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Section 1 of 2

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Tank 241-BY-109, Cores 201 and 203 Analytical Results for the Final Report

Ruth A. Esch

Waste Management of Hanford, Inc., Richland, WA 99352
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ANALYTICAL SERVICES

**TANK 241-BY-109, CORES 201 AND 203,
ANALYTICAL RESULTS FOR THE FINAL REPORT**

Project Coordinator: RUTH A. ESCH

Prepared for the U.S. Department of Energy
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by

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222-S ANALYTICAL SERVICES

TANK 241-BY-109, CORES 201 AND 203, ANALYTICAL RESULTS FOR THE FINAL REPORT

This document is the final laboratory report for tank 241-BY-109 push mode core segments collected between June 6, 1997 and June 17, 1997. The segments were subsampled and analyzed in accordance with the *Tank Push Mode Core Sampling and Analysis Plan* (TSAP) (Bell, 1997), the *Tank Safety Screening Data Quality Objective* (Safety DQO) (Dukelow, et al., 1995). The analytical results are included in Table 1.

None of the subsamples submitted for differential scanning calorimetry (DSC) and Total Alpha Activity (AT) analyses exceeded the notification limits stated in the DQO (Dukelow, et al., 1995) and the TSAP (Bell, 1997). The statistical results of the 95% confidence interval on the mean calculations are provided by the Tank Waste Remediation Systems (TWRS) Technical Basis Group in accordance with the Memorandum of Understanding (Schreiber, 1997) and not considered in this report.

Total Organic Carbon (TOC) analyses were performed on all subsamples that produced exotherms during the DSC analysis. All results were less than the notification limit of 3 weight percent TOC (30,000 $\mu\text{g C/g}$).

Appearance and Sample Handling

Attachment 1 is provided as a cross-reference for relating the tank farm customer identification numbers for the segments and blanks with the 222-S Laboratory sample numbers and the portion of sample analyzed.

Core 201

Five push mode core segments were removed from tank 241-BY-109 riser 12C between June 6, 1997 and June 13, 1997. Segments were received by the 222-S Laboratory between June 9, 1997 and June 16, 1997. Table 2 summarizes the extrusion information.

The chain of custody form for segment 3R1 indicated that this was a retake of segment 3. However, only one sampler was received for segment 3. Segments 1 and 4 were sampled using the Retained Gas Sampler (RGS) and extruded by the Process Chemistry Group.

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Core 203

Seven push mode core segments were removed from tank 241-BY-109 riser 10B between June 16, 1997 and June 17, 1997. Segments were received by the 222-S Laboratory between June 17, 1997 and June 18, 1997. Table 3 summarizes the extrusion information.

Segments 2, 5 and 6 were sampled using the Retained Gas Sampler and extruded by the Process Chemistry Group. The chain of custody form indicated that the cable was broken on the sampler for segment 2 before it was received at the 222-S Laboratory.

Field Blank

A field blank was provided to the 222-S Laboratory with core 203. It underwent the same analyses as the drainable liquid as indicated in the TSAP (Bell, 1997).

Hydrostatic Head Fluid (HHF)

A sample of the hydrostatic head fluid (HHF) lithium bromide (LiBr) solution was provided with core 201 and identified as Blank - LiBr. It was analyzed by Ion Chromatography (IC) and Inductively Coupled Plasma (ICP).

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Table 2. Sample Receipt and Extrusion Information for 241-BY-109, Core 201

Customer Id	Segment	Date Sampled	Date Received	Date Extruded	Inches Extruded*	Liquid Recovered (g)	Solids Recovered (g)	Sample Description
201-01	1	6/6/97	6/9/97	6/25/97	N/A	N/A	39.3 - Whole Segment	This segment was sampled using the Retained Gas Sampler (RGS) and extruded by the Process Chemistry Group. Following RGS extrusion, the solids resembled moist salt and were dry on the surface. The solids were brown in color. LiBr was added to drill string.
201-02	2	6/6/97	6/9/97	6/10/97	16.0	7.8 - Liner	199.9 - Upper Half 151.4 - Lower Half	The solids were brown in color and resembled wet sludge. The lower portion appeared to contain some granular material. No drainable liquid was collected. LiBr was added to drill string.
201-3R1	3R1	6/12/97	6/16/97	6/20/97	15.0	18.7 - Liner 39.1 - Drainable	185.4 - Upper Half 154.3 - Lower Half	The solids were gray in color and resembled sludge slurry. Collected approximately 20 mLs of liner liquid and 30 mLs of drainable liquid. The liner liquid was yellow-brown and opaque, the drainable liquid was yellow-green and opaque. No organic layer was observed. LiBr was added to drill string.
201-4	4	6/12/97	6/16/97	7/1/97	N/A	N/A	367.6 - Whole Segment	This segment was sampled using the Retained Gas Sampler (RGS) and extruded by the Process Chemistry Group. Following RGS extrusion, the solids resembled salt/sludge slurry, but were dry on the surface. The solids were brown in color. LiBr was added to drill string.
201-5	5	6/13/97	6/16/97	6/20/97	2.0	146.2 - Drainable	78.5 - Upper Half 38.5 - Lower Half	The upper half solids resembled a brown sludge slurry mixed with gray salt slurry. The lower half solids were gray in color and resembled a salt slurry. Collected approximately 100 mLs of drainable liquid which was yellow-brown and opaque. No organic layer was observed. LiBr was added to drill string.
Blank-LiBr	N/A	6/13/97	6/13/97	N/A	N/A	N/A	N/A	LiBr blank.

*Approximate Inches Extruded

**GBR - Gas-Bubble Retention and Release Studies

N/A - Information was not available or not applicable.

Table 3. Sample Receipt and Extrusion Information for 241-BY-109, Core 203

Customer Id	Segment	Date Sampled	Date Received	Date Extruded	Inches Extruded*	Liquid Recovered (g)	Solids Recovered (g)	Sample Description
203-1	1	6/16/97	6/18/97	6/20/97	3.0	0.0	88.71 - Lower Half	The solid was an unseparable mixture of gray and white dry salt crystals. No drainable liquid was collected. LBR was added to drill string.
203-2	2	6/16/97	6/18/97	7/9/97	N/A	N/A	171.3 - Whole Segment	This segment was sampled using the Retained Gas Sampler (RGS) and extruded by the Process Chemistry Group. Following RGS extrusion, the solids were a gray-brown moist sludge with gray-colored liquid. The sludge may have dried due to the broken sampler (this segment was indicated on the chain of custody) or due to an improperly sealed piston during the extrusion. LBR was added to drill string.
203-03	3	6/16/97	6/18/97	6/20/97	19.0	0.0	244.12 - Upper Half 221.83 - Lower Half	The upper half solids were gray in color and resembled a moist salt. The lower half solids were gray in color and resembled a moist salt, but appeared more granular than the upper half. No drainable liquid was collected. LBR was added to drill string.
203-04	4	6/16/97	6/18/97	6/20/97	19.0	0.0	219.79 - Upper Half 233.15 - Lower Half	The upper half and lower half solids were both gray in color and resembled a moist salt. No drainable liquid was collected. LBR was added to drill string.
203-05	5	6/16/97	6/18/97	7/11/97	N/A	N/A	379.1 - Whole Segment	This segment was sampled using the Retained Gas Sampler (RGS) and extruded by the Process Chemistry Group. Following RGS extrusion, the solids were gray-brown and resembled a smooth-textured homogenized sludge slurry. LBR was added to drill string.
203-6	6	6/17/97	6/18/97	7/16/97	N/A	N/A	315.4 - Whole Segment	This segment was sampled using the Retained Gas Sampler (RGS) and extruded by the Process Chemistry Group. Following RGS extrusion, the solids were a creamy black in color and resembled a smooth-textured homogenized sludge slurry. LBR was added to drill string.
203-7	7	6/17/97	6/18/97	6/23/97	18.0	0.0	189.9 - Upper Half 311.3 - Lower Half	The upper half solids were tan in color and resembled a creamy textured wet sludge. The lower half solids were white in color and resembled a creamy textured wet sludge. There was a tan colored syrup-like liquid coating the lower portion of this half segment. No drainable liquid was collected. LBR was added to drill string.
Field Blank	N/A	6/16/97	6/17/97	N/A	N/A	N/A	N/A	Liquid was clear and colorless.

*Approximate Inches Extruded N/A - Information was not available or not applicable.

Analytical Results Summary

The data summary table (Table 1) included in this report compiles the analytical results that comply with the applicable DQO. Some multielement methods provide results for analytes that are not required by the TSAP or the DQO. These analytes are considered "opportunistic" and the results are presented in Appendix A. There are no customer defined quality control (QC) parameters for these analytes and the results are not discussed in this document..

In the tables, the aliquot class (A#) column indicates the type of preparation performed prior to analysis. A "D" indicates that an acid dilution was made on a liquid sample, an "A" indicates an acid digest of a solid, an "F" indicates a fusion digest of a solid, a "W" indicates a water digest of a solid and a blank indicates a direct sample analysis.

Inorganic Analyses

Differential Scanning Calorimetry (DSC)

The DSC analyses were performed in duplicate on direct subsamples. The exothermic energy based on the dry weight of material was calculated for each using the average TGA result. The standard recoveries for this analysis were within the required limits. None of the results exceeded the notification limit of 480 Joules/g stated in the TSAP (Bell, 1997).

The relative percent difference (RPD) between sample and duplicate results for the liquid subsamples were all less than the required 30% RPD. Five of the eighteen solid subsamples had RPDs greater than 30%: core 201, segment 3R1 upper half solids (S97T001463) - 31.4%; core 201, segment 4 whole segment (S97T001736) - 58.1%; core 203, segment 3 upper half solids (S97T001486) - 34.1%; core 203, segment 5 whole segment (S97T001786) - 200% and core 203, segment 4 upper half solids (S97T001487) - 64.4%.

With the exception of core 201, segment 3R1 and core 203, segment 5, the descriptions of these segments indicate that there were significant salt crystals present to create a matrix that would be difficult to homogenize. Core 201, segment 3R1 and core 203, segment 5 both resembled sludge slurry. However, since the segments collected previous to these were described as containing granular pieces or salt, the two segments in question may have also contained some granular salts. For core 203, segment 5 salts may have been unnoticed because this RGS segment was stirred during the extrusion. The inhomogeneity may be the cause of the high RPDs for these five samples. Since the results were well below the notification limit, no reruns were requested.

A triplicate analysis was performed for core 203, segment 7 upper half solids (S97T001488) even though the RPD for the sample and duplicate was less than 30% (22.5%). There was better agreement between the duplicate and triplicate results. The three results are presented in Table 4. No other additional analyses were performed because the results were well below the notification limit.

Table 4: Dry Calculated DSC Triplicate Results for Tank 241-BY-109

Customer ID	Sample #	Result (Joules/g)	Duplicate (Joules/g)	Triplicate (Joules/g)	Mean (Joules/g)
C203 S7 UH	S97T001488	45.01	56.44	52.98	51.48

Thermogravimetric Analysis (TGA)

The TGA analyses were performed in duplicate on direct subsamples. Typically the results for TGA analysis are determined by summing the weight loss steps that begin below 200° C. For this tank, the result for eleven of the twenty-one subsamples was the sum of two weight loss steps that began below 200° C. One of these subsamples had two weight loss steps, but only the first was included in the results because the second began above 200° C. The remaining ten subsamples had only one weight loss step. More information may be obtained by examining the raw data. The standard recoveries and RPDs for this analysis were within the required limits.

Bulk Density/Specific Gravity

Bulk density was performed on the solid subsamples as required by the TSAP (Bell, 1997). There was insufficient solids to determine the bulk density for core 201, segments 1 and 5. The results of the bulk density test ranged from 1.61 g/mL to 2.00 g/mL. The highest bulk density result was greater than the 1.5 g/mL used to determine the total alpha activity action limit for the solid matrix stated in the TSAP (Bell, 1997). Therefore, the 2.00 g/mL density result was used to recalculate the limit. There were no defined QC parameters for this analysis.

The specific gravity (Sp.G.) was determined for the drainable liquids from core 201, segments 3R1 and 5 and the field blank. The results ranged from 1.483 to 1.524 for the drainable liquids. The average Sp.G. result for the field blank was 0.997. The standard recoveries and RPDs for this analysis were within the required limits.

Percent Water (% Water) by Gravimetric Analysis and Near Infrared Spectroscopy

The gravimetric percent water (%water) analysis was performed in duplicate on direct subsamples of the non-RGS segments, but only those which had sufficient material to determine the percent water by both gravimetric analysis and near infrared spectroscopy (near IR). The standard recoveries and RPDs for this analysis were within the required limits. Results from the near IR analyses are presented in Appendix B.

Ion Chromatography (IC)

The ion chromatography (IC) analysis was performed to check for intrusion of hydrostatic head fluid that was added to the drill string during core sampling. Bromide (Br⁻) was the only required

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analyte for this analysis. All other analytes are considered "opportunistic" and are presented in Appendix A. The standard recoveries, RPDs and spike recoveries for the Br⁻ analysis were all within the required limits.

Bromide was observed in ten of the eighteen solid subsamples indicating hydrostatic head fluid intrusion into these samples. The concentration of Br⁻ in these samples ranged from $1.34\text{e}+3 \mu\text{g/g}$ to $3.21\text{e}+3 \mu\text{g/g}$. The eight remaining subsamples reported Br⁻ less than the detection limit. Due to required dilutions, the detection limits were between $900 \mu\text{g/g}$ and $1300 \mu\text{g/g}$.

The concentration of Br⁻ in the LiBr blank was consistent with 0.3 M LiBr solution. No Br⁻ was detected in the field blank.

