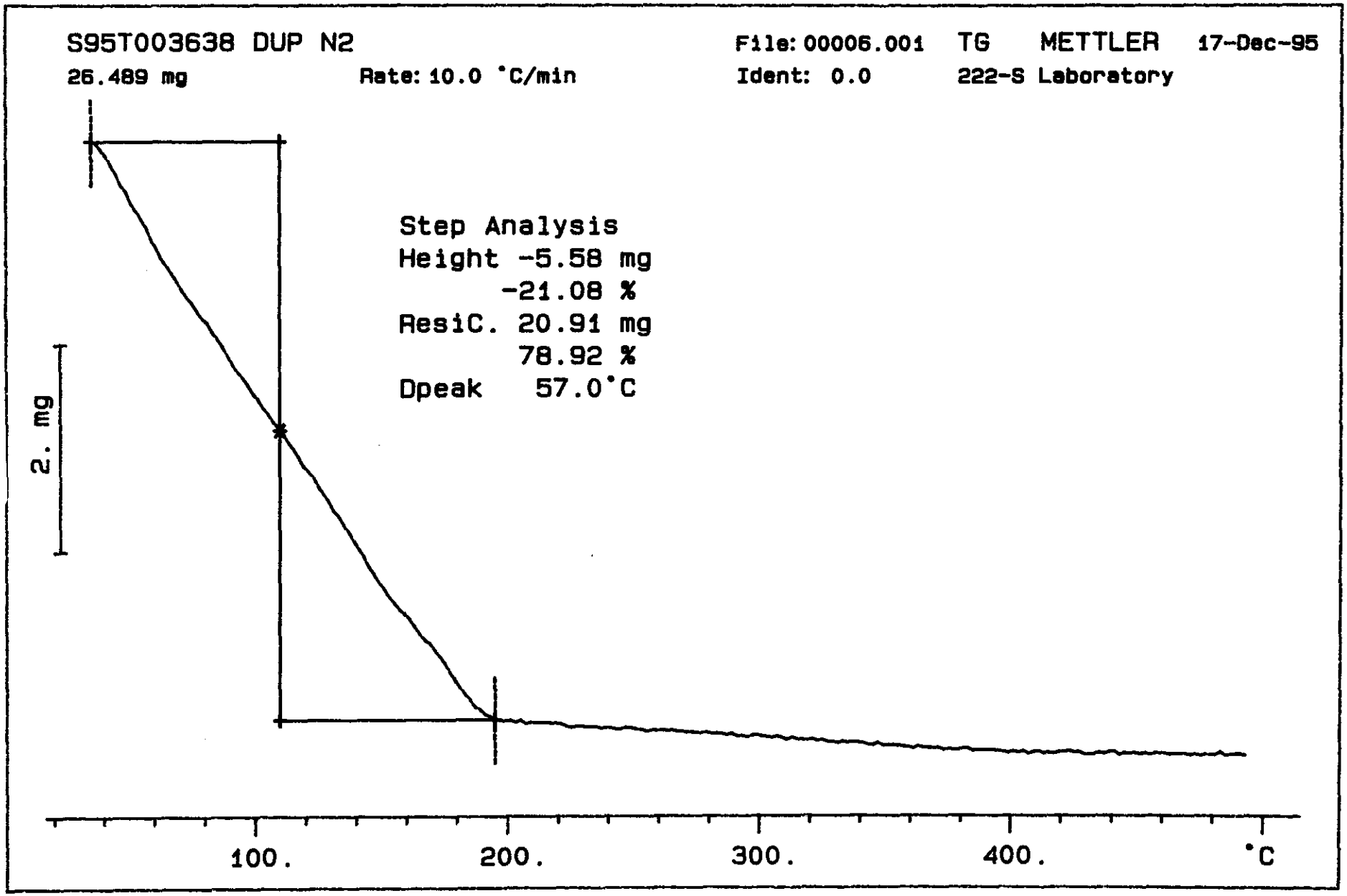
Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

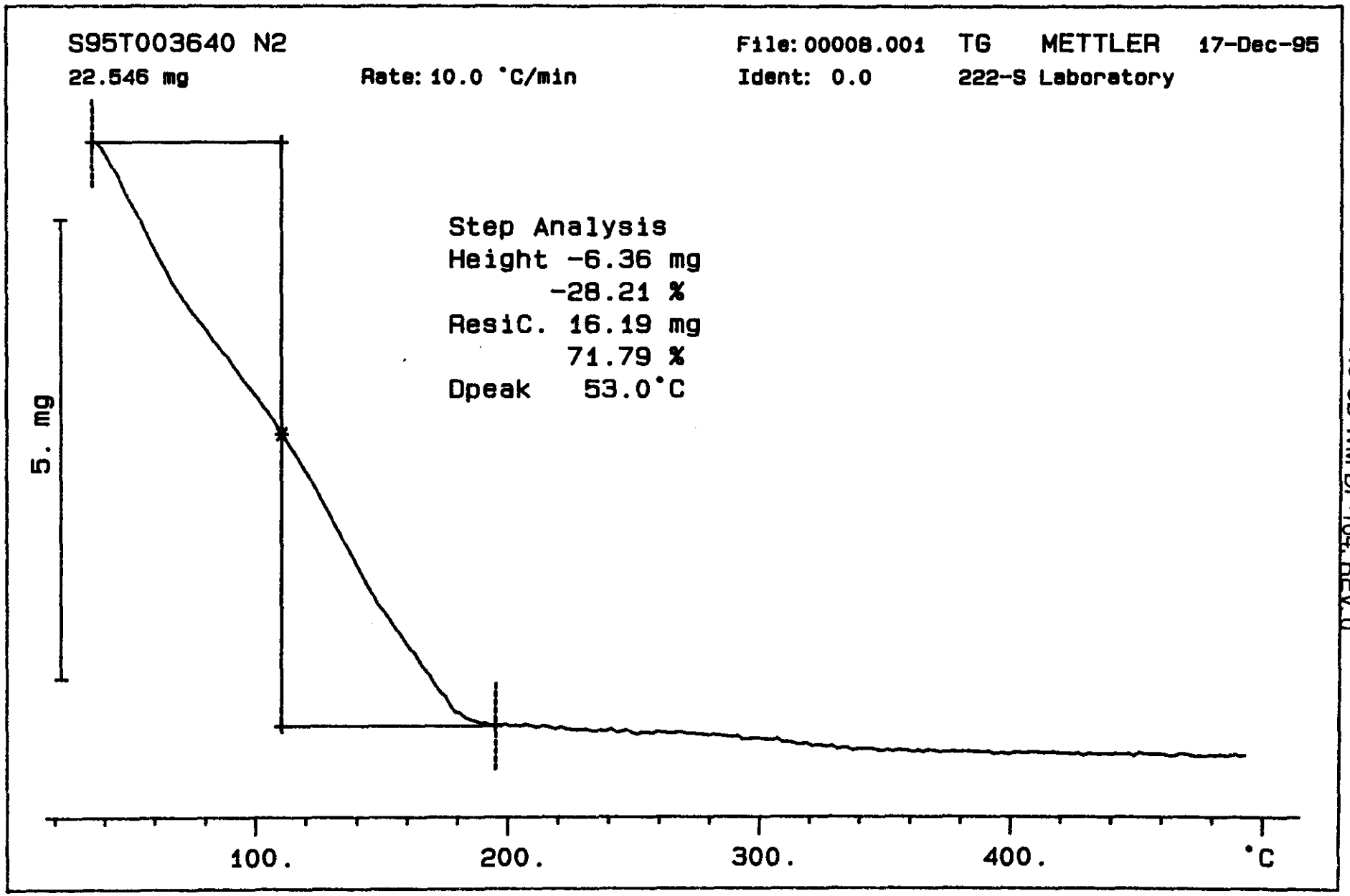
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 180 TO 185

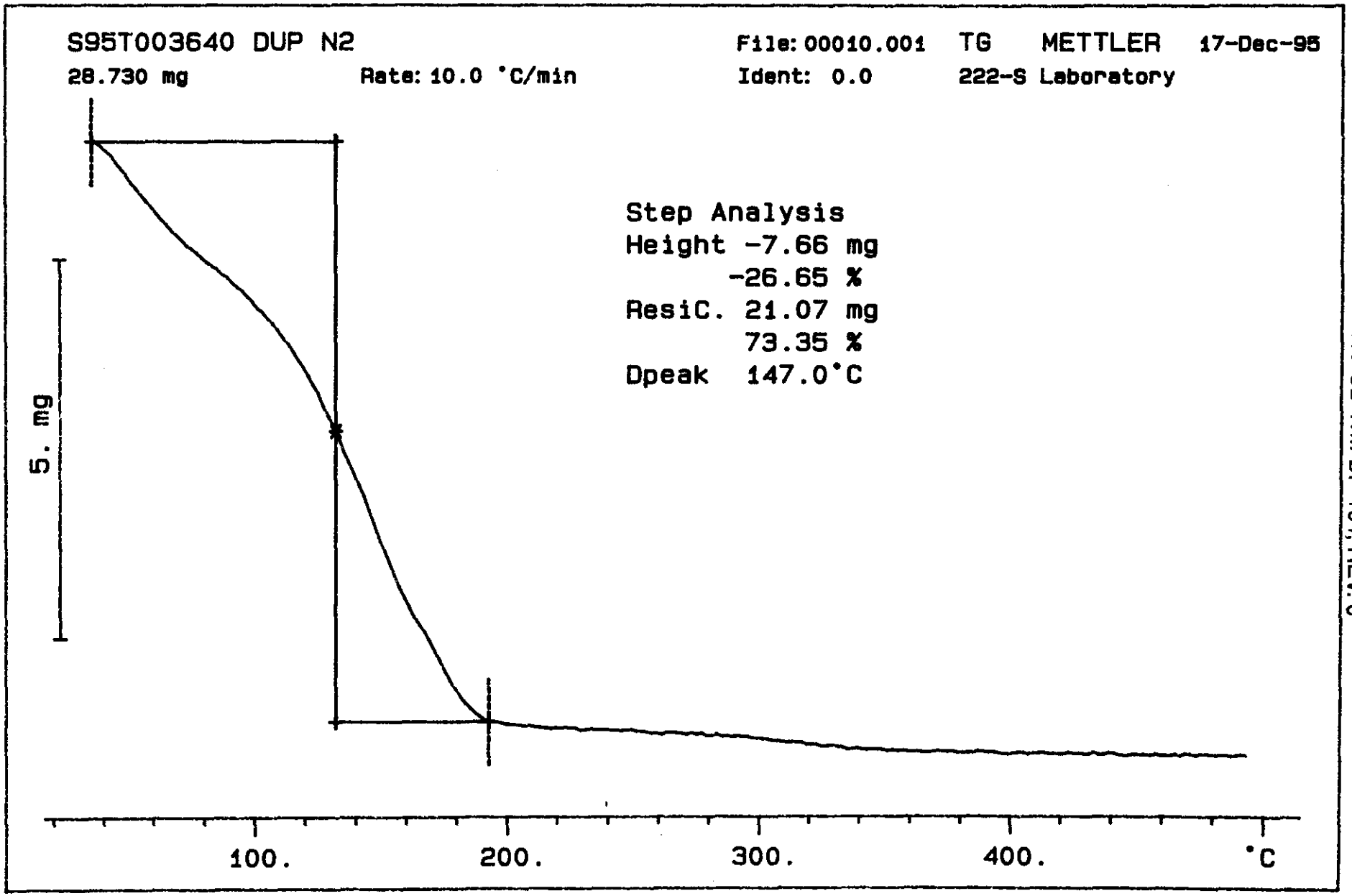


Susie M Fulton 12-17-95


S95T003638 N2
28.485 mg
Rate: 10.0 °C/min
File: 00004.001
TG
METTLER
17-Dec-95
Ident: 0.0
222-S Laboratory
Step Analysis
Height -5.79 mg
-20.34 %
ResiC. 22.69 mg
79.66 %
Dpeak 99.0°C
2. mg
100.
200.
300.
400.
°C


S95T003638 DUP N2
26.489 mg
Rate: 10.0 °C/min
File: 00006.001
TG
METTLER
17-Dec-95
Ident: 0.0
222-S Laboratory
Step Analysis
Height -5.58 mg
-21.08 %
ResiC. 20.91 mg
78.92 %
Dpeak 57.0°C
2. mg
100.
200.
300.
400.
°C


S95T003640 N2
22.546 mg
Rate: 10.0 °C/min
File: 00008.001
TG METTLER 17-Dec-95
Ident: 0.0
222-S Laboratory
Step Analysis
Height -6.36 mg
-28.21 %
ResiC. 16.19 mg
71.79 %
Dpeak 53.0°C
6w °C
100.
200.
300.
400.
°C


S95T003640 DUP N2
28.730 mg
Rate: 10.0 °C/min
File: 00010.001
TG
METTLER
17-Dec-95
Ident: 0.0
222-S Laboratory
Step Analysis
Height -7.66 mg
-26.65 %
ResiC. 21.07 mg
73.35 %
Dpeak 147.0°C
5. mg
100.
200.
300.
400.
°C

LABCORE Data Entry Template for Worklist# 4127

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

Method: LA-560-112 Rev/Mod B-1

Worklist Comment: Please run BY-104 TGAs under N2. bdv

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				TGA-01	SOLID	59.74	59.76	N/A	%
95000180	BY104 ROTARY	2	SAMPLE	S95T003529	0		TGA-01	SOLID	N/A	16.52		%
95000180	BY104 ROTARY	3	DUP	S95T003529	0		TGA-01	SOLID	16.52	12.96	N/A	%
95000180	BY104 ROTARY	4	SAMPLE	S95T003648	0		TGA-01	SOLID	N/A	35.26		%
95000180	BY104 ROTARY	5	DUP	S95T003648	0		TGA-01	SOLID	35.26	33.59	N/A	%

Final page for worklist # 4127

Analyst Signature Date

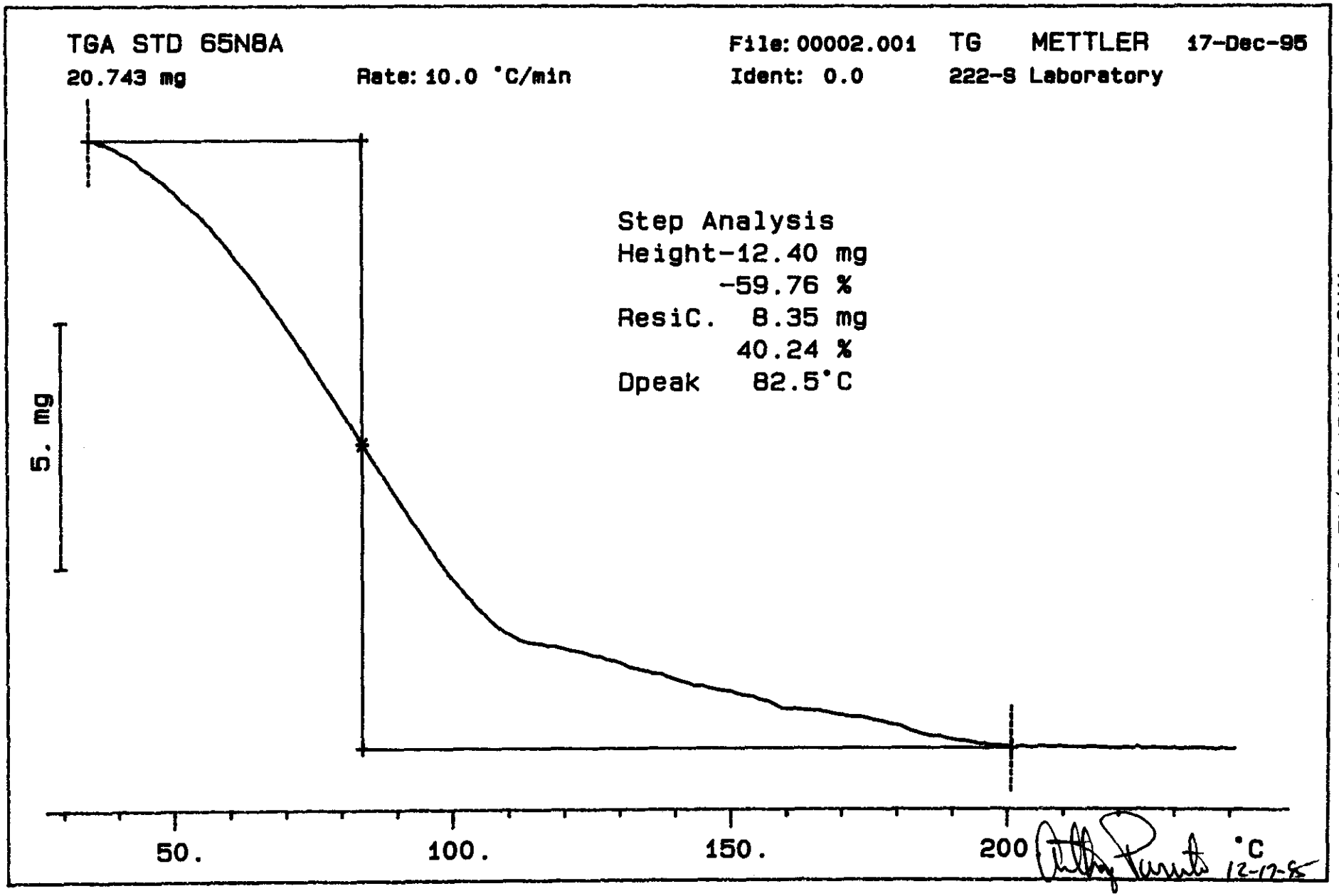
Analyst Signature Date 12-19-95

Verified 12/21/95 J. M Fuge

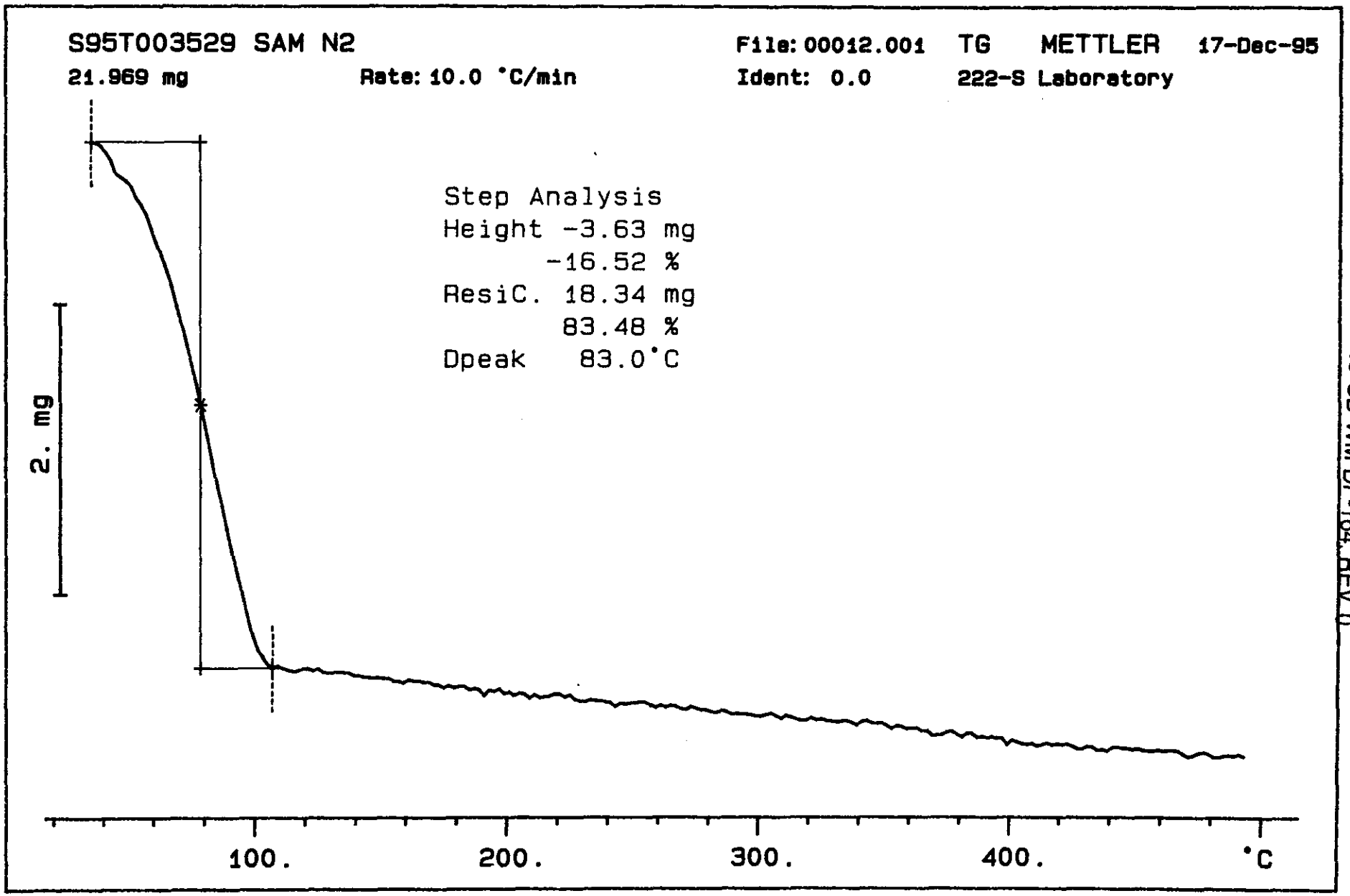
Data Entry Comments: S95T003648 produced another weight loss step of 3.60% at approximately 340°C. For the results the chemist summed the first two weight loss steps.

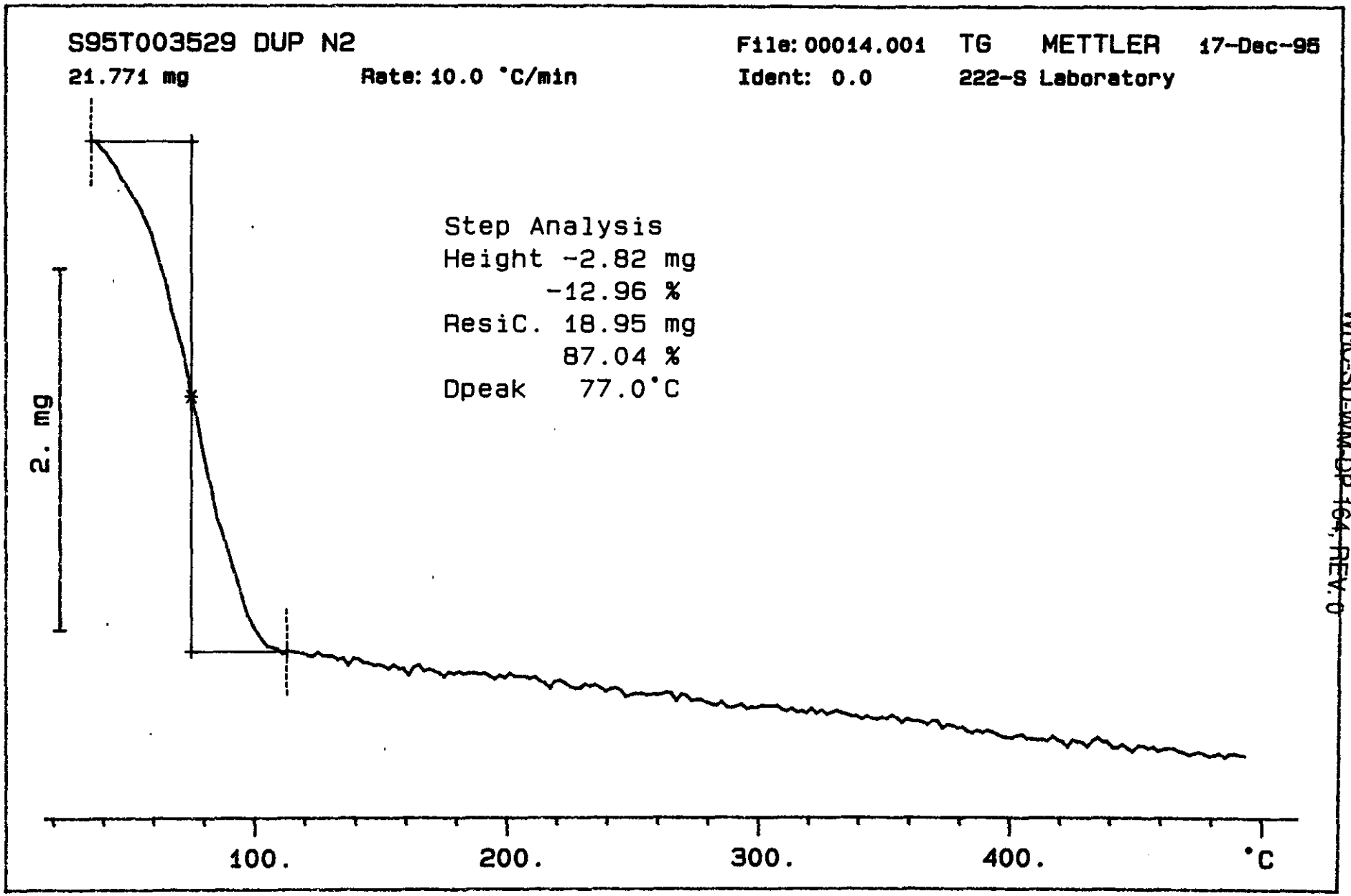
Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

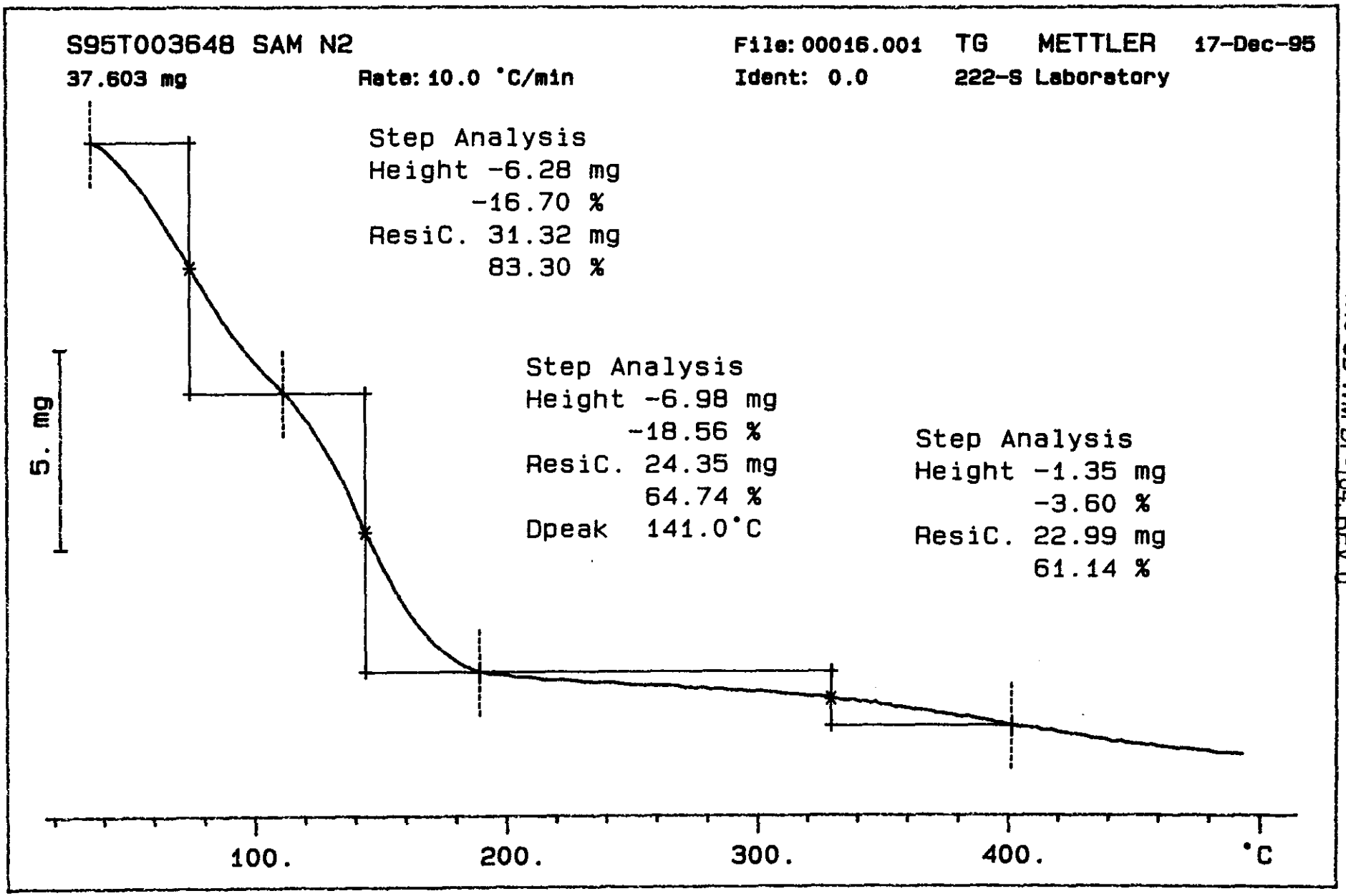
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 186 TO 190

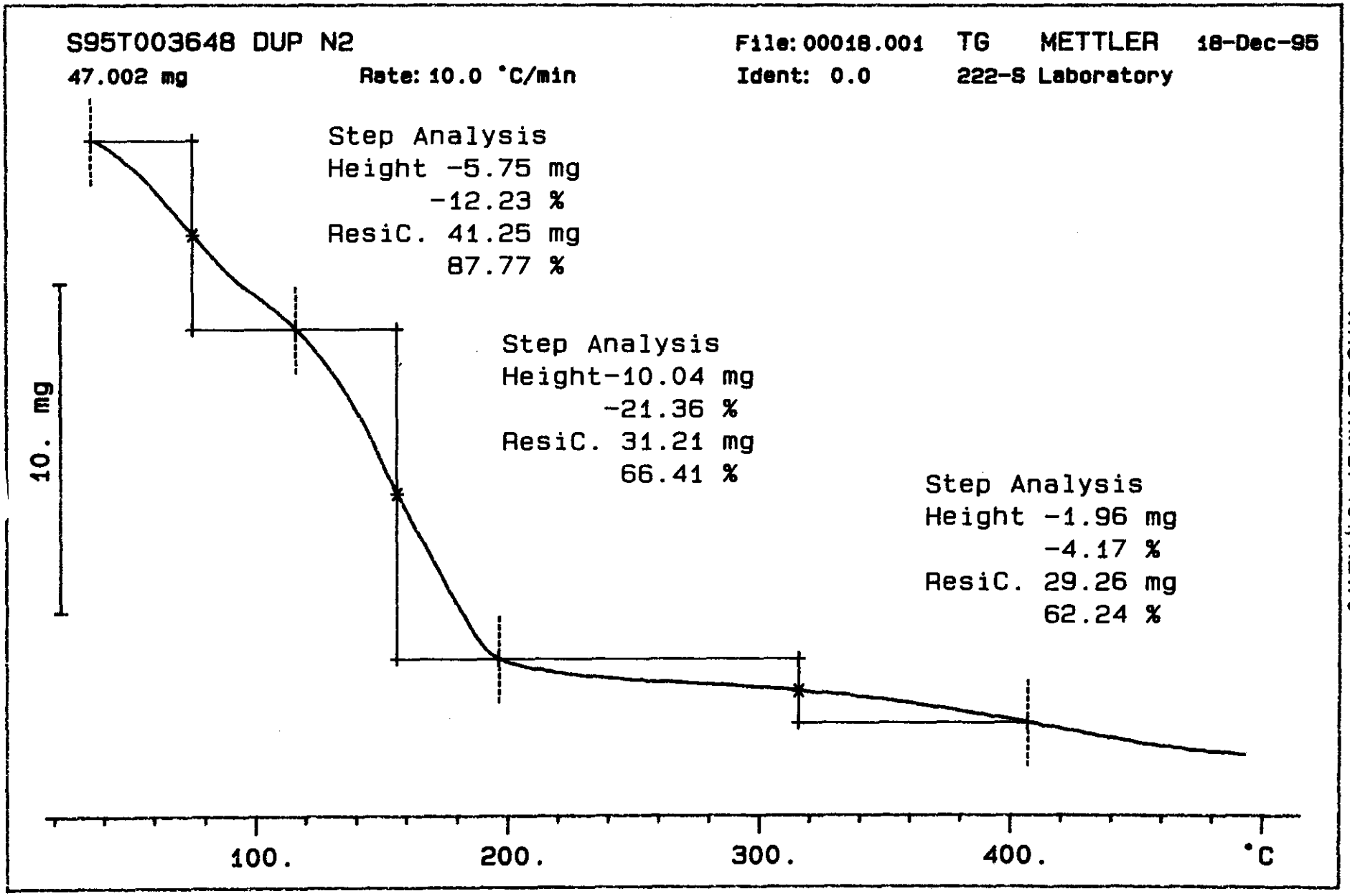


Cathy Parents 12-17-95


S95T003529 SAM N2
21.969 mg
Rate: 10.0 °C/min
File: 00012.001
TG
METTLER
17-Dec-95
Ident: 0.0
222-S Laboratory
Step Analysis
Height -3.63 mg
-16.52 %
ResiC. 18.34 mg
83.48 %
Dpeak 83.0°C
2. mg
100.
200.
300.
400.
°C


S95T003529 DUP N2
21.771 mg
Rate: 10.0 °C/min
File: 00014.001
TG METTLER
17-Dec-95
Ident: 0.0
222-S Laboratory
Step Analysis
Height -2.82 mg
-12.96 %
ResiC. 18.95 mg
87.04 %
Dpeak 77.0°C
2. mg
100.
200.
300.
400.
°C


S95T003648 SAM N2
37.603 mg
Rate: 10.0 °C/min
File: 00016.001
Ident: 0.0
TG
222-S Laboratory
METTLER
17-Dec-95
Step Analysis
Height -6.28 mg
-16.70 %
ResiC. 31.32 mg
83.30 %
Step Analysis
Height -6.98 mg
-18.56 %
ResiC. 24.35 mg
64.74 %
Dpeak 141.0°C
Step Analysis
Height -1.35 mg
-3.60 %
ResiC. 22.99 mg
61.14 %
5. mg
100.
200.
300.
400.
°C


S95T003648 DUP N2
47.002 mg
Rate: 10.0 °C/min
File: 00018.001
TG METTLER 18-Dec-95
Ident: 0.0
222-S Laboratory
Step Analysis
Height -5.75 mg
-12.23 %
ResiC. 41.25 mg
87.77 %
Step Analysis
Height-10.04 mg
-21.36 %
ResiC. 31.21 mg
66.41 %
Step Analysis
Height -1.96 mg
-4.17 %
ResiC. 29.26 mg
62.24 %
10. mg
100.
200.
300.
400.
°C

LABCORE Data Entry Template for Worklist# 4128

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

Method: LA-560-112 Rev/Mod B-1

Worklist Comment: Please run BY-104 TGAs under N2. bdv

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				TGA-01	SOLID	12/19/95 BDV ~~59.58~~ 59.74	59.58*	N/A	%
95000180	BY104 ROTARY	2	SAMPLE	S95T003637	0		TGA-01	SOLID	N/A	31.67		%
95000180	BY104 ROTARY	3	DUP	S95T003637	0		TGA-01	SOLID	31.67	25.16	N/A	%
95000180	BY104 ROTARY	4	SAMPLE	S95T003641	0		TGA-01	SOLID	N/A	33.92		%
		5	STD				TGA-01	SOLID	59.74	60.58	N/A	%
95000180	BY104 ROTARY	6	DUP	S95T003641	0		TGA-01	SOLID	33.92	33.91	N/A	%

Final page for worklist # 4128

Analyst Signature Date

Gary Hammitt 12-20-95
Analyst Signature Date

Verified 12/21/95 JM Fuge

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# 4128

Analyst: ADP **Instrument:** TGA0 **Book #** 65N8A

Method: LA-560-112 Rev/Mod B-1

Worklist Comment: Please run BY-104 TGAs under N2. bdv

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				TGA-01	SOLID			N/A	%
95000180	BY104 ROTARY	2	SAMPLE	S95T003637	0		TGA-01	SOLID	N/A			%
95000180	BY104 ROTARY	3	DUP	S95T003637	0		TGA-01	SOLID			N/A	%
95000180	BY104 ROTARY	4	SAMPLE	S95T003641	0		TGA-01	SOLID	N/A			%
95000180	BY104 ROTARY	5	DUP	S95T003641	0		TGA-01	SOLID			N/A	%

Final page for worklist # 4128

Anthony Pucciarelli 12-18-95

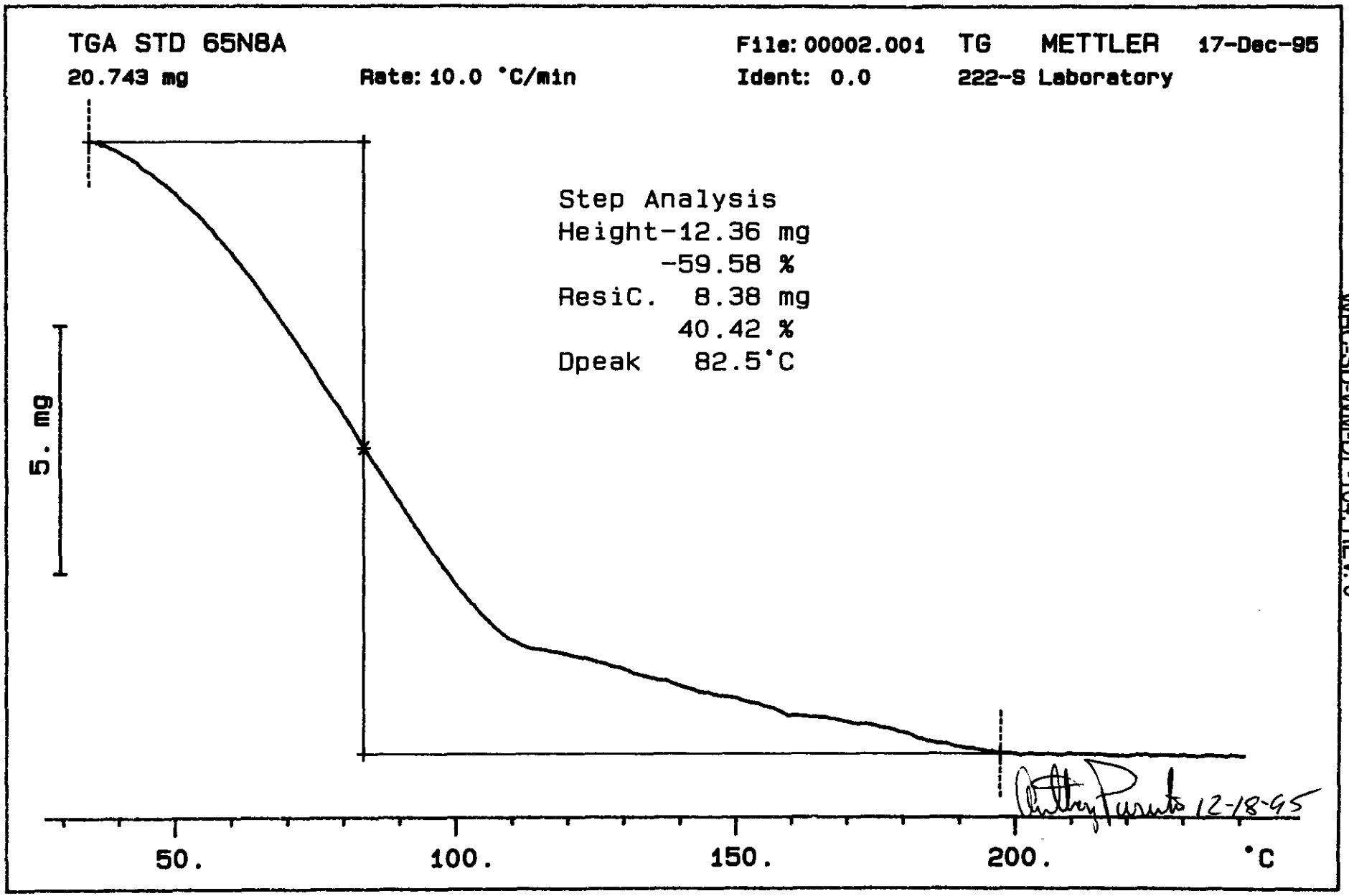
Analyst Signature **Date**

Analyst Signature **Date**

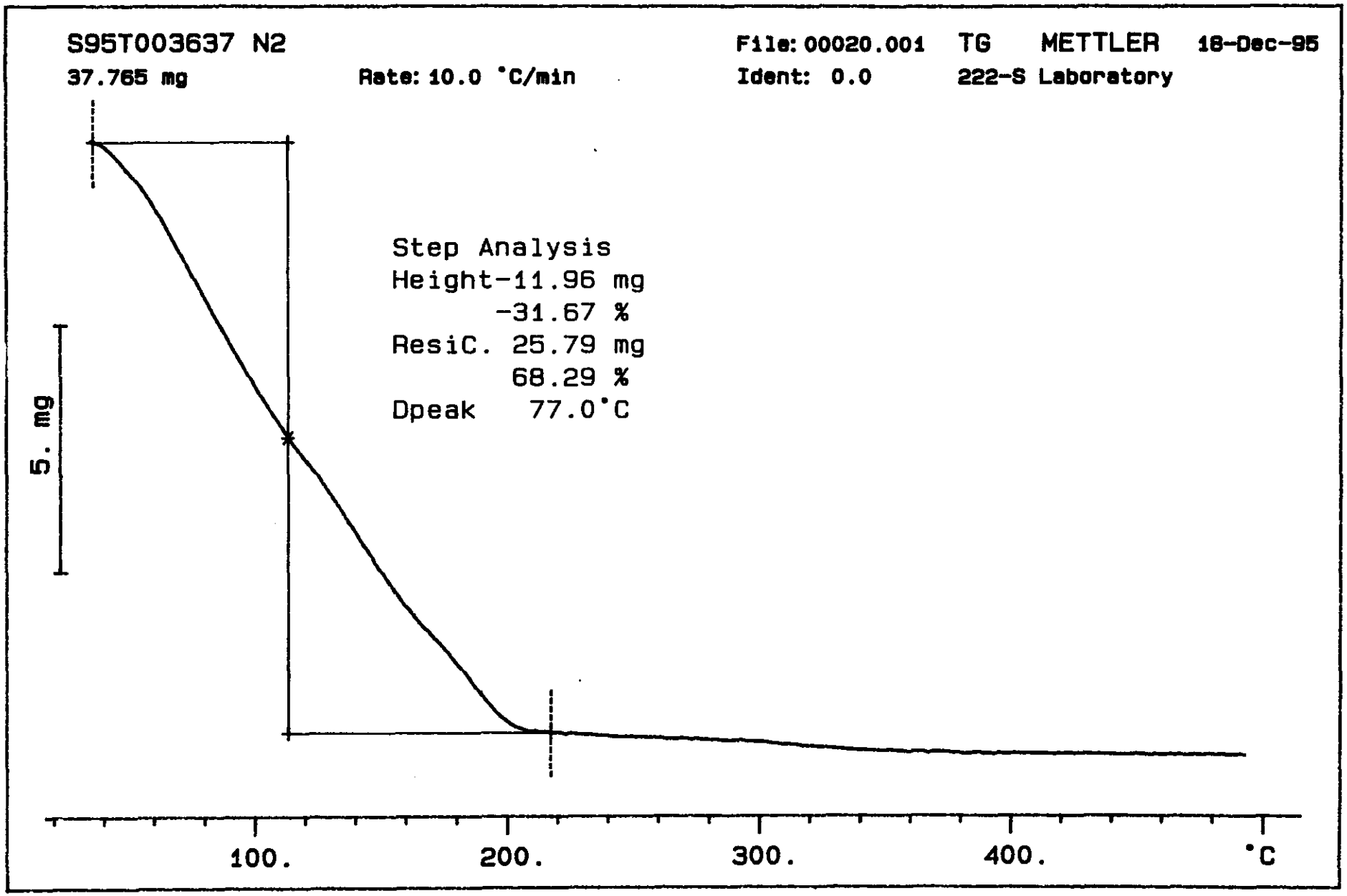
Data Entry Comments:

