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Tank 241-AP-107, Grab Samples, 7AP-99-1, 7AP-99-2, 7AP-99-3 and 7AP-99-4 Analytical Results for the Final Report

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WASTE MANAGEMENT LABORATORY

TANK 241-AP-107, GRAB SAMPLES 7AP-99-1, 7AP-99-2, 7AP-99-3 AND 7AP-99-4 ANALYTICAL RESULTS FOR THE FINAL REPORT

Project Coordinator: Kevin Bell

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

by

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Richland, Washington

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TABLE OF CONTENTS

Narrative 1

AP-107 Sample Breakdown (Attachment 1) 13

Chain of Custody (Attachment 2) 19

Sample Data Summary (Attachment 3) 25

Sample Handling 35

Breakdown Worklist # 29778 (886, 887, 888, 889) 37

Inorganic Analysis 39

Differential Scanning Calorimetry (DSC)
DSC Worklist # 29820 (890, 891) 41
DSC Worklist # 29821 (892, 893) 47
DSC Worklist # 29895 (890, 891, 892, 893) 53

Thermogravimetric Analysis (TGA)
TGA Worklist # 29829 (890, 891) 54
TGA Worklist # 29830 (892, 893) 60

Specific Gravity Analysis (SpG)
SpG Worklist # 29824 (890, 891, 892, 893) 66

pH Analysis
pH Worklist # 29832 (890, 891, 892, 893) 78

Hydroxide Analysis (OH)
OH Worklist # 29831 (890, 891, 892, 893) 80

Ammonia Analysis (NH3)
NH3 Worklist # 29827 (890, 891) 95
NH3 Worklist # 29971 (892) 108
NH3 Worklist # 29972 (890, 893) 122

Ion Chromatographic Analysis (IC)
IC Worklist # 29825 (894, 895, 896, 897) 138
IC Worklist # 29914 (894, 895, 896, 897) 156

Inductively Coupled Plasma Analysis (ICP)
ICP Worklist # 29799 (894, 895, 896, 897) 171

Inductive Coupled Plasma / Mass Spectrometer (ICP/MS)
ICP/MS Worklist # 29851 (890, 891, 892, 893) 178

TABLE OF CONTENTS (Continued)

Total Inorganic Carbon/Total Organic Carbon Analysis (TICTOC)
TICTOC Worklist # 29818 (896, 897) 202
TICTOC Worklist # 29836 (894, 895) 230

Radiochemical Analysis 255

Total Alpha Analysis (AT)
AT Worklist # 29803 (894, 895, 896, 897) 257

Gamma Energy Analysis (GEA)
GEA Worklist # 29805 (894, 895, 896, 897) 269

Strontium 90 Analysis (Sr90)
Sr90 Worklist # 29865 (894, 895, 896, 897) 315

Americium 241 Analysis (Am241)
Am241 Worklist # 29801 (894, 895, 896, 897) 327

Plutonium 239 Analysis (Pu239)
Pu239 Worklist # 29806 (894, 895, 896, 897) 370

Opportunistic Analyte Results (Appendix A) 413

This document consists of pages 1 to 412. Pages ii, 2, 12, 14, 20, 26, 28, 30, 32, 34, 36, and 40 were intentionally left blank.

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NARRATIVE

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WASTE MANAGEMENT LABORATORY

TANK 241-AP-107, GRAB SAMPLES 7AP-99-1, 7AP-99-2, 7AP-99-3 AND 7AP-99-4 ANALYTICAL RESULTS FOR THE FINAL REPORT

1.0 INTRODUCTION

This document is the format IV, final report for the tank 241-AP-107 (AP-107) grab samples taken in May 1999 to address waste compatibility concerns. Chemical, radiochemical, and physical analyses on the tank AP-107 samples were performed as directed in *Compatibility Grab Sampling and Analysis Plan for Fiscal Year 1999* (Sasaki 1999a). Any deviations from the instructions provided in the tank sampling and analysis plan (TSAP) were discussed in this narrative. Interim data were provided earlier (Bell 1999) to River Protection Project (RPP) personnel, however the data presented here represent the official results. No notification limits were exceeded.

2.0 SAMPLE RECEIVING AND APPEARANCE

Four liquid grab samples were taken from riser 1 of tank AP-107 in May 1999 by the RPP. No field or trip blank samples were delivered to the laboratory. Sampling and appearance information for each sample is provided in Table 1. Table 2 provides sample number information and the analytical disposition of each sample. The tank supernate samples were loaded into the 222-S Laboratory 11A hot cells where they were subsampled. Sample breakdown diagrams included as Attachment 1 show how each sample was subsampled.

Table 1. Sampling and Appearance Information for Tank AP-107 Grab Samples.

Sample Number	Date Sampled	Date Received	% Settled Solids	Sample Description
7AP-99-1	5/18/99	5/18/99	<2	Clear, light-yellow liquid.
7AP-99-2	5/18/99	5/18/99	<2	Clear, light-yellow liquid.
7AP-99-3	5/18/99	5/18/99	<2	Clear, light-yellow liquid.
7AP-99-4	5/18/99	5/18/99	<2	Clear, light-yellow liquid.

Table 2. Sample and Analysis Information on Tank AP-107 Samples.

Customer Sample Number	Lab Sample Number	Sample Type	Analysis
7AP-99-1	S99T000886	Tank Supernate Parent	Appearance Information
7AP-99-1	S99T000890	Tank Supernate Subsample	Inorganic
7AP-99-1	S99T000894	Tank Supernate Subsample	Inorganic & Radiochemical
7AP-99-2	S99T000887	Tank Supernate Parent	Appearance Information
7AP-99-2	S99T000891	Tank Supernate Subsample	Inorganic
7AP-99-2	S99T000895	Tank Supernate Subsample	Inorganic & Radiochemical
7AP-99-3	S99T000888	Tank Supernate Parent	Appearance Information
7AP-99-3	S99T000892	Tank Supernate Subsample	Inorganic
7AP-99-3	S99T000896	Tank Supernate Subsample	Inorganic & Radiochemical
7AP-99-4	S99T000889	Tank Supernate Parent	Appearance Information
7AP-99-4	S99T000893	Tank Supernate Subsample	Inorganic
7AP-99-4	S99T000897	Tank Supernate Subsample	Inorganic & Radiochemical

3.0 SAMPLE HANDLING

Copies of the chain-of-custody forms accompanying the samples are provided as Attachment 2. All four samples contained less than two percent settled solids and were clear, thus they were neither centrifuged nor filtered before they were subsampled. Before being subsampled, they were allowed to stand for at least 24 hours after being loaded into the 11A hot cells. Subsampling was performed using a pipette rather than by decantation so as not to disturb any settled solids.

4.0 ANALYSIS REQUIREMENTS

Analyses required by the TSAP (Sasaki 1999a) are presented in Table 3. Results of all requested analytes are reported in the data summary tables as Attachment 3. Some of the analytical methods reported results that were not specifically requested. Those analyte results were opportunistic and are reported in Appendix A. Quality control (QC) parameters for opportunistic results were not evaluated. The second column in the data tables is labeled "A#". This indicates the type of sample preparation performed before analysis. A "D" in column 2 indicates that an acid dilution was performed. No letter designation in the column indicates that the sample was analyzed directly or following dilution with water.

The QC criteria associated with an analyses varied depending on the analysis. The laboratory quality assurance plan (Markel 1999) and Table 2 of the TSAP (Sasaki 1999b) were used in determining whether the QC results were acceptable. All samples were run in duplicate or triplicate.

Table 3. Tank AP-107 Required Analytes and Analytical Procedures Used.

Method	Required Analyte	Analytical Procedure
Visual	Organic Layer	LA-519-151, Rev. G-0
Differential Scanning Calorimetry	Reaction Exotherm	LA-514-114, Rev. D-2
Thermogravimetric Analysis	Percent Water	LA-514-114, Rev. D-2
Gravimetry	Specific Gravity	LA-510-112, Rev. E-0
Combustion/Coulometry	Total Organic Carbon	LA-342-100, Rev. F-2
Coulometry	Total Inorganic Carbon	LA-342-100, Rev. F-2
Hydrogen Ion Electrode	pH	LA-212-106, Rev. C-2
Titration	Hydroxide	LA-211-102, Rev. D-1
Ammonia Electrode	Ammonia	LA-631-001, Rev. D-0
Ion Chromatography[1]	Cl^-, F^-, NO_2^-, NO_3^-, SO_4^{2-}, PO_4^{3-}	LA-533-105, Rev. F-0
Inductively Coupled Plasma (ICP)[1]	Al, Na, Fe, Mn, Ni, Cr, Zr	LA-505-161, Rev. C-3
ICP/Mass Spectroscopy	Uranium Isotopics	LA-506-101, Rev. A-1
Alpha Counting	Total Alpha Activity	LA-508-101, Rev. G-0
Separation/Beta Counting	^{90}Sr	LA-220-101, Rev. E-5
Gamma Energy Analysis[1]	^{137}Cs	LA-548-121, Rev. F-0
Separation/Alpha Energy Analysis[1]	$^{239/240}Pu$, ^{241}Am	LA-953-104, Rev. B-1

[1] Method provides opportunistic data.

5.0 ANALYTICAL RESULTS DISCUSSION BY TEST

Each analysis was discussed in the inorganic or radiochemical section of this narrative. No analysis exceeded its notification limit.

Analysis for acetone was not performed. The TSAP indicated that this analysis was not required on all samples. It was not clear if analysis for acetone was required on any of the AP-107 samples. Analyses will be performed at the customer's request.

5.1 INORGANIC ANALYSES

5.1.1 Ammonia by Ion-Specific Electrode (ISE)

Ammonia was measured on each supernate sample using an ammonia specific electrode. No ammonia was detected in the re-run of sample 7AP-99-1 (S99T000890). This sample was reanalyzed due to an unacceptable relative percent difference (RPD) value between the sample and duplicate results. Results on the remaining samples ranged from 77.1 to 126 μg/mL, well below the 5,000 μg/mL Notification Limit.

At 27.8, the RPD value on sample S99T000892 was above the TSAP limit of 20. This sample was not re-run since the results were near the method detection limit. All other QC requirements were met.

5.1.2 Differential Scanning Calorimetry (DSC)

The supernate samples were analyzed by differential scanning calorimetry (DSC). Heat absorbed by the sample from a net endothermic reaction or process, or heat given up by the sample from a net exothermic reaction or process was measured as a function of temperature. The samples were heated from approximately 25 to 500° C. None of the sample exhibited any net exotherms, thus the 480 J/g notification limit was not exceeded. There were no QC failures.

5.1.3 Hydroxide

Hydroxide concentrations were determined by titration. As with most of the other analyses, the analyte concentration in sample 7AP-99-1 was lower than that in the other samples. Hydroxide in sample 7AP-99-1 was 2,340 μg/mL. Concentrations in the remaining three samples were very similar; in the 7,230 to 7,400 μg/mL range. There were no QC failures.

5.1.4 Anions by Ion Chromatography (IC)

The concentrations of the anions fluoride, chloride, nitrate, nitrite, sulfate, and phosphate were measured by ion chromatography (IC). The results for bromide and oxalate were opportunistic and appear in Appendix A. Nitrate was the most abundant anion measured in the supernate samples and phosphate was the least abundant. Each anion concentration in sample 7AP-99-1 was about half of the respective concentration in the other three samples.

A matrix spike was added to sample 7AP-99-3 (S99T000896). Standard and matrix spike recoveries were excellent. In addition, all RPD values were within the TSAP limits.

5.1.5 Metals by Inductively Coupled Plasma (ICP)

Inductively coupled plasma (ICP) together with atomic emission spectroscopy was used to determine the concentrations of Al, Cr, Fe, Na, Ni, Mn, and Zr in the supernate samples. Concentrations of additional metals were determined opportunistically. These results are shown in Appendix A. The metal concentrations in sample 7AP-99-1 were roughly half the respective concentrations in the remaining samples.

As expected, sodium was the most abundant metal found in the samples. At 65,000 μg/mL in samples 7AP-99-2, -3, and -4, it was approximately ten times more abundant than aluminum, the next most plentiful metal. Chromium was much less abundant at about 500 μg/mL in the same samples. Iron, manganese, nickel, and zirconium were not detected despite method detection limits of 10 μg/mL or less.

A matrix spike was added to sample 7AP-99-3 (S99T000896). All QC parameters were within the TSAP limits. In addition to matrix spikes, serial dilutions were performed to assess the accuracy of the ICP method. The 5X serial dilution results in the raw data were denoted with a "L" suffix on the sample number. The 10X dilution results in the raw data were denoted with a "X" suffix on the sample number. The serial dilution results should be within 10% of the initial dilution. Serial dilution results for Al, Na, and Cr are shown in Table 4. As shown, the results indicate that the accuracy of these analyses were acceptable.

Table 4. Tank AP-107 ICP Serial Dilution Results.

Sample No.	Analyte	Mean Conc. (μg/mL)	5X Dilution (μg/mL)	10X Dilution (μg/mL)	Percent Differences
S99T000896	Al	6,020	6,066	6,015	0.76, 0.083
S99T000896	Na	59,300	60,300	60,060	1.7, 1.3
S99T000896	Cr	453	461	454	1.8, 0.22

5.1.6 Percent Water by Thermogravimetric Analysis (TGA)

Thermogravimetric analysis (TGA) was performed on all supernate samples. The percentage of water in a sample was determined through TGA by measuring the total weight loss of the sample between 25 and approximately 150° C. Additional information may be obtained by examining the raw data.

The percent water values in grab samples 7AP-99-2, -3, and -4 were all between 79.01 and 79.64 percent. Sample 7AP-99-1 contained more water averaging 87.61 percent. There were no QC failures.

5.1.7 pH

Duplicate pH measurements on three of the supernate samples were very similar, ranging from 13.16 to 13.27 pH units. The Notification Limit was 8.0. The pH of sample 7AP-99-1 was about 0.4 of a pH unit lower. This was consistent with the lower hydroxide concentration in that sample. There were no QC failures associated with the analyses.

5.1.8 Specific Gravity

The specific gravity results ranged from 1.073 on sample S99T000890 to 1.169 on sample S99T000891. All QC parameters were met.

5.1.9 Total Inorganic Carbon (TIC)

Total inorganic carbon (TIC) was measured by acid addition followed by coulometric titration of the resulting carbon dioxide. Levels of TIC in the supernate samples were very similar, ranging from 1,630 μg/mL in sample S99T000896 to 1,950 μg/mL in sample S99T000897. Very small amounts of TIC were found in the analytical blanks. The source of the TIC was most likely carbon dioxide absorbed from the atmosphere. The levels were considered negligible compared to the supernate sample levels. All remaining QC requirements were met.

5.1.10 Total Organic Carbon (TOC)

Total organic carbon (TOC) was measured by persulfate oxidation followed by coulometric titration of the resulting carbon dioxide. Sample 7AP-99-1 had about half the TOC as the other samples with an average concentration of 146 μg/mL. The highest TOC concentration was 600 μg/mL in sample S99T000896. This is equivalent to a concentration of 2,900 μg/mL on a dry-weight basis, well below the 45,000 μg/mL Notification Limit.

The reported RPD on sample S99T000894 is 46.9. This sample and sample S99T000896 were analyzed for TOC and TIC in triplicate. The results are shown in Table 5.

Small amounts of TOC were detected in the analytical blanks. The source of the TOC was most likely the ion exchange resin used to deionize the analytical water. This amount was considered insignificant. The standard and spike recoveries were met.

Table 5. TOC and TIC Sample, Duplicate, and Triplicate Results on Tank AP-107 Samples.

Sample No.	TOC Results (μg/mL)	TIC Results (μg/mL)
S99T000894	111, 179, 149	1710, 1760, 1770
S99T000896	494, 600, 574	1630, 1920, 1910

5.1.11 Uranium Isotopics by ICP/Mass Spectroscopy (MS)

All supernate samples were analyzed for the isotopes ^{233}U, ^{234}U, ^{235}U, ^{236}U, and ^{238}U by ICP/MS. Only the isotope ^{238}U was detected, even though detection limits for the other isotopes were below 0.326 μg/mL. The ^{238}U concentration in sample 7AP-99-1 averaged 5.114 μg/mL. The concentrations in the remaining samples were almost twice as high.

Standards and spikes were only available for the ^{235}U and ^{238}U isotopes. A matrix spike was added to sample S99T000892. The spike and standard recoveries and the RPD results were well within the TSAP limits.

5.2 RADIOCHEMICAL ANALYSES

5.2.1 Americium-241

The ^{241}Am activity was determined by chemical separation followed by alpha counting. The activity of $^{243/244}Cm$ was determined opportunistically. The Cm results are available in Appendix A. The activity in sample 7AP-99-1 was below the minimum detectable activity of 3.8×10^{-6} μCi/mL. Activities on the other samples were very low, ranging from 7.53×10^{-6} to 8.81×10^{-6} μCi/mL. The reported results had been corrected for the ^{241}Am tracer recovery and all QC parameters were met.

5.2.2 Gamma Energy Analysis (GEA)

The activity of ^{137}Cs was determined by GEA. Additional radionuclide activities were reported in Appendix A on an opportunistic basis. The activity in sample 7AP-99-1 averaged 36.75 μCi/mL. The activities in the other samples ranged from 62.3 to 78.8 μCi/mL. There is no spike associated with this analysis, but the standard recovery and RPD values were well within the TSAP limits.

5.2.3 Plutonium-239/240

Determined by chemical separation followed by alpha counting was the $^{239/240}Pu$ activity on the four grab samples. The activity of ^{238}Pu was determined opportunistically. As with most other radionuclides, there was less Pu in sample 7AP-99-1 than in the other samples. The activity in sample 7AP-99-1 averaged 6.58×10^{-6} μCi/mL, while activities in the other samples were on the order of 2.5×10^{-5} μCi/mL. The Notification Limit was 61.5 μCi/mL. All QC requirements were met and the reported results had been corrected for the ^{236}Pu tracer recovery.

5.2.4 Strontium-89/90

Chemical separation followed by beta counting provided the activity of $^{89/90}Sr$ in each sample. The activities ranged from 2.13×10^{-3} μCi/mL on sample 7AP-99-1 to 3.60×10^{-3} μCi/mL on sample 7AP-99-4. All standard recoveries and RPD values were well within the TSAP limits. The activities were corrected for carrier recoveries, which were between 91.1 and 92.4%.

5.2.5 Total Alpha

A low total alpha activity was found in sample 7AP-99-1 (S99T000894). The mean result was 7.77×10^{-4} μCi/mL. No total alpha activities were detected in the remaining samples. All results were less than 6.84×10^{-3} μCi/mL. The higher minimum detectable activity on samples 7AP-99-2, -3, and -4 were due to larger dilution factors. All QC requirements were met.

6.0 WASTE COMPATIBILITY CONCERNS

6.1 Nitrate (NO_3^-), Hydroxide (OH^-) and Nitrite (NO_2^-) - Corrosion Decision Rule

The results with respect to the waste compatibility corrosion rules are presented in Table 6. The NO_3^-, OH^-, and NO_2^- results are reported in μg/mL and molarity (M) units. The spreadsheet compares the results to the concentration ranges specified in Sasaki (1999a). A "YES" appeared in the appropriate space for the condition that was met. Only one of three sets of conditions must be met for OH^- and NO_2^- based on the range in which the NO_3^- concentration falls. If "NO" appears in the space under a condition, that condition is not met and a notification is required. All results for the four samples analyzed were within the acceptable concentration ranges required for corrosion control.

7.0 REFERENCES

Bell, K. E., 1999 (PAC) to Hall, K. M. (LMHC), "Format II Report on Tank 241-AP-107 Waste Compatibility Grab Samples Taken in May 1999". Letter WMH-9953970 dated June 10, 1999, Waste Management Hanford, Box 700, Richland, WA, 99352.

Markel, L. P., 1999, *Quality Assurance Plan for 222-S Laboratories*, HNF-SD-CP-QAPP-16, Rev. 3-C. Waste Management of Hanford, Inc., Richland, Washington, 99352.

Sasaki, L. M., 1999a, *Tank 241-AW-102 Evaporator Grab Sampling and Analysis Plan*, HNF-3528, Rev. 0-B, Lockheed Martin Hanford Corporation, Richland, WA 99352.

Sasaki, L. M., 1999b, *Tank 241-AW-102 Evaporator Grab Sampling and Analysis Plan*, HNF-3528, Rev. 0, Lockheed Martin Hanford Corporation, Richland, WA 99352.

Table 5. Tank AP-107 Waste Compatibility Corrosion Rules for DSTs with Temperatures Below 212° F.

Sample ID, Description	Analyte	Mean Result (ug/mL)	Mean Result (M)	Is $[NO_3^-]$...	Is $[OH^-]$...	Is $[NO_2^-]$...	Are $[OH^-]$, $[NO_2^-]$, and $[NO_3^-]$ such that...
7AP-99-1	NO_3^-	4.48E+04	0.723	≤1.0 M?	0.010 M ≤ $[OH^-]$ ≤ 8.0 M?	0.011 M ≤ $[NO_2^-]$ ≤ 5.5 M?	$[NO_3^-]/([OH^-] + [NO_2^-])$ < 2.5 M?
	OH^-	2.34E+03	0.138	YES	YES	YES	YES
Supernate	NO_2^-	1.16E+04	0.252				

Sample ID, Description	Analyte	Mean Result (ug/mL)	Mean Result (M)	Is $[NO_3^-]$...	Is $[OH^-]$ such that...	Is $[NO_2^-]$ such that...
7AP-99-2	NO_3^-	8.30E+04	1.339	1.0 M < [NO3-] ≤ 3.0 M?	$(0.1\ [NO_3^-]) \le [OH^-] \le 10.0$ M?	$([OH^-]+[NO_2^-]) \ge (0.4\ [NO_3^-])$?
	OH^-	7.32E+03	0.431	YES	YES	YES
	NO_2^-	2.14E+04	0.465			
Supernate						

Sample ID, Description	Analyte	Mean Result (ug/mL)	Mean Result (M)	Is $[NO_3^-]$...	Is $[OH^-]$ such that...	Is $[NO_2^-]$ such that...
7AP-99-3	NO_3^-	8.33E+04	1.344	1.0 M < [NO3-] ≤ 3.0 M?	$(0.1\ [NO_3^-]) \le [OH^-] \le 10.0$ M?	$([OH^-]+[NO_2^-]) \ge (0.4\ [NO_3^-])$?
	OH^-	7.32E+03	0.431	YES	YES	YES
	NO_2^-	2.14E+04	0.465			
Supernate						

Sample ID, Description	Analyte	Mean Result (ug/mL)	Mean Result (M)	Is $[NO_3^-]$...	Is $[OH^-]$ such that...	Is $[NO_2^-]$ such that...
7AP-99-4	NO_3^-	8.34E+04	1.345	1.0 M < [NO3-] ≤ 3.0 M?	$(0.1\ [NO_3^-]) \le [OH^-] \le 10.0$ M?	$([OH^-]+[NO_2^-]) \ge (0.4\ [NO_3^-])$?
	OH^-	7.36E+03	0.433	YES	YES	YES
	NO_2^-	2.12E+04	0.461			
Supernate						

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AP-107 SAMPLE BREAKDOWN

ATTACHMENT 1

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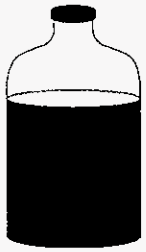
AP-107 Grab Sample Breakdown

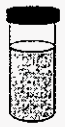
Sample 7AP-99-1, Supernate for Inorganic/Radchem
LABCORE group 99000198
Parent Sample S99T000886

Appearance
Organic Layer



S99T000890

DSC
DSC (dry)
NH3
TGA
OH
SpG
U Isotopics
pH



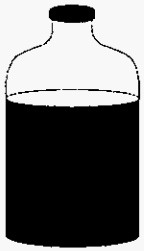
S99T000894

TIC
TOC
ICP
IC-01
Sr-90
GEA
Pu-238
Pu-239/240
Am-241
Cm-243/244
Total Alpha

AP-107 Grab Sample Breakdown

Sample 7AP-99-2, Supernate for Inorganic/Radchem
LABCORE group 99000198
Parent Sample S99T000887

Appearance
Organic Layer



S99T000891

DSC
DSC (dry)
NH3
TGA
OH
SpG
U Isotopics
pH

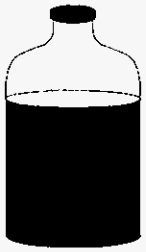
S99T000895

TIC
TOC
ICP
IC-01
Sr-90
GEA
Pu-238
Pu-239/240
Am-241
Cm-243/244
Total Alpha

AP-107 Grab Sample Breakdown

Sample 7AP-99-3, Supernate for Inorganic/Radchem
LABCORE group 99000198
Parent Sample S99T000888

Appearance
Organic Layer



S99T000892

DSC
DSC (dry)
NH3
TGA
OH
SpG
U Isotopics
pH

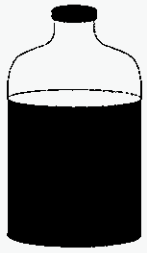
S99T000896

TIC
TOC
ICP
IC-01
Sr-90
GEA
Pu-238
Pu-239/240
Am-241
Cm-243/244
Total Alpha

AP-107 Grab Sample Breakdown

Sample 7AP-99-4, Supernate for Inorganic/Radchem
LABCORE group 99000198
Parent Sample S99T000889

Appearance
Organic Layer



S99T000893

DSC
DSC (dry)
NH3
TGA
OH
SpG
U Isotopics
pH

S99T000897

TIC
TOC
ICP
IC-01
Sr-90
GEA
Pu-238
Pu-239/240
Am-241
Cm-243/244
Total Alpha

ATTACHMENT 2

CHAIN-OF-CUSTODY FORMS

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CHAIN-OF-CUSTODY RECORD FOR CPO

(1) Sample Number: 7AP 99-1

(2) Supervisor/Sampler: James Sickels

(3) Tank: 241-AP-107

(4) Riser: 001

(5) Cask/Pig Serial No.: B-24

(6) Shipment Description:

A. Work Package Number: ES-99-00056/0

B. Cask/Pig Seal Number: 11831

C. Date Sample Collected: 5-18-99

D. Time Sample Collected: 1045

(7) Sampling Data

	Y	N
- Lithium Bromide	☐	☐
Amount		
Concentration		
- X-Ray	☐	☐
- Partial Sample	☐	☐
- Retrieved Partial Sample Stroke Length		

N
A

(8) Field Comments:

Yellow in Color 120 mg/L

21

(9) Seal Intact Upon Release? ☒ Yes ☐ No

(10) Seal Intact Upon Receipt? ☒ Yes ☐ No

(11) Seal Number AND Cask/Pig SERIAL Number consistent with this record? (Block 5 & 6b) ☒ Yes ☐ No

(12) Laboratory Comments:

S99T000886

HNF-1672 REV. 0

(13) Relinquished By (Sign and PRINT)	(14) Received By (Sign and PRINT)	(15) Date/Time	(16) Receiver Comments
Robert J Praznik	V. Matthews V. Matthews	1120 5-18-99	
(17) Relinquished By (Sign and PRINT)	(18) Received By (Sign and PRINT)	(19) Date/Time	(20) Receiver Comments
V. Matthews V. Matthews	TAMurphy / TAMURPHY	1350 5-18-99	
(21) Relinquished By (Sign and PRINT)	(22) Received By (Sign and PRINT)	(23) Date/Time	(24) Receiver Comments
(25) Relinquished By (Sign and PRINT)	(26) Received By (Sign and PRINT)	(27) Date/Time	(28) Receiver Comments

BC-6001-326 (07/97)

Copy - Laboratory Copy - Sampling Operations

05/18/99 14:11 FAX 002

CHAIN-OF-CUSTODY RECORD FOR CPO

(1) Sample Number: 7AP-99-2	(2) Supervisor/Sampler: James Sickels	(9) Seal Intact Upon Release? ☒ Yes ☐ No
(3) Tank: 241-AP-107	(4) Riser: 001	(5) Cask/Pig Serial No.: TF-11
(10) Seal Intact Upon Receipt? ☒ Yes ☐ No		
(11) Seal Number AND Cask/Pig SERIAL Number consistent with this record? (Block 5 & 6b) ☒ Yes ☐ No		

(6) Shipment Description:

A. Work Package Number: ES-99-00056/0

B. Cask/Pig Seal Number: 11832

C. Date Sample Collected: 5-18-99

D. Time Sample Collected: 1049

(7) Sampling Data

	Y	N
- Lithium Bromide	☐	☐
Amount		
Concentration		
- X-Ray	☐	☐
- Partial Sample	☐	☐
- Retrieved Partial Sample Stroke Length		

N/A

(8) Field Comments:

Yellow in Color 250 mR/hr

(12) Laboratory Comments:

S99T000887

HNF-1672 REV. 0

22

(13) Relinquished By (Sign and PRINT): Robert A Prunnin	(14) Received By (Sign and PRINT): James Sickels	(15) Date/Time: 5-18-99 1210	(16) Receiver Comments
(17) Relinquished By (Sign and PRINT): V. Montoya UVM 5-18-99	(18) Received By (Sign and PRINT):	(19) Date/Time: 1250 5-18-99	(20) Receiver Comments
(21) Relinquished By (Sign and PRINT)	(22) Received By (Sign and PRINT)	(23) Date/Time	(24) Receiver Comments
(25) Relinquished By (Sign and PRINT)	(26) Received By (Sign and PRINT)	(27) Date/Time	(28) Receiver Comments

BC-6001-326 (07/97)

CHAIN-OF-CUSTODY RECORD FOR CPO

(1) Sample Number: 7AP-99-3	(2) Supervisor/Sampler: James Sickels	(9) Seal Intact Upon Release? ☒ Yes ☐ No
(3) Tank: 241-AP-107	(4) Riser: 001	(5) Cask/Pig Serial No.: TF-9
		(10) Seal Intact Upon Receipt? ☒ Yes ☐ No
(6) Shipment Description:	(7) Sampling Data (Y / N)	(11) Seal Number AND Cask/Pig SERIAL Number consistent with this record? (Block 5 & 6b) ☒ Yes ☐ No
A. Work Package Number: ES-99-00056/0	- Lithium Bromide ☐ ☐	(12) Laboratory Comments:
B. Cask/Pig Seal Number: 11833	Amount:	
C. Date Sample Collected: 5-18-99	Concentration:	
D. Time Sample Collected: 1052	- X-Ray ☐ ☐	
	- Partial Sample ☐ ☐	
	- Retrieved Partial Sample Stroke Length:	

N/A

(8) Field Comments:

Yellow in Color 200 mR/hr

S99T000888

23

HNF-1672 REV. 0

(13) Relinquished By (Sign and PRINT)	(14) Received By (Sign and PRINT)	(15) Date/Time	(16) Receiver Comments
Robert J Pruzinik	V. Matthews V. Matthews	1320 5-18-99	
(17) Relinquished By (Sign and PRINT)	(18) Received By (Sign and PRINT)	(19) Date/Time	(20) Receiver Comments
V. Matthews V. Matthews	T A Murphy / TA MURPHY	1350 5-18-99	
(21) Relinquished By (Sign and PRINT)	(22) Received By (Sign and PRINT)	(23) Date/Time	(24) Receiver Comments
(25) Relinquished By (Sign and PRINT)	(26) Received By (Sign and PRINT)	(27) Date/Time	(28) Receiver Comments

RC-6001-326 (07/97)

CHAIN-OF-CUSTODY RECORD FOR CPO

(1) Sample Number: 7AP-99-4	(2) Supervisor/Sampler: James Sickels	(9) Seal Intact Upon Release? ☒ Yes ☐ No
(3) Tank: 241-AP-107	(4) Riser: 001	(5) Cask/Pig Serial No.: B-23
(10) Seal Intact Upon Receipt? ☒ Yes ☐ No		
(11) Seal Number AND Cask/Pig SERIAL Number consistent with this record? (Block 5 & 6b) ☒ Yes ☐ No		

(6) Shipment Description:

A. Work Package Number: ES-99-00056/0

B. Cask/Pig Seal Number: 11834

C. Date Sample Collected: 5-18-99

D. Time Sample Collected: 1055

(7) Sampling Data

	Y	N
- Lithium Bromide	☐	☐
Amount		
Concentration		
- X-Ray	☐	☐
- Partial Sample	☐	☐
- Retrieved Partial Sample Stroke Length		

N/A

(8) Field Comments:

Yellow in Color 200mR/hr.

(12) Laboratory Comments:

S99T000889

24

HNF-1672 REV. 0

(13) Relinquished By (Sign and PRINT)	(14) Received By (Sign and PRINT)	(15) Date/Time	(16) Receiver Comments
Robert J Plaznik	V. Matthews V. Matthews	12:04 5-18-99	
(17) Relinquished By (Sign and PRINT)	(18) Received By (Sign and PRINT)	(19) Date/Time	(20) Receiver Comments
V. Matthews V. Matthews	Murphy	1250 5-18-99	
(21) Relinquished By (Sign and PRINT)	(22) Received By (Sign and PRINT)	(23) Date/Time	(24) Receiver Comments
(25) Relinquished By (Sign and PRINT)	(26) Received By (Sign and PRINT)	(27) Date/Time	(28) Receiver Comments

BC-6001-326 (07/97)

ATTACHMENT 3

SAMPLE DATA SUMMARY

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Tank 241-AP-107 Data Summary
AP107 GRAB2

CORE NUMBER: n/a
SEGMENT #: 7AP-99-1

SEGMENT PORTION: Supernate

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S99T000886			Appearance of Sample-Smpl Prep		n/a	n/a	clear	n/a	n/a	n/a	n/a	n/a	n/a
S99T000886			Volume % Settled Solids	%	n/a	n/a	< 2.000	n/a	n/a	n/a	n/a	1.00e-01	n/a
S99T000886			Color of Sample		n/a	n/a	yellow	n/a	n/a	n/a	n/a	n/a	n/a
S99T000886			Organic Vol Present/sampleprep	mL	n/a	n/a	0.00e+00	n/a	n/a	n/a	n/a	n/a	n/a
S99T000890			DSC Exotherm Dry Calculated	Joules/g Dry	n/a	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S99T000890			DSC Exotherm on Perkin Elmer	Joules/g	96.66	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S99T000890			Ammonia by ISE-Std Additions	ug/mL	104.2	<25.00	< 25.00	<2.50E+1	n/a	n/a	n/a	25.00	n/a
S99T000890			OH- by Pot. Titration	ug/mL	103.8	n/a	2.34e+03	2.34e+03	2.34e+03	0.00	n/a	500.0	n/a
S99T000890			pH Direct	pH	n/a	n/a	12.81	12.83	12.82	0.16	n/a	1.00e-02	n/a
S99T000890			Specific Gravity	Sp.G.	99.43	n/a	1.088	1.073	1.081	1.39	n/a	1.00e-03	n/a
S99T000890			% Water by TGA on Perkin Elmer	%	99.36	n/a	87.04	88.18	87.61	1.30	n/a	n/a	n/a
S99T000890		D	Uranium-233 by ICP/MS Acid Add	ug/mL	n/a	<1.20e-05	<2.44e-01	<2.44e-1	n/a	n/a	n/a	2.44e-01	n/a
S99T000890		D	Uranium-234 by ICP/MS Acid Add	ug/mL	n/a	<1.20e-05	<2.44e-01	<2.44e-1	n/a	n/a	n/a	2.44e-01	n/a
S99T000890		D	Uranium-235 by ICP/MS Acid Add	ug/mL	100.0	<1.20e-05	<2.44e-01	<2.44e-1	n/a	n/a	n/a	2.44e-01	n/a
S99T000890		D	Uranium-236 by ICP/MS Acid Add	ug/mL	n/a	<1.60e-05	<3.25e-01	<3.25e-1	n/a	n/a	n/a	3.25e-01	n/a
S99T000890		D	Uranium-238 by ICP/MS Acid Add	ug/mL	98.00	<1.20e-05	5.089	5.140	5.114	0.98	n/a	2.44e-01	n/a
S99T000894			TIC by Acid/Coulometry	ug/mL	99.67	5.600	1.71e+03	1.76e+03	1.74e+03	2.88	n/a	5.000	n/a
S99T000894			TOC by Persulfate/Coulometry	ug/mL	88.67	6.900	1.11e+02	179.0	145.0	46.9	n/a	40.00	n/a
S99T000894			Strontium-89/90 High Level	uCi/mL	102.0	<3.39e-04	2.57e-03	2.13e-03	2.35e-03	18.7	n/a	4.42e-04	1.79E+01
S99T000894			Pu-239/240 by TRU-SPEC Resin	uCi/mL	101.6	<3.57e-06	6.69e-06	6.46e-06	6.58e-06	3.50	n/a	3.88e-06	5.23E+00
S99T000894		D	Aluminium-ICP-Acid Dil.	ug/mL	98.00	<5.00e-02	3.43e+03	3.43e+03	3.43e+03	0.00	n/a	5.050	n/a
S99T000894		D	Chromium-ICP-Acid Dil.	ug/mL	99.20	<1.00e-02	2.53e+02	253.0	253.0	0.00	n/a	1.010	n/a
S99T000894		D	Iron-ICP-Acid Dil.	ug/mL	100.4	<5.00e-02	< 5.050	<5.05e0	n/a	n/a	n/a	5.050	n/a
S99T000894		D	Manganese-ICP-Acid Dil.	ug/mL	95.80	<1.00e-02	< 1.010	<1.01e0	n/a	n/a	n/a	1.010	n/a
S99T000894		D	Sodium-ICP-Acid Dil.	ug/mL	100.4	<1.00e-01	3.55e+04	3.53e+04	3.54e+04	0.56	n/a	10.10	n/a
S99T000894		D	Nickel-ICP-Acid Dil.	ug/mL	99.00	<2.00e-02	< 2.020	<2.02e0	n/a	n/a	n/a	2.020	n/a
S99T000894		D	Zirconium-ICP-Acid Dil.	ug/mL	96.60	<1.00e-02	< 1.010	<1.01e0	n/a	n/a	n/a	1.010	n/a
S99T000894			Fluoride-IC-Dionex 4000/4500	ug/mL	98.63	<1.20e-02	4.34e+02	432.0	432.8	0.46	n/a	13.33	n/a
S99T000894			Chloride-IC-Dionex 4000/4500	ug/mL	98.76	<1.70e-02	1.04e+03	1.02e+03	1.03e+03	1.94	n/a	18.89	n/a
S99T000894			Nitrite-IC - Dionex 4000/4500	ug/mL	93.74	<1.08e-01	1.16e+04	1.15e+04	1.16e+04	0.87	n/a	120.0	n/a
S99T000894			Nitrate by IC-Dionex 4000/4500	ug/mL	96.40	<1.39e-01	4.47e+04	4.49e+04	4.48e+04	0.45	n/a	154.4	n/a
S99T000894			Phosphate-IC-Dionex 4000/4500	ug/mL	104.6	<1.20e-01	2.39e+02	229.0	233.9	4.27	n/a	12.12	n/a
S99T000894			Sulfate by IC-Dionex 4000/4500	ug/mL	106.9	<1.38e-01	1.16e+03	1.39e+03	1.28e+03	18.0	n/a	153.3	n/a
S99T000894			Cesium-137 by GEA	uCi/mL	104.6	<4.14e-03	36.90	36.60	36.75	0.82	n/a	n/a	0.240
S99T000894			Am-241 by Extraction	uCi/mL	93.46	<3.70e-06	<3.50e-06	<3.80E-6	n/a	n/a	n/a	3.50e-06	7.91E+00
S99T000894			Alpha in Liquid Samples	uCi/mL	88.84	<3.03e-04	7.91e-04	7.63e-04	7.77e-04	3.60	n/a	6.11e-04	6.57E+01

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Tank 241-AP-107 Data Summary
AP107 GRAB2

CORE NUMBER: n/a
SEGMENT #: 7AP-99-2

SEGMENT PORTION: Supernate

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S99T000887			Appearance of Sample-Smpl Prep		n/a	n/a	clear	n/a	n/a	n/a	n/a	n/a	n/a
S99T000887			Volume % Settled Solids	%	n/a	n/a	< 2.000	n/a	n/a	n/a	n/a	1.00e-01	n/a
S99T000887			Color of Sample		n/a	n/a	yellow	n/a	n/a	n/a	n/a	n/a	n/a
S99T000887			Organic Vol Present/sampleprep	mL	n/a	n/a	0.00e+00	n/a	n/a	n/a	n/a	n/a	n/a
S99T000891			DSC Exotherm Dry Calculated	Joules/g Dry	n/a	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S99T000891			DSC Exotherm on Perkin Elmer	Joules/g	96.66	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S99T000891			Ammonia by ISE-Std Additions	ug/mL	91.42	<50.00	1.01e+02	123.0	112.0	19.6	n/a	25.00	n/a
S99T000891			OH- by Pot. Titration	ug/mL	103.8	n/a	7.40e+03	7.23e+03	7.32e+03	2.32	n/a	1.25e+03	n/a
S99T000891			pH Direct	pH	n/a	n/a	13.16	13.18	13.17	0.15	n/a	1.00e-02	n/a
S99T000891			Specific Gravity	Sp.G.	99.43	n/a	1.168	1.169	1.168	0.09	n/a	1.00e-03	n/a
S99T000891			% Water by TGA on Perkin Elmer	%	99.36	n/a	79.42	79.01	79.22	0.52	n/a	n/a	n/a
S99T000891		D	Uranium-233 by ICP/MS Acid Add	ug/mL	n/a	<1.20e-05	<2.44e-01	<2.44e-1	n/a	n/a	n/a	2.44e-01	n/a
S99T000891		D	Uranium-234 by ICP/MS Acid Add	ug/mL	n/a	<1.20e-05	<2.44e-01	<2.44e-1	n/a	n/a	n/a	2.44e-01	n/a
S99T000891		D	Uranium-235 by ICP/MS Acid Add	ug/mL	100.0	<1.20e-05	<2.44e-01	<2.44e-1	n/a	n/a	n/a	2.44e-01	n/a
S99T000891		D	Uranium-236 by ICP/MS Acid Add	ug/mL	n/a	<1.60e-05	<3.25e-01	<3.25e-1	n/a	n/a	n/a	3.25e-01	n/a
S99T000891		D	Uranium-238 by ICP/MS Acid Add	ug/mL	98.00	<1.20e-05	9.941	9.450	9.695	5.05	n/a	2.44e-01	n/a
S99T000895			TIC by Acid/Coulometry	ug/mL	99.67	5.600	1.87e+03	1.88e+03	1.88e+03	0.53	n/a	5.000	n/a
S99T000895			TOC by Persulfate/Coulometry	ug/mL	88.67	6.900	4.61e+02	491.0	476.0	6.30	n/a	40.00	n/a
S99T000895			Strontium-89/90 High Level	uCi/mL	102.0	<3.39e-04	3.01e-02	3.04e-02	3.02e-02	0.99	n/a	4.00e-03	1.58E+01
S99T000895			Pu-239/240 by TRU-SPEC Resin	uCi/mL	101.6	<3.57e-06	2.47e-05	2.49e-05	2.48e-05	0.81	n/a	4.63e-06	2.98E+00
S99T000895		D	Aluminium-ICP-Acid Dil.	ug/mL	98.00	<5.00e-02	6.61e+03	6.61e+03	6.61e+03	0.00	n/a	10.10	n/a
S99T000895		D	Chromium-ICP-Acid Dil.	ug/mL	99.20	<1.00e-02	4.96e+02	496.0	496.0	0.00	n/a	2.010	n/a
S99T000895		D	Iron-ICP-Acid Dil.	ug/mL	100.4	<5.00e-02	< 10.10	<1.01e1	n/a	n/a	n/a	10.10	n/a
S99T000895		D	Manganese-ICP-Acid Dil.	ug/mL	95.80	<1.00e-02	< 2.010	<2.01e0	n/a	n/a	n/a	2.010	n/a
S99T000895		D	Sodium-ICP-Acid Dil.	ug/mL	100.4	<1.00e-01	6.55e+04	6.53e+04	6.54e+04	0.31	n/a	20.10	n/a
S99T000895		D	Nickel-ICP-Acid Dil.	ug/mL	99.00	<2.00e-02	< 4.020	<4.02e0	n/a	n/a	n/a	4.020	n/a
S99T000895		D	Zirconium-ICP-Acid Dil.	ug/mL	96.60	<1.00e-02	< 2.010	<2.01e0	n/a	n/a	n/a	2.010	n/a
S99T000895			Fluoride-IC-Dionex 4000/4500	ug/mL	98.63	<1.20e-02	7.60e+02	793.0	776.4	4.25	n/a	25.45	n/a
S99T000895			Chloride-IC-Dionex 4000/4500	ug/mL	98.76	<1.70e-02	1.83e+03	1.85e+03	1.84e+03	1.09	n/a	36.06	n/a
S99T000895			Nitrite-IC - Dionex 4000/4500	ug/mL	93.74	<1.08e-01	2.10e+04	2.19e+04	2.14e+04	4.20	n/a	229.1	n/a
S99T000895			Nitrate by IC-Dionex 4000/4500	ug/mL	96.40	<1.39e-01	8.34e+04	8.26e+04	8.30e+04	0.96	n/a	294.8	n/a
S99T000895			Phosphate-IC-Dionex 4000/4500	ug/mL	104.6	<1.20e-01	4.59e+02	449.0	454.1	2.20	n/a	12.12	n/a
S99T000895			Sulfate by IC-Dionex 4000/4500	ug/mL	106.9	<1.38e-01	2.11e+03	2.24e+03	2.17e+03	5.98	n/a	292.7	n/a
S99T000895			Cesium-137 by GEA	uCi/mL	104.6	<4.14e-03	66.80	62.30	64.55	6.97	n/a	n/a	0.180
S99T000895			Am-241 by Extraction	uCi/mL	93.46	<3.70e-06	7.83e-06	7.76e-06	7.79e-06	0.90	n/a	4.20e-06	5.31E+00
S99T000895			Alpha in Liquid Samples	uCi/mL	88.84	<3.03e-04	<4.94e-03	<6.84E-3	n/a	n/a	n/a	7.00e-03	5.00E+02

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Tank 241-AP-107 Data Summary
AP107 GRAB2

CORE NUMBER: n/a
SEGMENT #: 7AP-99-3

SEGMENT PORTION: Supernate

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S99T000888			Appearance of Sample-Smpl Prep		n/a	n/a	clear	n/a	n/a	n/a	n/a	n/a	n/a
S99T000888			Volume % Settled Solids	%	n/a	n/a	< 2.000	n/a	n/a	n/a	n/a	1.00e-01	n/a
S99T000888			Color of Sample		n/a	n/a	yellow	n/a	n/a	n/a	n/a	n/a	n/a
S99T000888			Organic Vol Present/sampleprep	mL	n/a	n/a	0.00e+00	n/a	n/a	n/a	n/a	n/a	n/a
S99T000892			DSC Exotherm Dry Calculated	Joules/g Dry	n/a	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S99T000892			DSC Exotherm on Perkin Elmer	Joules/g	96.66	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S99T000892			Ammonia by ISE-Std Additions	ug/mL	100.7	<50.00	77.10	102.0	89.55	27.8	124.5	50.00	n/a
S99T000892			OH- by Pot. Titration	ug/mL	103.8	n/a	7.23e+03	7.40e+03	7.32e+03	2.32	n/a	1.25e+03	n/a
S99T000892			pH Direct	pH	n/a	n/a	13.20	13.23	13.21	0.23	n/a	1.00e-02	n/a
S99T000892			Specific Gravity	Sp.G.	99.43	n/a	1.149	1.137	1.143	1.05	n/a	1.00e-03	n/a
S99T000892			% Water by TGA on Perkin Elmer	%	99.36	n/a	79.63	79.03	79.33	0.76	n/a	n/a	n/a
S99T000892		D	Uranium-233 by ICP/MS Acid Add	ug/mL	n/a	<1.20e-05	<2.44e-01	<2.44e-1	n/a	n/a	n/a	2.44e-01	n/a
S99T000892		D	Uranium-234 by ICP/MS Acid Add	ug/mL	n/a	<1.20e-05	<2.44e-01	<2.44e-1	n/a	n/a	n/a	2.44e-01	n/a
S99T000892		D	Uranium-235 by ICP/MS Acid Add	ug/mL	100.0	<1.20e-05	<2.44e-01	<2.44e-1	n/a	n/a	93.01	2.44e-01	n/a
S99T000892		D	Uranium-236 by ICP/MS Acid Add	ug/mL	n/a	<1.60e-05	<3.25e-01	<3.25e-1	n/a	n/a	n/a	3.25e-01	n/a
S99T000892		D	Uranium-238 by ICP/MS Acid Add	ug/mL	98.00	<1.20e-05	9.590	9.690	9.640	1.04	91.00	2.44e-01	n/a
S99T000896			TIC by Acid/Coulometry	ug/mL	100.0	5.00e-01	1.63e+03	1.92e+03	1.78e+03	16.3	120.0	5.000	n/a
S99T000896			TOC by Persulfate/Coulometry	ug/mL	95.33	1.700	4.93e+02	600.0	546.5	19.4	98.40	40.00	n/a
S99T000896			Strontium-89/90 High Level	uCi/mL	102.0	<3.39e-04	3.11e-02	3.05e-02	3.08e-02	1.95	n/a	4.00e-03	1.53E+01
S99T000896			Pu-239/240 by TRU-SPEC Resin	uCi/mL	101.6	<3.57e-06	2.54e-05	2.59e-05	2.57e-05	1.95	n/a	4.74e-06	2.87E+00
S99T000896		D	Aluminium-ICP-Acid Dil.	ug/mL	98.00	<5.00e-02	6.02e+03	6.01e+03	6.02e+03	0.17	97.00	101.0	n/a
S99T000896		D	Chromium-ICP-Acid Dil.	ug/mL	99.20	<1.00e-02	4.50e+02	456.0	453.0	1.32	97.80	2.010	n/a
S99T000896		D	Iron-ICP-Acid Dil.	ug/mL	100.4	<5.00e-02	< 10.10	<1.01e1	n/a	n/a	96.40	10.10	n/a
S99T000896		D	Manganese-ICP-Acid Dil.	ug/mL	95.80	<1.00e-02	< 2.010	<2.01e0	n/a	n/a	88.80	2.010	n/a
S99T000896		D	Sodium-ICP-Acid Dil.	ug/mL	100.4	<1.00e-01	6.01e+04	5.85e+04	5.93e+04	2.70	111.0	201.0	n/a
S99T000896		D	Nickel-ICP-Acid Dil.	ug/mL	99.00	<2.00e-02	< 4.020	<4.02e0	n/a	n/a	95.90	4.020	n/a
S99T000896		D	Zirconium-ICP-Acid Dil.	ug/mL	96.60	<1.00e-02	< 2.010	<2.01e0	n/a	n/a	92.10	2.010	n/a
S99T000896			Fluoride-IC-Dionex 4000/4500	ug/mL	98.63	<1.20e-02	8.01e+02	783.0	791.9	2.27	97.95	25.45	n/a
S99T000896			Chloride-IC-Dionex 4000/4500	ug/mL	98.76	<1.70e-02	1.86e+03	1.92e+03	1.89e+03	3.17	102.5	36.06	n/a
S99T000896			Nitrite-IC - Dionex 4000/4500	ug/mL	93.74	<1.08e-01	2.16e+04	2.11e+04	2.14e+04	2.34	96.77	229.1	n/a
S99T000896			Nitrate by IC-Dionex 4000/4500	ug/mL	96.40	<1.39e-01	8.29e+04	8.37e+04	8.33e+04	0.96	92.12	294.8	n/a
S99T000896			Phosphate-IC-Dionex 4000/4500	ug/mL	104.6	<1.20e-01	4.06e+02	446.0	425.9	9.39	106.2	12.12	n/a
S99T000896			Sulfate by IC-Dionex 4000/4500	ug/mL	106.9	<1.38e-01	2.50e+03	2.28e+03	2.39e+03	9.21	101.1	292.7	n/a
S99T000896			Cesium-137 by GEA	uCi/mL	104.6	<4.14e-03	65.90	64.50	65.20	2.15	n/a	n/a	0.180
S99T000896			Am-241 by Extraction	uCi/mL	93.46	<3.70e-06	8.81e-06	8.27e-06	8.54e-06	6.32	n/a	3.36e-06	4.87E+00
S99T000896			Alpha in Liquid Samples	uCi/mL	88.84	<3.03e-04	<5.73e-03	<3.34E-3	n/a	n/a	n/a	7.00e-03	5.00E+02

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Tank 241-AP-107 Data Summary
AP107 GRAB2

CORE NUMBER: n/a
SEGMENT #: 7AP-99-4

SEGMENT PORTION: Supernate

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S99T000889			Appearance of Sample-Smpl Prep		n/a	n/a	clear	n/a	n/a	n/a	n/a	n/a	n/a
S99T000889			Volume % Settled Solids	%	n/a	n/a	< 2.000	n/a	n/a	n/a	n/a	1.00e-01	n/a
S99T000889			Color of Sample		n/a	n/a	yellow	n/a	n/a	n/a	n/a	n/a	n/a
S99T000889			Organic Vol Present/sampleprep	mL	n/a	n/a	0.00e+00	n/a	n/a	n/a	n/a	n/a	n/a
S99T000893			DSC Exotherm Dry Calculated	Joules/g Dry	n/a	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S99T000893			DSC Exotherm on Perkin Elmer	Joules/g	96.66	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S99T000893			Ammonia by ISE-Std Additions	ug/mL	104.2	<25.00	1.07e+02	126.0	116.5	16.3	n/a	25.00	n/a
S99T000893			OH- by Pot. Titration	ug/mL	103.8	n/a	7.40e+03	7.33e+03	7.36e+03	0.95	n/a	1.25e+03	n/a
S99T000893			pH Direct	pH	n/a	n/a	13.26	13.27	13.27	0.08	n/a	1.00e-02	n/a
S99T000893			Specific Gravity	Sp.G.	99.43	n/a	1.154	1.147	1.151	0.61	n/a	1.00e-03	n/a
S99T000893			% Water by TGA on Perkin Elmer	%	99.36	n/a	79.64	79.31	79.47	0.42	n/a	n/a	n/a
S99T000893		D	Uranium-233 by ICP/MS Acid Add	ug/mL	n/a	<1.20e-05	<2.44e-01	<2.44e-1	n/a	n/a	n/a	2.44e-01	n/a
S99T000893		D	Uranium-234 by ICP/MS Acid Add	ug/mL	n/a	<1.20e-05	<2.44e-01	<2.44e-1	n/a	n/a	n/a	2.44e-01	n/a
S99T000893		D	Uranium-235 by ICP/MS Acid Add	ug/mL	100.0	<1.20e-05	<2.44e-01	<2.44e-1	n/a	n/a	n/a	2.44e-01	n/a
S99T000893		D	Uranium-236 by ICP/MS Acid Add	ug/mL	n/a	<1.60e-05	<3.25e-01	<3.25e-1	n/a	n/a	n/a	3.25e-01	n/a
S99T000893		D	Uranium-238 by ICP/MS Acid Add	ug/mL	98.00	<1.20e-05	9.639	9.760	9.700	1.24	n/a	2.44e-01	n/a
S99T000897			TIC by Acid/Coulometry	ug/mL	100.0	5.00e-01	1.94e+03	1.95e+03	1.94e+03	0.51	n/a	5.000	n/a
S99T000897			TOC by Persulfate/Coulometry	ug/mL	95.33	1.700	5.85e+02	591.0	588.0	1.02	n/a	40.00	n/a
S99T000897			Strontium-89/90 High Level	uCi/mL	102.0	<3.39e-04	3.45e-02	3.60e-02	3.53e-02	4.26	n/a	4.00e-03	1.44E+01
S99T000897			Pu-239/240 by TRU-SPEC Resin	uCi/mL	101.6	<3.57e-06	2.36e-05	2.38e-05	2.37e-05	0.84	n/a	4.98e-06	3.09E+00
S99T000897		D	Aluminium-ICP-Acid Dil.	ug/mL	98.00	<5.00e-02	6.59e+03	6.63e+03	6.61e+03	0.61	n/a	10.10	n/a
S99T000897		D	Chromium-ICP-Acid Dil.	ug/mL	99.20	<1.00e-02	4.92e+02	493.0	492.5	0.20	n/a	2.010	n/a
S99T000897		D	Iron-ICP-Acid Dil.	ug/mL	100.4	<5.00e-02	< 10.10	<1.01e1	n/a	n/a	n/a	10.10	n/a
S99T000897		D	Manganese-ICP-Acid Dil.	ug/mL	95.80	<1.00e-02	< 2.010	<2.01e0	n/a	n/a	n/a	2.010	n/a
S99T000897		D	Sodium-ICP-Acid Dil.	ug/mL	100.4	<1.00e-01	6.51e+04	6.57e+04	6.54e+04	0.92	n/a	20.10	n/a
S99T000897		D	Nickel-ICP-Acid Dil.	ug/mL	99.00	<2.00e-02	< 4.020	<4.02e0	n/a	n/a	n/a	4.020	n/a
S99T000897		D	Zirconium-ICP-Acid Dil.	ug/mL	96.60	<1.00e-02	< 2.010	<2.01e0	n/a	n/a	n/a	2.010	n/a
S99T000897			Fluoride-IC-Dionex 4000/4500	ug/mL	98.63	<1.20e-02	7.66e+02	760.0	763.1	0.79	n/a	25.45	n/a
S99T000897			Chloride-IC-Dionex 4000/4500	ug/mL	98.76	<1.70e-02	1.89e+03	1.88e+03	1.89e+03	0.53	n/a	36.06	n/a
S99T000897			Nitrite-IC - Dionex 4000/4500	ug/mL	93.74	<1.08e-01	2.12e+04	2.12e+04	2.12e+04	0.00	n/a	229.1	n/a
S99T000897			Nitrate by IC-Dionex 4000/4500	ug/mL	96.40	<1.39e-01	8.37e+04	8.31e+04	8.34e+04	0.72	n/a	294.8	n/a
S99T000897			Phosphate-IC-Dionex 4000/4500	ug/mL	104.6	<1.20e-01	4.57e+02	454.0	455.5	0.66	n/a	12.12	n/a
S99T000897			Sulfate by IC-Dionex 4000/4500	ug/mL	106.9	<1.38e-01	2.14e+03	2.32e+03	2.23e+03	8.07	n/a	292.7	n/a
S99T000897			Cesium-137 by GEA	uCi/mL	104.6	<4.14e-03	68.40	78.80	73.60	14.1	n/a	n/a	0.170
S99T000897			Am-241 by Extraction	uCi/mL	93.46	<3.70e-06	7.88e-06	7.53e-06	7.70e-06	4.54	n/a	3.21e-06	4.82E+00
S99T000897			Alpha in Liquid Samples	uCi/mL	88.84	<3.03e-04	<3.34e-03	<4.15E-3	n/a	n/a	n/a	7.00e-03	5.00E+02

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SAMPLE HANDLING

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LABCORE Data Entry Template for Worklist# 29778

Analyst: cwh **Instrument:** NONE _____ **Book #** N/a

Method: AdminDataEntry Rev/Mod _____

Worklist Comment: AP107 FOR @BRKDWN1,RLC

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
99000198	AP107 GRAB2	1	SAMPLE	S99T0:0886	0		@BRKDWN1 DOSERATE	LIQUID	N/A	<0.5		mrad/hour
99000198	AP107 GRAB2	1	SAMPLE	S99T0:0886	0		@BRKDWN1 SEALNUM	LIQUID	N/A	11831		
99000198	AP107 GRAB2	1	SAMPLE	S99T0:0886	0		@BRKDWN1 ETCHNUM	LIQUID	N/A	7AP-99-1		
99000198	AP107 GRAB2	1	SAMPLE	S99T0:0886	0		@BRKDWN1 APPEAR02	LIQUID	N/A	Clear		
99000198	AP107 GRAB2	1	SAMPLE	S99T0:0886	0		@BRKDWN1 SAMPAMT2	LIQUID	N/A	~~7AP-99-1~~ cd. 5-19-99 125		mL
99000198	AP107 GRAB2	1	SAMPLE	S99T0:0886	0		@BRKDWN1 STLSLD01	LIQUID	N/A	<2		%
99000198	AP107 GRAB2	1	SAMPLE	S99T0:0886	0		@BRKDWN1 COLOR-01	LIQUID	N/A	Yellow		
99000198	AP107 GRAB2	1	SAMPLE	S99T0:0886	0		@BRKDWN1 ORGVOL02	LIQUID	N/A	0		mL
99000198	AP107 GRAB2	2	SAMPLE	S99T0:0887	0		@BRKDWN1 DOSERATE	LIQUID	N/A	<0.5		mrad/hour
99000198	AP107 GRAB2	2	SAMPLE	S99T0:0887	0		@BRKDWN1 SEALNUM	LIQUID	N/A	11832		
99000198	AP107 GRAB2	2	SAMPLE	S99T0:0887	0		@BRKDWN1 ETCHNUM	LIQUID	N/A	7AP-99-2		
99000198	AP107 GRAB2	2	SAMPLE	S99T0:0887	0		@BRKDWN1 APPEAR02	LIQUID	N/A	Clear		
99000198	AP107 GRAB2	2	SAMPLE	S99T0:0887	0		@BRKDWN1 SAMPAMT2	LIQUID	N/A	~~7AP-99-2~~ cd. 5-19-99 125		mL
99000198	AP107 GRAB2	2	SAMPLE	S99T0:0887	0		@BRKDWN1 STLSLD01	LIQUID	N/A	<2		%
99000198	AP107 GRAB2	2	SAMPLE	S99T0:0887	0		@BRKDWN1 COLOR-01	LIQUID	N/A	Yellow		
99000198	AP107 GRAB2	2	SAMPLE	S99T0:0887	0		@BRKDWN1 ORGVOL02	LIQUID	N/A	0		mL
99000198	AP107 GRAB2	3	SAMPLE	S99T0:0888	0		@BRKDWN1 DOSERATE	LIQUID	N/A	<0.5		mrad/hour
99000198	AP107 GRAB2	3	SAMPLE	S99T0:0888	0		@BRKDWN1 SEALNUM	LIQUID	N/A	11833		

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# 29778

GROUP	PROJECT	S TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
99000198	AP107 GRAB2	3 SAMPLE	S99T0[illegible]0888	0		@BRKDWN1 ETCHNUM	LIQUID	N/A	ZAP-99-3		
99000198	AP107 GRAB2	3 SAMPLE	S99T0[illegible]0888	0		@BRKDWN1 APPEARO2	LIQUID	N/A	Clear		
99000198	AP107 GRAB2	3 SAMPLE	S99T0[illegible]0888	0		@BRKDWN1 SAMPAMT2	LIQUID	N/A	~~ZAP-99-3~~ CH 5-19-99	125	mL
99000198	AP107 GRAB2	3 SAMPLE	S99T0[illegible]0888	0		@BRKDWN1 STLSLD01	LIQUID	N/A	<2		%
99000198	AP107 GRAB2	3 SAMPLE	S99T0[illegible]0888	0		@BRKDWN1 COLOR-01	LIQUID	N/A	Yellow		
99000198	AP107 GRAB2	3 SAMPLE	S99T0[illegible]0888	0		@BRKDWN1 ORGVOL02	LIQUID	N/A	-0-		mL
99000198	AP107 GRAB2	4 SAMPLE	S99T0[illegible]0889	0		@BRKDWN1 DOSERATE	LIQUID	N/A	<0.5		mrad/hour
99000198	AP107 GRAB2	4 SAMPLE	S99T0[illegible]0889	0		@BRKDWN1 SEALNUM	LIQUID	N/A	11834		
99000198	AP107 GRAB2	4 SAMPLE	S99T0[illegible]0889	0		@BRKDWN1 ETCHNUM	LIQUID	N/A	ZAP-99-4		
99000198	AP107 GRAB2	4 SAMPLE	S99T0[illegible]0889	0		@BRKDWN1 APPEARO2	LIQUID	N/A	Clear		
99000198	AP107 GRAB2	4 SAMPLE	S99T0[illegible]0889	0		@BRKDWN1 SAMPAMT2	LIQUID	N/A	~~ZAP-99-4~~ CH. 5-19-99	125	mL
99000198	AP107 GRAB2	4 SAMPLE	S99T0[illegible]0889	0		@BRKDWN1 STLSLD01	LIQUID	N/A	<2		%
99000198	AP107 GRAB2	4 SAMPLE	S99T0[illegible]0889	0		@BRKDWN1 COLOR-01	LIQUID	N/A	Yellow		
99000198	AP107 GRAB2	4 SAMPLE	S99T0[illegible]0889	0		@BRKDWN1 ORGVOL02	LIQUID	N/A	-0-		mL

Final page for worklist # 29778

[illegible] 5/19/99
Analyst Signature Date

[illegible] 5/19/99
Analyst Signature Date

Approved RW Schroeder 5/19/99

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.

INORGANIC ANALYSIS

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LABCORE Data Entry Template for Worklist# 29820

Analyst: BM **Instrument:** DSC0 03 **Book #** 12N143

Method: LA-514-114 Rev/Mod ~~D-1~~ D-2 KH 5-25-99

Worklist Comment: AP107 FOR DSC-03 RTS

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				DSC-03	LIQUID	28.45	27.50	N/A	Joules/g
99000198	AP107 GRAB2	2	SAMPLE	S99T000890	0		DSC-03	LIQUID	N/A	0		Joules/g
99000198	AP107 GRAB2	3	DUP	S99T000890	0		DSC-03	LIQUID	0	0	N/A	Joules/g
99000198	AP107 GRAB2	4	SAMPLE	S99T000891	0		DSC-03	LIQUID	N/A	0		Joules/g
99000198	AP107 GRAB2	5	DUP	S99T000891	0		DSC-03	LIQUID	0	0	N/A	Joules/g

Final page for worklist # 29820

R J McCown 5/21/99
Analyst Signature Date

Mary Tracy 5/21/99
Analyst Signature Date

5-25-99
REVIEWER SIGNATURE DATE

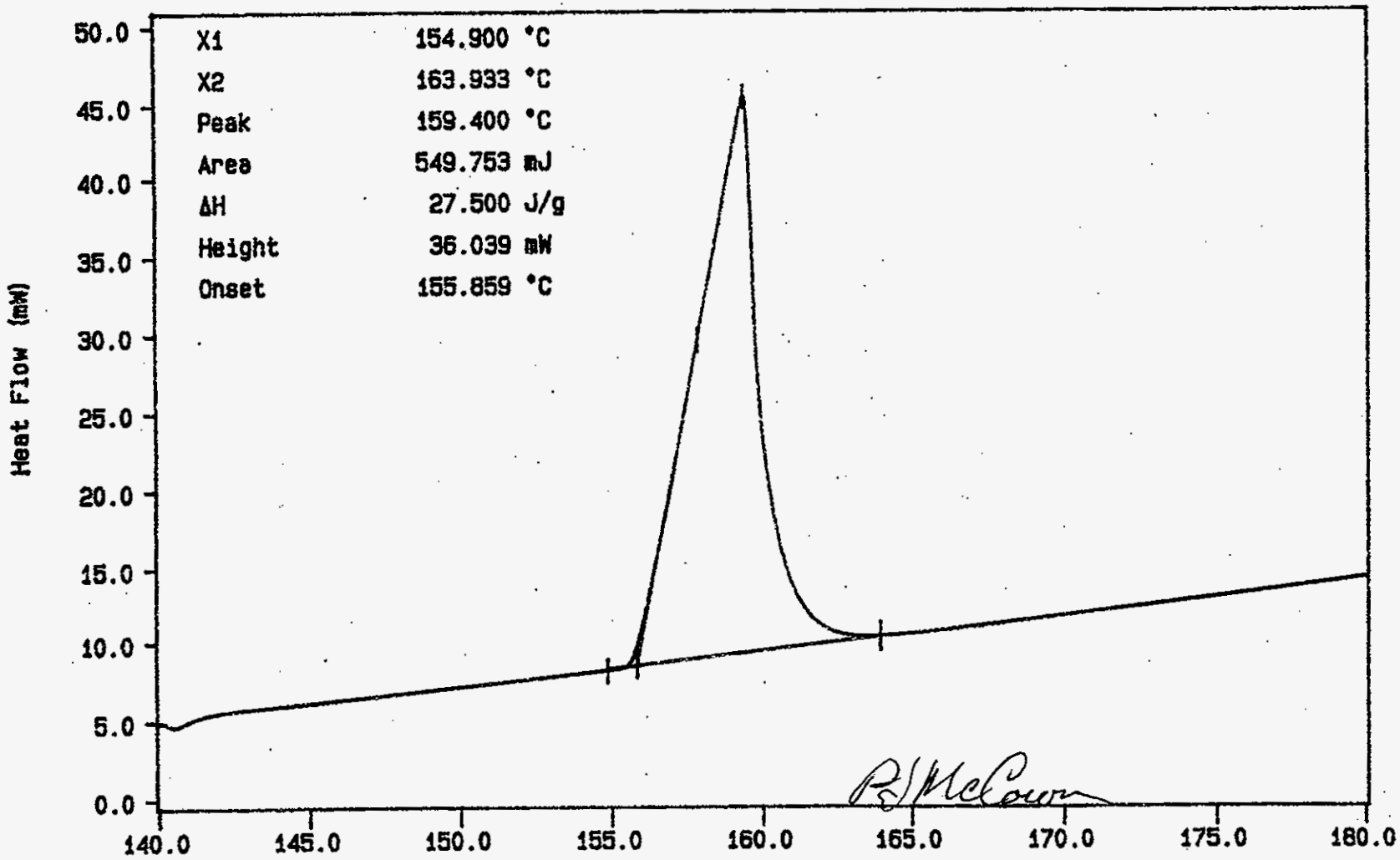
Data Entry Comments:

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

42

Curve 1: DSC
File info: IND052001 Thu May 20 19:17:00 1999
Sample Weight: 19.991 mg
STD 12N14-B

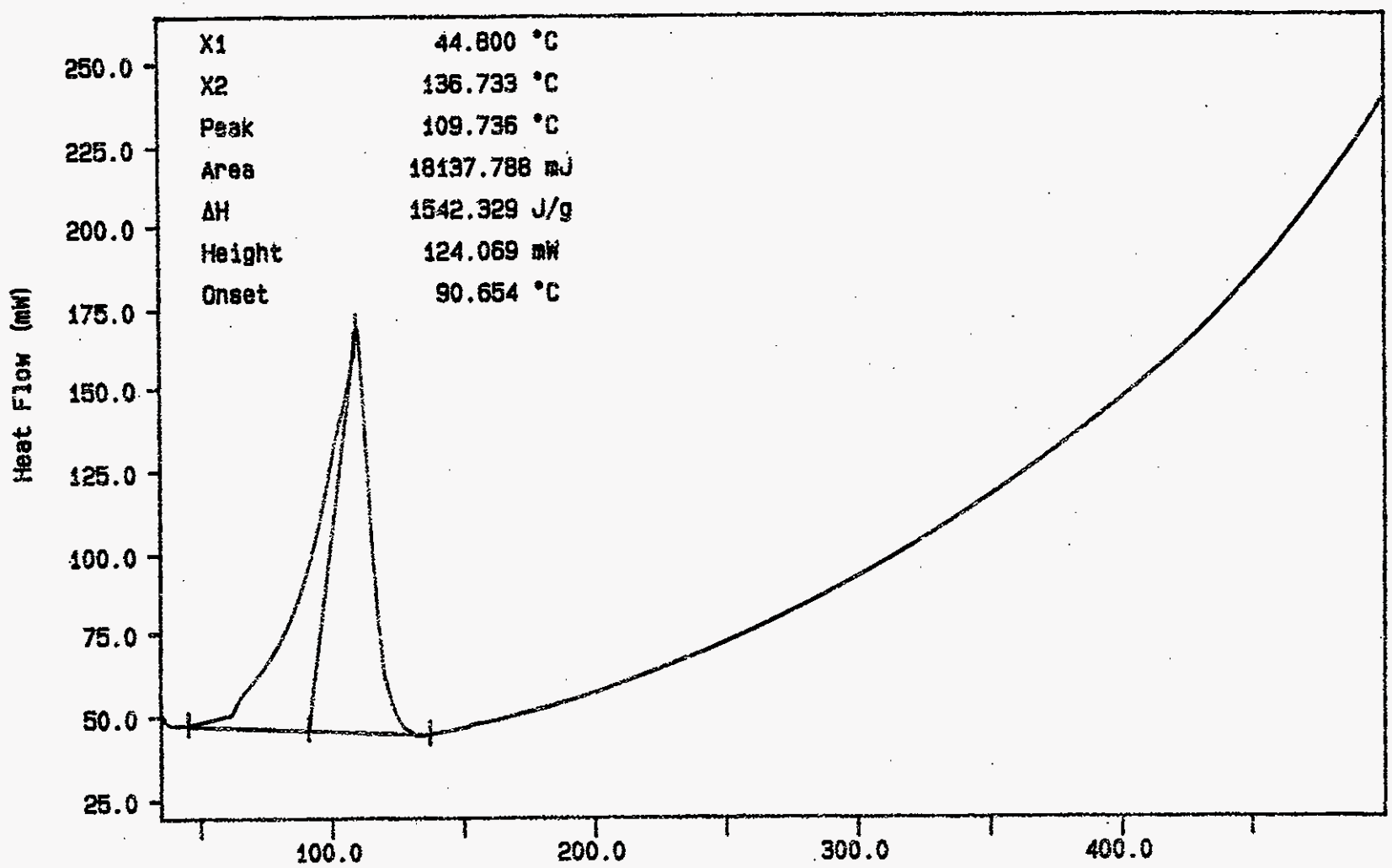
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 42 TO 44.



N2, EXOTHERM DOWN
TEMP1: 140.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 180.0 C

PJ MCCOWN
PERKIN-ELMER
7 Series Thermal Analysis System
Thu May 20 19:35:44 1999

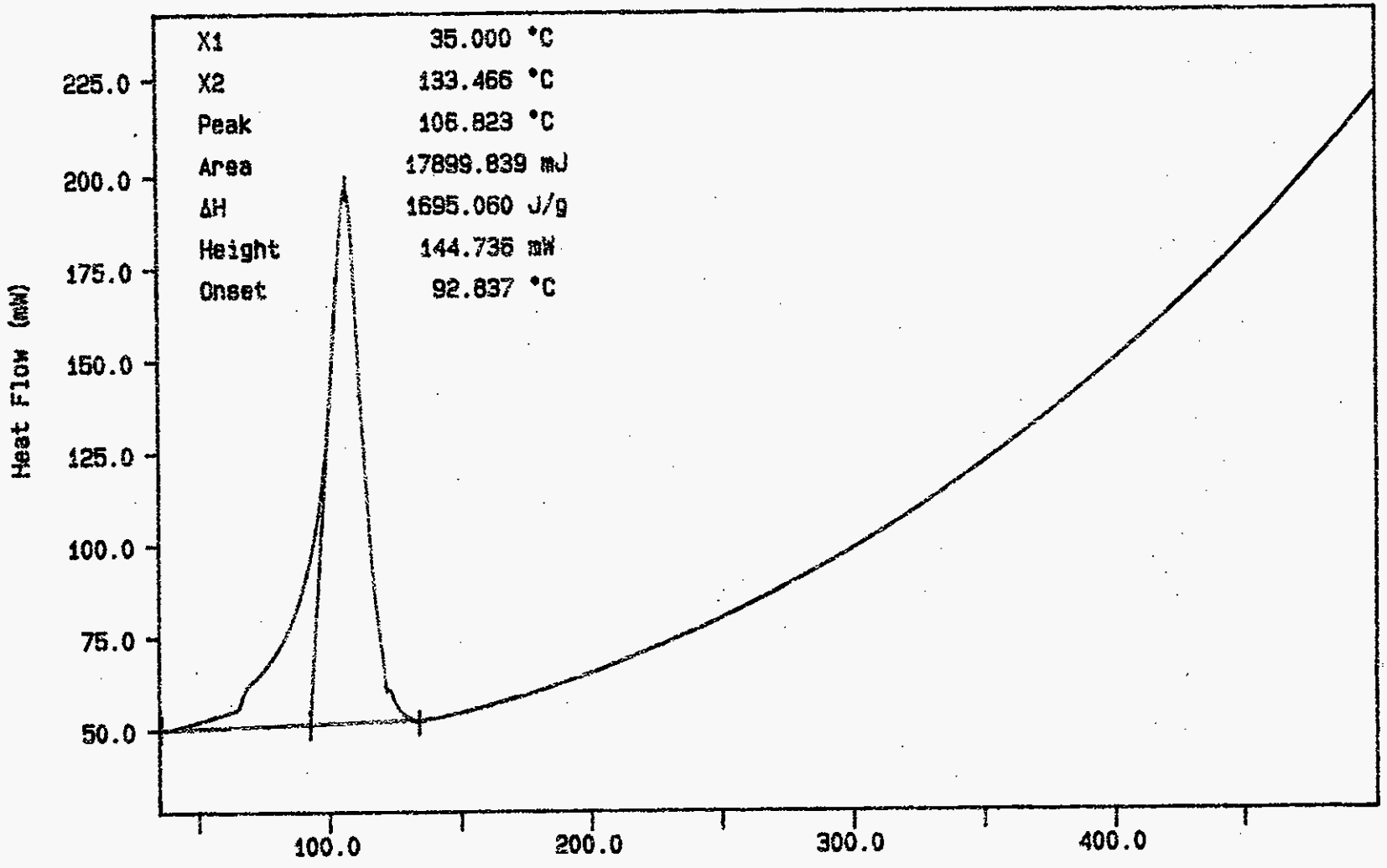
Curve 1: DSC
File info: SAM052101 Fri May 21 01:32:01 1999
Sample Weight: 11.760 mg
S99T000890



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

PJ MCCOWN
PERKIN-ELMER
7 Series Thermal Analysis System
Fri May 21 01:33:20 1999

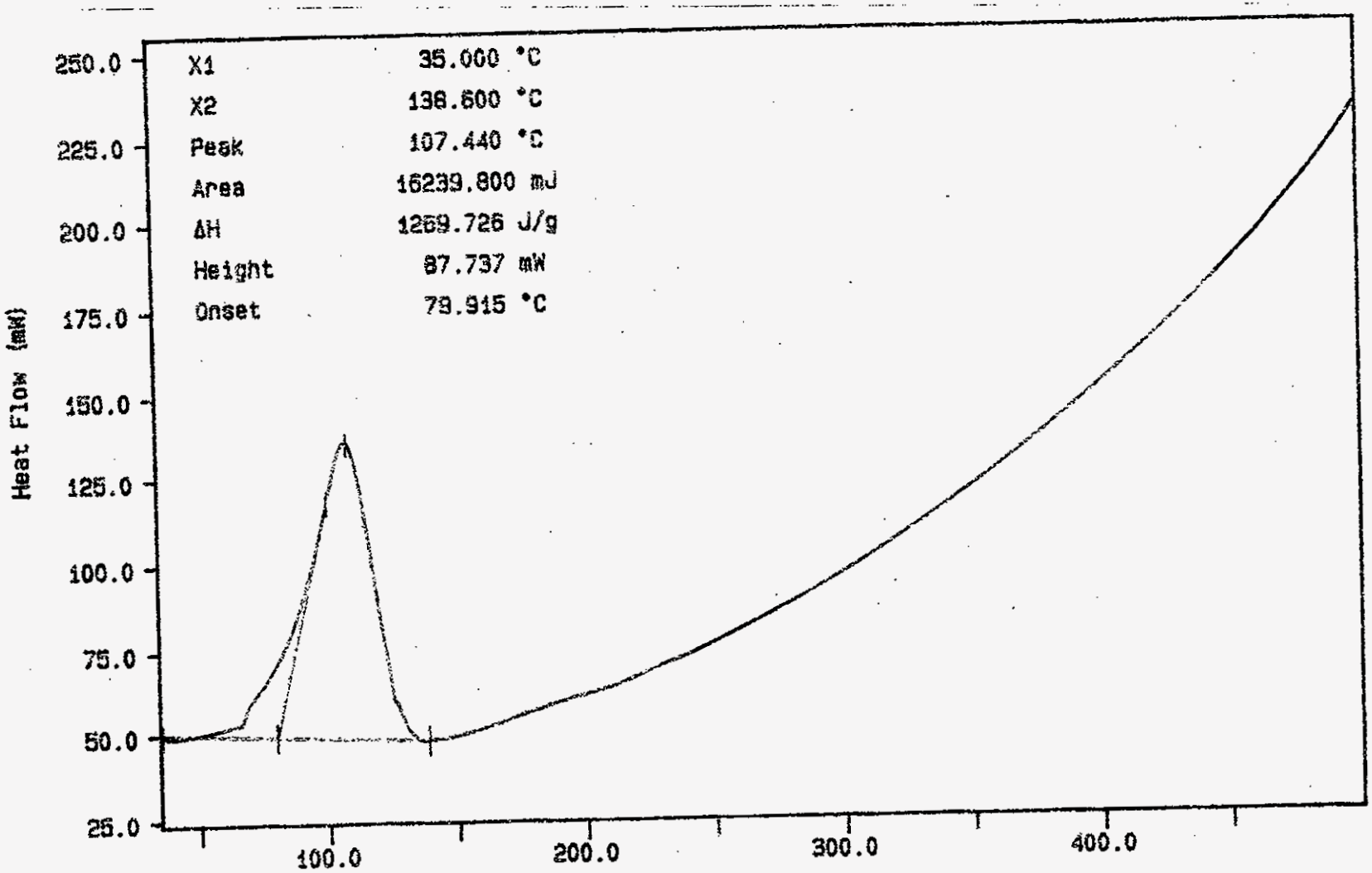
Curve 1: DSC
File info: SAM052102 Fri May 21 02:24:46 1999
Sample Weight: 10.560 mg
S99T000890 DUP



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

PJ MCCOWN
PERKIN-ELMER
7 Series Thermal Analysis System
Fri May 21 02:26:48 1999

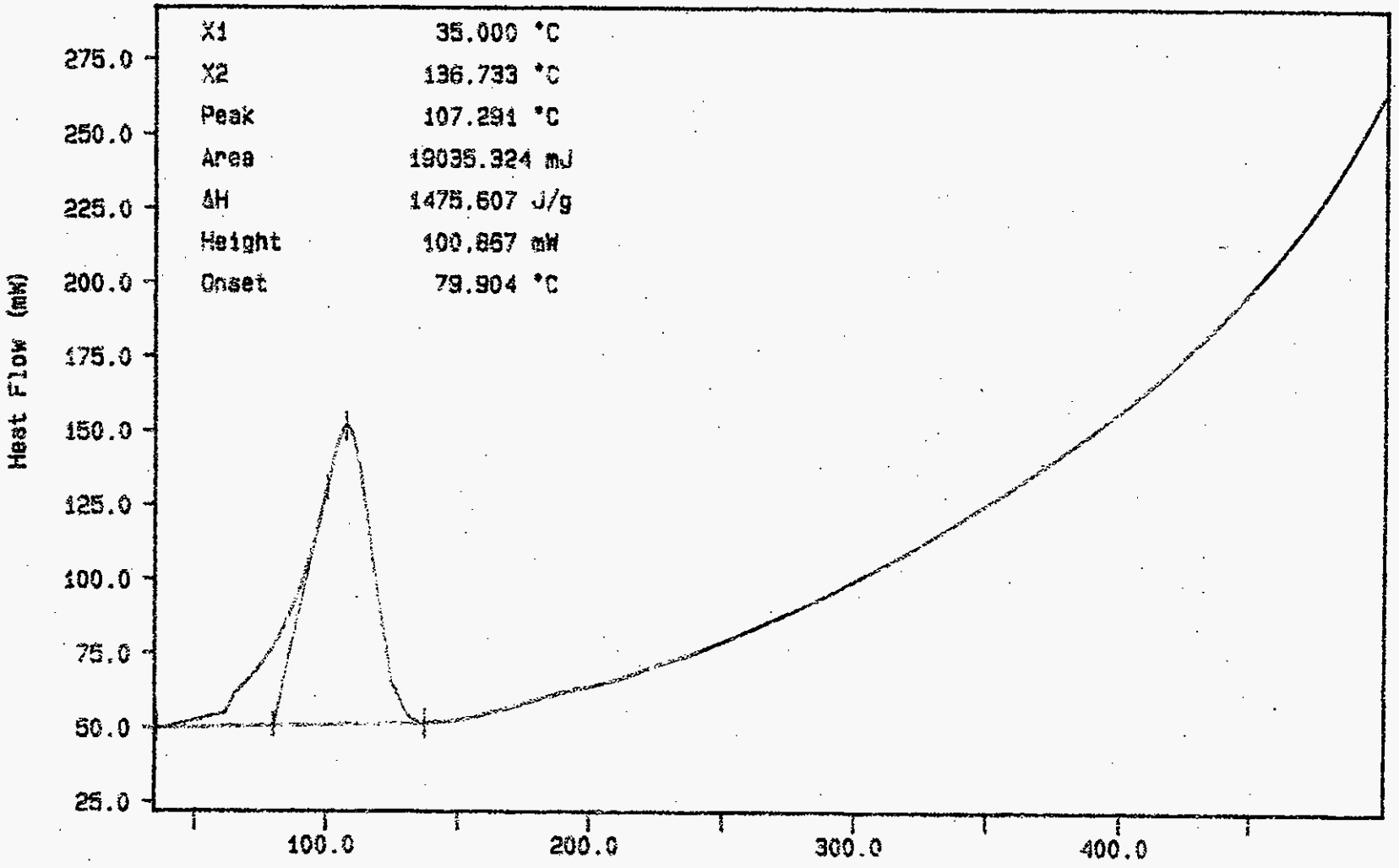
Curve 1: DSC
File info: SAM052103 Fri May 21 03:17:18 1999
Sample Weight: 12.790 mg
S99T000891



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

PJ MCCOWN
PERKIN-ELMER
7 Series Thermal Analysis System
Fri May 21 04:03:15 1999

Curve 1: DSC
File info: SAM052104 Fri May 21 04:52:45 1999
Sample Weight: 12.900 mg
S99T000891 DUP



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

PJ MCCOWN
PERKIN-ELMER
7 Series Thermal Analysis System
Fri May 21 06:58:30 1999

HNF-1672 REV. 0

worklistrpt Version 2.1 05/15/95
05/20/99 13:23

LABCORE Data Entry Template for Worklist# 29821

Analyst: RLC **Instrument:** DSC0 03 **Book #** 12N/4B

Method: LA-514-114 Rev/Mod ~~D-1~~ D-2 RJH 5-25-99

Worklist Comment: AP107 FOR DSC-03 RTS

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				DSC-03	LIQUID	28.45	27.5	N/A	Joules/g
99000198	AP107 GRAB2	2	SAMPLE	S99T000892	0		DSC-03	LIQUID	N/A	0		Joules/g
99000198	AP107 GRAB2	3	DUP	S99T000892	0		DSC-03	LIQUID	0	0	N/A	Joules/g
99000198	AP107 GRAB2	4	SAMPLE	S99T000893	0		DSC-03	LIQUID	N/A	0		Joules/g
99000198	AP107 GRAB2	5	DUP	S99T000893	0		DSC-03	LIQUID	0	0	N/A	Joules/g

Final page for worklist # 29821

RLMcCown 5/21/99
Analyst Signature **Date**

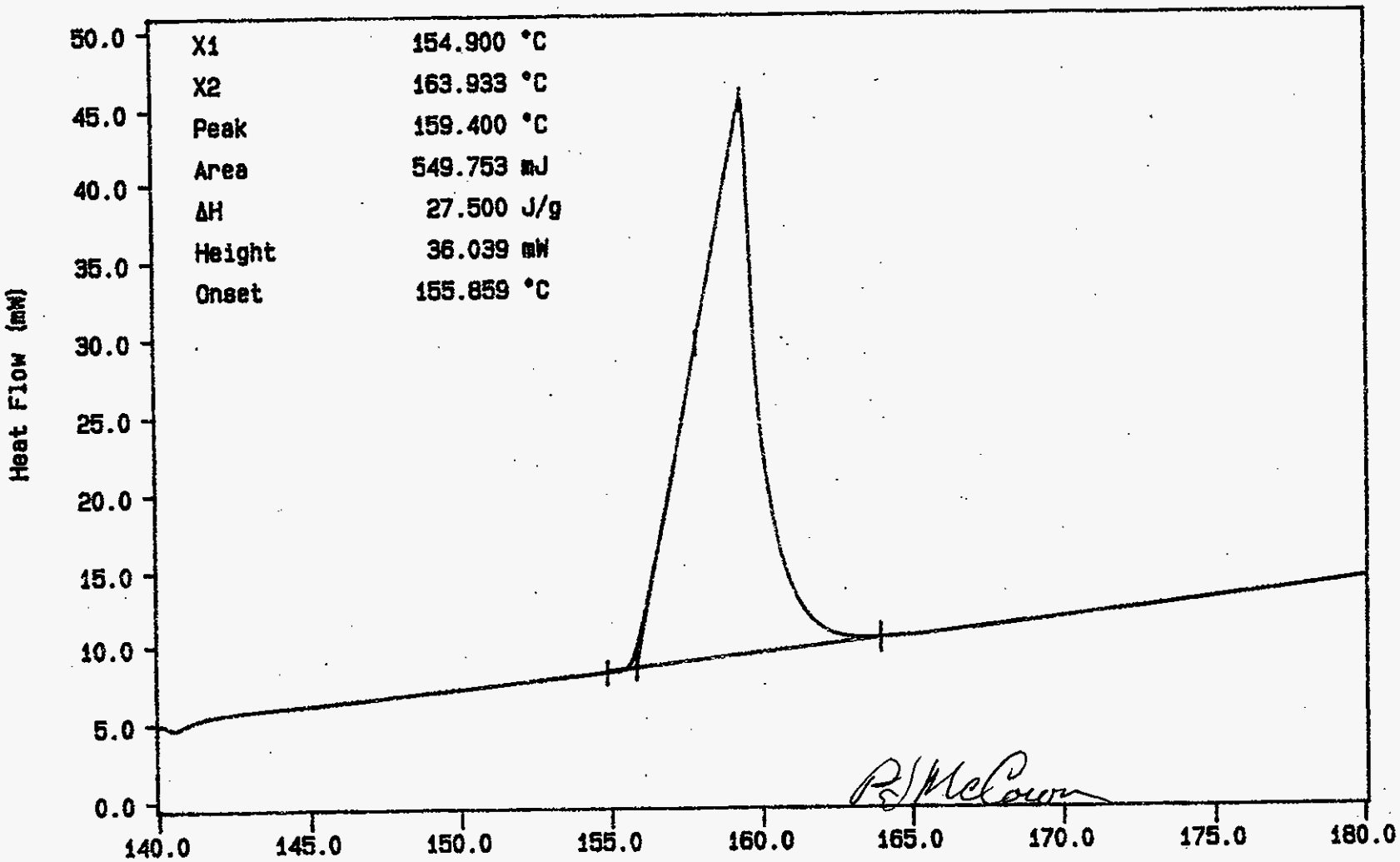
Mary Franz 5/24/99
Analyst Signature **Date**

RJ Hanson 5-25-99
REVIEWER SIGNATURE DATE

Data Entry Comments:

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

Curve 1: DSC
File info: IND052001 Thu May 20 19:17:00 1999
Sample Weight: 19.991 mg
STD 12N14-B



N2, EXOTHERM DOWN
TEMP1: 149.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 180.0 C

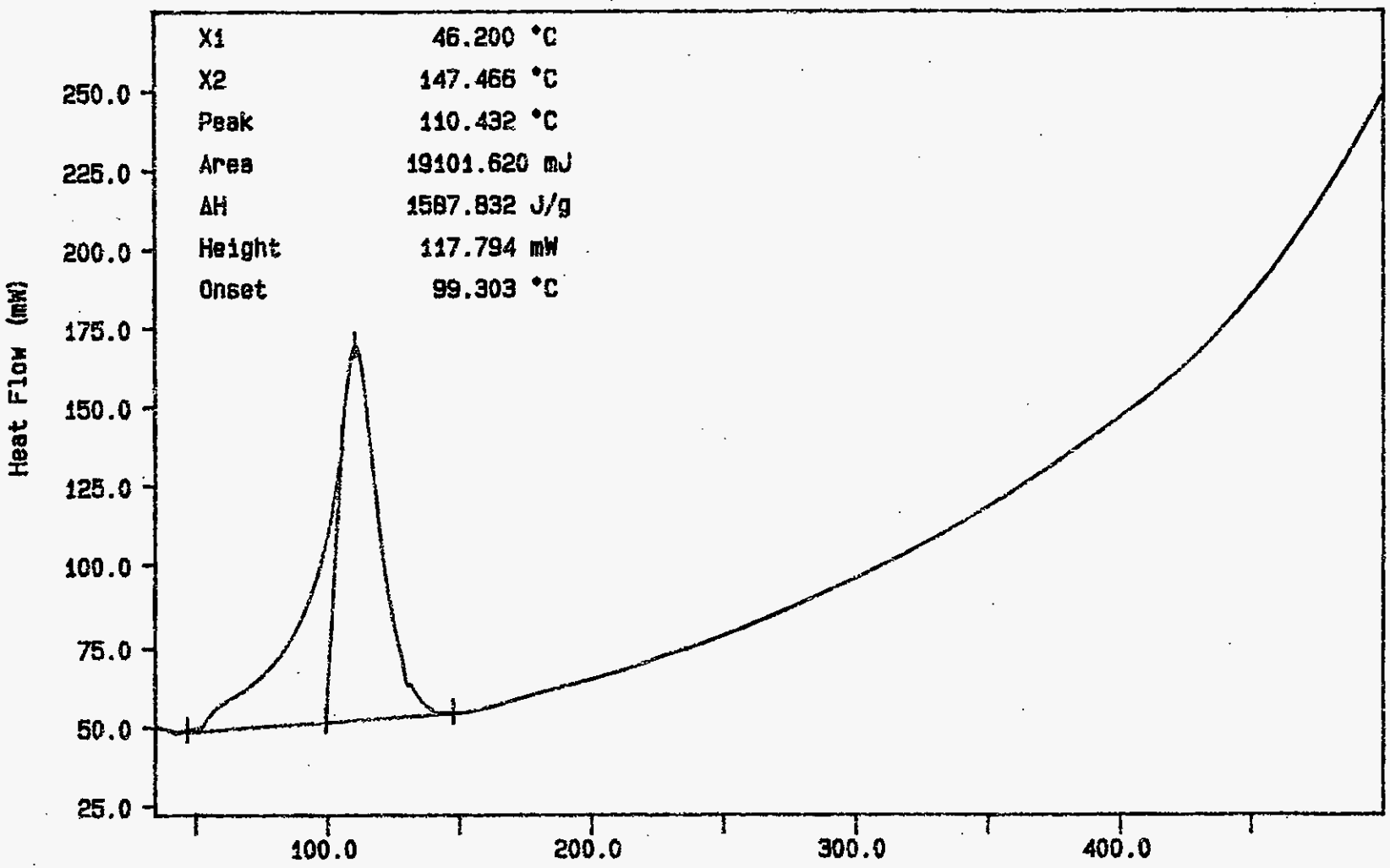
PJ MCCOWN
PERKIN-ELMER
7 Series Thermal Analysis System
Thu May 20 19:35:44 1999

HNF-1672 REV. 0

48

Curve 1: DSC
File info: SAM052001 Thu May 20 20:40:24 1999
Sample Weight: 12.030 mg
S99T000892

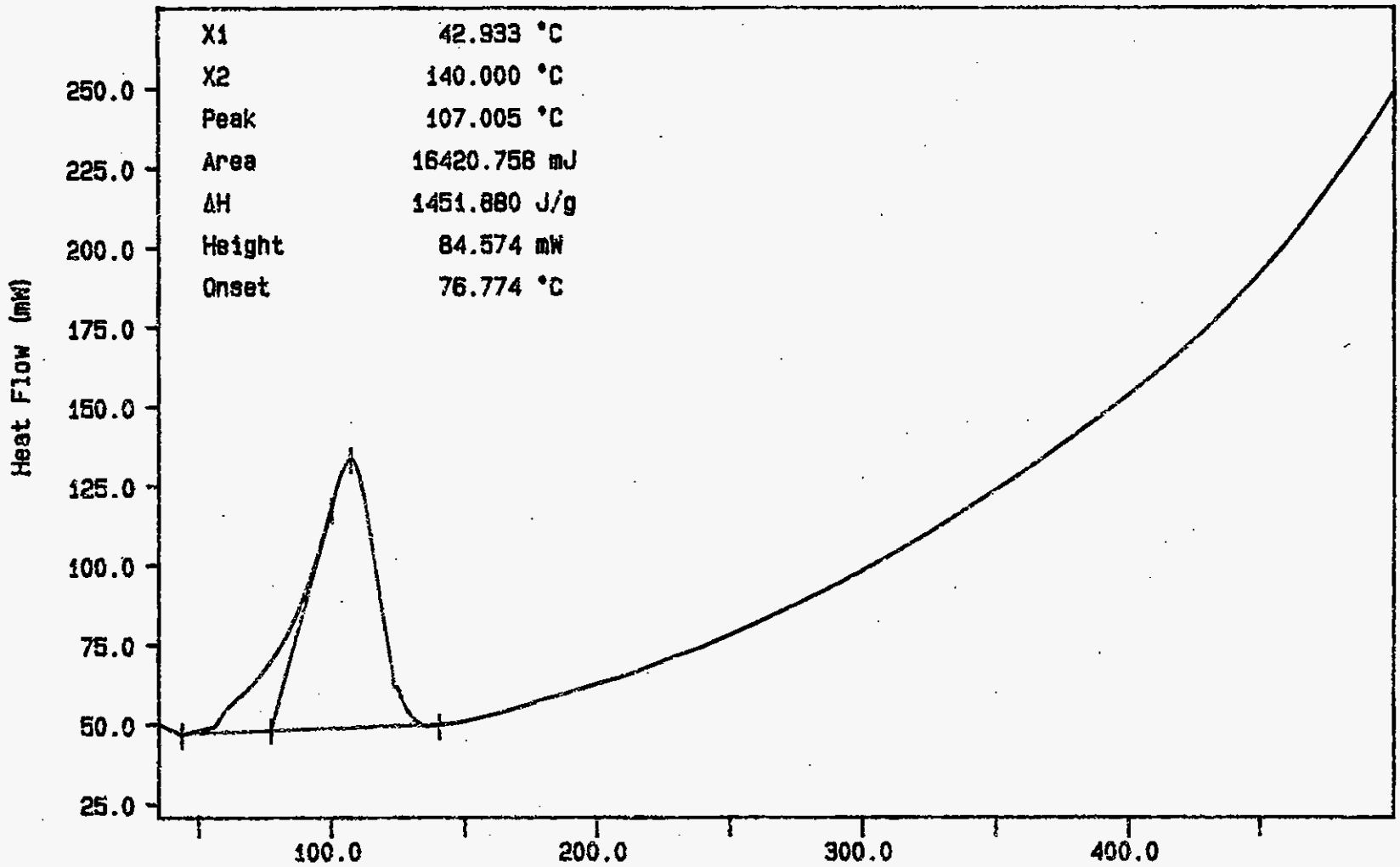
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 49 TO 53.