The blank reported for core 201, segment 2 LH (S97T001350), core 201 segment 3R1 LH (S97T001574) and core 203, segment 7 UH (S97T001559) was an instrument blank. Several reanalyses were required and the preparation blank (prep blank) was depleted. Initial analysis of the prep blank indicated no Br⁻ contamination.

Inductively Coupled Plasma Spectrophotometry (ICP)

The inductively coupled plasma (ICP) analysis was performed to check for intrusion of hydrostatic head fluid that was added to the drill string during core sampling. Lithium (Li) was the only required analyte for this analysis. All other analytes are considered "opportunistic" and are presented in Appendix A. The standard recoveries and spike recoveries for the Li analysis were within the required limits. RPDs were within the required limit with the one exception discussed below.

Lithium was observed in the seventeen of the eighteen solid subsamples indicating hydrostatic head fluid intrusion into these samples. The concentration of Br⁻ in these samples ranged from $7.68 \mu\text{g/g}$ to $283 \mu\text{g/g}$. Li was detected at very low concentrations in seven of the eight subsamples where Br⁻ was not detected. This was possible because of lower detection limits for the ICP due to less required dilution compared to the IC. Discrepancies in concentration between Li and Br⁻ where high concentrations of Br⁻ were detected may be attributed to the precipitation of Li out of solution.

The concentration of Li in the LiBr blank was consistent with 0.3 M LiBr solution. No Li was detected in the field blank.

Core 203, segment 2 (S97T001823) had an RPD greater than the required 20% (78.4%). Since the reported concentrations were nearly ten times the detection limit, the high RPD cannot be attributed to instrument noise at low concentrations. However, this segment was described as being a mixture of moist and dry salt. The dry salts make homogenization difficult and the high RPD may be attributed to this known inhomogeneity. An acceptable spike recovery was obtained for this sample and no reruns were requested.

Total Organic Carbon by Persulfate Oxidation (TOC)

TOC analysis by persulfate oxidation/coulometry was required only for subsamples which exhibited exotherms during the DSC analysis. The analysis was performed in duplicate on direct subsamples. None of the results exceeded the TOC notification limit of 30,000 $\mu\text{g C/g}$. The TIC results are considered "opportunistic" and are presented in Appendix A.

For all TIC and TOC analyses, an Analysis Report worksheet is included for each sample as raw data. Due to programming limitations with the instrument software, the sample size listed on the worksheet is incorrect. This value is not used in the final calculations and has no bearing on the results in Table 1.

The standard recoveries for these analyses were within the required limits. Four of the five subsamples with spike analysis requested had recoveries within the required limits of 75% - 125%. Core 201, segment 3R1 upper half solids (S97T001463) had a recovery of 9.82%. This spike failure is believed to be the result of the inhomogeneity of this sample which was described as a sludge slurry. Further evidence of inhomogeneity was seen in the duplicate analysis, as described below. No additional analysis was requested.

Two of the ten subsamples submitted for this analysis had RPDs greater than 20%: core 201, segment 3R1 UH (S97T001463) - 57.2% and core 201, segment 4 WS (S97T001736) - 46.7%. Triplicate analyses were performed for each of these and the results are presented in Table 5. The results presented in the table indicate that the variability may be related to sample inhomogeneity. Both of these samples were described as slurry samples, indicating that there may have been separated liquid in the subsample vial. The presence of separated liquid would make it difficult to obtain representative duplicates. No other additional analyses were requested.

Triplicate analyses were also performed for core 203, segment 3 lower half solids (S97T001483) and core 203, segment 7 upper half solids (S97T001488) because of high RPDs for the TIC analysis. The TOC results for these two samples are also included in Table 5.

Table 5: TOC Triplicate Results for Tank 241-BY-109

Customer ID	Sample #	Result ($\mu\text{g/g}$)	Duplicate ($\mu\text{g/g}$)	Triplicate ($\mu\text{g/g}$)	Mean ($\mu\text{g/g}$)
C201 S3R1 UH	S97T001463	5.33e+03	2.96e+03	3.43e+03	3.91e+03
C201 S4 WS	S97T001736	2.20e+03	3.54e+03	3.50e+03	3.08e+03
C203 S3 LH	S97T001483	4.57e+03	4.80e+03	4.69e+03	4.69e+03
C203 S7 UH	S97T001488	8.27e+03	9.91e+03	8.75e+03	8.98e+03

Radionuclide Analyses

Total Alpha (AT)

The total alpha (AT) analyses were performed in duplicate. The standard recoveries for this analysis were within the required limits of 70% - 130% recovery. All results were below the total alpha activity action limits of 61.5 $\mu\text{Ci/mL}$ for the drainable liquids and 30.7 $\mu\text{Ci/g}$ (based on a bulk density of 2.00 g/mL) for the solids.

RPDs were below 20% for both of the drainable liquid subsamples and ten of the thirteen solid subsamples analyzed. Three solid subsamples had a reported RPD greater than 20%: core 201, segment 5 LH (S97T001577) - 37.5%, core 203, segment 1 LH (S97T001541) - 26.8% and core 203, segment 6 WS (S97T001792) - 20.4%. The description of these segment portions in Tables 2 and 3 indicate that the samples were not very homogeneous. Two of the segments were described as slurries, indicating there may have been liquid separated from the solid in the sample vial. This is one possible explanation for the high RPDs.

In addition, the alpha activity was low for these samples, resulting in high counting errors. The results for two of the samples were only two to three times the detection limit (DL). Typically if the counting error is the same or greater than the RPD, as was the case with these three samples, additional analyses will not significantly change the results or improve the precision of the data. Since the results were well below the action limit, no reruns were requested.

Spike recoveries were within the required range of 75% - 125% recovery with one exception: core 203, segment 2 WS - 64.64% recovery. This sample was described as a dry salt and it is possible that there may have been a problem with high solids on the sample mount causing self absorption. However, since the spike recovery was within the control limits of the standard used for the spike, and the sample result was well below the total alpha notification limit, no rerun was requested.

HNF-SD-WM-DP-259, REV. 0

Procedures

Table 6 lists the analytical procedures used for performing the safety screening analyses. Abbreviations for analyses are defined in the table notes.

Table 6: Analytical Procedures

Analysis	Preparation Procedure	Analysis Procedure
Inorganic Analyses		
Bulk Density	Direct Analysis	LO-160-103 Rev. C-0
DSC	Direct Analysis	LA-514-114 Rev. D-1
TGA	Direct Analysis	LA-514-114 Rev. D-1
Sp.G.	Direct Analyses	LA-510-112 Rev. D-1
Grav. % Water	Direct Analysis	LA-564-101 Rev. G-0
% Water NIR	Direct Analysis	LT-510-102 Rev. A-0
IC	Liquid - Direct Analysis Solid - LA-504-101 Rev. F-0 +	LA-533-105 Rev. D-1
ICP	Liquid - Acid Dilution Solid - LA-505-163 Rev. A-0 ++	LA-505-151 Rev. E-1 LA-505-161 Rev. C-2
TOC - Persulfate Oxidation	Direct Analysis - Liquid & Solid	LA-342-100 Rev. E-0
Radionuclide Analyses		
Total Alpha	Liquid - Direct Analysis Solid - LA-549-141 Rev. F-0 +++	LA-508-101 Rev. G-0

Notes: + - Water digestion procedure
 ++ - Acid digestion procedure
 +++ - Fusion digestion procedure

Abbreviations:

DSC = differential scanning calorimetry
 TGA = thermogravimetric analysis
 Grav. % Water = gravimetric percent water
 IC = ion chromatography
 NIR = near infrared analysis

ICP = inductively coupled plasma spectrometry
 TOC = total organic carbon
 TIC = total inorganic carbon
 Sp.G. = specific gravity

HNF-SD-WM-DP-259, REV. 0

References

- Bell, K. E., 1997, *Tank 241-BY-109 Push Mode Core Sampling and Analysis Plan*, HNF-SD-WM-TSAP-133, Rev. 0A, Lockheed Martin Hanford Corporation, Richland, WA 99352.
- Dukelow, G. T., et al., 1995, *Tank Safety Screening Data Quality Objective*, WHC-SD-WM-SP-004, Rev. 2, Westinghouse Hanford Company, Richland, WA 99352.
- Schreiber, R. D., 1997, *Fiscal Year 1997 Memorandum of Understanding for the TWRS Characterization Project*, HNF-SD-WM-SD-023, Rev. 0, Lockheed Martin Hanford Corporation, Richland, WA 99352.

HNF-SD-WM-DP-259, REV. 0

ATTACHMENT 1

BY-109 SAMPLE BREAKDOWN

HNH-SD-WM-DP-259, REV. 0

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Attachment 1

BY-109
Core 201
Blank - LiBr
S97T001368

BY-109
Core 201
Seg: 1 RGS
S97T001330

Attachment 1

HNF-SD-WM-DP-259, REV. 0

BY-109
Core 201
Seg: 2
S97T001331

Attachment 1

HNF-SD-WM-DP-259, REV. 0

BY-109
Core 201
Seg: 3R1
S97T001396

Attachment 1

Lower Half Solids

S97T001442
Homogenize
Bulk Density

Upper Half Solids

S97T001445
Homogenize

Drainable Liquid

S97T001447
Filter

Liner Liquid

S97T001457
Filter

S97T001459
DSC
TGA
Grav. % Water

S97T001461
ARCHIVE
Near IR %Water

S97T001463
DSC
TGA
TIC/TOC
Grav. % Water

S97T001465
ARCHIVE
Near IR %Water

S97T001467
DSC
TGA
AT
Sp.G.

S97T001469
ICP: Li
IC: Br

S97T001470
ICP: Li
IC: Br

S97T001572
FUSION
AT

S97T001881
ACID DIGEST
ICP - Li

S97T01574
H2O DIGEST
IC - Br

S97T001575
ACID DIGEST
ICP - Li

S97T01576
H2O DIGEST
IC - Br

HNF-SD-WM-DP-253, REV. 0

BY-109
Core 201
Seg: 4 RGS
S97T001398

Attachment 1

HNF-SD-WM-DP-209, REV. 0

BY-109
Core 201
Seg: 5
S97T001397

Attachment 1

HNF-SD-MM-DP-257 REV. 0

BY-109
Core 203
Field Blank
S97T001399

Attachment 1

DSC
TGA
Sp.G.
IC: Br
ICP: Li

HNF-SD-WM-DP-259, REV. 0

BY-109
Core 203
Seg: 1
S97T001419

Attachment 1

HNF-SD-WM-DF-258, REV. 0

BY-109
Core 203
Seg: 2 RGS
S97T001412

Attachment 1

HNIF-SD-WM-DP-229, REV. 0

BY-109
Core 203
Seg: 3
S97T001415

Attachment 1

HNF-SD-WM-DP-259 REV. 0

BY-109
Core 203
Seg: 4
S97T001420

Attachment 1

HNF-SD-WM-DR-209 REV. 0

BY-109
Core 203
Seg: 5 RGS
S97T001413

Attachment 1

4NF-SD-WM-DP-259 REV. 0

BY-109
Core 203
Seg: 6 RGS
S97T001414

Attachment 1

HNF-SD-WM-DP-259 REV. 0

BY-109
Core 203
Seg: 7
S97T001421

Attachment 1

HNF-SD-MM-DP-259, REV. 0

HNF-SD-WM-DP-259, REV. 0

SAMPLE DATA SUMMARY

HNF-SD-WM-DP-259, REV. 0

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Table 1: Data Summary Report
BY-109 (P)

CORE NUMBER: 201
SEGMENT #: n/a

SEGMENT PORTION: Hydrostatic Head Fluid

Sample#	R A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S97T001368	D	Lithium-ICP-Acid Dil.	ug/mL	99.00	<1.00e-02	2.08e+03	2.07e+03	2.08e+03	0.48	n/a	2.00e-01	n/a
S97T001368		Bromide by Ion Chromatograph	ug/mL	100.5	<1.25e-01	2.43e+04	2.44e+04	2.44e+04	0.41	n/a	138.9	n/a

HNF-SD-WM-DP-25% REV. 0

Table 1: Data Summary Report
BY-109 (P)

CORE NUMBER: 201
SEGMENT #: 1

SEGMENT PORTION: W Whole Segment

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S97T001536			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
S97T001536			DSC Exotherm on Perkin Elmer	Joules/g	102.1	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S97T001536			% Water by TGA on Perkin Elmer	%	100.9	n/a	40.40	41.44	40.92	2.54	n/a	n/a	n/a
S97T001538	F		Alpha of Digested Solid	uCi/g	88.50	<2.58e-03	9.06e-02	8.81e-02	8.93e-02	2.80	n/a	6.00e-03	1.16E+01
S97T001540	W		Bromide by Ion Chromatograph	ug/g	98.98	<1.25e-01	2.08e+03	2.21e+03	2.15e+03	6.06	n/a	1.26e+03	n/a
S97T001821	A		Lithium -ICP-Acid Digest	ug/g	91.20	<1.00e-02	1.22e+02	139.0	130.5	13.0	n/a	19.70	n/a

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HNF-SD-WM-DP-253 REV. 0

Table 1: Data Summary Report
BY-109 (P)

CORE NUMBER: 201
SEGMENT #: 2

SEGMENT PORTION: Liner Liquid

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S97T001355		D	Lithium-ICP-Acid Dil.	ug/mL	102.8	<1.00e-02	9.54e+02	1.16e+03	1.06e+03	19.5	n/a	1.010	n/a
S97T001355			Bromide by Ion Chromatograph	ug/mL	95.59	<1.25e-01	3.50e+04	3.52e+04	3.51e+04	0.57	n/a	517.6	n/a