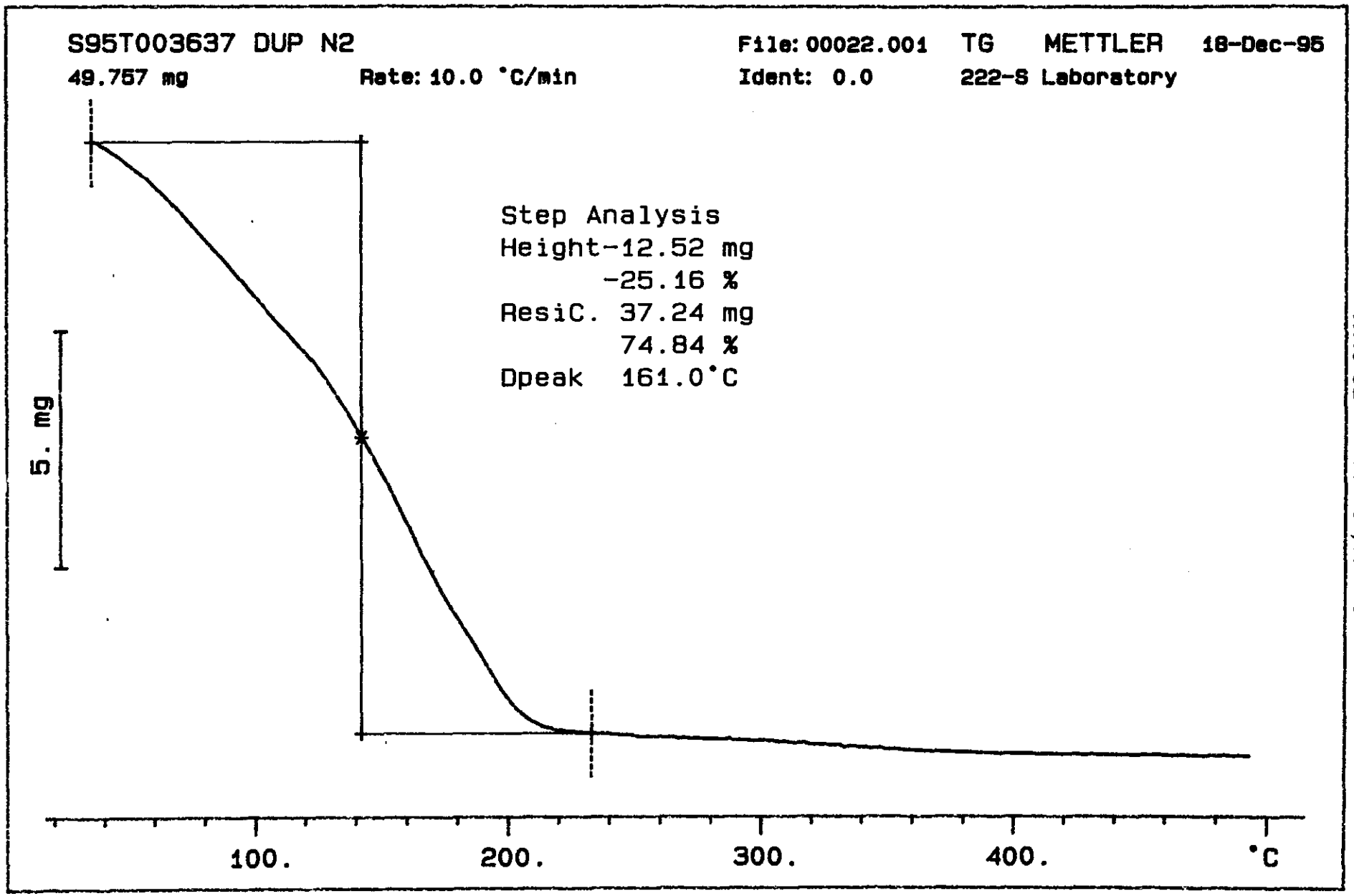
Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

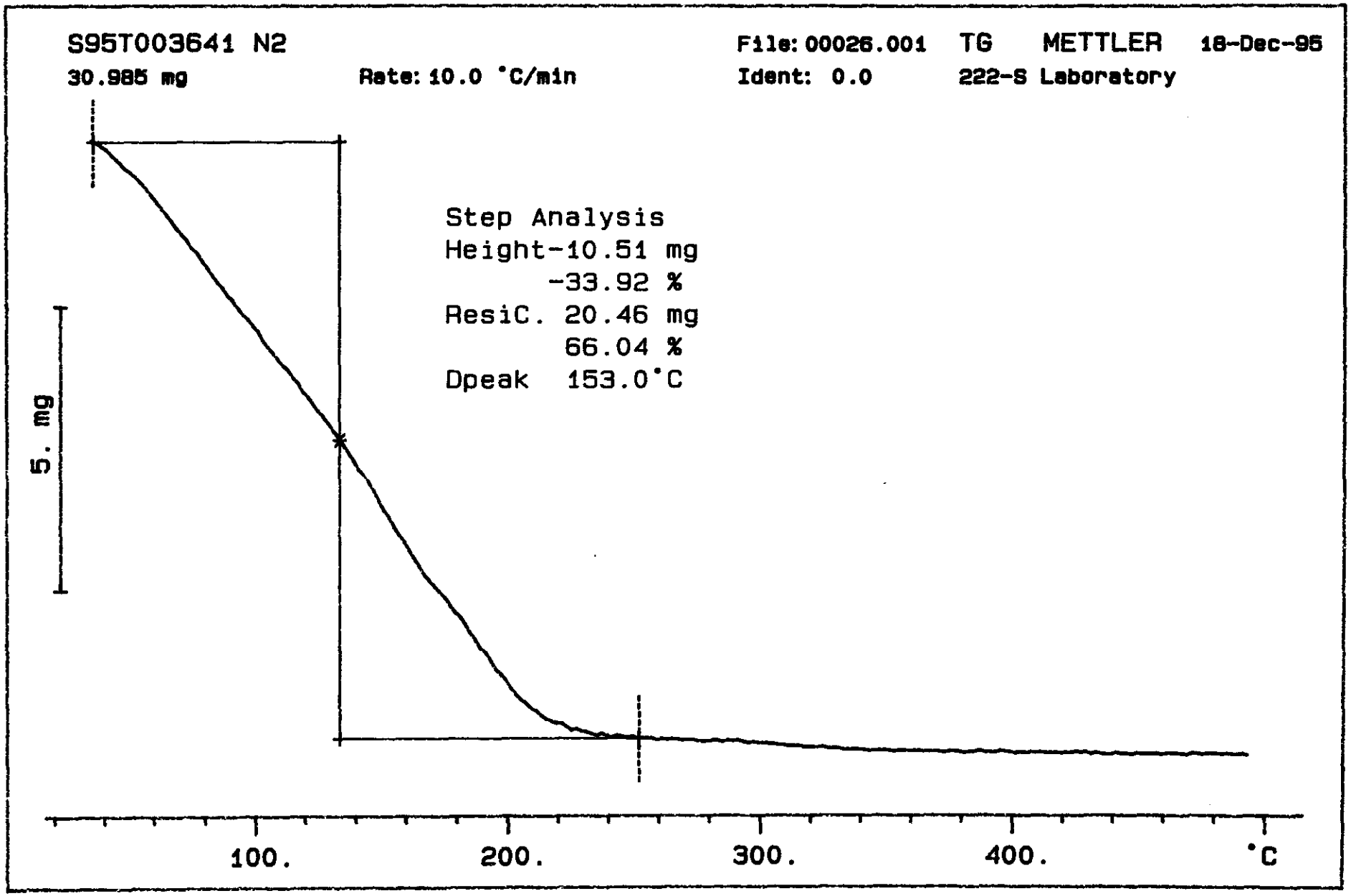
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 193 TO 198

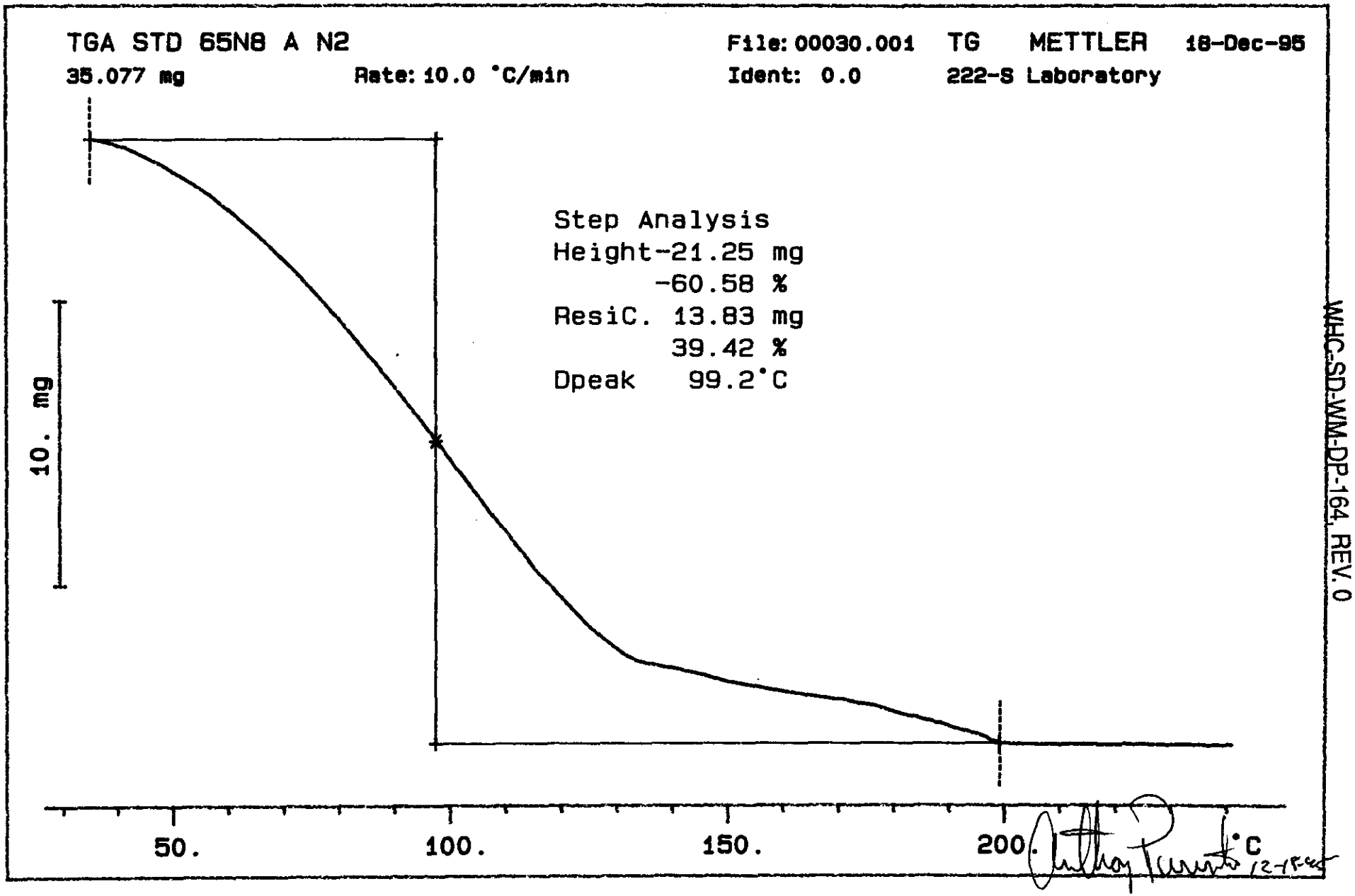


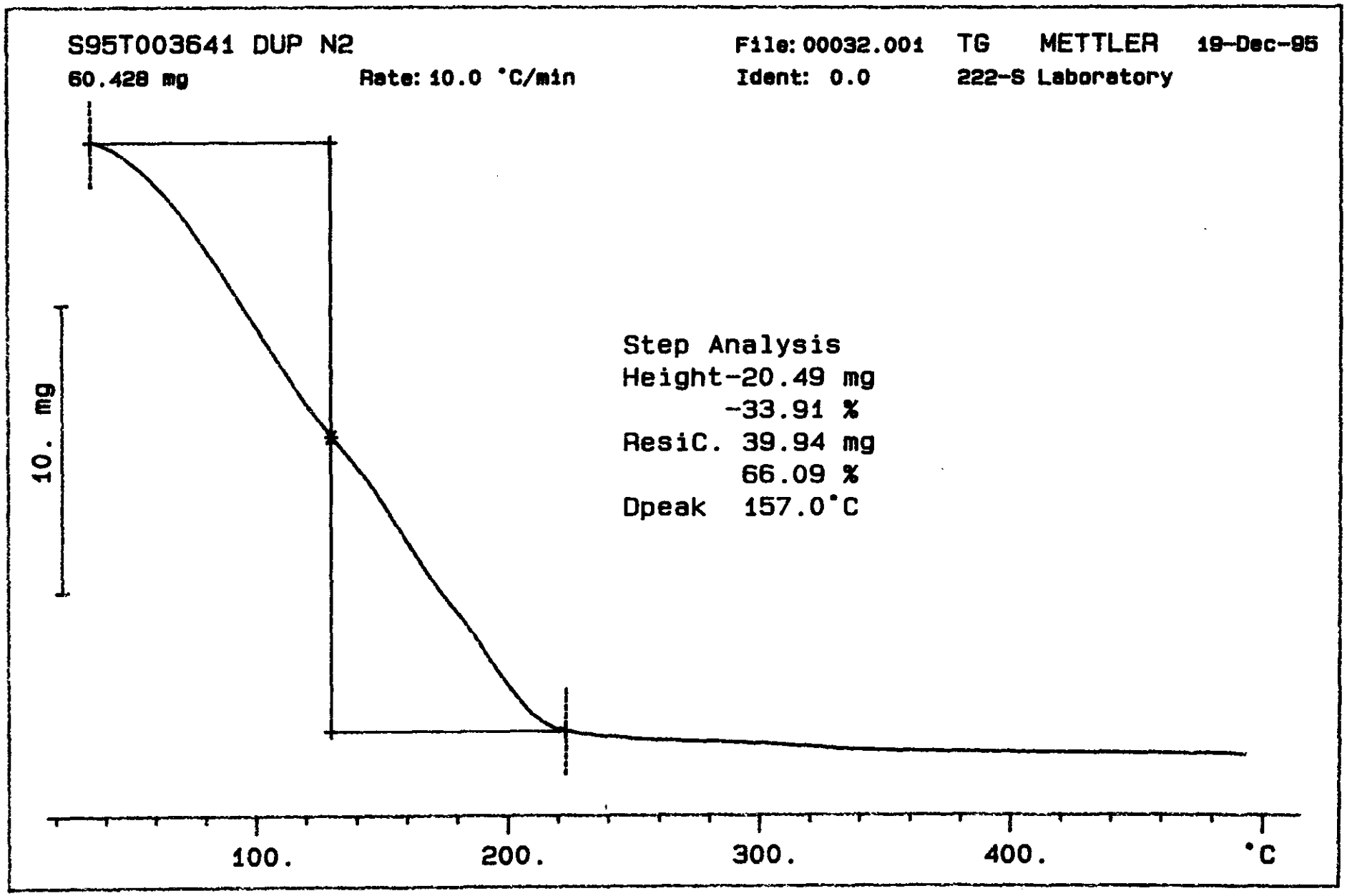
Cathy Pursuto 12-18-95


S95T003637 N2
37.765 mg
Rate: 10.0 °C/min
File: 00020.001
TG
METTLER
16-Dec-95
Ident: 0.0
222-S Laboratory
Step Analysis
Height-11.96 mg
-31.67 %
ResiC. 25.79 mg
68.29 %
Dpeak 77.0°C
5. mg
100.
200.
300.
400.
°C


S95T003637 DUP N2
49.757 mg
Rate: 10.0 °C/min
File: 00022.001
TG
METTLER
18-Dec-95
Ident: 0.0
222-S Laboratory
Step Analysis
Height -12.52 mg
-25.16 %
ResiC. 37.24 mg
74.84 %
Dpeak 161.0°C
5. mg
100.
200.
300.
400.
°C


S95T003641 N2
30.985 mg
Rate: 10.0 °C/min
File: 00026.001
TG METTLER
18-Dec-95
Ident: 0.0
222-S Laboratory
Step Analysis
Height-10.51 mg
-33.92 %
ResiC. 20.46 mg
66.04 %
Dpeak 153.0°C
5. mg
100.
200.
300.
400.
°C


TGA STD 65N8 A N2
35.077 mg
Rate: 10.0 °C/min
File: 00030.001
TG METTLER 18-Dec-95
Ident: 0.0
222-S Laboratory
Step Analysis
Height -21.25 mg
-60.58 %
ResiC. 13.83 mg
39.42 %
Dpeak 99.2°C
10. mg
50.
100.
150.
200.
°C


S95T003641 DUP N2
60.428 mg
Rate: 10.0 °C/min
File: 00032.001
TG METTLER 19-Dec-95
Ident: 0.0
222-S Laboratory
Step Analysis
Height -20.49 mg
-33.91 %
ResiC. 39.94 mg
66.09 %
Dpeak 157.0°C
10. mg
100.
200.
300.
400.
°C

LABCORE Data Entry Template for Worklist# 4129

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

Method: LA-560-112 Rev/Mod B-1

Worklist Comment: Please run BY-104 TGAs under N2. bdv

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				TGA-01	SOLID	59.74	60.5~~8~~62	2/13/96 BDV N/A	%
95000180	BY104 ROTARY	2	SAMPLE	S95T003702	0		TGA-01	SOLID	N/A	12.32		%
95000180	BY104 ROTARY	3	DUP	S95T003702	0		TGA-01	SOLID	12.32	10.10	N/A	%
95000180	BY104 ROTARY	4	SAMPLE	S95T003703	0		TGA-01	SOLID	N/A	12.61		%
95000180	BY104 ROTARY	5	DUP	S95T003703	0		TGA-01	SOLID	12.61	8.98	N/A	%

Final page for worklist # 4129

Anthony Pierantoni 12-18-95
Analyst Signature **Date**

Gary Hamm 12-20-95
Analyst Signature **Date**

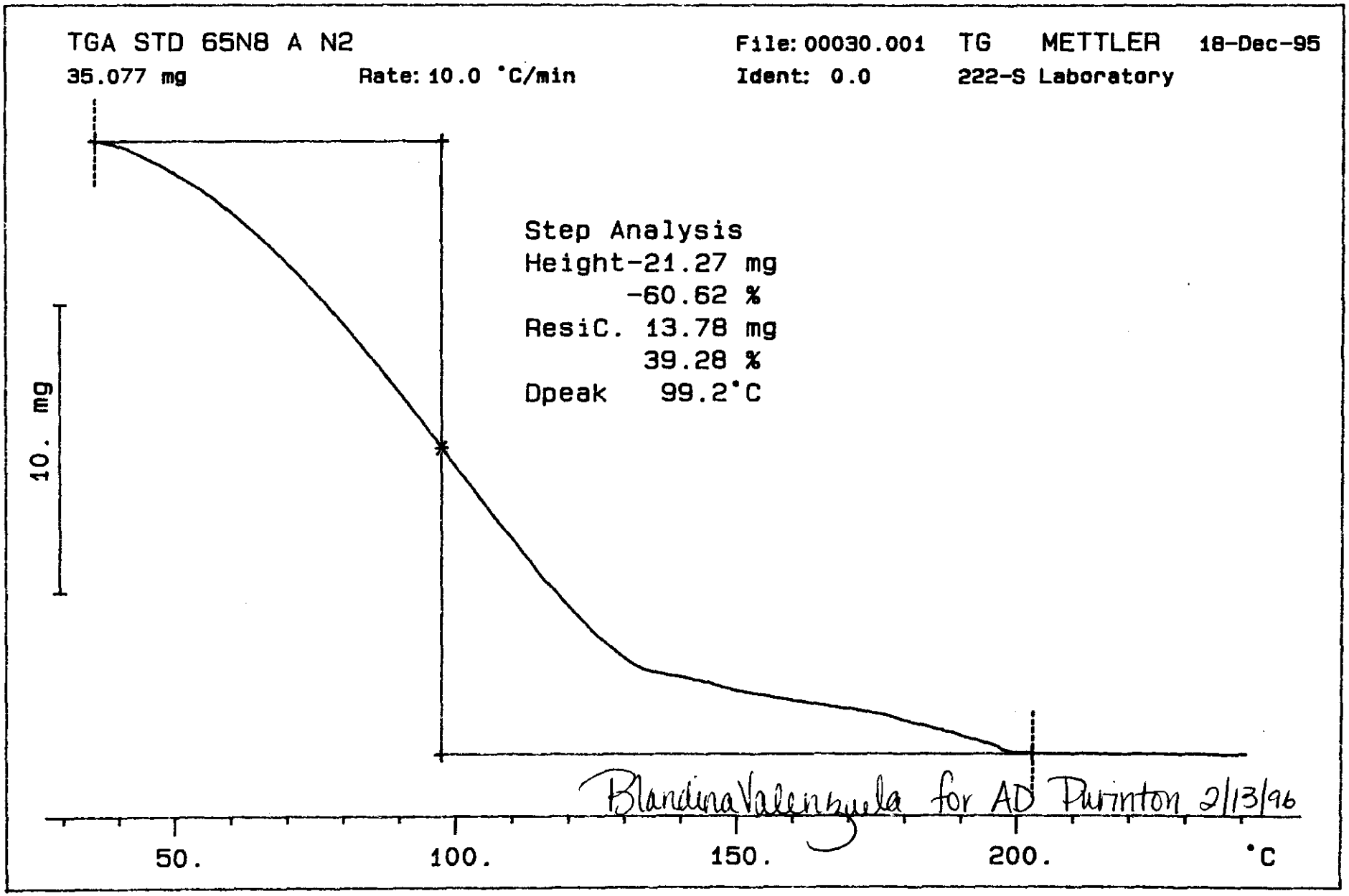
Verified 12/21/95 J M Fuge

S95T003702 produced a second weight loss step of .46%

Data Entry Comments:

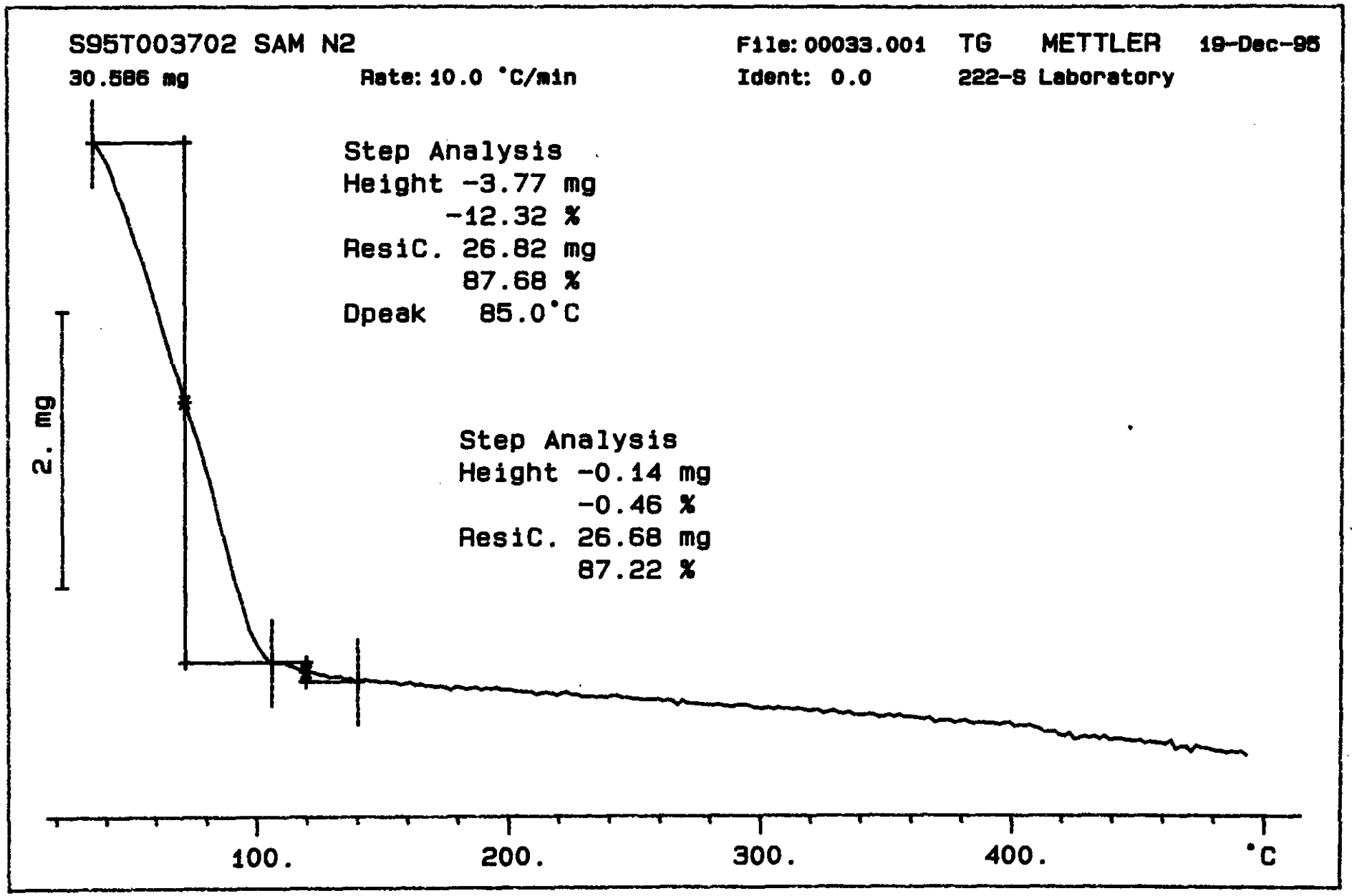
Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

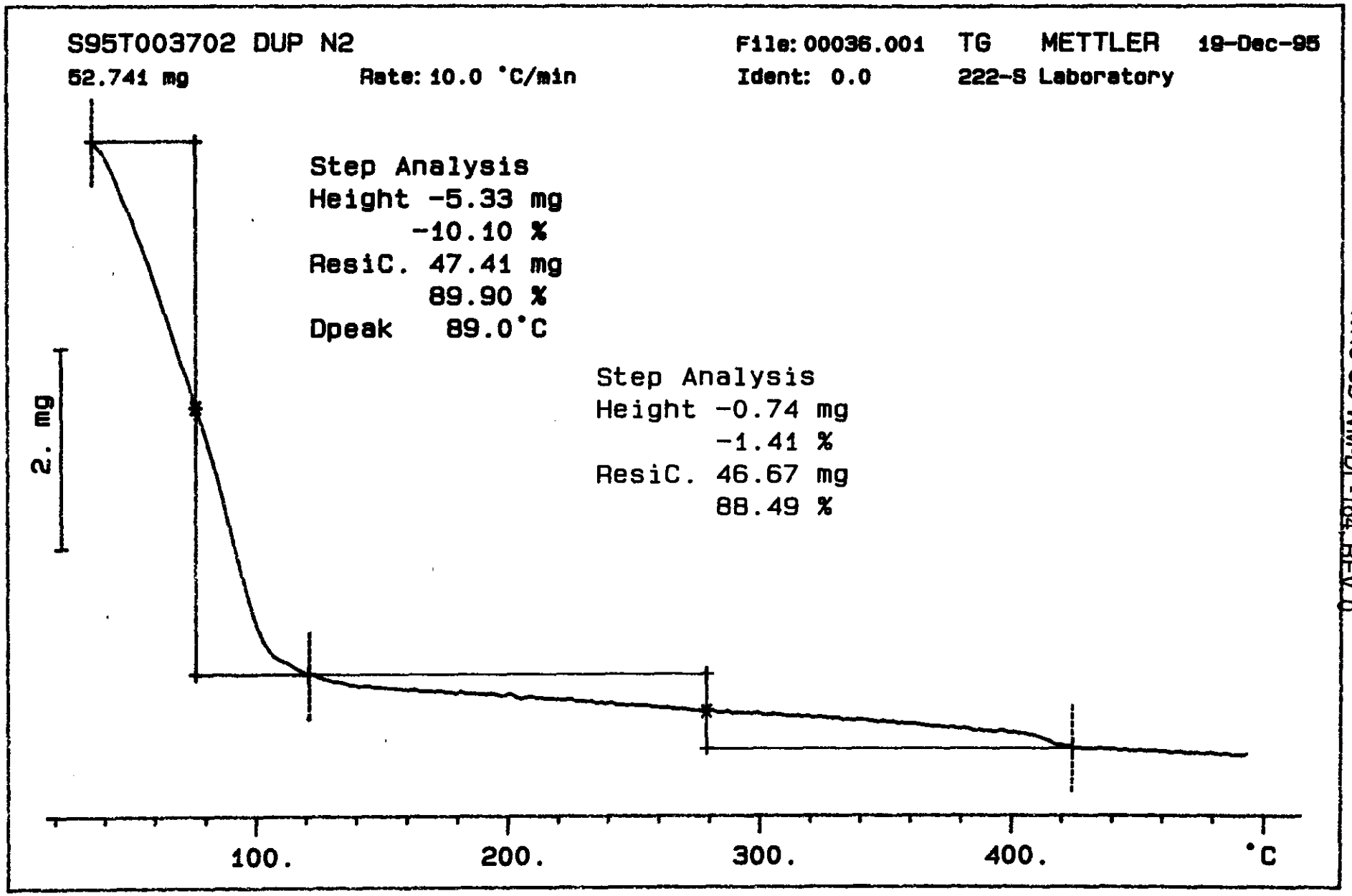
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 200 TO 204

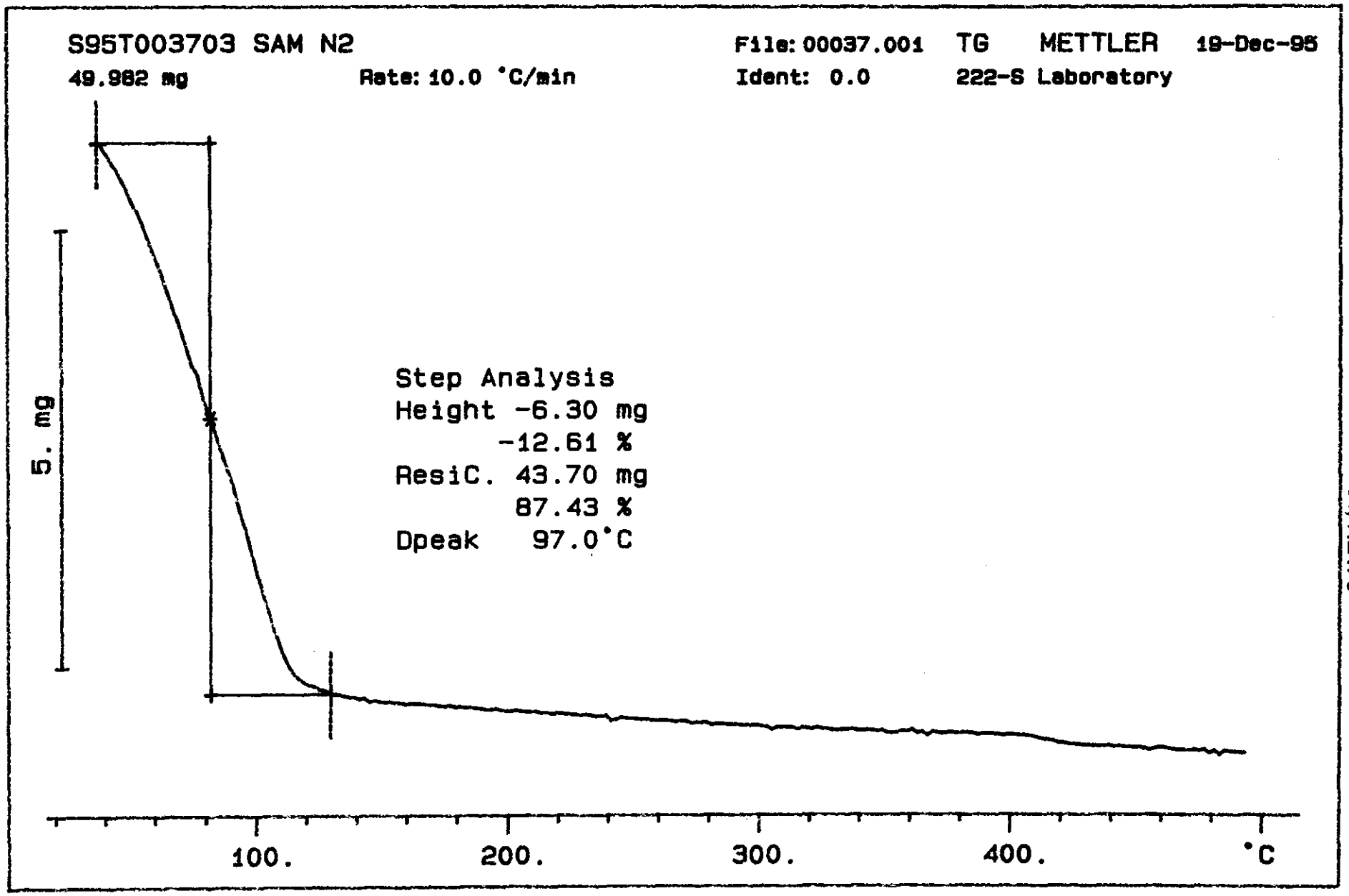


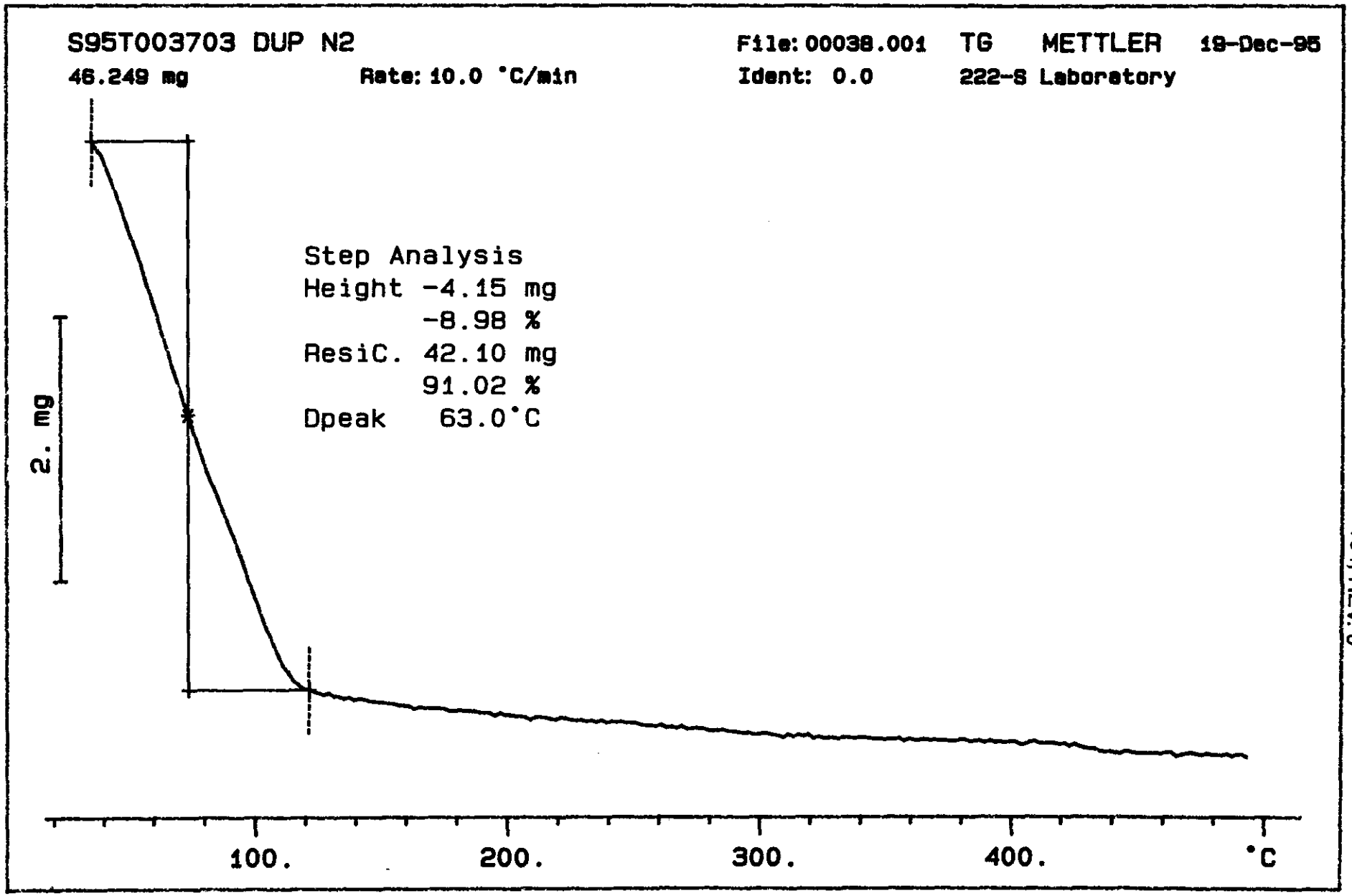
Blandina Valenzuela for AD Purinton 2/13/96

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES _____ TO _____ 2/13/96




S95T003702 DUP N2
52.741 mg
Rate: 10.0 °C/min
File: 00036.001
TG METTLER 19-Dec-95
Ident: 0.0
222-S Laboratory
Step Analysis
Height -5.33 mg
-10.10 %
ResiC. 47.41 mg
89.90 %
Dpeak 89.0°C
Step Analysis
Height -0.74 mg
-1.41 %
ResiC. 46.67 mg
88.49 %
2. mg
100.
200.
300.
400.
°C


S95T003703 SAM N2
49.982 mg
Rate: 10.0 °C/min
File: 00037.001
Ident: 0.0
TG
METTLER
222-S Laboratory
19-Dec-95
Step Analysis
Height -6.30 mg
-12.61 %
ResiC. 43.70 mg
87.43 %
Dpeak 97.0°C
6w °C
100.
200.
300.
400.
°C


S95T003703 DUP N2
46.249 mg
Rate: 10.0 °C/min
File: 00038.001
Ident: 0.0
TG
METTLER
222-S Laboratory
19-Dec-95
Step Analysis
Height -4.15 mg
-8.98 %
ResiC. 42.10 mg
91.02 %
Dpeak 63.0°C
2. mg
100.
200.
300.
400.
°C

LABCORE Data Entry Template for Worklist# 4460

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

Method: LA-560-112 Rev/Mod B-1

Worklist Comment: Please run BY-104 TGAs under N2. bdv

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				TGA-01	LIQUID	59.74	57.88*	N/A	%
95000180	BY104 ROTARY	2	SAMPLE	S95T003713	0		TGA-01	LIQUID	N/A	100.16		%
95000180	BY104 ROTARY	3	DUP	S95T003713	0		TGA-01	LIQUID	100.16	100.34	N/A	%

Final page for worklist # 4460

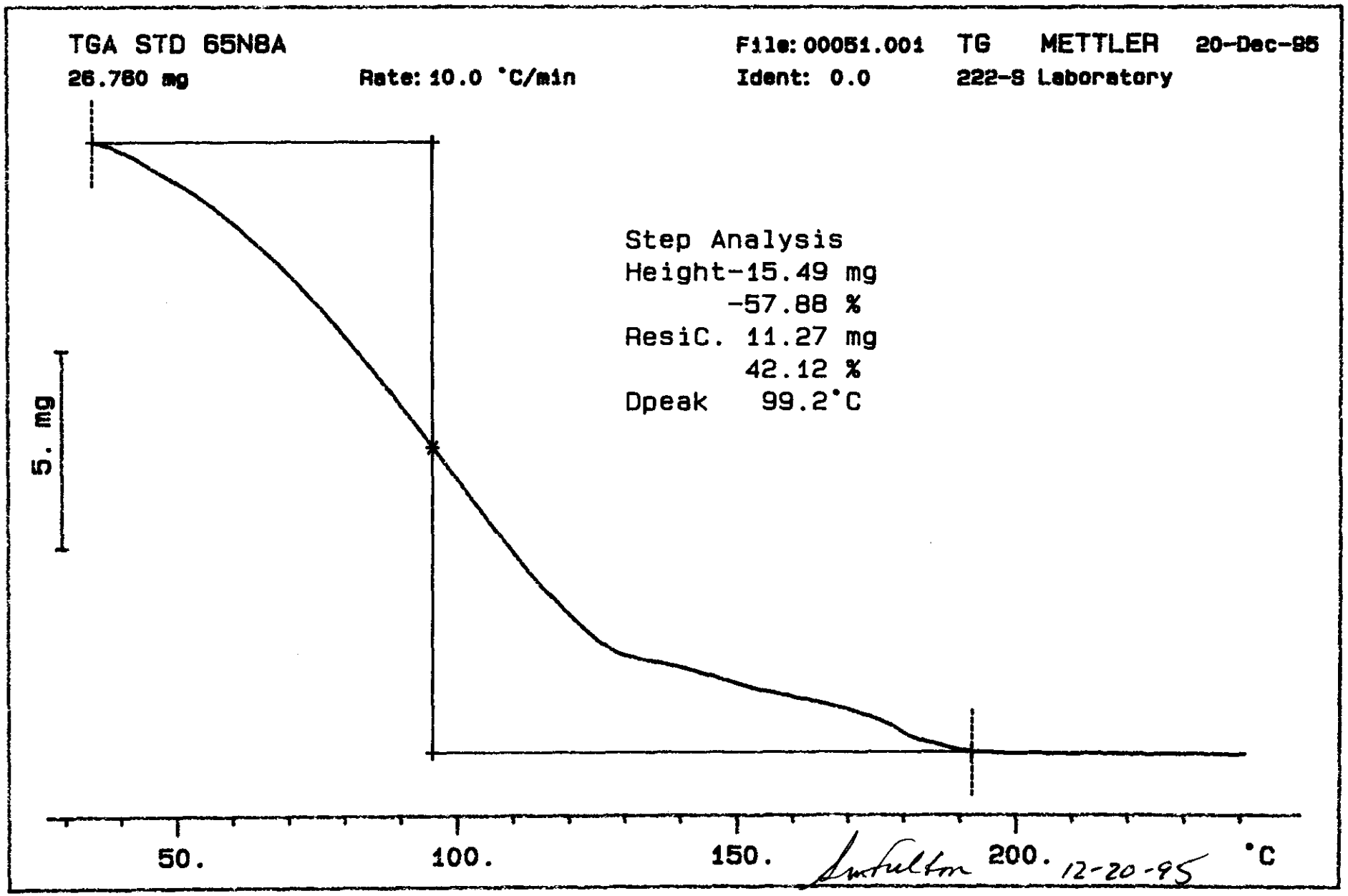
Sm Fulton 12-20-95
Analyst Signature **Date**

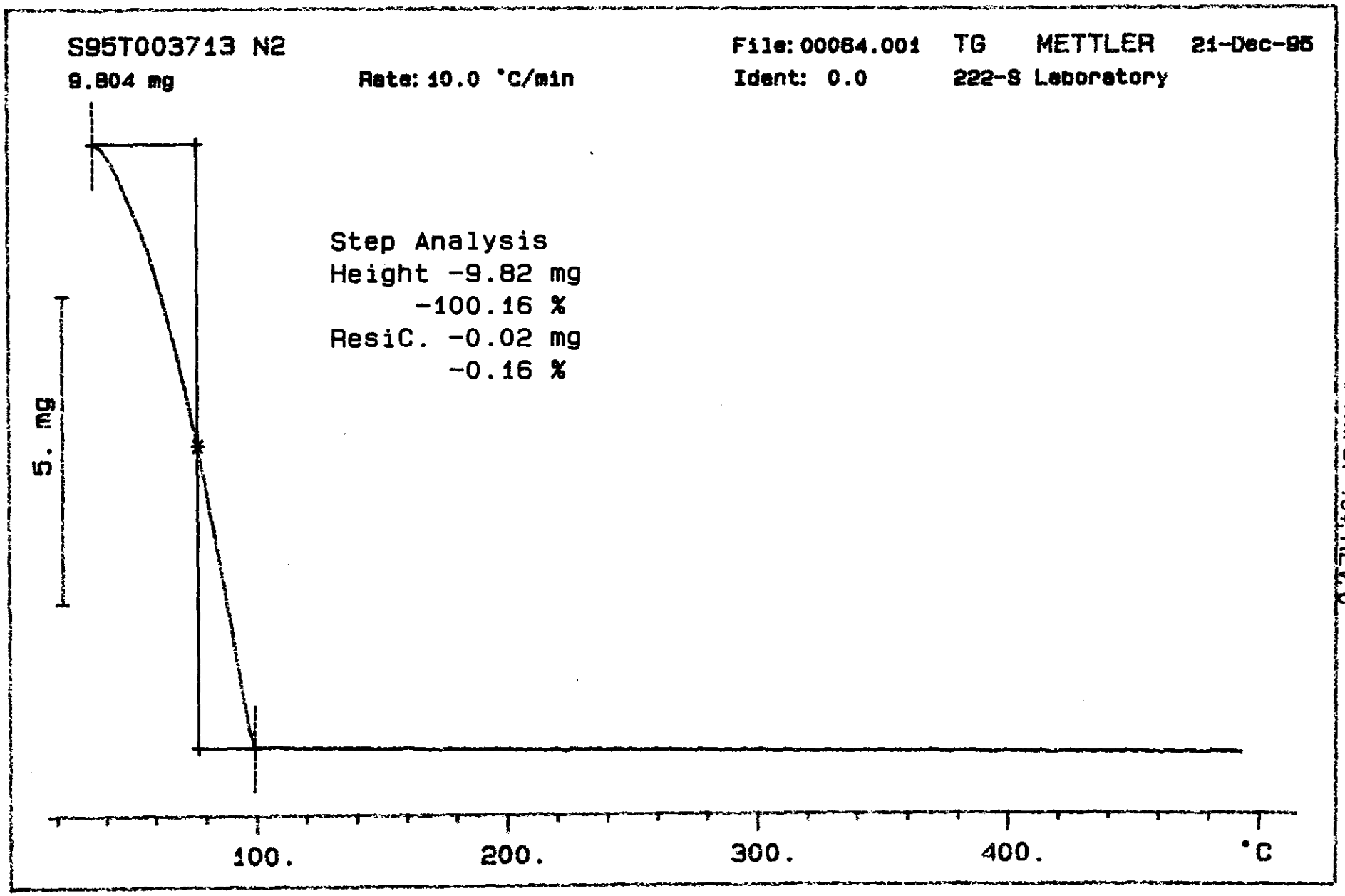
Linda Conlin 12-31-95
Analyst Signature **Date**

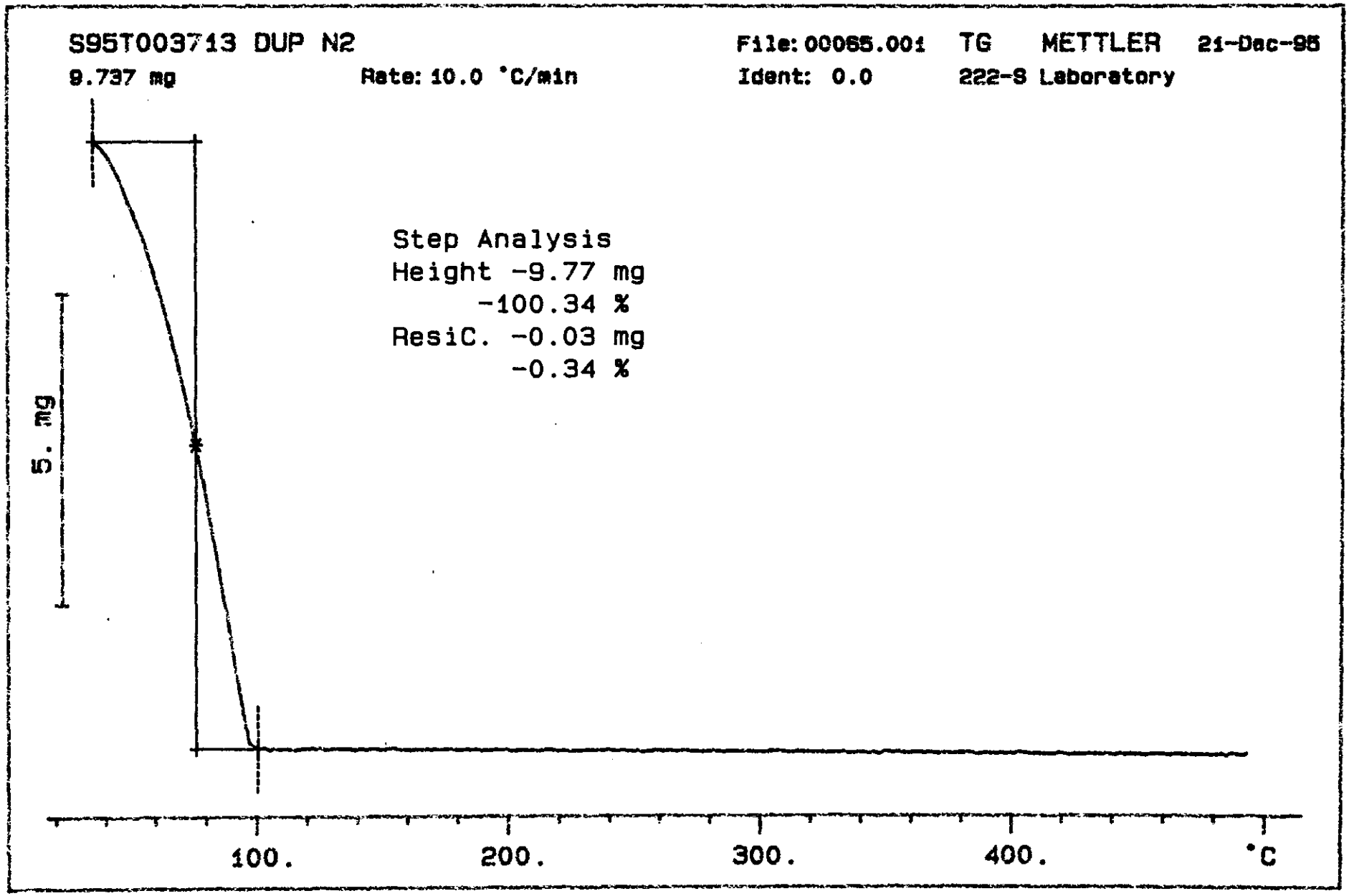
Data Entry Comments:

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 206 TO 208.