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

PJ MCCOWN
PERKIN-ELMER
7 Series Thermal Analysis System
Thu May 20 21:24:13 1999

Curve 1: DSC
File info: SAM052002 Thu May 20 22:17:40 1999
Sample Weight: 11.310 mg
S99T000892 DUP

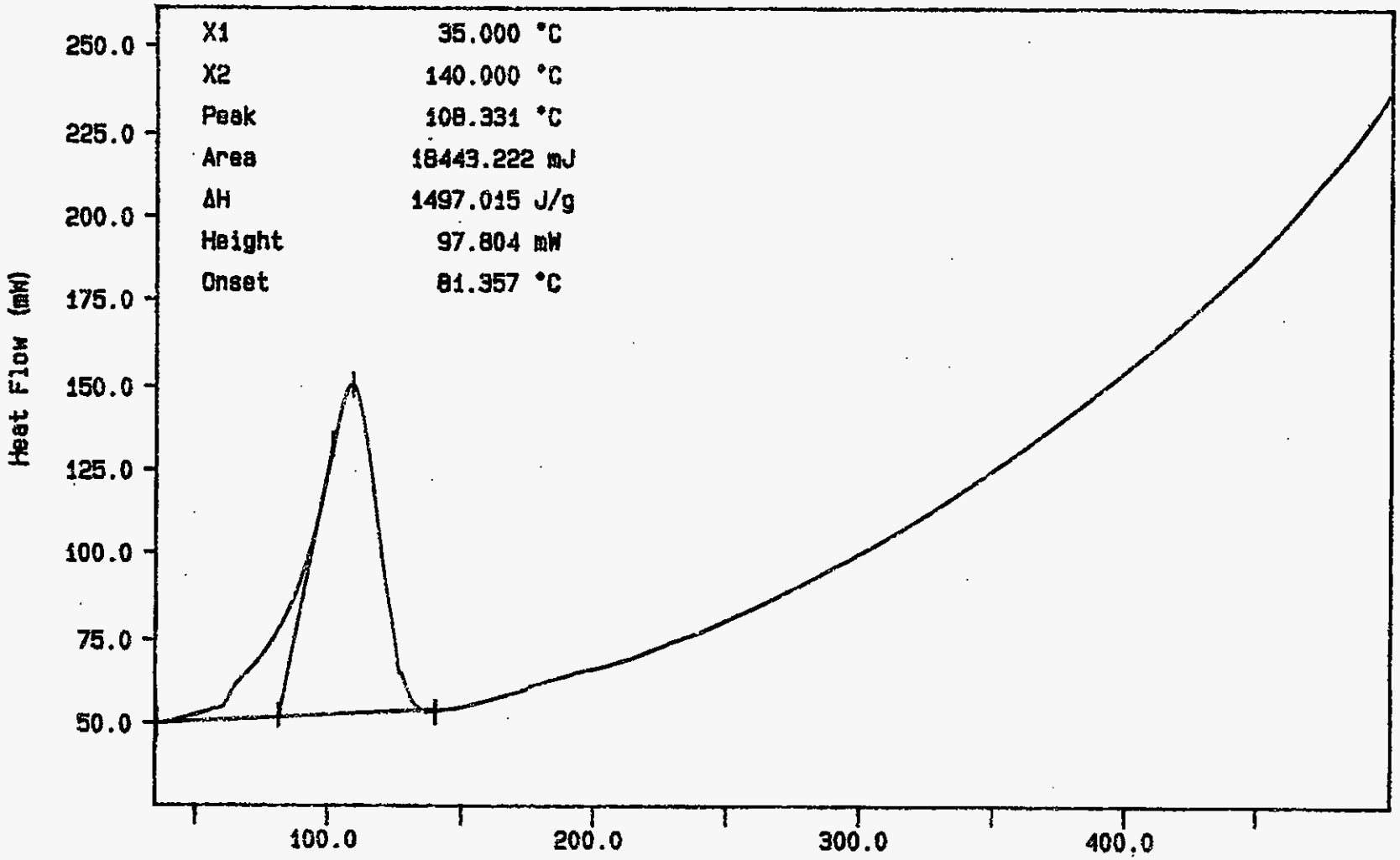


N2 10C/min
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 500.0 C

PJ MCCOWN
PERKIN-ELMER
7 Series Thermal Analysis System
Thu May 20 22:23:26 1999

05/21/99 01:34 FAX 3721143 2B HALL 004/012

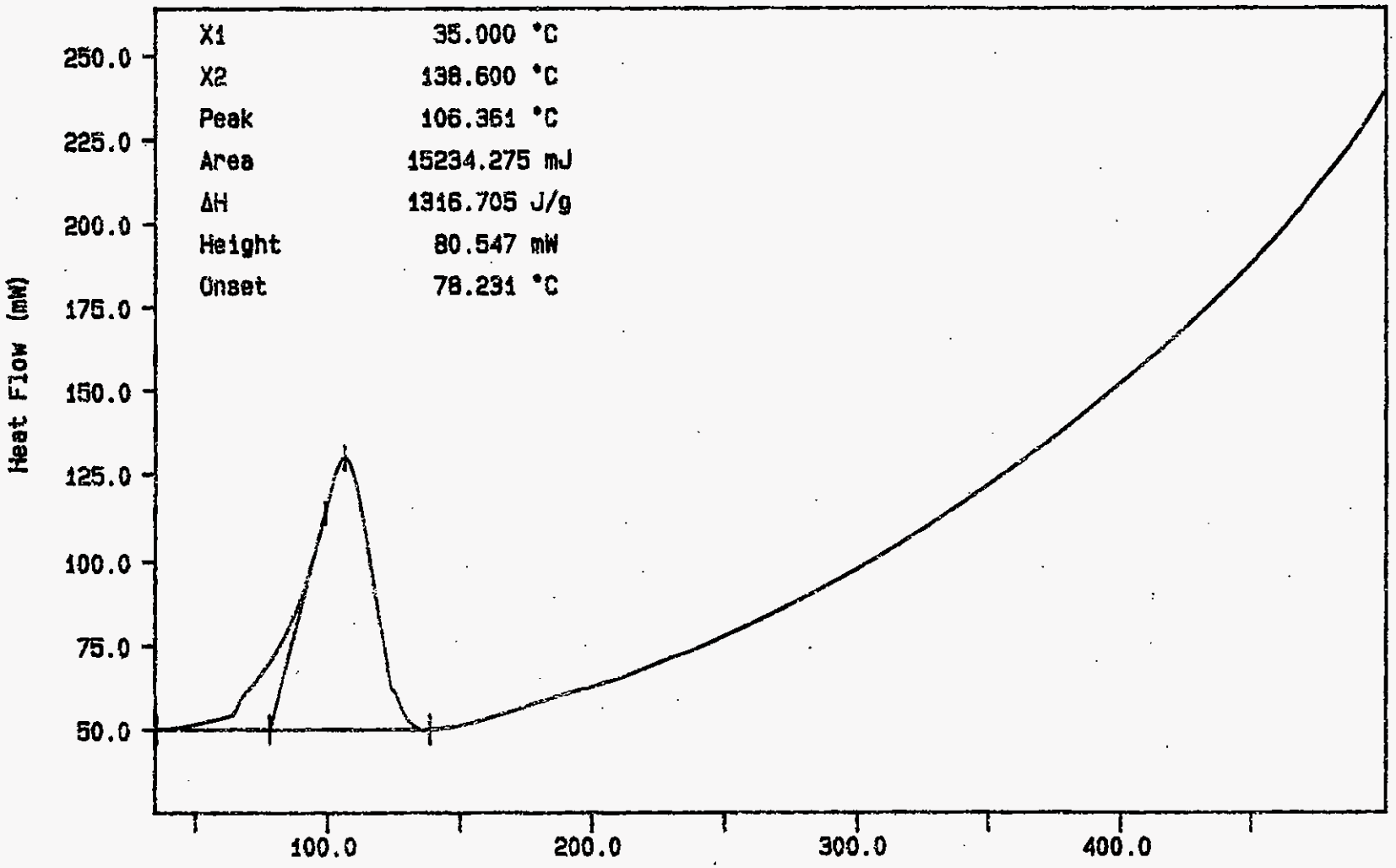
Curve 1: DSC
File info: SAM052003 Thu May 20 23:18:20 1999
Sample Weight: 12.320 mg
S99T000893



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

PJ MCCOWN
PERKIN-ELMER
7 Series Thermal Analysis System
Thu May 20 23:18:42 1999

Curve 1: DSC
File info: SAM052004 Fri May 21 00:11:09 1999
Sample Weight: 11.570 mg
S99T000893 DUP



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

PJ MCCOWN
PERKIN-ELMER
7 Series Thermal Analysis System
Fri May 21 00:41:38 1999

LABCORE Completed Worklist Report for Worklist# 29895

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

LA-514-114 5-25-99

Method: ~~LA-514-1~~13 Rev/Mod D-2

Worklist Comment: DSC02 AP107 MF

Seq	Type	Sample#	R	A	Test	Matrix	Actual	Found	DL or Yield	Unit
1	SAMPLE	S99T000890	0		DSC-02	LIQUID	N/A	0		Joules/g Dry
2	DUP	S99T000890	0		DSC-02	LIQUID	0	0	0.000	RPD
3	SAMPLE	S99T000891	0		DSC-02	LIQUID	N/A	0		Joules/g Dry
4	DUP	S99T000891	0		DSC-02	LIQUID	0	0	0.000	RPD
5	SAMPLE	S99T000892	0		DSC-02	LIQUID	N/A	0		Joules/g Dry
6	DUP	S99T000892	0		DSC-02	LIQUID	0	0	0.000	RPD
7	SAMPLE	S99T000893	0		DSC-02	LIQUID	N/A	0		Joules/g Dry
8	DUP	S99T000893	0		DSC-02	LIQUID	0	0	0.000	RPD

Final page for worklist# 29895

Analyst Signature Date

Mary Frans 5/25/99
Analyst Signature Date

R. Hennessy Jr 5/25/99
Reviewer Signature Date

Units shown for QC (BLK/BKG) may not reflect the actual units.

worklistrpt Version 2.1 05/15/95
05/20/99 13:27

LABCORE Data Entry Template for Worklist# 29829

Analyst: RJM **Instrument:** TGA0 03 **Book #** 117N8A

Method: LA-514-114 Rev/Mod ~~D-1~~ D-2 KJ 5-25-99

Worklist Comment: AP107 FOR TGA-03 RTS

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				TGA-03	LIQUID	59.4	59.02	N/A	%
99000198	AP107 GRAB2	2	SAMPLE	S99T000890	0		TGA-03	LIQUID	N/A	87.04		%
99000198	AP107 GRAB2	3	DUP	S99T000890	0		TGA-03	LIQUID	87.04	88.18	N/A	%
99000198	AP107 GRAB2	4	SAMPLE	S99T000891	0		TGA-03	LIQUID	N/A	79.42		%
99000198	AP107 GRAB2	5	DUP	S99T000891	0		TGA-03	LIQUID	79.42	79.01	N/A	%

Final page for worklist # 29829

RJMcCown 5/21/99
Analyst Signature **Date**

Mary Franz 5/24/99
Analyst Signature **Date**

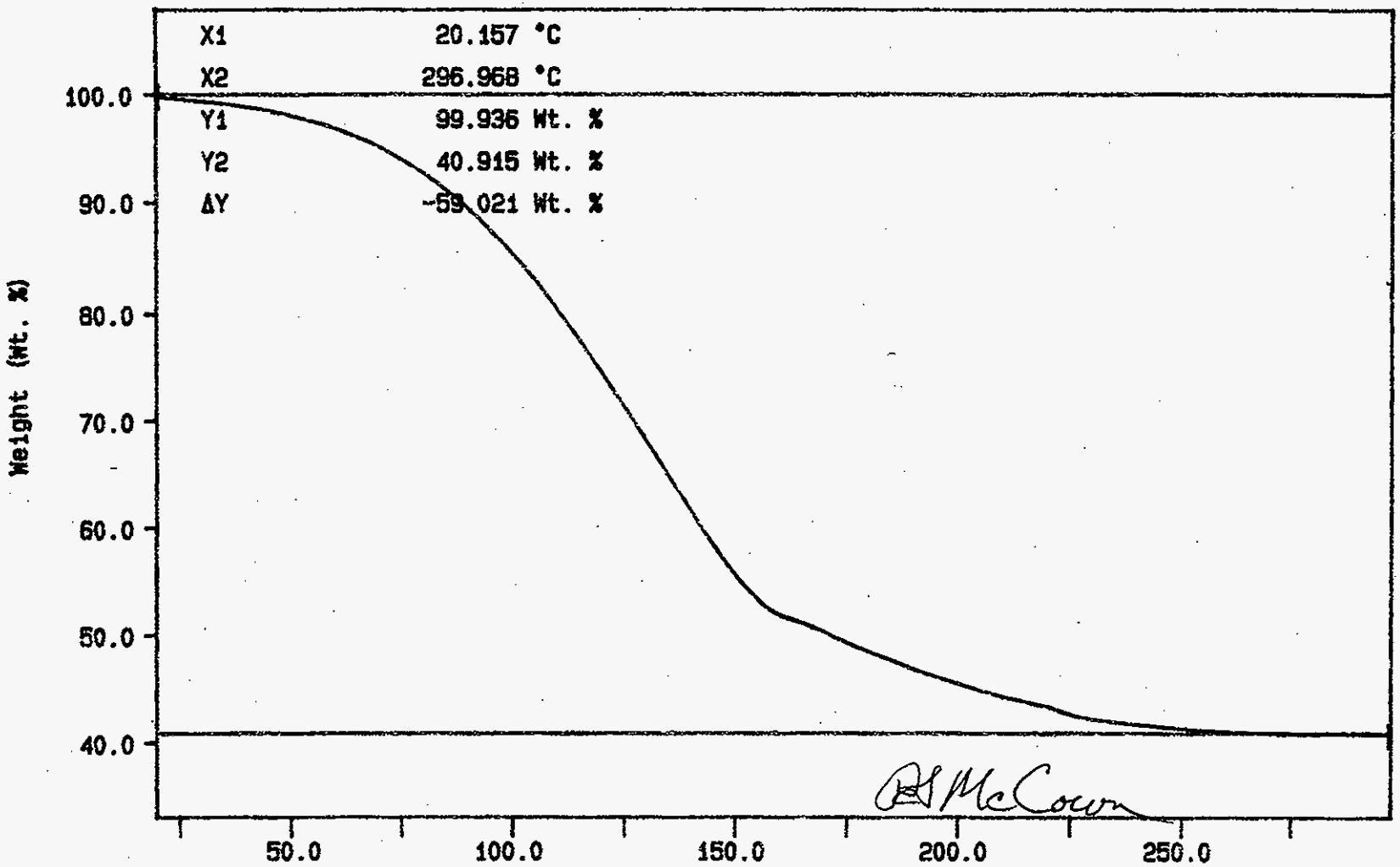
RJ Guenther 5/25/99
REVIEWER SIGNATURE DATE

Data Entry Comments:

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

Curve 1: TGA
File info: TER052001 Thu May 20 19:32:17 1999
Sample Weight: 14.320 mg
117N8-A

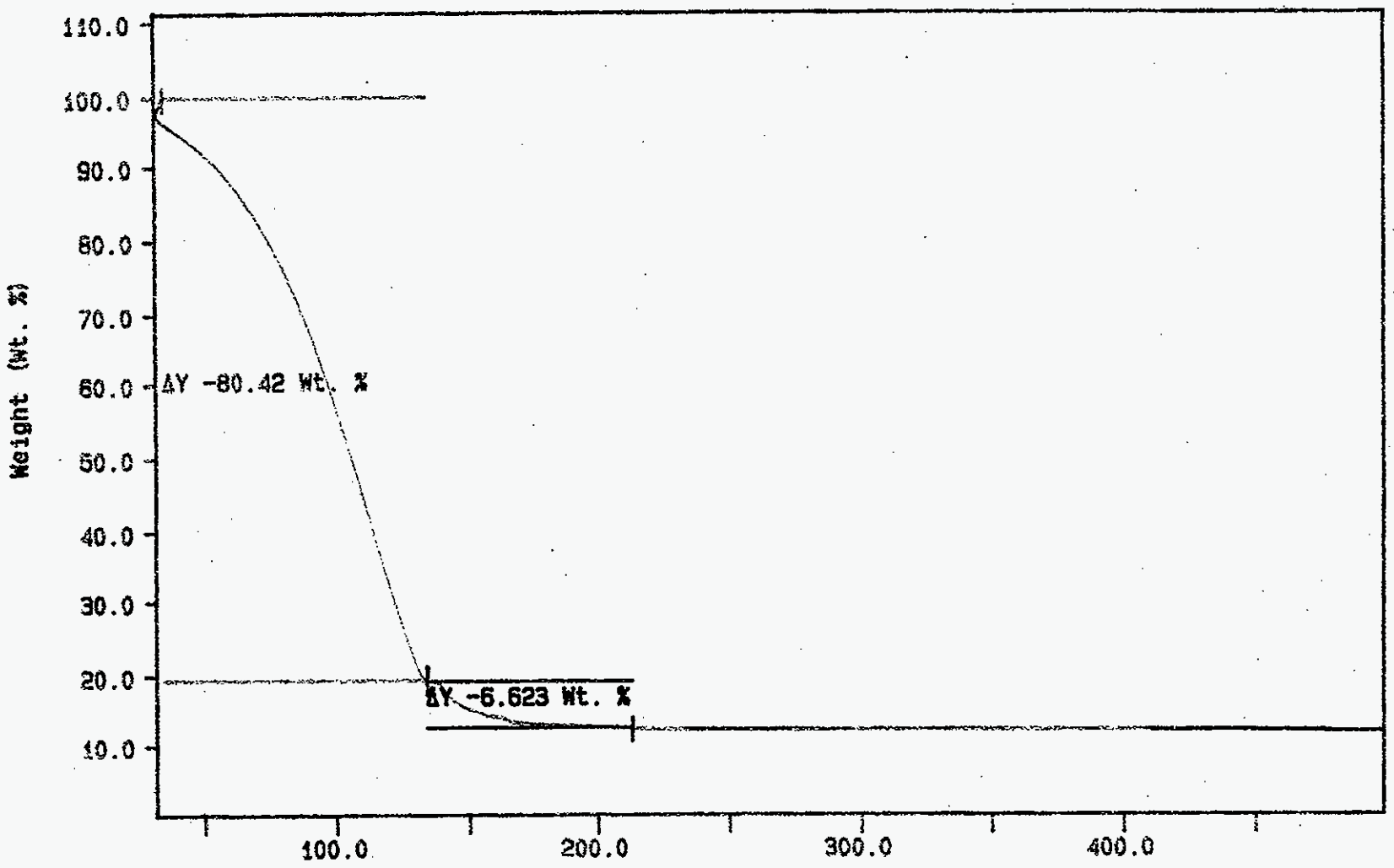
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 55 TO 59.



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

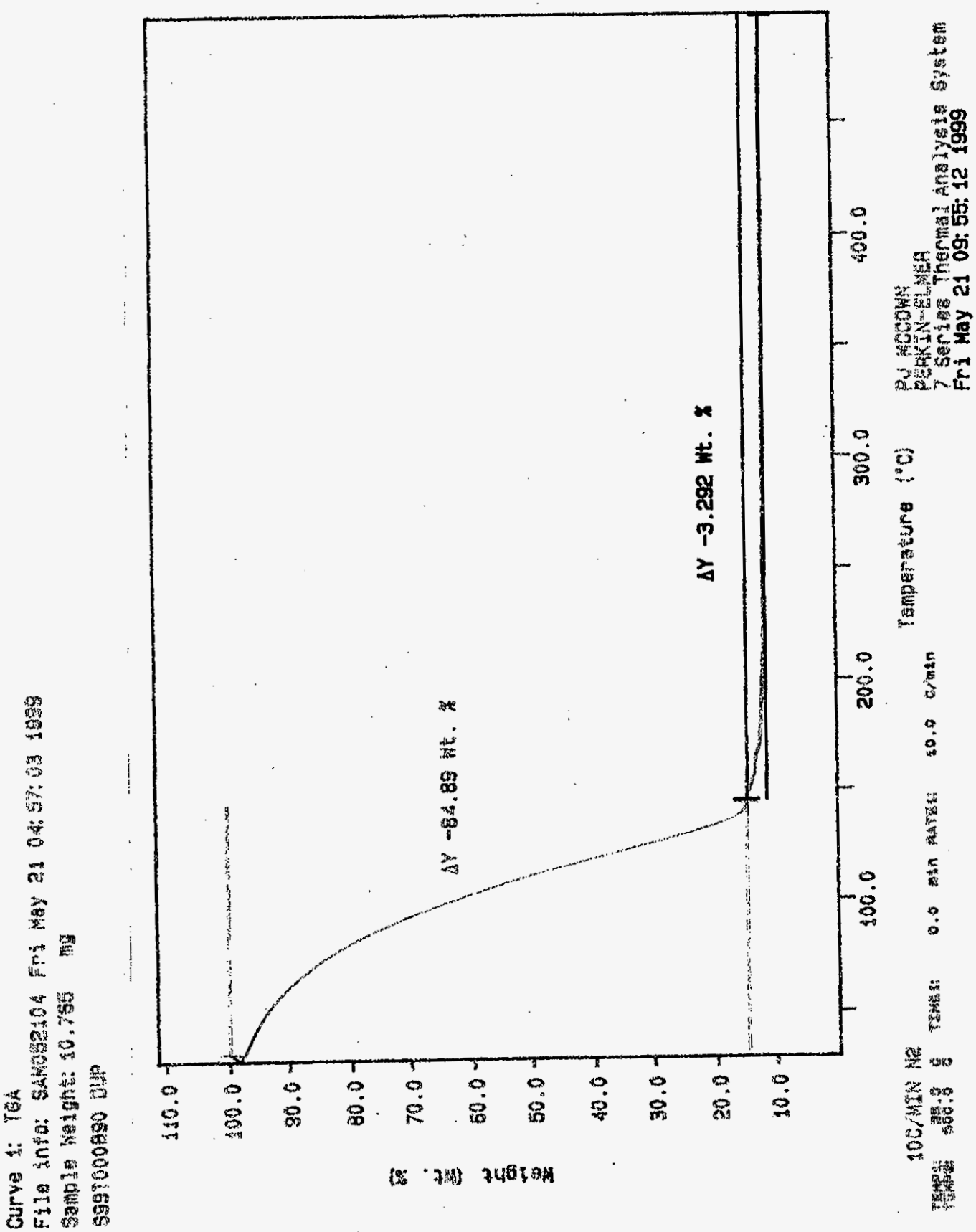
PJ MCCOWN
PERKIN-ELMER
7 Series Thermal Analysis System
Thu May 20 19:37:38 1999

Curve 1: TGA
File info: SAM052103 Fri May 21 03:51:03 1999
Sample Weight: 10.458 mg
S99T000890

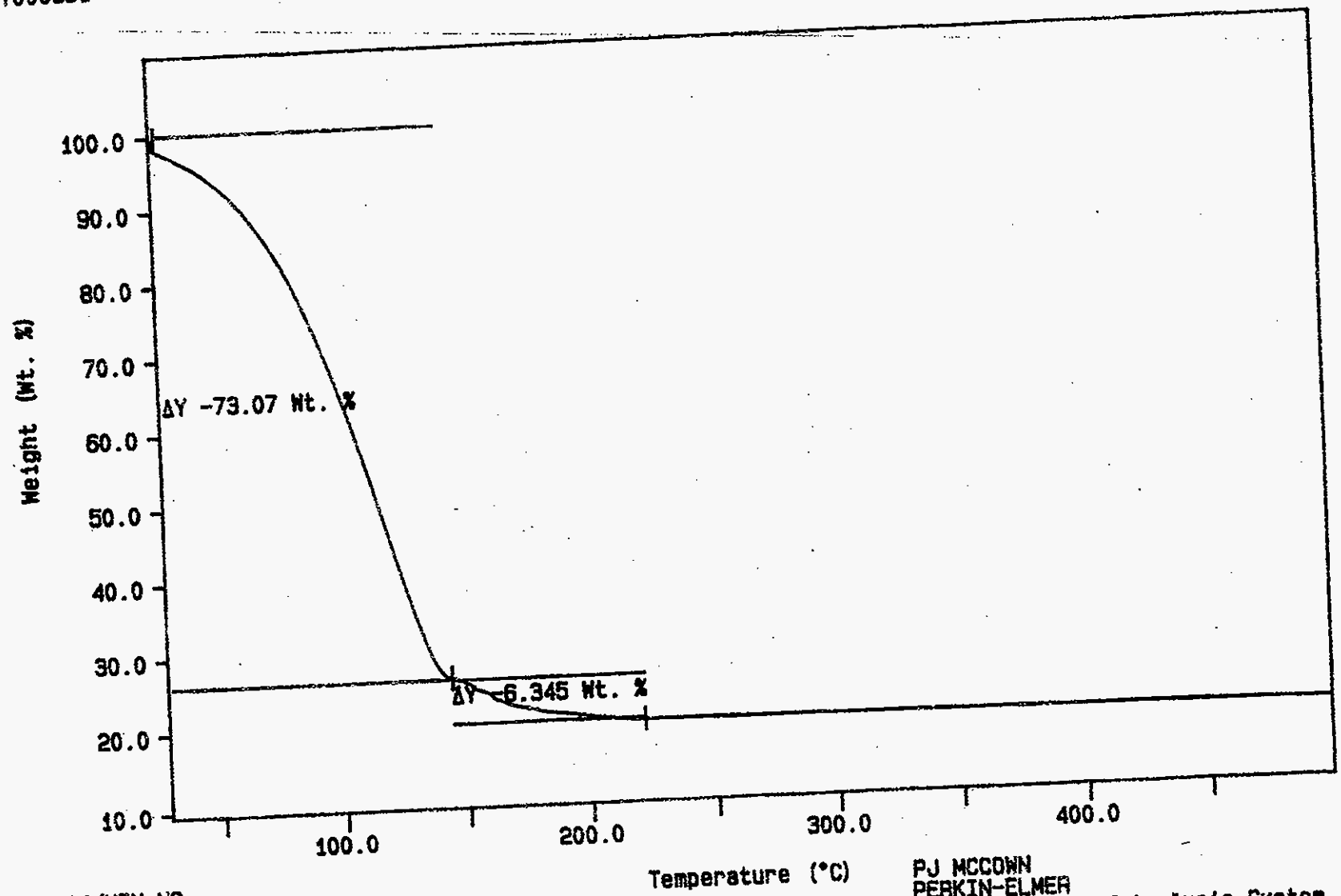


10C/MIN N2
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 500.0 C

PJ MCCOWN
PERKIN-ELMER
7 Series Thermal Analysis System
Fri May 21 04:06:54 1999


Curve 1: TGA
File info: SAMG92104 Fri May 21 04:57:03 1999
Sample Weight: 10.7565 mg
SS9T000890 DUP
ΔY -64.89 Wt. %
ΔY -3.292 Wt. %
Weight (Wt. %)
110.0
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
100.0
200.0
300.0
400.0
Temperature (°C)
10C/MIN N2
TEMP: 28.9 C
TEMP: 500.0 C
TEMP: 0.0 min RATE: 10.0 C/min
PC MODEL
PERKIN-ELMER
7 Series Thermal Analysis System
Fri May 21 09:55:12 1999

Curve 1: TGA
File info: SAM052101 Fri May 21 01:40:33 1999
Sample Weight: 11.460 mg
S99T000891



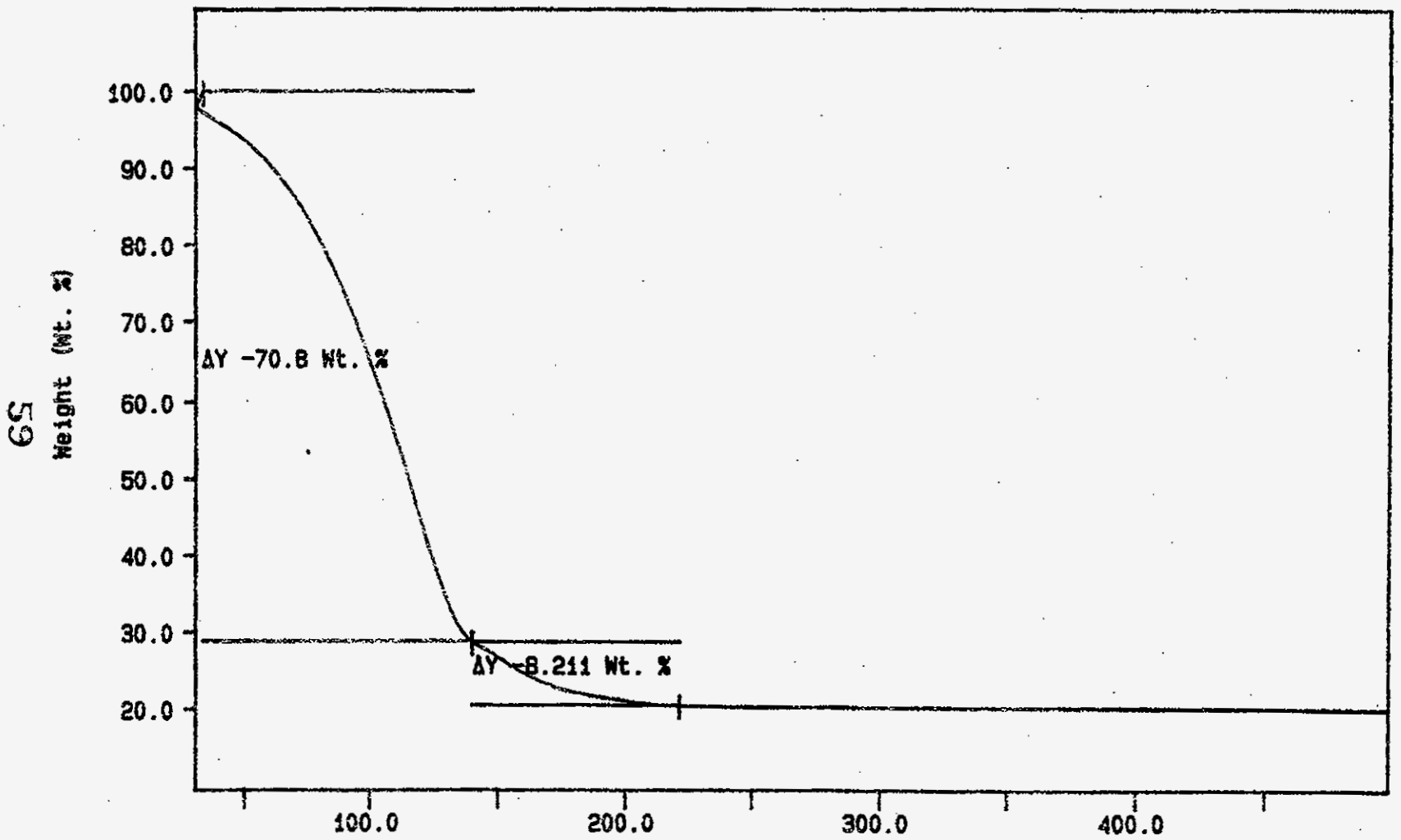
10C/MIN N2
35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
500.0 C

PJ MCCOWN
PERKIN-ELMER
7 Series Thermal Analysis System
Fri May 21 01:46:30 1999

58

HNF-1672 REV. 0

Curve 1: TGA
File info: SAM052102 Fri May 21 02:45:56 1999
Sample Weight: 11.441 mg
S99T000891 DUP



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

PJ MCCOWN
PERKIN-ELMER
7 Series Thermal Analysis System
Fri May 21 02:46:55 1999

LABCORE Data Entry Template for Worklist# 29830

Analyst: RJM **Instrument:** TGA0 03 **Book #** 117N8A

Method: LA-514-114 Rev/Mod ~~D-1~~ D-2 5-25-99

Worklist Comment: AP107 FOR TGA-03 RTS

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				TGA-03	LIQUID	59.4	59.02	N/A	%
99000198	AP107 GRAB2	2	SAMPLE	S99T000892	0		TGA-03	LIQUID	N/A	79.63		%
99000198	AP107 GRAB2	3	DUP	S99T000892	0		TGA-03	LIQUID	79.63	79.03	N/A	%
99000198	AP107 GRAB2	4	SAMPLE	S99T000893	0		TGA-03	LIQUID	N/A	79.64		%
99000198	AP107 GRAB2	5	DUP	S99T000893	0		TGA-03	LIQUID	79.64	79.31	N/A	%

Final page for worklist # 29830

RJ McCown 5/21/99
Analyst Signature Date

Mary Franz 5/24/99
Analyst Signature Date

REVIEWER SIGNATURE 5/25/99 DATE

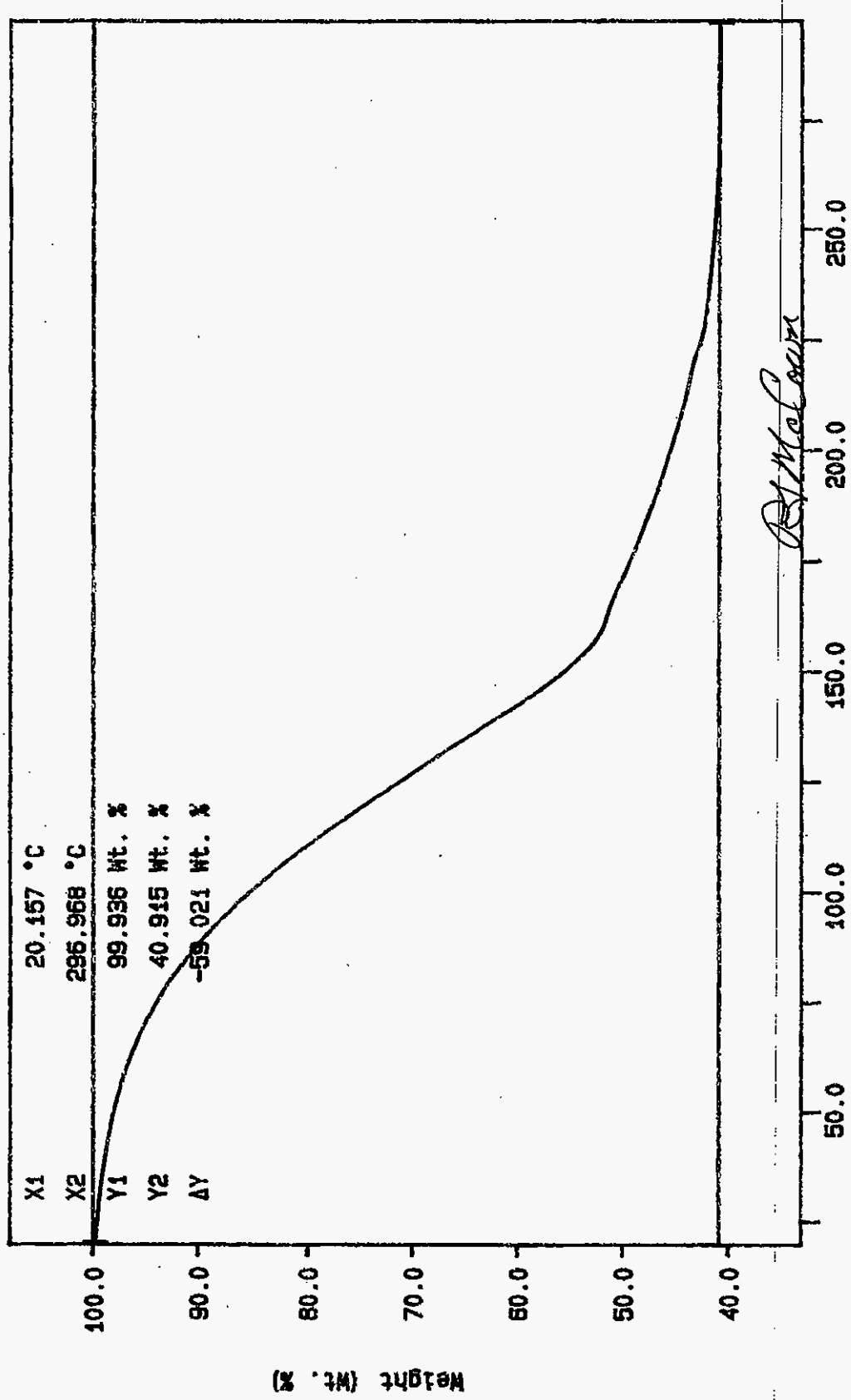
Data Entry Comments:

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

HNF-1672 REV. 0

Curve 1: TGA
File info: TER052001 Thu May 20 19:32:17 1999
Sample Weight: 14.320 mg
117NB-A

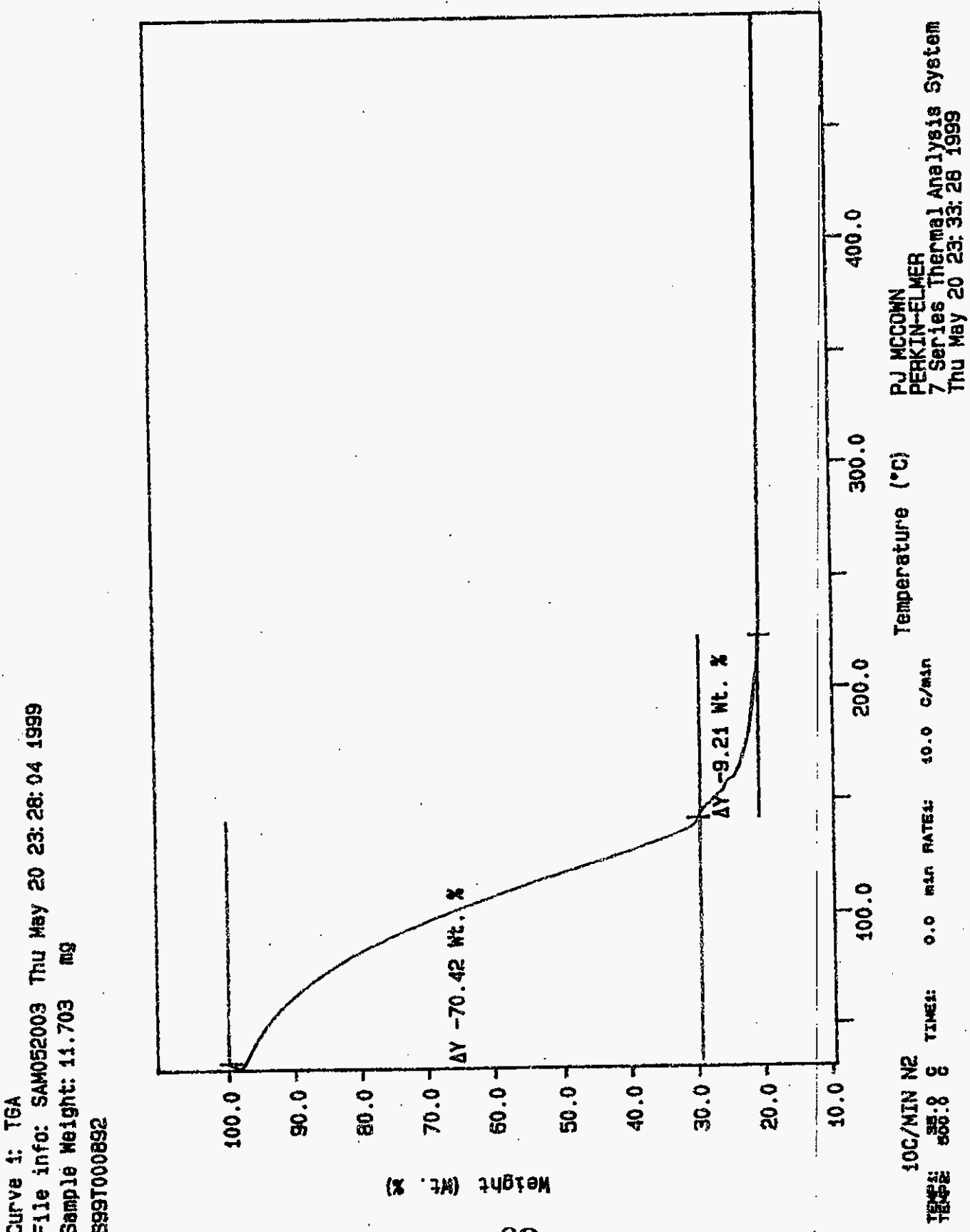
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 61 TO 65.

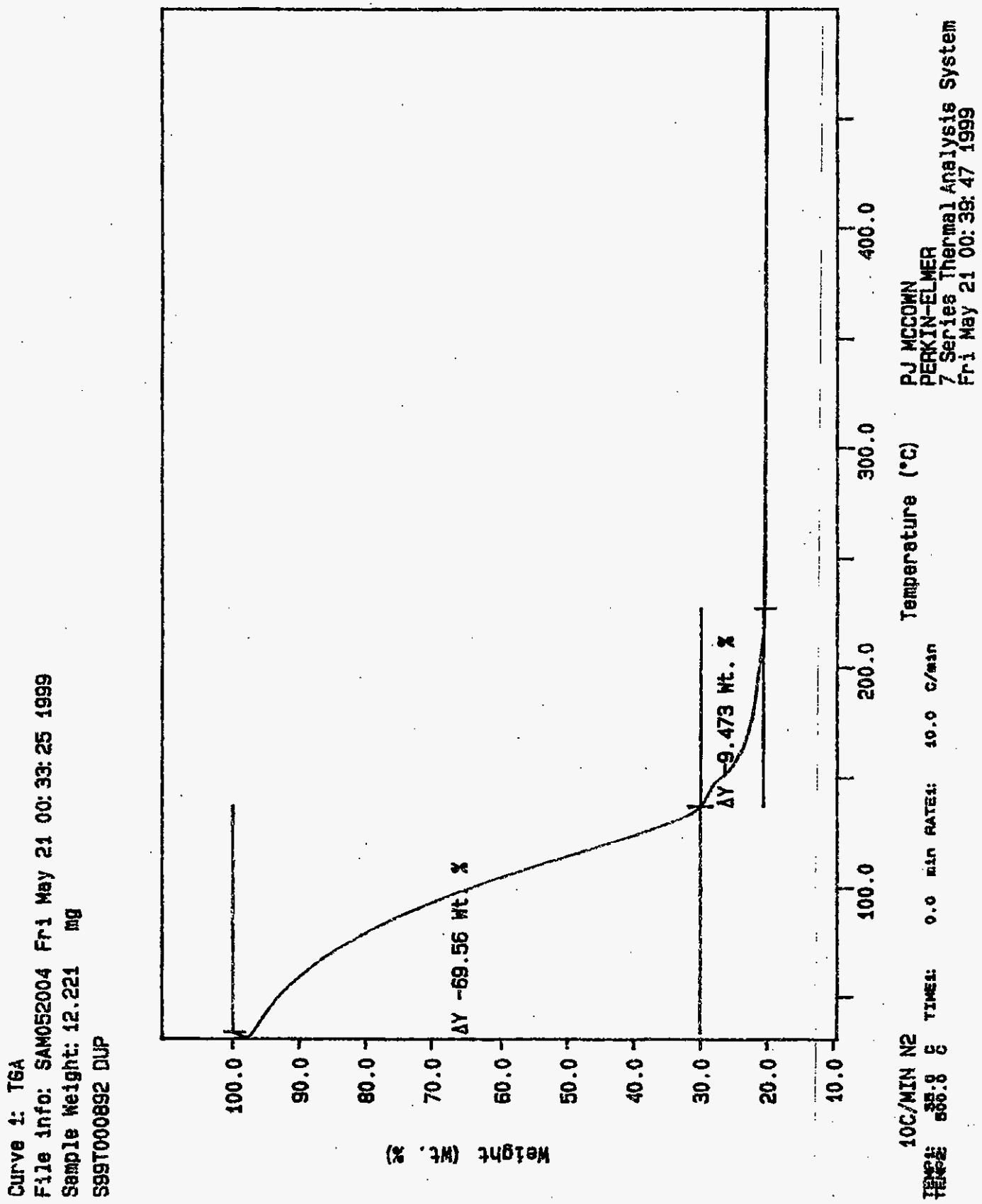


10C/MIN N2
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 300.0 C

PJ MCCOWN
PERKIN-ELMER
7 Series Thermal Analysis System
Thu May 20 19:40:31 1999

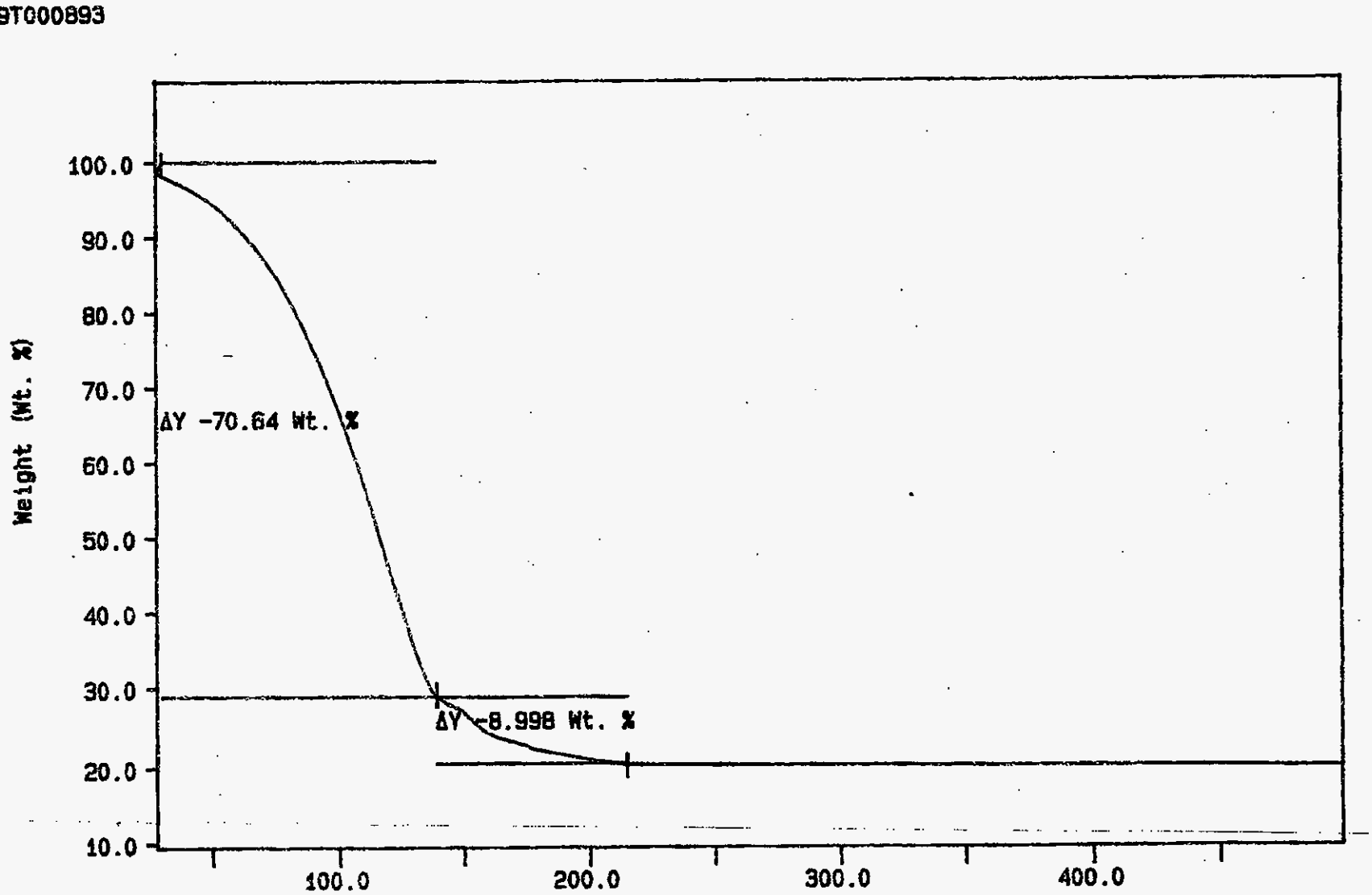
HNF-1672 REV. 0




Curve 1: TGA
File info: SAM052004 Fri May 21 00:33:25 1999
Sample Weight: 12.221 mg
S99T000892 DUP
Weight (Wt. %)
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
ΔY -69.56 Wt. %
ΔY -9.473 Wt. %
100.0
200.0
300.0
400.0
Temperature (°C)
10C/MIN N2
TEMP1: 38.9 C
TEMP2: 500.0 C
TIME1: 0.0 min RATE1: 10.0 C/min
PJ MCCOWN
PERKIN-ELMER
7 Series Thermal Analysis System
Fri May 21 00:39:47 1999

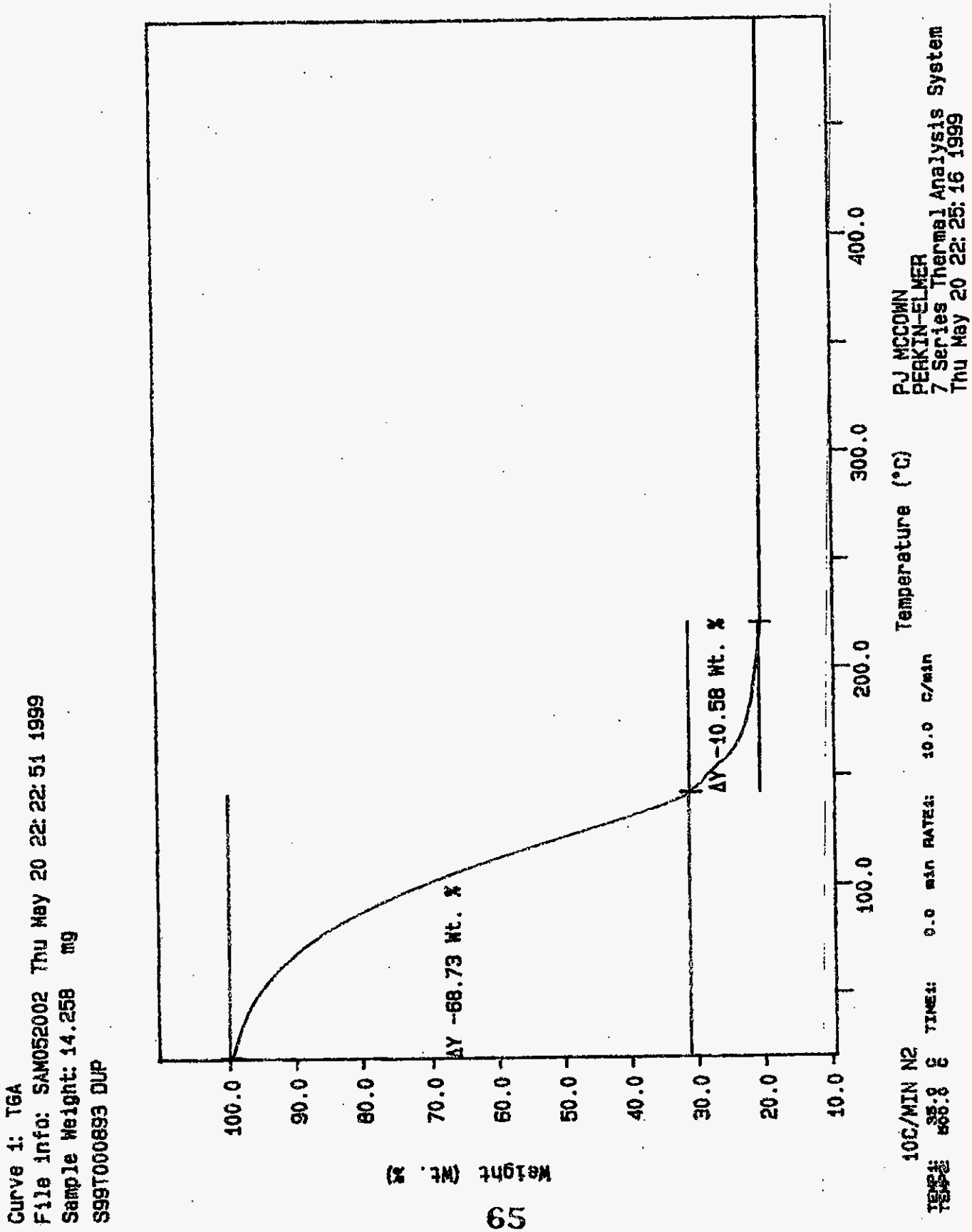
HNF-1672 REV. 0

Curve 1: TGA
File info: SAM052001 Thu May 20 20:37:10 1999
Sample Weight: 12.020 mg
S99T000893



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

PJ MCCOWN
PERKIN-ELMER
7 Series Thermal Analysis System
Thu May 20 21:26:00 1999


Curve 1: TGA
File info: SAM052002 Thu May 20 22:22:51 1999
Sample Weight: 14.258 mg
S99T000893 DUP
Weight (Wt. %)
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
ΔY -68.73 Wt. %
ΔY -10.58 Wt. %
100.0
200.0
300.0
400.0
Temperature (°C)
10C/MIN N2
TEMP: 35.0 C
TEMP: 400.0 C
TIME: 0.0 min RATE: 10.0 C/min
PJ MCCOWN
PERKIN-ELMER
7 Series Thermal Analysis System
Thu May 20 22:25:16 1999

LABCORE Completed Worklist Report for Worklist# 29824

Analyst: rdm **Instrument:** BA001 **Book#:** 134N16C

Method: LA-510-112 Rev/Mod E-0

Worklist Comment: AP107 FOR SPG-01 RTS

Seq	Type	Sample#	R	A	Test	Matrix	Actual	Found	DL or Yield	Unit
1	STD			0	SPG-01	LIQUID	1.3779	1.370	99.427	% Recovery
2	SAMPLE	S99T000890		0	SPG-01	LIQUID	N/A	1.088	1.00e-003	Sp.G.
3	DUP	S99T000890		0	SPG-01	LIQUID	1.088	1.073	1.388	RPD
4	SAMPLE	S99T000891		0	SPG-01	LIQUID	N/A	1.168	1.00e-003	Sp.G.
5	DUP	S99T000891		0	SPG-01	LIQUID	1.168	1.169	0.086	RPD
6	SAMPLE	S99T000892		0	SPG-01	LIQUID	N/A	1.149	1.00e-003	Sp.G.
7	DUP	S99T000892		0	SPG-01	LIQUID	1.149	1.137	1.050	RPD
8	SAMPLE	S99T000893		0	SPG-01	LIQUID	N/A	1.154	1.00e-003	Sp.G.
9	DUP	S99T000893		0	SPG-01	LIQUID	1.154	1.147	0.608	RPD

Final page for worklist# 29824

Analyst Signature Date

Analyst Signature Date

5/25/99

Reviewer Signature Date

Units shown for QC (BLK/BKG) may not reflect the actual units.

LABCORE Completed Worklist Report for Worklist# 29824

Analyst: rdm **Instrument:** BA001 **Book#:** 134N16C

Method: LA-510-112 Rev/Mod E-0

Worklist Comment: AP107 FOR SPG-01 RTS

Seq	Type	Sample#	R	A	Test	Matrix	Actual	Found	DL or Yield	Unit
1	STD			0	SPG-01	LIQUID	1.3779	1.370	99.427	% Recovery
2	SAMPLE	S99T000890		0	SPG-01	LIQUID	N/A	1.088	1.00e-003	Sp.G.
3	DUP	S99T000890		0	SPG-01	LIQUID	1.088	1.073	1.388	RPD
4	SAMPLE	S99T000891		0	SPG-01	LIQUID	N/A	1.168	1.00e-003	Sp.G.
5	DUP	S99T000891		0	SPG-01	LIQUID	1.168	1.169	0.086	RPD
6	SAMPLE	S99T000892		0	SPG-01	LIQUID	N/A	1.149	1.00e-003	Sp.G.
7	DUP	S99T000892		0	SPG-01	LIQUID	1.149	1.137	1.050	RPD
8	SAMPLE	S99T000893		0	SPG-01	LIQUID	N/A	1.214	1.00e-003	Sp.G.
9	DUP	S99T000893		0	SPG-01	LIQUID	1.214	1.147	5.676	RPD

Final page for worklist# 29824

Analyst Signature Date

Mary Frans 5/21/99
Analyst Signature Date

Reviewer Signature Date

Units shown for QC (BLK/BKG) may not reflect the actual units.

HNF-1672 REV. 0

worklistrpt Version 2.1 05/15/95
05/20/99 13:25

LABCORE Data Entry Template for Worklist# 29824

Analyst: RDM **Instrument:** BA001 **Book #** 134N16 C

Method: LA-510-112 Rev/Mod E-0

Worklist Comment: AP107 FOR SPG-01 RTS

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				SPG-01	LIQUID			N/A	Sp.G.
99000198	AP107 GRAB2	2	SAMPLE	S99T000890	0		SPG-01	LIQUID	N/A			Sp.G.
99000198	AP107 GRAB2	3	DUP	S99T000890	0		SPG-01	LIQUID			N/A	Sp.G.
99000198	AP107 GRAB2	4	SAMPLE	S99T000891	0		SPG-01	LIQUID	N/A			Sp.G.
99000198	AP107 GRAB2	5	DUP	S99T000891	0		SPG-01	LIQUID			N/A	Sp.G.
99000198	AP107 GRAB2	6	SAMPLE	S99T000892	0		SPG-01	LIQUID	N/A			Sp.G.
99000198	AP107 GRAB2	7	DUP	S99T000892	0		SPG-01	LIQUID			N/A	Sp.G.
99000198	AP107 GRAB2	8	SAMPLE	S99T000893	0		SPG-01	LIQUID	N/A			Sp.G.
99000198	AP107 GRAB2	9	DUP	S99T000893	0		SPG-01	LIQUID			N/A	Sp.G.

Final page for worklist # 29824

RDM 5/21/99
Analyst Signature **Date**

Mary Isaac 5/21/99
Analyst Signature **Date**

Data Entry Comments: ~~Sample size 250 G, 1/50 @ 100.~~ RDM 5/21/99

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

SPECIFIC GRAVITY : LA-510-112 (E-0)

Type		STD	REPLICATE
STD	Gross Weight (W2)	1.4854	1.4598
Work List	Tare Weight (W1)	1.3499	1.3214
29824	Weight of Solution (W2-W1)	0.1355	0.1384
Test Code	Volume of Solution µL	100.0000	100.0000
SPG-01	Specific Gravity	1.3550	1.3840
Matrix	Specific Gravity (Average)	1.3695	
LIQUID			
Sample #			
STD			
Instrument Code	Gross Weight (W2) = Wt. of vial + cap + cotton + solution		
BA001	Tare Weight (W1) = Wt. of vial + cap + cotton		
Analyst			
RDM	Specific Gravity = [(W2-W1) * 1000 µL/mL] / [Vol. of Solution µL * 1.000 g/mL]		
Date			
05/21/99	v RESULT v		
Time	Specific Gravity Average =	1.370	
10:05 AM			

Data Entry by:		Date:	05/21/99
Approved by:	NA	Date:	

Form 510112L1 Rev. 1.1

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

SPECIFIC GRAVITY : LA-510-112 (E-0)

Type		SAMPLE	REPLICATE
SAMPLE	Gross Weight (W2)	1.4518	0.0000
Work List	Tare Weight (W1)	1.3430	0.0000
29824	Weight of Solution (W2-W1)	0.1088	0
Test Code	Volume of Solution µL	100.0000	0.0000
SPG-01	Specific Gravity	1.0880	NA
Matrix			
LIQUID			
Sample #			
S99T000890			
Instrument Code	Gross Weight (W2) = Wt. of vial + cap + cotton + solution		
BA001	Tare Weight (W1) = Wt. of vial + cap + cotton		
Analyst			
RDM	Specific Gravity = [(W2-W1) * 1000 µL/mL] / [Vol. of Solution µL * 1.000 g/mL]		
Date			
05/21/99	v RESULT v		
Time	Specific Gravity =	1.088	
10:05 AM			

Data Entry by:		Date:	05/21/99
Approved by:	NA	Date:	

Form 510112L1 Rev. 1.1

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

SPECIFIC GRAVITY : LA-510-112 (E-0)

Type		DUP	REPLICATE
DUP	Gross Weight (W2)	1.4062	0.0000
Work List	Tare Weight (W1)	1.2989	0.0000
29824	Weight of Solution (W2-W1)	0.1073	0
Test Code	Volume of Solution µL	100.0000	0.0000
SPG-01	Specific Gravity	1.0730	NA
Matrix			
LIQUID			
Sample #			
S99T000890			
Instrument Code	Gross Weight (W2) = Wt. of vial + cap + cotton + solution		
BA001	Tare Weight (W1) = Wt. of vial + cap + cotton		
Analyst			
RDM	Specific Gravity = [(W2-W1) * 1000 µL/mL] / [Vol. of Solution µL * 1.000 g/mL]		
Date			
05/21/99	v RESULT v		
Time	Specific Gravity =	1.073	
10:05 AM			

Data Entry by:		Date:	05/21/99
Approved by:	NA	Date:	

Form 510112L1 Rev. 1.1

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

SPECIFIC GRAVITY : LA-510-112 (E-0)

Type		SAMPLE	REPLICATE
SAMPLE	Gross Weight (W2)	1.4533	0.0000
Work List	Tare Weight (W1)	1.3365	0.0000
29824	Weight of Solution (W2-W1)	0.1168	0
Test Code	Volume of Solution µL	100.0000	0.0000
SPG-01	Specific Gravity	1.1680	NA
Matrix			
LIQUID			
Sample #			
S99T000891			
Instrument Code	Gross Weight (W2) = Wt. of vial + cap + cotton + solution		
BA001	Tare Weight (W1) = Wt. of vial + cap + cotton		
Analyst			
RDM	Specific Gravity = [(W2-W1) * 1000 µL/mL] / [Vol. of Solution µL * 1.000 g/mL]		
Date			
05/21/99	v RESULT v		
Time	Specific Gravity =	1.168	
10:05 AM			

Data Entry by:		Date:	05/21/99
Approved by:	NA	Date:	

Form 510112L1 Rev. 1.1

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

SPECIFIC GRAVITY : LA-510-112 (E-0)

Type		DUP	REPLICATE
DUP	Gross Weight (W2)	1.4537	0.0000
Work List	Tare Weight (W1)	1.3368	0.0000
29824	Weight of Solution (W2-W1)	0.1169	0
Test Code	Volume of Solution µL	100.0000	0.0000
SPG-01	Specific Gravity	1.1690	NA
Matrix			
LIQUID			
Sample #			
S99T000891			
Instrument Code	Gross Weight (W2) = Wt. of vial + cap + cotton + solution		
BA001	Tare Weight (W1) = Wt. of vial + cap + cotton		
Analyst			
RDM	Specific Gravity = [(W2-W1) * 1000 µL/mL] / [Vol. of Solution µL * 1.000 g/mL]		
Date			
05/21/99	v RESULT v		
Time	Specific Gravity =	1.169	
10:05 AM			

Data Entry by:		Date:	05/21/99
Approved by:	NA	Date:	

Form 510112L1 Rev. 1.1

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

SPECIFIC GRAVITY : LA-510-112 (E-0)

Type		SAMPLE	REPLICATE
SAMPLE	Gross Weight (W2)	1.3819	0.0000
Work List	Tare Weight (W1)	1.2670	0.0000
29824	Weight of Solution (W2-W1)	0.1149	0
Test Code	Volume of Solution µL	100.0000	0.0000
SPG-01	Specific Gravity	1.1490	NA
Matrix			
LIQUID			
Sample #			
S99T000892			
Instrument Code	Gross Weight (W2) = Wt. of vial + cap + cotton + solution		
BA001	Tare Weight (W1) = Wt. of vial + cap + cotton		
Analyst			
RDM	Specific Gravity = [(W2-W1) * 1000 µL/mL] / [Vol. of Solution µL * 1.000 g/mL]		
Date			
05/21/99	v RESULT v		
Time	Specific Gravity =	1.149	
10:05 AM			

Data Entry by:		Date:	05/21/99
Approved by:	NA	Date:	

Form 510112L1 Rev. 1.1

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

SPECIFIC GRAVITY : LA-510-112 (E-0)

Type		DUP	REPLICATE
DUP	Gross Weight (W2)	1.4085	0.0000
Work List	Tare Weight (W1)	1.2948	0.0000
29824	Weight of Solution (W2-W1)	0.1137	0
Test Code	Volume of Solution µL	100.0000	0.0000
SPG-01	Specific Gravity	1.1370	NA
Matrix			
LIQUID			
Sample #			
S99T000892			
Instrument Code	Gross Weight (W2) = Wt. of vial + cap + cotton + solution		
BA001	Tare Weight (W1) = Wt. of vial + cap + cotton		
Analyst			
RDM	Specific Gravity = [(W2-W1) * 1000 µL/mL] / [Vol. of Solution µL * 1.000 g/mL]		
Date			
05/21/99	v RESULT v		
Time	Specific Gravity =	1.137	
10:05 AM			

Data Entry by:		Date:	05/21/99
Approved by:	NA	Date:	

Form 510112L1 Rev. 1.1

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

SPECIFIC GRAVITY : LA-510-112 (E-0)

Type		SAM	REPLICATE
SAM	Gross Weight (W2)	1.4605	
Work List	Tare Weight (W1)	1.3451	
29824	Weight of Solution (W2-W1)	0.1154	0
Test Code	Volume of Solution µL	100.0000	
SPG-01	Specific Gravity	1.1540	NA
Matrix			
LIQUID			
Sample #			
S99T000893			
Instrument Code	Gross Weight (W2) = Wt. of vial + cap + cotton + solution		
BA001	Tare Weight (W1) = Wt. of vial + cap + cotton		
Analyst			
RDM	Specific Gravity = [(W2-W1) * 1000 µL/mL] / [Vol. of Solution µL * 1.000 g/mL]		
Date			
05/21/99	v RESULT v		
Time	Specific Gravity =	1.154	
10:05 AM			

Data Entry by:		Date:	05/25/99
Approved by:	NA	Date:	

Form 510112L1 Rev. 1.1

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

SPECIFIC GRAVITY : LA-510-112 (E-0)

Type		DUP	REPLICATE
DUP	Gross Weight (W2)	1.4551	0.0000
Work List	Tare Weight (W1)	1.3404	0.0000
29824	Weight of Solution (W2-W1)	0.1147	0
Test Code	Volume of Solution µL	100.0000	0.0000
SPG-01	Specific Gravity	1.1470	NA
Matrix			
LIQUID			
Sample #			
S99T000893			
Instrument Code	Gross Weight (W2) = Wt. of vial + cap + cotton + solution		
BA001	Tare Weight (W1) = Wt. of vial + cap + cotton		
Analyst			
RDM	Specific Gravity = [(W2-W1) * 1000 µL/mL] / [Vol. of Solution µL * 1.000 g/mL]		
Date			
05/21/99	v RESULT v		
Time	Specific Gravity =	1.147	
10:05 AM			

Data Entry by:		Date:	05/21/99
Approved by:	NA	Date:	

Form 510112L1 Rev. 1.1

LABCORE Completed Worklist Report for Worklist# 29832

Analyst: rdm **Instrument:** PH01>7 **Book#:** _____

Method: LA-212-106 Rev/Mod C-2

Worklist Comment: AP107 FOR PH-01 RTS

Seq	Type	Sample#	R	A	Test	Matrix	Actual	Found	DL or Yield	Unit
1	STDPH			0	PH-01	LIQUID	1	8.01	8.010	pH
2	SAMPLE	S99T000890		0	PH-01	LIQUID	N/A	12.81	1.00e-002	pH
3	DUP	S99T000890		0	PH-01	LIQUID	12.81	12.83	0.156	RPD
4	SAMPLE	S99T000891		0	PH-01	LIQUID	N/A	13.16	1.00e-002	pH
5	DUP	S99T000891		0	PH-01	LIQUID	13.16	13.18	0.152	RPD
6	SAMPLE	S99T000892		0	PH-01	LIQUID	N/A	13.20	1.00e-002	pH
7	DUP	S99T000892		0	PH-01	LIQUID	13.20	13.23	0.227	RPD
8	SAMPLE	S99T000893		0	PH-01	LIQUID	N/A	13.26	1.00e-002	pH
9	DUP	S99T000893		0	PH-01	LIQUID	13.26	13.27	0.075	RPD

Final page for worklist# 29832

Analyst Signature Date

Mary Tracy 5/21/99
Analyst Signature Date

5/25/99
Reviewer Signature Date

Units shown for QC (BLK/BKG) may not reflect the actual units.

worklistrpt Version 2.1 05/15/95
05/20/99 13:28

LABCORE Data Entry Template for Worklist# 29832

Analyst: [illegible] **Instrument:** PH01 _____ **Book #** 18N96

Method: LA-212-106 Rev/Mod C-2

Worklist Comment: AP107 FOR PH-01 RTS

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STDPH				PH-01	LIQUID	8.00	8.01	N/A	pH
99000198	AP107 GRAB2	2	SAMPLE	S99T000890	0		PH-01	LIQUID	N/A	12.83		pH
99000198	AP107 GRAB2	3	DUP	S99T000890	0		PH-01	LIQUID		12.83	N/A	pH
99000198	AP107 GRAB2	4	SAMPLE	S99T000891	0		PH-01	LIQUID	N/A	13.16		pH
99000198	AP107 GRAB2	5	DUP	S99T000891	0		PH-01	LIQUID		13.18	N/A	pH
99000198	AP107 GRAB2	6	SAMPLE	S99T000892	0		PH-01	LIQUID	N/A	13.20		pH
99000198	AP107 GRAB2	7	DUP	S99T000892	0		PH-01	LIQUID		13.23	N/A	pH
99000198	AP107 GRAB2	8	SAMPLE	S99T000893	0		PH-01	LIQUID	N/A	13.26		pH
99000198	AP107 GRAB2	9	DUP	S99T000893	0		PH-01	LIQUID		13.27	N/A	pH

Final page for worklist # 29832

[illegible] 5/21/99
Analyst Signature **Date**

[illegible] 5/21/99
Analyst Signature **Date**

Data Entry Comments:

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

LABCORE Completed Worklist Report for Worklist# 29831

Analyst: rwk **Instrument:** PH01 **Book#:** 33N15A

Method: LA-211-102 Rev/Mod D-1

Worklist Comment: AP107 FOR OH-01 RTS

Seq	Type	Sample#	R	A	Test	Matrix	Actual	Found	DL or Yield	Unit
1	STD			0	OH-01	LIQUID	1.56e4	1.62e4	103.846	% Recovery
2	SAMPLE	S99T000890		0	OH-01	LIQUID	N/A	2.34e3	500.000	ug/mL
3	DUP	S99T000890		0	OH-01	LIQUID	2.34e3	2.34e3	0.000	RPD
4	SAMPLE	S99T000891		0	OH-01	LIQUID	N/A	7.40e3	1250.000	ug/mL
5	DUP	S99T000891		0	OH-01	LIQUID	7.40e3	7.23e3	2.324	RPD
6	SAMPLE	S99T000892		0	OH-01	LIQUID	N/A	7.23e3	1250.000	ug/mL
7	DUP	S99T000892		0	OH-01	LIQUID	7.23e3	7.40e3	2.324	RPD
8	SAMPLE	S99T000893		0	OH-01	LIQUID	N/A	7.40e3	1250.000	ug/mL
9	DUP	S99T000893		0	OH-01	LIQUID	7.40e3	7.33e3	0.950	RPD

Final page for worklist# 29831

Mary Franz 5/24/99
Analyst Signature Date

Analyst Signature Date

5/24/99
Reviewer Signature Date

Units shown for QC (BLK/BKG) may not reflect the actual units.

LABCORE Data Entry Template for Worklist# 29831

Analyst: RK **Instrument:** PH01 _____ **Book #** 33715-A

Method: LA-211-102 Rev/Mod D-1

Worklist Comment: AP107 FOR OH-01 RTS

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				OH-01	LIQUID			N/A	ug/mL
99000198	AP107 GRAB2	2	SAMPLE	S99T000890	0		OH-01	LIQUID	N/A			ug/mL
99000198	AP107 GRAB2	3	DUP	S99T000890	0		OH-01	LIQUID			N/A	ug/mL
99000198	AP107 GRAB2	4	SAMPLE	S99T000891	0		OH-01	LIQUID	N/A			ug/mL
99000198	AP107 GRAB2	5	DUP	S99T000891	0		OH-01	LIQUID			N/A	ug/mL
99000198	AP107 GRAB2	6	SAMPLE	S99T000892	0		OH-01	LIQUID	N/A			ug/mL
99000198	AP107 GRAB2	7	DUP	S99T000892	0		OH-01	LIQUID			N/A	ug/mL
99000198	AP107 GRAB2	8	SAMPLE	S99T000893	0		OH-01	LIQUID	N/A			ug/mL
99000198	AP107 GRAB2	9	DUP	S99T000893	0		OH-01	LIQUID			N/A	ug/mL

Final page for worklist # 29831

Nh Kim 5/20/99
Analyst Signature **Date**

Mary Franz 5/24/99
Analyst Signature **Date**

Data Entry Comments:

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

```
calibration data
date     99-05-20
pH(S) 1     7.00
pH(S) 2    10.00
t.cal.      23.0 °C
slope(rel)  .992
U(as)       26.1 mV
electr. input  1
        ========
```

Std

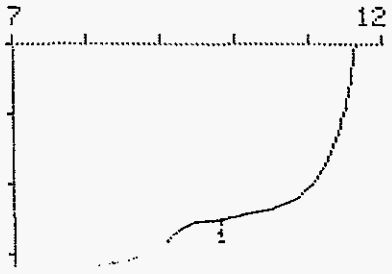
```
Id.#1          000
C00=         .05ml

date 99-05-20 time 19:31
GET pH         12  #  221
Id.#1          000
Id.#2        .1934
pH(init)     11.60
             V/ml          pH
EP1          .247        9.80
stop volt.reached
         ========
```

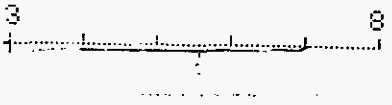
BLK

```
date 99-05-20 time 19:25
GET pH         12  #  220
Id.#1       757-2
Id.#2        .1934
pH(init)      7.05
             V/ml          pH
EP1          .008        5.59
manual stop
         ========
```

```
date 99-05-20 time 19:33
GET pH         12  #  221
.10ml/div      ΔpH=1/div
start V    .000 ml
```




```
date 99-05-20 time 19:25
GET pH         12  #  220
.10ml/div      ΔpH=1/div
start V    .000 ml
```



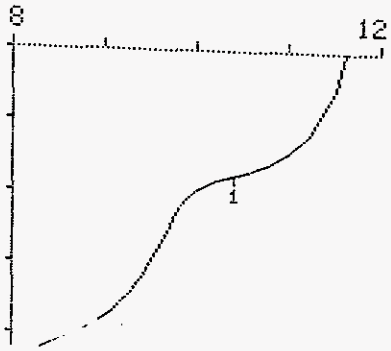
Id.#1 [illegible]
C00= .25ml

date 99-05-20 time 19:58
GET pH 12 # 223
Id.#1 890
Id.#2 .1934
pH(init) 11.59

	V/ml	pH
EP1	.178	10.39

manual stop
========

date 99-05-20 time 19:58
GET pH 12 # 223
.10ml/div ΔpH=1/div
start V .000 ml



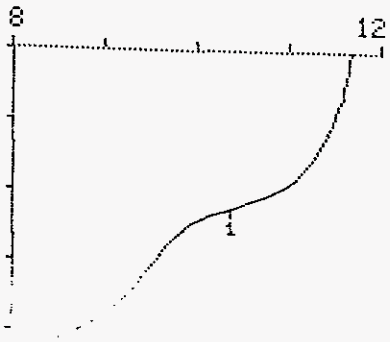
Id.#1 891
C00= ~~.10 ml~~ .1ml standby

date 99-05-20 time 20:14
GET pH 12 # 226
Id.#1 890
Id.#2 .1934
pH(init) 11.67

	V/ml	pH
EP1	.225	10.36

manual stop
========

date 99-05-20 time 20:14
GET pH 12 # 226
.10ml/div ΔpH=1/div
start V .000 ml



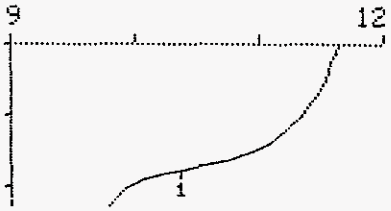
Id.#1 [illegible]
C00= .25ml

date 99-05-20 time 20:03
GET pH 12 # 224
Id.#1 890
Id.#2 .1934
pH(init) 11.62

	V/ml	pH
EP1	.178	10.37

manual stop
========

date 99-05-20 time 20:03
GET pH 12 # 224
.10ml/div ΔpH=1/div
start V .000 ml



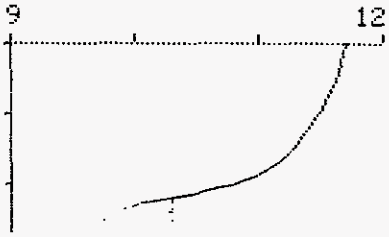
Id.#1 891 start
C00= .1ml

date 99-05-20 time 20:18
GET pH 12 # 227
Id.#1 891
Id.#2 .1934
pH(init) 11.67

	V/ml	pH
EP1	.220	10.30

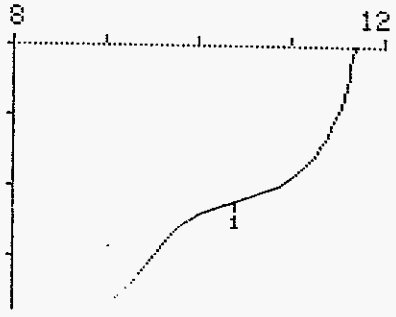
manual stop
========

date 99-05-20 time 20:19
GET pH 12 # 227
.10ml/div ΔpH=1/div
start V .000 ml



```
date 99-05-20 time 21:57
GET pH          12  #  228
Id.#1          ~~891~~ 892 6Am
Id.#2        .1934
pH(init)    11.66
            V/ml          pH
EP1         .220       10.40
manual stop
        ========
```

```
date 99-05-20 time 21:57
GET pH          12  #  228
.10ml/div        ΔpH=1/div
start V    .000 ml
```

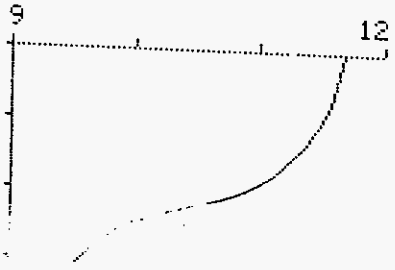



```
Id.#1
C00=          .1ml
```

6Am

```
date 99-05-20 time 22:08
GET pH          12  #  230
Id.#1          893
Id.#2        .1934
pH(init)    11.67
            V/ml          pH
EP1         .225       10.41
manual stop
        ========
```

```
date 99-05-20 time 22:08
GET pH          12  #  230
.10ml/div        ΔpH=1/div
start V    .000 ml
```

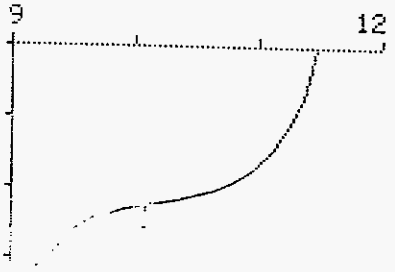



```
Id.#1        892-2
C00=          .1ml
```

DUP.

```
date 99-05-20 time 22:01
GET pH          12  #  229
Id.#1        892-2
Id.#2        .1934
pH(init)    11.44
            V/ml          pH
EP1         .225       10.09
manual stop
        ========
```

```
date 99-05-20 time 22:02
GET pH          12  #  229
.10ml/div        ΔpH=1/div
start V    .000 ml
```

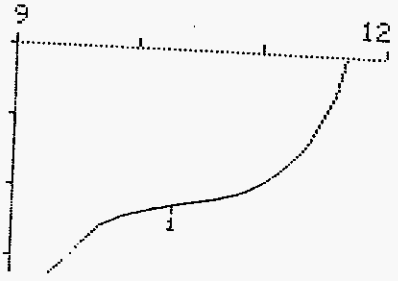



```
Id.#1        893-2
C00=          .1ml
```

DUP

```
date 99-05-20 time 22:12
GET pH          12  #  231
Id.#1        893-2
Id.#2        .1934
pH(init)    11.66
            V/ml          pH
EP1         .223       10.29
manual stop
        ========
```

```
date 99-05-20 time 22:12
GET pH          12  #  231
.10ml/div        ΔpH=1/div
start V    .000 ml
```



OH (AUTO) : LA-211-102 (D-1)

		STD
Type	Sample Size (mL) SS	0.050
STD	Concentration of Titrant (Molarity)	0.1934
Work List	Titrant volume at end-point in mL	0.247
29831	*** Enter Dilution Factor (DF) or 1 ***	1
Test Code		
OH-01	Concentration of Sample (MOLARITY)	9.55E-01
Matrix	Concentration of Sample in PPM	1.62E+04
LIQUID		
Sample #		
STD		
Instrument Code		
PH01	Detection Limit (PPM)	
Analyst		
RWK	OH Molarity =((mL HNO3)*(M HNO3))/Sample Size in mL)*Dilution Factor	
Date		
05/20/99	OH in µg/mL = (OH MOLARITY)*(17.0g/mole)*(1000000µg/g)/(1000mL/L)	
Time		
03:00 PM		STD
	Concentration of Sample (MOLARITY)	9.55E-01
	Concentration of Sample in PPM	1.62E+04

OH (AUTO) : LA-211-102 (D-1)

		BLNK
Type	Sample Size (mL) SS	0.250
BLNK	Concentration of Titrant (Molarity)	0.1934
Work List	Titrant volume at end-point in mL	0.008
29831	*** Enter Dilution Factor (DF) or 1 ***	1
Test Code		
OH-01	Concentration of Sample (MOLARITY)	6.19E-03
Matrix	Concentration of Sample in PPM	1.05E+02
LIQUID		
Sample #		
BLNK	Detection Limit =(125µg/SS)*DF	
Instrument Code		
PH01	Detection Limit (PPM)	5.00E+02
Analyst		
RWK	OH Molarity =((mL HNO3)*(M HNO3))/Sample Size in mL)*Dilution Factor	
Date		
05/20/99	OH in µg/mL = (OH MOLARITY)*(17.0g/mole)*(1000000µg/g)/(1000mL/L)	
Time		
03:00 PM		BLNK
	Concentration of Sample (MOLARITY)	6.19E-03
	Concentration of Sample in PPM	<500

The Result is < Detection Limit

OH (AUTO) : LA-211-102 (D-1)

		SAMPLE
Type	Sample Size (mL) SS	0.250
SAMPLE	Concentration of Titrant (Molarity)	0.1934
Work List	Titrant volume at end-point in mL	0.178
29831	*** Enter Dilution Factor (DF) or 1 ***	1
Test Code		
OH-01	Concentration of Sample (MOLARITY)	1.38E-01
Matrix	Concentration of Sample in PPM	2.34E+03
LIQUID		
Sample #		
S99T000890	Detection Limit =(125µg/SS)*DF	
Instrument Code		
PH01	Detection Limit (PPM)	5.00E+02
Analyst		
RWK	OH Molarity =((mL HNO3)*(M HNO3))/Sample Size in mL)*Dilution Factor	
Date		
05/20/99	OH in µg/mL = (OH MOLARITY)*(17.0g/mole)*(1000000µg/g)/(1000mL/L)	
Time		
03:00 PM		SAMPLE
	Concentration of Sample (MOLARITY)	1.38E-01
	Concentration of Sample in PPM	2.34E+03

OH (AUTO) : LA-211-102 (D-1)

		DUP
Type	Sample Size (mL) SS	0.250
DUP	Concentration of Titrant (Molarity)	0.1934
Work List	Titrant volume at end-point in mL	0.178
29831	*** Enter Dilution Factor (DF) or 1 ***	1
Test Code		
OH-01	Concentration of Sample (MOLARITY)	1.38E-01
Matrix	Concentration of Sample in PPM	2.34E+03
LIQUID		
Sample #		
S99T000890	Detection Limit =(125µg/SS)*DF	
Instrument Code		
PH01	Detection Limit (PPM)	5.00E+02
Analyst		
RWK	OH Molarity =((mL HNO3)*(M HNO3))/Sample Size in mL)*Dilution Factor	
Date		
05/20/99	OH in µg/mL = (OH MOLARITY)*(17.0g/mole)*(1000000µg/g)/(1000mL/L)	
Time		
03:00 PM		DUP
	Concentration of Sample (MOLARITY)	1.38E-01
	Concentration of Sample in PPM	2.34E+03

OH (AUTO) : LA-211-102 (D-1)

		SAMPLE
Type	Sample Size (mL) SS	0.100
SAMPLE	Concentration of Titrant (Molarity)	0.1934
Work List	Titrant volume at end-point in mL	0.225
29831	*** Enter Dilution Factor (DF) or 1 ***	1
Test Code		
OH-01	Concentration of Sample (MOLARITY)	4.35E-01
Matrix	Concentration of Sample in PPM	7.40E+03
LIQUID		
Sample #		
S99T000891	Detection Limit =(125µg/SS)*DF	
Instrument Code		
PH01	Detection Limit (PPM)	1.25E+03
Analyst		
RWK	OH Molarity =((mL HNO3)*(M HNO3))/Sample Size in mL)*Dilution Factor	
Date		
05/20/99	OH in µg/mL = (OH MOLARITY)*(17.0g/mole)*(1000000µg/g)/(1000mL/L)	
Time		
03:00 PM		SAMPLE
	Concentration of Sample (MOLARITY)	4.35E-01
	Concentration of Sample in PPM	7.40E+03

OH (AUTO) : LA-211-102 (D-1)

		DUP
Type	Sample Size (mL) SS	0.100
DUP	Concentration of Titrant (Molarity)	0.1934
Work List	Titrant volume at end-point in mL	0.220
29831	*** Enter Dilution Factor (DF) or 1 ***	1
Test Code		
OH-01	Concentration of Sample (MOLARITY)	4.25E-01
Matrix	Concentration of Sample in PPM	7.23E+03
LIQUID		
Sample #		
S99T000891	Detection Limit =(125µg/SS)*DF	
Instrument Code		
PH01	Detection Limit (PPM)	1.25E+03
Analyst		
RWK	OH Molarity =((mL HNO3)*(M HNO3))/Sample Size in mL)*Dilution Factor	
Date		
05/20/99	OH in µg/mL = (OH MOLARITY)*(17.0g/mole)*(1000000µg/g)/(1000mL/L)	
Time		
03:00 PM		DUP
	Concentration of Sample (MOLARITY)	4.25E-01
	Concentration of Sample in PPM	7.23E+03

OH (AUTO) : LA-211-102 (D-1)

		SAMPLE
Type	Sample Size (mL) SS	0.100
SAMPLE	Concentration of Titrant (Molarity)	0.1934
Work List	Titrant volume at end-point in mL	0.220
29831	*** Enter Dilution Factor (DF) or 1 ***	1
Test Code		
OH-01	Concentration of Sample (MOLARITY)	4.25E-01
Matrix	Concentration of Sample in PPM	7.23E+03
LIQUID		
Sample #		
S99T000892	Detection Limit =(125µg/SS)*DF	
Instrument Code		
PH01	Detection Limit (PPM)	1.25E+03
Analyst		
RWK	OH Molarity =((mL HNO3)*(M HNO3))/Sample Size in mL)*Dilution Factor	
Date		
05/20/99	OH in µg/mL = (OH MOLARITY)*(17.0g/mole)*(1000000µg/g)/(1000mL/L)	
Time		
03:00 PM		SAMPLE
	Concentration of Sample (MOLARITY)	4.25E-01
	Concentration of Sample in PPM	7.23E+03

OH (AUTO) : LA-211-102 (D-1)

		DUP
Type	Sample Size (mL) SS	0.100
DUP	Concentration of Titrant (Molarity)	0.1934
Work List	Titrant volume at end-point in mL	0.225
29831	*** Enter Dilution Factor (DF) or 1 ***	1
Test Code		
OH-01	Concentration of Sample (MOLARITY)	4.35E-01
Matrix	Concentration of Sample in PPM	7.40E+03
LIQUID		
Sample #		
S99T000892	Detection Limit =(125µg/SS)*DF	
Instrument Code		
PH01	Detection Limit (PPM)	1.25E+03
Analyst		
RWK	OH Molarity =((mL HNO3)*(M HNO3))/Sample Size in mL)*Dilution Factor	
Date		
05/20/99	OH in µg/mL = (OH MOLARITY)*(17.0g/mole)*(1000000µg/g)/(1000mL/L)	
Time		
03:00 PM		DUP
	Concentration of Sample (MOLARITY)	4.35E-01
	Concentration of Sample in PPM	7.40E+03

OH (AUTO) : LA-211-102 (D-1)

		SAMPLE
Type	Sample Size (mL) SS	0.100
SAMPLE	Concentration of Titrant (Molarity)	0.1934
Work List	Titrant volume at end-point in mL	0.225
29831	*** Enter Dilution Factor (DF) or 1 ***	1
Test Code		
OH-01	Concentration of Sample (MOLARITY)	4.35E-01
Matrix	Concentration of Sample in PPM	7.40E+03
LIQUID		
Sample #		
S99T000893	Detection Limit =(125µg/SS)*DF	
Instrument Code		
PH01	Detection Limit (PPM)	1.25E+03
Analyst		
RWK	OH Molarity =((mL HNO3)*(M HNO3))/Sample Size in mL)*Dilution Factor	
Date		
05/20/99	OH in µg/mL = (OH MOLARITY)*(17.0g/mole)*(1000000µg/g)/(1000mL/L)	
Time		
03:00 PM		SAMPLE
	Concentration of Sample (MOLARITY)	4.35E-01
	Concentration of Sample in PPM	7.40E+03

OH (AUTO) : LA-211-102 (D-1)

		DUP
Type	Sample Size (mL) SS	0.100
DUP	Concentration of Titrant (Molarity)	0.1934
Work List	Titrant volume at end-point in mL	0.223
29831	*** Enter Dilution Factor (DF) or 1 ***	1
Test Code		
OH-01	Concentration of Sample (MOLARITY)	4.31E-01
Matrix	Concentration of Sample in PPM	7.33E+03
LIQUID		
Sample #		
S99T000893	Detection Limit =(125µg/SS)*DF	
Instrument Code		
PH01	Detection Limit (PPM)	1.25E+03
Analyst		
RWK	OH Molarity =((mL HNO3)*(M HNO3))/Sample Size in mL)*Dilution Factor	
Date		
05/20/99	OH in µg/mL = (OH MOLARITY)*(17.0g/mole)*(1000000µg/g)/(1000mL/L)	
Time		
03:00 PM		DUP
	Concentration of Sample (MOLARITY)	4.31E-01
	Concentration of Sample in PPM	7.33E+03

LABCORE Completed Worklist Report for Worklist# 29827

Analyst: rwk **Instrument:** NH301 **Book#:** _____

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

Worklist Comment: AP107 FOR NH3-01 RTS

Seq	Type	Sample#	R	A	Test	Matrix	Actual	Found	DL or Yield	Unit
1	BLNK			0	NH3-01	LIQUID	1	<5.00E+1		ug/mL
2	STD			0	NH3-01	LIQUID	4.08E+02	3.76E+2	92.157	% Recovery
3	SAMPLE	S99T000890		0	NH3-01	LIQUID	N/A	1.25E+02	50.000	ug/mL
4	DUP	S99T000890		0	NH3-01	LIQUID	1.25E+2	5.48E+1	78.087	RPD
5	SAMPLE	S99T000891		0	NH3-01	LIQUID	N/A	1.01E+02	25.000	ug/mL
6	DUP	S99T000891		0	NH3-01	LIQUID	1.01E+2	1.23E+2	19.643	RPD
7	STD			0	NH3-01	LIQUID	4.08E+02	3.73E+2	91.422	% Recovery

Final page for worklist# 29827

Analyst Signature Date

Mary Franz 6/1/99
Analyst Signature Date

6/1/99
Reviewer Signature Date

Dup failure on S99T000890. Sample will be rerun. mfc

LABCORE Data Entry Template for Worklist# 29827

Analyst: NJK **Instrument:** NH301 **Book#** 59n19-A

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

Worklist Comment: AP107 FOR NH3-01 RTS

S	Type	Sample#	R	A	Test	Matrix	Group#	Project
1	BLNK				NH3-01	LIQUID		
2	STD				NH3-01	LIQUID		
3	SAMPLE	S99T000890	0		NH3-01	LIQUID	99000198	AP107 GRAB2
		Analytes Requested: NH3-01						
4	DUP	S99T000890	0		NH3-01	LIQUID		
5	SAMPLE	S99T000891	0		NH3-01	LIQUID	99000198	AP107 GRAB2
		Analytes Requested: NH3-01						
6	DUP	S99T000891	0		NH3-01	LIQUID		
7	STD				NH3-01	LIQUID		

Final page for worklist # 29827

Signature Date 5/24/99

Signature Date 6/1/99

Data Entry Comments:

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

WORKBOOK PAGE: BLANK1

AMMONIA (NH3) : LA-631-001 (~~C~~-0) D LIQUIDS/SOLIDS

				BLNK
Type	Instrument Data (µg/mL)	ID		0.000
BLNK	Blank Result from the Instrument (µg/mL)	BR		0.274
Work List	Vol of Sample for Dilution (mL) or Vol of Sample Direct (mL)	VSAM		0.500
29827	Final Vol of Dilution (mL) or Vol of Sample Direct (mL)	FVOL		25.0
Test Code				
NH3-01				
Matrix				
LIQUID	Dilution Factor	DF		1.000
Batch Number				
99002154				
Rerun				
0				
Sample Prep				
N/A	NH3 Concentration (µg/mL)	NH3 CONC	<	5.00E+01
Sample #				
BLNK	**Detection Limit (µg/mL)**	**5.00E+01**		
Instrument Code				
NH301	**Detection Limit = 1.000µg * (FVOL/VSAM)**			
Prepared By				
MF	**NH3 Concentration (µg/mL) = (BR) * (FVOL / VSAM) * DDF**			
Chemist				
MJL				
Analyst				
RWK				
Date Complete				
06/01/99				
Analysis Date				
05/24/99				
Analysis Time				
05:00 PM				
Sample Point	**NH3 Concentration (µg/mL)**		**< 5.00E+01**	
AP107				

Analyst:	RWK	Date:	06/01/99
Signature of Chemist: NA	MJL	Date:	

SAMPLE.WB1 REV 1.0 631001ML

WORKBOOK PAGE: STD2

AMMONIA (NH3) : LA-631-001 (~~C~~ D-0) µ10 µliter LIQUIDS/SOLIDS

			STD
Type	Instrument Data (µg/mL)	ID	15.300
STD	Blank Result from the Instrument (µg/mL)	BR	0.274
Work List	Vol of Sample for Dilution (mL) or Vol of Sample Direct (mL)	VSAM	1.000
29827	Final Vol of Dilution (mL) or Vol of Sample Direct (mL)	FVOL	25.0
Test Code	LCS Standard Book Number	LCS	59N19A
NH3-01	LCS Standard Concentration (µg/mL)	STD VAL	4.08E+02
Matrix			
LIQUID			
Batch Number			
99002154			
Rerun			
0			
Sample Prep			
N/A	NH3 Concentration (µg/mL)	NH3 CONC	3.76E+02
Sample #			
STD	Detection Limit (µg/mL)	2.50E+01	
Instrument Code			
NH301	Detection Limit = 1.000µg * (FVOL/VSAM)		
Prepared By			
MF	NH3 Concentration (µg/mL) = (ID-BR)*(FVOL /VSAM)		
Chemist			
MJL	QC ACTUAL = STD VAL		
Analyst	QC FOUND = (ID-BR) * (FVOL/VSAM)		
RWK			
Date Complete			
06/01/99			
Analysis Date	QC ACTUAL (µg)		4.08E+02
05/24/99	QC FOUND (µg)		3.76E+02
Analysis Time			
05:00 PM			
Sample Point			
AP107			

Analyst:	RWK	Date:	06/01/99
Signature of Chemist: NA	MJL	Date:	

SAMPLE.WB1 REV 1.0 631001ML

WORKBOOK PAGE: SAM5

AMMONIA (NH3) : LA-631-001 (~~C~~ D-0) LIQUIDS/SOLIDS

			SAMPLE
Type	Instrument Data (µg/mL)	ID	4.310
SAMPLE	Blank Result from the Instrument (µg/mL)	BR	0.274
Work List	Vol of Sample for Dilution (mL) or Vol of Sample Direct (mL)	VSAM	1.000
29827	Final Vol of Dilution (mL) or Vol of Sample Direct (mL)	FVOL	25.0
Test Code			
NH3-01			
Matrix			
LIQUID	Dilution Factor	DF	1.000
Batch Number			
99002154			
Rerun			
0			
Sample Prep			
N/A	NH3 Concentration (µg/mL)	NH3 CONC	1.01E+02
Sample #			
S99T000891	Detection Limit (µg/mL)	2.50E+01	
Instrument Code			
NH301	Detection Limit = 1.000µg • (FVOL/VSAM) * DF		
Prepared By			
MF	NH3 Concentration (µg/mL) = (ID-BR) * (FVOL / VSAM)*DF		
Chemist			
MJL			
Analyst			
RWK			
Date Complete			
06/01/99			
Analysis Date			
05/24/99			
Analysis Time			
05:00 PM			
Sample Point	NH3 Concentration (µg/mL)		1.01E+02
AP107			

Analyst:	RWK	Date:	06/01/99
Signature of Chemist: NA	MJL	Date:	

SAMPLE.WB1 REV 1.0 631001ML

WORKBOOK PAGE: DUP6

AMMONIA (NH3) : LA-631-001 (~~C~~ D-0) LIQUIDS/SOLIDS

			DUP
Type	Instrument Data (µg/mL)	ID	5.210
DUP	Blank Result from the Instrument (µg/mL)	BR	0.274
Work List	Vol of Sample for Dilution (mL) or Vol of Sample Direct (mL)	VSAM	1.000
29827	Final Vol of Dilution (mL) or Vol of Sample Direct (mL)	FVOL	25.0
Test Code			
NH3-01			
Matrix			
LIQUID	Dilution Factor	DF	1.000
Batch Number			
99002154			
Rerun			
0			
Sample Prep			
N/A	NH3 Concentration (µg/mL)	NH3 CONC	1.23E+02
Sample #			
S99T000891	**Detection Limit (µg/mL)**	**2.50E+01**	
Instrument Code			
NH301	**Detection Limit = 1.000µg * (FVOL/VSAM) * DF**		
Prepared By			
MF	**NH3 Concentration (µg/mL) = (ID-BR) * (FVOL / VSAM)*DF**		
Chemist			
MJL			
Analyst			
RWK			
Date Complete			
06/01/99			
Analysis Date			
05/24/99			
Analysis Time			
05:00 PM			
Sample Point	**NH3 Concentration (µg/mL)**		**1.23E+02**
AP107			

Analyst:	RWK	Date:	06/01/99
Signature of Chemist: NA	MJL	Date:	

SAMPLE.WB1 REV 1.0 631001ML

WORKBOOK PAGE: ST_END7

AMMONIA (NH3) : LA-631-001 (~~C~~ D-0) 6/9/99 LD — LIQUIDS/SOLIDS

			STD
Type	Instrument Data (µg/mL)	ID	7.730
STD	Blank Result from the Instrument (µg/mL)	BR	0.274
Work List	Vol of Sample for Dilution (mL) or Vol of Sample Direct (mL)	VSAM	0.500
29827	Final Vol of Dilution (mL) or Vol of Sample Direct (mL)	FVOL	25.0
Test Code	LCS Standard Book Number	LCS	59N19A
NH3-01	LCS Standard Concentration (µg/mL)	STD VAL	4.08E+02
Matrix			
LIQUID			
Batch Number			
99002154			
Rerun			
0			
Sample Prep			
N/A	NH3 Concentration (µg/mL)	NH3 CONC	3.73E+02
Sample #			
STD	Detection Limit (µg/mL)	5.00E+01	
Instrument Code			
NH301	Detection Limit = 1.000µg * (FVOL/VSAM)		
Prepared By			
MF	NH3 Concentration (µg/mL) = (ID-BR)*(FVOL /VSAM)		
Chemist			
MJL	QC ACTUAL = STD VAL		
Analyst	QC FOUND = (ID-BR) * (FVOL/VSAM)		
RWK			
Date Complete			
06/01/99			
Analysis Date	QC ACTUAL (µg)		4.08E+02
05/24/99	QC FOUND (µg)		3.73E+02
Analysis Time			
05:00 PM			
Sample Point			
AP107			

Analyst:	RWK	Date:	06/01/99
Signature of Chemist: NA	MJL	Date:	

SAMPLE.WB1 REV 1.0 631001ML

DOUBLE KNOWN ADDITION SELECTED
AT 08:26. 05-25-99

SAMPLE VOL= 25.000 AT 08:34. 05-25-99
ENTERED

EMF= 90.2 mV AT 08:46. 05-25-99

EMF= 89.8 mV AT 08:47. 05-25-99

EMF= 88.9 mV AT 08:47. 05-25-99

EMF= 88.5 mV AT 08:48. 05-25-99

HNF-1672 REV. 0

EMF= 88.2 mV AT 08:48. 05-25-99

EMF= 87.9 mV AT 08:49. 05-25-99

EMF= 87.6 mV AT 08:49. 05-25-99

EMF= 87.3 mV AT 08:49. 05-25-99

EMF= 87.0 mV AT 08:50. 05-25-99

EMF= 86.7 mV AT 08:50. 05-25-99

EMF= 86.7 mV AT 08:50. 05-25-99
ENTERED

STD CONCN= 997 AT 08:51. 05-25-99
ENTERED

STD VOL= .25000 AT 08:51. 05-25-99
ENTERED

EMF=-9.3 mV AT 08:57. 05-25-99

EMF=-9.7 mV AT 08:57. 05-25-99

EMF=-10.0 mV AT 08:58. 05-25-99

EMF=-10.4 mV AT 08:58. 05-25-99

EMF=-10.6 mV AT 08:58. 05-25-99

EMF=-10.9 mV AT 08:59. 05-25-99

EMF=-10.9 mV AT 08:59. 05-25-99
ENTERED

STD VOL= 2.5000 AT 09:00. 05-25-99
ENTERED

EMF=-71.8 mV AT 09:04. 05-25-99

EMF=-72.1 mV AT 09:04. 05-25-99 BLK

EMF=-72.4 mV AT 09:04. 05-25-99

EMF=-72.5 mV AT 09:04. 05-25-99
ENTERED

_:NH3 SLOPE=-62.2 mV/DEC
AT 09:04, 05-25-99

_:NH3 CONCN= .274

DOUBLE KNOWN ADDITION SELECTED
AT 09:05. 05-25-99

```
DOUBLE KNOWN ADDITION SELECTED
 AT 11:14. 05-25-99

SAMPLE VOL= 25.000 AT 11:14. 05-25-99
ENTERED

EMF=-28.3 mV AT 11:17. 05-25-99

EMF=-28.8 mV AT 11:18. 05-25-99

EMF=-29.0 mV AT 11:18. 05-25-99

EMF=-29.1 mV AT 11:18. 05-25-99
ENTERED

STD CONCN= 997 AT 11:19. 05-25-99
ENTERED

STD VOL= .25000 AT 11:19. 05-25-99
ENTERED

EMF=-41.5 mV AT 11:21. 05-25-99

EMF=-41.8 mV AT 11:21. 05-25-99

EMF=-41.8 mV AT 11:21. 05-25-99
ENTERED

STD VOL= 2.5000 AT 11:22. 05-25-99
ENTERED

EMF=-80.3 mV AT 11:25. 05-25-99

EMF=-80.6 mV AT 11:25. 05-25-99

EMF=-80.6 mV AT 11:25. 05-25-99
ENTERED

1:NH3 SLOPE=-59.4 mV/DEC
 AT 11:26. 05-25-99

1:NH3 CONCN= 15.3
```

Std 3

```
DOUBLE KNOWN ADDITION SELECTED
 AT 14:17. 05-25-99

SAMPLE VOL= 25.000 AT 14:21. 05-25-99
ENTERED

EMF= 14.4 mV AT 14:28. 05-25-99

EMF= 14.0 mV AT 14:29. 05-25-99

EMF= 13.9 mV AT 14:29. 05-25-99
ENTERED

STD CONCN= 997 AT 14:29. 05-25-99
ENTERED

STD VOL= .25000 AT 14:29. 05-25-99
ENTERED

EMF=-20.0 mV AT 14:30. 05-25-99

EMF=-16.1 mV AT 14:32. 05-25-99

EMF=-16.0 mV AT 14:32. 05-25-99
ENTERED

STD VOL= 2.5000 AT 14:32. 05-25-99
ENTERED

EMF=-66.5 mV AT 14:33. 05-25-99

EMF=-65.9 mV AT 14:34. 05-25-99

EMF=-65.9 mV AT 14:34. 05-25-99
ENTERED

1:NH3 SLOPE=-57.9 mV/DEC
 AT 14:34. 05-25-99

1:NH3 CONCN= 4.31
```

S99T000891 SAM
1mL

DOUBLE KNOWN ADDITION SELECTED
AT 14:59, 05-25-99

SAMPLE VOL= 25.000 AT 14:59, 05-25-99
ENTERED

EMF= 6.4 mV AT 15:03, 05-25-99

EMF= 5.9 mV AT 15:04, 05-25-99

EMF= 5.8 mV AT 15:04, 05-25-99
ENTERED

STD CONCN= 997 AT 15:04, 05-25-99
ENTERED

STD VOL= .25000 AT 15:04, 05-25-99
ENTERED

EMF=-23.7 mV AT 15:05, 05-25-99

EMF=-21.8 mV AT 15:06, 05-25-99

EMF=-21.6 mV AT 15:07, 05-25-99

EMF=-21.6 mV AT 15:07, 05-25-99
ENTERED

STD VOL= 2.5000 AT 15:07, 05-25-99
ENTERED

EMF=-70.9 mV AT 15:10, 05-25-99

EMF=-71.4 mV AT 15:11, 05-25-99

EMF=-71.5 mV AT 15:11, 05-25-99
ENTERED

_:NH3 SLOPE=-59.5 mV/DEC
AT 15:11, 05-25-99

_:NH3 CONCN= 5.21

S99T000891 DUP
1mL

OUBLE KNOWN ADDITION SELECTED
AT 15:40. 05-25-99

AMPLE VOL= 25.000 AT 15:41. 05-25-99
NTERED

MF=-10.9 mV AT 15:45. 05-25-99

MF=-11.1 mV AT 15:45. 05-25-99
NTERED

TD CONCN= 997 AT 15:46. 05-25-99
NTERED

TD VOL= .25000 AT 15:46. 05-25-99
NTERED

MF=-31.1 mV AT 15:49. 05-25-99

MF=-31.8 mV AT 15:50. 05-25-99

MF=-32.0 mV AT 15:50. 05-25-99

MF=-32.0 mV AT 15:50. 05-25-99
NTERED

TD VOL= 2.5000 AT 15:51. 05-25-99
NTERED

MF=-77.2 mV AT 15:54. 05-25-99

MF=-77.5 mV AT 15:55. 05-25-99

MF=-77.8 mV AT 15:55. 05-25-99

MF=-77.9 mV AT 15:55. 05-25-99
NTERED

:NH3 SLOPE=-58.8 mV/DEC
AT 15:55. 05-25-99

:NH3 CONCN= 7.73

Ending Std
.500 mL

LABCORE Completed Worklist Report for Worklist# 29971

Analyst: mf **Instrument:** NH301 **Book#:** _____

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

Worklist Comment: AP107 FOR NH3-01 MF

Seq	Type	Sample#	R	A	Test	Matrix	Actual	Found	DL or Yield	Unit
1	BLNK			0	NH3-01	LIQUID	1	<5.00E+1		ug/mL
2	STD			0	NH3-01	LIQUID	4.08E+02	4.11E+2	100.735	% Recovery
3	SAMPLE	S99T000892		0	NH3-01	LIQUID	N/A	7.71E+01	50.000	ug/mL
4	DUP	S99T000892		0	NH3-01	LIQUID	7.71E+1	1.02E+2	27.806	RPD
5	SPK	S99T000892		0	NH3-01	LIQUID	1.02E+02	1.27E+02	124.510	% Recovery

Final page for worklist# 29971

Analyst Signature Date

Mary Franz 6/1/99
Analyst Signature Date

6/2/99
Reviewer Signature Date

Units shown for QC (BLK/BKG) may not reflect the actual units.