U Upper Half of Segment: U Upper Half of Segment

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S97T001346			DSC Exotherm Dry Calculated	Joules/g Dry	n/a	n/a	34.38	36.73	35.55	6.61	n/a	n/a	n/a
S97T001346			DSC Exotherm on Perkin Elmer	Joules/g	98.66	n/a	19.62	20.96	20.29	6.60	n/a	n/a	n/a
S97T001346			% Water by TGA on Perkin Elmer	%	99.66	n/a	45.91	39.96	42.94	13.9	n/a	n/a	n/a
S97T001346			% Water by Gravimetric	%	99.19	n/a	34.44	35.98	35.21	4.37	n/a	1.00e-02	n/a
S97T001346			TOC by Persulfate/Coulometry	ug/g	91.67	2.00e-01	9.23e+03	1.08e+04	1.00e+04	15.7	n/a	40.00	n/a
S97T001352	A		Lithium -ICP-Acid Digest	ug/g	95.60	<1.00e-02	1.02e+02	115.0	108.5	12.0	n/a	18.30	n/a
S97T001353	W		Bromide by Ion Chromatograph	ug/g	107.1	<1.25e-01	2.00e+03	2.11e+03	2.06e+03	5.35	n/a	1.03e+03	n/a

L Lower Half of Segment: L Lower Half of Segment

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S97T001342			Bulk Density of Sample	g/mL	n/a	n/a	1.850	n/a	n/a	n/a	n/a	5.00e-01	n/a
S97T001344			DSC Exotherm Dry Calculated	Joules/g Dry	n/a	n/a	37.05	43.93	40.49	17.0	n/a	n/a	n/a
S97T001344			DSC Exotherm on Perkin Elmer	Joules/g	98.66	n/a	20.54	24.35	22.45	17.0	n/a	n/a	n/a
S97T001344			% Water by TGA on Perkin Elmer	%	99.66	n/a	45.61	43.52	44.56	4.69	n/a	n/a	n/a
S97T001344			% Water by Gravimetric	%	97.46	n/a	35.10	34.70	34.90	1.15	n/a	1.00e-02	n/a
S97T001344			TOC by Persulfate/Coulometry	ug/g	91.67	2.00e-01	6.04e+03	6.20e+03	6.12e+03	2.61	112.0	40.00	n/a
S97T001348	F		Alpha of Digested Solid	uCi/g	98.50	<4.72e-03	1.41e-01	1.56e-01	1.48e-01	10.1	108.4	1.00e-02	1.73E+01
S97T001349	A		Lithium -ICP-Acid Digest	ug/g	97.70	<1.00e-02	50.30	55.90	53.10	10.5	86.40	14.10	n/a
S97T001350	U		Bromide by Ion Chromatograph	ug/g	91.85	<1.25e-01	2.05e+03	2.13e+03	2.09e+03	3.83	89.13	1.03e+03	n/a
S97T001880	A		Lithium -ICP-Acid Digest	ug/g	94.60	<1.00e-02	55.70	67.40	61.55	19.0	98.00	9.850	n/a

HNF-SD-MM-DP-259 REV. 2

Table 1: Data Summary Report
BY-109 (P)

CORE NUMBER: 201
SEGMENT #: 3R1

SEGMENT PORTION: Liner Liquid

Sample#	R A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S97T001470	D	Lithium-ICP-Acid Dil.	ug/mL	102.8	<1.00e-02	1.13e+03	1.11e+03	1.12e+03	1.79	n/a	1.010	n/a
S97T001470		Bromide by Ion Chromatograph	ug/mL	95.59	<1.25e-01	4.64e+04	4.63e+04	4.63e+04	0.22	n/a	517.6	n/a

U Upper Half of Segment: U Upper Half of Segment

Sample#	R A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S97T001463		DSC Exotherm Dry Calculated	Joules/g Dry	n/a	n/a	21.62	29.69	25.66	31.5	n/a	n/a	n/a
S97T001463		DSC Exotherm on Perkin Elmer	Joules/g	101.0	n/a	11.55	15.86	13.71	31.4	n/a	n/a	n/a
S97T001463		% Water by TGA on Perkin Elmer	%	99.90	n/a	49.91	43.25	46.58	14.3	n/a	n/a	n/a
S97T001463		% Water by Gravimetric	%	99.19	n/a	32.56	34.84	33.70	6.77	n/a	1.00e-02	n/a
S97T001463		TOC by Persulfate/Coulometry	ug/g	92.00	13.70	5.33e+03	2.96e+03	4.14e+03	57.2	9.820	40.00	n/a
S97T001574	A	Lithium-ICP-Acid Digest	ug/g	95.60	<1.00e-02	1.85e+02	193.0	189.0	4.23	n/a	19.20	n/a
S97T001576	W	Bromide by Ion Chromatograph	ug/g	96.77	<1.25e-01	1.34e+03	1.41e+03	1.38e+03	5.09	n/a	1.01e+03	n/a

L Lower Half of Segment: L Lower Half of Segment

Sample#	R A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S97T001442		Bulk Density of Sample	g/mL	n/a	n/a	1.690	n/a	n/a	n/a	n/a	5.00e-01	n/a
S97T001459		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
S97T001459		DSC Exotherm on Perkin Elmer	Joules/g	98.91	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S97T001459		% Water by TGA on Perkin Elmer	%	99.66	n/a	50.41	53.65	52.03	6.23	n/a	n/a	n/a
S97T001459		% Water by Gravimetric	%	99.19	n/a	39.67	40.47	40.07	2.00	n/a	1.00e-02	n/a
S97T001572	F	Alpha of Digested Solid	uCi/g	98.50	<4.72e-03	5.43e-02	5.66e-02	5.54e-02	4.15	76.81	5.00e-03	2.23E+01
S97T001574	W	Bromide by Ion Chromatograph	ug/g	91.85	<1.25e-01	3.21e+03	3.14e+03	3.18e+03	2.20	87.44	1.01e+03	n/a
S97T001881	A	Lithium-ICP-Acid Digest	ug/g	94.60	<1.00e-02	2.83e+02	263.0	273.0	7.33	97.60	10.00	n/a

Drainable Liquid: Drainable Liquid

Sample#	R A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S97T001467		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
S97T001467		DSC Exotherm on Perkin Elmer	Joules/g	98.91	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S97T001467		Specific Gravity	Sp.G.	100.2	n/a	1.483	1.509	1.496	1.74	n/a	1.00e-02	n/a
S97T001467		% Water by TGA on Perkin Elmer	%	99.66	n/a	54.38	54.44	54.41	0.11	n/a	n/a	n/a
S97T001467		Alpha in Liquid Samples	uCi/mL	77.50	<6.57e-07	<1.61e-02	<1.47E-2	n/a	n/a	89.73	1.90e-02	2.30E+02
S97T001469	D	Lithium-ICP-Acid Dil.	ug/mL	102.8	<1.00e-02	<4.010	<4.01e0	n/a	n/a	103.0	4.010	n/a
S97T001469		Bromide by Ion Chromatograph	ug/mL	95.59	<1.25e-01	4.02e+03	4.15e+03	4.08e+03	3.18	93.89	643.9	n/a

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Table 1: Data Summary Report
BY-109 (P)

CORE NUMBER: 201
SEGMENT #: 4

SEGMENT PORTION: W Whole Segment

Sample#	R A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S97T001735		Bulk Density of Sample	g/mL	n/a	n/a	1.670	n/a	n/a	n/a	n/a	5.00e-01	n/a
S97T001736		DSC Exotherm Dry Calculated	Joules/g Dry	n/a	n/a	38.10	69.27	53.69	58.1	n/a	n/a	n/a
S97T001736		DSC Exotherm on Perkin Elmer	Joules/g	102.1	n/a	19.92	36.20	28.06	58.0	n/a	n/a	n/a
S97T001736		% Water by TGA on Perkin Elmer	%	100.9	n/a	49.01	46.42	47.72	5.43	n/a	n/a	n/a
S97T001736		TOC by Persulfate/Coulometry	ug/g	92.00	13.70	2.20e+03	3.54e+03	2.87e+03	46.7	n/a	40.00	n/a
S97T001738	F	Alpha of Digested Solid	uCi/g	88.50	<2.58e-03	3.05e-02	3.13e-02	3.09e-02	2.59	n/a	6.00e-03	2.21E+01
S97T001740	W	Bromide by Ion Chromatograph	ug/g	98.98	<1.25e-01	<1.26e+03	<1.26e3	n/a	n/a	97.11	1.26e+03	n/a
S97T001822	A	Lithium -ICP-Acid Digest	ug/g	91.20	<1.00e-02	24.10	20.80	22.45	14.7	88.20	20.20	n/a

HNF-SD-WM-DP-259, REV.0

Table 1: Data Summary Report
BY-109 (P)

CORE NUMBER: 201
SEGMENT #: 5

SEGMENT PORTION: U Upper Half of Segment

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S97T001464			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
S97T001464			DSC Exotherm on Perkin Elmer	Joules/g	101.0	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S97T001464			% Water by TGA on Perkin Elmer	%	99.90	n/a	45.56	54.88	50.22	18.6	n/a	n/a	n/a
S97T001580	A		Lithium -ICP-Acid Digest	ug/g	95.60	<1.00e-02	1.95e+02	188.0	191.5	3.66	n/a	19.30	n/a
S97T001581	W		Bromide by Ion Chromatograph	ug/g	96.77	<1.25e-01	1.57e+03	1.54e+03	1.56e+03	1.93	n/a	979.9	n/a

L Lower Half of Segment: L Lower Half of Segment

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S97T001460			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
S97T001460			DSC Exotherm on Perkin Elmer	Joules/g	98.91	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S97T001460			% Water by TGA on Perkin Elmer	%	99.66	n/a	51.39	51.08	51.23	0.61	n/a	n/a	n/a
S97T001577	F		Alpha of Digested Solid	uCi/g	98.50	<4.72e-03	1.71e-02	1.17e-02	1.44e-02	37.5	n/a	5.00e-03	4.15e+01
S97T001579	W		Bromide by Ion Chromatograph	ug/g	100.3	<1.25e-01	<1.00e+03	<1.00e3	n/a	n/a	n/a	1.00e+03	n/a
S97T001882	A		Lithium -ICP-Acid Digest	ug/g	94.60	<1.00e-02	54.70	48.70	51.70	11.6	n/a	9.950	n/a

Drainable Liquid: Drainable Liquid

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S97T001468			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
S97T001468			DSC Exotherm on Perkin Elmer	Joules/g	98.91	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S97T001468			Specific Gravity	Sp.G.	100.2	n/a	1.483	1.524	1.504	2.73	n/a	1.00e-02	n/a
S97T001468			% Water by TGA on Perkin Elmer	%	99.66	n/a	51.40	52.22	51.81	1.58	n/a	n/a	n/a
S97T001468			Alpha in Liquid Samples	uCi/mL	77.50	<6.57e-07	<1.74e-02	1.14e-02	n/a	n/a	n/a	1.90e-02	1.40e+02
S97T001471	D		Lithium-ICP-Acid Dil.	ug/mL	102.8	<1.00e-02	<4.010	<4.01e0	n/a	n/a	n/a	4.010	n/a
S97T001471			Bromide by Ion Chromatograph	ug/mL	95.59	<1.25e-01	2.60e+03	2.63e+03	2.62e+03	1.15	n/a	517.6	n/a

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Table 1: Data Summary Report
BY-109 (P)

CORE NUMBER: 203
SEGMENT #: N/A

SEGMENT PORTION: Field Blank

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S97T001399			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
S97T001399			DSC Exotherm on Perkin Elmer	Joules/g	99.75	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S97T001399			Specific Gravity	Sp.g.	100.2	n/a	1.000	9.94e-01	9.97e-01	0.60	n/a	1.00e-02	n/a
S97T001399			% Water by TGA on Perkin Elmer	%	99.44	n/a	99.72	99.31	99.52	0.41	n/a	n/a	n/a
S97T001399	D		Lithium-ICP-Acid Dil.	ug/mL	94.00	<1.00e-02	<1.00e-02	<1.00e-2	n/a	n/a	n/a	1.00e-02	n/a
S97T001399			Bromide by Ion Chromatograph	ug/mL	98.47	<1.25e-01	<1.25e-01	<1.25e-1	n/a	n/a	n/a	1.25e-01	n/a
S97T001399			Alpha in Liquid Samples	uCi/mL	77.50	<6.57e-07	<6.57e-07	<7.88E-7	n/a	n/a	n/a	9.36e-07	4.38E+02

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Table 1: Data Summary Report
BY-109 (P)

CORE NUMBER: 203
SEGMENT #: 1

SEGMENT PORTION: L Lower Half of Segment

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S97T001475			Bulk Density of Sample	g/mL	n/a	n/a	1.820	n/a	n/a	n/a	n/a	5.00e-01	n/a
S97T001482			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
S97T001482			DSC Exotherm on Perkin Elmer	Joules/g	101.7	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S97T001482			% Water by TGA on Perkin Elmer	%	99.66	n/a	41.16	41.68	41.42	1.26	n/a	n/a	n/a
S97T001541	F		Alpha of Digested Solid	uCi/g	91.00	<2.75e-02	5.73e-02	7.50e-02	6.62e-02	26.8	96.58	3.90e-02	7.11E+01
S97T001543	M		Bromide by Ion Chromatograph	ug/g	100.3	<1.25e-01	1.52e+03	1.37e+03	1.44e+03	10.4	95.93	1.04e+03	n/a
S97T001855	A		Lithium -ICP-Acid Digest	ug/g	96.40	<1.00e-02	1.47e+02	177.0	162.0	18.5	97.80	7.680	n/a