S95T003713 N2
9.804 mg
Rate: 10.0 °C/min
File: 00064.001
TG
METTLER
21-Dec-95
Ident: 0.0
222-S Laboratory
Step Analysis
Height -9.82 mg
-100.16 %
ResiC. -0.02 mg
-0.16 %
5. mg
100.
200.
300.
400.
°C


S95T003713 DUP N2
9.737 mg
Rate: 10.0 °C/min
File: 00065.001
TG
METTLER
21-Dec-95
Ident: 0.0
222-S Laboratory
Step Analysis
Height -9.77 mg
-100.34 %
ResiC. -0.03 mg
-0.34 %
5. mg
100.
200.
300.
400.
°C

LABCORE Data Entry Template for Worklist# 4464

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

Method: LA-514-114 Rev/Mod C-1

Worklist Comment: Please run BY-104 TGAs under N2. bdv

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				TGA-03	SOLID	59.74	60.49	N/A	%
95000180	BY104 ROTARY	2	SAMPLE	S95T003528	0		TGA-03	SOLID	N/A	16.08		%
95000180	BY104 ROTARY	3	DUP	S95T003528	0		TGA-03	SOLID	16.08	16.71	N/A	%
95000180	BY104 ROTARY	4	SAMPLE	S95T003632	0		TGA-03	SOLID	N/A	19.00		%
95000180	BY104 ROTARY	5	DUP	S95T003632	0		TGA-03	SOLID	19.00	22.41	N/A	%

Final page for worklist # 4464

See attached for signatures
Analyst Signature **Date** 1/2/96 BDV

Verified by Blandina Valenzuela 1-8-96

[signature] 1-7-96
Analyst Signature **Date**

S95T003528 produced two additional weight-loss steps of 5.97% and 7.13%.

Data Entry Comments: ~~S95T003632 produced~~ 1/2/96 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.

LABCORE Data Entry Template for Worklist# 4464

Analyst: SMF **Instrument:** TGA0 **Book #** 65N8/T

Method: LA-560-112 Rev/Mod

Worklist Comment: Please run BY-104 TGAs under N2. bdv

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				TGA-01	SOLID			N/A	%
95000180	BY104 ROTARY	2	SAMPLE	S95T003528	0		TGA-01	SOLID	N/A			%
95000180	BY104 ROTARY	3	DUP	S95T003528	0		TGA-01	SOLID			N/A	%
95000180	BY104 ROTARY	4	SAMPLE	S95T003632	0		TGA-01	SOLID	N/A			%
95000180	BY104 ROTARY	5	DUP	S95T003632	0		TGA-01	SOLID			N/A	%

Final page for worklist # 4464

Susie M. Fulton 12-20-95
Analyst Signature **Date**

Analyst Signature **Date**

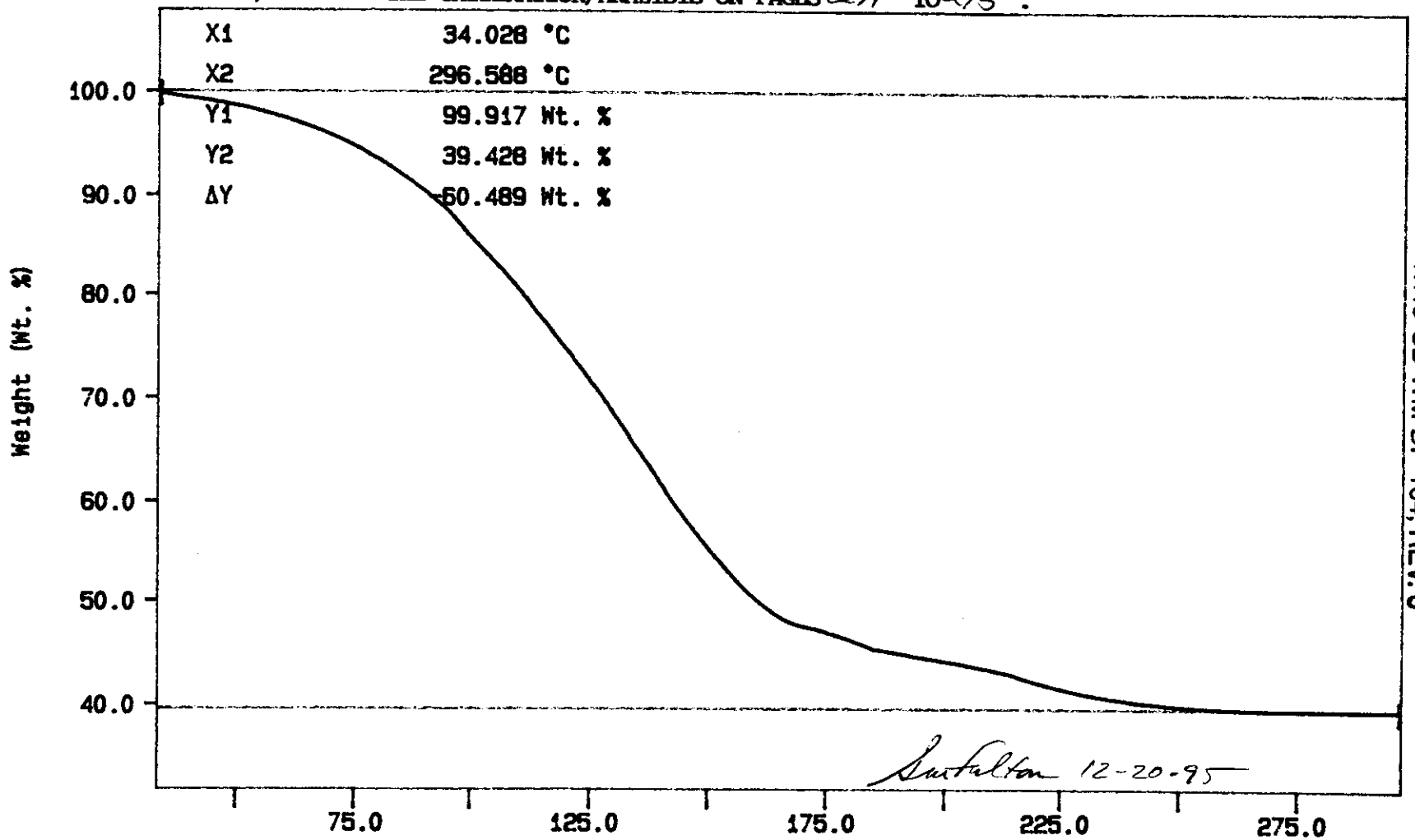
Other instrument was used
1/2/96
BDV

Data Entry Comments:

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

Curve 1: TGA
File info: TER122001 Wed Dec 20 19:41:08 1995
Sample Weight: 19.348 mg
65N8-A Terliq

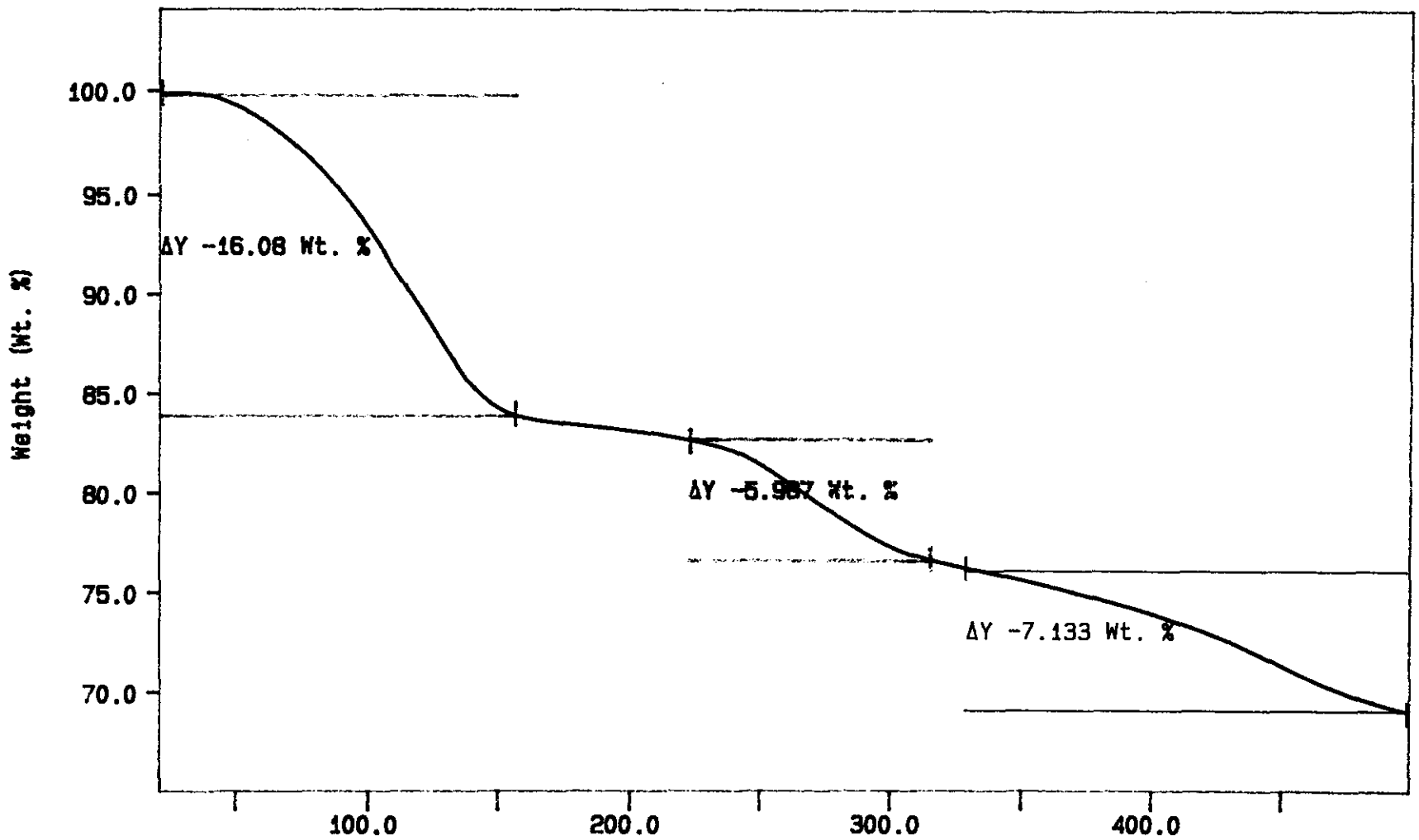
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 211 TO 215.



N2 10C/MIN
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 300.0 C

SM FULTON
PERKIN-ELMER
7 Series Thermal Analysis System
Wed Dec 20 19:45:03 1995

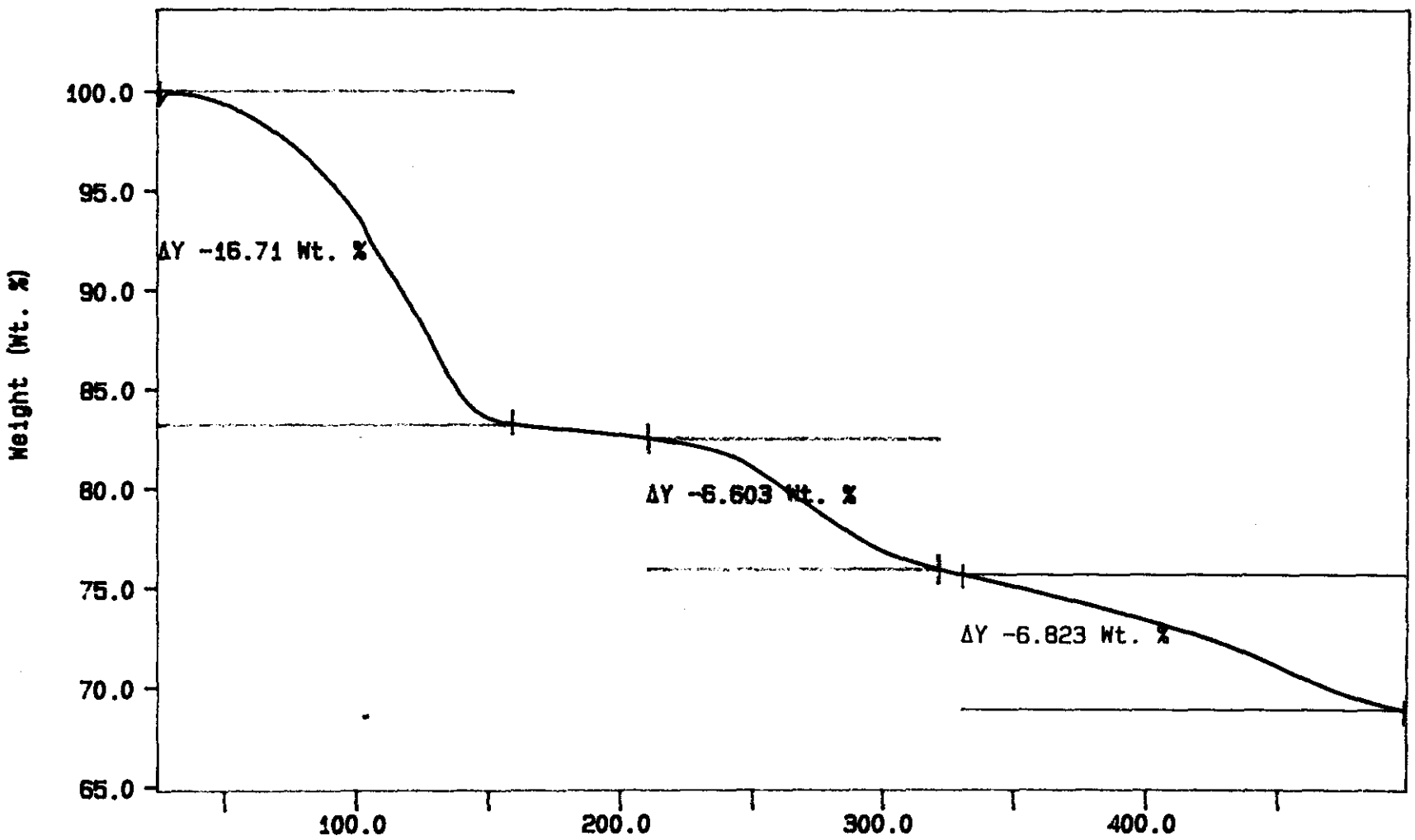
Curve 1: TGA
File info: SAM122004 Thu Dec 21 02:14:21 1995
Sample Weight: 14.703 mg
S95T003528



10C/MIN N2
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 500.0 C

SM FULTON
PERKIN-ELMER
7 Series Thermal Analysis System
Thu Dec 21 02:33:43 1995

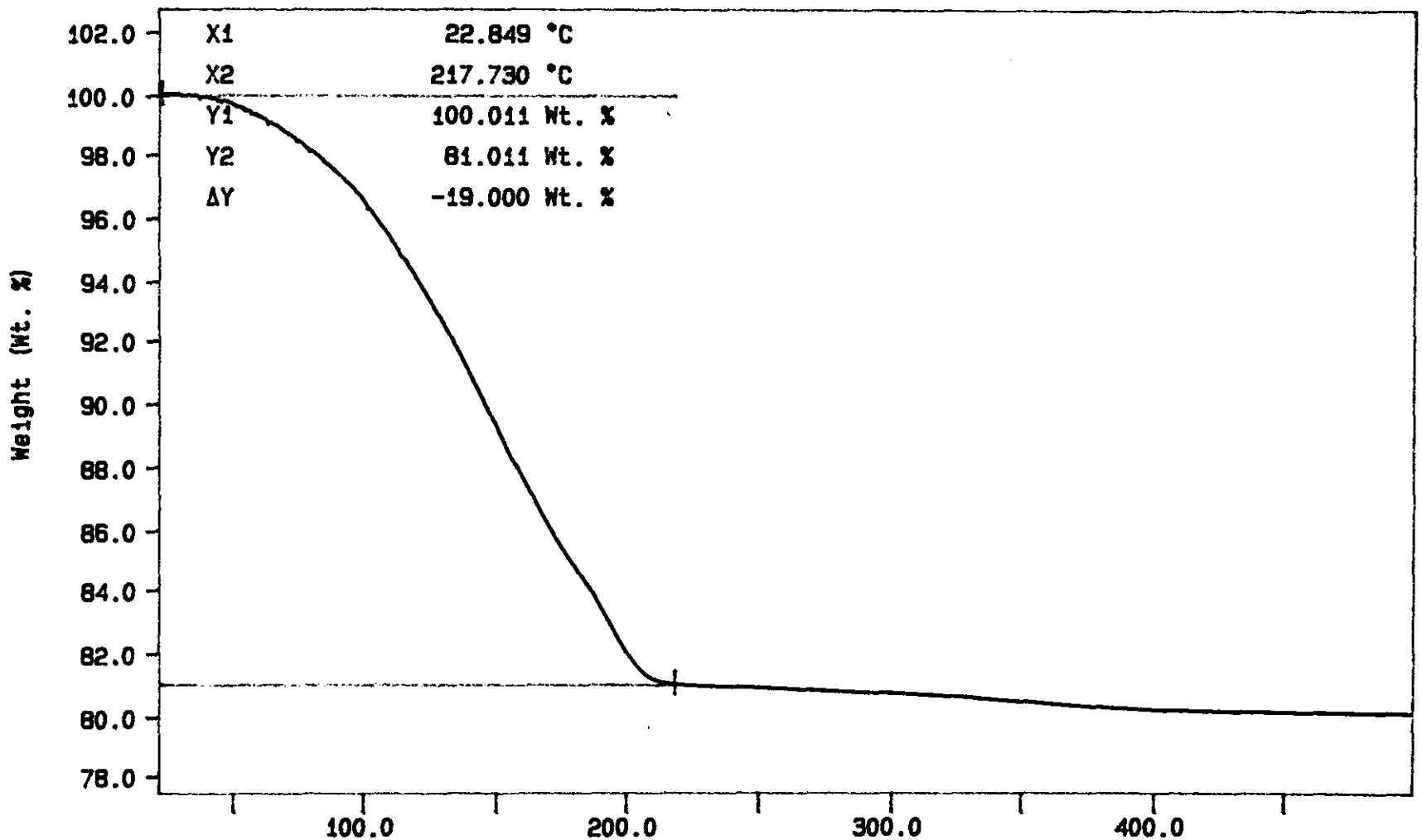
Curve 1: TGA
File info: SAM122005 Thu Dec 21 03:27:32 1995
Sample Weight: 21.131 mg
S95T003528 DUP



10C/MIN N2
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 600.0 C

SM FULTON
PERKIN-ELMER
7 Series Thermal Analysis System
Thu Dec 21 05:11:18 1995

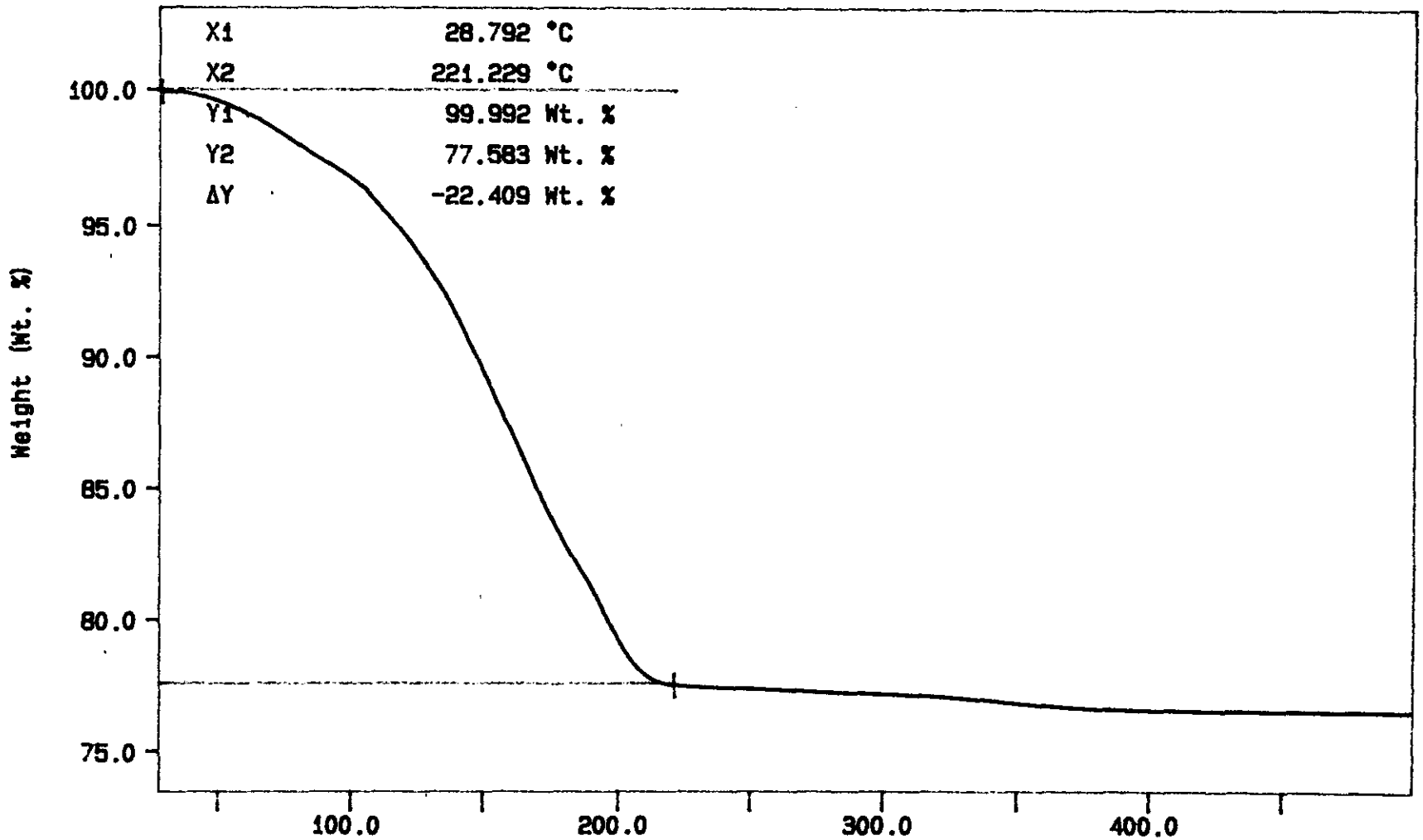
Curve 1: TGA
File info: SAM122001 Wed Dec 20 22:11:26 1995
Sample Weight: 29.149 mg
S95T003632



10C/MIN N2
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 600.0 C

SM FULTON
PERKIN-ELMER
7 Series Thermal Analysis System
Wed Dec 20 22:20:11 1995

Curve 1: TGA
File info: SAM122003 Thu Dec 21 00:29:18 1995
Sample Weight: 22.485 mg
S95T003632 ~~TRP~~ DUP
1/21/96 DRV



10C/MIN N2
TEMP1: 30.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 600.0 C

SM FULTON
PERKIN-ELMER
7 Series Thermal Analysis System
Thu Dec 21 01:08:30 1995

LABCORE Data Entry Template for Worklist# 4466

Analyst: SMF **Instrument:** TGA0 1 **Book #** 65N817

Method: LA-560-112 Rev/Mod B-1

Worklist Comment: Please run BY-104 TGAs under N2. bdv

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				TGA-01	SOLID	59.74	57.70*	N/A	%
95000180	BY104 ROTARY	2	SAMPLE	S95T003633	0		TGA-01	SOLID	N/A	24.42		%
95000180	BY104 ROTARY	3	DUP	S95T003633	0		TGA-01	SOLID	24.42	24.11	N/A	%
95000180	BY104 ROTARY	4	SAMPLE	S95T003635	0		TGA-01	SOLID	N/A	25.73		%
95000180	BY104 ROTARY	5	DUP	S95T003635	0		TGA-01	SOLID	25.73	25.85	N/A	%

Final page for worklist # 4466

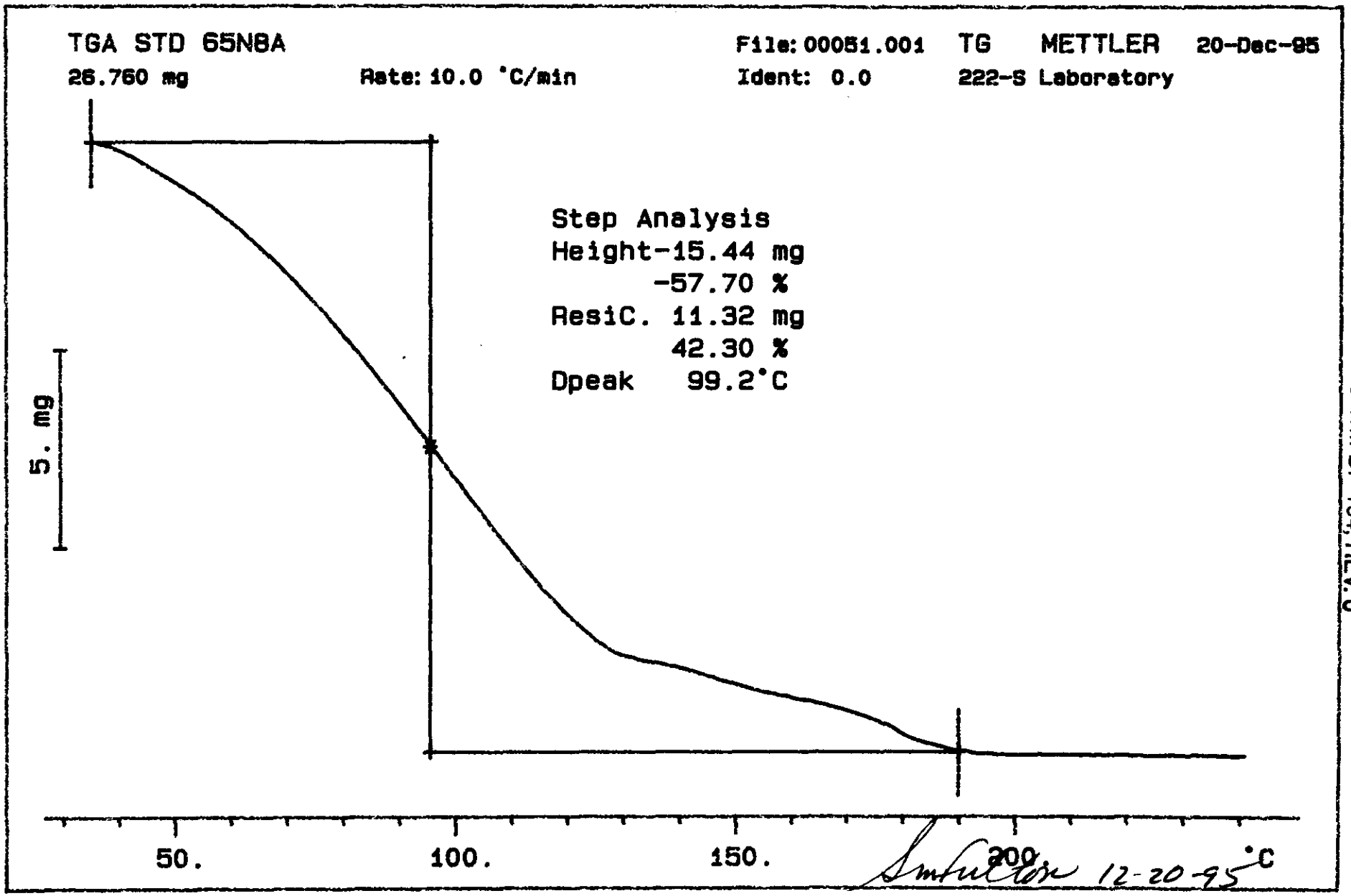
Sm Fulton 12-20-95
Analyst Signature **Date**

Frank Coulin 12/31/95
Analyst Signature **Date**

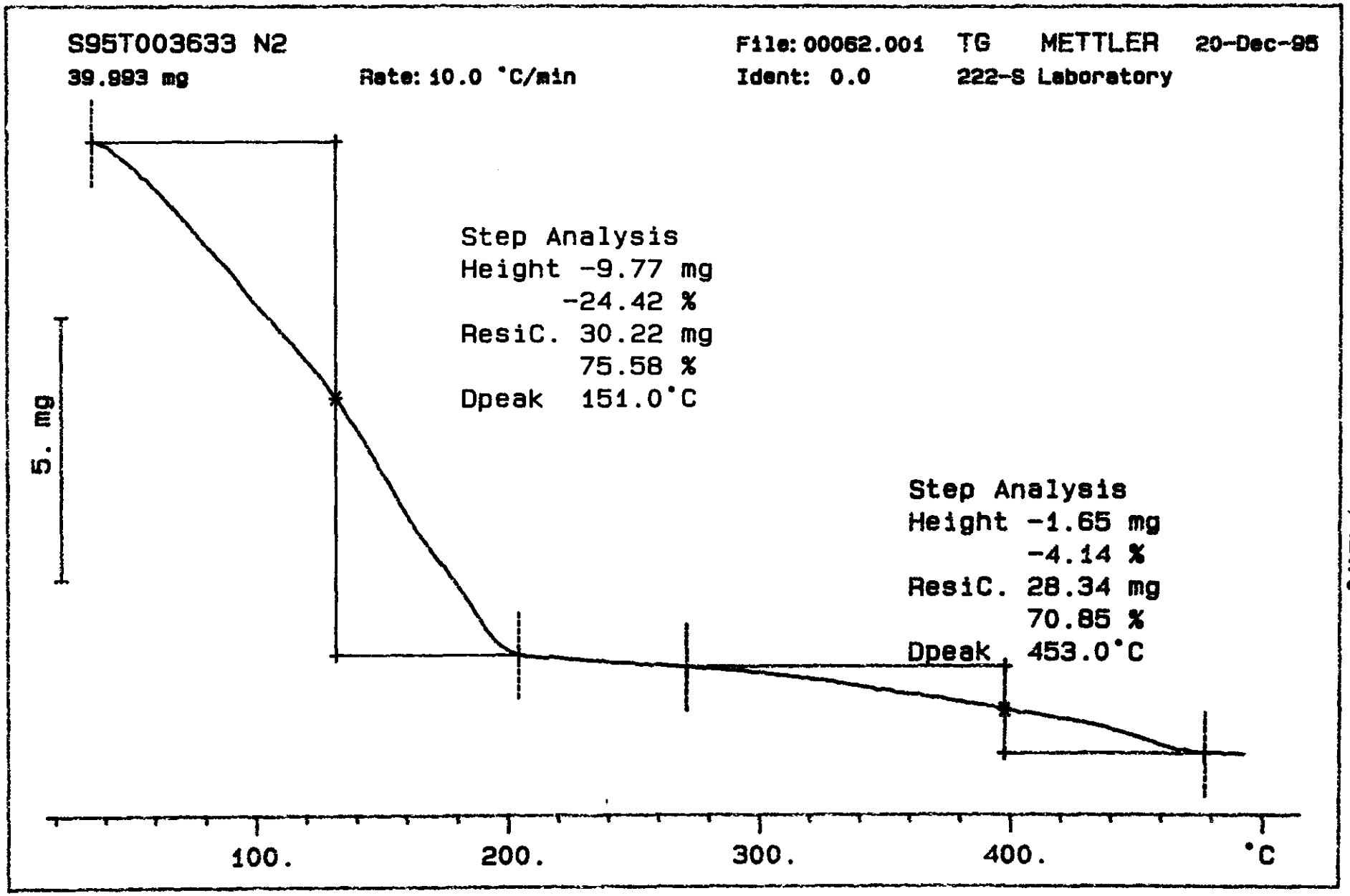
Data Entry Comments:

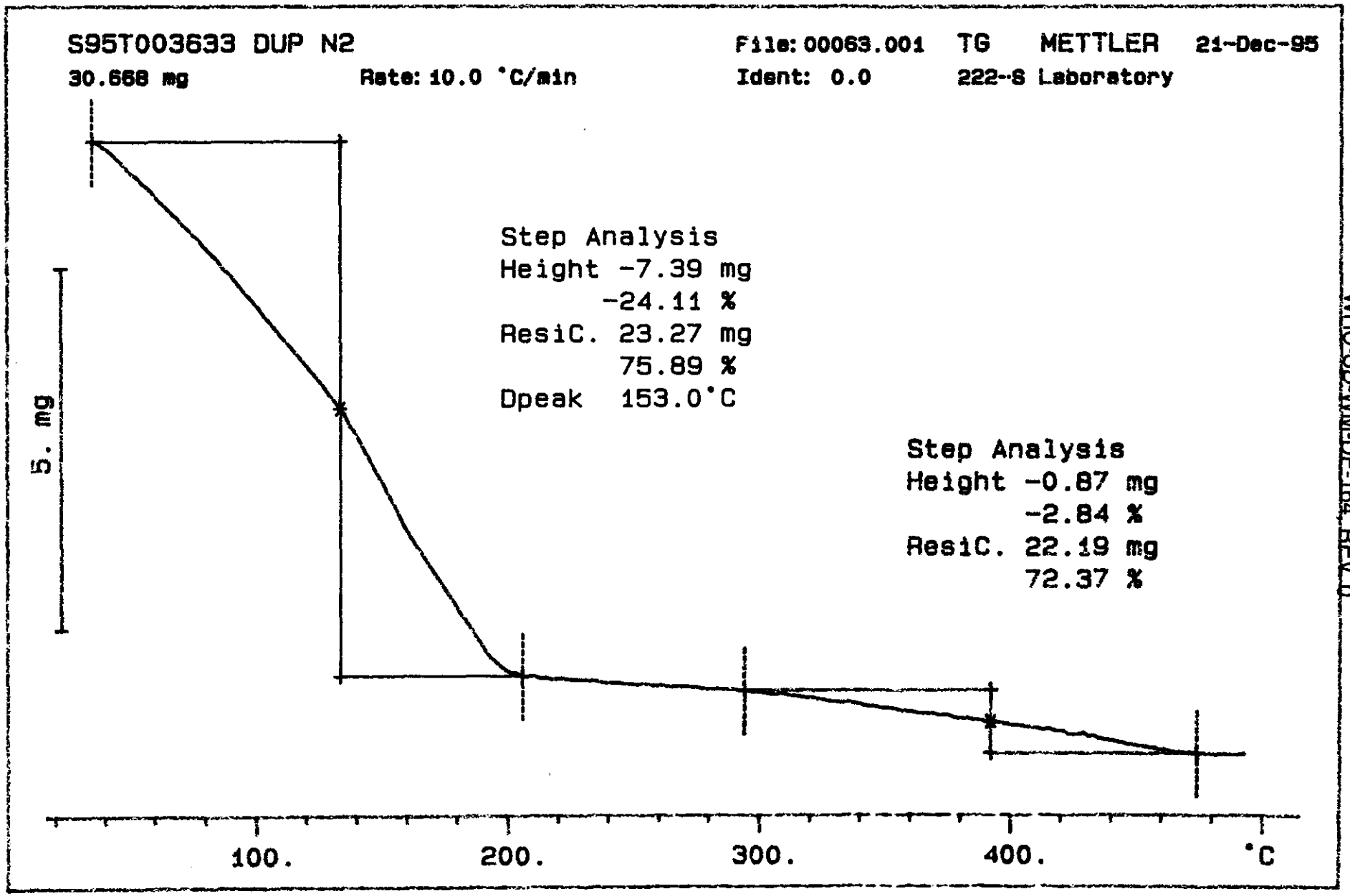
Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

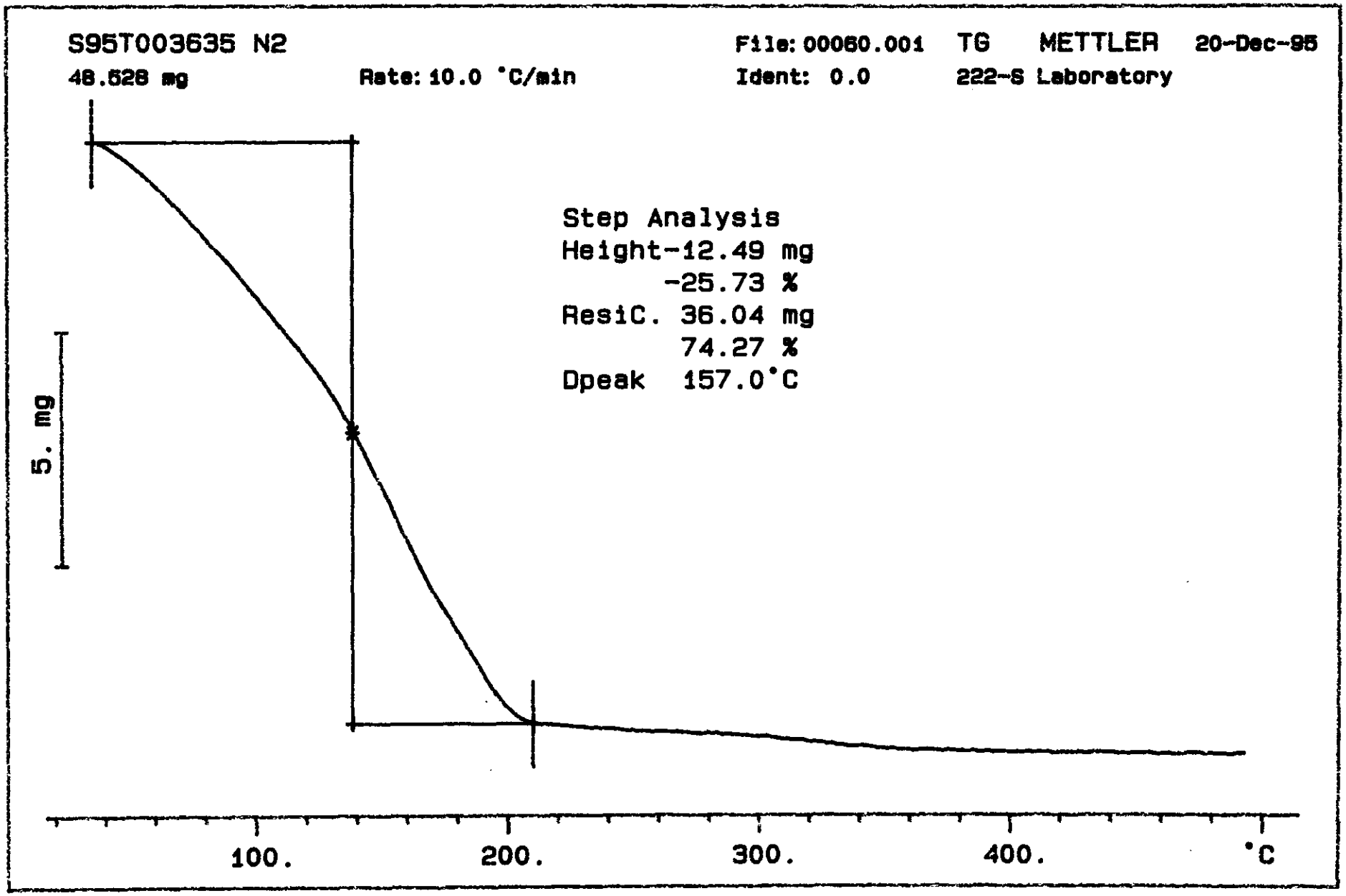
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 217 TO 221.