LABCORE Data Entry Template for Worklist# 29971

Analyst: _____ **Instrument:** NH301 _____ **Book#** _____

Method: LA-631-001 Rev/Mod _____

Worklist Comment: AP107 FOR NH3-01 MF

S	Type	Sample#	R	A	Test	Matrix	Group#	Project
1	BLNK				NH3-01	LIQUID		
2	STD				NH3-01	LIQUID		
3	SAMPLE	S99T000892	0		NH3-01	LIQUID	99000198	AP107 GRAB2
		Analytes Requested: NH3-01						
4	DUP	S99T000892	0		NH3-01	LIQUID		
5	SPK	S99T000892	0		NH3-01	LIQUID		

Final page for worklist # 29971

_____
Signature **Date**

Mary Franz 6/1/99
Signature **Date**

Data Entry Comments:

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

WORKBOOK PAGE: BLANK1

AMMONIA (NH3) : LA-631-001 (~~C~~ D-0) HD 6/9/99 LIQUIDS/SOLIDS

			BLNK
Type	Instrument Data (µg/mL)	ID	0.000
BLNK	Blank Result from the Instrument (µg/mL)	BR	0.788
Work List	Vol of Sample for Dilution (mL) or Vol of Sample Direct (mL)	VSAM	0.500
29971	Final Vol of Dilution (mL) or Vol of Sample Direct (mL)	FVOL	25.0
Test Code			
NH3-01			
Matrix			
LIQUID	Dilution Factor	DF	1.000
Batch Number			
99002155			
Rerun			
0			
Sample Prep			
N/A	NH3 Concentration (µg/mL)	NH3 CONC	< 5.00E+01
Sample #			
BLNK	**Detection Limit (µg/mL)**	**5.00E+01**	
Instrument Code			
NH301	**Detection Limit = 1.000µg • (FVOL/VSAM)**		
Prepared By			
MF	**NH3 Concentration (µg/mL) = (BR) • (FVOL / VSAM) * DDF**		
Chemist			
MJL			
Analyst			
MF			
Date Complete			
06/01/99			
Analysis Date			
05/26/99			
Analysis Time			
04:30 PM			
Sample Point	**NH3 Concentration (µg/mL)**		**< 5.00E+01**
AP107			

Analyst:		MF	Date: 06/01/99
Signature of Chemist:	NA	MJL	Date:

SAMPLE.WB1 REV 1.0 631001ML

WORKBOOK PAGE: STD2

AMMONIA (NH3) : LA-631-001 (D-0) LIQUIDS/SOLIDS

			STD
Type	Instrument Data (µg/mL)	ID	9.010
STD	Blank Result from the Instrument (µg/mL)	BR	0.788
Work List	Vol of Sample for Dilution (mL) or Vol of Sample Direct (mL)	VSAM	0.500
29971	Final Vol of Dilution (mL) or Vol of Sample Direct (mL)	FVOL	25.0
Test Code	LCS Standard Book Number	LCS	59N19A
NH3-01	LCS Standard Concentration (µg/mL)	STD VAL	4.08E+02
Matrix			
Batch Number			
99002155			
Rerun			
0			
Sample Prep			
N/A	NH3 Concentration (µg/mL)	NH3 CONC	4.11E+02
Sample #			
STD	Detection Limit (µg/mL)	5.00E+01	
Instrument Code			
NH301	Detection Limit = 1.000µg * (FVOL/VSAM)		
Prepared By			
MF	NH3 Concentration (µg/mL) = (ID-BR)*(FVOL /VSAM)		
Chemist			
MJL	QC ACTUAL = STD VAL		
Analyst	QC FOUND = (ID-BR) * (FVOL/VSAM)		
MF			
Date Complete			
06/01/99			
Analysis Date	QC ACTUAL (µg)		4.08E+02
05/26/99	QC FOUND (µg)		4.11E+02
Analysis Time			
04:30 PM			
Sample Point			
AP107			

Analyst:		MF	Date: 06/01/99
Signature of Chemist:	NA	MJL	Date:

SAMPLE.WB1 REV 1.0 631001ML

WORKBOOK PAGE: SAM3

AMMONIA (NH3) : LA-631-001 (~~C~~D-0) 6/9/99 LAD

LIQUIDS/SOLIDS

			SAMPLE
Type	Instrument Data (µg/mL)	ID	2.330
SAMPLE	Blank Result from the Instrument (µg/mL)	BR	0.788
Work List	Vol of Sample for Dilution (mL) or Vol of Sample Direct (mL)	VSAM	0.500
29971	Final Vol of Dilution (mL) or Vol of Sample Direct (mL)	FVOL	25.0
Test Code			
NH3-01			
Matrix			
LIQUID	Dilution Factor	DF	1.000
Batch Number			
99002155			
Rerun			
0			
Sample Prep			
N/A	NH3 Concentration (µg/mL)	NH3 CONC	7.71E+01
Sample #			
S99T000892	Detection Limit (µg/mL)	5.00E+01	
Instrument Code			
NH301	Detection Limit = 1.000µg • (FVOL/VSAM) * DF		
Prepared By			
MF	NH3 Concentration (µg/mL) = (ID-BR) • (FVOL / VSAM)*DF		
Chemist			
MJL			
Analyst			
MF			
Date Complete			
06/01/99			
Analysis Date			
05/26/99			
Analysis Time			
04:30 PM			
Sample Point	NH3 Concentration (µg/mL)		7.71E+01
AP107			

Analyst:		MF	Date: 06/01/99
Signature of Chemist:	NA	MJL	Date:

SAMPLE.WB1 REV 1.0 631001ML

WORKBOOK PAGE: DUP4

AMMONIA (NH3) : LA-631-001 (C-0) LIQUIDS/SOLIDS

			DUP
Type	Instrument Data (µg/mL)	ID	2.830
DUP	Blank Result from the Instrument (µg/mL)	BR	0.788
Work List	Vol of Sample for Dilution (mL) or Vol of Sample Direct (mL)	VSAM	0.500
29971	Final Vol of Dilution (mL) or Vol of Sample Direct (mL)	FVOL	25.0
Test Code			
NH3-01			
Matrix			
LIQUID	Dilution Factor	DF	1.000
Batch Number			
99002155			
Rerun			
0			
Sample Prep			
N/A	NH3 Concentration (µg/mL)	NH3 CONC	1.02E+02
Sample #			
S99T000892	Detection Limit (µg/mL)	5.00E+01	
Instrument Code			
NH301	Detection Limit = 1.000µg * (FVOL/VSAM) • DF		
Prepared By			
MF	NH3 Concentration (µg/mL) = (ID-BR) • (FVOL / VSAM)*DF		
Chemist			
MJL			
Analyst			
MF			
Date Complete			
06/01/99			
Analysis Date			
05/26/99			
Analysis Time			
04:30 PM			
Sample Point	NH3 Concentration (µg/mL)		1.02E+02
AP107			

Analyst:	MF	Date:	06/01/99
Signature of Chemist: NA	MJL	Date:	

SAMPLE.WB1 REV 1.0 631001ML

WORKBOOK PAGE: SPIKE5

AMMONIA (NH3) : LA-631-001 (C-0) LIQUIDS/SOLIDS

			SPK
Type	Instrument Data (µg/mL)	ID	7.430
SPK	Blank Result from the Instrument (µg/mL)	BR	0.788
Work List	Vol of Sample for Dilution (mL) or Vol of Sample Direct (mL)	VSAM	0.500
29971	Final Vol of Dilution (mL) or Vol of Sample Direct (mL)	FVOL	25.0
Test Code	Spike Book Number	SPK	59N19A
NH3-01	Spike Value (µg/mL)	SPK VAL	4.08E+02
Matrix	Vol of Spike Standard Used (mL)	VOL SPK	0.250
LIQUID			
Batch Number			
99002155			
Rerun	Sample Instrument Data (µg/mL)	SAM ID	2.33
0	Sample Volume of Sample (mL)	SAM VSAM	0.500
Sample Prep	Sample Final Volume (mL)	SAM FVOL	25.0
N/A			
Sample #			
S99T000892			
Instrument Code			
NH301			
Prepared By			
MF			
Chemist			
MJL	QC ACTUAL = SPK VAL * VOL SPK		
Analyst	QC FOUND = (((ID-BR) * FVOL) - (SAM ID - BR) * SAM FVOL * (VSAM / SAM VSAM))		
MF			
Date Complete			
06/01/99			
Analysis Date	QC ACTUAL (µg)		1.02E+02
05/26/99	QC FOUND (µg)		1.27E+02
Analysis Time			
04:30 PM			
Sample Point			
AP107			

Analyst:	MF	Date:	06/01/99
Signature of Chemist: NA	MJL	Date:	

SAMPLE.WB1 REV 1.0 631001ML

HNF-1672 REV. 0

DOUBLE KNOWN ADDITION SELECTED
AT 08:32, 05-26-99

SAMPLE VOL= 25.000 AT 08:32, 05-26-99
ENTERED

EMF=-74.7 mV AT 08:36, 05-26-99

EMF=-75.0 mV AT 08:36, 05-26-99

EMF=-75.2 mV AT 08:36, 05-26-99

EMF=-75.4 mV AT 08:37, 05-26-99

EMF=-75.5 mV AT 08:37, 05-26-99

EMF=-75.5 mV AT 08:37, 05-26-99
ENTERED

STD CONCN= 997 AT 08:38, 05-26-99
ENTERED

STD VOL= .25000 AT 08:38, 05-26-99
ENTERED

EMF=-93.6 mV AT 08:41, 05-26-99

EMF=-93.9 mV AT 08:41, 05-26-99

EMF=-94.1 mV AT 08:41, 05-26-99

EMF=-94.2 mV AT 08:42, 05-26-99

EMF=-94.4 mV AT 08:43, 05-26-99
ENTERED

STD VOL= 2.5000 AT 08:43, 05-26-99
ENTERED

EMF=-138.4 mV AT 08:46, 05-26-99

EMF=-138.7 mV AT 08:46, 05-26-99

EMF=-139.0 mV AT 08:47, 05-26-99

EMF=-139.1 mV AT 08:48, 05-26-99

EMF=-139.1 mV AT 08:48, 05-26-99
ENTERED

1:NH3 SLOPE=-59.2 mV/DEC
AT 08:48, 05-26-99

1:NH3 CONCN= 9.01 59N19-A . 500 ml

DOUBLE KNOWN ADDITION SELECTED
AT 08:48, 05-26-99

HNF-1672 REV. 0

DUBLE KNOWN ADDITION SELECTED
AT 10:37, 05-26-99

AMPLE VOL= 25.000 AT 10:38, 05-26-99
NTERED

MF= 125.0 mV AT 10:38, 05-26-99

MF=-13.6 mV AT 10:48, 05-26-99

MF=-13.6 mV AT 10:48, 05-26-99

MF=-14.0 mV AT 10:49, 05-26-99

MF=-14.1 mV AT 10:49, 05-26-99
NTERED

TD CONCN= 997 AT 10:49, 05-26-99
NTERED

TD VOL= .25000 AT 10:50, 05-26-99
NTERED

MF=-79.0 mV AT 10:53, 05-26-99

MF=-79.5 mV AT 10:54, 05-26-99

EMF=-79.6 mV AT 10:55, 05-26-99

EMF=-79.6 mV AT 10:55, 05-26-99
ENTERED

STD VOL= 2.5000 AT 10:55, 05-26-99
ENTERED

EMF=-130.9 mV AT 11:02, 05-26-99

EMF=-131.8 mV AT 11:03, 05-26-99

EMF=-132.3 mV AT 11:04, 05-26-99

EMF=-132.6 mV AT 11:04, 05-26-99

EMF=-132.9 mV AT 11:04, 05-26-99

EMF=-133.7 mV AT 11:05, 05-26-99

EMF=-134.5 mV AT 11:06, 05-26-99

EMF=-135.4 mV AT 11:07, 05-26-99

EMF=-135.7 mV AT 11:07, 05-26-99

EMF=-135.8 mV AT 11:07, 05-26-99
ENTERED

1:NH3 SLOPE=-57.9 mV/DEC
AT 11:07, 05-26-99

1:NH3 CONCN= .788 Blnk

DUBLE KNOWN ADDITION SELECTED
AT 12:50, 05-26-99

AMPLE VOL= 25.000 AT 12:50, 05-26-99
NTERED

MF= 143.2 mV AT 12:51, 05-26-99

MF=-40.4 mV AT 13:03, 05-26-99

MF=-41.1 mV AT 13:04, 05-26-99

MF=-41.3 mV AT 13:04, 05-26-99

MF=-41.5 mV AT 13:04, 05-26-99

MF=-41.6 mV AT 13:05, 05-26-99
NTERED

TD CONCN= 997 AT 13:05, 05-26-99
NTERED

TD VOL= .25000 AT 13:05, 05-26-99
NTERED

MF=-83.2 mV AT 13:08, 05-26-99

MF=-83.5 mV AT 13:08, 05-26-99

MF=-83.8 mV AT 13:09, 05-26-99

MF=-84.0 mV AT 13:09, 05-26-99

MF=-84.0 mV AT 13:09, 05-26-99
NTERED

TD VOL= 2.5000 AT 13:10, 05-26-99
NTERED

MF=-137.7 mV AT 13:12, 05-26-99

MF=-137.9 mV AT 13:13, 05-26-99

MF=-138.0 mV AT 13:13, 05-26-99

MF=-138.1 mV AT 13:13, 05-26-99

MF=-138.2 mV AT 13:14, 05-26-99
NTERED

1:NH3 SLOPE=-59.0 mV/DEC
AT 13:14, 05-26-99

1:NH3 CONCN= 2.33 .500 ml 892

HNF-1672 REV. 0

DUBLE KNOWN ADDITION SELECTED
AT 13:21, 05-26-99

AMPLE VOL= 25.000 AT 13:22, 05-26-99
NTERED

MF=-46.1 mV AT 13:26, 05-26-99

MF=-37.0 mV AT 13:27, 05-26-99

MF=-44.9 mV AT 13:30, 05-26-99

MF=-45.4 mV AT 13:31, 05-26-99

MF=-45.5 mV AT 13:31, 05-26-99
NTERED

-TD CONCN= 997 AT 13:31, 05-26-99
NTERED

TD VOL= .25000 AT 13:31, 05-26-99
NTERED

MF=-82.8 mV AT 13:34, 05-26-99

EMF=-83.1 mV AT 13:35, 05-26-99

EMF=-83.3 mV AT 13:35, 05-26-99

EMF=-83.5 mV AT 13:36, 05-26-99
ENTERED

TD VOL= 2.5000 AT 13:36, 05-26-99
ENTERED

EMF=-135.6 mV AT 13:39, 05-26-99

EMF=-135.8 mV AT 13:39, 05-26-99

EMF=-136.1 mV AT 13:40, 05-26-99

EMF=-136.2 mV AT 13:40, 05-26-99

EMF=-136.2 mV AT 13:40, 05-26-99
ENTERED

1:NH3 SLOPE=-58.4 mV/DEC
AT 13:41, 05-26-99

1:NH3 CONCN= 2.83 .500ml 892 Dup

HNF-1672 REV. 0

```
DUBLE KNOWN ADDITION SELECTED
AT 14:08, 05-26-99

AMPLE VOL= 25.000 AT 14:08, 05-26-99
NTERED

MF=-49.7 mV AT 14:13, 05-26-99

MF=-50.4 mV AT 14:14, 05-26-99

MF=-50.8 mV AT 14:14, 05-26-99
NTERED

TD CONCN= 997 AT 14:15, 05-26-99
NTERED

TD VOL= .25000 AT 14:15, 05-26-99
NTERED

MF=-82.0 mV AT 14:18, 05-26-99

MF=-82.3 mV AT 14:18, 05-26-99

MF=-82.5 mV AT 14:18, 05-26-99

MF=-82.5 mV AT 14:18, 05-26-99
NTERED

TD VOL= 2.5000 AT 14:19, 05-26-99
NTERED

MF=-134.3 mV AT 14:22, 05-26-99

MF=-134.5 mV AT 14:22, 05-26-99

MF=-134.7 mV AT 14:23, 05-26-99

MF=-134.8 mV AT 14:23, 05-26-99
NTERED

1:NH3 SLOPE=-60.5 mV/DEC
AT 14:23, 05-26-99

3:NH3 CONCN= 4.20
```

500ml 893

DUBLE KNOWN ADDITION SELECTED
AT 15:03. 05-26-99

AMPLE VOL= 25.000 AT 15:03. 05-26-99
NTERED

MF=-45.3 mV AT 15:11. 05-26-99

MF=-45.9 mV AT 15:11. 05-26-99

MF=-46.4 mV AT 15:12. 05-26-99

MF=-46.7 mV AT 15:13. 05-26-99

MF=-46.9 mV AT 15:13. 05-26-99

MF=-47.3 mV AT 15:14. 05-26-99

MF=-47.4 mV AT 15:14. 05-26-99

EMF=-47.5 mV AT 15:15. 05-26-99
ENTERED

STD CONCN= 997 AT 15:15. 05-26-99
ENTERED

STD VOL= .25000 AT 15:15. 05-26-99
ENTERED

EMF=-82.8 mV AT 15:19. 05-26-99

EMF=-83.1 mV AT 15:19. 05-26-99

EMF=-83.4 mV AT 15:20. 05-26-99

EMF=-83.6 mV AT 15:20. 05-26-99

EMF=-83.7 mV AT 15:20. 05-26-99
ENTERED

STD VOL= 2.5000 AT 15:21. 05-26-99
ENTERED

EMF=-133.3 mV AT 15:24. 05-26-99

EMF=-133.9 mV AT 15:24. 05-26-99

EMF=-134.1 mV AT 15:24. 05-26-99

EMF=-134.2 mV AT 15:25. 05-26-99

EMF=-134.6 mV AT 15:26. 05-26-99

EMF=-134.8 mV AT 15:26. 05-26-99

EMF=-134.8 mV AT 15:26. 05-26-99

EMF=-134.9 mV AT 15:26. 05-26-99
ENTERED

1:NH3 SLOPE=-57.0 m

NH3 Conc = 2.96 , 500 ml 893 DUP

DUBLE KNOWN ADDITION SELECTED
AT 13:48, 05-26-99

AMPLE VOL= 25.000 AT 13:48, 05-26-99
NTERED

MF=-64.6 mV AT 13:52, 05-26-99

MF=-64.9 mV AT 13:52, 05-26-99

MF=-65.2 mV AT 13:52, 05-26-99

MF=-65.3 mV AT 13:53, 05-26-99

MF=-65.5 mV AT 13:53, 05-26-99
NTERED

TD CONCN= 997 AT 13:53, 05-26-99
NTERED

TD VOL= .25000 AT 13:54, 05-26-99
NTERED

MF=-86.8 mV AT 13:56, 05-26-99

MF=-87.2 mV AT 13:56, 05-26-99

MF=-87.4 mV AT 13:57, 05-26-99

MF=-87.5 mV AT 13:57, 05-26-99
ENTERED

TD VOL= 2.5000 AT 13:57, 05-26-99
ENTERED

MF=-134.2 mV AT 14:00, 05-26-99

MF=-134.5 mV AT 14:00, 05-26-99

MF=-134.7 mV AT 14:00, 05-26-99

MF=-134.9 mV AT 14:01, 05-26-99
ENTERED

1:NH3 SLOPE=-60.2 mV/DEC
AT 14:01, 05-26-99

1:NH3 CONCN= 7.43 , 500 ml 892 Spk / .250ml 59N19-A

LABCORE Completed Worklist Report for Worklist# 29972

Analyst: mf **Instrument:** NH301 **Book#:** _____

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

Worklist Comment: AP107 FOR NH3-01 MF

Seq	Type	Sample#	R	A	Test	Matrix	Actual	Found	DL or Yield	Unit
1	STD			0	NH3-01	LIQUID	4.08E+02	4.25E+2	104.167	% Recovery
2	BLNK			0	NH3-01	LIQUID	1	<2.50E+1		ug/mL
3	SAMPLE	S99T000890		0	NH3-01	LIQUID	N/A <	2.50E+01	25.000	ug/mL
4	DUP	S99T000890		0	NH3-01	LIQUID	<2.50E+1	<2.50E+1		RPD
5	SAMPLE	S99T000893		0	NH3-01	LIQUID	N/A	1.07E+02	25.000	ug/mL
6	DUP	S99T000893		0	NH3-01	LIQUID	1.07E+2	1.26E+2	16.309	RPD
7	STD			0	NH3-01	LIQUID	4.08E+02	4.34E+2	106.373	% Recovery

Final page for worklist# 29972

Analyst Signature Date

Mary Franz 6/3/99
Analyst Signature Date

6/4/99
Reviewer Signature Date

Units shown for QC (BLK/BKG) may not reflect the actual units.

HNF-1672 REV. 0

06/01/99 13:18
ws2

LABCORE Data Entry Template for Worklist# 29972

Analyst: MF **Instrument:** NH301 _____ **Book#** 59N19-A

Method: LA-631-001 Rev/Mod _____

Worklist Comment: AP107 FOR NH3-01 MF

S	Type	Sample#	R	A	Test	Matrix	Group#	Project
1	STD				NH3-01	LIQUID		
2	BLNK				NH3-01	LIQUID		
3	SAMPLE	S99T000890	0		NH3-01	LIQUID	99000198	AP107 GRAB2
		Analytes Requested:			NH3-01			
4	DUP	S99T000890	0		NH3-01	LIQUID		
5	SAMPLE	S99T000893	0		NH3-01	LIQUID	99000198	AP107 GRAB2
		Analytes Requested:			NH3-01			
6	DUP	S99T000893	0		NH3-01	LIQUID		
7	STD				NH3-01	LIQUID		

Final page for worklist # 29972

Mary Freeny 6/3/99
Signature Date

Mary Freeny 6/3/99
Signature Date

Data Entry Comments:

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

WORKBOOK PAGE: STD1

AMMONIA (NH3) : LA-631-001 (~~C~~-0) D LIQUIDS/SOLIDS

			STD
Type	Instrument Data (µg/mL)	ID	9.210
STD	Blank Result from the Instrument (µg/mL)	BR	0.712
Work List	Vol of Sample for Dilution (mL) or Vol of Sample Direct (mL)	VSAM	0.500
29972	Final Vol of Dilution (mL) or Vol of Sample Direct (mL)	FVOL	25.0
Test Code	LCS Standard Book Number	LCS	59N19A
NH3-01	LCS Standard Concentration (µg/mL)	STD VAL	4.08E+02
Matrix			
LIQUID			
Batch Number			
99002301			
Rerun			
0			
Sample Prep			
N/A	NH3 Concentration (µg/mL)	NH3 CONC	4.25E+02
Sample #			
STD	Detection Limit (µg/mL)	5.00E+01	
Instrument Code			
NH301	Detection Limit = 1.000µg * (FVOL/VSAM)		
Prepared By			
MF	NH3 Concentration (µg/mL) = (ID-BR)*(FVOL /VSAM)		
Chemist			
MJL	QC ACTUAL = STD VAL		
Analyst	QC FOUND = (ID-BR) * (FVOL/VSAM)		
MF			
Date Complete			
06/03/99			
Analysis Date	QC ACTUAL (µg)		4.08E+02
06/03/99	QC FOUND (µg)		4.25E+02
Analysis Time			
03:30 PM			
Sample Point			
AP107			

Analyst:	MF	Date:	06/03/99
Signature of Chemist: NA	MJL	Date:	

SAMPLE.WB1 REV 1.0 631001ML

WORKBOOK PAGE: BLANK2

AMMONIA (NH3) : LA-631-001 (C-0) LIQUIDS/SOLIDS

			BLNK
Type	Instrument Data (µg/mL)	ID	0.000
BLNK	Blank Result from the Instrument (µg/mL)	BR	0.712
Work List	Vol of Sample for Dilution (mL) or Vol of Sample Direct (mL)	VSAM	1.000
29972	Final Vol of Dilution (mL) or Vol of Sample Direct (mL)	FVOL	25.0
Test Code			
NH3-01			
Matrix			
LIQUID	Dilution Factor	DF	1.000
Batch Number			
99002301			
Rerun			
0			
Sample Prep			
N/A	NH3 Concentration (µg/mL)	NH3 CONC	< 2.50E+01
Sample #			
BLNK	**Detection Limit (µg/mL)**	**2.50E+01**	
Instrument Code			
NH301	**Detection Limit = 1.000µg * (FVOL/VSAM)**		
Prepared By			
MF	**NH3 Concentration (µg/mL) = (BR) * (FVOL / VSAM) * DDF**		
Chemist			
MJL			
Analyst			
MF			
Date Complete			
06/03/99			
Analysis Date			
06/03/99			
Analysis Time			
03:30 PM			
Sample Point	**NH3 Concentration (µg/mL)**		**< 2.50E+01**
AP107			

Analyst:	MF	Date:	06/03/99
Signature of Chemist: NA	MJL	Date:	

SAMPLE.WB1 REV 1.0 631001ML

WORKBOOK PAGE: SAM3

AMMONIA (NH3) : LA-631-001 (C-0) LIQUIDS/SOLIDS

			SAMPLE
Type	Instrument Data (µg/mL)	ID	0.720
SAMPLE	Blank Result from the Instrument (µg/mL)	BR	0.712
Work List	Vol of Sample for Dilution (mL) or Vol of Sample Direct (mL)	VSAM	1.000
29972	Final Vol of Dilution (mL) or Vol of Sample Direct (mL)	FVOL	25.0
Test Code			
NH3-01			
Matrix			
LIQUID	Dilution Factor	DF	1.000
Batch Number			
99002301			
Rerun			
0			
Sample Prep			
N/A	NH3 Concentration (µg/mL)	NH3 CONC	< 2.50E+01
Sample #			
S99T000890	**Detection Limit (µg/mL)**	**2.50E+01**	
Instrument Code			
NH301	**Detection Limit = 1.000µg * (FVOL/VSAM) * DF**		
Prepared By			
MF	**NH3 Concentration (µg/mL) = (ID-BR) * (FVOL / VSAM)*DF**		
Chemist			
MJL			
Analyst			
MF			
Date Complete			
06/03/99			
Analysis Date			
06/03/99			
Analysis Time			
03:30 PM			
Sample Point	**NH3 Concentration (µg/mL)**		**< 2.50E+01**
AP107			

Analyst:		MF	Date: 06/03/99
Signature of Chemist:	NA	MJL	Date:

SAMPLE.WB1 REV 1.0 631001ML

WORKBOOK PAGE: DUP4

AMMONIA (NH3) : LA-631-001 (~~C~~-0) LIQUIDS/SOLIDS

			DUP
Type	Instrument Data (µg/mL)	ID	0.673
DUP	Blank Result from the Instrument (µg/mL)	BR	0.712
Work List	Vol of Sample for Dilution (mL) or Vol of Sample Direct (mL)	VSAM	1.000
29972	Final Vol of Dilution (mL) or Vol of Sample Direct (mL)	FVOL	25.0
Test Code			
NH3-01			
Matrix			
LIQUID	Dilution Factor	DF	1.000
Batch Number			
99002301			
Rerun			
0			
Sample Prep			
N/A	NH3 Concentration (µg/mL)	NH3 CONC	< 2.50E+01
Sample #			
S99T000890	**Detection Limit (µg/mL)**	**2.50E+01**	
Instrument Code			
NH301	**Detection Limit = 1.000µg • (FVOL/VSAM) * DF**		
Prepared By			
MF	**NH3 Concentration (µg/mL) = (ID-BR) • (FVOL / VSAM)*DF**		
Chemist			
MJL			
Analyst			
MF			
Date Complete			
06/03/99			
Analysis Date			
06/03/99			
Analysis Time			
03:30 PM			
Sample Point	**NH3 Concentration (µg/mL)**		**< 2.50E+01**
AP107			

Analyst:	MF	Date:	06/03/99
Signature of Chemist: NA	MJL	Date:	

SAMPLE.WB1 REV 1.0 631001ML

WORKBOOK PAGE: SAM5

AMMONIA (NH3) : LA-631-001 (~~C~~-0) LIQUIDS/SOLIDS

			SAMPLE
Type	Instrument Data (µg/mL)	ID	4.980
SAMPLE	Blank Result from the Instrument (µg/mL)	BR	0.712
Work List	Vol of Sample for Dilution (mL) or Vol of Sample Direct (mL)	VSAM	1.000
29972	Final Vol of Dilution (mL) or Vol of Sample Direct (mL)	FVOL	25.0
Test Code			
NH3-01			
Matrix			
LIQUID	Dilution Factor	DF	1.000
Batch Number			
99002301			
Rerun			
0			
Sample Prep			
N/A	NH3 Concentration (µg/mL)	NH3 CONC	1.07E+02
Sample #			
S99T000893	**Detection Limit (µg/mL)**	**2.50E+01**	
Instrument Code			
NH301	**Detection Limit = 1.000µg * (FVOL/VSAM) * DF**		
Prepared By			
MF	**NH3 Concentration (µg/mL) = (ID-BR) * (FVOL / VSAM)*DF**		
Chemist			
MJL			
Analyst			
MF			
Date Complete			
06/03/99			
Analysis Date			
06/03/99			
Analysis Time			
03:30 PM			
Sample Point	**NH3 Concentration (µg/mL)**		**1.07E+02**
AP107			

Analyst:	MF	Date:	06/03/99
Signature of Chemist: NA	MJL	Date:	

SAMPLE.WB1 REV 1.0 631001ML

WORKBOOK PAGE: DUP6

AMMONIA (NH3) : LA-631-001 (C-0) LIQUIDS/SOLIDS

			DUP
Type	Instrument Data (µg/mL)	ID	5.760
DUP	Blank Result from the Instrument (µg/mL)	BR	0.712
Work List	Vol of Sample for Dilution (mL) or Vol of Sample Direct (mL)	VSAM	1.000
29972	Final Vol of Dilution (mL) or Vol of Sample Direct (mL)	FVOL	25.0
Test Code			
NH3-01			
Matrix			
LIQUID	Dilution Factor	DF	1.000
Batch Number			
99002301			
Rerun			
0			
Sample Prep			
N/A	NH3 Concentration (µg/mL)	NH3 CONC	1.26E+02
Sample #			
S99T000893	**Detection Limit (µg/mL)**	**2.50E+01**	
Instrument Code			
NH301	**Detection Limit = 1.000µg * (FVOL/VSAM) * DF**		
Prepared By			
MF	**NH3 Concentration (µg/mL) = (ID-BR) * (FVOL / VSAM)*DF**		
Chemist			
MJL			
Analyst			
MF			
Date Complete			
06/03/99			
Analysis Date			
06/03/99			
Analysis Time			
03:30 PM			
Sample Point	**NH3 Concentration (µg/mL)**		**1.26E+02**
AP107			

Analyst:	MF	Date:	06/03/99
Signature of Chemist: NA	MJL	Date:	

SAMPLE.WB1 REV 1.0 631001ML

WORKBOOK PAGE: ST_END7

AMMONIA (NH3) : LA-631-001 (C-0) LIQUIDS/SOLIDS

			STD
Type	Instrument Data (µg/mL)	ID	9.400
STD	Blank Result from the Instrument (µg/mL)	BR	0.712
Work List	Vol of Sample for Dilution (mL) or Vol of Sample Direct (mL)	VSAM	0.500
29972	Final Vol of Dilution (mL) or Vol of Sample Direct (mL)	FVOL	25.0
Test Code	LCS Standard Book Number	LCS	59N19A
NH3-01	LCS Standard Concentration (µg/mL)	STD VAL	4.08E+02
Matrix			
LIQUID			
Batch Number			
99002301			
Rerun			
0			
Sample Prep			
N/A	NH3 Concentration (µg/mL)	NH3 CONC	4.34E+02
Sample #			
	Detection Limit (µg/mL)	5.00E+01	
Instrument Code			
NH301	Detection Limit = 1.000µg * (FVOL/VSAM)		
Prepared By			
MF	NH3 Concentration (µg/mL) = (ID-BR)*(FVOL /VSAM)		
Chemist			
MJL	QC ACTUAL = STD VAL		
Analyst	QC FOUND = (ID-BR) * (FVOL/VSAM)		
MF			
Date Complete			
06/03/99			
Analysis Date	QC ACTUAL (µg)		4.08E+02
06/03/99	QC FOUND (µg)		4.34E+02
Analysis Time			
03:30 PM			
Sample Point			
AP107			

Analyst:	MF	Date:	06/03/99
Signature of Chemist:	MJL	Date:	

SAMPLE.WB1 REV 1.0 631001ML

HNF-1672 REV. 0

DOUBLE KNOWN ADDITION SELECTED
AT 07:30, 06-03-99

SAMPLE VOL= 25.000 AT 07:30, 06-03-99
ENTERED

EMF=-67.8 mV AT 07:33, 06-03-99

EMF=-68.9 mV AT 07:34, 06-03-99

EMF=-69.3 mV AT 07:35, 06-03-99

EMF=-69.5 mV AT 07:35, 06-03-99

EMF=-69.8 mV AT 07:35, 06-03-99
ENTERED

STD CONCN= 997 AT 07:36, 06-03-99
ENTERED

STD VOL= .25000 AT 07:36, 06-03-99
ENTERED

EMF=-87.1 mV AT 07:39, 06-03-99

EMF=-87.3 mV AT 07:39, 06-03-99

EMF=-87.6 mV AT 07:40, 06-03-99

EMF=-87.7 mV AT 07:41, 06-03-99

EMF=-87.7 mV AT 07:41, 06-03-99
ENTERED

STD VOL= 2.5000 AT 07:42, 06-03-99
ENTERED

EMF=-129.9 mV AT 07:44, 06-03-99

EMF=-130.1 mV AT 07:45, 06-03-99

EMF=-130.3 mV AT 07:45, 06-03-99

EMF=-130.5 mV AT 07:45, 06-03-99
ENTERED

1:NH3 SLOPE=-57.0 mV/DEC
AT 07:46, 06-03-99

1:NH3 CONCN= 9.21 .500 ml 59N19-A

HNF-1672 REV. 0

DOUBLE KNOWN ADDITION SELECTED
AT 07:58, 06-03-99

SAMPLE VOL= 25.000 AT 07:58, 06-03-99
ENTERED

EMF=-5.5 mV AT 08:04, 06-03-99

EMF=-5.8 mV AT 08:05, 06-03-99

EMF=-6.1 mV AT 08:05, 06-03-99

EMF=-6.3 mV AT 08:05, 06-03-99

EMF=-6.5 mV AT 08:05, 06-03-99

EMF=-6.7 mV AT 08:06, 06-03-99

EMF=-6.8 mV AT 08:06, 06-03-99

EMF=-6.8 mV AT 08:06, 06-03-99
ENTERED

STD CONCN= 997 AT 08:07, 06-03-99
ENTERED

STD VOL= .25000 AT 08:07, 06-03-99
ENTERED

EMF=-74.6 mV AT 08:10, 06-03-99

EMF=-74.9 mV AT 08:10, 06-03-99

EMF=-75.2 mV AT 08:11, 06-03-99

EMF=-75.2 mV AT 08:11, 06-03-99
ENTERED

STD VOL= 2.5000 AT 08:12, 06-03-99
ENTERED

EMF=-131.2 mV AT 08:15, 06-03-99

EMF=-131.4 mV AT 08:16, 06-03-99

EMF=-131.7 mV AT 08:16, 06-03-99

EMF=-131.8 mV AT 08:17, 06-03-99

EMF=-131.9 mV AT 08:17, 06-03-99

EMF=-132.0 mV AT 08:17, 06-03-99

EMF=-132.0 mV AT 08:18, 06-03-99
ENTERED

1:NH3 SLOPE=-58.4 mV/DEC
AT 08:18, 06-03-99

1:NH3 CONCN= .712 Blnk

ENTERED

HNF-1672 REV. 0

EMF= 41.5 mV AT 10:12, 06-03-99

EMF= 18.6 mV AT 10:19, 06-03-99

EMF= 17.5 mV AT 10:20, 06-03-99

EMF= 16.8 mV AT 10:20, 06-03-99

EMF= 16.4 mV AT 10:21, 06-03-99

EMF= 16.1 mV AT 10:21, 06-03-99

EMF= 15.8 mV AT 10:21, 06-03-99

EMF= 15.6 mV AT 10:22, 06-03-99

EMF= 15.3 mV AT 10:22, 06-03-99
ENTERED

STD CONCN= 997 AT 10:23, 06-03-99
ENTERED

STD VOL= .25000 AT 10:23, 06-03-99
ENTERED

EMF=-55.5 mV AT 10:28, 06-03-99

EMF=-56.0 mV AT 10:29, 06-03-99

EMF=-56.4 mV AT 10:29, 06-03-99

EMF=-56.8 mV AT 10:29, 06-03-99

EMF=-57.0 mV AT 10:30, 06-03-99

EMF=-57.3 mV AT 10:30, 06-03-99

EMF=-57.7 mV AT 10:31, 06-03-99

EMF=-57.9 mV AT 10:31, 06-03-99
ENTERED

STD VOL= 2.5000 AT 10:32, 06-03-99
ENTERED

EMF=-117.5 mV AT 10:36, 06-03-99

EMF=-117.9 mV AT 10:36, 06-03-99

EMF=-118.2 mV AT 10:37, 06-03-99

EMF=-118.4 mV AT 10:37, 06-03-99

EMF=-118.7 mV AT 10:37, 06-03-99

EMF=-118.8 mV AT 10:38, 06-03-99

EMF=-118.9 mV AT 10:38, 06-03-99
ENTERED

1:NH3 SLOPE=-62.7 mV/DEC
AT 10:38, 06-03-99

NH3 Conc = 0.720 mg 890

DOUBLE KNOWN ADDITION SELECTED
AT 12:48, 06-03-99

SAMPLE VOL= 25.000 AT 12:48, 06-03-99
ENTERED

EMF= 10.8 mV AT 12:50, 06-03-99

EMF=-5.2 mV AT 12:57, 06-03-99

EMF=-5.6 mV AT 12:57, 06-03-99

EMF=-5.8 mV AT 12:58, 06-03-99

EMF=-6.0 mV AT 12:58, 06-03-99

EMF=-6.2 mV AT 12:58, 06-03-99
ENTERED

STD CONCN= 997 AT 12:59, 06-03-99
ENTERED

STD VOL= .25000 AT 12:59, 06-03-99
ENTERED

EMF=-75.6 mV AT 13:03, 06-03-99

EMF=-75.9 mV AT 13:04, 06-03-99

EMF=-76.1 mV AT 13:04, 06-03-99

EMF=-76.2 mV AT 13:04, 06-03-99
ENTERED

STD VOL= 2.5000 AT 13:05, 06-03-99
ENTERED

EMF=-131.2 mV AT 13:08, 06-03-99

EMF=-130.0 mV AT 13:09, 06-03-99

EMF=-130.2 mV AT 13:09, 06-03-99

EMF=-132.8 mV AT 13:11, 06-03-99

EMF=-133.1 mV AT 13:11, 06-03-99

EMF=-133.3 mV AT 13:12, 06-03-99
ENTERED

1:NH3 SLOPE=-58.6 mV/DEC
AT 13:12, 06-03-99

1:NH3 CONCN= .673 1 ml 890 dup

DOUBLE KNOWN ADDITION SELECTED
AT 13:22, 06-03-99

SAMPLE VOL= 25.000 AT 13:22, 06-03-99
ENTERED

EMF=-55.4 mV AT 13:26, 06-03-99

EMF=-55.7 mV AT 13:27, 06-03-99

EMF=-56.0 mV AT 13:27, 06-03-99

EMF=-56.1 mV AT 13:27, 06-03-99

EMF=-56.3 mV AT 13:28, 06-03-99

EMF=-56.5 mV AT 13:28, 06-03-99

EMF=-56.5 mV AT 13:28, 06-03-99

EMF=-56.6 mV AT 13:29, 06-03-99

EMF=-56.7 mV AT 13:29, 06-03-99

EMF=-56.8 mV AT 13:30, 06-03-99

EMF=-56.8 mV AT 13:30, 06-03-99
ENTERED

STD CONCN= 997 AT 13:30, 06-03-99
ENTERED

STD VOL= .25000 AT 13:30, 06-03-99
ENTERED

EMF=-83.8 mV AT 13:33, 06-03-99

EMF=-84.2 mV AT 13:34, 06-03-99

EMF=-84.6 mV AT 13:35, 06-03-99

EMF=-84.9 mV AT 13:36, 06-03-99

EMF=-84.9 mV AT 13:36, 06-03-99
ENTERED

STD VOL= 2.5000 AT 13:37, 06-03-99
ENTERED

EMF=-133.8 mV AT 13:39, 06-03-99

EMF=-134.2 mV AT 13:40, 06-03-99

EMF=-134.4 mV AT 13:40, 06-03-99

EMF=-134.8 mV AT 13:41, 06-03-99

EMF=-134.9 mV AT 13:41, 06-03-99

EMF=-135.0 mV AT 13:42, 06-03-99
ENTERED

1:NH3 SLOPE=-59.4 mV/DEC
~~AT 13:42, 06-03-99~~

1:NH3 CONCN= 4.98 1 ml 893

DOUBLE KNOWN ADDITION SELECTED
AT 13:50, 06-03-99

SAMPLE VOL= 25.000 AT 13:50, 06-03-99
ENTERED

EMF=-58.7 mV AT 13:54, 06-03-99

EMF=-59.0 mV AT 13:55, 06-03-99

EMF=-59.3 mV AT 13:55, 06-03-99

EMF=-59.4 mV AT 13:55, 06-03-99

EMF=-59.6 mV AT 13:56, 06-03-99

EMF=-59.7 mV AT 13:56, 06-03-99

EMF=-59.7 mV AT 13:57, 06-03-99
ENTERED

STD CONCN= 997 AT 13:57, 06-03-99
ENTERED

STD VOL= .25000 AT 13:57, 06-03-99
ENTERED

EMF=-84.0 mV AT 14:01, 06-03-99

EMF=-84.3 mV AT 14:01, 06-03-99

EMF=-84.5 mV AT 14:01, 06-03-99

EMF=-84.9 mV AT 14:02, 06-03-99

EMF=-85.0 mV AT 14:02, 06-03-99

EMF=-85.1 mV AT 14:03, 06-03-99

EMF=-85.1 mV AT 14:03, 06-03-99
ENTERED

STD VOL= 2.5000 AT 14:04, 06-03-99
ENTERED

EMF=-132.7 mV AT 14:07, 06-03-99

EMF=-132.9 mV AT 14:07, 06-03-99

EMF=-133.1 mV AT 14:07, 06-03-99

EMF=-133.6 mV AT 14:08, 06-03-99
ENTERED

1:NH3 SLOPE=-58.8 mV/DEC
AT 14:08, 06-03-99

1:NH3 CONCN= 5.76 1 ml 893 Wup

DOUBLE KNOWN ADDITION SELECTED
AT 14:18, 06-03-99

SAMPLE VOL= 25.000 AT 14:18, 06-03-99
ENTERED

EMF=-71.1 mV AT 14:21, 06-03-99

EMF=-71.8 mV AT 14:22, 06-03-99

EMF=-72.5 mV AT 14:22, 06-03-99

EMF=-72.8 mV AT 14:23, 06-03-99

EMF=-73.0 mV AT 14:23, 06-03-99

EMF=-73.2 mV AT 14:24, 06-03-99

EMF=-73.3 mV AT 14:24, 06-03-99
ENTERED

STD CONCN= 997 AT 14:25, 06-03-99
ENTERED

STD VOL= .25000 AT 14:25, 06-03-99
ENTERED

EMF=-90.2 mV AT 14:27, 06-03-99

EMF=-90.7 mV AT 14:28, 06-03-99

EMF=-91.2 mV AT 14:29, 06-03-99

EMF=-91.3 mV AT 14:29, 06-03-99

EMF=-91.4 mV AT 14:29, 06-03-99
ENTERED

STD VOL= 2.5000 AT 14:30, 06-03-99
ENTERED

EMF=-134.0 mV AT 14:33, 06-03-99

EMF=-134.4 mV AT 14:33, 06-03-99

EMF=-134.7 mV AT 14:34, 06-03-99

EMF=-134.9 mV AT 14:34, 06-03-99

EMF=-135.1 mV AT 14:35, 06-03-99
ENTERED

1:NH3 SLOPE=-58.4 mV/DEC
AT 14:35, 06-03-99

1:NH3 CONCN= 9.40

LABCORE Completed Worklist Report for Worklist# 29825

Analyst: kjt **Instrument:** IC45S1 **Book#:** 75N21D

Method: LA-533-105 Rev/Mod F-0

Worklist Comment: AP107 FOR @IC-01 RTS

Seq	Type	Sample#	R	A	Test	Matrix	Actual	Found	DL or Yield	Unit
1	CCB		0	@IC-QC	F	QC	1	<1.20e-2		ug/mL
1	CCB		0	@IC-QC	CL	QC	1	<1.70e-2		ug/mL
1	CCB		0	@IC-QC	NO2	QC	1	<1.08e-1		ug/mL
1	CCB		0	@IC-QC	BR	QC	1	<1.25e-1		ug/mL
1	CCB		0	@IC-QC	NO3	QC	1	<1.39e-1		ug/mL
1	CCB		0	@IC-QC	PO4	QC	1	<1.20e-1		ug/mL
1	CCB		0	@IC-QC	SO4	QC	1	<1.38e-1		ug/mL
1	CCB		0	@IC-QC	OXALATE2	QC	1	<1.05e-1		ug/mL
2	LCS-INST		0	@IC-QC	F	QC	5.84e1	5.76e+01	98.630	% Recovery
2	LCS-INST		0	@IC-QC	CL	QC	8.06e1	7.96e+01	98.759	% Recovery
2	LCS-INST		0	@IC-QC	NO2	QC	5.27e2	4.94e+02	93.738	% Recovery
2	LCS-INST		0	@IC-QC	BR	QC	5.76e2	5.91e+02	102.604	% Recovery
2	LCS-INST		0	@IC-QC	NO3	QC	5.84e2	5.63e+02	96.404	% Recovery
2	LCS-INST		0	@IC-QC	PO4	QC	5.44e2	6.49e+02	119.301	% Recovery
2	LCS-INST		0	@IC-QC	SO4	QC	6.42e2	6.86e+02	106.854	% Recovery
2	LCS-INST		0	@IC-QC	OXALATE2	QC	5.24e2	4.94e+02	94.275	% Recovery
3	CCV		0	@IC-QC	F	QC	6.40e1	6.38e+01	99.688	% Recovery
3	CCV		0	@IC-QC	CL	QC	8.95e1	8.94e+01	99.888	% Recovery
3	CCV		0	@IC-QC	NO2	QC	5.11e2	4.72e+02	92.368	% Recovery
3	CCV		0	@IC-QC	BR	QC	6.30e2	6.32e+02	100.317	% Recovery
3	CCV		0	@IC-QC	NO3	QC	7.00e2	7.19e+02	102.714	% Recovery
3	CCV		0	@IC-QC	PO4	QC	6.35e2	6.48e+02	102.047	% Recovery
3	CCV		0	@IC-QC	SO4	QC	7.00e2	7.04e+02	100.571	% Recovery
3	CCV		0	@IC-QC	OXALATE2	QC	5.25e2	5.20e+02	99.048	% Recovery
4	SAMPLE	S99T000894	0	@IC-01	F-02	LIQUID	N/A	4.335e+02	13.330	ug/mL
4	SAMPLE	S99T000894	0	@IC-01	CL-02	LIQUID	N/A	1.037e+03	18.890	ug/mL
4	SAMPLE	S99T000894	0	@IC-01	NO2-02	LIQUID	N/A	1.161e+04	120.000	ug/mL
4	SAMPLE	S99T000894	0	@IC-01	BR-02	LIQUID	N/A <	1.389e+02	138.900	ug/mL
4	SAMPLE	S99T000894	0	@IC-01	NO3-02	LIQUID	N/A	4.470e+04	154.400	ug/mL
4	SAMPLE	S99T000894	0	@IC-01	SO4-02	LIQUID	N/A	1.162e+03	153.300	ug/mL
4	SAMPLE	S99T000894	0	@IC-01	OXALATE2	LIQUID	N/A <	1.167e+02	116.700	ug/mL
5	DUP	S99T000894	0	@IC-01	F-02	LIQUID	4.34e+02	4.32e+02	0.462	RPD
5	DUP	S99T000894	0	@IC-01	CL-02	LIQUID	1.04e+03	1.02e+03	1.942	RPD
5	DUP	S99T000894	0	@IC-01	NO2-02	LIQUID	1.16e+04	1.15e+04	0.866	RPD
5	DUP	S99T000894	0	@IC-01	BR-02	LIQUID	<1.39e2	<1.39e2		RPD
5	DUP	S99T000894	0	@IC-01	NO3-02	LIQUID	4.47e+04	4.49e+04	0.446	RPD
5	DUP	S99T000894	0	@IC-01	PO4-02	LIQUID	2.57e+03	2.68e+03	4.190	RPD
5	DUP	S99T000894	0	@IC-01	SO4-02	LIQUID	1.16e+03	1.39e+03	18.039	RPD
5	DUP	S99T000894	0	@IC-01	OXALATE2	LIQUID	<1.17e2	<1.17e2		RPD
6	SAMPLE	S99T000895	0	@IC-01	F-02	LIQUID	N/A	7.597e+02	25.450	ug/mL
6	SAMPLE	S99T000895	0	@IC-01	CL-02	LIQUID	N/A	1.828e+03	36.060	ug/mL

Units shown for QC (BLK/BKG) may not reflect the actual units.

LABCORE Completed Worklist Report for Worklist# 29825

Seq	Type	Sample#	R	A	Test	Matrix	Actual	Found	DL or Yield	Unit
6	SAMPLE	S99T000895	0	@IC-01	NO2-02	LIQUID	N/A	2.100e+04	229.100	ug/mL
6	SAMPLE	S99T000895	0	@IC-01	BR-02	LIQUID	N/A <	2.651e+02	265.100	ug/mL
6	SAMPLE	S99T000895	0	@IC-01	NO3-02	LIQUID	N/A	8.335e+04	294.800	ug/mL
6	SAMPLE	S99T000895	0	@IC-01	SO4-02	LIQUID	N/A	2.106e+03	292.700	ug/mL
6	SAMPLE	S99T000895	0	@IC-01	OXALATE2	LIQUID	N/A <	2.227e+02	222.700	ug/mL
7	DUP	S99T000895	0	@IC-01	F-02	LIQUID	7.60e+02	7.93e+02	4.250	RPD
7	DUP	S99T000895	0	@IC-01	CL-02	LIQUID	1.83e+03	1.85e+03	1.087	RPD
7	DUP	S99T000895	0	@IC-01	NO2-02	LIQUID	2.10e+04	2.19e+04	4.196	RPD
7	DUP	S99T000895	0	@IC-01	BR-02	LIQUID	<2.65e2	<2.65e2		RPD
7	DUP	S99T000895	0	@IC-01	NO3-02	LIQUID	8.34e+04	8.26e+04	0.964	RPD
7	DUP	S99T000895	0	@IC-01	PO4-02	LIQUID	4.94e+03	5.44e+03	9.634	RPD
7	DUP	S99T000895	0	@IC-01	SO4-02	LIQUID	2.11e+03	2.24e+03	5.977	RPD
7	DUP	S99T000895	0	@IC-01	OXALATE2	LIQUID	<2.23e2	<2.23e2		RPD
8	SAMPLE	S99T000896	0	@IC-01	F-02	LIQUID	N/A	8.007e+02	25.450	ug/mL
8	SAMPLE	S99T000896	0	@IC-01	CL-02	LIQUID	N/A	1.855e+03	36.060	ug/mL
8	SAMPLE	S99T000896	0	@IC-01	NO2-02	LIQUID	N/A	2.165e+04	229.100	ug/mL
8	SAMPLE	S99T000896	0	@IC-01	BR-02	LIQUID	N/A <	2.651e+02	265.100	ug/mL
8	SAMPLE	S99T000896	0	@IC-01	NO3-02	LIQUID	N/A	8.293e+04	294.800	ug/mL
8	SAMPLE	S99T000896	0	@IC-01	SO4-02	LIQUID	N/A	2.504e+03	292.700	ug/mL
8	SAMPLE	S99T000896	0	@IC-01	OXALATE2	LIQUID	N/A <	2.227e+02	222.700	ug/mL
9	DUP	S99T000896	0	@IC-01	F-02	LIQUID	8.01e+02	7.83e+02	2.273	RPD
9	DUP	S99T000896	0	@IC-01	CL-02	LIQUID	1.86e+03	1.92e+03	3.175	RPD
9	DUP	S99T000896	0	@IC-01	NO2-02	LIQUID	2.16e+04	2.11e+04	2.342	RPD
9	DUP	S99T000896	0	@IC-01	BR-02	LIQUID	<2.65e2	<2.65e2		RPD
9	DUP	S99T000896	0	@IC-01	NO3-02	LIQUID	8.29e+04	8.37e+04	0.960	RPD
9	DUP	S99T000896	0	@IC-01	PO4-02	LIQUID	4.98e+03	5.01e+03	0.601	RPD
9	DUP	S99T000896	0	@IC-01	SO4-02	LIQUID	2.50e+03	2.28e+03	9.205	RPD
9	DUP	S99T000896	0	@IC-01	OXALATE2	LIQUID	<2.23e2	<2.23e2		RPD
10	SPK	S99T000896	0	@IC-01	F-02	LIQUID	5.84e1	5.72e+01	97.945	% Recovery
10	SPK	S99T000896	0	@IC-01	CL-02	LIQUID	8.06e1	8.26e+01	102.481	% Recovery
10	SPK	S99T000896	0	@IC-01	NO2-02	LIQUID	5.27e2	5.10e+02	96.774	% Recovery
10	SPK	S99T000896	0	@IC-01	BR-02	LIQUID	5.76e2	5.83e+02	101.215	% Recovery
10	SPK	S99T000896	0	@IC-01	NO3-02	LIQUID	5.84e2	5.38e+02	92.123	% Recovery
10	SPK	S99T000896	0	@IC-01	PO4-02	LIQUID	5.44e2	5.44e+02	100.000	% Recovery
10	SPK	S99T000896	0	@IC-01	SO4-02	LIQUID	6.42e2	6.49e+02	101.090	% Recovery
10	SPK	S99T000896	0	@IC-01	OXALATE2	LIQUID	5.24e2	5.22e+02	99.618	% Recovery
11	SAMPLE	S99T000897	0	@IC-01	F-02	LIQUID	N/A	7.663e+02	25.450	ug/mL
11	SAMPLE	S99T000897	0	@IC-01	CL-02	LIQUID	N/A	1.894e+03	36.060	ug/mL
11	SAMPLE	S99T000897	0	@IC-01	NO2-02	LIQUID	N/A	2.124e+04	229.100	ug/mL
11	SAMPLE	S99T000897	0	@IC-01	BR-02	LIQUID	N/A <	2.651e+02	265.100	ug/mL
11	SAMPLE	S99T000897	0	@IC-01	NO3-02	LIQUID	N/A	8.369e+04	294.800	ug/mL
11	SAMPLE	S99T000897	0	@IC-01	SO4-02	LIQUID	N/A	2.141e+03	292.700	ug/mL
11	SAMPLE	S99T000897	0	@IC-01	OXALATE2	LIQUID	N/A <	2.227e+02	222.700	ug/mL
12	DUP	S99T000897	0	@IC-01	F-02	LIQUID	7.66e+02	7.60e+02	0.786	RPD
12	DUP	S99T000897	0	@IC-01	CL-02	LIQUID	1.89e+03	1.88e+03	0.531	RPD
12	DUP	S99T000897	0	@IC-01	NO2-02	LIQUID	2.12e+04	2.12e+04	0.000	RPD
12	DUP	S99T000897	0	@IC-01	BR-02	LIQUID	<2.65e2	<2.65e2		RPD
12	DUP	S99T000897	0	@IC-01	NO3-02	LIQUID	8.37e+04	8.31e+04	0.719	RPD
12	DUP	S99T000897	0	@IC-01	PO4-02	LIQUID	4.71e+03	5.15e+03	8.925	RPD

Units shown for QC (BLK/BKG) may not reflect the actual units.

LABCORE Completed Worklist Report for Worklist# 29825

Seq	Type	Sample#	R	A	Test	Matrix	Actual	Found	DL or Yield	Unit
12	DUP	S99T000897	0	@IC-01	SO4-02	LIQUID	2.14e+03	2.32e+03	8.072	RPD
12	DUP	S99T000897	0	@IC-01	OXALATE2	LIQUID	<2.23e2	<2.23e2		RPD

Final page for worklist# 29825

Analyst Signature Date

Analyst Signature Date

James Fuge 6/1/99
Reviewer Signature Date

Units shown for QC (BLK/BKG) may not reflect the actual units.

LABCORE Data Entry Template for Worklist# 29825

Analyst: KJT **Instrument:** IC 4851 **Book#** ~~75N21A~~ 75N21-D 74N21-D JW 5-24-99

Method: LA-533-105 Rev/Mod F-0

Worklist Comment: AP107 FOR @IC-01 RTS

S	Type	Sample#	R	A	Test	Matrix	Group#	Project
1	CCB				@IC-QC	QC		
2	LCS-INST				@IC-QC	QC		
3	CCV				@IC-QC	QC		
4	SAMPLE	S99T000894	0		@IC-01	LIQUID	99000198	AP107 GRAB2
	Analytes Requested:				BR-02 , CL-02 , F-02 , NO2-02 , NO3-02 , OXALATE2, PO4-02 , SO4-02			
5	DUP	S99T000894	0		@IC-01	LIQUID		
6	SAMPLE	S99T000895	0		@IC-01	LIQUID	99000198	AP107 GRAB2
	Analytes Requested:				BR-02 , CL-02 , F-02 , NO2-02 , NO3-02 , OXALATE2, PO4-02 , SO4-02			
7	DUP	S99T000895	0		@IC-01	LIQUID		
8	SAMPLE	S99T000896	0		@IC-01	LIQUID	99000198	AP107 GRAB2
	Analytes Requested:				BR-02 , CL-02 , F-02 , NO2-02 , NO3-02 , OXALATE2, PO4-02 , SO4-02			
9	DUP	S99T000896	0		@IC-01	LIQUID		
10	SPK	S99T000896	0		@IC-01	LIQUID		
11	SAMPLE	S99T000897	0		@IC-01	LIQUID	99000198	AP107 GRAB2
	Analytes Requested:				BR-02 , CL-02 , F-02 , NO2-02 , NO3-02 , OXALATE2, PO4-02 , SO4-02			
12	DUP	S99T000897	0		@IC-01	LIQUID		

Final page for worklist # 29825

SEE ORIGINAL

Data Entry Comments:
uploaded 5-24-99
JRWhitell
29825MAY.CSV

PO4 std failed & will be re run
rest was ~~will be~~ validated 5/26/99
JMFuge

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

LABCORE Data Entry Template for Worklist# 29825

S	Type	Sample#	R	A	Test	Matrix	Group#	Project	Signature	Date	Signature	Date

Data Entry Comments:

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

LABCORE Data Entry Template for Worklist# 29825

Analyst: KST **Instrument:** IC 450008401 **Book#** ~~751021A~~ 5-24-99

Method: LA-533-105 Rev/Mod F0

Worklist Comment: AP107 FOR @IC-01 RTS

S	Type	Sample#	R	A	Test	Matrix	Group#	Project
1	CCB				@IC-QC	QC		
2	LCS-INST				@IC-QC	QC		
3	CCV				@IC-QC	QC		
4	SAMPLE	S99T000894	0		@IC-01	LIQUID	99000198	AP107 GRAB2
	Analytes Requested:				BR-02, CL-02, F-02, NO2-02, NO3-02, OXALATE2, PO4-02, SO4-02			
5	DUP	S99T000894	0		@IC-01	LIQUID		
6	SAMPLE	S99T000895	0		@IC-01	LIQUID	99000198	AP107 GRAB2
	Analytes Requested:				BR-02, CL-02, F-02, NO2-02, NO3-02, OXALATE2, PO4-02, SO4-02			
7	DUP	S99T000895	0		@IC-01	LIQUID		

Final page for worklist # 29825

KS Romelike 5-21-99

Signature Date Signature Date

Data Entry Comments:

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

HNF-1672 REV. 0

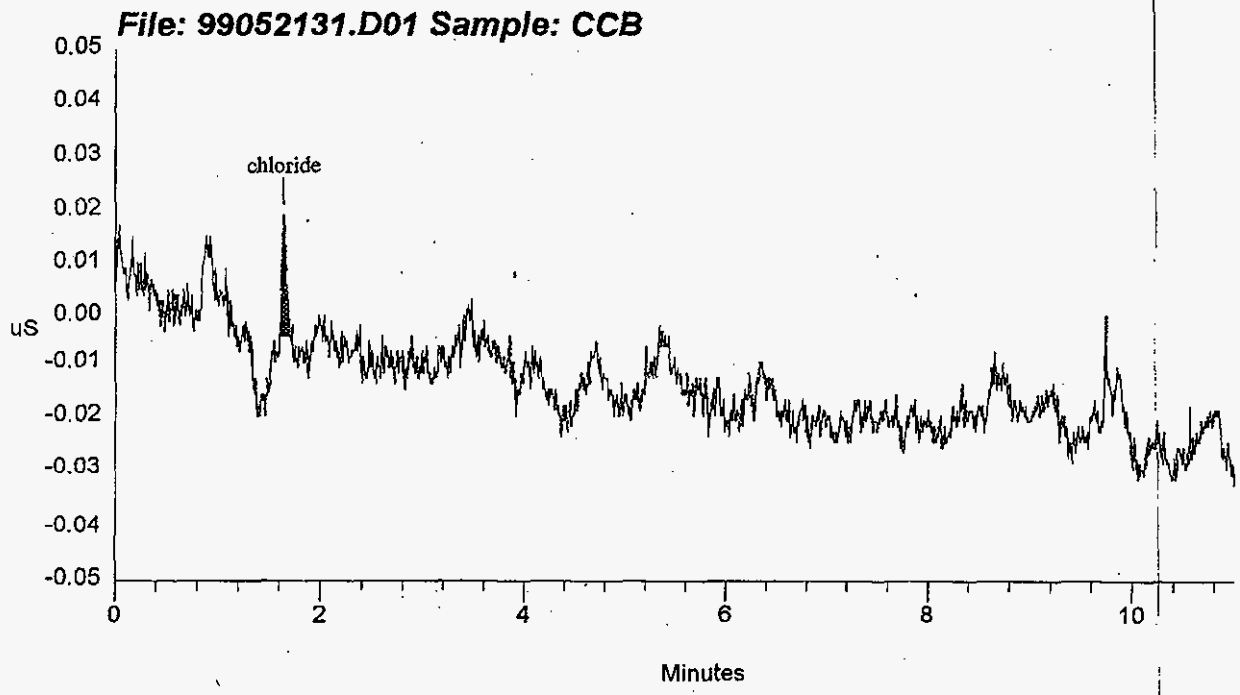
Data Reprocessed On 05/21/1999 09:49:07

Sample Name: CCB Date: 05/21/1999 09:28:16
Data File : C:\DX\DATA\99052131.D01
Method : C:\DX\METHOD\ANIONS.MET
ACI Address: 1 System: 1 Inject#: 1 Detector:CDM-1
Analyst: KS Thorndike 5/21/99 Column: AG4A/AS4A anion column

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1	3300	5Hz	0.00	11.00	50

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	1.64	chloride	0.004	23	70	1	2.50
		Totals	0.004	23	70		



SIGNATURE ABOVE REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 144 TO 155.

HNF-1672 REV. 0

Data Reprocessed On 05/21/1999 09:48:11

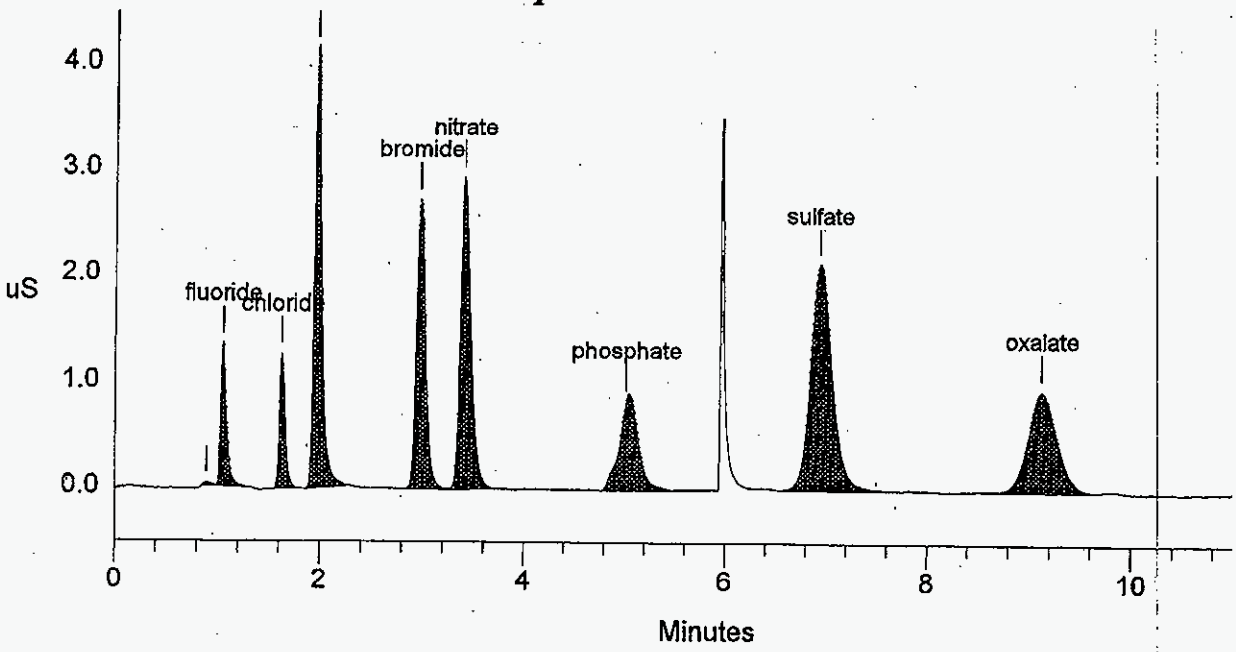
Sample Name: ICV 75N21D Date: 05/21/1999 09:40:17
Data File : C:\DX\DATA\99052131.D02
Method : C:\DX\METHOD\ANIONS.MET
ACI Address: 1 System: 1 Inject#: 2 Detector:CDM-1
Analyst : Column: AG4A/AS4A anion column

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	101	3300	5Hz	0.00	11.00	50

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.90		0.000	30	141	2	
2	1.05	fluoride	57.567	1347	5192	2	1.28
3	1.63	chloride	79.581	1272	4877	1	1.67
4	1.96	nitrite	493.581	4150	20290	1	1.38
5	2.97	bromide	590.956	2729	16573	1	3.72
6	3.41	nitrate	563.361	2934	20621	1	-0.10
7	5.01	phosphate	649.488	844	11918	1	5.62
8	6.93	sulfate	686.272	2114	31591	1	0.05
9	9.12	oxalate	493.972	954	18553	1	0.00
		Totals	3614.779	16374	129756		

File: 99052131.D02 Sample: ICV 75N21D



HNF-1672 REV. 0

Data Reprocessed On 05/21/1999 10:08:01

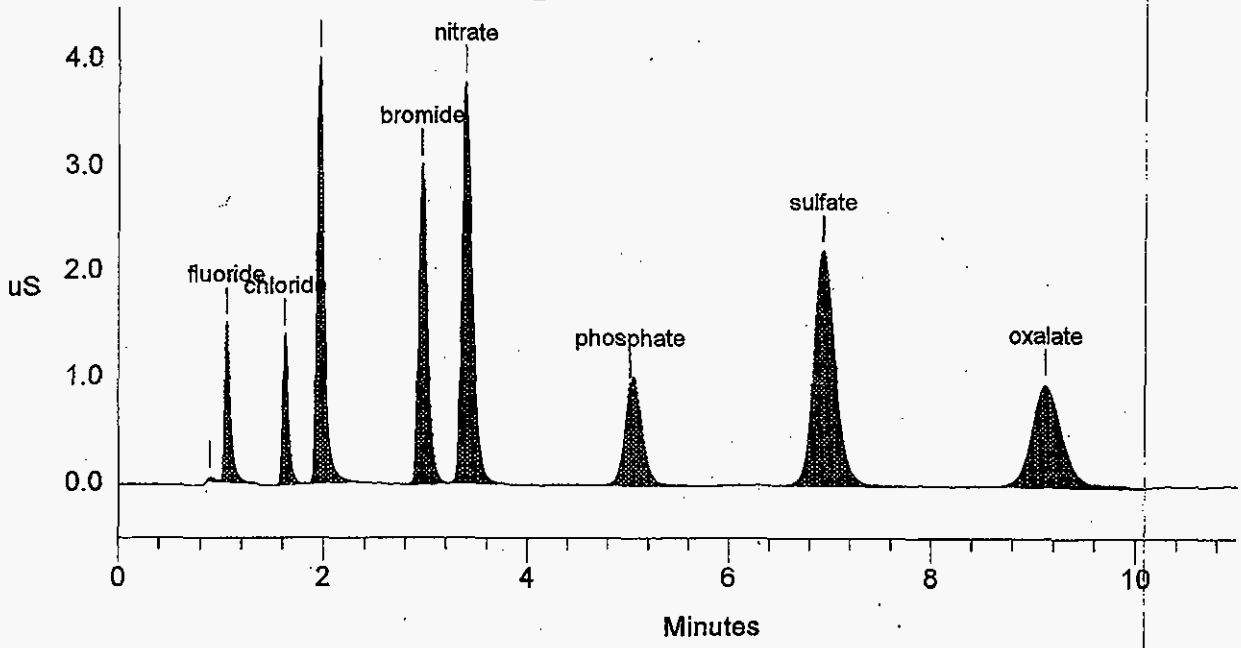
Sample Name: CCV 74N21D Date: 05/21/1999 10:04:39
Data File : C:\DX\DATA\99052131.D03
Method : C:\DX\METHOD\ANIONS.MET
ACI Address: 1 System: 1 Inject#: 3 Detector:CDM-1
Analyst : Column: AG4A/AS4A anion column

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	101	3300	5Hz	0.00	11.00	50

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

Pk. Num	Ret Time	Component Name		Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.89			0.000	32	132	2	
2	1.05	fluoride	99.6%	63.807	1481	5767	2	1.28
3	1.62	chloride	99.8%	89.356	1401	5480	1	1.25
4	1.96	nitrite	92.3%	471.517	4008	19363	1	1.38
5	2.96	bromide	100.1%	632.042	3001	17767	1	3.26
6	3.39	nitrate	102.6%	718.538	3773	26539	1	-0.10
7	5.01	phosphate	102.0%	647.909	914	11889	1	5.62
8	6.93	sulfate	100.5%	703.993	2210	32424	1	0.05
9	9.12	oxalate	99.0%	519.884	953	19522	1	0.00
			Totals	3847.046	17773	138883		

File: 99052131.D03 Sample: CCV 74N21D



Data Reprocessed On 05/21/1999 11:02:27

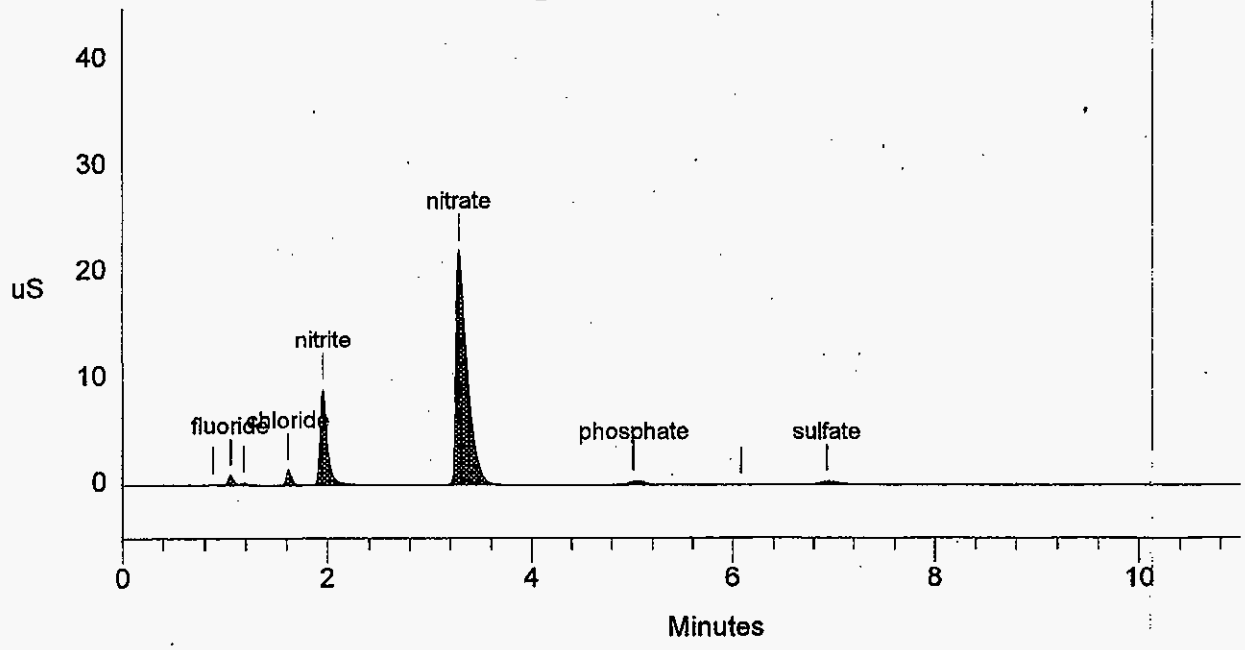
Sample Name: S99T000894 Date: 05/21/1999 10:59:45
Data File : C:\DX\DATA\99052131.D06
Method : C:\DX\METHOD\ANIONS.MET
ACI Address: 1 System: 1 Inject#: 6 Detector:CDM-1
Analyst : Column: AG4A/AS4A anion column

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area	Reject
External	1	1111	3300	5Hz	0.00	11.00		50

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.89		0.000	95	587	2	
2	1.05	fluoride	433.504	889	3529	2	1.28
3	1.18		0.000	260	1537	2	
4	1.61	chloride	1037.114	1437	5785	1	0.83
5	1.95	nitrite	11612.384	9002	44352	1	1.03
6	3.29	nitrate	44695.472	22084	170025	1	2.07
7	5.01	phosphate	2573.492	320	4268	1	5.62
8	6.08		0.000	26	1014	1	
9	6.93	sulfate	1161.848	311	4760	1	0.05
		Totals	61513.814	34424	235857		

File: 99052131.D06 Sample: S99T000894



Data Reprocessed On 05/21/1999 11:13:28

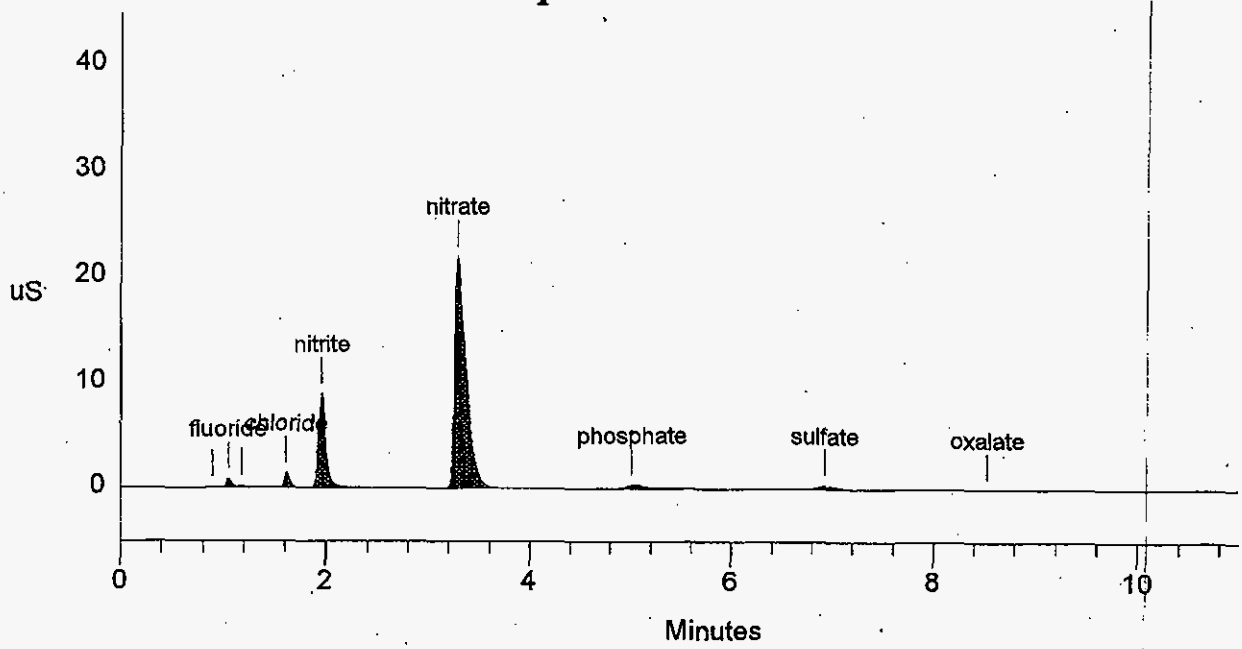
Sample Name: S99T000894 DUP Date: 05/21/1999 11:11:50
Data File : C:\DX\DATA\99052131.D07
Method : C:\DX\METHOD\ANIONS.MET
ACI Address: 1 System: 1 Inject#: 7 Detector:CDM-1
Analyst : Column: AG4A/AS4A anion column

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area	Reject
External	1	1111	3300	5Hz	0.00	11.00		50

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.90		0.000	95	567	2	
2	1.05	fluoride	432.002	883	3517	2	1.28
3	1.18		0.000	254	1430	2	
4	1.61	chloride	1020.385	1419	5691	1	0.83
5	1.95	nitrite	11458.398	8946	43742	1	1.03
6	3.29	nitrate	44926.176	21897	171048	1	2.07
7	5.01	phosphate	2676.980	331	4440	1	5.62
8	6.93	sulfate	1387.413	325	5694	1	0.05
9	8.53	oxalate	109.143	19	595	1	3.90
		Totals	62010.497	34167	236723		

File: 99052131.D07 Sample: S99T000894 DUP



HNF-1672 REV. 0

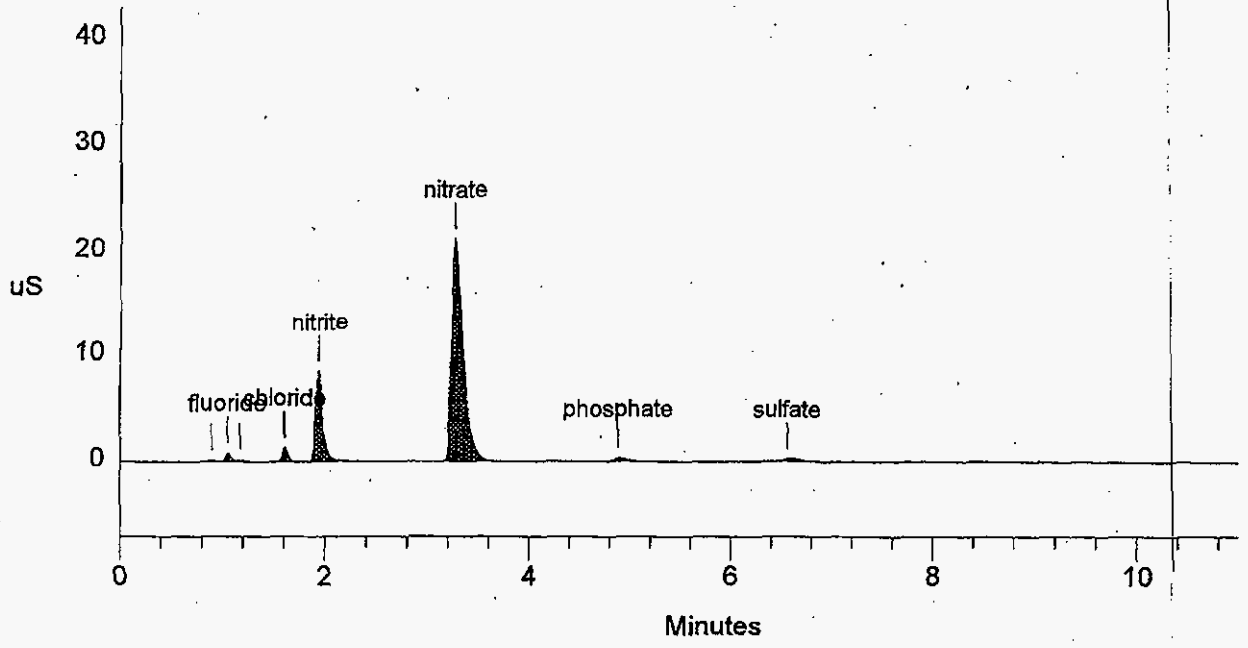
Sample Name: S99T000895 Date: 05/21/1999 13:35:27
Data File : C:\DX\DATA\99052131.D09
Method : C:\DX\METHOD\ANIONS.MET
ACI Address: 1 System: 1 Inject#: 9 Detector:CDM-1
Analyst : Column: AG4A/AS4A anion column

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area	Reject
External	1	2121	3300	5Hz	0.00	11.00		50

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.90		0.000	69	410	2	
2	1.05	fluoride	759.685	832	3235	2	1.28
3	1.17		0.000	225	1293	2	
4	1.61	chloride	1828.017	1363	5337	1	0.42
5	1.93	nitrite	21003.389	8467	41937	1	0.00
6	3.26	nitrate	83350.343	21028	165456	1	1.24
7	4.88	phosphate	4941.409	360	4293	1	2.81
8	6.56	sulfate	2106.453	279	4519	1	5.13
		Totals	113989.297	32625	226480		

File: 99052131.D09 Sample: S99T000895



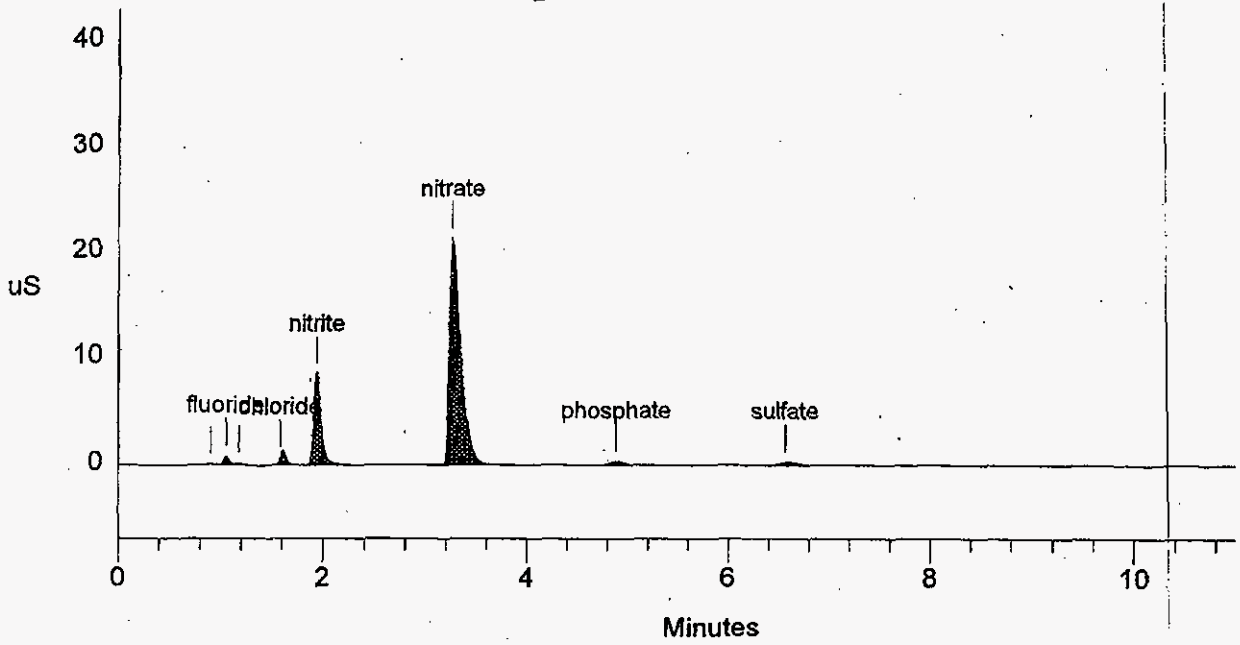
Sample Name: S99T000895 DUP Date: 05/21/1999 13:47:05
Data File : C:\DX\DATA\99052131.D10
Method : C:\DX\METHOD\ANIONS.MET
ACI Address: 1 System: 1 Inject#: 10 Detector:CDM-1
Analyst : Column: AG4A/AS4A anion column

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area	Reject
External	1	2121	3300	5Hz	0.00	11.00		50

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.91		0.000	71	383	2	
2	1.05	fluoride	793.417	835	3381	2	1.28
3	1.17		0.000	236	1270	2	
4	1.58	chloride	1848.356	731	5397	1	-1.25
5	1.93	nitrite	21875.557	8556	43743	1	0.00
6	3.26	nitrate	82557.796	21229	163635	1	1.24
7	4.88	phosphate	5442.997	382	4728	1	2.81
8	6.56	sulfate	2236.959	299	4801	1	5.13
		Totals	114755.082	32337	227339		

File: 99052131.D10 Sample: S99T000895 DUP



HNF-1672 REV. 0

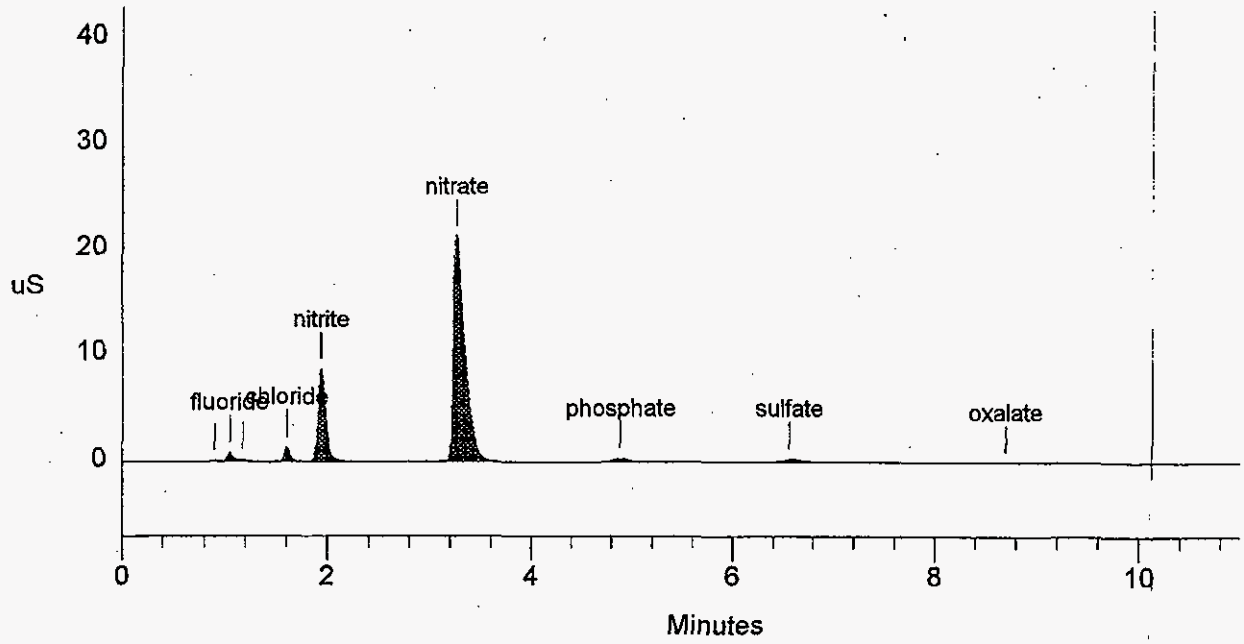
Sample Name: S99T000896	Date: 05/21/1999 13:59:59
Data File : C:\DX\DATA\99052131.D11	
Method : C:\DX\METHOD\ANIONS.MET	
ACI Address: 1 System: 1 Inject#: 11	Detector:CDM-1
Analyst :	Column: AG4A/AS4A anion column

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area	Reject
External	1	2121	3300	5Hz	0.00	11.00		50

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.91		0.000	67	382	2	
2	1.05	fluoride	800.730	850	3413	2	0.64
3	1.17		0.000	241	1287	2	
4	1.60	chloride	1855.224	1374	5417	1	0.00
5	1.93	nitrite	21648.120	8632	43272	1	0.00
6	3.26	nitrate	82927.916	21300	164485	1	1.24
7	4.88	phosphate	4982.819	378	4329	1	2.81
8	6.56	sulfate	2503.841	331	5380	1	5.13
9	8.69	oxalate	102.347	23	409	1	5.84
		Totals	114820.997	33197	228372		

File: 99052131.D11 Sample: S99T000896



HNF-1672 REV. 0

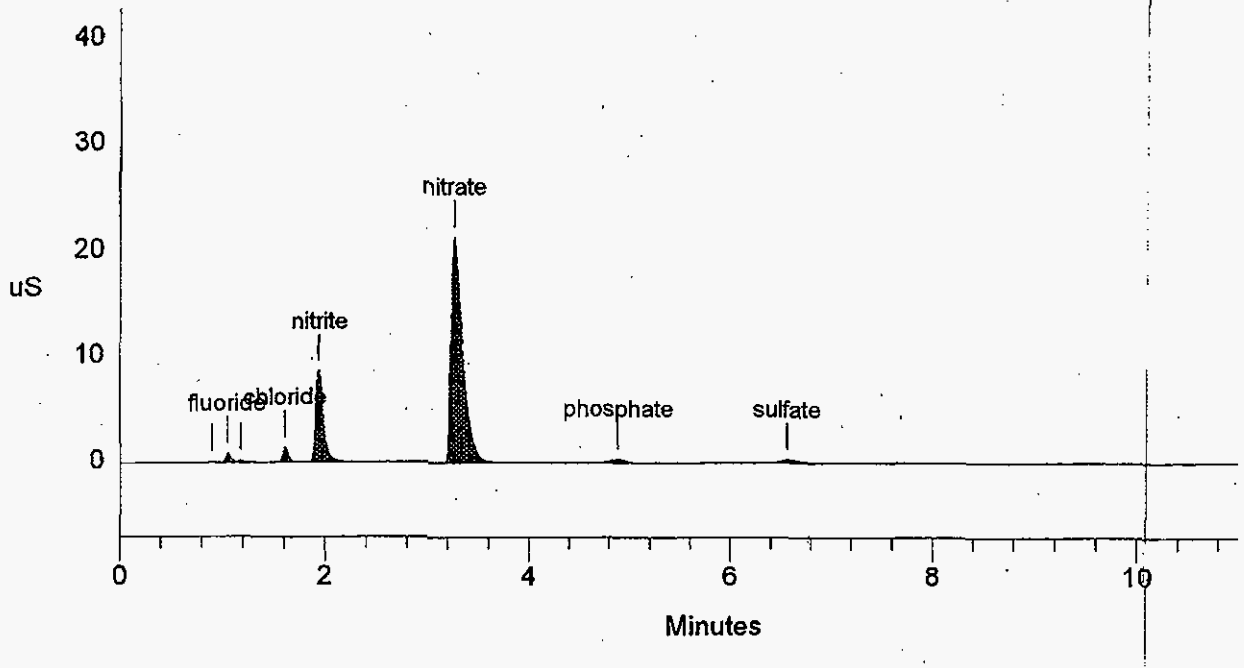
Sample Name: S99T000896 DUP Date: 05/21/1999 14:11:48
Data File : C:\DX\DATA\99052131.D12
Method : C:\DX\METHOD\ANIONS.MET
ACI Address: 1 System: 1 Inject#: 12 Detector:CDM-1
Analyst : Column: AG4A/AS4A anion column

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	2121	3300	5Hz	0.00	11.00	50

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.90		0.000	66	359	2	
2	1.05	fluoride	782.997	829	3336	2	0.64
3	1.17		0.000	236	1313	2	
4	1.61	chloride	1920.334	1426	5609	1	0.42
5	1.93	nitrite	21116.534	8574	42171	1	0.00
6	3.26	nitrate	83655.536	21278	166158	1	1.24
7	4.88	phosphate	5013.153	377	4355	1	2.81
8	6.56	sulfate	2278.974	304	4892	1	5.13
		Totals	114767.528	33090	228194		

File: 99052131.D12 Sample: S99T000896 DUP



HNF-1672 REV. 0

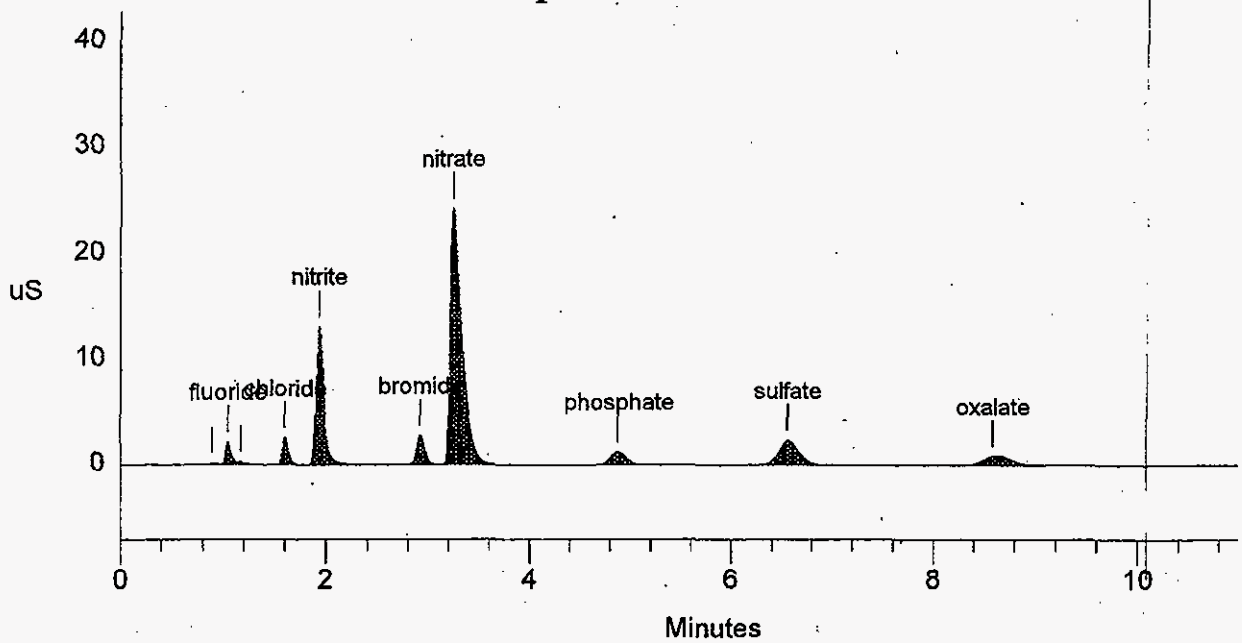
Sample Name: S99T000896 SPK Date: 05/21/1999 14:24:20
Data File : C:\DX\DATA\99052131.D13
Method : C:\DX\METHOD\ANIONS.MET
ACI Address: 1 System: 1 Inject#: 13 Detector:CDM-1
Analyst : Column: AG4A/AS4A anion column

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area	Reject
External	1	2121	3300	5Hz	0.00	11.00		50

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.90		0.000	86	436	2	
2	1.05	fluoride	1955.789	2180	8501	3	0.64
3	1.17		0.000	202	1245	4	
4	1.60	chloride	3524.877	2586	10399	1	0.00
5	1.93	nitrite	31955.483	13070	64981	1	0.00
6	2.92	bromide	11779.441	2781	15702	1	1.86
7	3.25	nitrate	93802.892	24161	190077	1	0.83
8	4.88	phosphate	15977.995	1262	13999	1	2.81
9	6.56	sulfate	15614.214	2384	34285	1	5.13
10	8.59	oxalate	10546.785	907	18862	1	4.55
		Totals	185157.476	49618	358486		

File: 99052131.D13 Sample: S99T000896 SPK



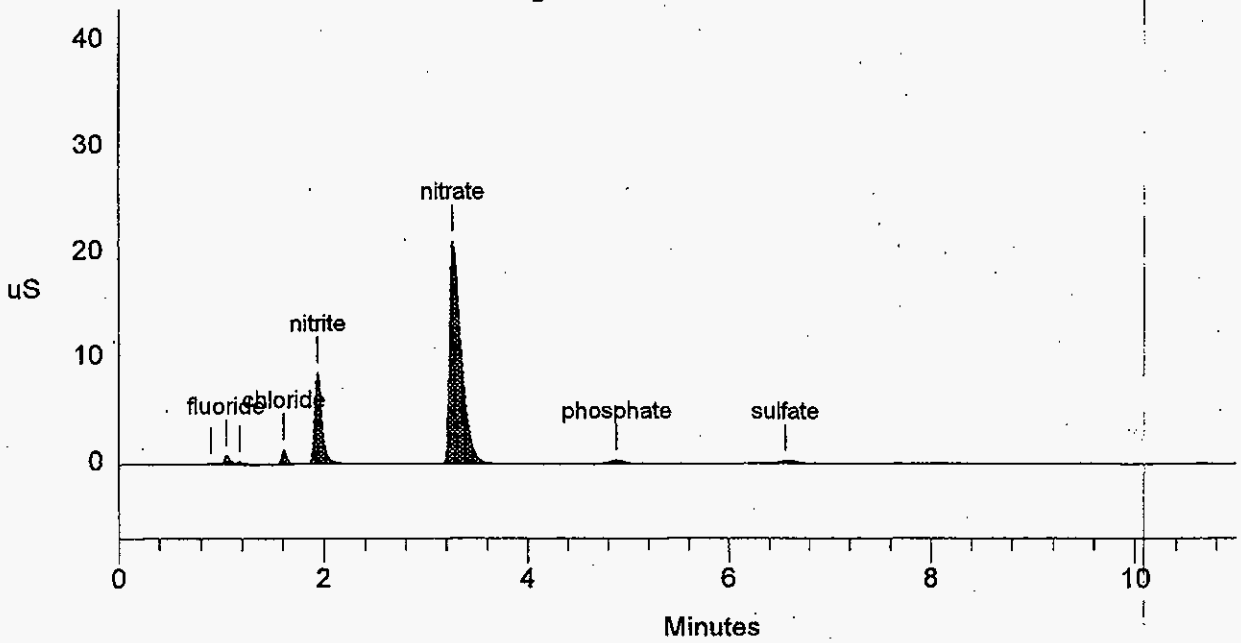
Sample Name: S99T000897 SAM Date: 05/21/1999 14:36:21
Data File : C:\DX\DATA\99052131.D14
Method : C:\DX\METHOD\ANIONS.MET
ACI Address: 1 System: 1 Inject#: 14 Detector:CDM-1
Analyst : Column: AG4A/AS4A anion column

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	2121	3300	5Hz	0.00	11.00	50

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.90		0.000	75	422	2	
2	1.05	fluoride	766.288	820	3263	2	0.64
3	1.17		0.000	233	1301	2	
4	1.61	chloride	1894.074	1408	5532	1	0.42
5	1.93	nitrite	21240.899	8519	42428	1	0.00
6	3.26	nitrate	83688.519	21041	166234	1	1.24
7	4.88	phosphate	4707.977	373	4091	1	2.81
8	6.56	sulfate	2140.631	308	4593	1	5.13
		Totals	114438.388	32778	227865		

File: 99052131.D14 Sample: S99T000897 SAM



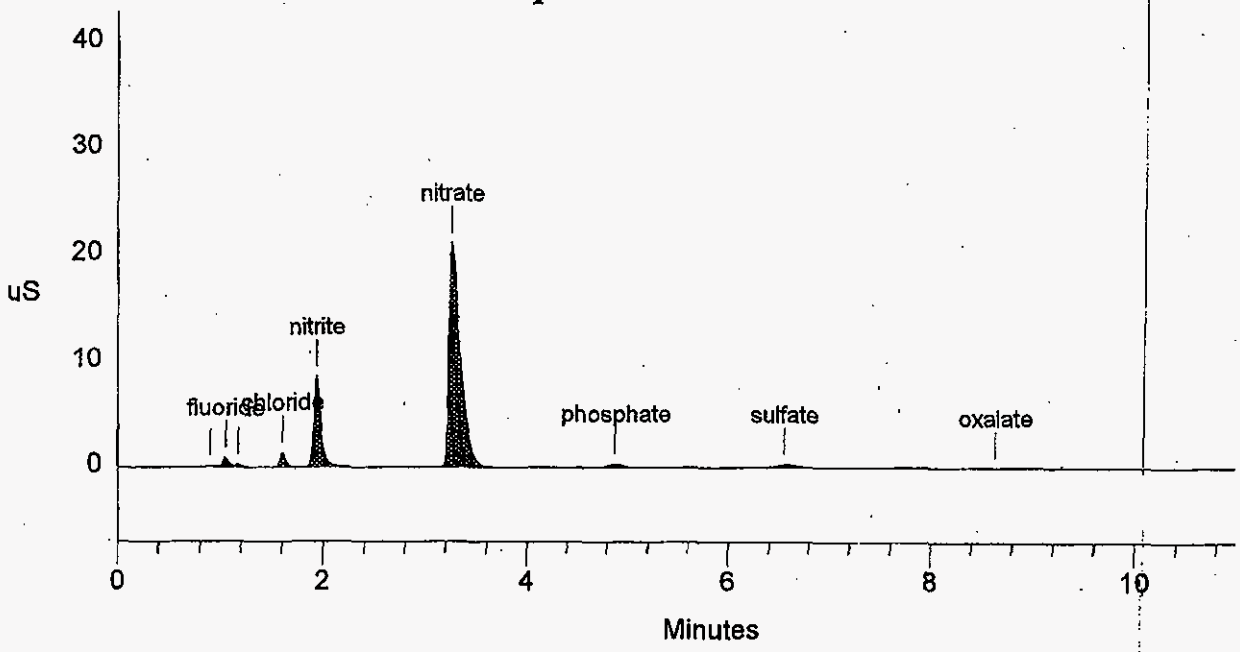
Sample Name: S99T000897 DUP Date: 05/21/1999 14:48:12
Data File : C:\DX\DATA\99052131.D15
Method : C:\DX\METHOD\ANIONS.MET
ACI Address: 1 System: 1 Inject#: 15 Detector:CDM-1
Analyst : Column: AG4A/AS4A anion column

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area	Reject
External	1	2121	3300	5Hz	0.00	11.00		50

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.91		0.000	67	365	2	
2	1.05	fluoride	760.045	833	3236	2	1.28
3	1.17		0.000	219	1130	2	
4	1.61	chloride	1884.424	1389	5503	1	0.42
5	1.94	nitrite	21206.828	8591	42358	1	0.34
6	3.26	nitrate	83121.368	21080	164929	1	1.24
7	4.88	phosphate	5145.649	382	4470	1	2.81
8	6.56	sulfate	2318.769	318	4979	1	5.13
9	8.64	oxalate	139.552	28	474	1	5.19
		Totals	114576.635	32908	227444		

File: 99052131.D15 Sample: S99T000897 DUP



LABCORE Completed Worklist Report for Worklist# 29914

Analyst: kjt **Instrument:** IC40S1 **Book#:** 75N21E

Method: LA-533-105 Rev/Mod F-0

Worklist Comment: AP-107 RERUN DF=1111 JHW

Seq	Type	Sample#	R	A	Test	Matrix	Actual	Found	DL or Yield	Unit
1	CCB		0	@IC-QC	F	QC	1	<1.20e-2		ug/mL
1	CCB		0	@IC-QC	CL	QC	1	<1.70e-2		ug/mL
1	CCB		0	@IC-QC	NO2	QC	1	<1.08e-1		ug/mL
1	CCB		0	@IC-QC	BR	QC	1	<1.25e-1		ug/mL
1	CCB		0	@IC-QC	NO3	QC	1	<1.39e-1		ug/mL
1	CCB		0	@IC-QC	PO4	QC	1	<1.20e-1		ug/mL
1	CCB		0	@IC-QC	SO4	QC	1	<1.38e-1		ug/mL
1	CCB		0	@IC-QC	OXALATE2	QC	1	<1.05e-1		ug/mL
2	LCS-INST		0	@IC-QC	F	QC	5.84e1	6.37e+01	109.075	% Recovery
2	LCS-INST		0	@IC-QC	CL	QC	8.06e1	8.29e+01	102.854	% Recovery
2	LCS-INST		0	@IC-QC	NO2	QC	5.33e2	5.29e+02	99.250	% Recovery
2	LCS-INST		0	@IC-QC	BR	QC	5.76e2	5.87e+02	101.910	% Recovery
2	LCS-INST		0	@IC-QC	NO3	QC	5.84e2	5.57e+02	95.377	% Recovery
2	LCS-INST		0	@IC-QC	PO4	QC	5.44e2	5.69e+02	104.596	% Recovery
2	LCS-INST		0	@IC-QC	SO4	QC	6.42e2	6.60e+02	102.804	% Recovery
2	LCS-INST		0	@IC-QC	OXALATE2	QC	5.31e2	5.46e+02	102.825	% Recovery
3	CCV		0	@IC-QC	F	QC	6.40e1	6.83e+01	106.719	% Recovery
3	CCV		0	@IC-QC	CL	QC	8.95e1	9.23e+01	103.128	% Recovery
3	CCV		0	@IC-QC	NO2	QC	5.17e2	5.21e+02	100.774	% Recovery
3	CCV		0	@IC-QC	BR	QC	6.30e2	6.28e+02	99.683	% Recovery
3	CCV		0	@IC-QC	NO3	QC	7.00e2	7.27e+02	103.857	% Recovery
3	CCV		0	@IC-QC	PO4	QC	6.35e2	6.51e+02	102.520	% Recovery
3	CCV		0	@IC-QC	SO4	QC	7.00e2	7.10e+02	101.429	% Recovery
3	CCV		0	@IC-QC	OXALATE2	QC	5.28e2	5.48e+02	103.788	% Recovery
4	SAMPLE	S99T000894	0	@IC-01	PO4-02	LIQUID	N/A	2.389e+02	12.120	ug/mL
5	DUP	S99T000894	0	@IC-01	F-02	LIQUID	?	3.61e+01		RPD
5	DUP	S99T000894	0	@IC-01	CL-02	LIQUID	?	9.54e+01		RPD
5	DUP	S99T000894	0	@IC-01	NO2-02	LIQUID	?	1.10e+03		RPD
5	DUP	S99T000894	0	@IC-01	BR-02	LIQUID	?	<1.26e1		RPD
5	DUP	S99T000894	0	@IC-01	NO3-02	LIQUID	?	4.31e+03		RPD
5	DUP	S99T000894	0	@IC-01	PO4-02	LIQUID	2.39e+02	2.29e+02	4.274	RPD
5	DUP	S99T000894	0	@IC-01	SO4-02	LIQUID	?	1.06e+02		RPD
5	DUP	S99T000894	0	@IC-01	OXALATE2	LIQUID	?	<1.06e1		RPD
6	SAMPLE	S99T000895	0	@IC-01	PO4-02	LIQUID	N/A	4.591e+02	12.120	ug/mL
7	DUP	S99T000895	0	@IC-01	F-02	LIQUID	?	6.71e+01		RPD
7	DUP	S99T000895	0	@IC-01	CL-02	LIQUID	?	1.84e+02		RPD
7	DUP	S99T000895	0	@IC-01	NO2-02	LIQUID	?	2.21e+03		RPD
7	DUP	S99T000895	0	@IC-01	BR-02	LIQUID	?	<1.26e1		RPD
7	DUP	S99T000895	0	@IC-01	NO3-02	LIQUID	?	8.04e+03		RPD
7	DUP	S99T000895	0	@IC-01	PO4-02	LIQUID	4.59e+02	4.49e+02	2.203	RPD
7	DUP	S99T000895	0	@IC-01	SO4-02	LIQUID	?	2.01e+02		RPD

Units shown for QC (BLK/BKG) may not reflect the actual units.

LABCORE Completed Worklist Report for Worklist# 29914

Seq Type	Sample#	R	A	Test	Matrix	Actual	Found	DL or Yield	Unit
7 DUP	S99T000895	0	@IC-01	OXALATE2	LIQUID	?	1.87e+01		RPD
8 SAMPLE	S99T000896	0	@IC-01	PO4-02	LIQUID	N/A	4.057e+02	12.120	ug/mL
9 DUP	S99T000896	0	@IC-01	F-02	LIQUID	?	6.37e+01		RPD
9 DUP	S99T000896	0	@IC-01	CL-02	LIQUID	?	1.80e+02		RPD
9 DUP	S99T000896	0	@IC-01	NO2-02	LIQUID	?	2.12e+03		RPD
9 DUP	S99T000896	0	@IC-01	BR-02	LIQUID	?	<1.26e1		RPD
9 DUP	S99T000896	0	@IC-01	NO3-02	LIQUID	?	7.87e+03		RPD
9 DUP	S99T000896	0	@IC-01	PO4-02	LIQUID	4.06e+02	4.46e+02	9.390	RPD
9 DUP	S99T000896	0	@IC-01	SO4-02	LIQUID	?	1.97e+02		RPD
9 DUP	S99T000896	0	@IC-01	OXALATE2	LIQUID	?	2.16e+01		RPD
10 SPK	S99T000896	0	@IC-01	F-02	LIQUID	5.84e1	0.00e+00	0.000	% Recovery
10 SPK	S99T000896	0	@IC-01	CL-02	LIQUID	8.06e1	0.00e+00	0.000	% Recovery
10 SPK	S99T000896	0	@IC-01	NO2-02	LIQUID	5.33e2	0.00e+00	0.000	% Recovery
10 SPK	S99T000896	0	@IC-01	BR-02	LIQUID	5.76e2	0.00e+00	0.000	% Recovery
10 SPK	S99T000896	0	@IC-01	NO3-02	LIQUID	5.84e2	0.00e+00	0.000	% Recovery
10 SPK	S99T000896	0	@IC-01	PO4-02	LIQUID	5.44e2	5.78e+02	106.250	% Recovery
10 SPK	S99T000896	0	@IC-01	SO4-02	LIQUID	6.42e2	0.00e+00	0.000	% Recovery
10 SPK	S99T000896	0	@IC-01	OXALATE2	LIQUID	5.31e2	0.00e+00	0.000	% Recovery
11 SAMPLE	S99T000897	0	@IC-01	PO4-02	LIQUID	N/A	4.570e+02	12.120	ug/mL
12 DUP	S99T000897	0	@IC-01	F-02	LIQUID	?	6.44e+01		RPD
12 DUP	S99T000897	0	@IC-01	CL-02	LIQUID	?	1.83e+02		RPD
12 DUP	S99T000897	0	@IC-01	NO2-02	LIQUID	?	2.15e+03		RPD
12 DUP	S99T000897	0	@IC-01	BR-02	LIQUID	?	<1.26e1		RPD
12 DUP	S99T000897	0	@IC-01	NO3-02	LIQUID	?	7.92e+03		RPD
12 DUP	S99T000897	0	@IC-01	PO4-02	LIQUID	4.57e+02	4.54e+02	0.659	RPD
12 DUP	S99T000897	0	@IC-01	SO4-02	LIQUID	?	1.99e+02		RPD
12 DUP	S99T000897	0	@IC-01	OXALATE2	LIQUID	?	2.31e+01		RPD

Final page for worklist# 29914

Analyst Signature Date

Analyst Signature Date

Reviewer Signature Date

Joann M. Fine 6/1/99

Units shown for QC (BLK/BKG) may not reflect the actual units.