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Table 1: Data Summary Report
BY-109 (P)

CORE NUMBER: 203
SEGMENT #: 2

SEGMENT PORTION: W Whole Segment

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S97T001741			Bulk Density of Sample	g/mL	n/a	n/a	1.660	n/a	n/a	n/a	n/a	5.00e-01	n/a
S97T001742			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
S97T001742			DSC Exotherm on Perkin Elmer	Joules/g	102.1	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S97T001742			% Water by TGA on Perkin Elmer	%	100.9	n/a	33.05	30.61	31.83	7.67	n/a	n/a	n/a
S97T001744	F		Alpha of Digested Solid	uCi/g	88.50	<2.58e-03	3.36e-02	3.61e-02	3.48e-02	7.17	64.64	6.00e-03	2.05E+01
S97T001746	W		Bromide by Ion Chromatograph	ug/g	100.0	<1.25e-01	2.62e+03	2.30e+03	2.46e+03	13.0	n/a	1.03e+03	n/a
S97T001823	A		Lithium -ICP-Acid Digest	ug/g	91.20	<1.00e-02	1.42e+02	325.0	233.5	78.4	n/a	19.60	n/a

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Table 1: Data Summary Report
BY-109 (P)

CORE NUMBER: 203
SEGMENT #: 3

SEGMENT PORTION: U Upper Half of Segment

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S97T001486			DSC Exotherm Dry Calculated	Joules/g Dry	n/a	n/a	41.51	58.57	50.04	34.1	n/a	n/a	n/a
S97T001486			DSC Exotherm on Perkin Elmer	Joules/g	98.98	n/a	28.29	39.92	34.11	34.1	n/a	n/a	n/a
S97T001486			% Water by TGA on Perkin Elmer	%	98.92	n/a	32.15	31.53	31.84	1.95	n/a	n/a	n/a
S97T001486			% Water by Gravimetric	%	99.15	n/a	31.80	32.00	31.90	0.63	n/a	1.00e-02	n/a
S97T001486			TOC by Persulfate/Coulometry	ug/g	91.67	2.00e-01	7.53e+03	7.43e+03	7.48e+03	1.34	n/a	40.00	n/a
S97T001547	A		Lithium -ICP-Acid Digest	ug/g	95.60	<1.00e-02	< 19.20	<1.94e1	n/a	n/a	n/a	19.20	n/a
S97T001548	W		Bromide by Ion Chromatograph	ug/g	107.1	<1.25e-01	<9.25e+02	<9.25e2	n/a	n/a	n/a	924.6	n/a

L Lower Half of Segment: L Lower Half of Segment

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S97T001476			Bulk Density of Sample	g/mL	n/a	n/a	1.720	n/a	n/a	n/a	n/a	5.00e-01	n/a
S97T001483			DSC Exotherm Dry Calculated	Joules/g Dry	n/a	n/a	38.90	45.49	42.20	15.6	n/a	n/a	n/a
S97T001483			DSC Exotherm on Perkin Elmer	Joules/g	101.7	n/a	25.77	30.13	27.95	15.6	n/a	n/a	n/a
S97T001483			% Water by TGA on Perkin Elmer	%	99.66	n/a	33.92	33.60	33.76	0.95	n/a	n/a	n/a
S97T001483			% Water by Gravimetric	%	99.19	n/a	32.37	34.67	33.52	6.86	n/a	1.00e-02	n/a
S97T001483			TOC by Persulfate/Coulometry	ug/g	91.33	3.100	4.57e+03	4.80e+03	4.68e+03	4.91	91.70	40.00	n/a
S97T001544	F		Alpha of Digested Solid	uCi/g	91.00	<2.75e-02	7.33e-02	8.89e-02	8.11e-02	19.2	n/a	4.20e-02	6.69E+01
S97T001546	W		Bromide by Ion Chromatograph	ug/g	100.3	<1.25e-01	<1.04e+03	<1.01e3	n/a	n/a	n/a	1.04e+03	n/a
S97T001866	A		Lithium -ICP-Acid Digest	ug/g	96.40	<1.00e-02	11.10	9.140	10.12	19.4	n/a	7.880	n/a

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Table 1: Data Summary Report
BY-109 (P)

CORE NUMBER: 203
SEGMENT #: 4

SEGMENT PORTION: U Upper Half of Segment

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S97T001487			DSC Exotherm Dry Calculated	Joules/g Dry	n/a	n/a	71.40	139.2	105.3	64.4	n/a	n/a	n/a
S97T001487			DSC Exotherm on Perkin Elmer	Joules/g	98.98	n/a	45.07	87.85	66.46	64.4	n/a	n/a	n/a
S97T001487			% Water by TGA on Perkin Elmer	%	98.92	n/a	37.06	36.70	36.88	0.98	n/a	n/a	n/a
S97T001487			% Water by Gravimetric	%	99.15	n/a	35.80	36.80	36.30	2.75	n/a	1.00e-02	n/a
S97T001487			TOC by Persulfate/Coulometry	ug/g	97.67	1.300	5.26e+03	5.50e+03	5.38e+03	4.46	n/a	40.00	n/a
S97T001552	A		Lithium -ICP-Acid Digest	ug/g	95.60	<1.00e-02	45.70	45.90	45.80	0.44	n/a	20.50	n/a
S97T001553	W		Bromide by Ion Chromatograph	ug/g	107.1	<1.25e-01	1.77e+03	1.62e+03	1.69e+03	8.85	n/a	1.02e+03	n/a

L Lower Half of Segment: L Lower Half of Segment

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S97T001477			Bulk Density of Sample	g/mL	n/a	n/a	1.680	n/a	n/a	n/a	n/a	5.00e-01	n/a
S97T001484			DSC Exotherm Dry Calculated	Joules/g Dry	n/a	n/a	1.24e+02	122.8	123.5	1.13	n/a	n/a	n/a
S97T001484			DSC Exotherm on Perkin Elmer	Joules/g	98.98	n/a	79.26	78.37	78.81	1.13	n/a	n/a	n/a
S97T001484			% Water by TGA on Perkin Elmer	%	98.92	n/a	36.06	36.32	36.19	0.72	n/a	n/a	n/a
S97T001484			% Water by Gravimetric	%	99.15	n/a	36.30	35.30	35.80	2.79	n/a	1.00e-02	n/a
S97T001484			TOC by Persulfate/Coulometry	ug/g	94.00	12.50	1.02e+04	1.03e+04	1.02e+04	0.98	92.90	40.00	n/a
S97T001549	F		Alpha of Digested Solid	uCi/g	91.00	<2.75e-02	6.09e-02	5.55e-02	5.82e-02	9.28	98.86	3.90e-02	7.61E+01
S97T001551	W		Bromide by Ion Chromatograph	ug/g	100.2	<1.25e-01	<1.02e+03	<1.01e3	n/a	n/a	101.0	1.02e+03	n/a
S97T001869	A		Lithium -ICP-Acid Digest	ug/g	96.40	<1.00e-02	9.950	10.50	10.22	5.38	95.00	7.720	n/a

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Table 1: Data Summary Report
BY-109 (P)

CORE NUMBER: 203
SEGMENT #: 5

SEGMENT PORTION: W Whole Segment

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S971001785			Bulk Density of Sample	g/mL	n/a	n/a	1.610	n/a	n/a	n/a	n/a	5.00e-01	n/a
S971001786			DSC Exotherm Dry Calculated	Joules/g Dry	n/a	n/a	41.47	0.00e+00	20.73	200	n/a	n/a	n/a
S971001786			DSC Exotherm on Perkin Elmer	Joules/g	102.1	n/a	21.63	0.00e+00	10.81	200	n/a	n/a	n/a
S971001786			% Water by TGA on Perkin Elmer	%	100.9	n/a	48.28	47.41	47.84	1.82	n/a	n/a	n/a
S971001786			TOC by Persulfate/Coulometry	ug/g	91.33	3.100	3.21e+03	2.73e+03	2.97e+03	16.2	n/a	40.00	n/a
S971001787	F		Alpha of Digested Solid	UC1/g	92.50	<6.25e-03	4.21e-02	3.69e-02	3.95e-02	13.2	98.86	8.00e-03	3.74e+01
S971001789	W		Bromide by Ion Chromatograph	ug/g	95.59	<1.25e-01	<1.03e+03	<1.02e3	n/a	n/a	92.36	1.03e+03	n/a
S971001937	A		Lithium -ICP-Acid Digest	ug/g	97.60	<1.00e-02	13.10	12.50	12.80	4.69	98.80	5.050	n/a

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Table 1: Data Summary Report
BY-109 (P)

CORE NUMBER: 203
SEGMENT #: 6

SEGMENT PORTION: W Whole Segment

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S97T001790			Bulk Density of Sample	g/mL	n/a	n/a	1.690	n/a	n/a	n/a	n/a	5.00e-01	n/a
S97T001791			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
S97T001791			DSC Exotherm on Perkin Elmer	Joules/g	102.2	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S97T001791			% Water by TGA on Perkin Elmer	%	99.14	n/a	41.30	39.90	40.60	3.45	n/a	n/a	n/a
S97T001792	F		Alpha of Digested Solid	uCi/g	92.50	<6.25e-03	2.86e-01	2.33e-01	2.60e-01	20.4	n/a	1.70e-02	1.92E+01
S97T001794	W		Bromide by Ion Chromatograph	ug/g	96.77	<1.25e-01	<1.02e+03	<1.01e3	n/a	n/a	n/a	1.02e+03	n/a
S97T001938	A		Lithium -ICP-Acid Digest	ug/g	97.60	<1.00e-02	54.30	56.30	55.30	3.62	n/a	4.920	n/a

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Table 1: Data Summary Report
BY-109 (P)

CORE NUMBER: 203
SEGMENT #: 7

SEGMENT PORTION: U Upper Half of Segment

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S97T001481			Bulk Density of Sample	g/mL	n/a	n/a	1.690	n/a	n/a	n/a	n/a	5.00e-01	n/a
S97T001488			DSC Exotherm Dry Calculated	Joules/g Dry	n/a	n/a	45.01	56.44	50.72	22.5	n/a	n/a	n/a
S97T001488			DSC Exotherm on Perkin Elmer	Joules/g	97.22	n/a	25.71	32.24	28.98	22.5	n/a	n/a	n/a
S97T001488			% Water by TGA on Perkin Elmer	%	99.83	n/a	43.05	42.70	42.88	0.82	n/a	n/a	n/a
S97T001488			% Water by Gravimetric	%	99.15	n/a	40.20	39.80	40.00	1.00	n/a	1.00e-02	n/a
S97T001488			TOC by Persulfate/Coulometry	ug/g	97.67	1.300	8.27e+03	9.91e+03	9.09e+03	18.0	94.60	40.00	n/a
S97T001557	F		Alpha of Digested Solid	uCi/g	98.50	<4.72e-03	1.00e-02	9.79e-03	9.90e-03	2.12	96.20	5.00e-03	5.53E+01
S97T001559	W		Bromide by Ion Chromatograph	ug/g	91.85	<1.25e-01	2.25e+03	2.24e+03	2.25e+03	0.45	88.96	1.02e+03	n/a
S97T001883	A		Lithium -ICP-Acid Digest	ug/g	94.60	<1.00e-02	53.00	54.00	53.50	1.87	95.60	10.00	n/a

L Lower Half of Segment: L Lower Half of Segment

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S97T001478			Bulk Density of Sample	g/mL	n/a	n/a	2.000	n/a	n/a	n/a	n/a	5.00e-01	n/a
S97T001485			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
S97T001485			DSC Exotherm on Perkin Elmer	Joules/g	98.98	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S97T001485			% Water by TGA on Perkin Elmer	%	98.92	n/a	27.63	29.18	28.41	5.46	n/a	n/a	n/a
S97T001485			% Water by Gravimetric	%	99.15	n/a	26.20	25.40	25.80	3.10	n/a	1.00e-02	n/a
S97T001554	F		Alpha of Digested Solid	uCi/g	91.00	<2.75e-02	<3.80e-02	3.54e-02	n/a	n/a	98.86	3.80e-02	1.84E+02
S97T001556	W		Bromide by Ion Chromatograph	ug/g	100.2	<1.25e-01	<9.93e+02	<1.03e3	n/a	n/a	105.1	993.0	n/a
S97T001872	A		Lithium -ICP-Acid Digest	ug/g	96.40	<1.00e-02	8.320	7.680	8.000	8.00	100.2	5.940	n/a

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CHAIN OF CUSTODY FORMS

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CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

(1) Shipment Number 200W-08-TF (2) Sample Number 201-01 (3) Supervisor D.C. Hartley, D. Hartley
 (4) Tank B4109 (5) Riser 12C (6) Segment 1 (7) Core 201 (8) Cask Serial Number 18B

Radiation Survey Data:		(9) FIELD	(33) LABORATORY	(10) Shipment Description
Over Top Dose Rate	<u>4.005 msv/hr</u>	<u>4.005 msv/hr</u>		A. Work Package Number <u>ES-87-00045</u>
Side Dose Rate	<u>0.01 msv/hr</u>	<u>0.01 msv/hr</u>		B. Cask Seal Number <u>13008</u>
Bottom Dose Rate	<u>0.01 msv/hr</u>	<u>0.05 msv/hr</u>		C. Sampler Serial Number <u>RGS-066</u>
Smearable Contamination	<u>420 dpm/100cm²</u> (Alpha) <u>417 dpm/100cm²</u> (Beta-Gamma)	<u>4.334 Bq/LAW</u> (Alpha) <u>416.7 Bq/LAW</u> (Beta-Gamma)		D. Date and Time Sampler Unseated <u>6-6-97 1309</u>
RCT* (HPT)	<u>R. Klein</u> (Signature)	RCT* (HPT)	<u>R. Klein</u> (Signature)	E. Expected Liquid Content <u>20%</u>
				F. Expected Solid Content <u>80%</u>
				G. Dose Rate Through Drill String <u>42 msv/hr</u>
				H. Expected Sample Length <u>19"</u>

(11) INFORMATION (Include statement of laboratory tests to be performed.)