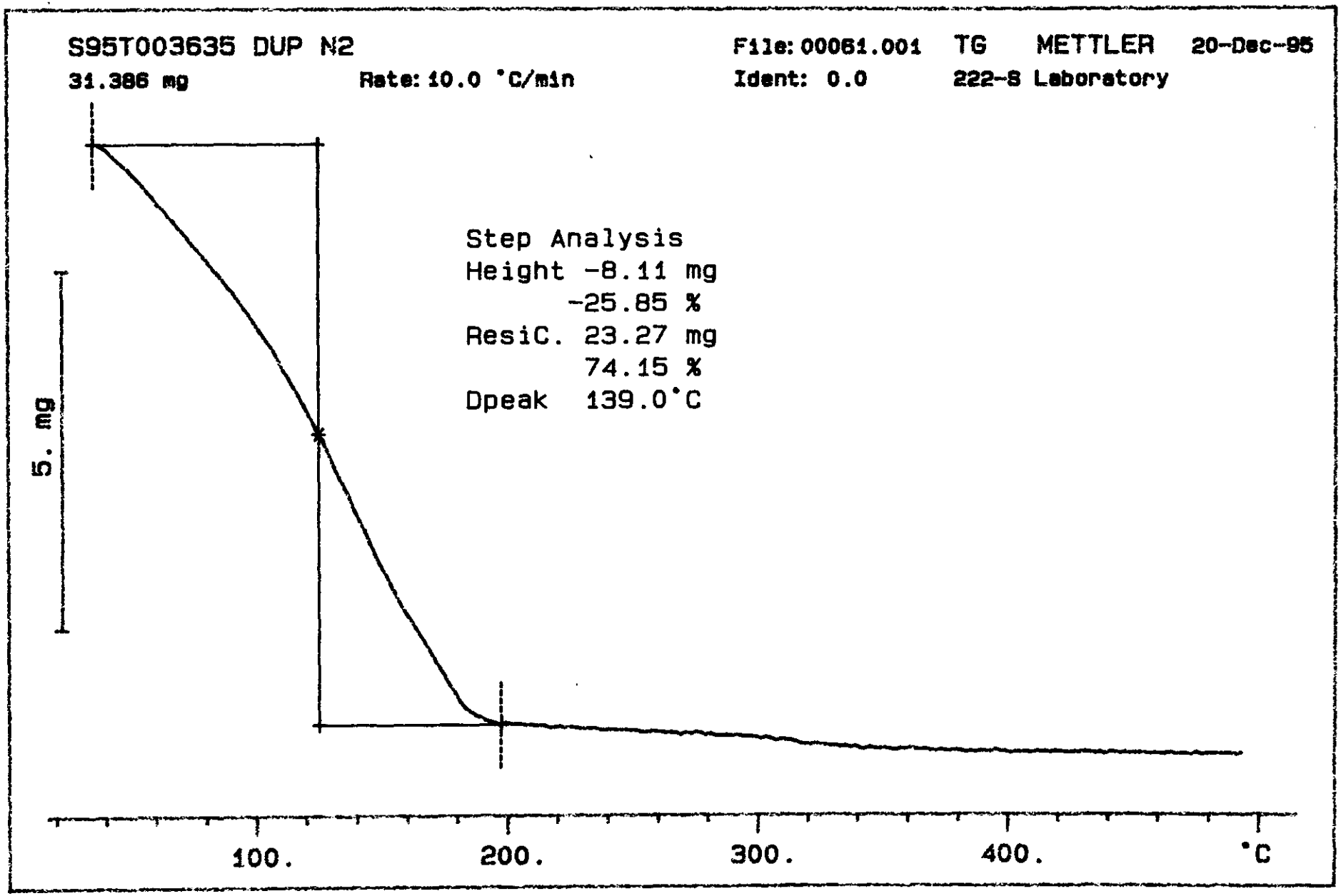


Smutter 12-20-95


S95T003633 N2
39.993 mg
Rate: 10.0 °C/min
File: 00062.001
TG
METTLER
20-Dec-95
Ident: 0.0
222-S Laboratory
Step Analysis
Height -9.77 mg
-24.42 %
ResiC. 30.22 mg
75.58 %
Dpeak 151.0°C
Step Analysis
Height -1.65 mg
-4.14 %
ResiC. 28.34 mg
70.85 %
Dpeak 453.0°C
5. mg
100.
200.
300.
400.
°C


S95T003633 DUP N2
30.668 mg
Rate: 10.0 °C/min
File: 00063.001
TG
METTLER
21-Dec-95
Ident: 0.0
222-S Laboratory
Step Analysis
Height -7.39 mg
-24.11 %
ResiC. 23.27 mg
75.89 %
Dpeak 153.0°C
Step Analysis
Height -0.87 mg
-2.84 %
ResiC. 22.19 mg
72.37 %
5. mg
100.
200.
300.
400.
°C


S95T003635 N2
48.528 mg
Rate: 10.0 °C/min
File: 00060.001
Ident: 0.0
TG
METTLER
222-S Laboratory
20-Dec-95
Step Analysis
Height-12.49 mg
-25.73 %
ResiC. 36.04 mg
74.27 %
Dpeak 157.0°C
5. mg
100.
200.
300.
400.
°C


S95T003635 DUP N2
31.386 mg
Rate: 10.0 °C/min
File: 00061.001
Ident: 0.0
TG
METTLER
222-S Laboratory
20-Dec-95
Step Analysis
Height -8.11 mg
-25.85 %
ResiC. 23.27 mg
74.15 %
Dpeak 139.0°C
5. mg
100.
200.
300.
400.
°C

LABCORE Data Entry Template for Worklist# 4467

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

Method: LA-560-112 Rev/Mod B-1

Worklist Comment: Please run BY-104 TGAs under N2. bdv

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				TGA-01	SOLID	59.74	61.67	N/A	%
95000180	BY104 ROTARY	2	SAMPLE	S95T003636	0		TGA-01	SOLID	N/A	26.96		%
95000180	BY104 ROTARY	3	DUP	S95T003636	0		TGA-01	SOLID	26.96	26.76	N/A	%
		4	STD				TGA-01	SOLID	59.74	60.54	N/A	%
95000180	BY104 ROTARY	5	SAMPLE	S95T003639	0		TGA-01	SOLID	N/A	30.64		%
95000180	BY104 ROTARY	6	DUP	S95T003639	0		TGA-01	SOLID	30.64	33.01	N/A	%

Final page for worklist # 4467

See attached for signatures
Analyst Signature **Date** 1/2/96

Verified by Blandina Valenzuela 1-8-96

Lisa Conlin
Analyst Signature **Date**

Data Entry Comments: S95T003636 produced an additional weight loss step at approximately 360°C with a ~~delta~~ 12.16 ppm weight loss of 4.14%
S95T003639 had a small peak on the duplicate run which was caused by bumping the machine.

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# 4467

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

Method: LA-560-112 Rev/Mod C

Worklist Comment: Please run BY-104 TGAs under N2. bdv

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				TGA-01	SOLID			N/A	%
95000180	BY104 ROTARY	2	SAMPLE	S95T003636	0		TGA-01	SOLID	N/A			%
95000180	BY104 ROTARY	3	DUP	S95T003636	0		TGA-01	SOLID			N/A	%
95000180	BY104 ROTARY	4	SAMPLE	S95T003639	0		TGA-01	SOLID	N/A			%
95000180	BY104 ROTARY	5	DUP	S95T003639	0		TGA-01	SOLID			N/A	%

Final page for worklist # 4467

Susie M. Fulton 12-21-95
Analyst Signature **Date**

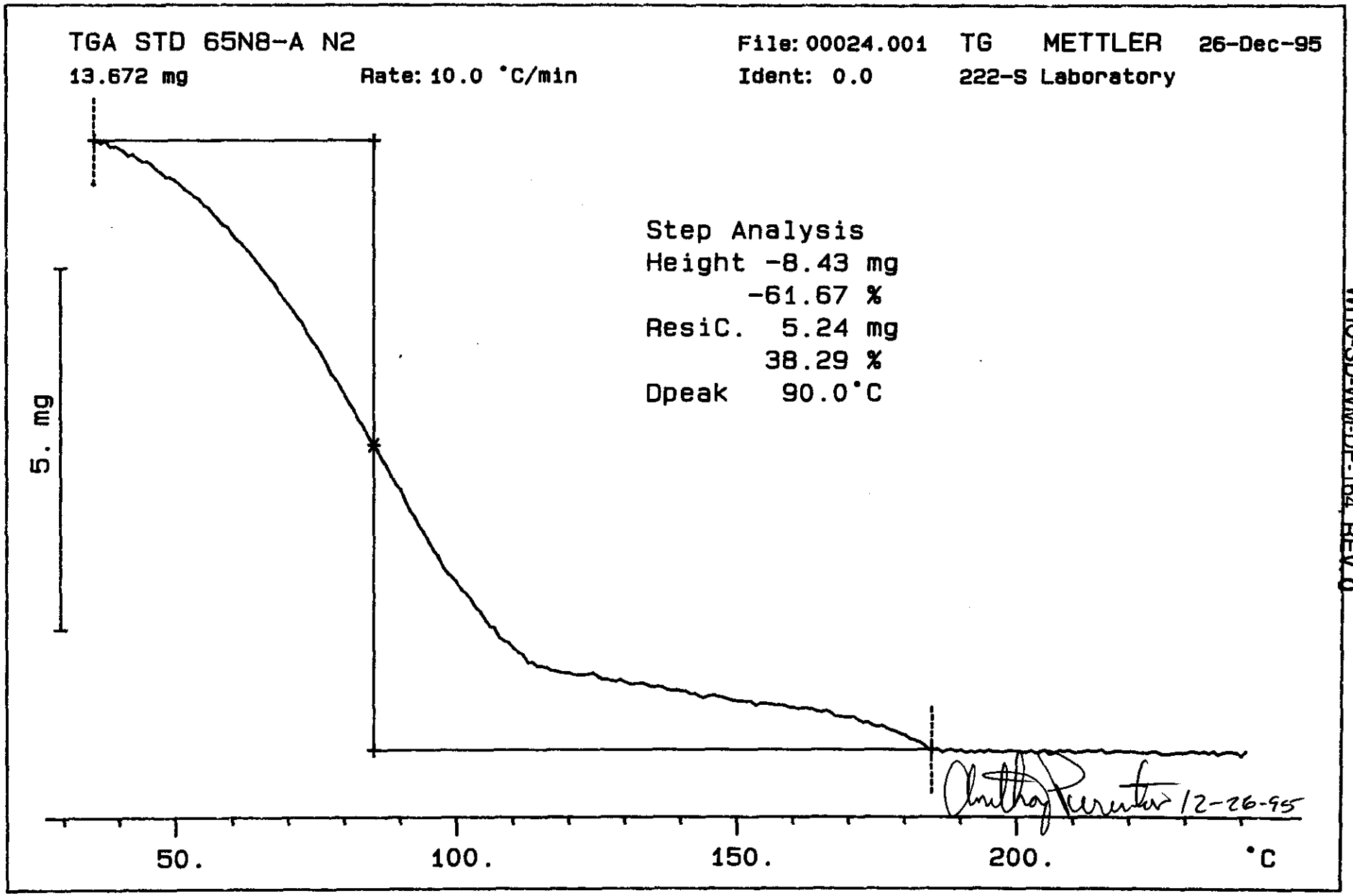
Analyst Signature **Date**

Anthony Pacurita 12-27-95

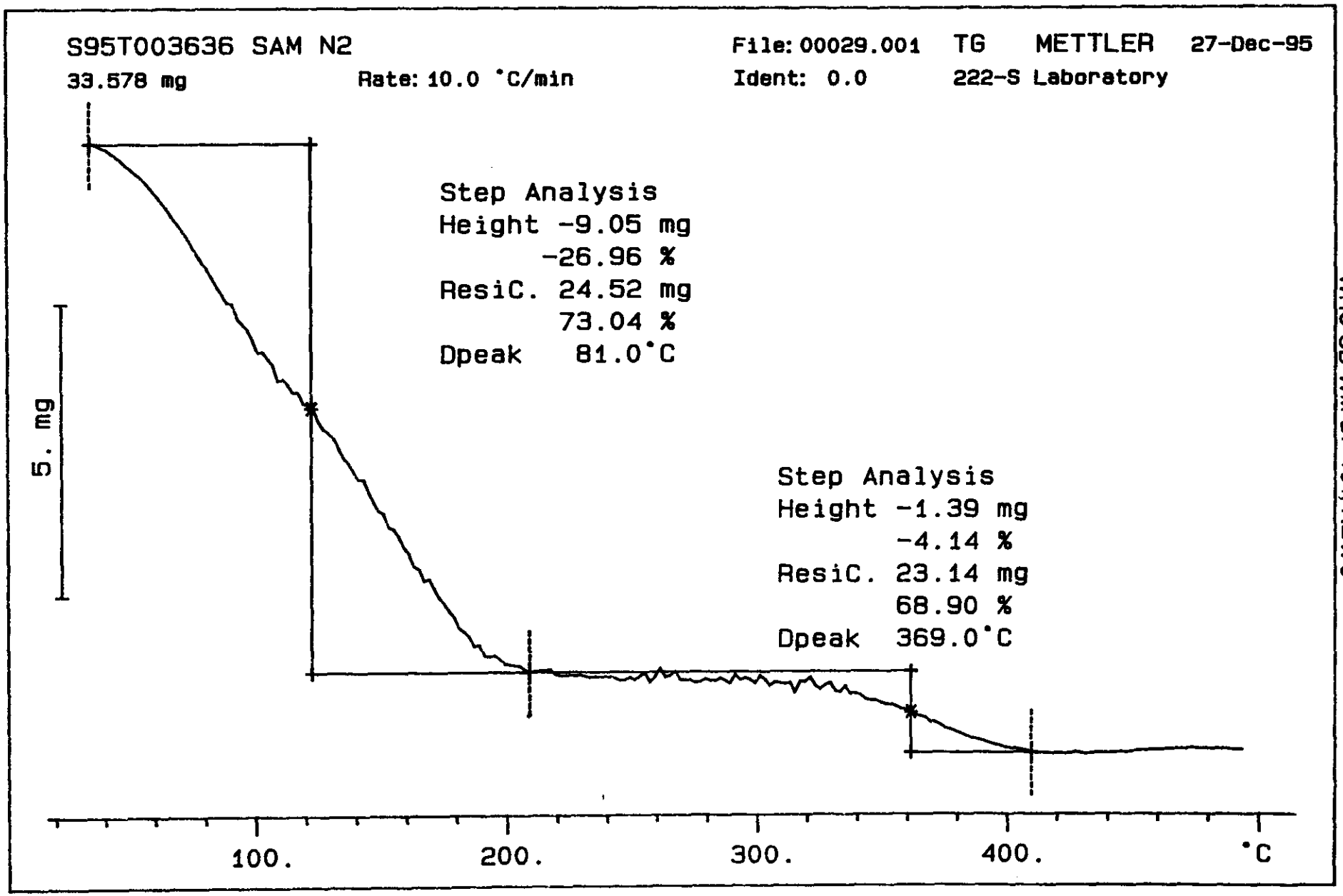
Data Entry Comments:

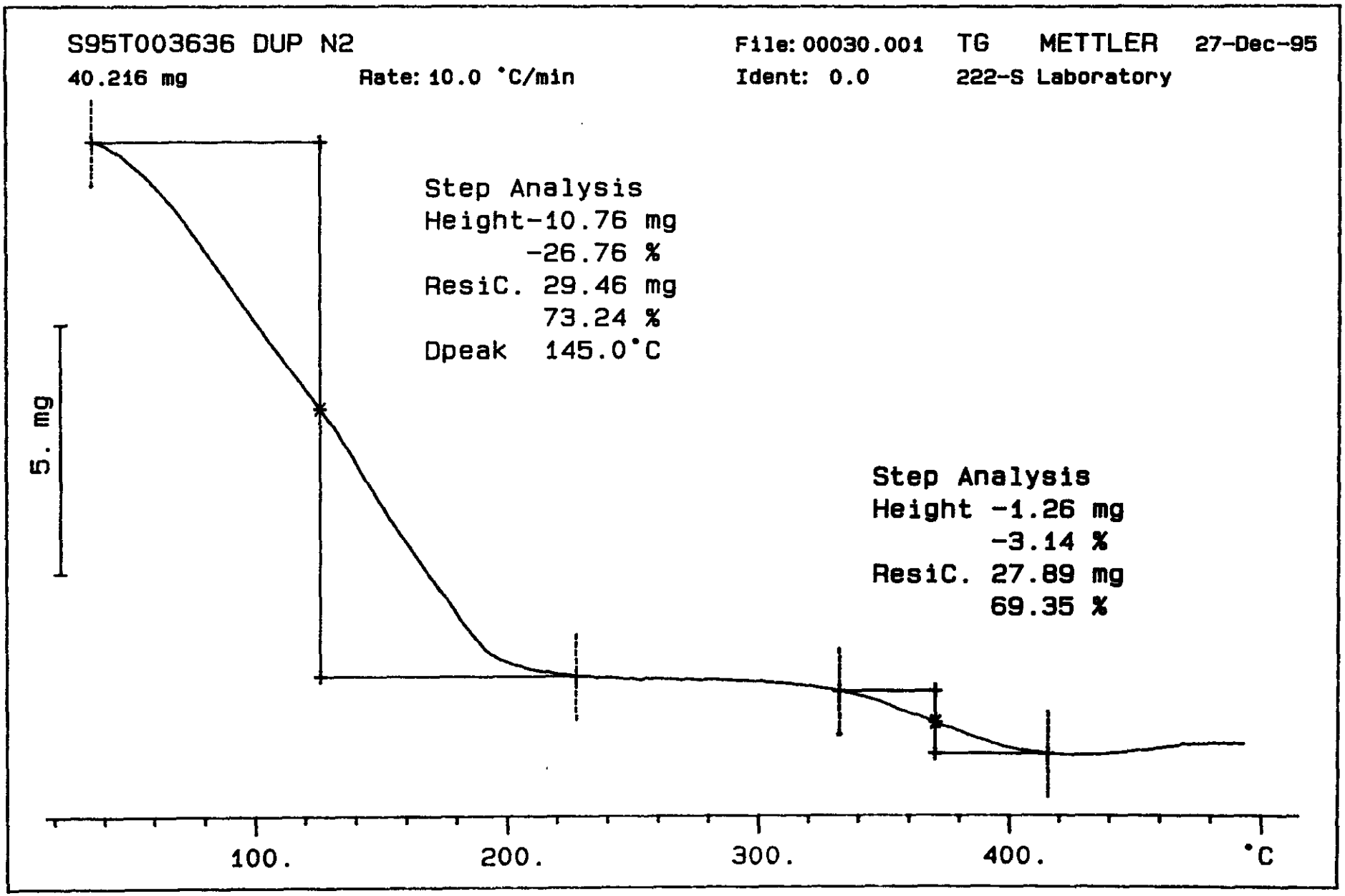
Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

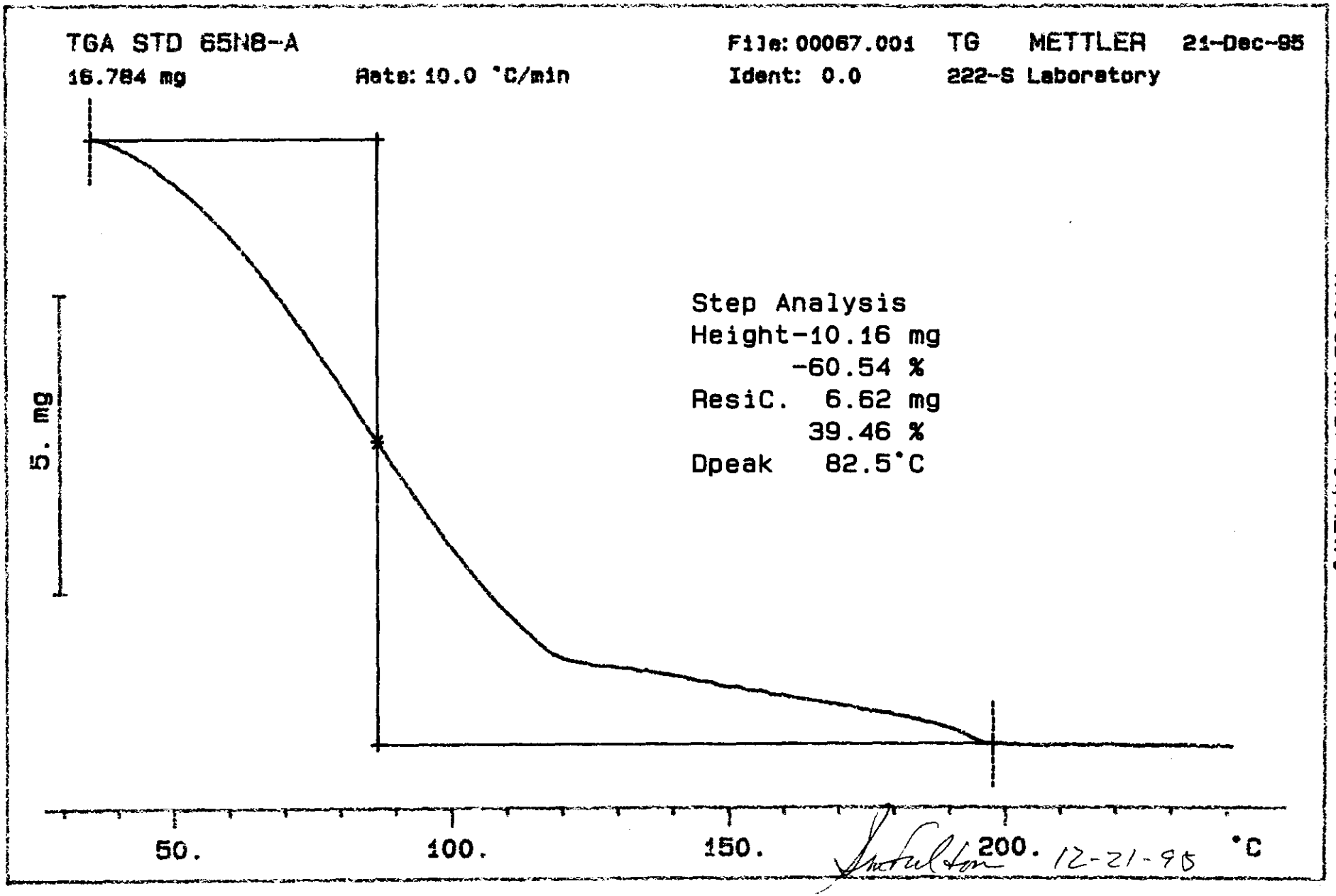
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 225 TO 229.

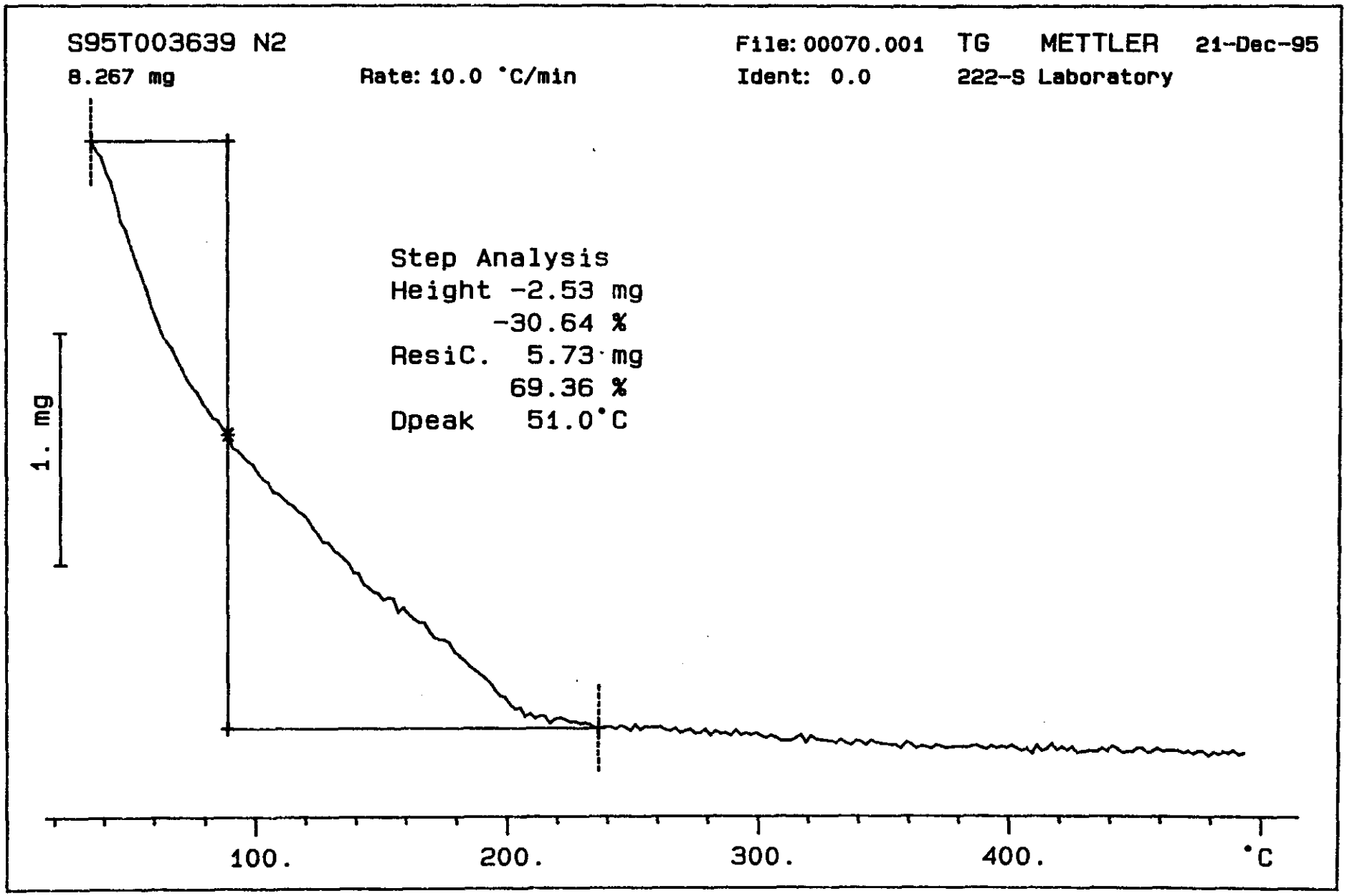


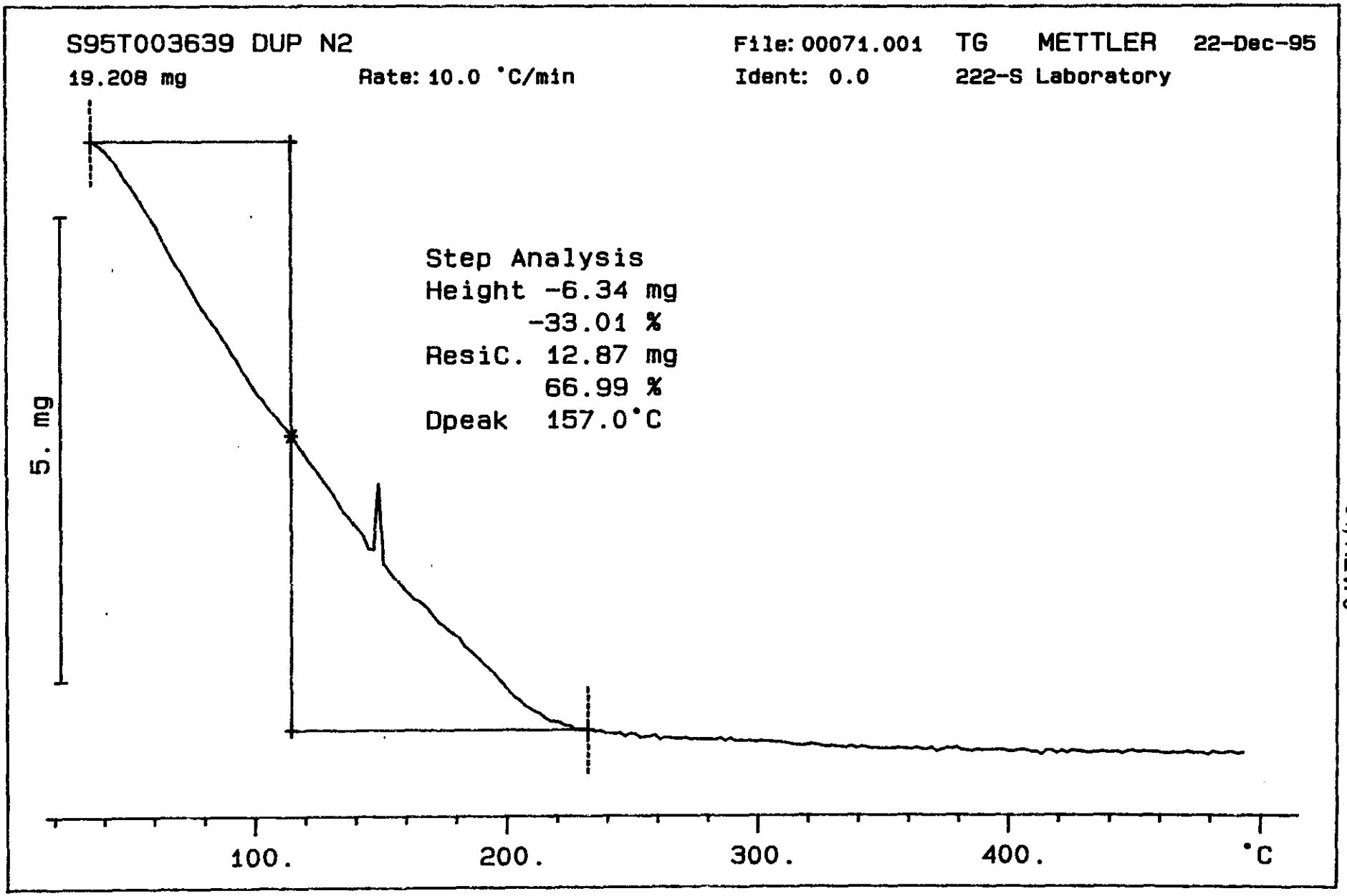
Anthony Lerentz 12-26-95


S95T003636 SAM N2
33.578 mg
Rate: 10.0 °C/min
File: 00029.001
TG
METTLER
27-Dec-95
Ident: 0.0
222-S Laboratory
Step Analysis
Height -9.05 mg
-26.96 %
ResiC. 24.52 mg
73.04 %
Dpeak 81.0°C
Step Analysis
Height -1.39 mg
-4.14 %
ResiC. 23.14 mg
68.90 %
Dpeak 369.0°C
5. mg
100.
200.
300.
400.
°C


S95T003636 DUP N2
40.216 mg
Rate: 10.0 °C/min
File: 00030.001
TG
METTLER
27-Dec-95
Ident: 0.0
222-S Laboratory
Step Analysis
Height-10.76 mg
-26.76 %
ResiC. 29.46 mg
73.24 %
Dpeak 145.0°C
Step Analysis
Height -1.26 mg
-3.14 %
ResiC. 27.89 mg
69.35 %
5. mg
100.
200.
300.
400.
°C


TGA STD 65N8-A
16.784 mg
Rate: 10.0 °C/min
File: 00067.001
TG METTLER 21-Dec-95
Ident: 0.0
222-S Laboratory
Step Analysis
Height -10.16 mg
-60.54 %
ResiC. 6.62 mg
39.46 %
Dpeak 82.5°C
5. mg
50.
100.
150.
200.
°C
12-21-95


S95T003639 N2
8.267 mg
Rate: 10.0 °C/min
File: 00070.001
TG
METTLER
21-Dec-95
Ident: 0.0
222-S Laboratory
Step Analysis
Height -2.53 mg
-30.64 %
ResiC. 5.73 mg
69.36 %
Dpeak 51.0°C
1. mg
100.
200.
300.
400.
°C


S95T003639 DUP N2
19.208 mg
Rate: 10.0 °C/min
File: 00071.001
TG METTLER 22-Dec-95
Ident: 0.0
222-S Laboratory
Step Analysis
Height -6.34 mg
-33.01 %
ResiC. 12.87 mg
66.99 %
Dpeak 157.0°C
5. mg
100.
200.
300.
400.
°C

LABCORE Data Entry Template for Worklist# 4498

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

Method: LA-560-112 Rev/Mod B-1

Worklist Comment: BY-104 TGA Run under Nitrogen glw

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				TGA-01	SOLID	59.74	60.61*	N/A	%
95000200	BY104 ROTARY	2	SAMPLE	S95T003764	0		TGA-01	SOLID	N/A	37.49		%
95000200	BY104 ROTARY	3	DUP	S95T003764	0		TGA-01	SOLID	37.49	36.64	N/A	%
		4	STD				TGA-01	SOLID	59.74	60.10*	N/A	%
95000200	BY104 ROTARY	5	SAMPLE	S95T003781	0		TGA-01	SOLID	N/A	30.24		%
95000200	BY104 ROTARY	6	DUP	S95T003781	0		TGA-01	SOLID	30.24	28.11	N/A	%

Final page for worklist # 4498

See attached for signatures
Analyst Signature **Date** 12/28/95

[illegible] 12/21/95
Analyst Signature **Date**

Data Entry Comments: S95T003781 ~~prod~~ 12/28/95 ADV results are the sum of two weight loss steps.

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# 4498

Analyst: RG **Instrument:** TGA0 **Book #** ~~BZ-NH~~ RG 12-23-95 65N8-A

Method: LA-560-112 Rev/Mod B-1

Worklist Comment: BY-104 TGA Run under Nitrogen glw

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				TGA-01	SOLID			N/A	%
95000200	BY104 ROTARY	2	SAMPLE	S95T003764	0		TGA-01	SOLID	N/A			%
95000200	BY104 ROTARY	3	DUP	S95T003764	0		TGA-01	SOLID			N/A	%
95000200	BY104 ROTARY	4	SAMPLE	S95T003781	0		TGA-01	SOLID	N/A			%
95000200	BY104 ROTARY	5	DUP	S95T003781	0		TGA-01	SOLID			N/A	%

Final page for worklist # 4498

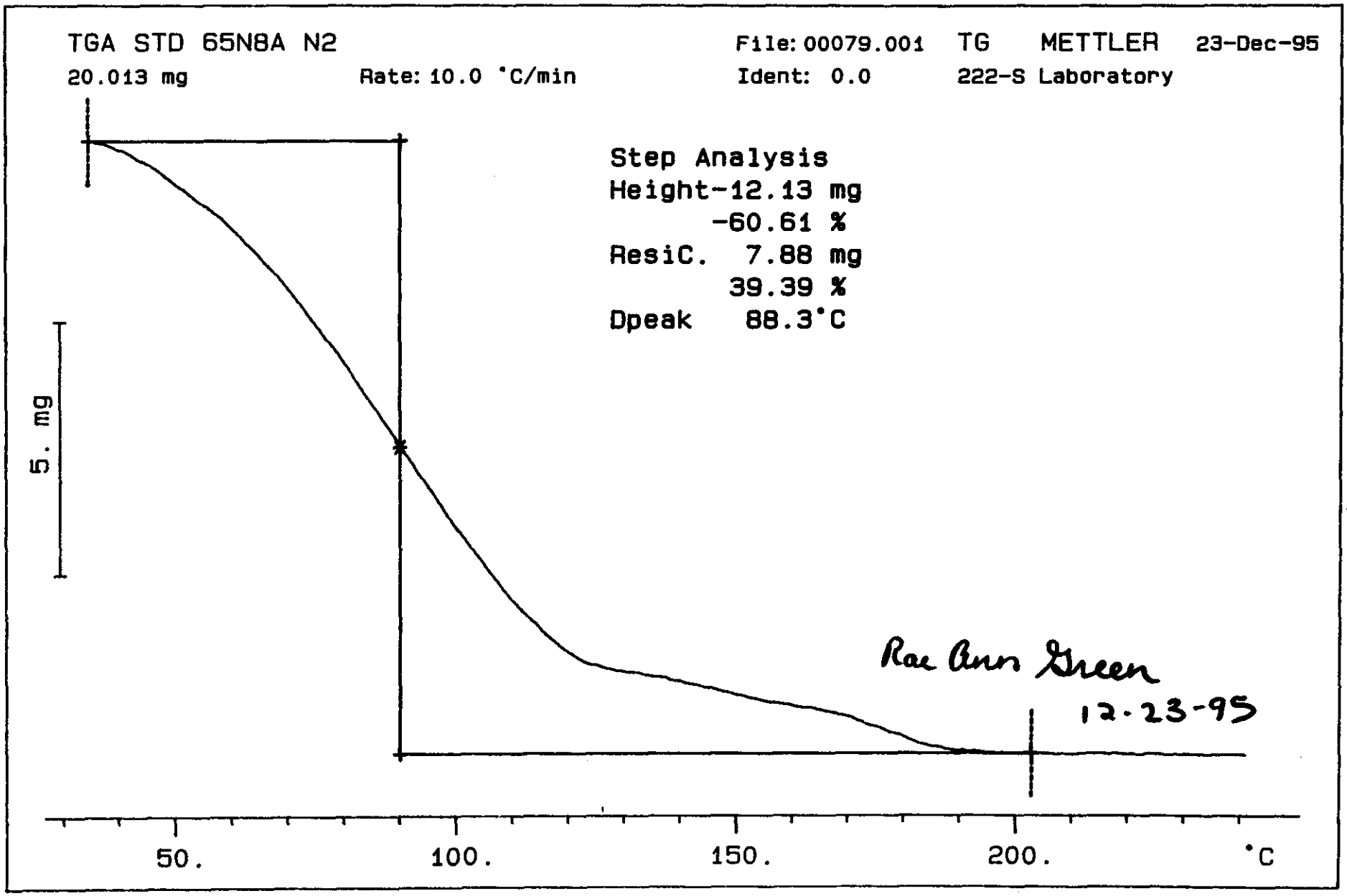
Rae Ann Green 12-23-95
Analyst Signature **Date**

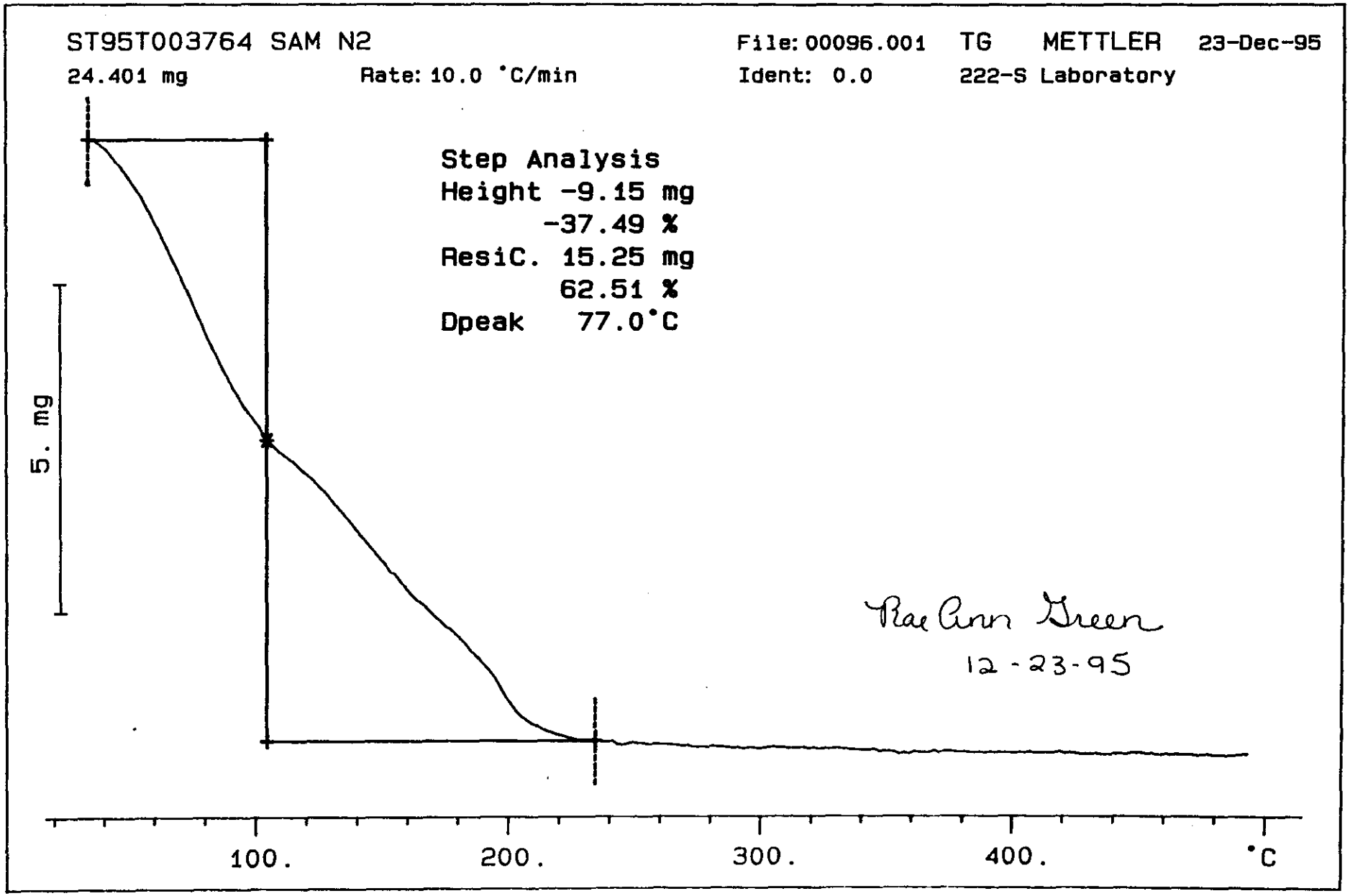
Arthur Pirrotta 12-24-95
Analyst Signature **Date**

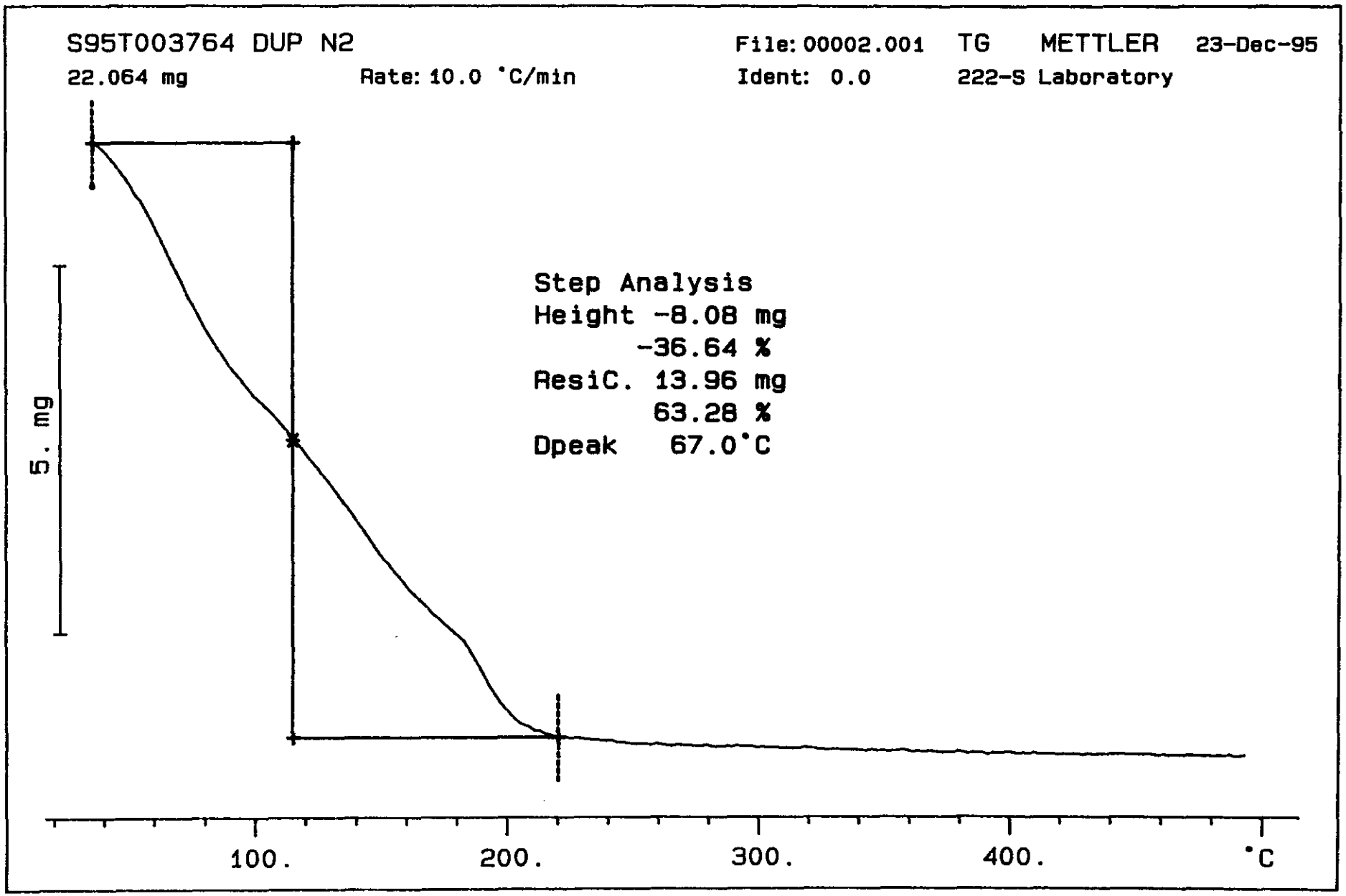
Data Entry Comments:

