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

Document number: SD-WM-DP-146

Section 1 **of** 2

Title: 60 DAY WASTE COMPATIBILITY SAFETY ISSUE and FINAL RESULTS for TANK 241-AW-105 GRAB SAMPLES: 5AW-95-1, 5AW-95-2 and 5AW-95-3

Date: 10/26/95 **Revision:** 0

Originator: RUTH A. ESCH
Co: WHC

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References: EDT-610070

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16. KEY

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Document Title:	60-Day Waste Compatibility Safety Issue and Final Results for Tank 241-AW-105, Grab Sample 5AW-95-1, 5AW-95-2, and 5AW-95-3
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SUPPORTING DOCUMENT

1. Total Pages 325

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ANALYTICAL SERVICES

60-DAY COMPATIBILITY SAFETY ISSUE AND FINAL RESULTS FOR TANK 241-AW-105, GRAB SAMPLES 5AW-95-1, 5AW-95-2 AND 5AW-95-3

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NARRATIVE

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60 DAY WASTE COMPATIBILITY SAFETY ISSUE AND FINAL RESULTS FOR TANK 241-AW-105 GRAB SAMPLES 5AW-95-1, 5AW-95-2 AND 5AW-95-3

Summary

Three grab samples (5AW-95-1, 5AW-95-2, and 5AW-95-3) were taken from tank 241-AW-105 riser 10A on August 29, 1995, and received by the 222-S laboratories on August 29, 1995. All three samples were designated as supernate liquid samples. These samples were analyzed to support both the waste compatibility safety program and to resolve process control questions from the most recent evaporator campaign. Accuracy and precision criteria were met for all analyses, with the following exceptions. The relative percent difference (RPD) between the sample and the duplicate for ^{90}Sr for sample 5AW-95-2 was 37.1%, and for sample 5AW-95-3 was 68.3%. The required precision was ±20. No rerun was requested (see the analytical results section for an explanation). No notifications were required based on sample results.

Appearance, OTR and Sample Breakdown

5AW-95-1

Visual observation indicated that sample 5AW-95-1 was a clear, colorless liquid with a trace amount of settled solids. The dose rate was 30 mrad/hr. There was no organic layer present.

Three subsamples were removed for analysis. Sample number S95T002187 (approximately 20 mL) was analyzed for inorganic analytes, S95T002190 (approximately 20 mL) was analyzed for radiochemical analytes, and S95T002193 (approximately 5 mL) was analyzed for acetone. Due to delays in receiving the TSAP, the sample was in the lab for approximately two weeks without being refrigerated. This may effect the results of the acetone analysis.

The remainder of the liquids, with the trace solids, was archived for possible future analysis.

5AW-95-2

Visual observation indicated that sample 5AW-95-2 was a clear, colorless liquid with a trace amount of settled solids. The dose rate was 40 mrad/hr. There was no organic layer present.

Three subsamples were removed for analysis. Sample number S95T002188 (approximately 20 mL) was analyzed for inorganic analytes, S95T002191 (approximately 20 mL) was analyzed for radiochemical analytes, and S95T002194 (approximately 5 mL) was analyzed for acetone. Due to delays in receiving the TSAP, the sample was in the lab for approximately two weeks without being refrigerated. This may effect the results of the acetone analysis.

The remainder of the liquids, with the trace solids, was archived for possible future analysis.

5AW-95-3
Visual observation indicated that sample 5AW-95-3 was a clear, yellow liquid with a trace amount of settled solids. The dose rate was 90 mrad/hr. There was no organic layer present.

Three subsamples were removed for analysis. Sample number S95T002189 (approximately 20 mL) was analyzed for inorganic analytes, S95T002192 (approximately 20 mL) was analyzed for radiochemical analytes, and S95T002195 (approximately 5 mL) was analyzed for acetone. Due to delays in receiving the TSAP, the sample was in the lab for approximately two weeks without being refrigerated. This may effect the results of the acetone analysis.

The remainder of the liquids, with the trace solids, was archived for possible future analysis.

Analytical Results

Two result tables are attached. Table 1 is the summary report from the Laboratory Information Management System (LIMS). Table 2 provides the inductively coupled plasma (ICP) serial dilution results. The serial dilution values were obtained from the raw data. The accuracy of the ICP results was assessed using these results in addition to matrix spikes. The sample was analyzed both undiluted and with a 5-fold serial dilution. For acceptable performance, the relative percent difference (RPD) between the serial dilution and the undiluted results must be ≤10%.

Attachment 1 is provided as a cross-reference for relating the tank farm customer ID numbers with the 222-S laboratory LABCORE sample numbers, and the portion of the sample that was analyzed.

The volume percent solids by centrifugation test was not performed on any of the samples due to an insufficient amount of solids present to perform the test.

The ammonia (NH_3) analysis was performed using procedure LA-631-001 Rev.B-0. There was no procedure referenced in the TSAP for this analysis. No analytical problems were noted.

The acetone analysis was performed using procedure LA-523-401 Rev. A-1. There was no procedure referenced in the TSAP for this analysis. During the volatile organic analysis (VOA) the following compounds were tentatively identified in addition to acetone:

5AW-95-1	Trimethyl silanol CAS# 1066406, 2-propylfuran CAS# 4229918, and Normal paraffin hydrocarbons (NPHs)
5AW-95-2	2-propylfuran CAS# 4229918 and Normal paraffin hydrocarbon (NPH)
5AW-95-3	Trimethyl silanol CAS# 1066406, 2-propylfuran CAS# 4229918, and Normal paraffin hydrocarbons (NPHs)

Procedure LA-514-113 Rev. C-0 was used to perform the differential scanning calorimetry (DSC) analysis. No analytical problems were noted.

Procedure LA-560-112 Rev. B-0 was used to perform the thermogravimetric analysis (TGA) for percent moisture. No analytical problems were noted.

Procedure LA-344-105 Rev. C-0 was used to perform the total organic carbon (TOC) analysis. No analytical problems were noted.

Procedure LA-548-121 Rev. D-1 was used for the gamma energy analysis (GEA) of ^{137}Cs. ^{134}Cs and ^{60}Co were also identified in all three samples. The reported ^{134}Cs concentrations are listed below. The ^{60}Co results are included in Table 1.

5AW-95-1	^{134}Cs	5.25e-03 μCi/mL
5AW-95-2	^{134}Cs	5.74e-03 μCi/mL
5AW-95-3	^{134}Cs	1.89e-02 μCi/mL

Procedure LA-220-101 Rev. D-1 was used for the analysis of ^{90}Sr. The results for samples 5AW-95-2 (3.87e-3) and 5AW-95-3 (3.67e-3) were very close to the detection limit (approximately 2.00e-3 μCi/mL). With results close to the detection limit, the relative counting error is very high causing poor precision (high RPD). The RPD between the sample and the duplicate for ^{90}Sr for sample 5AW-95-2 was 37.1%, and for sample 5AW-95-3 was 68.3%. These results exceeded the required precision limit of ±20%. However, since the sample results were less than two times the detection limit, no reruns were requested.

Procedure LA-505-161 Rev. B-0 was used to perform the inductively coupled plasma (ICP) analysis for Al, Fe, and Na. This procedure is for ICP analysis using the Thermo Jarrell Ash (TJA) ICP instrument. Procedure LA-505-151, referenced in the TSAP, is the procedure for ICP analysis using the Analytical Research Laboratory (ARL) instrument. No analytical problems were noted.

Procedure LA-211-102 Rev. C-0 was used to perform the hydroxide (OH^-) analysis. No analytical problems were noted.

Procedure LA-533-105 Rev. D-1 was used to perform the ion chromatography (IC) analysis for Cl^-, F^-, PO_4^{3-}, SO_4^{2-}, NO_3^-, and NO_2^-. No analytical problems were noted.

Procedure LA-212-106 Rev. A-0 was used to perform the pH analysis. No analytical problems were noted.

Procedure LA-622-102 Rev. C-0 was used to perform the total inorganic carbon (TIC) analysis. The procedure referenced in the TSAP (LA-344-105) is incorrect for this analysis. No analytical were noted.

Procedure LA-943-127 Rev. B-0 was used for the $^{239/240}Pu$ analyses. The procedure specified in the TSAP (LA-503-156) was superseded by the above procedure. No analytical problems were noted.

Procedure LA-953-103 Rev. A-4 was used for the analysis of ^{241}Am. No analytical problems were noted.

Procedure LA-510-112 Rev. C-3 was used to perform the specific gravity (SpG) analysis. No analytical problems were noted.

Reference

WHC-SD-WM-TSAP-037, REV. 1, "Compatibility Grab Sampling and Analysis Plan", dated September 1, 1995, Westinghouse Hanford Company, Richland, WA 99352

SAMPLE DATA SUMMARY

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Table 1: RESULTS FOR COMPATIBILITY AND EVAPORATOR STUDY
AW-105 GRAB

RISER: 10A
SEGMENT #: 5AW-95-1

SEGMENT PORTION: Supernate

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S95T002187			Tot. Organic Carbon by Coul.	ug/mL	97.33	<5.000	264.0	243.0	253.5	8.28	n/a	5.500	n/a
S95T002187			Tot. Inorg. Carbon by Coul.	ug/mL	97.00	<5.000	117.0	118.0	117.5	0.85	n/a	5.000	n/a
S95T002187			% Water by TGA using Mettler	%	101.2	n/a	96.64	96.55	96.59	0.09	n/a	n/a	n/a
S95T002187			Specific Gravity	Sp.G.	98.20	n/a	1.000	1.000	1.000	0.00	n/a	1.00e-02	n/a
S95T002187			pH Direct	pH	99.59	n/a	13.37	13.36	13.36	0.07	n/a	1.00e-02	n/a
S95T002187			OH- by Pot. Titration	ug/mL	94.58	<42.00	3.32e+03	3.27e+03	3.30e+03	1.52	n/a	625.0	n/a
S95T002187			Ammonia by ISE-Std Additions	ug/mL	93.12	3.60e-01	76.80	68.20	72.50	11.9	104.0	5.000	n/a
S95T002187			DSC Exotherm using Mettler	Joules/g	110.0	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S95T002187		D	Aluminium-ICP-Acid Dil.	ug/mL	99.71	-2.60e-03	36.54	35.68	36.11	2.38	91.77	1.050	n/a
S95T002187		D	Iron-ICP-Acid Dil.	ug/mL	102.2	5.00e-04	< 1.0500	<1.0500	n/a	n/a	97.18	1.050	n/a
S95T002187		D	Sodium-ICP-Acid Dil.	ug/mL	100.1	8.70e-03	9.94e+03	9.78e+03	9.86e+03	1.59	n/a	2.100	n/a
S95T002187			Sulfate by IC - Dionex 4000i	ug/mL	103.8	<6.78e-01	111.0	114.0	112.5	2.67	n/a	68.50	n/a
S95T002187			Phosphate by IC - Dionex 4000i	ug/mL	104.7	<5.96e-01	< 6.02e01	<6.02e01	n/a	n/a	n/a	60.20	n/a
S95T002187			Nitrate by IC - Dionex 4000i	ug/mL	104.6	<6.99e-01	1.29e+04	1.30e+04	1.30e+04	0.77	n/a	777.0	n/a
S95T002187			Nitrite by IC - Dionex 4000i	ug/mL	104.8	<5.47e-01	780.0	788.0	784.0	1.02	n/a	608.0	n/a
S95T002187			Fluoride by IC - Dionex 4000i	ug/mL	101.2	<6.20e-02	435.0	445.0	440.0	2.27	n/a	68.90	n/a
S95T002187			Chloride by IC - Dionex 4000i	ug/mL	100.9	<8.30e-02	32.50	32.70	32.60	0.61	n/a	8.380	n/a
S95T002190			Strontium-89/90 High Level	uCi/mL	96.33	2.49e-03	8.88e-03	9.66e-03	9.27e-03	8.41	n/a	2.07e-03	2.75E+01
S95T002190			Pu-239/240 by Ion Exchange	uCi/mL	82.81	<4.80e-06	1.31e-05	1.28e-05	1.29e-05	2.32	n/a	4.89e-06	6.00E+00
S95T002190			Cesium-137 by GEA	uCi/mL	99.61	6.63e-05	1.790	1.830	1.810	2.21	n/a	6.63e-05	.16
S95T002190			Cobalt-60 by GEA	uCi/mL	97.23	<1.76e-05	3.37e-04	2.94e-04	3.16e-04	13.6	n/a	1.76e-05	18.86
S95T002190			Am-241 by Extraction	uCi/mL	91.53	<2.98e-05	<6.63E-05	<8.04E-5	n/a	n/a	n/a	6.63e-05	1.06E+01
S95T002193			Acetone	ug/L	n/a	0.00e+00	90.00	100.0	95.00	10.5	n/a	100.0	n/a

Table 1: RESULTS FOR COMPATIBILITY AND EVAPORATOR STUDY
AW-105 GRAB

RISER: 10A
SEGMENT #: 5AW-95-2

SEGMENT PORTION: Supernate

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S95T002188			Tot. Organic Carbon by Coul.	ug/mL	97.33	<5.000	230.0	213.0	221.5	7.67	90.90	5.500	n/a
S95T002188			Tot. Inorg. Carbon by Coul.	ug/mL	97.00	<5.000	98.00	97.50	97.75	0.51	n/a	5.000	n/a
S95T002188			% Water by TGA using Mettler	%	99.25	n/a	96.40	95.89	96.15	0.53	n/a	n/a	n/a
S95T002188			Specific Gravity	Sp.G.	98.20	n/a	9.99e-01	1.000	1.00e+00	0.10	n/a	1.00e-02	n/a
S95T002188			pH Direct	pH	99.59	n/a	13.24	13.24	13.24	0.00	n/a	1.00e-02	n/a
S95T002188			OH- by Pot. Titration	ug/mL	94.58	<42.00	3.44e+03	3.46e+03	3.45e+03	0.58	n/a	625.0	n/a
S95T002188			Ammonia by ISE-Std Additions	ug/mL	93.12	3.60e-01	112.0	114.0	113.0	1.77	n/a	5.000	n/a
S95T002188			DSC Exotherm using Mettler	Joules/g	110.0	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S95T002188		D	Aluminium-ICP-Acid Dil.	ug/mL	99.71	-2.60e-03	42.72	42.42	42.57	0.70	92.70	1.050	n/a
S95T002188		D	Iron-ICP-Acid Dil.	ug/mL	102.2	5.00e-04	< 1.0500	<1.0500	n/a	n/a	96.80	1.050	n/a
S95T002188		D	Sodium-ICP-Acid Dil.	ug/mL	100.1	8.70e-03	1.05e+04	1.04e+04	1.04e+04	0.87	n/a	2.100	n/a
S95T002188			Sulfate by IC - Dionex 4000i	ug/mL	103.8	<6.78e-01	112.0	119.0	115.5	6.06	n/a	68.50	n/a
S95T002188			Phosphate by IC - Dionex 4000i	ug/mL	104.7	<5.96e-01	< 6.02e01	<6.02e01	n/a	n/a	n/a	60.20	n/a
S95T002188			Nitrate by IC - Dionex 4000i	ug/mL	104.6	<6.99e-01	1.60e+04	1.58e+04	1.59e+04	1.26	n/a	777.0	n/a
S95T002188			Nitrite by IC - Dionex 4000i	ug/mL	104.8	<5.47e-01	872.0	855.0	863.5	1.97	n/a	608.0	n/a
S95T002188			Fluoride by IC - Dionex 4000i	ug/mL	101.2	<6.20e-02	544.0	537.0	540.5	1.30	n/a	68.90	n/a
S95T002188			Chloride by IC - Dionex 4000i	ug/mL	100.9	<8.30e-02	41.20	42.90	42.05	4.04	n/a	8.380	n/a
S95T002191			Strontium-89/90 High Level	uCi/mL	96.33	2.49e-03	3.87e-03	2.66e-03	3.27e-03	37.1	n/a	2.04e-03	4.96E+01
S95T002191			Pu-239/240 by Ion Exchange	uCi/mL	98.44	<4.02e-06	1.51e-05	1.53e-05	1.52e-05	1.32	n/a	4.01e-06	5.08E+00
S95T002191			Cesium-137 by GEA	uCi/mL	99.61	6.63e-05	2.030	2.030	2.030	0.00	n/a	6.63e-05	.15
S95T002191			Cobalt-60 by GEA	uCi/mL	97.23	<1.76e-05	3.51e-04	3.12e-04	3.31e-04	11.8	n/a	1.76e-05	18.07
S95T002191			Am-241 by Extraction	uCi/mL	91.53	<2.98e-05	<2.01E-04	<5.96E-5	n/a	n/a	n/a	2.01e-04	1.00E+02
S95T002194			Acetone	ug/L	n/a	0.00e+00	160.0	160.0	160.0	0.00	n/a	100.0	n/a

Table 1: RESULTS FOR COMPATIBILITY AND EVAPORATOR STUDY
AW-105 GRAB

RISER: 10A
SEGMENT #: 5AW-95-3

SEGMENT PORTION: Supernate

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S95T002189			Tot. Organic Carbon by Coul.	ug/mL	96.00	<5.000	819.0	843.0	831.0	2.89	n/a	30.00	n/a
S95T002189			Tot. Inorg. Carbon by Coul.	ug/mL	97.00	<5.000	217.0	217.0	217.0	0.00	106.9	5.000	n/a
S95T002189			% Water by TGA using Mettler	%	99.25	n/a	94.11	93.61	93.86	0.53	n/a	n/a	n/a
S95T002189			Specific Gravity	Sp.G.	98.20	n/a	1.020	1.020	1.020	0.00	n/a	1.00e-02	n/a
S95T002189			pH Direct	pH	99.59	n/a	13.15	13.16	13.16	0.08	n/a	1.00e-02	n/a
S95T002189			OH- by Pot. Titration	ug/mL	94.58	<42.00	5.13e+03	5.11e+03	5.12e+03	0.39	n/a	625.0	n/a
S95T002189			Ammonia by ISE-Std Additions	ug/mL	93.12	3.60e-01	552.0	590.0	571.0	6.65	n/a	5.000	n/a
S95T002189			DSC Exotherm using Mettler	Joules/g	96.66	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S95T002189		D	Aluminium-ICP-Acid Dil.	ug/mL	99.71	-2.60e-03	144.7	144.4	144.6	0.25	93.33	2.050	n/a
S95T002189		D	Iron-ICP-Acid Dil.	ug/mL	102.2	5.00e-04	< 2.0500	<2.0500	n/a	n/a	99.00	2.050	n/a
S95T002189		D	Sodium-ICP-Acid Dil.	ug/mL	100.1	8.70e-03	1.73e+04	1.73e+04	1.73e+04	0.09	n/a	4.100	n/a
S95T002189			Sulfate by IC - Dionex 4000i	ug/mL	103.8	<6.78e-01	310.0	310.0	310.0	0.00	n/a	68.50	n/a
S95T002189			Phosphate by IC - Dionex 4000i	ug/mL	104.7	<5.96e-01	130.0	126.0	128.0	3.12	n/a	60.20	n/a
S95T002189			Nitrate by IC - Dionex 4000i	ug/mL	104.6	<6.99e-01	2.09e+04	2.17e+04	2.13e+04	3.76	n/a	777.0	n/a
S95T002189			Nitrite by IC - Dionex 4000i	ug/mL	104.8	<5.47e-01	1.17e+03	1.19e+03	1.18e+03	1.69	n/a	608.0	n/a
S95T002189			Fluoride by IC - Dionex 4000i	ug/mL	101.2	<6.20e-02	1.56e+03	1.62e+03	1.59e+03	3.77	n/a	68.90	n/a
S95T002189			Chloride by IC - Dionex 4000i	ug/mL	100.9	<8.30e-02	93.50	93.60	93.55	0.11	n/a	8.380	n/a
S95T002192			Strontium-89/90 High Level	uCi/mL	96.33	2.02e-03	3.67e-03	7.48e-03	5.58e-03	68.3	n/a	2.15e-03	5.34E+01
S95T002192			Pu-239/240 by Ion Exchange	uCi/mL	98.44	<4.02e-06	4.08e-05	4.72e-05	4.40e-05	14.5	n/a	4.52e-06	3.05E+00
S95T002192			Cesium-137 by GEA	uCi/mL	99.61	6.63e-05	6.960	6.980	6.970	0.29	n/a	6.63e-05	.16
S95T002192			Cobalt-60 by GEA	uCi/mL	97.23	<1.76e-05	1.67e-03	1.55e-03	1.61e-03	7.45	n/a	1.76e-05	13.02
S95T002192			Am-241 by Extraction	uCi/mL	91.53	<2.98e-05	<5.99E-05	<2.18E-4	n/a	n/a	n/a	5.99e-05	1.00E+02
S95T002195			Acetone	ug/L	n/a	0.00e+00	970.0	1.00e+03	985.0	3.05	n/a	100.0	n/a

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Table 2

ICP Serial Dilution Results for Tank 241-AW-105
Waste Compatibility Study

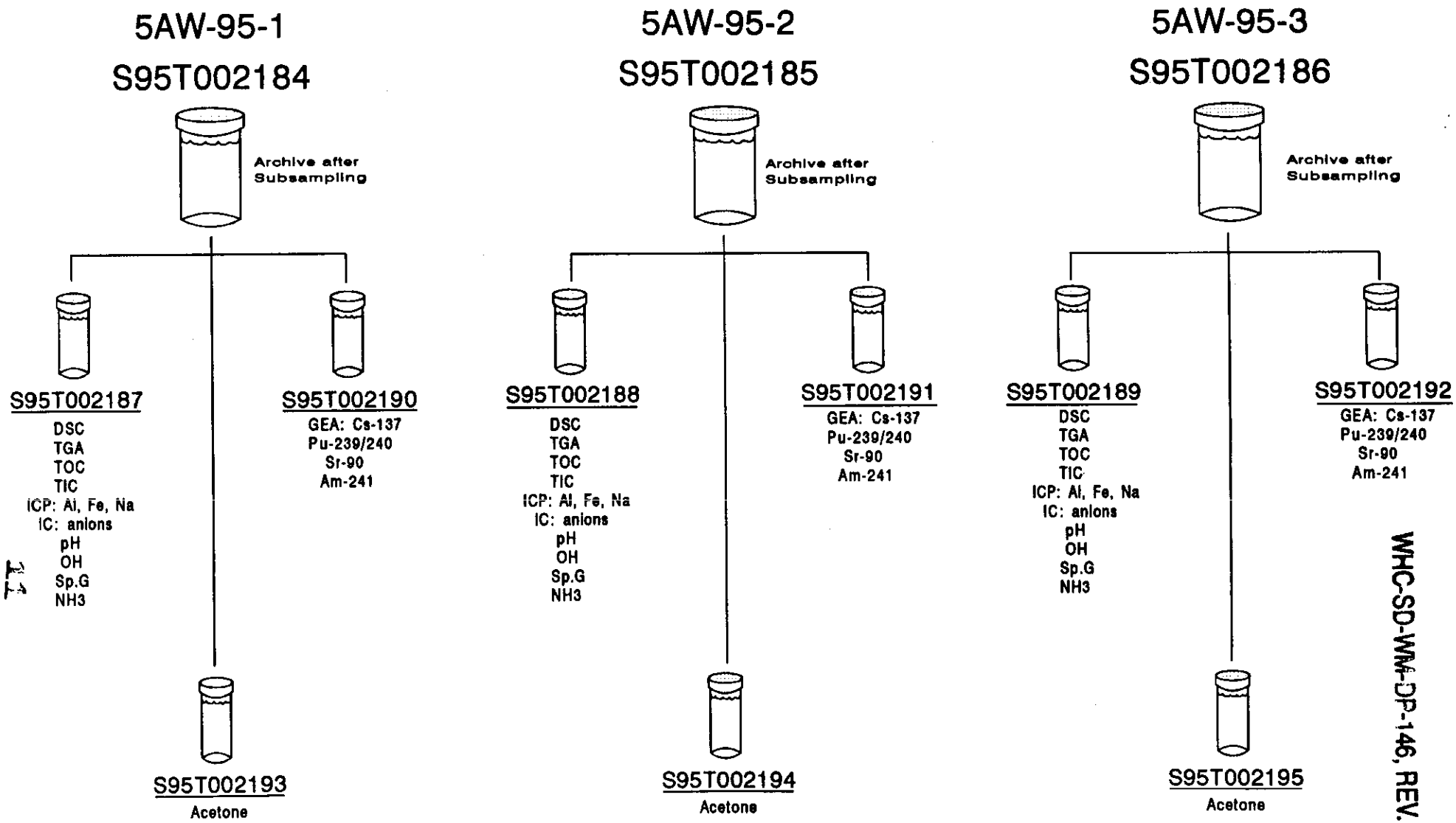
Riser 10A

Sample ID	Analyte	Sample Result (µg/mL) Undiluted	Serial Dilution Result (µg/mL)	RPD
S95T002187				
(AW-105-1)	Al	36.54	35.81	2.0
	Fe	<1.05	<1.05	n/a
	Na	9940	10200	2.6
S95T002188				
(AW-105-2)	Al	42.72	41.00	4.1
	Fe	<1.05	<1.05	n/a
	Na	10500	10490	0.1
S95T002189				
(AW-105-3)	Al	144.7	146.8	1.5
	Fe	<2.05	<2.05	n/a
	Na	17300	18200	5.1

RPD (Relative Percent Difference) = (ABS(Sample - Serial Dilution))/[(Sample +Serial Dilution)/2] X 10

Attachment 1

AW-105 GRAB SAMPLE BREAKDOWN



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CHAIN OF CUSTODY FORMS

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Westinghou anford Company

CHAIN OF CUSTODY/SAM E ANALYSIS REQUEST

COPY

Page 1 of 1

Data Turnaround: ☐ Priority ☒ Normal

Collector: JAMES SICKELS	Company Contact: J. JONES	Telephone No.: 373-3578
Project Designation: N/A	Sampling Location: 241-AW-105 R# 10A	SAF No.: N/A
Ice Chest No.: N/A	Field Logbook No.: N/A	Method of Shipment: WHC TRANSPORTATION
Shipped To: 222S LABS	Offsite Property No.: N/A	Bill of Lading/Air Bill No.: N/A

Possible Sample Hazards/Remarks: RADIOACTIVE

Special Handling and/or Storage: N/A

Preservative	N/A
Type of Container	GLASS
No. of Container(s)	2
Volume	125 mL (EA)

SAMPLE ANALYSIS

Seal #1 (2509) #2 (2511)

Sample No.	Matrix*	Date Sampled	Time Sampled		
SAW-95-1	L	8-29-95	10:47	DOSE RATE AT CONTACT	5 mR/hr
SAW-95-2	L	8-29-95	10:55	DOSE RATE AT CONTACT	4 mR/hr

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
James Sickels / JAMES SICKELS	1455 8-29-95	Christine S Parker	14:35 8-29-95
Christine S Parker / Christine S Parker		N Lacin	1515 8-29-95

SPECIAL INSTRUCTIONS

Matrix*
- S = Soil
- SE = Sediment
- SO = Solid
- SL = Sludge
- W = Water
- O = Oil
- A = Air
- DS = Drum Solids
- DL = Drum Liquids
- T = Tissue
- WI = Wipe
- L = Liquid
- V = Vegetation
- X = Other

LABORATORY SECTION: Received By | Title | Date/Time

FINAL SAMPLE DISPOSITION: Disposal Method | Disposed By | Date/Time

DISTRIBUTION: Original- Sample Yellow - Sampler

BC-6000-828 (12/92)

WHC-SD-WM-DP-146, REV. 0

Westinghouse Hanford Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

COPY

Page 1 of 1

Data Turnaround: ☐ Priority ☒ Normal

Collector: JAMES SICKELS	Company Contact: J. JONES	Telephone No.: 373-3578
Project Designation: N/A	Sampling Location: 241-AW-105 R# 10A	SAF No.: N/A
Ice Chest No.: N/A	Field Logbook No.: N/A	Method of Shipment: WHC TRANSPORTATION
Shipped To: 222S LABS	Offsite Property No.: N/A	Bill of Lading/Air Bill No.: N/A

Possible Sample Hazards/Remarks: RADIOACTIVE

Special Handling and/or Storage: N/A

Preservative	N/A
Type of Container	GLASS
No. of Container(s)	1
Volume	125mL

SAMPLE ANALYSIS

SEAL # (2510)

Sample No.	Matrix*	Date Sampled	Time Sampled	
5AW-95-3	L	8-29-95	11:05	DOSE RATE ON CONTACT 37 mR/hr.