HNF-1672 REV. 0

05/26/99 08:19
ws2

LABCORE Data Entry Template for Worklist# 29914

75N21E

Analyst: KJT **Instrument:** IC 4000sys1 **Book#** ~~75N01E~~ JW 3-26-99

Method: LA-533-105 Rev/Mod F-0

Worklist Comment: AP-107 RERUN DF=1111 JHW

S	Type	Sample#	R	A	Test	Matrix	Group#	Project
1	CCB				@IC-QC	QC		
2	LCS-INST				@IC-QC	QC		
3	CCV				@IC-QC	QC		
4	SAMPLE	S99T000894	0		@IC-01	LIQUID	99000198	AP107 GRAB2
	Analytes Requested: PO4-02							
5	DUP	S99T000894	0		@IC-01	LIQUID		
6	SAMPLE	S99T000895	0		@IC-01	LIQUID	99000198	AP107 GRAB2
	Analytes Requested: PO4-02							
7	DUP	S99T000895	0		@IC-01	LIQUID		
8	SAMPLE	S99T000896	0		@IC-01	LIQUID	99000198	AP107 GRAB2
	Analytes Requested: PO4-02							
9	DUP	S99T000896	0		@IC-01	LIQUID		
10	SPK	S99T000896	0		@IC-01	LIQUID		
11	SAMPLE	S99T000897	0		@IC-01	LIQUID	99000198	AP107 GRAB2
	Analytes Requested: PO4-02							
12	DUP	S99T000897	0		@IC-01	LIQUID		

Final page for worklist # 29914

KJ Thornelloe 5-26-99
Signature **Date**

Signature **Date**

Data Entry Comments:
uploaded 5-26-99 Validated 5/26/99 JM Fuge
JL Worrell

29914MAY.CSV

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

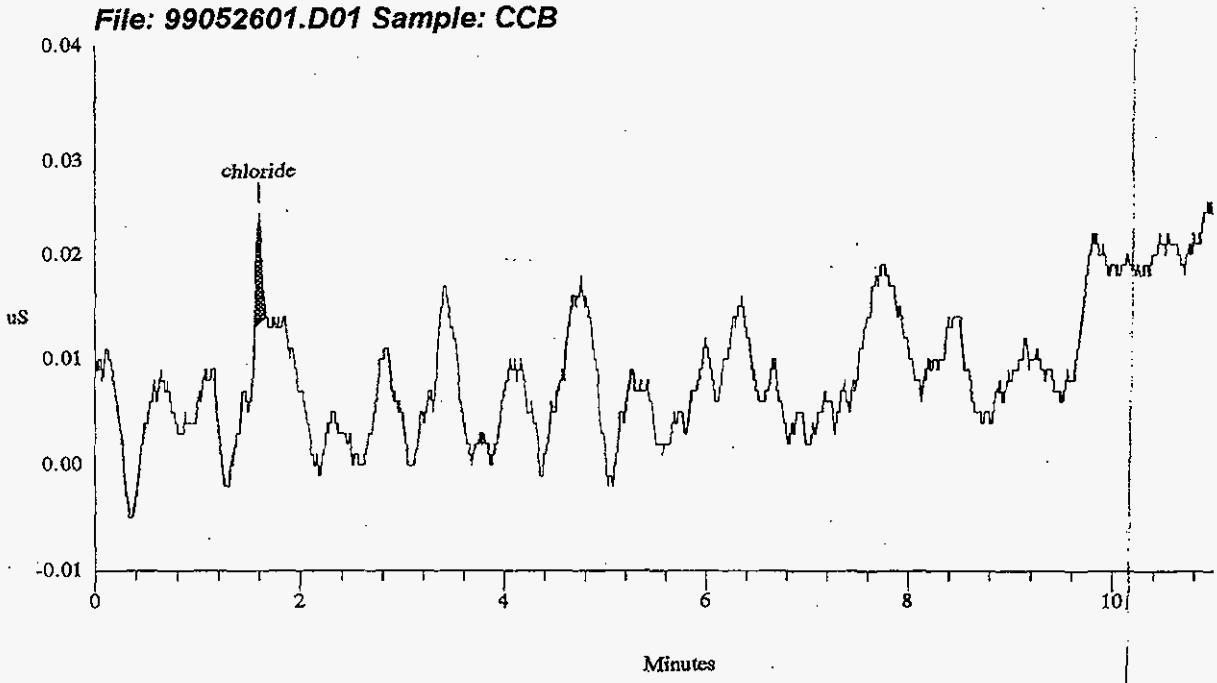
HNF-1672 REV. 0

Sample Name: CCB
Date: 05/26/1999 09:08:47
Data File : C:\DX\DATA\99052601.D01
Method : C:\DX\METHOD\KIT.MET
ACI Address: 1 System: 1 Inject#: 1 Detector:CDM-1
Analyst K. Thomsike 5/26/99 Column: AG4A/AS4A anion column

alibration	Volume	Dilution	Points	Rate	Start	Stop	Area	Reject
xternal	1	1	3300	5Hz	0.00	11.00		30

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	1.60	chloride	0.003	11	39	1	-1.23
		Totals	0.003	11	39		



SIGNATURE ABOVE REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 159 TO 170.

HNF-1672 REV. 0

75N21E

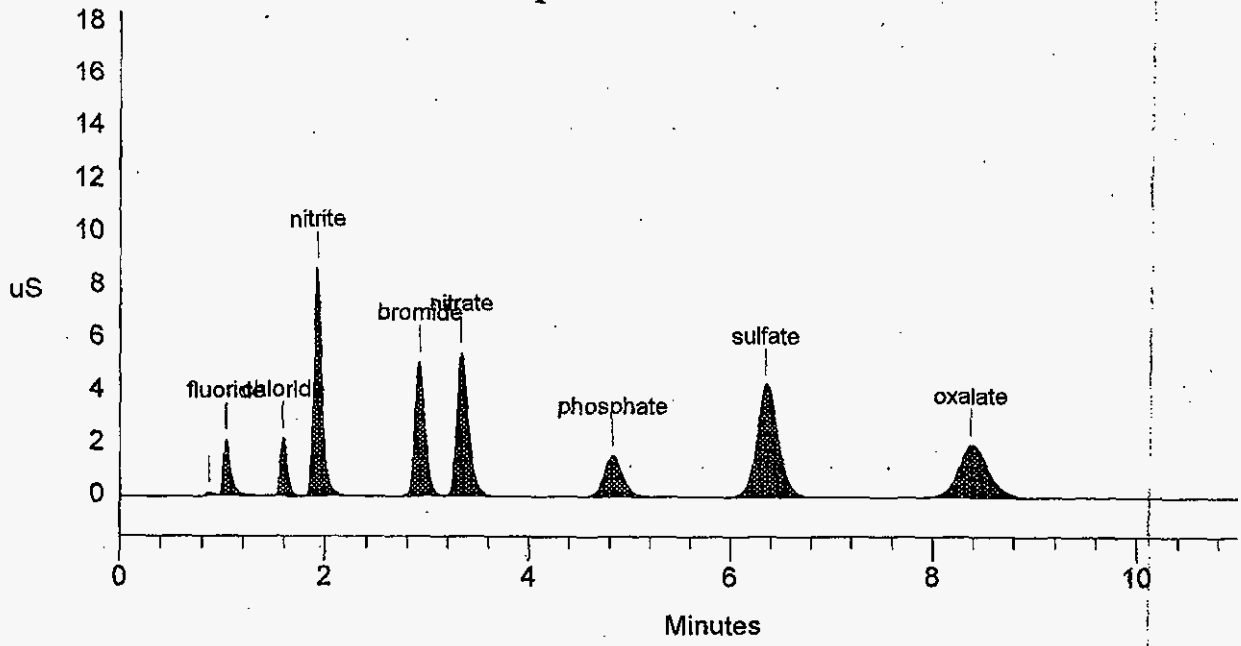
Sample Name: LCS ~~75N11E~~ JW 5-26-99 Date: 05/26/1999 09:44:06
Data File : C:\DX\DATA\99052601.D03
Method : C:\DX\METHOD\KIT.MET
ACI Address: 1 System: 1 Inject#: 3 Detector:CDM-1
Analyst : Column: AG4A/AS4A anion column

alibration	Volume	Dilution	Points	Rate	Start	Stop	Area	Reject
xternal	1	101	3300	5Hz	0.00	11.00		30

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml		Height	Area	Bl. Code	%Delta
1	0.87		0.000		116	559	2	
2	1.03	fluoride	63.656	109%	2120	10916	2	-1.59
3	1.59	chloride	82.909	102.9%	2185	10422	1	-2.06
4	1.92	nitrite	529.360	99.3%	8667	47302	1	-2.70
5	2.92	bromide	586.741	101.8%	5111	34846	1	-2.34
6	3.33	nitrate	556.811	95.3%	5433	43515	1	-3.01
7	4.83	phosphate	569.215	104.6%	1583	21005	1	1.12
8	6.35	sulfate	660.447	102.8%	4272	63874	1	1.71
9	8.37	oxalate	545.748	102.8%	1995	41113	1	1.95
		Totals	3594.888		31483	273553		

File: 99052601.D03 Sample: LCS 75N11E



HNF-1672 REV. 0

74N21E

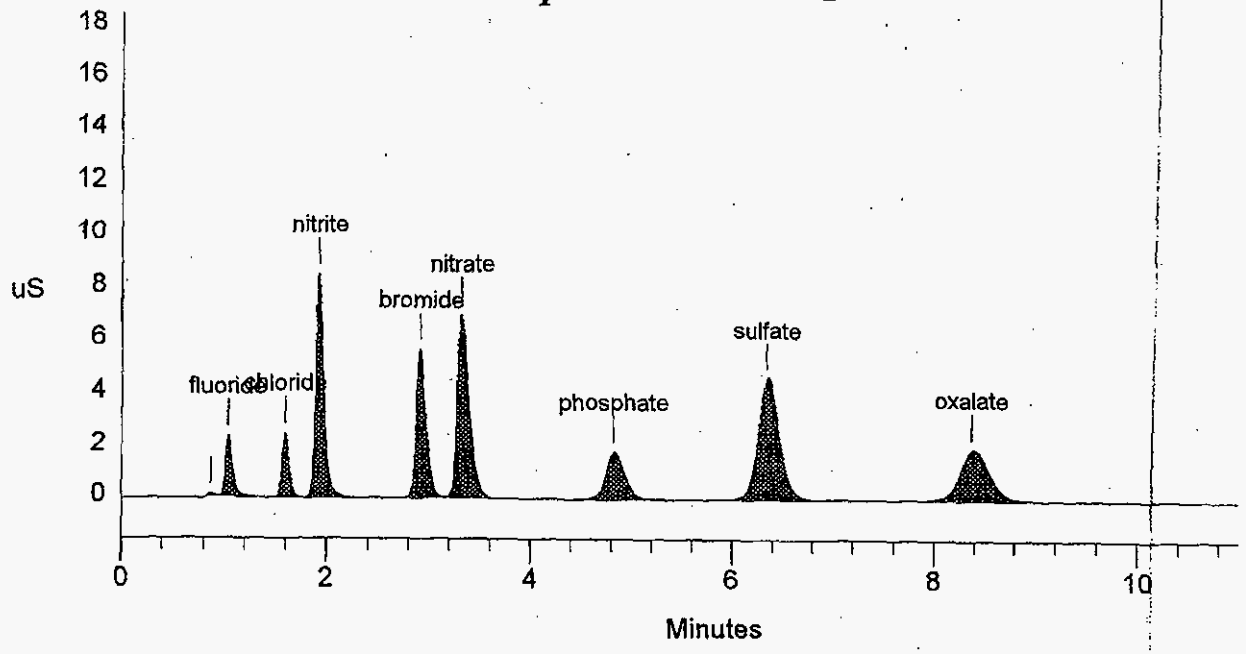
Sample Name: CCV ~~74N11E~~ JW 5-26-99 Date: 05/26/1999 10:14:57
Data File : C:\DX\DATA\99052601.D05
Method : C:\DX\METHOD\KIT.MET
ACI Address: 1 System: 1 Inject#: 5 Detector:CDM-1
Analyst : Column: AG4A/AS4A anion column

alibration	Volume	Dilution	Points	Rate	Start	Stop	Area	Reject
xternal	1	101	3300	5Hz	0.00	11.00		30

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml		Height	Area	Bl. Code	%Delta
1	0.87		0.000		111	514	2	
2	1.03	fluoride	68.338	106.8%	2325	11730	2	-1.59
3	1.59	chloride	92.349	103.2%	2492	11618	1	-1.65
4	1.92	nitrite	521.090	100.6%	8484	46564	1	-2.70
5	2.91	bromide	628.157	99.7%	5647	37334	1	-2.56
6	3.32	nitrate	727.312	103.9%	6995	57007	1	-3.21
7	4.83	phosphate	650.826	102.5%	1825	24054	1	1.12
8	6.35	sulfate	710.406	101.5%	4589	68761	1	1.71
9	8.37	oxalate	548.038	102.8%	1967	41285	1	1.95
		Totals	3946.514		34436	298866		

File: 99052601.D05 Sample: CCV 74N11E



Data Reprocessed On 05/26/1999 15:13:33

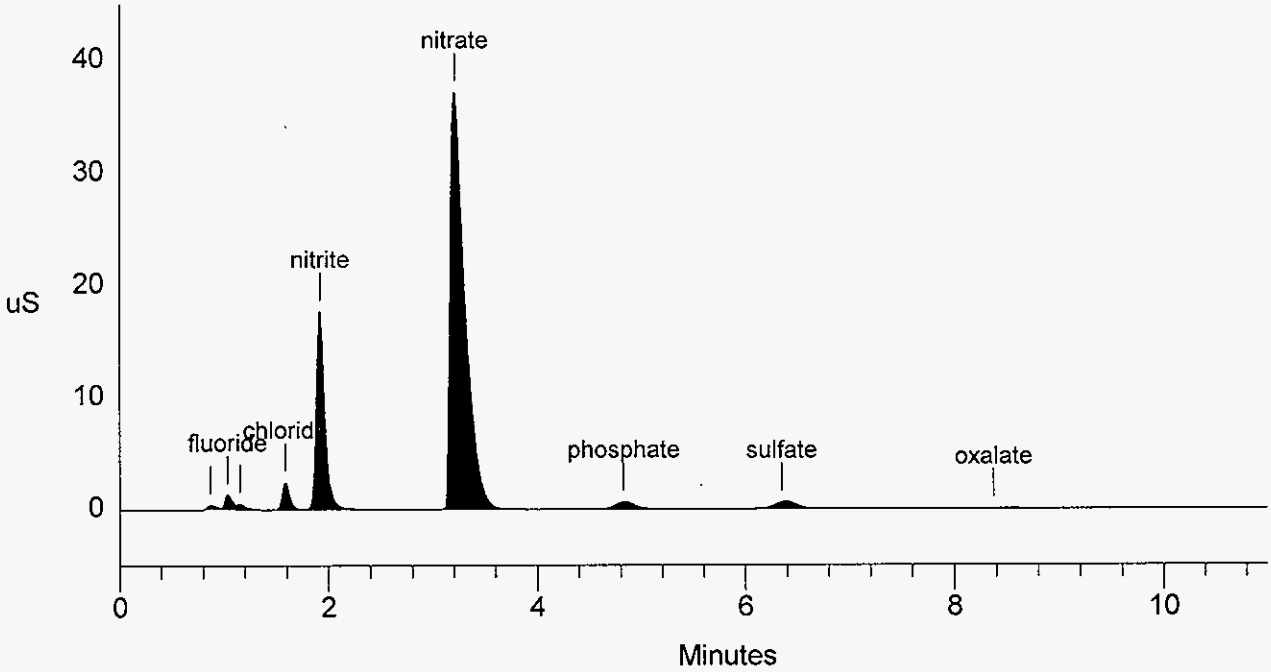
Sample Name: S99T000894 SAM Date: 05/26/1999 10:34:21
Data File : F:\DATA\99052631.D01
Method : C:\DX\METHOD\AUTOMEL.met
ACI Address: 1 System: 1 Inject#: 1 Detector:CDM-1
Analyst : Column: AG4A/AS4A anion column

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	101	3300	5Hz	0.00	11.00	30

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.87		0.000	290	1440	2	
2	1.03	fluoride	35.839	1247	6113	2	-1.59
3	1.15		0.000	512	3154	2	
4	1.59	chloride	96.213	2439	12108	1	-2.06
5	1.92	nitrite	1100.141	17687	98277	1	-2.70
6	3.21	nitrate	4328.424	37118	363498	1	-0.10
7	4.83	phosphate	238.949	651	8763	1	1.12
8	6.35	sulfate	108.768	612	10428	1	1.71
9	8.37	oxalate	12.482	39	945	1	1.95
		Totals	5920.816	60595	504726		

File: 99052631.D01 Sample: S99T000894 SAM



Data Reprocessed On 05/26/1999 15:14:09

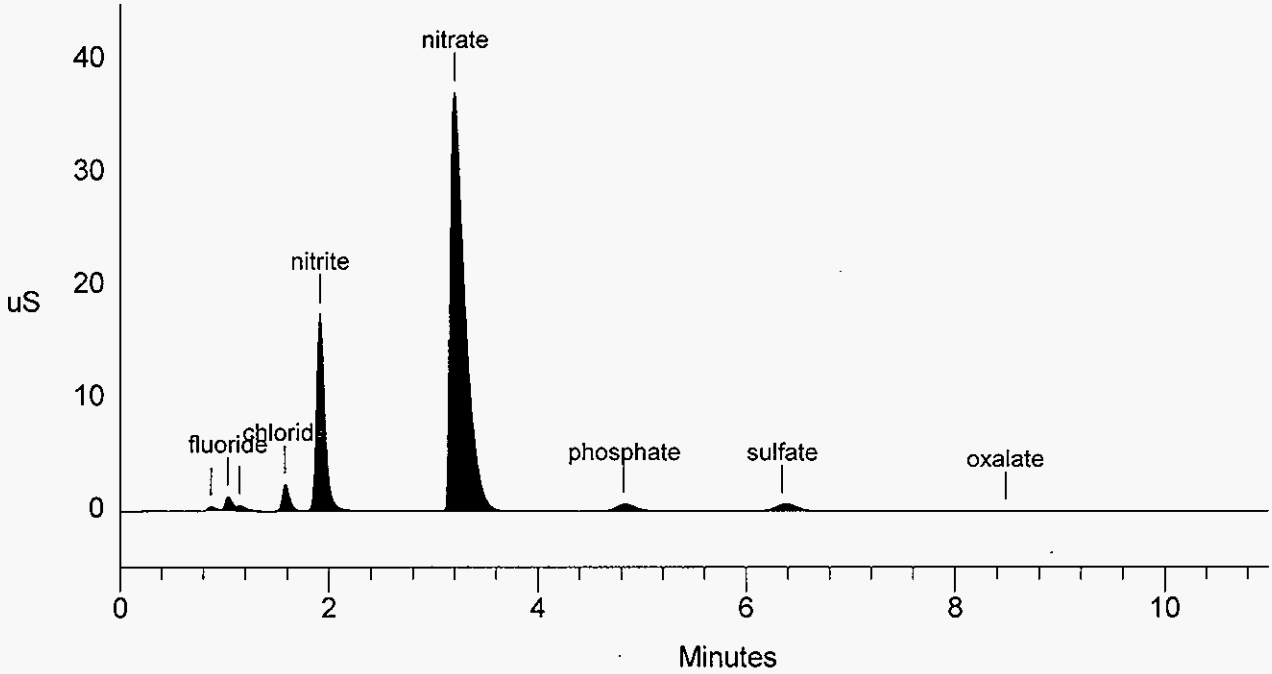
Sample Name: S99T000894 DUP Date: 05/26/1999 10:48:01
Data File : F:\DATA\99052631.D02
Method : C:\DX\METHOD\AUTOMEL.met
ACI Address: 1 System: 1 Inject#: 2 Detector:CDM-1
Analyst : Column: AG4A/AS4A anion column

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area	Reject
External	1	101	3300	5Hz	0.00	11.00		30

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.87		0.000	305	1581	2	
2	1.03	fluoride	36.072	1255	6153	2	-1.59
3	1.15		0.000	516	3240	2	
4	1.58	chloride	95.401	2389	12005	1	-2.47
5	1.91	nitrite	1096.682	17542	97968	1	-3.04
6	3.20	nitrate	4310.038	37166	361812	1	0.00
7	4.83	phosphate	228.806	639	8390	1	1.12
8	6.35	sulfate	105.742	618	10137	1	1.71
9	8.48	oxalate	8.561	30	648	1	3.25
		Totals	5881.302	60460	501934		

File: 99052631.D02 Sample: S99T000894 DUP



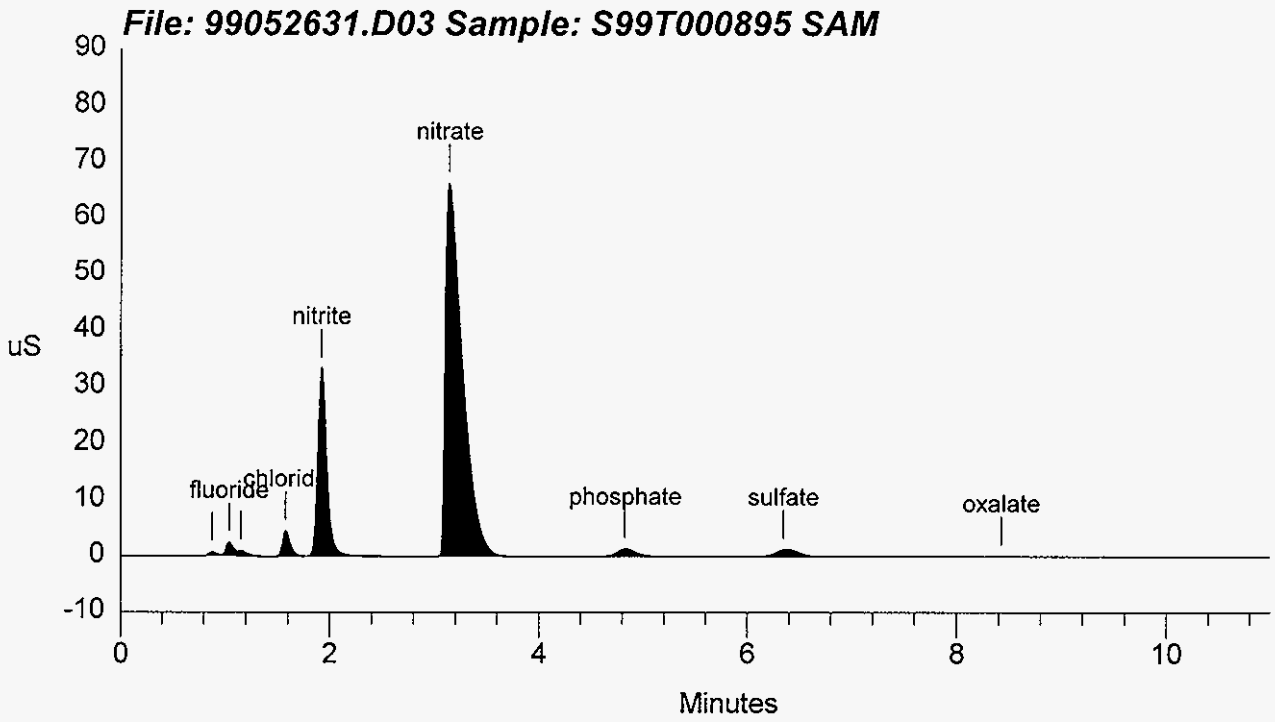
Data Reprocessed On 05/26/1999 15:15:42

Sample Name: S99T000895 SAM Date: 05/26/1999 11:01:41
Data File : F:\DATA\99052631.D03
Method : C:\DX\METHOD\AUTOMEL.met
ACI Address: 1 System: 1 Inject#: 3 Detector:CDM-1
Analyst : Column: AG4A/AS4A anion column

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	101	3300	5Hz	0.00	11.00	30

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.88		0.000	551	2788	2	
2	1.04	fluoride	67.649	2332	11610	2	-0.95
3	1.15		0.000	1016	6463	2	
4	1.58	chloride	186.953	4545	23717	1	-2.47
5	1.92	nitrite	2247.072	33191	200614	1	-2.70
6	3.14	nitrate	8155.270	66188	753316	1	0.00
7	4.83	phosphate	459.079	1303	16906	1	1.12
8	6.35	sulfate	207.049	1230	19880	1	1.71
9	8.43	oxalate	28.901	75	2188	1	2.60
		Totals	11351.973	110432	1037481		



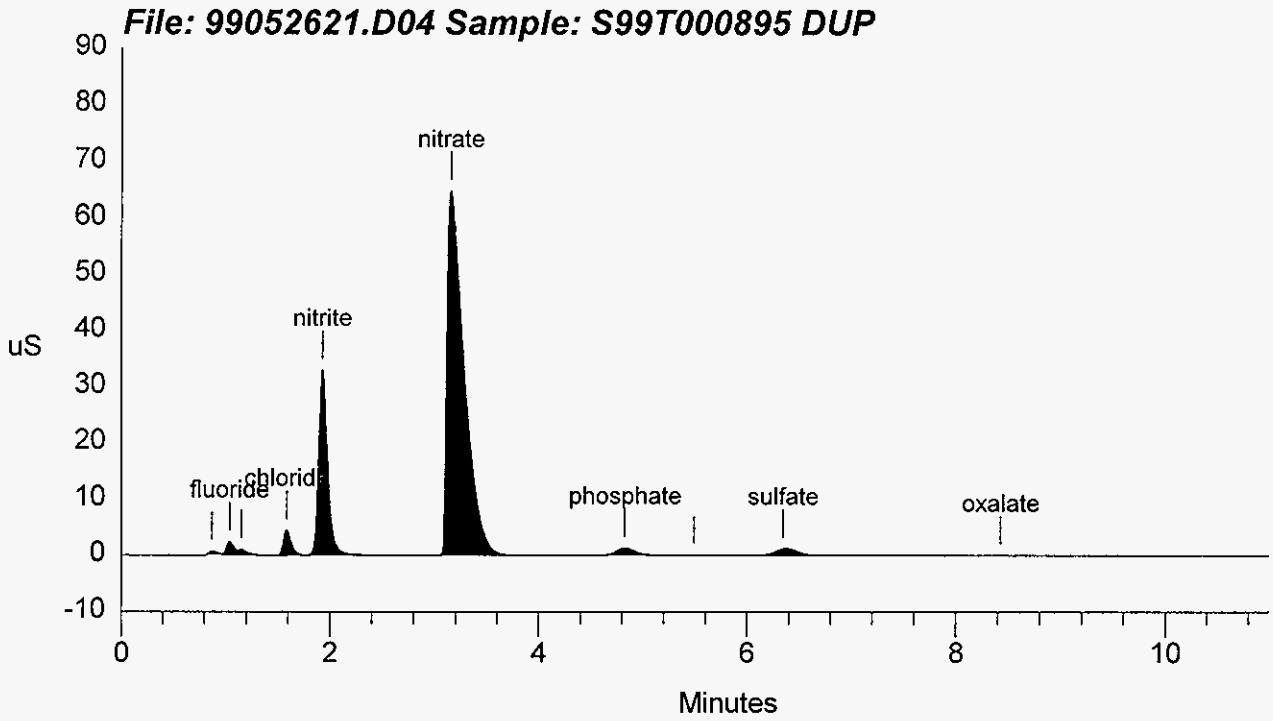
Data Reprocessed On 05/26/1999 15:16:27

Sample Name: S99T000895 DUP	Date: 05/26/1999 11:15:20
Data File : F:\DATA\99052621.D04	
Method : C:\DX\METHOD\AUTOMEL.met	
ACI Address: 1 System: 1 Inject#: 4	Detector:CDM-1
Analyst :	Column: AG4A/AS4A anion column

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	101	3300	5Hz	0.00	11.00	30

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.87		0.000	536	2734	2	
2	1.04	fluoride	67.116	2289	11517	2	-0.95
3	1.15		0.000	992	6143	2	
4	1.59	chloride	183.858	4486	23317	1	-2.06
5	1.93	nitrite	2206.170	32977	196966	1	-2.36
6	3.15	nitrate	8044.613	64742	740699	1	8.74
7	4.83	phosphate	448.655	1292	16519	1	1.12
8	5.49		0.000	38	1010	1	
9	6.35	sulfate	200.896	1227	19288	1	1.71
10	8.43	oxalate	18.684	73	1415	1	2.60
		Totals	11169.992	108650	1019608		



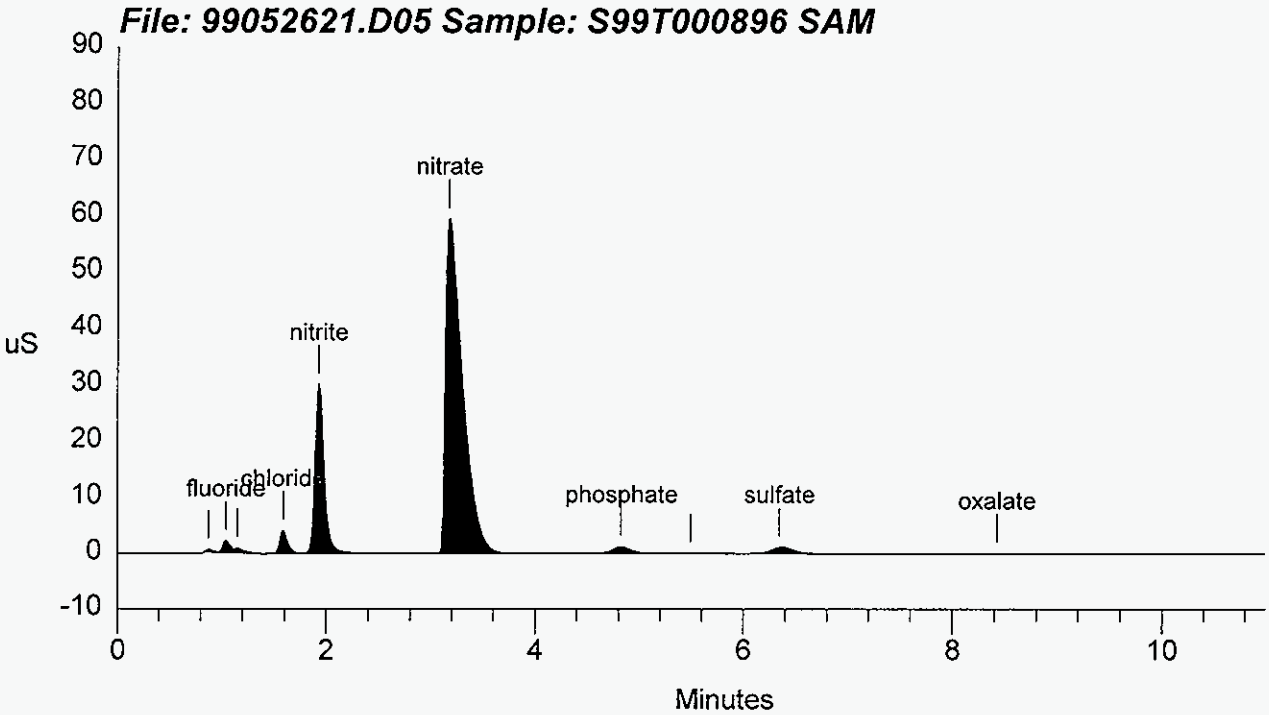
Data Reprocessed On 05/26/1999 15:17:21

Sample Name: S99T000896 SAM	Date: 05/26/1999 11:28:59
Data File : F:\DATA\99052621.D05	
Method : C:\DX\METHOD\AUTOMEL.met	
ACI Address: 1 System: 1 Inject#: 5	Detector:CDM-1
Analyst :	Column: AG4A/AS4A anion column

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area	Reject
External	1	101	3300	5Hz	0.00	11.00		30

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.87		0.000	483	2436	2	
2	1.04	fluoride	63.234	2122	10843	2	-0.95
3	1.15		0.000	915	5711	2	
4	1.59	chloride	170.261	4094	21567	1	-2.06
5	1.93	nitrite	2033.883	29983	181601	1	-2.36
6	3.17	nitrate	7429.946	59406	672363	1	0.00
7	4.83	phosphate	405.654	1176	14923	1	1.12
8	5.49		0.000	37	905	1	
9	6.35	sulfate	184.676	1136	17726	1	1.71
10	8.43	oxalate	16.001	69	1211	1	2.60
		Totals	10303.655	99421	929286		



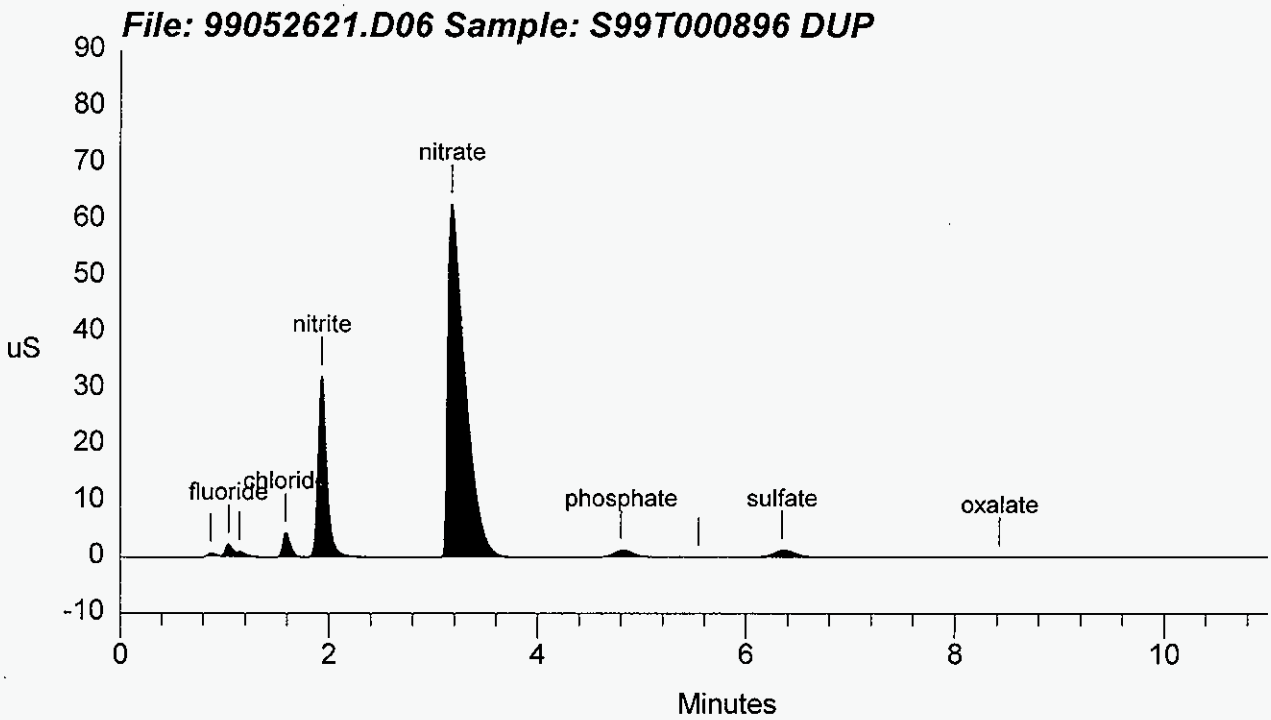
Data Reprocessed On 05/26/1999 15:18:00

Sample Name: S99T000896 DUP	Date: 05/26/1999 11:42:37
Data File : F:\DATA\99052621.D06	
Method : C:\DX\METHOD\AUTOMEL.met	
ACI Address: 1 System: 1 Inject#: 6	Detector:CDM-1
Analyst :	Column: AG4A/AS4A anion column

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area	Reject
External	1	101	3300	5Hz	0.00	11.00		30

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.87		0.000	536	2839	2	
2	1.04	fluoride	63.749	2244	10932	2	-0.95
3	1.15		0.000	964	6345	2	
4	1.59	chloride	180.059	4344	22828	1	-2.06
5	1.93	nitrite	2123.973	32214	189636	1	-2.03
6	3.17	nitrate	7867.875	62796	720752	1	0.00
7	4.80	phosphate	446.124	1224	16425	1	0.56
8	5.55		0.000	33	849	1	
9	6.35	sulfate	196.636	1234	18878	1	1.71
10	8.43	oxalate	21.623	79	1637	1	2.60
		Totals	10900.039	105668	991120		



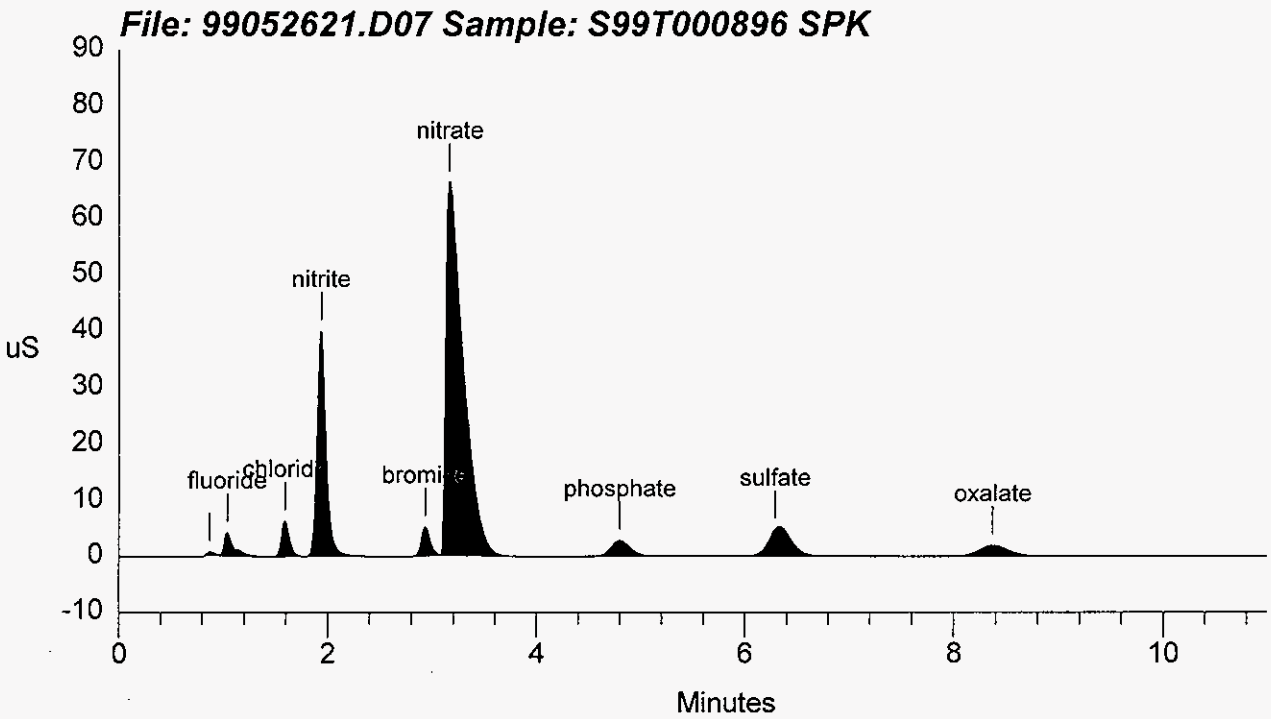
Data Reprocessed On 05/26/1999 15:18:37

Sample Name: S99T000896 SPK	Date: 05/26/1999 11:56:16
Data File : F:\DATA\99052621.D07	
Method : C:\DX\METHOD\AUTOMEL.met	
ACI Address: 1 System: 1 Inject#: 7	Detector:CDM-1
Analyst :	Column: AG4A/AS4A anion column

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	101	3300	5Hz	0.00	11.00	30

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.87		0.000	612	3058	2	
2	1.04	fluoride	154.800	4139	27034	2	-0.95
3	1.59	chloride	265.422	6388	33911	1	-1.65
4	1.94	nitrite	2688.186	39959	239940	1	-1.69
5	2.93	bromide	501.621	5156	29745	1	-1.90
6	3.17	nitrate	8335.758	66234	774116	1	0.00
7	4.80	phosphate	983.421	2821	36579	1	0.56
8	6.29	sulfate	815.001	4754	79018	1	0.85
9	8.37	oxalate	524.785	1945	39541	1	1.95
		Totals	14268.993	132007	1262943		



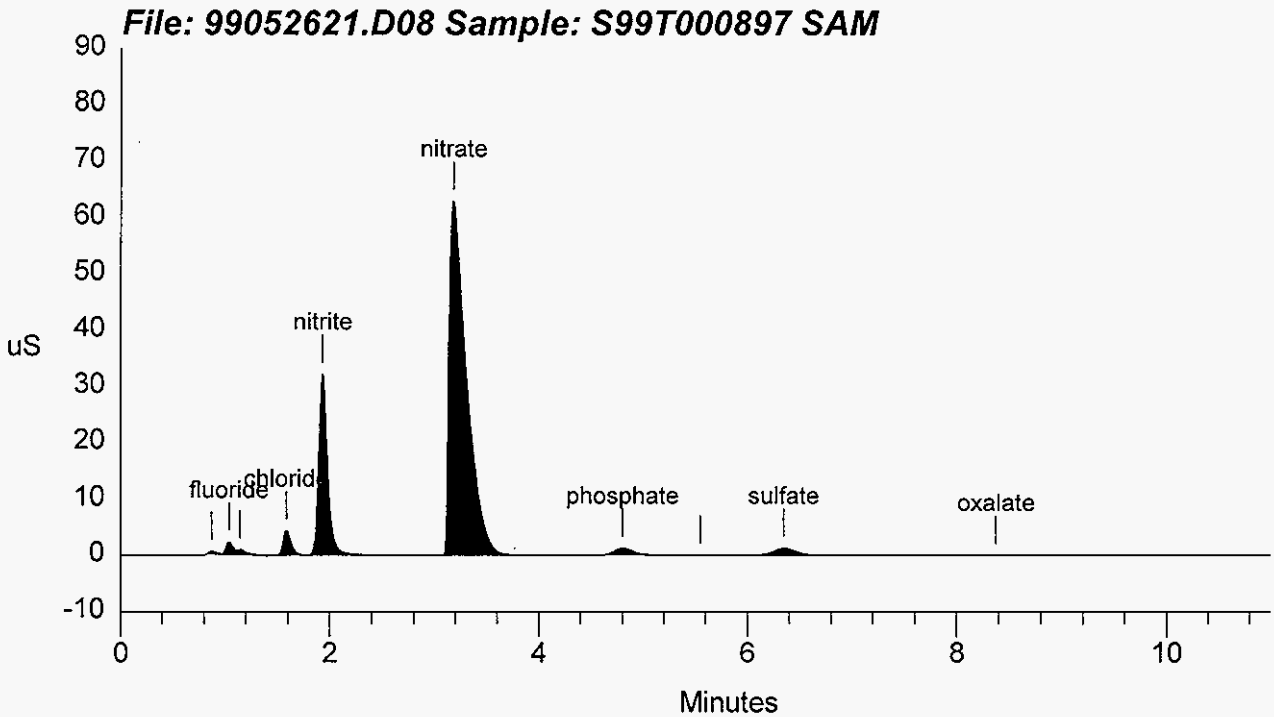
Data Reprocessed On 05/26/1999 15:19:28

Sample Name: S99T000897 SAM	Date: 05/26/1999 12:09:56
Data File : F:\DATA\99052621.D08	
Method : C:\DX\METHOD\AUTOMEL.met	
ACI Address: 1 System: 1 Inject#: 8	Detector:CDM-1
Analyst :	Column: AG4A/AS4A anion column

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	101	3300	5Hz	0.00	11.00	30

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.87		0.000	546	2789	2	
2	1.04	fluoride	64.832	2264	11120	2	-0.95
3	1.15		0.000	983	6337	2	
4	1.59	chloride	188.457	4387	23910	1	-2.06
5	1.93	nitrite	2136.466	32271	190750	1	-2.03
6	3.18	nitrate	7925.542	62877	727233	1	0.00
7	4.80	phosphate	456.990	1284	16828	1	0.56
8	5.55		0.000	34	761	1	
9	6.35	sulfate	200.836	1278	19282	1	1.71
10	8.37	oxalate	19.673	70	1489	1	1.95
		Totals	10992.796	105994	1000500		



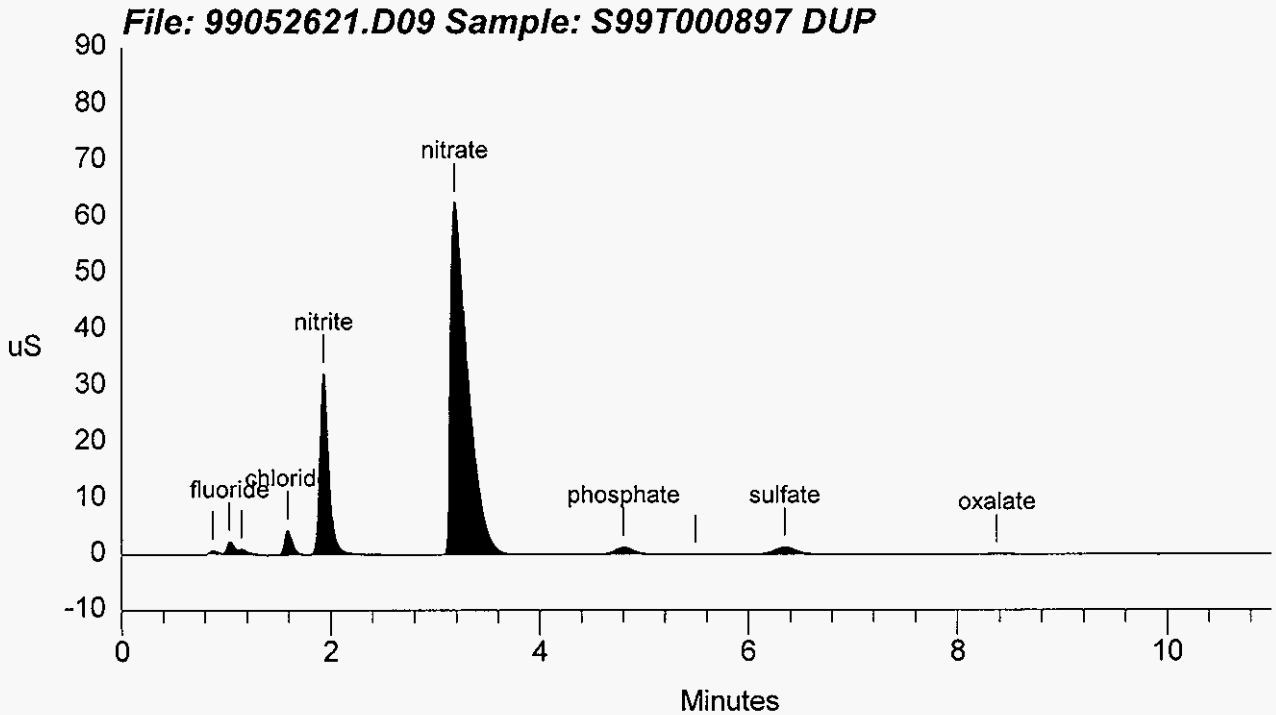
Data Reprocessed On 05/26/1999 15:20:08

Sample Name: S99T000897 DUP	Date: 05/26/1999 12:23:35
Data File : F:\DATA\99052621.D09	
Method : C:\DX\METHOD\AUTOMEL.met	
ACI Address: 1 System: 1 Inject#: 9	Detector:CDM-1
Analyst :	Column: AG4A/AS4A anion column

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area	Reject
External	1	101	3300	5Hz	0.00	11.00		30

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.87		0.000	522	2692	2	
2	1.03	fluoride	64.353	2207	11037	2	-1.59
3	1.15		0.000	978	6405	2	
4	1.59	chloride	183.073	4372	23216	1	-2.06
5	1.93	nitrite	2148.569	32178	191829	1	-2.03
6	3.18	nitrate	7924.054	62599	727066	1	0.00
7	4.80	phosphate	453.764	1280	16708	1	0.56
8	5.49		0.000	36	887	1	
9	6.35	sulfate	198.618	1278	19068	1	1.71
10	8.37	oxalate	23.148	75	1752	1	1.95
		Totals	10995.580	105525	1000661		



File #9521A for 05-24-99

HNF-1672 REV. 0

05/20/99 08:04
ws2

LABCORE Data Entry Template for Worklist# 29799

Analyst: VLM **Instrument:** ICP01 2 VM 05-24-99 **Book#** 79848B

Method: LA-505-~~151~~/161 Rev/Mod C-3 VM 5-24-99

Worklist Comment: ICP AP-107 (DIRECT)

S	Type	Sample#	R	A	Test	Matrix	Group#	Project
1	ICV				@ICP-QC	QC		
2	ICB				@ICP-QC	QC		
3	LLS				@ICP-QC	QC		
4	ICSA				@ICP-QC	QC		
5	ICSAB				@ICP-QC	QC		
6	SAMPLE	S99T000894	0	D	@ICP-D01	LIQUID	99000198	AP107 GRAB2
		Analytes Requested:			AG-D-01 , AL-D-01 , AS-D-01 , B-D-01 , BA-D-01 , BE-D-01 , BI-D-01 , CA-D-01 , CD-D-01 , CE-D-01 , CO-D-01 , CR-D-01 , CU-D-01 , FE-D-01 , K-D-01 , LA-D-01 , LI-D-01 , MG-D-01 , MN-D-01 , MO-D-01 , NA-D-01 , ND-D-01 , NI-D-01 , P-D-01 , PB-D-01 , S-D-01 , SB-D-01 , SE-D-01 , SI-D-01 , SM-D-01 , SR-D-01 , TI-D-01 , TL-D-01 , U-D-01 , V-D-01 , ZN-D-01 , ZR-D-01			
7	DUP	S99T000894	0	D	@ICP-D01	LIQUID		
8	SAMPLE	S99T000895	0	D	@ICP-D01	LIQUID	99000198	AP107 GRAB2
		Analytes Requested:			AG-D-01 , AL-D-01 , AS-D-01 , B-D-01 , BA-D-01 , BE-D-01 , BI-D-01 , CA-D-01 , CD-D-01 , CE-D-01 , CO-D-01 , CR-D-01 , CU-D-01 , FE-D-01 , K-D-01 , LA-D-01 , LI-D-01 , MG-D-01 , MN-D-01 , MO-D-01 , NA-D-01 , ND-D-01 , NI-D-01 , P-D-01 , PB-D-01 , S-D-01 , SB-D-01 , SE-D-01 , SI-D-01 , SM-D-01 , SR-D-01 , TI-D-01 , TL-D-01 , U-D-01 , V-D-01 , ZN-D-01 , ZR-D-01			
9	DUP	S99T000895	0	D	@ICP-D01	LIQUID		
10	CCV				@ICP-QC	QC		
11	CCB				@ICP-QC	QC		
12	SERDIL	S99T000896	0	D	@ICP-D01	LIQUID		

Data Entry Comments:
uploaded 5-25-99
John Wanell

Validated by:
Sal M. Pang
05/25/99

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

LABCORE Data Entry Template for Worklist# 29799

S	Type	Sample#	R	A	Test	Matrix	Group#	Project
13	SAMPLE	S99T000896	0	D	@ICP-D01	LIQUID	99000198	AP107 GRAB2

Analytes Requested: AG-D-01 , AL-D-01 , AS-D-01 , B-D-01 , BA-D-01 , BE-D-01 , BI-D-01 , CA-D-01 , CD-D-01 , CE-D-01 , CO-D-01 , CR-D-01 , CU-D-01 , FE-D-01 , K-D-01 , LA-D-01 , LI-D-01 , MG-D-01 , MN-D-01 , MO-D-01 , NA-D-01 , ND-D-01 , NI-D-01 , P-D-01 , PB-D-01 , S-D-01 , SB-D-01 , SE-D-01 , SI-D-01 , SM-D-01 , SR-D-01 , TI-D-01 , TL-D-01 , U-D-01 , V-D-01 , ZN-D-01 , ZR-D-01

S	Type	Sample#	R	A	Test	Matrix	Group#	Project
14	DUP	S99T000896	0	D	@ICP-D01	LIQUID		
15	SPK-POST	S99T000896	0	D	@ICP-D01	LIQUID		

sample X
sample_AX 10ppm spk

S	Type	Sample#	R	A	Test	Matrix	Group#	Project
16	SAMPLE	S99T000897	0	D	@ICP-D01	LIQUID	99000198	AP107 GRAB2

Analytes Requested: AG-D-01 , AL-D-01 , AS-D-01 , B-D-01 , BA-D-01 , BE-D-01 , BI-D-01 , CA-D-01 , CD-D-01 , CE-D-01 , CO-D-01 , CR-D-01 , CU-D-01 , FE-D-01 , K-D-01 , LA-D-01 , LI-D-01 , MG-D-01 , MN-D-01 , MO-D-01 , NA-D-01 , ND-D-01 , NI-D-01 , P-D-01 , PB-D-01 , S-D-01 , SB-D-01 , SE-D-01 , SI-D-01 , SM-D-01 , SR-D-01 , TI-D-01 , TL-D-01 , U-D-01 , V-D-01 , ZN-D-01 , ZR-D-01

S	Type	Sample#	R	A	Test	Matrix	Group#	Project
17	DUP	S99T000897	0	D	@ICP-D01	LIQUID		
18	ICSA				@ICP-QC	QC		
19	ICSAB				@ICP-QC	QC		
20	CCV				@ICP-QC	QC		
21	CCB				@ICP-QC	QC		

Final page for worklist # 29799

Valerie L Massie 05-24-99

Signature	Date
S99T000894	DF=101
S99T000894_D	DF-101
S99T000895	DF-201
S99T000895_D	DF-201
S99T000896_L	DF=1005
S99T000896	DF-201
S99T000896_D	DF-201
S99T000896_A	DF-201
S99T000896_X	DF-2010
S99T000896_AX	DF-2010
S99T000897	DF-201
S99T000897_D	DF-201

Data Entry Comments:

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

File ; 9521 A for 05-24-99

HNF-1672 REV. 0

Analysis Report Summary 05/24/99 11:33:50 AM page 1

#	Sample Name	File	Method	Date	Time	OpID	Type	Mode
1	ICV	9521A	ICP2	05/24/99	08:41	VLM	Q	CONC
2	ICV	9521A	ICP2	05/24/99	08:44	VLM	Q	CONC
3	ICB	9521A	ICP2	05/24/99	08:56	VLM	Q	CONC
4	LLS	9521A	ICP2	05/24/99	09:00	VLM	Q	CONC
5	ICSA	9521A	ICP2	05/24/99	09:04	VLM	Q	CONC
6	ICSAB	9521A	ICP2	05/24/99	09:09	VLM	Q	CONC
7	S99T000894	9521A	ICP2	05/24/99	09:36	VLM	S	CONC
8	S99T000894_D	9521A	ICP2	05/24/99	09:43	VLM	S	CONC
9	S99T000895	9521A	ICP2	05/24/99	09:55	VLM	S	CONC
10	S99T000895_D	9521A	ICP2	05/24/99	10:00	VLM	S	CONC
11	CCV	9521A	ICP2	05/24/99	10:04	VLM	Q	CONC
12	ICB VM05-24-99	9521A	ICP2	05/24/99	10:08	VLM	Q	CONC
13	S99T000896_L	9521A	ICP2	05/24/99	10:32	VLM	S	CONC
14	S99T000896	9521A	ICP2	05/24/99	10:36	VLM	S	CONC
15	S99T000896_D	9521A	ICP2	05/24/99	10:40	VLM	S	CONC
16	S99T000896_A	9521A	ICP2	05/24/99	10:44	VLM	S	CONC
17	S99T000896_X	9521A	ICP2	05/24/99	10:50	VLM	S	CONC
18	S99T000896_AX	9521A	ICP2	05/24/99	11:01	VLM	S	CONC
19	S99T000897	9521A	ICP2	05/24/99	11:05	VLM	S	CONC
20	S99T000897_D	9521A	ICP2	05/24/99	11:09	VLM	S	CONC
21	ICSA	9521A	ICP2	05/24/99	11:14	VLM	Q	CONC
22	ICSAB	9521A	ICP2	05/24/99	11:18	VLM	Q	CONC
23	CCV	9521A	ICP2	05/24/99	11:24	VLM	Q	CONC
24	CCB	9521A	ICP2	05/24/99	11:28	VLM	Q	CONC

S99T000896 John Worrell

Post Spike:

$$Al = \frac{\left(\frac{25522}{2010}\right) - \left(\frac{6015.2}{2010}\right)}{10} \times 100 = 97.0\%$$

$$Na = \frac{\left(\frac{82359}{2010}\right) - \left(\frac{60064}{2010}\right)}{10} \times 100 = 110.9\%$$

SIGNATURE ABOVE REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 173 TO 177.

HNF-1672 REV. 0

Analysis Report Averages 05/24/99 11:33:50 AM page 2

#	Sample Name	Ag	Al	As	B	Ba	Be
1	ICV	4.8866	4.9187	4.9652	5.0779	4.8498	4.9369
2	ICV	4.8856	4.8995	4.9565	5.0735	4.8461	4.9343
3	ICB	.00009	.00573	-.00190	.00246	.00000	.00001
4	LLS	.02170	.09738	.19457	.09855	.09547	.00973
5	ICSA	-.00150	242.41	.02922	.00270	.00027	.00013
6	ICSAB	.93270	242.10	.02013	.00201	.44584	.45135
7	S99T000894	2.6904	3427.3	-3.5395	7.4017	.01092	.02102
8	S99T000894_D	2.4114	3429.8	-4.4571	7.2083	-.00574	.01120
9	S99T000895	4.6882	6612.7	-5.7523	13.076	.00576	.05033
10	S99T000895_D	4.7282	6612.3	-5.9969	13.738	-.00448	.02678
11	CCV	4.7910	4.7429	4.8497	4.9448	4.6404	4.8713
12	CCB VM 05-24-99	.00013	-.00553	-.00706	.00001	.00006	.00000
13	S99T000896_L	5.2361	6066.0	-14.582	10.221	.06441	-.00220
14	S99T000896	4.3034	5936.1	-4.7820	12.194	.02270	.03456
15	S99T000896_D	4.1039	6013.9	-7.4816	12.084	.00217	.03855
16	S99T000896_A	183.03	6203.3	191.62	203.12	173.26	188.91
17	S99T000896_X	4.5183	6015.2	-14.500	9.9642	-.12329	.03371
18	S99T000896_AX	19395.	25522.	19708.	19655.	19466.	19567.
19	S99T000897	5.0607	6589.5	-5.8913	14.509	.01947	.04266
20	S99T000897_D	4.7558	6632.6	-5.6881	13.406	-.00562	.02697
21	ICSA	-.00051	241.56	.05269	.00160	.00033	.00019
22	ICSAB	.93266	241.91	.04948	.00273	.44619	.45424
23	CCV	4.8700	4.8579	4.9572	5.0419	4.8071	4.9711
24	CCB	-.00016	.00228	-.00782	.00274	.00001	.00005

#	Sample Name	Bi	Ca	Cd	Ce	Co	Cr
1	ICV	4.9668	5.0683	5.0305	4.9935	4.9346	4.9416
2	ICV	5.0055	5.0877	5.0527	4.9855	4.9508	4.9551
3	ICB	-.01707	.00623	-.00019	-.00329	.00121	.00052
4	LLS	.19538	.21739	.00967	.20031	.04088	.02091
5	ICSA	.00783	254.53	-.00553	.01243	.00267	-.00173
6	ICSAB	-.02294	256.16	.92422	.02152	.45725	.46400
7	S99T000894	3.1203	3.2449	.16396	.35262	.37614	252.87
8	S99T000894_D	2.5396	3.4237	.07375	-.98130	.24167	253.38
9	S99T000895	8.0769	6.6811	.17063	-.15475	.13078	496.23
10	S99T000895_D	3.6416	6.5930	.16656	-1.0501	.38688	495.89
11	CCV	4.9185	5.0686	5.0137	4.8197	4.9004	4.9079
12	CCB VM 05-24-99	-.00011	.00778	.00015	-.00080	.00078	-.00074
13	S99T000896_L	-3.4056	10.394	.01360	-.77681	1.2587	461.11
14	S99T000896	1.6030	6.1352	.19733	.14313	.60499	450.41
15	S99T000896_D	5.2606	6.4470	.06427	-1.2834	.06479	456.16
16	S99T000896_A	190.88	208.09	198.89	183.87	192.96	647.03
17	S99T000896_X	-10.554	3.5936	-.71468	-4.9059	.89706	454.46
18	S99T000896_AX	20030.	19860.	19888.	19376.	19778.	20252.
19	S99T000897	7.6256	7.6008	.36409	.93615	.53380	491.91
20	S99T000897_D	4.7389	6.4906	.11388	-.25456	.14206	493.31
21	ICSA	.01223	257.32	-.00412	.01379	.00201	-.00110
22	ICSAB	.01654	258.25	.93209	.01361	.46020	.46650
23	CCV	5.0091	5.1129	5.0801	4.9608	4.9727	4.9789
24	CCB	.00977	.00694	-.00036	-.00443	.00222	.00135

Analysis Report Averages 05/24/99 11:33:50 AM page 3

#	Sample Name	Cu	Eu	Fe	K	La	Li
1	ICV	5.0525	.02998	5.0134	4.9419	5.0435	4.9975
2	ICV	5.0423	.03015	5.0194	5.0106	5.0348	4.9790
3	ICB	.00024	.00026	.00041	-.19704	-.00010	.00008
4	LLS	.01857	.00210	.10018	.58706	.10045	.02117
5	ICSA	.00010	.25265	96.090	.21119	-.00522	.00262
6	ICSAB	.47207	.25601	96.530	.19964	-.00424	.95009
7	S99T000894	-.20817	.07722	.35652	921.06	.15504	.09637
8	S99T000894_D	-.30968	.17144	.23078	910.62	-.05857	.16702
9	S99T000895	-.72800	.37424	.62562	1646.2	.05880	.33283
10	S99T000895_D	-.49250	.42734	.60810	1657.9	.04676	.38548
11	CCV	4.8438	.03157	4.9316	4.7776	4.8687	4.7116
12	ICB VM 05-24-99	-.00154	.00345	.00006	-.02208	.00021	.00262
13	S99T000896_L	-.70981	3.2362	-.38512	1772.2	.21615	2.4588
14	S99T000896	-.48550	.69613	1.2438	1496.5	.14815	.49091
15	S99T000896_D	-.27384	.64181	.56452	1497.2	.06546	.50866
16	S99T000896_A	184.67	1.8568	193.71	1650.0	187.29	175.14
17	S99T000896_X	-2.5360	6.8685	-2.8361	1435.5	-1.1439	5.0943
18	S99T000896_AX	19317.	123.09	19619.	20740.	19386.	19073.
19	S99T000897	-.50325	.44784	.71110	1677.8	.17789	.38575
20	S99T000897_D	-.73195	.33927	.56577	1601.2	.03841	.28028
21	ICSA	-.00011	.24763	96.793	.01340	-.00513	.00341
22	ICSAB	.47056	.25280	97.019	.19580	-.00508	.94054
23	CCV	4.9924	.03130	4.9973	4.9087	5.0096	4.8779
24	CCB	.00106	.00147	.00106	-.14755	-.00019	.00087

#	Sample Name	Mg	Mn	Mo	Na	Nd	Ni
1	ICV	4.9923	4.7766	4.9938	5.0541	5.0470	4.9240
2	ICV	4.9914	4.7876	5.0069	5.0241	5.0242	4.9502
3	ICB	-.00068	.00004	.00029	.04193	-.00030	-.00218
4	LLS	.20744	.01891	.09863	.16686	.19853	.03698
5	ICSA	247.34	-.00865	-.01053	184.98	.01274	-.01699
6	ICSAB	246.93	.41771	-.01214	185.75	.01052	.91088
7	S99T000894	.74647	-.01381	9.8552	35488.	.27943	-.16892
8	S99T000894_D	-.30976	.00670	9.6060	35322.	-.19176	.17999
9	S99T000895	-.40351	.03436	18.727	65492.	-.43958	-.33713
10	S99T000895_D	-.82254	.04957	19.171	65313.	.11439	.46099
11	CCV VM	4.8401	4.6981	4.9336	4.6854	4.8395	4.8778
12	ICB 05-24-99	-.00130	.00072	.00053	-.01282	-.00173	-.00120
13	S99T000896_L	10.104	.42715	18.828	60301.	1.3551	.67840
14	S99T000896	1.3218	.08016	16.920	57721.	.39852	-.53753
15	S99T000896_D	-.01553	.07315	17.458	58547.	.06764	.10409
16	S99T000896_A	186.75	178.40	211.95	58793.	184.84	192.67
17	S99T000896_X	3.6841	1.0735	18.025	60064.	-1.4059	-1.6696
18	S99T000896_AX	19482.	19606.	19810.	82359.	19305.	19823.
19	S99T000897	2.1800	.07776	19.668	65063.	.26430	-.13195
20	S99T000897_D	-.09813	.02622	18.763	65683.	-.40703	.52676
21	ICSA	247.06	-.00824	-.01024	181.84	.01077	-.00993
22	ICSAB	247.15	.42041	-.01195	183.51	.00849	.91377
23	CCV	4.9260	4.7692	5.0271	4.8908	4.9783	4.9622
24	CCB	-.00243	.00029	.00288	.04914	.00118	-.00131

HNF-1672 REV. 0

Analysis Report Averages 05/24/99 11:33:50 AM page 4

#	Sample Name	P	Pb	S	Sb	Se	Si
1	ICV	4.9755	4.9398	4.9056	4.9618	4.8551	5.1972
2	ICV	4.9838	4.9799	4.8912	4.9810	4.8819	5.2015
3	ICB	.00019	.01753	.01096	.00122	.01472	.00145
4	LLS	.38152	.22020	.20020	.09734	.19940	.11789
5	ICSA	-.04149	.07611	-.03145	.01073	-.03845	-.01114
6	ICSAB	-.02406	1.0302	-.01795	.01282	-.03541	-.00858
7	S99T000894	827.59	5.0113	394.29	1.5569	9.2221	13.881
8	S99T000894_D	824.69	4.3013	394.62	.82449	9.0656	14.448
9	S99T000895	1616.9	6.9517	773.73	3.4029	14.705	26.906
10	S99T000895_D	1615.7	8.3610	775.09	2.9150	12.568	26.919
11	CCV	4.9232	4.9357	4.8391	4.9057	4.8018	5.1197
12	CCB VM05-24-99	.00306	-.00687	.01080	-.00325	.02967	.00866
13	S99T000896_L	1471.4	6.3646	710.11	7.9976	34.845	29.860
14	S99T000896	1461.7	7.6939	700.71	.88413	16.874	24.981
15	S99T000896_D	1472.2	7.8908	710.65	1.4357	13.910	25.043
16	S99T000896_A	1677.9	201.45	905.26	197.45	209.68	229.07
17	S99T000896_X	1464.9	21.711	674.25	-.38722	71.936	36.079
18	S99T000896_AX	21259.	19981.	20495.	19774.	19712.	19548.
19	S99T000897	1602.3	7.9999	775.49	2.8701	14.817	27.010
20	S99T000897_D	1608.2	5.7803	774.80	1.4758	13.959	26.207
21	ICSA	-.01168	.07468	-.03145	.00301	-.01202	-.00960
22	ICSAB	-.01466	1.0336	-.01884	.01672	-.01084	-.00910
23	CCV	4.9830	4.9851	4.9272	4.9856	4.8899	5.1788
24	CCB	.00247	.01703	.00143	.00194	.03379	.00149

#	Sample Name	Sm	Sr	Th	Ti	Tl	U
1	ICV	5.0290	4.9202	.41176	5.0281	4.8578	10.227
2	ICV	5.0073	4.9080	.42234	5.0225	4.8586	10.184
3	ICB	.00226	.00000	-.00121	.00042	-.01999	.00885
4	LLS	.20455	.01956	.01899	.02015	.40045	.50468
5	ICSA	-.01765	.00142	.09180	.00231	-.07079	.03094
6	ICSAB	-.01001	.00154	.09810	.00291	-.05273	.04721
7	S99T000894	.60283	.01391	-2.1046	.14294	-1.0335	17.563
8	S99T000894_D	1.2115	.02305	-3.2551	.05152	-1.4042	19.905
9	S99T000895	3.9098	.12719	-3.3942	.06299	.65872	31.598
10	S99T000895_D	3.7346	.12691	-4.6586	.14262	-3.3158	34.789
11	CCV	4.8381	4.7598	.40561	4.9126	4.7578	9.8546
12	CCB VM05-24-99	.02691	.00036	-.00532	.00011	-.01468	.10161
13	S99T000896_L	26.761	.33046	-7.6810	.52623	-18.691	115.88
14	S99T000896	5.2420	.13898	-3.1255	.23496	-4.4613	38.695
15	S99T000896_D	4.8600	.13300	-4.8393	.14290	.44319	36.123
16	S99T000896_A	190.31	181.67	12.020	190.99	187.59	410.62
17	S99T000896_X	51.865	.66261	-22.528	1.0292	-41.726	219.31
18	S99T000896_AX	19387.	19334.	1614.2	19575.	19841.	38689.
19	S99T000897	3.0509	.11492	-2.2270	.18218	-2.9720	29.777
20	S99T000897_D	2.9608	.10283	-4.0689	.09037	-4.0551	26.594
21	ICSA	-.00833	.00144	.10525	.00265	-.08126	.03692
22	ICSAB	-.00800	.00147	.10104	.00235	-.07189	.04035
23	CCV	4.9914	4.8879	.43655	5.0241	4.8984	10.143
24	CCB	.00957	.00005	-.00035	.00056	-.02004	.03178

HNF-1672 REV. 0

Analysis Report Averages 05/24/99 11:33:50 AM page 5

#	Sample Name	V	Y	Zn	Zr
1	ICV	4.9852	.01269	4.9499	4.8237
2	ICV	4.9849	.01248	4.9577	4.8251
3	ICB	-.00022	-.00008	-.00030	.00008
4	LLS	.09792	.00080	.01978	.01741
5	ICSA	-.00664	.00972	-.00654	-.00379
6	ICSAB	.45533	.01066	.97988	-.00318
7	S99T000894	.21458	.01633	-.12471	.17523
8	S99T000894_D	.28793	.06293	-.19365	.34094
9	S99T000895	.74885	.17601	-.12001	.53692
10	S99T000895_D	.82995	.25359	-.21871	.70907
11	CCV run	4.9035	.01419	4.9169	4.7028
12	CCB 05-24-99	.00496	.00184	-.00047	.00333
13	S99T000896_L	4.5282	1.7663	-.12465	3.2903
14	S99T000896	1.1802	.34665	-.08300	.79532
15	S99T000896_D	1.0410	.30038	.06235	.88446
16	S99T000896_A	192.41	.86743	196.85	185.10
17	S99T000896_X	8.7032	3.2221	.06934	7.1402
18	S99T000896_AX	19655.	53.652	19801.	19452.
19	S99T000897	.81094	.14521	-.10330	.53252
20	S99T000897_D	.61185	.13078	-.17319	.55108
21	ICSA	-.00457	.01035	-.00545	-.00336
22	ICSAB	.45853	.01066	.98585	-.00257
23	CCV	4.9968	.01336	4.9652	4.8127
24	CCB	.00151	.00045	.00049	.00100

LABCORE Completed Worklist Report for Worklist# 29851

Analyst: bjg **Instrument:** ICPMS1 **Book#:** 990524-1

Method: LA-506-101 Rev/Mod A-1

Worklist Comment: ICP/MS AP-107 (DIRECT) Iso-U

Seq	Type	Sample#	R	A		Test	Matrix	Actual		Found	DL or Yield	Unit
1	ICV		0		@MSU-QC	U235	QC	0.000142		1.42e-04	100.000	% Recovery
1	ICV		0		@MSU-QC	U238	QC	0.020		1.96e-02	98.000	% Recovery
2	ICB		0		@MSU-QC	U233	QC	1		<1.20e-5		ug/mL
2	ICB		0		@MSU-QC	U234	QC	1		<1.20e-5		ug/mL
2	ICB		0		@MSU-QC	U235	QC	1		<1.20e-5		ug/mL
2	ICB		0		@MSU-QC	U236	QC	1		<1.60e-5		ug/mL
2	ICB		0		@MSU-QC	U238	QC	1		<1.20e-5		ug/mL
3	SAMPLE	S99T000890	0	D	@MSU-D1	U233-D1	LIQUID	N/A	<	2.436e-01	0.244	ug/mL
3	SAMPLE	S99T000890	0	D	@MSU-D1	U234-D1	LIQUID	N/A	<	2.436e-01	0.244	ug/mL
3	SAMPLE	S99T000890	0	D	@MSU-D1	U235-D1	LIQUID	N/A	<	2.436e-01	0.244	ug/mL
3	SAMPLE	S99T000890	0	D	@MSU-D1	U236-D1	LIQUID	N/A	<	3.248e-01	0.325	ug/mL
3	SAMPLE	S99T000890	0	D	@MSU-D1	U238-D1	LIQUID	N/A		5.089e+00	0.244	ug/mL
4	DUP	S99T000890	0	D	@MSU-D1	U233-D1	LIQUID	<2.44e-1		<2.44e-1		RPD
4	DUP	S99T000890	0	D	@MSU-D1	U234-D1	LIQUID	<2.44e-1		<2.44e-1		RPD
4	DUP	S99T000890	0	D	@MSU-D1	U235-D1	LIQUID	<2.44e-1		<2.44e-1		RPD
4	DUP	S99T000890	0	D	@MSU-D1	U236-D1	LIQUID	<3.25e-1		<3.25e-1		RPD
4	DUP	S99T000890	0	D	@MSU-D1	U238-D1	LIQUID	5.09e+00		5.14e+00	0.978	RPD
5	SAMPLE	S99T000891	0	D	@MSU-D1	U233-D1	LIQUID	N/A	<	2.436e-01	0.244	ug/mL
5	SAMPLE	S99T000891	0	D	@MSU-D1	U234-D1	LIQUID	N/A	<	2.436e-01	0.244	ug/mL
5	SAMPLE	S99T000891	0	D	@MSU-D1	U235-D1	LIQUID	N/A	<	2.436e-01	0.244	ug/mL
5	SAMPLE	S99T000891	0	D	@MSU-D1	U236-D1	LIQUID	N/A	<	3.248e-01	0.325	ug/mL
5	SAMPLE	S99T000891	0	D	@MSU-D1	U238-D1	LIQUID	N/A		9.941e+00	0.244	ug/mL
6	DUP	S99T000891	0	D	@MSU-D1	U233-D1	LIQUID	<2.44e-1		<2.44e-1		RPD
6	DUP	S99T000891	0	D	@MSU-D1	U234-D1	LIQUID	<2.44e-1		<2.44e-1		RPD
6	DUP	S99T000891	0	D	@MSU-D1	U235-D1	LIQUID	<2.44e-1		<2.44e-1		RPD
6	DUP	S99T000891	0	D	@MSU-D1	U236-D1	LIQUID	<3.25e-1		<3.25e-1		RPD
6	DUP	S99T000891	0	D	@MSU-D1	U238-D1	LIQUID	9.94e+00		9.45e+00	5.054	RPD
7	SAMPLE	S99T000892	0	D	@MSU-D1	U233-D1	LIQUID	N/A	<	2.436e-01	0.244	ug/mL
7	SAMPLE	S99T000892	0	D	@MSU-D1	U234-D1	LIQUID	N/A	<	2.436e-01	0.244	ug/mL
7	SAMPLE	S99T000892	0	D	@MSU-D1	U235-D1	LIQUID	N/A	<	2.436e-01	0.244	ug/mL
7	SAMPLE	S99T000892	0	D	@MSU-D1	U236-D1	LIQUID	N/A	<	3.248e-01	0.325	ug/mL
7	SAMPLE	S99T000892	0	D	@MSU-D1	U238-D1	LIQUID	N/A		9.590e+00	0.244	ug/mL
8	DUP	S99T000892	0	D	@MSU-D1	U233-D1	LIQUID	<2.44e-1		<2.44e-1		RPD
8	DUP	S99T000892	0	D	@MSU-D1	U234-D1	LIQUID	<2.44e-1		<2.44e-1		RPD
8	DUP	S99T000892	0	D	@MSU-D1	U235-D1	LIQUID	<2.44e-1		<2.44e-1		RPD
8	DUP	S99T000892	0	D	@MSU-D1	U236-D1	LIQUID	<3.25e-1		<3.25e-1		RPD
8	DUP	S99T000892	0	D	@MSU-D1	U238-D1	LIQUID	9.59e+00		9.69e+00	1.037	RPD
9	SPK-POST	S99T000892	0	D	@MSU-D1	U235-D1	LIQUID	0.000143		1.33e-04	93.007	% Recovery
9	SPK-POST	S99T000892	0	D	@MSU-D1	U238-D1	LIQUID	0.020		1.82e-02	91.000	% Recovery
10	SAMPLE	S99T000893	0	D	@MSU-D1	U233-D1	LIQUID	N/A	<	2.436e-01	0.244	ug/mL
10	SAMPLE	S99T000893	0	D	@MSU-D1	U234-D1	LIQUID	N/A	<	2.436e-01	0.244	ug/mL

Units shown for QC (BLK/BKG) may not reflect the actual units.

LABCORE Completed Worklist Report for Worklist# 29851

Seq	Type	Sample#	R	A		Test	Matrix	Actual		Found	DL or Yield	Unit
10	SAMPLE	S99T000893	0	D	@MSU-D1	U235-D1	LIQUID	N/A	<	2.436e-01	0.244	ug/mL
10	SAMPLE	S99T000893	0	D	@MSU-D1	U236-D1	LIQUID	N/A	<	3.248e-01	0.325	ug/mL
10	SAMPLE	S99T000893	0	D	@MSU-D1	U238-D1	LIQUID	N/A		9.639e+00	0.244	ug/mL
11	DUP	S99T000893	0	D	@MSU-D1	U233-D1	LIQUID	<2.44e-1		<2.44e-1		RPD
11	DUP	S99T000893	0	D	@MSU-D1	U234-D1	LIQUID	<2.44e-1		<2.44e-1		RPD
11	DUP	S99T000893	0	D	@MSU-D1	U235-D1	LIQUID	<2.44e-1		<2.44e-1		RPD
11	DUP	S99T000893	0	D	@MSU-D1	U236-D1	LIQUID	<3.25e-1		<3.25e-1		RPD
11	DUP	S99T000893	0	D	@MSU-D1	U238-D1	LIQUID	9.64e+00		9.76e+00	1.237	RPD
12	CCV		0		@MSU-QC	U235	QC	0.000142		1.41e-04	99.296	% Recovery
12	CCV		0		@MSU-QC	U238	QC	0.020		1.95e-02	97.500	% Recovery
13	CCB		0		@MSU-QC	U233	QC	1		<1.20e-5		ug/mL
13	CCB		0		@MSU-QC	U234	QC	1		<1.20e-5		ug/mL
13	CCB		0		@MSU-QC	U235	QC	1		<1.20e-5		ug/mL
13	CCB		0		@MSU-QC	U236	QC	1		<1.60e-5		ug/mL
13	CCB		0		@MSU-QC	U238	QC	1		<1.20e-5		ug/mL

Final page for worklist# 29851

Analyst Signature **Date**

Analyst Signature **Date**

Saul M. Pang 05/25/99

Reviewer Signature **Date**

Units shown for QC (BLK/BKG) may not reflect the actual units.

LABCORE Data Entry Template for Worklist# 29851

Analyst: BJG **Instrument:** ICPMS1 **Book#** 990524-1

Method: LA-506-101 **Rev/Mod** A-1

Worklist Comment: ICP/MS AP-107 (DIRECT) Iso-U

S	Type	Sample#	R	A	Test	Matrix	Group#	Project
1	ICV				@MSU-QC	QC		
2	ICB				@MSU-QC	QC		
3	SAMPLE	S99T000890	0	D	@MSU-D1	LIQUID	99000198	AP107 GRAB2
	Analytes Requested: U233-D1 , U234-D1 , U235-D1 , U236-D1 , U238-D1							
4	DUP	S99T000890	0	D	@MSU-D1	LIQUID		
5	SAMPLE	S99T000891	0	D	@MSU-D1	LIQUID	99000198	AP107 GRAB2
	Analytes Requested: U233-D1 , U234-D1 , U235-D1 , U236-D1 , U238-D1							
6	DUP	S99T000891	0	D	@MSU-D1	LIQUID		
7	SAMPLE	S99T000892	0	D	@MSU-D1	LIQUID	99000198	AP107 GRAB2
	Analytes Requested: U233-D1 , U234-D1 , U235-D1 , U236-D1 , U238-D1							
8	DUP	S99T000892	0	D	@MSU-D1	LIQUID		
9	SPK-POST	S99T000892	0	D	@MSU-D1	LIQUID		
10	SAMPLE	S99T000893	0	D	@MSU-D1	LIQUID	99000198	AP107 GRAB2
	Analytes Requested: U233-D1 , U234-D1 , U235-D1 , U236-D1 , U238-D1							
11	DUP	S99T000893	0	D	@MSU-D1	LIQUID		
12	CCV				@MSU-QC	QC		
13	CCB				@MSU-QC	QC		

Final page for worklist # 29851

Signature: [illegible] Date: 5-24-99

S99T000 890 - 893 .1-10ml - .05-10ml

Signature: D.F. Date: 20,301

Data Entry Comments:

SCANS = T890, T891, T892, T893

post spike = .02ml of 10ppm U STD

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

Analysis Report 05/24/99 09:53:35 page 1

Method: MS_TUNE Sample Name: ms-tune Operator: bjg
Comment:
Run Time: 05/24/99 09:52 Type: Unk Mode: INT Corr.Fact: 1.000000

Elem	In[115]
Line	115/pulse
Units	Cts/S
Avg	112400.
Stddev	1153.
%RSD	1.026
#1	112600.
#2	112600.
#3	113600.
#4	112700.
#5	112600.
#6	110700.
#7	109900.
#8	113300.
#9	112300.
#10	113200.

Validated by:
Sal M. Pang
05/25/99

B J Gaeke
5-24-99
AP-107
S99T000880-93
File # U0524A.TXT
W.C. # 29851

SIGNATURE ABOVE REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 181 TO 201.

Analysis Report 05/24/99 09:55:30 page 1

Method: ISOU Sample Name: BLANK Operator:
Comment:
Run Time: 05/24/99 09:54 Type: Std Mode: IR Corr.Fact: 1.000000

Elem	U_[233]	U_[234]	U_[235]	U_[236]	U_[238]
Line	233/pulse	234/pulse	235/pulse	236/pulse	238/pulse
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	4.970	4.372	4.847	5.459	5.711
Stddev	.605	.749	.780	.933	.495
%RSD	12.18	17.13	16.08	17.09	8.668
#1	5.901	3.755	5.686	5.793	6.008
#2	4.980	5.510	4.556	6.251	6.146
#3	5.105	3.722	5.105	4.254	4.892
#4	4.488	4.175	3.653	4.696	5.636
#5	4.379	4.700	5.234	6.302	5.875

Int. Std.	Ir[193]
Line	193/pulse
Units	Cts/S
Avg	4.7106
Stddev	.0500
%RSD	1.0605
#1	4.6604
#2	4.7189
#3	4.7015
#4	4.7909
#5	4.6812

Method : ISOU Standardzn Report 05/24/99 09:55:46 page 1

El Name	Slope	Y-int	Correlation	Date Stdized
U_[233]	583.3159	4.9705	1.0000000	05/24/99 09:55:28

Standard Name	Concentration Stated	Concentration Found	Difference Conc	Difference %	Signal (S)IR
Blank	0	0	0	0	4.9705
100ppb U	0.711	0.711	0	0	419.71

U [233]

0

(S)IR 470010

Concentration

El Name	Slope	Y-int	Correlation	Date Stdized
U_[234]	584.1573	4.3722	1.0000000	05/24/99 09:55:28

Standard Name	Concentration Stated	Concentration Found	Difference Conc	Difference %	Signal (S)IR
Blank	0	0	0	0	4.3722
100ppb U	0.711	0.711	0	0	419.71

U [234]

0

(S)IR 470010

Concentration

El Name	Slope	Y-int	Correlation	Date Stdized
U_[235]	583.4900	4.8467	1.0000000	05/24/99 09:55:28

Standard Name	Concentration Stated	Concentration Found	Difference Conc	Difference %	Signal (S)IR
Blank	0	0	0	0	4.8467
100ppb U	0.711	0.711	0	0	419.71

U [235]

0

(S)IR 470010

Concentration

El Name	Slope	Y-int	Correlation	Date Stdized
U_[236]	582.6282	5.4594	1.0000000	05/24/99 09:55:28

Standard Name	Concentration Stated	Concentration Found	Difference Conc	Difference %	Signal (S)IR
Blank	0	0	0	0	5.4594
100ppb U	0.711	0.711	0	0	419.71

U [236]

0

(S)IR 470010

Concentration

Method : ISOU Standardzn Report 05/24/99 09:55:46 page 2

El Name	Slope	Y-int	Correlation	Date Stdized
U_[238]	531.5433	5.7112	1.0000000	05/24/99 09:55:28

Standard	Concentration		Difference		Signal
Name	Stated	Found	Conc	%	(S)IR
Blank	0	0	0	0	5.7112
100ppb U	99.3	99.3	0	0	52788

U [238]

0

58070 U

(S)IR

Concentration

Analysis Report 05/24/99 09:59:16 page 1

Method: ISOU Sample Name: 100ppb U Operator:
Comment:
Run Time: 05/24/99 09:57 Type: Std Mode: IR Corr.Fact: 1.000000

Elem	U_[233]	U_[234]	U_[235]	U_[236]	U_[238]
Line	233/pulse	234/pulse	235/pulse	236/pulse	238/pulse
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	623.3	623.3	623.3	623.3	81570.
Stddev	13.4	13.4	13.4	13.4	1093.
%RSD	2.157	2.157	2.157	2.157	1.339
#1	638.2	638.2	638.2	638.2	80930.
#2	606.5	606.5	606.5	606.5	80940.
#3	613.7	613.7	613.7	613.7	81930.
#4	634.5	634.5	634.5	634.5	83330.
#5	623.6	623.6	623.6	623.6	80700.

Int. Std.	Ir[193]
Line	193/pulse
Units	Cts/S
Avg	4.1187
Stddev	.0345
%RSD	.83719
#1	4.0879
#2	4.0850
#3	4.1255
#4	4.1259
#5	4.1694

Method : ISOU Standardzn Report 05/24/99 10:00:12 page 1

El Name	Slope	Y-int	Correlation	Date Stdized
U_[233]	869.6851	4.9705	1.0000000	05/24/99 09:59:14

Standard Name	Concentration Stated	Concentration Found	Difference Conc	Difference %	Signal (S)IR
Blank	0	0	0	0	4.9705
100ppb U	0.711	0.711	0	0	623.32

U [233]
0
(S)IR 690010
Concentration

El Name	Slope	Y-int	Correlation	Date Stdized
U_[234]	870.5265	4.3722	1.0000000	05/24/99 09:59:14

Standard Name	Concentration Stated	Concentration Found	Difference Conc	Difference %	Signal (S)IR
Blank	0	0	0	0	4.3722
100ppb U	0.711	0.711	0	0	623.32

U [234]
0
(S)IR 690010
Concentration

El Name	Slope	Y-int	Correlation	Date Stdized
U_[235]	869.8592	4.8467	1.0000000	05/24/99 09:59:14

Standard Name	Concentration Stated	Concentration Found	Difference Conc	Difference %	Signal (S)IR
Blank	0	0	0	0	4.8467
100ppb U	0.711	0.711	0	0	623.32

U [235]
0
(S)IR 690010
Concentration

El Name	Slope	Y-int	Correlation	Date Stdized
U_[236]	868.9974	5.4594	1.0000000	05/24/99 09:59:14

Standard Name	Concentration Stated	Concentration Found	Difference Conc	Difference %	Signal (S)IR
Blank	0	0	0	0	5.4594
100ppb U	0.711	0.711	0	0	623.32

U [236]
0
(S)IR 690010
Concentration

Method : ISOU Standardzn Report 05/24/99 10:00:12 page 2

El Name	Slope	Y-int	Correlation	Date Stdized
U_[238]	821.3719	5.7112	1.0000000	05/24/99 09:59:14

Standard Name	Concentration Stated	Concentration Found	Difference Conc	Difference %	Signal (S)IR
Blank	0	0	0	0	5.7112
100ppb U	99.3	99.3	0	0	81568

U [238]

0

(S)IR 89730 UIO

Concentration

Analysis Report 05/24/99 10:06:03 page 1

Method: ISOU Sample Name: blank Operator: bjg
Comment: background
Run Time: 05/24/99 10:04 Type: Unk Mode: CONC Corr.Fact: 1.000000

Elem	U_[233]	U_[234]	U_[235]	U_[236]	U_[238]
Line	233/pulse	234/pulse	235/pulse	236/pulse	238/pulse
Units	ppb	ppb	ppb	ppb	ppb
Avg	.0009	.0010	.0012	.0003	.0012
Stddev	.0010	.0009	.0013	.0007	.0019
%RSD	116.2	95.63	103.4	206.7	162.0
#1	-.0007	.0001	.0010	.0009	.0034
#2	.0005	.0018	.0000	.0005	-.0008
#3	.0010	.0021	.0034	.0000	.0026
#4	.0019	.0005	.0007	-.0007	.0015
#5	.0017	.0002	.0012	.0009	-.0008

Int. Std.	Ir[193]
Line	193/pulse
Units	Cts/S
Avg	4.2296
Stddev	.0308
%RSD	.72837
#1	4.2247
#2	4.2394
#3	4.1843
#4	4.2296
#5	4.2699

Analysis Report 05/24/99 10:08:27 page 1

Method: ISOU Sample Name: icv Operator: bjg
Comment: iso-u lcs
Run Time: 05/24/99 10:07 Type: Unk Mode: CONC Corr.Fact: 1.000000

Elem	U_[233]	U_[234]	U_[235]	U_[236]	U_[238]
Line	233/pulse	234/pulse	235/pulse	236/pulse	238/pulse
Units	ppb	ppb	ppb	ppb	ppb
Avg	.0009	.0020	.1420	.0031	19.61
Stddev	.0008	.0013	.0034	.0009	.20
%RSD	90.44	67.97	2.376	30.99	.9990
#1	.0003	.0039	.1478	.0036	19.75
#2	.0022	.0018	.1417	.0014	19.89
#3	.0007	.0017	.1390	.0033	19.42
#4	.0013	.0024	.1406	.0037	19.53
#5	.0001	.0001	.1410	.0034	19.48

Int. Std.	Ir[193]
Line	193/pulse
Units	Cts/S
Avg	4.2375
Stddev	.0376
%RSD	.88794
#1	4.2016
#2	4.2022
#3	4.2746
#4	4.2788
#5	4.2304

Analysis Report 05/24/99 10:13:55 page 1

Method: ISOU Sample Name: icb Operator: bjg
Comment: 2% hno3
Run Time: 05/24/99 10:12 Type: Unk Mode: CONC Corr.Fact: 1.000000

Elem	U_[233]	U_[234]	U_[235]	U_[236]	U_[238]
Line	233/pulse	234/pulse	235/pulse	236/pulse	238/pulse
Units	ppb	ppb	ppb	ppb	ppb
Avg	.0006	.0016	.0009	.0001	.0013
Stddev	.0012	.0008	.0009	.0002	.0010
%RSD	219.3	48.66	104.2	375.7	77.78
#1	-.0007	.0013	.0005	.0002	.0018
#2	.0004	.0030	.0002	-.0001	.0020
#3	.0002	.0016	.0002	-.0002	.0016
#4	.0003	.0014	.0024	.0004	-.0005
#5	.0026	.0009	.0012	.0001	.0015

Int. Std.	Ir[193]
Line	193/pulse
Units	Cts/S
Avg	4.2778
Stddev	.0317
%RSD	.74120
#1	4.2519
#2	4.2950
#3	4.2819
#4	4.3189
#5	4.2410

Analysis Report 05/24/99 10:19:00 page 1

Method: ISOU Sample Name: s99t000890 Operator: bjg
Comment: 20301 df
Run Time: 05/24/99 10:17 Type: Unk Mode: CONC Corr.Fact: 1.000000

Elem	U_[233]	U_[234]	U_[235]	U_[236]	U_[238]
Line	233/pulse	234/pulse	235/pulse	236/pulse	238/pulse
Units	ppb	ppb	ppb	ppb	ppb
Avg	.0013	.0012	.0027	.0004	.2507
Stddev	.0007	.0011	.0010	.0004	.0063
%RSD	55.60	88.29	38.11	122.5	2.513
#1	.0012	.0028	.0035	.0001	.2424
#2	.0008	-.0002	.0033	.0001	.2584
#3	.0024	.0012	.0027	.0007	.2543
#4	.0005	.0011	.0010	.0010	.2465
#5	.0013	.0011	.0029	-.0001	.2518

Int. Std.	Ir[193]
Line	193/pulse
Units	Cts/S
Avg	4.1268
Stddev	.0442
%RSD	1.0707
#1	4.1621
#2	4.1300
#3	4.0519
#4	4.1328
#5	4.1569

Analysis Report 05/24/99 10:20:33 page 1

Method: ISOU Sample Name: s99t000890_d Operator: bjg
Comment: 20301 df
Run Time: 05/24/99 10:19 Type: Unk Mode: CONC Corr.Fact: 1.000000

Elem	U_[233]	U_[234]	U_[235]	U_[236]	U_[238]
Line	233/pulse	234/pulse	235/pulse	236/pulse	238/pulse
Units	ppb	ppb	ppb	ppb	ppb
Avg	.0009	.0022	.0033	.0004	.2534
Stddev	.0006	.0004	.0020	.0018	.0105
%RSD	67.54	20.12	60.65	481.9	4.129
#1	.0018	.0015	.0067	-.0001	.2662
#2	.0007	.0022	.0034	.0017	.2440
#3	.0003	.0020	.0027	-.0011	.2513
#4	.0005	.0026	.0026	-.0014	.2622
#5	.0013	.0026	.0013	.0028	.2431

Int. Std.	Ir[193]
Line	193/pulse
Units	Cts/S
Avg	3.9956
Stddev	.0464
%RSD	1.1612
#1	4.0299
#2	4.0483
#3	3.9830
#4	3.9878
#5	3.9289

05/24/99 11:02 FAX 013

Analysis Report 05/24/99 10:23:25 page 1

Method: ISOU Sample Name: s99t000891 Operator: bjg
Comment: 20301 df
Run Time: 05/24/99 10:22 Type: Unk Mode: CONC Corr.Fact: 1.000000

Elem	U_[233]	U_[234]	U_[235]	U_[236]	U_[238]
Line	233/pulse	234/pulse	235/pulse	236/pulse	238/pulse
Units	ppb	ppb	ppb	ppb	ppb
Avg	.0026	.0017	.0061	.0006	.4897
Stddev	.0008	.0011	.0024	.0016	.0179
%RSD	31.71	67.69	39.12	262.0	3.654
#1	.0024	.0018	.0027	-.0001	.5040
#2	.0034	.0025	.0058	-.0013	.5042
#3	.0021	.0026	.0094	.0018	.4951
#4	.0034	.0017	.0065	.0027	.4614
#5	.0016	-.0002	.0059	-.0001	.4837

Int. Std.	Ir[193]
Line	193/pulse
Units	Cts/S
Avg	3.6682
Stddev	.1086
%RSD	2.9606
#1	3.5267
#2	3.5824
#3	3.7563
#4	3.7720
#5	3.7035

Analysis Report 05/24/99 10:27:10 page 1

Method: ISOU Sample Name: s99t000891_d Operator: bjg
Comment: 20301 df
Run Time: 05/24/99 10:25 Type: Unk Mode: CONC Corr.Fact: 1.000000

Elem	U_[233]	U_[234]	U_[235]	U_[236]	U_[238]
Line	233/pulse	234/pulse	235/pulse	236/pulse	238/pulse
Units	ppb	ppb	ppb	ppb	ppb
Avg	.0019	.0011	.0047	.0008	.4653
Stddev	.0014	.0012	.0008	.0014	.0220
%RSD	72.11	102.7	16.28	170.7	4.721
#1	.0032	.0003	.0049	.0008	.4686
#2	.0027	.0013	.0056	-.0009	.4525
#3	.0007	-.0001	.0037	.0013	.5023
#4	.0026	.0013	.0050	.0000	.4542
#5	.0001	.0029	.0041	.0029	.4489

Int. Std.	Ir[193]
Line	193/pulse
Units	Cts/S
Avg	3.6595
Stddev	.0470
%RSD	1.2839
#1	3.6675
#2	3.6076
#3	3.6497
#4	3.7340
#5	3.6387

Analysis Report 05/24/99 10:30:04 page 1

Method: ISOU Sample Name: s99t000892 Operator: bjg
Comment: 20301 df
Run Time: 05/24/99 10:28 Type: Unk Mode: CONC Corr.Fact: 1.000000

Elem	U_[233]	U_[234]	U_[235]	U_[236]	U_[238]
Line	233/pulse	234/pulse	235/pulse	236/pulse	238/pulse
Units	ppb	ppb	ppb	ppb	ppb
Avg	.0008	.0021	.0052	.0009	.4724
Stddev	.0009	.0007	.0024	.0020	.0188
%RSD	121.0	33.32	45.87	209.2	3.974
#1	.0020	.0027	.0057	.0001	.4596
#2	.0005	.0027	.0023	.0021	.4725
#3	.0004	.0011	.0035	.0000	.4488
#4	.0013	.0018	.0060	-.0012	.4946
#5	-.0004	.0025	.0084	.0038	.4864

Int. Std.	Ir[193]
Line	193/pulse
Units	Cts/S
Avg	3.6733
Stddev	.0515
%RSD	1.4030
#1	3.7120
#2	3.5870
#3	3.6877
#4	3.7113
#5	3.6686

Analysis Report 05/24/99 10:32:54 page 1

Method: ISOU Sample Name: s99t000892_d Operator: bjg
Comment: 20301 df
Run Time: 05/24/99 10:31 Type: Unk Mode: CONC Corr.Fact: 1.000000

Elem	U_[233]	U_[234]	U_[235]	U_[236]	U_[238]
Line	233/pulse	234/pulse	235/pulse	236/pulse	238/pulse
Units	ppb	ppb	ppb	ppb	ppb
Avg	.0019	.0016	.0040	.0002	.4773
Stddev	.0001	.0015	.0014	.0013	.0252
%RSD	4.096	98.07	35.64	650.2	5.277
#1	.0019	.0012	.0027	.0004	.4490
#2	.0019	.0042	.0037	.0020	.5099
#3	.0018	.0014	.0055	-.0013	.4830
#4	.0020	.0005	.0056	-.0009	.4897
#5	.0019	.0005	.0027	.0008	.4551

Int. Std.	Ir[193]
Line	193/pulse
Units	Cts/S
Avg	3.6717
Stddev	.0702
%RSD	1.9119
#1	3.6954
#2	3.6054
#3	3.5916
#4	3.7129
#5	3.7531

Analysis Report 05/24/99 10:35:51 page 1

Method: ISOU Sample Name: s99t000892_a Operator: bjg
Comment: 20301 df
Run Time: 05/24/99 10:34 Type: Unk Mode: CONC Corr.Fact: 1.000000

Elem	U_[233]	U_[234]	U_[235]	U_[236]	U_[238]
Line	233/pulse	234/pulse	235/pulse	236/pulse	238/pulse
Units	ppb	ppb	ppb	ppb	ppb
Avg	.0020	.0031	.1327	.0037	18.66
Stddev	.0012	.0015	.0078	.0018	.50
%RSD	58.24	49.27	5.856	48.15	2.657
#1	.0040	.0054	.1371	.0040	19.00
#2	.0014	.0018	.1370	.0060	18.91
#3	.0009	.0017	.1355	.0039	18.83
#4	.0022	.0036	.1349	.0038	17.79
#5	.0017	.0030	.1189	.0010	18.74

Int. Std.	Ir[193]
Line	193/pulse
Units	Cts/S
Avg	3.5998
Stddev	.0628
%RSD	1.7454
#1	3.6812
#2	3.5589
#3	3.5681
#4	3.5386
#5	3.6522

Analysis Report 05/24/99 10:42:21 page 1

Method: ISOU Sample Name: s99t000893 Operator: bjg
Comment: 20301 df
Run Time: 05/24/99 10:41 Type: Unk Mode: CONC Corr.Fact: 1.000000

Elem	U_[233]	U_[234]	U_[235]	U_[236]	U_[238]
Line	233/pulse	234/pulse	235/pulse	236/pulse	238/pulse
Units	ppb	ppb	ppb	ppb	ppb
Avg	.0009	.0007	.0052	.0013	.4748
Stddev	.0012	.0008	.0011	.0013	.0146
%RSD	131.3	116.5	21.06	98.73	3.068
#1	.0023	.0019	.0066	.0020	.4962
#2	-.0002	-.0005	.0054	.0013	.4659
#3	.0019	.0007	.0037	.0014	.4782
#4	.0011	.0010	.0056	-.0008	.4761
#5	-.0004	.0006	.0046	.0028	.4576

Int. Std.	Ir[193]
Line	193/pulse
Units	Cts/S
Avg	3.6546
Stddev	.0757
%RSD	2.0703
#1	3.7454
#2	3.6614
#3	3.5381
#4	3.6432
#5	3.6849

Analysis Report 05/24/99 10:45:49 page 1

Method: ISOU Sample Name: s99t000893_d Operator: bjg
Comment: 20301 df
Run Time: 05/24/99 10:44 Type: Unk Mode: CONC Corr.Fact: 1.000000

Elem	U_[233]	U_[234]	U_[235]	U_[236]	U_[238]
Line	233/pulse	234/pulse	235/pulse	236/pulse	238/pulse
Units	ppb	ppb	ppb	ppb	ppb
Avg	.0007	.0025	.0046	.0003	.4808
Stddev	.0012	.0009	.0015	.0009	.0094
%RSD	173.8	35.25	32.99	317.0	1.961
#1	.0006	.0039	.0037	.0009	.4709
#2	-.0010	.0026	.0032	.0001	.4914
#3	.0016	.0021	.0039	-.0012	.4760
#4	.0020	.0019	.0067	.0011	.4751
#5	.0001	.0018	.0058	.0005	.4903

Int. Std.	Ir[193]
Line	193/pulse
Units	Cts/S
Avg	3.6318
Stddev	.0613
%RSD	1.6875
#1	3.5426
#2	3.6215
#3	3.7131
#4	3.6505
#5	3.6312

Analysis Report 05/24/99 10:48:36 page 1

Method: ISOU Sample Name: ccv Operator: bjg
Comment: iso-u lcs
Run Time: 05/24/99 10:47 Type: Unk Mode: CONC Corr.Fact: 1.000000

Elem	U_[233]	U_[234]	U_[235]	U_[236]	U_[238]
Line	233/pulse	234/pulse	235/pulse	236/pulse	238/pulse
Units	ppb	ppb	ppb	ppb	ppb
Avg	.0015	.0022	.1406	.0040	19.53
Stddev	.0007	.0007	.0073	.0018	.74
%RSD	47.68	33.09	5.194	44.45	3.796
#1	.0017	.0026	.1404	.0062	19.28
#2	.0007	.0022	.1458	.0017	20.53
#3	.0017	.0012	.1485	.0046	19.76
#4	.0025	.0021	.1386	.0027	19.60
#5	.0009	.0032	.1297	.0050	18.49

Int. Std.	Ir[193]
Line	193/pulse
Units	Cts/S
Avg	3.7439
Stddev	.0711
%RSD	1.8978
#1	3.7875
#2	3.6602
#3	3.7110
#4	3.7188
#5	3.8418

Analysis Report 05/24/99 10:55:31 page 1

Method: ISOU Sample Name: ccb Operator: bjg
Comment: 2% hno3
Run Time: 05/24/99 10:54 Type: Unk Mode: CONC Corr.Fact: 1.000000

Elem	U_[233]	U_[234]	U_[235]	U_[236]	U_[238]
Line	233/pulse	234/pulse	235/pulse	236/pulse	238/pulse
Units	ppb	ppb	ppb	ppb	ppb
Avg	.0011	.0015	.0002	.0007	.0013
Stddev	.0013	.0017	.0008	.0007	.0016
%RSD	120.7	110.6	434.0	97.32	129.4
#1	.0010	.0035	.0011	.0010	.0009
#2	.0032	.0017	.0009	.0015	-.0007
#3	-.0001	.0025	-.0004	.0010	.0010
#4	.0000	-.0008	-.0001	.0003	.0038
#5	.0013	.0005	-.0006	-.0003	.0013

Int. Std.	Ir[193]
Line	193/pulse
Units	Cts/S
Avg	3.8038
Stddev	.1199
%RSD	3.1510
#1	3.7088
#2	3.8230
#3	3.6538
#4	3.9081
#5	3.9251

5-24-99

LABCORE Completed Worklist Report for Worklist# 29818

Analyst: pjm **Instrument:** CARB2 **Book#:** _____

Method: LA-342-100 Rev/Mod F-2

Worklist Comment: AP107 FOR @TICTOC1 RTS

Seq	Type	Sample#	R	A	Test	Matrix	Actual	Found	DL or Yield	Unit
1	BLNK			0	@TICTOC1 TIC-02	LIQUID	1	5.00E-1	0.500	ug/mL
1	BLNK			0	@TICTOC1 TOC-02	LIQUID	1	1.70E+0	1.700	ug/mL
2	STD			0	@TICTOC1 TIC-02	LIQUID	6.02E+02	6.02E+2	100.000	% Recovery
2	STD			0	@TICTOC1 TOC-02	LIQUID	3.00E+03	2.86E+3	95.333	% Recovery
3	SAMPLE	S99T000896		0	@TICTOC1 TIC-02	LIQUID	N/A	1.63E+03	5.000	ug/mL
3	SAMPLE	S99T000896		0	@TICTOC1 TOC-02	LIQUID	N/A	4.93E+02	40.000	ug/mL
4	DUP	S99T000896		0	@TICTOC1 TIC-02	LIQUID	1.63E+3	1.92E+3	16.338	RPD
4	DUP	S99T000896		0	@TICTOC1 TOC-02	LIQUID	4.94E+2	6.00E+2	19.378	RPD
5	TRIPL	S99T000896		0	@TICTOC1 TIC-02	LIQUID	1.63E+3	1.91E+3	15.819	RPD
5	TRIPL	S99T000896		0	@TICTOC1 TOC-02	LIQUID	4.94E+2	5.74E+2	14.981	RPD
6	SPK	S99T000896		0	@TICTOC1 TIC-02	LIQUID	1.00E+02	1.20E+02	120.000	% Recovery
6	SPK	S99T000896		0	@TICTOC1 TOC-02	LIQUID	1.00E+02	9.84E+01	98.400	% Recovery
7	SAMPLE	S99T000897		0	@TICTOC1 TIC-02	LIQUID	N/A	1.94E+03	5.000	ug/mL
7	SAMPLE	S99T000897		0	@TICTOC1 TOC-02	LIQUID	N/A	5.85E+02	40.000	ug/mL
8	DUP	S99T000897		0	@TICTOC1 TIC-02	LIQUID	1.94E+3	1.95E+3	0.514	RPD
8	DUP	S99T000897		0	@TICTOC1 TOC-02	LIQUID	5.85E+2	5.91E+2	1.020	RPD

Final page for worklist# 29818

Analyst Signature Date

Mary Franz 6/1/99
Analyst Signature Date

6/1/99
Reviewer Signature Date

Units shown for QC (BLK/BKG) may not reflect the actual units.