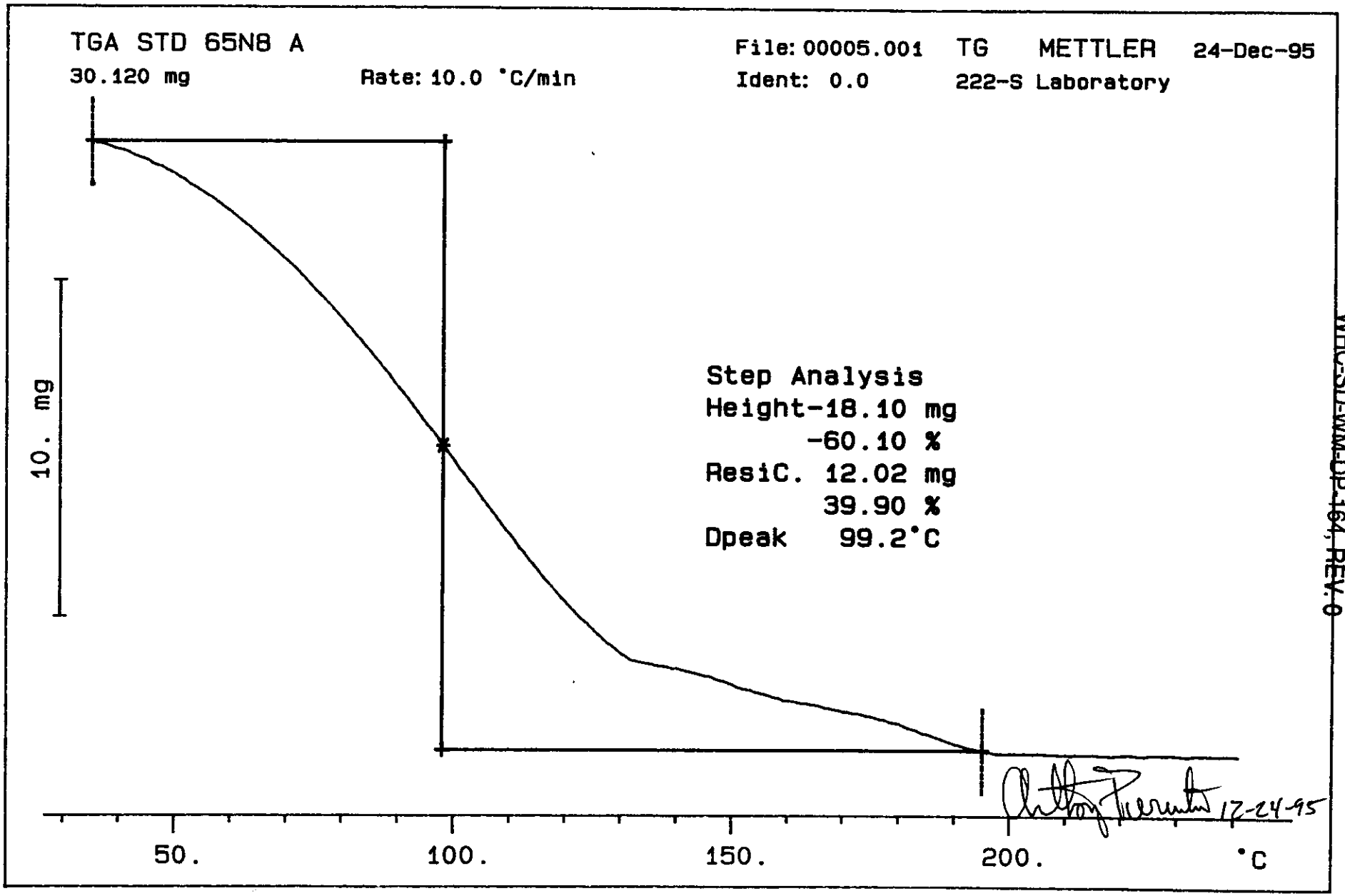
Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

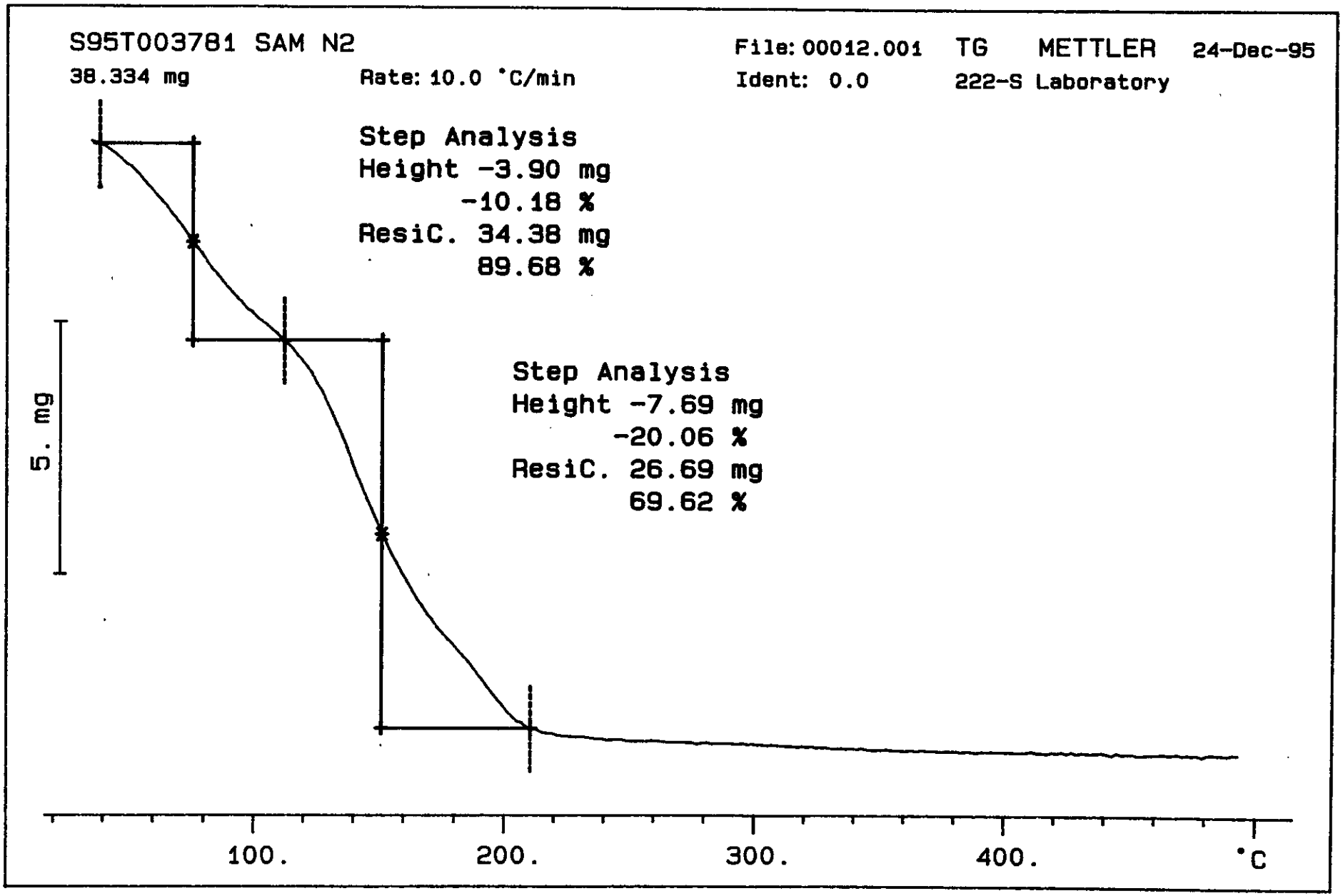
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 232 TO 237. JRW 7/20/96

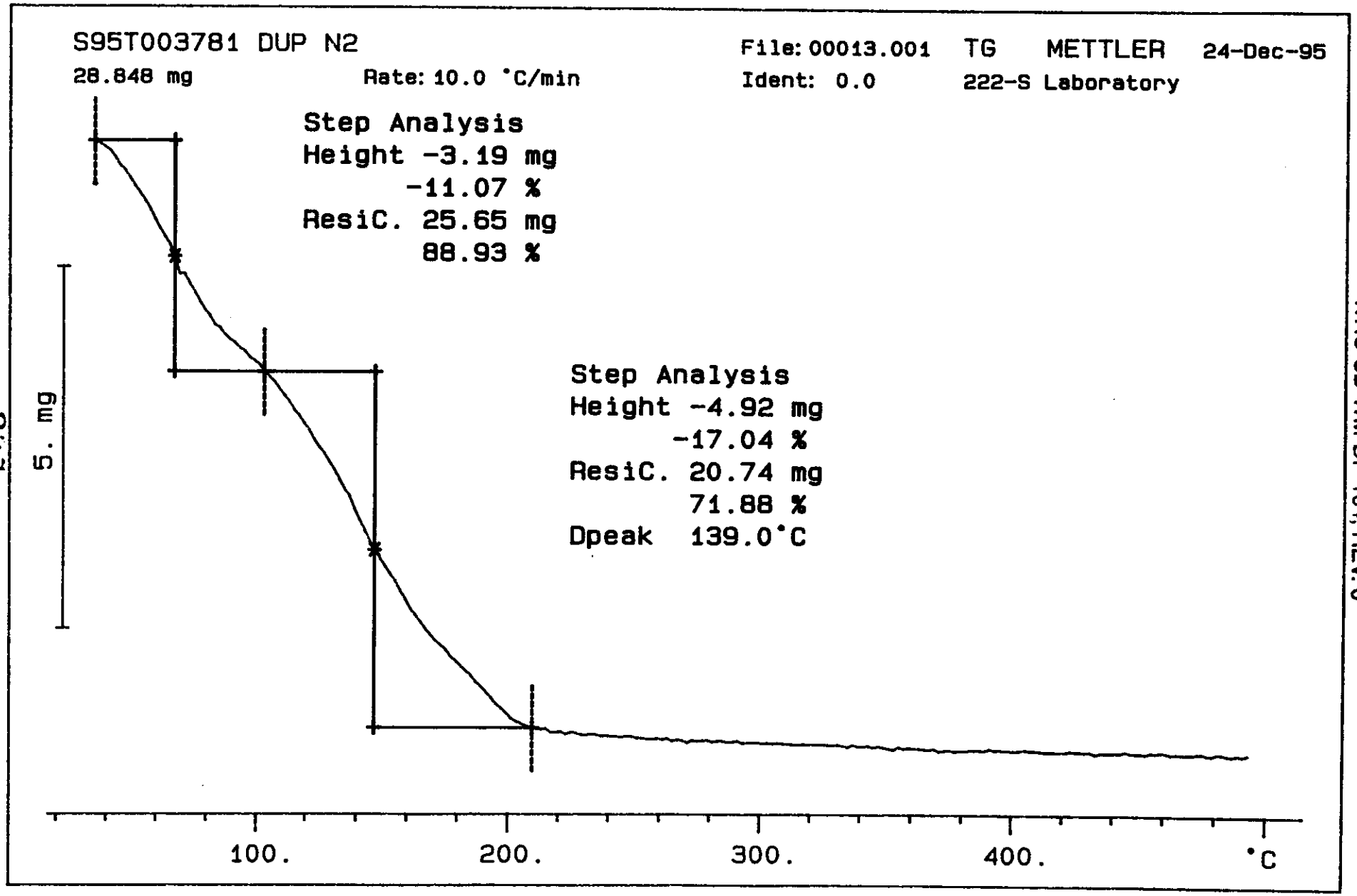



ST95T003764 SAM N2
24.401 mg
Rate: 10.0 °C/min
File: 00096.001
TG METTLER 23-Dec-95
Ident: 0.0
222-S Laboratory
Step Analysis
Height -9.15 mg
-37.49 %
ResiC. 15.25 mg
62.51 %
Dpeak 77.0°C
5. mg
100.
200.
300.
400.
°C
Rae Ann Green
12-23-95


S95T003764 DUP N2
22.064 mg
Rate: 10.0 °C/min
File: 00002.001
Ident: 0.0
TG
METTLER
23-Dec-95
222-S Laboratory
Step Analysis
Height -8.08 mg
-36.64 %
ResiC. 13.96 mg
63.28 %
Dpeak 67.0°C
5. mg
100.
200.
300.
400.
°C


TGA STD 65N8 A
30.120 mg
Rate: 10.0 °C/min
File: 00005.001
TG METTLER
24-Dec-95
Ident: 0.0
222-S Laboratory
10. mg
Step Analysis
Height-18.10 mg
-60.10 %
ResiC. 12.02 mg
39.90 %
Dpeak 99.2°C
50.
100.
150.
200.
°C
12-24-95


S95T003781 SAM N2
38.334 mg
Rate: 10.0 °C/min
File: 00012.001
TG
METTLER
24-Dec-95
Ident: 0.0
222-S Laboratory
Step Analysis
Height -3.90 mg
-10.18 %
ResiC. 34.38 mg
89.68 %
Step Analysis
Height -7.69 mg
-20.06 %
ResiC. 26.69 mg
69.62 %
5. mg
100.
200.
300.
400.
°C


S95T003781 DUP N2
28.848 mg
Rate: 10.0 °C/min
File: 00013.001
TG
METTLER
24-Dec-95
Ident: 0.0
222-S Laboratory
Step Analysis
Height -3.19 mg
-11.07 %
ResiC. 25.65 mg
88.93 %
Step Analysis
Height -4.92 mg
-17.04 %
ResiC. 20.74 mg
71.88 %
Dpeak 139.0°C
5. mg
100.
200.
300.
400.
°C

LABCORE Data Entry Template for Worklist# 4501

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

Method: LA-514-114 Rev/Mod C-1

Worklist Comment: BY-104 TGA Run under Nitrogen dlh

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				TGA-03	SOLID	59.74	59.89	N/A	%
95000200	BY104 ROTARY	2	SAMPLE	S95T003809	0		TGA-03	SOLID	N/A	37.06		%
95000200	BY104 ROTARY	3	DUP	S95T003809	0		TGA-03	SOLID	37.06	35.97	N/A	%
95000200	BY104 ROTARY	4	SAMPLE	S95T003783	0		TGA-03	SOLID	N/A	26.37		%
95000200	BY104 ROTARY	5	DUP	S95T003783	0		TGA-03	SOLID	26.37	28.19	N/A	%

Final page for worklist # 4501

See attached for signatures
Analyst Signature **Date** 12/29/95

Linda Conlin 12/30/95
Analyst Signature **Date**

Data Entry Comments:

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

LABCORE Data Entry Template for Worklist# 4501

Analyst: RLMcCown **Instrument:** TGA0 _____ **Book #** 65U8A

Method: LA-~~560-112~~ 514-114 Rev/Mod C-1
RLM 12/25/95

Worklist Comment: BY-104 TGA Run under Nitrogen dlh

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				TGA-01	SOLID			N/A	%
95000200	BY104 ROTARY	2	SAMPLE	S95T003809	0		TGA-01	SOLID	N/A			%
95000200	BY104 ROTARY	3	DUP	S95T003809	0		TGA-01	SOLID			N/A	%
95000200	BY104 ROTARY	4	SAMPLE	S95T003783	0		TGA-01	SOLID	N/A			%
95000200	BY104 ROTARY	5	DUP	S95T003783	0		TGA-01	SOLID			N/A	%

Final page for worklist # 4501

RLMcCown 12/25/95
Analyst Signature **Date**

Analyst Signature **Date**

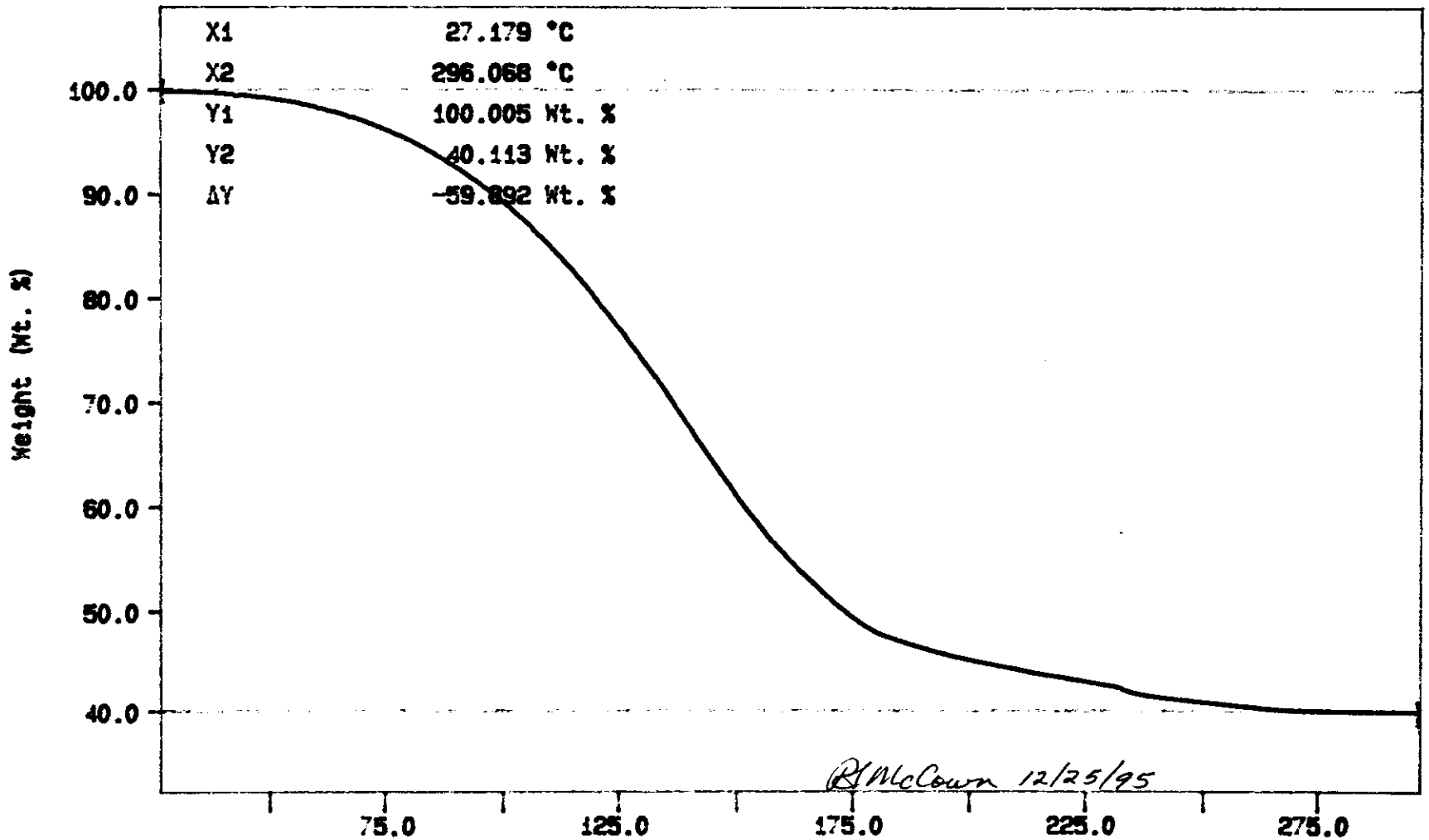
Other instrument was used.
12/29/95
BDV

Data Entry Comments:

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

Curve 1: TGA
File info: TER122404 Sun Dec 24 20:23:43 1995
Sample Weight: 22.734 mg
65N8-A Terliq

BEST AVAILABLE COPY

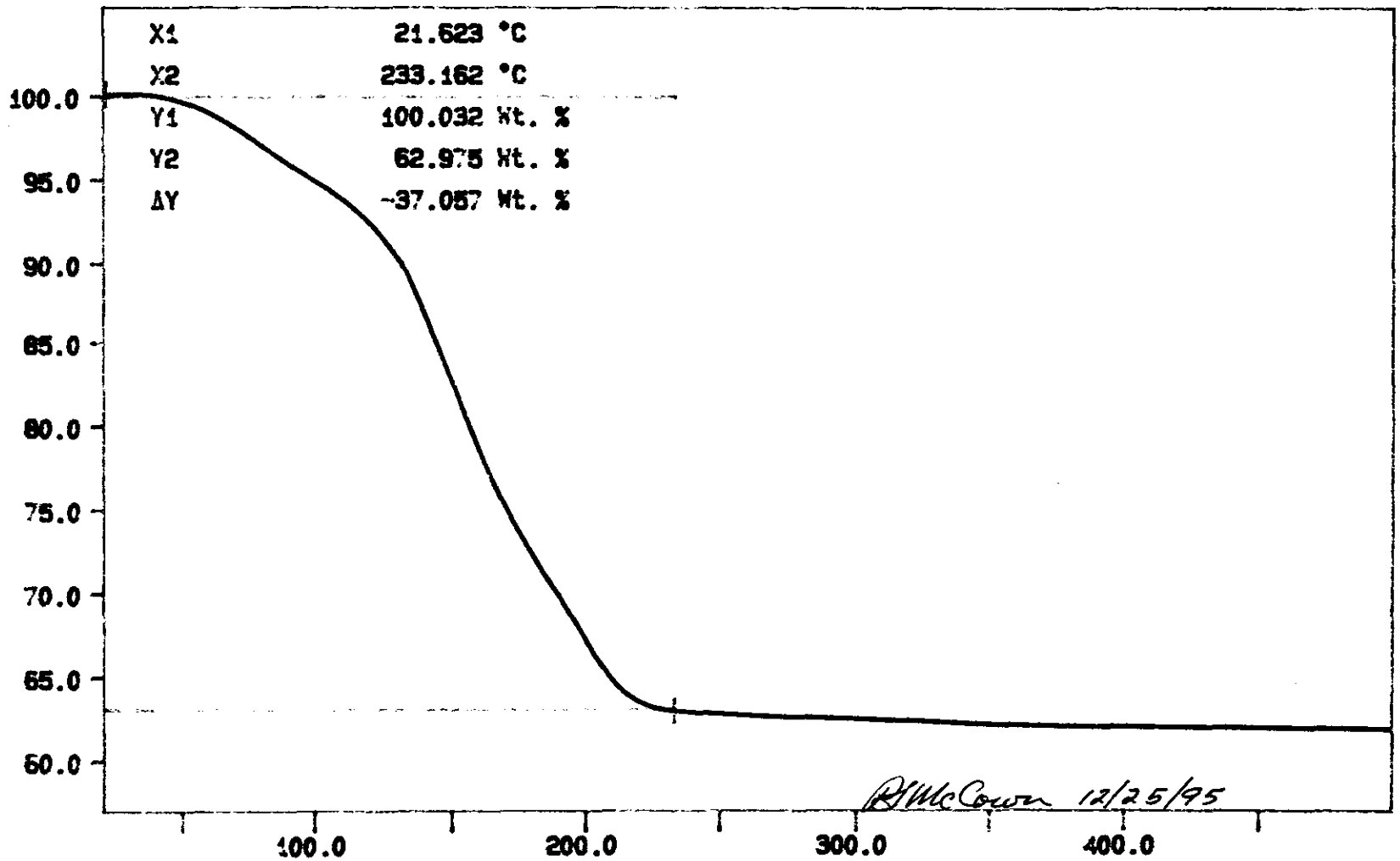


N2 10C/MIN
TEMP1: 25.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 300.0 C

PJ MCCOWN
PERKIN-ELMER
7 Series Thermal Analysis System
Sun Dec 24 20:25:46 1995

Curve 1: TGA
File info: SAM122404 Sun Dec 24 22:00:17 1995
Sample Weight: 19.767 mg
S95T003809 SAM N2

BEST AVAILABLE COPY

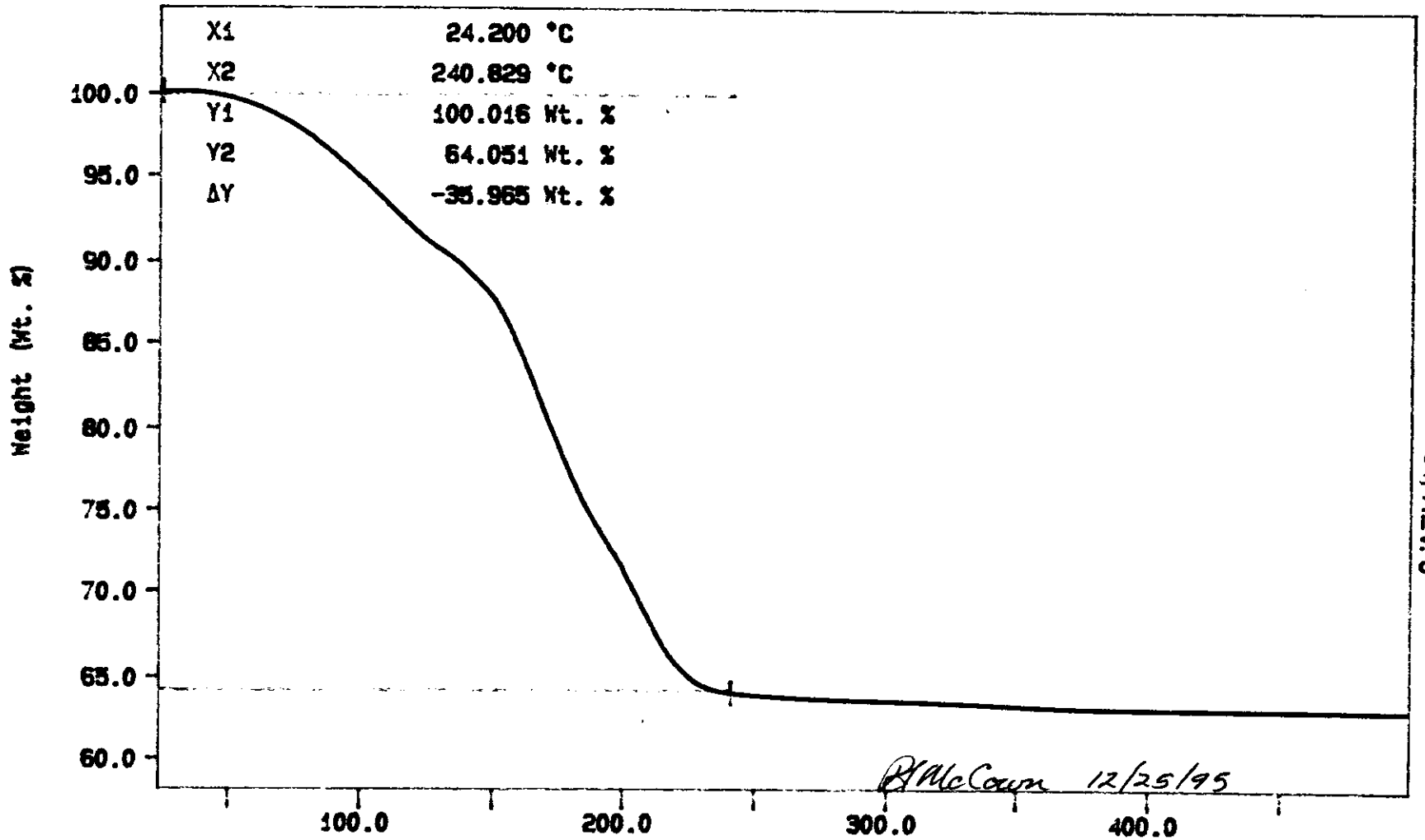


10C/MIN N2
TEMP1: 25.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 800.0 C

PJ MCCOWN
PERKIN-ELMER
7 Series Thermal Analysis System
Sun Dec 24 22:25:13 1995

Curve 1: TGA
File info: SAM122405 Sun Dec 24 23:32:39 1995
Sample Weight: 21.550 mg
S95T003609 DUP N2

BEST AVAILABLE COPY



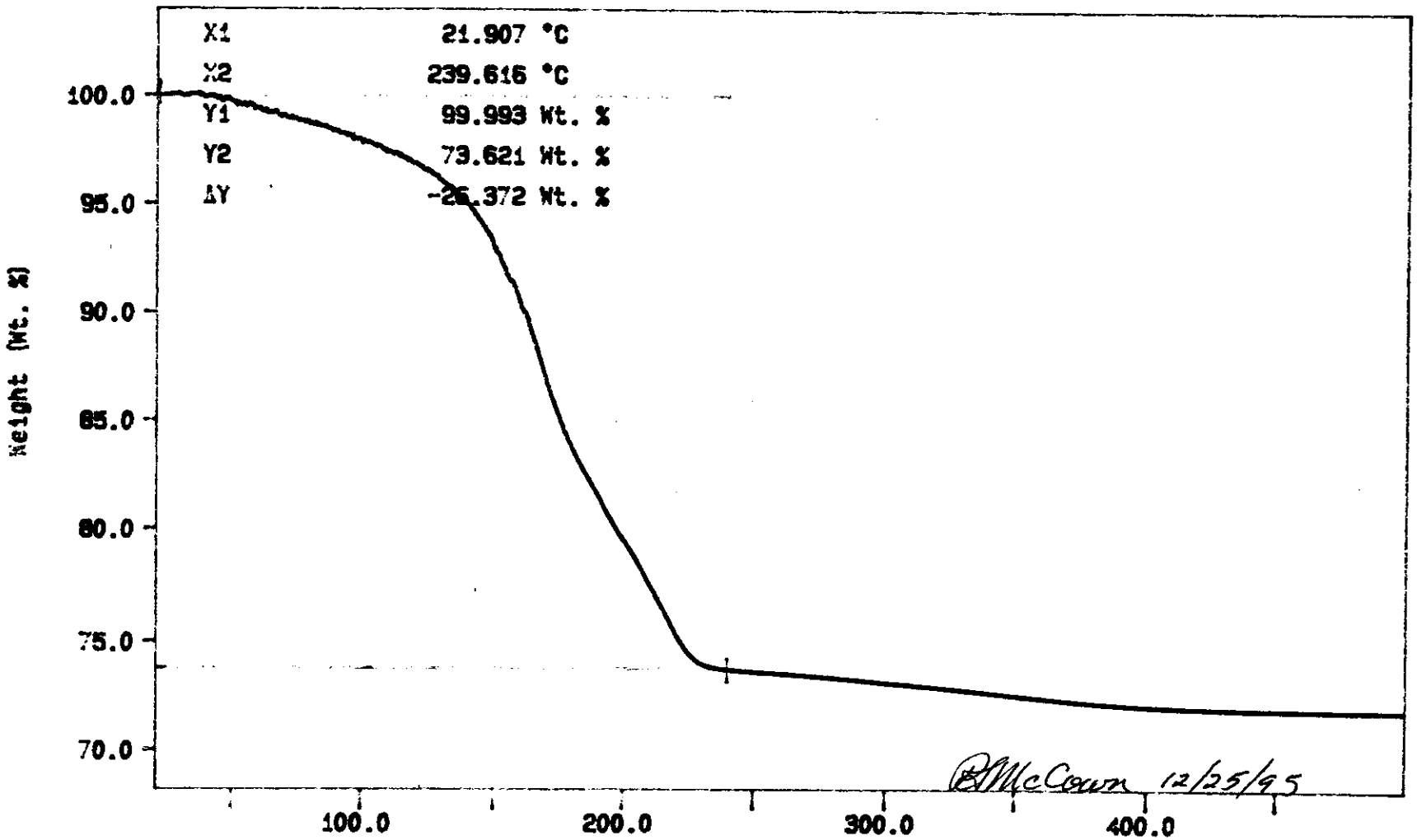
10C/MIN N2
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 600.0 C

PJ MCCONN
PERKIN-ELMER
7 Series Thermal Analysis System
Sun Dec 24 23:38:18 1995

WHC-SD-WM-DP-164, REV. 0

Curve 1: TGA
File info: SAM122501 Mon Dec 25 00:52:37 1995
Sample Weight: 33.078 mg
S95T003783 SAM N2

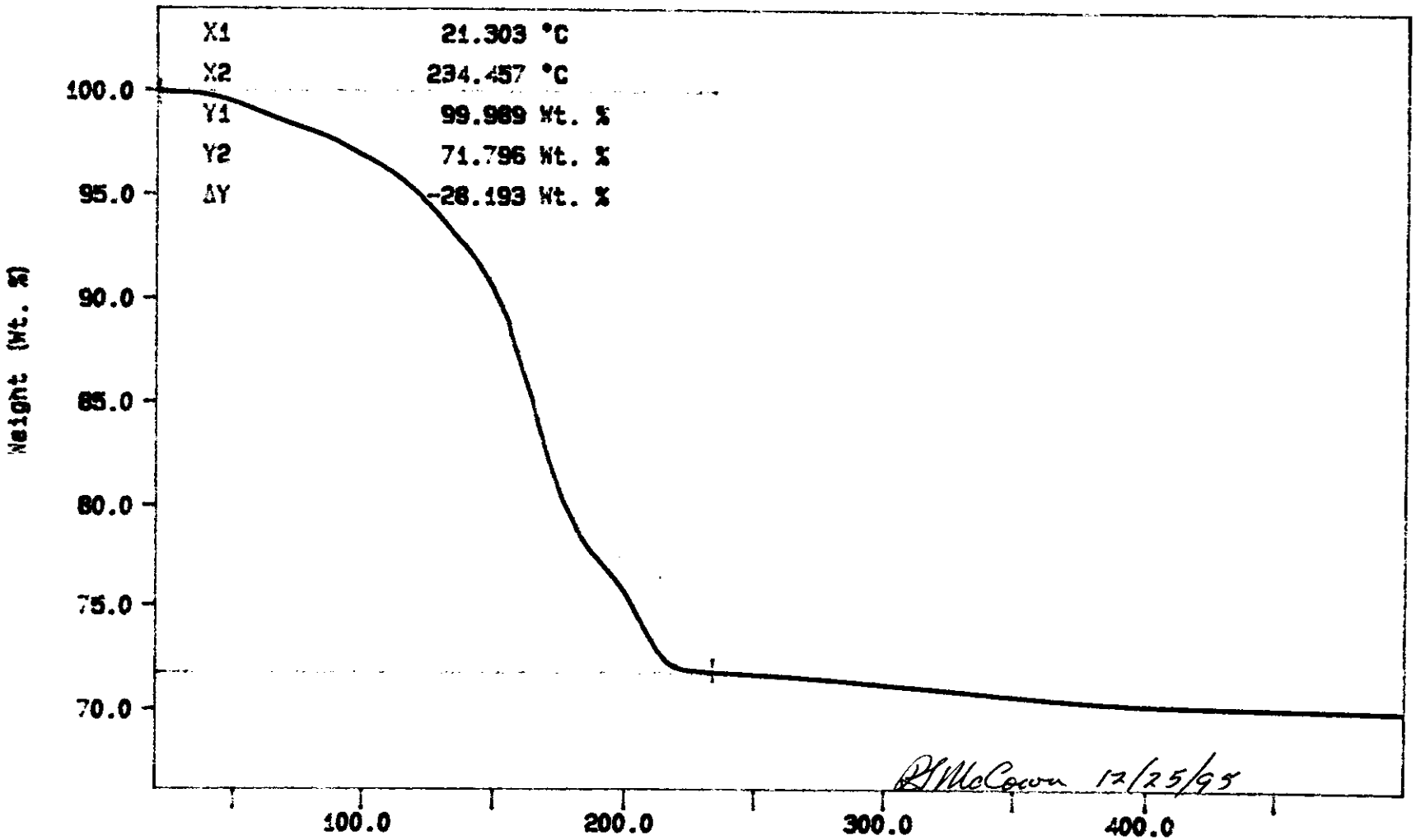
BEST AVAILABLE COPY



10C/MIN N2
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 500.0 C

PJ MCCOWN
PERKIN-ELMER
7 Series Thermal Analysis System
Mon Dec 25 01:21:25 1995

Curve 1: TGA
File info: SAM122502 Mon Dec 25 02:50:25 1995
Sample Weight: 23.486 mg
S95T003783 DUP N2



10C/MIN N2
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 800.0 C

PJ MCCOWN
PERKIN-ELMER
7 Series Thermal Analysis System
Mon Dec 25 03:03:55 1995

LABCORE Data Entry Template for Worklist# 4502

Analyst: R McCoon **Instrument:** TGA0 1 **Book #** 6508A

Method: LA-560-112 Rev/Mod B-1

Worklist Comment: BY 104 TGA Run under Nitrogen dlh

GROUP	PROJECT	S TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD				TGA-01	SOLID	59.74	60.28	N/A	%
95000200	BY104 ROTARY	2 SAMPLE	S95T003810	0		TGA-01	SOLID	N/A	13.86		%
95000200	BY104 ROTARY	3 DUP	S95T003810	0		TGA-01	SOLID	13.86	13.40	N/A	%
95000200	BY104 ROTARY	4 SAMPLE	S95T003782	0		TGA-01	SOLID	N/A	34.40		%
95000200	BY104 ROTARY	5 DUP	S95T003782	0		TGA-01	SOLID	34.40	37.81	N/A	%

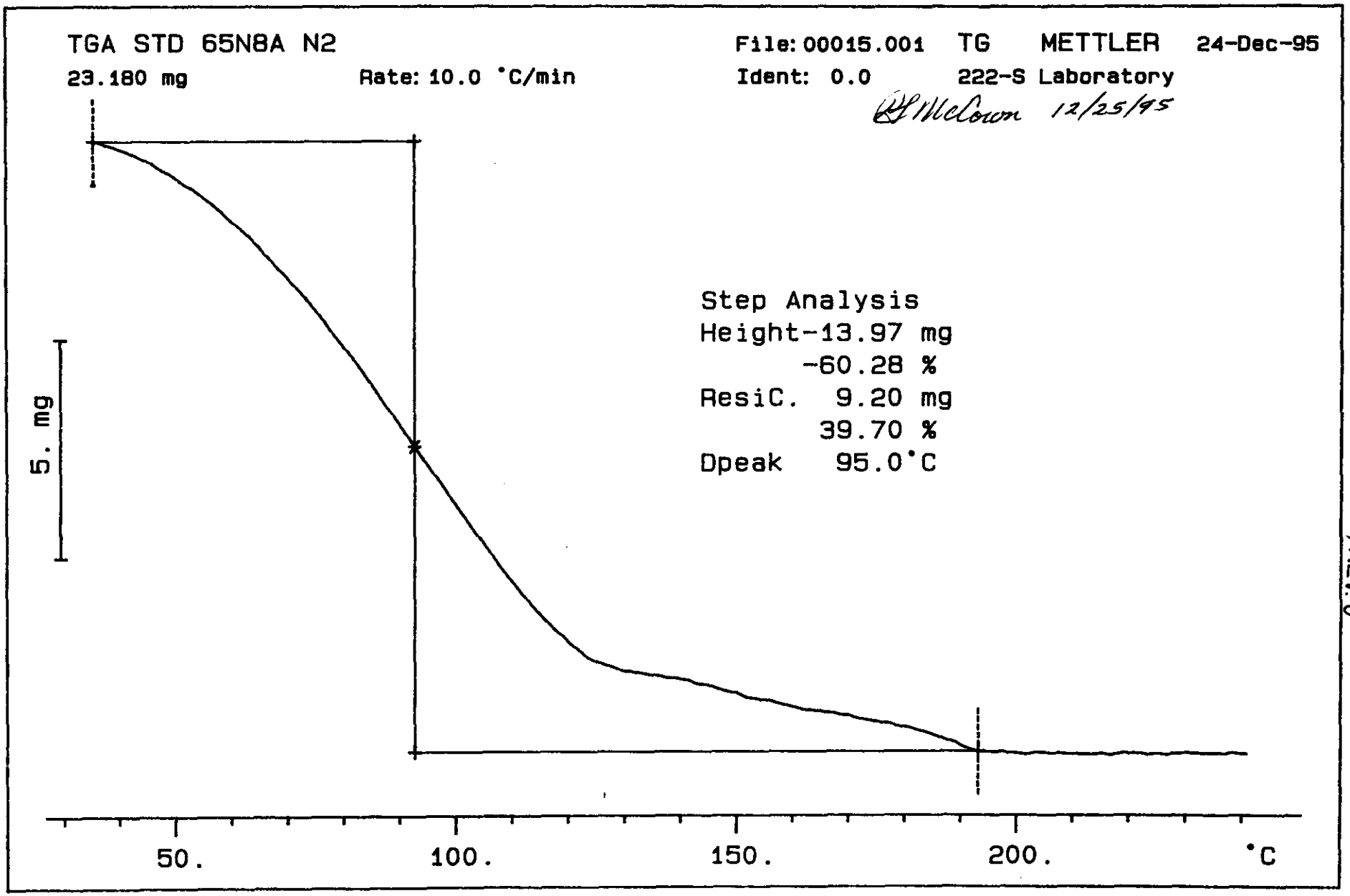
Final page for worklist # 4502

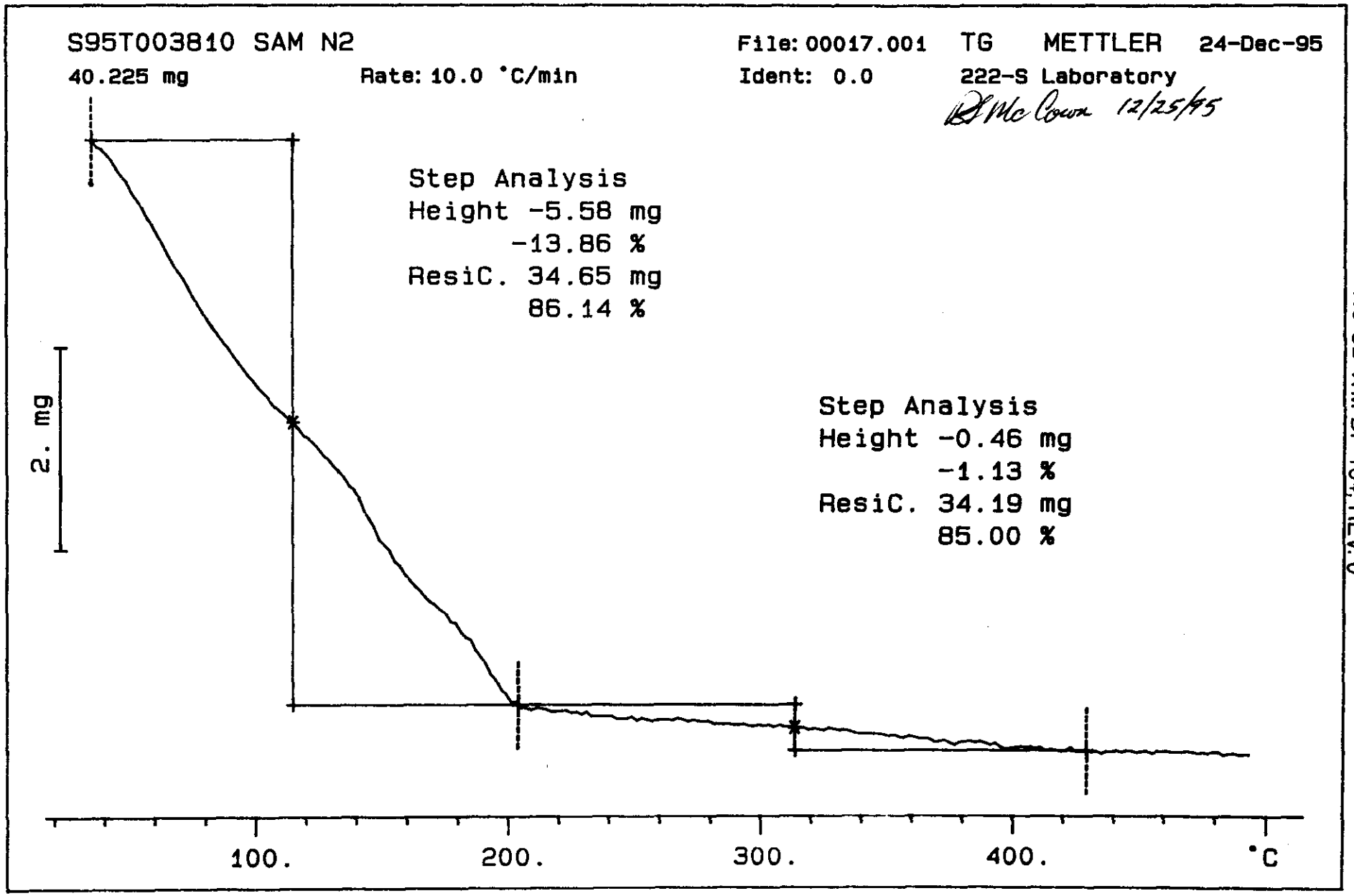
R McCoon 12/25/95
Analyst Signature **Date**