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(12) Field Comments		(134) Laboratory Comments		
THIS IS AN RGS Sampler, X-RAY SHOWS APPROX. 40% OF MATERIAL LITHIUM BROMIDE ADDED				
(13) Point of Origin <u>B4109</u>	(14) Destination <u>222.5</u>	(15) Sender Name (Sign and PRINT) <u>James S. Sackel</u>	(16) Date/Time <u>6-9-97</u>	(17) Sender Comments
(19) Relinquished By (Sign and PRINT) <u>James S. Sackel</u>	(20) Received By (Sign and PRINT) <u>James S. Sackel</u>	(21) Date/Time <u>6-9-97</u>	(22) Receiver Comments	
(23) Relinquished By (Sign and PRINT) <u>James S. Sackel</u>	(24) Received By (Sign and PRINT) <u>James S. Sackel</u>	(25) Date/Time <u>6-9-97</u>	(26) Receiver Comments	
(27) Relinquished By (Sign and PRINT) <u>James S. Sackel</u>	(28) Received By (Sign and PRINT) <u>James S. Sackel</u>	(29) Date/Time <u>6-9-97</u>	(30) Receiver Comments	

(18) Seal Intact Upon Release? ☒ Yes ☐ No	(31) Seal Intact Upon Receipt? ☒ Yes ☐ No	(32) Seal Data Consistent with this Record? ☒ Yes ☐ No
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COPY

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

(1) Shipment Number 2000-08-77

(2) Sample Number 6997-B 200-02

(3) Supervisor

(5) Riser 12 c

(7) Core 201

(8) Cask Serial Number 276

(4) Tank Bx109

Radiation Survey Dates:

Over Top Dose Rate 0.1 mSv

Side Dose Rate 0.1 mSv

Bottom Dose Rate 1 mSv

Measurable Contamination < 20 dpm/100cm²(Alpha) < 20 dpm/100cm²

(Beta-Gamma) 1200

(HPT) RCT*

(Signature)

(HPT) RCT*

(Signature)

(Beta-Gamma)

< 16.7 Bq/Lm²

(Alpha)

< 334 Bq/Lm²

0.01 mSv/hr

0.08 mSv/hr

0.005 mSv/hr

(13) LABORATORY

(10) Shipment Description

A. Work Package Number

B. Cask Seal Number

C. Sampler Serial Number

D. Date and Time Sampler Unsealed

E. Expected Liquid Content

F. Expected Solid Content

G. Dose Rate Through Drill String

H. Expected Sample Length

(11) INFORMATION (Include statement of laboratory tests to be performed.)

49

(12) Field Comments

Lithium Provide Address

(13) Point of Origin

2225

(19) Relinquished By (Sign and PRINT)

(29) Relinquished By (Sign and PRINT)

(27) Relinquished By (Sign and PRINT)

(14) Destination

(15) Sender Name (Sign and PRINT)

(20) Received By (Sign and PRINT)

(24) Received By (Sign and PRINT)

(28) Received By (Sign and PRINT)

(16) Date/Time

(22) Recolver Comments

(26) Recolver Comments

(30) Recolver Comments

(32) Seal Data Consistent with this Record?

(31) Seal Intact Upon Receipt?

(18) Seal Intact Upon Release?

Shipment No.

Yes ☒ No ☐

Cask Seal No.

Yes ☒ No ☐

Sample No.

Yes ☒ No ☐

DISTRIBUTION: White - Office of Sample Management Yellow - Recipient of Sample Pink - Core Sampling, S6-B5 Goldentred - Tank Farm Operations, S4-43

BC-6000-309 102/94

HNF-SD-WM-DP-255 REV. 0

6 Pump # 77000412

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

1) Shipment Number 200W-08-TF (2) Sample Number 201-3R1 (3) Supervisor M.C. Jones
 4) Tank BY-109 (5) Riser 12C (6) Segment 3R1 (7) Core 201 (8) Cask Serial Number C2015

Radiation Survey Data:		(9) FIELD	(33) LABORATORY	(10) Shipment Description
Over Top Dose Rate	<u>.01 mSV</u>		<u><.005 mSV</u>	A. Work Package Number <u>ES-97-00045</u>
Side Dose Rate	<u>.10 mSV</u>		<u>.10 mSV</u>	B. Cask Seal Number <u>000417172497 11707</u>
Bottom Dose Rate	<u>.05 mSV</u>		<u>.005 mSV</u>	C. Sampler Serial Number <u>96-361</u>
Smearable Contamination	<u>.334 Bq/100cm²</u>		<u>2.0</u>	D. Date and Time Sampler Unseated <u>6-12-97 1346</u>
	(Alpha) <u>16.7 Bq/100cm²</u>		(Alpha) <u><1000 Bq/LAN</u>	E. Expected Liquid Content <u>20%</u>
	(Beta-Gamma) <u>RCE</u>		(Beta-Gamma) <u>[Signature]</u>	F. Expected Solid Content <u>0%</u>
	RCT* (HPT) <u>[Signature]</u>		RCT* (HPT) <u>[Signature]</u>	G. Dose Rate Through Drill String <u>700 mR/HR</u>
	(Signature)		(Signature)	H. Expected Sample Length <u>19"</u>

1) INFORMATION (Include statement of laboratory tests to be performed.)

HNF-SD-WM-DP-259, REV. 0

2) Field Comments X-Ray Showed 1644 (has Air in it)
This is a retake of sample #3
Libr WAS ADDED TO THE DRILL STRING
Seal # 12487 Broken in order to X-Ray Sampler
Seal # 11707 put in its place @ 4:49/97
 34) Laboratory Comments S97T0013016

(3) Point of Origin <u>BY-109</u>	(14) Destination <u>222-S</u>	(15) Sender Name (Sign and PRINT) <u>STEVEN BLANCHER</u>	(16) Date/Time <u>06-16-97 1350</u>	(17) Sender Comments
(9) Relinquished By (Sign and PRINT) <u>Steven Blancher</u>	(20) Received By (Sign and PRINT) <u>[Signature]</u>	(21) Date/Time <u>6-16-97 1400</u>	(22) Receiver Comments	
(3) Relinquished By (Sign and PRINT) <u>[Signature]</u>	(24) Received By (Sign and PRINT) <u>[Signature]</u>	(25) Date/Time <u>6-16-97/1400</u>	(26) Receiver Comments	
(7) Relinquished By (Sign and PRINT)	(28) Received By (Sign and PRINT)	(29) Date/Time	(30) Receiver Comments	

(18) Seal Intact Upon Release? ☒ Yes ☐ No	(31) Seal Intact Upon Receipt? ☒ Yes ☐ No	(32) Seal Data Consistent with this Record? ☒ Yes ☐ No
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Jun. 17, 1997 12:12PM WMC 22S LAB ROOM 2F BACKSIDE No. 4037 P. 3/4

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

Shipment Number 200W-08-TR (2) Sample Number 201-4 (3) Supervisor D.C. Hanley
 Tank BY 109 (5) Riser 12C (6) Segment 4 (7) Core 201 (8) Cask Seal Number #77

Exposure Survey Date: (9) FIELD (33) LABORATORY (10) Shipment Description

Over Top Dose Rate 0.1 mSV < 0.05 mSV A. Work Package Number ES-97-00045/0
 Side Dose Rate 0.10 mSV 0.06 mSV B. Cask Seal Number *11702
 Bottom Dose Rate 0.05 mSV 0.04 mSV C. Sampler Serial Number RG5-070
 Smearable Contamination < 0.335 Bq/100cm² < 0.335 Bq/100cm² D. Date and Time Sampler Unseated 6-12-97, 1803
 (Alpha) (Alpha) E. Expected Liquid Content 20%
< 16.7 Bq/100cm² < 1002 Bq/100cm² F. Expected Solid Content 80%
 (Beta-Gamma) (Beta-Gamma) G. Dose Rate Through Drill String 350 mR/hr
 RCT* (HPT) [Signature] RCT* (HPT) [Signature] H. Expected Sample Length 194

1) INFORMATION (Include statement of laboratory tests to be performed.)

HNF-SD-WM-DP- 559 REV. 0

2) Field Comments (34) Laboratory Comments

Lithium Bromide added X-ray showed 16%¹¹ 597T001398

Seal # 13074 Due to X-Raying of Sampler.
Seal # 11702 put in its place.
Cask Seal Number corrected to 06/13/97.

(1) Point of Origin <u>BY 109</u>	(14) Destination <u>222S</u>	(15) Sent Of Name (Sign and PRINT) <u>STEVEN B CARTER</u>	(16) Date/Time <u>06-16-97</u> <u>1354</u>	(17) Sender Comments
(3) Relinquished By (Sign and PRINT) <u>STEVEN B CARTER</u>	(20) Received By (Sign and PRINT) <u>[Signature]</u>	(21) Date/Time <u>6-16-97</u> <u>1400</u>	(22) Receiver Comments	
(5) Relinquished By (Sign and PRINT) <u>[Signature]</u>	(24) Received By (Sign and PRINT) <u>[Signature]</u>	(25) Date/Time <u>6-16-97</u> <u>1440</u>	(26) Receiver Comments	
(7) Relinquished By (Sign and PRINT)	(28) Received By (Sign and PRINT)	(29) Date/Time	(30) Receiver Comments	

18) Seal Intact Upon Release? (31) Seal Intact Upon Receipt? (32) Seal Data Consistent with this Record?

☒ Yes ☐ No ☒ Yes ☐ No ☒ Yes ☐ No

Shipment No. ☒ Yes ☐ No Cask Seal No. ☒ Yes ☐ No Sample No. ☒ Yes ☐ No

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

Shipment Number <u>200W-00-TF</u>	(2) Sample Number <u>201-5</u>	(3) Supervisor <u>J.C. Hartley</u>
Tank <u>BY109</u>	(5) Riser <u>12 C</u>	(6) Segment <u>5</u>
(7) Core <u>201</u>	(8) Cask Serial Number <u>56</u>	
Radiation Survey Data:		
(9) FIELD	(33) LABORATORY	(10) Shipment Description
Over Top Dose Rate <u>.01 mSV</u>	<u>5.005 mSV</u>	A. Work Package Number <u>ES-97-00045/0</u>
Side Dose Rate <u>.15 mSV</u>	<u>.15 mSV</u>	B. Cask Seal Number <u>13053</u>
Bottom Dose Rate <u>.05 mSV</u>	<u>.03 mSV</u>	C. Sampler Serial Number <u>96-367</u>
Smearable Contamination <u>2.334 Bq/100cm²</u>	<u>5.109 Bq/100cm²</u>	D. Date and Time Sampler Unseated <u>6-13-97/0436</u>
(Alpha) <u>116.7 Bq/100cm²</u>	(Alpha) <u>116.7 Bq/100cm²</u>	E. Expected Liquid Content <u>70%</u>
(Beta-Gamma) <u>R. Clei</u>	(Beta-Gamma) <u>R. Clei</u>	F. Expected Solid Content <u>80%</u>
ACT* (HPT) (Signature)	ACT* (HPT) (Signature)	G. Dose Rate Through Drill String <u>800 mR</u>
		H. Expected Sample Length <u>19"</u>

1) INFORMATION (Include statement of laboratory tests to be performed.)

HNFS-SD-WM-DP-269, REV. 0

2) Field Comments <u>Segment #5 pushed 2" and hit high down force,</u>	34) Laboratory Comments <u>S97T001397</u>
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3) Point of Origin <u>BY109</u>	14) Destination <u>2225</u>	15) Sender Name (Sign and PRINT) <u>Steven B. Carter</u>	16) Date/Time <u>06-16-97 1352</u>	17) Sender Comments
3) Relinquished By (Sign and PRINT) <u>Steven B. Carter</u>	20) Received By (Sign and PRINT) <u>Richard E. Chambers</u>	21) Date/Time <u>6-16-97 1400</u>	22) Receiver Comments	
3) Relinquished By (Sign and PRINT) <u>Richard E. Chambers</u>	24) Received By (Sign and PRINT) <u>Richard E. Chambers</u>	25) Date/Time <u>06-16-97/1440</u>	26) Receiver Comments	
7) Relinquished By (Sign and PRINT)	28) Received By (Sign and PRINT)	29) Date/Time	30) Receiver Comments	

(18) Seal Intact Upon Release? ☒ Yes ☐ No	(31) Seal Intact Upon Receipt? ☒ Yes ☐ No	(32) Seal Date Consistent with this Record? Shipment No. ☒ Yes ☐ No Cask Seal No. ☒ Yes ☐ No Sample No. ☒ Yes ☐ No
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CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

Shipment Number NA (2) Sample Number BLANK - Li. BR (3) Supervisor R. Frank Hunt

Tank By-109 (5) Riser 12C (6) Segment - N/A - (7) Core 201 (8) Cask Serial Number - N/A -

Radiation Survey Date: (9) FIELD (33) LABORATORY (10) Shipment Description

Over Top Dose Rate NA A. Work Package Number ES-97-00045

Side Dose Rate NA B. Cask Seal Number 1132

Bottom Dose Rate NA C. Sampler Serial Number N/A

Smearable Contamination NA 6/13/97 D. Date and Time Sampler Unloaded 6-13-97 / 0421

(Alpha) (Alpha) E. Expected Liquid Content 100%

(Beta-Gamma) (Beta-Gamma) F. Expected Solid Content N/A

RCT* (HPT) (Signature) RCT* (HPT) (Signature) G. Dose Rate Through Drill String N/A 6/13/97

H. Expected Sample Length N/A

INFORMATION (Include statement of laboratory tests to be performed.)