LABCORE Data Entry Template for Worklist# 29818

Analyst: BM **Instrument:** CARB2 **Book#** TIC 25N12E
TOC 34N12A

Method: LA-342-100 **Rev/Mod** F-2

Worklist Comment: AP107 FOR @TICTOC1 RTS

S	Type	Sample#	R	A	Test	Matrix	Group#	Project
1	BLNK				@TICTOC1	LIQUID		
2	STD				@TICTOC1	LIQUID		
3	SAMPLE	S99T000896	0		@TICTOC1	LIQUID	99000198	AP107 GRAB2
	Analytes Requested:				TIC-02 , TOC-02			
4	DUP	S99T000896	0		@TICTOC1	LIQUID		
5	SPK	S99T000896	0		@TICTOC1	LIQUID		
6	SAMPLE	S99T000897	0		@TICTOC1	LIQUID	99000198	AP107 GRAB2
	Analytes Requested:				TIC-02 , TOC-02			
7	DUP	S99T000897	0		@TICTOC1	LIQUID		

Final page for worklist # 29818

RMCown 5/25/99
Signature Date

Mary Jones 6/1/99
Signature Date

Data Entry Comments: Ran S99T000896 in triplicate

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

WORKBOOK PAGE: BLANK1

TIC/TOC : LA-342-100 (F-2) LIQUIDS

			TIC	TOC
Type	Sample Size in mL	(SS)	0.0000	0.0000
BLNK	Dilution Factor	(DF)	1	1
Work List	µg of Carbon in Sample	(C1)	5.4	19.4
29818	µg of Carbon from Baseline	(C2)	4.9	21.1

Test Code	@TICTOC1
Matrix	LIQUID
Batch Number	99002143
Rerun	0
Sample Prep	N/A
Sample #	BLNK
Instrument Code	CARB2
Prepared By	MF
Chemist	MJL
Analyst	PJM
Date Complete	06/01/99
Analysis Date	05/25/99
Analysis Time	04:30 PM
Sample Point	AP107

µg of Carbon = |C1-C2|

	TIC	TOC
Method Detection Limit in µg/mL	5	40
µg of Carbon	5.00E-01	1.70E+00

Data Entered By:	MF	Date:	06/01/99
Signature of Chemist:	NA	Date:	

BLANK.WB1 REV 1.0 342100ML

WORKBOOK PAGE: STD2

TIC/TOC : LA-342-100 (F-2) LIQUIDS

			TIC	TOC
Type	Sample Size in mL	(SS)	1.0000	0.2000
STD	Dilution Factor	(DF)	1	1
Work List	Final Coulometer Reading in µg	(C1)	606.8	593.5
29818	µg of Carbon from Baseline	(C2)	4.9	21.1
Test Code	Standard Book Number		25N12E	34N12A
@TICTOC1	Standard Value (µg/ml)		602	3000

Matrix	LIQUID
Batch Number	99002143
Rerun	0
Sample Prep	N/A
Sample #	STD
Instrument Code	CARB2
Prepared By	MF
Chemist	MJL
Analyst	PJM
Date Complete	06/01/99
Analysis Date	05/25/99
Analysis Time	04:30 PM
Sample Point	AP107

QC Actual in µg/mL = Standard Value (µg/mL)

QC Found in µg/mL = (C1 - C2) * DF / SS

QC Found in µg/mL for TIC = 5 if C1 < C2

QC Found in µg/mL for TOC = 40 if C1 < C2

% Recovery = QC Found / QC Actual * 100

	TIC	TOC
Method Detection Limit in µg/mL	5	40
QC Actual in µg/mL	6.02E+02	3.00E+03
QC Found in µg/mL	6.02E+02	2.86E+03
Percent Standard Recovery	100.0	95.4

Data Entered By:	MF	Date:	06/01/99
Signature of Chemist:	NA	Date:	

STANDARD.WB1 REV 1.0 342100ML

WORKBOOK PAGE: SAM3

TIC/TOC : LA-342-100 (F-2) LIQUIDS

			TIC	TOC
Type	Sample Size in mL	(SS)	0.2000	0.2000
SAMPLE	Dilution Factor	(DF)	1	1
Work List	µg of Carbon in Sample	(C1)	331.1	119.8
29818	µg of Carbon from Baseline	(C2)	4.9	21.1
Test Code				
@TICTOC1				

Matrix	LIQUID
Batch Number	99002143
Rerun	0
Sample Prep	N/A
Sample #	S99T000896
Instrument Code	CARB2
Prepared By	MF
Chemist	MJL
Analyst	PJM
Date Complete	06/01/99
Analysis Date	05/25/99
Analysis Time	04:30 PM
Sample Point	AP107

µg of Carbon/mL = (C1-C2) * DF / SS
µg of Carbon/mL for TIC = 5 if C1 < C2
µg of Carbon/mL for TOC = 40 if C1 < C2

	TIC	TOC
Method Detection Limit in µg/mL	5	40
µg of Carbon/mL	1.63E+03	4.93E+02

Data Entered By:	MF	Date:	06/01/99
Signature of Chemist:	NA	Date:	

SAMPLE.WB1 REV 1.0 342100ML

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WORKBOOK PAGE: DUP4

TIC/TOC : LA-342-100 (F-2) LIQUIDS

			TIC	TOC
Type	Sample Size in mL	(SS)	0.2000	0.2000
DUP	Dilution Factor	(DF)	1	1
Work List	µg of Carbon in Sample	(C1)	389.6	141
29818	µg of Carbon from Baseline	(C2)	4.9	21.1
Test Code	Known µg of C from Original Sample		1.63E+3	4.94E+2
@TICTOC1				

Matrix	LIQUID
Batch Number	99002143
Rerun	0
Sample Prep	N/A
Sample #	S99T000896
Instrument Code	CARB2
Prepared By	MF
Chemist	MJL
Analyst	PJM
Date Complete	06/01/99
Analysis Date	05/25/99
Analysis Time	04:30 PM
Sample Point	AP107

µg of Carbon/mL = (C1-C2) * DF / SS
µg of Carbon/mL for TIC = 5 if C1 < C2
µg of Carbon/mL for TOC = 40 if C1 < C2

	TIC	TOC
Method Detection Limit in µg/mL	5	40
µg of Carbon/mL	1.92E+03	6.00E+02

Data Entered By:	MF	Date:	06/01/99
Signature of Chemist:	NA	Date:	

SAMPLE.WB1 REV 1.0 342100ML

WORKBOOK PAGE: TRIPL5

TIC/TOC : LA-342-100 (F-2) LIQUIDS

			TIC	TOC
Type	Sample Size in mL	(SS)	0.2000	0.2000
TRIPL	Dilution Factor	(DF)	1	1
Work List	µg of Carbon in Sample	(C1)	386.4	135.9
29818	µg of Carbon from Baseline	(C2)	4.9	21.1
Test Code	Known µg of C from Original Sample		1.63E+3	4.94E+2
@TICTOC1	Duplicate Result		1.92E+3	6.00E+2

Matrix	LIQUID
Batch Number	99002143
Rerun	0
Sample Prep	N/A
Sample #	S99T000896
Instrument Code	CARB2
Prepared By	MF
Chemist	MJL
Analyst	PJM
Date Complete	06/01/99
Analysis Date	05/25/99
Analysis Time	04:30 PM
Sample Point	AP107

µg of Carbon/mL = (C1-C2) * DF / SS
µg of Carbon/mL for TIC = 5 if C1 < C2
µg of Carbon/mL for TOC = 40 if C1 < C2

	TIC	TOC
Method Detection Limit in µg/mL	5	40
µg of Carbon/mL	1.91E+03	5.74E+02

Data Entered By:	MF	Date:	06/01/99
Signature of Chemist:	NA	Date:	

SAMPLE.WB1 REV 1.0 342100ML

WORKBOOK PAGE: SPIKE6

TIC/TOC : LA-342-100 (F-2) LIQUIDS

Type	Sample Vial Data		TIC	TOC
SPK	Sample Volume in mL	(SS)	0.2000	0.2000
Work List	Final Coulometer Reading in µg	(C1)	331.1	119.8
29818	Spiked Vial Data			
Test Code	Sample Volume in mL	(SPK SS)	0.2000	0.2000
@TICTOC1	Amount of Spike Std. in mL	(SPK VOL)	0.500	0.100
Matrix	Final Coulometer Reading in µg	(C2)	693.1	415
LIQUID	Spike Book Number		25N12E	34N12A
Batch Number	Spike Standard Value in µg/ml	(SPK CONC)	602	3000
99002143	µg C in baseline	(BL)	4.9	21.1

Rerun	0
Sample Prep	N/A
Sample #	S99T000896
Instrument Code	CARB2
Prepared By	MF
Chemist	MJL
Analyst	PJM
Date Complete	06/01/99
Analysis Date	05/25/99
Analysis Time	04:30 PM
Sample Point	AP107

Percent Spike Recovery = ((C2-BL) - (C1-BL) * (SPK SS) / SS) / ((SPK CONC) * (SPK VOL)) * 100

QC Actual in µg/mL = Spike Value (µg/mL)

QC Found in µg/mL = (Percent Spike Recovery)*(QC Actual) / 100

	TIC	TOC
QC Actual in µg/mL	6.02E+02	3.00E+03
QC Found in µg/mL	7.24E+02	2.95E+03
Percent Spike Recovery	120.3	98.4

Data Entered By:	MF	Date:	06/01/99
Signature of Chemist:	NA	Date:	

SPIKE.WB1 REV 1.3 342100ML

WORKBOOK PAGE: SAM7

TIC/TOC : LA-342-100 (F-2) LIQUIDS

			TIC	TOC
Type	Sample Size in mL	(SS)	0.2000	0.2000
SAMPLE	Dilution Factor	(DF)	1	1
Work List	µg of Carbon in Sample	(C1)	393.4	138.2
29818	µg of Carbon from Baseline	(C2)	4.9	21.1
Test Code				
@TICTOC1				

Matrix	LIQUID
Batch Number	99002143
Rerun	0
Sample Prep	N/A
Sample #	S99T000897
Instrument Code	CARB2
Prepared By	MF
Chemist	MJL
Analyst	PJM
Date Complete	06/01/99
Analysis Date	05/25/99
Analysis Time	04:30 PM
Sample Point	AP107

µg of Carbon/mL = (C1-C2) * DF / SS
µg of Carbon/mL for TIC = 5 if C1 < C2
µg of Carbon/mL for TOC = 40 if C1 < C2

	TIC	TOC
Method Detection Limit in µg/mL	5	40
µg of Carbon/mL	1.94E+03	5.85E+02

Data Entered By:	MF	Date:	06/01/99
Signature of Chemist:	N/A	Date:	

SAMPLE.WB1 REV 1.0 342100ML

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WORKBOOK PAGE: DUP8

TIC/TOC : LA-342-100 (F-2) LIQUIDS

			TIC	TOC
Type	Sample Size in mL	(SS)	0.2000	0.2000
DUP	Dilution Factor	(DF)	1	1
Work List	µg of Carbon in Sample	(C1)	395.7	139.2
29818	µg of Carbon from Baseline	(C2)	4.9	21.1
Test Code	Known µg of C from Original Sample		1.94E+3	5.85E+2
@TICTOC1				

Matrix	LIQUID
Batch Number	99002143
Rerun	0
Sample Prep	N/A
Sample #	S99T000897
Instrument Code	CARB2
Prepared By	MF
Chemist	MJL
Analyst	PJM
Date Complete	06/01/99
Analysis Date	05/25/99
Analysis Time	04:30 PM
Sample Point	AP107

µg of Carbon/mL = (C1-C2) * DF / SS
µg of Carbon/mL for TIC = 5 if C1 < C2
µg of Carbon/mL for TOC = 40 if C1 < C2

	TIC	TOC
Method Detection Limit in µg/mL	5	40
µg of Carbon/mL	1.95E+03	5.90E+02

Data Entered By:	MF	Date:	06/01/99
Signature of Chemist:	NA	Date:	

SAMPLE.WB1 REV 1.0 342100ML

P

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

Sample: BASE-2 Date: 05/25/99 Time: 09:15:31

Sample Size = 1 uL
Dil Factor = 1
Blank ID # = BASE-2
Blank Value = N/A

Analyst : PJ MCCOWN
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.08	0.00	0.00
2	0.51	0.20	100.00
3	1.01	0.50	60.00
4	1.50	0.90	44.44
5	2.00	1.10	18.18
6	2.50	1.40	21.43
7	3.00	1.70	17.65
8	3.50	1.90	10.53
9	4.00	2.10	9.52
10	4.50	2.40	12.50
11	5.00	2.60	7.69
12	5.50	2.80	7.14
13	6.00	3.10	9.68
14	6.50	3.20	3.13
15	7.00	3.40	5.88
16	7.50	3.60	5.56
17	8.00	3.90	7.69
18	8.50	4.00	2.50
19	9.00	4.30	6.98
20	9.50	4.40	2.27
21	10.00	4.60	4.35
22	10.50	4.90	6.12

BLANK VALUE = 4.9 micrograms carbon
BLANK FACTOR = 4.9 / 10.49811 = +4.7E-01 ug/min Carbon

Sample Run By: PJ McCown 5/25/99
PJ MCCOWN 00000

SIGNATURE ABOVE REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 212 TO 229.

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

Sample: BASE-2 Date: 05/25/99 Time: 09:28:05

Sample Size = 1 uL
Dil Factor = 1
Blank ID # = BASE-2
Blank Value = N/A

Analyst : PJ MCCOWN
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.08	0.00	0.00
2	0.51	0.20	100.00
3	1.01	0.40	50.00
4	1.50	0.90	55.56
5	2.00	3.10	70.97
6	2.50	6.90	55.07
7	3.00	11.00	37.27
8	3.50	13.10	16.03
9	4.00	14.80	11.49
10	4.50	15.70	5.73
11	5.00	16.50	4.85
12	5.50	17.20	4.07
13	6.00	17.80	3.37
14	6.50	18.40	3.26
15	7.00	18.90	2.65
16	7.50	19.30	2.07
17	8.00	19.80	2.53
18	8.50	20.10	1.49
19	9.00	20.40	1.47
20	9.50	20.60	0.97
21	10.00	21.00	1.90
22	10.50	21.10	0.47

BLANK VALUE = 21.1 micrograms carbon
BLANK FACTOR = 21.1 / 10.49902 = +2.01E+00 ug/min Carbon

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

Sample Run By: PJ McCown 5/25/99
PJ MCCOWN 00000

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: STD-2 Date: 05/25/99 Time: 09:43:36

Sample Size = 1000 uL
Dil Factor = 1
Blank ID # =
Blank Value = .47 ug/minute C

Analyst : PJ MCCOWN
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.08	0.00	0.00
2	0.51	0.40	100.00
3	1.01	1.10	63.64
4	1.51	30.10	96.35
5	2.00	146.80	79.50
6	2.50	305.30	51.92
7	3.00	435.10	29.83
8	3.50	518.80	16.13
9	4.00	562.30	7.74
10	4.50	583.00	3.55
11	5.00	592.00	1.52
12	5.50	596.30	0.72
13	6.00	599.00	0.45
14	6.50	600.50	0.25
15	7.00	601.80	0.22
16	7.50	602.90	0.18
17	8.00	603.70	0.13
18	8.50	604.50	0.13
19	9.00	605.10	0.10
20	9.50	605.80	0.12
21	10.00	606.30	0.08
22	10.50	606.80	0.08

USER INPUT BLANK VALUE
BLANK VALUE = 4.934541 micrograms carbon
BLANK FACTOR = 4.934541 / 10.49902 = +4.7E-01 ug/min Carbon

SAMPLE RESULTS:
(606.8 - 4.934914)(1)/(1000) = +6.019E-01 g/L Carbon
(606.8 - 4.934914)(1)/(1000)(12) = +5.016E-02 Molar Carbon

Sample Run By: PJ McCown 5/25/99
PJ MCCOWN 00000

1.0 mL 25N12E

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: STD-2 Date: 05/25/99 Time: 09:59:51

Sample Size = 200 uL
Dil Factor = 1
Blank ID # =
Blank Value = 2.01 ug/minute C

Analyst : PJ MCCOWN
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.08	0.00	0.00
2	0.51	0.30	100.00
3	1.00	0.70	57.14
4	1.50	1.20	41.67
5	2.00	3.80	68.42
6	2.50	42.00	90.95
7	3.00	190.00	77.89
8	3.50	376.40	49.52
9	4.00	486.90	22.69
10	4.50	540.30	9.88
11	5.00	564.60	4.30
12	5.50	575.90	1.96
13	6.00	581.10	0.89
14	6.50	584.50	0.58
15	7.00	586.50	0.34
16	7.50	588.10	0.27
17	8.00	589.40	0.22
18	8.50	590.50	0.19
19	9.00	591.30	0.14
20	9.50	592.10	0.14
21	10.00	592.80	0.12
22	10.50	593.50	0.12

USER INPUT BLANK VALUE
BLANK VALUE = 21.10304 micrograms carbon
BLANK FACTOR = 21.10304 / 10.49902 = +2.0E+00 ug/min Carbon

SAMPLE RESULTS:
(593.5 - 21.10095)(1)/(200) = +2.862E+00 g/L Carbon
(593.5 - 21.10095)(1)/(200)(12) = +2.385E-01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: PJMcCown 5/25/99
PJ MCCOWN 00000
.200mL 34N12A

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: BLNK-2 Date: 05/25/99 Time: 10:21:33

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .47 ug/minute C

Analyst : PJ MCCOWN
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.08	0.00	0.00
2	0.51	0.20	100.00
3	1.01	0.50	60.00
4	1.51	0.80	37.50
5	2.00	1.10	27.27
6	2.50	1.30	15.38
7	3.00	1.60	18.75
8	3.50	1.90	15.79
9	4.00	2.10	9.52
10	4.50	2.40	12.50
11	5.00	2.60	7.69
12	5.50	2.90	10.34
13	6.00	3.20	9.37
14	6.50	3.40	5.88
15	7.00	3.60	5.56
16	7.50	3.90	7.69
17	8.00	4.10	4.88
18	8.50	4.40	6.82
19	9.00	4.60	4.35
20	9.50	4.90	6.12
21	10.00	5.10	3.92
22	10.50	5.40	5.56

USER INPUT BLANK VALUE
BLANK VALUE = 4.934541 micrograms carbon
BLANK FACTOR = 4.934541 / 10.49902 = +4.7E-01 ug/min Carbon

SAMPLE RESULTS:
(5.4 - 4.934541)(1)/(1) = +4.7E-01 g/L Carbon
(5.4 - 4.934541)(1)/(1)(12) = +3.9E-02 Molar Carbon

Sample Run By: PJ MCCOWN 00000

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: BLNK-2 Date: 05/25/99 Time: 10:39:32

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 2.01 ug/minute C

Analyst : PJ MCCOWN
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.08	0.00	0.00
2	0.51	0.30	100.00
3	1.01	0.60	50.00
4	1.51	1.00	40.00
5	2.00	3.20	68.75
6	2.50	7.30	56.16
7	3.00	10.40	29.81
8	3.50	12.60	17.46
9	4.00	13.80	8.70
10	4.50	14.70	6.12
11	5.00	15.20	3.29
12	5.50	15.80	3.80
13	6.00	16.30	3.07
14	6.50	16.80	2.98
15	7.00	17.20	2.33
16	7.50	17.60	2.27
17	8.00	18.00	2.22
18	8.50	18.30	1.64
19	9.00	18.70	2.14
20	9.50	18.90	1.06
21	10.00	19.10	1.05
22	10.50	19.40	1.55

USER INPUT BLANK VALUE
BLANK VALUE = 21.10304 micrograms carbon
BLANK FACTOR = 21.10304 / 10.49902 = +2.0E+00 ug/min Carbon

SAMPLE RESULTS:
(19.4 - 21.10304)(1)/(1) = < 5.00 E-3 g/L Carbon
(19.4 - 21.10304)(1)/(1)(12) = < 4.17 E-4 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: PJM
PJ MCCOWN 00000

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S99T000896 Date: 05/25/99 Time: 11:26:43

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .47 ug/minute C

Analyst : PJ MCCOWN
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.08	0.00	0.00
2	0.51	0.40	100.00
3	1.01	0.70	42.86
4	1.50	1.30	46.15
5	2.00	18.90	93.12
6	2.50	93.30	79.74
7	3.00	185.20	49.62
8	3.50	253.40	26.91
9	4.00	290.60	12.80
10	4.50	308.00	5.65
11	5.00	316.50	2.69
12	5.50	320.40	1.22
13	6.00	322.80	0.74
14	6.50	324.50	0.52
15	7.00	325.70	0.37
16	7.50	326.80	0.34
17	8.00	327.70	0.27
18	8.50	328.50	0.24
19	9.00	329.20	0.21
20	9.50	329.80	0.18
21	10.00	330.40	0.18
22	10.50	331.10	0.21

USER INPUT BLANK VALUE
BLANK VALUE = 4.934541 micrograms carbon
BLANK FACTOR = 4.934541 / 10.49902 = +4.7E-01 ug/min Carbon

SAMPLE RESULTS:
(331.1 - 4.934541)(1)/(1) = +3.262E+02 g/L Carbon
(331.1 - 4.934541)(1)/(1)(12) = +2.718E+01 Molar Carbon

Sample Run By: RJM
PJ MCCOWN 00000

200 ml

HNF-1672 REV. 0

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S99T000896 Date: 05/25/99 Time: 11:39:11

Sample Size = 1 uL
Dil Factor = 1
Blank ID # = RJM 5/25/99
Blank Value = ~~.47~~ 2.01 ug/minute C

Analyst : PJ MCCOWN
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.08	0.00	0.00
2	0.51	0.60	100.00
3	1.01	1.10	45.45
4	1.51	1.70	35.29
5	2.00	7.00	75.71
6	2.50	31.50	77.78
7	3.00	67.30	53.19
8	3.50	90.00	25.22
9	4.00	101.20	11.07
10	4.50	106.70	5.15
11	5.00	109.80	2.82
12	5.50	111.70	1.70
13	6.00	113.30	1.41
14	6.50	114.40	0.96
15	7.00	115.50	0.95
16	7.50	116.30	0.69
17	8.00	117.10	0.68
18	8.50	117.70	0.51
19	9.00	118.40	0.59
20	9.50	118.90	0.42
21	10.00	119.40	0.42
22	10.50	119.80	0.33

Blank value 2.01

USER INPUT BLANK VALUE
BLANK VALUE = 4.934541 micrograms carbon
BLANK FACTOR = 4.934541 / 10.49902 = +4.7E-01 ug/min Carbon

SAMPLE RESULTS:
(119.8 - 4.934139)(1)/(1) = +1.149E+02 g/L Carbon
(119.8 - 4.934139)(1)/(1)(12) = +9.572E+00 Molar Carbon

Sample Run By: PJM
PJ MCCOWN 00000

.200 mL

HNF-1672 REV. 0

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 896 DUP Date: 05/25/99 Time: 11:50:58

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .47 ug/minute C

Analyst : PJ MCCOWN
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.08	0.00	0.00
2	0.51	0.30	100.00
3	1.01	0.80	62.50
4	1.51	1.40	42.86
5	2.00	23.20	93.97
6	2.50	111.80	79.25
7	3.00	221.10	49.43
8	3.50	298.90	26.03
9	4.00	342.90	12.83
10	4.50	364.10	5.82
11	5.00	373.50	2.52
12	5.50	378.00	1.19
13	6.00	380.70	0.71
14	6.50	382.40	0.44
15	7.00	383.80	0.36
16	7.50	384.90	0.29
17	8.00	386.00	0.28
18	8.50	386.80	0.21
19	9.00	387.60	0.21
20	9.50	388.20	0.15
21	10.00	388.90	0.18
22	10.50	389.60	0.18

USER INPUT BLANK VALUE
BLANK VALUE = 4.934541 micrograms carbon
BLANK FACTOR = 4.934541 / 10.49902 = +4.7E-01 ug/min Carbon

SAMPLE RESULTS:
(389.6 - 4.934541)(1)/(1) = +3.847E+02 g/L Carbon
(389.6 - 4.934541)(1)/(1)(12) = +3.206E+01 Molar Carbon

Sample Run By: PJM
PJ MCCOWN 00000
+200mL

HNF-1672 REV. 0

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 896 DUP Date: 05/25/99 Time: 13:13:33

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 2.01 ug/minute C

Analyst : PJ MCCOWN
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.08	0.00	0.00
2	0.51	0.60	100.00
3	1.01	1.00	40.00
4	1.51	1.70	41.18
5	2.00	5.60	69.64
6	2.50	26.80	79.10
7	3.00	67.30	60.18
8	3.50	99.00	32.02
9	4.00	115.80	14.51
10	4.50	124.10	6.69
11	5.00	128.50	3.42
12	5.50	131.20	2.06
13	6.00	133.30	1.58
14	6.50	134.80	1.11
15	7.00	136.20	1.03
16	7.50	137.20	0.73
17	8.00	137.90	0.51
18	8.50	138.80	0.65
19	9.00	139.40	0.43
20	9.50	139.90	0.36
21	10.00	140.40	0.36
22	10.50	141.00	0.43

USER INPUT BLANK VALUE
BLANK VALUE = 21.10304 micrograms carbon
BLANK FACTOR = 21.10304 / 10.49902 = +2.0E+00 ug/min Carbon

SAMPLE RESULTS:
(141 - 21.10304)(1)/(1) = +1.199E+02 g/L Carbon
(141 - 21.10304)(1)/(1)(12) = +9.991E+00 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: PJ MCCOWN 00000

.200ml

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 896 TRIP Date: 05/25/99 Time: 13:32:45

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .47 ug/minute C

Analyst : PJ MCCOWN
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.08	0.00	0.00
2	0.51	0.40	100.00
3	1.01	0.60	33.33
4	1.51	9.40	93.62
5	2.00	76.90	87.78
6	2.50	184.50	58.32
7	3.00	272.30	32.24
8	3.50	325.60	16.37
9	4.00	353.90	8.00
10	4.50	366.50	3.44
11	5.00	372.70	1.66
12	5.50	376.00	0.88
13	6.00	378.20	0.58
14	6.50	379.80	0.42
15	7.00	380.90	0.29
16	7.50	382.00	0.29
17	8.00	383.00	0.26
18	8.50	383.70	0.18
19	9.00	384.60	0.23
20	9.50	385.20	0.16
21	10.00	385.90	0.18
22	10.50	386.40	0.13

USER INPUT BLANK VALUE
BLANK VALUE = 4.934541 micrograms carbon
BLANK FACTOR = 4.934541 / 10.49902 = +4.7E-01 ug/min Carbon

SAMPLE RESULTS:
(386.4 - 4.934139)(1)/(1) = +3.815E+02 g/L Carbon
(386.4 - 4.934139)(1)/(1)(12) = +3.179E+01 Molar Carbon

Sample Run By: PJM
PJ MCCOWN 00000
200mL

HNF-1672 REV. 0

P

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 896 TRIP Date: 05/25/99 Time: 13:45:37

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 2.01 ug/minute C

Analyst : PJ MCCOWN
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.08	0.00	0.00
2	0.51	0.60	100.00
3	1.01	1.10	45.45
4	1.51	2.10	47.62
5	2.00	12.40	83.06
6	2.50	49.00	74.69
7	3.00	87.40	43.94
8	3.50	109.00	19.82
9	4.00	118.60	8.09
10	4.50	123.70	4.12
11	5.00	126.70	2.37
12	5.50	128.40	1.32
13	6.00	129.70	1.00
14	6.50	130.90	0.92
15	7.00	131.90	0.76
16	7.50	132.70	0.60
17	8.00	133.30	0.45
18	8.50	134.00	0.52
19	9.00	134.50	0.37
20	9.50	135.10	0.44
21	10.00	135.60	0.37
22	10.50	135.90	0.22

USER INPUT BLANK VALUE
BLANK VALUE = 21.10304 micrograms carbon
BLANK FACTOR = 21.10304 / 10.49902 = +2.0E+00 ug/min Carbon

SAMPLE RESULTS:
(135.9 - 21.10095)(1)/(1) = +1.148E+02 g/L Carbon
(135.9 - 21.10095)(1)/(1)(12) = +9.567E+00 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: PJM
PJ MCCOWN 00000

.200 mL

HNF-1672 REV. 0

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 896 SPK Date: 05/25/99 Time: 14:04:49

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .47 ug/minute C

Analyst : PJ MCCOWN
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.08	0.00	0.00
2	0.51	0.60	100.00
3	1.01	1.10	45.45
4	1.51	2.00	45.00
5	2.00	37.30	94.64
6	2.50	186.00	79.95
7	3.00	379.50	50.99
8	3.50	519.40	26.93
9	4.00	600.60	13.52
10	4.50	646.20	7.06
11	5.00	667.10	3.13
12	5.50	676.10	1.33
13	6.00	680.70	0.68
14	6.50	683.40	0.40
15	7.00	685.50	0.31
16	7.50	687.10	0.23
17	8.00	688.20	0.16
18	8.50	689.50	0.19
19	9.00	690.50	0.14
20	9.50	691.40	0.13
21	10.00	692.30	0.13
22	10.50	693.10	0.12

USER INPUT BLANK VALUE
BLANK VALUE = 4.934541 micrograms carbon
BLANK FACTOR = 4.934541 / 10.49902 = +4.7E-01 ug/min Carbon

SAMPLE RESULTS:
(693.1 - 4.935401)(1)/(1) = +6.882E+02 g/L Carbon
(693.1 - 4.935401)(1)/(1)(12) = +5.735E+01 Molar Carbon

Sample Run By: RJM
PJ MCCOWN 00000

.200mL
+.500mL 25N12E

HNF-1672 REV. 0

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 896 SPK Date: 05/25/99 Time: 14:18:17

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 2.01 ug/minute C

Analyst : PJ MCCOWN
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.08	0.00	0.00
2	0.54	0.70	100.00
3	1.04	1.20	41.67
4	1.54	1.90	36.84
5	2.04	6.30	69.84
6	2.54	35.20	82.10
7	3.04	140.60	74.96
8	3.54	268.20	47.58
9	4.04	341.30	21.42
10	4.54	377.10	9.49
11	5.04	392.50	3.92
12	5.54	400.00	1.88
13	6.04	403.80	0.94
14	6.54	406.50	0.66
15	7.04	408.20	0.42
16	7.54	409.70	0.37
17	8.04	410.90	0.29
18	8.54	411.90	0.24
19	9.04	412.80	0.22
20	9.54	413.60	0.19
21	10.04	414.50	0.22
22	10.54	415.00	0.12

USER INPUT BLANK VALUE
BLANK VALUE = 21.10304 micrograms carbon
BLANK FACTOR = 21.10304 / 10.49902 = +2.0E+00 ug/min Carbon

SAMPLE RESULTS:
(415 - 21.17665)(1)/(1) = +3.938E+02 g/L Carbon
(415 - 21.17665)(1)/(1)(12) = +3.282E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: PJM
PJ MCCOWN 00000

.200mL
+ .100mL 34N12A
225

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S99T000897 Date: 05/25/99 Time: 14:33:11

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .47 ug/minute C

Analyst : PJ MCCOWN
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.08	0.00	0.00
2	0.51	0.60	100.00
3	1.01	1.10	45.45
4	1.50	1.70	35.29
5	2.00	20.30	91.63
6	2.50	105.20	80.70
7	3.00	214.40	50.93
8	3.50	294.80	27.27
9	4.00	341.70	13.73
10	4.50	364.90	6.36
11	5.00	375.60	2.85
12	5.50	380.60	1.31
13	6.00	383.60	0.78
14	6.50	385.40	0.47
15	7.00	387.00	0.41
16	7.50	388.20	0.31
17	8.00	389.20	0.26
18	8.50	390.10	0.23
19	9.00	391.10	0.26
20	9.50	391.90	0.20
21	10.00	392.70	0.20
22	10.50	393.40	0.18

USER INPUT BLANK VALUE
BLANK VALUE = 4.934541 micrograms carbon
BLANK FACTOR = 4.934541 / 10.49902 = +4.7E-01 ug/min Carbon

SAMPLE RESULTS:
(393.4 - 4.934914)(1)/(1) = +3.885E+02 g/L Carbon
(393.4 - 4.934914)(1)/(1)(12) = +3.237E+01 Molar Carbon

Sample Run By: RJM
PJ MCCOWN 00000

÷200mL

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S99T000897 Date: 05/25/99 Time: 14:45:58

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 2.01 ug/minute C

Analyst : PJ MCCOWN
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.08	0.00	0.00
2	0.51	0.70	100.00
3	1.01	1.40	50.00
4	1.51	6.90	79.71
5	2.00	37.50	81.60
6	2.50	80.50	53.42
7	3.00	106.40	24.34
8	3.50	118.10	9.91
9	4.00	124.00	4.76
10	4.50	127.20	2.52
11	5.00	129.40	1.70
12	5.50	131.00	1.22
13	6.00	132.20	0.91
14	6.50	133.20	0.75
15	7.00	134.20	0.75
16	7.50	134.90	0.52
17	8.00	135.60	0.52
18	8.50	136.20	0.44
19	9.00	136.70	0.37
20	9.50	137.30	0.44
21	10.00	137.70	0.29
22	10.50	138.20	0.36

USER INPUT BLANK VALUE
BLANK VALUE = 21.10304 micrograms carbon
BLANK FACTOR = 21.10304 / 10.49902 = +2.0E+00 ug/min Carbon

SAMPLE RESULTS:
(138.2 - 21.10291)(1)/(1) = +1.171E+02 g/L Carbon
(138.2 - 21.10291)(1)/(1)(12) = +9.758E+00 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: RJM
PJ MCCOWN 00000

-200mL

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 897 DUP Date: 05/25/99 Time: 14:58:28

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .47 ug/minute C

Analyst : PJ MCCOWN
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.08	0.00	0.00
2	0.51	0.50	100.00
3	1.01	1.00	50.00
4	1.50	3.40	70.59
5	2.00	48.20	92.95
6	2.50	152.70	68.43
7	3.00	253.40	39.74
8	3.50	319.00	20.56
9	4.00	355.60	10.29
10	4.50	372.90	4.64
11	5.00	380.80	2.07
12	5.50	384.60	0.99
13	6.00	386.80	0.57
14	6.50	388.40	0.41
15	7.00	389.90	0.38
16	7.50	390.90	0.26
17	8.00	391.90	0.26
18	8.50	392.80	0.23
19	9.00	393.70	0.23
20	9.50	394.40	0.18
21	10.00	395.00	0.15
22	10.50	395.70	0.18

USER INPUT BLANK VALUE
BLANK VALUE = 4.934541 micrograms carbon
BLANK FACTOR = 4.934541 / 10.49902 = +4.7E-01 ug/min Carbon

SAMPLE RESULTS:
(395.7 - 4.933652)(1)/(1) = +3.908E+02 g/L Carbon
(395.7 - 4.933652)(1)/(1)(12) = +3.256E+01 Molar Carbon

Sample Run By: PJ
PJ MCCOWN 00000

-200mL

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 897 DUP Date: 05/25/99 Time: 15:17:35

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 2.01 ug/minute C

Analyst : PJ MCCOWN
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.08	0.00	0.00
2	0.51	0.90	100.00
3	1.01	1.40	35.71
4	1.50	4.70	70.21
5	2.00	27.10	82.66
6	2.50	70.50	61.56
7	3.00	102.00	30.88
8	3.50	116.60	12.52
9	4.00	123.70	5.74
10	4.50	127.40	2.90
11	5.00	129.90	1.92
12	5.50	131.60	1.29
13	6.00	132.90	0.98
14	6.50	134.00	0.82
15	7.00	135.00	0.74
16	7.50	135.80	0.59
17	8.00	136.50	0.51
18	8.50	137.00	0.36
19	9.00	137.70	0.51
20	9.50	138.10	0.29
21	10.00	138.70	0.43
22	10.50	139.20	0.36

USER INPUT BLANK VALUE
BLANK VALUE = 21.10304 micrograms carbon
BLANK FACTOR = 21.10304 / 10.49902 = +2.0E+00 ug/min Carbon

SAMPLE RESULTS:
(139.2 - 21.10304)(1)/(1) = +1.181E+02 g/L Carbon
(139.2 - 21.10304)(1)/(1)(12) = +9.841E+00 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: RJM
PJ MCCOWN 00000

.200uL

LABCORE Completed Worklist Report for Worklist# 29836

Analyst: rdm **Instrument:** CARB2 **Book#:** _____

Method: LA-342-100 Rev/Mod F-2

Worklist Comment: AP107 FOR @TICTOC1 RTS

Seq	Type	Sample#	R	A	Test	Matrix	Actual	Found	DL or Yield	Unit
1	BLNK			0	@TICTOC1 TIC-02	LIQUID	1	5.60E+0	5.600	ug/mL
1	BLNK			0	@TICTOC1 TOC-02	LIQUID	1	6.90E+0	6.900	ug/mL
2	STD			0	@TICTOC1 TIC-02	LIQUID	6.02E+02	6.00E+2	99.668	% Recovery
2	STD			0	@TICTOC1 TOC-02	LIQUID	3.00E+03	2.66E+3	88.667	% Recovery
3	SAMPLE	S99T000894		0	@TICTOC1 TIC-02	LIQUID	N/A	1.71E+03	5.000	ug/mL
3	SAMPLE	S99T000894		0	@TICTOC1 TOC-02	LIQUID	N/A	1.11E+02	40.000	ug/mL
4	DUP	S99T000894		0	@TICTOC1 TIC-02	LIQUID	1.71E+3	1.76E+3	2.882	RPD
4	DUP	S99T000894		0	@TICTOC1 TOC-02	LIQUID	1.11E+2	1.79E+2	46.897	RPD
5	TRIPL	S99T000894		0	@TICTOC1 TIC-02	LIQUID	1.71E+3	1.77E+3	3.448	RPD
5	TRIPL	S99T000894		0	@TICTOC1 TOC-02	LIQUID	1.11E+2	1.49E+2	29.231	RPD
6	SAMPLE	S99T000895		0	@TICTOC1 TIC-02	LIQUID	N/A	1.87E+03	5.000	ug/mL
6	SAMPLE	S99T000895		0	@TICTOC1 TOC-02	LIQUID	N/A	4.61E+02	40.000	ug/mL
7	DUP	S99T000895		0	@TICTOC1 TIC-02	LIQUID	1.87E+3	1.88E+3	0.533	RPD
7	DUP	S99T000895		0	@TICTOC1 TOC-02	LIQUID	4.61E+2	4.91E+2	6.303	RPD

Final page for worklist# 29836

Analyst Signature Date

Analyst Signature Date 5/24/99

Reviewer Signature Date 5/25/99

Units shown for QC (BLK/BKG) may not reflect the actual units.

05/20/99 14:37
ws2

LABCORE Data Entry Template for Worklist# 29836

Analyst: RDM **Instrument:** CARB2 **Book#** 25N12E 34N12A

Method: LA-342-100 Rev/Mod F-2

Worklist Comment: AP107 FOR @TICTOC1 RTS

S	Type	Sample#	R	A	Test	Matrix	Group#	Project
1	BLNK				@TICTOC1	LIQUID		
2	STD				@TICTOC1	LIQUID		
3	SAMPLE	S99T000894	0		@TICTOC1	LIQUID	99000198	AP107 GRAB2
		Analytes Requested:			TIC-02 , TOC-02			
4	DUP	S99T000894	0		@TICTOC1	LIQUID		
* TRIPL 5	SAMPLE	S99T000895	0		@TICTOC1	LIQUID	99000198	AP107 GRAB2
		Analytes Requested:			TIC-02 , TOC-02			
6	DUP	S99T000895	0		@TICTOC1	LIQUID		

Final page for worklist # 29836

RDM 5/23/99

Signature Date

Signature Date

Data Entry Comments: Ran Trp on 894

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

WORKBOOK PAGE: BLANK1

TIC/TOC : LA-342-100 (F-2) LIQUIDS

			TIC	TOC
Type	Sample Size in mL	(SS)	0.0000	0.0000
BLNK	Dilution Factor	(DF)	1	1
Work List	µg of Carbon in Sample	(C1)	9.5	22.9
29836	µg of Carbon from Baseline	(C2)	3.9	29.8

Test Code	@TICTOC1
Matrix	LIQUID
Batch Number	99002163
Rerun	0
Sample Prep	N/A
Sample #	BLNK
Instrument Code	CARB2
Prepared By	JMV
Chemist	MJL
Analyst	RDM
Date Complete	05/24/99
Analysis Date	05/23/99
Analysis Time	02:00 PM
Sample Point	AP 107

µg of Carbon = |C1-C2|

	TIC	TOC
Method Detection Limit in µg/mL	5	40
µg of Carbon	5.60E+00	6.90E+00

Data Entered By:	JMV	Date:	05/24/99
Signature of Chemist:	NA	Date:	

BLANK.WB1 REV 1.0 342100ML

WORKBOOK PAGE: STD2

TIC/TOC : LA-342-100 (F-2) LIQUIDS

			TIC	TOC
Type	Sample Size in mL	(SS)	1.0000	0.2000
STD	Dilution Factor	(DF)	1	1
Work List	Final Coulometer Reading in µg	(C1)	603.5	561.8
29836	µg of Carbon from Baseline	(C2)	3.9	29.8
Test Code	Standard Book Number		25N12E	34N12A
@TICTOC1	Standard Value (µg/ml)		602	3000

Matrix	LIQUID
Batch Number	99002163
Rerun	0
Sample Prep	N/A
Sample #	STD
Instrument Code	CARB2
Prepared By	JMV
Chemist	MJL
Analyst	RDM
Date Complete	05/24/99
Analysis Date	05/23/99
Analysis Time	02:00 PM
Sample Point	AP 107

QC Actual in µg/mL = Standard Value (µg/mL)

QC Found in µg/mL = (C1 - C2) * DF / SS

QC Found in µg/mL for TIC = 5 if C1 < C2

QC Found in µg/mL for TOC = 40 if C1 < C2

% Recovery = QC Found / QC Actual * 100

	TIC	TOC
Method Detection Limit in µg/mL	5	40
QC Actual in µg/mL	6.02E+02	3.00E+03
QC Found in µg/mL	6.00E+02	2.66E+03
Percent Standard Recovery	99.6	88.7

Data Entered By:	JMV	Date:	05/24/99
Signature of Chemist:	NA	Date:	

STANDARD.WB1 REV 1.0 342100ML

WORKBOOK PAGE: SAM3

TIC/TOC : LA-342-100 (F-2) LIQUIDS

			TIC	TOC
Type	Sample Size in mL	(SS)	0.1000	0.1000
SAMPLE	Dilution Factor	(DF)	1	1
Work List	µg of Carbon in Sample	(C1)	175.2	40.9
29836	µg of Carbon from Baseline	(C2)	3.9	29.8
Test Code				
@TICTOC1				

Matrix	LIQUID
Batch Number	99002163
Rerun	0
Sample Prep	N/A
Sample #	S99T000894
Instrument Code	CARB2
Prepared By	JMV
Chemist	MJL
Analyst	RDM
Date Complete	05/24/99
Analysis Date	05/23/99
Analysis Time	02:00 PM
Sample Point	AP 107

µg of Carbon/mL = (C1-C2) * DF / SS
µg of Carbon/mL for TIC = 5 if C1 < C2
µg of Carbon/mL for TOC = 40 if C1 < C2

	TIC	TOC
Method Detection Limit in µg/mL	5	40
µg of Carbon/mL	1.71E+03	1.11E+02

Data Entered By:	JMV	Date:	05/24/99
Signature of Chemist:	NA	Date:	

WORKBOOK PAGE: DUP4

TIC/TOC : LA-342-100 (F-2) LIQUIDS

			TIC	TOC
Type	Sample Size in mL	(SS)	0.1000	0.1000
DUP	Dilution Factor	(DF)	1	1
Work List	µg of Carbon in Sample	(C1)	179.6	47.7
29836	µg of Carbon from Baseline	(C2)	3.9	29.8
Test Code	Known µg of C from Original Sample		1.71E+3	1.11E+2
@TICTOC1				

Matrix	LIQUID
Batch Number	99002163
Rerun	0
Sample Prep	N/A
Sample #	S99T000894
Instrument Code	CARB2
Prepared By	JMV
Chemist	MJL
Analyst	RDM
Date Complete	05/24/99
Analysis Date	05/23/99
Analysis Time	02:00 PM
Sample Point	AP 107

µg of Carbon/mL = (C1-C2) * DF / SS
µg of Carbon/mL for TIC = 5 if C1 < C2
µg of Carbon/mL for TOC = 40 if C1 < C2

	TIC	TOC
Method Detection Limit in µg/mL	5	40
µg of Carbon/mL	1.76E+03	1.79E+02

Data Entered By:	JMV	Date:	05/24/99
Signature of Chemist:	NA	Date:	

SAMPLE.WB1 REV 1.0 342100ML

WORKBOOK PAGE: TRIPL5

TIC/TOC : LA-342-100 (F-2) LIQUIDS

			TIC	TOC
Type	Sample Size in mL	(SS)	0.1000	0.1000
TRIPL	Dilution Factor	(DF)	1	1
Work List	µg of Carbon in Sample	(C1)	181.3	44.7
29836	µg of Carbon from Baseline	(C2)	3.9	29.8
Test Code	Known µg of C from Original Sample		1.71E+3	1.11E+2
@TICTOC1	Duplicate Result		1.76E+3	1.79E+2

Matrix	LIQUID
Batch Number	99002163
Rerun	0
Sample Prep	N/A
Sample #	S99T000894
Instrument Code	CARB2
Prepared By	JMV
Chemist	MJL
Analyst	RDM
Date Complete	05/24/99
Analysis Date	05/23/99
Analysis Time	02:00 PM
Sample Point	AP 107

µg of Carbon/mL = (C1-C2) * DF / SS
µg of Carbon/mL for TIC = 5 if C1 < C2
µg of Carbon/mL for TOC = 40 if C1 < C2

	TIC	TOC
Method Detection Limit in µg/mL	5	40
µg of Carbon/mL	1.77E+03	1.49E+02

Data Entered By:	JMV	Date:	05/24/99
Signature of Chemist:	N/A	Date:	

SAMPLE.WB1 REV 1.0 342100ML

WORKBOOK PAGE: SAM6

TIC/TOC : LA-342-100 (F-2) LIQUIDS

			TIC	TOC
Type	Sample Size in mL	(SS)	1.0000	1.0000
SAMPLE	Dilution Factor	(DF)	1	1
Work List	µg of Carbon in Sample	(C1)	1876.2	490.4
29836	µg of Carbon from Baseline	(C2)	3.9	29.8
Test Code				
@TICTOC1				

Matrix	LIQUID
Batch Number	99002163
Rerun	0
Sample Prep	N/A
Sample #	S99T000895
Instrument Code	CARB2
Prepared By	JMV
Chemist	MJL
Analyst	RDM
Date Complete	05/24/99
Analysis Date	05/23/99
Analysis Time	02:00 PM
Sample Point	AP 107

µg of Carbon/mL = (C1-C2) * DF / SS
µg of Carbon/mL for TIC = 5 if C1 < C2
µg of Carbon/mL for TOC = 40 if C1 < C2

	TIC	TOC
Method Detection Limit in µg/mL	5	40
µg of Carbon/mL	1.87E+03	4.61E+02

Data Entered By:	JMV	Date:	05/24/99
Signature of Chemist:	NA	Date:	

SAMPLE.WB1 REV 1.0 342100ML

I:\342100\OUT\29836.WB1 05/24/99 08:13:24

WORKBOOK PAGE: DUP7

TIC/TOC : LA-342-100 (F-2) LIQUIDS

			TIC	TOC
Type	Sample Size in mL	(SS)	1.0000	1.0000
DUP	Dilution Factor	(DF)	1	1
Work List	µg of Carbon in Sample	(C1)	1881.9	521.1
29836	µg of Carbon from Baseline	(C2)	3.9	29.8
Test Code	Known µg of C from Original Sample		1.87E+3	4.61E+2
@TICTOC1				

Matrix	LIQUID
Batch Number	99002163
Rerun	0
Sample Prep	N/A
Sample #	S99T000895
Instrument Code	CARB2
Prepared By	JMV
Chemist	MJL
Analyst	RDM
Date Complete	05/24/99
Analysis Date	05/23/99
Analysis Time	02:00 PM
Sample Point	AP 107

µg of Carbon/mL = (C1-C2) * DF / SS
µg of Carbon/mL for TIC = 5 if C1 < C2
µg of Carbon/mL for TOC = 40 if C1 < C2

	TIC	TOC
Method Detection Limit in µg/mL	5	40
µg of Carbon/mL	1.88E+03	4.91E+02

Data Entered By:	JMV	Date:	05/24/99
Signature of Chemist:	NA	Date:	

SAMPLE.WB1 REV 1.0 342100ML

HNF-1672 REV. 0

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

Sample: BASE Date: 05/21/99 Time: 07:12:04

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

Analyst : RD MEYERS
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.10	0.00
2	1.01	0.30	66.67
3	1.51	0.40	25.00
4	2.00	0.60	33.33
5	2.50	1.00	40.00
6	3.00	1.20	16.67
7	3.50	1.50	20.00
8	4.00	1.70	11.76
9	4.50	1.90	10.53
10	5.00	2.10	9.52
11	5.50	2.20	4.55
12	6.00	2.40	8.33
13	6.50	2.50	4.00
14	7.00	2.70	7.41
15	7.50	2.80	3.57
16	8.00	3.00	6.67
17	8.50	3.10	3.23
18	9.00	3.30	6.06
19	9.50	3.40	2.94
20	10.00	3.60	5.56
21	10.50	3.70	2.70
22	11.00	3.90	5.13

BLANK VALUE = 3.9 micrograms carbon
BLANK FACTOR = 3.9 / 10.99786 = +3.5E-01 ug/min Carbon

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 239 TO 254.

Sample Run By: RD Meyers 5/23/99
RD MEYERS 00002

HNF-1672 REV. 0

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

Sample: BASE Date: 05/21/99 Time: 07:36:22

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

Analyst : RD MEYERS
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.50	0.00
2	1.00	2.20	77.27
3	1.50	4.10	46.34
4	2.00	5.90	30.51
5	2.50	8.90	33.71
6	3.00	13.80	35.51
7	3.50	18.50	25.41
8	4.00	21.70	14.75
9	4.50	23.80	8.82
10	5.00	24.90	4.42
11	5.50	25.70	3.11
12	6.00	26.40	2.65
13	6.50	26.90	1.86
14	7.00	27.40	1.82
15	7.50	27.80	1.44
16	8.00	28.10	1.07
17	8.50	28.50	1.40
18	9.00	28.80	1.04
19	9.50	29.00	0.69
20	10.00	29.30	1.02
21	10.50	29.60	1.01
22	11.00	29.80	0.67

BLANK VALUE = 29.8 micrograms carbon
BLANK FACTOR = 29.8 / 10.99515 = +2.71E+00 ug/min Carbon

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

Sample Run By: RD MEYERS 00002

HNF-1672 REV. 0

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 25N12-E Date: 05/21/99 Time: 07:55:35

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

Analyst : RD MEYERS
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.30	0.00
2	1.01	0.50	40.00
3	1.50	0.70	28.57
4	2.00	3.10	77.42
5	2.50	41.70	92.57
6	3.00	158.50	73.69
7	3.50	309.00	48.71
8	4.00	434.00	28.80
9	4.50	514.60	15.66
10	5.00	558.00	7.78
11	5.50	579.70	3.74
12	6.00	590.20	1.78
13	6.50	595.00	0.81
14	7.00	597.70	0.45
15	7.50	599.00	0.22
16	8.00	600.10	0.18
17	8.50	600.90	0.13
18	9.00	601.50	0.10
19	9.50	602.10	0.10
20	10.00	602.60	0.08
21	10.50	603.10	0.08
22	11.00	603.50	0.07

USER INPUT BLANK VALUE
BLANK VALUE = 3.848302 micrograms carbon
BLANK FACTOR = 3.848302 / 10.99515 = +3.5E-01 ug/min Carbon

SAMPLE RESULTS:
(603.5 - 3.848953)(1)/(1) = +5.997E+02 g/L Carbon
(603.5 - 3.848953)(1)/(1)(12) = +4.997E+01 Molar Carbon

Sample Run By: _____
RD MEYERS 00002

HNF-1672 REV. 0

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 34N12-A Date: 05/21/99 Time: 08:08:20

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 2.71 ug/minute C

Analyst : RD MEYERS
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.40	0.00
2	1.01	0.80	50.00
3	1.50	9.20	91.30
4	2.00	127.10	92.76
5	2.50	330.30	61.52
6	3.00	463.10	28.68
7	3.50	514.20	9.94
8	4.00	534.40	3.78
9	4.50	543.00	1.58
10	5.00	547.60	0.84
11	5.50	550.50	0.53
12	6.00	552.60	0.38
13	6.50	554.50	0.34
14	7.00	555.90	0.25
15	7.50	557.10	0.22
16	8.00	558.00	0.16
17	8.50	558.80	0.14
18	9.00	559.50	0.13
19	9.50	560.20	0.12
20	10.00	560.80	0.11
21	10.50	561.40	0.11
22	11.00	561.80	0.07

USER INPUT BLANK VALUE
BLANK VALUE = 29.79685 micrograms carbon
BLANK FACTOR = 29.79685 / 10.99515 = +2.7E+00 ug/min Carbon

SAMPLE RESULTS:
(561.8 - 29.8019)(1)/(1) = +5.320E+02 g/L Carbon
(561.8 - 29.8019)(1)/(1)(12) = +4.433E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: RD MEYERS 00002

HNF-1672 REV. 0

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: BLK Date: 05/21/99 Time: 08:21:20

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

Analyst : RD MEYERS
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.50	0.00
2	1.01	0.90	44.44
3	1.50	1.10	18.18
4	2.00	2.60	57.69
5	2.50	4.00	35.00
6	3.00	5.00	20.00
7	3.50	5.70	12.28
8	4.00	6.20	8.06
9	4.50	6.50	4.62
10	5.00	6.70	2.99
11	5.50	7.10	5.63
12	6.00	7.30	2.74
13	6.50	7.50	2.67
14	7.00	7.80	3.85
15	7.50	8.00	2.50
16	8.00	8.20	2.44
17	8.50	8.40	2.38
18	9.00	8.60	2.33
19	9.50	8.80	2.27
20	10.00	9.00	2.22
21	10.50	9.30	3.23
22	11.00	9.50	2.11

USER INPUT BLANK VALUE
BLANK VALUE = 3.848302 micrograms carbon
BLANK FACTOR = 3.848302 / 10.99515 = +3.5E-01 ug/min Carbon

SAMPLE RESULTS:
(9.5 - 3.848654)(1)/(1) = +5.7E+00 g/L Carbon
(9.5 - 3.848654)(1)/(1)(12) = +4.7E-01 Molar Carbon

Sample Run By: _____
RD MEYERS 00002

HNF-1672 REV. 0

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: BLK Date: 05/21/99 Time: 08:35:21

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 2.71 ug/minute C

Analyst : RD MEYERS
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.30	0.00
2	1.01	0.60	50.00
3	1.51	1.40	57.14
4	2.01	4.60	69.57
5	2.50	9.50	51.58
6	3.00	13.40	29.10
7	3.50	15.40	12.99
8	4.00	16.80	8.33
9	4.50	17.60	4.55
10	5.00	18.30	3.83
11	5.50	18.90	3.17
12	6.00	19.30	2.07
13	6.50	19.90	3.02
14	7.00	20.50	2.93
15	7.50	20.90	1.91
16	8.00	21.40	2.34
17	8.50	21.70	1.38
18	9.00	22.00	1.36
19	9.50	22.20	0.90
20	10.00	22.40	0.89
21	10.50	22.60	0.88
22	11.00	22.90	1.31

USER INPUT BLANK VALUE
BLANK VALUE = 29.79685 micrograms carbon
BLANK FACTOR = 29.79685 / 10.99515 = +2.7E+00 ug/min Carbon

SAMPLE RESULTS:
(22.9 - 29.80959)(1)/(1) = < 5.00 E-3 g/L Carbon
(22.9 - 29.80959)(1)/(1)(12) = < 4.17 E-4 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: _____
RD MEYERS 00002

HNF-1672 REV. 0

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 894 Date: 05/21/99 Time: 08:52:05

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

Analyst : RD MEYERS
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.30	0.00
2	1.01	0.40	25.00
3	1.51	0.80	50.00
4	2.00	4.20	80.95
5	2.50	26.10	83.91
6	3.00	68.90	62.12
7	3.50	112.50	38.76
8	4.00	141.30	20.38
9	4.50	157.70	10.40
10	5.00	165.10	4.48
11	5.50	168.30	1.90
12	6.00	170.10	1.06
13	6.50	171.10	0.58
14	7.00	171.80	0.41
15	7.50	172.40	0.35
16	8.00	172.90	0.29
17	8.50	173.40	0.29
18	9.00	173.80	0.23
19	9.50	174.20	0.23
20	10.00	174.50	0.17
21	10.50	175.00	0.29
22	11.00	175.20	0.11

USER INPUT BLANK VALUE
BLANK VALUE = 3.848302 micrograms carbon
BLANK FACTOR = 3.848302 / 10.99515 = +3.5E-01 ug/min Carbon

SAMPLE RESULTS:
(175.2 - 3.848953)(1)/(1) = +1.714E+02 g/L Carbon
(175.2 - 3.848953)(1)/(1)(12) = +1.428E+01 Molar Carbon

Sample Run By: _____
RD MEYERS 00002

HNF-1672 REV. 0

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 894 Date: 05/21/99 Time: 09:06:42

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 2.71 ug/minute C

Analyst : RD MEYERS
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.40	0.00
2	1.01	0.60	33.33
3	1.51	2.20	72.73
4	2.00	8.90	75.28
5	2.50	20.20	55.94
6	3.00	27.80	27.34
7	3.50	31.40	11.46
8	4.00	33.60	6.55
9	4.50	34.70	3.17
10	5.00	35.80	3.07
11	5.50	36.50	1.92
12	6.00	37.20	1.88
13	6.50	37.70	1.33
14	7.00	38.30	1.57
15	7.50	38.70	1.03
16	8.00	39.00	0.77
17	8.50	39.40	1.02
18	9.00	39.70	0.76
19	9.50	40.00	0.75
20	10.00	40.30	0.74
21	10.50	40.60	0.74
22	11.00	40.90	0.73

USER INPUT BLANK VALUE
BLANK VALUE = 29.79685 micrograms carbon
BLANK FACTOR = 29.79685 / 10.99515 = +2.7E+00 ug/min Carbon

SAMPLE RESULTS:
(40.9 - 29.79925)(1)/(1) = +1.11E+01 g/L Carbon
(40.9 - 29.79925)(1)/(1)(12) = +9.25E-01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: _____
RD MEYERS 00002

HNF-1672 REV. 0

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 894D4P Date: 05/21/99 Time: 09:20:43

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

Analyst : RD MEYERS
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.30	0.00
2	1.01	0.50	40.00
3	1.50	1.00	50.00
4	2.00	6.80	85.29
5	2.50	35.60	80.90
6	3.00	81.10	56.10
7	3.50	122.50	33.80
8	4.00	149.30	17.95
9	4.50	162.90	8.35
10	5.00	169.60	3.95
11	5.50	172.80	1.85
12	6.00	174.50	0.97
13	6.50	175.40	0.51
14	7.00	176.10	0.40
15	7.50	176.70	0.34
16	8.00	177.30	0.34
17	8.50	177.70	0.23
18	9.00	178.10	0.22
19	9.50	178.50	0.22
20	10.00	178.90	0.22
21	10.50	179.30	0.22
22	11.00	179.60	0.17

USER INPUT BLANK VALUE
BLANK VALUE = 3.848302 micrograms carbon
BLANK FACTOR = 3.848302 / 10.99515 = +3.5E-01 ug/min Carbon

SAMPLE RESULTS:
(179.6 - 3.849231)(1)/(1) = +1.758E+02 g/L Carbon
(179.6 - 3.849231)(1)/(1)(12) = +1.465E+01 Molar Carbon

Sample Run By: _____
RD MEYERS 00002

HNF-1672 REV. 0

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 894DHP Date: 05/21/99 Time: 10:00:53

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 2.71 ug/minute C

Analyst : RD MEYERS
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.40	0.00
2	1.01	0.70	42.86
3	1.50	3.20	78.13
4	2.00	12.70	74.80
5	2.50	25.50	50.20
6	3.00	33.40	23.65
7	3.50	37.60	11.17
8	4.00	39.80	5.53
9	4.50	41.00	2.93
10	5.00	42.20	2.84
11	5.50	42.90	1.63
12	6.00	43.60	1.61
13	6.50	44.40	1.80
14	7.00	45.00	1.33
15	7.50	45.50	1.10
16	8.00	46.00	1.09
17	8.50	46.30	0.65
18	9.00	46.60	0.64
19	9.50	46.90	0.64
20	10.00	47.20	0.64
21	10.50	47.50	0.63
22	11.00	47.70	0.42

USER INPUT BLANK VALUE
BLANK VALUE = 29.79685 micrograms carbon
BLANK FACTOR = 29.79685 / 10.99515 = +2.7E+00 ug/min Carbon

SAMPLE RESULTS:
(47.7 - 29.8019)(1)/(1) = +1.79E+01 g/L Carbon
(47.7 - 29.8019)(1)/(1)(12) = +1.49E+00 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: _____
RD MEYERS 00002

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 894TRP Date: 05/21/99 Time: 10:20:08

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

Analyst : RD MEYERS
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.20	0.00
2	1.00	0.50	60.00
3	1.50	0.80	37.50
4	2.00	6.30	87.30
5	2.50	36.30	82.64
6	3.00	83.10	56.32
7	3.50	124.90	33.47
8	4.00	151.40	17.50
9	4.50	164.80	8.13
10	5.00	171.30	3.79
11	5.50	174.30	1.72
12	6.00	176.00	0.97
13	6.50	177.00	0.56
14	7.00	177.80	0.45
15	7.50	178.30	0.28
16	8.00	178.90	0.34
17	8.50	179.40	0.28
18	9.00	179.80	0.22
19	9.50	180.20	0.22
20	10.00	180.60	0.22
21	10.50	181.00	0.22
22	11.00	181.30	0.17

USER INPUT BLANK VALUE
BLANK VALUE = 3.848302 micrograms carbon
BLANK FACTOR = 3.848302 / 10.99515 = +3.5E-01 ug/min Carbon

SAMPLE RESULTS:
(181.3 - 3.849252)(1)/(1) = +1.775E+02 g/L Carbon
(181.3 - 3.849252)(1)/(1)(12) = +1.479E+01 Molar Carbon

Sample Run By: _____
RD MEYERS 00002

HNF-1672 REV. 0

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 894TRP Date: 05/21/99 Time: 10:32:51

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 2.71 ug/minute C

Analyst : RD MEYERS
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.40	0.00
2	1.01	0.70	42.86
3	1.50	2.60	73.08
4	2.00	11.50	77.39
5	2.50	23.70	51.48
6	3.00	31.70	25.24
7	3.50	35.60	10.96
8	4.00	37.40	4.81
9	4.50	38.80	3.61
10	5.00	39.80	2.51
11	5.50	40.50	1.73
12	6.00	41.10	1.46
13	6.50	41.60	1.20
14	7.00	42.20	1.42
15	7.50	42.50	0.71
16	8.00	42.90	0.93
17	8.50	43.20	0.69
18	9.00	43.50	0.69
19	9.50	43.80	0.68
20	10.00	44.10	0.68
21	10.50	44.50	0.90
22	11.00	44.70	0.45

USER INPUT BLANK VALUE
BLANK VALUE = 29.79685 micrograms carbon
BLANK FACTOR = 29.79685 / 10.99515 = +2.7E+00 ug/min Carbon

SAMPLE RESULTS:
(44.7 - 29.8019)(1)/(1) = +1.49E+01 g/L Carbon
(44.7 - 29.8019)(1)/(1)(12) = +1.24E+00 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: _____
RD MEYERS 00002

HNF-1672 REV. 0

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 895 Date: 05/21/99 Time: 10:45:58

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

Analyst : RD MEYERS
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.30	0.00
2	1.01	0.60	50.00
3	1.51	1.10	45.45
4	2.00	57.80	98.10
5	2.50	372.30	84.47
6	3.00	838.70	55.61
7	3.50	1262.60	33.57
8	4.00	1539.80	18.00
9	4.50	1695.20	9.17
10	5.00	1780.40	4.79
11	5.50	1824.50	2.42
12	6.00	1844.80	1.10
13	6.50	1854.70	0.53
14	7.00	1860.20	0.30
15	7.50	1864.00	0.20
16	8.00	1866.60	0.14
17	8.50	1868.60	0.11
18	9.00	1871.20	0.14
19	9.50	1872.60	0.07
20	10.00	1873.60	0.05
21	10.50	1875.00	0.07
22	11.00	1876.20	0.06

USER INPUT BLANK VALUE
BLANK VALUE = 3.848302 micrograms carbon
BLANK FACTOR = 3.848302 / 10.99515 = +3.5E-01 ug/min Carbon

SAMPLE RESULTS:
(1876.2 - 3.849231)(1)/(1) = +1.8724E+03 g/L Carbon
(1876.2 - 3.849231)(1)/(1)(12) = +1.5603E+02 Molar Carbon

Sample Run By: RD MEYERS 00002

HNF-1672 REV. 0

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 895 Date: 05/21/99 Time: 10:59:11

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 2.71 ug/minute C

Analyst : RD MEYERS
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	1.30	0.00
2	1.01	2.10	38.10
3	1.51	29.80	92.95
4	2.00	109.60	72.81
5	2.50	225.80	51.46
6	3.00	349.30	35.36
7	3.50	418.00	16.44
8	4.00	449.20	6.95
9	4.50	464.40	3.27
10	5.00	471.10	1.42
11	5.50	475.80	0.99
12	6.00	478.70	0.61
13	6.50	480.60	0.40
14	7.00	482.80	0.46
15	7.50	484.10	0.27
16	8.00	485.50	0.29
17	8.50	486.50	0.21
18	9.00	487.20	0.14
19	9.50	488.10	0.18
20	10.00	488.90	0.16
21	10.50	489.60	0.14
22	11.00	490.40	0.16

USER INPUT BLANK VALUE
BLANK VALUE = 29.79685 micrograms carbon
BLANK FACTOR = 29.79685 / 10.99515 = +2.7E+00 ug/min Carbon

SAMPLE RESULTS:
(490.4 - 29.80471)(1)/(1) = +4.606E+02 g/L Carbon
(490.4 - 29.80471)(1)/(1)(12) = +3.838E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: _____
RD MEYERS 00002

HNF-1672 REV. 0

P^

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 895DUP Date: 05/21/99 Time: 11:11:52

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

Analyst : RD MEYERS
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.50	0.00
2	1.00	1.00	50.00
3	1.50	1.60	37.50
4	2.00	47.90	96.66
5	2.50	338.70	85.86
6	3.00	802.60	57.80
7	3.50	1238.70	35.21
8	4.00	1527.90	18.93
9	4.50	1686.00	9.38
10	5.00	1773.60	4.94
11	5.50	1824.90	2.81
12	6.00	1847.30	1.21
13	6.50	1858.70	0.61
14	7.00	1865.30	0.35
15	7.50	1869.20	0.21
16	8.00	1872.30	0.17
17	8.50	1874.40	0.11
18	9.00	1876.40	0.11
19	9.50	1878.30	0.10
20	10.00	1879.50	0.06
21	10.50	1880.80	0.07
22	11.00	1881.90	0.06

USER INPUT BLANK VALUE
BLANK VALUE = 3.848302 micrograms carbon
BLANK FACTOR = 3.848302 / 10.99515 = +3.5E-01 ug/min Carbon

SAMPLE RESULTS:
(1881.9 - 3.849316)(1)/(1) = +1.8781E+03 g/L Carbon
(1881.9 - 3.849316)(1)/(1)(12) = +1.5650E+02 Molar Carbon

Sample Run By: _____
RD MEYERS 00002

HNF-1672 REV. 0

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 895DUP Date: 05/21/99 Time: 11:24:24

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 2.71 ug/minute C

Analyst : RD MEYERS
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	1.10	0.00
2	1.01	2.10	47.62
3	1.50	8.30	74.70
4	2.00	65.60	87.35
5	2.50	165.00	60.24
6	3.00	305.10	45.92
7	3.50	403.80	24.44
8	4.00	455.50	11.35
9	4.50	481.00	5.30
10	5.00	493.60	2.55
11	5.50	499.90	1.26
12	6.00	505.00	1.01
13	6.50	508.30	0.65
14	7.00	510.90	0.51
15	7.50	513.00	0.41
16	8.00	514.90	0.37
17	8.50	516.20	0.25
18	9.00	517.50	0.25
19	9.50	518.50	0.19
20	10.00	519.50	0.19
21	10.50	520.30	0.15
22	11.00	521.10	0.15

USER INPUT BLANK VALUE
BLANK VALUE = 29.79685 micrograms carbon
BLANK FACTOR = 29.79685 / 10.99515 = +2.7E+00 ug/min Carbon

SAMPLE RESULTS:
(521.1 - 29.8019)(1)/(1) = +4.913E+02 g/L Carbon
(521.1 - 29.8019)(1)/(1)(12) = +4.094E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: _____
RD MEYERS 00002

RADIOCHEMICAL ANALYSIS

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LABCORE Completed Worklist Report for Worklist# 29803

Analyst: scl **Instrument:** AB16 **Book#:** _____

Method: LA-508-101 Rev/Mod G-0

Worklist Comment: AP107 FOR @ALPHA01, RLC

Seq	Type	Sample#	R	A	Test	Matrix	Actual	Found	DL or Yield	Unit
1	STD		0	@ALPHA01	ALPHA01	LIQUID	2.51E-04	2.23E-4	88.845	% Recovery
1	STD		0	@ALPHA01	ALPHA01E	LIQUID	1.00	3.12E+00	3.120	% Ct. Erro
2	BLNK		0	@ALPHA01	ALPHA01	LIQUID	1	<3.03E-4		uCi/mL
2	BLNK		0	@ALPHA01	ALPHA01E	LIQUID	1.00	5.00E+02	500.000	uCi/mL
3	BLNK/BKG		0	@ALPHA01	ALPHA01	LIQUID	1.00E+00	8.33E-01	0.833	BLNK/BKG
4	SAMPLE	S99T000894	0	@ALPHA01	ALPHA01	LIQUID	N/A	7.91E-04	6.11e-004	uCi/mL
4	SAMPLE	S99T000894	0	@ALPHA01	ALPHA01E	LIQUID	N/A	6.57E+01		% Ct. Error
5	DUP	S99T000894	0	@ALPHA01	ALPHA01	LIQUID	7.91E-4	7.63E-4	3.604	RPD
5	DUP	S99T000894	0	@ALPHA01	ALPHA01E	LIQUID	1.00	7.35E+01	73.500	% Ct. Erro
6	SAMPLE	S99T000895	0	@ALPHA01	ALPHA01	LIQUID	N/A <	4.94E-03	6.72e-003	uCi/mL
6	SAMPLE	S99T000895	0	@ALPHA01	ALPHA01E	LIQUID	N/A	5.00E+02		% Ct. Error
7	DUP	S99T000895	0	@ALPHA01	ALPHA01	LIQUID	<4.94E-3	<6.84E-3		RPD
7	DUP	S99T000895	0	@ALPHA01	ALPHA01E	LIQUID	1.00	5.00E+02	500.000	% Ct. Erro
8	SAMPLE	S99T000896	0	@ALPHA01	ALPHA01	LIQUID	N/A <	5.73E-03	6.72e-003	uCi/mL
8	SAMPLE	S99T000896	0	@ALPHA01	ALPHA01E	LIQUID	N/A	5.00E+02		% Ct. Error
9	DUP	S99T000896	0	@ALPHA01	ALPHA01	LIQUID	<5.73E-3	<3.34E-3		RPD
9	DUP	S99T000896	0	@ALPHA01	ALPHA01E	LIQUID	1.00	5.00E+02	500.000	% Ct. Erro
10	SAMPLE	S99T000897	0	@ALPHA01	ALPHA01	LIQUID	N/A <	3.34E-03	6.72e-003	uCi/mL
10	SAMPLE	S99T000897	0	@ALPHA01	ALPHA01E	LIQUID	N/A	5.00E+02		% Ct. Error
11	DUP	S99T000897	0	@ALPHA01	ALPHA01	LIQUID	<3.34E-3	<4.15E-3		RPD
11	DUP	S99T000897	0	@ALPHA01	ALPHA01E	LIQUID	1.00	5.00E+02	500.000	% Ct. Erro

Final page for worklist# 29803

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

John Relyea 24 May 99
Reviewer Signature **Date**

Units shown for QC (BLK/BKG) may not reflect the actual units.

05/20/99 09:13
ws2

LABCORE Data Entry Template for Worklist# 29803

Analyst: S. L **Instrument:** AB00 **Book#** 50B57

Method: LA-508-101 Rev/Mod G-0

Worklist Comment: AP107 FOR @ALPHA01, RLC

S	Type	Sample#	R	A	Test	Matrix	Group#	Project
1	STD				@ALPHA01	LIQUID		
2	BLNK				@ALPHA01	LIQUID		
3	BLNK/BKG				@ALPHA01	LIQUID		
4	SAMPLE	S99T000894	0		@ALPHA01	LIQUID	99000198	AP107 GRAB2
	Analytes Requested: ALPHA01 , ALPHA01E							
5	DUP	S99T000894	0		@ALPHA01	LIQUID		
6	SAMPLE	S99T000895	0		@ALPHA01	LIQUID	99000198	AP107 GRAB2
	Analytes Requested: ALPHA01 , ALPHA01E							
7	DUP	S99T000895	0		@ALPHA01	LIQUID		
8	SAMPLE	S99T000896	0		@ALPHA01	LIQUID	99000198	AP107 GRAB2
	Analytes Requested: ALPHA01 , ALPHA01E							
9	DUP	S99T000896	0		@ALPHA01	LIQUID		
10	SAMPLE	S99T000897	0		@ALPHA01	LIQUID	99000198	AP107 GRAB2
	Analytes Requested: ALPHA01 , ALPHA01E							
11	DUP	S99T000897	0		@ALPHA01	LIQUID		

Final page for worklist # 29803

Sue Lin 5-21-99
Signature **Date**

Sharon L Cadle 5-23-99
Signature **Date**

Ray L Ghent 5-23-99

Data Entry Comments:

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

WORKBOOK PAGE: STD1

AT : LA-508-101 (G-0) LA-508-113 (B-0) STANDARD

			STANDARD	REPLICATE
Type	DETECTOR NUMBER		16	16
STD	DISH SIZE (1 , 2 , or 5)	(MS)	2	2
Work List	GROSS COUNTS	(GC)	3944	4041
29803	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.1	0.1
AT	SAMPLE SIZE in mL	(SS)	1.000	1.000
Test Code	DILUTION FACTOR	(DF)	1	1
@ALPHA01	STANDARD BOOK NUMBER	(Std BN)	50B57	50B57
Matrix	EFFICIENCY FACTOR	(EFF)	0.2683	0.2683
LIQUID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		131.367	134.600
Batch Number	Standard Value in µCi/mL		2.51E-04	
99002128	Concentration in µCi/L	=	2.21E-01	
Rerun	Replicate Concentration in µCi/L	=	2.26E-01	
0	AVERAGE CONCENTRATION in µCi/L	=	2.2327E-01	

Sample Prep: N/A

Sample #: WL29803-STD

Instrument Code: WB27806

Prepared By: SLH2

Chemist: SAC

Analyst: SCL

Date Complete: 05/23/99

Analysis Date: 05/21/99

Analysis Time: 01:30 PM

Sample Point: AP107 GRAB2

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL µCi/L = Rs * 1000mL/L * DF / (EFF * SS * 2220000dpm/µCi)

ALPHA TOTAL µCi/mL = ALPHA TOTAL µCi/L / 1000mL/L

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

			DETECTION LEVEL
ALPHA TOTAL CONCENTRATION in µCi/mL	=	2.23E-04	6.05E-07 µCi/mL
RELATIVE COUNTING ERROR	=	3.1%	

Analyst:		SLH2	Date: 23-May-99
Signature of Chemist:	John Relyea	SAC	Date: 24 May 99

STANDARD.WB1 Rev. 1.0 508101ML

WORKBOOK PAGE: BLANK2

AT : LA-508-101 (G-0) LIQUIDS

			BLNK	REPLICATE
Type	DETECTOR NUMBER		16	16
BLNK	DISH SIZE (1 , 2 , or 5)	(MS)	2	2
Work List	GROSS COUNTS	(GC)	1	4
29803	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.1	0.1
AT	SAMPLE SIZE in mL	(SS)	0.100	0.100
Test Code	DILUTION FACTOR	(DF)	101	101
@ALPHA01	DIGEST DILUTION FACTOR	(DDF)	1	1
Matrix	EFFICIENCY FACTOR	(EFF)	0.2683	0.2683
LIQUID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		0.135	0.179

Batch Number			
99002128	Blank Concentration in µCi/L	<	2.28E-01
Rerun	Replicate Concentration in µCi/L	<	3.03E-01
0	Maximum Concentration in µCi/L	<	3.0327E-01

Sample Prep: N/A

Sample #: WL29803-BLNK

Instrument Code: WB27806

Prepared By: SLH2

Chemist: SAC

Analyst: SCL

Date Complete: 05/23/99

Analysis Date: 05/21/99

Analysis Time: 01:30 PM

Sample Point: AP107 GRAB2

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL µCi/L = Rs * 1000mL/L * DF * DDF / (EFF * SS * 2220000dpm/µCi)

ALPHA TOTAL µCi/mL = ALPHA TOTAL µCi/L / 1000mL/L

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

ALPHA TOTAL in µCi/mL (Maximum) =	< 3.03E-04	DETECTION LEVEL
LESS Than Value was Determined from Lc.		6.11E-04 µCi/mL
RELATIVE COUNTING ERROR	500.0%	

Analyst:		SCL	Date: 23-May-99
Signature of Chemist:	John Relyea	SAC	Date: 24 May 99

BLANK.WB1 Rev. 1.0 508101ML0

WORKBOOK PAGE: SAM4

AT : LA-508-101 (G-0) LIQUIDS

			SAMPLE	REPLICATE
Type	DETECTOR NUMBER		16	16
SAMPLE	DISH SIZE (1 , 2 , or 5)	(MS)	2	2
Work List	GROSS COUNTS	(GC)	16	18
29803	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.1	0.1
AT	SAMPLE SIZE in mL	(SS)	0.100	0.100
Test Code	DILUTION FACTOR	(DF)	101	101
@ALPHA01	DIGEST DILUTION FACTOR	(DDF)	1	1
Matrix	EFFICIENCY FACTOR	(EFF)	0.2683	0.2683
LIQUID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		0.433	0.500
Batch Number				
99002128	Blank Concentration in µCi/L		7.35E-01	
Rerun	Replicate Concentration in µCi/L		8.48E-01	
0	Average Concentration in µCi/L		7.9132E-01	

Sample Prep: N/A

Sample #: S99T000894

Instrument Code: WB27806

Prepared By: SLH2

Chemist: SAC

Analyst: SCL

Date Complete: 05/23/99

Analysis Date: 05/21/99

Analysis Time: 01:30 PM

Sample Point: AP107 GRAB2

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL µCi/L = Rs * 1000mL/L * DF * DDF / (EFF * SS * 2220000dpm/µCi)

ALPHA TOTAL µCi/mL = ALPHA TOTAL µCi/L / 1000mL/L

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

ALPHA TOTAL in µCi/mL (Average)	=	7.91E-04	DETECTION LEVEL
RELATIVE COUNTING ERROR		65.7%	6.11E-04 µCi/mL

Analyst:		SCL	Date: 23-May-99
Signature of Chemist:	John Relyea	SAC	Date: 27 May 99

SAMPLE.WB1 Rev. 1.0 508101ML

WORKBOOK PAGE: DUP5

AT : LA-508-101 (G-0) LIQUIDS

			DUP	REPLICATE
Type	DETECTOR NUMBER		16	16
DUP	DISH SIZE (1 , 2 , or 5)	(MS)	2	2
Work List	GROSS COUNTS	(GC)	14	19
29803	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.1	0.1
AT	SAMPLE SIZE in mL	(SS)	0.100	0.100
Test Code	DILUTION FACTOR	(DF)	101	101
@ALPHA01	DIGEST DILUTION FACTOR	(DDF)	1	1
Matrix	EFFICIENCY FACTOR	(EFF)	0.2683	0.2683
LIQUID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		0.367	0.533

Batch Number		
99002128	Blank Concentration in µCi/L	6.22E-01
Rerun	Replicate Concentration in µCi/L	9.04E-01
0	Average Concentration in µCi/L	7.6306E-01

Sample Prep: N/A

Sample #: S99T000894

Instrument Code: WB27806

Prepared By: SLH2

Chemist: SAC

Analyst: SCL

Date Complete: 05/23/99

Analysis Date: 05/21/99

Analysis Time: 01:30 PM

Sample Point: AP107 GRAB2

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL µCi/L = Rs * 1000mL/L * DF * DDF / (EFF * SS * 2220000dpm/µCi)

ALPHA TOTAL µCi/mL = ALPHA TOTAL µCi/L / 1000mL/L

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

ALPHA TOTAL in µCi/mL (Average) =	7.63E-04	DETECTION LEVEL
RELATIVE COUNTING ERROR	73.5%	6.11E-04 µCi/mL

Analyst:		SCL	Date: 23-May-99
Signature of Chemist:	John Relyea	SAC	Date: 24 May 99

SAMPLE.WB1 Rev. 1.0 508101ML

WORKBOOK PAGE: SAM6

AT : LA-508-101 (G-0) LIQUIDS

			SAMPLE	REPLICATE
Type	DETECTOR NUMBER		16	16
SAMPLE	DISH SIZE (1 , 2 , or 5)	(MS)	2	2
Work List	GROSS COUNTS	(GC)	3	6
29803	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.1	0.1
AT	SAMPLE SIZE in mL	(SS)	0.100	0.100
Test Code	DILUTION FACTOR	(DF)	1111	1111
@ALPHA01	DIGEST DILUTION FACTOR	(DDF)	1	1
Matrix	EFFICIENCY FACTOR	(EFF)	0.2683	0.2683
LIQUID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		0.135	0.265
Batch Number				
99002128	Blank Concentration in µCi/L	<	2.51E+00	
Rerun	Replicate Concentration in µCi/L	<	4.94E+00	
0	Maximum Concentration in µCi/L	<	4.9430E+00	

Sample Prep: N/A

Sample #: S99T000895

Instrument Code: WB27806

Prepared By: SLH2

Chemist: SAC

Analyst: SCL

Date Complete: 05/23/99

Analysis Date: 05/21/99

Analysis Time: 01:30 PM

Sample Point: AP107 GRAB2

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL µCi/L = Rs * 1000mL/L * DF * DDF / (EFF * SS * 2220000dpm/µCi)

ALPHA TOTAL µCi/mL = ALPHA TOTAL µCi/L / 1000mL/L

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

ALPHA TOTAL in µCi/mL (Maximum)	=	< 4.94E-03	DETECTION LEVEL
LESS Than Value was Determined from Lc.			6.72E-03 µCi/mL
RELATIVE COUNTING ERROR		500.0%	

Analyst:		SCL	Date: 23-May-99
Signature of Chemist:	John Relyea	SAC	Date: 24 May 99

SAMPLE.WB1 Rev. 1.0 508101ML

WORKBOOK PAGE: DUP7

AT : LA-508-101 (G-0) LIQUIDS

			DUP	REPLICATE
Type	DETECTOR NUMBER		16	16
DUP	DISH SIZE (1 , 2 , or 5)	(MS)	2	2
Work List	GROSS COUNTS	(GC)	3	14
29803	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.1	0.1
AT	SAMPLE SIZE in mL	(SS)	0.100	0.100
Test Code	DILUTION FACTOR	(DF)	1111	1111
@ALPHA01	DIGEST DILUTION FACTOR	(DDF)	1	1
Matrix	EFFICIENCY FACTOR	(EFF)	0.2683	0.2683
LIQUID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		0.135	0.367

Batch Number			
99002128	Blank Concentration in µCi/L	<	2.51E+00
Rerun	Replicate Concentration in µCi/L		6.84E+00
0	Maximum Concentration in µCi/L	<	6.8393E+00

Sample Prep: N/A

Sample #: S99T000895

Instrument Code: WB27806

Prepared By: SLH2

Chemist: SAC

Analyst: SCL

Date Complete: 05/23/99

Analysis Date: 05/21/99

Analysis Time: 01:30 PM

Sample Point: AP107 GRAB2

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL µCi/L = Rs * 1000mL/L * DF * DDF / (EFF * SS * 2220000dpm/µCi)

ALPHA TOTAL µCi/mL = ALPHA TOTAL µCi/L / 1000mL/L

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

				DETECTION LEVEL
ALPHA TOTAL in µCi/mL (Maximum)	=	< 6.84E-03		
LESS Than Value was Determined from Lc.				6.72E-03 µCi/mL
RELATIVE COUNTING ERROR			500.0%	

Analyst:		SCL	Date: 23-May-99
Signature of Chemist:	John Relyea	SAC	Date: 24 May 99

SAMPLE.WB1 Rev. 1.0 508101MD

WORKBOOK PAGE: SAM8

AT : LA-508-101 (G-0) LIQUIDS

			SAMPLE	REPLICATE
Type	DETECTOR NUMBER		16	16
SAMPLE	DISH SIZE (1 , 2 , or 5)	(MS)	2	2
Work List	GROSS COUNTS	(GC)	2	7
29803	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.1	0.1
AT	SAMPLE SIZE in mL	(SS)	0.100	0.100
Test Code	DILUTION FACTOR	(DF)	1111	1111
@ALPHA01	DIGEST DILUTION FACTOR	(DDF)	1	1
Matrix	EFFICIENCY FACTOR	(EFF)	0.2683	0.2683
LIQUID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		0.135	0.307

Batch Number			
99002128	Blank Concentration in µCi/L	<	2.51E+00
Rerun	Replicate Concentration in µCi/L	<	5.73E+00
0	Maximum Concentration in µCi/L	<	5.7312E+00

Sample Prep: N/A

Sample #: S99T000896

Instrument Code: WB27806

Prepared By: SLH2

Chemist: SAC

Analyst: SCL

Date Complete: 05/23/99

Analysis Date: 05/21/99

Analysis Time: 01:30 PM

Sample Point: AP107 GRAB2

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL µCi/L = Rs * 1000mL/L * DF * DDF / (EFF * SS * 2220000dpm/µCi)

ALPHA TOTAL µCi/mL = ALPHA TOTAL µCi/L / 1000mL/L

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

ALPHA TOTAL in µCi/mL (Maximum)	=	< 5.73E-03	DETECTION LEVEL
LESS Than Value was Determined from Lc.			6.72E-03 µCi/mL
RELATIVE COUNTING ERROR		500.0%	

Analyst:		SCL	Date: 23-May-99
Signature of Chemist:	John Relyea	SAC	Date: 24 May 99

SAMPLE.WB1 Rev. 1.0 508101ML

WORKBOOK PAGE: DUP9

AT : LA-508-101 (G-0) LIQUIDS

			DUP	REPLICATE
Type	DETECTOR NUMBER		16	16
DUP	DISH SIZE (1 , 2 , or 5)	(MS)	2	2
Work List	GROSS COUNTS	(GC)	2	4
29803	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.1	0.1
AT	SAMPLE SIZE in mL	(SS)	0.100	0.100
Test Code	DILUTION FACTOR	(DF)	1111	1111
@ALPHA01	DIGEST DILUTION FACTOR	(DDF)	1	1
Matrix	EFFICIENCY FACTOR	(EFF)	0.2683	0.2683
LIQUID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		0.135	0.179
Batch Number				
99002128	Blank Concentration in µCi/L	<	2.51E+00	
Rerun	Replicate Concentration in µCi/L	<	3.34E+00	
0	Maximum Concentration in µCi/L	<	3.3360E+00	

Sample Prep: N/A

Sample #: S99T000896

Instrument Code: WB27806

Prepared By: SLH2

Chemist: SAC

Analyst: SCL

Date Complete: 05/23/99

Analysis Date: 05/21/99

Analysis Time: 01:30 PM

Sample Point: AP107 GRAB2

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL µCi/L = Rs * 1000mL/L * DF * DDF / (EFF * SS * 2220000dpm/µCi)

ALPHA TOTAL µCi/mL = ALPHA TOTAL µCi/L / 1000mL/L

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

ALPHA TOTAL in µCi/mL (Maximum)	=	< 3.34E-03		DETECTION LEVEL
LESS Than Value was Determined from Lc.				6.72E-03 µCi/mL
RELATIVE COUNTING ERROR		500.0%		

Analyst:		SCL	Date: 23-May-99
Signature of Chemist:	John Richey	SAC	Date: 24 May 99

SAMPLE.WB1 Rev. 1.0 508101ML

WORKBOOK PAGE: SAM10

AT : LA-508-101 (G-0) LIQUIDS

			SAMPLE	REPLICATE
DETECTOR NUMBER			16	16
DISH SIZE (1 , 2 , or 5)	(MS)		2	2
GROSS COUNTS	(GC)		3	4
COUNT TIME in MINUTES	(CT)		30	30
BACKGROUND in cpm	(BKG)		0.1	0.1
SAMPLE SIZE in mL	(SS)		0.100	0.100
DILUTION FACTOR	(DF)		1111	1111
DIGEST DILUTION FACTOR	(DDF)		1	1
EFFICIENCY FACTOR	(EFF)		0.2683	0.2683
Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE			0.135	0.179
Blank Concentration in µCi/L		<	2.51E+00	
Replicate Concentration in µCi/L		<	3.34E+00	
Maximum Concentration in µCi/L		<	3.3360E+00	

Type	SAMPLE
Work List	29803
AT or TB ?	AT
Test Code	@ALPHA01
Matrix	LIQUID
Batch Number	99002128
Rerun	0
Sample Prep	N/A
Sample #	S99T000897
Instrument Code	WB27806
Prepared By	SLH2
Chemist	SAC
Analyst	SCL
Date Complete	05/23/99
Analysis Date	05/21/99
Analysis Time	01:30 PM
Sample Point	AP107 GRAB2

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL µCi/L = Rs * 1000mL/L * DF * DDF / (EFF * SS * 2220000dpm/µCi)

ALPHA TOTAL µCi/mL = ALPHA TOTAL µCi/L / 1000mL/L

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

ALPHA TOTAL in µCi/mL (Maximum)	=	< 3.34E-03	DETECTION LEVEL
LESS Than Value was Determined from Lc.			
RELATIVE COUNTING ERROR		500.0%	6.72E-03 µCi/mL

Analyst:		SCL	Date: 23-May-99
Signature of Chemist:	John Relyea	SAC	Date: 24 May 99

SAMPLE.WB1 Rev. 1.0 508101ML

WORKBOOK PAGE: DUP11

AT : LA-508-101 (G-0) LIQUIDS

			DUP	REPLICATE
Type	DETECTOR NUMBER		16	16
DUP	DISH SIZE (1 , 2 , or 5)	(MS)	2	2
Work List	GROSS COUNTS	(GC)	4	5
29803	COUNT TIME in MINUTES	(CT)	30	30
AT or TS ?	BACKGROUND in cpm	(BKG)	0.1	0.1
AT	SAMPLE SIZE in mL	(SS)	0.100	0.100
Test Code	DILUTION FACTOR	(DF)	1111	1111
@ALPHA01	DIGEST DILUTION FACTOR	(DDF)	1	1
Matrix	EFFICIENCY FACTOR	(EFF)	0.2683	0.2683
LIQUID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		0.179	0.222

Batch Number		
99002128	Blank Concentration in µCi/L	< 3.34E+00
Rerun	Replicate Concentration in µCi/L	< 4.15E+00
0	Maximum Concentration in µCi/L	< 4.1452E+00

Sample Prep: N/A

Sample #: S99T000897

Instrument Code: WB27806

Prepared By: SLH2

Chemist: SAC

Analyst: SCL

Date Complete: 05/23/99

Analysis Date: 05/21/99

Analysis Time: 01:30 PM

Sample Point: AP107 GRAB2

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL µCi/L = Rs * 1000mL/L * DF * DDF / (EFF * SS * 2220000dpm/µCi)

ALPHA TOTAL µCi/mL = ALPHA TOTAL µCi/L / 1000mL/L

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

ALPHA TOTAL in µCi/mL (Maximum)	=	< 4.15E-03	DETECTION LEVEL
LESS THAN Value was Determined from Rmax.			6.72E-03 µCi/mL
RELATIVE COUNTING ERROR		500.0%	

Analyst:		SCL	Date: 23-May-99
Signature of Chemist:	John Relyea	SAC	Date: 24 May 99

SAMPLE.WB1 Rev. 1.0 508101ML

LABCORE Completed Worklist Report for Worklist# 29805

Analyst: rro **Instrument:** GEA02 **Book#:** 46B57

Method: LA-548-121 Rev/Mod F-Ø

Worklist Comment: AP107 FOR @GEA-03, RLC

Seq	Type	Sample#	R	A	Test	Matrix	Actual		Found	DL or Yield	Unit
1	STD		0	@GEA-03	CO60-02	LIQUID	5.262e-03		5.73e-03	108.894	% Recovery
1	STD		0	@GEA-03	CO60-02E	LIQUID	1		2.91	2.910	% Ct Error
1	STD		0	@GEA-03	CS13702	LIQUID	8.086e-03		8.46e-03	104.625	% Recovery
1	STD		0	@GEA-03	CS13702E	LIQUID	1		2.83	2.830	% Ct Error
2	BLNK		0	@GEA-03	CO60-02	LIQUID	1		<1.64e-3		uCi/mL
2	BLNK		0	@GEA-03	NB94-02	LIQUID	1		<1.62e-3		uCi/mL
2	BLNK		0	@GEA-03	RU10602	LIQUID	1		<3.03e-2		uCi/mL
2	BLNK		0	@GEA-03	CS13402	LIQUID	1		<1.64e-3		uCi/mL
2	BLNK		0	@GEA-03	CS13702	LIQUID	1		<4.14e-3		uCi/mL
2	BLNK		0	@GEA-03	CE14402	LIQUID	1		<1.60e-2		uCi/mL
2	BLNK		0	@GEA-03	EU15402	LIQUID	1		<6.36e-3		uCi/mL
2	BLNK		0	@GEA-03	EU15502	LIQUID	1		<4.06e-3		uCi/mL
2	BLNK		0	@GEA-03	RA22602	LIQUID	1		<2.94e-2		uCi/mL
3	SAMPLE	S99T000894	0	@GEA-03	CO60-02	LIQUID	N/A	<	1.733e-03	1.73e-003	uCi/mL
3	SAMPLE	S99T000894	0	@GEA-03	CO60-02E	LIQUID	N/A		n/a		% Ct. Error
3	SAMPLE	S99T000894	0	@GEA-03	NB94-02	LIQUID	N/A	<	1.867e-03	1.87e-003	uCi/mL
3	SAMPLE	S99T000894	0	@GEA-03	NB94-02E	LIQUID	N/A		n/a		% Ct. Error
3	SAMPLE	S99T000894	0	@GEA-03	RU10602	LIQUID	N/A	<	2.622e-01	0.262	uCi/mL
3	SAMPLE	S99T000894	0	@GEA-03	RU10602E	LIQUID	N/A		n/a		% Ct. Error
3	SAMPLE	S99T000894	0	@GEA-03	CS13402	LIQUID	N/A	<	1.306e-02	1.31e-002	uCi/mL
3	SAMPLE	S99T000894	0	@GEA-03	CS13402E	LIQUID	N/A		n/a		% Ct. Error
3	SAMPLE	S99T000894	0	@GEA-03	CS13702	LIQUID	N/A		3.690e+01		uCi/mL
3	SAMPLE	S99T000894	0	@GEA-03	CS13702E	LIQUID	N/A		0.240		% Ct. Error
3	SAMPLE	S99T000894	0	@GEA-03	CE14402	LIQUID	N/A	<	1.659e-01	0.166	uCi/mL
3	SAMPLE	S99T000894	0	@GEA-03	CE14402E	LIQUID	N/A		n/a		% Ct. Error
3	SAMPLE	S99T000894	0	@GEA-03	EU15402	LIQUID	N/A	<	5.458e-03	5.46e-003	uCi/mL
3	SAMPLE	S99T000894	0	@GEA-03	EU15402E	LIQUID	N/A		n/a		% Ct. Error
3	SAMPLE	S99T000894	0	@GEA-03	EU15502	LIQUID	N/A	<	3.840e-02	3.84e-002	uCi/mL
3	SAMPLE	S99T000894	0	@GEA-03	EU15502E	LIQUID	N/A		n/a		% Ct. Error
3	SAMPLE	S99T000894	0	@GEA-03	RA22602	LIQUID	N/A	<	3.143e-01	0.314	uCi/mL
3	SAMPLE	S99T000894	0	@GEA-03	RA22602E	LIQUID	N/A		n/a		% Ct. Error
4	DUP	S99T000894	0	@GEA-03	CO60-02	LIQUID	<1.73e-3		<1.69e-3		RPD
4	DUP	S99T000894	0	@GEA-03	CO60-02E	LIQUID	1		n/a		% Ct Error
4	DUP	S99T000894	0	@GEA-03	NB94-02	LIQUID	<1.87e-3		<1.90e-3		RPD
4	DUP	S99T000894	0	@GEA-03	NB94-02E	LIQUID	1		n/a		% Ct Error
4	DUP	S99T000894	0	@GEA-03	RU10602	LIQUID	<2.62e-1		<2.64e-1		RPD
4	DUP	S99T000894	0	@GEA-03	RU10602E	LIQUID	1		n/a		% Ct Error
4	DUP	S99T000894	0	@GEA-03	CS13402	LIQUID	<1.31e-2		<1.32e-2		RPD
4	DUP	S99T000894	0	@GEA-03	CS13402E	LIQUID	1		n/a		% Ct Error
4	DUP	S99T000894	0	@GEA-03	CS13702	LIQUID	3.69e+01		3.66e+01	0.816	RPD
4	DUP	S99T000894	0	@GEA-03	CS13702E	LIQUID	1		0.240	0.240	% Ct Error

Units shown for QC (BLK/BKG) may not reflect the actual units.

LABCORE Completed Worklist Report for Worklist# 29805

Seq	Type	Sample#	R	A	Test	Matrix	Actual	Found	DL or Yield	Unit
4	DUP	S99T000894	0	@GEA-03	CE14402	LIQUID	<1.66e-1	<1.66e-1		RPD
4	DUP	S99T000894	0	@GEA-03	CE14402E	LIQUID	1	n/a		% Ct Error
4	DUP	S99T000894	0	@GEA-03	EU15402	LIQUID	<5.46e-3	<6.78e-3		RPD
4	DUP	S99T000894	0	@GEA-03	EU15402E	LIQUID	1	n/a		% Ct Error
4	DUP	S99T000894	0	@GEA-03	EU15502	LIQUID	<3.84e-2	<3.83e-2		RPD
4	DUP	S99T000894	0	@GEA-03	EU15502E	LIQUID	1	n/a		% Ct Error
4	DUP	S99T000894	0	@GEA-03	RA22602	LIQUID	<3.14e-1	<3.10e-1		RPD
4	DUP	S99T000894	0	@GEA-03	RA22602E	LIQUID	1	n/a		% Ct Error
5	SAMPLE	S99T000895	0	@GEA-03	CO60-02	LIQUID	N/A <	1.982e-03	1.98e-003	uCi/mL
5	SAMPLE	S99T000895	0	@GEA-03	CO60-02E	LIQUID	N/A	n/a		% Ct. Error
5	SAMPLE	S99T000895	0	@GEA-03	NB94-02	LIQUID	N/A <	2.091e-03	2.09e-003	uCi/mL
5	SAMPLE	S99T000895	0	@GEA-03	NB94-02E	LIQUID	N/A	n/a		% Ct. Error
5	SAMPLE	S99T000895	0	@GEA-03	RU10602	LIQUID	N/A <	3.515e-01	0.351	uCi/mL
5	SAMPLE	S99T000895	0	@GEA-03	RU10602E	LIQUID	N/A	n/a		% Ct. Error
5	SAMPLE	S99T000895	0	@GEA-03	CS13402	LIQUID	N/A <	1.771e-02	1.77e-002	uCi/mL
5	SAMPLE	S99T000895	0	@GEA-03	CS13402E	LIQUID	N/A	n/a		% Ct. Error
5	SAMPLE	S99T000895	0	@GEA-03	CS13702	LIQUID	N/A	6.680e+01		uCi/mL
5	SAMPLE	S99T000895	0	@GEA-03	CS13702E	LIQUID	N/A	0.180		% Ct. Error
5	SAMPLE	S99T000895	0	@GEA-03	CE14402	LIQUID	N/A <	2.227e-01	0.223	uCi/mL
5	SAMPLE	S99T000895	0	@GEA-03	CE14402E	LIQUID	N/A	n/a		% Ct. Error
5	SAMPLE	S99T000895	0	@GEA-03	EU15402	LIQUID	N/A <	4.330e-03	4.33e-003	uCi/mL
5	SAMPLE	S99T000895	0	@GEA-03	EU15402E	LIQUID	N/A	n/a		% Ct. Error
5	SAMPLE	S99T000895	0	@GEA-03	EU15502	LIQUID	N/A <	5.149e-02	5.15e-002	uCi/mL
5	SAMPLE	S99T000895	0	@GEA-03	EU15502E	LIQUID	N/A	n/a		% Ct. Error
5	SAMPLE	S99T000895	0	@GEA-03	RA22602	LIQUID	N/A <	4.198e-01	0.420	uCi/mL
5	SAMPLE	S99T000895	0	@GEA-03	RA22602E	LIQUID	N/A	n/a		% Ct. Error
6	DUP	S99T000895	0	@GEA-03	CO60-02	LIQUID	<1.98e-3	<2.21e-3		RPD
6	DUP	S99T000895	0	@GEA-03	CO60-02E	LIQUID	1	n/a		% Ct Error
6	DUP	S99T000895	0	@GEA-03	NB94-02	LIQUID	<2.09e-3	<1.70e-3		RPD
6	DUP	S99T000895	0	@GEA-03	NB94-02E	LIQUID	1	n/a		% Ct Error
6	DUP	S99T000895	0	@GEA-03	RU10602	LIQUID	<3.51e-1	<3.38e-1		RPD
6	DUP	S99T000895	0	@GEA-03	RU10602E	LIQUID	1	n/a		% Ct Error
6	DUP	S99T000895	0	@GEA-03	CS13402	LIQUID	<1.77e-2	<1.69e-2		RPD
6	DUP	S99T000895	0	@GEA-03	CS13402E	LIQUID	1	n/a		% Ct Error
6	DUP	S99T000895	0	@GEA-03	CS13702	LIQUID	6.68e+01	6.23e+01	6.971	RPD
6	DUP	S99T000895	0	@GEA-03	CS13702E	LIQUID	1	0.180	0.180	% Ct Error
6	DUP	S99T000895	0	@GEA-03	CE14402	LIQUID	<2.23e-1	<2.16e-1		RPD
6	DUP	S99T000895	0	@GEA-03	CE14402E	LIQUID	1	n/a		% Ct Error
6	DUP	S99T000895	0	@GEA-03	EU15402	LIQUID	<4.33e-3	<5.27e-3		RPD
6	DUP	S99T000895	0	@GEA-03	EU15402E	LIQUID	1	n/a		% Ct Error
6	DUP	S99T000895	0	@GEA-03	EU15502	LIQUID	<5.15e-2	<4.97e-2		RPD
6	DUP	S99T000895	0	@GEA-03	EU15502E	LIQUID	1	n/a		% Ct Error
6	DUP	S99T000895	0	@GEA-03	RA22602	LIQUID	<4.20e-1	<4.05e-1		RPD
6	DUP	S99T000895	0	@GEA-03	RA22602E	LIQUID	1	n/a		% Ct Error
7	SAMPLE	S99T000896	0	@GEA-03	CO60-02	LIQUID	N/A <	2.181e-03	2.18e-003	uCi/mL
7	SAMPLE	S99T000896	0	@GEA-03	CO60-02E	LIQUID	N/A	n/a		% Ct. Error
7	SAMPLE	S99T000896	0	@GEA-03	NB94-02	LIQUID	N/A <	2.104e-03	2.10e-003	uCi/mL
7	SAMPLE	S99T000896	0	@GEA-03	NB94-02E	LIQUID	N/A	n/a		% Ct. Error
7	SAMPLE	S99T000896	0	@GEA-03	RU10602	LIQUID	N/A <	3.475e-01	0.347	uCi/mL

Units shown for QC (BLK/BKG) may not reflect the actual units.