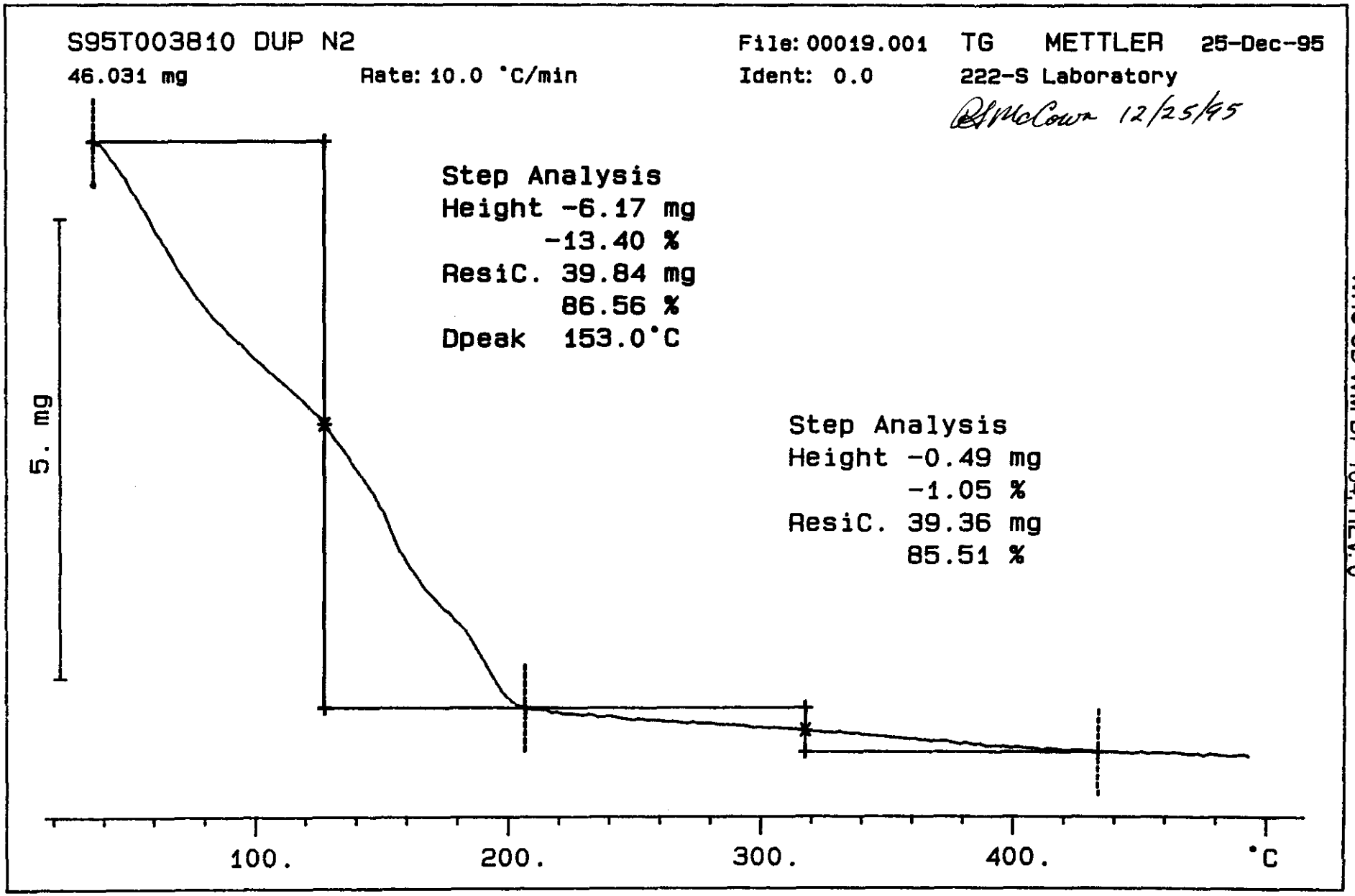
Linda Conlin 12/31/95
Analyst Signature **Date**

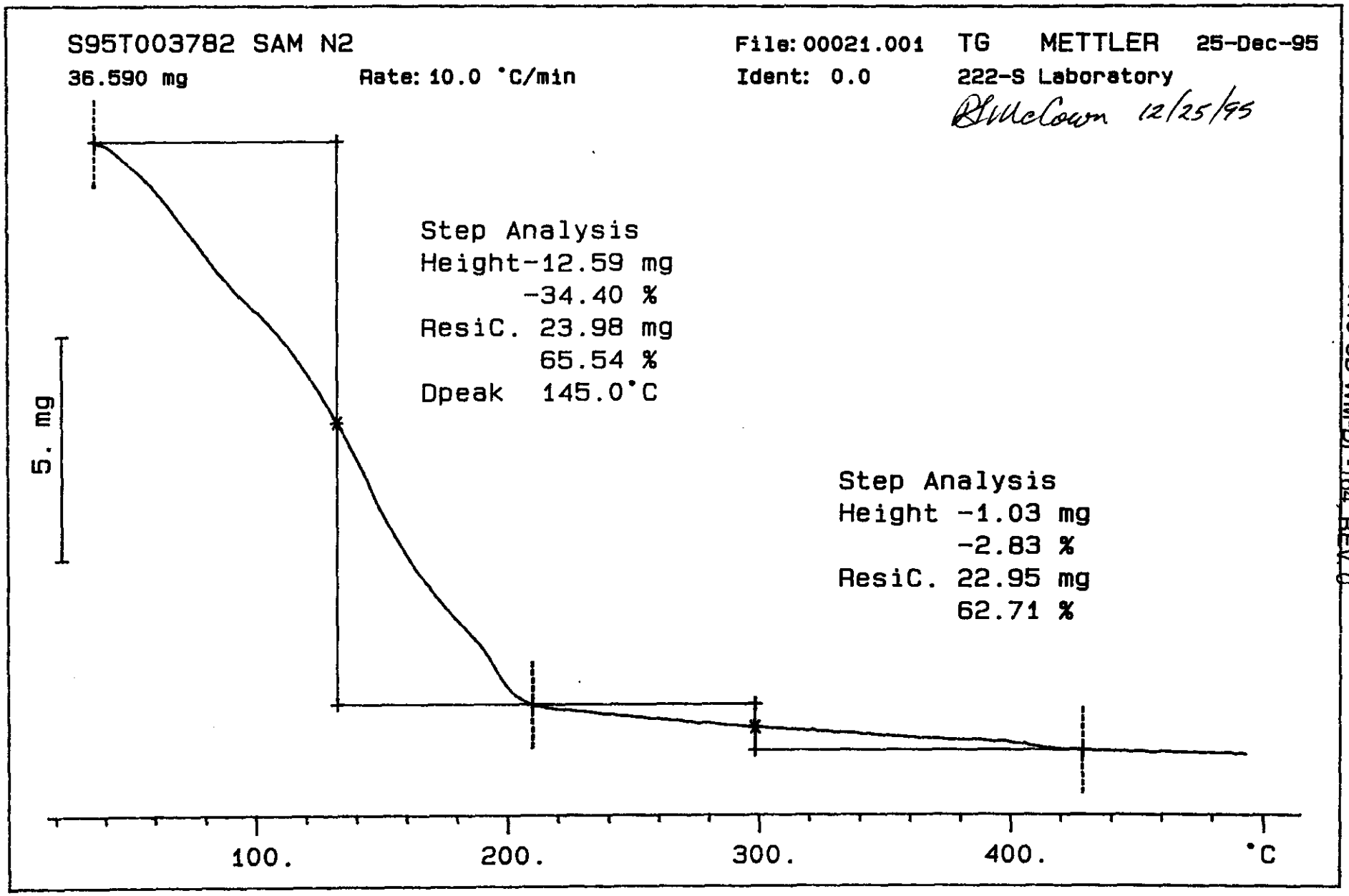
Data Entry Comments: S95T003810 produced an additional weight loss of 1.05%

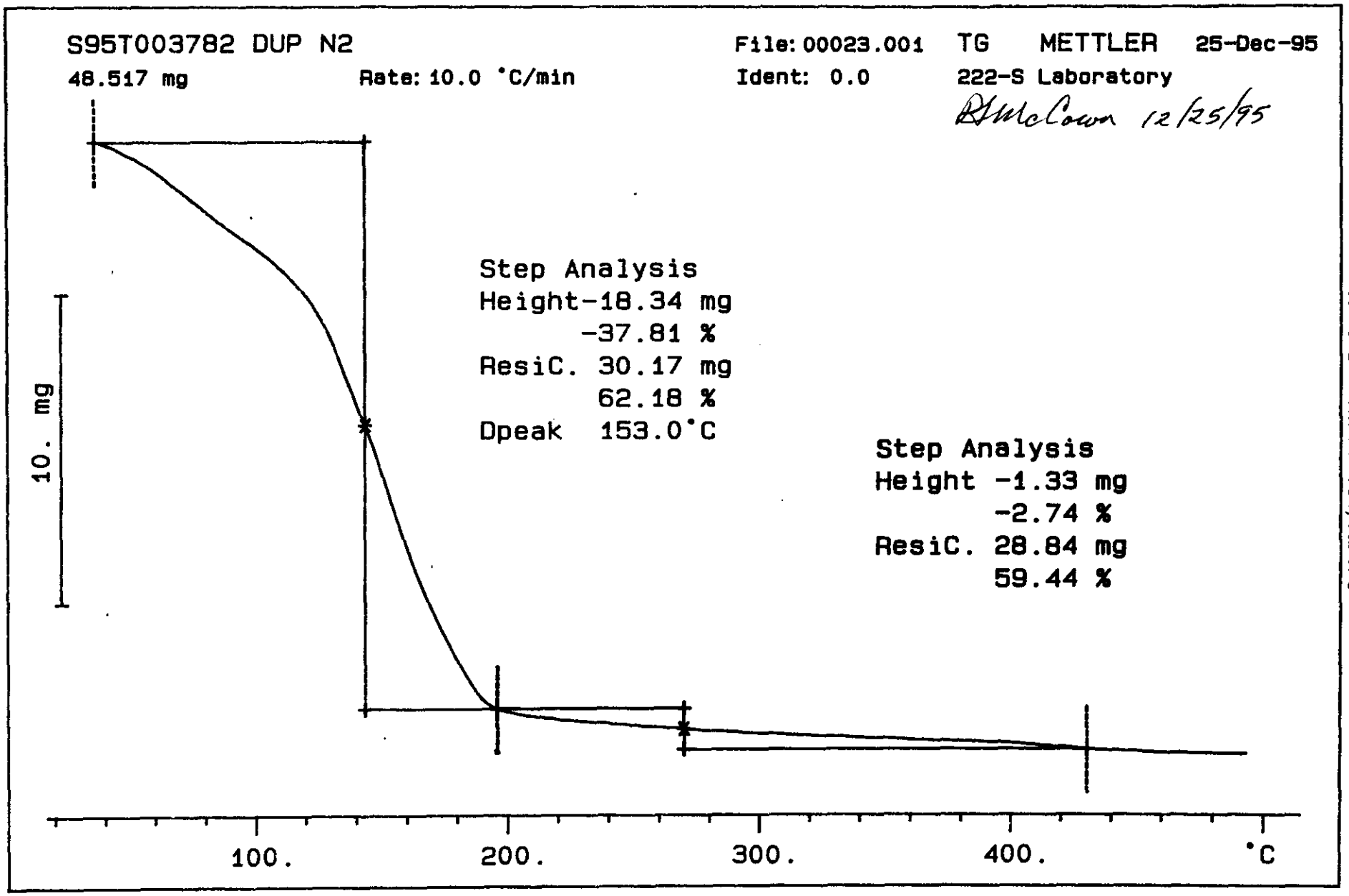
Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.


TGA STD 65N8A N2
23.180 mg
Rate: 10.0 °C/min
File: 00015.001 TG METTLER 24-Dec-95
Ident: 0.0 222-S Laboratory
Step Analysis
Height -13.97 mg
-60.28 %
ResiC. 9.20 mg
39.70 %
Dpeak 95.0°C
5. mg
50.
100.
150.
200.
°C


S95T003810 SAM N2
40.225 mg
Rate: 10.0 °C/min
File: 00017.001
TG METTLER 24-Dec-95
Ident: 0.0
222-S Laboratory
D McCown 12/25/95
Step Analysis
Height -5.58 mg
-13.86 %
ResiC. 34.65 mg
86.14 %
Step Analysis
Height -0.46 mg
-1.13 %
ResiC. 34.19 mg
85.00 %
2. mg
100.
200.
300.
400.
°C


S95T003810 DUP N2
46.031 mg
Rate: 10.0 °C/min
File: 00019.001
TG METTLER 25-Dec-95
Ident: 0.0
222-S Laboratory
RJ McCown 12/25/95
Step Analysis
Height -6.17 mg
-13.40 %
ResiC. 39.84 mg
86.56 %
Dpeak 153.0°C
Step Analysis
Height -0.49 mg
-1.05 %
ResiC. 39.36 mg
85.51 %
5. mg
100.
200.
300.
400.
°C


S95T003782 SAM N2
36.590 mg
Rate: 10.0 °C/min
File: 00021.001
TG METTLER 25-Dec-95
Ident: 0.0
222-S Laboratory
BMcCown 12/25/95
Step Analysis
Height -12.59 mg
-34.40 %
ResiC. 23.98 mg
65.54 %
Dpeak 145.0°C
Step Analysis
Height -1.03 mg
-2.83 %
ResiC. 22.95 mg
62.71 %
5. mg
100.
200.
300.
400.
°C


S95T003782 DUP N2
48.517 mg
Rate: 10.0 °C/min
File: 00023.001
Ident: 0.0
TG METTLER 25-Dec-95
222-S Laboratory
RHMcCown 12/25/95
Step Analysis
Height -18.34 mg
-37.81 %
ResiC. 30.17 mg
62.18 %
Dpeak 153.0°C
Step Analysis
Height -1.33 mg
-2.74 %
ResiC. 28.84 mg
59.44 %
10. mg
100.
200.
300.
400.
°C

LABCORE Data Entry Template for Worklist# 4503

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

Method: LA-560-112 Rev/Mod B-1

Worklist Comment: BY-104 TGA Run under Nitrogen dlh

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				TGA-01	SOLID	59.74	61.67	N/A	%
95000200	BY104 ROTARY	2	SAMPLE	S95T003784	0		TGA-01	SOLID	N/A	16.61		%
95000200	BY104 ROTARY	3	DUP	S95T003784	0		TGA-01	SOLID	16.61	18.13	N/A	%
95000200	BY104 ROTARY	4	SAMPLE	[redacted]	0		TGA-01	SOLID	N/A	15.26		%
95000200	BY104 ROTARY	5	DUP	S95T003785	0		TGA-01	SOLID	15.26	17.55	N/A	%

Final page for worklist # 4503

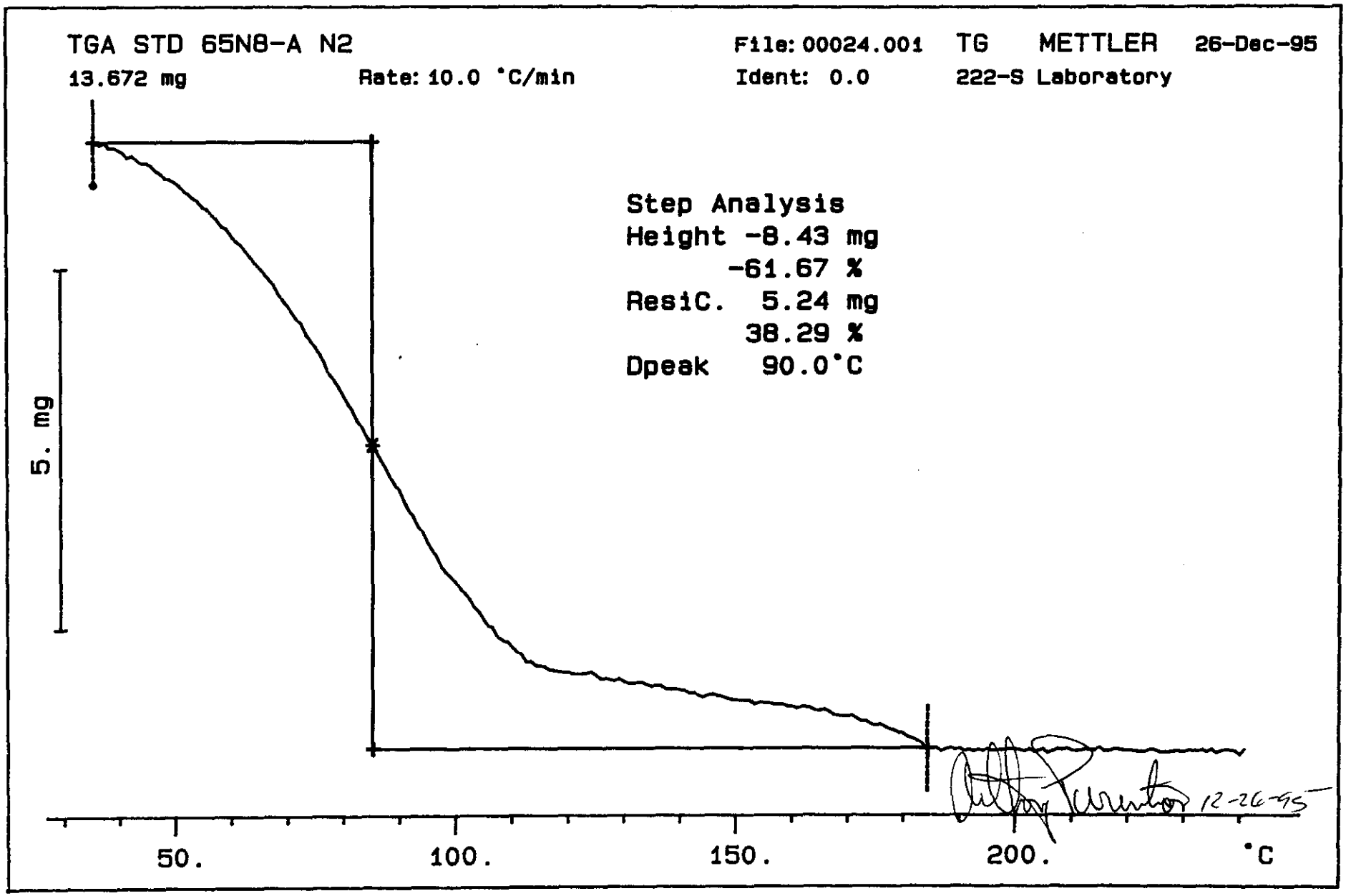
Anthony Pernita 12-26-95
Analyst Signature **Date**

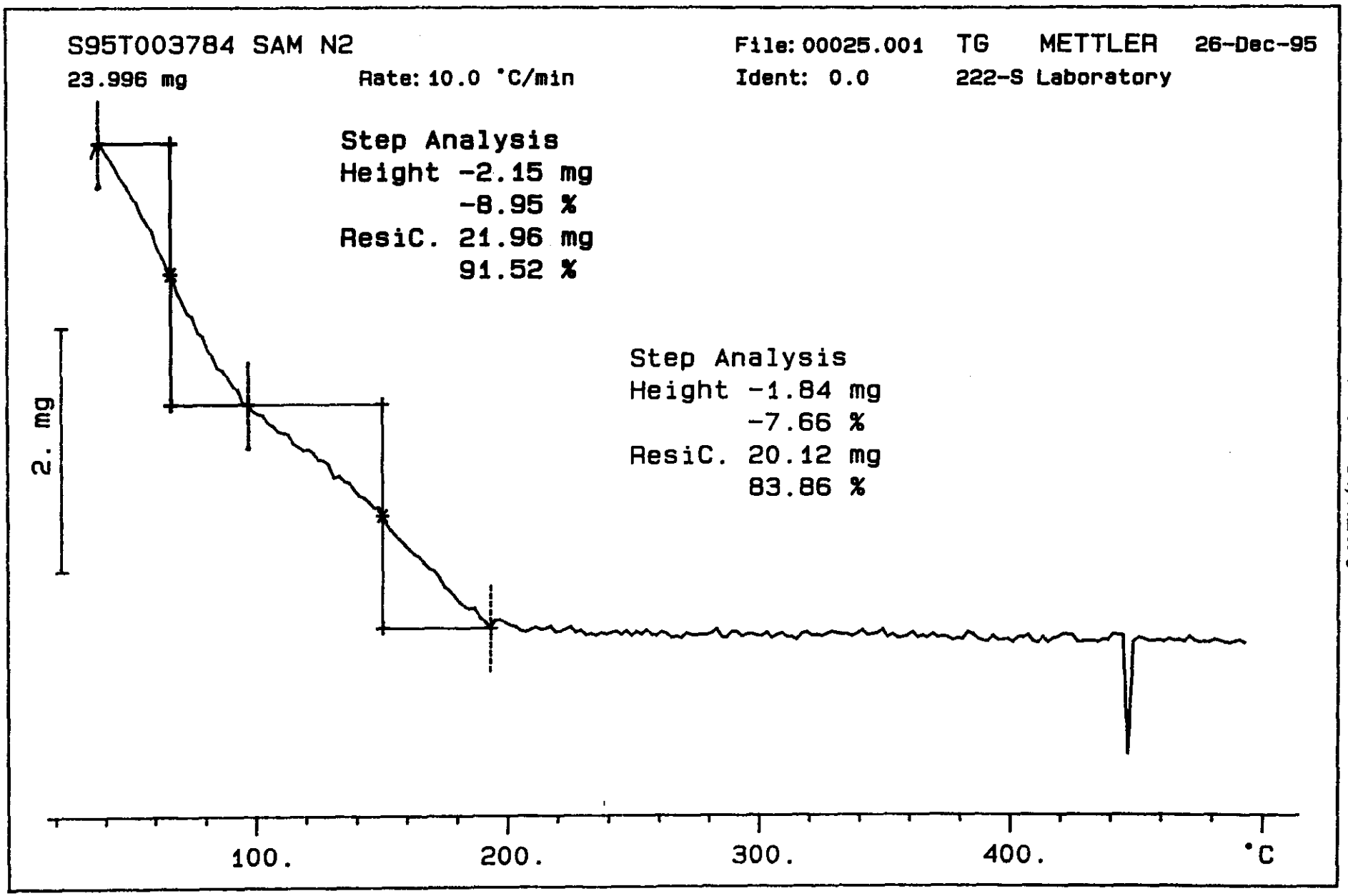
Steve Peterson 1/1/96
Analyst Signature **Date**

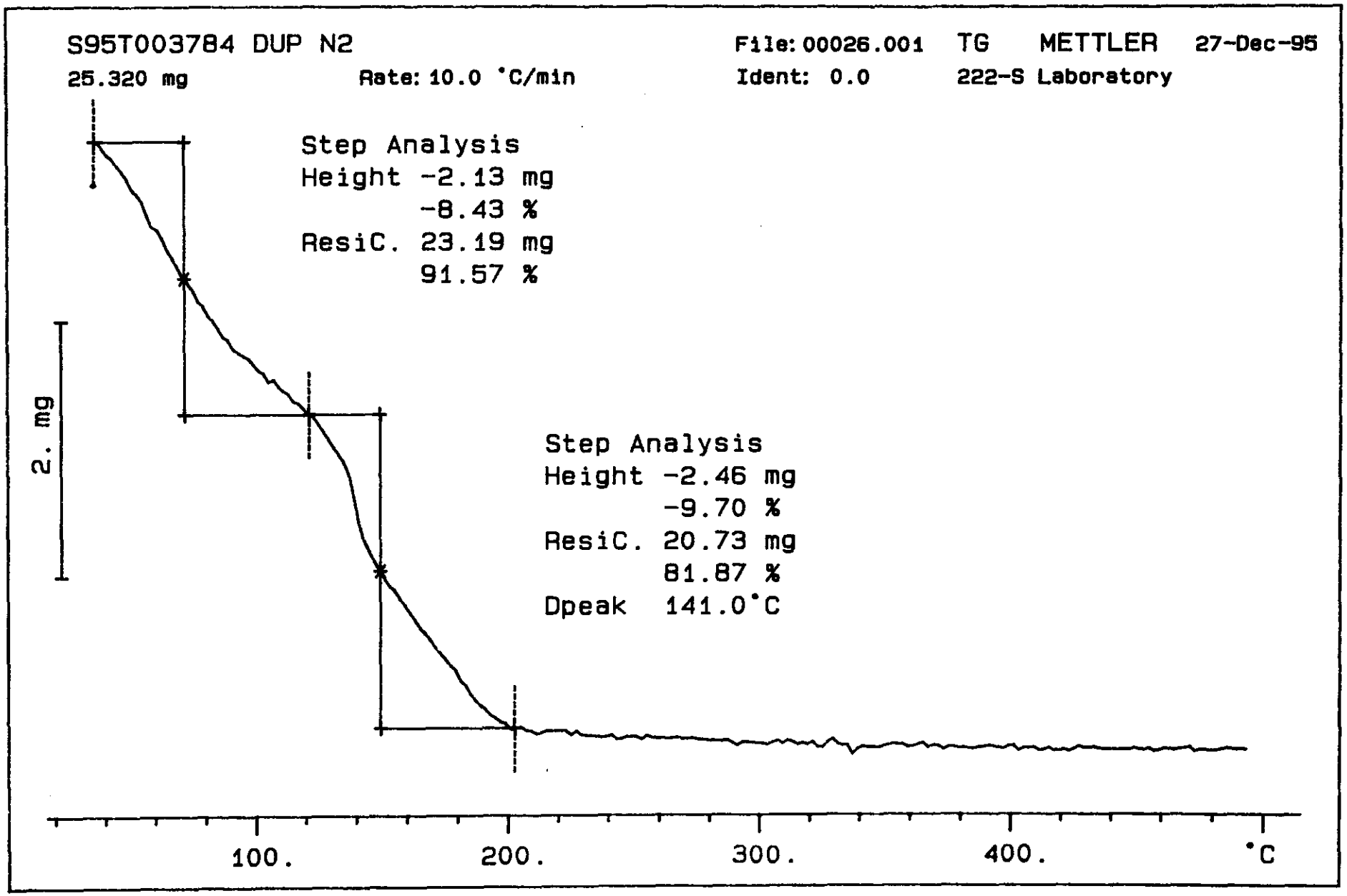
Data Entry Comments: The results are the sum of two weight loss steps

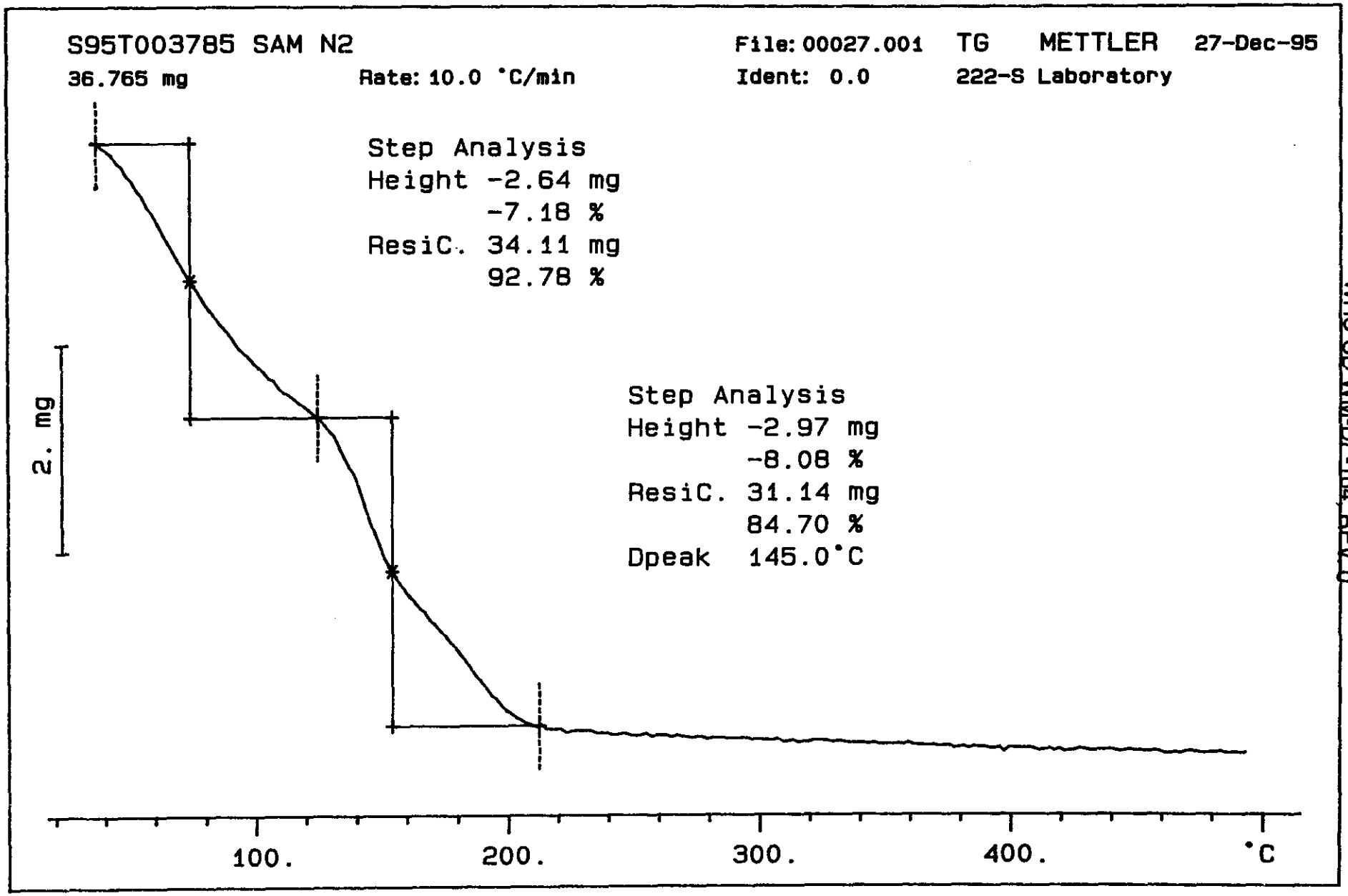
Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

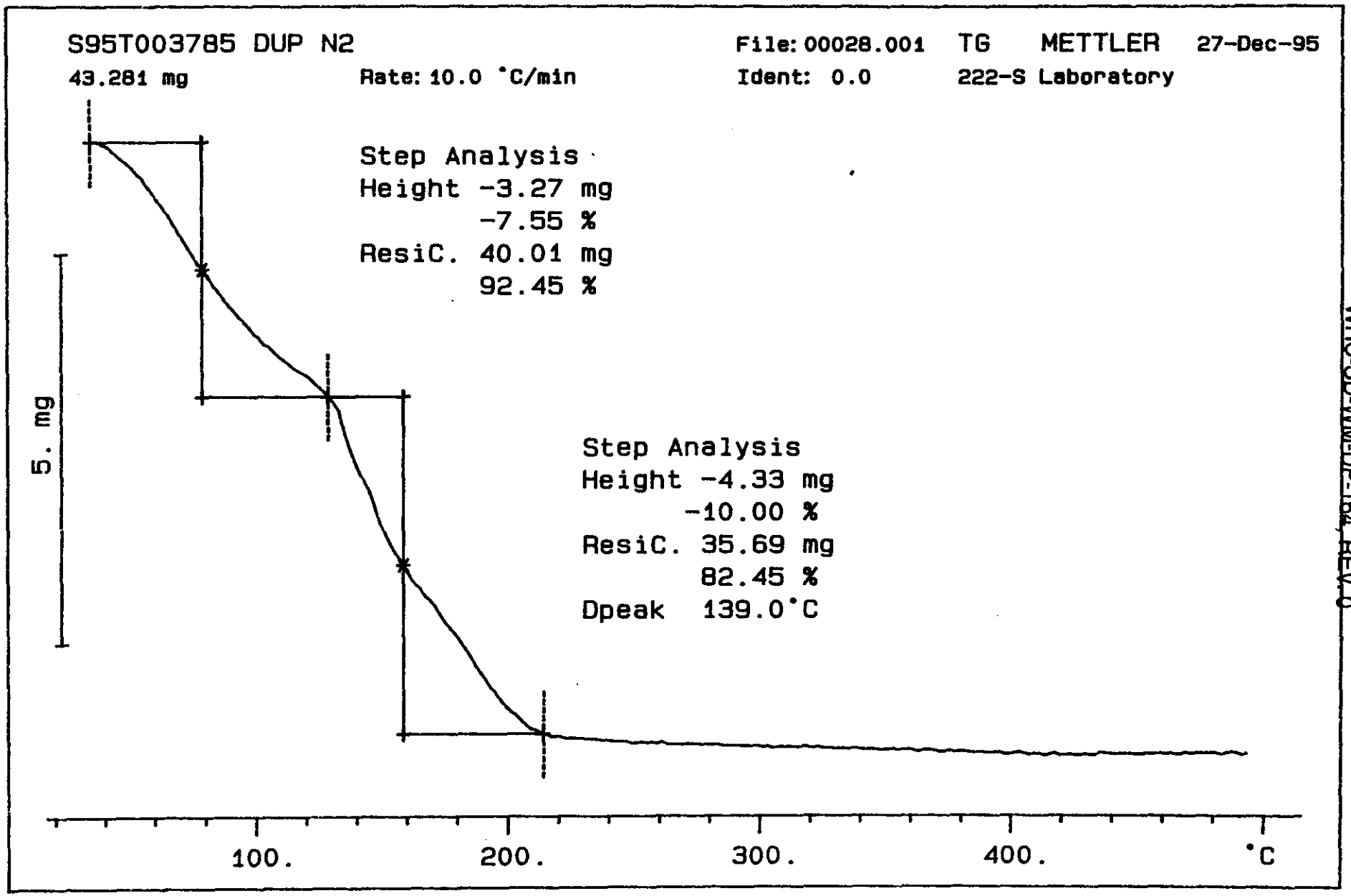
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 252 TO 256.




S95T003784 SAM N2
23.996 mg
Rate: 10.0 °C/min
File: 00025.001
TG
METTLER
26-Dec-95
Ident: 0.0
222-S Laboratory
Step Analysis
Height -2.15 mg
-8.95 %
ResiC. 21.96 mg
91.52 %
Step Analysis
Height -1.84 mg
-7.66 %
ResiC. 20.12 mg
83.86 %
2. mg
100.
200.
300.
400.
°C


S95T003784 DUP N2
25.320 mg
Rate: 10.0 °C/min
File: 00026.001
Ident: 0.0
TG
METTLER
222-S Laboratory
27-Dec-95
Step Analysis
Height -2.13 mg
-8.43 %
ResiC. 23.19 mg
91.57 %
Step Analysis
Height -2.46 mg
-9.70 %
ResiC. 20.73 mg
81.87 %
Dpeak 141.0°C
2. mg
100.
200.
300.
400.
°C


S95T003785 SAM N2
36.765 mg
Rate: 10.0 °C/min
File: 00027.001
Ident: 0.0
TG METTLER 27-Dec-95
222-S Laboratory
Step Analysis
Height -2.64 mg
-7.18 %
ResiC. 34.11 mg
92.78 %
Step Analysis
Height -2.97 mg
-8.08 %
ResiC. 31.14 mg
84.70 %
Dpeak 145.0°C
2. mg
100.
200.
300.
400.
°C


S95T003785 DUP N2
43.281 mg
Rate: 10.0 °C/min
File: 00028.001
TG METTLER 27-Dec-95
Ident: 0.0
222-S Laboratory
Step Analysis
Height -3.27 mg
-7.55 %
ResiC. 40.01 mg
92.45 %
Step Analysis
Height -4.33 mg
-10.00 %
ResiC. 35.69 mg
82.45 %
Dpeak 139.0°C
5. mg
100.
200.
300.
400.
°C

LABCORE Data Entry Template for Worklist# 4626

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

Method: LA-560-112 Rev/Mod B-1

Worklist Comment: Please run BY-104 TGA under N2. bdv

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				TGA-01	SOLID	59.74	60.13	N/A	%
95000180	BY104 ROTARY	2	SAMPLE	S95T003644	0		TGA-01	SOLID	N/A	29.20		%
95000180	BY104 ROTARY	3	DUP	S95T003644	0		TGA-01	SOLID	29.20	27.83	N/A	%

Final page for worklist # 4626

Anthony Pucuntz 1-3-96
Analyst Signature **Date**

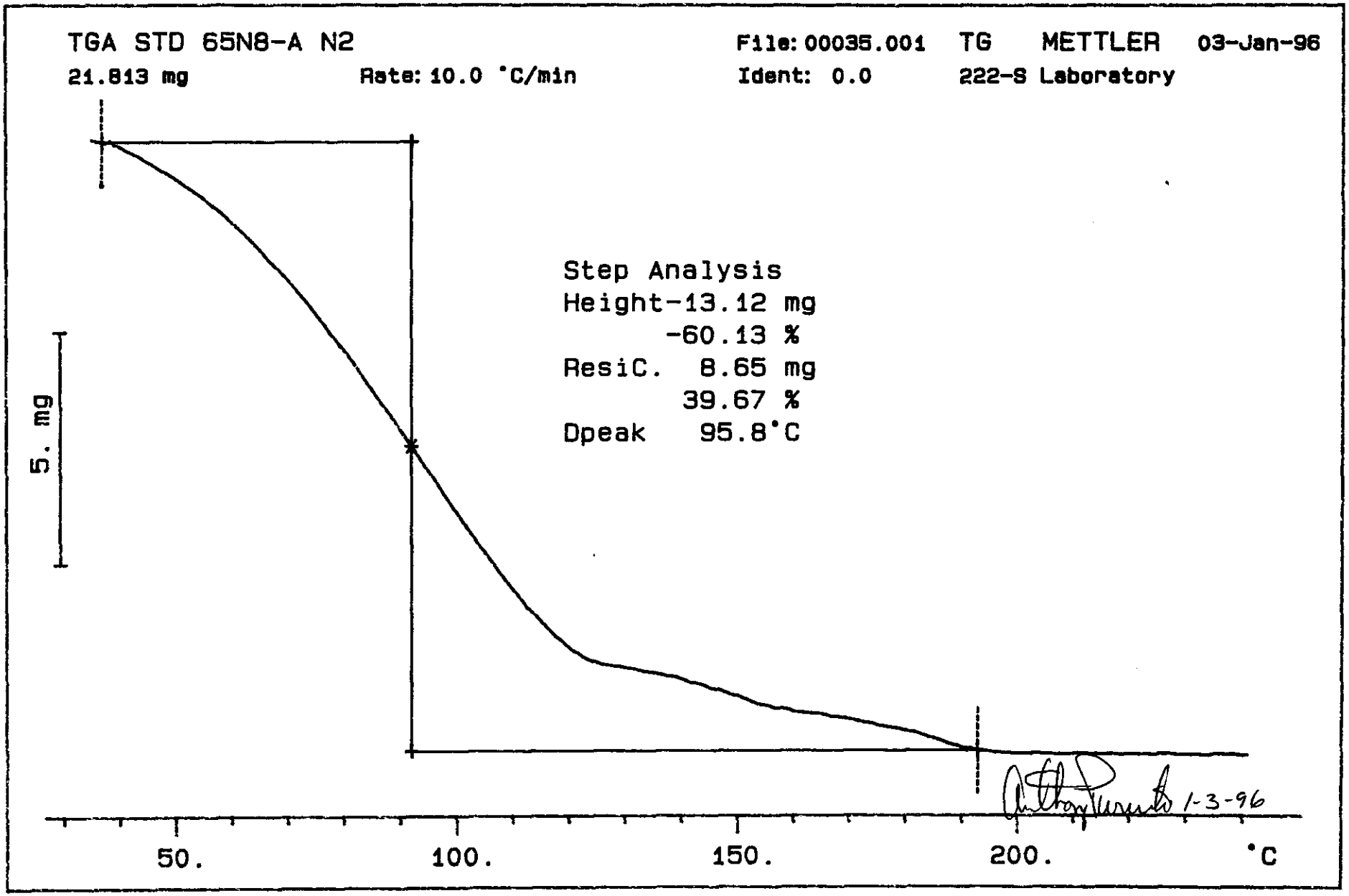
Gary Hamilt 1-6-96
Analyst Signature **Date**

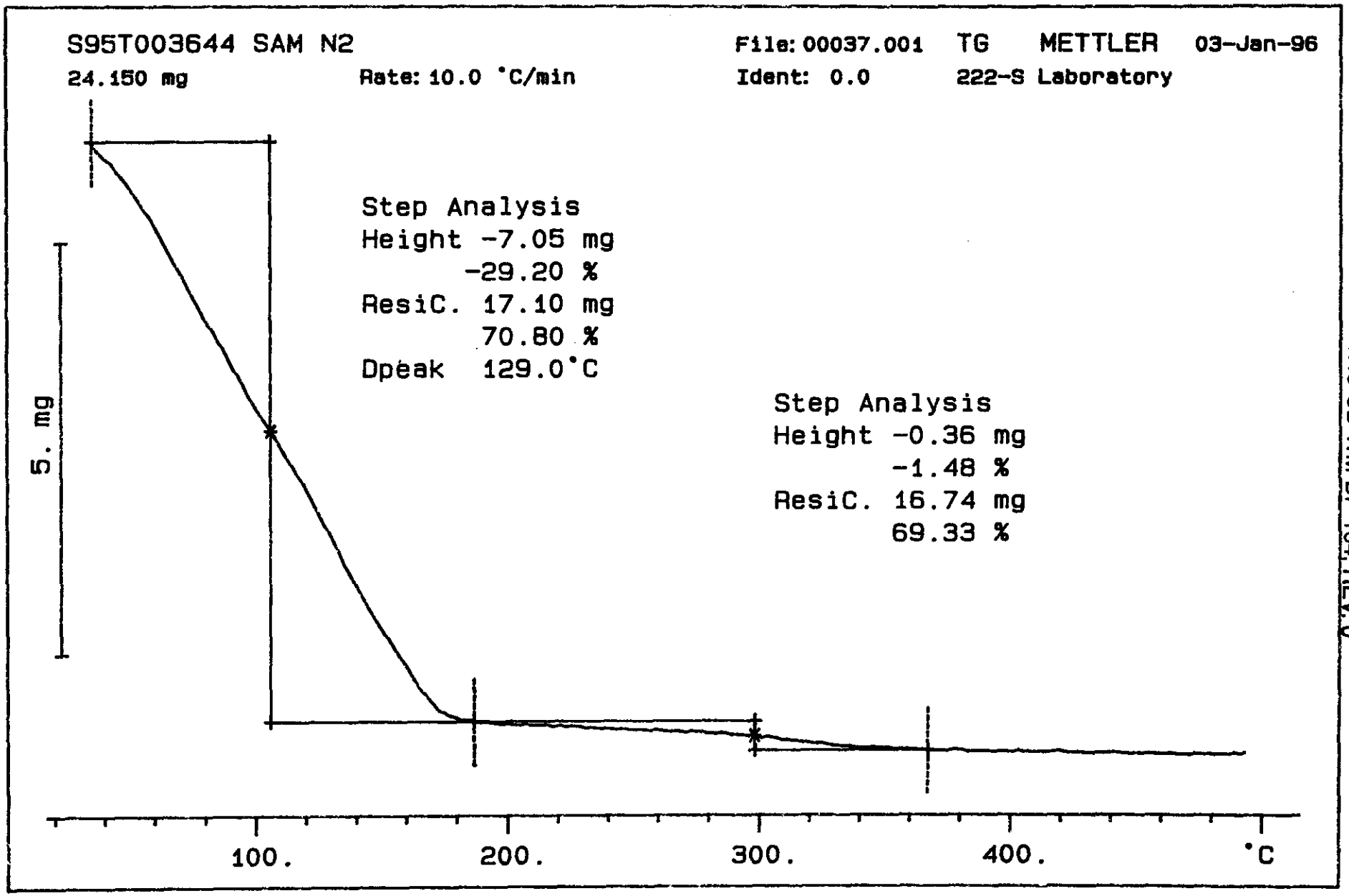
Verified by Blandina Valenzuela 1-8-96

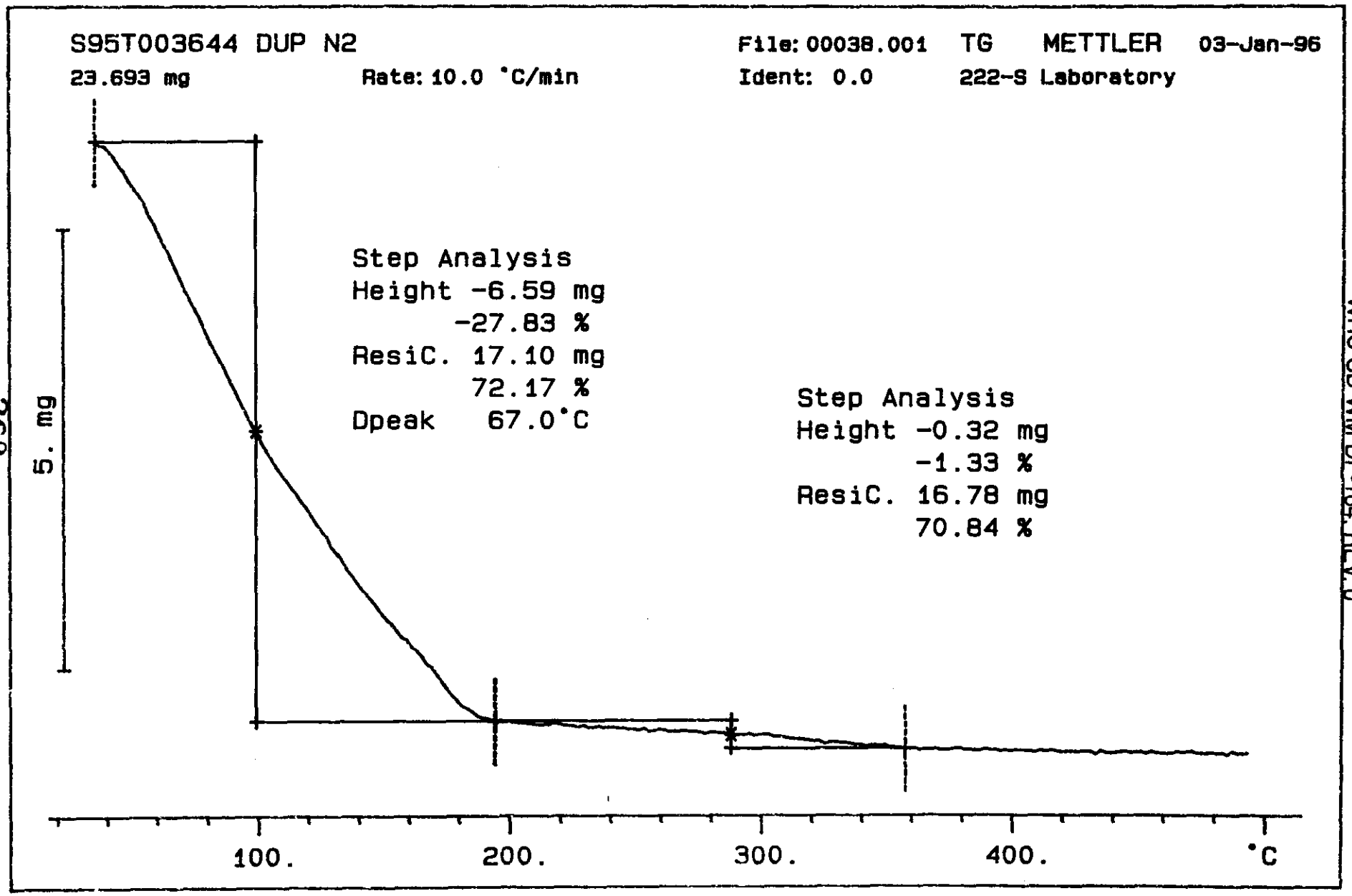
Data Entry Comments: Sample produced one additional weight loss step of 1.48% 1/4/95 BDV

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

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 258 TO 260.