HNF-SD-WM-DP-059, REV. 0

(31) Field Comments (34) Laboratory Comments

BLANK - Li. BR. 597T001368

(13) Point of Origin <u>R-12C</u>	(14) Destination <u>222's Lab.</u>	(15) Sender Name (Sign and PRINT) <u>STEVEN B CARTER</u>	(16) Date/Time <u>06/13/97</u>	(17) Sender Comments
Relinquished By (Sign and PRINT) <u>Steve B Carter</u>	(20) Received By (Sign and PRINT) <u>James R. Knight</u>	(21) Date/Time <u>6-13-97</u>	(22) Receiver Comments	
Relinquished By (Sign and PRINT) <u>James R. Knight</u>	(24) Received By (Sign and PRINT) <u>James R. Knight</u>	(25) Date/Time <u>6-13-97</u>	(26) Receiver Comments	
Relinquished By (Sign and PRINT)	(28) Received By (Sign and PRINT)	(29) Date/Time	(30) Receiver Comments	

(31) Seal Intact Upon Release?	(31) Seal Intact Upon Receipt?	(32) Seal Date Consistent with this Record?
☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No

Shipment No. ☒ Yes ☐ No Cask Seal No. ☒ Yes ☐ No Sample No. ☒ Yes ☐ No

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

Shipment Number <u>N/A</u>	(2) Sample Number <u>Field Blank</u>	(3) Supervisor <u>M.C. Jones</u>
Tank <u>BY-109</u>	(5) Riser <u>10B</u>	(6) Segment <u>N/A</u>
	(7) Core <u>203</u>	(8) Cask Serial Number <u>N/A</u>
Radiation Survey Data:		(10) Shipment Description
(9) FIELD	(33) LABORATORY	
Over Top Dose Rate	<u>2.5</u>	A. Work Package Number <u>ES-97-00044</u>
Side Dose Rate	<u>2.5</u>	B. Cask Seal Number <u>12481</u>
Bottom Dose Rate	<u>2.5</u>	C. Sampler Serial Number <u>N/A</u>
Smearable Contamination	<u>2.20</u>	D. Date and Time Sampler Unseated <u>6-16-97 1700</u>
(Alpha)	(Alpha)	E. Expected Liquid Content <u>100%</u>
(Beta-Gamma)	(Beta-Gamma)	F. Expected Solid Content <u>0%</u>
ACT* (HPT)	ACT* (HPT)	G. Dose Rate Through Drill String <u>< 5 MR/HR</u>
(Signature)	(Signature)	H. Expected Sample Length <u>100 mL</u>

1) INFORMATION (Include statement of laboratory tests to be performed.)

HNF-SD-WM-DP-259 REV. D

(2) Field Comments	(34) Laboratory Comments
Field Blank With Di-Water.	S97T001399

(1) Point of Origin	(14) Destination	(5) Sender Name (Sign and PRINT)	(16) Date/Time	(17) Sender Comments
BY-109	222-S	James Sickels	6-17-97	
(3) Relinquished By (Sign and PRINT)	(20) Received By (Sign and PRINT)	(21) Date/Time	(22) Receiver Comments	
James Sickels	Charles E. Boyd	6-17-97		
(4) Relinquished By (Sign and PRINT)	(24) Received By (Sign and PRINT)	(25) Date/Time	(26) Receiver Comments	
Charles E. Boyd	Sam Knight	6-17-97		
(7) Relinquished By (Sign and PRINT)	(28) Received By (Sign and PRINT)	(29) Date/Time	(30) Receiver Comments	

(18) Seal Intact Upon Release?	(31) Seal Intact Upon Receipt?	(32) Seal Data Consistent with this Record?
☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No

DISTRIBUTION: White - Office of Sample Management Yellow - Recipient of Sample Pink - Core Sampling, S6-85 Goldenrod - Tank Farm Operations, S4-43 BC-6000-309 (02/94)

Jun. 17, 1997 - 9:21AM - HHC 222S LAB ROOM 2F BACKSIDE

No. 4031 P. 2/2

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

Shipment Number <u>200W-08-TF</u>	(2) Sample Number <u>203-1</u>	(3) Supervisor <u>D.C. Hartley, Old Hartley</u>
Tank <u>B4109</u>	(5) Riser <u>10B</u>	(6) Segment <u>1</u>
	(7) Core <u>203</u>	(8) Cask Serial Number <u>C1030</u>

Radiation Survey Date:	(9) FIELD	(33) LABORATORY	(10) Shipment Description
Over Top Dose Rate <u>1.005 mSv</u>	<u>1.005 mSv</u>	<u>1.005 mSv</u>	A. Work Package Number <u>ES-97-00044/10</u>
Side Dose Rate <u>1.005 mSv</u>	<u>1.005 mSv</u>	<u>1.005 mSv</u>	B. Cask Seal Number <u>6-16-97-3075 12498</u>
Bottom Dose Rate <u>1.605 mSv</u>	<u>1.605 mSv</u>	<u>1.605 mSv</u>	C. Sampler Serial Number <u>96-354</u>
Smearable Contamination <u>1.334 Bq/100cm²</u>	<u>1.334 Bq/100cm²</u>	<u>1.334 Bq/100cm²</u>	D. Date and Time Sampler Unseated <u>6-16-97, 0545</u>
	(Alpha)	(Alpha)	E. Expected Liquid Content <u>20%</u>
	(Beta-Gamma)	(Beta-Gamma)	F. Expected Solid Content <u>80%</u>
RCT* (HPT)	RCT* (HPT)	RCT* (HPT)	G. Dose Rate Through Drill String <u>3.5 mSv/Hr</u>
(Signature)	(Signature)	(Signature)	H. Expected Sample Length <u>15"</u>

1) INFORMATION (Include statement of laboratory tests to be performed.)

HNF-SD-WM-DP-259, REV. 0

2) Field Comments

(34) Laboratory Comments

Lithium Bromide Added

S97T001419

(13) Point of Origin <u>B4109</u>	(14) Destination <u>222S</u>	(15) Sender Name (Sign and PRINT) <u>Steve R. Penzlik for D. Hartley</u>	(16) Date/Time <u>6-18-97/1050</u>	(17) Sender Comments
(18) Relinquished By (Sign and PRINT) <u>Steve R. Penzlik</u>	(19) Received By (Sign and PRINT) <u>Steve R. Penzlik</u>	(20) Date/Time <u>6-18-97</u>	(21) Date/Time <u>6-18-97</u>	(22) Receiver Comments
(23) Relinquished By (Sign and PRINT) <u>Steve R. Penzlik</u>	(24) Received By (Sign and PRINT) <u>Steve R. Penzlik</u>	(25) Date/Time <u>6-18-97</u>	(26) Date/Time <u>6-18-97</u>	(27) Receiver Comments
(28) Relinquished By (Sign and PRINT)	(29) Received By (Sign and PRINT)	(30) Date/Time	(31) Date/Time	(32) Receiver Comments

(18) Seal Intact Upon Release?	(31) Seal Intact Upon Receipt?	(32) Seal Date Consistent with this Record?
☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

Shipment Number 200W-08-IT (2) Sample Number 203-2 (3) Supervisor McL Jones (4) Core 203 (5) Segment 2 (6) Tank 203-6 (7) Cask Serial Number 203-6 (8)

RADIATION SURVEY DATA:		(9) FIELD		(13) LABORATORY	
Over Top Dose Rate	0.1 mSv	0.02 mSv	0.01 mSv	A. Work Package Number	ES-97-00044
Side Dose Rate	0.05 mSv	0.05 mSv	0.05 mSv	B. Cask Seal Number	12499
Bottom Dose Rate	0.05 mSv	0.05 mSv	0.05 mSv	C. Sampler Serial Number	RG5-074
Measurable Contamination	0.05 mSv	0.05 mSv	0.05 mSv	D. Date and Time Sampler Unsealed	6-16-97 1815
	0.05 mSv	0.05 mSv	0.05 mSv	E. Expected Liquid Content	2016
	0.05 mSv	0.05 mSv	0.05 mSv	F. Expected Solid Content	8890
	0.05 mSv	0.05 mSv	0.05 mSv	G. Dose Rate Through Drill String	70 MR/hr
	0.05 mSv	0.05 mSv	0.05 mSv	H. Expected Sample Length	19"

(1) INFORMATION (Include statement of laboratory tests to be performed.)
 (2) Field Comments
 (3) Point of Origin
 (4) Destination
 (5) Order Name (Sign and Print)
 (6) Receiver By (Sign and Print)
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 (100) Receiver By (Sign and Print)

(1) Sealed Intact Upon Release? Yes ☒ No ☐
 (2) Sealed Intact Upon Receipt? Yes ☒ No ☐
 (3) Sealed Intact Upon Receipt? Yes ☒ No ☐
 (4) Sealed Intact Upon Receipt? Yes ☒ No ☐
 (5) Sealed Intact Upon Receipt? Yes ☒ No ☐
 (6) Sealed Intact Upon Receipt? Yes ☒ No ☐
 (7) Sealed Intact Upon Receipt? Yes ☒ No ☐
 (8) Sealed Intact Upon Receipt? Yes ☒ No ☐
 (9) Sealed Intact Upon Receipt? Yes ☒ No ☐
 (10) Sealed Intact Upon Receipt? Yes ☒ No ☐
 (11) Sealed Intact Upon Receipt? Yes ☒ No ☐
 (12) Sealed Intact Upon Receipt? Yes ☒ No ☐
 (13) Sealed Intact Upon Receipt? Yes ☒ No ☐
 (14) Sealed Intact Upon Receipt? Yes ☒ No ☐
 (15) Sealed Intact Upon Receipt? Yes ☒ No ☐
 (16) Sealed Intact Upon Receipt? Yes ☒ No ☐
 (17) Sealed Intact Upon Receipt? Yes ☒ No ☐
 (18) Sealed Intact Upon Receipt? Yes ☒ No ☐
 (19) Sealed Intact Upon Receipt? Yes ☒ No ☐
 (20) Sealed Intact Upon Receipt? Yes ☒ No ☐
 (21) Sealed Intact Upon Receipt? Yes ☒ No ☐
 (22) Sealed Intact Upon Receipt? Yes ☒ No ☐
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 (49) Sealed Intact Upon Receipt? Yes ☒ No ☐
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 (51) Sealed Intact Upon Receipt? Yes ☒ No ☐
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 (54) Sealed Intact Upon Receipt? Yes ☒ No ☐
 (55) Sealed Intact Upon Receipt? Yes ☒ No ☐
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 (72) Sealed Intact Upon Receipt? Yes ☒ No ☐
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 (75) Sealed Intact Upon Receipt? Yes ☒ No ☐
 (76) Sealed Intact Upon Receipt? Yes ☒ No ☐
 (77) Sealed Intact Upon Receipt? Yes ☒ No ☐
 (78) Sealed Intact Upon Receipt? Yes ☒ No ☐
 (79) Sealed Intact Upon Receipt? Yes ☒ No ☐
 (80) Sealed Intact Upon Receipt? Yes ☒ No ☐
 (81) Sealed Intact Upon Receipt? Yes ☒ No ☐
 (82) Sealed Intact Upon Receipt? Yes ☒ No ☐
 (83) Sealed Intact Upon Receipt? Yes ☒ No ☐
 (84) Sealed Intact Upon Receipt? Yes ☒ No ☐
 (85) Sealed Intact Upon Receipt? Yes ☒ No ☐
 (86) Sealed Intact Upon Receipt? Yes ☒ No ☐
 (87) Sealed Intact Upon Receipt? Yes ☒ No ☐
 (88) Sealed Intact Upon Receipt? Yes ☒ No ☐
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 (90) Sealed Intact Upon Receipt? Yes ☒ No ☐
 (91) Sealed Intact Upon Receipt? Yes ☒ No ☐
 (92) Sealed Intact Upon Receipt? Yes ☒ No ☐
 (93) Sealed Intact Upon Receipt? Yes ☒ No ☐
 (94) Sealed Intact Upon Receipt? Yes ☒ No ☐
 (95) Sealed Intact Upon Receipt? Yes ☒ No ☐
 (96) Sealed Intact Upon Receipt? Yes ☒ No ☐
 (97) Sealed Intact Upon Receipt? Yes ☒ No ☐
 (98) Sealed Intact Upon Receipt? Yes ☒ No ☐
 (99) Sealed Intact Upon Receipt? Yes ☒ No ☐
 (100) Sealed Intact Upon Receipt? Yes ☒ No ☐

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

Shipment Number <u>200W-08-TF</u>		Sample Number <u>203-03</u>		Supervisor <u>M.C. Jones</u>	
Tank <u>BY-109</u>		Riser <u>10B</u>		Segment <u>3</u>	
Core <u>203</u>		Cask Serial Number <u>SV-71</u>			

Radiation Survey Data:		(9) FIELD		(33) LABORATORY	
Over Top Dose Rate	<u>0.1 mSv</u>		<u>< 0.05 mSv</u>		
Side Dose Rate	<u>0.12 mSv</u>		<u>0.12 mSv</u>		
Bottom Dose Rate	<u>0.05 mSv</u>		<u>0.05 mSv</u>		
Smearable Contamination	<u>< 334 Bq/cm²</u>		<u>< 10 Bq/cm²</u>		
	(Alpha)		(Alpha)		
	<u>< 16.7 Bq/cm²</u>		<u>< 100 dpm</u>		
	(Beta-Gamma)		(Beta-Gamma)		
RCT* (HPT)	<u>[Signature]</u>	RCT* (HPT)	<u>[Signature]</u>		
	(Signature)		(Signature)		

(10) Shipment Description	
A. Work Package Number	<u>ES-97-00044</u>
B. Cask Seal Number	<u>12415</u>
C. Sampler Serial Number	<u>96-355</u>
D. Date and Time Sampler Unseated	<u>6-16-97 / 1901</u>
E. Expected Liquid Content	<u>20%</u>
F. Expected Solid Content	<u>80%</u>
G. Dose Rate Through Drill String	<u>410 mR/hr</u>
H. Expected Sample Length	<u>19"</u>

I) INFORMATION (Include statement of laboratory tests to be performed.)