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CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: James Sickels / JAMES SICKELS	Date/Time: 8-29-95 1355	Received By: Jubal Helms / Jubal Helms	Date/Time: 8-29-95 1355 / 1455
Relinquished By: Jubal Helms / Jubal Helms	Date/Time: 8-29-95 1445	Received By: F.E. Walker / E.E. Parker	Date/Time: 1500 8-29-95
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received By	Date/Time

SPECIAL INSTRUCTIONS

Matrix*
- S = Soil
- SE = Sediment
- SO = Solid
- SL = Sludge
- W = Water
- O = Oil
- A = Air
- DS = Drum Solids
- DL = Drum Liquids
- T = Tissue
- WI = Wipe
- L = Liquid
- V = Vegetation
- X = Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

DISTRIBUTION: Original- Sample Yellow - Sampler

BC-6000-828 (12/92)

WHC-SD-WM-DP-146, REV. 0

SAMPLE HANDLING

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LABCORE Data Entry Template for Worklist# 2303

Analyst: JHW **Instrument:** NONE _____ **Book #** N/A

Method: LA-519-151 Rev/Mod E-2

Worklist Comment: AW105 @BRKDWN S95T002184, 2185, 2186

GROUP	PROJECT	S TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
95000130	AW-105 GRAB	1 SAMPLE	S95T002184	0		@BRKDWN1 DOSERATE	LIQUID	N/A	~~45~~ 30 (pae 9/12/95)		~~mrad~~ mrad/hour (rae 9/12/95) mrad/hr
95000130	AW-105 GRAB	1 SAMPLE	S95T002184	0		@BRKDWN1 APPEAR01	LIQUID	N/A	complete		
95000130	AW-105 GRAB	1 SAMPLE	S95T002184	0		@BRKDWN1 SAMPAMT2	LIQUID	N/A	~~55~~ 80 mL (rae 9/12/95)		rae 9/12/95
95000130	AW-105 GRAB	2 SAMPLE	S95T002185	0		@BRKDWN1 DOSERATE	LIQUID	N/A	~~45~~ 40 (pae 9/12/95)		mrad/hour
95000130	AW-105 GRAB	2 SAMPLE	S95T002185	0		@BRKDWN1 APPEAR01	LIQUID	N/A	complete		
95000130	AW-105 GRAB	2 SAMPLE	S95T002185	0		@BRKDWN1 SAMPAMT2	LIQUID	N/A	~~55~~ 80 mL (rae 9/12/95)		rae 9/12/95
95000130	AW-105 GRAB	3 SAMPLE	S95T002186	0		@BRKDWN1 DOSERATE	LIQUID	N/A	90		mrad/hour
95000130	AW-105 GRAB	3 SAMPLE	S95T002186	0		@BRKDWN1 APPEAR01	LIQUID	N/A	~~55~~ (rae 9/12/95)		complete
95000130	AW-105 GRAB	3 SAMPLE	S95T002186	0		@BRKDWN1 SAMPAMT2	LIQUID	N/A	~~55~~ 80 mL (rae 9/12/95)		rae 9/12/95

Final page for worklist # 2303

Analyst Signature 9-12-95 Date

Approved by RAbsh 9/14/95

Analyst Signature 9/12/95 Date

	Dose	Solids?	Org. layer?	Color	clarity
S95T002184	b/o 45 mrad/hr w/c 45 mR/hr correction factor of 5@ line before subsampling C. Felder.	Trace	No	Colorless	clear
S95T002185	b/o 45 mrad/hr w/c 45 mR/hr before subsampling C. Felder	Trace	No	Colorless	clear
S95T002186	b/o 175 mrad/hr w/c 140 mR/hr before subsampling C. Felder	Trace	No	pale yellow	clear

Data Entry Comments:

Dose rates reported are those measured after subsampling.

SAMPAMT reported is amount after subsampling.

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

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INORGANIC ANALYSES

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LABCORE Data Entry Template for Worklist# 2415

Analyst: RAG Instrument: PH01 Book # 110N16G

Method: LA-212-106 Rev. A-Ø 10/20/95 RAG

Worklist Comment: pH AW-105, AW-106

GROUP	PROJECT	S TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT	RJ 9-20-95
		1 STDPH	110N16-G			PH-QC	QC	7.35	7.35	N/A		7.35 pH
95000126	AW-106 GRAB	2 SAMPLE	S95T002016	0		PH-01	LIQUID	N/A	14.19		pH	14.19 pH
95000126	AW-106 GRAB	3 DUP	S95T002016	0		PH-01	LIQUID	14.19	14.16	N/A	pH	14.16 pH
95000130	AW-105 GRAB	4 SAMPLE	S95T002187	0		PH-01	LIQUID	N/A	13.37		pH	13.37 pH
95000130	AW-105 GRAB	5 DUP	S95T002187	0		PH-01	LIQUID	13.37	13.36	N/A	pH	13.36 pH
95000130	AW-105 GRAB	6 SAMPLE	S95T002188	0		PH-01	LIQUID	N/A	13.24		pH	13.24 pH
95000130	AW-105 GRAB	7 DUP	S95T002188	0		PH-01	LIQUID	13.24	13.24	N/A	pH	13.24 pH
95000130	AW-105 GRAB	8 SAMPLE	S95T002189	0		PH-01	LIQUID	N/A	13.15		pH	13.15 pH
0130	AW-105 GRAB	9 DUP	S95T002189	0		PH-01	LIQUID	13.15	13.16	N/A	pH	13.16 pH

Final page for worklist # 2415

Rae Ann Green 9-20-95
Analyst Signature Date

9-20-95
Analyst Signature Date

Reviewed RW Schroeder 9/21/95

Data Entry Comments: STD book # 110N16-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# 2416

Analyst: Raw **Instrument:** PH01 WC06695 **Book #** 57N8

Method: LA-211-102 Rev/Mod C-0

Worklist Comment: OH AW-105, AW-106

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	BLNK				OH-01	LIQUID	1	<42	N/A	ug/mL
		2	STD				OH-01	LIQUID	1.66 E4	1.57 E4	N/A	ug/mL
95000126	AW-106 GRAB	3	SAMPLE	S95T002016	0		OH-01	LIQUID	N/A	2.75 E4	2.50 E3	ug/mL
95000126	AW-106 GRAB	4	DUP	S95T002016	0		OH-01	LIQUID	2.75 E4	2.79 E4	N/A	ug/mL
95000130	AW-105 GRAB	5	SAMPLE	S95T002187	0		OH-01	LIQUID	N/A	3.32 E3	6.25 E2	ug/mL
95000130	AW-105 GRAB	6	DUP	S95T002187	0		OH-01	LIQUID	3.32 E3	327 E3	N/A	ug/mL
95000130	AW-105 GRAB	7	SAMPLE	S95T002188	0		OH-01	LIQUID	N/A	3.44 E3	6.25 E2	ug/mL
95000130	AW-105 GRAB	8	DUP	S95T002188	0		OH-01	LIQUID	3.44 E3	3.46 E3	N/A	ug/mL
95000130	AW-105 GRAB	9	SAMPLE	S95T002189	0		OH-01	LIQUID	N/A	5.13 E3	6.25 E2	ug/mL
95000130	AW-105 GRAB	10	DUP	S95T002189	0		OH-01	LIQUID	5.13 E3	5.11 E3	N/A	ug/mL
		11	STD				OH-01	LIQUID	1.66E4	1.76 E4	N/A	ug/mL

Final page for worklist # 2416

R. Wendland 10/11/95
Analyst Signature **Date**

[illegible] 10/11/95
Analyst Signature **Date**

Reviewed RW Schroeder 10/12/95

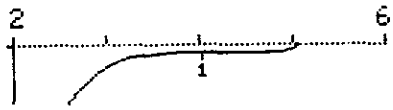
Data Entry Comments:

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.

```
date 95-10-11 time 06:41
GET pH          12  #   62
Id.#1            1
Id.#2        .2005
pH(init)      5.03
            V/ml          pH
EP1         .013        4.03
stop volt.reached
        ========
```

BLK

```
date 95-10-11 time 06:44
GET pH          12  #   62
.10ml/div        ΔpH=1/div
start V    .000 ml
```



OH (AUTO) : LA-211-102 (C-0)

		BLANK
Type	Sample Size (mL) SS	3.000
BLANK	Concentration of HNO3 (Molarity)	0.2005
WorkList	HNO3 Titrant at OH end-point in mL	0.000
2416	Dilution Factor DF	1
TestCode	Concentration of OH in Sample (Molarity)	0.00E+00
OH-01	OH in Sample in µg/mL (PPM)	0.00E+00
Matrix		
LIQUID		
Sample#	Detection Limit = 125µg / SS * DF	
BLNK		
Instrument Code	Detection Limit (µg/mL)	4.17E+01
WC06695		
Analyst	OH Molarity =((mL HNO3)*(M HNO3))/Sample Size in mL*Dilution Factor	
R. WENDLAND		
Date	OH in µg/mL = (OH MOLARITY)*(17.0g/mole)*((1000000µg/g)/(1000mL/L))	
10/11/95		
Time		BLANK
	Concentration of OH in Sample (Molarity)	0.00E+00
	OH in Sample in µg/mL (PPM)	<42

The Result is < Detection Limit

Data Entry by:	[illegible]	Date:	10/11/95
Approved by:	RW Schroeder	Date:	10/12/95

Form 211102_1 Rev. 1.3 Page 1 of 1

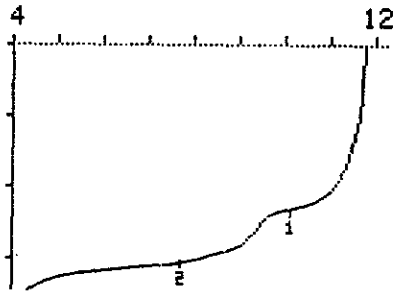
PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

WHC-SD-WM-DP-146, REV. 0

```
date 95-10-11 time 06:49
GET pH          12  #   63
Id.#1            1
Id.#2        .2005
pH(init)    11.74
            V/ml          pH
EP1         .231       10.11
EP2         .303        7.71
manual stop
        ========
```

std .050

```
date 95-10-11 time 06:50
GET pH          12  #   63
.10ml/div       ΔpH=1/div
start V    .000 ml
```



OH (AUTO) : LA-211-102 (C-0)

		STANDARD
Type	Sample Size (mL) SS	0.050
STANDARD	Concentration of HNO3 (Molarity)	0.2005
Work List	HNO3 Titrant at OH end-point in mL	0.231
2416	Dilution Factor DF	1
Test Code	Concentration of OH in Sample (Molarity)	9.26E-01
OH-01	OH in Sample in µg/mL (PPM)	1.57E+04
Matrix		
LIQUID		
Sample #		
57N8		
Instrument Code		
WC06695		
Analyst	OH Molarity =((mL HNO3)*(M HNO3))/Sample Size in mL*Dilution Factor	
R. WENDLAND		
Date	OH in µg/mL = (OH MOLARITY)*(17.0g/mole)*((1000000µg/g)/(1000mL/L))	
10/11/95		
Time		STANDARD
	Concentration of OH in Sample (Molarity)	9.26E-01
	OH in Sample in µg/mL (PPM)	1.57E+04

Data Entry by:	[illegible]	Date:	10/11/95
Approved by:	RW Schroeder	Date:	10/12/95

Form 211102_1 Rev. 1.3 Page 1 of 1

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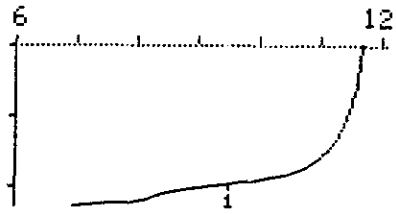
```
date 95-10-11 time 08:02
GET pH          12  #   67
Id.#1           87
Id.#2        .2005
pH(init)     11.69
            V/ml          pH
EP1          .195       9.52
stop volt.reached
        ========
```

(.200)

```
date 95-10-11 time 08:03
GET pH          12  #   67
.10ml/div        ΔpH=1/div
start V    .000 ml
```



OH (AUTO) : LA-211-102 (C-0)

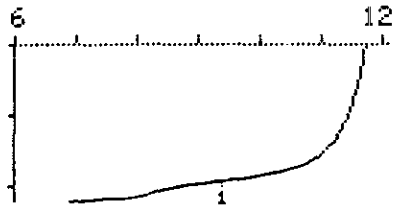
		SAMPLE
Type	Sample Size (mL) SS	0.200
SAMPLE	Concentration of HNO3 (Molarity)	0.2005
Work List	HNO3 Titrant at OH end-point in mL	0.195
2416	Dilution Factor DF	1
Test Code	Concentration of OH in Sample (Molarity)	1.95E-01
OH-01	OH in Sample in µg/mL (PPM)	3.32E+03
Matrix		
LIQUID		
Sample #	Detection Limit = 125µg / SS * DF	
S95T002187		
Instrument Code	Detection Limit (µg/mL)	6.25E+02
WC06695		
Analyst	OH Molarity =((mL HNO3)*(M HNO3))/Sample Size in mL*Dilution Factor	
R. WENDLAND		
Date	OH in µg/mL = (OH MOLARITY)*(17.0g/mole)*((1000000µg/g)/(1000mL/L))	
10/11/95		
Time		SAMPLE
	Concentration of OH in Sample (Molarity)	1.95E-01
	OH in Sample in µg/mL (PPM)	3.32E+03

Data Entry by:	[illegible]	Date:	10/11/95
Approved by:	RW Schwerdt	Date:	10/12/95

Form 211102_1 Rev. 1.3

```
date 95-10-11 time 08:06
GET pH          12  #   68
Id.#1          87-2
Id.#2         .2005
pH(init)     11.71
             V/ml          pH
EP1          .192        9.41
stop volt.reached
        ========


date 95-10-11 time 08:07
GET pH          12  #   68
.10ml/div        ΔpH=1/div
start V    .000 ml
```



OH (AUTO) : LA-211-102 (C-0)

		SAMPLE/DUP
Type	Sample Size (mL) SS	0.200
SAMPLE/DUP	Concentration of HNO3 (Molarity)	0.2005
WorkList	HNO3 Titrant at OH end-point in mL	0.192
2416	Dilution Factor DF	1
TestCode	Concentration of OH in Sample (Molarity)	1.92E-01
OH-01	OH in Sample in µg/mL (PPM)	3.27E+03
Matrix		
LIQUID		
Sample#	Detection Limit = 125µg / SS * DF	
S95T002187		
InstrumentCode	Detection Limit (µg/mL)	6.25E+02
WC06695		
Analyst	OH Molarity =((mL HNO3)*(M HNO3))/Sample Size in mL*Dilution Factor	
R. WENDLAND		
Date	OH in µg/mL = (OH MOLARITY)*(17.0g/mole)*((1000000µg/g)/(1000mL/L))	
10/11/95		
Time		SAMPLE/DUP
	Concentration of OH in Sample (Molarity)	1.92E-01
	OH in Sample in µg/mL (PPM)	3.27E+03

Data Entry by:	R Wend	Date:	10/11/95
Approved by:	Ru Schroder	Date:	10/12/95

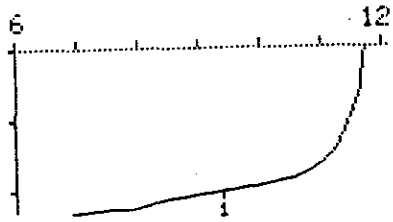
Form 211102_1 Rev. 1.3 Page 1 of 1

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER


```
date 95-10-11 time 08:11
GET pH          12  #   69
Id.#1           88
Id.#2        .2005
pH(init)     11.72
            V/ml          pH
EP1          .202       9.39
stop volt.reached
        ========
```

200

```
date 95-10-11 time 08:12
GET pH          12  #   69
.10ml/div        ΔpH=1/div
start V    .000 ml
```



OH (AUTO) : LA-211-102 (C-0)

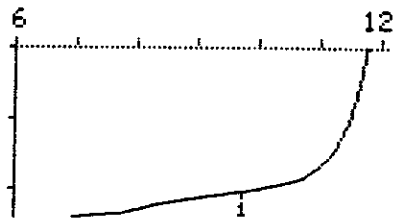
		SAMPLE
Type	Sample Size (mL) SS	0.200
SAMPLE	Concentration of HNO3 (Molarity)	0.2005
Work List	HNO3 Titrant at OH end-point in mL	0.202
2416	Dilution Factor DF	1
Test Code	Concentration of OH in Sample (Molarity)	2.03E-01
OH-01	OH in Sample in µg/mL (PPM)	3.44E+03
Matrix		
LIQUID		
Sample #	Detection Limit = 125µg / SS * DF	
S95T002188		
Instrument Code	Detection Limit (µg/mL)	6.25E+02
WC06695		
Analyst	OH Molarity =((mL HNO3)*(M HNO3))/Sample Size in mL*Dilution Factor	
R. WENDLAND		
Date	OH in µg/mL = (OH MOLARITY)*(17.0g/mole)*((1000000µg/g)/(1000mL/L))	
10/11/95		
Time		SAMPLE
	Concentration of OH in Sample (Molarity)	2.03E-01
	OH in Sample in µg/mL (PPM)	3.44E+03

Data Entry by:	R. Ebel	Date:	10/11/95
Approved by:	R.W. Schroeder	Date:	10/12/95

Form 211102_1 Rev. 1.3

```
date 95-10-11 time 08:15
GET pH          12  #   70
Id.#1        88-2
Id.#2       .2005
pH(init)    11.74
            V/ml          pH
EP1         .203        9.74
stop volt.reached
        ========


date 95-10-11 time 08:18
GET pH          12  #   70
.10ml/div       ΔpH=1/div
start V    .000 ml
```



OH (AUTO) : LA-211-102 (C-0)

		SAMPLE/DUP
Type	Sample Size (mL) SS	0.200
SAMPLE/DUP	Concentration of HNO3 (Molarity)	0.2005
Work List	HNO3 Titrant at OH end-point in mL	0.203
2416	Dilution Factor DF	1
Test Code	Concentration of OH in Sample (Molarity)	2.04E-01
OH-01	OH in Sample in µg/mL (PPM)	3.46E+03
Matrix		
LIQUID		
Sample #	Detection Limit = 125µg / SS * DF	
S95T002188		
Instrument Code	Detection Limit (µg/mL)	6.25E+02
WC06695		
Analyst	OH Molarity =((mL HNO3)*(M HNO3))/Sample Size in mL*Dilution Factor	
R. WENDLAND		
Date	OH in µg/mL = (OH MOLARITY)*(17.0g/mole)*((1000000µg/g)/(1000mL/L))	
10/11/95		
Time		SAMPLE/DUP
	Concentration of OH in Sample (Molarity)	2.04E-01
	OH in Sample in µg/mL (PPM)	3.46E+03

Data Entry by:	RF Hurd	Date:	10/11/95
Approved by:	Ru Schneider	Date:	10/12/95

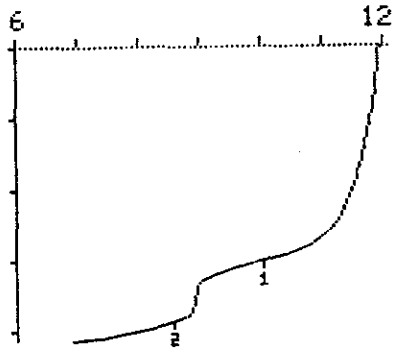
Form 211102_1 Rev. 1.3 Page 1 of 1

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

WHC-SD-WM-DP-146, REV. 0

```
date 95-10-11 time 08:25
GET pH          12  #   71
Id.#1           89
Id.#2        .2005
pH(init)     11.92
             V/ml          pH
EP1          .301       10.05
EP2          .387        8.57
stop volt.reached
        ========
```

```
date 95-10-11 time 08:26
GET pH          12  #   71
.10ml/div       ΔpH=1/div
start V    .000 ml
```



OH (AUTO) : LA-211-102 (C-0)

		SAMPLE
Type	Sample Size (mL) SS	0.200
SAMPLE	Concentration of HNO3 (Molarity)	0.2005
Work List	HNO3 Titrant at OH end-point in mL	0.301
2416	Dilution Factor DF	1
Test Code	Concentration of OH in Sample (Molarity)	3.02E-01
OH-01	OH in Sample in µg/mL (PPM)	5.13E+03
Matrix		
LIQUID		
Sample #	Detection Limit = 125µg / SS * DF	
S95T002189		
Instrument Code	Detection Limit (µg/mL)	6.25E+02
WC06695		
Analyst	OH Molarity =((mL HNO3)*(M HNO3))/Sample Size in mL*Dilution Factor	
R. WENDLAND		
Date	OH in µg/mL = (OH MOLARITY)*(17.0g/mole)*((1000000µg/g)/(1000mL/L))	
10/11/95		
Time		SAMPLE
	Concentration of OH in Sample (Molarity)	3.02E-01
	OH in Sample in µg/mL (PPM)	5.13E+03

Data Entry by:	RE Steele	Date:	10/11/95
Approved by:	Ruth Edwards	Date:	10/12/95

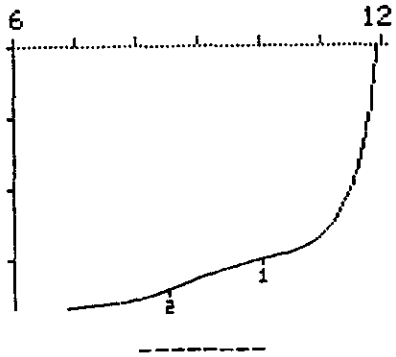
Form 211102_1 Rev. 1.3 Page 1 of 1

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

WHC-SD-WM-DP-146, REV. 0

```
date 95-10-11 time 08:30
GET pH        12  #   72
Id.#1         89-2
Id.#2        .2005
pH(init)    11.91
            V/ml        pH
EP1         .300      10.06
EP2         .344       8.51
stop volt.reached
        ========
```

```
date 95-10-11 time 08:32
GET pH        12  #   72
.10ml/div      ΔpH=1/div
start V    .000 ml
```



OH (AUTO) : LA-211-102 (C-0)

		SAMPLE/DUP
Type	Sample Size (mL) SS	0.200
SAMPLE/DUP	Concentration of HNO3 (Molarity)	0.2005
Work List	HNO3 Titrant at OH end-point in mL	0.300
2416	Dilution Factor DF	1
Test Code	Concentration of OH in Sample (Molarity)	3.01E-01
OH-01	OH in Sample in µg/mL (PPM)	5.11E+03
Matrix		
LIQUID		
Sample #	Detection Limit = 125µg / SS * DF	
S95T002189		
Instrument Code	Detection Limit (µg/mL)	6.25E+02
WC06695		
Analyst	OH Molarity =((mL HNO3)*(M HNO3))/Sample Size in mL*Dilution Factor	
R. WENDLAND		
Date	OH in µg/mL = (OH MOLARITY)*(17.0g/mole)*((1000000µg/g)/(1000mL/L))	
10/11/95		
Time		SAMPLE/DUP
	Concentration of OH in Sample (Molarity)	3.01E-01
	OH in Sample in µg/mL (PPM)	5.11E+03

Data Entry by:	RL Stark	Date:	10/11/95
Approved by:	RW Schroeder	Date:	10/12/95

Form 211102_1 Rev. 1.3 Page 1 of 1

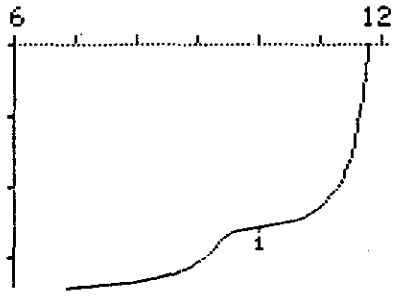
PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

WHC-SD-WM-DP-146, REV. 0

```
date 95-10-11 time 08:37
GET pH          12  #   73
Id.#1            1
Id.#2        .2005
pH(init)    11.78
            V/ml          pH
EP1         .258       10.00
stop volt.reached
        ========
```

.050

```
date 95-10-11 time 08:37
GET pH          12  #   73
.10ml/div       ΔpH=1/div
start V    .000 ml
```



OH (AUTO) : LA-211-102 (C-0)

		STANDARD
Type	Sample Size (mL) SS	0.050
STANDARD	Concentration of HNO3 (Molarity)	0.2005
WorkList	HNO3 Titrant at OH end-point in mL	0.258
2416	Dilution Factor DF	1
Test Code	Concentration of OH in Sample (Molarity)	1.03E+00
OH-01	OH in Sample in µg/mL (PPM)	1.76E+04
Matrix		
LIQUID		
Sample #		
57N8		
Instrument Code		
WC06695		
Analyst	OH Molarity =((mL HNO3)*(M HNO3))/Sample Size in mL*Dilution Factor	
R. WENDLAND		
Date	OH in µg/mL = (OH MOLARITY)*(17.0g/mole)*((1000000µg/g)/(1000mL/L))	
10/11/95		
Time		STANDARD
	Concentration of OH in Sample (Molarity)	1.03E+00
	OH in Sample in µg/mL (PPM)	1.76E+04

Data Entry by:	RL Ebel	Date:	10/11/95
Approved by:	RW Schroeder	Date:	10/12/95

Form 211102_1 Rev. 1.3 Page 1 of 1

worklistrpt Version 2.1 05/15/95
09/13/95 11:58

LABCORE Data Entry Template for Worklist# 2366

Analyst: RAW **Instrument:** NH301 ~~WB49375~~ RWS **Book #** ~~47N8A~~ 122N16B RWS 9/18/95

Method: LA-631-001 Rev/Mod B-0

Worklist Comment: NH3 AW-105 - use 1.0mL sample size (spike w/ ~~0.100mL~~ 1.000 ml STD) RWS 9/18/95

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	BLNK				NH3-01	LIQUID	1	0.360	N/A	ug/ml.
		2	STD				NH3-01	LIQUID	3.78e2	3.52E2	N/A	ug/ml.
95000130	AW-105 GRAB	3	SAMPLE	S95T002189	0		NH3-01	LIQUID	N/A	5.52e2	5.00EO	ug/ml.
95000130	AW-105 GRAB	4	DUP	S95T002189	0		NH3-01	LIQUID	5.52e2	5.90e2	N/A	ug/ml.
95000130	AW-105 GRAB	5	SAMPLE	S95T002187	0		NH3-01	LIQUID	N/A	7.68e1	5.00EO	ug/ml.
95000130	AW-105 GRAB	6	DUP	S95T002187	0		NH3-01	LIQUID	7.68e1	6.82e1	N/A	ug/ml.
95000130	AW-105 GRAB	7	SPK	S95T002187	0		NH3-01	RWS 9/18/95 LIQUID	~~393~~ 100	~~3~~ 104 RWS 9/18/95	N/A	ug/ml.
95000130	AW-105 GRAB	8	SAMPLE	S95T002188	0		NH3-01	LIQUID	N/A	1.12e2	5.00EO	ug/ml.
95000130	AW-105 GRAB	9	DUP	S95T002188	0		NH3-01	RWS 9/18/95 LIQUID	~~1.14e2~~ 1.12e2	1.14e2	N/A	ug/ml.
		10	STD				NH3-01	LIQUID	3.78e2	3.97e2	N/A	ug/ml.