S95T003644 SAM N2
24.150 mg
Rate: 10.0 °C/min
File: 00037.001
TG
METTLER
03-Jan-96
Ident: 0.0
222-S Laboratory
Step Analysis
Height -7.05 mg
-29.20 %
ResiC. 17.10 mg
70.80 %
Dpeak 129.0°C
Step Analysis
Height -0.36 mg
-1.48 %
ResiC. 16.74 mg
69.33 %
5. mg
100.
200.
300.
400.
°C


S95T003644 DUP N2
23.693 mg
Rate: 10.0 °C/min
File: 00038.001
TG
METTLER
03-Jan-96
Ident: 0.0
222-S Laboratory
Step Analysis
Height -6.59 mg
-27.83 %
ResiC. 17.10 mg
72.17 %
Dpeak 67.0°C
Step Analysis
Height -0.32 mg
-1.33 %
ResiC. 16.78 mg
70.84 %
5. mg
100.
200.
300.
400.
°C

LABCORE Data Entry Template for Worklist# 5123

Analyst: ADP **Instrument:** TGA0 1 **Book #** 75N8 A

Method: LA-560-112 Rev/Mod B-1

Worklist Comment: Please run BY-104 TGAs under N2. bdv

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				TGA-01	LIQUID	59.2	60.05 *	N/A	%
95000200	BY104 ROTARY	2	SAMPLE	S95T003761	0		TGA-01	LIQUID	N/A	~~41.34~~ 49.05	2/23/96 BDV	%
95000200	BY104 ROTARY	3	DUP	S95T003761	0		TGA-01	LIQUID	~~41.34~~ 49.05 2/23/96 BDV	~~42.31~~ 48.93	~~49.05~~ N/A 2/23/96	% BDV
95000200	BY104 ROTARY	4	SAMPLE	S95T003775	0		TGA-01	LIQUID	N/A	~~41.14~~ 48.80	2/23/96 BDV	%
95000200	BY104 ROTARY	5	DUP	S95T003775	0		TGA-01	LIQUID	~~41.14~~ 48.80	~~40.66~~ 48.95	2/23/96 BDV N/A	%

Final page for worklist # 5123

Anthony Pucciarello 1-23-96
Analyst Signature **Date**

[illegible] 1/24/96
Analyst Signature **Date**

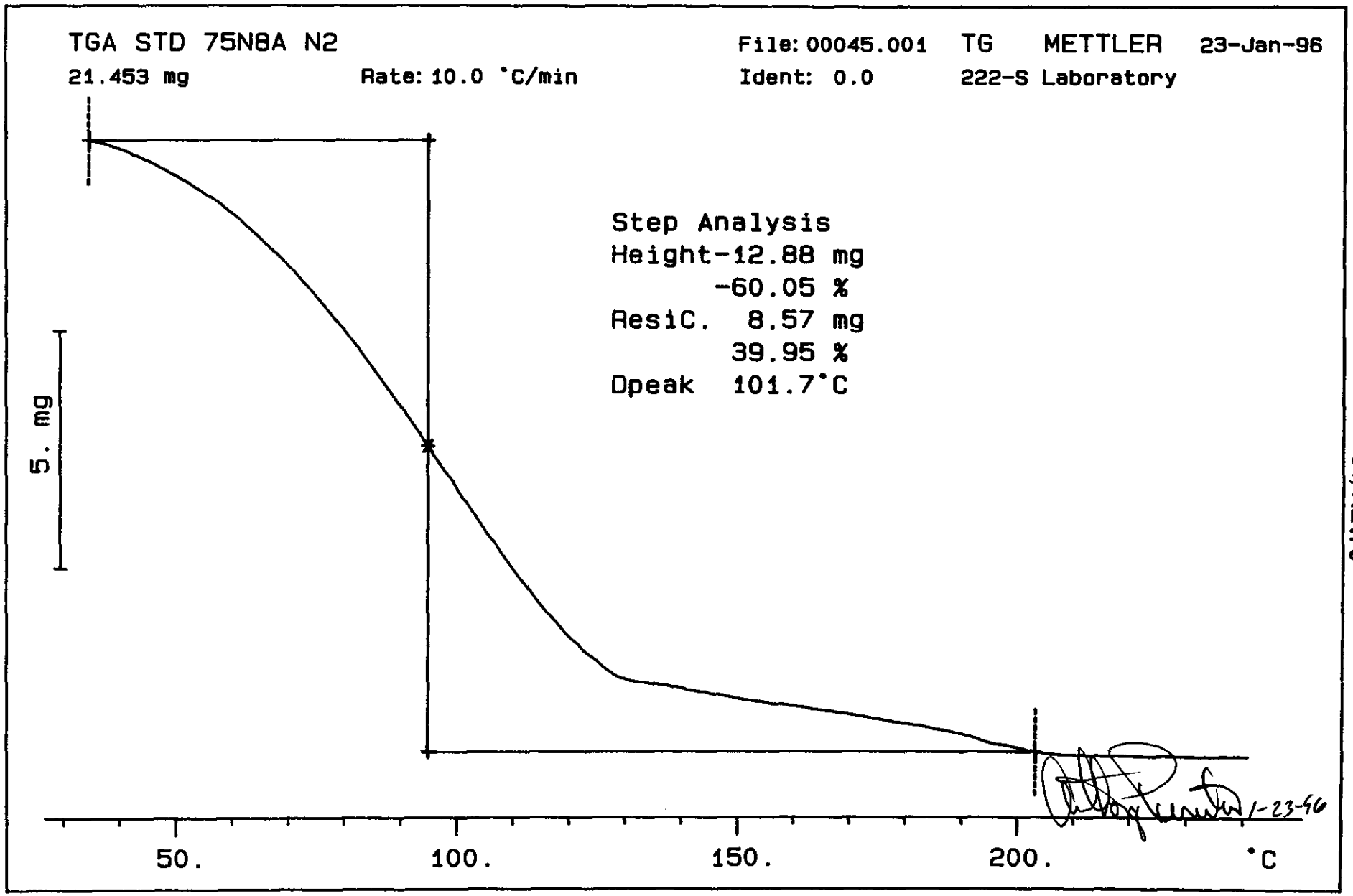
Verified by Blandina Valenzuela 1/26/96

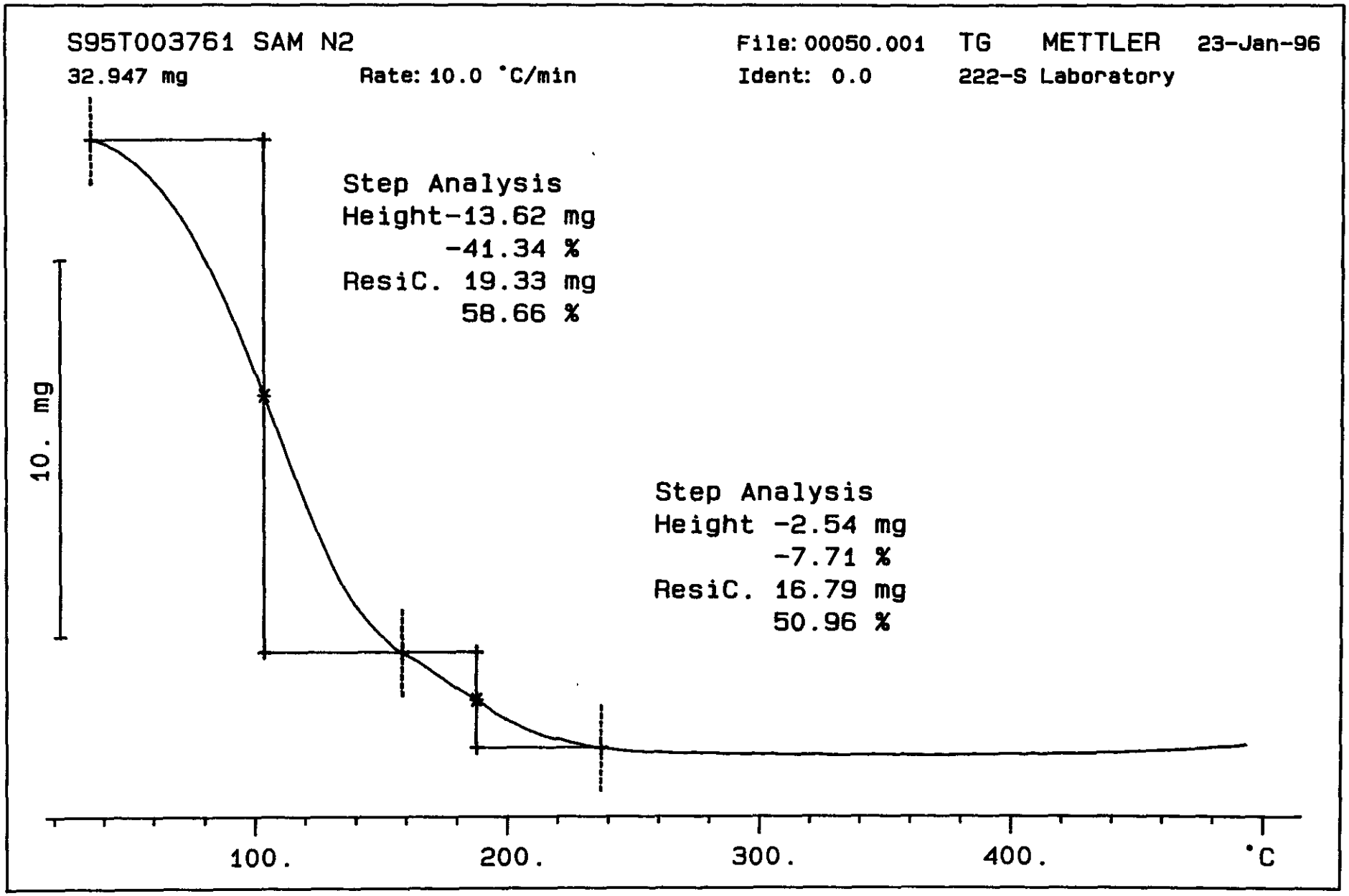
Data Entry Comments: S95T003761 produced a second weight loss step of 7.71% about 180°C.

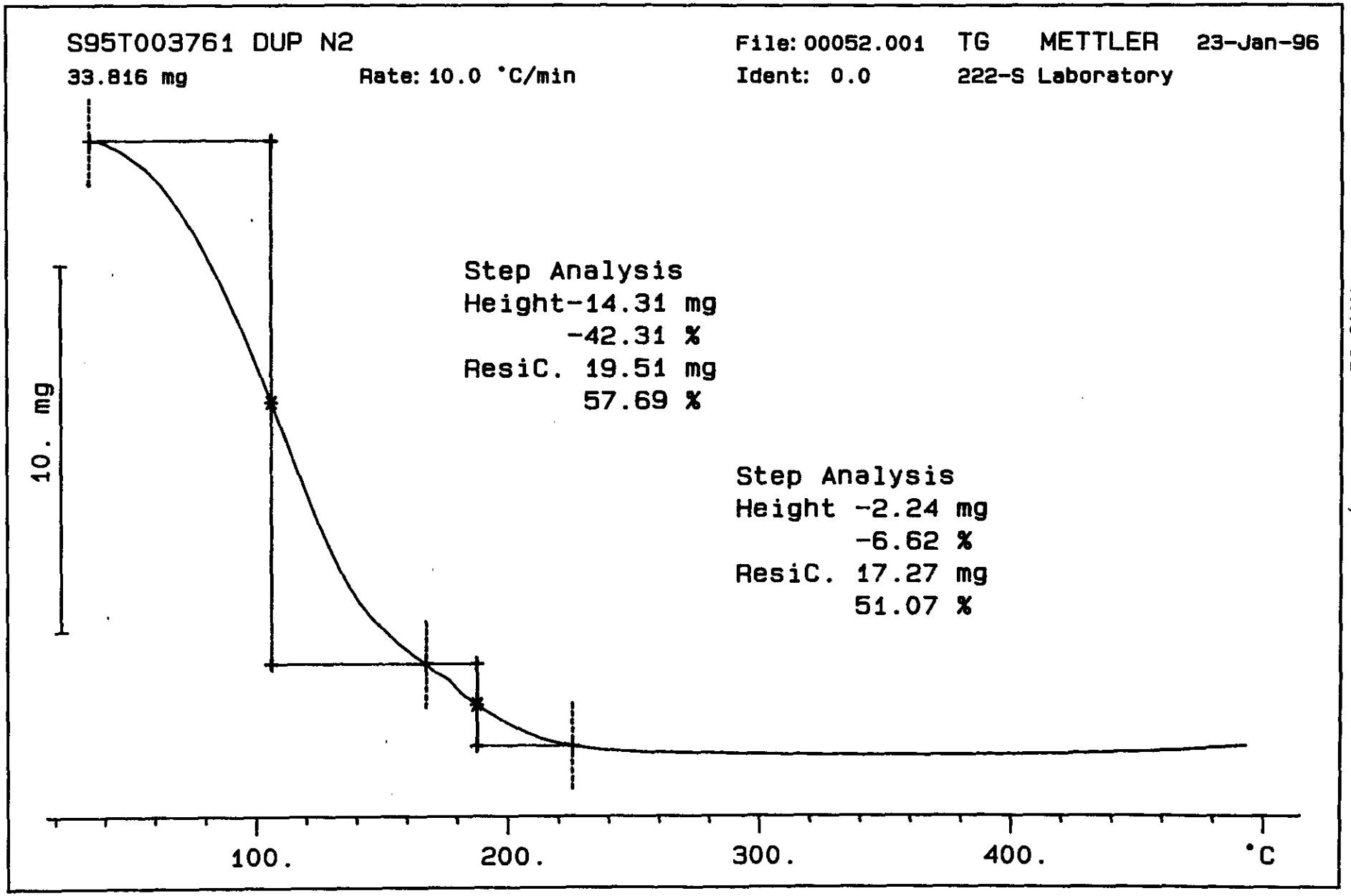
S95T003775 produced a second weight loss step of 7.66% at approximately 200°C

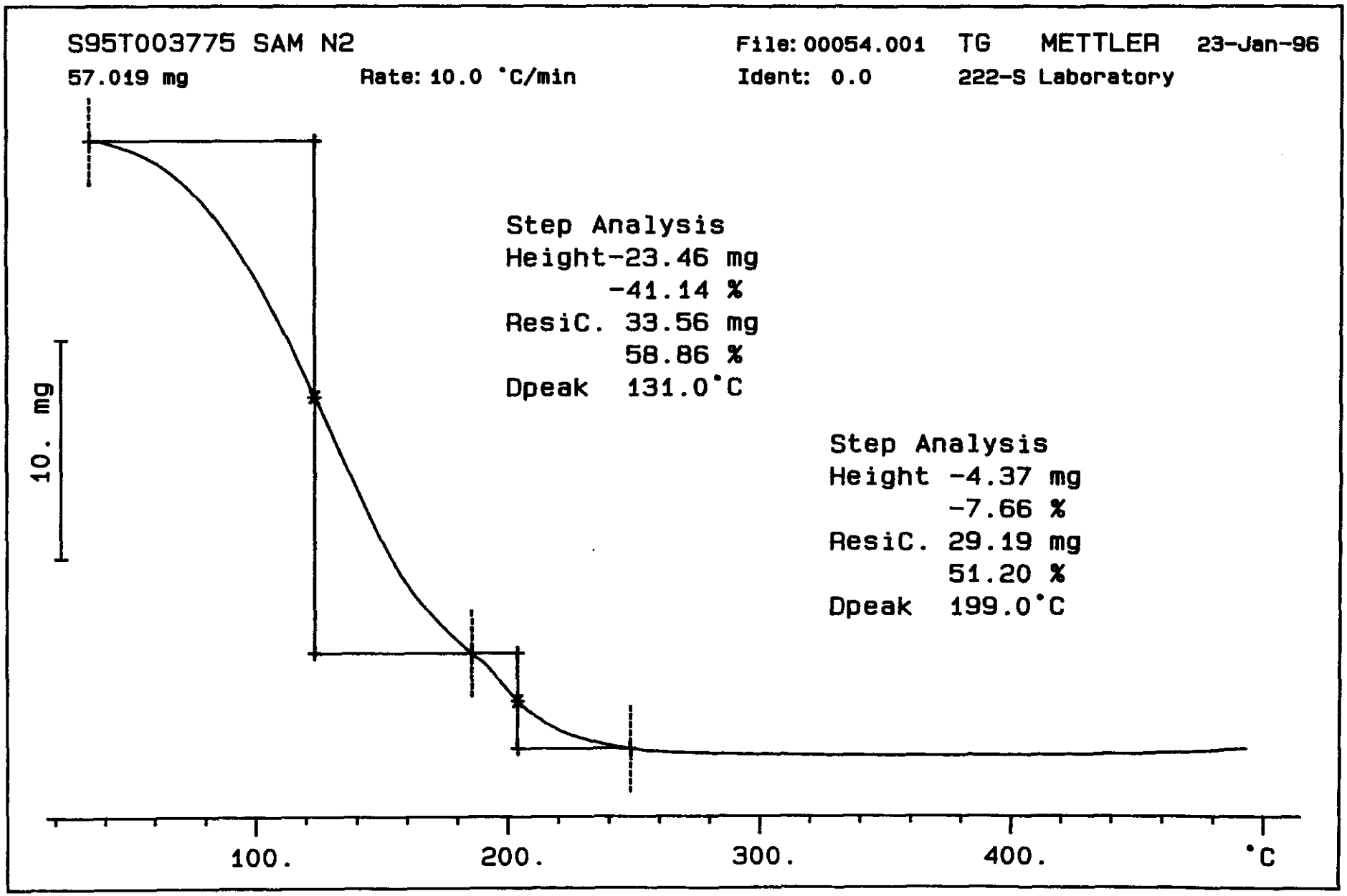
Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

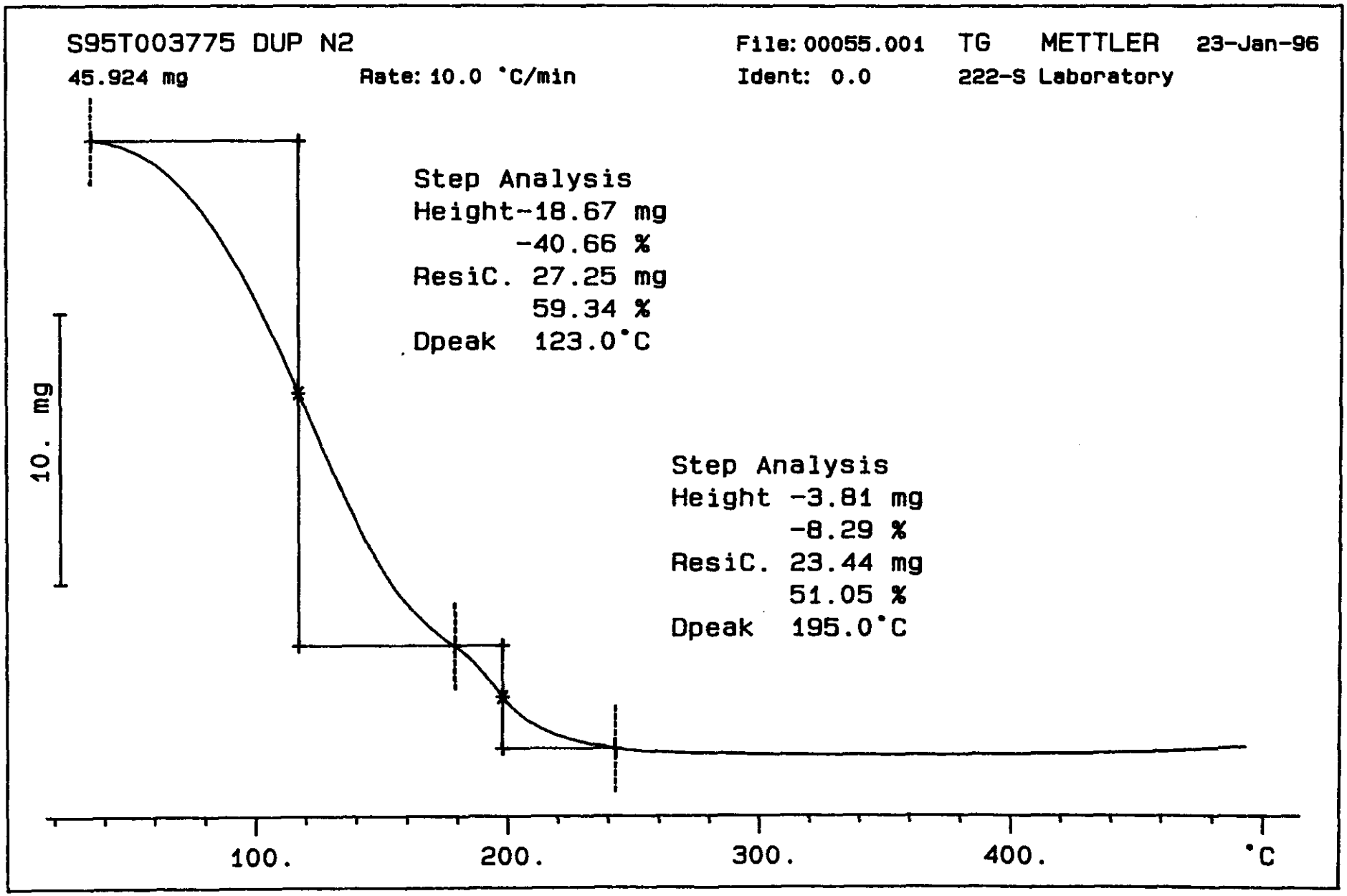
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 262 TO 266.




S95T003761 SAM N2
32.947 mg
Rate: 10.0 °C/min
File: 00050.001
TG METTLER 23-Jan-96
Ident: 0.0
222-S Laboratory
Step Analysis
Height -13.62 mg
-41.34 %
ResiC. 19.33 mg
58.66 %
Step Analysis
Height -2.54 mg
-7.71 %
ResiC. 16.79 mg
50.96 %
10. mg
100.
200.
300.
400.
°C


S95T003761 DUP N2
33.816 mg
Rate: 10.0 °C/min
File: 00052.001
TG METTLER 23-Jan-96
Ident: 0.0
222-S Laboratory
Step Analysis
Height-14.31 mg
-42.31 %
ResiC. 19.51 mg
57.69 %
Step Analysis
Height -2.24 mg
-6.62 %
ResiC. 17.27 mg
51.07 %
10. mg
100.
200.
300.
400.
°C


S95T003775 SAM N2
57.019 mg
Rate: 10.0 °C/min
File: 00054.001
Ident: 0.0
TG
METTLER
222-S Laboratory
23-Jan-96
Step Analysis
Height -23.46 mg
-41.14 %
ResiC. 33.56 mg
58.86 %
Dpeak 131.0°C
Step Analysis
Height -4.37 mg
-7.66 %
ResiC. 29.19 mg
51.20 %
Dpeak 199.0°C
10. mg
100.
200.
300.
400.
°C


S95T003775 DUP N2
45.924 mg
Rate: 10.0 °C/min
File: 00055.001
TG METTLER 23-Jan-96
Ident: 0.0
222-S Laboratory
Step Analysis
Height -18.67 mg
-40.66 %
ResiC. 27.25 mg
59.34 %
Dpeak 123.0°C
Step Analysis
Height -3.81 mg
-8.29 %
ResiC. 23.44 mg
51.05 %
Dpeak 195.0°C
10. mg
100.
200.
300.
400.
°C

LABCORE Data Entry Template for Worklist# 5296

Analyst: ABP **Instrument:** TGA0 1 **Book #** 75N8A

Method: LA-560-112 Rev/Mod B-1

Worklist Comment: Please run BY-104 TGAs under N2. bdv

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				TGA-01	SOLID	59.2	60.46	N/A	%
95000180	BY104 ROTARY	2	SAMPLE	S95T003634	0		TGA-01	SOLID	N/A	28.77		%
95000180	BY104 ROTARY	3	DUP	S95T003634	0		TGA-01	SOLID	28.77	26.33	N/A	%

Final page for worklist # 5296

Anthony Pucciarello 1-31-96
Analyst Signature **Date**

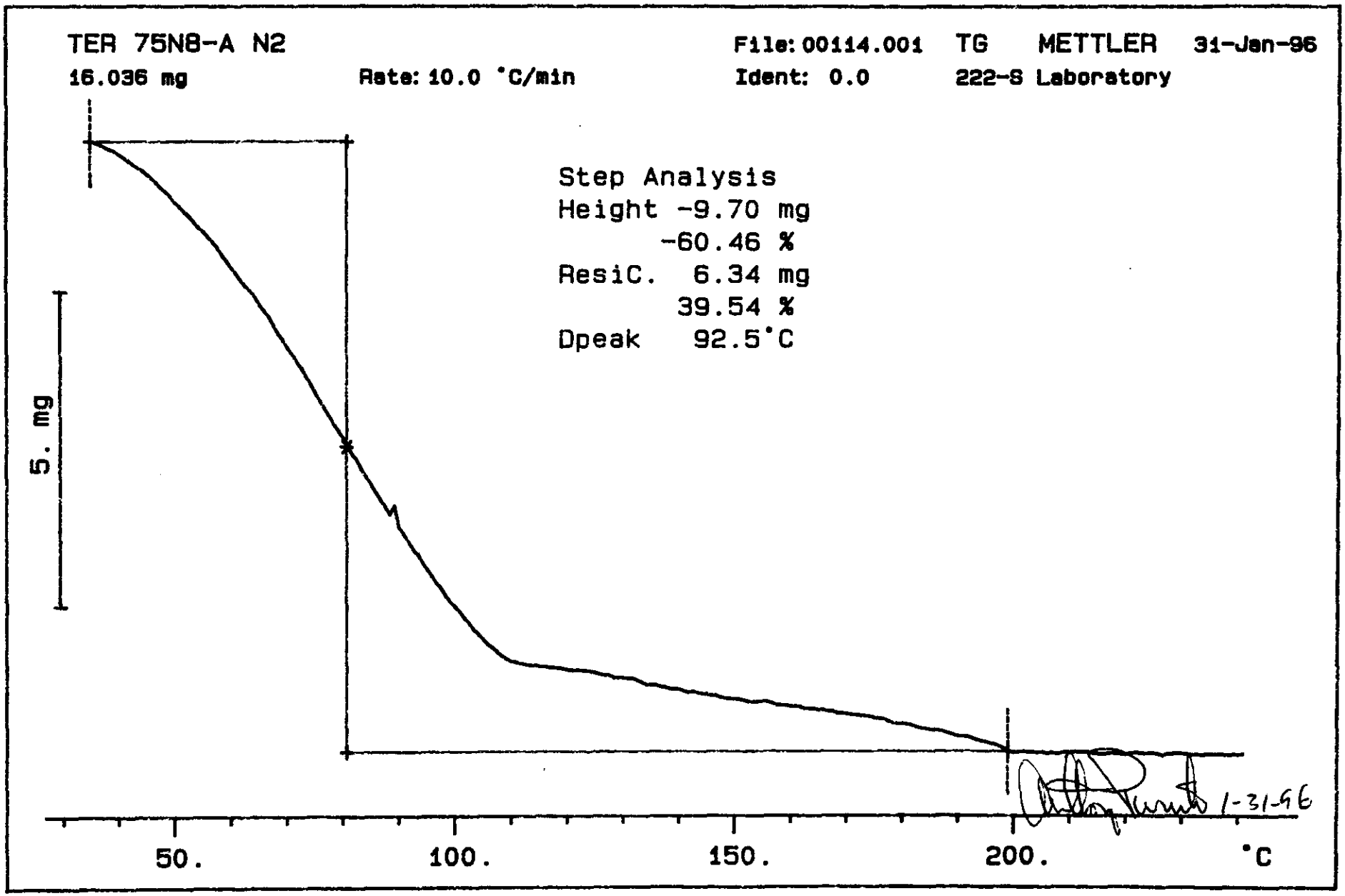
K. Wright 2/2/96
Analyst Signature **Date**

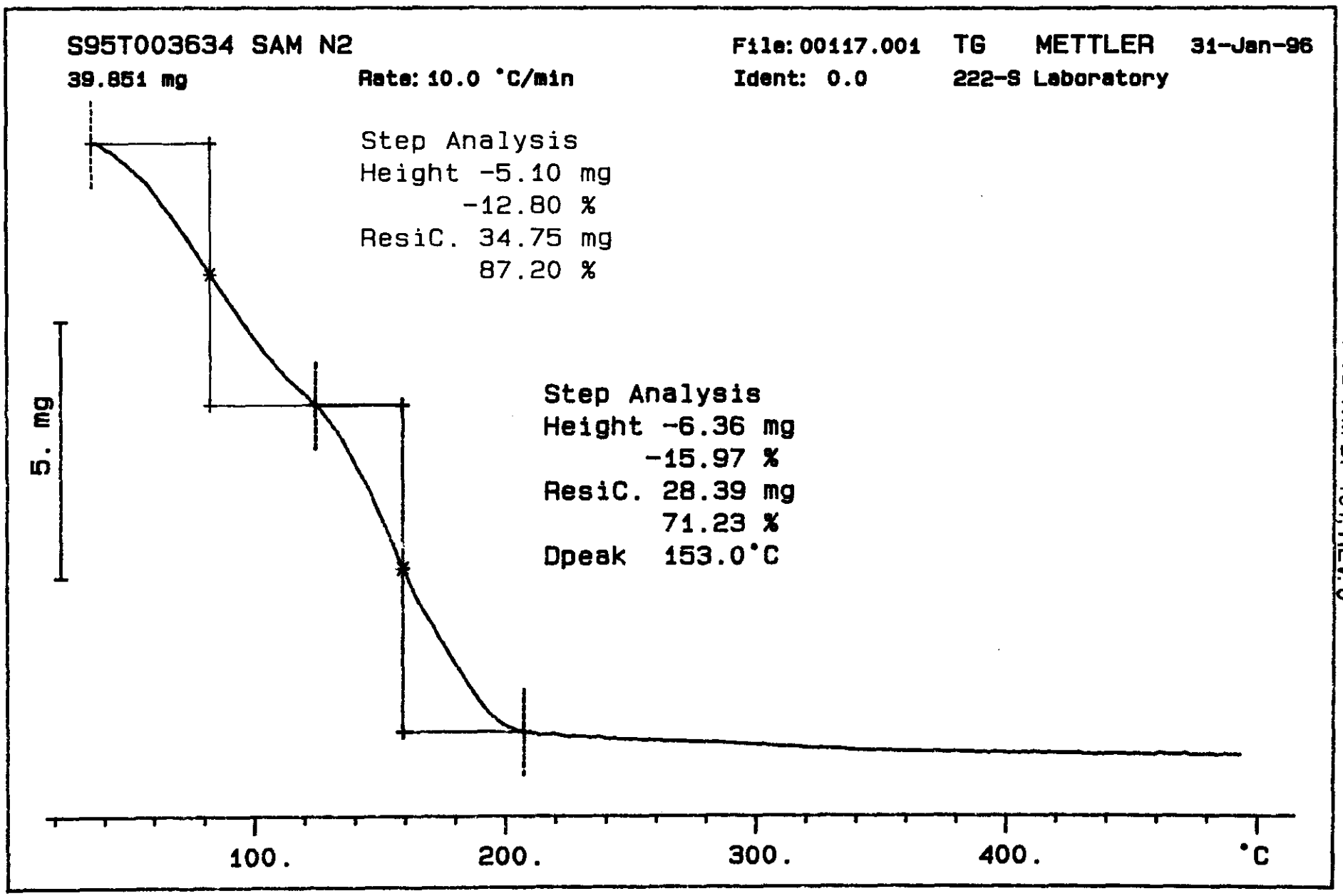
Verified by Blandina Valenzuela 2/5/96

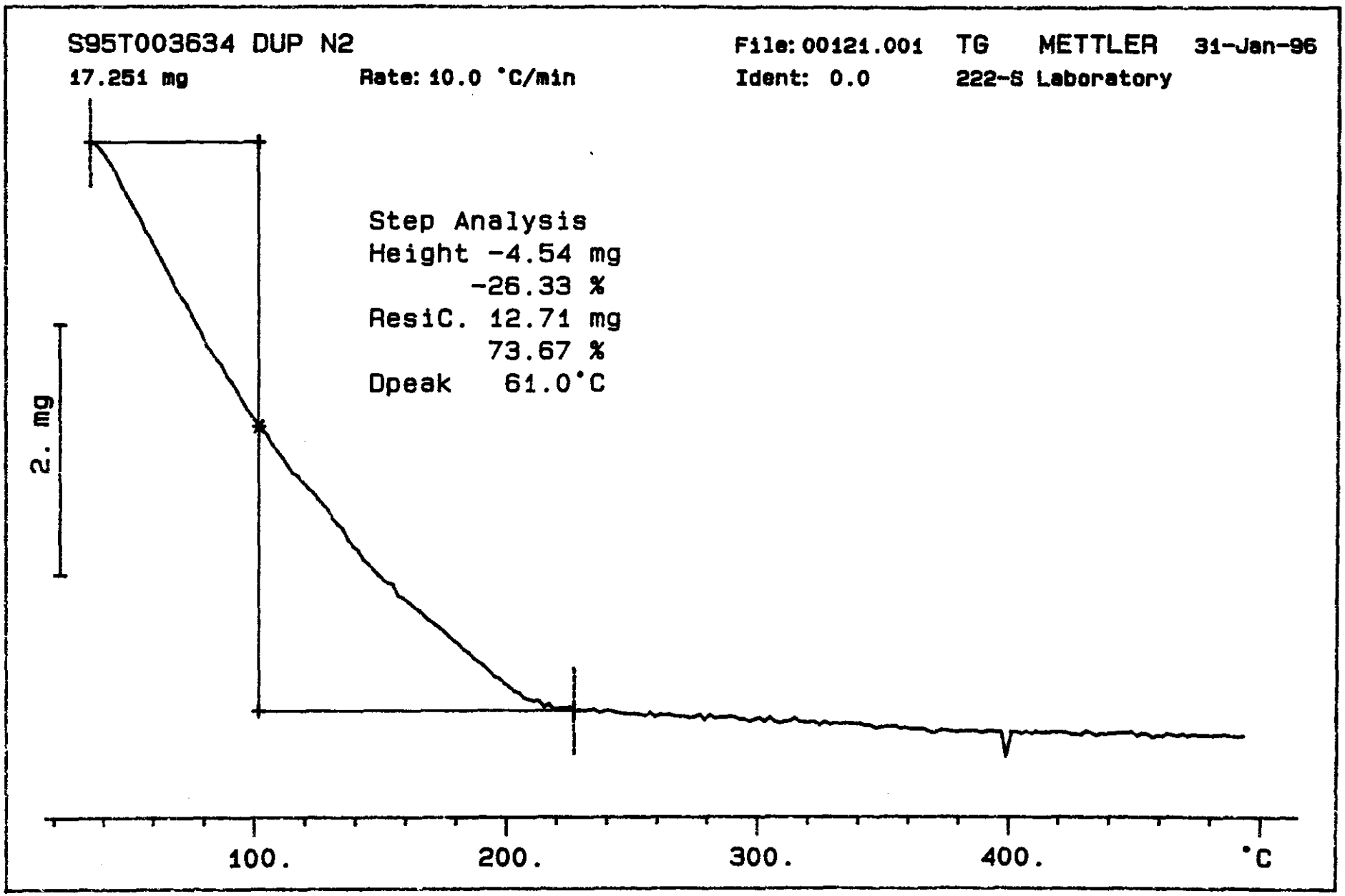
Data Entry Comments: The results given are the sum of two weight loss steps.

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 268 TO 270.




S95T003634 SAM N2
39.851 mg
Rate: 10.0 °C/min
File: 00117.001
Ident: 0.0
TG
METTLER
222-S Laboratory
31-Jan-96
Step Analysis
Height -5.10 mg
-12.80 %
ResiC. 34.75 mg
87.20 %
Step Analysis
Height -6.36 mg
-15.97 %
ResiC. 28.39 mg
71.23 %
Dpeak 153.0°C
5. mg
100.
200.
300.
400.
°C


S95T003634 DUP N2
17.251 mg
Rate: 10.0 °C/min
File: 00121.001
TG
METTLER
31-Jan-96
Ident: 0.0
222-S Laboratory
Step Analysis
Height -4.54 mg
-26.33 %
ResiC. 12.71 mg
73.67 %
Dpeak 61.0°C
2. mg
100.
200.
300.
400.
°C

LABCORE Data Entry Template for Worklist# 5326

Analyst: ADP **Instrument:** TGA0 1 **Book #** 75N8A

Method: LA-560-112 Rev/Mod B-1

Worklist Comment: Please run BY-104 TGA's under N2. bdv

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				TGA-01	SOLID	59.2	60.34*	N/A	%
95000180	BY104 ROTARY	2	SAMPLE	S95T003637	1		TGA-01	SOLID	N/A	18.71		%
95000180	BY104 ROTARY	3	DUP	S95T003637	1		TGA-01	SOLID	18.71	24.20	N/A	%
		4	STD				TGA-01	SOLID	59.2	59.36*	N/A	%
95000180	BY104 ROTARY	5	SAMPLE	S95T003646	0		TGA-01	SOLID	N/A	22.97		%
95000180	BY104 ROTARY	6	DUP	S95T003646	0		TGA-01	SOLID	22.97	24.24	N/A	%

Final page for worklist # 5326

See attached for signatures

Analyst Signature **Date** 2-1-96 BDV

Verified by Blandina Valenzuela 2/5/96

Analyst Signature **Date**

Data Entry Comments: S95T003637 produced a second weight loss step of 1.70%
S95T003646 produced a second weight loss step of 1.34%

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# 5326

Analyst: ASP **Instrument:** TGA0 1 **Book #** 25N8 A

Method: LA-560-112 Rev/Mod B-1

Worklist Comment: Please run BY-104 TGA's under N2. bdv

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				TGA-01	SOLID	59.2	60.34	N/A	%
95000180	BY104 ROTARY	2	SAMPLE	S95T003637	1		TGA-01	SOLID	N/A			%
95000180	BY104 ROTARY	3	DUP	S95T003637	1		TGA-01	SOLID			N/A	%
95000180	BY104 ROTARY	4	SAMPLE	S95T003646	0		TGA-01	SOLID	N/A			%
95000180	BY104 ROTARY	5	DUP	S95T003646	0		TGA-01	SOLID			N/A	%

Final page for worklist # 5326

Anthony Pierantoni 1-31-96
Analyst Signature **Date**

TE Wright 2/2/96
Analyst Signature **Date**

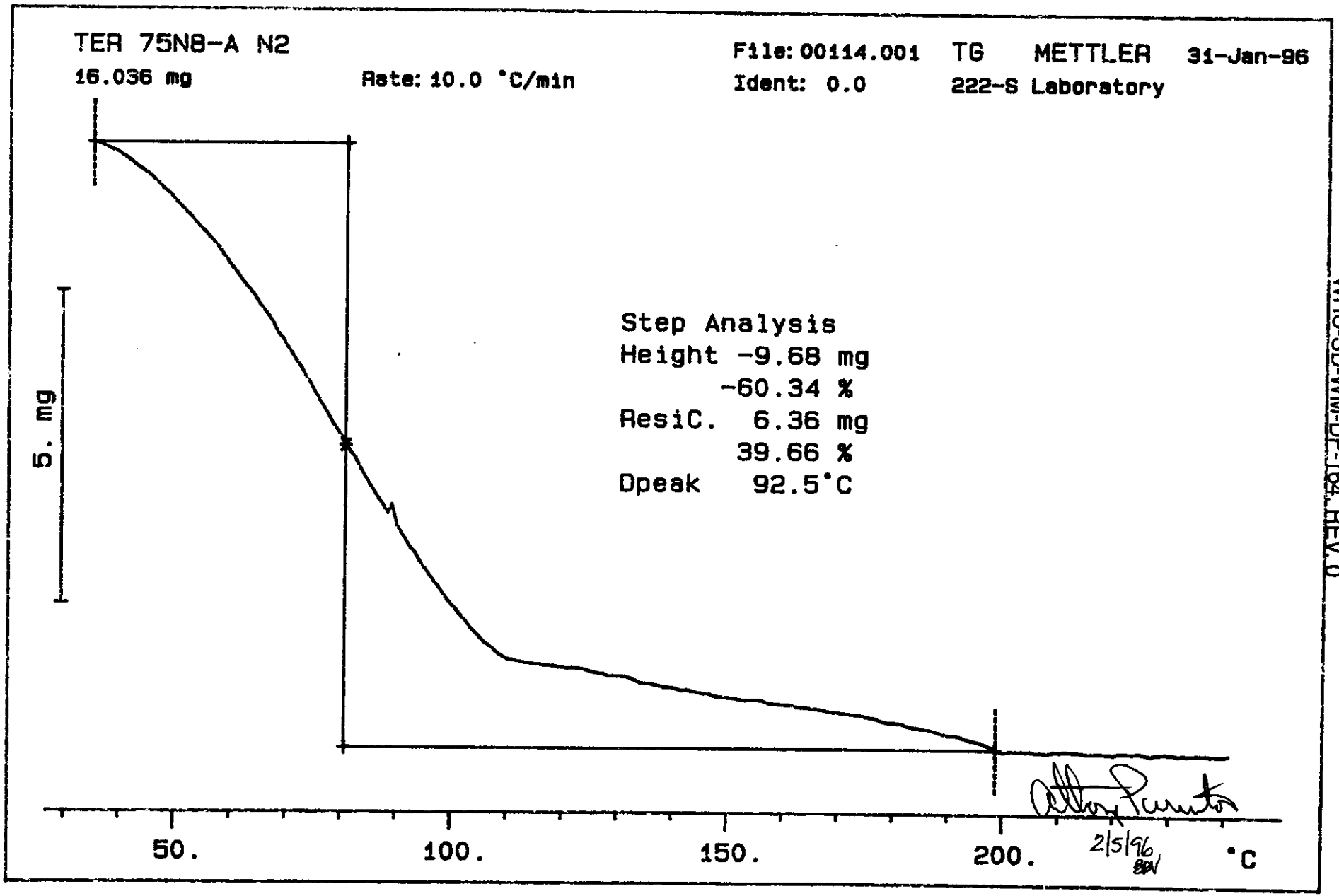
Anthony Pierantoni 2-1-96

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 273 TO 278.