HNFDSD-WM-DP-259 REV. 0

2) Field Comments		34) Laboratory Comments	
Libr added To The Drill String.		597T001415	

(13) Point of Origin	(14) Destination	(15) Sender Name (Sign and PRINT)	(16) Date/Time	(17) Sender Comments
<u>BY-109</u>	<u>222-S</u>	<u>[Signature] R.J. Penzwick for M.C. Jones</u>	<u>6/18/97 / 1230</u>	
(18) Relinquished By (Sign and PRINT)	(20) Received By (Sign and PRINT)	(21) Date/Time	(22) Receiver Comments	
<u>[Signature] R.J. Penzwick</u>	<u>[Signature] C.F. Boyd</u>	<u>6-18-97 / 1250</u>		
(19) Relinquished By (Sign and PRINT)	(24) Received By (Sign and PRINT)	(25) Date/Time	(26) Receiver Comments	
<u>[Signature] C.F. Boyd</u>	<u>[Signature] J. Knight Jr</u>	<u>6-18-97 / 1255</u>		
(21) Relinquished By (Sign and PRINT)	(28) Received By (Sign and PRINT)	(29) Date/Time	(30) Receiver Comments	

(18) Seal Intact Upon Release?	(31) Seal Intact Upon Receipt?	(32) Seal Data Consistent with this Record?
☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

Shipment Number <u>200W-08-TF</u>	(2) Sample Number <u>203-6</u>	(3) Supervisor <u>DC Hartley, Delaitt, 97</u>
Tank <u>B4109</u>	(5) Riser <u>10B</u>	(6) Segment <u>6</u>
	(7) Core <u>203</u>	(8) Cask Serial Number <u>SN#58 SN#50</u>

Radiation Survey Date:	(9) FIELD	(33) LABORATORY	(10) Shipment Description
Over Top Dose Rate <u>.01 mSv</u>		<u><.005 mSv</u>	A. Work Package Number <u>ES-97-00044/0</u>
Side Dose Rate <u>.1 mSv</u>		<u>.1 mSv</u>	B. Cask Seal Number <u>13076</u>
Bottom Dose Rate <u>.05 mSv</u>		<u>.03 mSv</u>	C. Sampler Serial Number <u>R65-068</u>
Smearable Contamination <u><.334 Bq/100cm²</u>		<u><D</u>	D. Date and Time Sampler Unseated <u>6-17-97, 0142</u>
(Alpha)		(Alpha)	E. Expected Liquid Content <u>20%</u>
<u><16.7 Bq/100cm²</u>		<u><100 DPM</u>	F. Expected Solid Content <u>80%</u>
(Beta-Gamma)		(Beta-Gamma)	G. Dose Rate Through Drill String <u>280 mR/Hr</u>
RCT* <u>[Signature]</u>	RCT* <u>[Signature]</u>		H. Expected Sample Length <u>1911</u>
(HPT)	(HPT)		
(Signature)	(Signature)		

1) INFORMATION (include statement of laboratory tests to be performed.)

HNF-SD-WM-DP-259 REV. 0

2) Field Comments		3) Laboratory Comments	
<u>Lithium Bromide Added</u> <u>X-RAY OF SAMPLE</u> <u>showed a 15 3/4 inch</u> <u>R 65 sampler Recovery.</u>		<u>S97T001414</u>	

(13) Point of Origin <u>B4109</u>	(14) Destination <u>2225</u>	(15) Sender Name (Sign and PRINT) <u>RS Pezwnik for D Hartley</u>	(16) Date/Time <u>6/18/97/0930</u>	(17) Sender Comments
(18) Relinquished By (Sign and PRINT) <u>[Signature]</u>	(19) Received By (Sign and PRINT) <u>RS Pezwnik</u>	(20) Received By (Sign and PRINT) <u>[Signature]</u>	(21) Date/Time <u>6-18-97</u>	(22) Receiver Comments
(23) Relinquished By (Sign and PRINT) <u>[Signature]</u>	(24) Received By (Sign and PRINT) <u>[Signature]</u>	(25) Received By (Sign and PRINT) <u>[Signature]</u>	(26) Date/Time <u>6-18-97</u>	(26) Receiver Comments
(27) Relinquished By (Sign and PRINT)	(28) Received By (Sign and PRINT)	(29) Date/Time	(30) Receiver Comments	

(18) Seal Intact Upon Release? ☒ Yes ☐ No	(31) Seal Intact Upon Receipt? ☒ Yes ☐ No	(32) Seal Date Consistent with this Record? ☒ Yes ☐ No
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CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

Shipment Number <u>200W-08-TP</u>	(2) Sample Number <u>203-7</u>	(3) Supervisor <u>D.C. Hartley</u>
Tank <u>B4109</u>	(5) Riser <u>10B</u>	(6) Segment <u>7</u>
	(7) Core <u>203</u>	(8) Cask Serial Number <u>C1032</u>
Radiation Survey Date:		(10) Shipment Description
(9) FIELD	(33) LABORATORY	
Over Top Dose Rate <u>.01 mSv</u>	<u><.005 mSv</u>	A. Work Package Number <u>ES-97-00044/0</u>
Side Dose Rate <u>.1 mSv</u>	<u>.02 mSv</u>	B. Cask Seal Number <u>13052</u>
Bottom Dose Rate <u>.05 mSv</u>	<u>.015 mSv</u>	C. Sampler Serial Number <u>96-360</u>
Smearable Contamination <u><334 Bq/100cm²</u>	<u><10</u>	D. Date and Time Sampler Unseated <u>6-17-97, 0306</u>
(Alpha)	(Alpha)	E. Expected Liquid Content <u>20%</u>
<u><16.7 Bq/100cm²</u>	<u><100 DPM</u>	F. Expected Solid Content <u>80%</u>
(Beta-Gamma)	(Beta-Gamma)	G. Dose Rate Through Drill String <u>650 mR/hr</u>
RCT* <u>2 hr</u>	RCT* <u>1 hr</u>	H. Expected Sample Length <u>1911</u>
(HPT)	(HPT)	

1) INFORMATION (Include statement of laboratory tests to be performed.)

HNF-SD-WM-DP 259 REV. 0

1) Field Comments <u>Sample pushed 17h</u> <u>Lithium Bromide Added</u>		34) Laboratory Comments <u>597T001421</u>	
13) Point of Origin <u>B4109</u>	14) Destination <u>2225</u>	15) Sender Name (Sign and PRINT) <u>John R. Pernik for D. Hartley</u>	16) Date/Time <u>6/18/97/USD</u>
17) Relinquished By (Sign and PRINT) <u>John R. Pernik</u>	18) Received By (Sign and PRINT) <u>John R. Pernik</u>	19) Date/Time <u>6-18-97</u>	20) Receiver Comments
21) Relinquished By (Sign and PRINT) <u>John R. Pernik</u>	22) Received By (Sign and PRINT) <u>John R. Pernik</u>	23) Date/Time <u>6-18-97</u>	24) Receiver Comments
25) Relinquished By (Sign and PRINT) <u>John R. Pernik</u>	26) Received By (Sign and PRINT) <u>John R. Pernik</u>	27) Date/Time <u>6-18-97</u>	28) Receiver Comments
29) Relinquished By (Sign and PRINT)	30) Received By (Sign and PRINT)	31) Date/Time	32) Receiver Comments
18) Seal Intact Upon Release? ☒ Yes ☐ No		31) Seal Intact Upon Receipt? ☒ Yes ☐ No	
32) Seal Date Consistent with this Record? ☒ Yes ☐ No		Sample No. ☒ Yes ☐ No	

HNF-SD-WM-DP-259, REV. 0

PHOTOGRAPHS

HNH-SD-WM-DP-259, REV. 0

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BY-109 Core 201 Segment #2

6-10-97

BY-104 Core 201 Segment 3K1

6-20-97

HNF-SD-WM-DP-259, REV. 0

BY-109 Core 201 Segment #5

6-20-97

HNF-SD-WM-DP-259, REV. 0

BY-109 Core 203 Segment #1

6/20/97

BY-109 Core 203 Segment #3

6/25/97

HNF-SD-WM-DP-259, REV. 0

BY-109 Core 203 Segment #4

6/20/97

HNF-SD-WM-DP-259, REV. 0

BY-109 Core 203 Segment #7

6/23/97

HNF-SD-WM-DP-259, REV. 0

SAMPLE HANDLING

HNF-SD-WM-DP-259, REV. 0

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LABCORE Data Entry Template for Worklist# 18563

Analyst: EC Instrument: BA000 Book # NA

Method: LO-160-103 Rev/Mod

Worklist Comment: BY-109 C201 SEG # 2 RISER 12C EXTRUSION

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 INSTCHK01			EXTRUD01	SOLID	<u>20</u>	<u>20.00</u>	<u>11.47</u>	N/A
		2 INSTCHK02			EXTRUD01	SOLID	<u>500</u>	<u>500.18</u>	<u>11.47</u>	N/A
97000412	BY-109 (P)	3 SAMPLE	S97T001331	0	DLIQVOL1	SOLID	<u>N/A</u>	<u>0</u>		mL
97000412	BY-109 (P)	4 SAMPLE	S97T001331	0	DLIQWT01	SOLID	<u>N/A</u>	<u>0</u>		g
97000412	BY-109 (P)	5 SAMPLE	S97T001331	0	EST.G/ML	SOLID	<u>N/A</u>	<u>0</u>		g/mL
97000412	BY-109 (P)	6 SAMPLE	S97T001331	0	EXTRUD01	SOLID	<u>N/A</u>	<u>complete</u>		
97000412	BY-109 (P)	7 SAMPLE	S97T001331	0	LLIQWT01	SOLID	<u>N/A</u>	<u>7.8</u>		g
97000412	BY-109 (P)	8 SAMPLE	S97T001331	0	NOTEBOOK	SOLID	<u>N/A</u>	<u>NA-36</u>		
97000412	BY-109 (P)	9 SAMPLE	S97T001331	0	SLDVOL01	SOLID	<u>N/A</u>	<u>NA</u>		mL
97000412	BY-109 (P)	10 SAMPLE	S97T001331	0	SLDWT-01	SOLID	<u>N/A</u>	<u>351.3</u>		g
97000412	BY-109 (P)	11 SAMPLE	S97T001331	0	APPEAR01	SOLID	<u>N/A</u>	<u>complete</u>		
97000412	BY-109 (P)	12 SAMPLE	S97T001331	0	ORGVOL01	SOLID	<u>N/A</u>	<u>0</u>		mL

Final page for worklist # 18563

Analyst Signature

Date

6/11/97

Analyst Signature

Date

6/11/97

Validated by 77 Logins 6-11-97

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.

worklist Version 2.1 05/15/95
06/20/97 08:40

HNF-SD-WM-DP-259, REV. 0

Page: 1

LABCORE Data Entry Template for Worklist# 18750

Analyst: ER Instrument: BA000 Book # NAMethod: LO-160-103 Rev/Mod CO

Worklist Comment: BY-109 C201 SEG #3R1 RISER 12C EXTRUSION

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 INSTCHK01			EXTRUD01	SOLID	<u>20</u>	<u>20.02</u>	<u>N/A</u>	
		2 INSTCHK02			EXTRUD01	SOLID	<u>300</u>	<u>300.12</u>	<u>N/A</u>	
97000412	BY-109 (P)	3 SAMPLE	S97T001396	0	DLIQVOL1	SOLID	<u>N/A</u>	<u>30</u> <u>39.1</u>		ml
97000412	BY-109 (P)	4 SAMPLE	S97T001396	0	DLIQWT01	SOLID	<u>N/A</u>	<u>39.1</u>		g
97000412	BY-109 (P)	5 SAMPLE	S97T001396	0	EST.G/ML	SOLID	<u>N/A</u>	<u>1.30</u>		g/ml
97000412	BY-109 (P)	6 SAMPLE	S97T001396	0	EXTRUD01	SOLID	<u>N/A</u>	<u>Complete</u>		
97000412	BY-109 (P)	7 SAMPLE	S97T001396	0	LLIQWT01	SOLID	<u>N/A</u>	<u>18.7</u>		g
97000412	BY-109 (P)	8 SAMPLE	S97T001396	0	NOTEBOOK	SOLID	<u>N/A</u>	<u>11-36</u>		
97000412	BY-109 (P)	9 SAMPLE	S97T001396	0	SLDVOL01	SOLID	<u>N/A</u>	<u>NA</u>		ml
97000412	BY-109 (P)	10 SAMPLE	S97T001396	0	SLDWT-01	SOLID	<u>N/A</u>	<u>339.7</u>		g
97000412	BY-109 (P)	11 SAMPLE	S97T001396	0	APPEAR01	SOLID	<u>N/A</u>	<u>Complete</u>		
97000412	BY-109 (P)	12 SAMPLE	S97T001396	0	ORGVOL01	SOLID	<u>N/A</u>	<u>0</u>		ml