Final page for worklist # 2366

R. Wendland 9-14-95
Analyst Signature **Date**

[illegible] 9-18-95
Analyst Signature **Date**

Reviewed RW Schroeder 9/19/95

Data Entry Comments:

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

STD

RWS 9/18/95

1mL of ~~47N8A~~ 122N16B

```
MEASUREMENT AT 08:22, 09-15-95
1:NH3= 9.43  :-79.9 mV  23.1'C
ENTERED

1:NH3 ISO= 1.0000 AT 08:25, 09-15-95
ENTERED

DOUBLE KNOWN ADDITION SELECTED
 AT 08:28, 09-15-95

SAMPLE VOL= 25.000 AT 08:29, 09-15-95
ENTERED

EMF=-83.6 mV AT 08:29, 09-15-95

EMF=-83.6 mV AT 08:29, 09-15-95

EMF=-83.6 mV AT 08:30, 09-15-95
ENTERED

STD CONCN= 1000 AT 08:30, 09-15-95
ENTERED

STD VOL= .25000 AT 08:30, 09-15-95
ENTERED

EMF=-96.9 mV AT 08:31, 09-15-95

EMF=-96.9 mV AT 08:31, 09-15-95

EMF=-96.9 mV AT 08:32, 09-15-95

EMF=-96.9 mV AT 08:32, 09-15-95
ENTERED

STD VOL= 2.5000 AT 08:33, 09-15-95
ENTERED

EMF=-135.7 mV AT 08:33, 09-15-95

EMF=-135.9 mV AT 08:34, 09-15-95

EMF=-135.9 mV AT 08:34, 09-15-95
ENTERED

1:NH3 SLOPE=-58.1 mV/DEC
 AT 08:34, 09-15-95

1:NH3 CONCN= 14.1

DOUBLE KNOWN ADDITION SELECTED
 AT 08:42, 09-15-95
```

BEST AVAILABLE COPY

14.1 x 25 = 352

BLK

25 ml reagent H_2O

```
SAMPLE VOL= 25.000 AT 08:43, 09-15-95
ENTERED

EMF= 3.1 mV AT 08:44, 09-15-95

EMF= 3.2 mV AT 08:44, 09-15-95

EMF= 3.3 mV AT 08:45, 09-15-95
ENTERED

STD CONCN= 1000 AT 08:45, 09-15-95
ENTERED

STD VOL= .25000 AT 08:46, 09-15-95
ENTERED

EMF=-79.8 mV AT 08:46, 09-15-95

EMF=-79.9 mV AT 08:47, 09-15-95

EMF=-79.9 mV AT 08:47, 09-15-95
ENTERED

STD VOL= 2.5000 AT 08:47, 09-15-95
ENTERED

EMF=-136.2 mV AT 08:48, 09-15-95

EMF=-136.3 mV AT 08:48, 09-15-95
ENTERED

1:NH3 SLOPE=-57.2 mV/DEC
 AT 08:48, 09-15-95

1:NH3 CONCN= .360
```

BEST AVAILABLE COPY

.360 x 1 = 0.360 mg/mL

S95T002187
1.0mL → 25mL

DOUBLE KNOWN ADDITION SELECTED
AT 08:50, 09-15-95

SAMPLE VOL= 25.000 AT 08:50, 09-15-95
ENTERED

EMF=-50.6 mV AT 08:50, 09-15-95

EMF=-50.3 mV AT 08:51, 09-15-95

EMF=-50.2 mV AT 08:51, 09-15-95

EMF=-50.1 mV AT 08:51, 09-15-95
ENTERED

STD CONCN= 1000 AT 08:52, 09-15-95
ENTERED

STD VOL= .25000 AT 08:52, 09-15-95
ENTERED

BEST AVAILABLE COPY

EMF=-86.3 mV AT 08:52, 09-15-95

EMF=-86.1 mV AT 08:53, 09-15-95

EMF=-86.1 mV AT 08:54, 09-15-95
ENTERED

STD VOL= 2.5000 AT 08:54, 09-15-95
ENTERED

EMF=-137.7 mV AT 08:54, 09-15-95

EMF=-137.7 mV AT 08:56, 09-15-95

EMF=-137.7 mV AT 08:56, 09-15-95
ENTERED

NH3 SLOPE=-57.6 mV/DEC
AT 08:56, 09-15-95

NH3 CONCN= 3.07

3.07 x 25 = 7.68 el µg/mL

47D SA5T002187 Duplicate
1.0mL → 25mL

```
DOUBLE KNOWN ADDITION SELECTED
 AT 09:32, 09-15-95

SAMPLE VOL= 25.000 AT 09:32, 09-15-95
ENTERED

EMF=-50.3 mV AT 09:32, 09-15-95

EMF=-49.7 mV AT 09:33, 09-15-95

EMF=-49.4 mV AT 09:33, 09-15-95

EMF=-49.4 mV AT 09:33, 09-15-95
ENTERED

STD CONCN= 1000 AT 09:34, 09-15-95
ENTERED

STD VOL= .25000 AT 09:34, 09-15-95
ENTERED

EMF=-88.0 mV AT 09:34, 09-15-95

EMF=-88.0 mV AT 09:35, 09-15-95

EMF=-87.9 mV AT 09:35, 09-15-95
ENTERED

STD VOL= 2.5000 AT 09:36, 09-15-95
ENTERED

EMF=-140.4 mV AT 09:36, 09-15-95

EMF=-140.4 mV AT 09:37, 09-15-95
ENTERED

1:NH3 SLOPE=-57.9 mV/DEC
 AT 09:37, 09-15-95

1:NH3 CONCN= 2.73
```

BEST AVAILABLE COPY

2.73 x 25 = 68.2 mg/mL

S95T002187 + Spike
Rwk 9/18/95
1.0mL + ~~0.100ml 47N6A→25ml~~
1.0 ml 122N16B→25ml

```
DOUBLE KNOWN ADDITION SELECTED
 AT 09:38, 09-15-95

SAMPLE VOL= 25.000 AT 09:39, 09-15-95
ENTERED

EMF=-98.7 mV AT 09:39, 09-15-95

EMF=-98.4 mV AT 09:40, 09-15-95

EMF=-98.2 mV AT 09:40, 09-15-95

EMF=-98.1 mV AT 09:41, 09-15-95
ENTERED

STD CONCN= 1000 AT 09:41, 09-15-95
ENTERED

STD VOL= .25000 AT 09:41, 09-15-95
ENTERED

EMF=-108.8 mV AT 09:42, 09-15-95

EMF=-108.7 mV AT 09:42, 09-15-95

EMF=-108.6 mV AT 09:42, 09-15-95

EMF  108.6 mV AT 09:43, 09-15-95
N    ED

 TD VOL= 2.5000 AT 09:43, 09-15-95
ENTERED

EMF=-144.3 mV AT 09:43, 09-15-95

EMF=-144.1 mV AT 09:44, 09-15-95

MF=-144.0 mV AT 09:45, 09-15-95
NTERED

NH3 SLOPE=-58.1 mV/DEC
AT 09:45, 09-15-95

NH3 CONCN= 18.8
```

BEST AVAILABLE COPY

18.8 - 3.07 x 25 = 393/378 x100 = 104.0% rec

88

S95T002188
1.0mL → 25ml

DOUBLE KNOWN ADDITION SELECTED
AT 09:47, 09-15-95

SAMPLE VOL= 25.000 AT 09:47, 09-15-95
ENTERED

EMF=-63.6 mV AT 09:47, 09-15-95

EMF=-63.3 mV AT 09:48, 09-15-95

EMF=-63.1 mV AT 09:48, 09-15-95

EMF=-62.9 mV AT 09:49, 09-15-95

EMF=-62.8 mV AT 09:49, 09-15-95
ENTERED

STD CONCN= 1000 AT 09:49, 09-15-95
ENTERED

STD VOL= .25000 AT 09:49, 09-15-95
ENTERED

EMF=-92.3 mV AT 09:50, 09-15-95

EMF=-91.9 mV AT 09:51, 09-15-95

EMF=-91.8 mV AT 09:51, 09-15-95
ENTERED

STD VOL= 2.5000 AT 09:51, 09-15-95
ENTERED

EMF=-141.0 mV AT 09:52, 09-15-95

EMF=-141.0 mV AT 09:53, 09-15-95

EMF=-140.9 mV AT 09:53, 09-15-95

EMF=-140.9 mV AT 09:53, 09-15-95
ENTERED

:NH3 SLOPE=-57.3 mV/DEC
AT 09:53, 09-15-95

:NH3 CONCN= 4.46

BEST AVAILABLE COPY

4.46 x 25 = 111.5 µg/mL

80Y

S95T002188 Duplicate
1.0ml → 25ml

```
OUBLE KNOWN ADDITION SELECTED
A    9:54, 09-15-95

AMPLE VOL= 25.000 AT 09:54, 09-15-95
NTERED

MF=-65.0 mV AT 09:55, 09-15-95

MF=-64.7 mV AT 09:55, 09-15-95

MF=-64.4 mV AT 09:56, 09-15-95

MF=-64.3 mV AT 09:56, 09-15-95

MF=-64.1 mV AT 09:56, 09-15-95
NTERED

TD CONCN= 1000 AT 09:57, [illegible]
NTERED

TD VOL= .250[illegible] AT [illegible]
[illegible]

[illegible] AT [illegible] 09-15-95

[illegible] AT 09:58, 09-15-95

[illegible] AT 09:58, 09-15-95

F=-92.9 mV AT 09:59, 09-15-95

F=-92.8 mV AT 09:59, 09-15-95
NTERED

TD VOL= 2.5000 AT 09:59, 09-15-95
NTERED

MF=-141.9 mV AT 10:[illegible]

MF=-141.9 mV AT 10:11, 09-15-95
NTERED

[illegible]
```

BEST AVAILABLE COPY

4.56 x 25 = 114 ug/mL

S95T002189
1.0mL → 25mL

```
DOUBLE KNOWN ADDITION SELECTED
 AT 10:02, 09-15-95

SAMPLE VOL= 25.000 AT 10:02, 09-15-95
ENTERED

EMF=-101.5 mV AT 10:02, 09-15-95

EMF=-101.3 mV AT 10:02, 09-15-95

EMF=-101.1 mV AT 10:03, 09-15-95

EMF=-101.0 mV AT 10:03, 09-15-95

EMF=-100.9 mV AT 10:04, 09-15-95

EMF=-100.7 mV AT 10:04, 09-15-95

EMF=-100.5 mV AT 10:05, 09-15-95
ENTERED

STD CONCN= 1000 AT 10:05, 09-15-95
ENTERED

STD VOL= .25000 AT 10:05, 09-15-95
ENTERED

EMF=-110.6 mV AT 10:05, 09-15-95

EMF=-110.5 mV AT 10:06, 09-15-95

EMF=-110.2 mV AT 10:07, 09-15-95

EMF=-110.0 mV AT 10:07, 09-15-95

EMF=-110.0 mV AT 10:07, 09-15-95
ENTERED

STD VOL= 2.5000 AT 10:09, 09-15-95
ENTERED

EMF=-144.7 mV AT 10:09, 09-15-95

EMF=-144.6 mV AT 10:10, 09-15-95

EMF=-144.5 mV AT 10:10, 09-15-95

EMF=-144.5 mV AT 10:10, 09-15-95
ENTERED

1:NH3 SLOPE=-60.1 mV/DEC
 AT 10:10, 09-15-95

1:NH3 CONCN= 22.1
```

BEST AVAILABLE COPY

22.1 x 25 = 552.5 µg/mL

S95T002189 Duplicate
1.0mL → 25mL

D(LE KNOWN ADDITION SELECTED
A. 10:12, 09-15-95

SAMPLE VOL= 25.000 AT 10:12, 09-15-95
ENTERED

EMF=-101.1 mV AT 10:13, 09-15-95

EMF=-101.0 mV AT 10:13, 09-15-95

EMF=-100.7 mV AT 10:14, 09-15-95

EMF=-100.6 mV AT 10:14, 09-15-95

EMF=-100.4 mV AT 10:15, 09-15-95

EMF=-100.3 mV AT 10:15, 09-15-95

EMF=-100.2 mV AT 10:15, 09-15-95
ENTERED

STD CONCN= 1000 AT 10:17, 09-15-95
ENTERED

STD VOL= .25000 AT 10:17, 09-15-95
EN~~RED

EMF=-110.1 mV AT 10:17, 09-15-95

EMF=-109.9 mV AT 10:18, 09-15-95

EMF=-109.8 mV AT 10:18, 09-15-95

EMF=-109.5 mV AT 10:19, 09-15-95

EMF=-109.5 mV AT 10:19, 09-15-95
ENTERED

STD VOL= 2.5000 AT 10:19, 09-15-95
ENTERED

EMF=-144.5 mV AT 10:20, 09-15-95

EMF=-144.4 mV AT 10:21, 09-15-95

EMF=-144.3 mV AT 10:21, 09-15-95

EMF=-144.3 mV AT 10:21, 09-15-95
ENTERED

1:NH3 SLOPE=-62.3 mV/DEC
10:22, 09-15-95

1:NH3 CONCN= 23.6

23.6 x 25 = 590 µg/mL

BEST AVAILABLE COPY

CCV
1.0mL → 25
~~47N8A~~ 122N6B
RWS 9/18/95

DOUBLE KNOWN ADDITION SELECTED
AT 10:23, 09-15-95

SAMPLE VOL= 25.000 AT 10:23, 09-15-95
ENTERED

EMF=-95.1 mV AT 10:23, 09-15-95

EMF=-95.0 mV AT 10:23, 09-15-95

EMF=-94.4 mV AT 10:25, 09-15-95

EMF=-94.4 mV AT 10:25, 09-15-95
ENTERED

STD CONCN= 1000 AT 10:25, 09-15-95
ENTERED

STD VOL= .25000 AT 10:26, 09-15-95
ENTERED

EMF=-106.8 mV AT 10:26, 09-15-95

EMF=-106.6 mV AT 10:27, 09-15-95

EMF=-106.6 mV AT 10:27, 09-15-95
ENTERED

STD VOL= 1.5000 AT 10:27, 09-15-95
ENTERED

EMF=-144.7 mV AT 10:28, 09-15-95

EMF=-144.6 mV AT 10:28, 09-15-95

EMF=-144.5 mV AT 10:29, 09-15-95

EMF=-144.5 mV AT 10:29, 09-15-95
ENTERED

1:NH3 SLOPE=-58.6 mV/DEC
AT 10:29, 09-15-95

1:NH3 CONCN= 15.9

BEST AVAILABLE COPY

15.9 x25= 397/378

LABCORE Data Entry Template for Worklist# 2376

Analyst: SMF Instrument: DSC01 _____ Book # 12N14A

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

Worklist Comment: AW105 dsc,run under N2.JMF

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				DSC-01	LIQUID	28.45	31.3	N/A	Joules/g
95000130	AW-105 GRAB	2	SAMPLE	S95T002187	0		DSC-01	LIQUID	N/A	Ø		Joules/g
95000130	AW-105 GRAB	3	DUP	S95T002187	0		DSC-01	LIQUID	Ø	Ø	N/A	Joules/g
95000130	AW-105 GRAB	4	SAMPLE	S95T002188	0		DSC-01	LIQUID	N/A	Ø		Joules/g
95000130	AW-105 GRAB	5	DUP	S95T002188	0		DSC-01	LIQUID	Ø	Ø	N/A	Joules/g

Final page for worklist # 2376

Susie M. Fulton 9-24-95 — Analyst Signature — Date 2330

[illegible] 9-25-95 — Analyst Signature — Date

Verified by Blandina Valenzuela 9-26-95

S95T002187 produced one endotherm at 101.3°C with a delta H of 1716.8 J/g.

Data Entry Comments: S95T002188 produced one endotherm at 103.3°C with a delta H of 1578.4 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.

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 43 TO 47.

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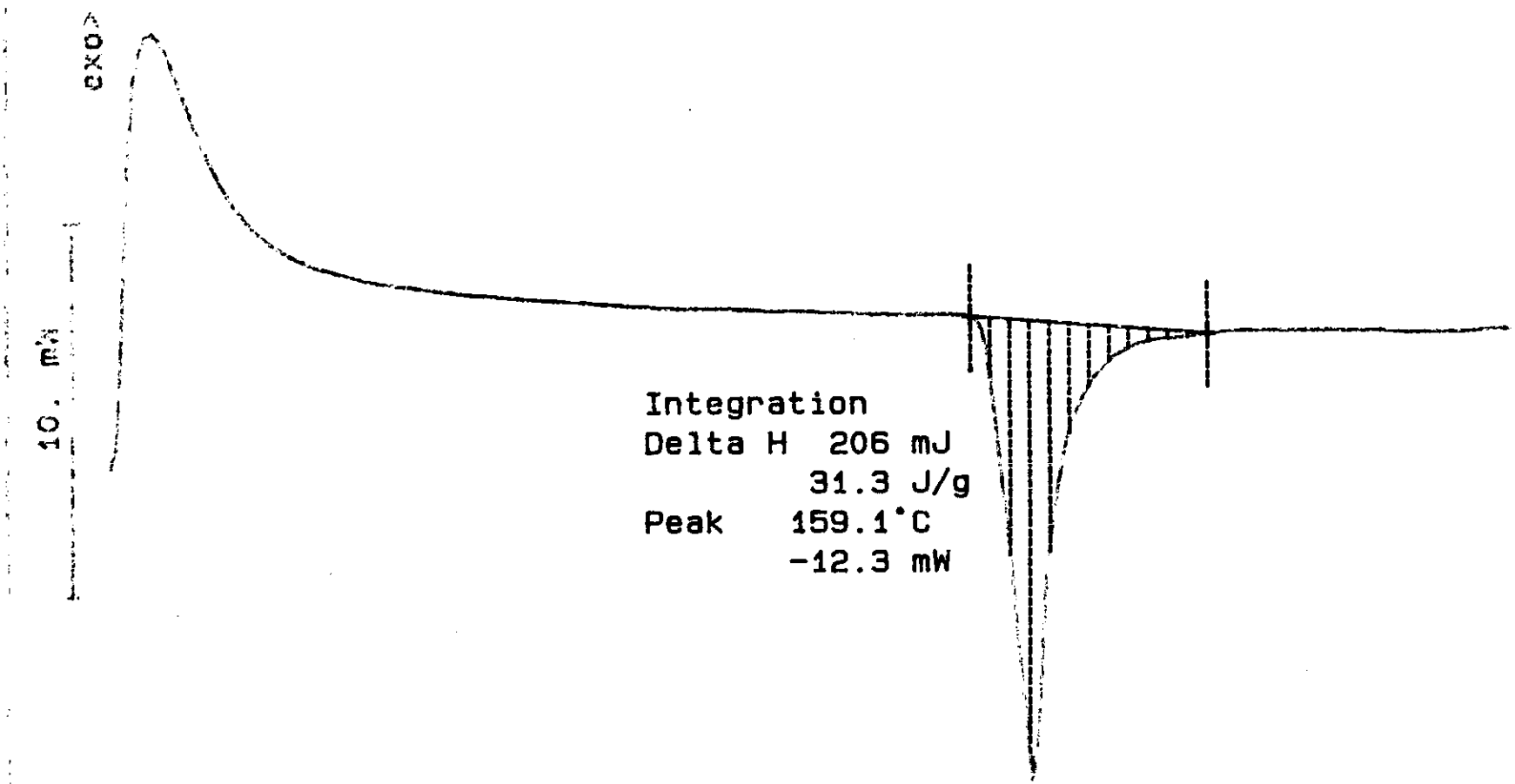
DSC STD 12N14A File: 00017.001 DSC METTLER 24-Sep-95

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

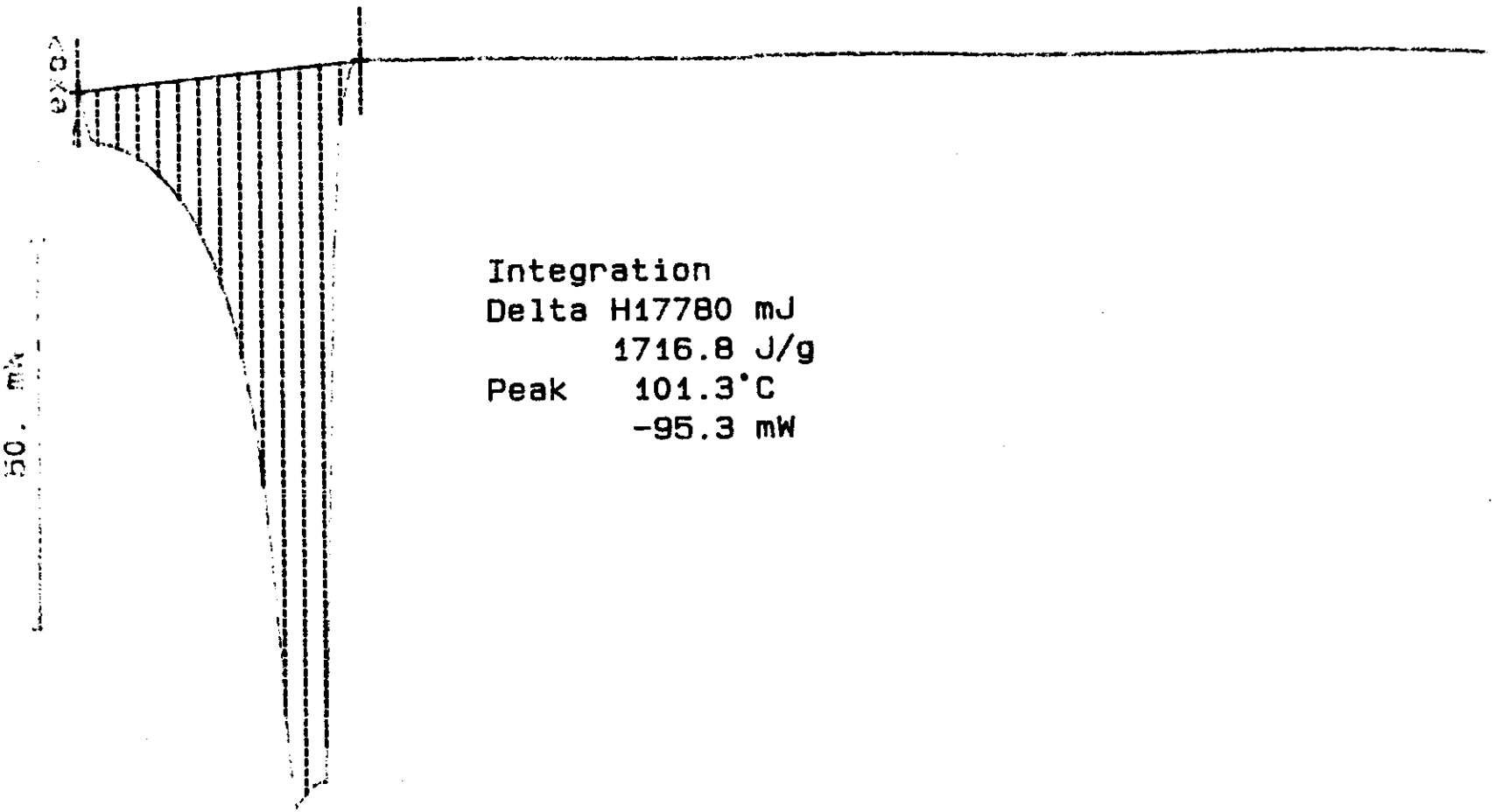


Susie M. Fulton 9-28-95

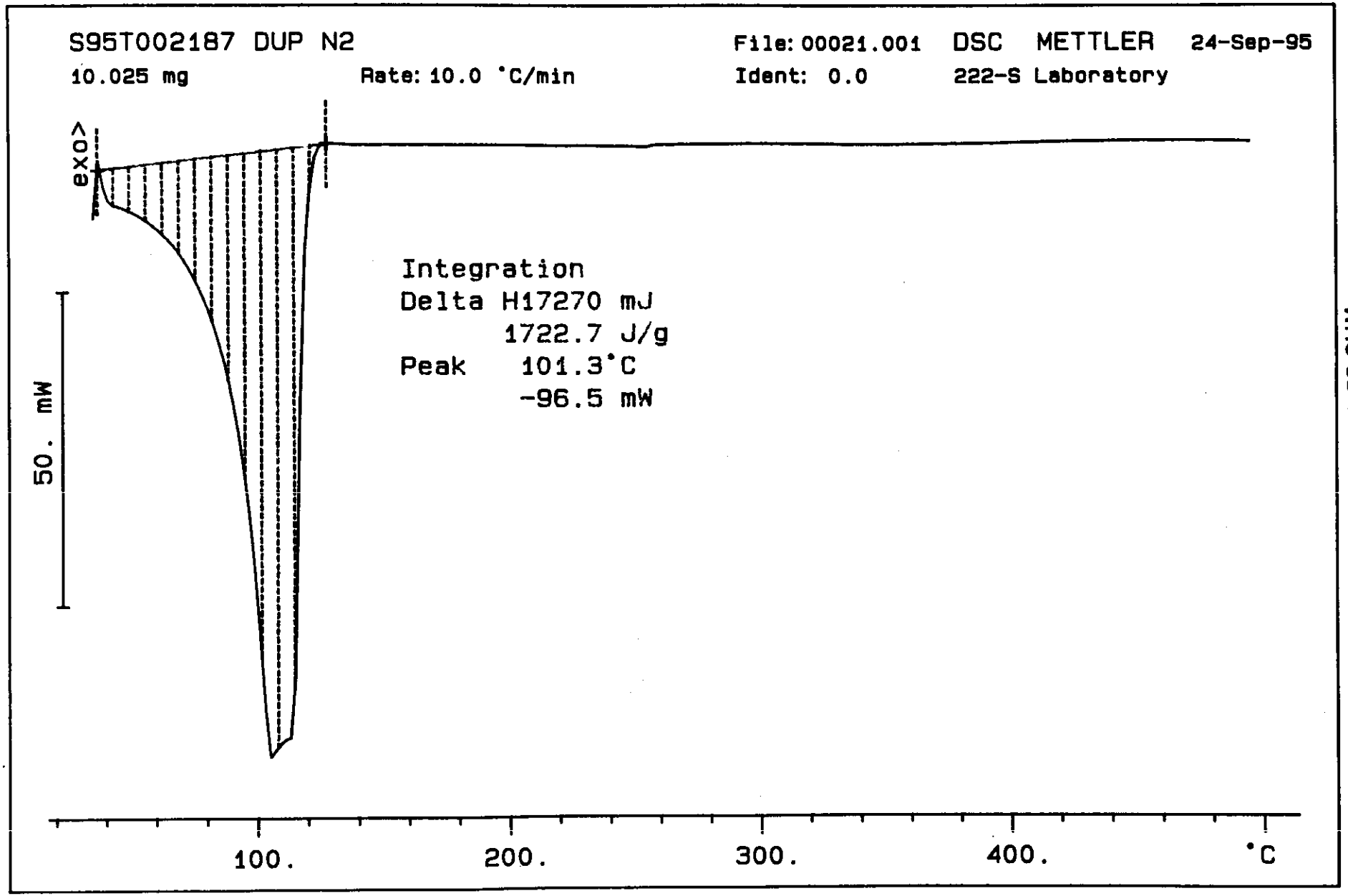
WHC-SD-WM-DP-146, REV. 0

BEST AVAILABLE COPY

S95T0021B7 N2
10.357 mg
Rate: 10.0 °C/min
File: 00019.001 DSC METTLER 24-Sep-95
Ident: 0.0 222-S Laboratory



BEST AVAILABLE COPY



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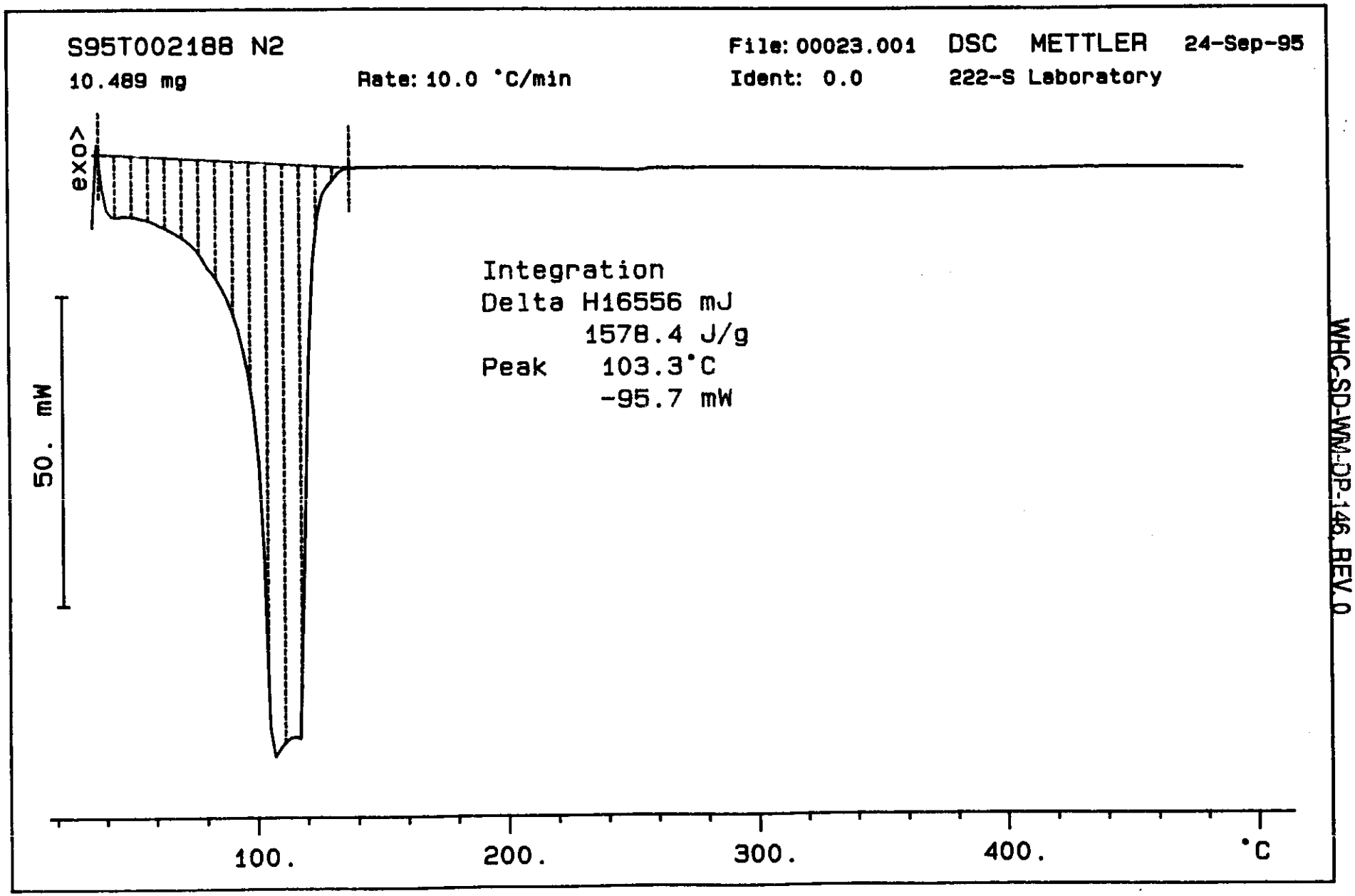
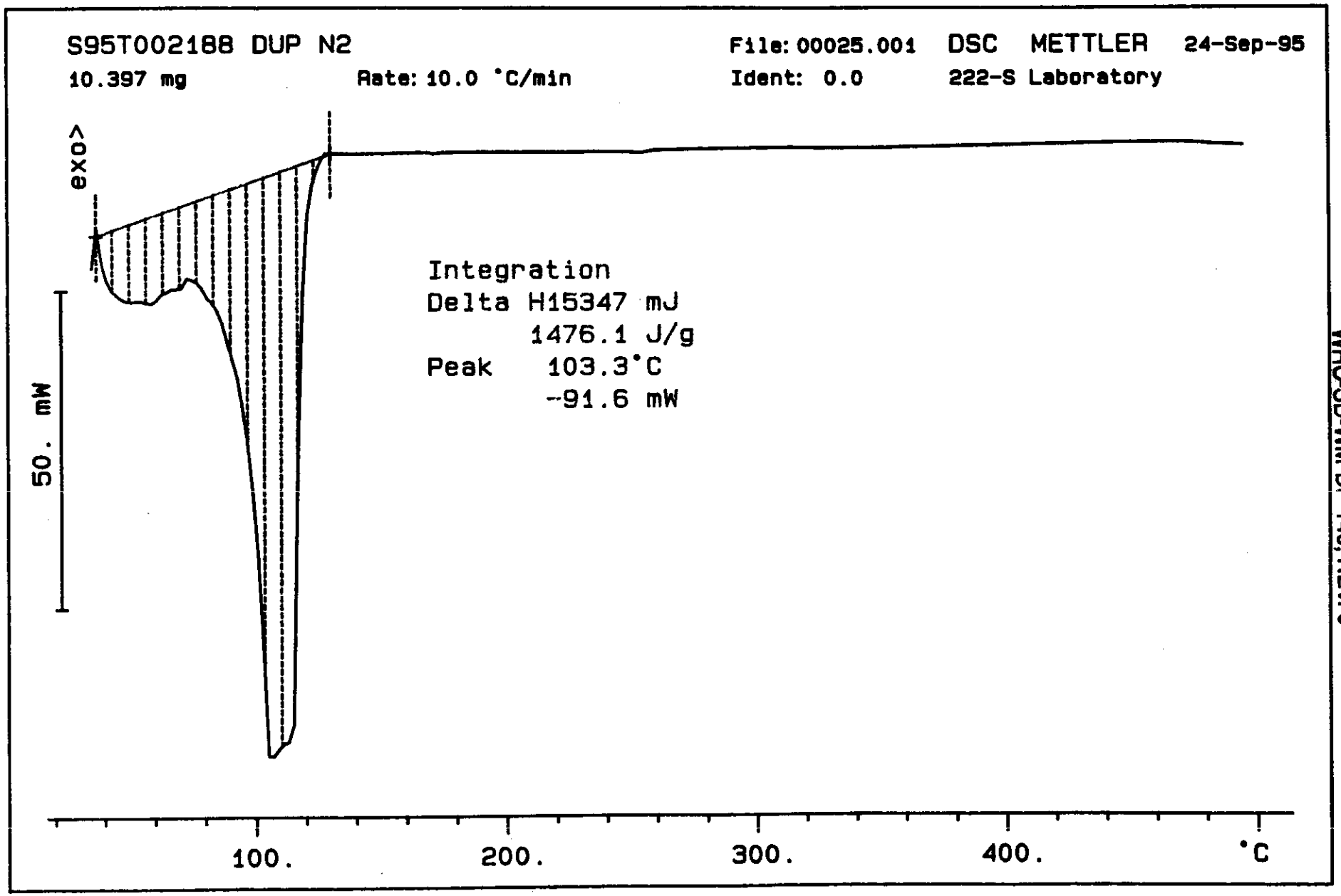