LABCORE Completed Worklist Report for Worklist# 29805

Seq	Type	Sample#	R	A	Test	Matrix	Actual		Found	DL or Yield	Unit
7	SAMPLE	S99T000896	0	@GEA-03	RU10602E	LIQUID	N/A		n/a		% Ct. Error
7	SAMPLE	S99T000896	0	@GEA-03	CS13402	LIQUID	N/A	<	1.756e-02	1.76e-002	uCi/mL
7	SAMPLE	S99T000896	0	@GEA-03	CS13402E	LIQUID	N/A		n/a		% Ct. Error
7	SAMPLE	S99T000896	0	@GEA-03	CS13702	LIQUID	N/A		6.590e+01		uCi/mL
7	SAMPLE	S99T000896	0	@GEA-03	CS13702E	LIQUID	N/A		0.180		% Ct. Error
7	SAMPLE	S99T000896	0	@GEA-03	CE14402	LIQUID	N/A	<	2.218e-01	0.222	uCi/mL
7	SAMPLE	S99T000896	0	@GEA-03	CE14402E	LIQUID	N/A		n/a		% Ct. Error
7	SAMPLE	S99T000896	0	@GEA-03	EU15402	LIQUID	N/A	<	4.968e-03	4.97e-003	uCi/mL
7	SAMPLE	S99T000896	0	@GEA-03	EU15402E	LIQUID	N/A		n/a		% Ct. Error
7	SAMPLE	S99T000896	0	@GEA-03	EU15502	LIQUID	N/A	<	5.133e-02	5.13e-002	uCi/mL
7	SAMPLE	S99T000896	0	@GEA-03	EU15502E	LIQUID	N/A		n/a		% Ct. Error
7	SAMPLE	S99T000896	0	@GEA-03	RA22602	LIQUID	N/A	<	4.172e-01	0.417	uCi/mL
7	SAMPLE	S99T000896	0	@GEA-03	RA22602E	LIQUID	N/A		n/a		% Ct. Error
8	DUP	S99T000896	0	@GEA-03	CO60-02	LIQUID	<2.18e-3		<1.98e-3		RPD
8	DUP	S99T000896	0	@GEA-03	CO60-02E	LIQUID	1		n/a		% Ct Error
8	DUP	S99T000896	0	@GEA-03	NB94-02	LIQUID	<2.10e-3		<2.14e-3		RPD
8	DUP	S99T000896	0	@GEA-03	NB94-02E	LIQUID	1		n/a		% Ct Error
8	DUP	S99T000896	0	@GEA-03	RU10602	LIQUID	<3.47e-1		<3.43e-1		RPD
8	DUP	S99T000896	0	@GEA-03	RU10602E	LIQUID	1		n/a		% Ct Error
8	DUP	S99T000896	0	@GEA-03	CS13402	LIQUID	<1.76e-2		<1.74e-2		RPD
8	DUP	S99T000896	0	@GEA-03	CS13402E	LIQUID	1		n/a		% Ct Error
8	DUP	S99T000896	0	@GEA-03	CS13702	LIQUID	6.59e+01		6.45e+01	2.147	RPD
8	DUP	S99T000896	0	@GEA-03	CS13702E	LIQUID	1		0.180	0.180	% Ct Error
8	DUP	S99T000896	0	@GEA-03	CE14402	LIQUID	<2.22e-1		<2.19e-1		RPD
8	DUP	S99T000896	0	@GEA-03	CE14402E	LIQUID	1		n/a		% Ct Error
8	DUP	S99T000896	0	@GEA-03	EU15402	LIQUID	<4.97e-3		<5.53e-3		RPD
8	DUP	S99T000896	0	@GEA-03	EU15402E	LIQUID	1		n/a		% Ct Error
8	DUP	S99T000896	0	@GEA-03	EU15502	LIQUID	<5.13e-2		<5.07e-2		RPD
8	DUP	S99T000896	0	@GEA-03	EU15502E	LIQUID	1		n/a		% Ct Error
8	DUP	S99T000896	0	@GEA-03	RA22602	LIQUID	<4.17e-1		<4.12e-1		RPD
8	DUP	S99T000896	0	@GEA-03	RA22602E	LIQUID	1		n/a		% Ct Error
9	SAMPLE	S99T000897	0	@GEA-03	CO60-02	LIQUID	N/A	<	1.778e-03	1.78e-003	uCi/mL
9	SAMPLE	S99T000897	0	@GEA-03	CO60-02E	LIQUID	N/A		n/a		% Ct. Error
9	SAMPLE	S99T000897	0	@GEA-03	NB94-02	LIQUID	N/A	<	2.188e-03	2.19e-003	uCi/mL
9	SAMPLE	S99T000897	0	@GEA-03	NB94-02E	LIQUID	N/A		n/a		% Ct. Error
9	SAMPLE	S99T000897	0	@GEA-03	RU10602	LIQUID	N/A	<	3.543e-01	0.354	uCi/mL
9	SAMPLE	S99T000897	0	@GEA-03	RU10602E	LIQUID	N/A		n/a		% Ct. Error
9	SAMPLE	S99T000897	0	@GEA-03	CS13402	LIQUID	N/A	<	1.781e-02	1.78e-002	uCi/mL
9	SAMPLE	S99T000897	0	@GEA-03	CS13402E	LIQUID	N/A		n/a		% Ct. Error
9	SAMPLE	S99T000897	0	@GEA-03	CS13702	LIQUID	N/A		6.840e+01		uCi/mL
9	SAMPLE	S99T000897	0	@GEA-03	CS13702E	LIQUID	N/A		0.170		% Ct. Error
9	SAMPLE	S99T000897	0	@GEA-03	CE14402	LIQUID	N/A	<	2.276e-01	0.228	uCi/mL
9	SAMPLE	S99T000897	0	@GEA-03	CE14402E	LIQUID	N/A		n/a		% Ct. Error
9	SAMPLE	S99T000897	0	@GEA-03	EU15402	LIQUID	N/A	<	5.881e-03	5.88e-003	uCi/mL
9	SAMPLE	S99T000897	0	@GEA-03	EU15402E	LIQUID	N/A		n/a		% Ct. Error
9	SAMPLE	S99T000897	0	@GEA-03	EU15502	LIQUID	N/A	<	5.239e-02	5.24e-002	uCi/mL
9	SAMPLE	S99T000897	0	@GEA-03	EU15502E	LIQUID	N/A		n/a		% Ct. Error
9	SAMPLE	S99T000897	0	@GEA-03	RA22602	LIQUID	N/A	<	4.250e-01	0.425	uCi/mL
9	SAMPLE	S99T000897	0	@GEA-03	RA22602E	LIQUID	N/A		n/a		% Ct. Error

Units shown for QC (BLK/BKG) may not reflect the actual units.

LABCORE Completed Worklist Report for Worklist# 29805

Seq	Type	Sample#	R	A	Test	Matrix	Actual	Found	DL or Yield	Unit
10	DUP	S99T000897	0	@GEA-03	CO60-02	LIQUID	<1.78e-3	<2.05e-3		RPD
10	DUP	S99T000897	0	@GEA-03	CO60-02E	LIQUID	1	n/a		% Ct Error
10	DUP	S99T000897	0	@GEA-03	NB94-02	LIQUID	<2.19e-3	<2.31e-3		RPD
10	DUP	S99T000897	0	@GEA-03	NB94-02E	LIQUID	1	n/a		% Ct Error
10	DUP	S99T000897	0	@GEA-03	RU10602	LIQUID	<3.54e-1	<3.81e-1		RPD
10	DUP	S99T000897	0	@GEA-03	RU10602E	LIQUID	1	n/a		% Ct Error
10	DUP	S99T000897	0	@GEA-03	CS13402	LIQUID	<1.78e-2	<1.91e-2		RPD
10	DUP	S99T000897	0	@GEA-03	CS13402E	LIQUID	1	n/a		% Ct Error
10	DUP	S99T000897	0	@GEA-03	CS13702	LIQUID	6.84e+01	7.88e+01	14.130	RPD
10	DUP	S99T000897	0	@GEA-03	CS13702E	LIQUID	1	0.160	0.160	% Ct Error
10	DUP	S99T000897	0	@GEA-03	CE14402	LIQUID	<2.28e-1	<2.43e-1		RPD
10	DUP	S99T000897	0	@GEA-03	CE14402E	LIQUID	1	n/a		% Ct Error
10	DUP	S99T000897	0	@GEA-03	EU15402	LIQUID	<5.88e-3	<5.96e-3		RPD
10	DUP	S99T000897	0	@GEA-03	EU15402E	LIQUID	1	n/a		% Ct Error
10	DUP	S99T000897	0	@GEA-03	EU15502	LIQUID	<5.24e-2	<5.60e-2		RPD
10	DUP	S99T000897	0	@GEA-03	EU15502E	LIQUID	1	n/a		% Ct Error
10	DUP	S99T000897	0	@GEA-03	RA22602	LIQUID	<4.25e-1	<4.56e-1		RPD
10	DUP	S99T000897	0	@GEA-03	RA22602E	LIQUID	1	n/a		% Ct Error

Comments Section:

Comments for sample# S99T000894 **and test** @GEA-03 .
DL=0 => n/a.

Comments for sample# S99T000895 **and test** @GEA-03 .
DL=0 => n/a.

Comments for sample# S99T000896 **and test** @GEA-03 .
DL=0 => n/a.

Comments for sample# S99T000897 **and test** @GEA-03 .
DL=0 => n/a.

Final page for worklist# 29805

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

RKJones 5-24-99
Reviewer Signature **Date**

Units shown for QC (BLK/BKG) may not reflect the actual units.

LABCORE Data Entry Template for Worklist# 29805

Analyst: RRO **Instrument:** GEA00 2 **Book#** 46B57

Method: LA-548-121 Rev/Mod F-0

Worklist Comment: AP107 FOR @GEA-03, RLC

S	Type	Sample#	R	A	Test	Matrix	Group#	Project
1	STD				@GEA-03	LIQUID		
2	BLNK				@GEA-03	LIQUID		
3	SAMPLE	S99T000894	0		@GEA-03	LIQUID	99000198	AP107 GRAB2
	Analytes Requested:	CE14402 , CE14402E, CO60-02 , CO60-02E, CS13402 , CS13402E, CS13702 , CS13702E, EU15402 , EU15402E, EU15502 , EU15502E, NB94-02 , NB94-02E, RA22602 , RA22602E, RU10602 , RU10602E						
4	DUP	S99T000894	0		@GEA-03	LIQUID		
5	SAMPLE	S99T000895	0		@GEA-03	LIQUID	99000198	AP107 GRAB2
	Analytes Requested:	CE14402 , CE14402E, CO60-02 , CO60-02E, CS13402 , CS13402E, CS13702 , CS13702E, EU15402 , EU15402E, EU15502 , EU15502E, NB94-02 , NB94-02E, RA22602 , RA22602E, RU10602 , RU10602E						
6	DUP	S99T000895	0		@GEA-03	LIQUID		
7	SAMPLE	S99T000896	0		@GEA-03	LIQUID	99000198	AP107 GRAB2
	Analytes Requested:	CE14402 , CE14402E, CO60-02 , CO60-02E, CS13402 , CS13402E, CS13702 , CS13702E, EU15402 , EU15402E, EU15502 , EU15502E, NB94-02 , NB94-02E, RA22602 , RA22602E, RU10602 , RU10602E						
8	DUP	S99T000896	0		@GEA-03	LIQUID		
9	SAMPLE	S99T000897	0		@GEA-03	LIQUID	99000198	AP107 GRAB2
	Analytes Requested:	CE14402 , CE14402E, CO60-02 , CO60-02E, CS13402 , CS13402E, CS13702 , CS13702E, EU15402 , EU15402E, EU15502 , EU15502E, NB94-02 , NB94-02E, RA22602 , RA22602E, RU10602 , RU10602E						
10	DUP	S99T000897	0		@GEA-03	LIQUID		

Data Entry Comments:

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

LABCORE Data Entry Template for Worklist# 29805

S Type	Sample#	R	A	Test	Matrix	Group#	Project

Final page for worklist # 29805

RR O'Dell 5-21-99
Signature Date

[illegible] 5/24/99
Signature Date

Data Entry Comments:

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

```
*****************************************************************************
* 222-S Laboratory Counting Room   21-MAY-1999 15:55:59.47                  *
*****************************************************************************
      >>>>>>>>>> SAMPLE INFORMATION <<<<<<<<<<
Worklist #:              29805
Sample ID:               WL29805-STD
Sample Size:             1.00000E-03 L
Dilution Factor:         1.00000E+00

      >>>>>>>>>> COUNT INFORMATION <<<<<<<<<<
Detector ID:             GEA2
File Number:             dka300:[spec.GEA2]2g2597.cnf
Geometry:                42
Count Time:              0 00:50:00.00 sec
Real Time:               0 00:50:23.36 sec
Dead Time:               0.8%

      >>>>>>>>>> ANALYSIS INFORMATION <<<<<<<<<<
Sample Count Time:       21-MAY-1999 15:05:02.22
Decayed to:              21-MAY-1999 15:05:02.22
Standard Deviations:     2
Analysis Library:        ENVGEA
Analyst:                 NEW
Background Subtract:     DKA300:[SPEC.GEA2]2GBACK

      >>>>>>>>>> CALIBRATION INFORMATION <<<<<<<<<<
 Date of last energy calibration:       3-MAY-1999 14:49:30.70
 Date of last efficiency calibration:   3-MAY-1999 14:49:59.73
*****************************************************************************
```

Removed by:

Verified by: John Relyea 24 May 99

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity uCi/L
0	661.68*	5790	1.49	1323.23	1316	14	2.8		CS-137	8.46
0	1173.19	2848	1.91	2346.39	2337	18	4.2		CO-60	5.62
0	1332.40	2682	1.94	2664.88	2655	18	4.1		CO-60	5.85

Summary of Nuclide Activity
Sample ID : WL29805-STD Acquisition date : 21-MAY-1999 15:05:02

Total number of lines in spectrum	3	
Number of unidentified lines	0	
Number of lines tentatively identified by NID	3	100.00%

Nuclide Type :

Nuclide	Hlife	Decay	Wtd Mean Uncorrected uCi/L	Wtd Mean Decay Corr uCi/L	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
CO-60	5.27Y	1.00	5.734E+00	5.734E+00	0.167E+00	2.91	
CS-137	30.00Y	1.00	8.456E+00	8.456E+00	0.239E+00	2.83	
			---	---			
Total Activity :			1.419E+01	1.419E+01			
Grand Total Activity :			1.419E+01	1.419E+01			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Minimum Detectable Activity Report
Sample ID : WL29805-STD Acquisition date : 21-MAY-1999 15:05:02

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/L)
BE-7	271.	477.59	7.1153E-01
NA-24	13.	1368.55	4.4854E-02
K-40	108.	1460.75	1.1234E+00
AR-41	22.	1293.60	6.1713E-02
SC-46	140.	1120.55	1.0992E-01
CR-51	320.	320.08	5.4432E-01
MN-54	148.	834.83	8.9539E-02
CO-56	149.	846.76	9.0922E-02
CO-58	158.	810.78	9.0653E-02
FE-59	143.	1099.25	1.9355E-01
ZN-65	119.	1115.55	1.9973E-01
SE-75	322.	264.66	7.9809E-02
KR-85	244.	514.00	1.7263E+01
SR-85	244.	514.01	7.8058E-02
Y-88	4.	1836.06	3.5039E-02
Y-91	47.	1204.67	2.3318E+01
NB-94	176.	871.09	1.0068E-01
ZRNB-95	141.	724.20	3.5245E-01
RU-103	222.	497.08	7.6292E-02
RURH-106	163.	621.93	1.4765E+00
AG-108m	145.	722.94	8.6700E-02
CD-109	280.	88.03	1.3459E+00
AG-110M	234.	657.76	9.6646E-02
SN-113	318.	391.69	1.0306E-01
TE-123m	365.	159.00	4.4883E-02
SB-124	150.	602.73	7.0027E-02
SB-125	332.	427.89	2.4908E-01
TE-125m	286.	109.27	1.3313E+01
I-129	255.	39.60	1.4090E+01
I-131	287.	364.48	7.2419E-02
XE-131m	345.	163.93	1.8839E+00
BA-133	320.	356.02	9.7538E-02
CS-134	169.	604.70	7.4521E-02
CS-136	167.	818.51	9.3707E-02
CS-138	15.	1435.86	1.0214E-01
CE-139	370.	165.85	4.7906E-02
BA-140	172.	537.31	2.7016E-01
LA-140	4.	1596.21	3.2449E-02
CE-141	329.	145.44	7.4007E-02
CE-144	353.	133.51	3.3669E-01
CEPR-144	353.	133.51	6.7273E-01
EU-152	316.	121.78	1.2892E-01
EU-154	27.	1274.51	1.6487E-01
EU-155	269.	86.54	1.4974E-01
HF-181	271.	482.18	9.2195E-02
TA-182	268.	67.75	2.1006E-01
HG-203	314.	279.20	5.9224E-02
BI-207	165.	569.70	6.9742E-02
TL-208	305.	277.36	7.4865E-01
PB-210	273.	46.50	1.0199E+01
BI-212	143.	727.18	1.1824E+00

Minimum Detectable Activity Report (continued) Page : 4
Sample ID : WL29805-STD Acquisition date : 21-MAY-1999 15:05:02

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/L)
PB-212	403.	238.63	1.1014E-01
BI-214	187.	609.31	1.7144E-01
PB-214	297.	351.92	2.8831E-01
RA-224	416.	240.99	1.2426E+00
RA-226	430.	186.10	1.2217E+00
AC-228	214.	911.21	4.3074E-01
TH-228	306.	84.37	4.3164E+00
TH-229	285.	88.47	1.9689E-01
U-232	298.	57.78	7.8507E+01
PA-233	297.	312.17	1.3407E-01
UTH-233	385.	245.34	4.3582E+01
PA-234M	157.	1001.03	1.6369E+01
TH-234	270.	63.29	2.8323E+00
U-235	437.	185.71	7.4890E-02
NP-237	271.	86.48	3.9799E-01
U-237	318.	101.07	1.6827E-01
NP-238	167.	984.45	3.9055E-01
NP-239	317.	106.12	1.7782E-01
PU-239	362.	129.30	5.9513E+02
AM-241	289.	59.54	3.8442E-01
AM-243	282.	74.67	1.1383E-01

```
*************************************************************************
* 222-S Laboratory Counting Room   21-MAY-1999 18:53:41.11             *
*************************************************************************
      >>>>>>>>>> SAMPLE INFORMATION <<<<<<<<<<
Worklist #:             29805
Sample ID:              WL29805-BLK
Sample Size:            1.00000E-03 L
Dilution Factor:        1.01000E+02

      >>>>>>>>>> COUNT INFORMATION <<<<<<<<<<
Detector ID:            GEA2
File Number:            dka300:[spec.GEA2]2g2598.cnf
Geometry:               42
Count Time:             0 02:30:00.00 sec
Real Time:              0 02:30:27.64 sec
Dead Time:              0.3%

      >>>>>>>>>> ANALYSIS INFORMATION <<<<<<<<<<
Sample Count Time:      21-MAY-1999 16:22:42.21
Decayed to:             21-MAY-1999 16:22:42.21
Standard Deviations:    2
Analysis Library:       ENVGEA
Analyst:                GL
Background Subtract:    DKA300:[SPEC.GEA2]2GBACK

      >>>>>>>>>> CALIBRATION INFORMATION <<<<<<<<<<
 Date of last energy calibration:      3-MAY-1999 14:49:30.70
 Date of last efficiency calibration:  3-MAY-1999 14:49:59.73
*************************************************************************

Post-NID Peak Search Report
***** No peaks found *****
```

Removed by: SLlahr

Verified by: John Relyea 24 May 99

Summary of Nuclide Activity
Page : 2
Sample ID : WL29805-BLK
Acquisition date : 21-MAY-1999 16:22:42

**** There are no nuclides meeting summary criteria ****

Flags: "K" = Keyline not found
"M" = Manually accepted
"E" = Manually edited
"A" = Nuclide specific abn. limit

Minimum Detectable Activity Report
Page : 3
Sample ID : WL29805-BLK
Acquisition date : 21-MAY-1999 16:22:42

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/L)
BE-7	107.	477.59	1.5378E+01
NA-24	13.	1368.55	1.5478E+00
K-40	324.	1460.75	6.4109E+01
AR-41	26.	1293.60	2.9662E+00
SC-46	58.	1120.55	2.4363E+00
CR-51	151.	320.08	1.2799E+01
MN-54	58.	834.83	1.9344E+00
CO-56	44.	846.76	1.7228E+00
CO-58	43.	810.78	1.6662E+00
FE-59	30.	1099.25	3.1350E+00
CO-60	18.	1332.50	1.6389E+00
ZN-65	38.	1115.55	3.9287E+00
SE-75	169.	264.66	1.9692E+00
KR-85	139.	514.00	4.4378E+02
SR-85	139.	514.01	2.0038E+00
Y-88	10.	1836.06	1.7229E+00
Y-91	30.	1204.67	6.3285E+02
NB-94	36.	871.09	1.6157E+00
ZRNB-95	54.	724.20	7.5676E+00
RU-103	83.	497.08	1.6094E+00
RURH-106	57.	621.93	3.0261E+01
AG-108m	52.	722.94	1.8101E+00
CD-109	165.	88.03	3.5128E+01
AG-110M	71.	657.76	1.8434E+00
SN-113	107.	391.69	2.0580E+00
TE-123m	199.	159.00	1.1269E+00
SB-124	63.	602.73	1.5679E+00
SB-125	104.	427.89	4.8137E+00
TE-125m	142.	109.27	3.1995E+02
I-129	132.	39.60	3.4556E+02
I-131	111.	364.48	1.5509E+00
XE-131m	204.	163.93	4.9250E+01
BA-133	113.	356.02	1.9916E+00
CS-134	69.	604.70	1.6398E+00
CS-136	44.	818.51	1.6820E+00
CS-137	307.	661.66	4.1384E+00
CS-138	20.	1435.86	8.0449E+00
CE-139	203.	165.85	1.2070E+00
BA-140	70.	537.31	5.9630E+00
LA-140	14.	1596.21	1.8166E+00
CE-141	195.	145.44	1.9353E+00
CE-144	171.	133.51	7.9874E+00
CEPR-144	171.	133.51	1.5959E+01
EU-152	193.	121.78	3.4264E+00
EU-154	37.	1274.51	6.3589E+00
EU-155	172.	86.54	4.0618E+00
HF-181	85.	482.18	1.7826E+00
TA-182	147.	67.75	5.3084E+00
HG-203	151.	279.20	1.3998E+00
BI-207	73.	569.70	1.5907E+00
TL-208	139.	277.36	1.7275E+01

Minimum Detectable Activity Report (continued) Page : 4
Sample ID : WL29805-BLK Acquisition date : 21-MAY-1999 16:22:42

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/L)
PB-210	127.	46.50	2.3872E+02
BI-212	60.	727.18	2.6430E+01
PB-212	225.	238.63	2.7994E+00
BI-214	102.	609.31	4.3302E+00
PB-214	176.	351.92	1.6775E+01
RA-224	235.	240.99	3.1904E+01
RA-226	215.	186.10	2.9424E+01
AC-228	65.	911.21	8.2362E+00
TH-228	197.	84.37	1.1762E+02
TH-229	160.	88.47	5.0205E+00
U-232	145.	57.78	1.8680E+03
PA-233	116.	312.17	2.8792E+00
UTH-233	170.	245.34	9.9012E+02
PA-234M	41.	1001.03	2.9166E+02
TH-234	143.	63.29	7.0403E+01
U-235	215.	185.71	1.7889E+00
NP-237	173.	86.48	1.0785E+01
U-237	162.	101.07	4.1113E+00
NP-238	30.	984.45	6.0113E+00
NP-239	190.	106.12	4.7279E+00
PU-239	190.	129.30	1.4688E+04
AM-241	153.	59.54	9.5360E+00
AM-243	173.	74.67	3.0322E+00

```
*****************************************************************************
* 222-S Laboratory Counting Room   22-MAY-1999 00:42:15.00                  *
*****************************************************************************
      >>>>>>>>>> SAMPLE INFORMATION <<<<<<<<<<
Worklist #:              29805
Sample ID:               S99T894-SAM                    Removed by:
Sample Size:             1.00000E-03 L
Dilution Factor:         1.01000E+02                    S L Hale

      >>>>>>>>>> COUNT INFORMATION <<<<<<<<<<
Detector ID:             GEA2                           Verified by:
File Number:             dka300:[spec.GEA2]2g2600.cnf
Geometry:                42                             John Relyea 24 May 99
Count Time:              0 02:30:00.00 sec
Real Time:               0 02:34:08.50 sec
Dead Time:               2.7%

      >>>>>>>>>> ANALYSIS INFORMATION <<<<<<<<<<
Sample Count Time:       21-MAY-1999 22:07:36.53
Decayed to:              21-MAY-1999 22:07:36.53
Standard Deviations:     2
Analysis Library:        ENVGEA
Analyst:                 SLH2
Background Subtract:     DKA300:[SPEC.GEA2]2GBACK

      >>>>>>>>>> CALIBRATION INFORMATION <<<<<<<<<<
 Date of last energy calibration:       3-MAY-1999 14:49:30.70
 Date of last efficiency calibration:   3-MAY-1999 14:49:59.73
*****************************************************************************
```

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity uCi/L
0	661.65*	749628	1.48	1323.18	1315	16	0.2		CS-137	3.686E+04
0	1460.78*	46	1.76	2921.71	2915	14	94.9		K-40	34.1

Summary of Nuclide Activity
Sample ID : S99T894-SAM Acquisition date : 21-MAY-1999 22:07:36

Total number of lines in spectrum	2	
Number of unidentified lines	0	
Number of lines tentatively identified by NID	2	100.00%

Nuclide Type :

Nuclide	Hlife	Decay	Wtd Mean Uncorrected uCi/L	Wtd Mean Decay Corr uCi/L	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
~~K-40~~	~~1.28E+09Y~~	~~1.00~~	~~3.409E+01~~	~~3.409E+01~~	~~3.235E+01~~	~~94.91~~	JR 24 May 99
CS-137	30.00Y	1.00	3.686E+04	3.686E+04	0.009E+04	0.24	
			---	---			
	Total Activity :		3.690E+04	3.690E+04			
	Grand Total Activity :		3.690E+04	3.690E+04			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Minimum Detectable Activity Report
Page : 3
Sample ID : S99T894-SAM
Acquisition date : 21-MAY-1999 22:07:36

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/L)
BE-7	22663.	477.59	2.1237E+02
NA-24	19.	1368.55	1.8365E+00
AR-41	31.	1293.60	3.2431E+00
SC-46	58.	1120.55	2.4411E+00
CR-51	18674.	320.08	1.3631E+02
MN-54	53.	834.83	1.8542E+00
CO-56	54.	846.76	1.8965E+00
CO-58	58.	810.78	1.9017E+00
FE-59	37.	1099.25	3.4790E+00
CO-60	20.	1332.50	1.7330E+00
ZN-65	35.	1115.55	3.8044E+00
SE-75	20649.	264.66	2.0926E+01
KR-85	11631.	514.00	3.8868E+03
SR-85	11629.	514.01	1.7580E+01
Y-88	7.	1836.06	1.4424E+00
Y-91	42.	1204.67	7.3832E+02
NB-94	50.	871.09	1.8667E+00
ZRNB-95	94.	724.20	9.7660E+00
RU-103	14153.	497.08	1.9835E+01
RURH-106	4878.	621.93	2.6219E+02
AG-108m	96.	722.94	2.4031E+00
CD-109	16652.	88.03	3.3937E+02
AG-110M	16289.	657.76	2.6276E+01
SN-113	20196.	391.69	2.6902E+01
TE-123m	20035.	159.00	1.0909E+01
SB-124	4993.	602.73	1.3092E+01
SB-125	23629.	427.89	6.8811E+01
TE-125m	18002.	109.27	3.4530E+03
I-129	15360.	39.60	3.5693E+03
I-131	19277.	364.48	1.9445E+01
XE-131m	20430.	163.93	4.7609E+02
BA-133	18819.	356.02	2.4484E+01
CS-134	4925.	604.70	1.3061E+01
CS-136	56.	818.51	1.8802E+00
CS-138	16.	1435.86	7.5794E+00
CE-139	20334.	165.85	1.1651E+01
BA-140	8405.	537.31	6.1466E+01
LA-140	12.	1596.21	1.7339E+00
CE-141	19940.	145.44	1.8885E+01
CE-144	19941.	133.51	8.3006E+01
CEPR-144	19942.	133.51	1.6587E+02
EU-152	19217.	121.78	3.2933E+01
EU-154	26.	1274.51	5.4579E+00
EU-155	16600.	86.54	3.8395E+01
HF-181	18487.	482.18	2.4896E+01
TA-182	15590.	67.75	5.2373E+01
HG-203	19934.	279.20	1.5444E+01
BI-207	5550.	569.70	1.3114E+01
TL-208	19941.	277.36	1.9816E+02
PB-210	14981.	46.50	2.4769E+03
BI-212	102.	727.18	3.3835E+01

Minimum Detectable Activity Report (continued) Page : 4
Sample ID : S99T894-SAM Acquisition date : 21-MAY-1999 22:07:36

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/L)
PB-212	22973.	238.63	2.7324E+01
BI-214	4977.	609.31	2.8793E+01
PB-214	18798.	351.92	1.7044E+02
RA-224	22823.	240.99	3.0436E+02
RA-226	26332.	186.10	3.1430E+02
AC-228	72.	911.21	8.6566E+00
TH-228	16602.	84.37	1.0414E+03
TH-229	16755.	88.47	4.9341E+01
U-232	15435.	57.78	1.8493E+04
PA-233	18719.	312.17	3.4843E+01
UTH-233	22423.	245.34	1.0923E+04
PA-234M	51.	1001.03	3.2345E+02
TH-234	15450.	63.29	7.0023E+02
U-235	26119.	185.71	1.9037E+01
NP-237	16607.	86.48	1.0171E+02
U-237	17308.	101.07	4.0807E+01
NP-238	41.	984.45	6.8593E+00
NP-239	17535.	106.12	4.3763E+01
PU-239	20024.	129.30	1.4524E+05
AM-241	15276.	59.54	9.1442E+01
AM-243	15857.	74.67	2.7901E+01

```
*************************************************************************
* 222-S Laboratory Counting Room   22-MAY-1999 03:46:17.69              *
*************************************************************************
      >>>>>>>>>> SAMPLE INFORMATION <<<<<<<<<<
Worklist #:              29805
Sample ID:               S99T894-DUP                    Removed by:
Sample Size:             1.00000E-03 L
Dilution Factor:         1.01000E+02                    SLH

      >>>>>>>>>> COUNT INFORMATION <<<<<<<<<<
Detector ID:             GEA2                           Verified by:
File Number:             dka300:[spec.GEA2]2g2602.cnf
Geometry:                42                             John Relyea 24 May 99
Count Time:              0 02:30:00.00 sec
Real Time:               0 02:34:04.70 sec
Dead Time:               2.6%

      >>>>>>>>>> ANALYSIS INFORMATION <<<<<<<<<<
Sample Count Time:       22-MAY-1999 01:11:41.01
Decayed to:              22-MAY-1999 01:11:41.01
Standard Deviations:     2
Analysis Library:        ENVGEA
Analyst:                 SLH2
Background Subtract:     DKA300:[SPEC.GEA2]2GBACK

      >>>>>>>>>> CALIBRATION INFORMATION <<<<<<<<<<
 Date of last energy calibration:       3-MAY-1999 14:49:30.70
 Date of last efficiency calibration:   3-MAY-1999 14:49:59.73
*************************************************************************
```

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity uCi/L
0	661.65*	744171	1.48	1323.18	1315	16	0.2		CS-137	3.659E+04

Summary of Nuclide Activity
Sample ID : S99T894-DUP

Acquisition date : 22-MAY-1999 01:11:41

Total number of lines in spectrum	1	
Number of unidentified lines	0	
Number of lines tentatively identified by NID	1	100.00%

Nuclide Type :

Nuclide	Hlife	Decay	Wtd Mean Uncorrected uCi/L	Wtd Mean Decay Corr uCi/L	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
CS-137	30.00Y	1.00	3.659E+04	3.659E+04	0.009E+04	0.24	
			---	---			
Total Activity :			3.659E+04	3.659E+04			
Grand Total Activity :			3.659E+04	3.659E+04			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Minimum Detectable Activity Report
Sample ID : S99T894-DUP Acquisition date : 22-MAY-1999 01:11:41

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/L)
BE-7	22723.	477.59	2.1265E+02
NA-24	16.	1368.55	1.7051E+00
K-40	327.	1460.75	6.4397E+01
AR-41	20.	1293.60	2.6326E+00
SC-46	65.	1120.55	2.5683E+00
CR-51	18329.	320.08	1.3505E+02
MN-54	73.	834.83	2.1639E+00
CO-56	49.	846.76	1.8173E+00
CO-58	53.	810.78	1.8242E+00
FE-59	39.	1099.25	3.5502E+00
CO-60	19.	1332.50	1.6910E+00
ZN-65	52.	1115.55	4.5493E+00
SE-75	20542.	264.66	2.0872E+01
KR-85	11546.	514.00	3.8727E+03
SR-85	11543.	514.01	1.7516E+01
Y-88	8.	1836.06	1.5414E+00
Y-91	43.	1204.67	7.4730E+02
NB-94	52.	871.09	1.9041E+00
ZRNB-95	113.	724.20	1.0699E+01
RU-103	14114.	497.08	1.9808E+01
RURH-106	4947.	621.93	2.6403E+02
AG-108m	110.	722.94	2.5576E+00
CD-109	16419.	88.03	3.3699E+02
AG-110M	16188.	657.76	2.6195E+01
SN-113	20162.	391.69	2.6879E+01
TE-123m	20153.	159.00	1.0941E+01
SB-124	5008.	602.73	1.3112E+01
SB-125	23487.	427.89	6.8605E+01
TE-125m	17666.	109.27	3.4208E+03
I-129	15004.	39.60	3.5279E+03
I-131	18663.	364.48	1.9134E+01
XE-131m	19871.	163.93	4.6955E+02
BA-133	18788.	356.02	2.4465E+01
CS-134	5067.	604.70	1.3246E+01
CS-136	51.	818.51	1.8139E+00
CS-138	15.	1435.86	7.2816E+00
CE-139	19956.	165.85	1.1542E+01
BA-140	8540.	537.31	6.1953E+01
LA-140	14.	1596.21	1.8465E+00
CE-141	19895.	145.44	1.8864E+01
CE-144	20041.	133.51	8.3211E+01
CEPR-144	20040.	133.51	1.6627E+02
EU-152	19365.	121.78	3.3059E+01
EU-154	42.	1274.51	6.7816E+00
EU-155	16496.	86.54	3.8274E+01
HF-181	18065.	482.18	2.4611E+01
TA-182	15325.	67.75	5.1929E+01
HG-203	19580.	279.20	1.5307E+01
BI-207	5378.	569.70	1.2911E+01
TL-208	19805.	277.36	1.9748E+02
PB-210	14798.	46.50	2.4618E+03

Minimum Detectable Activity Report (continued) Page : 4
Sample ID : S99T894-DUP Acquisition date : 22-MAY-1999 01:11:41

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/L)
BI-212	113.	727.18	3.5518E+01
PB-212	22874.	238.63	2.7266E+01
BI-214	4973.	609.31	2.8783E+01
PB-214	18633.	351.92	1.6963E+02
RA-224	22627.	240.99	3.0305E+02
RA-226	25671.	186.10	3.1034E+02
AC-228	92.	911.21	9.6986E+00
TH-228	16463.	84.37	1.0370E+03
TH-229	16464.	88.47	4.8913E+01
U-232	15016.	57.78	1.8241E+04
PA-233	18723.	312.17	3.4846E+01
UTH-233	22142.	245.34	1.0854E+04
PA-234M	34.	1001.03	2.6903E+02
TH-234	15181.	63.29	6.9413E+02
U-235	25420.	185.71	1.8781E+01
NP-237	16514.	86.48	1.0143E+02
U-237	17394.	101.07	4.0909E+01
NP-238	39.	984.45	6.7224E+00
NP-239	17423.	106.12	4.3624E+01
PU-239	19853.	129.30	1.4463E+05
AM-241	15116.	59.54	9.0965E+01
AM-243	15717.	74.67	2.7778E+01

```
*************************************************************************
* 222-S Laboratory Counting Room   22-MAY-1999 06:25:42.13              *
*************************************************************************
      >>>>>>>>>> SAMPLE INFORMATION <<<<<<<<<<
Worklist #:              29805
Sample ID:               S99T895-SAM
Sample Size:             1.00000E-03 L
Dilution Factor:         1.01000E+02

      >>>>>>>>>> COUNT INFORMATION <<<<<<<<<<
Detector ID:             GEA2
File Number:             dka300:[spec.GEA2]2g2603.cnf
Geometry:                42
Count Time:              0 02:30:00.00 sec
Real Time:               0 02:36:38.10 sec
Dead Time:               4.2%

      >>>>>>>>>> ANALYSIS INFORMATION <<<<<<<<<<
Sample Count Time:       22-MAY-1999 03:48:33.93
Decayed to:              22-MAY-1999 03:48:33.93
Standard Deviations:     2
Analysis Library:        ENVGEA
Analyst:                 SLH2
Background Subtract:     DKA300:[SPEC.GEA2]2GBACK

      >>>>>>>>>> CALIBRATION INFORMATION <<<<<<<<<<
 Date of last energy calibration:       3-MAY-1999 14:49:30.70
 Date of last efficiency calibration:   3-MAY-1999 14:49:59.73
*************************************************************************
```

Removed by:

Verified by: John Relyea 24 May 99

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity uCi/L
0	661.67*	1357961	1.49	1323.21	1315	16	0.2		CS-137	6.678E+04
0	1323.31	64	2.15	2646.71	2641	14	43.2			

Summary of Nuclide Activity
Page : 2
Sample ID : S99T895-SAM
Acquisition date : 22-MAY-1999 03:48:33

Total number of lines in spectrum	2	
Number of unidentified lines	1	
Number of lines tentatively identified by NID	1	50.00%

Nuclide Type :

Nuclide	Hlife	Decay	Wtd Mean Uncorrected uCi/L	Wtd Mean Decay Corr uCi/L	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
CS-137	30.00Y	1.00	6.678E+04	6.678E+04	0.012E+04	0.18	
			---	---			
Total Activity :			6.678E+04	6.678E+04			
Grand Total Activity :			6.678E+04	6.678E+04			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Minimum Detectable Activity Report
Sample ID : S99T895-SAM Acquisition date : 22-MAY-1999 03:48:33

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/L)
BE-7	41372.	477.59	2.8665E+02
NA-24	16.	1368.55	1.7162E+00
K-40	303.	1460.75	6.2092E+01
AR-41	22.	1293.60	2.8035E+00
SC-46	66.	1120.55	2.5867E+00
CR-51	33775.	320.08	1.8312E+02
MN-54	70.	834.83	2.1211E+00
CO-56	76.	846.76	2.2251E+00
CO-58	73.	810.78	2.1189E+00
FE-59	35.	1099.25	3.3673E+00
CO-60	27.	1332.50	1.9821E+00
ZN-65	49.	1115.55	4.4408E+00
SE-75	37277.	264.66	2.8088E+01
KR-85	20837.	514.00	5.1953E+03
SR-85	20834.	514.01	2.3499E+01
Y-88	7.	1836.06	1.4424E+00
Y-91	40.	1204.67	7.2218E+02
NB-94	63.	871.09	2.0907E+00
ZRNB-95	244.	724.20	1.5418E+01
RU-103	25605.	497.08	2.6647E+01
RURH-106	8806.	621.93	3.5154E+02
AG-108m	224.	722.94	3.5939E+00
CD-109	30268.	88.03	4.5700E+02
AG-110M	28686.	657.76	3.4831E+01
SN-113	36494.	391.69	3.6125E+01
TE-123m	36276.	159.00	1.4664E+01
SB-124	9004.	602.73	1.7545E+01
SB-125	42489.	427.89	9.2186E+01
TE-125m	32276.	109.27	4.6186E+03
I-129	27744.	39.60	4.7913E+03
I-131	34641.	364.48	2.6041E+01
XE-131m	36591.	163.93	6.3653E+02
BA-133	33886.	356.02	3.2820E+01
CS-134	9090.	604.70	1.7705E+01
CS-136	78.	818.51	2.2002E+00
CS-138	15.	1435.86	7.3277E+00
CE-139	36943.	165.85	1.5687E+01
BA-140	15105.	537.31	8.2272E+01
LA-140	13.	1596.21	1.8082E+00
CE-141	36616.	145.44	2.5564E+01
CE-144	36026.	133.51	1.1145E+02
CEPR-144	36024.	133.51	2.2270E+02
EU-152	35005.	121.78	4.4400E+01
EU-154	16.	1274.51	4.3299E+00
EU-155	29924.	86.54	5.1490E+01
HF-181	33213.	482.18	3.3334E+01
TA-182	27684.	67.75	6.9711E+01
HG-203	35568.	279.20	2.0609E+01
BI-207	10105.	569.70	1.7660E+01
TL-208	35789.	277.36	2.6519E+02
PB-210	27404.	46.50	3.3461E+03

Minimum Detectable Activity Report (continued)
Sample ID : S99T895-SAM Acquisition date : 22-MAY-1999 03:48:33

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/L)
BI-212	236.	727.18	5.0563E+01
PB-212	41656.	238.63	3.6758E+01
BI-214	8965.	609.31	3.8564E+01
PB-214	33889.	351.92	2.3202E+02
RA-224	41427.	240.99	4.0972E+02
RA-226	47060.	186.10	4.1979E+02
AC-228	99.	911.21	1.0010E+01
TH-228	29647.	84.37	1.3900E+03
TH-229	30289.	88.47	6.6266E+01
U-232	27350.	57.78	2.4588E+04
PA-233	33577.	312.17	4.6616E+01
UTH-233	39985.	245.34	1.4571E+04
PA-234M	40.	1001.03	2.9076E+02
TH-234	27677.	63.29	9.3608E+02
U-235	46547.	185.71	2.5391E+01
NP-237	29908.	86.48	1.3634E+02
U-237	31539.	101.07	5.5028E+01
NP-238	50.	984.45	7.5775E+00
NP-239	31916.	106.12	5.8991E+01
PU-239	35651.	129.30	1.9360E+05
AM-241	27637.	59.54	1.2285E+02
AM-243	28753.	74.67	3.7526E+01

```
*****************************************************************************
* 222-S Laboratory Counting Room   22-MAY-1999 09:18:27.69                  *
*****************************************************************************
      >>>>>>>>>> SAMPLE INFORMATION <<<<<<<<<<
Worklist #:              29805
Sample ID:               S99T000895-DUP
Sample Size:             1.00000E-03 L
Dilution Factor:         1.01000E+02

      >>>>>>>>>> COUNT INFORMATION <<<<<<<<<<
Detector ID:             GEA2
File Number:             dka300:[spec.GEA2]2g2604.cnf
Geometry:                42
Count Time:              0 02:30:00.00 sec
Real Time:               0 02:36:17.66 sec
Dead Time:               4.0%

      >>>>>>>>>> ANALYSIS INFORMATION <<<<<<<<<<
Sample Count Time:       22-MAY-1999 06:41:39.74
Decayed to:              22-MAY-1999 06:41:39.74
Standard Deviations:     2
Analysis Library:        ENVGEA
Analyst:                 GL
Background Subtract:     DKA300:[SPEC.GEA2]2GBACK

      >>>>>>>>>> CALIBRATION INFORMATION <<<<<<<<<<
 Date of last energy calibration:       3-MAY-1999 14:49:30.70
 Date of last efficiency calibration:   3-MAY-1999 14:49:59.73
*****************************************************************************
```

Removed by:

Verified by: John Relyea 24 May 99

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity uCi/L
0	661.66*	1266479	1.48	1323.20	1315	16	0.2		CS-137	6.228E+04
0	1322.90	80	1.95	2645.87	2640	13	33.3			

Summary of Nuclide Activity
Sample ID : S99T000895-DUP

Acquisition date : 22-MAY-1999 06:41:39

Total number of lines in spectrum	2	
Number of unidentified lines	1	
Number of lines tentatively identified by NID	1	50.00%

Nuclide Type :

Nuclide	Hlife	Decay	Wtd Mean Uncorrected uCi/L	Wtd Mean Decay Corr uCi/L	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
CS-137	30.00Y	1.00	6.228E+04	6.228E+04	0.011E+04	0.18	
			---	---			
Total Activity :			6.228E+04	6.228E+04			
Grand Total Activity :			6.228E+04	6.228E+04			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Minimum Detectable Activity Report
Sample ID : S99T000895-DUP Acquisition date : 22-MAY-1999 06:41:39

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/L)
BE-7	38482.	477.59	2.7649E+02
NA-24	12.	1368.55	1.5088E+00
K-40	342.	1460.75	6.5802E+01
AR-41	18.	1293.60	2.5364E+00
SC-46	58.	1120.55	2.4427E+00
CR-51	31382.	320.08	1.7654E+02
MN-54	57.	834.83	1.9183E+00
CO-56	51.	846.76	1.8490E+00
CO-58	81.	810.78	2.2231E+00
FE-59	38.	1099.25	3.5200E+00
CO-60	35.	1332.50	2.2131E+00
ZN-65	34.	1115.55	3.7553E+00
SE-75	34856.	264.66	2.7163E+01
KR-85	19504.	514.00	5.0271E+03
SR-85	19503.	514.01	2.2739E+01
Y-88	9.	1836.06	1.6139E+00
Y-91	44.	1204.67	7.5745E+02
NB-94	40.	871.09	1.6990E+00
ZRNB-95	198.	724.20	1.3968E+01
RU-103	24098.	497.08	2.5853E+01
RURH-106	8158.	621.93	3.3844E+02
AG-108m	189.	722.94	3.3158E+00
CD-109	28032.	88.03	4.3986E+02
AG-110M	26538.	657.76	3.3506E+01
SN-113	34267.	391.69	3.5009E+01
TE-123m	33901.	159.00	1.4178E+01
SB-124	8340.	602.73	1.6890E+01
SB-125	39776.	427.89	8.9202E+01
TE-125m	30519.	109.27	4.4916E+03
I-129	26254.	39.60	4.6613E+03
I-131	32339.	364.48	2.5163E+01
XE-131m	34010.	163.93	6.1373E+02
BA-133	31874.	356.02	3.1834E+01
CS-134	8279.	604.70	1.6902E+01
CS-136	67.	818.51	2.0457E+00
CS-138	18.	1435.86	7.9289E+00
CE-139	34345.	165.85	1.5127E+01
BA-140	14223.	537.31	7.9844E+01
LA-140	17.	1596.21	1.9829E+00
CE-141	34218.	145.44	2.4715E+01
CE-144	33790.	133.51	1.0795E+02
CEPR-144	33788.	133.51	2.1570E+02
EU-152	32840.	121.78	4.3009E+01
EU-154	24.	1274.51	5.2670E+00
EU-155	27926.	86.54	4.9747E+01
HF-181	30935.	482.18	3.2174E+01
TA-182	26261.	67.75	6.7902E+01
HG-203	33594.	279.20	2.0030E+01
BI-207	9369.	569.70	1.7009E+01
TL-208	33756.	277.36	2.5757E+02
PB-210	25582.	46.50	3.2334E+03

Minimum Detectable Activity Report (continued) Page : 4
Sample ID : S99T000895-DUP Acquisition date : 22-MAY-1999 06:41:39

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/L)
BI-212	221.	727.18	4.9036E+01
PB-212	39086.	238.63	3.5609E+01
BI-214	8336.	609.31	3.7194E+01
PB-214	31511.	351.92	2.2331E+02
RA-224	38475.	240.99	3.9488E+02
RA-226	43749.	186.10	4.0480E+02
AC-228	98.	911.21	9.9681E+00
TH-228	27908.	84.37	1.3488E+03
TH-229	28049.	88.47	6.3776E+01
U-232	25373.	57.78	2.3686E+04
PA-233	31672.	312.17	4.5279E+01
UTH-233	37328.	245.34	1.4081E+04
PA-234M	66.	1001.03	3.6508E+02
TH-234	25710.	63.29	9.0233E+02
U-235	43473.	185.71	2.4540E+01
NP-237	27927.	86.48	1.3176E+02
U-237	29169.	101.07	5.2926E+01
NP-238	31.	984.45	6.1020E+00
NP-239	29833.	106.12	5.7038E+01
PU-239	33757.	129.30	1.8841E+05
AM-241	25371.	59.54	1.1772E+02
AM-243	26832.	74.67	3.6255E+01

```
*****************************************************************************
* 222-S Laboratory Counting Room   22-MAY-1999 12:03:14.84                  *
*****************************************************************************
      >>>>>>>>>> SAMPLE INFORMATION <<<<<<<<<<
Worklist #:              29805
Sample ID:               S99T000896-SAM
Sample Size:             1.00000E-03 L
Dilution Factor:         1.01000E+02

      >>>>>>>>>> COUNT INFORMATION <<<<<<<<<<
Detector ID:             GEA2
File Number:             dka300:[spec.GEA2]2g2605.cnf
Geometry:                42
Count Time:              0 02:30:00.00 sec
Real Time:               0 02:36:35.43 sec
Dead Time:               4.2%

      >>>>>>>>>> ANALYSIS INFORMATION <<<<<<<<<<
Sample Count Time:       22-MAY-1999 09:26:09.89
Decayed to:              22-MAY-1999 09:26:09.89
Standard Deviations:     2
Analysis Library:        ENVGEA
Analyst:                 GL
Background Subtract:     DKA300:[SPEC.GEA2]2GBACK

      >>>>>>>>>> CALIBRATION INFORMATION <<<<<<<<<<
 Date of last energy calibration:       3-MAY-1999 14:49:30.70
 Date of last efficiency calibration:   3-MAY-1999 14:49:59.73
*****************************************************************************
```

Removed by:

Verified by: John Relyea 24 May 99

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity uCi/L
0	661.66*	1340136	1.49	1323.19	1315	16	0.2		CS-137	6.590E+04
0	1322.86	103	1.90	2645.81	2638	13	26.6			
0	1764.22*	14	1.73	3528.80	3519	16	120.3			

Summary of Nuclide Activity
Sample ID : S99T000896-SAM

Acquisition date : 22-MAY-1999 09:26:09

Total number of lines in spectrum	3	
Number of unidentified lines	1	
Number of lines tentatively identified by NID	2	66.67%

Nuclide Type :

Nuclide	Hlife	Decay	Wtd Mean Uncorrected uCi/L	Wtd Mean Decay Corr uCi/L	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
CS-137	30.00Y	1.00	6.590E+04	6.590E+04	0.012E+04	0.18	
		Total Activity :	6.590E+04	6.590E+04			
		Grand Total Activity :	6.590E+04	6.590E+04			

Flags: "K" = Keyline not found
"E" = Manually edited
"M" = Manually accepted
"A" = Nuclide specific abn. limit

Minimum Detectable Activity Report
Sample ID : S99T000896-SAM

Acquisition date : 22-MAY-1999 09:26:09

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/L)
BE-7	40761.	477.59	2.8453E+02
NA-24	17.	1368.55	1.7529E+00
K-40	316.	1460.75	6.3348E+01
AR-41	24.	1293.60	2.8769E+00
SC-46	78.	1120.55	2.8065E+00
CR-51	33167.	320.08	1.8147E+02
MN-54	79.	834.83	2.2327E+00
CO-56	72.	846.76	2.1750E+00
CO-58	69.	810.78	2.0649E+00
FE-59	40.	1099.25	3.5983E+00
CO-60	34.	1332.50	2.1810E+00
ZN-65	49.	1115.55	4.4179E+00
SE-75	36758.	264.66	2.7893E+01
KR-85	20929.	514.00	5.2068E+03
SR-85	20927.	514.01	2.3551E+01
Y-88	10.	1836.06	1.6773E+00
Y-91	43.	1204.67	7.5152E+02
NB-94	64.	871.09	2.1038E+00
ZRNB-95	208.	724.20	1.4285E+01
RU-103	25173.	497.08	2.6422E+01
RURH-106	8602.	621.93	3.4747E+02
AG-108m	219.	722.94	3.5571E+00
CD-109	29863.	88.03	4.5395E+02
AG-110M	28726.	657.76	3.4855E+01
SN-113	36545.	391.69	3.6150E+01
TE-123m	35997.	159.00	1.4608E+01
SB-124	8973.	602.73	1.7516E+01
SB-125	42399.	427.89	9.2088E+01
TE-125m	32349.	109.27	4.6238E+03
I-129	27111.	39.60	4.7365E+03
I-131	34060.	364.48	2.5822E+01
XE-131m	36384.	163.93	6.3473E+02
BA-133	33591.	356.02	3.2677E+01
CS-134	8940.	604.70	1.7559E+01
CS-136	83.	818.51	2.2734E+00
CS-138	17.	1435.86	7.8912E+00
CE-139	36453.	165.85	1.5583E+01
BA-140	14957.	537.31	8.1869E+01
LA-140	9.	1596.21	1.5444E+00
CE-141	35874.	145.44	2.5304E+01
CE-144	35732.	133.51	1.1100E+02
CEPR-144	35731.	133.51	2.2179E+02
EU-152	34838.	121.78	4.4294E+01
EU-154	21.	1274.51	4.9680E+00
EU-155	29742.	86.54	5.1334E+01
HF-181	33110.	482.18	3.3283E+01
TA-182	27762.	67.75	6.9809E+01
HG-203	35129.	279.20	2.0482E+01
BI-207	9975.	569.70	1.7546E+01
TL-208	35629.	277.36	2.6460E+02
PB-210	27072.	46.50	3.3259E+03

Minimum Detectable Activity Report (continued) Page : 4
Sample ID : S99T000896-SAM Acquisition date : 22-MAY-1999 09:26:09

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/L)
BI-212	209.	727.18	4.7682E+01
PB-212	40965.	238.63	3.6453E+01
BI-214	8898.	609.31	3.8420E+01
PB-214	33489.	351.92	2.3059E+02
RA-224	40834.	240.99	4.0678E+02
RA-226	46467.	186.10	4.1715E+02
AC-228	99.	911.21	1.0024E+01
TH-228	29684.	84.37	1.3909E+03
TH-229	29833.	88.47	6.5766E+01
U-232	26640.	57.78	2.4268E+04
PA-233	33292.	312.17	4.6418E+01
UTH-233	40004.	245.34	1.4575E+04
PA-234M	44.	1001.03	3.0334E+02
TH-234	27091.	63.29	9.2617E+02
U-235	45990.	185.71	2.5239E+01
NP-237	29763.	86.48	1.3601E+02
U-237	30879.	101.07	5.4451E+01
NP-238	41.	984.45	6.9235E+00
NP-239	31387.	106.12	5.8501E+01
PU-239	35737.	129.30	1.9383E+05
AM-241	26868.	59.54	1.2113E+02
AM-243	28488.	74.67	3.7354E+01

```
*****************************************************************************
* 222-S Laboratory Counting Room   22-MAY-1999 15:46:31.66                  *
*****************************************************************************
      >>>>>>>>>> SAMPLE INFORMATION <<<<<<<<<<
Worklist #:              29805
Sample ID:               S99T000896-DUP
Sample Size:             1.00000E-03 L
Dilution Factor:         1.01000E+02

      >>>>>>>>>> COUNT INFORMATION <<<<<<<<<<
Detector ID:             GEA2
File Number:             dka300:[spec.GEA2]2g2606.cnf
Geometry:                42
Count Time:              0 02:30:00.00 sec
Real Time:               0 02:36:27.17 sec
Dead Time:               4.1%

      >>>>>>>>>> ANALYSIS INFORMATION <<<<<<<<<<
Sample Count Time:       22-MAY-1999 13:09:34.43
Decayed to:              22-MAY-1999 13:09:34.43
Standard Deviations:     2
Analysis Library:        ENVGEA
Analyst:                 GL
Background Subtract:     DKA300:[SPEC.GEA2]2GBACK

      >>>>>>>>>> CALIBRATION INFORMATION <<<<<<<<<<
 Date of last energy calibration:       3-MAY-1999 14:49:30.70
 Date of last efficiency calibration:   3-MAY-1999 14:49:59.73
*****************************************************************************
```

Removed by:

Verified by: John Relyea 24 May 99

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity uCi/L
0	661.66*	1311114	1.49	1323.20	1315	16	0.2		CS-137	6.447E+04
0	968.98*	25	1.42	1937.90	1934	7	88.5			

Summary of Nuclide Activity
Sample ID : S99T000896-DUP Acquisition date : 22-MAY-1999 13:09:34

Total number of lines in spectrum	2	
Number of unidentified lines	0	
Number of lines tentatively identified by NID	2	100.00%

Nuclide Type :

Nuclide	Hlife	Decay	Wtd Mean Uncorrected uCi/L	Wtd Mean Decay Corr uCi/L	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
CS-137	30.00Y	1.00	6.447E+04	6.447E+04	0.012E+04	0.18	
		Total Activity :	6.447E+04	6.447E+04			
		Grand Total Activity :	6.447E+04	6.447E+04			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Minimum Detectable Activity Report
Sample ID : S99T000896-DUP

Acquisition date : 22-MAY-1999 13:09:34

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/L)
BE-7	40152.	477.59	2.8241E+02
NA-24	25.	1368.55	2.0605E+00
K-40	318.	1460.75	6.3561E+01
AR-41	23.	1293.60	2.8480E+00
SC-46	71.	1120.55	2.6814E+00
CR-51	32316.	320.08	1.7913E+02
MN-54	78.	834.83	2.2199E+00
CO-56	57.	846.76	1.9446E+00
CO-58	68.	810.78	2.0466E+00
FE-59	36.	1099.25	3.4318E+00
CO-60	27.	1332.50	1.9833E+00
ZN-65	48.	1115.55	4.3825E+00
SE-75	35795.	264.66	2.7526E+01
KR-85	20269.	514.00	5.1244E+03
SR-85	20267.	514.01	2.3179E+01
Y-88	11.	1836.06	1.7722E+00
Y-91	38.	1204.67	7.1257E+02
NB-94	67.	871.09	2.1402E+00
ZRNB-95	196.	724.20	1.3894E+01
RU-103	24801.	497.08	2.6226E+01
RURH-106	8360.	621.93	3.4257E+02
AG-108m	208.	722.94	3.4712E+00
CD-109	29248.	88.03	4.4926E+02
AG-110M	27711.	657.76	3.4236E+01
SN-113	35565.	391.69	3.5664E+01
TE-123m	35402.	159.00	1.4487E+01
SB-124	8933.	602.73	1.7476E+01
SB-125	40434.	427.89	8.9935E+01
TE-125m	31381.	109.27	4.5544E+03
I-129	27210.	39.60	4.7451E+03
I-131	33171.	364.48	2.5484E+01
XE-131m	35160.	163.93	6.2399E+02
BA-133	32803.	356.02	3.2293E+01
CS-134	8763.	604.70	1.7386E+01
CS-136	87.	818.51	2.3134E+00
CS-138	21.	1435.86	8.6398E+00
CE-139	35070.	165.85	1.5286E+01
BA-140	14571.	537.31	8.0810E+01
LA-140	12.	1596.21	1.7292E+00
CE-141	35438.	145.44	2.5151E+01
CE-144	34818.	133.51	1.0957E+02
CEPR-144	34816.	133.51	2.1894E+02
EU-152	33847.	121.78	4.3661E+01
EU-154	27.	1274.51	5.5337E+00
EU-155	28997.	86.54	5.0689E+01
HF-181	32232.	482.18	3.2840E+01
TA-182	27125.	67.75	6.9006E+01
HG-203	34841.	279.20	2.0398E+01
BI-207	9792.	569.70	1.7386E+01
TL-208	34947.	277.36	2.6206E+02
PB-210	26246.	46.50	3.2750E+03

Minimum Detectable Activity Report (continued) Page : 4
Sample ID : S99T000896-DUP Acquisition date : 22-MAY-1999 13:09:34

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/L)
BI-212	199.	727.18	4.6628E+01
PB-212	40463.	238.63	3.6230E+01
BI-214	8685.	609.31	3.7959E+01
PB-214	33066.	351.92	2.2895E+02
RA-224	39868.	240.99	4.0195E+02
RA-226	45346.	186.10	4.1210E+02
AC-228	84.	911.21	9.2822E+00
TH-228	28868.	84.37	1.3717E+03
TH-229	29247.	88.47	6.5119E+01
U-232	26331.	57.78	2.4127E+04
PA-233	32610.	312.17	4.5942E+01
UTH-233	38738.	245.34	1.4343E+04
PA-234M	54.	1001.03	3.3142E+02
TH-234	26552.	63.29	9.1693E+02
U-235	44858.	185.71	2.4927E+01
NP-237	28980.	86.48	1.3422E+02
U-237	30584.	101.07	5.4191E+01
NP-238	46.	984.45	7.2364E+00
NP-239	31072.	106.12	5.8207E+01
PU-239	34842.	129.30	1.9140E+05
AM-241	26681.	59.54	1.2071E+02
AM-243	27411.	74.67	3.6643E+01

```
*************************************************************************
* 222-S Laboratory Counting Room   22-MAY-1999 19:32:15.99             *
*************************************************************************
      >>>>>>>>>> SAMPLE INFORMATION <<<<<<<<<<
Worklist #:              29805
Sample ID:               S99T000897-SAM
Sample Size:             1.00000E-03 L
Dilution Factor:         1.01000E+02

      >>>>>>>>>> COUNT INFORMATION <<<<<<<<<<
Detector ID:             GEA2
File Number:             dka300:[spec.GEA2]2g2608.cnf
Geometry:                42
Count Time:              0 02:30:00.00 sec
Real Time:               0 02:36:47.66 sec
Dead Time:               4.3%

      >>>>>>>>>> ANALYSIS INFORMATION <<<<<<<<<<
Sample Count Time:       22-MAY-1999 16:54:59.18
Decayed to:              22-MAY-1999 16:54:59.18
Standard Deviations:     2
Analysis Library:        ENVGEA
Analyst:                 GL
Background Subtract:     DKA300:[SPEC.GEA2]2GBACK

      >>>>>>>>>> CALIBRATION INFORMATION <<<<<<<<<<
 Date of last energy calibration:       3-MAY-1999 14:49:30.70
 Date of last efficiency calibration:   3-MAY-1999 14:49:59.73
*************************************************************************
```

Removed by: Sh Malic

Verified by: John Relyea 24 May 99

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity uCi/L
0	661.68*	1391249	1.48	1323.23	1315	16	0.2		CS-137	6.841E+04
0	1322.81	117	2.03	2645.71	2636	18	25.2			
~~0~~	~~1460.78*~~	~~25~~	~~2.18~~	~~2921.72~~	~~2915~~	~~14~~	~~179.5~~		~~K-40~~	~~18.2~~ JHR

Summary of Nuclide Activity
Sample ID : S99T000897-SAM

Acquisition date : 22-MAY-1999 16:54:59

Total number of lines in spectrum	3	
Number of unidentified lines	1	
Number of lines tentatively identified by NID	2	66.67%

Nuclide Type :

Nuclide	Hlife	Decay	Wtd Mean Uncorrected uCi/L	Wtd Mean Decay Corr uCi/L	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
~~K-40~~	~~1.28E+09Y~~	~~1.00~~	~~1.821E+01~~	~~1.821E+01~~	~~3.267E+01~~	~~179.45~~	JAR
CS-137	30.00Y	1.00	6.841E+04	6.841E+04	0.012E+04	0.17	24May99
		Total Activity :	6.843E+04	6.843E+04			
		Grand Total Activity :	6.843E+04	6.843E+04			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Minimum Detectable Activity Report
Page : 3
Sample ID : S99T000897-SAM
Acquisition date : 22-MAY-1999 16:54:59

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/L)
BE-7	42580.	477.59	2.9079E+02
NA-24	19.	1368.55	1.8218E+00
AR-41	33.	1293.60	3.3582E+00
SC-46	83.	1120.55	2.8881E+00
CR-51	34888.	320.08	1.8610E+02
MN-54	72.	834.83	2.1504E+00
CO-56	71.	846.76	2.1529E+00
CO-58	81.	810.78	2.2216E+00
FE-59	40.	1099.25	3.5828E+00
CO-60	21.	1332.50	1.7783E+00
ZN-65	49.	1115.55	4.4450E+00
SE-75	38133.	264.66	2.8408E+01
KR-85	21687.	514.00	5.2998E+03
SR-85	21685.	514.01	2.3973E+01
Y-88	5.	1836.06	1.2878E+00
Y-91	53.	1204.67	8.2977E+02
NB-94	70.	871.09	2.1876E+00
ZRNB-95	238.	724.20	1.5243E+01
RU-103	26414.	497.08	2.7063E+01
RURH-106	8945.	621.93	3.5428E+02
AG-108m	252.	722.94	3.8040E+00
CD-109	31297.	88.03	4.6469E+02
AG-110M	28736.	657.76	3.4861E+01
SN-113	37628.	391.69	3.6680E+01
TE-123m	37681.	159.00	1.4945E+01
SB-124	9137.	602.73	1.7673E+01
SB-125	43565.	427.89	9.3341E+01
TE-125m	33146.	109.27	4.6802E+03
I-129	28459.	39.60	4.8525E+03
I-131	35645.	364.48	2.6415E+01
XE-131m	37551.	163.93	6.4480E+02
BA-133	35354.	356.02	3.3521E+01
CS-134	9195.	604.70	1.7806E+01
CS-136	91.	818.51	2.3732E+00
CS-138	23.	1435.86	8.9636E+00
CE-139	37633.	165.85	1.5833E+01
BA-140	15555.	537.31	8.3482E+01
LA-140	15.	1596.21	1.9030E+00
CE-141	37194.	145.44	2.5764E+01
CE-144	37617.	133.51	1.1388E+02
CEPR-144	37616.	133.51	2.2755E+02
EU-152	36346.	121.78	4.5240E+01
EU-154	31.	1274.51	5.8813E+00
EU-155	30976.	86.54	5.2385E+01
HF-181	34256.	482.18	3.3852E+01
TA-182	28823.	67.75	7.1126E+01
HG-203	36593.	279.20	2.0903E+01
BI-207	10400.	569.70	1.7915E+01
TL-208	36885.	277.36	2.6921E+02
PB-210	28341.	46.50	3.4027E+03
BI-212	207.	727.18	4.7522E+01

Minimum Detectable Activity Report (continued) Page : 4
Sample ID : S99T000897-SAM Acquisition date : 22-MAY-1999 16:54:59

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/L)
PB-212	42601.	238.63	3.7172E+01
BI-214	9298.	609.31	3.9269E+01
PB-214	35204.	351.92	2.3669E+02
RA-224	42217.	240.99	4.1360E+02
RA-226	48242.	186.10	4.2502E+02
AC-228	80.	911.21	9.0693E+00
TH-228	30882.	84.37	1.4186E+03
TH-229	31301.	88.47	6.7359E+01
U-232	28041.	57.78	2.4896E+04
PA-233	34890.	312.17	4.7516E+01
UTH-233	41215.	245.34	1.4793E+04
PA-234M	52.	1001.03	3.2622E+02
TH-234	28286.	63.29	9.4630E+02
U-235	47812.	185.71	2.5733E+01
NP-237	30989.	86.48	1.3878E+02
U-237	32047.	101.07	5.5469E+01
NP-238	49.	984.45	7.4866E+00
NP-239	32752.	106.12	5.9756E+01
PU-239	36820.	129.30	1.9674E+05
AM-241	27915.	59.54	1.2346E+02
AM-243	29833.	74.67	3.8222E+01

```
*************************************************************************
* 222-S Laboratory Counting Room   22-MAY-1999 22:28:49.64             *
*************************************************************************
      >>>>>>>>>> SAMPLE INFORMATION <<<<<<<<<<
Worklist #:              29805
Sample ID:               S99T897-DUP                    Removed by:
Sample Size:             1.00000E-03 L
Dilution Factor:         1.01000E+02

      >>>>>>>>>> COUNT INFORMATION <<<<<<<<<<
Detector ID:             GEA2                           Verified by:
File Number:             dka300:[spec.GEA2]2g2609.cnf
Geometry:                42
Count Time:              0 02:30:00.00 sec
Real Time:               0 02:37:42.57 sec
Dead Time:               4.9%

      >>>>>>>>>> ANALYSIS INFORMATION <<<<<<<<<<
Sample Count Time:       22-MAY-1999 19:50:37.67
Decayed to:              22-MAY-1999 19:50:37.67
Standard Deviations:     2
Analysis Library:        ENVGEA
Analyst:                 SLH2
Background Subtract:     DKA300:[SPEC.GEA2]2GBACK

      >>>>>>>>>> CALIBRATION INFORMATION <<<<<<<<<<
 Date of last energy calibration:      3-MAY-1999 14:49:30.70
 Date of last efficiency calibration:  3-MAY-1999 14:49:59.73
*************************************************************************
```

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity uCi/L
0	661.67*	1602595	1.49	1323.22	1315	16	0.2		CS-137	7.881E+04
0	1323.30	165	2.27	2646.68	2638	19	16.8			
0	1460.74*	19	1.72	2921.64	2915	14	206.8		K-40	14.4

Summary of Nuclide Activity
Sample ID : S99T897-DUP

Acquisition date : 22-MAY-1999 19:50:37

Total number of lines in spectrum	3	
Number of unidentified lines	1	
Number of lines tentatively identified by NID	2	66.67%

Nuclide Type :

Nuclide	Hlife	Decay	Wtd Mean Uncorrected uCi/L	Wtd Mean Decay Corr uCi/L	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
~~K-40~~	~~1.28E+09Y~~	~~1.00~~	~~1.440E+01~~	~~1.440E+01~~	~~2.977E+01~~	~~206.78~~	JJR
CS-137	30.00Y	1.00	7.881E+04	7.881E+04	0.013E+04	0.16	24 May 99
		Total Activity :	7.882E+04	7.882E+04			
		Grand Total Activity :	7.882E+04	7.882E+04			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Minimum Detectable Activity Report
Sample ID : S99T897-DUP Acquisition date : 22-MAY-1999 19:50:37

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/L)
BE-7	49142.	477.59	3.1234E+02
NA-24	20.	1368.55	1.8729E+00
AR-41	36.	1293.60	3.4968E+00
SC-46	76.	1120.55	2.7724E+00
CR-51	39711.	320.08	1.9852E+02
MN-54	75.	834.83	2.1811E+00
CO-56	89.	846.76	2.4009E+00
CO-58	106.	810.78	2.5250E+00
FE-59	46.	1099.25	3.8266E+00
CO-60	29.	1332.50	2.0463E+00
ZN-65	45.	1115.55	4.2546E+00
SE-75	44059.	264.66	3.0529E+01
KR-85	24811.	514.00	5.6672E+03
SR-85	24808.	514.01	2.5634E+01
Y-88	7.	1836.06	1.4344E+00
Y-91	36.	1204.67	6.9262E+02
NB-94	78.	871.09	2.3064E+00
ZRNB-95	272.	724.20	1.6273E+01
RU-103	30129.	497.08	2.8897E+01
RURH-106	10350.	621.93	3.8093E+02
AG-108m	295.	722.94	4.1076E+00
CD-109	35634.	88.03	4.9573E+02
AG-110M	33148.	657.76	3.7433E+01
SN-113	43575.	391.69	3.9464E+01
TE-123m	42891.	159.00	1.5942E+01
SB-124	10685.	602.73	1.9104E+01
SB-125	50218.	427.89	1.0020E+02
TE-125m	38406.	109.27	5.0368E+03
I-129	32613.	39.60	5.1933E+03
I-131	40831.	364.48	2.8266E+01
XE-131m	43181.	163.93	6.9132E+02
BA-133	40235.	356.02	3.5753E+01
CS-134	10583.	604.70	1.9095E+01
CS-136	106.	818.51	2.5406E+00
CS-138	17.	1435.86	7.8852E+00
CE-139	43353.	165.85	1.6990E+01
BA-140	17927.	537.31	8.9594E+01
LA-140	15.	1596.21	1.9249E+00
CE-141	43433.	145.44	2.7835E+01
CE-144	42922.	133.51	1.2162E+02
CEPR-144	42924.	133.51	2.4303E+02
EU-152	41472.	121.78	4.8315E+01
EU-154	32.	1274.51	5.9622E+00
EU-155	35414.	86.54	5.6000E+01
HF-181	39381.	482.18	3.6289E+01
TA-182	32891.	67.75	7.5962E+01
HG-203	42427.	279.20	2.2502E+01
BI-207	11719.	569.70	1.9010E+01
TL-208	42357.	277.36	2.8843E+02
PB-210	32365.	46.50	3.6355E+03
BI-212	257.	727.18	5.2734E+01

Minimum Detectable Activity Report (continued) Page : 4
Sample ID : S99T897-DUP Acquisition date : 22-MAY-1999 19:50:37

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/L)
PB-212	49269.	238.63	3.9967E+01
BI-214	10558.	609.31	4.1830E+01
PB-214	40359.	351.92	2.5475E+02
RA-224	48569.	240.99	4.4357E+02
RA-226	55555.	186.10	4.5602E+02
AC-228	98.	911.21	9.9757E+00
TH-228	35459.	84.37	1.5198E+03
TH-229	35688.	88.47	7.1910E+01
U-232	32408.	57.78	2.6758E+04
PA-233	39767.	312.17	5.0719E+01
UTH-233	47807.	245.34	1.5929E+04
PA-234M	59.	1001.03	3.4801E+02
TH-234	32640.	63.29	1.0163E+03
U-235	54939.	185.71	2.7579E+01
NP-237	35426.	86.48	1.4835E+02
U-237	37176.	101.07	5.9730E+01
NP-238	45.	984.45	7.2146E+00
NP-239	37716.	106.12	6.4117E+01
PU-239	42638.	129.30	2.1167E+05
AM-241	32648.	59.54	1.3348E+02
AM-243	34163.	74.67	4.0893E+01

LABCORE Completed Worklist Report for Worklist# 29865

Analyst: scl **Instrument:** AB10 **Book#:** _____

Method: LA-220-101 Rev/Mod E-5

Worklist Comment: Rerun of WL 29804, AP-107. mcb

Seq	Type	Sample#	R	A	Test	Matrix	Actual	Found	DL or Yield	Unit
1	STD		0	@SR90-01	SR90-01	LIQUID	8.36E-04	8.53E-4	102.033	% Recovery
1	STD		0	@SR90-01	SR90-01C	LIQUID	100	9.15E+01	91.500	% Recovery
1	STD		0	@SR90-01	SR90-01E	LIQUID	1.00	2.29E+00	2.290	% Ct. Erro
2	BLNK		0	@SR90-01	SR90-01	LIQUID	1	<3.39E-4		uCi/mL
2	BLNK		0	@SR90-01	SR90-01C	LIQUID	100	9.11E+01	91.100	% Recovery
2	BLNK		0	@SR90-01	SR90-01E	LIQUID	1.00	2.81E+02	281.000	uCi/mL
3	BLNK/BKG		0	@SR90-01	SR90-01	LIQUID	1	1.10E+00	1.100	BLNK/BKG
4	SAMPLE	S99T000894	0	@SR90-01	SR90-01	LIQUID	N/A	2.57E-03	4.42e-004	uCi/mL
4	SAMPLE	S99T000894	0	@SR90-01	SR90-01C	LIQUID	N/A	9.11E+01		% Recovery
4	SAMPLE	S99T000894	0	@SR90-01	SR90-01E	LIQUID	N/A	1.79E+01		% Ct. Error
5	DUP	S99T000894	0	@SR90-01	SR90-01	LIQUID	2.57E-3	2.13E-3	18.723	RPD
5	DUP	S99T000894	0	@SR90-01	SR90-01C	LIQUID	100	9.13E+01	91.300	% Recovery
5	DUP	S99T000894	0	@SR90-01	SR90-01E	LIQUID	1.00	2.05E+01	20.500	% Cnt Err
6	SAMPLE	S99T000895	0	@SR90-01	SR90-01	LIQUID	N/A	3.01E-02	4.38e-003	uCi/mL
6	SAMPLE	S99T000895	0	@SR90-01	SR90-01C	LIQUID	N/A	9.16E+01		% Recovery
6	SAMPLE	S99T000895	0	@SR90-01	SR90-01E	LIQUID	N/A	1.58E+01		% Ct. Error
7	DUP	S99T000895	0	@SR90-01	SR90-01	LIQUID	3.01E-2	3.04E-2	0.992	RPD
7	DUP	S99T000895	0	@SR90-01	SR90-01C	LIQUID	100	9.18E+01	91.800	% Recovery
7	DUP	S99T000895	0	@SR90-01	SR90-01E	LIQUID	1.00	1.57E+01	15.700	% Cnt Err
8	SAMPLE	S99T000896	0	@SR90-01	SR90-01	LIQUID	N/A	3.11E-02	4.32e-003	uCi/mL
8	SAMPLE	S99T000896	0	@SR90-01	SR90-01C	LIQUID	N/A	9.23E+01		% Recovery
8	SAMPLE	S99T000896	0	@SR90-01	SR90-01E	LIQUID	N/A	1.53E+01		% Ct. Error
9	DUP	S99T000896	0	@SR90-01	SR90-01	LIQUID	3.11E-2	3.05E-2	1.948	RPD
9	DUP	S99T000896	0	@SR90-01	SR90-01C	LIQUID	100	9.24E+01	92.400	% Recovery
9	DUP	S99T000896	0	@SR90-01	SR90-01E	LIQUID	1.00	1.55E+01	15.500	% Cnt Err
10	SAMPLE	S99T000897	0	@SR90-01	SR90-01	LIQUID	N/A	3.45E-02	4.36e-003	uCi/mL
10	SAMPLE	S99T000897	0	@SR90-01	SR90-01C	LIQUID	N/A	9.13E+01		% Recovery
10	SAMPLE	S99T000897	0	@SR90-01	SR90-01E	LIQUID	N/A	1.44E+01		% Ct. Error
11	DUP	S99T000897	0	@SR90-01	SR90-01	LIQUID	3.45E-2	3.60E-2	4.255	RPD
11	DUP	S99T000897	0	@SR90-01	SR90-01C	LIQUID	100	9.23E+01	92.300	% Recovery
11	DUP	S99T000897	0	@SR90-01	SR90-01E	LIQUID	1.00	1.38E+01	13.800	% Cnt Err

Final page for worklist# 29865

Analyst Signature Date

Analyst Signature Date

Reviewer Signature Date 27 May 99

Units shown for QC (BLK/BKG) may not reflect the actual units.

LABCORE Data Entry Template for Worklist# 29865

Analyst: S.L **Instrument:** AB00 #10 **Book#** 46B57

Method: LA-220-101 Rev/Mod E-~~4~~5

Worklist Comment: Rerun of WL 29804, AP-107. mcb

S	Type	Sample#	R	A	Test	Matrix	Group#	Project
1	STD				@SR90-01	LIQUID		
2	BLNK				@SR90-01	LIQUID		
3	BLNK/BKG				@SR90-01	LIQUID		
4	SAMPLE	S99T000894	0		@SR90-01	LIQUID	99000198	AP107 GRAB2
	Analytes Requested: SR90-01 , SR90-01C, SR90-01E							
5	DUP	S99T000894	0		@SR90-01	LIQUID		
6	SAMPLE	S99T000895	0		@SR90-01	LIQUID	99000198	AP107 GRAB2
	Analytes Requested: SR90-01 , SR90-01C, SR90-01E							
7	DUP	S99T000895	0		@SR90-01	LIQUID		
8	SAMPLE	S99T000896	0		@SR90-01	LIQUID	99000198	AP107 GRAB2
	Analytes Requested: SR90-01 , SR90-01C, SR90-01E							
9	DUP	S99T000896	0		@SR90-01	LIQUID		
10	SAMPLE	S99T000897	0		@SR90-01	LIQUID	99000198	AP107 GRAB2
	Analytes Requested: SR90-01 , SR90-01C, SR90-01E							
11	DUP	S99T000897	0		@SR90-01	LIQUID		

Final page for worklist # 29865

Sue Lee 5-26-99
Signature **Date**

T Raymond 5-27-99
Signature **Date**
Lynda Z Chaxe 5/27/99

Data Entry Comments:

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

WORKBOOK PAGE: STD1

Sr-89/90 : LA-220-101 (E-3), 102 (INACTIVE), 104 (E-5) LIQUIDS

							STANDARD
Type	DETECTOR NUMBER		10	CARRIER ADDED in mL	(CVA)		1.000
STD	TOTAL COUNTS	(TC)	7638	GROSS WEIGHT	(W2)		7.4019
Work List	COUNT TIME in MINUTES	(CT)	10	TARE WEIGHT	(W1)		7.3104
29865	BACKGROUND in cpm	(BKG)	9.8	NET WEIGHT	(W3)		0.0915
Test Code	SAMPLE VOLUME in mL	(SS)	1.000	DELTA TIME (HOURS)	(DT)		6.37
@SR90-01	DILUTION FACTOR	(DF)	1				
Matrix	DIGEST DILUTION FACTOR	DDF	1				
LIQUID	SAMPLE COUNT RATE	(Rs)	754.00	SR-90 EFFICIENCY FACTO	(C1)		0.4051
Batch Number	CRITICAL LEVEL	(Lc)	1.89	Y-90 EFFICIENCY FACTOR	(C2)		0.4503
99002212	TIME OF SEPARATION	(ST)	08:25	Rmax			N/A
Rerun	DATE OF SEPARATION	(SD)	05/26/99	DETECTION LIMIT	(Ld)		3.86
0	TIME OF COUNT	(TOC)	14:47	Sr-89/90 CONC. in µCi/L			8.5329E-01
Sample Prep	DATE OF COUNT	(DOC)	05/26/99				
N/A	STANDARD BOOK #		46B57				
Sample #	STANDARD VALUE in µCi/mL		8.3642E-04				
WL29865-STD							
Instrument Code							
WB26870							
Prepared By							
VAR							
Chemist							
SAC							
Analyst							
SCL							
Date Complete							
05/27/99							
Analysis Date							
05/26/99							
Analysis Time							
01:30 PM							
Sample Point							
AP107 GRAB2							

Sample Count Rate (Rs) = (Total Counts (TC) / Count Time (CT)) - Background in cpm (BKG)

Sr-89/90 CONC in µCi/mL REPLACE RS WITH RMAX IF RS<=LcAND RS>=0 OR REPLACE RS WITH Lc IF RS<0

RS*DF*DDF*1000/((C1+C2*(1-e to the power of ((-natural log 2)/64.2*DT)))*SS*REC*2220000)

NOTE: 64.2 = Half Life for Y-90 and Rec. = Fractional Carrier Recovery ((W2-W1) / (CVA * 0.1000))

Relative Counting Error = The Square Root of ((TC + BKG * CT) / (TC - BKG * CT)*1.96)

Percent Carrier Recovery = (Net Weight / Expected weight) * 100

NOTE: Expected weight = CVA * 0.1

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

Delta Time (hours) = ((DOC - SD) * 24) + (TOC - ST) / 100

Sr-89/90 CONCENTRATION	8.53E-04	µCi/mL
RELATIVE COUNTING ERROR	2.3%	
PERCENT CARRIER RECOVERY	91.5%	

DETECTION LEVEL

4.37E-06 µCi/L

Analyst:	SCL	Date:	27-May-99
Signature of Chemist:	SAC	Date:	27 May 99

STANDARD.WB1 REV 2.0 22010NML

WORKBOOK PAGE: BLANK2

LA-220-101 / E-3 Sr-89/90 : LA-220-101 (E-3), 102 (INACTIVE), 104 (E-5)

Type	DETECTOR NUMBER		10	CARRIER ADDED in mL	(CVA)	BLNK 1.000
BLNK	TOTAL COUNTS	(TC)	108	GROSS WEIGHT	(W2)	7.4167
Work List	COUNT TIME in MINUTES	(CT)	10	TARE WEIGHT	(W1)	7.3256
29865	BACKGROUND in cpm	(BKG)	9.8	NET WEIGHT	(W3)	0.0911
Test Code	SAMPLE VOLUME in mL	(SS)	1.000	DELTA TIME (HOURS)	(DT)	6.58
@SR90-01	DILUTION FACTOR	DF	101			
Matrix	DIGEST DILUTION FACTOR	(DDF)	1			
LIQUID	SAMPLE COUNT RATE	(Rs)	1.00	SR-90 EFFICIENCY FACTOR	(C1)	0.4051
Batch Number	CRITICAL LEVEL	(Lc)	1.89	Y-90 EFFICIENCY FACTOR	(C2)	0.4503
99002212	TIME OF SEPARATION	(ST)	08:25	Rmax		2.96
Rerun	DATE OF SEPARATION	(SD)	05/26/99	DETECTION LIMIT	(Ld)	3.86
0	TIME OF COUNT	(TOC)	15:00	Sr-89/90 CONC in µCi/L	<	3.3870E-01
Sample Prep	DATE OF COUNT	(DOC)	05/26/99			
N/A						
Sample #						
WL29865-BLNK						

Instrument Code: WB26870

Prepared By: VAR

Chemist: SAC

Analyst: SCL

Date Complete: 05/27/99

Analysis Date: 05/26/99

Analysis Time: 01:30 PM

Sample Point: AP107 GRAB2

Sample Count Rate (Rs) = (Total Counts (TC) / Count Time (CT)) - Background in cpm (BKG)

Sr-89/90 CONC in µCi/L Replace RS with RMAX if RS<=Lc and RS>=0 or Replace RS with Lc if RS<0

RS*DF*DDF/((C1+C2*(1-e to the power of ((-natural log 2)/64.2*DT)))*SS*REC*2220000)

NOTE: 64.2 = Half Life for Y-90 and Rec. = Fractional Carrier Recovery ((W2-W1) / (CVA • 0.1000))

Relative Counting Error = (The Square Root of (TC + BKG * CT) / (TC - BKG • CT))*1.96

Percent Carrier Recovery = (Net Weight / Expected weight) * 100

NOTE: Expected weight = CVA * 0.1

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

Delta Time (hours) = ((DOC - SD) * 24) + (TOC - ST) / 100

Sr-89/90 CONCENTRATION	< 3.39E-04	µCi/mL	DETECTION LEVEL
LESS THAN Value was Determined from Rmax.			
RELATIVE COUNTING ERROR	281.3%		4.42E-04 µCi/mL
PERCENT CARRIER RECOVERY	91.1%		

Analyst:	SCL	Date:	27-May-99
Signature of Chemist: SA Cathy	SAC	Date:	27 May 99

BLANK.WB1 REV 2.0 22010NML

WORKBOOK PAGE: SAM4

Sr-89/90 : LA-220-101 (E-3), 102 (INACTIVE), 104 (E-5)

						SAMPLE
Type	DETECTOR NUMBER		10	CARRIER ADDED in mL	(CVA)	1.000
SAMPLE	TOTAL COUNTS	(TC)	323	GROSS WEIGHT	(W2)	7.3979
Work List	COUNT TIME in MINUTES	(CT)	10	TARE WEIGHT	(W1)	7.3068
29865	BACKGROUND in cpm	(BKG)	9.8	NET WEIGHT	(W3)	0.0911
Test Code	SAMPLE VOLUME in mL	(SS)	1.000	DELTA TIME (HOURS)	(DT)	6.78
@SR90-01	DILUTION FACTOR	DF	101			
Matrix	DIGEST DILUTION FACTOR	(DDF)	1			
LIQUID	SAMPLE COUNT RATE	(Rs)	22.50	SR-90 EFFICIENCY FACTOR	(C1)	0.4051
Batch Number	CRITICAL LEVEL	(Lc)	1.89	Y-90 EFFICIENCY FACTOR	(C2)	0.4503
99002212	TIME OF SEPARATION	(ST)	08:25	Rmax		N/A
Rerun	DATE OF SEPARATION	(SD)	05/26/99	DETECTION LIMIT	(Ld)	3.86
0	TIME OF COUNT	(TOC)	15:12	Sr-89/90 CONC in µCi/L		2.5719E+00
Sample Prep	DATE OF COUNT	(DOC)	05/26/99			
N/A						
Sample #						
S99T000894						
Instrument Code						
WB26870						
Prepared By						
VAR						
Chemist						
SAC						
Analyst						
SCL						
Date Complete						
05/27/99						
Analysis Date						
05/26/99						
Analysis Time						
01:30 PM						
Sample Point						
AP107 GRAB2						

Sample Count Rate (Rs) = (Total Counts (TC) / Count Time (CT)) - Background in cpm (BKG)

Sr-89/90 CONC in µCi/L Replace RS with RMAX if RS<=Lc and RS>=0 or Replace RS with Lc if RS<0

RS*DF*DDF/((C1+C2*(1-e to the power of ((-natural log 2)/64.2*DT)))*SS*REC*2220000)

NOTE: 64.2 = Half Life for Y-90 and Rec. = Fractional Carrier Recovery ((W2-W1) / (CVA * 0.1000))

Relative Counting Error = (The Square Root of (TC + BKG * CT) / (TC - BKG * CT))*1.96

Percent Carrier Recovery = (Net Weight / Expected weight) * 100

NOTE: Expected weight = CVA * 0.1

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

Delta Time (hours) = ((DOC - SD) * 24) + (TOC - ST) / 100

				DETECTION LEVEL
Sr-89/90 CONCENTRATION	2.57E-03	µCi/mL		
RELATIVE COUNTING ERROR	17.9%			4.42E-04 µCi/mL
PERCENT CARRIER RECOVERY	91.1%			

Analyst:		SCL	Date:	27-May-99
Signature of Chemist:	SCWalton	SAC	Date:	27May99

SAMPLE.WB1 REV 2.0 22010NML

WORKBOOK PAGE: DUP5

Sr-89/90 : LA-220-101 (E-3), 102 (INACTIVE), 104 (E-5)

						DUP
Type	DETECTOR NUMBER		10	CARRIER ADDED in mL	(CVA)	1.000
DUP	TOTAL COUNTS	(TC)	285	GROSS WEIGHT	(W2)	7.4170
Work List	COUNT TIME in MINUTES	(CT)	10	TARE WEIGHT	(W1)	7.3257
29865	BACKGROUND in cpm	(BKG)	9.8	NET WEIGHT	(W3)	0.0913
Test Code	SAMPLE VOLUME in mL	(SS)	1.000	DELTA TIME (HOURS)	(DT)	6.97
@SR90-01	DILUTION FACTOR	DF	101			
Matrix	DIGEST DILUTION FACTOR	(DDF)	1			
LIQUID	SAMPLE COUNT RATE	(Rs)	18.70	SR-90 EFFICIENCY FACTOR	(C1)	0.4051
Batch Number	CRITICAL LEVEL	(Lc)	1.89	Y-90 EFFICIENCY FACTOR	(C2)	0.4503
99002212	TIME OF SEPARATION	(ST)	08:25	Rmax		N/A
Rerun	DATE OF SEPARATION	(SD)	05/26/99	DETECTION LIMIT	(Ld)	3.86
0	TIME OF COUNT	(TOC)	15:23	Sr-89/90 CONC in µCi/L		2.1288E+00
Sample Prep	DATE OF COUNT	(DOC)	05/26/99			
N/A						
Sample #						
S99T000894						
Instrument Code						
WB26870						
Prepared By						
VAR						
Chemist						
SAC						
Analyst						
SCL						
Date Complete						
05/27/99						
Analysis Date						
05/26/99						
Analysis Time						
01:30 PM						
Sample Point						
AP107 GRAB2						

Sample Count Rate (Rs) = (Total Counts (TC) / Count Time (CT)) - Background in cpm (BKG)

Sr-89/90 CONC in µCi/L Replace RS with RMAX if RS<=Lc and RS>=0 or Replace RS with Lc if RS<0

RS*DF*DDF/((C1+C2*(1-e to the power of ((-natural log 2)/64.2*DT)))*SS*REC*2220000)

NOTE: 64.2 = Half Life for Y-90 and Rec. = Fractional Carrier Recovery ((W2-W1) / (CVA * 0.1000))

Relative Counting Error = (The Square Root of (TC + BKG * CT) / (TC - BKG * CT))*1.96

Percent Carrier Recovery = (Net Weight / Expected weight) * 100

NOTE: Expected weight = CVA * 0.1

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

Delta Time (hours) = ((DOC - SD) * 24) + (TOC - ST) / 100

Sr-89/90 CONCENTRATION	2.13E-03	µCi/mL
RELATIVE COUNTING ERROR	20.5%	
PERCENT CARRIER RECOVERY	91.3%	

DETECTION LEVEL 4.40E-04 µCi/mL

Analyst:	SCL	Date:	27-May-99
Signature of Chemist:	SAC	Date:	27 May 99

SAMPLE.WB1 REV 2.0 22010NML

WORKBOOK PAGE: SAM6

Sr-89/90 : LA-220-101 (E-3), 102 (INACTIVE), 104 (E-5)

							SAMPLE
Type	DETECTOR NUMBER		10	CARRIER ADDED in mL		(CVA)	1.000
SAMPLE	TOTAL COUNTS	(TC)	364	GROSS WEIGHT		(W2)	7.4106
Work List	COUNT TIME in MINUTES	(CT)	10	TARE WEIGHT		(W1)	7.3190
29865	BACKGROUND in cpm	(BKG)	9.8	NET WEIGHT		(W3)	0.0916
Test Code	SAMPLE VOLUME in mL	(SS)	0.100	DELTA TIME (HOURS)		(DT)	7.08
@SR90-01	DILUTION FACTOR	DF	101				
Matrix	DIGEST DILUTION FACTOR	(DDF)	1				
LIQUID	SAMPLE COUNT RATE	(Rs)	26.60	SR-90 EFFICIENCY FACTOR		(C1)	0.4051
Batch Number	CRITICAL LEVEL	(Lc)	1.89	Y-90 EFFICIENCY FACTOR		(C2)	0.4503
99002212	TIME OF SEPARATION	(ST)	08:30	Rmax			N/A
Rerun	DATE OF SEPARATION	(SD)	05/26/99	DETECTION LIMIT		(Ld)	3.86
0	TIME OF COUNT	(TOC)	15:35	Sr-89/90 CONC in µCi/L			3.0146E+01
Sample Prep	DATE OF COUNT	(DOC)	05/26/99				
N/A							
Sample #							
S99T000895							
Instrument Code							
WB26870							
Prepared By							
VAR							
Chemist							
SAC							
Analyst							
SCL							
Date Complete							
05/27/99							
Analysis Date							
05/26/99							
Analysis Time							
01:30 PM							
Sample Point							
AP107 GRAB2							

Sample Count Rate (Rs) = (Total Counts (TC) / Count Time (CT)) - Background in cpm (BKG)

Sr-89/90 CONC in µCi/L Replace RS with RMAX if RS<=Lc and RS>=0 or Replace RS with Lc if RS<0

RS*DF*DDF/((C1+C2*(1-e to the power of ((-natural log 2)/64.2*DT)))*SS*REC*2220000)

NOTE: 64.2 = Half Life for Y-90 and Rec. = Fractional Carrier Recovery ((W2-W1) / (CVA * 0.1000))

Relative Counting Error = (The Square Root of (TC + BKG * CT) / (TC - BKG * CT))*1.96

Percent Carrier Recovery = (Net Weight / Expected weight) * 100

NOTE: Expected weight = CVA * 0.1

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

Delta Time (hours) = ((DOC - SD) * 24) + (TOC - ST) / 100

Sr-89/90 CONCENTRATION	3.01E-02	µCi/mL	DETECTION LEVEL
RELATIVE COUNTING ERROR	15.8%		4.38E-03 µCi/mL
PERCENT CARRIER RECOVERY	91.6%		

Analyst:	SCL	Date:	27-May-99
Signature of Chemist:	SAC	Date:	27 May 99

SAMPLE.WB1 REV 2.0 22010NML

WORKBOOK PAGE: DUP7

Sr-89/90 : LA-220-101 (E-3), 102 (INACTIVE), 104 (E-5)

							DUP
Type	DETECTOR NUMBER		10	CARRIER ADDED in mL		(CVA)	1.000
DUP	TOTAL COUNTS	(TC)	368	GROSS WEIGHT		(W2)	7.4556
Work List	COUNT TIME in MINUTES	(CT)	10	TARE WEIGHT		(W1)	7.3638
29865	BACKGROUND in cpm	(BKG)	9.8	NET WEIGHT		(W3)	0.0918
Test Code	SAMPLE VOLUME in mL	(SS)	0.100	DELTA TIME (HOURS)		(DT)	7.37
@SR90-01	DILUTION FACTOR	DF	101				
Matrix	DIGEST DILUTION FACTOR	(DDF)	1				
LIQUID	SAMPLE COUNT RATE	(Rs)	27.00	SR-90 EFFICIENCY FACTOR		(C1)	0.4051
Batch Number	CRITICAL LEVEL	(Lc)	1.89	Y-90 EFFICIENCY FACTOR		(C2)	0.4503
99002212	TIME OF SEPARATION	(ST)	08:30	Rmax			N/A
Rerun	DATE OF SEPARATION	(SD)	05/26/99	DETECTION LIMIT		(Ld)	3.86
0	TIME OF COUNT	(TOC)	15:52	Sr-89/90 CONC in µCi/L			3.0444E+01
Sample Prep	DATE OF COUNT	(DOC)	05/26/99				
N/A							
Sample #							
S99T000895							
Instrument Code							
WB26870							
Prepared By							
VAR							
Chemist							
SAC							
Analyst							
SCL							
Date Complete							
05/27/99							
Analysis Date							
05/26/99							
Analysis Time							
01:30 PM							
Sample Point							
AP107 GRAB2							

Sample Count Rate (Rs) = (Total Counts (TC) / Count Time (CT)) - Background in cpm (BKG)

Sr-89/90 CONC in µCi/L Replace RS with RMAX if RS<=Lc and RS>=0 or Replace RS with Lc if RS<0

RS*DF*DDF/((C1+C2*(1-e to the power of ((-natural log 2)/64.2*DT)))*SS*REC*2220000)

NOTE: 64.2 = Half Life for Y-90 and Rec. = Fractional Carrier Recovery ((W2-W1) / (CVA * 0.1000))

Relative Counting Error = (The Square Root of (TC + BKG * CT) / (TC - BKG * CT))*1.96

Percent Carrier Recovery = (Net Weight / Expected weight) * 100

NOTE: Expected weight = CVA * 0.1

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

Delta Time (hours) = ((DOC - SD) * 24) + (TOC - ST) / 100

Sr-89/90 CONCENTRATION	3.04E-02	µCi/mL	DETECTION LEVEL
RELATIVE COUNTING ERROR	15.7%		4.36E-03 µCi/mL
PERCENT CARRIER RECOVERY	91.8%		

Analyst:	SCL	Date:	27-May-99
Signature of Chemist:	SAC	Date:	27 May 99

SAMPLE.WB1 REV 2.0 22010NML

WORKBOOK PAGE: SAM8

Sr-89/90 : LA-220-101 (E-3), 102 (INACTIVE), 104 (E-5)

							SAMPLE
Type	DETECTOR NUMBER		10	CARRIER ADDED in mL		(CVA)	1.000
SAMPLE	TOTAL COUNTS	(TC)	376	GROSS WEIGHT		(W2)	7.4357
Work List	COUNT TIME in MINUTES	(CT)	10	TARE WEIGHT		(W1)	7.3434
29865	BACKGROUND in cpm	(BKG)	9.8	NET WEIGHT		(W3)	0.0923
Test Code	SAMPLE VOLUME in mL	(SS)	0.100	DELTA TIME (HOURS)		(DT)	7.63
@SR90-01	DILUTION FACTOR	DF	101				
Matrix	DIGEST DILUTION FACTOR	(DDF)	1				
LIQUID	SAMPLE COUNT RATE	(Rs)	27.80	SR-90 EFFICIENCY FACTOR		(C1)	0.4051
Batch Number	CRITICAL LEVEL	(Lc)	1.89	Y-90 EFFICIENCY FACTOR		(C2)	0.4503
99002212	TIME OF SEPARATION	(ST)	08:30	Rmax			N/A
Rerun	DATE OF SEPARATION	(SD)	05/26/99	DETECTION LIMIT		(Ld)	3.86
0	TIME OF COUNT	(TOC)	16:08	Sr-89/90 CONC in µCi/L			3.1092E+01
Sample Prep	DATE OF COUNT	(DOC)	05/26/99				
N/A							
Sample #							
S99T000896							
Instrument Code							
WB26870							
Prepared By							
VAR							
Chemist							
SAC							
Analyst							
SCL							
Date Complete							
05/27/99							
Analysis Date							
05/26/99							
Analysis Time							
01:30 PM							
Sample Point							
AP107 GRAB2							

Sample Count Rate (Rs) = (Total Counts (TC) / Count Time (CT)) - Background in cpm (BKG)

Sr-89/90 CONC in µCi/L Replace RS with RMAX if RS<=Lc and RS>=0 or Replace RS with Lc if RS<0

RS*DF*DDF/((C1+C2*(1-e to the power of ((-natural log 2)/64.2*DT)))*SS*REC*2220000)

NOTE: 64.2 = Half Life for Y-90 and Rec. = Fractional Carrier Recovery ((W2-W1) / (CVA * 0.1000))

Relative Counting Error = (The Square Root of (TC + BKG * CT) / (TC - BKG * CT))*1.96

Percent Carrier Recovery = (Net Weight / Expected weight) * 100

NOTE: Expected weight = CVA * 0.1

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

Delta Time (hours) = ((DOC - SD) * 24) + (TOC - ST) / 100

			DETECTION LEVEL
Sr-89/90 CONCENTRATION	3.11E-02	µCi/mL	4.32E-03 µCi/mL
RELATIVE COUNTING ERROR	15.3%		
PERCENT CARRIER RECOVERY	92.3%		

Analyst:	SCL	Date:	27-May-99
Signature of Chemist:	SAC	Date:	27 May 99

SAMPLE.WB1 REV 2.0 22010NML

WORKBOOK PAGE: DUP9

Sr-89/90 : LA-220-101 (E-3), 102 (INACTIVE), 104 (E-5)

							DUP
Type	DETECTOR NUMBER		10	CARRIER ADDED in mL	(CVA)		1.000
DUP	TOTAL COUNTS	(TC)	371	GROSS WEIGHT	(W2)		7.3744
Work List	COUNT TIME in MINUTES	(CT)	10	TARE WEIGHT	(W1)		7.2820
29865	BACKGROUND in cpm	(BKG)	9.8	NET WEIGHT	(W3)		0.0924
Test Code	SAMPLE VOLUME in mL	(SS)	0.100	DELTA TIME (HOURS)	(DT)		7.78
@SR90-01	DILUTION FACTOR	DF	101				
Matrix	DIGEST DILUTION FACTOR	(DDF)	1				
LIQUID	SAMPLE COUNT RATE	(Rs)	27.30	SR-90 EFFICIENCY FACTOR	(C1)		0.4051
Batch Number	CRITICAL LEVEL	(Lc)	1.89	Y-90 EFFICIENCY FACTOR	(C2)		0.4503
99002212	TIME OF SEPARATION	(ST)	08:30	Rmax			N/A
Rerun	DATE OF SEPARATION	(SD)	05/26/99	DETECTION LIMIT	(Ld)		3.86
0	TIME OF COUNT	(TOC)	16:17	Sr-89/90 CONC in µCi/L			3.0453E+01
Sample Prep	DATE OF COUNT	(DOC)	05/26/99				
N/A							
Sample #							
S99T000896							
Instrument Code							
WB26870							
Prepared By							
VAR							
Chemist							
SAC							
Analyst							
SCL							
Date Complete							
05/27/99							
Analysis Date							
05/26/99							
Analysis Time							
01:30 PM							
Sample Point							
AP107 GRAB2							

Sample Count Rate (Rs) = (Total Counts (TC) / Count Time (CT)) - Background in cpm (BKG)

Sr-89/90 CONC in µCi/L Replace RS with RMAX if RS<=Lc and RS>=0 or Replace RS with Lc if RS<0

RS*DF*DDF/((C1+C2*(1-e to the power of ((-natural log 2)/64.2*DT)))*SS*REC*2220000)

NOTE: 64.2 = Half Life for Y-90 and Rec. = Fractional Carrier Recovery ((W2-W1) / (CVA * 0.1000))

Relative Counting Error = (The Square Root of (TC + BKG * CT) / (TC - BKG * CT))*1.96

Percent Carrier Recovery = (Net Weight / Expected weight) * 100

NOTE: Expected weight = CVA * 0.1

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

Delta Time (hours) = ((DOC - SD) * 24) + (TOC - ST) / 100

Sr-89/90 CONCENTRATION	3.05E-02	µCi/mL	DETECTION LEVEL
RELATIVE COUNTING ERROR	15.5%		4.31E-03 µCi/mL
PERCENT CARRIER RECOVERY	92.4%		

Analyst:	SCL	Date:	27-May-99
Signature of Chemist: S A Cattus	SAC	Date:	27 May 99

SAMPLE.WB1 REV 2.0 22010NML

WORKBOOK PAGE: SAM10

Sr-89/90 : LA-220-101 (E-3), 102 (INACTIVE), 104 (E-5)

							SAMPLE
Type:	DETECTOR NUMBER		10	CARRIER ADDED in mL		(CVA)	1.000
SAMPLE	TOTAL COUNTS	(TC)	404	GROSS WEIGHT		(W2)	7.3915
Work List	COUNT TIME in MINUTES	(CT)	10	TARE WEIGHT		(W1)	7.3002
29865	BACKGROUND in cpm	(BKG)	9.8	NET WEIGHT		(W3)	0.0913
Test Code	SAMPLE VOLUME in mL	(SS)	0.100	DELTA TIME (HOURS)		(DT)	7.92
@SR90-01	DILUTION FACTOR	DF	101				
Matrix	DIGEST DILUTION FACTOR	(DDF)	1				
LIQUID	SAMPLE COUNT RATE	(Rs)	30.60	SR-90 EFFICIENCY FACTOR		(C1)	0.4051
Batch Number	CRITICAL LEVEL	(Lc)	1.89	Y-90 EFFICIENCY FACTOR		(C2)	0.4503
99002212	TIME OF SEPARATION	(ST)	08:35	Rmax			N/A
Rerun	DATE OF SEPARATION	(SD)	05/26/99	DETECTION LIMIT		(Ld)	3.86
0	TIME OF COUNT	(TOC)	16:30	Sr-89/90 CONC in µCi/L			3.4499E+01
Sample Prep	DATE OF COUNT	(DOC)	05/26/99				
N/A							
Sample #							
S99T000897							
Instrument Code							
WB26870							
Prepared By							
VAR							
Chemist							
SAC							
Analyst							
SCL							
Date Complete							
05/27/99							
Analysis Date							
05/26/99							
Analysis Time							
01:30 PM							
Sample Point							
AP107 GRAB2							

Sample Count Rate (Rs) = (Total Counts (TC) / Count Time (CT)) - Background in cpm (BKG)

Sr-89/90 CONC in µCi/L Replace RS with RMAX if RS<=Lc and RS>=0 or Replace RS with Lc if RS<0

RS*DF*DDF/((C1+C2*(1-e to the power of ((-natural log 2)/64.2*DT)))*SS*REC*2220000)

NOTE: 64.2 = Half Life for Y-90 and Rec. = Fractional Carrier Recovery ((W2-W1) / (CVA * 0.1000))

Relative Counting Error = (The Square Root of (TC + BKG * CT) / (TC - BKG * CT))*1.96

Percent Carrier Recovery = (Net Weight / Expected weight) * 100

NOTE: Expected weight = CVA * 0.1

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

Delta Time (hours) = ((DOC - SD) * 24) + (TOC - ST) / 100

				DETECTION LEVEL
Sr-89/90 CONCENTRATION	3.45E-02	µCi/mL		
RELATIVE COUNTING ERROR	14.4%			4.36E-03 µCi/mL
PERCENT CARRIER RECOVERY	91.3%			

Analyst:	SCL	Date:	27-May-99
Signature of Chemist:	SAC	Date:	27 May 99

SAMPLE.WB1 REV 2.0 22010NML

WORKBOOK PAGE: DUP11

Sr-89/90 : LA-220-101 (E-3), 102 (INACTIVE), 104 (E-5)

							DUP
Type	DETECTOR NUMBER		10	CARRIER ADDED in mL	(CVA)		1.000
DUP	TOTAL COUNTS	(TC)	421	GROSS WEIGHT	(W2)		7.4356
Work List	COUNT TIME in MINUTES	(CT)	10	TARE WEIGHT	(W1)		7.3433
29865	BACKGROUND in cpm	(BKG)	9.8	NET WEIGHT	(W3)		0.0923
Test Code	SAMPLE VOLUME in mL	(SS)	0.100	DELTA TIME (HOURS)	(DT)		8.08
@SR90-01	DILUTION FACTOR	DF	101				
Matrix	DIGEST DILUTION FACTOR	(DDF)	1				
LIQUID	SAMPLE COUNT RATE	(Rs)	32.30	SR-90 EFFICIENCY FACTOR	(C1)		0.4051
Batch Number	CRITICAL LEVEL	(Lc)	1.89	Y-90 EFFICIENCY FACTOR	(C2)		0.4503
99002212	TIME OF SEPARATION	(ST)	08:35	Rmax			N/A
Rerun	DATE OF SEPARATION	(SD)	05/26/99	DETECTION LIMIT	(Ld)		3.86
0	TIME OF COUNT	(TOC)	16:40	Sr-89/90 CONC in µCi/L			3.5961E+01
Sample Prep	DATE OF COUNT	(DOC)	05/26/99				
N/A							
Sample #							
S99T000897							
Instrument Code							
WB26870							
Prepared By							
VAR							
Chemist							
SAC							
Analyst							
SCL							
Date Complete							
05/27/99							
Analysis Date							
05/26/99							
Analysis Time							
01:30 PM							
Sample Point							
AP107 GRAB2							

Sample Count Rate (Rs) = (Total Counts (TC) / Count Time (CT)) - Background in cpm (BKG)

Sr-89/90 CONC in µCi/L Replace RS with RMAX if RS<=Lc and RS>=0 or Replace RS with Lc if RS<0

RS*DF*DDF/((C1+C2*(1-e to the power of ((-natural log 2)/64.2*DT)))*SS*REC*2220000)

NOTE: 64.2 = Half Life for Y-90 and Rec. = Fractional Carrier Recovery ((W2-W1) / (CVA * 0.1000))

Relative Counting Error = (The Square Root of (TC + BKG * CT) / (TC - BKG * CT))*1.96

Percent Carrier Recovery = (Net Weight / Expected weight) * 100

NOTE: Expected weight = CVA * 0.1

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

Delta Time (hours) = ((DOC - SD) * 24) + (TOC - ST) / 100

Sr-89/90 CONCENTRATION	3.60E-02	µCi/mL	DETECTION LEVEL
RELATIVE COUNTING ERROR	13.8%		4.30E-03 µCi/mL
PERCENT CARRIER RECOVERY	92.3%		

Analyst:	SCL	Date:	27-May-99
Signature of Chemist:	SAC	Date:	27May99

SAMPLE.WB1 REV 2.0 22010NML

LABCORE Completed Worklist Report for Worklist# 29801

Analyst: gll **Instrument:** AB13 **Book#:** _____

Method: LA-953-104 Rev/Mod B-01 HD 6/1/99

Worklist Comment: AP107 FOR @AM24102, RLC

Seq	Type	Sample#	R	A	Test	Matrix	Actual	Found	DL or Yield	Unit
1	BLNK			0	@AM24102 AM24101	LIQUID	1	<3.70E-6		uCi/mL
1	BLNK			0	@AM24102 AM24101E	LIQUID	1.00	1.00E+02	100.000	% Ct Error
1	BLNK			0	@AM24102 AM24101T	LIQUID	100	8.20E+01	82.000	% Recovery
1	BLNK			0	@AM24102 CM24301	LIQUID	1	<3.70E-6		uCi/mL
1	BLNK			0	@AM24102 CM24301E	LIQUID	1.00	1.00E+02	100.000	uCi/mL
2	STD			0	@AM24102 AM24101	LIQUID	1.07E-04	1.00E-4	93.458	% Recovery
2	STD			0	@AM24102 AM24101E	LIQUID	1.00	1.90E+00	1.900	% Ct Error
2	STD			0	@AM24102 AM24101T	LIQUID	100	8.29E+01	82.900	% Recovery
3	SAMPLE	S99T000894		0	@AM24102 AM24101	LIQUID	N/A <	3.50E-06	3.50e-006	uCi/mL
3	SAMPLE	S99T000894		0	@AM24102 AM24101E	LIQUID	N/A	7.91E+00		% Ct. Error
3	SAMPLE	S99T000894		0	@AM24102 AM24101T	LIQUID	N/A	8.67E+01		% Recovery
3	SAMPLE	S99T000894		0	@AM24102 CM24301	LIQUID	N/A <	3.50E-06	3.50e-006	uCi/mL
3	SAMPLE	S99T000894		0	@AM24102 CM24301E	LIQUID	N/A	1.00E+02		% Ct. Error
4	DUP	S99T000894		0	@AM24102 AM24101	LIQUID	<3.50E-6	<3.80E-6		RPD
4	DUP	S99T000894		0	@AM24102 AM24101E	LIQUID	1.00	7.90E+00	7.900	% Ct Error
4	DUP	S99T000894		0	@AM24102 AM24101T	LIQUID	100	7.91E+01	79.100	% Recovery
4	DUP	S99T000894		0	@AM24102 CM24301	LIQUID	<3.50E-6	<3.80E-6		RPD
4	DUP	S99T000894		0	@AM24102 CM24301E	LIQUID	1.00	1.00E+02	100.000	% Ct. Erro
5	SAMPLE	S99T000895		0	@AM24102 AM24101	LIQUID	N/A	7.83E-06	4.20e-006	uCi/mL
5	SAMPLE	S99T000895		0	@AM24102 AM24101E	LIQUID	N/A	5.31E+00		% Ct. Error
5	SAMPLE	S99T000895		0	@AM24102 AM24101T	LIQUID	N/A	8.10E+01		% Recovery
5	SAMPLE	S99T000895		0	@AM24102 CM24301	LIQUID	N/A <	4.20E-06	4.20e-006	uCi/mL
5	SAMPLE	S99T000895		0	@AM24102 CM24301E	LIQUID	N/A	1.00E+02		% Ct. Error
6	DUP	S99T000895		0	@AM24102 AM24101	LIQUID	7.83E-6	7.76E-6	0.898	RPD
6	DUP	S99T000895		0	@AM24102 AM24101E	LIQUID	1.00	5.00E+00	5.000	% Ct Error
6	DUP	S99T000895		0	@AM24102 AM24101T	LIQUID	100	8.79E+01	87.900	% Recovery
6	DUP	S99T000895		0	@AM24102 CM24301	LIQUID	<4.20E-6	<3.56E-6		RPD
6	DUP	S99T000895		0	@AM24102 CM24301E	LIQUID	1.00	1.00E+02	100.000	% Ct. Erro
7	SAMPLE	S99T000896		0	@AM24102 AM24101	LIQUID	N/A	8.81E-06	3.36e-006	uCi/mL
7	SAMPLE	S99T000896		0	@AM24102 AM24101E	LIQUID	N/A	4.87E+00		% Ct. Error
7	SAMPLE	S99T000896		0	@AM24102 AM24101T	LIQUID	N/A	9.50E+01		% Recovery
7	SAMPLE	S99T000896		0	@AM24102 CM24301	LIQUID	N/A <	3.36E-06	3.36e-006	uCi/mL
7	SAMPLE	S99T000896		0	@AM24102 CM24301E	LIQUID	N/A	1.00E+02		% Ct. Error
8	DUP	S99T000896		0	@AM24102 AM24101	LIQUID	8.81E-6	8.27E-6	6.323	RPD
8	DUP	S99T000896		0	@AM24102 AM24101E	LIQUID	1.00	4.84E+00	4.840	% Ct Error
8	DUP	S99T000896		0	@AM24102 AM24101T	LIQUID	100	9.03E+01	90.300	% Recovery
8	DUP	S99T000896		0	@AM24102 CM24301	LIQUID	<3.36E-6	<3.52E-6		RPD
8	DUP	S99T000896		0	@AM24102 CM24301E	LIQUID	1.00	1.00E+02	100.000	% Ct. Erro
9	SAMPLE	S99T000897		0	@AM24102 AM24101	LIQUID	N/A	7.88E-06	3.21e-006	uCi/mL
9	SAMPLE	S99T000897		0	@AM24102 AM24101E	LIQUID	N/A	4.82E+00		% Ct. Error
9	SAMPLE	S99T000897		0	@AM24102 AM24101T	LIQUID	N/A	9.52E+01		% Recovery

Units shown for QC (BLK/BKG) may not reflect the actual units.