BEST AVAILABLE COPY



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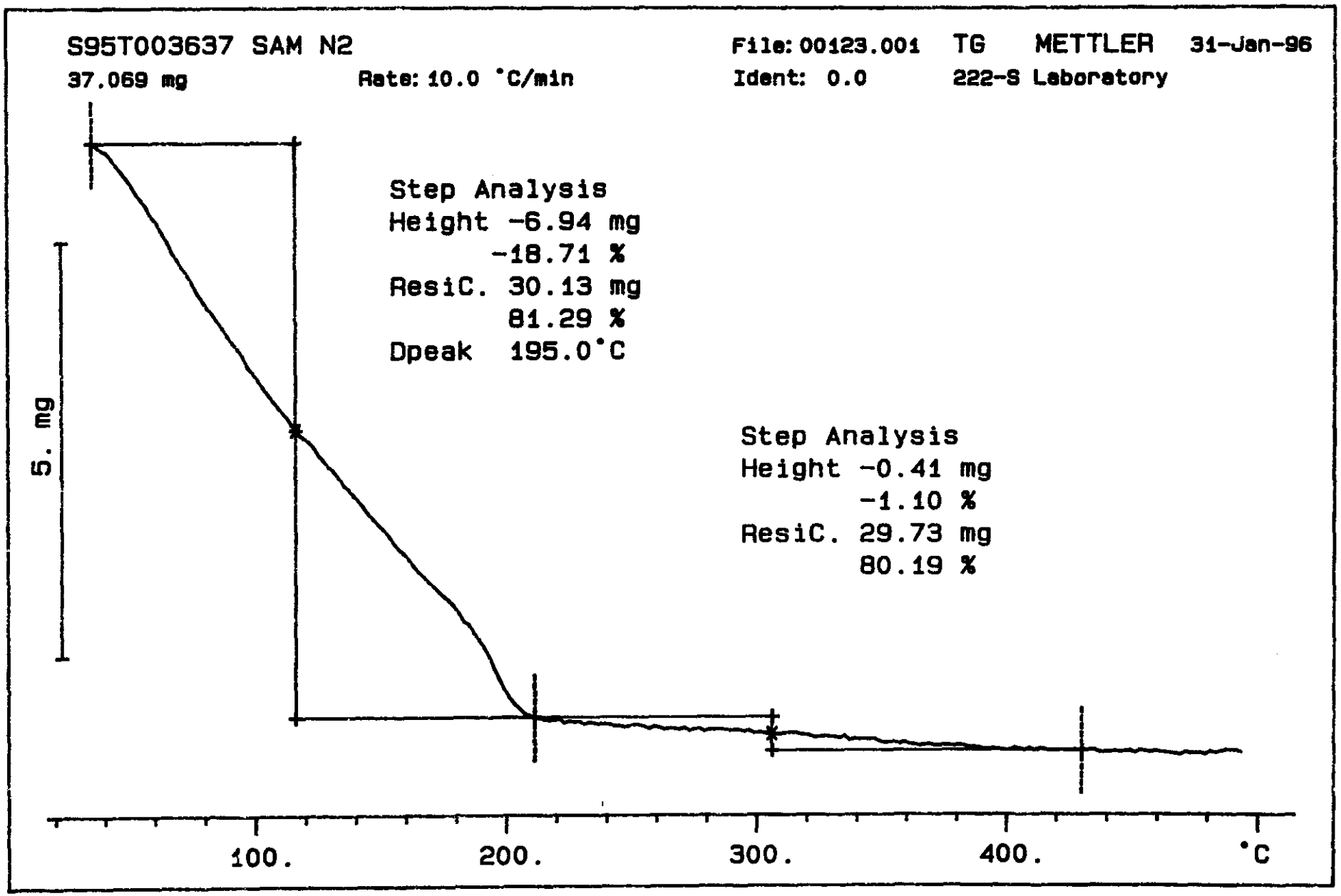

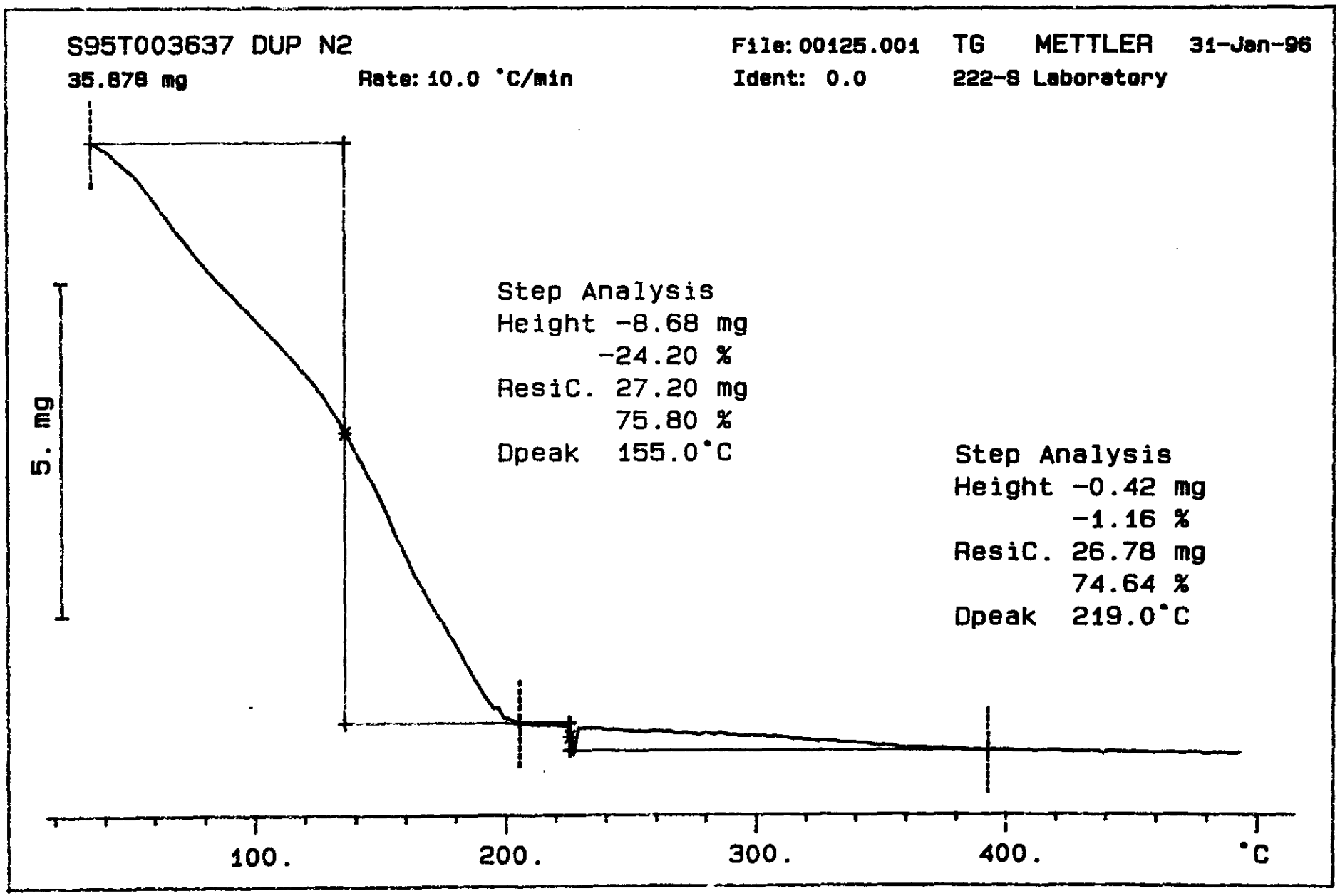
S95T003637 DUP N2
35.878 mg
Rate: 10.0 °C/min
File: 00125.001
Ident: 0.0
TG
METTLER
222-S Laboratory
31-Jan-96
Step Analysis
Height -8.68 mg
-24.20 %
ResiC. 27.20 mg
75.80 %
Dpeak 155.0°C
Step Analysis
Height -0.42 mg
-1.16 %
ResiC. 26.78 mg
74.64 %
Dpeak 219.0°C
5. mg
100.
200.
300.
400.
°C

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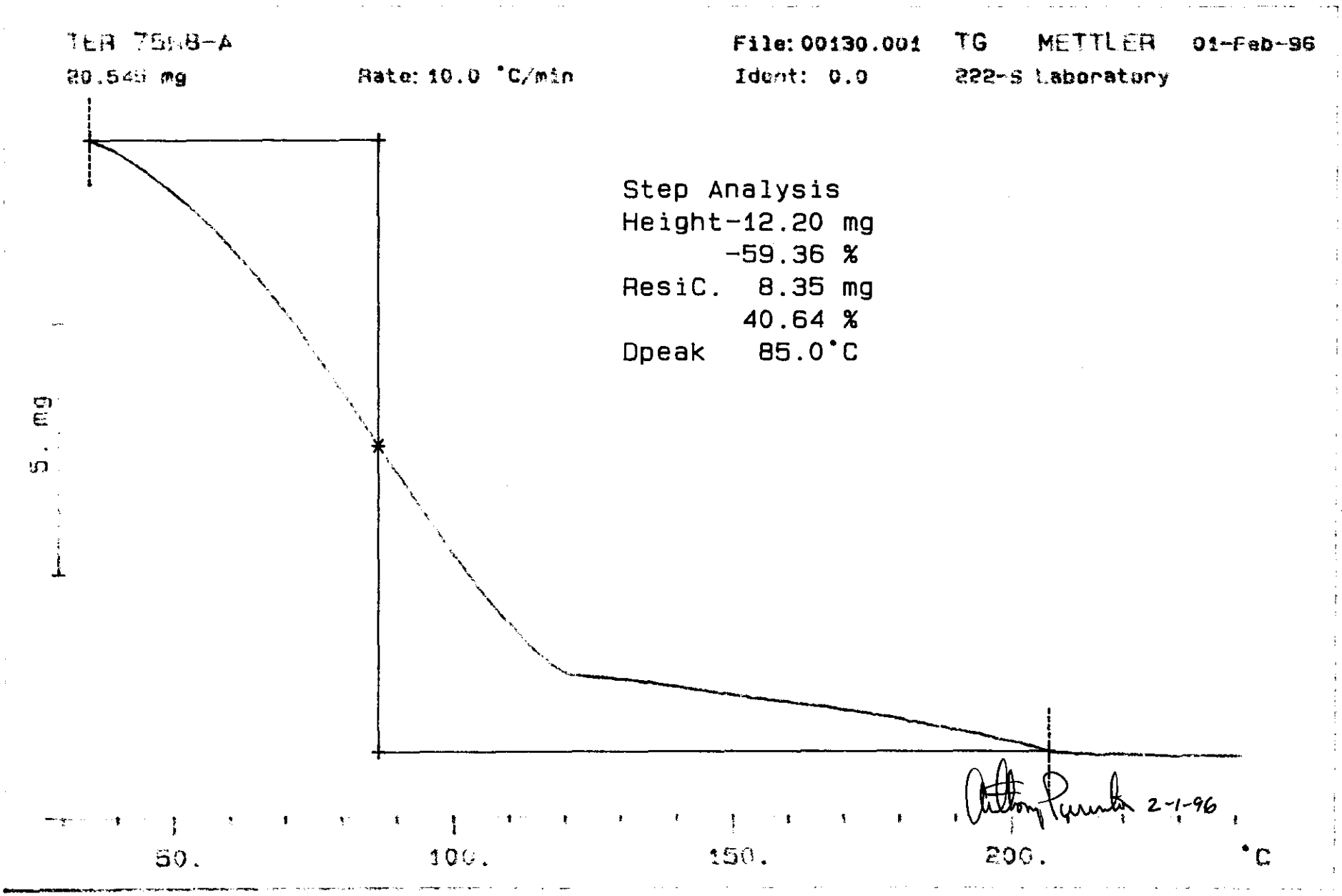

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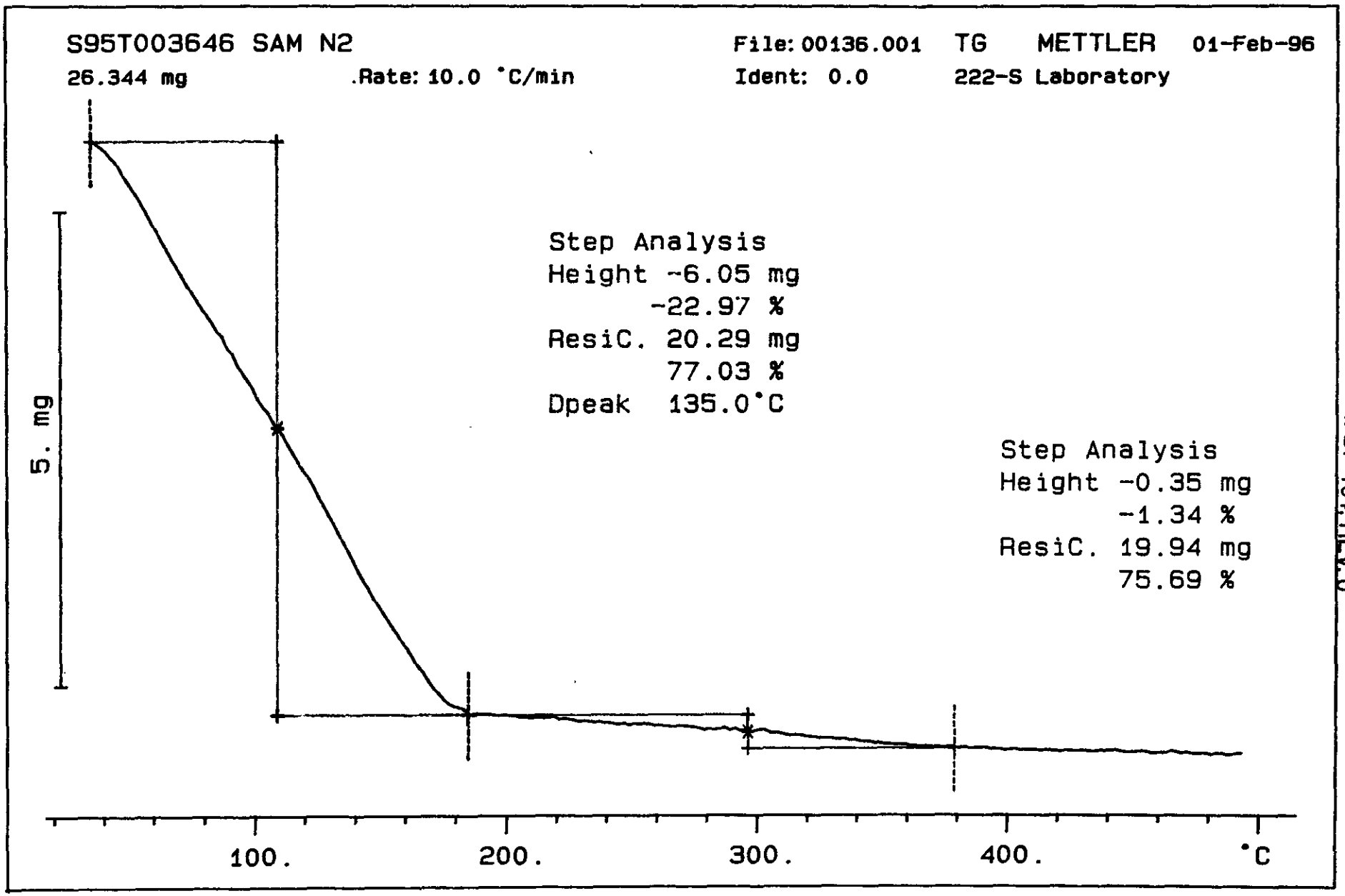

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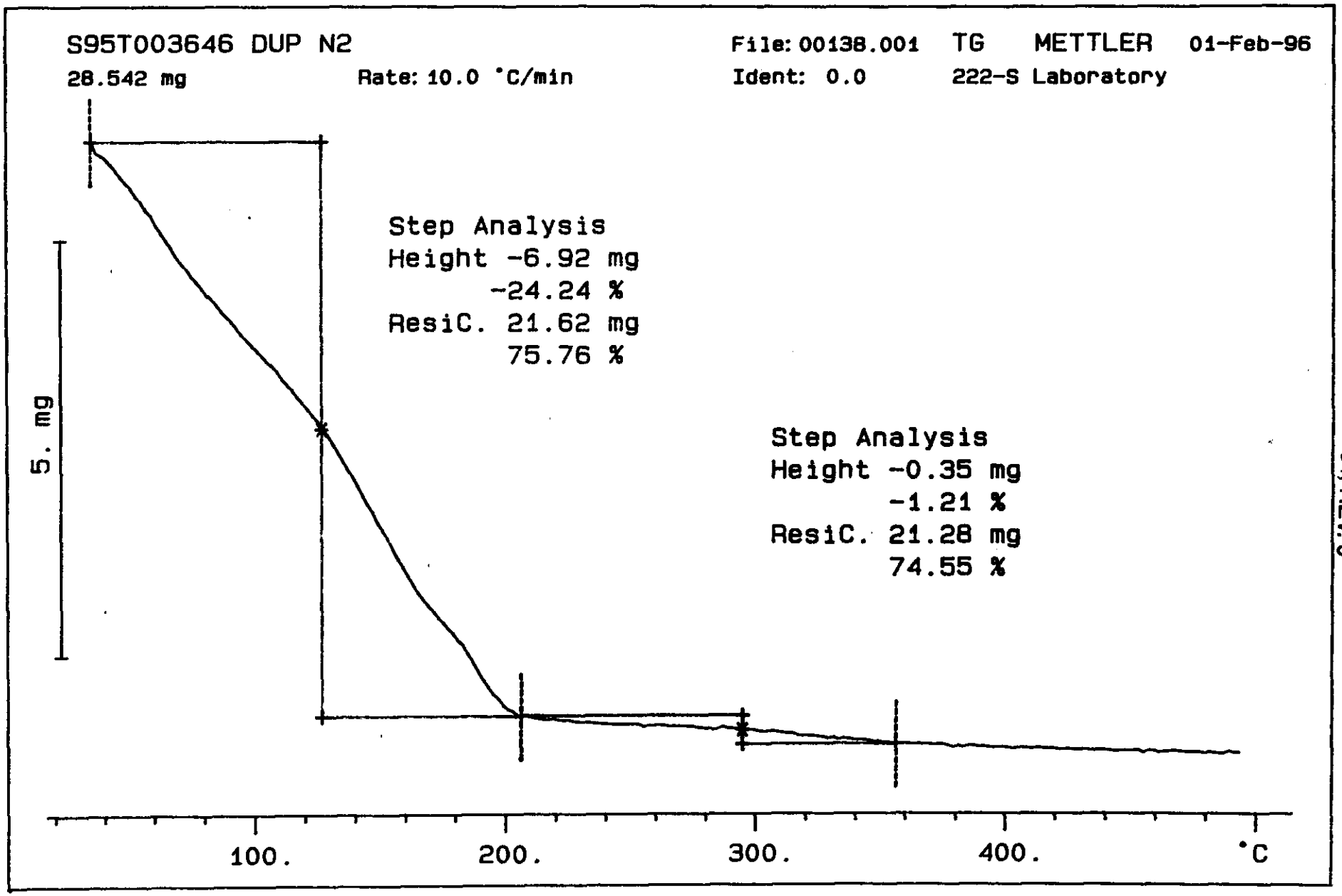


LABCORE Data Entry Template for Worklist# 5327

Analyst: ADP **Instrument:** TGA0 3 **Book #** 75N8A

Method: LA-514-114 Rev/Mod C-1

Worklist Comment: Please run BY-104 TGAs under N2. bdv

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				TGA-03	SOLID	59.2	60.22*	N/A	%
95000180	BY104 ROTARY	2	SAMPLE	S95T003529	0		TGA-03	SOLID	N/A	7.297 2/2/96		%
95000180	BY104 ROTARY	3	DUP	S95T003529	0		TGA-03	SOLID	7.297 2/2/96	13.40	N/A	%
		4	STD				TGA-01	SOLID	59.2	59.36*	N/A	%
95000180	BY104 ROTARY	5	SAMPLE	S95T003703	1		TGA-01	SOLID	N/A	11.86		%
95000180	BY104 ROTARY	6	DUP	S95T003703	1		TGA-01	SOLID	11.86	6.13	N/A	%

Final page for worklist # 5327

See attached for signatures

Analyst Signature **Date** 2/2/96

Verified by Blandina Valenzuela 2/5/96

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# 5327

Analyst: ADP **Instrument:** TGA0 _____ **Book #** 75N8A

Method: LA-560-112 Rev/Mod C-1

Worklist Comment: Please run BY-104 TGAs under N2. bdv

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				TGA-01	SOLID			N/A	%
95000180	BY104 ROTARY	2	SAMPLE	S95T003529	1		TGA-01	SOLID	N/A			%
95000180	BY104 ROTARY	3	DUP	S95T003529	1		TGA-01	SOLID			N/A	%
95000180	BY104 ROTARY	4	SAMPLE	S95T003703	1		TGA-01	SOLID	N/A			%
95000180	BY104 ROTARY	5	DUP	S95T003703	1		TGA-01	SOLID			N/A	%

Final page for worklist # 5327

Anthony Punto 1-31-96
Analyst Signature **Date**

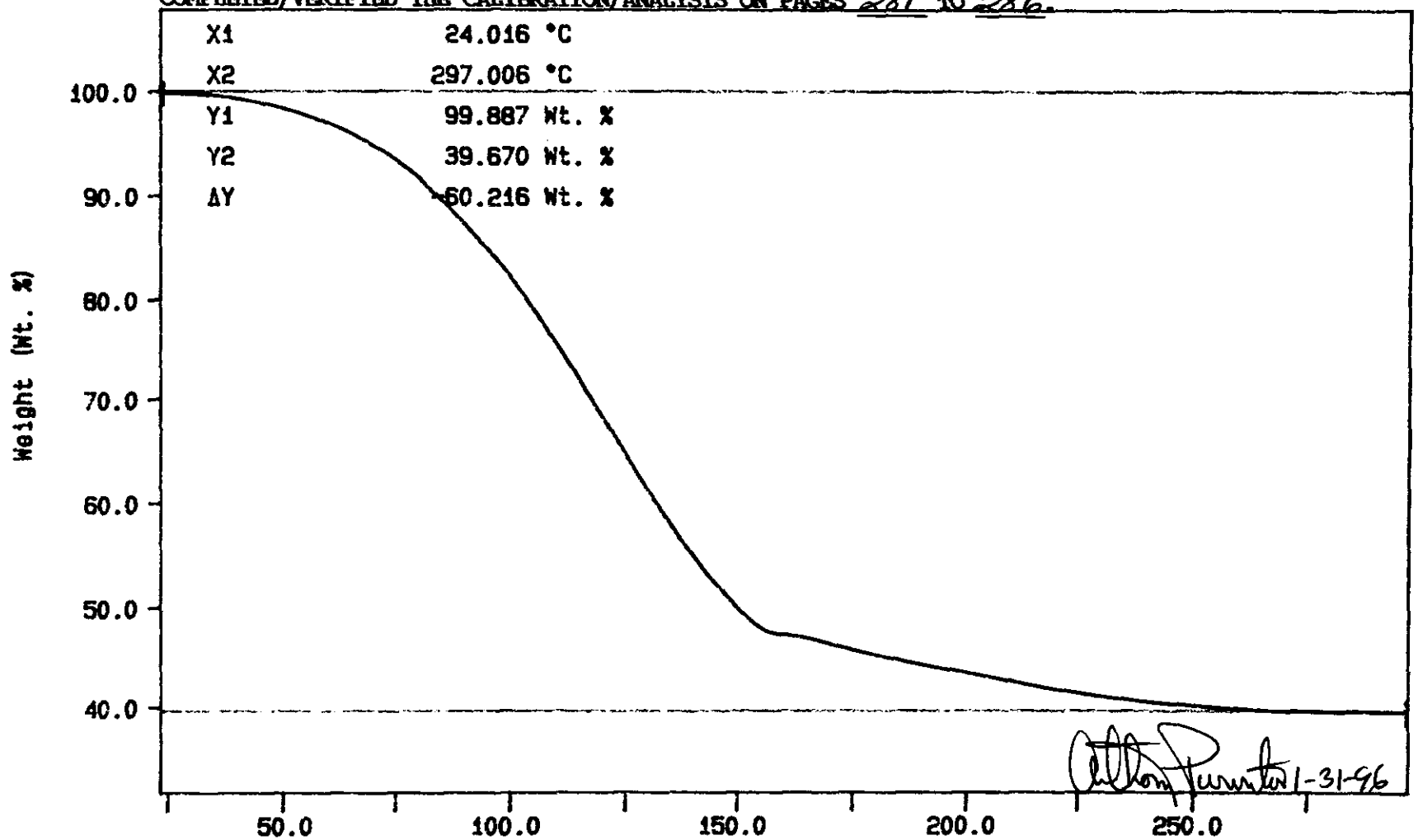
N E Wright 2/2/96
Analyst Signature **Date**

Other instrument was used.
2/5/96 BDV

Data Entry Comments:

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

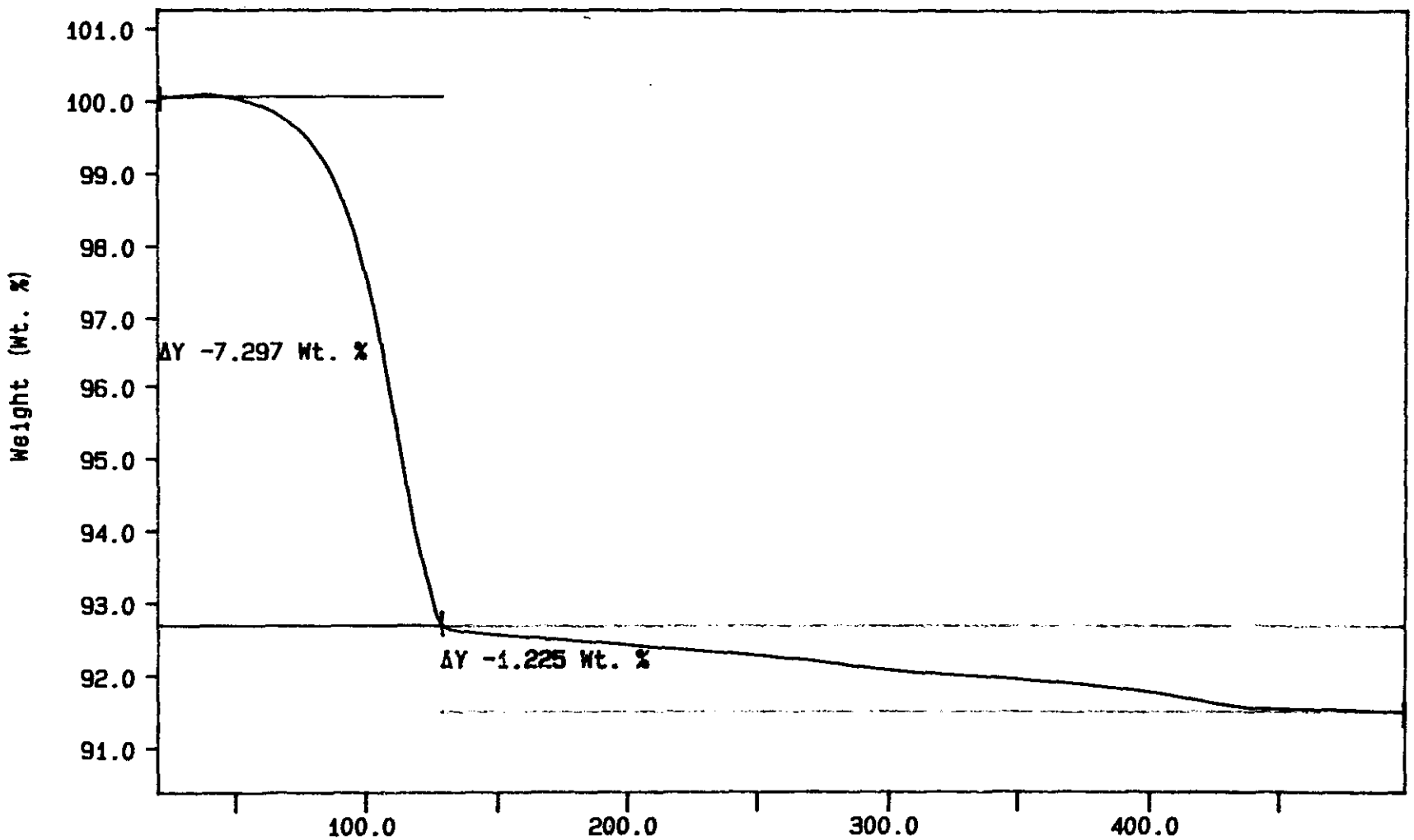
Curve 1: TGA
File info: TER013101 Wed Jan 31 06:49:59 1996
Sample Weight: 13.811 mg
TERLIQ ~~100CN2~~ R&D 75N8-A
1-31-96 SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 281 TO 286.



N2 10C/MIN
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 300.0 C

AD PURINTON
PERKIN-ELMER
7 Series Thermal Analysis System
Wed Jan 31 07:36:32 1996

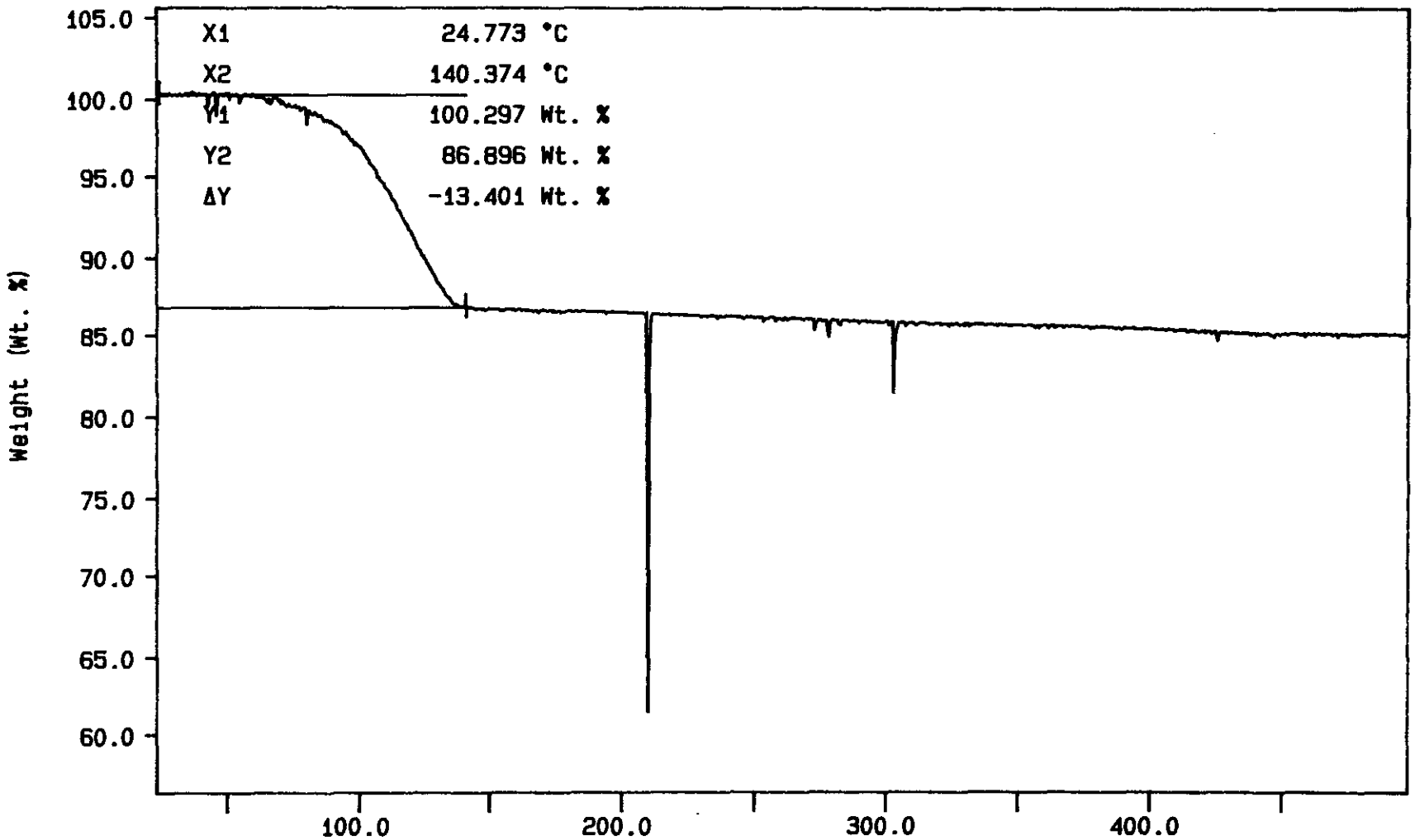
Curve 1: TGA
File info: SAM013104 Wed Jan 31 14:31:41 1996
Sample Weight: 22.441 mg
S95T003529 SAM



10C/MIN N2
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 600.0 C

AD PURINTON
PERKIN-ELMER
7 Series Thermal Analysis System
Wed Jan 31 14:52:19 1996

Curve 1: TGA
File info: SAM013105 Wed Jan 31 15:59:46 1996
Sample Weight: 19.087 mg
S95T003529 DUP



10C/MIN N2
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 500.0 C

AD PURINTON
PERKIN-ELMER
7 Series Thermal Analysis System
Wed Jan 31 16:05:38 1996

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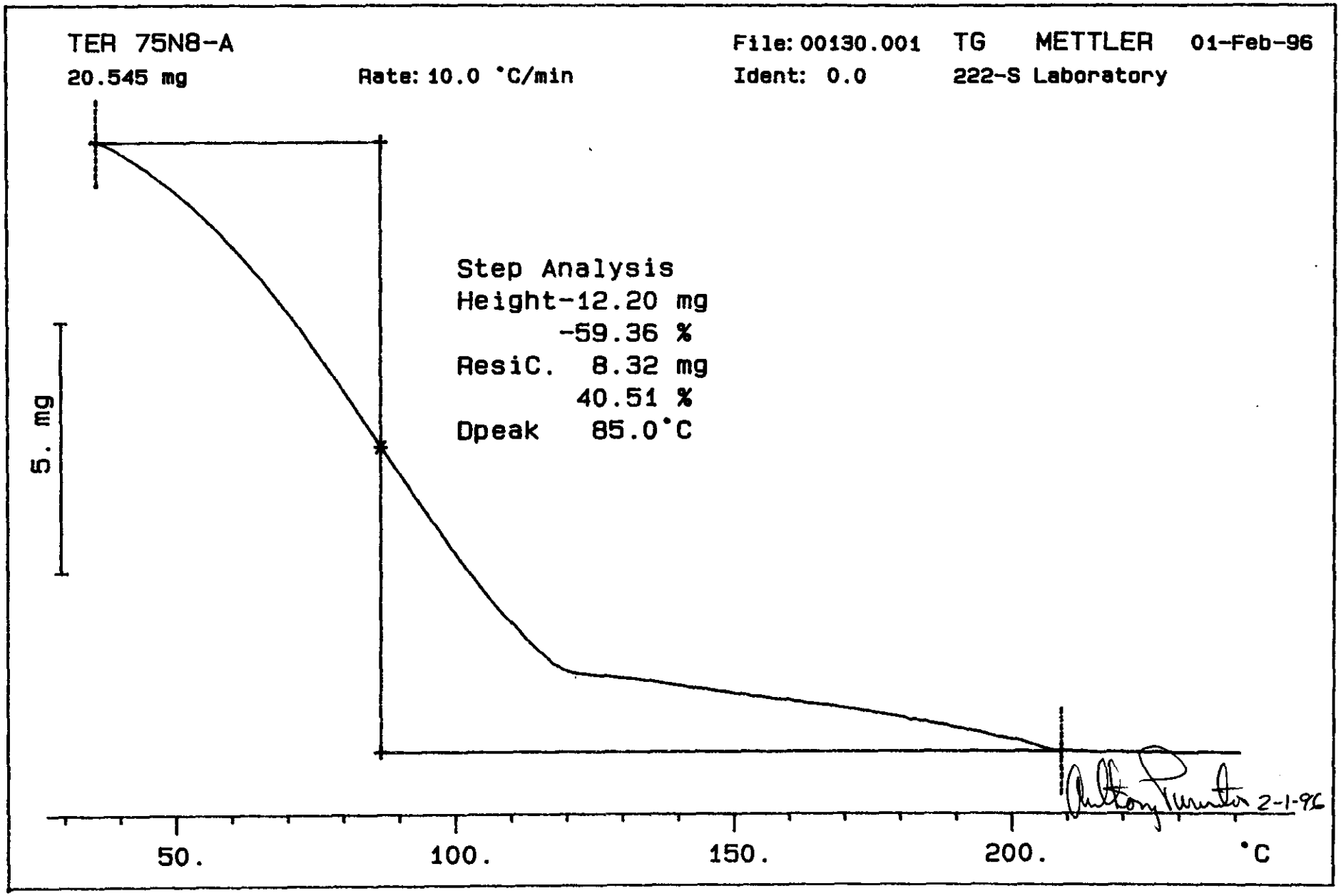

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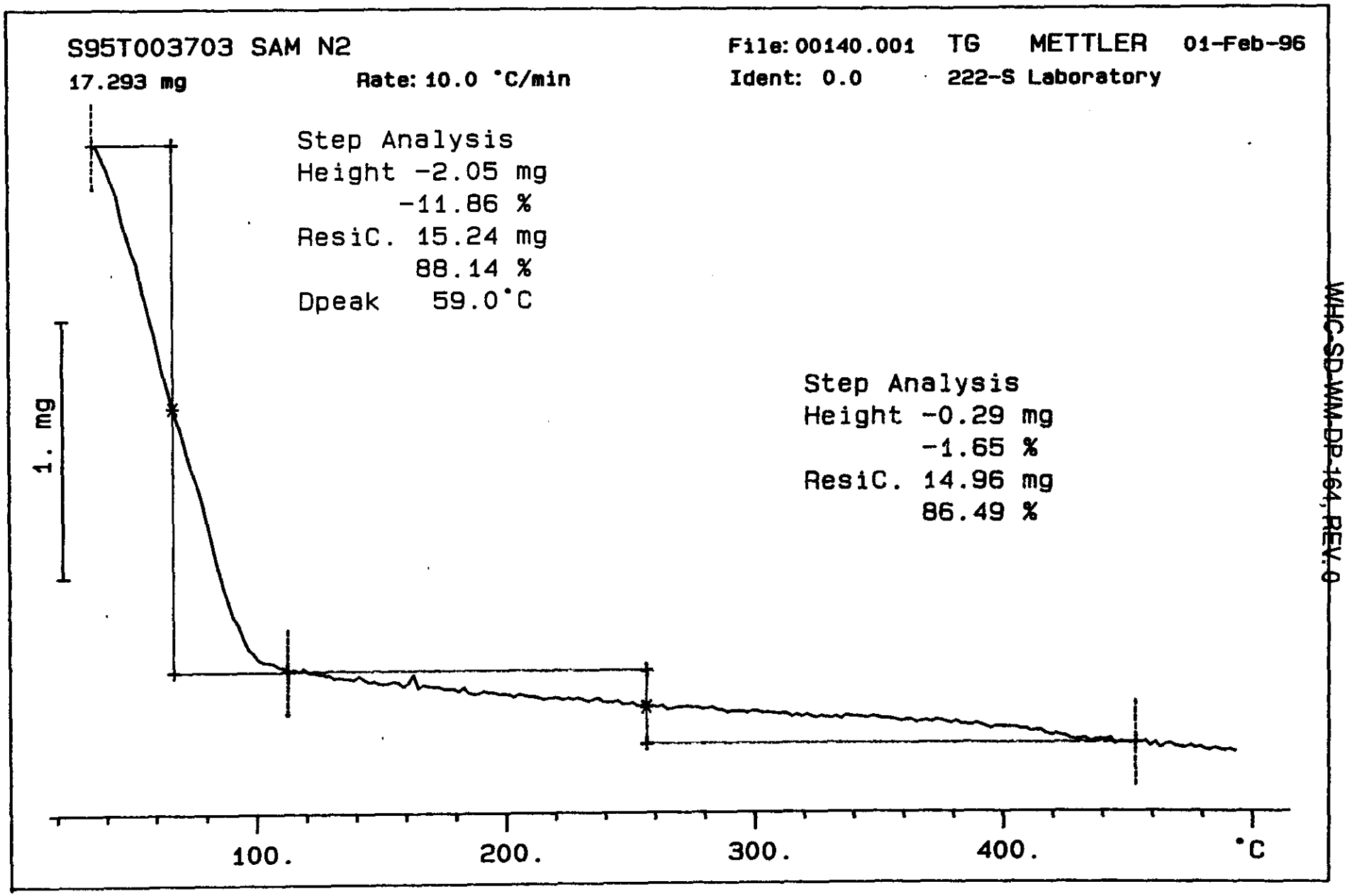

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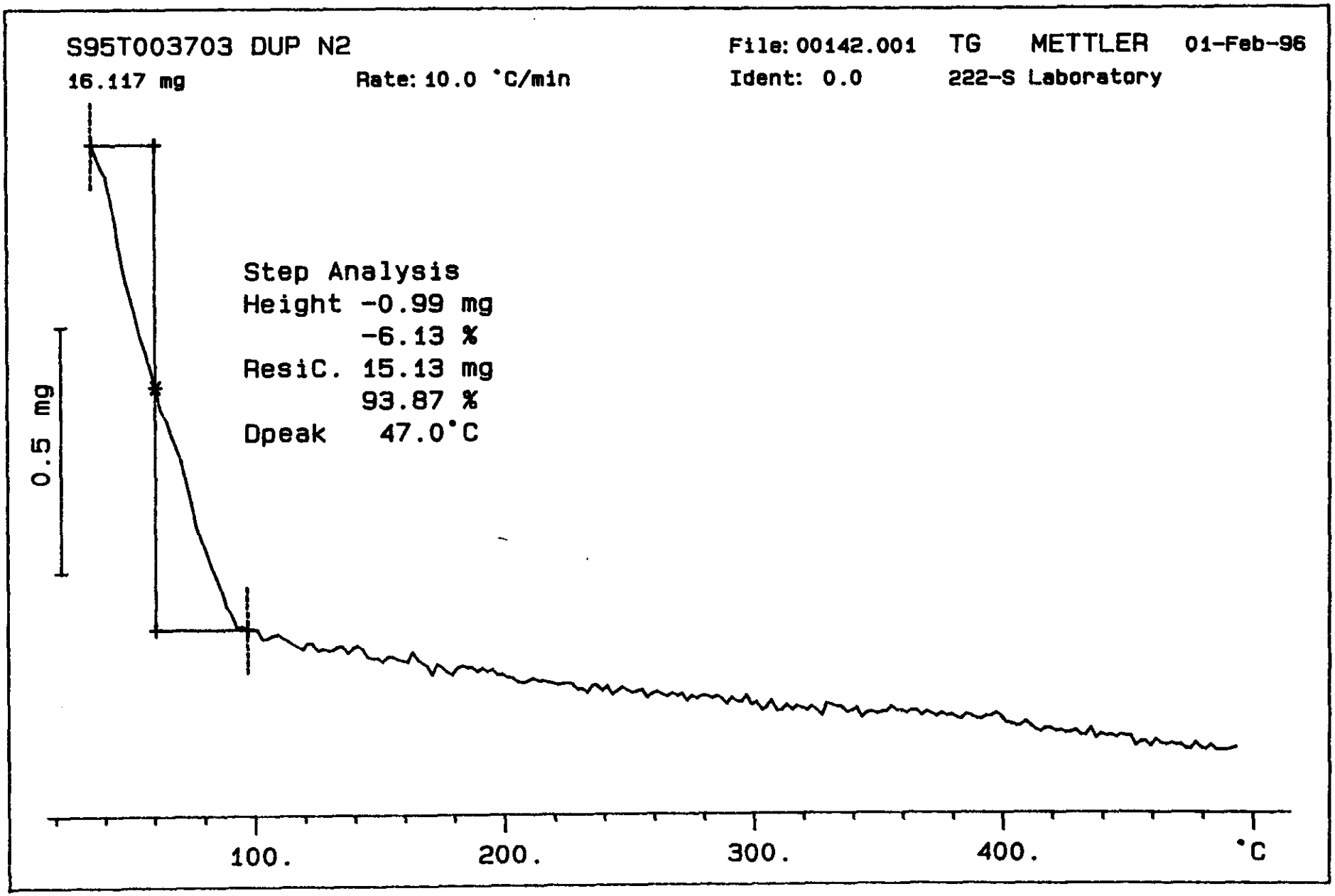

DISTRIBUTION SHEET

To Distribution	From Data Assessment and Integration	Page 1 of 1
		Date: 02-12-96
Project Title/Work Order **WHC-SD-WM-DP-164, REV. 0,** "45-Day Safety Screening Results for Tank 241-BY-104, Rotary Mode Cores 116 and 117		EDT NO.: 614778
		ECN NO.: N/A

Name	MSIN	Text With all Attach	EDT/ECN ONLY
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K. L. Silvers	P7-27		X
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J. A. Voogd	H5-03		X
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EDMC	H6-08	X	
LTIC	T6-03		X
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TFIC (Tank Farm Information Center)	R1-20		X
Washington State Department of Ecology			
Single-Shell Tank Unit Manager			
A. B. Stone	B5-18	X	
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Jim Poppiti 12800 Middlebrook Rd. Trevion II, EM-36 Germantown, MD 20874			X
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