BEST AVAILABLE COPY



LABCORE Data Entry Template for Worklist# 2377

Analyst: RJ McCown Instrument: DSC01 _____ Book # 12N14A

Method: LA-514-113 Rev/Mod C-0

Worklist Comment: Aw-105 dsc,run under N2. JMF

GROUP	PROJECT	S TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD				DSC-01	LIQUID	28.45	27.5	N/A	Joules/g
95000130	AW-105 GRAB	2 SAMPLE	S95T002189	0		DSC-01	LIQUID	N/A	Ø		Joules/g
95000130	AW-105 GRAB	3 DUP	S95T002189	0		DSC-01	LIQUID	Ø	Ø	N/A	Joules/g

Final page for worklist # 2377

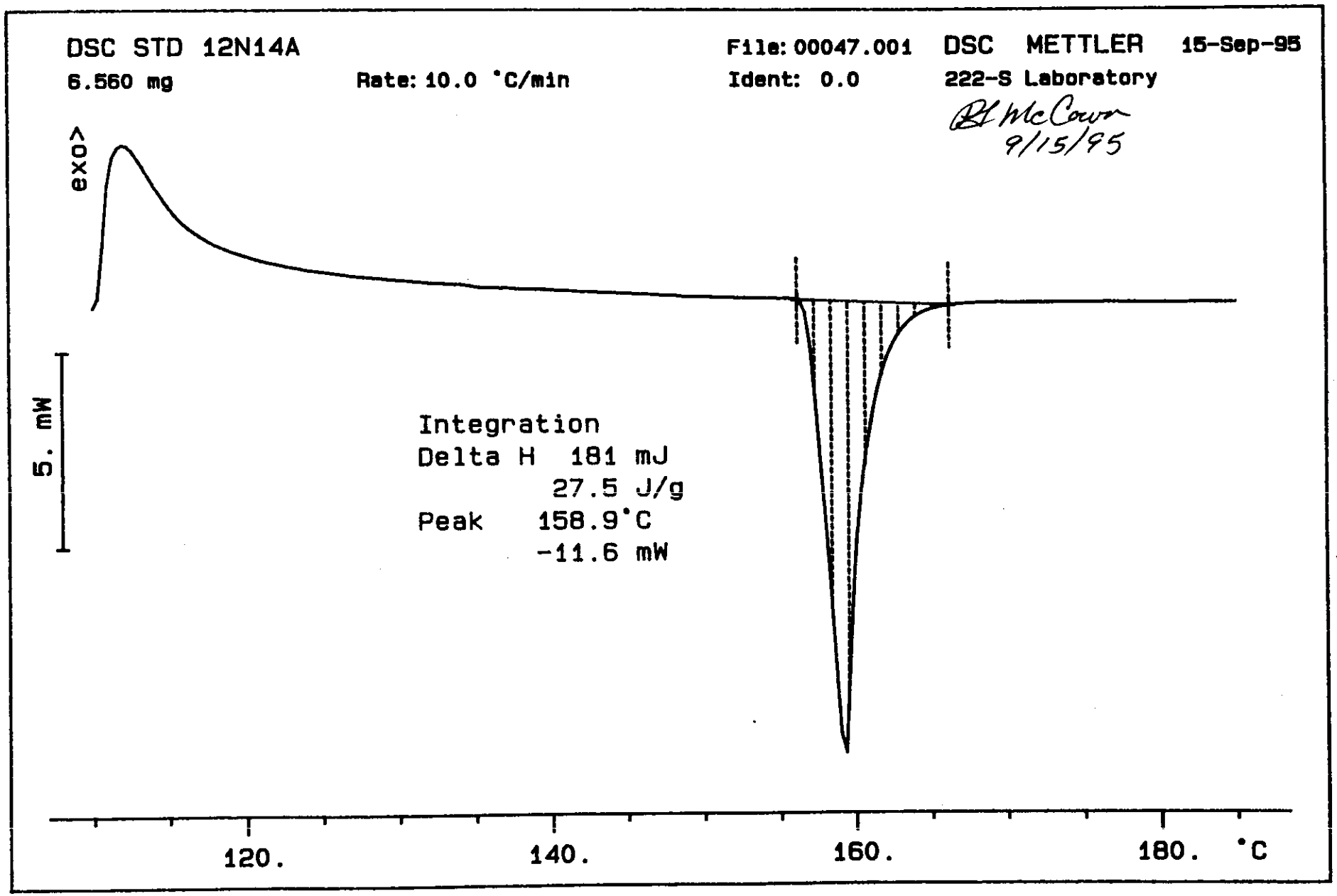
RJ McCown 9/15/95
Analyst Signature Date

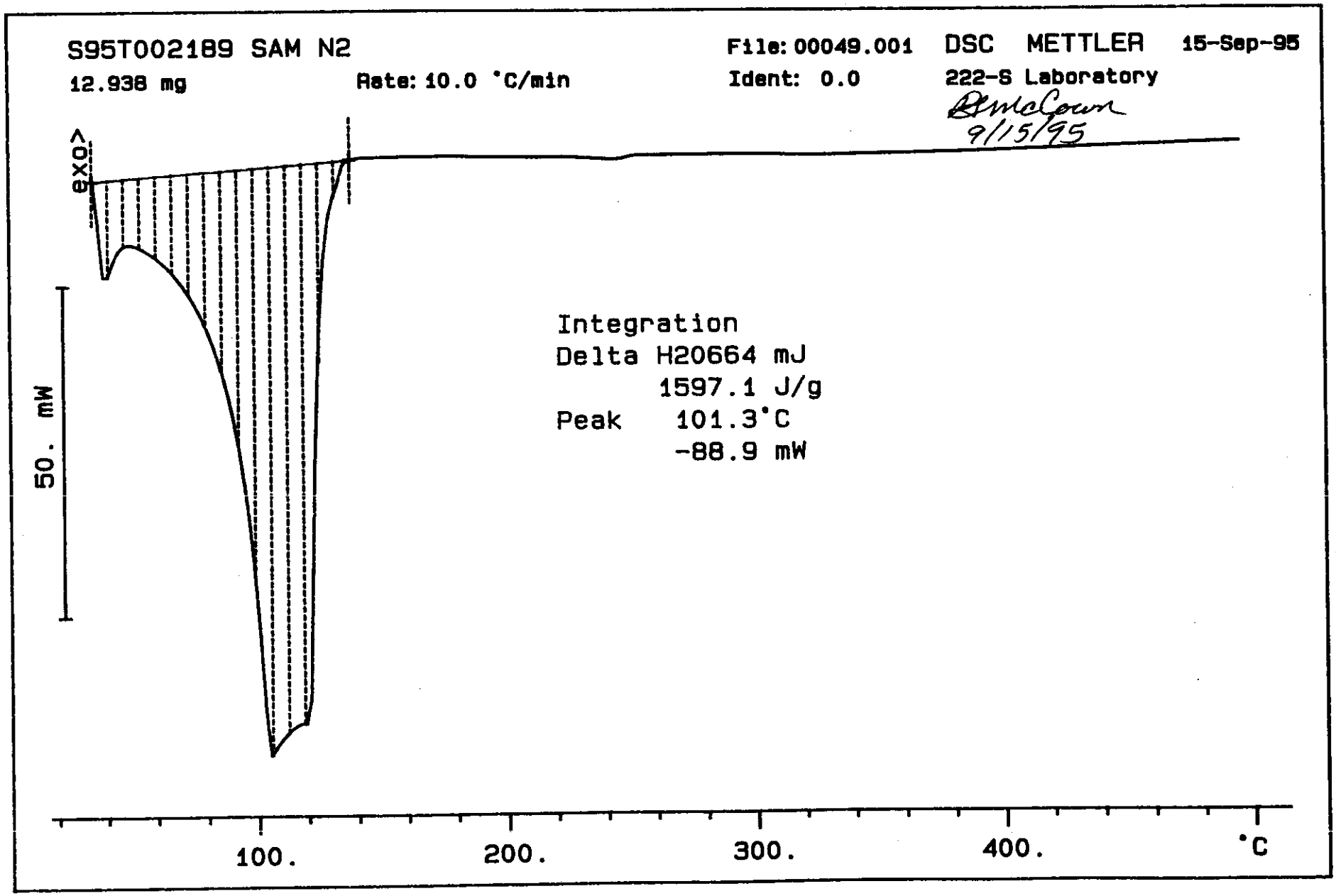
Verified by Blandina Valenzuela (9-20-95)

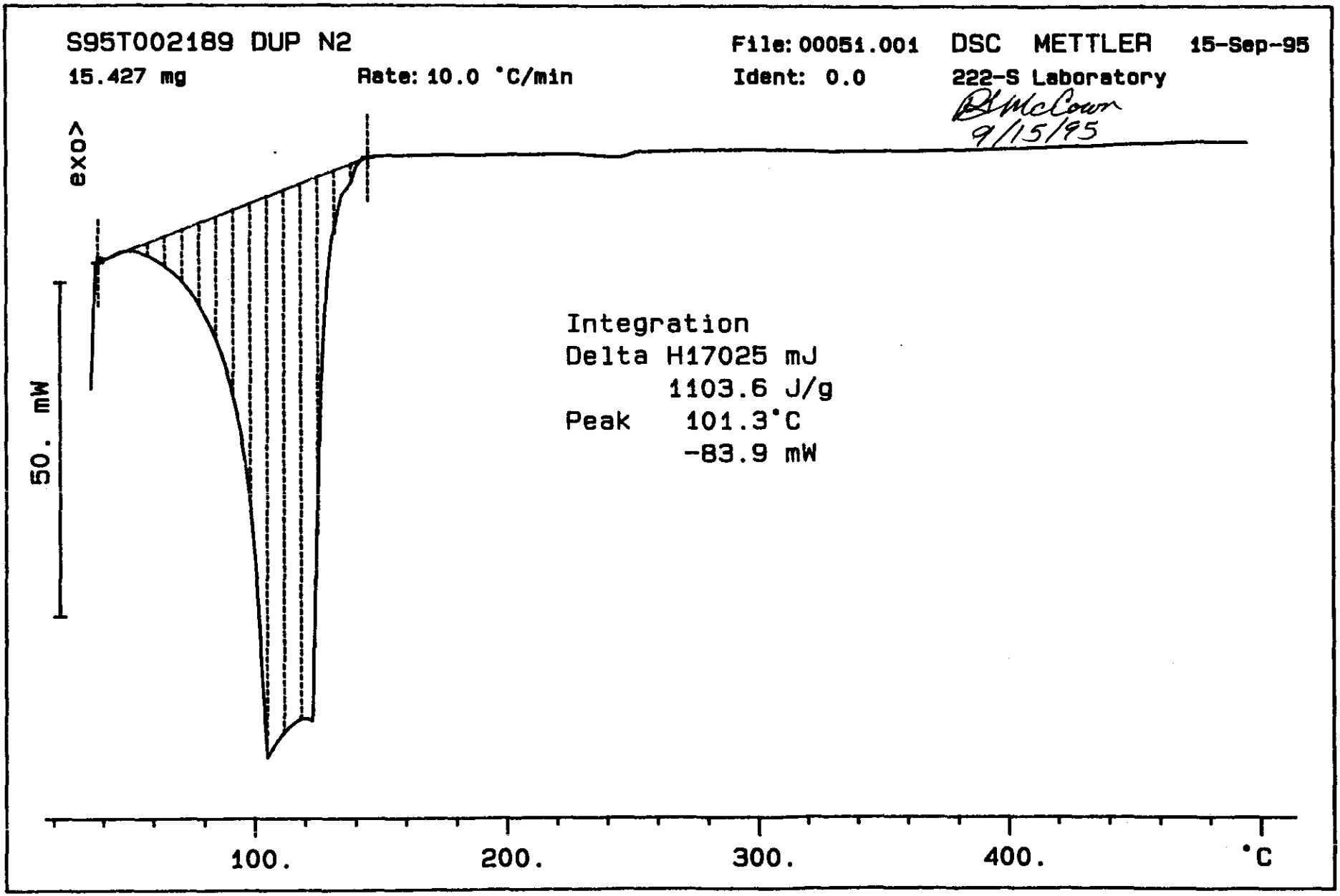
[illegible] 9-18-95
Analyst Signature Date

Data Entry Comments: Sample produced one endothermic region at 101.3°C with a delta H of 1597.1 J/g.

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


DSC STD 12N14A
6.560 mg
Rate: 10.0 °C/min
File: 00047.001
Ident: 0.0
DSC METTLER
222-S Laboratory
15-Sep-95
BH McCown
9/15/95
exo>
5. mW
Integration
Delta H 181 mJ
27.5 J/g
Peak 158.9°C
-11.6 mW
120.
140.
160.
180.
°C


S95T002189 SAM N2
12.938 mg
Rate: 10.0 °C/min
File: 00049.001
Ident: 0.0
DSC METTLER
222-S Laboratory
15-Sep-95
B McCown
9/15/95
exo>
50. mW
Integration
Delta H20664 mJ
1597.1 J/g
Peak 101.3°C
-88.9 mW
100.
200.
300.
400.
°C


S95T002189 DUP N2
15.427 mg
Rate: 10.0 °C/min
File: 00051.001
Ident: 0.0
DSC METTLER
222-S Laboratory
15-Sep-95
B.H. McCown
9/15/95
<exo
50. mW
Integration
Delta H17025 mJ
1103.6 J/g
Peak 101.3°C
-83.9 mW
100.
200.
300.
400.
°C

LABCORE Data Entry Template for Worklist# 2372

Analyst: ABP Instrument: TGA01 Book # 65N8A

Method: LA-560-112 Rev/Mod B-0

Worklist Comment: Please run aw105 TGA under N2. JMF

GROUP	PROJECT	S TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD				TGA-01	LIQUID	59.74	59.29	N/A	%
95000130	AW-105 GRAB	2 SAMPLE	S95T002188	0		TGA-01	LIQUID	N/A	96.40		%
95000130	AW-105 GRAB	3 DUP	S95T002188	0		TGA-01	LIQUID	96.40	95.89	N/A	%
95000130	AW-105 GRAB	4 SAMPLE	S95T002189	0		TGA-01	LIQUID	N/A	94.11		%
95000130	AW-105 GRAB	5 DUP	S95T002189	0		TGA-01	LIQUID	94.11	93.61	N/A	%

Final page for worklist # 2372

Anthony Purunto 9-25-95
Analyst Signature Date

Analyst Signature Date

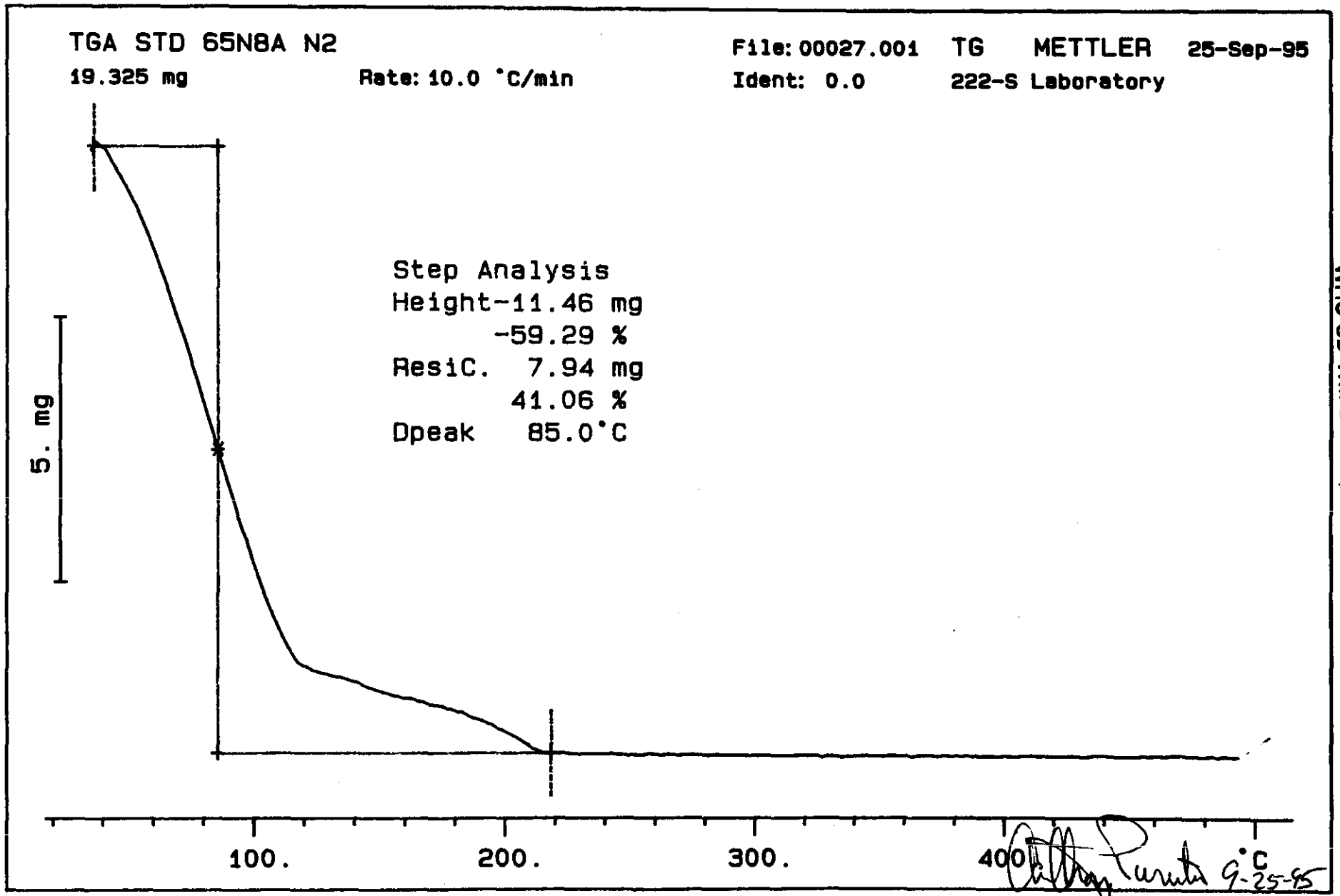
Verified by Blandina Valenzuela 9-26-95

Data Entry Comments:

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

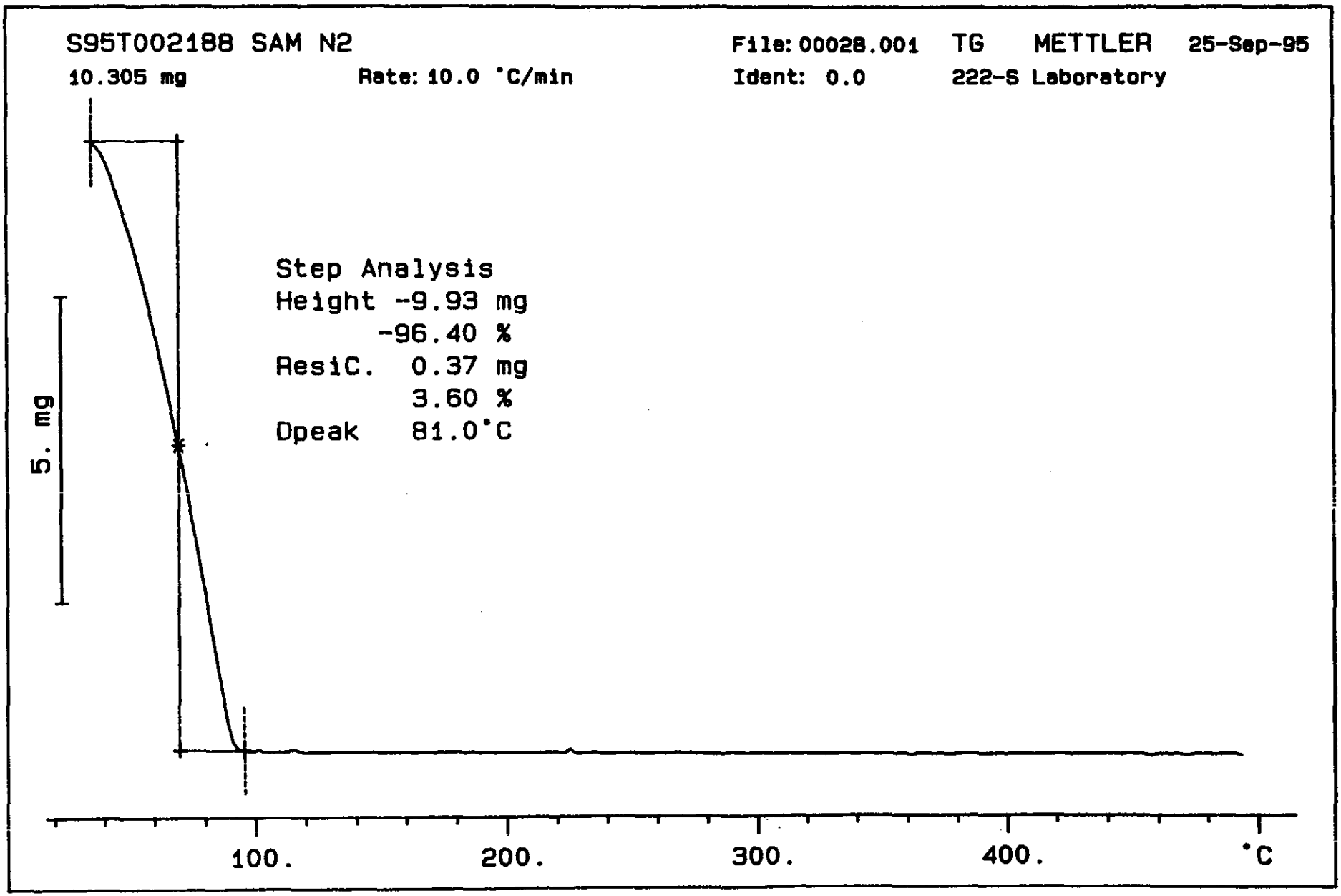
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 53 TO 57.