LABCORE Completed Worklist Report for Worklist# 29801

Seq	Type	Sample#	R	A	Test	Matrix	Actual	Found	DL or Yield	Unit
9	SAMPLE	S99T000897	0	@AM24102	CM24301	LIQUID	N/A <	3.21E-06	3.21e-006	uCi/mL
9	SAMPLE	S99T000897	0	@AM24102	CM24301E	LIQUID	N/A	1.00E+02		% Ct. Error
10	DUP	S99T000897	0	@AM24102	AM24101	LIQUID	7.88E-6	7.53E-6	4.543	RPD
10	DUP	S99T000897	0	@AM24102	AM24101E	LIQUID	1.00	4.92E+00	4.920	% Ct Error
10	DUP	S99T000897	0	@AM24102	AM24101T	LIQUID	100	9.68E+01	96.800	% Recovery
10	DUP	S99T000897	0	@AM24102	CM24301	LIQUID	<3.21E-6	<3.16E-6		RPD
10	DUP	S99T000897	0	@AM24102	CM24301E	LIQUID	1.00	1.00E+02	100.000	% Ct. Erro

Final page for worklist# 29801

Analyst Signature Date

Analyst Signature Date

John Relyea 25 May 99
Reviewer Signature Date

Units shown for QC (BLK/BKG) may not reflect the actual units.

05/20/99 09:12
ws2

LABCORE Data Entry Template for Worklist# 29801

Analyst: GLL **Instrument:** AM01 #23 **Book#** 46557

Method: LA-953-104 Rev/Mod B-1

Worklist Comment: AP107 FOR @AM24102, RLC

S	Type	Sample#	R	A	Test	Matrix	Group#	Project
1	BLNK				@AM24102	LIQUID		
2	STD				@AM24102	LIQUID		
3	SAMPLE	S99T000894	0		@AM24102	LIQUID	99000198	AP107 GRAB2
	Analytes Requested: AM24101 , AM24101E, AM24101T, CM24301 , CM24301E							
4	DUP	S99T000894	0		@AM24102	LIQUID		
5	SAMPLE	S99T000895	0		@AM24102	LIQUID	99000198	AP107 GRAB2
	Analytes Requested: AM24101 , AM24101E, AM24101T, CM24301 , CM24301E							
6	DUP	S99T000895	0		@AM24102	LIQUID		
7	SAMPLE	S99T000896	0		@AM24102	LIQUID	99000198	AP107 GRAB2
	Analytes Requested: AM24101 , AM24101E, AM24101T, CM24301 , CM24301E							
8	DUP	S99T000896	0		@AM24102	LIQUID		
9	SAMPLE	S99T000897	0		@AM24102	LIQUID	99000198	AP107 GRAB2
	Analytes Requested: AM24101 , AM24101E, AM24101T, CM24301 , CM24301E							
10	DUP	S99T000897	0		@AM24102	LIQUID		

Final page for worklist # 29801

Signature Date 5-21-99

Signature Date 5-24-99

Signature Date 5-25-99

Data Entry Comments:

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

WORKBOOK PAGE: STD2

Am 241 and Cm 243/244: LA-953-103 (VOID) or LA-953-104(B-0)) MD 6/8/99 LIQUID

						STD
Type	Date Counted		MAY-22-99	Am 241 AEA Frac.	(C241)	0.446
STD	Sample Volume in mL	(SS)	1.000	Am 243 AEA Frac.	(C243)	0.452
Work List	Sample D.F.	(DF)	1	Cm 243/244 AEA Frac.	(Cm)	0
29801	Tracer Volume in mL	(SPKV)	0.200	Total AT Counts		3942
Test Code	Digest D.F.	(DDF)	1.000	AT Count Time (min)	(TC)	30
@AM24102	Tracer Book No.		10B59	Background in cpm	(Bkg)	0.1
Matrix	Am-243 Tracer Value	(dpm/mL)	1130	Am 241 cpm		44.25
LIQUID	Detector Number		13	Am 243 cpm		44.77
Batch Number	Detector Efficiency	(DetEff)	0.3166	Cm 243/244 cpm		0
99002129	Standard Book No		46B57	AEA Count Time	(min)	480
Rerun	Standard Value in µCi/mL		1.070E-04	Am 241 µCi/L =		1.0045E-01
0				Cm 243/244 µCi/L =	<	1.3577E-02

Sample Prep
N/A
Sample Number
WL29801-STD
Instrument Code
WB27810
Prepared By
SLH2
Chemist
JFR
Analyst
GLL
Date Complete
05/24/99
Analysis Date
05/21/99
Analysis Time
03:30 PM
Sample Point
AP107 GRAB2

Am-241 µCi/L = (C241 * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

Cm-243/244 µCi/L = (Cm * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

Relative Counting Error = Square Root of [(1/(Am-243 cpm * min)) + (1 / (Am-241 or Cm-243/244 cpm * min))] * 1.96 * 100

Am 243 Tracer Recovery = (Total AT Counts / TC - Bkg) * (1/DetEff) * C243 * 100 / Am-243 Tracer Value * SPKV

Am 241 µCi/mL	=	1.00E-04	DETECTION LEVELS in µCi/mL
Relative Counting Error	=	1.9%	
NOTE: Cm-243/244 Result is a LESS THAN Value.			Am 241
Cm 243/244 µCi/mL		< 1.36E-05	1.36E-05
Relative Counting Error	=	100.0%	Cm 243/244
Am 243 Tracer Recovery	=	82.9%	1.36E-05

Analyst:	GLL	Date:	05/24/99
Signature of Chemist: John Relyea	JFR	Date:	25 May 99

STANDARD.WB1 REV 1.2 953103ML

WORKBOOK PAGE: BLANK1

Am 241 and Cm 243/244: LA-953-103 (VOID) or LA-953-104(B-0)) LIQUID / SO

Type	Date Counted		MAY-22-99	Am 241 AEA Frac.	(C241)	0
BLNK	Sample Volume in mL	(SS)	1.000	Am 243 AEA Frac.	(C243)	0.838
Work List	Sample D.F.	(DF)	1	Cm 243/244 AEA Frac.	(Cm)	0
29801	Tracer Volume in mL	(SPKV)	0.100	Total AT Counts		1053
Test Code	Digest D.F.	(DDF)	1.000	AT Count Time (min)	(TC)	30
@AM24102	Tracer Book No.		10B59	Background in cpm	(Bkg)	0.1
Matrix	Am-243 Tracer Value	(dpm/mL)	1130	Am 241 cpm		0
LIQUID	Detector Number		13	Am 243 cpm		20.75
Batch Number	Detector Efficiency	(DetEff)	0.3166	Cm 243/244 cpm		0
99002129				AEA Count Time	(min)	480
Rerun				Am 241 µCi/L =	<	3.7045E-03
0				Cm 243/244 µCi/L =	<	3.7045E-03
Sample Prep						
N/A						
Sample Number						
WL29801-BLNK						
Instrument Code						
WB27810						
Prepared By						
SLH2						
Chemist						
JFR						
Analyst						
GLL						
Date Complete						
05/24/99						
Analysis Date						
05/21/99						
Analysis Time						
03:30 PM						
Sample Point						
AP107 GRAB2						

Am-241 µCi/L = (C241 * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

Cm-243/244 µCi/L = (Cm * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

Relative Counting Error = Square Root of [(1/(Am-243 cpm * min)) + (1 / (Am-241 or Cm-243/244 cpm * min))] * 1.96 * 100

Am 243 Tracer Recovery = (Total AT Counts / TC - Bkg) * (1/DetEff) * C243 * 100 / Am-243 Tracer Value * SPKV

NOTE: Am-241 Result is a LESS THAN Value.

Am 241 µCi/mL	=	< 3.70E-06	DETECTION LEVELS in µCi/mL
Relative Counting Error	=	100.0%	
NOTE: Cm-243/244 Result is a LESS THAN Value.			Am 241
Cm 243/244 µCi/mL		< 3.70E-06	3.70E-06
Relative Counting Error	=	100.0%	Cm 243/244
Am 243 Tracer Recovery	=	82.0%	3.70E-06

Analyst:		GLL	Date:	05/24/99
Signature of Chemist:	John Relyea	JFR	Date:	25 May 99

BLANK.WB1 REV 1.2 953103ML

WORKBOOK PAGE: SAM3

Am 241 and Cm 243/244: LA-953-103 (VOID) or LA-953-104(B-0)) LIQUID / SO

Type	Date Counted		MAY-22-99	Am 241 AEA Frac.	(C241)	SAMPLE 0.052
SAMPLE	Sample Volume in mL	(SS)	1.000	Am 243 AEA Frac.	(C243)	0.838
Work List	Sample D.F.	(DF)	1	Cm 243/244 AEA Frac.	(Cm)	0
29801	Tracer Volume in mL	(SPKV)	0.100	Total AT Counts		1113
Test Code	Digest D.F.	(DDF)	1.000	AT Count Time (min)	(TC)	30
@AM24102	Tracer Book No.		10B59	Background in cpm	(Bkg)	0.1
Matrix	Am-243 Tracer Value	(dpm/mL)	1130	Am 241 cpm		1.36
LIQUID	Detector Number		13	Am 243 cpm		21.86
Batch Number	Detector Efficiency	(DetEff)	0.3166	Cm 243/244 cpm		0
99002129				AEA Count Time	(min)	480
Rerun				Am 241 µCi/L =	<	3.5042E-03
0				Cm 243/244 µCi/L =	<	3.5042E-03
Sample Prep						
N/A						
Sample Number						
S99T000894						
Instrument Code						
WB27810						
Prepared By						
SLH2						
Chemist						
JFR						
Analyst						
GLL						
Date Complete						
05/24/99						
Analysis Date						
05/21/99						
Analysis Time						
03:30 PM						
Sample Point						
AP107 GRAB2						

Am-241 µCi/L = (C241 * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

Cm-243/244 µCi/L = (Cm * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

Relative Counting Error = Square Root of [(1/(Am-243 cpm * min)) + (1 / (Am-241 or Cm-243/244 cpm * min))] * 1.96 * 100

Am 243 Tracer Recovery = (Total AT Counts / TC - Bkg) * (1/DetEff) * C243 * 100 / Am-243 Tracer Value * SPKV

NOTE: Am-241 Result is a LESS THAN Value.

Am 241 µCi/mL	=	< 3.50E-06	DETECTION LEVELS in µCi/mL
Relative Counting Error	=	7.9%	
NOTE: Cm-243/244 Result is a LESS THAN Value.			Am 241
Cm 243/244 µCi/mL		< 3.50E-06	3.50E-06
Relative Counting Error	=	100.0%	Cm 243/244
Am 243 Tracer Recovery	=	86.7%	3.50E-06

Analyst:	GLL	Date:	05/24/99
Signature of Chemist: John Relyea	JFR	Date:	25 May 99

SAMPLE.WB1 REV 1.2 953103ML

WORKBOOK PAGE: DUP4

Am 241 and Cm 243/244: LA-953-103 (VOID) or LA-953-104(B-0)) LIQUID / SO

Type	Date Counted		MAY-22-99	Am 241 AEA Frac.	(C241)	0.051
DUP	Sample Volume in mL	(SS)	1.000	Am 243 AEA Frac.	(C243)	0.846
Work List	Sample D.F.	(DF)	1	Cm 243/244 AEA Frac.	(Cm)	0
29801	Tracer Volume in mL	(SPKV)	0.100	Total AT Counts		1007
Test Code	Digest D.F.	(DDF)	1.000	AT Count Time (min)	(TC)	30
@AM24102	Tracer Book No.		10B59	Background in cpm	(Bkg)	0.1
Matrix	Am-243 Tracer Value	(dpm/mL)	1130	Am 241 cpm		1.36
LIQUID	Detector Number		13	Am 243 cpm		22.74
Batch Number	Detector Efficiency	(DetEff)	0.3166	Cm 243/244 cpm		0
99002129				AEA Count Time	(min)	480
Rerun				Am 241 µCi/L =	<	3.8013E-03
0				Cm 243/244 µCi/L =	<	3.8013E-03
Sample Prep						
N/A						
Sample Number						
S99T000894						
Instrument Code						
WB27810						
Prepared By						
SLH2						
Chemist						
JFR						
Analyst						
GLL						
Date Complete						
05/24/99						
Analysis Date						
05/21/99						
Analysis Time						
03:30 PM						
Sample Point						
AP107 GRAB2						

DUP

Am-241 µCi/L = (C241 * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

Cm-243/244 µCi/L = (Cm * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

Relative Counting Error = Square Root of [(1/(Am-243 cpm * min)) + (1 / (Am-241 or Cm-243/244 cpm * min))] * 1.96 * 100

Am 243 Tracer Recovery = (Total AT Counts / TC - Bkg) * (1/DetEff) * C243 * 100 / Am-243 Tracer Value * SPKV

NOTE: Am-241 Result is a LESS THAN Value.

Am 241 µCi/mL	=	< 3.80E-06	DETECTION LEVELS in µCi/mL
Relative Counting Error	=	7.9%	
NOTE: Cm-243/244 Result is a LESS THAN Value.			Am 241 3.80E-06
Cm 243/244 µCi/mL		< 3.80E-06	
Relative Counting Error	=	100.0%	Cm 243/244 3.80E-06
Am 243 Tracer Recovery	=	79.1%	

Analyst:		GLL	Date:	05/24/99
Signature of Chemist:	John Relyea	JFR	Date:	25 May 99

SAMPLE.WB1 REV 1.2 953103ML

WORKBOOK PAGE: SAM5

Am 241 and Cm 243/244: LA-953-103 (VOID) or LA-953-104(B-Ø) LIQUID / SO

Type:	Date Counted		MAY-22-99	Am 241 AEA Frac.	(C241)	SAMPLE 0.115
SAMPLE	Sample Volume in mL	(SS)	1.000	Am 243 AEA Frac.	(C243)	0.748
WorkList:	Sample D.F.	(DF)	1	Cm 243/244 AEA Frac.	(Cm)	0
29801	Tracer Volume in mL	(SPKV)	0.100	Total AT Counts		1165
Test Code:	Digest D.F.	(DDF)	1.000	AT Count Time (min)	(TC)	30
@AM24102	Tracer Book No.		10B59	Background in cpm	(Bkg)	0.1
Matrix:	Am-243 Tracer Value	(dpm/mL)	1130	Am 241 cpm		3.27
LIQUID	Detector Number		13	Am 243 cpm		21.36
Batch Number:	Detector Efficiency	(DetEff)	0.3166	Cm 243/244 cpm		0
99002129				AEA Count Time	(min)	480
Rerun:				Am 241 µCi/L =		7.8257E-03
0				Cm 243/244 µCi/L =	<	4.2014E-03
Sample Prep:						
N/A						

Sample Number: S99T000895

Instrument Code: WB27810

Prepared By: SLH2

Chemist: JFR

Analyst: GLL

Date Complete: 05/24/99

Analysis Date: 05/21/99

Analysis Time: 03:30 PM

Sample Point: AP107 GRAB2

Am-241 µCi/L = (C241 * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

Cm-243/244 µCi/L = (Cm * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

Relative Counting Error = Square Root of [(1/(Am-243 cpm * min)) + (1 / (Am-241 or Cm-243/244 cpm * min))] * 1.96 * 100

Am 243 Tracer Recovery = (Total AT Counts / TC - Bkg) * (1/DetEff) * C243 * 100 / Am-243 Tracer Value * SPKV

Am 241 µCi/mL	=	7.83E-06	DETECTION LEVELS in µCi/mL
Relative Counting Error	=	5.3%	
NOTE: Cm-243/244 Result is a LESS THAN Value.			Am 241
Cm 243/244 µCi/mL		< 4.20E-06	4.20E-06
Relative Counting Error	=	100.0%	Cm 243/244
Am 243 Tracer Recovery	=	81.0%	4.20E-06

Analyst:		GLL	Date:	05/24/99
Signature of Chemist:	John Relyea	JFR	Date:	25 May 99

SAMPLE.WB1 REV 1.2 953103ML

WORKBOOK PAGE: DUP6

Am 241 and Cm 243/244: LA-953-103 (VOID) or LA-953-104(B-0) LIQUID / SO

Type	Date Counted		MAY-22-99	Am 241 AEA Frac.	(C241)	0.124
DUP	Sample Volume in mL	(SS)	1.000	Am 243 AEA Frac.	(C243)	0.813
Work List	Sample D.F.	(DF)	1	Cm 243/244 AEA Frac.	(Cm)	0
29801	Tracer Volume in mL	(SPKV)	0.100	Total AT Counts		1163
Test Code	Digest D.F.	(DDF)	1.000	AT Count Time (min)	(TC)	30
@AM24102	Tracer Book No.		10B59	Background in cpm	(Bkg)	0.1
Matrix	Am-243 Tracer Value	(dpm/mL)	1130	Am 241 cpm		3.69
LIQUID	Detector Number		13	Am 243 cpm		24.28
Batch Number	Detector Efficiency	(DetEff)	0.3166	Cm 243/244 cpm		0
99002129				AEA Count Time	(min)	480
Rerun				Am 241 µCi/L =		7.7635E-03
0				Cm 243/244 µCi/L =	<	3.5626E-03
Sample Prep						
N/A						
Sample Number						
S99T000895						
Instrument Code						
WB27810						
Prepared By						
SLH2						
Chemist						
JFR						
Analyst						
GLL						
Date Complete						
05/24/99						
Analysis Date						
05/21/99						
Analysis Time						
03:30 PM						
Sample Point						
AP107 GRAB2						

Am-241 µCi/L = (C241 * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

Cm-243/244 µCi/L = (Cm * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

Relative Counting Error = Square Root of [(1/(Am-243 cpm * min)) + (1 / (Am-241 or Cm-243/244 cpm * min))] * 1.96 * 100

Am 243 Tracer Recovery = (Total AT Counts / TC - Bkg) * (1/DetEff) * C243 * 100 / Am-243 Tracer Value * SPKV

Am 241 µCi/mL	=	7.76E-06	DETECTION LEVELS in µCi/mL
Relative Counting Error	=	5.0%	
NOTE: Cm-243/244 Result is a LESS THAN Value.			Am 241
Cm 243/244 µCi/mL		< 3.56E-06	3.56E-06
Relative Counting Error	=	100.0%	Cm 243/244
Am 243 Tracer Recovery	=	87.9%	3.56E-06

Analyst:	GLL	Date:	05/24/99
Signature of Chemist: John Relyea	JFR	Date:	25 May 99

SAMPLE.WB1 REV 1.2 953103ML

WORKBOOK PAGE: SAM7

Am 241 and Cm 243/244: LA-953-103 (VOID) or LA-953-104(B-0)) LIQUID / SO

Type	Date Counted		MAY-22-99	Am 241 AEA Frac.	(C241)	0.138
SAMPLE	Sample Volume in mL	(SS)	1.000	Am 243 AEA Frac.	(C243)	0.797
Work List	Sample D.F.	(DF)	1	Cm 243/244 AEA Frac.	(Cm)	0
29801	Tracer Volume in mL	(SPKV)	0.100	Total AT Counts		1282
Test Code	Digest D.F.	(DDF)	1.000	AT Count Time (min)	(TC)	30
@AM24102	Tracer Book No.		10B59	Background in cpm	(Bkg)	0.1
Matrix	Am-243 Tracer Value	(dpm/mL)	1130	Am 241 cpm		3.95
LIQUID	Detector Number		13	Am 243 cpm		22.87
Batch Number	Detector Efficiency	(DetEff)	0.3166	Cm 243/244 cpm		0
99002129				AEA Count Time	(min)	480
Rerun				Am 241 µCi/L =		8.8135E-03
0				Cm 243/244 µCi/L =	<	3.3622E-03
Sample Prep						
N/A						
Sample Number						
S99T000896						
Instrument Code						
WB27810						
Prepared By						
SLH2						
Chemist						
JFR						
Analyst						
GLL						
Date Complete						
05/24/99						
Analysis Date						
05/21/99						
Analysis Time						
03:30 PM						
Sample Point						
AP107 GRAB2						

Am-241 µCi/L = (C241 * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

Cm-243/244 µCi/L = (Cm * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

Relative Counting Error = Square Root of [(1/(Am-243 cpm * min)) + (1 / (Am-241 or Cm-243/244 cpm * min))] * 1.96 * 100

Am 243 Tracer Recovery = (Total AT Counts / TC - Bkg) * (1/DetEff) * C243 * 100 / Am-243 Tracer Value * SPKV

Am 241 µCi/mL =	8.81E-06	DETECTION LEVELS in µCi/mL
Relative Counting Error =	4.9%	
NOTE: Cm-243/244 Result is a LESS THAN Value.		Am 241 3.36E-06
Cm 243/244 µCi/mL	< 3.36E-06	
Relative Counting Error =	100.0%	Cm 243/244 3.36E-06
Am 243 Tracer Recovery =	95.0%	

Analyst:		GLL	Date:	05/24/99
Signature of Chemist:	John Relyea	JFR	Date:	25 May 99

SAMPLE.WB1 REV 1.2 953103ML

WORKBOOK PAGE: DUP8

Am 241 and Cm 243/244: LA-953-103 (VOID) or LA-953-104(B-0)) LIQUID / SO

Type	Date Counted		MAY-22-99	Am 241 AEA Frac.	(C241)	0.13
DUP	Sample Volume in mL	(SS)	1.000	Am 243 AEA Frac.	(C243)	0.8
Work List	Sample D.F.	(DF)	1	Cm 243/244 AEA Frac.	(Cm)	0
29801	Tracer Volume in mL	(SPKV)	0.100	Total AT Counts		1215
Test Code	Digest D.F.	(DDF)	1.000	AT Count Time (min)	(TC)	30
@AM24102	Tracer Book No.		10B59	Background in cpm	(Bkg)	0.1
Matrix	Am-243 Tracer Value	(dpm/mL)	1130	Am 241 cpm		3.97
LIQUID	Detector Number		13	Am 243 cpm		24.46
Batch Number	Detector Efficiency	(DetEff)	0.3166	Cm 243/244 cpm		0
99002129				AEA Count Time	(min)	480
Rerun				Am 241 µCi/L =		8.2714E-03
0				Cm 243/244 µCi/L =	<	3.5215E-03
Sample Prep						
N/A						
Sample Number						
S99T000896						
Instrument Code						
WB27810						
Prepared By						
SLH2						
Chemist						
JFR						
Analyst						
GLL						
Date Complete						
05/24/99						
Analysis Date						
05/21/99						
Analysis Time						
03:30 PM						
Sample Point						
AP107 GRAB2						

Am-241 µCi/L = (C241 * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

Cm-243/244 µCi/L = (Cm * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

Relative Counting Error = Square Root of [(1/(Am-243 cpm * min)) + (1 / (Am-241 or Cm-243/244 cpm * min))] * 1.96 * 100

Am 243 Tracer Recovery = (Total AT Counts / TC - Bkg) * (1/DetEff) * C243 * 100 / Am-243 Tracer Value * SPKV

Am 241 µCi/mL =	8.27E-06	DETECTION LEVELS in µCi/mL
Relative Counting Error =	4.8%	
NOTE: Cm-243/244 Result is a LESS THAN Value.		Am 241
Cm 243/244 µCi/mL	< 3.52E-06	3.52E-06
Relative Counting Error =	100.0%	Cm 243/244
Am 243 Tracer Recovery =	90.3%	3.52E-06

Analyst:		GLL	Date:	05/24/99
Signature of Chemist:	John Relyea	JFR	Date:	25 May 99

SAMPLE.WB1 REV 1.2 953103ML

WORKBOOK PAGE: SAM9

Am 241 and Cm 243/244: LA-953-103 (VOID) or LA-953-104(B-~~0~~)) 1/ 1/ 1/ LIQUID / SO

Type	Date Counted		MAY-22-99	Am 241 AEA Frac.	(C241)	SAMPLE 0.129
SAMPLE	Sample Volume in mL	(SS)	1.000	Am 243 AEA Frac.	(C243)	0.833
Work List	Sample D.F.	(DF)	1	Cm 243/244 AEA Frac.	(Cm)	0
29801	Tracer Volume in mL	(SPKV)	0.100	Total AT Counts		1229
Test Code	Digest D.F.	(DDF)	1.000	AT Count Time (min)	(TC)	30
@AM24102	Tracer Book No.		10B59	Background in cpm	(Bkg)	0.1
Matrix	Am-243 Tracer Value	(dpm/mL)	1130	Am 241 cpm		3.97
LIQUID	Detector Number		13	Am 243 cpm		25.66
Batch Number	Detector Efficiency	(DetEff)	0.3166	Cm 243/244 cpm		0
99002129				AEA Count Time	(min)	480
Rerun				Am 241 µCi/L =		7.8826E-03
0				Cm 243/244 µCi/L =	<	3.2109E-03
Sample Prep						
N/A						
Sample Number						
S99T000897						
Instrument Code						
WB27810						
Prepared By						
SLH2						
Chemist						
JFR						
Analyst						
GLL						
Date Complete						
05/24/99						
Analysis Date						
05/21/99						
Analysis Time						
03:30 PM						
Sample Point						
AP107 GRAB2						

Am-241 µCi/L = (C241 * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

Cm-243/244 µCi/L = (Cm * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

Relative Counting Error = Square Root of [(1/(Am-243 cpm * min)) + (1 / (Am-241 or Cm-243/244 cpm * min))] * 1.96 * 100

Am 243 Tracer Recovery = (Total AT Counts / TC - Bkg) * (1/DetEff) * C243 * 100 / Am-243 Tracer Value * SPKV

Am 241 µCi/mL	=	7.88E-06	DETECTION LEVELS in µCi/mL
Relative Counting Error	=	4.8%	
NOTE: Cm-243/244 Result is a LESS THAN Value.			Am 241
Cm 243/244 µCi/mL		< 3.21E-06	3.21E-06
Relative Counting Error	=	100.0%	Cm 243/244
Am 243 Tracer Recovery	=	95.2%	3.21E-06

Analyst:	GLL	Date:	05/24/99
Signature of Chemist: John Relyea	JFR	Date:	25 May 99

SAMPLE.WB1 REV 1.2 953103ML

WORKBOOK PAGE: DUP10

Am 241 and Cm 243/244: LA-953-103 (VOID) or LA-953-104(B-Ø) LIQUID / SO

Type:	Date Counted		MAY-22-99	Am 241 AEA Frac.	(C241)	0.123
DUP	Sample Volume in mL	(SS)	1.000	Am 243 AEA Frac.	(C243)	0.832
Work List	Sample D.F.	(DF)	1	Cm 243/244 AEA Frac.	(Cm)	0
29801	Tracer Volume in mL	(SPKV)	0.100	Total AT Counts		1252
Test Code	Digest D.F.	(DDF)	1.000	AT Count Time (min)	(TC)	30
@AM24102	Tracer Book No.		10B59	Background in cpm	(Bkg)	0.1
Matrix	Am-243 Tracer Value	(dpm/mL)	1130	Am 241 cpm		3.79
LIQUID	Detector Number		13	Am 243 cpm		25.6
Batch Number	Detector Efficiency	(DetEff)	0.3166	Cm 243/244 cpm		0
99002129				AEA Count Time	(min)	480
Rerun				Am 241 µCi/L =		7.5250E-03
0				Cm 243/244 µCi/L =	<	3.1593E-03
Sample Prep						
N/A						
Sample Number						
S99T000897						
Instrument Code						
WB27810						
Prepared By						
SLH2						
Chemist						
JFR						
Analyst						
GLL						
Date Complete						
05/24/99						
Analysis Date						
05/21/99						
Analysis Time						
03:30 PM						
Sample Point						
AP107 GRAB2						

Am-241 µCi/L = (C241 * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

Cm-243/244 µCi/L = (Cm * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

Relative Counting Error = Square Root of [(1/(Am-243 cpm * min)) + (1 / (Am-241 or Cm-243/244 cpm * min))] * 1.96 * 100

Am 243 Tracer Recovery = (Total AT Counts / TC - Bkg) * (1/DetEff) * C243 * 100 / Am-243 Tracer Value * SPKV

Am 241 µCi/mL	=	7.53E-06	DETECTION LEVELS in µCi/mL
Relative Counting Error	=	4.9%	
NOTE: Cm-243/244 Result is a LESS THAN Value.			Am 241 3.16E-06
Cm 243/244 µCi/mL		< 3.16E-06	
Relative Counting Error	=	100.0%	Cm 243/244 3.16E-06
Am 243 Tracer Recovery	=	96.8%	

Analyst:		GLL	Date:	05/24/99
Signature of Chemist:	John Relyea	JFR	Date:	25 May 99

SAMPLE.WB1 REV 1.2 953103ML

222-S Analytical Laboraratory
G E N E R A L A L P H A E N E R G Y A N A L Y S I S
Rev. 2.10

DATA REDUCTION REPORT

SAMPLE
WL29801-STD-AM
File ID: 3a3486.CNF

Counted on: 5/24/99 @ 7:59
Detector: AEA3
Geometry number: 1
Count time: 28803. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1	1222.9	1222.9	297.829	297.829	14.000	6.735	7.000	2.445
2	1256.4	1256.4	251.758	251.732	12.000	5.650	6.000	1.955
3	36.1	36.1	175.077	174.908	92.000	1.000	46.000	0.100
4?	2.9	2.9	165.470	161.093	4.000	0.240	2.000	2.082

PEAK RESULTS
Peak Error Limit: 30%

Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1	Pu238	0.446	5.487	5.469	0.018	0.03	44.25	1.3	269.0	0.121E-03
	Am241		5.479	5.469	0.010				206.0	0.928E-04
2	Am243	0.452	5.266	5.257	0.009	0.03	44.77	1.4	197.9	0.891E-04
3	Pu242	0.029	4.891	4.904	-.013	0.00	2.88	5.3	12.6	0.568E-05
4		????		4.840			0.01	912.		
Totals:		0.927	<--valid peaks only-->				91.89			

DETECTOR CALIBRATION
Energy(MEV) = 4.099 + (0.0046)*Channel
Energy range (MeV): 4.099 TO 6.454
Efficiency = 0.2285 CPM/DPM
(Data reduction compression factor: 1.)

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	47573.0	100.000
Smoothed	47573.0	100.000
Composite fit	44120.5	92.743
Residuals	3452.5	7.257

Analyzed by: _____
NEW

Spectrum 3a3486.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 8809.1

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Raw Data Dump for AEA Spectrum: 3a3486.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	3.	3.	5.	6.
21	2.	6.	3.	4.	2.	2.	2.	4.	9.	5.
31	4.	1.	6.	7.	4.	4.	2.	4.	2.	5.
41	3.	5.	4.	4.	2.	5.	5.	3.	7.	1.
51	4.	4.	7.	3.	6.	7.	7.	4.	5.	2.
61	5.	5.	4.	4.	3.	3.	7.	8.	5.	4.
71	7.	3.	9.	11.	8.	7.	3.	9.	5.	7.
81	9.	10.	9.	4.	8.	9.	8.	7.	5.	7.
91	6.	7.	10.	5.	5.	6.	12.	9.	8.	8.
101	7.	11.	8.	9.	10.	15.	11.	11.	5.	11.
111	12.	9.	6.	9.	5.	16.	14.	6.	11.	17.
121	17.	9.	14.	11.	14.	11.	10.	16.	14.	8.
131	18.	14.	15.	16.	13.	17.	11.	14.	16.	18.
141	12.	14.	21.	16.	17.	18.	18.	24.	12.	14.
151	16.	25.	19.	26.	21.	29.	23.	22.	17.	24.
161	30.	38.	24.	24.	29.	27.	27.	29.	18.	28.
171	27.	31.	35.	41.	31.	37.	33.	29.	38.	27.
181	37.	30.	37.	52.	26.	37.	40.	41.	50.	53.
191	38.	46.	46.	44.	46.	46.	63.	61.	56.	49.
201	60.	56.	63.	66.	61.	69.	79.	71.	70.	81.
211	81.	86.	71.	79.	82.	87.	113.	89.	99.	110.
221	119.	140.	108.	134.	155.	155.	145.	181.	166.	195.
231	218.	226.	255.	246.	291.	336.	348.	364.	419.	488.
241	497.	593.	642.	763.	791.	836.	939.	1116.	1169.	1281.
251	1372.	1396.	1402.	1210.	902.	568.	350.	237.	195.	166.
261	167.	158.	158.	157.	135.	170.	149.	137.	118.	123.
271	121.	118.	160.	146.	156.	175.	166.	192.	251.	247.
281	243.	270.	334.	369.	362.	389.	513.	598.	666.	666.
291	701.	809.	872.	1026.	1184.	1256.	1307.	1358.	1304.	1206.
301	909.	630.	447.	311.	264.	213.	156.	139.	99.	65.
311	57.	55.	30.	5.	6.	1.	1.	0.	0.	0.
321	2.	0.	2.	0.	0.	0.	0.	0.	1.	1.
331	1.	1.	0.	1.	0.	0.	0.	0.	0.	1.
341	0.	2.	0.	3.	1.	0.	4.	2.	1.	0.
351	0.	1.	0.	2.	2.	0.	1.	0.	1.	0.
361	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
371	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
381	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
401	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
411	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
421	0.	0.	0.	1.	0.	0.	0.	0.	0.	2.
431	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
441	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
451	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
461	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
471	0.	1.	0.	1.	0.	0.	1.	1.	1.	1.
481	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
491	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
511	0.	0.								

222-S Analytical Laboraratory
G E N E R A L A L P H A E N E R G Y A N A L Y S I S
Rev. 2.10

DATA REDUCTION REPORT

SAMPLE
WL29801-BLK-AM
File ID: 3a3483.CNF

Counted on: 5/22/99 @13:46
Detector: AEA3
Geometry number: 1
Count time: 28804. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1	580.9	580.9	252.085	252.085	12.000	5.148	6.000	1.714

PEAK RESULTS
Peak Error Limit: 30%

Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1	Am243	0.838	5.266	5.260	0.006	0.02	20.75	2.0	90.4	0.407E-04
Totals:		0.838	<--valid peaks only-->				20.75			

DETECTOR CALIBRATION
Energy(MEV) = 4.101 + (0.0046)*Channel
Energy range (MeV): 4.101 TO 6.456
Efficiency = 0.2317 CPM/DPM
(Data reduction compression factor: 1.)

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	11880.0	100.000
Smoothed	11880.0	100.000
Composite fit	9960.0	83.839
Residuals	1920.0	16.161

Analyzed by: _____
GL

Spectrum 3a3483.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 4073.4

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Raw Data Dump for AEA Spectrum: 3a3483.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	1.	2.	0.	2.
21	0.	0.	2.	0.	2.	1.	0.	3.	0.	1.
31	2.	0.	1.	4.	2.	2.	2.	3.	2.	1.
41	2.	1.	0.	2.	2.	0.	3.	3.	0.	1.
51	1.	2.	0.	1.	1.	3.	1.	2.	1.	4.
61	2.	1.	2.	4.	2.	2.	2.	1.	1.	0.
71	4.	2.	4.	1.	5.	1.	3.	1.	2.	4.
81	1.	2.	2.	1.	3.	1.	3.	1.	3.	3.
91	0.	3.	1.	5.	5.	2.	4.	4.	5.	3.
101	1.	7.	5.	1.	2.	1.	3.	3.	0.	3.
111	4.	6.	2.	4.	4.	7.	4.	2.	6.	1.
121	1.	5.	1.	3.	6.	6.	5.	6.	4.	9.
131	4.	4.	7.	12.	6.	6.	11.	8.	8.	5.
141	7.	1.	6.	10.	8.	9.	2.	8.	9.	11.
151	9.	11.	8.	6.	10.	9.	7.	5.	10.	8.
161	15.	6.	7.	12.	8.	9.	4.	12.	7.	18.
171	10.	12.	12.	14.	10.	13.	11.	15.	13.	10.
181	23.	13.	10.	18.	17.	15.	27.	11.	17.	19.
191	15.	20.	19.	15.	29.	24.	17.	33.	22.	27.
201	25.	40.	27.	29.	23.	25.	40.	36.	27.	35.
211	25.	39.	45.	36.	49.	38.	51.	46.	42.	51.
221	48.	59.	64.	45.	70.	58.	81.	68.	93.	108.
231	102.	116.	119.	124.	131.	143.	177.	162.	199.	177.
241	216.	284.	323.	322.	368.	383.	399.	448.	535.	576.
251	635.	627.	657.	598.	462.	282.	140.	100.	78.	56.
261	41.	39.	32.	32.	40.	21.	25.	19.	16.	11.
271	1.	6.	1.	0.	2.	1.	0.	0.	3.	3.
281	1.	1.	3.	1.	2.	1.	3.	6.	1.	4.
291	2.	2.	2.	1.	3.	5.	4.	3.	5.	6.
301	6.	1.	1.	0.	0.	0.	1.	0.	0.	0.
311	2.	1.	0.	0.	1.	0.	1.	1.	0.	0.
321	1.	0.	0.	0.	0.	0.	0.	1.	1.	0.
331	0.	0.	0.	0.	0.	0.	0.	0.	2.	1.
341	1.	3.	1.	1.	1.	5.	2.	2.	0.	2.
351	0.	1.	1.	0.	2.	1.	0.	1.	1.	1.
361	0.	1.	0.	0.	0.	0.	0.	1.	0.	1.
371	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
381	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	1.	0.	0.	0.	1.	0.
401	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
411	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.
421	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.
431	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.
441	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
451	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
461	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
471	0.	0.	0.	0.	1.	0.	2.	0.	0.	0.
481	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.
491	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
511	0.	0.								

222-S Analytical Laboraratory
G E N E R A L A L P H A E N E R G Y A N A L Y S I S
Rev. 2.10

DATA REDUCTION REPORT

SAMPLE
S99T000894-SAM-A
File ID: 4a4475.CNF

Counted on: 5/22/99 @13:47
Detector: AEA4
Geometry number: 1
Count time: 28801. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1	30.7	30.7	298.134	298.134	12.000	5.870	6.000	1.432
2	541.2	541.2	251.683	251.676	12.000	5.727	6.000	1.611
3	15.4	15.4	202.324	201.623	8.000	7.442	4.000	0.389
4?	2.2	2.2	167.763	167.374	4.000	0.614	2.000	0.369

PEAK RESULTS
Peak Error Limit: 30%

Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1	Pu238	0.052	5.487	5.462	0.025	0.03	1.36	7.7	8.3	0.375E-05
	Am241		5.479	5.462	0.017				6.4	0.288E-05
2	Am243	0.838	5.266	5.248	0.018	0.03	21.86	1.9	97.2	0.438E-04
3		0.089		5.018		0.03	2.32	7.2	10.2	0.459E-05
4		????		4.861			0.04	292.		
Totals:		0.979	<--valid peaks only-->				25.54			

DETECTOR CALIBRATION
Energy(MEV) = 4.091 + (0.0046)*Channel
Energy range (MeV): 4.091 TO 6.446
Efficiency = 0.2271 CPM/DPM
(Data reduction compression factor: 1.)

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	12518.0	100.000
Smoothed	12518.0	100.000
Composite fit	12275.8	98.065
Residuals	242.2	1.935

Analyzed by: _____
GL

Spectrum 4a4475.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 3869.3

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Raw Data Dump for AEA Spectrum: 4a4475.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	2.	1.	1.
21	1.	1.	1.	0.	0.	1.	0.	1.	2.	2.
31	1.	1.	0.	2.	2.	3.	0.	1.	1.	1.
41	1.	0.	1.	0.	2.	1.	3.	1.	1.	2.
51	0.	0.	1.	3.	1.	1.	2.	1.	2.	3.
61	3.	1.	2.	2.	2.	3.	0.	3.	3.	2.
71	2.	4.	1.	2.	2.	4.	1.	2.	4.	0.
81	2.	1.	3.	3.	2.	3.	2.	2.	2.	2.
91	3.	2.	0.	2.	1.	3.	7.	3.	1.	2.
101	3.	4.	1.	1.	1.	5.	5.	1.	4.	1.
111	3.	2.	1.	2.	3.	1.	2.	4.	2.	3.
121	8.	2.	2.	4.	3.	6.	4.	6.	2.	6.
131	3.	6.	4.	5.	7.	4.	8.	2.	8.	8.
141	4.	5.	3.	4.	7.	7.	11.	9.	10.	5.
151	7.	5.	7.	14.	8.	13.	7.	5.	10.	17.
161	10.	5.	10.	14.	6.	15.	14.	8.	16.	13.
171	7.	7.	9.	7.	10.	8.	13.	12.	12.	9.
181	17.	12.	20.	16.	21.	13.	23.	20.	18.	21.
191	14.	22.	23.	11.	20.	19.	25.	20.	18.	15.
201	26.	40.	27.	21.	22.	21.	20.	23.	26.	40.
211	35.	32.	39.	39.	42.	54.	43.	56.	39.	62.
221	52.	48.	75.	78.	72.	76.	71.	92.	94.	105.
231	123.	98.	158.	145.	165.	178.	191.	226.	198.	229.
241	246.	295.	330.	369.	397.	442.	483.	492.	539.	553.
251	572.	566.	585.	543.	439.	258.	130.	74.	61.	41.
261	39.	33.	37.	34.	30.	21.	24.	18.	21.	9.
271	8.	1.	6.	6.	7.	9.	5.	11.	14.	9.
281	13.	12.	7.	11.	11.	13.	13.	18.	18.	23.
291	20.	20.	23.	26.	28.	33.	29.	34.	33.	31.
301	28.	17.	6.	4.	9.	5.	4.	2.	4.	1.
311	4.	0.	3.	0.	1.	1.	0.	1.	0.	0.
321	0.	0.	1.	0.	1.	1.	0.	1.	0.	0.
331	1.	0.	0.	0.	0.	1.	2.	2.	0.	0.
341	2.	1.	1.	2.	2.	0.	0.	1.	0.	1.
351	0.	0.	1.	6.	0.	0.	1.	1.	3.	3.
361	2.	1.	0.	0.	1.	1.	0.	2.	0.	2.
371	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
381	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.
401	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
411	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
421	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.
431	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
441	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
451	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
461	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
471	1.	0.	0.	2.	1.	2.	1.	0.	0.	0.
481	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
491	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
511	0.	0.								

222-S Analytical Laboraratory
G E N E R A L A L P H A E N E R G Y A N A L Y S I S
Rev. 2.10

DATA REDUCTION REPORT

SAMPLE
S99T000894-DUP-A
File ID: 5a5399.CNF

Counted on: 5/22/99 @13:48
Detector: AEA5
Geometry number: 1
Count time: 28805. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1	30.8	30.8	301.718	301.718	12.000	5.354	6.000	1.290
2	549.8	549.8	254.143	254.137	14.000	7.535	7.000	2.236
3	12.4	12.4	182.783	182.549	82.000	442.207	41.000	124.124

PEAK RESULTS
Peak Error Limit: 30%

Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1	Pu238	0.051	5.487	5.481	0.006	0.02	1.36	7.7	7.8	0.353E-05
	Am241		5.479	5.481	-.002				6.0	0.271E-05
2	Am243	0.846	5.266	5.262	0.004	0.03	22.74	1.9	95.3	0.429E-04
3	Np237	0.096	4.769	4.933	-.164	2.03	2.59	17.8	12.4	0.556E-05
	Pu242		4.891	4.933	-.042				10.7	0.484E-05
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Totals:		0.993	<--valid peaks only-->				26.69			

DETECTOR CALIBRATION
Energy(MEV) = 4.093 + (0.0046)*Channel
Energy range (MeV): 4.093 TO 6.448
Efficiency = 0.2410 CPM/DPM
(Data reduction compression factor: 1.)

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	12905.0	100.000
Smoothed	12905.0	100.000
Composite fit	12814.4	99.298
Residuals	90.6	0.702

Analyzed by: _____
GL

Spectrum 5a5399.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 4007.0

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Raw Data Dump for AEA Spectrum: 5a5399.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.
21	1.	1.	2.	0.	1.	0.	0.	2.	2.	3.
31	0.	0.	1.	1.	1.	1.	0.	2.	0.	0.
41	1.	0.	2.	3.	1.	3.	2.	0.	0.	0.
51	0.	0.	0.	4.	0.	2.	2.	1.	0.	0.
61	1.	1.	2.	2.	5.	2.	0.	0.	3.	1.
71	1.	2.	0.	0.	0.	1.	2.	2.	0.	2.
81	1.	2.	0.	2.	0.	3.	0.	1.	0.	3.
91	4.	3.	2.	3.	3.	3.	0.	1.	1.	2.
101	2.	3.	5.	4.	3.	2.	2.	2.	1.	4.
111	1.	0.	6.	4.	3.	3.	3.	3.	2.	2.
121	5.	5.	2.	1.	3.	5.	4.	3.	6.	4.
131	2.	6.	2.	3.	2.	6.	4.	2.	6.	3.
141	3.	5.	5.	6.	8.	7.	4.	5.	10.	10.
151	4.	5.	6.	2.	6.	5.	8.	6.	11.	12.
161	6.	9.	10.	4.	6.	10.	4.	11.	13.	7.
171	9.	12.	13.	4.	15.	7.	11.	17.	4.	9.
181	18.	11.	18.	15.	11.	10.	14.	12.	10.	20.
191	13.	15.	14.	15.	17.	16.	25.	13.	22.	21.
201	23.	23.	20.	29.	35.	23.	30.	28.	30.	38.
211	29.	23.	42.	35.	50.	32.	34.	47.	53.	56.
221	56.	59.	47.	51.	55.	62.	57.	73.	74.	89.
231	76.	89.	94.	112.	108.	137.	175.	171.	184.	197.
241	222.	257.	261.	288.	314.	355.	367.	413.	462.	478.
251	475.	580.	563.	609.	579.	545.	508.	385.	329.	181.
261	116.	70.	69.	52.	43.	45.	40.	33.	36.	26.
271	22.	18.	6.	9.	10.	9.	6.	4.	4.	4.
281	7.	7.	9.	9.	15.	6.	10.	18.	18.	16.
291	17.	13.	19.	17.	31.	22.	28.	28.	27.	36.
301	26.	34.	32.	34.	20.	14.	4.	5.	3.	3.
311	6.	1.	2.	1.	2.	2.	0.	0.	0.	0.
321	1.	0.	0.	2.	1.	0.	0.	0.	0.	0.
331	1.	1.	0.	2.	3.	1.	0.	0.	0.	1.
341	0.	0.	0.	0.	1.	0.	6.	2.	2.	1.
351	1.	0.	0.	2.	1.	2.	1.	1.	2.	1.
361	0.	3.	6.	0.	3.	2.	0.	2.	0.	0.
371	2.	0.	0.	0.	0.	0.	1.	0.	0.	0.
381	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
401	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
411	0.	1.	0.	0.	1.	0.	0.	0.	0.	0.
421	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.
431	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.
441	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
451	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
461	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.
471	0.	0.	0.	0.	0.	1.	3.	1.	3.	0.
481	1.	0.	1.	0.	1.	1.	0.	0.	0.	0.
491	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
511	0.	0.								

222-S Analytical Laboraratory
G E N E R A L A L P H A E N E R G Y A N A L Y S I S
Rev. 2.10

DATA REDUCTION REPORT

SAMPLE
S99T000895-SAM-A
File ID: 6a6403.CNF

Counted on: 5/22/99 @13:49
Detector: AEA6
Geometry number: 1
Count time: 28802. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1	81.4	81.4	297.116	297.116	14.000	8.159	7.000	2.644
2	625.5	625.5	250.937	250.932	12.000	5.596	6.000	2.085

PEAK RESULTS
Peak Error Limit: 30%

Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1	Am241	0.115	5.479	5.467	0.012	0.04	3.27	4.9	15.6	0.704E-05
	Pu238		5.487	5.467	0.020				20.4	0.919E-05
2	Am243	0.748	5.266	5.254	0.012	0.03	21.36	1.9	96.9	0.436E-04
		---					---			
Totals:		0.862	<--valid peaks only-->				24.63			

DETECTOR CALIBRATION
Energy(MEV) = 4.100 + (0.0046)*Channel
Energy range (MeV): 4.100 TO 6.455
Efficiency = 0.2227 CPM/DPM
(Data reduction compression factor: 1.)

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	13710.0	100.000
Smoothed	13710.0	100.000
Composite fit	11823.2	86.238
Residuals	1886.8	13.762

Analyzed by: _____
GL

Spectrum 6a6403.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 4133.6

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Raw Data Dump for AEA Spectrum: 6a6403.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	2.	1.	1.
21	1.	1.	2.	0.	1.	1.	0.	1.	2.	0.
31	0.	1.	1.	0.	1.	1.	0.	2.	3.	3.
41	2.	1.	0.	1.	1.	2.	1.	1.	0.	0.
51	2.	3.	2.	2.	3.	4.	4.	0.	2.	3.
61	2.	1.	3.	6.	1.	1.	0.	1.	1.	2.
71	3.	4.	4.	1.	3.	4.	4.	0.	2.	3.
81	2.	1.	0.	1.	7.	1.	3.	1.	0.	2.
91	5.	3.	3.	4.	6.	5.	4.	3.	3.	4.
101	7.	4.	3.	5.	4.	4.	3.	4.	3.	3.
111	3.	5.	3.	1.	2.	3.	0.	1.	3.	3.
121	14.	5.	5.	8.	3.	0.	5.	2.	6.	6.
131	4.	2.	7.	6.	8.	8.	9.	8.	7.	8.
141	7.	8.	3.	5.	7.	7.	6.	7.	13.	9.
151	10.	13.	9.	10.	10.	10.	11.	14.	7.	8.
161	12.	8.	13.	10.	14.	15.	9.	16.	12.	17.
171	12.	14.	23.	17.	13.	15.	14.	17.	14.	18.
181	20.	21.	11.	11.	15.	21.	19.	9.	15.	25.
191	21.	21.	22.	24.	20.	23.	16.	19.	21.	26.
201	18.	22.	22.	29.	24.	36.	27.	32.	27.	21.
211	25.	36.	24.	48.	43.	35.	41.	38.	32.	45.
221	47.	46.	55.	46.	64.	62.	67.	60.	82.	80.
231	89.	115.	124.	111.	127.	164.	174.	192.	210.	240.
241	288.	290.	331.	374.	426.	483.	497.	579.	624.	669.
251	693.	695.	626.	449.	297.	200.	126.	96.	78.	59.
261	36.	42.	43.	38.	32.	34.	25.	18.	17.	16.
271	8.	5.	15.	10.	9.	11.	8.	16.	22.	13.
281	14.	29.	37.	32.	37.	29.	44.	34.	50.	57.
291	67.	69.	75.	61.	82.	95.	90.	78.	91.	72.
301	55.	29.	24.	29.	17.	17.	13.	8.	7.	11.
311	1.	3.	1.	0.	0.	0.	1.	0.	0.	1.
321	0.	0.	0.	2.	1.	1.	0.	0.	1.	0.
331	0.	0.	0.	0.	1.	0.	0.	0.	2.	0.
341	1.	3.	4.	0.	0.	2.	2.	4.	1.	1.
351	0.	2.	1.	2.	0.	2.	2.	4.	5.	0.
361	3.	2.	3.	5.	4.	5.	2.	3.	4.	2.
371	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.
381	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.
401	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
411	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
421	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.
431	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.
441	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
451	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
461	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
471	0.	0.	0.	0.	1.	1.	0.	1.	1.	0.
481	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
491	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
511	0.	0.								

222-S Analytical Laboraratory
G E N E R A L A L P H A E N E R G Y A N A L Y S I S
Rev. 2.10

DATA REDUCTION REPORT

SAMPLE
S99T000895-DUP-A
File ID: 9a9315.CNF

Counted on: 5/22/99 @13:50
Detector: AEA9
Geometry number: 1
Count time: 28801. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1	95.7	95.7	297.872	297.872	16.000	7.265	8.000	2.420
2	720.4	720.4	252.031	252.028	12.000	4.750	6.000	1.696

PEAK RESULTS
Peak Error Limit: 30%

Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1	Pu238	0.124	5.487	5.472	0.015	0.03	3.69	4.7	21.4	0.965E-05
	Am241		5.479	5.472	0.007				16.4	0.739E-05
2	Am243	0.813	5.266	5.261	0.005	0.02	24.28	1.8	102.5	0.462E-04
		---					---			
Totals:		0.937	<--valid peaks only-->				27.97			

DETECTOR CALIBRATION
Energy(MEV) = 4.101 + (0.0046)*Channel
Energy range (MeV): 4.101 TO 6.457
Efficiency = 0.2392 CPM/DPM
(Data reduction compression factor: 1.)

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	14328.0	100.000
Smoothed	14328.0	100.000
Composite fit	13426.0	93.704
Residuals	902.0	6.296

Analyzed by: _____
GL

Spectrum 9a9315.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 4921.7

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Raw Data Dump for AEA Spectrum: 9a9315.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.
21	1.	0.	1.	0.	0.	0.	0.	0.	0.	2.
31	0.	0.	1.	0.	0.	0.	0.	0.	1.	0.
41	0.	0.	1.	0.	0.	0.	1.	0.	0.	0.
51	1.	1.	0.	3.	0.	0.	1.	1.	0.	0.
61	1.	0.	1.	0.	1.	0.	0.	0.	0.	1.
71	1.	0.	0.	1.	0.	1.	0.	0.	0.	0.
81	1.	1.	0.	0.	1.	0.	0.	0.	0.	0.
91	1.	0.	1.	2.	0.	0.	2.	1.	0.	0.
101	1.	0.	0.	0.	1.	1.	0.	2.	2.	1.
111	1.	1.	0.	1.	0.	0.	1.	1.	1.	1.
121	1.	3.	0.	2.	1.	1.	0.	3.	2.	1.
131	2.	2.	3.	1.	0.	2.	2.	2.	2.	1.
141	1.	3.	1.	0.	1.	2.	2.	4.	3.	2.
151	3.	3.	3.	2.	2.	3.	2.	2.	3.	1.
161	4.	1.	2.	3.	5.	7.	4.	4.	3.	5.
171	5.	4.	8.	6.	6.	3.	4.	6.	4.	7.
181	6.	7.	15.	8.	3.	8.	5.	10.	5.	7.
191	16.	9.	14.	8.	6.	12.	12.	14.	10.	20.
201	19.	9.	15.	16.	17.	17.	12.	18.	14.	19.
211	16.	21.	23.	28.	26.	33.	33.	38.	38.	38.
221	48.	40.	54.	49.	50.	52.	69.	60.	88.	89.
231	89.	112.	130.	128.	156.	171.	196.	218.	208.	249.
241	302.	311.	355.	415.	447.	453.	487.	597.	647.	675.
251	739.	828.	812.	702.	516.	323.	177.	89.	80.	58.
261	53.	65.	64.	50.	35.	42.	41.	29.	15.	18.
271	7.	10.	15.	3.	9.	10.	16.	18.	17.	22.
281	20.	27.	29.	30.	33.	46.	48.	40.	57.	51.
291	54.	71.	85.	93.	86.	86.	114.	104.	87.	110.
301	66.	56.	28.	26.	19.	24.	18.	14.	8.	9.
311	5.	2.	3.	3.	1.	1.	1.	0.	1.	0.
321	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.
331	1.	0.	0.	0.	1.	0.	0.	0.	1.	3.
341	1.	0.	3.	3.	1.	4.	3.	5.	8.	1.
351	2.	0.	1.	0.	3.	2.	3.	6.	1.	1.
361	4.	3.	4.	0.	3.	2.	2.	2.	5.	1.
371	1.	0.	1.	0.	0.	0.	0.	0.	0.	0.
381	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.
401	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
411	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
421	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.
431	0.	0.	0.	0.	1.	1.	1.	0.	0.	0.
441	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
451	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.
461	1.	0.	0.	0.	0.	0.	0.	0.	1.	0.
471	0.	0.	1.	1.	1.	0.	1.	2.	0.	5.
481	1.	1.	0.	1.	0.	0.	0.	0.	0.	0.
491	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
511	0.	0.								

222-S Analytical Laboraratory
G E N E R A L A L P H A E N E R G Y A N A L Y S I S
Rev. 2.10

DATA REDUCTION REPORT

SAMPLE
S99T000896-SAM-A
File ID: 12a1217.CNF

Counted on: 5/22/99 @13:51
Detector: AEA12
Geometry number: 1
Count time: 28806. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1	155.0	155.0	300.323	300.323	12.000	4.860	6.000	3.244
2	954.7	954.7	254.058	254.058	10.000	3.663	5.000	2.276

PEAK RESULTS
Peak Error Limit: 30%

Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1	Pu238	0.138	5.487	5.476	0.011	0.02	3.95	4.5	24.4	0.110E-04
	Am241		5.479	5.476	0.003				18.7	0.842E-05
2	Am243	0.797	5.266	5.264	0.002	0.02	22.87	1.9	102.8	0.463E-04
		---					---			
Totals:		0.935	<--valid peaks only-->				26.82			

DETECTOR CALIBRATION
Energy(MEV) = 4.095 + (0.0046)*Channel
Energy range (MeV): 4.095 TO 6.450
Efficiency = 0.2248 CPM/DPM
(Data reduction compression factor: 1.)

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	13773.0	100.000
Smoothed	13773.0	100.000
Composite fit	12875.3	93.482
Residuals	897.7	6.518

Analyzed by: _____
GL

Spectrum 12a1217.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 6028.5

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Raw Data Dump for AEA Spectrum: 12a1217.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.
21	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.
31	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.
41	0.	0.	0.	0.	1.	0.	0.	0.	0.	1.
51	0.	0.	0.	0.	0.	1.	2.	0.	0.	2.
61	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.
71	0.	2.	0.	0.	0.	0.	0.	0.	0.	0.
81	0.	1.	0.	0.	1.	0.	0.	1.	0.	0.
91	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.
101	0.	1.	1.	0.	1.	0.	1.	1.	1.	0.
111	1.	1.	1.	1.	0.	0.	0.	0.	0.	0.
121	0.	0.	1.	0.	1.	0.	0.	0.	0.	0.
131	0.	1.	1.	1.	0.	0.	0.	0.	0.	1.
141	0.	0.	1.	0.	0.	2.	1.	0.	2.	0.
151	1.	1.	0.	1.	0.	0.	1.	0.	1.	0.
161	0.	1.	0.	1.	1.	1.	2.	0.	1.	2.
171	0.	0.	1.	0.	1.	3.	1.	0.	1.	0.
181	0.	0.	0.	1.	0.	1.	1.	1.	2.	1.
191	1.	1.	1.	1.	2.	2.	1.	0.	3.	1.
201	1.	2.	4.	0.	3.	4.	6.	3.	7.	1.
211	7.	4.	1.	4.	4.	9.	4.	5.	5.	6.
221	6.	13.	10.	8.	14.	21.	14.	17.	21.	30.
231	34.	32.	44.	50.	53.	65.	56.	81.	108.	117.
241	139.	177.	200.	235.	265.	372.	368.	391.	478.	618.
251	713.	878.	1032.	1178.	1132.	898.	544.	279.	155.	96.
261	80.	78.	62.	63.	80.	58.	49.	41.	33.	34.
271	28.	14.	2.	5.	5.	1.	7.	3.	7.	12.
281	10.	7.	7.	14.	15.	12.	21.	27.	14.	42.
291	47.	49.	57.	70.	87.	78.	120.	136.	162.	198.
301	171.	169.	98.	70.	49.	31.	33.	26.	21.	15.
311	19.	9.	6.	8.	3.	0.	2.	0.	0.	0.
321	0.	0.	0.	0.	0.	2.	0.	0.	1.	0.
331	0.	1.	0.	0.	0.	1.	2.	0.	0.	0.
341	1.	0.	0.	2.	4.	3.	1.	4.	4.	0.
351	0.	0.	1.	1.	1.	1.	2.	1.	1.	2.
361	5.	6.	2.	3.	6.	5.	4.	2.	3.	4.
371	6.	1.	1.	1.	0.	0.	0.	0.	0.	0.
381	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
401	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.
411	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
421	0.	0.	0.	0.	0.	0.	1.	0.	1.	0.
431	0.	0.	0.	0.	1.	2.	1.	0.	0.	0.
441	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
451	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
461	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
471	0.	0.	0.	1.	0.	0.	3.	1.	1.	2.
481	0.	0.	4.	0.	1.	0.	0.	0.	0.	0.
491	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
511	0.	0.								

222-S Analytical Laboraratory
G E N E R A L A L P H A E N E R G Y A N A L Y S I S
Rev. 2.10

DATA REDUCTION REPORT

SAMPLE
S99T000896-DUP-A
File ID: 13a1394.CNF

Counted on: 5/22/99 @13:52
Detector: AEA13
Geometry number: 1
Count time: 28806. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1	146.9	146.9	301.864	301.864	12.000	5.094	6.000	2.999
2	975.2	975.2	256.027	256.027	12.000	4.052	6.000	2.420

PEAK RESULTS
Peak Error Limit: 30%

Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1	Pu238	0.130	5.487	5.475	0.012	0.02	3.97	4.5	22.3	0.100E-04
	Am241		5.479	5.475	0.004				17.1	0.770E-05
2	Am243	0.800	5.266	5.264	0.002	0.02	24.46	1.8	99.9	0.450E-04
Totals:		0.930	<--valid peaks only-->				28.43			

DETECTOR CALIBRATION
Energy(MEV) = 4.087 + (0.0046)*Channel
Energy range (MeV): 4.087 TO 6.442
Efficiency = 0.2472 CPM/DPM
(Data reduction compression factor: 1.)

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	14671.0	100.000
Smoothed	14671.0	100.000
Composite fit	13648.8	93.032
Residuals	1022.2	6.968

Analyzed by: _____
GL

Spectrum 13a1394.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 5378.2

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Raw Data Dump for AEA Spectrum: 13a1394.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	1.	1.	0.	0.	1.
21	0.	0.	0.	0.	0.	0.	0.	0.	3.	0.
31	0.	0.	1.	0.	1.	1.	1.	0.	1.	1.
41	3.	2.	0.	2.	1.	1.	3.	0.	1.	0.
51	1.	1.	2.	3.	1.	1.	1.	0.	0.	1.
61	2.	1.	0.	0.	1.	0.	3.	0.	2.	1.
71	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.
81	0.	2.	1.	2.	2.	1.	1.	1.	0.	1.
91	2.	1.	0.	1.	1.	0.	0.	1.	0.	0.
101	1.	1.	0.	0.	2.	0.	0.	4.	2.	1.
111	0.	0.	1.	0.	2.	1.	0.	5.	2.	0.
121	1.	1.	1.	2.	2.	1.	2.	1.	2.	2.
131	3.	0.	2.	3.	3.	1.	0.	1.	1.	1.
141	0.	1.	2.	3.	1.	1.	3.	4.	3.	1.
151	2.	2.	3.	2.	1.	2.	2.	0.	3.	2.
161	2.	1.	3.	1.	1.	0.	1.	3.	2.	3.
171	3.	3.	2.	3.	0.	2.	1.	2.	1.	4.
181	1.	3.	2.	2.	3.	2.	7.	2.	4.	6.
191	1.	5.	6.	7.	0.	3.	6.	1.	5.	5.
201	3.	3.	5.	2.	5.	7.	3.	5.	4.	7.
211	4.	6.	5.	8.	7.	7.	5.	7.	9.	9.
221	13.	11.	18.	11.	12.	17.	8.	22.	19.	19.
231	27.	29.	37.	46.	47.	50.	45.	67.	70.	86.
241	94.	132.	155.	161.	217.	254.	303.	377.	413.	465.
251	549.	649.	774.	955.	1064.	1175.	1105.	953.	621.	306.
261	177.	111.	74.	74.	77.	81.	64.	62.	47.	43.
271	35.	30.	13.	11.	7.	7.	4.	4.	6.	5.
281	4.	11.	8.	12.	12.	18.	20.	18.	34.	29.
291	28.	59.	53.	46.	58.	61.	99.	98.	125.	140.
301	160.	178.	172.	118.	94.	62.	32.	34.	25.	24.
311	18.	18.	9.	11.	6.	5.	2.	0.	0.	0.
321	0.	1.	0.	0.	0.	0.	1.	0.	0.	0.
331	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
341	0.	1.	0.	0.	1.	1.	0.	1.	1.	0.
351	0.	1.	1.	0.	1.	2.	1.	3.	3.	0.
361	5.	1.	3.	4.	3.	3.	7.	2.	8.	6.
371	7.	5.	2.	0.	0.	0.	0.	0.	0.	0.
381	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
401	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
411	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
421	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.
431	0.	0.	1.	1.	0.	0.	0.	0.	0.	1.
441	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
451	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
461	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
471	0.	0.	0.	1.	3.	0.	0.	0.	1.	2.
481	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
491	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
511	0.	0.								

222-S Analytical Laboraratory
G E N E R A L A L P H A E N E R G Y A N A L Y S I S
Rev. 2.10

DATA REDUCTION REPORT

SAMPLE
S99T000897-SAM-A
File ID: 14a1484.CNF

Counted on: 5/22/99 @13:53
Detector: AEA14
Geometry number: 1
Count time: 28804. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1	121.8	121.8	299.302	299.302	14.000	7.724	7.000	3.914
2	889.1	889.1	253.811	253.810	12.000	4.583	6.000	2.159

PEAK RESULTS
Peak Error Limit: 30%

Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1	Pu238	0.129	5.487	5.473	0.014	0.04	3.97	4.5	23.0	0.104E-04
	Am241		5.479	5.473	0.006				17.6	0.793E-05
2	Am243	0.833	5.266	5.264	0.002	0.02	25.66	1.8	108.0	0.486E-04
Totals:		0.962	<--valid peaks only-->				29.63			

DETECTOR CALIBRATION
Energy(MEV) = 4.096 + (0.0046)*Channel
Energy range (MeV): 4.096 TO 6.452
Efficiency = 0.2400 CPM/DPM
(Data reduction compression factor: 1.)

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	14783.0	100.000
Smoothed	14783.0	100.000
Composite fit	14223.7	96.216
Residuals	559.3	3.784

Analyzed by: _____
GL

Spectrum 14a1484.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 6107.9

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Raw Data Dump for AEA Spectrum: 14a1484.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
21	0.	0.	0.	1.	0.	0.	2.	1.	0.	0.
31	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.
41	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
51	1.	0.	0.	0.	1.	1.	0.	1.	0.	0.
61	0.	0.	2.	0.	0.	0.	1.	0.	0.	0.
71	1.	0.	1.	1.	0.	2.	0.	1.	0.	2.
81	0.	2.	0.	0.	0.	0.	1.	1.	0.	0.
91	2.	2.	0.	0.	0.	0.	0.	0.	1.	0.
101	0.	0.	0.	0.	1.	2.	1.	0.	0.	1.
111	0.	0.	1.	0.	2.	2.	1.	0.	0.	1.
121	0.	0.	0.	0.	0.	0.	1.	0.	1.	1.
131	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.
141	1.	1.	1.	2.	1.	1.	1.	1.	0.	2.
151	1.	1.	1.	0.	1.	1.	0.	3.	0.	2.
161	0.	1.	2.	2.	0.	0.	0.	2.	2.	0.
171	3.	0.	0.	1.	1.	2.	0.	1.	1.	0.
181	1.	2.	1.	1.	1.	0.	2.	0.	2.	3.
191	1.	1.	2.	1.	2.	0.	5.	5.	2.	1.
201	3.	2.	3.	6.	3.	4.	3.	2.	6.	3.
211	3.	5.	4.	9.	3.	7.	7.	15.	13.	11.
221	7.	15.	19.	18.	13.	15.	19.	29.	39.	36.
231	45.	50.	63.	81.	72.	94.	93.	115.	140.	160.
241	212.	263.	270.	324.	357.	429.	508.	544.	619.	743.
251	772.	850.	975.	1027.	981.	843.	563.	292.	161.	93.
261	93.	70.	71.	68.	52.	71.	55.	45.	37.	22.
271	20.	7.	7.	2.	5.	9.	5.	10.	12.	4.
281	12.	18.	15.	16.	25.	25.	30.	26.	45.	52.
291	54.	77.	69.	86.	81.	101.	116.	147.	138.	133.
301	117.	114.	92.	55.	31.	34.	23.	31.	19.	20.
311	16.	11.	5.	3.	1.	1.	0.	0.	0.	1.
321	0.	1.	0.	0.	1.	0.	1.	0.	0.	0.
331	0.	1.	0.	1.	1.	0.	0.	1.	1.	0.
341	2.	2.	3.	0.	1.	1.	1.	1.	0.	3.
351	0.	1.	1.	0.	3.	3.	3.	4.	4.	2.
361	2.	4.	3.	5.	4.	2.	5.	7.	4.	2.
371	1.	1.	2.	0.	0.	0.	0.	0.	0.	0.
381	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
401	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.
411	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.
421	0.	0.	3.	0.	0.	0.	0.	0.	0.	0.
431	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.
441	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
451	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
461	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.
471	0.	0.	1.	0.	1.	0.	2.	1.	0.	1.
481	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
491	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
511	0.	0.								

222-S Analytical Laboraratory
G E N E R A L A L P H A E N E R G Y A N A L Y S I S
Rev. 2.10

DATA REDUCTION REPORT

SAMPLE
S99T0000897-DUP-
File ID: 15a1557.CNF

Counted on: 5/22/99 @13:55
Detector: AEA15
Geometry number: 1
Count time: 28802. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1	133.6	133.6	298.038	298.038	14.000	5.687	7.000	3.236
2	922.6	922.6	251.958	251.958	12.000	4.716	6.000	2.461

PEAK RESULTS
Peak Error Limit: 30%

Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1	Pu238	0.123	5.487	5.470	0.017	0.03	3.79	4.6	21.4	0.965E-05
	Am241		5.479	5.470	0.009				16.4	0.739E-05
2	Am243	0.832	5.266	5.258	0.008	0.02	25.60	1.8	105.3	0.474E-04
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Totals:		0.955	<--valid peaks only-->				29.39			

DETECTOR CALIBRATION
Energy(MEV) = 4.099 + (0.0046)*Channel
Energy range (MeV): 4.099 TO 6.454
Efficiency = 0.2456 CPM/DPM
(Data reduction compression factor: 1.)

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	14775.0	100.000
Smoothed	14775.0	100.000
Composite fit	14107.7	95.484
Residuals	667.3	4.516

Analyzed by: _____
GL

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          '    '     Spectrum 15a1557.CNF
1 Legend:  Raw = ....  Modeled Peaks = 1,2,.., etc     Display Max.:    6213.2

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Raw Data Dump for AEA Spectrum: 15a1557.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.
21	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.
31	0.	1.	0.	0.	0.	0.	0.	1.	0.	1.
41	2.	0.	0.	0.	0.	0.	0.	0.	1.	0.
51	0.	1.	0.	0.	0.	0.	0.	0.	0.	2.
61	0.	0.	0.	0.	0.	1.	1.	0.	1.	1.
71	0.	0.	1.	0.	0.	1.	0.	0.	0.	0.
81	0.	0.	1.	1.	0.	0.	1.	0.	1.	0.
91	0.	0.	0.	1.	0.	1.	1.	1.	1.	0.
101	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.
111	0.	1.	0.	1.	0.	1.	1.	1.	1.	0.
121	0.	0.	0.	1.	1.	1.	0.	0.	1.	0.
131	0.	0.	2.	0.	0.	2.	1.	2.	0.	0.
141	1.	0.	0.	0.	0.	2.	1.	0.	1.	0.
151	0.	0.	1.	2.	0.	2.	2.	0.	0.	1.
161	2.	1.	0.	1.	2.	0.	1.	3.	1.	0.
171	1.	0.	1.	2.	1.	2.	0.	1.	1.	1.
181	3.	3.	2.	2.	0.	0.	2.	4.	2.	2.
191	3.	5.	2.	2.	3.	2.	2.	0.	3.	2.
201	5.	4.	1.	3.	6.	6.	9.	6.	7.	2.
211	8.	6.	8.	6.	10.	9.	16.	8.	11.	15.
221	18.	12.	16.	16.	18.	29.	29.	31.	28.	29.
231	51.	64.	53.	80.	107.	104.	132.	155.	171.	204.
241	241.	324.	336.	408.	470.	508.	599.	694.	769.	899.
251	1017.	1077.	1038.	865.	644.	387.	211.	125.	87.	67.
261	74.	66.	58.	51.	60.	40.	36.	29.	24.	15.
271	6.	8.	4.	4.	7.	7.	7.	9.	11.	14.
281	12.	9.	19.	14.	24.	27.	37.	45.	39.	54.
291	62.	82.	73.	84.	105.	126.	157.	159.	148.	133.
301	87.	52.	45.	49.	26.	25.	8.	19.	9.	13.
311	6.	3.	3.	1.	0.	0.	0.	0.	0.	0.
321	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.
331	0.	1.	2.	0.	0.	0.	0.	0.	0.	0.
341	0.	1.	1.	1.	1.	1.	2.	0.	1.	1.
351	0.	2.	3.	1.	1.	3.	0.	4.	4.	5.
361	4.	7.	4.	3.	9.	1.	9.	8.	5.	4.
371	2.	0.	0.	0.	0.	0.	0.	1.	0.	0.
381	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
401	0.	0.	0.	0.	1.	0.	0.	0.	1.	0.
411	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
421	0.	1.	0.	0.	0.	1.	0.	0.	0.	0.
431	0.	0.	0.	0.	1.	0.	0.	0.	1.	0.
441	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
451	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
461	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
471	0.	0.	0.	0.	1.	2.	0.	0.	3.	1.
481	1.	0.	0.	0.	0.	1.	0.	0.	0.	0.
491	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
511	0.	0.								

LABCORE Completed Worklist Report for Worklist# 29806

Analyst: gll **Instrument:** AB14 **Book#:** _____

Method: LA-953-104 Rev/Mod B-1

Worklist Comment: AP107 FOR @PU23902, RLC

Seq	Type	Sample#	R	A	Test		Matrix	Actual	Found	DL or Yield	Unit
1	BLNK			0	@PU23902	PU23901	LIQUID	1	<3.57E-6		uCi/mL
1	BLNK			0	@PU23902	PU23901T	LIQUID	100	9.39E+01	93.900	% Recovery
1	BLNK			0	@PU23902	PU23901E	LIQUID	1.00	1.00E+02	100.000	uCi/mL
1	BLNK			0	@PU23902	PU23801	LIQUID	1	<3.57E-6		uCi/mL
1	BLNK			0	@PU23902	PU23801E	LIQUID	1.00	1.00E+02	100.000	uCi/mL
2	STD			0	@PU23902	PU23901	LIQUID	1.26E-04	1.28E-4	101.587	% Recovery
2	STD			0	@PU23902	PU23901T	LIQUID	100	8.84E+01	88.400	% Recovery
2	STD			0	@PU23902	PU23901E	LIQUID	1.0	1.70E+00	1.700	% Ct Error
3	SAMPLE	S99T000894		0	@PU23902	PU23901	LIQUID	N/A	6.69E-06	3.88e-006	uCi/mL
3	SAMPLE	S99T000894		0	@PU23902	PU23901T	LIQUID	N/A	9.09E+01		% Recovery
3	SAMPLE	S99T000894		0	@PU23902	PU23901E	LIQUID	N/A	5.23E+00		% Ct. Error
3	SAMPLE	S99T000894		0	@PU23902	PU23801	LIQUID	N/A <	3.88E-06	3.88e-006	uCi/mL
3	SAMPLE	S99T000894		0	@PU23902	PU23801E	LIQUID	N/A	9.57E+00		% Ct. Error
4	DUP	S99T000894		0	@PU23902	PU23901	LIQUID	6.69E-6	6.46E-6	3.498	RPD
4	DUP	S99T000894		0	@PU23902	PU23901T	LIQUID	100	9.62E+01	96.200	% Recovery
4	DUP	S99T000894		0	@PU23902	PU23901E	LIQUID	1.00	5.31E+00	5.310	% Ct Error
4	DUP	S99T000894		0	@PU23902	PU23801	LIQUID	<3.88E-6	<3.66E-6		RPD
4	DUP	S99T000894		0	@PU23902	PU23801E	LIQUID	1.00	1.03E+01	10.300	% Ct. Erro
5	SAMPLE	S99T000895		0	@PU23902	PU23901	LIQUID	N/A	2.47E-05	4.63e-006	uCi/mL
5	SAMPLE	S99T000895		0	@PU23902	PU23901T	LIQUID	N/A	8.99E+01		% Recovery
5	SAMPLE	S99T000895		0	@PU23902	PU23901E	LIQUID	N/A	2.98E+00		% Ct. Error
5	SAMPLE	S99T000895		0	@PU23902	PU23801	LIQUID	N/A	6.10E-06	4.63e-006	uCi/mL
5	SAMPLE	S99T000895		0	@PU23902	PU23801E	LIQUID	N/A	5.51E+00		% Ct. Error
6	DUP	S99T000895		0	@PU23902	PU23901	LIQUID	2.47E-5	2.49E-5	0.806	RPD
6	DUP	S99T000895		0	@PU23902	PU23901T	LIQUID	100	8.94E+01	89.400	% Recovery
6	DUP	S99T000895		0	@PU23902	PU23901E	LIQUID	1.00	2.95E+00	2.950	% Ct Error
6	DUP	S99T000895		0	@PU23902	PU23801	LIQUID	6.10E-6	5.01E-6	19.622	RPD
6	DUP	S99T000895		0	@PU23902	PU23801E	LIQUID	1.00	6.04E+00	6.040	% Ct. Erro
7	SAMPLE	S99T000896		0	@PU23902	PU23901	LIQUID	N/A	2.54E-05	4.74e-006	uCi/mL
7	SAMPLE	S99T000896		0	@PU23902	PU23901T	LIQUID	N/A	8.82E+01		% Recovery
7	SAMPLE	S99T000896		0	@PU23902	PU23901E	LIQUID	N/A	2.87E+00		% Ct. Error
7	SAMPLE	S99T000896		0	@PU23902	PU23801	LIQUID	N/A	5.16E-06	4.74e-006	uCi/mL
7	SAMPLE	S99T000896		0	@PU23902	PU23801E	LIQUID	N/A	5.85E+00		% Ct. Error
8	DUP	S99T000896		0	@PU23902	PU23901	LIQUID	2.54E-5	2.59E-5	1.949	RPD
8	DUP	S99T000896		0	@PU23902	PU23901T	LIQUID	100	8.93E+01	89.300	% Recovery
8	DUP	S99T000896		0	@PU23902	PU23901E	LIQUID	1.00	2.90E+00	2.900	% Ct Error
8	DUP	S99T000896		0	@PU23902	PU23801	LIQUID	5.16E-6	<4.76E-6		RPD
8	DUP	S99T000896		0	@PU23902	PU23801E	LIQUID	1.00	6.25E+00	6.250	% Ct. Erro
9	SAMPLE	S99T000897		0	@PU23902	PU23901	LIQUID	N/A	2.36E-05	4.98e-006	uCi/mL
9	SAMPLE	S99T000897		0	@PU23902	PU23901T	LIQUID	N/A	8.80E+01		% Recovery
9	SAMPLE	S99T000897		0	@PU23902	PU23901E	LIQUID	N/A	3.09E+00		% Ct. Error

Units shown for QC (BLK/BKG) may not reflect the actual units.

LABCORE Completed Worklist Report for Worklist# 29806

Seq	Type	Sample#	R	A	Test	Matrix	Actual	Found	DL or Yield	Unit
9	SAMPLE	S99T000897	0	@PU23902	PU23801	LIQUID	N/A	1.28E-05	4.98e-006	uCi/mL
9	SAMPLE	S99T000897	0	@PU23902	PU23801E	LIQUID	N/A	4.02E+00		% Ct. Error
10	DUP	S99T000897	0	@PU23902	PU23901	LIQUID	2.36E-5	2.38E-5	0.844	RPD
10	DUP	S99T000897	0	@PU23902	PU23901T	LIQUID	100	8.10E+01	81.000	% Recovery
10	DUP	S99T000897	0	@PU23902	PU23901E	LIQUID	1.00	3.07E+00	3.070	% Ct Error
10	DUP	S99T000897	0	@PU23902	PU23801	LIQUID	1.28E-5	1.34E-5	4.580	RPD
10	DUP	S99T000897	0	@PU23902	PU23801E	LIQUID	1.00	3.92E+00	3.920	% Ct. Erro

Final page for worklist# 29806

Analyst Signature Date

Analyst Signature Date

John Relyea 24 May 99
Reviewer Signature Date

Units shown for QC (BLK/BKG) may not reflect the actual units.