BEST AVAILABLE COPY

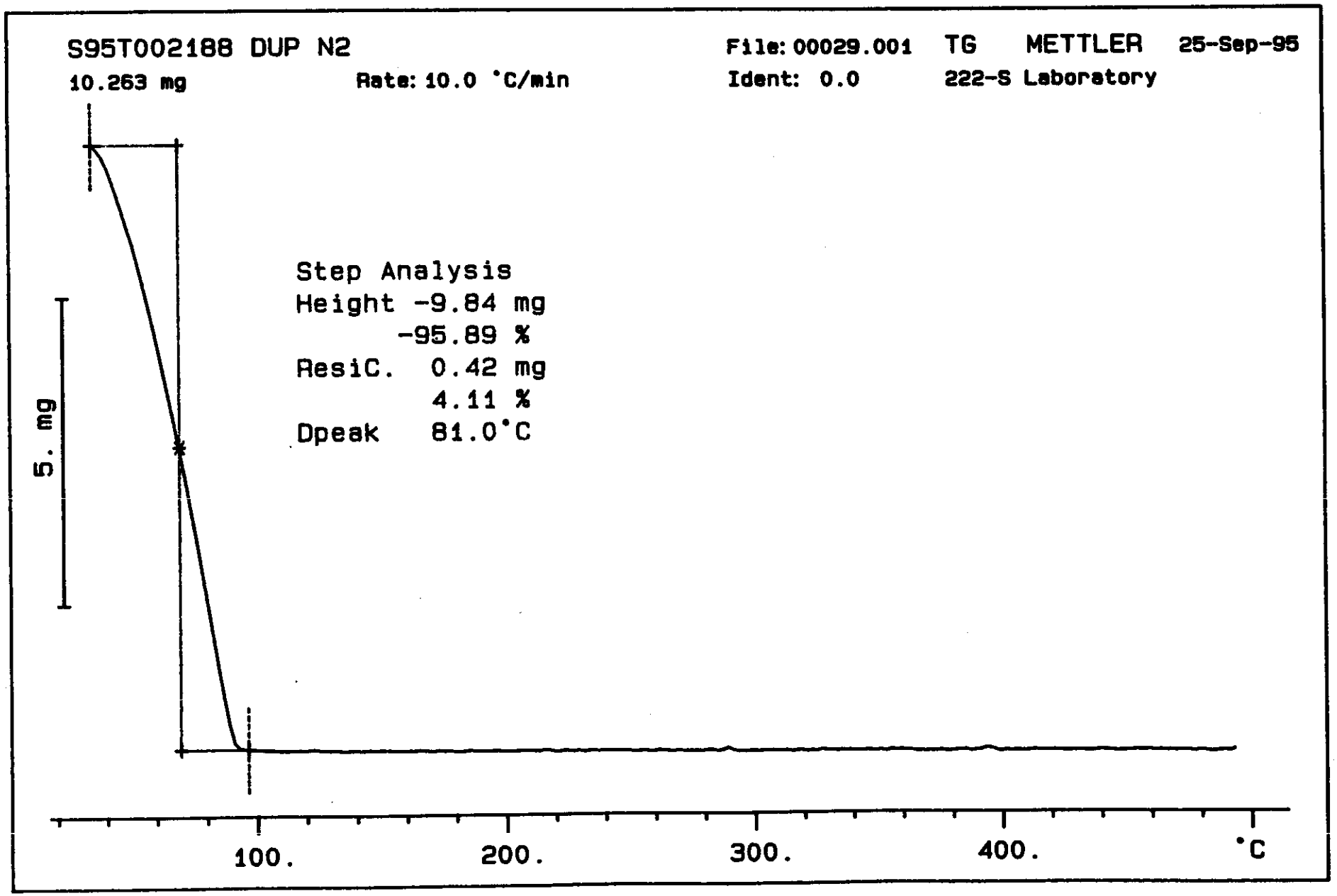


Cathy Furuta 9-25-95

BEST AVAILABLE COPY



BEST AVAILABLE COPY



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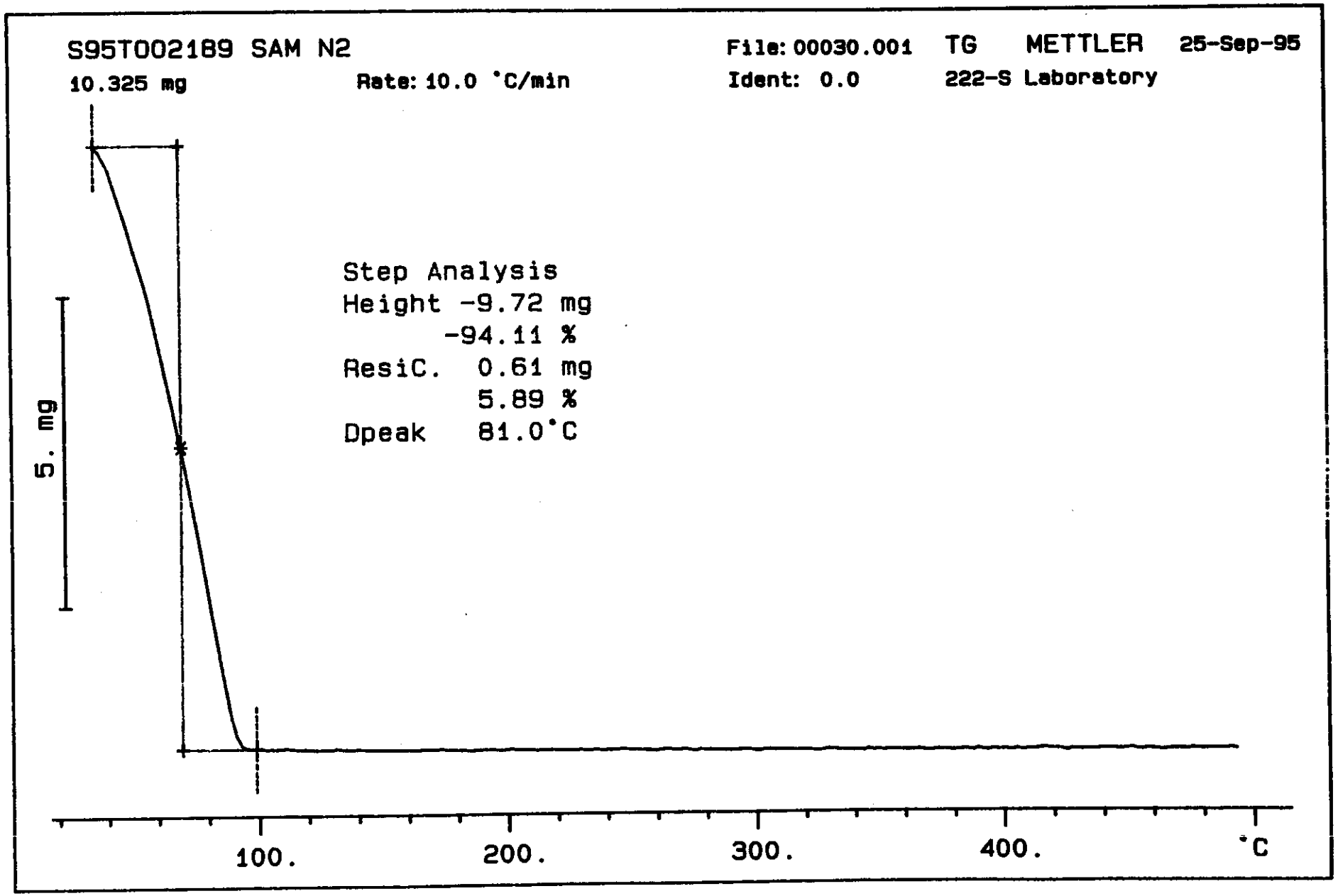
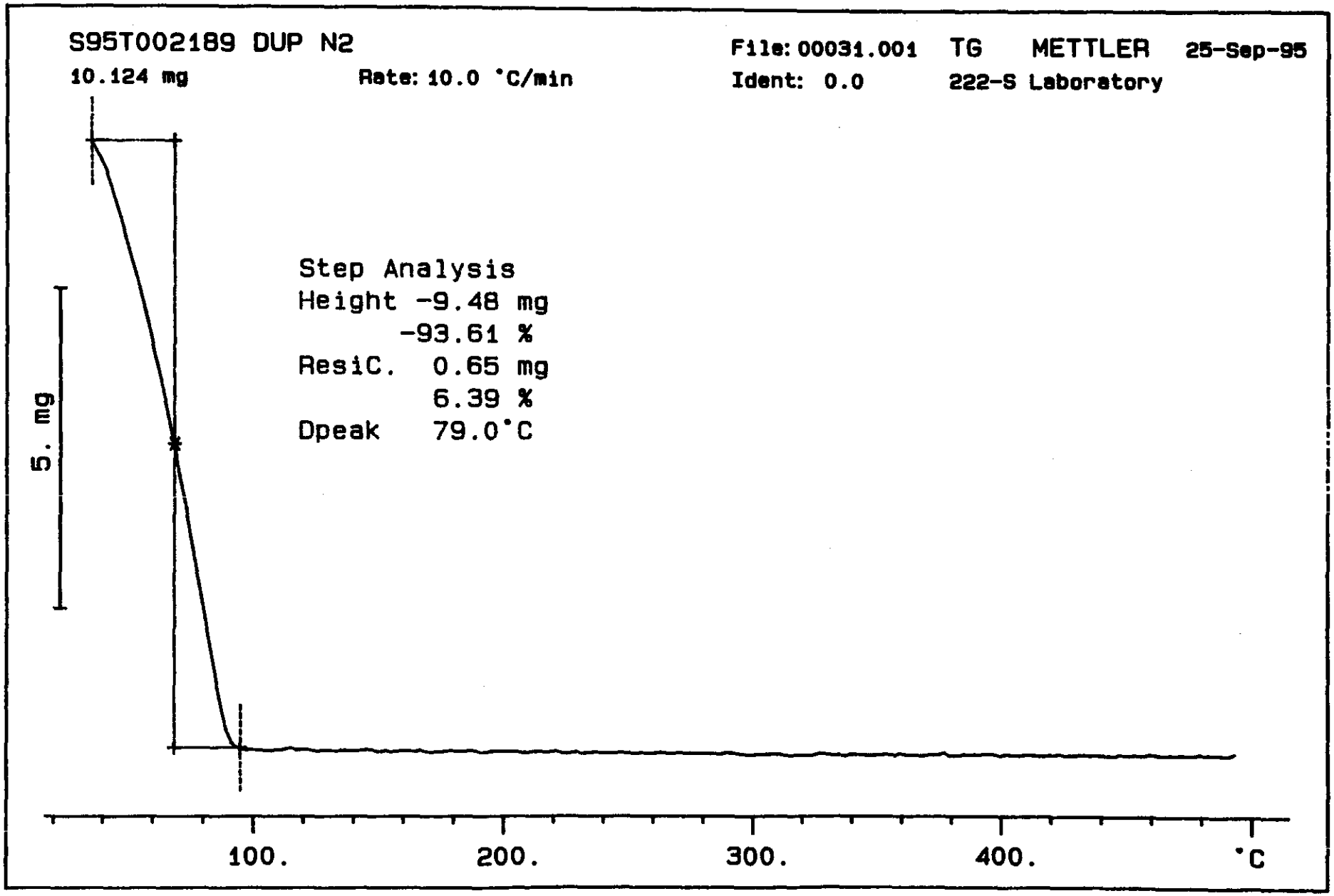


BEST AVAILABLE COPY



LABCORE Data Entry Template for Worklist# 2414

Analyst: DJS Instrument: BA001 _____ Book # 134N16-A

Method: LA-510-112 Rev/Mod C-3

Worklist Comment: SpG AW-105 - Do not run in replicates

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD	134N16-A			SPG-01	LIQUID	1.1081	1.089	N/A	Sp.G.
95000130	AW-105 GRAB	2	SAMPLE	S95T002187	0		SPG-01	LIQUID	N/A	1.001	0.01	Sp.G.
95000130	AW-105 GRAB	3	DUP	S95T002187	0		SPG-01	LIQUID	1.001	1.000	N/A	Sp.G.
95000130	AW-105 GRAB	4	SAMPLE	S95T002188	0		SPG-01	LIQUID	N/A	.999	0.01	Sp.G.
95000130	AW-105 GRAB	5	DUP	S95T002188	0		SPG-01	LIQUID	.999	1.001	N/A	Sp.G.
95000130	AW-105 GRAB	6	SAMPLE	S95T002189	0		SPG-01	LIQUID	N/A	1.016	0.01	Sp.G.
95000130	AW-105 GRAB	7	DUP	S95T002189	0		SPG-01	LIQUID	1.016	1.023	N/A	Sp.G.
		8	STD				SPG-01	LIQUID	1.1081	1.091	N/A	Sp.G.

Final page for worklist # 2414

DJ Griffin 10-14-95
Analyst Signature Date

Gary Hammitt 10-15-95
Analyst Signature Date

Reviewed RW Schroeder 10/16/95

Sample Size: 0.15017 ml

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.

SPECIFIC GRAVITY: LA-510-112 (C-3)

WORKLIST #	ANALYST SIGNATURE	ANALYSIS DATE	ANALYSIS TIME	INSTRUMENT CODE
2414	DBB	10-14-95		

[X] SAMPLE [ ] STANDARD [ ] DUPLICATE [ ] PREP BLANK [ ] REAGENT BLANK

SAMPLE # = 134N16-A STD # =

		REPLICATE
GROSS WEIGHT (g)	2.05619	2.07823
TARE WEIGHT (g)	1.89256	1.91577
VOL. of SOLUTION (mL)	0.16363	0.16346

[ ] SAMPLE [ ] STANDARD [X] DUPLICATE [ ] PREP BLANK [ ] REAGENT BLANK

SAMPLE # = 595T002188 STD # =

		REPLICATE
GROSS WEIGHT (g)	2.03701	
TARE WEIGHT (g)	1.88664	
VOL. of SOLUTION (mL)	0.15037	

[X] SAMPLE [ ] STANDARD [ ] DUPLICATE [ ] PREP BLANK [ ] REAGENT BLANK

SAMPLE # = 595T002187 STD # =

		REPLICATE
GROSS WEIGHT (g)	1.99953	
TARE WEIGHT (g)	1.84915	
VOL. of SOLUTION (mL)	0.15038	

[X] SAMPLE [ ] STANDARD [ ] DUPLICATE [ ] PREP BLANK [ ] REAGENT BLANK

SAMPLE # = 595T002189 STD # =

		REPLICATE
GROSS WEIGHT (g)	2.03925	
TARE WEIGHT (g)	1.88668	
VOL. of SOLUTION (mL)	0.15257	

[ ] SAMPLE [ ] STANDARD [X] DUPLICATE [ ] PREP BLANK [ ] REAGENT BLANK

SAMPLE # = 595T002187 STD # =

		REPLICATE
GROSS WEIGHT (g)	2.04979	
TARE WEIGHT (g)	1.89967	
VOL. of SOLUTION (mL)	0.15012	

[ ] SAMPLE [ ] STANDARD [X] DUPLICATE [ ] PREP BLANK [ ] REAGENT BLANK

SAMPLE # = 595T002189 STD # =

		REPLICATE
GROSS WEIGHT (g)	2.02857	
TARE WEIGHT (g)	1.87492	
VOL. of SOLUTION (mL)	0.15365	

[X] SAMPLE [ ] STANDARD [ ] DUPLICATE [ ] PREP BLANK [ ] REAGENT BLANK

SAMPLE # = 595T002188 STD # =

		REPLICATE
GROSS WEIGHT (g)	2.01932	
TARE WEIGHT (g)	1.86931	
VOL. of SOLUTION (mL)	0.15001	

[ ] SAMPLE [X] STANDARD [ ] DUPLICATE [ ] PREP BLANK [ ] REAGENT BLANK

SAMPLE # = STD # =

Ending Std.

		REPLICATE
GROSS WEIGHT (g)	1.98332	2.08135
TARE WEIGHT (g)	1.81931	1.91764
VOL. of SOLUTION (mL)	0.16401	0.16371

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

SPECIFIC GRAVITY : LA-510-112 (C-3)

		STANDARD	STANDARD
STANDARD	Gross Weight (W2)	2.0562	2.0792
	Tare Weight (W1)	1.8926	1.9158
2414	Weight of Solution (W2-W1)	0.16363	0.16346
	Volume of Solution µL	150.1700	150.1700
SPG-01	Specific Gravity	1.0896	1.0885
	Specific Gravity (Average)	1.0891	
LIQUID			
STD			
	Gross Weight (W2) = Wt. of vial + cap + cotton + solution		
BA001	Tare Weight (W1) = Wt. of vial + cap + cotton		
DON GRIFFIN	Specific Gravity = [(W2-W1) * 1000 µL/mL] / [Vol. of Solution µL * 1.000 g/mL]		
10/14/95	v RESULT v		
	Specific Gravity Average =	1.089	

Data Entry by:	Dan Hammett	Date:	10/15/95
Approved by:	Ron Schroeder	Date:	10/16/95

Form 510112L1 Rev. 1.1

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

SPECIFIC GRAVITY : LA-510-112 (C-3)

		SAMPLE	REPLICATE
SAMPLE	Gross Weight (W2)	1.9995	
	Tare Weight (W1)	1.8492	
2414	Weight of Solution (W2-W1)	0.15038	0
	Volume of Solution µL	150.1700	
SPG-01	Specific Gravity	1.0014	NA

LIQUID

S95T002187

BA001

DON GRIFFIN

10/14/95

Gross Weight (W2) = Wt. of vial + cap + cotton + solution

Tare Weight (W1) = Wt. of vial + cap + cotton

Specific Gravity = [(W2-W1) * 1000 µL/mL] / [Vol. of Solution µL * 1.000 g/mL]

v RESULT v

Specific Gravity =	1.001

Data Entry by:	[signature]	Date:	10/15/95
Approved by:	[signature]	Date:	10/16/95

Form 510112L1 Rev. 1.1

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

SPECIFIC GRAVITY : LA-510-112 (C-3)

		DUPLICATE	REPLICATE
DUPLICATE	Gross Weight (W2)	2.0498	
	Tare Weight (W1)	1.8997	
2414	Weight of Solution (W2-W1)	0.15012	0
	Volume of Solution µL	150.1700	
SPG-01	Specific Gravity	0.9997	NA
Matrix			
LIQUID			
Sample #			
S95T002187			
Instrument Code	Gross Weight (W2) = Wt. of vial + cap + cotton + solution		
BA001	Tare Weight (W1) = Wt. of vial + cap + cotton		
Analyst			
DON GRIFFIN	Specific Gravity = [(W2-W1) * 1000 µL/mL] / [Vol. of Solution µL * 1.000 g/mL]		
Date			
10/14/95	v RESULT v		
Time	Specific Gravity =	1.000	

Data Entry by:	Dan Hamm	Date:	10/15/95
Approved by:	Ru Schuder	Date:	10/16/95

Form 510112L1 Rev. 1.1

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

SPECIFIC GRAVITY : LA-510-112 (C-3)

		SAMPLE	REPLICATE
SAMPLE	Gross Weight (W2)	2.0193	
	Tare Weight (W1)	1.8693	
2414	Weight of Solution (W2-W1)	0.15001	0
	Volume of Solution µL	150.1700	
SPG-01	Specific Gravity	0.9989	NA

LIQUID

S95T002188

BA001

DON GRIFFIN

10/14/95

Gross Weight (W2) = Wt. of vial + cap + cotton + solution

Tare Weight (W1) = Wt. of vial + cap + cotton

Specific Gravity = [(W2-W1) * 1000 µL/mL] / [Vol. of Solution µL * 1.000 g/mL]

v RESULT v

Specific Gravity =	0.999

Data Entry by:	[signature]	Date:	10/15/95
Approved by:	RW Schroeder	Date:	10/16/95

Form 510112L1 Rev. 1.1

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

SPECIFIC GRAVITY : LA-510-112 (C-3)

		DUPLICATE	REPLICATE
DUPLICATE	Gross Weight (W2)	2.0370	
	Tare Weight (W1)	1.8866	
2414	Weight of Solution (W2-W1)	0.15037	0
	Volume of Solution µL	150.1700	
SPG-01	Specific Gravity	1.0013	NA

LIQUID

S95T002188

BA001

DON GRIFFIN

10/14/95

Gross Weight (W2) = Wt. of vial + cap + cotton + solution
Tare Weight (W1) = Wt. of vial + cap + cotton

Specific Gravity = [(W2-W1) * 1000 µL/mL] / [Vol. of Solution µL * 1.000 g/mL]

v RESULT v

Specific Gravity =	1.001

Data Entry by:	Mary Hassell	Date:	10/15/95
Approved by:	Rick Schroeder	Date:	10/16/95

Form 510112L1 Rev. 1.1

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

SPECIFIC GRAVITY : LA-510-112 (C-3)

		SAMPLE	REPLICATE
SAMPLE	Gross Weight (W2)	2.0393	
	Tare Weight (W1)	1.8867	
2414	Weight of Solution (W2-W1)	0.15257	0
	Volume of Solution µL	150.1700	
SPG-01	Specific Gravity	1.0160	NA

LIQUID

S95T002189

Gross Weight (W2) = Wt. of vial + cap + cotton + solution

BA001 Tare Weight (W1) = Wt. of vial + cap + cotton

DON GRIFFIN Specific Gravity = [(W2-W1) * 1000 µL/mL] / [Vol. of Solution µL * 1.000 g/mL]

10/14/95 v RESULT v

Specific Gravity = 1.016

Data Entry by:	Gary Hamm	Date:	10/15/95
Approved by:	Ru Schneider	Date:	10/16/95

Form 510112L1 Rev. 1.1 Page 1 of 1

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

SPECIFIC GRAVITY : LA-510-112 (C-3)

		DUPLICATE	REPLICATE
DUPLICATE	Gross Weight (W2)	2.0286	
	Tare Weight (W1)	1.8749	
2414	Weight of Solution (W2-W1)	0.15365	0
	Volume of Solution µL	150.1700	
SPG-01	Specific Gravity	1.0232	NA

LIQUID

S95T002189

Instrument Code: BA001

DON GRIFFIN

Date: 10/14/95

Gross Weight (W2) = Wt. of vial + cap + cotton + solution

Tare Weight (W1) = Wt. of vial + cap + cotton

Specific Gravity = [(W2-W1) * 1000 µL/mL] / [Vol. of Solution µL * 1.000 g/mL]

v RESULT v

Specific Gravity =	1.023

Data Entry by:	Gary Hammett	Date:	10/15/95
Approved by:	Ron Schroeder	Date:	10/16/95

Form 510112L1 Rev. 1.1

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

SPECIFIC GRAVITY : LA-510-112 (C-3)

		STANDARD	STANDARD
STANDARD	Gross Weight (W2)	1.9833	2.0814
	Tare Weight (W1)	1.8193	1.9176
2414	Weight of Solution (W2-W1)	0.16401	0.16371
	Volume of Solution µL	150.1700	150.1700
SPG-01	Specific Gravity	1.0922	1.0902
Matrix	Specific Gravity (Average)	1.0912	
LIQUID			
Sample			
STD			
Instrument Code	Gross Weight (W2) = Wt. of vial + cap + cotton + solution		
BA001	Tare Weight (W1) = Wt. of vial + cap + cotton		
Analyst			
DON GRIFFIN	Specific Gravity = [(W2-W1) * 1000 µL/mL] / [Vol. of Solution µL * 1.000 g/mL]		
Date			
10/14/95	v RESULT v		
Time	Specific Gravity Average =	1.091	

Data Entry by:	[signature]	Date:	10/15/95
Approved by:	R W Schroeder	Date:	10/16/95

Form 510112L1 Rev. 1.1

LABCORE Data Entry Template for Worklist# 2371

Analyst: EC Instrument: IC01 IC01 Book # 106N9-C

Method: LA-533-105 Rev/Mod D-1

Worklist Comment: AW 105 grab IC, no spike required. JMF

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	BLNK				@IC-01 F-02	LIQUID	1	L.062	N/A	ug/mL
		1	BLNK				@IC-01 CL-02	LIQUID	1	L.083	N/A	ug/mL
		1	BLNK				@IC-01 NO2-02	LIQUID	1	L.547	N/A	ug/mL
		1	BLNK				@IC-01 BR-02	LIQUID	NA	NA	N/A	ug/mL
		1	BLNK				@IC-01 NO3-02	LIQUID	1	L.699	N/A	ug/mL
		1	BLNK				@IC-01 PO4-02	LIQUID	1	L.596	N/A	ug/mL
		1	BLNK				@IC-01 SO4-02	LIQUID	1	L.678	N/A	ug/mL
		1	BLNK				@IC-01 OXALATE2	LIQUID	NA	NA	N/A	ug/mL
		2	STD				@IC-01 F-02	LIQUID	59	59.7	N/A	ug/mL
		2	STD				@IC-01 CL-02	LIQUID	79	79.7	N/A	ug/mL
		2	STD				@IC-01 NO2-02	LIQUID	~~614~~ 532	557.6	N/A	ug/mL
		2	STD				@IC-01 BR-02	LIQUID	NA	NA	N/A	ug/mL
		2	STD				@IC-01 NO3-02	LIQUID	614	642.5	N/A	ug/mL
		2	STD				@IC-01 PO4-02	LIQUID	546	571.6	N/A	ug/mL
		2	STD				@IC-01 SO4-02	LIQUID	631	654.8	N/A	ug/mL
		2	STD				@IC-01 OXALATE2	LIQUID	NA	NA	N/A	ug/mL
95000130	AW-105 GRAB	3	SAMPLE	S95T002187	0		@IC-01 F-02	LIQUID	N/A	4.35E02	6.89e1	ug/mL
95000130	AW-105 GRAB	3	SAMPLE	S95T002187	0		@IC-01 CL-02	LIQUID	N/A	3.25E01	8.38e0	ug/mL

Data Entry Comments:

LMCS 106N9-C .100mL - 10mL

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# 2371

GROUP	PROJECT	S TYPE	SAMPLE#	R	A	-------TEST------		MATRIX	ACTUAL	FOUND	DL	UNIT
95000130	AW-105 GRAB	3 SAMPLE	S95T002187	0		@IC-01	NO2-02	LIQUID	N/A	7.80E02	6.08e2	ug/mL
95000130	AW-105 GRAB	3 SAMPLE	S95T002187	0		@IC-01	NO3-02	LIQUID	N/A	1.29E04	7.77e2	ug/mL
95000130	AW-105 GRAB	3 SAMPLE	S95T002187	0		@IC-01	PO4-02	LIQUID	N/A	<6.02e1 ~~<662.16~~	9MF 9/26/95 6.02e1	ug/mL
95000130	AW-105 GRAB	3 SAMPLE	S95T002187	0		@IC-01	SO4-02	LIQUID	N/A	1.11E02	6.85e1	ug/mL
95000130	AW-105 GRAB	4 DUP	S95T002187	0		@IC-01	F-02	LIQUID	4.35E02	4.45E02	N/A	ug/mL
95000130	AW-105 GRAB	4 DUP	S95T002187	0		@IC-01	CL-02	LIQUID	3.25E01	3.27E01	N/A	ug/mL
95000130	AW-105 GRAB	4 DUP	S95T002187	0		@IC-01	NO2-02	LIQUID	7.80E02	7.88E02	N/A	ug/mL
95000130	AW-105 GRAB	4 DUP	S95T002187	0		@IC-01	BR-02	LIQUID	NA	NA	N/A	ug/mL
95000130	AW-105 GRAB	4 DUP	S95T002187	0		@IC-01	NO3-02	LIQUID	1.29E04	1.30E04	N/A	ug/mL
95000130	AW-105 GRAB	4 DUP	S95T002187	0		@IC-01	PO4-02	LIQUID	9MF 9/26/95 <6.02e1 ~~<662.7~~ ~~<6.6~~ 9-21-95	<6.02e1 ~~<662.7~~	9MF 9/26/95 N/A	ug/mL
95000130	AW-105 GRAB	4 DUP	S95T002187	0		@IC-01	SO4-02	LIQUID	1.11E02	1.14E02	N/A	ug/mL
95000130	AW-105 GRAB	4 DUP	S95T002187	0		@IC-01	OXALATE2	LIQUID	NA	NA	N/A	ug/mL
95000130	AW-105 GRAB	5 SAMPLE	S95T002188	0		@IC-01	F-02	LIQUID	N/A	5.44E02	6.89e1	ug/mL
95000130	AW-105 GRAB	5 SAMPLE	S95T002188	0		@IC-01	CL-02	LIQUID	N/A	4.12E01	8.38e0	ug/mL
95000130	AW-105 GRAB	5 SAMPLE	S95T002188	0		@IC-01	NO2-02	LIQUID	N/A	8.72E02	6.08e2	ug/mL
95000130	AW-105 GRAB	5 SAMPLE	S95T002188	0		@IC-01	NO3-02	LIQUID	N/A	1.60E04	7.77e2	ug/mL
95000130	AW-105 GRAB	5 SAMPLE	S95T002188	0		@IC-01	PO4-02	LIQUID	N/A	<6.02e1 ~~<662.7~~	6.02e1	ug/mL
95000130	AW-105 GRAB	5 SAMPLE	S95T002188	0		@IC-01	SO4-02	LIQUID	N/A	1.12E02	6.85e1	ug/mL
95000130	AW-105 GRAB	6 DUP	S95T002188	0		@IC-01	F-02	LIQUID	5.44E02	5.37E02	N/A	ug/mL
95000130	AW-105 GRAB	6 DUP	S95T002188	0		@IC-01	CL-02	LIQUID	4.12E01	4.29E01	N/A	ug/mL
95000130	AW-105 GRAB	6 DUP	S95T002188	0		@IC-01	NO2-02	LIQUID	8.72E02	8.55E02	N/A	ug/mL

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# 2371

JP	PROJECT	S TYPE	SAMPLE#	R	A	TEST		MATRIX	ACTUAL	FOUND	DL	UNIT
95000130	AW-105 GRAB	6 DUP	S95T002188	0		IC-01	BR-02	LIQUID	N/A	NA	N/A	ug/mL
95000130	AW-105 GRAB	6 DUP	S95T002188	0		IC-01	NO3-02	LIQUID	1.60E04	1.58E04	N/A	ug/mL
95000130	AW-105 GRAB	6 DUP	S95T002188	0		IC-01	PO4-02	LIQUID	~~1662.7~~ <6.02e1	~~1662.7~~ <6.02e1	N/A	ug/mL
95000130	AW-105 GRAB	6 DUP	S95T002188	0		IC-01	SO4-02	LIQUID	1.12E02	1.14E02	N/A	ug/mL
95000130	AW-105 GRAB	6 DUP	S95T002188	0		IC-01	OXALATE2	LIQUID	NA	NA	N/A	ug/mL
95000130	AW-105 GRAB	7 SAMPLE	S95T002189	0		IC-01	F-02	LIQUID	N/A	1.56E03	6.89e1	ug/mL
95000130	AW-105 GRAB	7 SAMPLE	S95T002189	0		IC-01	CL-02	LIQUID	N/A	9.35E01	8.38e0	ug/mL
95000130	AW-105 GRAB	7 SAMPLE	S95T002189	0		IC-01	NO2-02	LIQUID	N/A	1.17E03	6.08e2	ug/mL
95000130	AW-105 GRAB	7 SAMPLE	S95T002189	0		IC-01	NO3-02	LIQUID	N/A	2.09E04	7.77e2	ug/mL
95000130	AW-105 GRAB	7 SAMPLE	S95T002189	0		IC-01	PO4-02	LIQUID	N/A	1.30E02	6.02e1	ug/mL
95000130	AW-105 GRAB	7 SAMPLE	S95T002189	0		IC-01	SO4-02	LIQUID	N/A	3.10E02	6.85e1	ug/mL
95000130	AW-105 GRAB	8 DUP	S95T002189	0		IC-01	F-02	LIQUID	1.56E03	1.62E03	N/A	ug/mL
95000130	AW-105 GRAB	8 DUP	S95T002189	0		IC-01	CL-02	LIQUID	9.35E01	9.36E01	N/A	ug/mL
95000130	AW-105 GRAB	8 DUP	S95T002189	0		IC-01	NO2-02	LIQUID	1.17E03	1.19E03	N/A	ug/mL
95000130	AW-105 GRAB	8 DUP	S95T002189	0		IC-01	BR-02	LIQUID	NA	NA	N/A	ug/mL
95000130	AW-105 GRAB	8 DUP	S95T002189	0		IC-01	NO3-02	LIQUID	2.09E04	2.17E04	N/A	ug/mL
95000130	AW-105 GRAB	8 DUP	S95T002189	0		IC-01	PO4-02	LIQUID	1.30E02	1.26E02	N/A	ug/mL
95000130	AW-105 GRAB	8 DUP	S95T002189	0		IC-01	SO4-02	LIQUID	3.10E02	3.10E02	N/A	ug/mL
95000130	AW-105 GRAB	8 DUP	S95T002189	0		IC-01	OXALATE2	LIQUID	NA	NA	N/A	ug/mL

Final page for worklist # 2371

[illegible] 9-19-95 [illegible] 9-21-95

Data Entry Comments: Verified 9/26/95 J.M. Lye

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.

WESTINGHOUSE HANFORD COMPANY
222-S LABORATORY
INORGANIC ANALYTICAL BATCH AND SUMMARY SHEET

ANION ANALYSIS ON DIONEX

SAMPLE #:	S95T002187 & S95T002188 & S95T002189		
TEST CODE:	IC01	ANALYST:	E. COLVIN
INSTRUMENT:		ANALYSIS DATE:	09/19/95
WORK LIST #:	2371	SAMPLE POINT:	AW-105 GRAB
BATCH ID:	N/A	SAMPLE PREP:	

AMF 9/24/95

Result Units µg/mL	Fluoride	Chloride	Nitrite	Nitrate	Phosphate	Sulfate	Bromide	Oxalate
106N9C	101.2%	100.9%	107.4%	104.6%	104.7%	103.8%	ERR	ERR
S95T002187	4.35E+02	3.25E+01	7.80E+02	1.29E+04	6.02e1 ~~<662.16~~	1.11E+02	<0.00	<0.00
S95T002187DUP	4.45E+02	3.27E+01	7.88E+02	1.30E+04	~~<662.16~~	1.14E+02	0.00E+00	<0.00
Duplicate 1 RPD	2.2%	0.6%	1.0%	0.3%	6.02e1 N/A	2.4%		N/A
S95T002188	5.44E+02	4.12E+01	8.72E+02	1.60E+04	~~<662.16~~	1.12E+02	0.00E+00	<0.00
S95T002188DUP	5.37E+02	4.29E+01	8.55E+02	1.58E+04	~~<662.16~~	1.19E+02	<0.00	<0.00
Duplicate 2 RPD	1.2%	4.0%	2.0%	1.3%	6.02e1 N/A	5.7%		ERR
S95T002189	1.56E+03	9.35E+01	1.17E+03	2.09E+04	1.30E+02	3.10E+02	0.00E+00	<0.00
S95T002189DUP	1.62E+03	9.36E+01	1.19E+03	2.17E+04	1.26E+02	3.10E+02	0.00E+00	<0.00
Duplicate 3 RPD	3.9%	0.1%	2.4%	3.5%	3.5%	0.3%		ERR

NARRATIVE: **Analyst Comments:**

Chemist Comments:

Form Completed By:	E. Colvin	Date:	9/24/95
Chemist Approval:	[illegible]	Date:	9/24/95

LAB LEADER INFO	
Method:	LA-533-105
Matrix:	LIQUID
Test Code:	IC01
Work List #:	2371
Batch #:	N/A
Result Units	
(µg/g or µg/mL):	µg/mL
Spike Book Number:	106N9C
Enter Spike Sample # (1-4):	
Prepared By:	R. JONES
Prepared Date:	09/21/95
Chemist:	J. FRYE
Analyst:	E. COLVIN
Analysis Date:	09/19/95
Time Complete:	11:10 AM
Instrument Code:	
Rerun:	0
Sample Prep:	
Sample Point:	AW-105 GRAB
Sample Type	
STANDARD	106N9C
SAMPLE 1	S95T002187
DUPLICATE 1	S95T002187DUP
SAMPLE 2	S95T002188
DUPLICATE 2	S95T002188DUP
SAMPLE 3	S95T002189
DUPLICATE 3	S95T002189DUP
SAMPLE 4	
DUPLICATE 4	
SPIKE	
SPIKE DUPLICATE	

PRINT

TECH INFO	Fluoride	Chloride	Nitrite	Nitrate	Phosphate	Sulfate	Bromide	Oxalate
Blank Data (µg/mL)	<.062	<.083	<.547	<.699	<.596	<.678	N/A	N/A
Standard Data (µg/mL)	59.7	79.7	557.6	642.5	571.6	654.8	N/A	N/A
					GMF 9/26/95			
Sample 1 Data (µg/mL)	4.35E+02	3.25E+01	7.80E+02	1.29E+04	<.596	1.11E+02	N/A	N/A
Sample 1 Dilution Factor	1111	101	1111	1111	10 (~~1111~~	101	N/A	N/A
Sample 1 Prep DF	1	1	1	1	1	1	1	1
Duplicate 1 Data (µg/mL)	4.45E+02	3.27E+01	7.88E+02	1.30E+04	<.596	1.14E+02	N/A	N/A
Duplicate 1 Dilution Factor	1111	101	1111	1111	10 (~~1111~~	101	N/A	N/A
Duplicate 1 Prep DF	1	1	1	1	1	1	1	1
					GMF 9/26/95			
Sample 2 Data (µg/mL)	5.44E+02	4.12E+01	8.72E+02	1.60E+04	<.596	1.12E+02	N/A	N/A
Sample 2 Dilution Factor	1111	101	1111	1111	10 (~~1111~~	101	N/A	N/A
Sample 2 Prep DF	1	1	1	1	1	1	1	1
Duplicate 2 Data (µg/mL)	5.37E+02	4.29E+01	8.55E+02	1.58E+04	<.596	1.19E+02	N/A	N/A
Duplicate 2 Dilution Factor	1111	101	1111	1111	10 (~~1111~~	101	N/A	N/A
Duplicate 2 Prep DF	1	1	1	1	1	1	1	1
Sample 3 Data (µg/mL)	1.56E+03	9.35E+01	1.17E+03	2.09E+04	1.30E+02	3.10E+02	N/A	N/A
Sample 3 Dilution Factor	1111	101	1111	1111	101	101	N/A	N/A
Sample 3 Prep DF	1	1	1	1	1	1	1	1
Duplicate 3 Data (µg/mL)	1.62E+03	9.36E+01	1.19E+03	2.17E+04	1.26E+02	3.10E+02	N/A	N/A
Duplicate 3 Dilution Factor	1111	101	1111	1111	101	101	N/A	N/A
Duplicate 3 Prep DF	1	1	1	1	1	1	1	1
Sample 4 Data (µg/mL)								
Sample 4 Dilution Factor								
Sample 4 Prep DF								
Duplicate 4 Data (µg/mL)								
Duplicate 4 Dilution Factor								
Duplicate 4 Prep DF								
Spike + Sample (µg/mL)								
Spike + Dup (µg/mL)								
Spike Volume (mL)					<6.02e / GMF 9/26/95			
Total Volume (mL)								
Std. Conc. (µg/mL)	59	79	519	614	546	631	N/A	N/A
Detection Limit	0.062	0.083	0.547	0.699	0.596	0.678	N/A	N/A
Matrix Detection Limit 1	6.89E+01	8.38E+00	6.08E+02	7.77E+02	~~6.63E+02~~	6.85E+01	0.00E+00	0.00E+00
Matrix Detection Limit 2	6.89E+01	8.38E+00	6.08E+02	7.77E+02	~~6.63E+02~~	6.85E+01	0.00E+00	0.00E+00
Matrix Detection Limit 3	6.89E+01	8.38E+00	6.08E+02	7.77E+02	6.02E+01	6.85E+01	0.00E+00	0.00E+00
Matrix Detection Limit 4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Spike Recovery = [((Spike+Sample)-(Sample)*(Total Volume))/((Spike Vol.)*(Spike Std.)*(Sample DF))]*100%
Note: (For spike recovery when the sample conc. is less than detection limit you do NOT subtract sample conc.)
Duplicate Relative % Difference = ((Sample - Duplicate) / ((Sample + Duplicate) / 2) * 100%)
Less than Values are Calculated from the Detection Limit*Dilution Factor

<6.02e GMF 9/26/95

v RESULTS v	Fluoride	Chloride	Nitrite	Nitrate	Phosphate	Sulfate	Bromide	Oxalate
ERR	101.2%	100.9%	107.4%	104.6%	104.7%	103.8%	ERR	ERR
Sample 1 in µg/mL	4.35E+02	3.25E+01	7.80E+02	1.29E+04	~~<662.16~~	1.11E+02	<0.00	<0.00
Duplicate 1 in µg/mL	4.45E+02	3.27E+01	7.88E+02	1.30E+04	~~<662.16~~	1.14E+02	0.00E+00	<0.00
Duplicate 1 RPD	2.2%	0.6%	1.0%	0.3%	N/A	2.4%		N/A
Sample 2 in µg/mL	5.44E+02	4.12E+01	8.72E+02	1.60E+04	~~<662.16~~	1.12E+02	0.00E+00	<0.00
Duplicate 2 in µg/mL	5.37E+02	4.29E+01	8.55E+02	1.58E+04	~~<662.16~~	1.19E+02	<0.00	<0.00
Duplicate 2 RPD	1.2%	4.0%	2.0%	1.3%	N/A	5.7%		ERR
Sample 3 in µg/mL	1.56E+03	9.35E+01	1.17E+03	2.09E+04	1.30E+02	3.10E+02	0.00E+00	<0.00
Duplicate 3 in µg/mL	1.62E+03	9.36E+01	1.19E+03	2.17E+04	1.26E+02	3.10E+02	0.00E+00	<0.00
Duplicate 3 RPD	3.9%	0.1%	2.4%	3.5%	3.5%	0.3%		ERR

Data Entry by: R. Jones — Date 09/21/95
Approved by: John Frye — Date 9/26/95
Form DIONEX.WB1 Rev. 1.3

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Sample Name: 106N9-C STD Date: 09/19/1995 07:56:15
Data File : C:\DX\DATA\95091981.D02
Method : C:\DX\METHOD\KIT.MET
ACI Address: 1 System: 1 Inject#: 2 Detector:CDM-1
Analyst : G.B. Cohn Column: AG4A/AS4A anion column/SRS

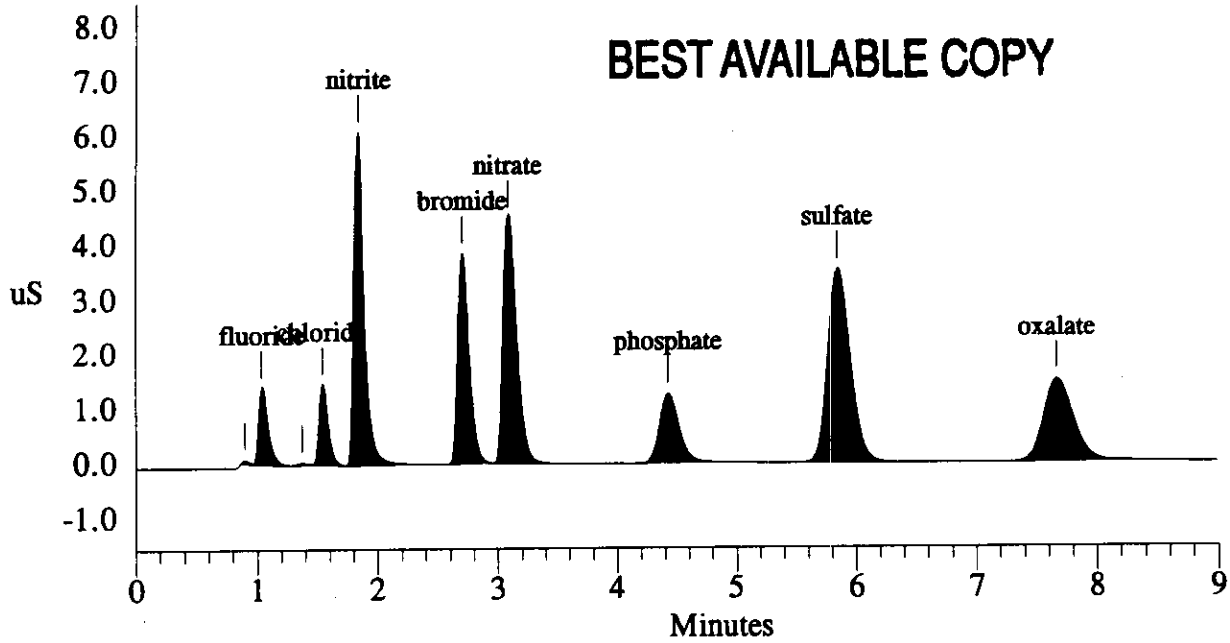
9-19-95

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	101	2700	5Hz	0.00	9.00	200

********** Peak Report: All Peaks **********

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.90		0.000	64	238	2	
2	1.04	fluoride	59.689	1396	7503	2	-1.89
3	1.37		0.000	39	203	1	
4	1.54	chloride	79.687	1472	7590	1	1.32
5	1.84	nitrite	557.639	6102	35664	1	1.10
6	2.71	bromide	589.677	3859	25239	1	0.37
7	3.09	nitrate	642.509	4498	35520	1	0.32
8	4.43	phosphate	571.568	1280	14309	1	-1.12
9	5.85	sulfate	654.778	3555	46880	1	-1.02
10	7.67	oxalate	535.528	1512	26009	1	-1.41
		Totals	3691.075	23776	199154		

File: 95091981.D02 Sample: 106N9-C STD



SIGNATURE ABOVE REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 73 TO 86.

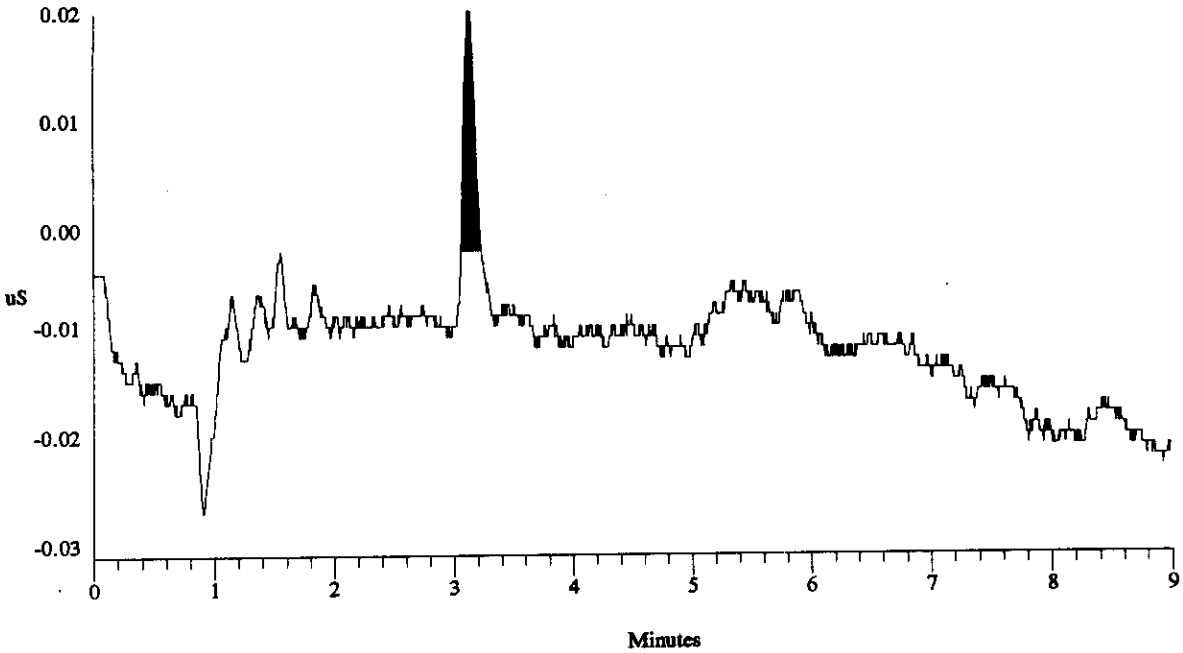
```
==================================================================================
| Sample Name: BLANK                          Date: 09/19/1995 07:45:01          |
| Data File  : C:\DX\DATA\95091981.D01                                           |
| Method     : C:\DX\METHOD\KIT.MET                                              |
| CI Address: 1  System: 1  Inject#: 1                        Detector:CDM-1     |
| Analyst    :                 Column: AG4A/AS4A anion column/SRS                |
==================================================================================
```

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area	Reject
External	1	1	2700	5Hz	0.00	9.00		200

********** Peak Report: All Peaks **********

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
		Totals	0.000	0	0		

File: 95091981.D01 Sample: BLANK



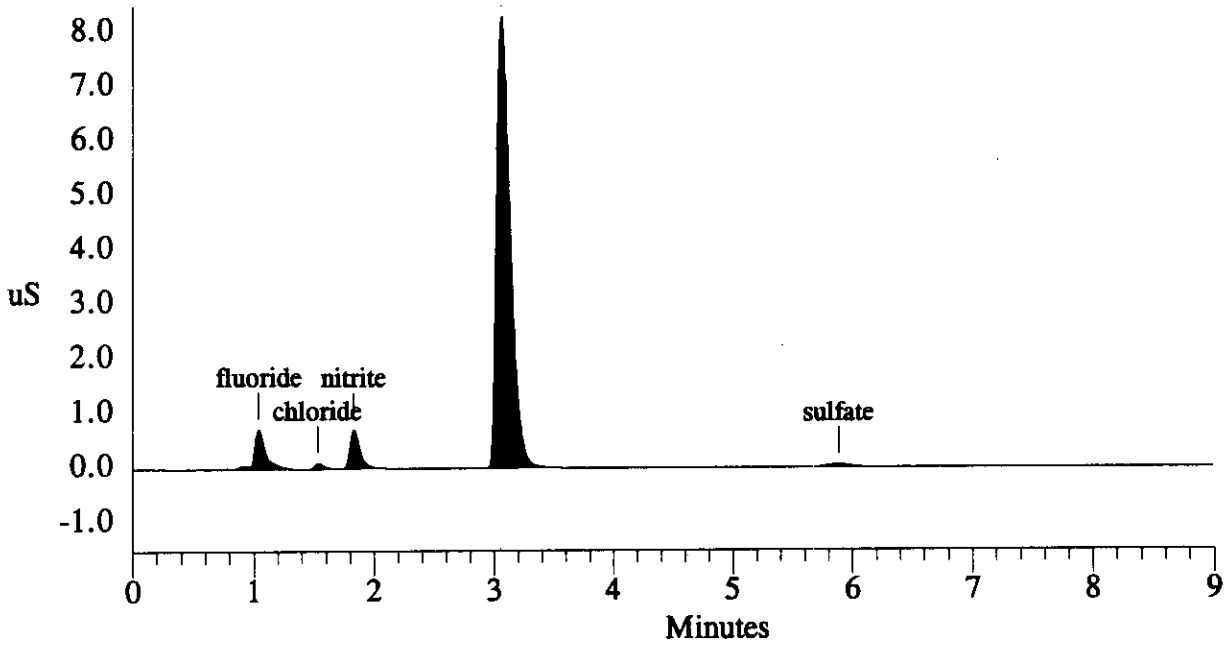
Sample Name: S95T002187 Date: 09/19/1995 08:22:32
Data File : C:\DX\DATA\95091981.D04
Method : C:\DX\METHOD\KIT.MET
ACI Address: 1 System: 1 Inject#: 4 Detector:CDM-1
Analyst : Column: AG4A/AS4A anion column/SRS

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area	Reject
External	1	1111	2700	5Hz	0.00	9.00		200

********** Peak Report: All Peaks **********

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	1.04	fluoride	435.271	731	4924	1	-1.89
2	1.53	chloride	29.549	114	600	1	0.66
3	1.83	nitrite	779.809	712	4147	1	0.55
4	3.07	nitrate	12928.947	8286	66102	1	-0.32
5	5.89	sulfate	153.437	52	639	1	-0.34
		Totals	14327.014	9895	76411		

File: 95091981.D04 Sample: S95T002187



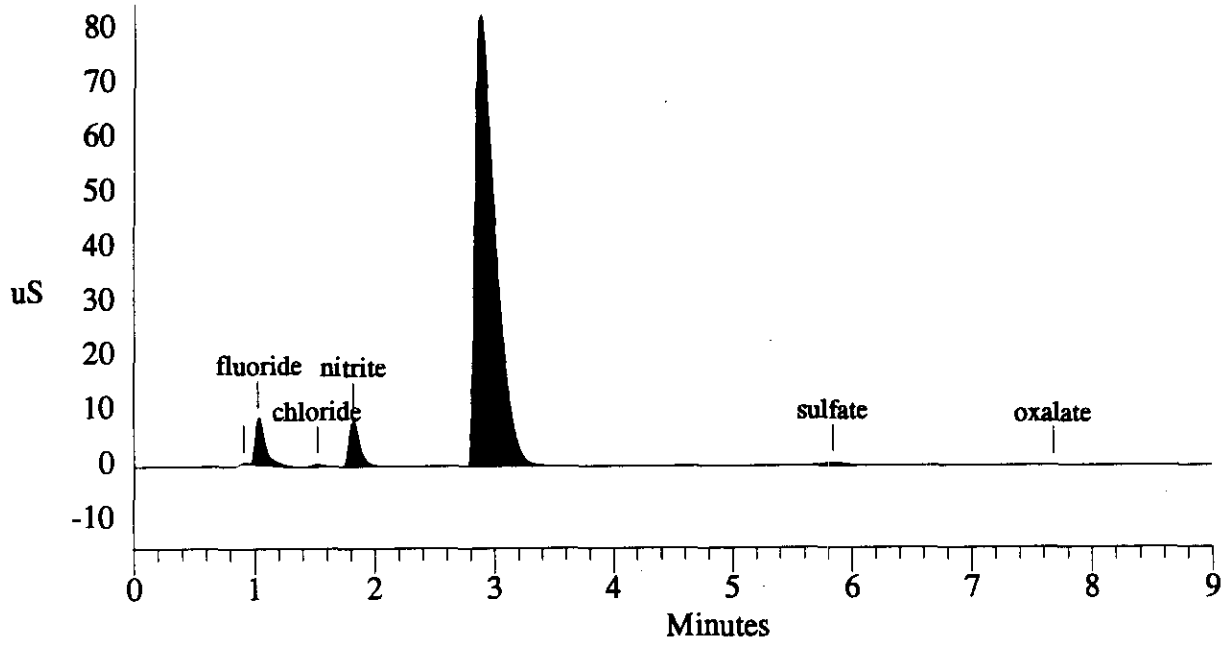
```
==============================================================================
| Sample Name: S95T002187                        Date: 09/19/1995 09:14:20   |
| Data File  : C:\DX\DATA\95091981.D08                                       |
| Method     : C:\DX\METHOD\KIT.MET                                          |
| ICI Address: 1  System: 1  Inject#: 8                   Detector:CDM-1     |
| Analyst    :                  Column: AG4A/AS4A anion column/SRS          |
==============================================================================
```

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area	Reject
External	1	101	2700	5Hz	0.00	9.00		200

********** Peak Report: All Peaks **********

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.91		0.000	183	582	2	
2	1.03	fluoride	351.846	8451	49612	2	-2.83
3	1.52	chloride	32.540	543	3284	1	0.00
4	1.82	nitrite	798.573	8502	51611	1	0.00
5	2.89	nitrate	8697.608	82964	965785	1	-6.17
6	5.84	sulfate	111.362	562	7548	1	-1.18
7	7.68	oxalate	25.366	26	364	1	-1.29
		Totals	10017.296	101230	1078787		

File: 95091981.D08 Sample: S95T002187



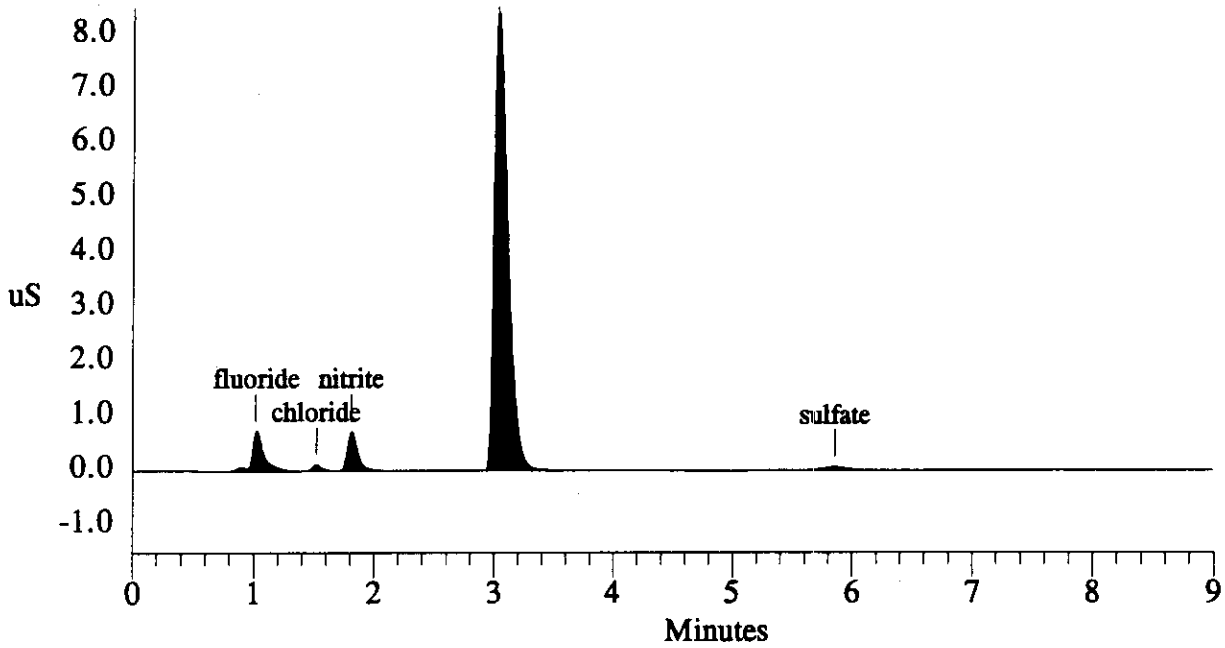
```
Sample Name: S95T002187  DUP                    Date: 09/19/1995 08:36:54
Data File  : C:\DX\DATA\95091981.D05
Method     : C:\DX\METHOD\KIT.MET
ACI Address: 1  System: 1  Inject#: 5                        Detector:CDM-1
Analyst    :                 Column: AG4A/AS4A anion column/SRS
```

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1111	2700	5Hz	0.00	9.00	200

********** Peak Report: All Peaks **********

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	1.02	fluoride	444.977	727	5037	1	-3.77
2	1.52	chloride	27.580	117	584	1	0.00
3	1.81	nitrite	787.581	720	4192	1	-0.55
4	3.04	nitrate	12971.065	8261	66325	1	-1.30
5	5.86	sulfate	158.493	54	672	1	-0.85
		Totals	14389.696	9879	76809		

File: 95091981.D05 Sample: S95T002187 DUP



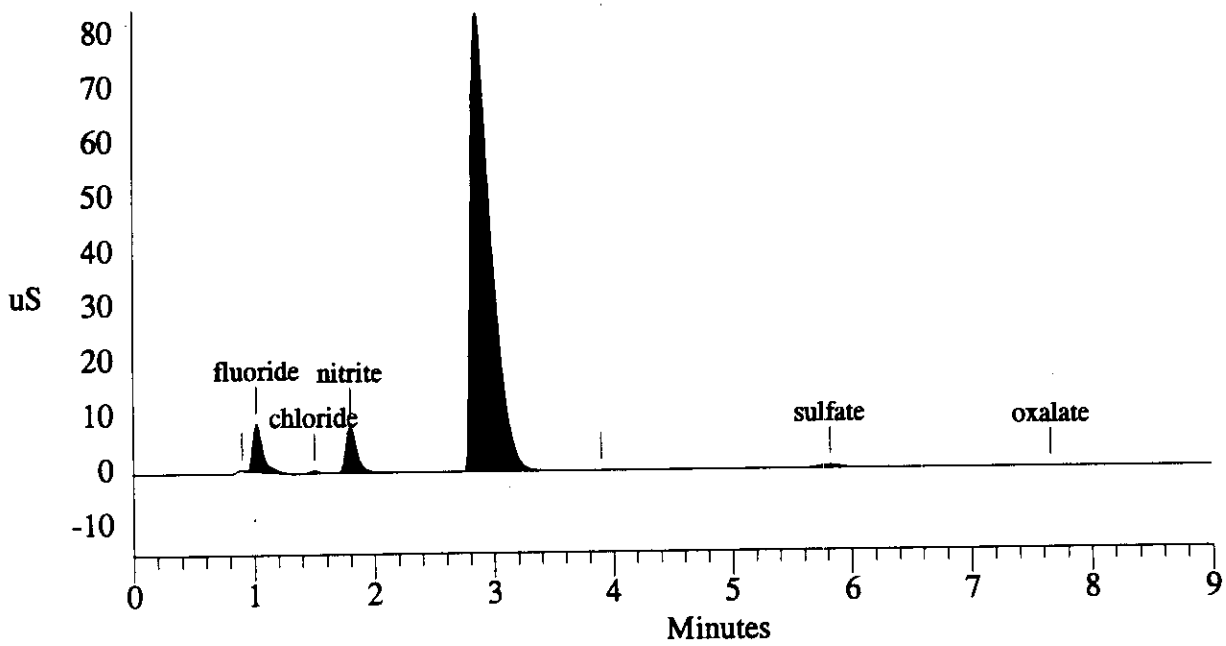
```
==============================================================================
| Sample Name: S95T002187  DUP                    Date: 09/19/1995 09:02:53   |
| Data File  : C:\DX\DATA\95091981.D07                                        |
| Method     : C:\DX\METHOD\KIT.MET                                           |
| ICI Address: 1  System: 1  Inject#: 7                     Detector:CDM-1    |
| Analyst    :                 Column: AG4A/AS4A anion column/SRS            |
==============================================================================
```

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	101	2700	5Hz	0.00	9.00	200

********** Peak Report: All Peaks **********

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.90		0.000	221	726	2	
2	1.02	fluoride	354.934	8677	50117	2	-3.77
3	1.50	chloride	32.702	541	3299	1	-1.32
4	1.80	nitrite	819.816	8574	53029	1	-1.10
5	2.86	bromide	6885.118	83527	972885	1	5.93
6	3.90		0.000	22	204	1	
7	5.82	sulfate	114.081	567	7742	1	-1.52
8	7.66	oxalate	25.002	26	346	1	-1.54
		Totals	8231.653	102155	1088347		

File: 95091981.D07 Sample: S95T002187 DUP



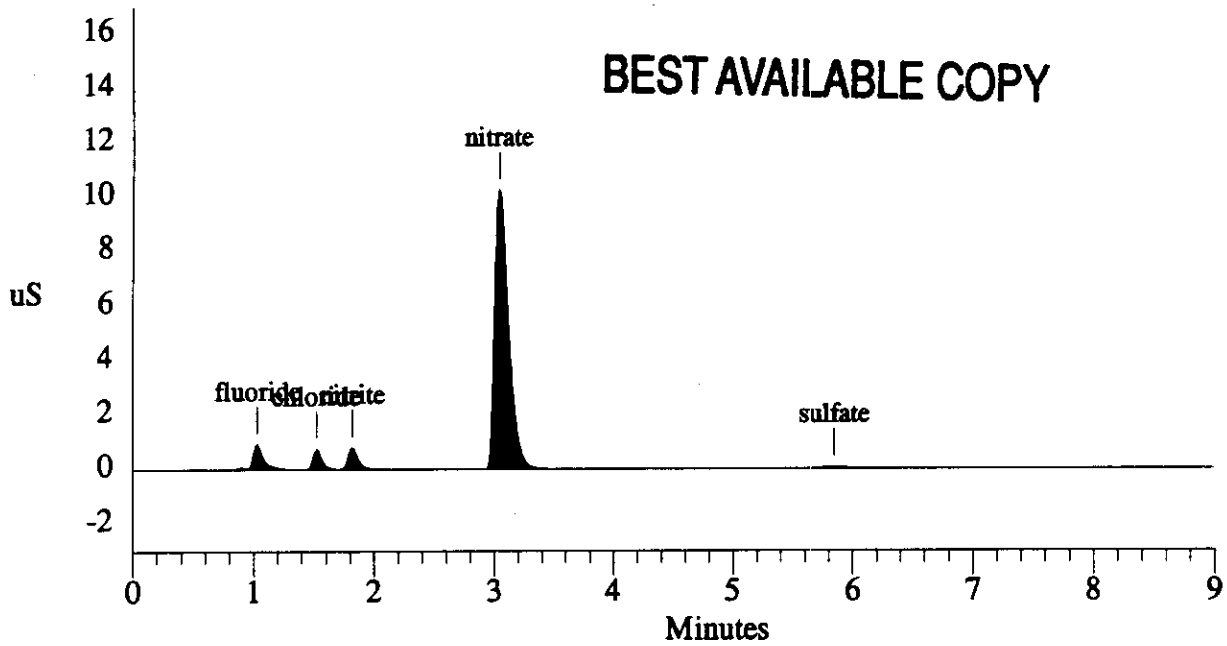
```
==========================================================================
| Sample Name: S95T002188                    Date: 09/19/1995 10:31:53   |
| Data File  : C:\DX\DATA\95091981.D12                                   |
| Method     : C:\DX\METHOD\KIT.MET                                      |
| ACI Address: 1  System: 1  Inject#: 12                Detector:CDM-1   |
| Analyst    :                Column: AG4A/AS4A anion column/SRS         |
==========================================================================
```