05/20/99 09:17
ws2

LABCORE Data Entry Template for Worklist# 29806

Analyst: GCL **Instrument:** PU01 14 **Book#** 46B57

Method: LA-953-104 Rev/Mod B-1

Worklist Comment: AP107 FOR @PU23902, RLC

S	Type	Sample#	R	A	Test	Matrix	Group#	Project
1	BLNK				@PU23902	LIQUID		
2	STD				@PU23902	LIQUID		
3	SAMPLE	S99T000894	0		@PU23902	LIQUID	99000198	AP107 GRAB2
	Analytes Requested: PU23801 , PU23801E, PU23901 , PU23901E, PU23901T							
4	DUP	S99T000894	0		@PU23902	LIQUID		
5	SAMPLE	S99T000895	0		@PU23902	LIQUID	99000198	AP107 GRAB2
	Analytes Requested: PU23801 , PU23801E, PU23901 , PU23901E, PU23901T							
6	DUP	S99T000895	0		@PU23902	LIQUID		
7	SAMPLE	S99T000896	0		@PU23902	LIQUID	99000198	AP107 GRAB2
	Analytes Requested: PU23801 , PU23801E, PU23901 , PU23901E, PU23901T							
8	DUP	S99T000896	0		@PU23902	LIQUID		
9	SAMPLE	S99T000897	0		@PU23902	LIQUID	99000198	AP107 GRAB2
	Analytes Requested: PU23801 , PU23801E, PU23901 , PU23901E, PU23901T							
10	DUP	S99T000897	0		@PU23902	LIQUID		

Final page for worklist # 29806

Gary LaPlant 5-21-99
Signature **Date**

Shirl L Hale 5-24-99
Signature **Date**
RE Wright 5/24/99

Data Entry Comments:

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

WORKBOOK PAGE: BLANK1

Pu 238 and 239/240 : LA-943-128 (VOID) or LA-953-104(B-1)) L

Type	DATE COUNTED		MAY-22-99	PU 236 AEA FRAC	(C236)	0.919
BLNK	SAMPLE VOLUME in mL	SS	1.000	PU 238 AEA FRAC	(C238)	0.000
Work List	SAMPLE DILUTION FACTOR	DF	1.000	PU 239 AEA FRAC	(C239)	0.000
29806	TRACER VOLUME in mL	SPKV	0.100	TOTAL AT COUNTS		2035
Test Code	DIGEST DILUTION FACTOR	DDF	1.0000	AT COUNT TIME (MIN)		30
@PU23902	TRACER BOOK NO		16B59	BACKGROUND in cp	(Bkg)	0.100
Matrix	DETECTOR NUMBER		14	PU 236 cpm		48.720
LIQUID	EFFICIENCY FACTOR	EFF	0.2910	PU 238 cpm		0.000
Batch Number	TRACER PREPARATION DATE		04/13/99	PU 239 cpm		0.000
99002133	TRACER PREPARATION VALUE (dpm/mL)		2338.00	AEA COUNT TIME		480
Rerun	PU-236 DECAY CORR'D VALUE	(dpm/mL)	2278.07	Pu 239/240 µCi/L =	<	3.567E-03
0	PU-238 TRACER VALUE	(dpm/mL	0.00			

BLNK

Sample Prep
N/A
Sample #
WL29806-BLNK
Instrument Code
WB27807
Prepared By
SLH2
Chemist
JFR
Analyst
GLL
Date Complete
05/24/99
Analysis Date
05/21/99
Analysis Time
03:30 PM
Sample Point
AP107 GRAB2

Decay Time = Date Counted - Tracer Preparation Date

Pu-236 Decay Corr'd Value = Pu-236 Preparation Value *[e to the power of {(-ln2 * Decay Time/1040.95)]

Pu 236 Tracer Recovery = (Total AT Counts / TC -Bkg)*C236*100/(Pu-236 Decay Corr'd Value * SPKV*EFF)

Pu 239/240 µCi/L = (C239)(Pu 236 Decay Corr'd Value)(SPKV)(1000mL/L)(DF)(DDF) / [(C236)(SS)(D g/L)(2220000 dpm/µCi)]

Pu 238 dpm = [(Total AT Counts / TC) - Bkg * 1/EFF * C238] - (Pu-238 Tracer Value *SPKV *Pu 236 Tracer Recovery / 100)

Pu 238 µCi/L = [(Pu 238 dpm)(DF)(DDF)(1000mL/L)] / [(Pu-236 Tracer Recovery /100)(2220000 dpm/µCi)(D g/L)(SS)]

Relative Counting Error = Square Root of [(1/(Pu 236 cpm * min)) + (1 / (Pu 238 or 239/240 cpm * min))] * 1.96 * 100

Pu 239/240 µCi/mL		< 3.57E-06	DETECTION LEVELS in µCi/mL
Relative Counting Error	=	100.0%	
NOTE: Pu 238 Result is a LESS THAN Value.			Pu 239/240
Pu 238 µCimL		< 3.57E-06	3.57E-06
Relative Counting Error	=	100.0%	Pu 238
Pu 236 Tracer Recovery	=	93.9%	3.57E-06

Analyst:	GLL	Date:	24-May-99
Signature of Chemist: John Relyea	JFR	Date:	24 May 99

BLANK.WB1 REV 1.0 943128ML

WORKBOOK PAGE: STD2

Pu 238 and 239/240 : LA-943-128 (VOID) or LA-953-104(B-Ø)) LIQUID

						STD
Type	DATE COUNTED		MAY-22-99	PU 236 AEA FRAC	(C236)	0.423
STD	SAMPLE VOLUME in mL	SS	1.000	PU 238 AEA FRAC	(C238)	0.000
Work List	SAMPLE DILUTION FACTOR	DF	1.000	PU 239 AEA FRAC	(C239)	0.526
29806	TRACER VOLUME in mL	SPKV	0.100	TOTAL AT COUNTS		4161
Test Code	DIGEST DILUTION FACTOR	DDF	1.000	AT COUNT TIME (MIN)		30
@PU23902	TRACER BOOK NO		16B59	BACKGROUND in cpm	(Bkg)	0.100
Matrix	DETECTOR NUMBER		14	PU 236 cpm		50.150
LIQUID	EFFICIENCY FACTOR	EFF	0.291	PU 238 cpm		0.000
Batch Number	TRACER PREPARATION DATE		04/13/99	PU 239 cpm		62.310
99002133	TRACER PREPARATION VALUE (dpm/mL)		2338.000	AEA COUNT TIME		480
Rerun	PU-236 DECAY CORR'D VALUE	(dpm/mL)	2278.065	Pu 239/240 µCi/L		1.2760E-01
0	PU-238 TRACER VALUE	(dpm/mL)	0.000			
Sample Prep	STANDARD BOOK NO		46B57			
N/A	STANDARD VALUE in µCi/mL		1.260E-04			
Sample #						
WL29806-STD						
Instrument Code						
WB27807						
Prepared By						
SLH2						
Chemist						
JFR						
Analyst						
GLL						
Date Complete						
05/24/99						
Analysis Date						
05/21/99						
Analysis Time						
03:30 PM						
Sample Point						
AP107 GRAB2						

Decay Time = Date Counted - Tracer Preparation Date

Pu-236 Decay Corr'd Value = Pu-236 Preparation Value *[e to the power of {(-ln2 * Decay Time/1040.95)]

Pu 236 Tracer Recovery = (Total AT Counts / TC -Bkg)* 1/EFF *C236*100/Pu-236 Decay Corr'd Value * SPKV

Pu 239/240 µCi/L = (C239)(Pu 236 Decay Corr'd Value)(SPKV)(1000mL/L)(DF)(DDF) / [(C236)(SS)(2220000 dpm/µCi)]

Pu 238 dpm = [(Total AT Counts / TC) - Bkg * 1/EFF * C238] - (Pu-238 Tracer Value *SPKV *Pu 236 Tracer Recovery / 100)

Pu 238 µCi/L = [(Pu 238 dpm)(DF)(DDF)(1000mL/L)] / [(Pu-236 Tracer Recovery /100)(2220000 dpm/µCi)(D g/L)(SS)]

Relative Counting Error = Square Root of [(1/(Pu 236 cpm * min)) + (1 / (Pu 238 or 239/240 cpm * min))] * 1.96 * 100

Pu 239/240 µCi/mL		1.28E-04	DETECTION LEVELS in µCi/mL
Relative Counting Error	=	1.7%	Pu 239/240 8.23E-06
Pu 236 Tracer Recovery	=	88.4%	

Analyst:	GLL	Date:	24-May-99
Signature of Chemist: John Relyea	JFR	Date:	24 May 99

STANDARD.WB1 REV 1.0 943128ML

WORKBOOK PAGE: SAM3

Pu 238 and 239/240 : LA-943-128 (VOID) or LA-953-104(B-0) LIQUID /

Type:	DATE COUNTED		MAY-22-99	PU 236 AEA FRAC	(C236)	0.874
SAMPLE	SAMPLE VOLUME in mL	SS	1.000	PU 238 AEA FRAC	(C238)	0.016
Work List	SAMPLE DILUTION FACTOR	DF	1.000	PU 239 AEA FRAC	(C239)	0.057
29806	TRACER VOLUME in mL	SPKV	0.100	TOTAL AT COUNTS		2071
Test Code	DIGEST DILUTION FACTOR	DDF	1.0000	AT COUNT TIME (MIN)		30
@PU23902	TRACER BOOK NO		16B59	BACKGROUND in cpm	(Bkg)	0.100
Matrix	DETECTOR NUMBER		14	PU 236 cpm		47.990
LIQUID	EFFICIENCY FACTOR	EFF	0.291	PU 238 cpm		0.890
Batch Number	TRACER PREPARATION DATE		04/13/99	PU 239 cpm		3.110
99002133	TRACER PREPARATION VALUE (dpm/mL)		2338.000	AEA COUNT TIME		480
Rerun	PU-236 DECAY CORR'D VALUE	(dpm/mL)	2278.065	Pu 239/240 µCi/L		6.6923E-03
0	PU-238 TRACER VALUE	(dpm/mL)	0.000			

SAMPLE

Sample Prep: N/A

Sample #: S99T000894

Instrument Code: WB27807

Prepared By: SLH2

Chemist: JFR

Analyst: GLL

Date Complete: 05/24/99

Analysis Date: 05/21/99

Analysis Time: 03:30 PM

Sample Point: AP107 GRAB2

Decay Time = Date Counted - Tracer Preparation Date

Pu-236 Decay Corr'd Value = Pu-236 Preparation Value *[e to the power of {(-ln2 * Decay Time/1040.95)]

Pu 236 Tracer Recovery = (Total AT Counts / TC -Bkg) *C236*100/(Pu-236 Decay Corr'd Value * SPKV * EFF)

Pu 239/240 µCi/L = (C239)(Pu 236 Decay Corr'd Value)(SPKV)(1000mL/L)(DF)(DDF) / [(C236)(SS)(D g/L)(2220000 dpm/µCi)]

Pu 238 dpm = [(Total AT Counts / TC) - Bkg * 1/EFF * C238] - (Pu-238 Tracer Value *SPKV *Pu 236 Tracer Recovery / 100)

Pu 238 µCi/L = [(Pu 238 dpm)(DF)(DDF)(1000mL/L)] / [(Pu-236 Tracer Recovery /100)(2220000 dpm/µCi)(D g/L)(SS)]

Relative Counting Error = Square Root of [(1/(Pu 236 cpm * min)) + (1 / (Pu 238 or 239/240 cpm * min))] * 1.96 * 100

Pu 239/240 µCi/mL		6.69E-06	DETECTION LEVELS in µCi/mL
Relative Counting Error	=	5.2%	
NOTE: Pu 238 Result is a LESS THAN Value.			Pu 239/240 3.88E-06
Pu 238 µCimL		< 3.88E-06	
Relative Counting Error	=	9.6%	Pu 238 3.88E-06
Pu 236 Tracer Recovery	=	90.9%	

Analyst:	GLL	Date:	24-May-99
Signature of Chemist: John Relyea	JFR	Date:	24 May 99

SAMPLE.WB1 REV 1.0 943128ML

WORKBOOK PAGE: DUP4

Pu 238 and 239/240 : LA-943-128 (VOID) or LA-953-104(B-1) LIQUID /

Type	DATE COUNTED		MAY-22-99	PU 236 AEA FRAC	(C236)	0.874
DUP	SAMPLE VOLUME in mL	SS	1.000	PU 238 AEA FRAC	(C238)	0.014
Work List	SAMPLE DILUTION FACTOR	DF	1.000	PU 239 AEA FRAC	(C239)	0.055
29806	TRACER VOLUME in mL	SPKV	0.100	TOTAL AT COUNTS		2191
Test Code	DIGEST DILUTION FACTOR	DDF	1.0000	AT COUNT TIME (MIN)		30
@PU23902	TRACER BOOK NO		16B59	BACKGROUND in cpm	(Bkg)	0.100
Matrix	DETECTOR NUMBER		14	PU 236 cpm		47.650
LIQUID	EFFICIENCY FACTOR	EFF	0.291	PU 238 cpm		0.770
Batch Number	TRACER PREPARATION DATE		04/13/99	PU 239 cpm		3.020
99002133	TRACER PREPARATION VALUE (dpm/mL)		2338.000	AEA COUNT TIME		480
Rerun	PU-236 DECAY CORR'D VALUE	(dpm/mL)	2278.065	Pu 239/240 µCi/L		6.4575E-03
0	PU-238 TRACER VALUE	(dpm/mL)	0.000			

DUP

Sample Prep
N/A
Sample #
S99T000894
Instrument Code
WB27807
Prepared By
SLH2
Chemist
JFR
Analyst
GLL
Date Complete
05/24/99
Analysis Date
05/21/99
Analysis Time
03:30 PM
Sample Point
AP107 GRAB2

Decay Time = Date Counted - Tracer Preparation Date

Pu-236 Decay Corr'd Value = Pu-236 Preparation Value *[e to the power of {(-ln2 * Decay Time/1040.95)]

Pu 236 Tracer Recovery = (Total AT Counts / TC -Bkg) *C236*100/(Pu-236 Decay Corr'd Value * SPKV * EFF)

Pu 239/240 µCi/L = (C239)(Pu 236 Decay Corr'd Value)(SPKV)(1000mL/L)(DF)(DDF) / [(C236)(SS)(D g/L)(2220000 dpm/µCi)]

Pu 238 dpm = [(Total AT Counts / TC) - Bkg * 1/EFF * C238] - (Pu-238 Tracer Value *SPKV *Pu 236 Tracer Recovery / 100)

Pu 238 µCi/L = [(Pu 238 dpm)(DF)(DDF)(1000mL/L)] / [(Pu-236 Tracer Recovery /100)(2220000 dpm/µCi)(D g/L)(SS)]

Relative Counting Error = Square Root of [(1/(Pu 236 cpm * min)) + (1 / (Pu 238 or 239/240 cpm * min))] * 1.96 * 100

Pu 239/240 µCi/mL		6.46E-06	DETECTION LEVELS in µCi/mL
Relative Counting Error	=	5.3%	
NOTE: Pu 238 Result is a LESS THAN Value.			Pu 239/240
Pu 238 µCimL		< 3.66E-06	3.66E-06
Relative Counting Error	=	10.3%	Pu 238
Pu 236 Tracer Recovery	=	96.2%	3.66E-06

Analyst:	GLL	Date:	24-May-99
Signature of Chemist: John Relyea	JFR	Date:	24 May 99

SAMPLE.WB1 REV 1.0 943128ML

WORKBOOK PAGE: SAM5

Pu 238 and 239/240 : LA-943-128 (VOID) or LA-953-104(B-1) LIQUID / SAMPLE

Type	DATE COUNTED		MAY-22-99	PU 236 AEA FRAC	(C236)	0.740
SAMPLE	SAMPLE VOLUME in mL	SS	1.000	PU 238 AEA FRAC	(C238)	0.044
Work List	SAMPLE DILUTION FACTOR	DF	1.000	PU 239 AEA FRAC	(C239)	0.178
29806	TRACER VOLUME in mL	SPKV	0.100	TOTAL AT COUNTS		2420
Test Code	DIGEST DILUTION FACTOR	DDF	1.0000	AT COUNT TIME (MIN)		30
@PU23902	TRACER BOOK NO		16B59	BACKGROUND in cpm	(Bkg)	0.100
Matrix	DETECTOR NUMBER		14	PU 236 cpm		46.600
LIQUID	EFFICIENCY FACTOR	EFF	0.291	PU 238 cpm		2.790
Batch Number	TRACER PREPARATION DATE		04/13/99	PU 239 cpm		11.200
99002133	TRACER PREPARATION VALUE (dpm/mL)		2338.000	AEA COUNT TIME		480
Rerun	PU-236 DECAY CORR'D VALUE (dpm/mL)		2278.065	Pu 239/240 µCi/L		2.4683E-02
0	PU-238 TRACER VALUE (dpm/mL)		0.000			

Sample Prep
N/A
Sample #
S99T000895
Instrument Code
WB27807
Prepared By
SLH2
Chemist
JFR
Analyst
GLL
Date Complete
05/24/99
Analysis Date
05/21/99
Analysis Time
03:30 PM
Sample Point
AP107 GRAB2

Decay Time = Date Counted - Tracer Preparation Date

Pu-236 Decay Corr'd Value = Pu-236 Preparation Value *[e to the power of {(-ln2 * Decay Time/1040.95)]

Pu 236 Tracer Recovery = (Total AT Counts / TC -Bkg) *C236*100/(Pu-236 Decay Corr'd Value * SPKV * EFF)

Pu 239/240 µCi/L = (C239)(Pu 236 Decay Corr'd Value)(SPKV)(1000mL/L)(DF)(DDF) / [(C236)(SS)(D g/L)(2220000 dpm/µCi)]

Pu 238 dpm = [(Total AT Counts / TC) - Bkg * 1/EFF * C238] - (Pu-238 Tracer Value *SPKV *Pu 236 Tracer Recovery / 100)

Pu 238 µCi/L = [(Pu 238 dpm)(DF)(DDF)(1000mL/L)] / [(Pu-236 Tracer Recovery /100)(2220000 dpm/µCi)(D g/L)(SS)]

Relative Counting Error = Square Root of [(1/(Pu 236 cpm * min)) + (1 / (Pu 238 or 239/240 cpm * min))] * 1.96 * 100

Pu 239/240 µCi/mL		2.47E-05	DETECTION LEVELS in µCi/mL	
Relative Counting Error	=	3.0%		
			Pu 239/240	
Pu 238 µCimL		6.10E-06	4.63E-06	
Relative Counting Error	=	5.5%	Pu 238	
Pu 236 Tracer Recovery	=	89.9%	4.63E-06	

Analyst:		GLL	Date:	24-May-99
Signature of Chemist:	John Relyea	JFR	Date:	24 May 99

SAMPLE.WB1 REV 1.0 943128ML

Pu 238 and 239/240 : LA-943-128 (VOID) or LA-953-104(B-0)) LIQUID /

Type	DATE COUNTED		MAY-22-99	PU 236 AEA FRAC	(C236)		0.737
DUP	SAMPLE VOLUME in mL	SS	1.000	PU 238 AEA FRAC	(C238)		0.036
Work List	SAMPLE DILUTION FACTOR	DF	1.000	PU 239 AEA FRAC	(C239)		0.179
29806	TRACER VOLUME in mL	SPKV	0.100	TOTAL AT COUNTS			2415
Test Code	DIGEST DILUTION FACTOR	DDF	1.0000	AT COUNT TIME (MIN)			30
@PU23902	TRACER BOOK NO		16B59	BACKGROUND in cpm	(Bkg)		0.100
Matrix	DETECTOR NUMBER		14	PU 236 cpm			47.120
LIQUID	EFFICIENCY FACTOR	EFF	0.291	PU 238 cpm			2.300
Batch Number	TRACER PREPARATION DATE		04/13/99	PU 239 cpm			11.450
99002133	TRACER PREPARATION VALUE (dpm/mL)		2338.000	AEA COUNT TIME			480
Rerun	PU-236 DECAY CORR'D VALUE (dpm/mL)		2278.065	Pu 239/240 µCi/L			2.4923E-02
0	PU-238 TRACER VALUE (dpm/mL)		0.000				

Sample Prep
N/A
Sample #
S99T000895
Instrument Code
WB27807
Prepared By
SLH2
Chemist
JFR
Analyst
GLL
Date Complete
05/24/99
Analysis Date
05/21/99
Analysis Time
03:30 PM
Sample Point
AP107 GRAB2

Decay Time = Date Counted - Tracer Preparation Date

Pu-236 Decay Corr'd Value = Pu-236 Preparation Value *[e to the power of {(-ln2 * Decay Time/1040.95)]

Pu 236 Tracer Recovery = (Total AT Counts / TC -Bkg) *C236*100/(Pu-236 Decay Corr'd Value * SPKV * EFF)

Pu 239/240 µCi/L = (C239)(Pu 236 Decay Corr'd Value)(SPKV)(1000mL/L)(DF)(DDF) / [(C236)(SS)(D g/L)(2220000 dpm/µCi)]

Pu 238 dpm = [(Total AT Counts / TC) - Bkg * 1/EFF * C238] - (Pu-238 Tracer Value *SPKV *Pu 236 Tracer Recovery / 100)

Pu 238 µCi/L = [(Pu 238 dpm)(DF)(DDF)(1000mL/L)] / [(Pu-236 Tracer Recovery /100)(2220000 dpm/µCi)(D g/L)(SS)]

Relative Counting Error = Square Root of [(1/(Pu 236 cpm * min)) + (1 / (Pu 238 or 239/240 cpm * min))] * 1.96 * 100

Pu 239/240 µCi/mL		2.49E-05	DETECTION LEVELS in µCi/mL
Relative Counting Error	=	2.9%	
			Pu 239/240
Pu 238 µCimL		5.01E-06	4.67E-06
Relative Counting Error	=	6.0%	Pu 238
Pu 236 Tracer Recovery	=	89.4%	4.67E-06

Analyst:	GLL	Date:	24-May-99
Signature of Chemist: John Relyea	JFR	Date:	24 May 99

SAMPLE.WB1 REV 1.0 943128ML

WORKBOOK PAGE: SAM7

Pu 238 and 239/240 : LA-943-128 (VOID) or LA-953-104(B-0)) LIQUID / SAMPLE

Type	DATE COUNTED		MAY-22-99	PU 236 AEA FRAC	(C236)	0.736
SAMPLE	SAMPLE VOLUME in mL	SS	1.000	PU 238 AEA FRAC	(C238)	0.037
Work List	SAMPLE DILUTION FACTOR	DF	1.000	PU 239 AEA FRAC	(C239)	0.182
29806	TRACER VOLUME in mL	SPKV	0.100	TOTAL AT COUNTS		2387
Test Code	DIGEST DILUTION FACTOR	DDF	1.0000	AT COUNT TIME (MIN)		30
@PU23902	TRACER BOOK NO		16B59	BACKGROUND in cpm	(Bkg)	0.100
Matrix	DETECTOR NUMBER		14	PU 236 cpm		48.860
LIQUID	EFFICIENCY FACTOR	EFF	0.291	PU 238 cpm		2.460
Batch Number	TRACER PREPARATION DATE		04/13/99	PU 239 cpm		12.090
99002133	TRACER PREPARATION VALUE (dpm/mL)		2338.000	AEA COUNT TIME		480
Rerun	PU-236 DECAY CORR'D VALUE (dpm/mL)		2278.065	Pu 239/240 µCi/L		2.5375E-02
0	PU-238 TRACER VALUE (dpm/mL)		0.000			

Sample Prep
N/A
Sample #
S99T000896
Instrument Code
WB27807
Prepared By
SLH2
Chemist
JFR
Analyst
GLL
Date Complete
05/24/99
Analysis Date
05/21/99
Analysis Time
03:30 PM
Sample Point
AP107 GRAB2

Decay Time = Date Counted - Tracer Preparation Date

Pu-236 Decay Corr'd Value = Pu-236 Preparation Value *[e to the power of {(-ln2 * Decay Time/1040.95)]

Pu 236 Tracer Recovery = (Total AT Counts / TC -Bkg) *C236*100/(Pu-236 Decay Corr'd Value * SPKV * EFF)

Pu 239/240 µCi/L = (C239)(Pu 236 Decay Corr'd Value)(SPKV)(1000mL/L)(DF)(DDF) / [(C236)(SS)(D g/L)(2220000 dpm/µCi)]

Pu 238 dpm = [(Total AT Counts / TC) - Bkg * 1/EFF * C238] - (Pu-238 Tracer Value *SPKV *Pu 236 Tracer Recovery / 100)

Pu 238 µCi/L = [(Pu 238 dpm)(DF)(DDF)(1000mL/L)] / [(Pu-236 Tracer Recovery /100)(2220000 dpm/µCi)(D g/L)(SS)]

Relative Counting Error = Square Root of [(1/(Pu 236 cpm * min)) + (1 / (Pu 238 or 239/240 cpm * min))] * 1.96 * 100

Pu 239/240 µCi/mL		2.54E-05	DETECTION LEVELS in µCi/mL
Relative Counting Error	=	2.9%	
			Pu 239/240
Pu 238 µCimL		5.16E-06	4.74E-06
Relative Counting Error	=	5.8%	Pu 238
Pu 236 Tracer Recovery	=	88.2%	4.74E-06

Analyst:		GLL	Date:	24-May-99
Signature of Chemist:	John Relyea	JFR	Date:	24 May 99

SAMPLE.WB1 REV 1.0 943128ML

WORKBOOK PAGE: DUP8

Pu 238 and 239/240 : LA-943-128 (VOID) or LA-953-104(B-9)) LIQUID /

Type	DATE COUNTED		MAY-22-99	PU 236 AEA FRAC	(C236)	0.725
DUP	SAMPLE VOLUME in mL	SS	1.000	PU 238 AEA FRAC	(C238)	0.033
Work List	SAMPLE DILUTION FACTOR	DF	1.000	PU 239 AEA FRAC	(C239)	0.183
29806	TRACER VOLUME in mL	SPKV	0.100	TOTAL AT COUNTS		2452
Test Code	DIGEST DILUTION FACTOR	DDF	1.0000	AT COUNT TIME (MIN)		30
@PU23902	TRACER BOOK NO		16B59	BACKGROUND in cpm	(Bkg)	0.100
Matrix	DETECTOR NUMBER		14	PU 236 cpm		47.310
LIQUID	EFFICIENCY FACTOR	EFF	0.291	PU 238 cpm		2.140
Batch Number	TRACER PREPARATION DATE		04/13/99	PU 239 cpm		11.950
99002133	TRACER PREPARATION VALUE (dpm/mL)		2338.000	AEA COUNT TIME		480
Rerun	PU-236 DECAY CORR'D VALUE (dpm/mL)		2278.065	Pu 239/240 µCi/L		2.5902E-02
0	PU-238 TRACER VALUE (dpm/mL)		0.000			

Sample Prep
N/A
Sample #
S99T000896
Instrument Code
WB27807
Prepared By
SLH2
Chemist
JFR
Analyst
GLL
Date Complete
05/24/99
Analysis Date
05/21/99
Analysis Time
03:30 PM
Sample Point
AP107 GRAB2

Decay Time = Date Counted - Tracer Preparation Date
Pu-236 Decay Corr'd Value = Pu-236 Preparation Value *[e to the power of {(-ln2 * Decay Time/1040.95)]
Pu 236 Tracer Recovery = (Total AT Counts / TC -Bkg) *C236*100/(Pu-236 Decay Corr'd Value * SPKV * EFF)
Pu 239/240 µCi/L = (C239)(Pu 236 Decay Corr'd Value)(SPKV)(1000mL/L)(DF)(DDF) / [(C236)(SS)(D g/L)(2220000 dpm/µCi)]
Pu 238 dpm = [(Total AT Counts / TC) - Bkg * 1/EFF * C238] - (Pu-238 Tracer Value *SPKV *Pu 236 Tracer Recovery / 100)
Pu 238 µCi/L = [(Pu 238 dpm)(DF)(DDF)(1000mL/L)] / [(Pu-236 Tracer Recovery /100)(2220000 dpm/µCi)(D g/L)(SS)]
Relative Counting Error = Square Root of [(1/(Pu 236 cpm * min)) + (1 / (Pu 238 or 239/240 cpm * min))] * 1.96 * 100

Pu 239/240 µCi/mL		2.59E-05	DETECTION LEVELS in µCi/mL
Relative Counting Error	=	2.9%	
NOTE: Pu 238 Result is a LESS THAN Value.			Pu 239/240
Pu 238 µCimL		< 4.76E-06	4.76E-06
Relative Counting Error	=	6.3%	Pu 238
Pu 236 Tracer Recovery	=	89.3%	4.76E-06

Analyst:	GLL	Date:	24-May-99
Signature of Chemist: John Relyea	JFR	Date:	24 May 99

SAMPLE.WB1 REV 1.0 943128ML

WORKBOOK PAGE: SAM9

Pu 238 and 239/240 : LA-943-128 (VOID) or LA-953-104(B-0) LIQUID / SAMPLE

Type	DATE COUNTED		MAY-22-99	PU 236 AEA FRAC	(C236)	0.703
SAMPLE	SAMPLE VOLUME in mL	SS	1.000	PU 238 AEA FRAC	(C238)	0.088
Work List	SAMPLE DILUTION FACTOR	DF	1.000	PU 239 AEA FRAC	(C239)	0.162
29806	TRACER VOLUME in mL	SPKV	0.100	TOTAL AT COUNTS		2492
Test Code	DIGEST DILUTION FACTOR	DDF	1.0000	AT COUNT TIME (MIN)		30
@PU23902	TRACER BOOK NO		16B59	BACKGROUND in cpm	(Bkg)	0.100
Matrix	DETECTOR NUMBER		14	PU 236 cpm		44.800
LIQUID	EFFICIENCY FACTOR	EFF	0.291	PU 238 cpm		5.580
Batch Number	TRACER PREPARATION DATE		04/13/99	PU 239 cpm		10.330
99002133	TRACER PREPARATION VALUE (dpm/mL)		2338.000	AEA COUNT TIME		480
Rerun	PU-236 DECAY CORR'D VALUE	(dpm/mL)	2278.065	Pu 239/240 µCi/L		2.3647E-02
0	PU-238 TRACER VALUE	(dpm/mL)	0.000			

Sample Prep
N/A
Sample #
S99T000897
Instrument Code
WB27807
Prepared By
SLH2
Chemist
JFR
Analyst
GLL
Date Complete
05/24/99
Analysis Date
05/21/99
Analysis Time
03:30 PM
Sample Point
AP107 GRAB2

Decay Time = Date Counted - Tracer Preparation Date

Pu-236 Decay Corr'd Value = Pu-236 Preparation Value *[e to the power of {(-ln2 * Decay Time/1040.95)]

Pu 236 Tracer Recovery = (Total AT Counts / TC -Bkg) *C236*100/(Pu-236 Decay Corr'd Value * SPKV * EFF)

Pu 239/240 µCi/L = (C239)(Pu 236 Decay Corr'd Value)(SPKV)(1000mL/L)(DF)(DDF) / [(C236)(SS)(D g/L)(2220000 dpm/µCi)]

Pu 238 dpm = [(Total AT Counts / TC) - Bkg * 1/EFF * C238] - (Pu-238 Tracer Value *SPKV *Pu 236 Tracer Recovery / 100)

Pu 238 µCi/L = [(Pu 238 dpm)(DF)(DDF)(1000mL/L)] / [(Pu-236 Tracer Recovery /100)(2220000 dpm/µCi)(D g/L)(SS)]

Relative Counting Error = Square Root of [(1/(Pu 236 cpm * min)) + (1 / (Pu 238 or 239/240 cpm * min))] * 1.96 * 100

Pu 239/240 µCi/mL		2.36E-05	DETECTION LEVELS in µCi/mL
Relative Counting Error	=	3.1%	
			Pu 239/240
Pu 238 µCimL		1.28E-05	4.98E-06
Relative Counting Error	=	4.0%	Pu 238
Pu 236 Tracer Recovery	=	88.0%	4.98E-06

Analyst:		GLL	Date:	24-May-99
Signature of Chemist:	John Relyea	JFR	Date:	24 May 99

SAMPLE.WB1 REV 1.0 943128ML

WORKBOOK PAGE: DUP10

Pu 238 and 239/240 : LA-943-128 (VOID) or LA-953-104(B-0)) LIQUID /

							DUP
Type	DATE COUNTED		MAY-22-99	PU 236 AEA FRAC	(C236)		0.702
DUP	SAMPLE VOLUME in mL	SS	1.000	PU 238 AEA FRAC	(C238)		0.092
Work List	SAMPLE DILUTION FACTOR	DF	1.000	PU 239 AEA FRAC	(C239)		0.163
29806	TRACER VOLUME in mL	SPKV	0.100	TOTAL AT COUNTS			2297
Test Code	DIGEST DILUTION FACTOR	DDF	1.0000	AT COUNT TIME (MIN)			30
@PU23902	TRACER BOOK NO		16B59	BACKGROUND in cpm	(Bkg)		0.100
Matrix	DETECTOR NUMBER		14	PU 236 cpm			44.980
LIQUID	EFFICIENCY FACTOR	EFF	0.291	PU 238 cpm			5.900
Batch Number	TRACER PREPARATION DATE		04/13/99	PU 239 cpm			10.470
99002133	TRACER PREPARATION VALUE (dpm/mL)		2338.000	AEA COUNT TIME			480
Rerun	PU-236 DECAY CORR'D VALUE	(dpm/mL)	2278.065	Pu 239/240 µCi/L			2.3827E-02
0	PU-238 TRACER VALUE	(dpm/mL)	0.000				

Sample Prep
N/A
Sample #
S99T000897
Instrument Code
WB27807
Prepared By
SLH2
Chemist
JFR
Analyst
GLL
Date Complete
05/24/99
Analysis Date
05/21/99
Analysis Time
03:30 PM
Sample Point
AP107 GRAB2

Decay Time = Date Counted - Tracer Preparation Date
Pu-236 Decay Corr'd Value = Pu-236 Preparation Value *[e to the power of {(-ln2 * Decay Time/1040.95)}]
Pu 236 Tracer Recovery = (Total AT Counts / TC -Bkg) *C236*100/(Pu-236 Decay Corr'd Value * SPKV * EFF)
Pu 239/240 µCi/L = (C239)(Pu 236 Decay Corr'd Value)(SPKV)(1000mL/L)(DF)(DDF) / [(C236)(SS)(D g/L)(2220000 dpm/µCi)]
Pu 238 dpm = [(Total AT Counts / TC) - Bkg * 1/EFF * C238] - (Pu-238 Tracer Value *SPKV *Pu 236 Tracer Recovery / 100)
Pu 238 µCi/L = [(Pu 238 dpm)(DF)(DDF)(1000mL/L)] / [(Pu-236 Tracer Recovery /100)(2220000 dpm/µCi)(D g/L)(SS)]
Relative Counting Error = Square Root of [(1/(Pu 236 cpm * min)) + (1 / (Pu 238 or 239/240 cpm * min))] * 1.96 * 100

Pu 239/240 µCi/mL		2.38E-05	DETECTION LEVELS in µCi/mL
Relative Counting Error	=	3.1%	
			Pu 239/240
Pu 238 µCimL		1.34E-05	5.42E-06
Relative Counting Error	=	3.9%	Pu 238
Pu 236 Tracer Recovery	=	81.0%	5.42E-06

LAD 6/8/99
~~HNF-1672 REV~~

Analyst:	GLL	Date:	24-May-99
Signature of Chemist:	JFR	Date:	24 May 99

SAMPLE.WB1 REV 1.0 943128ML

222-S Analytical Laboraratory
G E N E R A L A L P H A E N E R G Y A N A L Y S I S
Rev. 2.10

DATA REDUCTION REPORT

SAMPLE
WL29806-BLK-PU
File ID: 17a1705.CNF

Counted on: 5/22/99 @13:57
Detector: AEA17
Geometry number: 1
Count time: 28804. Sec

PEAK ANALYSIS

Peak	Peak height		Peak center		FWHM		Tau	
ID	Initial	Final	Initial	Final	Initial	Final	Initial	Final
1?	13.1	13.1	476.263	476.263	14.000	5.094	7.000	1.986
2	2025.2	2025.2	363.143	363.143	10.000	2.645	5.000	1.370
3?	44.1	44.1	303.608	303.535	8.000	0.000	4.000	3.686
4	142.8	142.8	288.151	288.150	10.000	2.754	5.000	2.496
5	29.8	29.8	270.468	270.260	12.000	2.674	6.000	1.777

PEAK RESULTS
Peak Error Limit: 30%

Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1		????		6.284			0.43	13.7		
2	Pu236	0.919	5.755	5.764	-.009	0.01	48.72	1.3	203.6	0.917E-04
	Cm243		5.779	5.764	0.015				273.3	0.123E-03
3		????		5.490			0.00	1000.		
4	Th228	0.051	5.400	5.419	-.019	0.01	2.72	5.4	15.7	0.706E-05
5		0.012		5.337		0.01	0.64	13.2	2.6	0.117E-05
Totals:		0.982	<--valid peaks only-->				52.07			

DETECTOR CALIBRATION
Energy(MEV) = 4.094 + (0.0046)*Channel
Energy range (MeV): 4.094 TO 6.449
Efficiency = 0.2442 CPM/DPM
(Data reduction compression factor: 1.)

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	25452.0	100.000
Smoothed	25451.1	99.997
Composite fit	25205.0	99.029
Residuals	247.0	0.971

Analyzed by: _____
GL

Spectrum 17a1705.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 11823.7

```
5
5
5
..4
..4



2
.. 2
............2.
........................................2
.............................................................................2
..2....
```

Raw Data Dump for AEA Spectrum: 17a1705.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.
31	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
41	0.	2.	0.	1.	0.	1.	0.	0.	0.	0.
51	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
61	1.	1.	0.	0.	1.	0.	1.	0.	0.	0.
71	1.	0.	0.	0.	1.	0.	2.	0.	0.	1.
81	1.	1.	1.	0.	1.	0.	0.	1.	0.	1.
91	0.	1.	0.	0.	2.	1.	0.	0.	0.	0.
101	0.	0.	0.	1.	1.	1.	0.	0.	1.	0.
111	1.	1.	0.	0.	0.	0.	0.	1.	1.	0.
121	1.	2.	0.	1.	0.	1.	0.	1.	0.	0.
131	1.	0.	1.	0.	0.	0.	1.	0.	0.	0.
141	2.	2.	2.	1.	0.	1.	1.	1.	0.	0.
151	0.	3.	1.	0.	0.	0.	0.	0.	0.	0.
161	1.	0.	0.	1.	0.	0.	0.	0.	1.	0.
171	0.	2.	0.	0.	0.	1.	1.	0.	1.	1.
181	1.	2.	0.	0.	1.	0.	0.	0.	1.	0.
191	0.	2.	0.	1.	1.	0.	1.	0.	0.	1.
201	1.	1.	0.	0.	2.	0.	2.	0.	2.	2.
211	0.	3.	2.	1.	1.	3.	2.	3.	2.	0.
221	0.	2.	2.	3.	0.	3.	1.	3.	0.	3.
231	2.	3.	4.	4.	0.	0.	0.	1.	1.	3.
241	3.	3.	4.	1.	1.	2.	5.	3.	5.	4.
251	3.	3.	4.	4.	7.	10.	9.	7.	4.	3.
261	3.	7.	3.	7.	15.	14.	21.	26.	33.	45.
271	32.	41.	13.	19.	17.	7.	9.	17.	28.	22.
281	31.	37.	52.	80.	94.	118.	168.	172.	190.	151.
291	45.	26.	11.	10.	8.	10.	5.	8.	15.	11.
301	11.	17.	20.	16.	21.	15.	11.	7.	5.	0.
311	0.	1.	2.	1.	2.	5.	3.	4.	4.	4.
321	2.	2.	5.	6.	3.	2.	8.	8.	10.	13.
331	13.	11.	9.	18.	21.	17.	18.	29.	26.	36.
341	55.	55.	91.	114.	131.	154.	168.	230.	286.	411.
351	545.	678.	841.	942.	920.	783.	741.	892.	1064.	1362.
361	1712.	2201.	2530.	2502.	1969.	1115.	361.	72.	7.	1.
371	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
381	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.
401	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.
411	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.
421	0.	4.	3.	3.	3.	0.	2.	2.	1.	0.
431	1.	1.	1.	2.	2.	0.	0.	1.	0.	0.
441	0.	0.	1.	0.	0.	2.	2.	0.	5.	2.
451	0.	2.	2.	4.	0.	0.	1.	1.	3.	5.
461	2.	1.	3.	2.	6.	6.	9.	6.	4.	10.
471	6.	14.	10.	11.	12.	16.	15.	14.	7.	8.
481	5.	5.	2.	0.	1.	0.	0.	1.	0.	1.
491	0.	0.	0.	0.	1.	0.	1.	2.	1.	4.
511	4.	0.								

222-S Analytical Laboraratory
G E N E R A L A L P H A E N E R G Y A N A L Y S I S
Rev. 2.10

DATA REDUCTION REPORT

SAMPLE
WL29806-STD-PU
File ID: 16a1663.CNF

Counted on: 5/22/99 @13:56
Detector: AEA16
Geometry number: 1
Count time: 28802. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1?	20.4	20.4	474.240	474.240	14.000	5.153	7.000	4.869
2	1986.4	1986.4	360.778	360.778	10.000	2.831	5.000	1.382
3?	34.9	34.9	302.099	301.936	10.000	1.817	5.000	0.836
4	134.1	134.1	286.012	285.958	10.000	2.609	5.000	2.389
5?	32.2	32.2	268.504	268.042	12.000	4.411	6.000	4.034
6?	14.4	14.4	254.604	253.650	28.000	37.632	14.000	16.811
7	2844.4	2844.4	227.360	227.359	12.000	3.134	6.000	2.164

PEAK RESULTS
Peak Error Limit: 30%

Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1		????		6.278			0.49	12.8		
2	Pu236	0.423	5.755	5.756	-.0010.01		50.15	1.3	213.7	0.963E-04
3		????		5.485			0.84	10.0		
4	Th228	0.021	5.400	5.411	-.0110.01		2.50	6.0	14.7	0.662E-05
5		????		5.329			0.73	13.8		
6		????		5.263			0.90	20.3		
7	Pu239	0.526	5.147	5.142	0.0050.01		62.31	1.1	260.3	0.117E-03
	Pu240		5.144	5.142	0.002				260.3	0.117E-03
		---					---			
Totals:		0.971	<--valid peaks only-->				114.96			

DETECTOR CALIBRATION
Energy(MEV) = 4.096 + (0.0046)*Channel
Energy range (MeV): 4.096 TO 6.451
Efficiency = 0.2394 CPM/DPM
(Data reduction compression factor: 1.)

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	56857.0	100.000
Smoothed	56857.0	100.000
Composite fit	56598.0	99.545
Residuals	259.0	0.455

Spectrum 16a1663.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 17652.0

```
7
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Raw Data Dump for AEA Spectrum: 16a1663.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.
21	0.	0.	1.	0.	0.	0.	0.	1.	0.	2.
31	1.	2.	0.	0.	1.	1.	1.	1.	0.	0.
41	1.	0.	0.	1.	0.	0.	0.	0.	0.	0.
51	1.	0.	0.	1.	0.	1.	1.	0.	2.	0.
61	0.	0.	1.	0.	2.	1.	0.	1.	0.	0.
71	0.	1.	0.	0.	0.	1.	1.	0.	0.	1.
81	1.	2.	0.	0.	0.	0.	2.	0.	0.	0.
91	1.	0.	1.	0.	0.	1.	0.	0.	1.	1.
101	1.	0.	1.	0.	1.	0.	0.	0.	0.	1.
111	1.	0.	0.	1.	1.	2.	0.	1.	0.	4.
121	1.	1.	0.	3.	0.	1.	0.	1.	1.	2.
131	1.	3.	6.	1.	1.	0.	0.	1.	1.	4.
141	1.	1.	2.	1.	3.	5.	0.	0.	0.	0.
151	2.	1.	2.	5.	1.	0.	3.	1.	2.	0.
161	2.	3.	1.	3.	4.	4.	3.	1.	1.	6.
171	4.	4.	4.	2.	3.	8.	1.	6.	4.	3.
181	3.	4.	8.	7.	7.	5.	7.	6.	10.	3.
191	6.	13.	7.	6.	21.	10.	19.	14.	17.	21.
201	27.	40.	37.	44.	50.	58.	60.	67.	87.	111.
211	155.	233.	260.	325.	423.	555.	670.	681.	772.	872.
221	956.	1270.	1593.	2017.	2508.	3112.	3461.	3521.	2975.	2041.
231	1039.	364.	59.	12.	2.	0.	3.	1.	3.	3.
241	2.	4.	1.	1.	4.	1.	4.	7.	6.	9.
251	6.	11.	7.	13.	10.	13.	9.	3.	5.	6.
261	10.	6.	16.	25.	22.	40.	33.	47.	34.	32.
271	36.	19.	15.	26.	19.	18.	16.	26.	29.	48.
281	55.	75.	86.	135.	156.	177.	172.	121.	69.	34.
291	17.	9.	13.	8.	8.	12.	12.	23.	17.	24.
301	23.	27.	20.	24.	26.	10.	2.	3.	1.	1.
311	7.	3.	3.	5.	3.	2.	5.	1.	5.	5.
321	3.	8.	5.	6.	6.	7.	9.	16.	20.	17.
331	21.	15.	20.	18.	29.	33.	35.	46.	75.	98.
341	108.	132.	145.	197.	224.	294.	364.	499.	580.	747.
351	893.	946.	900.	824.	862.	1008.	1190.	1465.	1946.	2189.
361	2473.	2300.	1705.	892.	284.	45.	8.	0.	0.	0.
371	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
381	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
401	0.	0.	0.	0.	1.	0.	0.	0.	0.	1.
411	1.	0.	0.	1.	0.	0.	1.	1.	1.	0.
421	2.	2.	1.	1.	2.	0.	0.	2.	3.	1.
431	1.	2.	0.	3.	1.	1.	0.	1.	1.	0.
441	0.	0.	0.	0.	0.	0.	2.	0.	0.	1.
451	0.	0.	0.	0.	2.	0.	0.	0.	0.	0.
461	2.	0.	0.	7.	3.	6.	8.	9.	8.	9.
471	10.	31.	23.	24.	20.	24.	20.	7.	6.	8.
481	3.	5.	1.	0.	0.	0.	0.	0.	0.	0.
491	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
511	0.	0.								

222-S Analytical Laboraratory
G E N E R A L A L P H A E N E R G Y A N A L Y S I S
Rev. 2.10

DATA REDUCTION REPORT

SAMPLE
S99T000894-SAM-P
File ID: 18a1870.CNF

Counted on: 5/22/99 @13:59
Detector: AEA18
Geometry number: 1
Count time: 28805. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1?	17.6	17.6	474.257	474.257	10.000	4.610	5.000	5.134
2	1984.6	1984.6	360.673	360.673	10.000	2.702	5.000	1.398
3	38.3	38.3	301.483	301.446	10.000	1.763	5.000	0.838
4	122.2	122.2	285.808	285.743	8.000	2.264	4.000	2.050
5	28.1	28.1	268.647	268.402	8.000	2.248	4.000	1.527
6	134.6	134.6	227.289	227.289	10.000	3.878	5.000	2.767

PEAK RESULTS
Peak Error Limit: 30%

Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1		????		6.274			0.39	14.3		
2	Pu236	0.874	5.755	5.752	0.003	0.01	47.99	1.3	211.6	0.953E-04
3	Pu238	0.016	5.487	5.479	0.008	0.01	0.89	9.6	5.4	0.241E-05
	Am241		5.479	5.479	0.000				4.1	0.185E-05
4	Th228	0.040	5.400	5.407	-.007	0.01	2.18	6.5	13.3	0.599E-05
5		0.010		5.327		0.01	0.57	14.3	2.4	0.110E-05
6	Pu239	0.057	5.147	5.138	0.009	0.02	3.11	5.1	13.4	0.606E-05
	Pu240		5.144	5.138	0.006				13.4	0.606E-05
		---					---			
Totals:		0.997	<--valid peaks only-->				54.75			

DETECTOR CALIBRATION
Energy(MEV) = 4.093 + (0.0046)*Channel
Energy range (MeV): 4.093 TO 6.448
Efficiency = 0.2314 CPM/DPM
(Data reduction compression factor: 1.)

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	26364.0	100.000
Smoothed	26364.0	100.000
Composite fit	26470.4	100.404
Residuals	-106.4	-0.404

Spectrum 18a1870.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 9607.3

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Raw Data Dump for AEA Spectrum: 18a1870.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.
31	1.	0.	0.	0.	0.	0.	0.	0.	1.	0.
41	1.	0.	0.	0.	2.	2.	0.	0.	0.	0.
51	0.	1.	0.	0.	0.	0.	0.	0.	0.	1.
61	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
71	0.	1.	1.	0.	1.	0.	0.	0.	0.	0.
81	0.	0.	1.	0.	0.	0.	1.	0.	0.	0.
91	0.	0.	0.	0.	0.	0.	0.	2.	0.	1.
101	0.	0.	0.	0.	1.	0.	1.	1.	0.	0.
111	0.	0.	0.	0.	0.	1.	0.	1.	0.	0.
121	0.	1.	1.	0.	0.	1.	0.	1.	0.	0.
131	0.	0.	0.	1.	0.	0.	1.	0.	0.	0.
141	0.	0.	0.	1.	1.	0.	0.	1.	0.	0.
151	1.	1.	1.	0.	2.	1.	0.	0.	0.	0.
161	0.	0.	2.	1.	0.	0.	0.	0.	0.	1.
171	0.	0.	0.	1.	1.	0.	0.	1.	2.	0.
181	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.
191	1.	0.	1.	0.	0.	0.	1.	0.	0.	1.
201	2.	2.	2.	3.	2.	3.	3.	3.	1.	3.
211	7.	12.	21.	13.	21.	22.	31.	47.	38.	37.
221	41.	57.	72.	112.	135.	157.	148.	167.	132.	105.
231	67.	31.	9.	7.	3.	1.	1.	1.	2.	4.
241	2.	2.	3.	3.	2.	4.	3.	2.	5.	7.
251	6.	3.	4.	8.	9.	4.	4.	4.	6.	6.
261	5.	10.	9.	18.	18.	22.	30.	35.	46.	27.
271	24.	15.	6.	11.	14.	11.	26.	18.	13.	39.
281	76.	64.	109.	105.	129.	180.	146.	88.	51.	15.
291	16.	10.	8.	15.	13.	13.	9.	21.	25.	21.
301	31.	34.	30.	15.	17.	9.	2.	3.	1.	4.
311	0.	3.	2.	4.	4.	1.	2.	3.	5.	3.
321	2.	3.	4.	7.	6.	15.	8.	7.	14.	10.
331	12.	12.	14.	21.	29.	19.	33.	35.	41.	63.
341	94.	88.	136.	160.	203.	224.	319.	449.	600.	783.
351	867.	923.	808.	784.	827.	949.	1195.	1560.	1767.	2397.
361	2489.	2303.	1530.	746.	202.	23.	4.	2.	0.	1.
371	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
381	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
401	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
411	1.	0.	0.	0.	0.	0.	1.	1.	2.	1.
421	1.	3.	0.	2.	2.	2.	1.	2.	2.	0.
431	2.	0.	1.	2.	1.	0.	0.	0.	1.	0.
441	0.	0.	1.	0.	0.	0.	0.	0.	1.	0.
451	0.	0.	1.	0.	1.	0.	1.	3.	0.	0.
461	1.	1.	1.	1.	2.	4.	7.	4.	4.	6.
471	22.	17.	23.	19.	19.	21.	13.	6.	5.	3.
481	7.	0.	2.	2.	0.	0.	0.	0.	0.	0.
491	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
511	0.	0.								

222-S Analytical Laboraratory
G E N E R A L A L P H A E N E R G Y A N A L Y S I S
Rev. 2.10

DATA REDUCTION REPORT

SAMPLE
S99T000894-DUP-P
File ID: 19a1991.CNF

Counted on: 5/22/99 @13:59
Detector: AEA19
Geometry number: 1
Count time: 28806. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1?	13.7	13.7	474.924	474.924	12.000	4.305	6.000	2.648
2	1608.6	1608.6	361.848	361.848	10.000	3.048	5.000	1.165
3	28.1	28.1	304.604	304.469	30.000	7.595	15.000	15.247
4	97.7	97.7	287.748	287.724	10.000	3.260	5.000	1.957
5	21.3	21.3	269.348	268.879	10.000	2.758	5.000	0.904
6	116.1	116.1	229.449	229.442	10.000	3.764	5.000	1.977

PEAK RESULTS
Peak Error Limit: 30%

Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1		????		6.270			0.35	15.2		
2	Pu236	0.874	5.755	5.750	0.005	0.01	47.65	1.3	203.8	0.918E-04
3	Pu238	0.014	5.487	5.486	0.001	0.03	0.77	13.0	4.5	0.202E-05
	Am241		5.479	5.486	-.007				3.4	0.155E-05
4	Th228	0.042	5.400	5.409	-.009	0.01	2.30	6.1	13.6	0.612E-05
5		0.013		5.322		0.01	0.69	13.4	2.9	0.130E-05
6	Pu239	0.055	5.147	5.141	0.006	0.02	3.02	5.2	12.7	0.570E-05
	Pu240		5.144	5.141	0.003				12.7	0.570E-05
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Totals:		0.999	<--valid peaks only-->				54.43			

DETECTOR CALIBRATION
Energy(MEV) = 4.085 + (0.0046)*Channel
Energy range (MeV): 4.085 TO 6.440
Efficiency = 0.2386 CPM/DPM
(Data reduction compression factor: 1.)

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	26170.0	100.000
Smoothed	26170.0	100.000
Composite fit	26297.6	100.487
Residuals	-127.6	-0.487

Spectrum 19a1991.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 8440.4

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Raw Data Dump for AEA Spectrum: 19a1991.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	1.	0.	1.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.
31	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.
41	0.	0.	0.	0.	0.	1.	1.	0.	0.	0.
51	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.
61	0.	1.	1.	0.	0.	0.	1.	0.	0.	0.
71	1.	0.	0.	0.	0.	1.	0.	0.	0.	0.
81	0.	1.	0.	1.	0.	0.	1.	0.	1.	0.
91	0.	0.	0.	2.	1.	0.	0.	0.	1.	0.
101	1.	0.	1.	0.	0.	1.	1.	0.	0.	0.
111	0.	0.	2.	1.	0.	0.	1.	0.	0.	1.
121	0.	1.	0.	1.	0.	1.	1.	1.	1.	2.
131	0.	0.	1.	0.	1.	0.	0.	1.	1.	0.
141	0.	2.	2.	0.	1.	0.	0.	0.	0.	1.
151	0.	1.	1.	1.	0.	0.	2.	3.	1.	0.
161	3.	1.	0.	2.	2.	1.	3.	0.	1.	1.
171	0.	0.	0.	2.	2.	0.	1.	2.	1.	1.
181	0.	1.	1.	5.	0.	2.	1.	2.	4.	1.
191	1.	1.	2.	3.	3.	4.	3.	0.	2.	5.
201	4.	4.	1.	7.	9.	2.	8.	5.	10.	15.
211	7.	13.	11.	18.	25.	15.	20.	29.	38.	36.
221	40.	48.	62.	66.	67.	81.	125.	104.	140.	139.
231	131.	85.	52.	29.	18.	4.	7.	2.	7.	1.
241	10.	2.	6.	5.	4.	0.	6.	6.	6.	9.
251	9.	6.	14.	10.	7.	11.	12.	8.	6.	5.
261	10.	7.	15.	15.	14.	14.	19.	31.	37.	27.
271	27.	16.	17.	16.	19.	17.	21.	22.	23.	30.
281	45.	43.	61.	59.	77.	91.	114.	118.	124.	80.
291	31.	18.	19.	14.	20.	19.	17.	20.	16.	21.
301	23.	16.	18.	43.	36.	41.	13.	12.	8.	13.
311	10.	11.	12.	14.	12.	16.	24.	19.	18.	20.
321	25.	33.	29.	36.	28.	37.	43.	44.	33.	44.
331	52.	68.	59.	55.	69.	85.	80.	92.	103.	142.
341	150.	173.	178.	239.	258.	291.	358.	424.	484.	610.
351	736.	817.	894.	940.	809.	859.	893.	1120.	1342.	1471.
361	1767.	1900.	1857.	1525.	816.	316.	48.	6.	0.	0.
371	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
381	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	1.	0.	0.	0.	0.	0.	1.	0.
401	0.	1.	0.	0.	0.	1.	0.	0.	1.	0.
411	1.	0.	1.	0.	0.	0.	0.	0.	0.	2.
421	2.	2.	2.	2.	2.	1.	2.	1.	0.	1.
431	0.	0.	2.	2.	2.	1.	1.	1.	0.	0.
441	0.	0.	0.	0.	0.	0.	1.	1.	0.	1.
451	0.	0.	1.	0.	1.	2.	0.	1.	1.	0.
461	2.	2.	1.	3.	9.	6.	2.	3.	5.	8.
471	11.	16.	12.	15.	15.	18.	10.	10.	8.	1.
481	0.	3.	0.	0.	0.	0.	0.	0.	0.	0.
491	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
511	0.	0.								

222-S Analytical Laboraratory
G E N E R A L A L P H A E N E R G Y A N A L Y S I S
Rev. 2.10

DATA REDUCTION REPORT

SAMPLE
S99T000895-SAM-P
File ID: 21a2170.CNF

Counted on: 5/22/99 @14: 1
Detector: AEA21
Geometry number: 1
Count time: 28801. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1?	11.8	11.8	473.893	473.893	12.000	4.103	6.000	2.455
2	1734.7	1734.7	359.204	359.204	10.000	2.680	5.000	1.153
3	49.0	49.0	301.203	301.136	12.000	4.126	6.000	0.675
4	72.5	72.5	284.713	284.574	8.000	1.730	4.000	1.873
5?	14.3	14.3	268.012	267.559	8.000	1.879	4.000	1.205
6	459.8	459.8	226.269	226.267	12.000	3.450	6.000	1.985

PEAK RESULTS
Peak Error Limit: 30%

Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1		????		6.276			0.30	16.4		
2	Pu236	0.740	5.755	5.749	0.0060	.01	46.60	1.3	200.0	0.901E-04
3	Pu238	0.044	5.487	5.481	0.0060	.02	2.79	5.5	16.3	0.733E-05
	Am241		5.479	5.481	-.002				12.5	0.562E-05
4	Th228	0.018	5.400	5.405	-.0050	.01	1.11	13.3	6.6	0.297E-05
5		????		5.327			0.28	33.1		
6	Pu239	0.178	5.147	5.137	0.0100	.02	11.20	2.7	47.1	0.212E-04
	Pu240		5.144	5.137	0.007				47.1	0.212E-04
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Totals:		0.980	<--valid peaks only-->				61.71			

DETECTOR CALIBRATION
Energy(MEV) = 4.096 + (0.0046)*Channel
Energy range (MeV): 4.096 TO 6.451
Efficiency = 0.2378 CPM/DPM
(Data reduction compression factor: 1.)

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	30211.0	100.000
Smoothed	30211.0	100.000
Composite fit	29898.3	98.965
Residuals	312.8	1.035

Spectrum 21a2170.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 10234.7

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Raw Data Dump for AEA Spectrum: 21a2170.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	1.	1.	0.	1.
21	0.	0.	0.	0.	1.	1.	0.	0.	1.	1.
31	0.	0.	1.	0.	0.	0.	0.	1.	0.	2.
41	0.	0.	1.	2.	1.	0.	0.	0.	1.	0.
51	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.
61	0.	0.	1.	0.	1.	1.	0.	0.	0.	0.
71	0.	0.	0.	0.	1.	0.	0.	1.	0.	0.
81	0.	0.	0.	0.	0.	2.	0.	0.	1.	0.
91	0.	2.	0.	1.	1.	1.	0.	1.	1.	1.
101	1.	0.	0.	0.	0.	1.	4.	1.	0.	0.
111	0.	2.	1.	3.	0.	0.	0.	1.	0.	1.
121	1.	2.	1.	1.	0.	0.	1.	1.	2.	1.
131	1.	0.	0.	2.	0.	4.	2.	0.	0.	2.
141	2.	2.	3.	2.	1.	0.	1.	3.	2.	2.
151	0.	1.	2.	2.	2.	0.	2.	1.	2.	3.
161	3.	2.	2.	4.	2.	5.	1.	0.	0.	1.
171	6.	1.	2.	3.	0.	2.	1.	4.	5.	7.
181	2.	0.	2.	5.	3.	7.	5.	6.	8.	3.
191	5.	8.	12.	7.	17.	9.	7.	13.	15.	13.
201	19.	22.	20.	29.	25.	21.	27.	32.	41.	46.
211	51.	73.	66.	98.	104.	131.	143.	154.	163.	219.
221	220.	290.	336.	433.	473.	575.	530.	479.	317.	176.
231	96.	37.	11.	3.	1.	1.	1.	5.	3.	1.
241	4.	3.	1.	7.	10.	4.	7.	6.	3.	5.
251	12.	7.	10.	12.	12.	8.	10.	6.	8.	12.
261	10.	20.	23.	13.	18.	22.	30.	34.	27.	22.
271	19.	15.	19.	20.	13.	22.	28.	31.	40.	51.
281	52.	79.	84.	104.	134.	106.	67.	37.	25.	22.
291	28.	37.	38.	25.	35.	42.	35.	57.	43.	46.
301	58.	53.	60.	35.	16.	11.	11.	9.	14.	5.
311	13.	10.	12.	11.	16.	16.	26.	12.	21.	26.
321	24.	27.	28.	23.	29.	40.	46.	39.	37.	35.
331	49.	49.	74.	66.	81.	89.	85.	119.	122.	146.
341	164.	229.	254.	285.	333.	457.	549.	687.	855.	869.
351	891.	836.	802.	814.	985.	1173.	1448.	1814.	2101.	2178.
361	1805.	950.	344.	69.	8.	1.	0.	0.	0.	0.
371	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
381	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	1.	0.	0.	0.	1.	0.
401	0.	0.	0.	0.	0.	0.	1.	0.	0.	1.
411	0.	0.	1.	1.	0.	1.	0.	1.	2.	2.
421	3.	1.	2.	0.	1.	2.	0.	0.	2.	1.
431	2.	1.	1.	1.	2.	1.	0.	0.	0.	0.
441	0.	0.	0.	0.	0.	0.	1.	0.	1.	1.
451	1.	0.	0.	1.	1.	0.	2.	2.	1.	0.
461	1.	0.	1.	2.	3.	7.	5.	8.	10.	10.
471	8.	12.	11.	16.	10.	12.	8.	5.	2.	0.
481	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
491	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
511	0.	0.								

222-S Analytical Laboraratory
G E N E R A L A L P H A E N E R G Y A N A L Y S I S
Rev. 2.10

DATA REDUCTION REPORT

SAMPLE
S99T000895-DUP-P
File ID: 22a2254.CNF

Counted on: 5/22/99 @14: 2
Detector: AEA22
Geometry number: 1
Count time: 28802. Sec

PEAK ANALYSIS

Peak	Peak height		Peak center		FWHM		Tau	
ID	Initial	Final	Initial	Final	Initial	Final	Initial	Final
1?	12.9	12.9	473.714	473.714	14.000	4.549	7.000	3.166
2	1613.3	1613.3	359.612	359.612	10.000	3.039	5.000	1.187
3	51.8	51.8	301.282	301.168	10.000	3.997	5.000	0.899
4	78.7	78.7	285.053	284.820	10.000	2.743	5.000	1.679
5?	17.9	17.9	267.811	267.155	10.000	1.999	5.000	0.711
6	422.1	422.1	226.182	226.180	12.000	4.072	6.000	2.048

PEAK RESULTS
Peak Error Limit: 30%

Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1		????		6.275			0.32	15.9		
2	Pu236	0.737	5.755	5.751	0.004	0.01	47.12	1.3	208.1	0.938E-04
3	Pu238	0.036	5.487	5.482	0.005	0.02	2.30	6.2	13.9	0.624E-05
	Am241		5.479	5.482	-.003				10.6	0.478E-05
4	Th228	0.027	5.400	5.406	-.006	0.01	1.75	8.9	10.7	0.482E-05
5		????		5.325			0.52	18.8		
6	Pu239	0.179	5.147	5.137	0.010	0.02	11.45	2.7	49.6	0.223E-04
	Pu240		5.144	5.137	0.007				49.6	0.223E-04
		---					---			
Totals:		0.979	<--valid peaks only-->				62.62			

DETECTOR CALIBRATION
Energy(MEV) = 4.096 + (0.0046)*Channel
Energy range (MeV): 4.096 TO 6.452
Efficiency = 0.2310 CPM/DPM
(Data reduction compression factor: 1.)

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	30700.0	100.000
Smoothed	30700.0	100.000
Composite fit	30462.9	99.228
Residuals	237.1	0.772

Spectrum 22a2254.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 9591.4

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Raw Data Dump for AEA Spectrum: 22a2254.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.
21	0.	0.	0.	0.	0.	1.	0.	1.	0.	0.
31	0.	1.	0.	0.	0.	0.	0.	0.	0.	1.
41	0.	0.	1.	0.	0.	2.	0.	0.	1.	0.
51	0.	1.	0.	1.	0.	0.	0.	1.	0.	0.
61	0.	0.	1.	0.	0.	1.	0.	0.	0.	0.
71	1.	0.	1.	1.	2.	1.	0.	2.	1.	1.
81	1.	0.	0.	0.	1.	0.	0.	0.	4.	1.
91	1.	0.	0.	1.	1.	0.	1.	1.	1.	0.
101	0.	1.	0.	2.	0.	0.	1.	0.	1.	1.
111	0.	2.	1.	3.	0.	0.	0.	1.	0.	0.
121	2.	3.	4.	0.	1.	1.	0.	0.	2.	1.
131	0.	2.	1.	2.	3.	5.	3.	3.	2.	3.
141	2.	1.	2.	5.	3.	3.	4.	0.	0.	1.
151	2.	0.	3.	1.	1.	2.	2.	1.	2.	1.
161	2.	4.	1.	2.	3.	2.	1.	2.	3.	3.
171	2.	4.	3.	3.	6.	3.	3.	4.	3.	5.
181	7.	4.	8.	4.	6.	9.	6.	3.	7.	8.
191	11.	12.	14.	8.	11.	13.	11.	19.	18.	17.
201	9.	18.	24.	26.	20.	39.	23.	41.	60.	46.
211	71.	74.	84.	107.	133.	138.	150.	166.	167.	194.
221	274.	293.	337.	421.	457.	487.	496.	421.	319.	195.
231	117.	33.	21.	8.	2.	3.	2.	5.	5.	5.
241	3.	2.	4.	7.	6.	9.	6.	4.	10.	10.
251	7.	10.	8.	9.	14.	9.	12.	7.	7.	16.
261	21.	12.	22.	17.	24.	28.	33.	38.	34.	19.
271	22.	23.	19.	27.	22.	31.	42.	43.	43.	62.
281	71.	91.	93.	104.	114.	119.	92.	66.	36.	26.
291	28.	35.	35.	28.	34.	33.	45.	48.	48.	59.
301	55.	66.	57.	44.	30.	11.	9.	6.	14.	17.
311	15.	9.	7.	18.	18.	22.	16.	30.	22.	27.
321	28.	24.	22.	32.	41.	35.	49.	44.	57.	52.
331	65.	60.	84.	86.	90.	112.	121.	134.	147.	174.
341	176.	212.	237.	321.	369.	429.	513.	610.	699.	887.
351	891.	896.	841.	837.	972.	1089.	1300.	1550.	1852.	1934.
361	1829.	1358.	674.	215.	48.	4.	0.	0.	0.	0.
371	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
381	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	1.	0.	1.	0.	0.	0.	0.	0.	0.	0.
401	0.	0.	0.	1.	0.	0.	0.	0.	0.	1.
411	0.	0.	1.	1.	1.	0.	0.	2.	2.	1.
421	1.	5.	2.	3.	0.	2.	0.	2.	2.	0.
431	1.	1.	0.	0.	1.	0.	0.	1.	0.	0.
441	0.	0.	0.	0.	0.	0.	1.	0.	2.	1.
451	1.	0.	1.	0.	1.	0.	0.	2.	0.	3.
461	1.	0.	4.	3.	2.	1.	7.	8.	10.	11.
471	9.	10.	17.	15.	15.	10.	5.	7.	3.	1.
481	1.	1.	3.	0.	0.	0.	0.	0.	0.	0.
491	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
511	0.	0.								

222-S Analytical Laboraratory
G E N E R A L A L P H A E N E R G Y A N A L Y S I S
Rev. 2.10

DATA REDUCTION REPORT

SAMPLE
S99T000896-SAM-P
File ID: 23a2327.CNF

Counted on: 5/22/99 @14: 3
Detector: AEA23
Geometry number: 1
Count time: 28802. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1?	12.0	12.0	480.901	480.901	8.000	4.796	4.000	3.536
2	1561.8	1561.8	365.761	365.761	10.000	3.486	5.000	1.272
3	62.0	62.0	307.278	307.180	12.000	3.502	6.000	0.900
4	68.2	68.2	290.832	290.558	12.000	3.058	6.000	1.798
5?	17.4	17.4	274.366	273.108	10.000	2.859	5.000	0.969
6	419.6	419.6	232.223	232.220	12.000	4.282	6.000	1.956

PEAK RESULTS
Peak Error Limit: 30%

Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1		????		6.291			0.30	16.4		
2	Pu236	0.736	5.755	5.762	-.007	0.02	48.86	1.3	197.8	0.891E-04
	Cm243		5.779	5.762	0.017				265.5	0.120E-03
3	Pu238	0.037	5.487	5.492	-.005	0.02	2.46	6.0	13.5	0.610E-05
	Am241		5.479	5.492	-.013				10.4	0.467E-05
4	Th228	0.024	5.400	5.416	-.016	0.01	1.59	9.6	8.9	0.401E-05
5		????		5.336			0.55	18.0		
6	Pu239	0.182	5.147	5.148	-.001	0.02	12.09	2.6	47.9	0.216E-04
	Pu240		5.144	5.148	-.004				47.9	0.216E-04
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Totals:		0.980	<--valid peaks only-->				65.00			

DETECTOR CALIBRATION
Energy(MEV) = 4.079 + (0.0046)*Channel
Energy range (MeV): 4.079 TO 6.435
Efficiency = 0.2521 CPM/DPM
(Data reduction compression factor: 1.)

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	31849.0	100.000
Smoothed	31849.0	100.000
Composite fit	31606.8	99.239
Residuals	242.2	0.761

Spectrum 23a2327.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 10479.6

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Raw Data Dump for AEA Spectrum: 23a2327.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	1.	0.	1.	1.	0.
21	2.	0.	2.	0.	0.	1.	0.	1.	0.	0.
31	1.	0.	0.	1.	0.	0.	0.	0.	0.	0.
41	0.	0.	1.	0.	0.	0.	1.	0.	1.	0.
51	0.	0.	1.	1.	0.	0.	0.	0.	1.	1.
61	1.	0.	0.	1.	1.	0.	0.	0.	0.	0.
71	0.	1.	1.	1.	0.	1.	0.	0.	0.	0.
81	1.	0.	1.	1.	1.	2.	0.	0.	2.	1.
91	0.	0.	0.	2.	1.	0.	0.	1.	0.	1.
101	0.	0.	2.	0.	0.	1.	1.	1.	0.	0.
111	0.	0.	1.	0.	0.	0.	0.	2.	1.	1.
121	0.	2.	0.	1.	0.	0.	0.	2.	2.	0.
131	0.	1.	1.	1.	3.	1.	0.	3.	2.	0.
141	0.	2.	2.	1.	1.	5.	0.	1.	0.	3.
151	1.	3.	1.	2.	4.	3.	2.	2.	3.	2.
161	2.	3.	3.	5.	0.	1.	2.	1.	7.	1.
171	4.	5.	4.	2.	3.	6.	4.	3.	2.	5.
181	5.	6.	9.	6.	9.	8.	4.	10.	4.	9.
191	9.	11.	10.	10.	12.	11.	13.	15.	13.	14.
201	10.	21.	16.	26.	21.	28.	24.	36.	33.	45.
211	47.	37.	36.	41.	69.	62.	75.	64.	84.	104.
221	126.	173.	163.	191.	204.	231.	239.	306.	342.	398.
231	457.	486.	485.	423.	321.	221.	109.	69.	23.	5.
241	5.	5.	3.	0.	4.	5.	3.	5.	6.	7.
251	7.	10.	5.	5.	9.	5.	8.	4.	5.	8.
261	12.	12.	10.	15.	7.	13.	21.	17.	16.	29.
271	27.	27.	27.	34.	33.	26.	25.	21.	20.	26.
281	26.	31.	26.	38.	65.	49.	68.	77.	85.	108.
291	96.	113.	72.	57.	47.	28.	33.	36.	47.	38.
301	24.	43.	54.	52.	51.	61.	86.	69.	72.	43.
311	29.	16.	17.	9.	15.	10.	24.	16.	24.	26.
321	26.	24.	28.	42.	30.	32.	25.	37.	30.	46.
331	53.	59.	48.	63.	53.	70.	92.	70.	68.	104.
341	103.	109.	123.	165.	169.	163.	240.	233.	278.	345.
351	379.	434.	521.	634.	728.	837.	901.	895.	857.	883.
361	921.	1097.	1273.	1571.	1689.	1832.	1768.	1417.	903.	403.
371	142.	40.	4.	0.	0.	1.	1.	0.	0.	0.
381	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	0.	2.	0.	0.	1.	0.
401	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.
411	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
421	0.	0.	0.	0.	0.	0.	1.	0.	1.	2.
431	1.	2.	0.	3.	1.	1.	2.	0.	0.	2.
441	0.	0.	1.	0.	0.	0.	0.	0.	1.	1.
451	0.	0.	0.	0.	1.	0.	3.	0.	1.	0.
461	2.	0.	1.	1.	0.	5.	4.	1.	2.	2.
471	1.	0.	1.	2.	8.	8.	13.	13.	12.	9.
481	11.	20.	4.	13.	2.	3.	3.	1.	1.	2.
491	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
511	0.	0.								

222-S Analytical Laboraratory
G E N E R A L A L P H A E N E R G Y A N A L Y S I S
Rev. 2.10

DATA REDUCTION REPORT

SAMPLE
S99T000896-DUP-P
File ID: 24a2428.CNF

Counted on: 5/22/99 @14: 5
Detector: AEA24
Geometry number: 1
Count time: 28802. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1?	11.9	11.9	472.899	472.899	14.000	6.128	7.000	4.977
2	1777.1	1777.1	359.724	359.724	10.000	2.683	5.000	1.173
3	61.0	61.0	300.911	300.859	10.000	3.888	5.000	1.223
4	84.9	84.9	284.694	284.517	8.000	2.491	4.000	2.159
5	22.4	22.4	267.774	267.232	10.000	3.067	5.000	1.102
6	479.5	479.5	226.471	226.470	10.000	3.550	5.000	1.978

PEAK RESULTS
Peak Error Limit: 30%

Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1		????		6.270			0.31	16.0		
2	Pu236	0.725	5.755	5.750	0.005	0.01	47.31	1.3	210.3	0.947E-04
3	Pu238	0.033	5.487	5.479	0.008	0.02	2.14	6.3	12.9	0.583E-05
	Am241		5.479	5.479	0.000				9.9	0.446E-05
4	Th228	0.024	5.400	5.404	-.004	0.01	1.59	8.9	9.7	0.439E-05
5		0.011		5.324		0.01	0.69	13.8	3.0	0.135E-05
6	Pu239	0.183	5.147	5.137	0.010	0.02	11.95	2.6	52.1	0.235E-04
	Pu240		5.144	5.137	0.007				52.1	0.235E-04
		---					---			
Totals:		0.976	<--valid peaks only-->				63.67			

DETECTOR CALIBRATION
Energy(MEV) = 4.095 + (0.0046)*Channel
Energy range (MeV): 4.095 TO 6.450
Efficiency = 0.2295 CPM/DPM
(Data reduction compression factor: 1.)

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	31332.0	100.000
Smoothed	31332.0	100.000
Composite fit	30715.2	98.031
Residuals	616.8	1.969

Spectrum 24a2428.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 10012.1

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Raw Data Dump for AEA Spectrum: 24a2428.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	3.	0.	0.	1.	1.	1.
21	1.	1.	0.	1.	0.	0.	0.	2.	1.	0.
31	0.	1.	1.	3.	0.	1.	2.	1.	1.	1.
41	2.	1.	1.	0.	0.	0.	2.	1.	2.	0.
51	1.	3.	3.	2.	5.	2.	1.	0.	2.	1.
61	0.	0.	1.	2.	1.	0.	1.	1.	1.	0.
71	2.	0.	1.	0.	0.	1.	2.	1.	2.	2.
81	2.	1.	0.	0.	2.	2.	3.	0.	1.	1.
91	0.	0.	3.	1.	2.	1.	1.	0.	0.	2.
101	1.	2.	1.	1.	0.	2.	1.	3.	0.	3.
111	0.	2.	1.	0.	3.	1.	2.	1.	0.	2.
121	2.	0.	4.	2.	3.	3.	1.	0.	2.	1.
131	0.	2.	1.	3.	1.	0.	6.	4.	2.	3.
141	4.	3.	5.	1.	8.	7.	1.	1.	4.	1.
151	2.	2.	2.	4.	4.	4.	4.	3.	1.	5.
161	2.	5.	4.	4.	3.	7.	6.	2.	2.	3.
171	5.	7.	3.	5.	4.	5.	3.	4.	7.	2.
181	10.	3.	3.	5.	6.	2.	7.	7.	5.	7.
191	4.	10.	6.	6.	5.	13.	9.	15.	17.	11.
201	14.	10.	26.	20.	38.	22.	44.	42.	43.	51.
211	46.	73.	91.	97.	104.	151.	146.	169.	169.	220.
221	232.	269.	350.	388.	534.	569.	577.	522.	373.	213.
231	104.	60.	16.	4.	6.	3.	0.	3.	9.	4.
241	5.	3.	7.	2.	2.	3.	5.	9.	5.	10.
251	8.	9.	5.	14.	5.	6.	14.	7.	13.	9.
261	10.	18.	23.	20.	23.	22.	39.	25.	30.	26.
271	14.	20.	9.	20.	21.	24.	25.	26.	34.	58.
281	58.	81.	92.	119.	140.	100.	77.	51.	24.	38.
291	29.	27.	40.	22.	35.	41.	36.	52.	58.	68.
301	72.	76.	55.	40.	16.	13.	11.	6.	11.	6.
311	15.	9.	15.	17.	15.	13.	19.	22.	24.	22.
321	30.	14.	33.	28.	37.	27.	30.	45.	50.	49.
331	49.	47.	68.	87.	77.	78.	91.	145.	130.	140.
341	162.	207.	235.	257.	329.	389.	474.	618.	736.	843.
351	910.	833.	843.	877.	900.	1160.	1323.	1621.	1998.	2188.
361	2111.	1486.	620.	174.	36.	2.	1.	0.	0.	0.
371	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.
381	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
401	0.	0.	1.	0.	0.	0.	0.	0.	0.	1.
411	0.	0.	0.	1.	0.	0.	0.	1.	1.	1.
421	1.	1.	2.	0.	1.	0.	2.	1.	1.	3.
431	1.	0.	3.	1.	0.	0.	0.	1.	0.	0.
441	0.	0.	0.	1.	0.	0.	0.	1.	1.	1.
451	0.	0.	0.	1.	0.	1.	2.	1.	2.	0.
461	2.	2.	2.	2.	6.	3.	3.	7.	13.	6.
471	13.	12.	14.	16.	8.	7.	8.	9.	5.	2.
481	1.	0.	0.	1.	0.	0.	0.	0.	0.	0.
491	0.	0.	0.	0.	1.	0.	0.	1.	0.	0.
511	0.	0.								

222-S Analytical Laboraratory
G E N E R A L A L P H A E N E R G Y A N A L Y S I S
Rev. 2.10

DATA REDUCTION REPORT

SAMPLE
S99T000897-SAM-P
File ID: 25a2596.CNF

Counted on: 5/22/99 @14: 6
Detector: AEA25
Geometry number: 1
Count time: 28803. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1?	21.2	21.2	239.145	239.145	10.000	1.940	5.000	3.650
2?	26.4	26.4	199.969	199.969	8.000	1.487	4.000	2.279
3	2937.8	2937.8	157.295	157.295	6.000	1.698	3.000	1.849
4	168.8	168.8	135.224	135.035	18.000	2.262	9.000	0.687
5?	54.9	54.9	130.350	129.825	6.000	0.295	3.000	3.960
6	755.6	755.6	108.355	108.340	6.000	1.525	3.000	2.096

PEAK RESULTS
Peak Error Limit: 30%

Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1		????		6.795			0.30	16.3		
2		????		6.301			0.35	15.2		
3	Pu236	0.703	5.755	5.763	-.008	0.02	44.80	1.3	187.1	0.843E-04
	Cm243		5.779	5.763	0.016				251.2	0.113E-03
4	Pu238	0.088	5.487	5.483	0.004	0.03	5.58	4.0	31.7	0.143E-04
	Am241		5.479	5.483	-.004				24.3	0.109E-04
5		????		5.417			0.30	63.8		
6	Pu239	0.162	5.147	5.146	0.001	0.02	10.33	2.9	42.3	0.191E-04
	Pu240		5.144	5.146	-.002				42.3	0.191E-04
		---					---			
Totals:		0.953	<--valid peaks only-->				60.71			

DETECTOR CALIBRATION
Energy(MEV) = 3.781 + (0.0126)*Channel
Energy range (MeV): 3.781 TO 10.233
Efficiency = 0.2443 CPM/DPM
(Data reduction compression factor: 1.)

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	30571.0	100.000
Smoothed	30571.0	100.000
Composite fit	29598.5	96.819
Residuals	972.5	3.181

Spectrum 25a2596.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 16284.5

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Raw Data Dump for AEA Spectrum: 25a2596.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	1.	0.	3.	1.	1.	0.	0.	2.	0.	2.
21	0.	2.	0.	0.	1.	0.	0.	0.	2.	1.
31	2.	4.	1.	1.	0.	1.	0.	4.	2.	1.
41	0.	0.	1.	2.	0.	1.	1.	1.	2.	3.
51	0.	1.	0.	2.	0.	3.	0.	1.	1.	3.
61	1.	1.	4.	5.	1.	6.	2.	2.	1.	3.
71	2.	3.	6.	8.	2.	6.	4.	9.	11.	6.
81	4.	6.	4.	4.	6.	7.	6.	5.	9.	7.
91	8.	16.	12.	18.	28.	26.	41.	33.	44.	71.
101	79.	118.	169.	243.	332.	466.	693.	1023.	1292.	705.
111	158.	15.	10.	18.	9.	16.	19.	31.	33.	33.
121	28.	40.	55.	89.	61.	47.	70.	95.	164.	244.
131	246.	116.	64.	90.	117.	150.	155.	76.	45.	35.
141	52.	76.	67.	102.	105.	146.	188.	200.	295.	365.
151	519.	784.	1234.	1899.	2394.	2306.	3402.	4751.	3017.	310.
161	3.	1.	0.	0.	0.	0.	0.	0.	2.	1.
171	0.	0.	0.	0.	1.	0.	3.	5.	3.	2.
181	1.	2.	1.	4.	4.	3.	2.	0.	0.	1.
191	1.	2.	3.	4.	5.	1.	17.	15.	29.	43.
201	31.	18.	1.	1.	0.	0.	0.	0.	0.	0.
211	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
221	0.	1.	0.	1.	0.	1.	1.	0.	1.	0.
231	0.	0.	2.	3.	9.	11.	12.	25.	32.	26.
241	17.	7.	3.	0.	0.	0.	0.	0.	0.	0.
251	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
261	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
271	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
281	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
291	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
301	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
311	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
321	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
331	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
341	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
351	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
361	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.
371	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
381	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	1.	0.	0.	0.	0.	3.	8.	11.
401	5.	3.	1.	1.	2.	0.	0.	1.	0.	0.
411	0.	1.	1.	0.	2.	1.	2.	1.	0.	0.
421	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.
431	1.	0.	0.	0.	0.	0.	2.	0.	1.	0.
441	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
451	0.	0.	0.	0.	0.	0.	1.	1.	0.	1.
461	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
471	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
481	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.
491	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
511	0.	0.								

222-S Analytical Laboraratory
G E N E R A L A L P H A E N E R G Y A N A L Y S I S
Rev. 2.10

DATA REDUCTION REPORT

SAMPLE
S99T000897-DUP-P
File ID: 26a2669.CNF

Counted on: 5/22/99 @14: 7
Detector: AEA26
Geometry number: 1
Count time: 28801. Sec

PEAK ANALYSIS

Peak	Peak height		Peak center		FWHM		Tau	
ID	Initial	Final	Initial	Final	Initial	Final	Initial	Final
1?	21.9	21.9	239.917	239.917	8.000	1.602	4.000	2.724
2?	20.2	20.2	200.320	200.320	10.000	1.686	5.000	2.567
3	2949.6	2949.6	157.845	157.845	8.000	1.716	4.000	1.888
4	181.1	181.1	135.059	135.059	18.000	2.613	9.000	0.833
5	784.9	784.9	108.746	108.731	8.000	1.455	4.000	2.062

PEAK RESULTS
Peak Error Limit: 30%

Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1		????		6.778			0.29	16.6		
2		????		6.283			0.28	16.9		
3	Pu236	0.702	5.755	5.752	0.003	0.02	44.98	1.3	196.5	0.885E-04
4	Pu238	0.092	5.487	5.468	0.019	0.03	5.90	3.9	35.1	0.158E-04
	Am241		5.479	5.468	0.011				26.9	0.121E-04
5	Pu239	0.163	5.147	5.139	0.008	0.02	10.47	2.9	44.8	0.202E-04
	Pu240		5.144	5.139	0.005				44.8	0.202E-04
		---					---			
Totals:		0.958	<--valid peaks only-->				61.35			

DETECTOR CALIBRATION
Energy(MEV) = 3.779 + (0.0125)*Channel
Energy range (MeV): 3.779 TO 10.179
Efficiency = 0.2336 CPM/DPM
(Data reduction compression factor: 1.)

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	30753.0	100.000
Smoothed	30753.0	100.000
Composite fit	29722.4	96.649
Residuals	1030.6	3.351

410 Analyzed by: _____

Spectrum 26a2669.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 16002.2

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Raw Data Dump for AEA Spectrum: 26a2669.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	1.	0.	0.	1.	0.	1.	0.	0.	1.
21	0.	0.	0.	0.	1.	0.	3.	1.	3.	2.
31	2.	0.	0.	1.	0.	2.	1.	0.	1.	2.
41	0.	2.	2.	1.	0.	1.	3.	1.	4.	0.
51	1.	2.	2.	0.	5.	0.	1.	1.	1.	5.
61	3.	5.	7.	3.	4.	4.	4.	1.	2.	6.
71	5.	6.	4.	6.	5.	3.	1.	3.	10.	7.
81	6.	9.	9.	11.	7.	2.	15.	9.	12.	17.
91	18.	9.	19.	23.	18.	23.	37.	38.	48.	59.
101	67.	81.	130.	201.	304.	443.	570.	889.	1261.	1007.
111	332.	55.	13.	11.	11.	15.	13.	22.	35.	29.
121	29.	45.	64.	73.	86.	50.	55.	91.	170.	218.
131	278.	188.	83.	87.	111.	142.	163.	92.	54.	47.
141	51.	64.	63.	76.	97.	125.	187.	209.	241.	295.
151	432.	620.	970.	1487.	2081.	2265.	2820.	4095.	4247.	1682.
161	140.	2.	0.	0.	0.	0.	0.	0.	0.	0.
171	0.	0.	0.	1.	0.	0.	0.	0.	0.	3.
181	7.	4.	4.	1.	4.	2.	0.	0.	0.	1.
191	1.	1.	3.	2.	2.	4.	8.	14.	18.	27.
201	36.	13.	7.	2.	0.	0.	0.	0.	0.	0.
211	0.	0.	0.	0.	0.	0.	0.	2.	1.	0.
221	0.	0.	1.	1.	0.	1.	0.	0.	0.	1.
231	0.	2.	4.	1.	5.	5.	7.	20.	21.	34.
241	29.	13.	2.	1.	1.	0.	0.	0.	0.	0.
251	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
261	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
271	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
281	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
291	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
301	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
311	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
321	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
331	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
341	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
351	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
361	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
371	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
381	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	1.	0.	0.	0.	0.	6.
401	4.	9.	3.	3.	0.	0.	1.	2.	1.	0.
411	0.	0.	0.	1.	1.	2.	1.	1.	0.	0.
421	1.	0.	1.	0.	0.	0.	0.	0.	0.	0.
431	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
441	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
451	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
461	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
471	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
481	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
491	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
511	0.	0.								

APPENDIX A

OPPORTUNISTIC ANALYTE RESULTS

Opportunistic Analyte Report
AP107 GRAB2

CORE NUMBER: n/a
SEGMENT #: 7AP-99-1

SEGMENT PORTION: Supernate

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S99T000886			Etched Number on Vial		n/a	n/a	7AP-99-1	n/a	n/a	n/a	n/a	n/a	n/a
S99T000894			Pu-238 by Ion Exchange	uCi/mL	n/a	<3.57e-06	<3.88e-06	<3.66E-6	n/a	n/a	n/a	3.88e-06	9.57E+00
S99T000894		D	Silver-ICP-Acid Dil.	ug/mL	97.80	<1.00e-02	2.690	2.410	2.550	11.0	n/a	1.010	n/a
S99T000894		D	Arsenic-ICP-Acid Dil.	ug/mL	99.20	<1.00e-01	< 10.10	<1.01e1	n/a	n/a	n/a	10.10	n/a
S99T000894		D	Boron-ICP-Acid Dil.	ug/mL	101.4	<5.00e-02	7.400	7.210	7.305	2.60	n/a	5.050	n/a
S99T000894		D	Barium-ICP-Acid Dil.	ug/mL	97.00	<5.00e-02	< 5.050	<5.05e0	n/a	n/a	n/a	5.050	n/a
S99T000894		D	Beryllium-ICP-Acid Dil.	ug/mL	98.60	<5.00e-03	<5.05e-01	<5.05e-1	n/a	n/a	n/a	5.05e-01	n/a
S99T000894		D	Bismuth-ICP-Acid Dil.	ug/mL	100.2	<1.00e-01	< 10.10	<1.01e1	n/a	n/a	n/a	10.10	n/a
S99T000894		D	Calcium-ICP-Acid Dil.	ug/mL	101.8	<1.00e-01	< 10.10	<1.01e1	n/a	n/a	n/a	10.10	n/a
S99T000894		D	Cadmium-ICP-Acid Dil.	ug/mL	101.0	<5.00e-03	<5.05e-01	<5.05e-1	n/a	n/a	n/a	5.05e-01	n/a
S99T000894		D	Cerium-ICP-Acid Dil.	ug/mL	99.80	<1.00e-01	< 10.10	<1.01e1	n/a	n/a	n/a	10.10	n/a
S99T000894		D	Cobalt-ICP-Acid Dil.	ug/mL	99.00	<2.00e-02	< 2.020	<2.02e0	n/a	n/a	n/a	2.020	n/a
S99T000894		D	Copper-ICP-Acid Dil.	ug/mL	100.8	<1.00e-02	< 1.010	<1.01e0	n/a	n/a	n/a	1.010	n/a
S99T000894		D	Potassium-ICP-Acid Dil.	ug/mL	100.2	<5.00e-01	9.21e+02	911.0	916.0	1.09	n/a	50.50	n/a
S99T000894		D	Lanthanum-ICP-Acid Dil.	ug/mL	100.6	<5.00e-02	< 5.050	<5.05e0	n/a	n/a	n/a	5.050	n/a
S99T000894		D	Lithium-ICP-Acid Dil.	ug/mL	99.60	<1.00e-02	< 1.010	<1.01e0	n/a	n/a	n/a	1.010	n/a
S99T000894		D	Magnesium-ICP-Acid Dil.	ug/mL	99.80	<1.00e-01	< 10.10	<1.01e1	n/a	n/a	n/a	10.10	n/a
S99T000894		D	Molybdenum-ICP-Acid Dil.	ug/mL	100.2	<5.00e-02	9.860	9.610	9.735	2.57	n/a	5.050	n/a
S99T000894		D	Neodymium-ICP-Acid Dil.	ug/mL	100.4	<1.00e-01	< 10.10	<1.01e1	n/a	n/a	n/a	10.10	n/a
S99T000894		D	Phosphorus-ICP-Acid Dil.	ug/mL	99.60	<2.00e-01	8.28e+02	825.0	826.5	0.36	n/a	20.20	n/a
S99T000894		D	Lead-ICP-Acid Dil.	ug/mL	99.60	<1.00e-01	< 10.10	<1.01e1	n/a	n/a	n/a	10.10	n/a
S99T000894		D	Sulfur-ICP-Acid Dil.	ug/mL	97.80	<1.00e-01	3.94e+02	395.0	394.5	0.25	n/a	10.10	n/a
S99T000894		D	Antimony-ICP-Acid Dil.	ug/mL	99.60	<6.00e-02	< 6.060	<6.06e0	n/a	n/a	n/a	6.060	n/a
S99T000894		D	Selenium-ICP-Acid Dil.	ug/mL	97.60	<1.00e-01	< 10.10	<1.01e1	n/a	n/a	n/a	10.10	n/a
S99T000894		D	Silicon-ICP-Acid Dil.	ug/mL	104.0	<5.00e-02	13.90	14.40	14.15	3.53	n/a	5.050	n/a
S99T000894		D	Samarium-ICP-Acid Dil.	ug/mL	100.2	<1.00e-01	< 10.10	<1.01e1	n/a	n/a	n/a	10.10	n/a
S99T000894		D	Strontium-ICP-Acid Dil.	ug/mL	98.20	<1.00e-02	< 1.010	<1.01e0	n/a	n/a	n/a	1.010	n/a
S99T000894		D	Titanium-ICP-Acid Dil.	ug/mL	100.4	<1.00e-02	< 1.010	<1.01e0	n/a	n/a	n/a	1.010	n/a
S99T000894		D	Thallium-ICP-Acid Dil.	ug/mL	97.20	<2.00e-01	< 20.20	<2.02e1	n/a	n/a	n/a	20.20	n/a
S99T000894		D	Uranium-ICP-Acid Dil.	ug/mL	102.0	<5.00e-01	< 50.50	<5.05e1	n/a	n/a	n/a	50.50	n/a
S99T000894		D	Vanadium-ICP-Acid Dil.	ug/mL	99.60	<5.00e-02	< 5.050	<5.05e0	n/a	n/a	n/a	5.050	n/a
S99T000894		D	Zinc-ICP-Acid Dil.	ug/mL	99.20	<1.00e-02	< 1.010	<1.01e0	n/a	n/a	n/a	1.010	n/a
S99T000894			Bromide by Ion Chromatograph	ug/mL	102.6	<1.25e-01	<1.39e+02	<1.39e2	n/a	n/a	n/a	138.9	n/a
S99T000894			Oxalate-IC-Dionex 4000/450	ug/mL	94.28	<1.05e-01	<1.17e+02	<1.17e2	n/a	n/a	n/a	116.7	n/a
S99T000894			Cobalt-60 by GEA	uCi/mL	108.9	<1.64e-03	<1.73e-03	<1.69e-3	n/a	n/a	n/a	2.00e-03	n/a
S99T000894			Niobium-94 by GEA	uCi/mL	n/a	<1.62e-03	<1.87e-03	<1.90e-3	n/a	n/a	n/a	2.00e-03	n/a
S99T000894			Ru/Rh-106 by GEA	uCi/mL	n/a	<3.03e-02	<2.62e-01	<2.64e-1	n/a	n/a	n/a	2.62e-01	n/a
S99T000894			Cesium-134 by GEA	uCi/mL	n/a	<1.64e-03	<1.31e-02	<1.32e-2	n/a	n/a	n/a	1.30e-02	n/a
S99T000894			Ce/Pr-144 by GEA	uCi/mL	n/a	<1.60e-02	<1.66e-01	<1.66e-1	n/a	n/a	n/a	1.66e-01	n/a
S99T000894			Europium-154 by GEA	uCi/mL	n/a	<6.36e-03	<5.46e-03	<6.78e-3	n/a	n/a	n/a	5.00e-03	n/a
S99T000894			Europium-155 by GEA	uCi/mL	n/a	<4.06e-03	<3.84e-02	<3.83e-2	n/a	n/a	n/a	3.80e-02	n/a
S99T000894			Radium-226 by GEA	uCi/mL	n/a	<2.94e-02	<3.14e-01	<3.10e-1	n/a	n/a	n/a	3.14e-01	n/a
S99T000894			Cm-243/244 by Extraction	uCi/mL	n/a	<3.70e-06	<3.50e-06	<3.80E-6	n/a	n/a	n/a	3.50e-06	1.00E+02

Opportunistic Analyte Report
AP107 GRAB2

CORE NUMBER: n/a
SEGMENT #: 7AP-99-2

SEGMENT PORTION: Supernate

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S99T000887			Etched Number on Vial		n/a	n/a	7AP-99-2	n/a	n/a	n/a	n/a	n/a	n/a
S99T000895			Pu-238 by Ion Exchange	uCi/mL	n/a	<3.57e-06	6.10e-06	5.01e-06	5.56e-06	19.6	n/a	4.63e-06	5.51E+00
S99T000895		D	Silver-ICP-Acid Dil.	ug/mL	97.80	<1.00e-02	4.690	4.730	4.710	0.85	n/a	2.010	n/a
S99T000895		D	Arsenic-ICP-Acid Dil.	ug/mL	99.20	<1.00e-01	< 20.10	<2.01e1	n/a	n/a	n/a	20.10	n/a
S99T000895		D	Boron-ICP-Acid Dil.	ug/mL	101.4	<5.00e-02	13.10	13.70	13.40	4.48	n/a	10.10	n/a
S99T000895		D	Barium-ICP-Acid Dil.	ug/mL	97.00	<5.00e-02	< 10.10	<1.01e1	n/a	n/a	n/a	10.10	n/a
S99T000895		D	Beryllium-ICP-Acid Dil.	ug/mL	98.60	<5.00e-03	< 1.010	<1.01e0	n/a	n/a	n/a	1.010	n/a
S99T000895		D	Bismuth-ICP-Acid Dil.	ug/mL	100.2	<1.00e-01	< 20.10	<2.01e1	n/a	n/a	n/a	20.10	n/a
S99T000895		D	Calcium-ICP-Acid Dil.	ug/mL	101.8	<1.00e-01	< 20.10	<2.01e1	n/a	n/a	n/a	20.10	n/a
S99T000895		D	Cadmium-ICP-Acid Dil.	ug/mL	101.0	<5.00e-03	< 1.010	<1.01e0	n/a	n/a	n/a	1.010	n/a
S99T000895		D	Cerium-ICP-Acid Dil.	ug/mL	99.80	<1.00e-01	< 20.10	<2.01e1	n/a	n/a	n/a	20.10	n/a
S99T000895		D	Cobalt-ICP-Acid Dil.	ug/mL	99.00	<2.00e-02	< 4.020	<4.02e0	n/a	n/a	n/a	4.020	n/a
S99T000895		D	Copper-ICP-Acid Dil.	ug/mL	100.8	<1.00e-02	< 2.010	<2.01e0	n/a	n/a	n/a	2.010	n/a
S99T000895		D	Potassium-ICP-Acid Dil.	ug/mL	100.2	<5.00e-01	1.65e+03	1.66e+03	1.66e+03	0.60	n/a	101.0	n/a
S99T000895		D	Lanthanum-ICP-Acid Dil.	ug/mL	100.6	<5.00e-02	< 10.10	<1.01e1	n/a	n/a	n/a	10.10	n/a
S99T000895		D	Lithium-ICP-Acid Dil.	ug/mL	99.60	<1.00e-02	< 2.010	<2.01e0	n/a	n/a	n/a	2.010	n/a
S99T000895		D	Magnesium-ICP-Acid Dil.	ug/mL	99.80	<1.00e-01	< 20.10	<2.01e1	n/a	n/a	n/a	20.10	n/a
S99T000895		D	Molybdenum-ICP-Acid Dil.	ug/mL	100.2	<5.00e-02	18.70	19.20	18.95	2.64	n/a	10.10	n/a
S99T000895		D	Neodymium-ICP-Acid Dil.	ug/mL	100.4	<1.00e-01	< 20.10	<2.01e1	n/a	n/a	n/a	20.10	n/a
S99T000895		D	Phosphorus-ICP-Acid Dil.	ug/mL	99.60	<2.00e-01	1.62e+03	1.62e+03	1.62e+03	0.00	n/a	40.20	n/a
S99T000895		D	Lead-ICP-Acid Dil.	ug/mL	99.60	<1.00e-01	< 20.10	<2.01e1	n/a	n/a	n/a	20.10	n/a
S99T000895		D	Sulfur-ICP-Acid Dil.	ug/mL	97.80	<1.00e-01	7.74e+02	775.0	774.5	0.13	n/a	20.10	n/a
S99T000895		D	Antimony-ICP-Acid Dil.	ug/mL	99.60	<6.00e-02	< 12.10	<1.21e1	n/a	n/a	n/a	12.10	n/a
S99T000895		D	Selenium-ICP-Acid Dil.	ug/mL	97.60	<1.00e-01	< 20.10	<2.01e1	n/a	n/a	n/a	20.10	n/a
S99T000895		D	Silicon-ICP-Acid Dil.	ug/mL	104.0	<5.00e-02	26.90	26.90	26.90	0.00	n/a	10.10	n/a
S99T000895		D	Samarium-ICP-Acid Dil.	ug/mL	100.2	<1.00e-01	< 20.10	<2.01e1	n/a	n/a	n/a	20.10	n/a
S99T000895		D	Strontium-ICP-Acid Dil.	ug/mL	98.20	<1.00e-02	< 2.010	<2.01e0	n/a	n/a	n/a	2.010	n/a
S99T000895		D	Titanium-ICP-Acid Dil.	ug/mL	100.4	<1.00e-02	< 2.010	<2.01e0	n/a	n/a	n/a	2.010	n/a
S99T000895		D	Thallium-ICP-Acid Dil.	ug/mL	97.20	<2.00e-01	< 40.20	<4.02e1	n/a	n/a	n/a	40.20	n/a
S99T000895		D	Uranium-ICP-Acid Dil.	ug/mL	102.0	<5.00e-01	<1.01e+02	<1.01e2	n/a	n/a	n/a	101.0	n/a
S99T000895		D	Vanadium-ICP-Acid Dil.	ug/mL	99.60	<5.00e-02	< 10.10	<1.01e1	n/a	n/a	n/a	10.10	n/a
S99T000895		D	Zinc-ICP-Acid Dil.	ug/mL	99.20	<1.00e-02	< 2.010	<2.01e0	n/a	n/a	n/a	2.010	n/a
S99T000895			Bromide by Ion Chromatograph	ug/mL	102.6	<1.25e-01	<2.65e+02	<2.65e2	n/a	n/a	n/a	265.1	n/a
S99T000895			Oxalate-IC-Dionex 4000/450	ug/mL	94.28	<1.05e-01	<2.23e+02	<2.23e2	n/a	n/a	n/a	222.7	n/a
S99T000895			Cobalt-60 by GEA	uCi/mL	108.9	<1.64e-03	<1.98e-03	<2.21e-3	n/a	n/a	n/a	2.00e-03	n/a
S99T000895			Niobium-94 by GEA	uCi/mL	n/a	<1.62e-03	<2.09e-03	<1.70e-3	n/a	n/a	n/a	2.00e-03	n/a
S99T000895			Ru/Rh-106 by GEA	uCi/mL	n/a	<3.03e-02	<3.51e-01	<3.38e-1	n/a	n/a	n/a	3.51e-01	n/a
S99T000895			Cesium-134 by GEA	uCi/mL	n/a	<1.64e-03	<1.77e-02	<1.69e-2	n/a	n/a	n/a	1.80e-02	n/a
S99T000895			Ce/Pr-144 by GEA	uCi/mL	n/a	<1.60e-02	<2.23e-01	<2.16e-1	n/a	n/a	n/a	2.23e-01	n/a
S99T000895			Europium-154 by GEA	uCi/mL	n/a	<6.36e-03	<4.33e-03	<5.27e-3	n/a	n/a	n/a	4.00e-03	n/a
S99T000895			Europium-155 by GEA	uCi/mL	n/a	<4.06e-03	<5.15e-02	<4.97e-2	n/a	n/a	n/a	5.10e-02	n/a
S99T000895			Radium-226 by GEA	uCi/mL	n/a	<2.94e-02	<4.20e-01	<4.05e-1	n/a	n/a	n/a	4.20e-01	n/a
S99T000895			Cm-243/244 by Extraction	uCi/mL	n/a	<3.70e-06	<4.20e-06	<3.56E-6	n/a	n/a	n/a	4.20e-06	1.00E+02

Opportunistic Analyte Report
AP107 GRAB2

CORE NUMBER: n/a
SEGMENT #: 7AP-99-3

SEGMENT PORTION: Supernate

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S99T000888			Etched Number on Vial		n/a	n/a	7AP-99-3	n/a	n/a	n/a	n/a	n/a	n/a
S99T000896			Pu-238 by Ion Exchange	uCi/mL	n/a	<3.57e-06	5.16e-06	<4.76E-6	n/a	n/a	n/a	4.74e-06	5.85E+00
S99T000896		D	Silver-ICP-Acid Dil.	ug/mL	97.80	<1.00e-02	4.300	4.100	4.200	4.76	88.90	2.010	n/a
S99T000896		D	Arsenic-ICP-Acid Dil.	ug/mL	99.20	<1.00e-01	< 20.10	<2.01e1	n/a	n/a	95.30	20.10	n/a
S99T000896		D	Boron-ICP-Acid Dil.	ug/mL	101.4	<5.00e-02	12.20	12.10	12.15	0.82	95.00	10.10	n/a
S99T000896		D	Barium-ICP-Acid Dil.	ug/mL	97.00	<5.00e-02	< 10.10	<1.01e1	n/a	n/a	86.20	10.10	n/a
S99T000896		D	Beryllium-ICP-Acid Dil.	ug/mL	98.60	<5.00e-03	< 1.010	<1.01e0	n/a	n/a	94.00	1.010	n/a
S99T000896		D	Bismuth-ICP-Acid Dil.	ug/mL	100.2	<1.00e-01	< 20.10	<2.01e1	n/a	n/a	95.00	20.10	n/a
S99T000896		D	Calcium-ICP-Acid Dil.	ug/mL	101.8	<1.00e-01	< 20.10	<2.01e1	n/a	n/a	104.0	20.10	n/a
S99T000896		D	Cadmium-ICP-Acid Dil.	ug/mL	101.0	<5.00e-03	< 1.010	<1.01e0	n/a	n/a	98.90	1.010	n/a
S99T000896		D	Cerium-ICP-Acid Dil.	ug/mL	99.80	<1.00e-01	< 20.10	<2.01e1	n/a	n/a	91.50	20.10	n/a
S99T000896		D	Cobalt-ICP-Acid Dil.	ug/mL	99.00	<2.00e-02	< 4.020	<4.02e0	n/a	n/a	96.00	4.020	n/a
S99T000896		D	Copper-ICP-Acid Dil.	ug/mL	100.8	<1.00e-02	< 2.010	<2.01e0	n/a	n/a	91.90	2.010	n/a
S99T000896		D	Potassium-ICP-Acid Dil.	ug/mL	100.2	<5.00e-01	1.50e+03	1.50e+03	1.50e+03	0.00	76.40	101.0	n/a
S99T000896		D	Lanthanum-ICP-Acid Dil.	ug/mL	100.6	<5.00e-02	< 10.10	<1.01e1	n/a	n/a	93.20	10.10	n/a
S99T000896		D	Lithium-ICP-Acid Dil.	ug/mL	99.60	<1.00e-02	< 2.010	<2.01e0	n/a	n/a	87.10	2.010	n/a
S99T000896		D	Magnesium-ICP-Acid Dil.	ug/mL	99.80	<1.00e-01	< 20.10	<2.01e1	n/a	n/a	92.90	20.10	n/a
S99T000896		D	Molybdenum-ICP-Acid Dil.	ug/mL	100.2	<5.00e-02	16.90	17.50	17.20	3.49	97.00	10.10	n/a
S99T000896		D	Neodymium-ICP-Acid Dil.	ug/mL	100.4	<1.00e-01	< 20.10	<2.01e1	n/a	n/a	92.00	20.10	n/a
S99T000896		D	Phosphorus-ICP-Acid Dil.	ug/mL	99.60	<2.00e-01	1.46e+03	1.47e+03	1.46e+03	0.68	108.0	40.20	n/a
S99T000896		D	Lead-ICP-Acid Dil.	ug/mL	99.60	<1.00e-01	< 20.10	<2.01e1	n/a	n/a	100.0	20.10	n/a
S99T000896		D	Sulfur-ICP-Acid Dil.	ug/mL	97.80	<1.00e-01	7.01e+02	711.0	706.0	1.42	102.0	20.10	n/a
S99T000896		D	Antimony-ICP-Acid Dil.	ug/mL	99.60	<6.00e-02	< 12.10	<1.21e1	n/a	n/a	98.20	12.10	n/a
S99T000896		D	Selenium-ICP-Acid Dil.	ug/mL	97.60	<1.00e-01	< 20.10	<2.01e1	n/a	n/a	104.0	20.10	n/a
S99T000896		D	Silicon-ICP-Acid Dil.	ug/mL	104.0	<5.00e-02	25.00	25.00	25.00	0.00	102.0	10.10	n/a
S99T000896		D	Samarium-ICP-Acid Dil.	ug/mL	100.2	<1.00e-01	< 20.10	<2.01e1	n/a	n/a	94.70	20.10	n/a
S99T000896		D	Strontium-ICP-Acid Dil.	ug/mL	98.20	<1.00e-02	< 2.010	<2.01e0	n/a	n/a	90.40	2.010	n/a
S99T000896		D	Titanium-ICP-Acid Dil.	ug/mL	100.4	<1.00e-02	< 2.010	<2.01e0	n/a	n/a	95.00	2.010	n/a
S99T000896		D	Thallium-ICP-Acid Dil.	ug/mL	97.20	<2.00e-01	< 40.20	<4.02e1	n/a	n/a	93.30	40.20	n/a
S99T000896		D	Uranium-ICP-Acid Dil.	ug/mL	102.0	<5.00e-01	<1.01e+02	<1.01e2	n/a	n/a	102.0	101.0	n/a
S99T000896		D	Vanadium-ICP-Acid Dil.	ug/mL	99.60	<5.00e-02	< 10.10	<1.01e1	n/a	n/a	95.70	10.10	n/a
S99T000896		D	Zinc-ICP-Acid Dil.	ug/mL	99.20	<1.00e-02	< 2.010	<2.01e0	n/a	n/a	97.90	2.010	n/a
S99T000896			Bromide by Ion Chromatograph	ug/mL	102.6	<1.25e-01	<2.65e+02	<2.65e2	n/a	n/a	101.2	265.1	n/a
S99T000896			Oxalate-IC-Dionex 4000/450	ug/mL	94.28	<1.05e-01	<2.23e+02	<2.23e2	n/a	n/a	99.62	222.7	n/a
S99T000896			Cobalt-60 by GEA	uCi/mL	108.9	<1.64e-03	<2.18e-03	<1.98e-3	n/a	n/a	n/a	2.00e-03	n/a
S99T000896			Niobium-94 by GEA	uCi/mL	n/a	<1.62e-03	<2.10e-03	<2.14e-3	n/a	n/a	n/a	2.00e-03	n/a
S99T000896			Ru/Rh-106 by GEA	uCi/mL	n/a	<3.03e-02	<3.47e-01	<3.43e-1	n/a	n/a	n/a	3.47e-01	n/a
S99T000896			Cesium-134 by GEA	uCi/mL	n/a	<1.64e-03	<1.76e-02	<1.74e-2	n/a	n/a	n/a	1.80e-02	n/a
S99T000896			Ce/Pr-144 by GEA	uCi/mL	n/a	<1.60e-02	<2.22e-01	<2.19e-1	n/a	n/a	n/a	2.22e-01	n/a
S99T000896			Europium-154 by GEA	uCi/mL	n/a	<6.36e-03	<4.97e-03	<5.53e-3	n/a	n/a	n/a	5.00e-03	n/a
S99T000896			Europium-155 by GEA	uCi/mL	n/a	<4.06e-03	<5.13e-02	<5.07e-2	n/a	n/a	n/a	5.10e-02	n/a
S99T000896			Radium-226 by GEA	uCi/mL	n/a	<2.94e-02	<4.17e-01	<4.12e-1	n/a	n/a	n/a	4.17e-01	n/a
S99T000896			Cm-243/244 by Extraction	uCi/mL	n/a	<3.70e-06	<3.36e-06	<3.52E-6	n/a	n/a	n/a	3.36e-06	1.00E+02

Opportunistic Analyte Report
AP107 GRAB2

CORE NUMBER: n/a
SEGMENT #: 7AP-99-4

SEGMENT PORTION: Supernate

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S99T000889			Etched Number on Vial		n/a	n/a	7AP-99-4	n/a	n/a	n/a	n/a	n/a	n/a
S99T000897			Pu-238 by Ion Exchange	uCi/mL	n/a	<3.57e-06	1.28e-05	1.34e-05	1.31e-05	4.58	n/a	4.98e-06	4.02E+00
S99T000897		D	Silver-ICP-Acid Dil.	ug/mL	97.80	<1.00e-02	5.060	4.760	4.910	6.11	n/a	2.010	n/a
S99T000897		D	Arsenic-ICP-Acid Dil.	ug/mL	99.20	<1.00e-01	< 20.10	<2.01e1	n/a	n/a	n/a	20.10	n/a
S99T000897		D	Boron-ICP-Acid Dil.	ug/mL	101.4	<5.00e-02	14.50	13.40	13.95	7.89	n/a	10.10	n/a
S99T000897		D	Barium-ICP-Acid Dil.	ug/mL	97.00	<5.00e-02	< 10.10	<1.01e1	n/a	n/a	n/a	10.10	n/a
S99T000897		D	Beryllium-ICP-Acid Dil.	ug/mL	98.60	<5.00e-03	< 1.010	<1.01e0	n/a	n/a	n/a	1.010	n/a
S99T000897		D	Bismuth-ICP-Acid Dil.	ug/mL	100.2	<1.00e-01	< 20.10	<2.01e1	n/a	n/a	n/a	20.10	n/a
S99T000897		D	Calcium-ICP-Acid Dil.	ug/mL	101.8	<1.00e-01	< 20.10	<2.01e1	n/a	n/a	n/a	20.10	n/a
S99T000897		D	Cadmium-ICP-Acid Dil.	ug/mL	101.0	<5.00e-03	< 1.010	<1.01e0	n/a	n/a	n/a	1.010	n/a
S99T000897		D	Cerium-ICP-Acid Dil.	ug/mL	99.80	<1.00e-01	< 20.10	<2.01e1	n/a	n/a	n/a	20.10	n/a
S99T000897		D	Cobalt-ICP-Acid Dil.	ug/mL	99.00	<2.00e-02	< 4.020	<4.02e0	n/a	n/a	n/a	4.020	n/a
S99T000897		D	Copper-ICP-Acid Dil.	ug/mL	100.8	<1.00e-02	< 2.010	<2.01e0	n/a	n/a	n/a	2.010	n/a
S99T000897		D	Potassium-ICP-Acid Dil.	ug/mL	100.2	<5.00e-01	1.68e+03	1.60e+03	1.64e+03	4.88	n/a	101.0	n/a
S99T000897		D	Lanthanum-ICP-Acid Dil.	ug/mL	100.6	<5.00e-02	< 10.10	<1.01e1	n/a	n/a	n/a	10.10	n/a
S99T000897		D	Lithium-ICP-Acid Dil.	ug/mL	99.60	<1.00e-02	< 2.010	<2.01e0	n/a	n/a	n/a	2.010	n/a
S99T000897		D	Magnesium-ICP-Acid Dil.	ug/mL	99.80	<1.00e-01	< 20.10	<2.01e1	n/a	n/a	n/a	20.10	n/a
S99T000897		D	Molybdenum-ICP-Acid Dil.	ug/mL	100.2	<5.00e-02	19.70	18.80	19.25	4.68	n/a	10.10	n/a
S99T000897		D	Neodymium-ICP-Acid Dil.	ug/mL	100.4	<1.00e-01	< 20.10	<2.01e1	n/a	n/a	n/a	20.10	n/a
S99T000897		D	Phosphorus-ICP-Acid Dil.	ug/mL	99.60	<2.00e-01	1.60e+03	1.61e+03	1.60e+03	0.62	n/a	40.20	n/a
S99T000897		D	Lead-ICP-Acid Dil.	ug/mL	99.60	<1.00e-01	< 20.10	<2.01e1	n/a	n/a	n/a	20.10	n/a
S99T000897		D	Sulfur-ICP-Acid Dil.	ug/mL	97.80	<1.00e-01	7.75e+02	775.0	775.0	0.00	n/a	20.10	n/a
S99T000897		D	Antimony-ICP-Acid Dil.	ug/mL	99.60	<6.00e-02	< 12.10	<1.21e1	n/a	n/a	n/a	12.10	n/a
S99T000897		D	Selenium-ICP-Acid Dil.	ug/mL	97.60	<1.00e-01	< 20.10	<2.01e1	n/a	n/a	n/a	20.10	n/a
S99T000897		D	Silicon-ICP-Acid Dil.	ug/mL	104.0	<5.00e-02	27.00	26.20	26.60	3.01	n/a	10.10	n/a
S99T000897		D	Samarium-ICP-Acid Dil.	ug/mL	100.2	<1.00e-01	< 20.10	<2.01e1	n/a	n/a	n/a	20.10	n/a
S99T000897		D	Strontium-ICP-Acid Dil.	ug/mL	98.20	<1.00e-02	< 2.010	<2.01e0	n/a	n/a	n/a	2.010	n/a
S99T000897		D	Titanium-ICP-Acid Dil.	ug/mL	100.4	<1.00e-02	< 2.010	<2.01e0	n/a	n/a	n/a	2.010	n/a
S99T000897		D	Thallium-ICP-Acid Dil.	ug/mL	97.20	<2.00e-01	< 40.20	<4.02e1	n/a	n/a	n/a	40.20	n/a
S99T000897		D	Uranium-ICP-Acid Dil.	ug/mL	102.0	<5.00e-01	<1.01e+02	<1.01e2	n/a	n/a	n/a	101.0	n/a
S99T000897		D	Vanadium-ICP-Acid Dil.	ug/mL	99.60	<5.00e-02	< 10.10	<1.01e1	n/a	n/a	n/a	10.10	n/a
S99T000897		D	Zinc-ICP-Acid Dil.	ug/mL	99.20	<1.00e-02	< 2.010	<2.01e0	n/a	n/a	n/a	2.010	n/a
S99T000897			Bromide by Ion Chromatograph	ug/mL	102.6	<1.25e-01	<2.65e+02	<2.65e2	n/a	n/a	n/a	265.1	n/a
S99T000897			Oxalate-IC-Dionex 4000/450	ug/mL	94.28	<1.05e-01	<2.23e+02	<2.23e2	n/a	n/a	n/a	222.7	n/a
S99T000897			Cobalt-60 by GEA	uCi/mL	108.9	<1.64e-03	<1.78e-03	<2.05e-3	n/a	n/a	n/a	2.00e-03	n/a
S99T000897			Niobium-94 by GEA	uCi/mL	n/a	<1.62e-03	<2.19e-03	<2.31e-3	n/a	n/a	n/a	2.00e-03	n/a
S99T000897			Ru/Rh-106 by GEA	uCi/mL	n/a	<3.03e-02	<3.54e-01	<3.81e-1	n/a	n/a	n/a	3.54e-01	n/a
S99T000897			Cesium-134 by GEA	uCi/mL	n/a	<1.64e-03	<1.78e-02	<1.91e-2	n/a	n/a	n/a	1.80e-02	n/a
S99T000897			Ce/Pr-144 by GEA	uCi/mL	n/a	<1.60e-02	<2.28e-01	<2.43e-1	n/a	n/a	n/a	2.28e-01	n/a
S99T000897			Europium-154 by GEA	uCi/mL	n/a	<6.36e-03	<5.88e-03	<5.96e-3	n/a	n/a	n/a	6.00e-03	n/a
S99T000897			Europium-155 by GEA	uCi/mL	n/a	<4.06e-03	<5.24e-02	<5.60e-2	n/a	n/a	n/a	5.20e-02	n/a
S99T000897			Radium-226 by GEA	uCi/mL	n/a	<2.94e-02	<4.25e-01	<4.56e-1	n/a	n/a	n/a	4.25e-01	n/a
S99T000897			Cm-243/244 by Extraction	uCi/mL	n/a	<3.70e-06	<3.21e-06	<3.16E-6	n/a	n/a	n/a	3.21e-06	1.00E+02

417

DISTRIBUTION SHEET

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