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1111	2700	5Hz	0.00	9.00	200

********** Peak Report: All Peaks **********

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	1.03	fluoride	543.726	936	6184	1	-2.83
2	1.52	chloride	422.793	742	3818	1	0.00
3	1.82	nitrite	871.710	803	4680	1	0.00
4	3.05	nitrate	16003.693	10267	82578	1	-0.97
5	5.85	sulfate	205.711	80	975	1	-1.02
		Totals	18047.633	12827	98235		

File: 95091981.D12 Sample: S95T002188



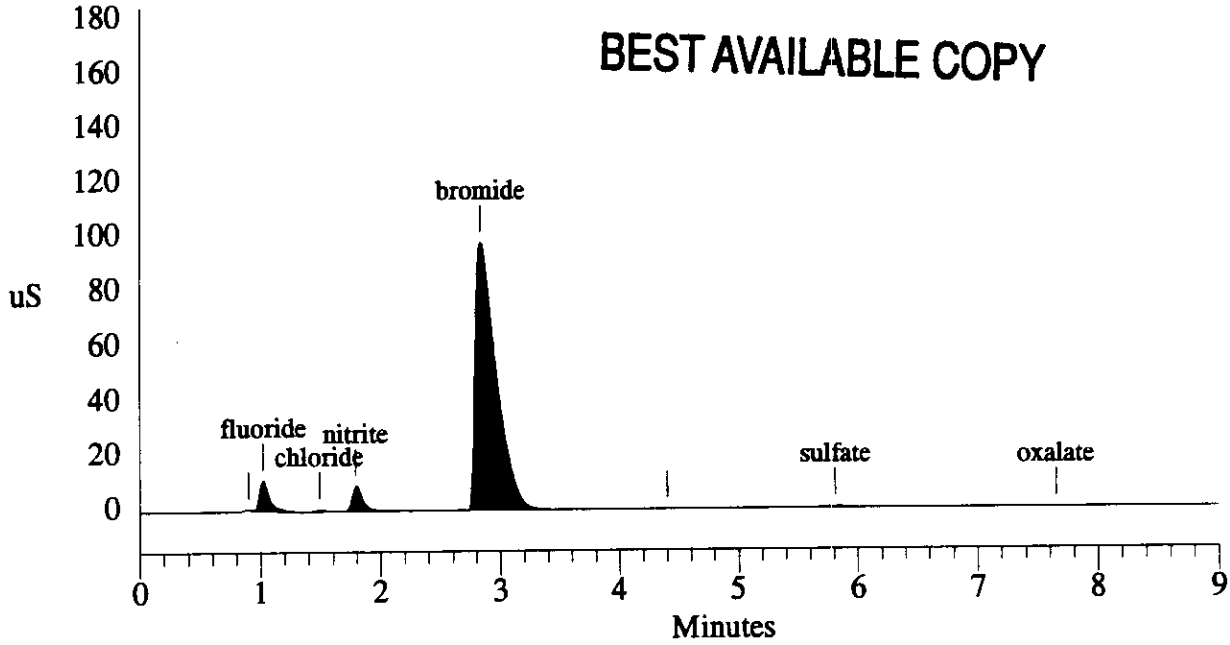
```
==============================================================================
| Sample Name: S95T002188                      Date: 09/19/1995 09:26:07      |
| Data File  : C:\DX\DATA\95091981.D09                                        |
| Method     : C:\DX\METHOD\KIT.MET                                           |
| ^CI Address: 1  System: 1  Inject#: 9                   Detector:CDM-1      |
| ıalyst     :                Column: AG4A/AS4A anion column/SRS              |
==============================================================================
```

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area	Reject
External	1	101	2700	5Hz	0.00	9.00		200

********** Peak Report: All Peaks **********

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.90		0.000	229	723	2	
2	1.02	fluoride	433.622	11043	63582	2	-3.77
3	1.49	chloride	41.218	665	4070	1	-1.97
4	1.79	nitrite	872.616	9086	56561	1	-1.65
5	2.84	bromide	4114.451	97962	1191150	1	5.19
7	5.81	sulfate	112.347	567	7619	1	-1.69
8	7.65	oxalate	28.245	36	506	1	-1.67
		Totals	5602.499	119588	1324211		

File: 95091981.D09 Sample: S95T002188



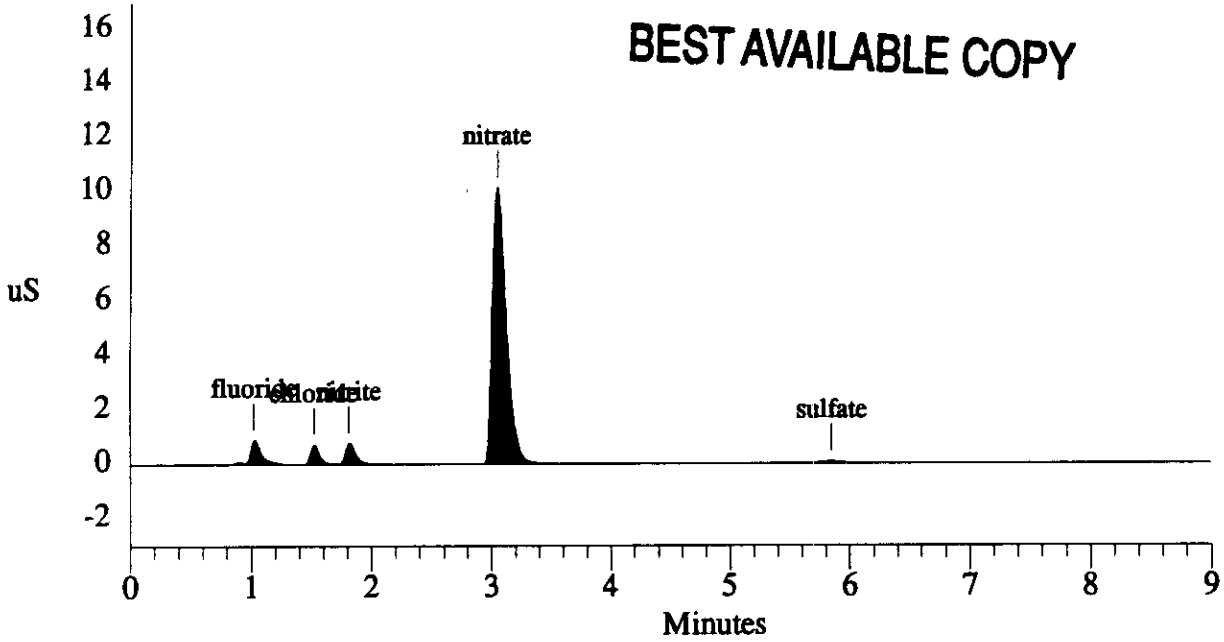
Sample Name: S95T002188 DUP	Date: 09/19/1995 10:22:09
Data File : C:\DX\DATA\95091981.D11	
Method : C:\DX\METHOD\KIT.MET	
ACI Address: 1 System: 1 Inject#: 11	Detector:CDM-1
Analyst :	Column: AG4A/AS4A anion column/SRS

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1111	2700	5Hz	0.00	9.00	200

********** Peak Report: All Peaks **********

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	1.02	fluoride	537.304	901	6109	1	-3.77
2	1.52	chloride	419.348	728	3790	1	0.00
3	1.81	nitrite	854.553	773	4580	1	-0.55
4	3.05	nitrate	15790.784	10124	81427	1	-0.97
5	5.85	sulfate	194.919	75	906	1	-1.02
		Totals	17796.908	12599	96812		

File: 95091981.D11 Sample: S95T002188 DUP



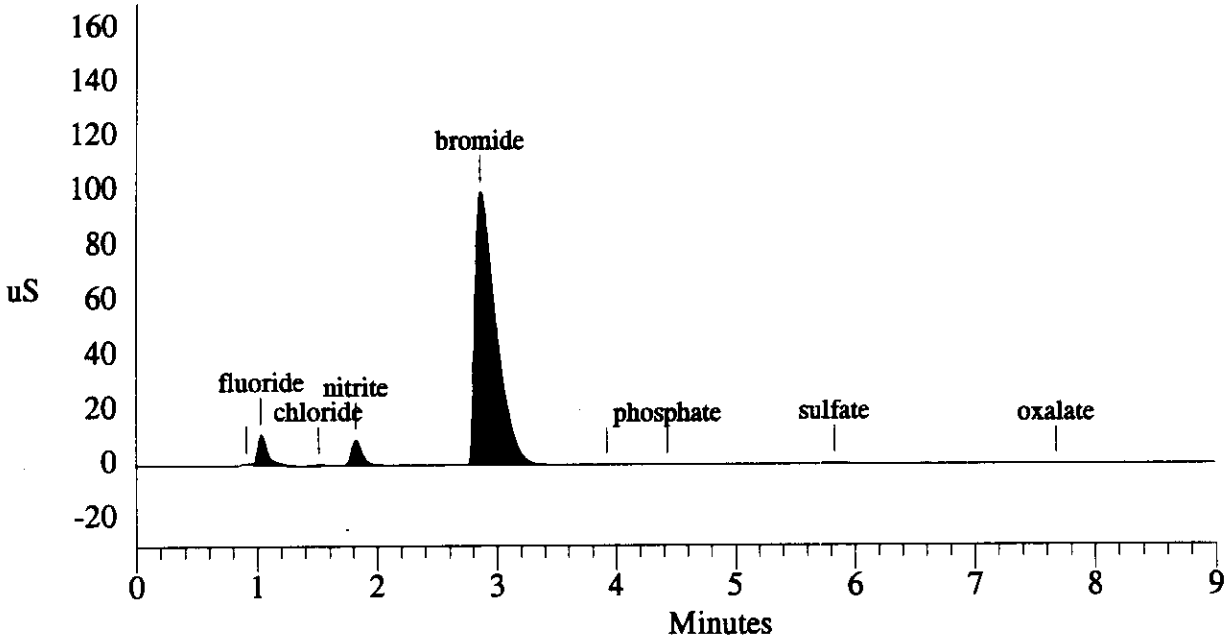
```
==============================================================================
| Sample Name: S95T002188  DUP                    Date: 09/19/1995 10:12:02   |
| Data File  : C:\DX\DATA\95091981.D10                                        |
| Method     : C:\DX\METHOD\KIT.MET                                           |
| ICI Address: 1  System: 1  Inject#: 10                   Detector:CDM-1     |
| Analyst    :                  Column: AG4A/AS4A anion column/SRS           |
==============================================================================
```

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	101	2700	5Hz	0.00	9.00	200

********** Peak Report: All Peaks **********

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.91		0.000	223	715	2	
2	1.03	fluoride	432.831	10926	63440	2	-2.83
3	1.51	chloride	42.883	679	4222	1	-0.66
4	1.82	nitrite	911.120	9544	59144	1	0.00
5	2.86	bromide	3679.808	99739	1217107	1	5.93
6	3.92		0.000	27	258	1	
7	4.43	phosphate	25.603	21	204	1	-1.12
8	5.83	sulfate	118.886	594	8084	1	-1.35
9	7.68	oxalate	30.360	39	611	1	-1.29
		Totals	5241.492	121792	1353784		

File: 95091981.D10 Sample: S95T002188 DUP



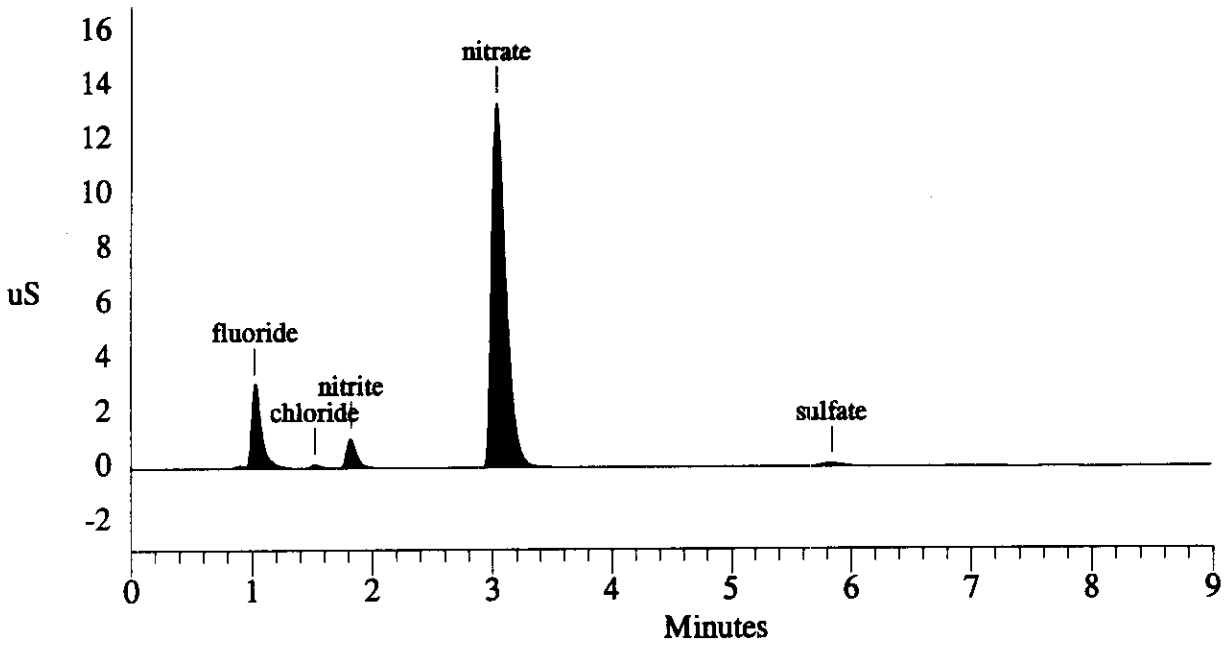
```
==============================================================================
| Sample Name: S95T002189                      Date: 09/19/1995 11:20:25      |
| Data File  : C:\DX\DATA\95091981.D16                                        |
| Method     : C:\DX\METHOD\KIT.MET                                           |
| ACI Address: 1  System: 1  Inject#: 16                  Detector:CDM-1      |
| Analyst    :                 Column: AG4A/AS4A anion column/SRS             |
==============================================================================
```

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1111	2700	5Hz	0.00	9.00	200

********** Peak Report: All Peaks **********

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	1.02	fluoride	1558.142	3061	18370	1	-3.77
2	1.52	chloride	43.870	140	716	1	0.00
3	1.82	nitrite	1165.308	1086	6386	1	0.00
4	3.04	nitrate	20945.850	13367	109741	1	-1.30
5	5.84	sulfate	287.676	115	1503	1	-1.18
		Totals	24000.847	17769	136715		

File: 95091981.D16 Sample: S95T002189



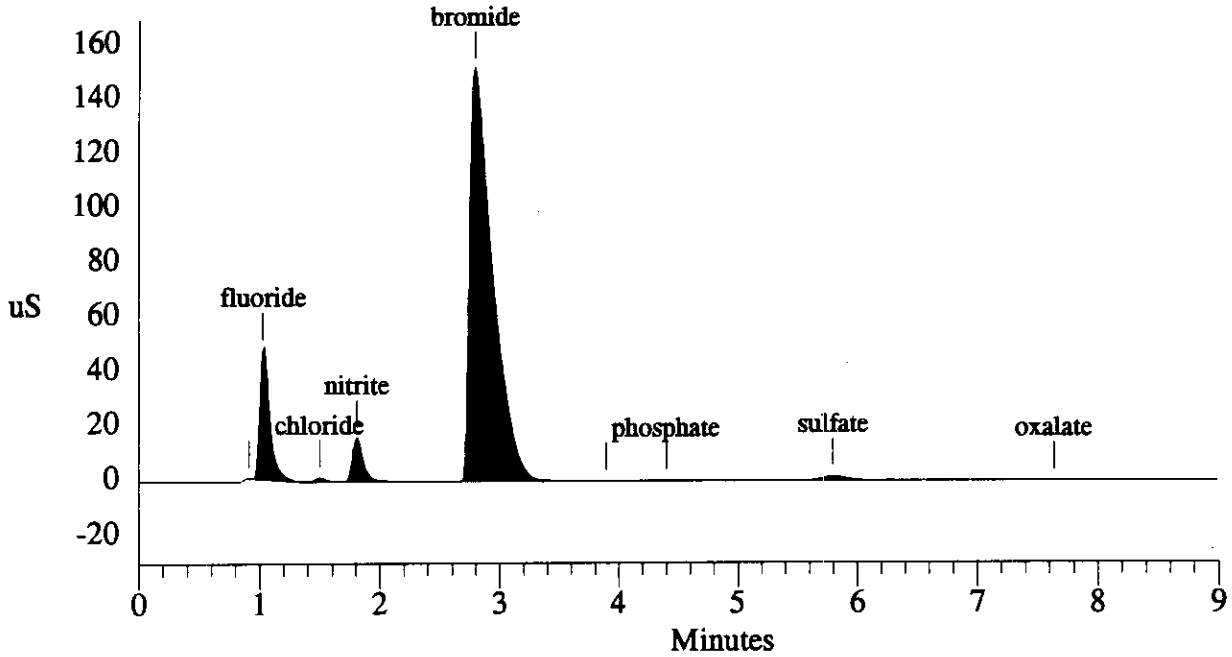
Sample Name: S95T002189 Date: 09/19/1995 10:45:07
Data File : C:\DX\DATA\95091981.D13
Method : C:\DX\METHOD\KIT.MET
^CI Address: 1 System: 1 Inject#: 13 Detector:CDM-1
ıalyst : Column: AG4A/AS4A anion column/SRS

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	101	2700	5Hz	0.00	9.00	200

********** Peak Report: All Peaks **********

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.91		0.000	146	273	1	
2	1.03	fluoride	762.660	47180	269916	1	-2.83
3	1.50	chloride	93.535	1497	8870	1	-1.32
4	1.81	nitrite	1504.973	16067	99816	1	-0.55
5	2.80	bromide	-20317.595	151471	2008904	1	3.70
6	3.90		0.000	80	780	1	
7	4.40	phosphate	130.140	250	2861	1	-1.79
8	5.80	sulfate	309.584	1582	21738	1	-1.86
9	7.64	oxalate	68.388	142	2494	1	-1.80
		Totals	-17448.315	218415	2415653		

File: 95091981.D13 Sample: S95T002189



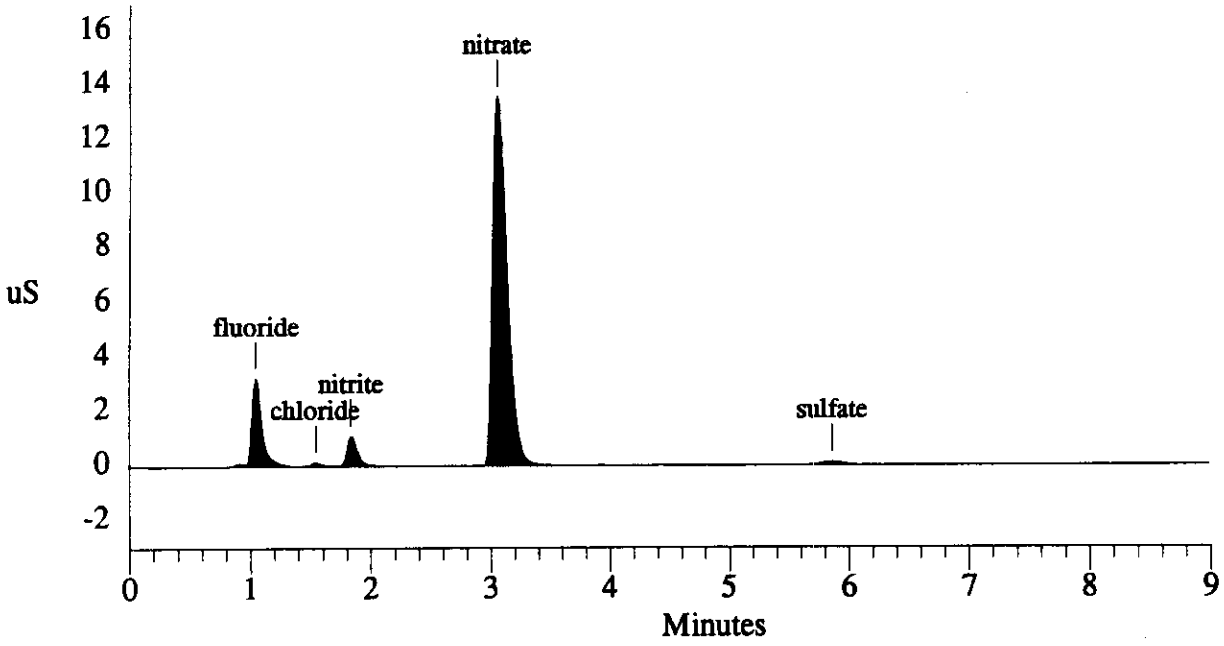
Sample Name: S95T002189 DUP Date: 09/19/1995 11:10:23
Data File : C:\DX\DATA\95091981.D15
Method : C:\DX\METHOD\KIT.MET
ACI Address: 1 System: 1 Inject#: 15 Detector:CDM-1
Analyst : Column: AG4A/AS4A anion column/SRS

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1111	2700	5Hz	0.00	9.00	200

********** Peak Report: All Peaks **********

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	1.04	fluoride	1619.274	3220	19130	1	-1.89
2	1.54	chloride	48.003	145	750	1	1.32
3	1.83	nitrite	1193.924	1086	6552	1	0.55
4	3.06	nitrate	21694.541	13543	113933	1	-0.65
5	5.86	sulfate	286.340	118	1494	1	-0.85
		Totals	24842.082	18112	141859		

File: 95091981.D15 Sample: S95T002189 DUP



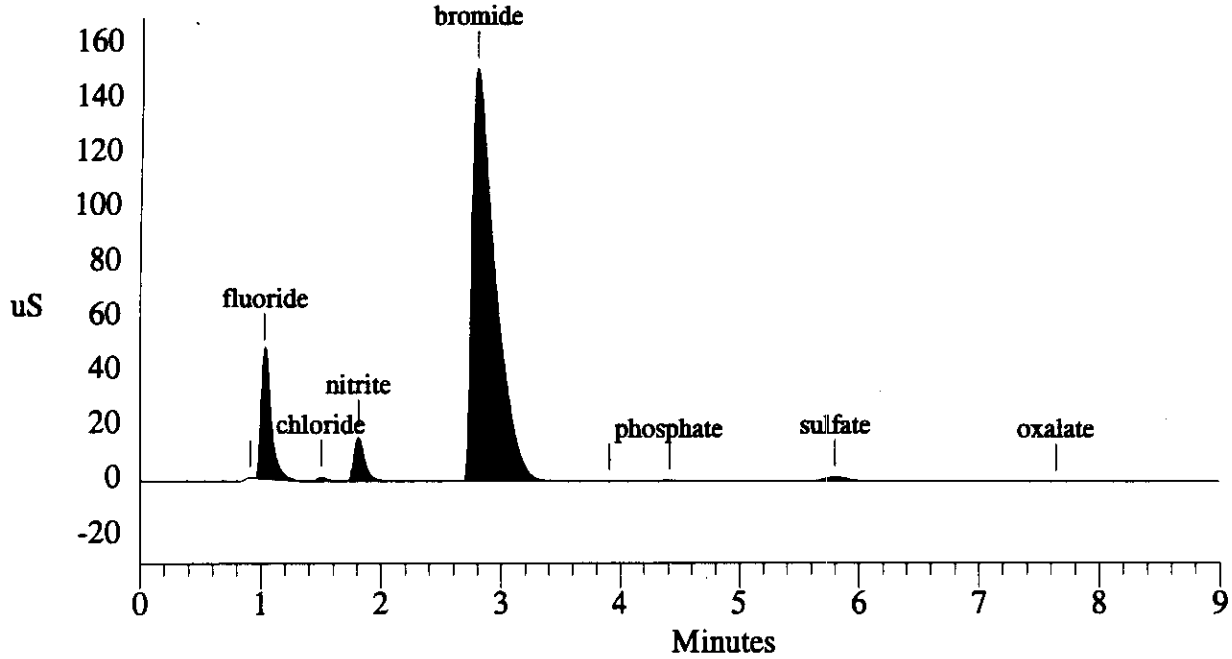
Sample Name: S95T002189 DUP Date: 09/19/1995 10:57:10
Data File : C:\DX\DATA\95091981.D14
Method : C:\DX\METHOD\KIT.MET
CI Address: 1 System: 1 Inject#: 14 Detector:CDM-1
Analyst : Column: AG4A/AS4A anion column/SRS

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	101	2700	5Hz	0.00	9.00	200

********** Peak Report: All Peaks **********

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.91		0.000	147	278	1	
2	1.03	fluoride	760.128	46956	270965	1	-2.83
3	1.50	chloride	93.612	1495	8877	1	-1.32
4	1.81	nitrite	1506.396	16118	99915	1	-0.55
5	2.80	bromide	-20429.906	151471	2011487	1	3.70
6	3.91		0.000	78	756	1	
7	4.41	phosphate	125.561	249	2744	1	-1.56
8	5.80	sulfate	310.397	1585	21796	1	-1.86
9	7.64	oxalate	66.904	137	2421	1	-1.80
		Totals	-17566.909	218237	2419240		

File: 95091981.D14 Sample: S95T002189 DUP



LABCORE Data Entry Template for Worklist# 2294

Analyst: B. GOECKE Instrument: ~~ICP01~~ ICP02 BG 9-15-95 Book# YEB5FA

Method: LA-505-~~151~~ 161 BG 9-15-95 Rev/Mod B-0

Worklist Comment: ICP AW-10~~8~~5 DIRECT SP 09/25/95

S	Type	Sample#	R	A	Test	Matrix	Group#	Project
1	ICV				@ICP-QC	QC		
2	ICB				@ICP-QC	QC		
3	ICSA				@ICP-QC	QC		
4	ICSAB				@ICP-QC	QC		
5	SERDIL	S95T002187	0	D	@ICP-D01	LIQUID		
6	SAMPLE	S95T002187	0	D	@ICP-D01	LIQUID	95000130	AW-105 GRAB
	Analytes Requested: AL-D-01 , FE-D-01 , NA-D-01							
7	DUP	S95T002187	0	D	@ICP-D01	LIQUID		
8	SPK	S95T002187	0	D	@ICP-D01	LIQUID		
9	SERDIL	S95T002188	0	D	@ICP-D01	LIQUID		
10	SAMPLE	S95T002188	0	D	@ICP-D01	LIQUID	95000130	AW-105 GRAB
	Analytes Requested: AL-D-01 , FE-D-01 , NA-D-01							
11	DUP	S95T002188	0	D	@ICP-D01	LIQUID		
12	SPK	S95T002188	0	D	@ICP-D01	LIQUID		
13	CCV				@ICP-QC	QC		
14	CCB				@ICP-QC	QC		
15	SERDIL	S95T002189	0	D	@ICP-D01	LIQUID		
16	SAMPLE	S95T002189	0	D	@ICP-D01	LIQUID	95000130	AW-105 GRAB
	Analytes Requested: AL-D-01 , FE-D-01 , NA-D-01							
17	DUP	S95T002189	0	D	@ICP-D01	LIQUID		

Data Entry Comments:
The dilution factor (shown on the next page) for the serial dilution for sample S95T002189_L was supposed to be 205, but was ~~entered~~ entered incorrectly as 105. Therefore, all serial dilution results for that sample must be multiplied by 2. RAE 10/11/95

S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

RAE 10/11/95

LABCORE Data Entry Template for Worklist# 2294

	.ype	Sample#	R	A	Test	Matrix	Group#	Project
18	SPK	S95T002189	0	D	@ICP-D01	LIQUID		
19	ICSA				@ICP-QC	QC		
20	ICSAB				@ICP-QC	QC		
21	CCV				@ICP-QC	QC		
22	CCB				@ICP-QC	QC		

Final page for worklist # 2294

Reviewed by:

Analyst Signature 9-19-95 Date

Analyst Signature 09/21/95 Date

		D.F.
S95T002187_C	.5mL - 10mL - 2mL - 8mL	105
S95T002187	.5mL - 10mL	21
S95T002187_D	.5mL - 10mL	21
S95T002187_A	.5mL - 2mL - 8mL	21
S95T002188_C	.5mL - 10mL - 2mL - 8mL	105
S95T002188	.5mL - 10mL	21
S95T002188_D	.5mL - 10mL	21
S95T002188_A	.5mL - 2mL - 8mL	21
S95T002189_C	.250mL - 10mL - 2mL - 8mL	205
S95T002189	.250 mL 10mL	41
S95T002189_D	.250 mL 10mL	41
S95T002189_A	.250 mL 2mL 8mL	41

Data Entry Comments:

S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

BEST AVAILABLE COPY

Analysis Report Summary Wed 09-20-95 12:49:29 PM page 1

#	Sample Name	File	Method	Date	Time	OpID	Type	Mode
1	ICV	950920A	ICP2	09/20/95	10:00	BJG	Q	CONC
2	ICB	950920A	ICP2	09/20/95	10:04	BJG	Q	CONC
3	ICSA	950920A	ICP2	09/20/95	10:08	BJG	Q	CONC
4	ICSAB	950920A	ICP2	09/20/95	10:13	BJG	Q	CONC
5	S95T002187_L	950920A	ICP2	09/20/95	10:22	BJG	S	CONC
6	S95T002187	950920A	ICP2	09/20/95	10:25	BJG	S	CONC
7	S95T002187_D	950920A	ICP2	09/20/95	10:29	BJG	S	CONC
8	S95T002187_A	950920A	ICP2	09/20/95	10:32	BJG	S	CONC
9	S95T002188_L	950920A	ICP2	09/20/95	10:36	BJG	S	CONC
10	S95T002188	950920A	ICP2	09/20/95	10:39	BJG	S	CONC
11	S95T002188_D	950920A	ICP2	09/20/95	10:43	BJG	S	CONC
12	S95T002188_A	950920A	ICP2	09/20/95	10:46	BJG	S	CONC
13	CCV	950920A	ICP2	09/20/95	10:52	BJG	Q	CONC
14	CCB	950920A	ICP2	09/20/95	10:56	BJG	Q	CONC
15	S95T002189_L	950920A	ICP2	09/20/95	11:07	BJG	S	CONC
16	S95T002189	950920A	ICP2	09/20/95	11:13	BJG	S	CONC
17	S95T002189_D	950920A	ICP2	09/20/95	11:16	BJG	S	CONC
18	S95T002189_A	950920A	ICP2	09/20/95	11:19	BJG	S	CONC
19	ICSA	950920A	ICP2	09/20/95	11:23	BJG	Q	CONC
20	ICSAB	950920A	ICP2	09/20/95	11:26	BJG	Q	CONC
21	CCV_1	950920A	ICP2	09/20/95	11:30	BJG	Q	CONC
22	CCB_1	950920A	ICP2	09/20/95	11:33	BJG	Q	CONC

BJ Gaede 9-20-95
AW-105
S95T002187-89
.5-10-c
.25-10-c

SIGNATURE ABOVE REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 89 TO 93.

Analysis Report Averages Wed 09-20-95 12:49:29 PM page 2

#	Sample Name	Ag	Al	As	B	Ba	Be
	ICV	4.994	4.986	5.178	5.019	5.046	5.216
2	ICB	-.0001	-.0026	.0028	-.0018	.0000	-.0000
3	ICSA	.0011	252.4	-.0245	.0002	.0034	-.0002
4	ICSAB	.9733	247.8	-.0525	-.0025	.4737	.4867
5	S95T002187_L	.0377	35.81	1.256	.1972	.3206	-.0235
6	S95T002187_	.0475	36.54	.3855	.4748	.3403	-.0025
7	S95T002187_D	.0165	35.68	.2044	.3788	.3471	-.0040
8	S95T002187_A	19.46	55.81	21.13	20.08	19.89	20.60
9	S95T002188_L	-.0003	41.00	.9457	.4370	.3336	-.0346
10	S95T002188_	-.0007	42.72	.4434	.3970	.3448	-.0029
11	S95T002188_D	.0160	42.42	.1446	.4931	.3464	-.0037
12	S95T002188_A	19.40	62.18	21.56	20.08	19.77	20.58
13	CCV	4.979	4.924	5.186	4.967	4.955	5.214
14	CCB	.0014	.0009	.0117	.0046	-.0000	.0000
15	S95T002189_L	.0860	73.42	.6858	.7244	.0231	-.0190
16	S95T002189_	.0746	144.7	.7361	.6410	.0979	.0245
17	S95T002189_D	.0368	144.4	1.189	.6221	.0992	.0171
18	S95T002189_A	38.30	183.0	43.14	39.31	38.43	40.82
19	ICSA	.0001	247.4	-.0448	-.0018	.0032	-.0002
20	ICSAB	.9793	248.7	-.0294	-.0020	.4748	.4941
21	CCV_1	5.017	4.967	5.253	5.024	5.037	5.295
22	CCB_1	.0018	-.0042	.0158	.0028	.0000	-.0002

#	Sample Name	Bi	Ca	Cd	Ce	Co	Cr
1	ICV	5.013	5.037	5.097	5.123	5.028	5.151
2	ICB	-.0136	.0032	-.0008	-.0104	-.0012	.0009
3	ICSA	-.0045	250.8	-.0001	.0079	.0005	-.0058
4	ICSAB	-.0242	250.5	.9627	.0130	.4696	.4778
5	S95T002187_L	-.8416	-6.566	-.0260	-.6390	-.2921	1.116
6	S95T002187_	.2286	1.199	.0252	-.0293	.0003	1.046
7	S95T002187_D	.4370	1.030	-.0037	-.1607	-.0095	1.043
	S95T002187_A	19.80	24.15	20.31	20.13	19.96	21.54
	S95T002188_L	-.5666	-6.425	-.0020	-.5730	-.1933	1.310
10	S95T002188_	.0629	-.0479	-.0083	-.2532	-.0681	1.189
11	S95T002188_D	-.1722	-.0624	-.0040	-.0835	-.0436	1.219
12	S95T002188_A	19.12	20.73	20.28	19.93	19.84	21.70
13	CCV	4.989	5.223	5.168	5.044	5.090	5.203
14	CCB	.0161	.0061	.0002	-.0067	-.0007	.0015
15	S95T002189_L	.4462	-9.485	.0766	-.5472	-.2661	2.716
16	S95T002189_	.5329	-3.380	.0955	-.4774	-.0657	5.131
17	S95T002189_D	.4628	-2.515	.0929	.0361	-.0659	5.049
18	S95T002189_A	39.74	39.30	40.74	39.55	39.93	46.10
19	ICSA	-.0051	255.3	-.0001	.0026	.0005	-.0053
20	ICSAB	-.0084	258.1	.9818	.0036	.4778	.4858
21	CCV_1	5.011	5.303	5.213	5.117	5.140	5.258
22	CCB_1	-.0032	.0106	.0002	-.0016	-.0004	.0015

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#	Sample Name	Cu	Eu	Fe	K	La	Li
1	ICV	5.077	.0046	5.112	4.895	5.074	5.012
2	ICB	.0008	.0007	.0005	.0673	-.0008	.0006
3	ICSA	-.0082	-.0197	94.80	.3179	-.0046	.0031
4	ICSAB	.4723	-.0220	93.52	.3258	-.0032	.9893
5	S95T002187_L	.0935	.0820	-.2956	694.3	-.0964	.0889
6	S95T002187_	.0877	.0166	.0287	696.6	.0155	.0200
7	S95T002187_D	.0604	.0114	.0090	680.6	-.0251	.0311
8	S95T002187_A	19.99	.0306	20.41	707.0	19.97	19.75
9	S95T002188_L	.0966	.1434	-.1790	803.2	-.0401	.1666
10	S95T002188_	.0607	.0184	.0483	805.7	-.0345	.0356
11	S95T002188_D	.0696	.0146	.0358	800.6	-.0018	.0333
12	S95T002188_A	19.96	.0241	20.33	823.4	19.89	19.76
13	CCV	4.979	.0059	5.153	4.939	4.992	4.830
14	CCB	.0006	.0022	.0000	.0377	.0003	.0024
15	S95T002189_L	-.0110	.1881	-.1523	1700.	-.0394	.2111
16	S95T002189_	.1196	.0658	.0559	3238.	-.0489	.0737
17	S95T002189_D	.1290	.0579	.1329	3212.	.0242	.0868
18	S95T002189_A	39.31	.0864	40.59	3236.	39.26	38.68
19	ICSA	-.0088	-.0357	94.44	.0837	-.0045	.0044
20	ICSAB	.4720	-.0347	95.10	.2272	-.0044	.9861
21	CCV_1	5.047	.0061	5.190	4.932	5.072	4.931
22	CCB_1	.0001	.0024	.0009	.0561	.0003	.0028

#	Sample Name	Mg	Mn	Mo	Na	Nd	Ni
1	ICV	4.986	4.993	5.101	5.007	5.243	5.051
2	ICB	.0039	.0003	-.0008	.0087	.0016	-.0068
3	ICSA	252.9	-.0075	-.0153	196.4	.0180	-.0110
4	ICSAB	248.9	.4543	-.0195	192.6	.0190	.9149
5	S95T002187_L	-.4637	-.0108	.0143	10200.	-.1563	.4135
6	S95T002187_	-.0118	-.0013	.1503	9938.	.0364	.0432
7	S95T002187_D	.2263	.0036	.1810	9781.	.0399	-.0390
8	S95T002187_A	19.71	19.42	20.72	9856.	20.53	20.05
9	S95T002188_L	.0837	.0062	-.0221	10480.	.2293	.1698
10	S95T002188_	-.0420	-.0010	.1909	10490.	-.0389	-.1567
11	S95T002188_D	-.0455	-.0016	.1875	10400.	.0221	-.1096
12	S95T002188_A	19.18	19.37	20.64	10520.	20.47	19.93
13	CCV	4.949	5.029	5.138	4.850	5.135	5.102
14	CCB	.0022	.0011	-.0017	.0212	.0014	-.0058
15	S95T002189_L	-.3931	.0240	.2455	9100.	-.0954	.0094
16	S95T002189_	-.2898	.0085	.5959	17280.	.0032	-.1863
17	S95T002189_D	-.0696	.0013	.5557	17260.	.0651	.0798
18	S95T002189_A	38.54	38.66	41.53	17210.	40.50	40.10
19	ICSA	249.5	-.0067	-.0153	189.5	.0183	-.0304
20	ICSAB	250.8	.4621	-.0168	191.9	.0160	.9336
21	CCV_1	4.978	5.086	5.196	4.939	5.207	5.156
22	CCB_1	.0099	.0009	-.0019	.0227	.0026	-.0008

#	Sample Name	P	Pb	S	Sb	Se	Si
	ICV	5.315	5.082	5.071	4.783	5.065	4.935
2	ICB	-.0039	-.0021	-.0133	-.0122	.0478	.0100
3	ICSA	.0080	.0260	.0336	.0007	-.0331	.0155
4	ICSAB	-.0073	1.003	.0246	-.0205	-.0170	.0222
5	S95T002187_L	36.55	1.034	35.56	-.9346	5.880	21.47
6	S95T002187_	36.69	.1348	40.11	-.0424	1.502	22.24
7	S95T002187_D	36.76	.0065	38.79	-.0885	1.505	22.04
8	S95T002187_A	59.27	20.48	59.74	19.31	22.90	43.49
9	S95T002188_L	38.33	.2791	34.90	-.2803	6.162	21.35
10	S95T002188_	38.85	-.1994	38.58	-.2146	1.576	21.10
11	S95T002188_D	39.29	.0293	38.19	-.2030	1.898	21.00
12	S95T002188_A	60.67	20.21	58.85	19.09	22.46	42.24
13	CCV	5.392	5.167	5.053	4.819	5.128	4.979
14	CCB	.0022	.0101	-.0124	-.0054	.0740	.0303
15	S95T002189_L	64.90	-.1863	54.73	.1293	8.645	12.98
16	S95T002189_	125.0	.2332	109.9	-.3982	3.849	30.74
17	S95T002189_D	124.3	.0669	109.4	-.3963	3.530	31.71
18	S95T002189_A	169.0	40.72	150.1	38.21	44.92	74.40
19	ICSA	.0011	.0370	.0374	.0001	-.0288	.0460
20	ICSAB	.0107	1.024	.0224	-.0080	-.0043	.0350
21	CCV_1	5.475	5.179	5.095	4.870	5.202	5.004
22	CCB_1	.0084	.0020	-.0237	-.0078	.0773	.0272

#	Sample Name	Sm	Sr	Th	Ti	Tl	U
1	ICV	5.096	5.020	-.0057	4.943	4.984	10.05
2	ICB	.0091	-.0002	-.0037	.0006	-.0053	.0445
3	ICSA	.0109	-.0046	.0252	.0015	.0485	-.7187
4	ICSAB	.0177	-.0045	.0301	.0025	-.0555	-.6941
5	S95T002187_L	1.409	-.0197	-.2730	.0021	1.405	24.20
6	S95T002187_	.3281	.0160	.0324	.0225	-.3481	19.80
7	S95T002187_D	.2911	.0168	-.1576	.0136	-.4036	20.24
[illegible]	S95T002187_A	20.20	19.69	-.0299	19.65	19.62	61.60
	S95T002188_L	2.448	-.0194	-.6080	.0477	-1.012	21.42
[illegible]	S95T002188_	.2978	-.0048	-.0949	-.0040	-.1340	13.83
11	S95T002188_D	.3397	-.0048	-.0534	.0049	-.5708	13.97
12	S95T002188_A	20.12	19.64	-.0601	19.59	19.23	53.15
13	CCV	4.999	4.930	-.0064	4.899	5.063	9.895
14	CCB	.0278	-.0002	-.0039	.0000	-.0043	.1148
15	S95T002189_L	2.801	-.0099	-.5816	-.0400	-3.387	15.05
16	S95T002189_	1.111	-.0045	-.1843	-.0070	-1.548	13.43
17	S95T002189_D	1.007	-.0010	-.1446	.0187	-1.998	12.68
18	S95T002189_A	40.15	38.72	-.0472	38.65	38.78	89.64
19	ICSA	.0278	-.0040	.0256	.0017	.0261	-.7116
20	ICSAB	.0219	-.0041	.0183	.0015	.0223	-.7465
21	CCV_1	5.090	5.007	-.0002	4.966	5.065	10.04
22	CCB_1	.0309	.0004	-.0037	.0003	-.0111	.1118

#	Sample Name	V	Y	Zn	Zr
1	ICV	5.011	.0132	5.023	5.029
2	ICB	.0024	.0006	.0009	.0020
3	ICSA	.0018	.0194	-.0006	-.0029
4	ICSAB	.4728	.0196	.9745	-.0022
5	S95T002187_L	.3548	.0576	-.4407	.2431
6	S95T002187	.0920	.0198	.8904	.0639
7	S95T002187_D	.0882	.0165	.7860	.0911
8	S95T002187_A	20.03	.0692	21.13	19.98
9	S95T002188_L	.4468	.0988	.2348	.2709
10	S95T002188	.1203	.0165	1.108	.0615
11	S95T002188_D	.0957	.0165	1.041	.0579
12	S95T002188_A	19.98	.0692	21.31	19.92
13	CCV	5.019	.0144	5.087	4.995
14	CCB	.0059	.0015	.0004	.0034
15	S95T002189_L	.5789	.1235	-.7214	.4278
16	S95T002189	.2050	.0579	1.877	.1320
17	S95T002189_D	.1792	.0482	2.056	.1295
18	S95T002189_A	39.79	.1543	42.68	39.41
19	ICSA	.0062	.0202	-.0011	-.0003
20	ICSAB	.4818	.0202	.9895	-.0008
21	CCV_1	5.081	.0142	5.126	5.059
22	CCB_1	.0064	.0016	.0001	.0034

LABCORE Data Entry Template for Worklist# 2670

Analyst: RAW Instrument: TOC01 WC39937 Book # 16N12-B
SPK-11N12-G

Method: LA-344-105 Rev/Mod C-0

Worklist Comment: TOC combustion AW-106/AW-105

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	BLNK				TOC-01	LIQUID	1	<5.00 E0 E-3 RWS 10/5/95	N/A	ug/mL
		2	STD				TOC-01	LIQUID	~~2.99~~ 3.00 E+3 RWS 10/5/95	2.92 E+3	N/A	ug/mL
95000126	AW-106 GRAB	3	SAMPLE	S95T002016	0		TOC-01	LIQUID	N/A	5.51 E+3	5.50 E+1	ug/mL
95000126	AW-106 GRAB	4	DUP	S95T002016	0		TOC-01	LIQUID	5.51 E+3	~~4.53~~ E+3	5.08 E+3 RWS 10/5/95	ug/mL
95000130	AW-105 GRAB	5	SAMPLE	S95T002187	0		TOC-01	LIQUID	N/A	2.64 E+2	5.50	ug/mL
95000130	AW-105 GRAB	6	DUP	S95T002187	0		TOC-01	LIQUID	2.64 E+2	2.43 E+2	N/A	ug/mL
95000130	AW-105 GRAB	7	SAMPLE	S95T002188	0		TOC-01	LIQUID	N/A	2.30 E+2	5.50	ug/mL
95000130	AW-105 GRAB	8	DUP	S95T002188	0		TOC-01	LIQUID	~~2.30~~ 2.30 E+2 RWS 10/5/95	~~2.31~~ E+2	2.13 E2 RWS 10/5/95	ug/mL
[illegible]0130	AW-105 GRAB	9	SPK	S95T002188	0		TOC-01	LIQUID	100	~~90.7~~ 90.9 RWS 10/5/95	N/A	ug/mL
95000130	AW-105 GRAB	10	SAMPLE	S95T002189	0		TOC-01	LIQUID	N/A	7.15 E+2	5.50 E+1	ug/mL
95000130	AW-105 GRAB	11	DUP	S95T002189	0		TOC-01	LIQUID	7.15 E+2	6.27 E+2	N/A	ug/mL

Final page for worklist # 2670

R. WENDLAND 10-4-95
Analyst Signature Date

RWS 10/5/95 ~~R H Stuth~~ 10/05/95
Analyst Signature Date
Reviewed by RW Schroeder 10/9/95

S95T002189 results rejected RWS 10/9/95

Data Entry Comments: SAMPLES = (16) (89) .200 - 2m H_2SO_4 (.5 M)
(87) (88) 2mL - .200 H_2SO_4 (2 M)
SPIKE = .200 — .200 — .200 INJ
DILUTE SAMPLE SPIKE

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

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

WHC-SD-WM-DP-146, REV. 0

TOC : LA-344-105 (C-0) LIQUIDS

			STANDARD
Sample Volume in mL	(SS)		0.200
H2SO4 Volume in mL	(VR)		2.000
Volume Injected in mL	(VI)		0.200
Dilution Factor	(DF)		11
Digest Dilution Factor	(DDF)		1
µg of Carbon in Sample	(C1)		55.6
µg of Carbon in Blank	(C2)		2.6
g of Carbon/L		=	2.92E+00

Type
STANDARD
Work List
2670
Test Code
TOC-01
Matrix
LIQUID
Sample #
16N12-B
Instrument Code
WC39937
Analyst
R. WENDLAND
Date
10/04/95
Time

g of Carbon/L = $\frac{(C1-C2) * DF * DDF}{VI * 1000}$

µg of Carbon/mL = g of Carbon/L * 1000000 µg/g / 1000 mL/L

Detection Level (µg/mL) = $\frac{1 \mu g\ C * DF * DDF}{VI}$

µg Carbon/mL =	2.92E+03	DETECTION LEVEL in µg/mL
		5.50E+01

Data Entry by:	RT Steele	Date:	10/04/95
Approved by:	RW Schroeder	Date:	10/5/95

Form 344105_C Rev. 1.1

94.1

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

WHC-SD-WM-DP-146, REV. 0

TOC : LA-344-105 (C-0) LIQUIDS

				BLANK
Type	Sample Volume in mL		(SS)	0.200
BLANK	H2SO4 Volume in mL		(VR)	0.200
Work List	Volume Injected in mL		(VI)	0.200
2670	Dilution Factor		(DF)	1
Test Code	Digest Dilution Factor		(DDF)	1
TOC-01	µg of Carbon in Sample		(C1)	2.6
Matrix	µg of Carbon in Blank		(C2)	2.3
LIQUID	g of Carbon/L	=	<	5.00E-03
Sample #				
BLNK				
Instrument Code				
WC39937				
Analyst				
R. WENDLAND				
Date				
10/04/95				
Time				

g of Carbon/L = $\frac{(C1-C2) * DF * DDF}{VI * 1000}$

µg of Carbon/mL = g of Carbon/L * 1000000 µg/g / 1000 mL/L

Detection Level (µg/mL) = $\frac{1 \text{ µg C} * DF * DDF}{VI}$

NOTE: Reported Result is Below Detection Level.

µg Carbon/mL =	<	5.00E+00	DETECTION LEVEL in µg/mL
			5.00E+00

Data Entry by:	[illegible]	Date:	10/04/95
Approved by:	[illegible]	Date:	10/5/95

Form 344105_C Rev. 1.1

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

WHC-SD-WM-DP-146, REV. 0

TOC : LA-344-105 (C-0) LIQUIDS

			Sample
Type	Sample Volume in mL	(SS)	2.000
Sample	H2SO4 Volume in mL	(VR)	0.200
Work List	Volume Injected in mL	(VI)	0.200
2670	Dilution Factor	(DF)	1.1
Test Code	Digest Dilution Factor	(DDF)	1
TOC-01	µg of Carbon in Sample	(C1)	50.6
Matrix	µg of Carbon in Blank	(C2)	2.6
Liquid	g of Carbon/L	=	2.64E-01

Sample #	
S95T002187	
Instrument Code	
WC39937	
Analyst	
R. Wendland	
Date	
10/04/95	
Time	

g of Carbon/L = $\frac{(C1-C2) * DF * DDF}{VI * 1000}$

µg of Carbon/mL = g of Carbon/L * 1000000 µg/g / 1000 mL/L

Detection Level (µg/mL) = $\frac{1 \text{ µg C} * DF * DDF}{VI}$

µg Carbon/mL =	2.64E+02	DETECTION LEVEL in µg/mL
		5.50E+00

Data Entry by:	Ru Schroeder	Date:	10/05/95
Approved by:	Ru Schroeder	Date:	10/5/95

Form 344105_C Rev. 1.1

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

WHC-SD-WM-DP-146, REV. 0

TOC : LA-344-105 (C-0) LIQUIDS

			Duplicate
Type	Sample Volume in mL	(SS)	2.000
Duplicate	H2SO4 Volume in mL	(VR)	0.200
Work List	Volume Injected in mL	(VI)	0.200
2670	Dilution Factor	(DF)	1.1
Test Code	Digest Dilution Factor	(DDF)	1
TOC-01	µg of Carbon in Sample	(C1)	46.7
Matrix	µg of Carbon in Blank	(C2)	2.6
Liquid	g of Carbon/L	=	2.43E-01

Sample #
S95T002187
Instrument Code
WC39937
Analyst
R. Wendland
Date
10/04/95
Time

g of Carbon/L = $\frac{(C1-C2) * DF * DDF}{VI * 1000}$

µg of Carbon/mL = g of Carbon/L * 1000000 µg/g / 1000 mL/L

Detection Level (µg/mL) = $\frac{1 \text{ µg C} * DF * DDF}{VI}$

µg Carbon/mL =	2.43E+02	DETECTION LEVEL in µg/mL
		5.50E+00

Data Entry by:	Ken Schroeder	Date:	10/05/95
Approved by:	Ken Schroeder	Date:	10/5/95

Form 344105_C Rev. 1.1

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

WHC-SD-WM-DP-146, REV. 0

TOC : LA-344-105 (C-0) LIQUIDS

			Sample
Type	Sample Volume in mL	(SS)	2.000
Sample	H2SO4 Volume in mL	(VR)	0.200
Work List	Volume Injected in mL	(VI)	0.200
2670	Dilution Factor	(DF)	1.1
Test Code	Digest Dilution Factor	(DDF)	1
TOC-01	µg of Carbon in Sample	(C1)	44.4
Matrix	µg of Carbon in Blank	(C2)	2.6
Liquid	g of Carbon/L	=	2.30E-01

Sample #	
S95T002188	
Instrument Code	
WC39937	
Analyst	
R. Wendland	
Date	
10/04/95	
Time	

g of Carbon/L = $\frac{(C1-C2) * DF * DDF}{VI * 1000}$

µg of Carbon/mL = g of Carbon/L * 1000000 µg/g / 1000 mL/L

Detection Level (µg/mL) = $\frac{1 \text{ µg C} * DF * DDF}{VI}$

µg Carbon/mL =	2.30E+02	DETECTION LEVEL in µg/mL
		5.50E+00

Data Entry by:	Ron Schroeder	Date:	10/05/95
Approved by:	Ron Schroeder	Date:	10/5/95

Form 344105_C Rev. 1.1

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

WHC-SD-WM-DP-146, REV. 0

TOC : LA-344-105 (C-0) LIQUIDS

			Duplicate
Type	Sample Volume in mL	(SS)	2.000
Duplicate	H2SO4 Volume in mL	(VR)	0.200
Work List	Volume Injected in mL	(VI)	0.200
2670	Dilution Factor	(DF)	1.1
Test Code	Digest Dilution Factor	(DDF)	1
TOC-01	µg of Carbon in Sample	(C1)	41.4
Matrix	µg of Carbon in Blank	(C2)	2.6
Liquid	g of Carbon/L	=	2.13E-01

Sample #
S95T002188
Instrument Code
WC39937
Analyst
R. Wendland
Date
10/04/95
Time

g of Carbon/L = $\frac{(C1-C2) * DF * DDF}{VI * 1000}$

µg of Carbon/mL = g of Carbon/L * 1000000 µg/g / 1000 mL/L

Detection Level (µg/mL) = $\frac{1 \mu g C * DF * DDF}{VI}$

µg Carbon/mL =	2.13E+02	DETECTION LEVEL in µg/mL
		5.50E+00

Data Entry by:	Rick Schroeder	Date:	10/05/95
Approved by:	Rick Schroeder	Date:	10/5/95

Form 344105_C Rev. 1.1

PLACE ANALYTICAL CARD IN BOX BELOW-DO NOT WRITE IN SPACE

WHC-SD-WM-DP-146, REV. 0

TOC: LA-344-105 SPIKED SAMPLE

SPIKE

Type	>>>>>> Sample Vial Data <<<<<<		>>>>> Spiked Vial Data <<<<<	
SPIKE	Sample Volume in mL	2.000	Sample Size in mL (SS)	0.200
Work List	H2SO4 Volume in mL	0.200	Spike Volume in mL	0.200
2670	Volume Injected in mL	0.200	H2SO4 Volume in mL	0.000
Test Code	µg of Carbon in Sample	44.4	Volume Injected in mL	0.200
TOC-01	µg of Carbon in Blank	2.6	Sample Pre-Spike Dil. Factor (PDF)	1.1
Matrix			Spike Value (µg/ml)	748
liquid			µg C in Sample + Spike	91.5
Sample #			µg C in Blank	2.6
S95T002188				
Instrument Code				
WC39937				
Analyst				
R. Wendland				
Date				
10/04/95				
Time				

PERCENT SPIKE REC = $\frac{\text{µg Carbon Recovered from Spike} * 100}{\text{µg Carbon in Spike}}$

WHERE : µg Carbon Recovered from Spike =

[(µgC in sample + spike - µgC in blank) * (Spike Correction Factor)]

- [(µgC sample - µgC blank) * (Sample Correction Factor) * (Sample Size Correction Factor) * (PDF)]

Spike Correction Factor = $\frac{\text{Total volume in spiked sample vial (mL)}}{\text{Volume injected (mL)}}$

Sample Correction Factor = $\frac{\text{Total volume in sample vial (mL)}}{\text{Volume injected (mL)}}$

Sample Size Correction Factor = $\frac{\text{Sample size in (mL) in spiked vial}}{\text{Sample size (mL) in sample}}$

Sample Pre-Spike Dilution Factor = $\frac{1}{\text{Dilution of Sample Before Added to Spike Vial}}$

WHERE : µg Carbon in Spike = Spike Value (µg/mL) * Spike Volume (mL)

Percent Spike Recovery 90.9%

Data Entry by:	Ru Schroeder	Date:	05-Oct-95
Approved by:	Ru Schroeder	Date:	10/5/95

Form X Rev. 1.1

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

WHC-SD-WM-DP-146, REV. 0

TOC : LA-344-105 (C-0) LIQUIDS

			Sample
Type	Sample Volume in mL	(SS)	0.200
Sample	H2SO4 Volume in mL	(VR)	2.000
Work List	Volume Injected in mL	(VI)	0.200
2670	Dilution Factor	(DF)	11
Test Code	Digest Dilution Factor	(DDF)	1
TOC-01	µg of Carbon in Sample	(C1)	15.6
Matrix	µg of Carbon in Blank	(C2)	2.6
Liquid	g of Carbon/L	=	7.15E-01

Sample #
S95T002189
Instrument Code
WC39937
Analyst
R. Wendland
Date
10/04/95
Time

g of Carbon/L = $\frac{(C1-C2) * DF * DDF}{VI * 1000}$

µg of Carbon/mL = g of Carbon/L * 1000000 µg/g / 1000 mL/L

Detection Level (µg/mL) = $\frac{1 \text{ µg C} * DF * DDF}{VI}$

µg Carbon/mL =	7.15E+02	DETECTION LEVEL in µg/mL
		5.50E+01

Data Entry by:	Ray Schroeder	Date:	10/05/95
Approved by:	RN Schroeder	Date:	10/5/95

Form 344105_C Rev. 1.1

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

WHC-SD-WM-DP-146, REV. 0

TOC : LA-344-105 (C-0) LIQUIDS

			Duplicate
Type	Sample Volume in mL	(SS)	0.200
Duplicate	H2SO4 Volume in mL	(VR)	2.000
Work List	Volume Injected in mL	(VI)	0.200
2670	Dilution Factor	(DF)	11
Test Code	Digest Dilution Factor	(DDF)	1
TOC-01	µg of Carbon in Sample	(C1)	14
Matrix	µg of Carbon in Blank	(C2)	2.6
Liquid	g of Carbon/L	=	6.27E-01

Sample #
S95T002189
Instrument Code
WC39937
Analyst
R. Wendland
Date
10/04/95
Time

g of Carbon/L = $\frac{(C1-C2) * DF * DDF}{VI * 1000}$

µg of Carbon/mL = g of Carbon/L * 1000000 µg/g / 1000 mL/L

Detection Level (µg/mL) = $\frac{1 \text{ µg C} * DF * DDF}{VI}$

µg Carbon/mL =	6.27E+02	DETECTION LEVEL in µg/mL
		5.50E+01

Data Entry by:	RW Schroeder	Date:	10/05/95
Approved by:	Bill Schroeder	Date:	10/5/95

Form 344105_C Rev. 1.1

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