Final page for worklist # 18750

CSL 7/1/97
Analyst Signature Date

CSL 7/1/97
Analyst Signature Date

Data Entry Comments:

Validated by
ARK
7/1/97

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# 18762

Analyst: gy Instrument: BA000 Book # N/A

Method: LO-160-103 Rev/Mod C-0

Worklist Comment: BY-109 CORE 203 SEG #1 RISER 10B EXTRUSION

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	INSTCHK01				EXTRUD01	SOLID	20	20.02	N/A	
		2	INSTCHK02				EXTRUD01	SOLID	300	500.5	N/A	
97000411	BY-109 (P)	3	SAMPLE	S97T001419	0		DLIQUOL1	SOLID	N/A	0		ml
97000411	BY-109 (P)	4	SAMPLE	S97T001419	0		DLIQUOT01	SOLID	N/A	0		g
97000411	BY-109 (P)	5	SAMPLE	S97T001419	0		EST.G/ML	SOLID	N/A	N/A		g/ml
97000411	BY-109 (P)	6	SAMPLE	S97T001419	0		EXTRUD01	SOLID	N/A	complete		
97000411	BY-109 (P)	7	SAMPLE	S97T001419	0		LLIGHT01	SOLID	N/A	5		g
97000411	BY-109 (P)	8	SAMPLE	S97T001419	0		NOTEBOOK	SOLID	N/A	HNF-N36		
97000411	BY-109 (P)	9	SAMPLE	S97T001419	0		SLDVOL01	SOLID	N/A	N/A		ml
97000411	BY-109 (P)	10	SAMPLE	S97T001419	0		SLDLT-01	SOLID	N/A	88.7		g
97000411	BY-109 (P)	11	SAMPLE	S97T001419	0		APPEAR01	SOLID	N/A	complete		
97000411	BY-109 (P)	12	SAMPLE	S97T001419	0		ORGVOL01	SOLID	N/A	HNF 0		ml

Final page for worklist # 18762

Analyst Signature A. Mag Date 6-25-97

Analyst Signature A. Mag Date 6-25-97

Validated by M. Legiers
6-25-97

Data Entry Comments:

worklistpt Version 2.1 05/15/95

HNF-SD-WM-DP-259, REV. 0

Page: 1

06/20/97 13:49

LABCORE Data Entry Template for Worklist# 18763

Analyst: _____ Instrument: BA000 _____ Book # _____

Method: LO-160-103 Rev/Mod C-φ

Worklist Comment: BY-109 CORE 203 SEG #3 EXTRUSION

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	INSTCHK01				EXTRUD01	SOLID	20	20.62	N/A	
		2	INSTCHK02				EXTRUD01	SOLID	500	500.5	N/A	
97000411	BY-109 (P)	3	SAMPLE	S97T001415	0		DLIQVOL1	SOLID	N/A	φ		mL
97000411	BY-109 (P)	4	SAMPLE	S97T001415	0		DLIQWT01	SOLID	N/A	φ		g
97000411	BY-109 (P)	5	SAMPLE	S97T001415	0		EST_G/ML	SOLID	N/A	N/A		g/mL
97000411	BY-109 (P)	6	SAMPLE	S97T001415	0		EXTRUD01	SOLID	N/A	complete		
97000411	BY-109 (P)	7	SAMPLE	S97T001415	0		LLIQWT01	SOLID	N/A	<5		g
97000411	BY-109 (P)	8	SAMPLE	S97T001415	0		NOTEBOOK	SOLID	N/A	HNF-N-36		
97000411	BY-109 (P)	9	SAMPLE	S97T001415	0		SLDVOL01	SOLID	N/A	N/A		mL
97000411	BY-109 (P)	10	SAMPLE	S97T001415	0		SLDWT-01	SOLID	N/A	465.9		g
97000411	BY-109 (P)	11	SAMPLE	S97T001415	0		APPEAR01	SOLID	N/A	complete		
97000411	BY-109 (P)	12	SAMPLE	S97T001415	0		ORGVOL01	SOLID	N/A	φ		mL

Final page for worklist # 18763

J. May 6-25-97
 Analyst Signature Date
 Validated by *N. Lapins*
 6-25-97

J. May 6-25-97
 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.

HNF-SD-WM-DP-259, REV. 0

worklistpr Version 2.1 05/15/95
06/20/97 13:55

Page: 1

LABCORE Data Entry Template for Worklist# 18764

Analyst: DP

Instrument: BA000

Book # N/AMethod: LO-160-103 Rev/Mod C-φ

Worklist Comment: BY-109 CORE 201 SEG #5 RISER 12C EXTRUSION

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 INSTCHK01			EXTRUD01	SOLID	20	2002	N/A	
		2 INSTCHK02			EXTRUD01	SOLID	500	500.15	N/A	
97000412	BY-109 (P)	3 SAMPLE	S97T001397 -0		DLIQVOL1	SOLID	N/A	100		ml
97000412	BY-109 (P)	4 SAMPLE	S97T001397 0		DLIQWT01	SOLID	N/A	146.2		g
97000412	BY-109 (P)	5 SAMPLE	S97T001397 0		EST.G/ML	SOLID	N/A	1.46		g/ml
97000412	BY-109 (P)	6 SAMPLE	S97T001397 0		EXTRUD01	SOLID	N/A	complete		
97000412	BY-109 (P)	7 SAMPLE	S97T001397 0		LLIQWT01	SOLID	N/A	25		g
97000412	BY-109 (P)	8 SAMPLE	S97T001397 0		NOTEBOOK	SOLID	N/A	HNF-N-36		
97000412	BY-109 (P)	9 SAMPLE	S97T001397 0		SLDVOL01	SOLID	N/A	N/A		ml
97000412	BY-109 (P)	10 SAMPLE	S97T001397 0		SLDWT-01	SOLID	N/A	117.0		g
97000412	BY-109 (P)	11 SAMPLE	S97T001397 0		APPEAR01	SOLID	N/A	complete		
97000412	BY-109 (P)	12 SAMPLE	S97T001397 0		ORGVOL01	SOLID	N/A	φ		ml

Final page for worklist # 18764

Analyst Signature D. Pagan Date 6-25-97Analyst Signature D. Pagan Date 6-25-97Validated by J. Lopez
6-25-97

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.

worklist Version 2.1 05/15/95
06/20/97 13:58

HNF-SD-WM-DP-259, REV. 0

Page: 1

LABCORE Data Entry Template for Worklist# 18766

Analyst: _____ Instrument: BA000 _____ Book # _____

Method: LO-160-103 Rev/Mod C- ϕ

Worklist Comment: BY-109 CORE 203 SEG #4 RISER 10B EXTRUSION

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	INSTCHK01		EXTRUD01	SOLID	20	20.02	N/A	
		2	INSTCHK02		EXTRUD01	SOLID	500	500.15	N/A	
97000411	BY-109 (P)	3	SAMPLE	S97T001420	0	DLIQVOL1	SOLID	N/A	ϕ	ml
97000411	BY-109 (P)	4	SAMPLE	S97T001420	0	DLIGHT01	SOLID	N/A	ϕ	g
97000411	BY-109 (P)	5	SAMPLE	S97T001420	0	EST.G/ML	SOLID	N/A	N/A	g/ml
97000411	BY-109 (P)	6	SAMPLE	S97T001420	0	EXTRUD01	SOLID	N/A	complete	
97000411	BY-109 (P)	7	SAMPLE	S97T001420	0	LLIGHT01	SOLID	N/A	ES	g
97000411	BY-109 (P)	8	SAMPLE	S97T001420	0	NOTEBOOK	SOLID	N/A	HNF-N-36	
97000411	BY-109 (P)	9	SAMPLE	S97T001420	0	SLDVOL01	SOLID	N/A	N/A	ml
97000411	BY-109 (P)	10	SAMPLE	S97T001420	0	SLDWT-01	SOLID	N/A	452.9	g
97000411	BY-109 (P)	11	SAMPLE	S97T001420	0	APPEAR01	SOLID	N/A	complete	
97000411	BY-109 (P)	12	SAMPLE	S97T001420	0	ORGVOL01	SOLID	N/A	ϕ	ml

Final page for worklist # 18766

Analyst Signature *A. Nag* Date 6-25-97Analyst Signature *A. Nag* Date 6-25-97Validated by *M. Lagins*
6-25-97

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# 18769

Analyst: _____ Instrument: BA000 _____ Book # _____

Method: LO-160-103 Rev/Mod C-φ HNF-SD-WM-DP-259, REV. 0

Worklist Comment: BY-109 CORE 203 SEG #7 RISER 10B EXTRUSION

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 INSTCHK01			EXTRUD01	SOLID	<u>20</u>	<u>20.01</u>	N/A	
		2 INSTCHK02			EXTRUD01	SOLID	<u>500</u>	<u>500.12</u>	N/A	
97000411	BY-109 (P)	3 SAMPLE	S97T001421	0	DLIQVOL1	SOLID	N/A	<u>φ</u>		ml
97000411	BY-109 (P)	4 SAMPLE	S97T001421	0	DLIQWT01	SOLID	N/A	<u>φ</u>		g
97000411	BY-109 (P)	5 SAMPLE	S97T001421	0	EST_G/ML	SOLID	N/A	<u>N/A</u>		g/ml
97000411	BY-109 (P)	6 SAMPLE	S97T001421	0	EXTRUD01	SOLID	N/A	<u>complete</u>		
97000411	BY-109 (P)	7 SAMPLE	S97T001421	0	LLIQWT01	SOLID	N/A	<u><10</u>		g
97000411	BY-109 (P)	8 SAMPLE	S97T001421	0	NOTEBOOK	SOLID	N/A	<u>HNF-N-36</u>		
97000411	BY-109 (P)	9 SAMPLE	S97T001421	0	SLDVOL01	SOLID	N/A	<u>N/A</u>		ml
97000411	BY-109 (P)	10 SAMPLE	S97T001421	0	SLDWT-01	SOLID	N/A	<u>501.2</u>		g
97000411	BY-109 (P)	11 SAMPLE	S97T001421	0	APPEAR01	SOLID	N/A	<u>complete</u>		
97000411	BY-109 (P)	12 SAMPLE	S97T001421	0	ORGVOL01	SOLID	N/A	<u>φ</u>		ml

Final page for worklist # 18769

A. Mag 6-25-97
 Analyst Signature Date

A. Mag 6-25-97
 Analyst Signature Date

Validated by M. Lapins
6-25-97

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.

HNH-SD-WM-DP-259, REV. 0

SAMPLE PREPARATIONS

HNH-SD-WM-DP-259, REV. 0

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LABCORE Data Entry Template for Worklist# 19385

Analyst: KNT Instrument: FUS01 Book # _____
Method: LA-549-141 Rev/Mod F-0 ~~HNF-SD-WM-DP~~ REV. 11/13/97
Worklist Comment: BY109, FUSION01 skm

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	BLNK-PREP				FUSION01	SOLID	<u>1</u>	<u>.250</u>	N/A	g/L
97000412	BY-109 (P)	2	SAMPLE	S97T001348	0	F	FUSION01	SOLID	N/A	<u>2.0404</u>		g/L
			<u>.5101</u> → <u>.250L</u>									
97000412	BY-109 (P)	3	SAMPLE	S97T001348	0	F	DOSE-02	SOLID	N/A	<u>30</u>		mrad/hour
97000412	BY-109 (P)	4	DUP	S97T001348	0	F	FUSION01	SOLID	<u>2.0404</u>	<u>2.1156</u>	N/A	g/L
			<u>.5289</u> → <u>.250L</u>									
97000412	BY-109 (P)	5	DUP	S97T001348	0	F	DOSE-02	SOLID	<u>30</u>	<u>30</u>	N/A	mrad/hour
97000411	BY-109 (P)	6	SAMPLE	S97T001557	0	F	FUSION01	SOLID	N/A	<u>1.9648</u>		g/L
			<u>.4912</u> → <u>.250L</u>									
97000411	BY-109 (P)	7	SAMPLE	S97T001557	0	F	DOSE-02	SOLID	N/A	<u>15</u>		mrad/hour
97000411	BY-109 (P)	8	DUP	S97T001557	0	F	FUSION01	SOLID	<u>1.9648</u>	<u>2.0088</u>	N/A	g/L
			<u>.5022</u> → <u>.250L</u>									
97000411	BY-109 (P)	9	DUP	S97T001557	0	F	DOSE-02	SOLID	<u>15</u>	<u>20</u>	N/A	mrad/hour
97000412	BY-109 (P)	10	SAMPLE	S97T001572	0	F	FUSION01	SOLID	N/A	<u>1.8680</u>		g/L
			<u>.4670</u> → <u>.250L</u>									
97000412	BY-109 (P)	11	SAMPLE	S97T001572	0	F	DOSE-02	SOLID	N/A	<u>30</u>		mrad/hour
97000412	BY-109 (P)	12	DUP	S97T001572	0	F	FUSION01	SOLID	<u>1.8680</u>	<u>1.8464</u>	N/A	g/L
			<u>.4616</u> → <u>.250L</u>									
97000412	BY-109 (P)	13	DUP	S97T001572	0	F	DOSE-02	SOLID	<u>30</u>	<u>30</u>	N/A	mrad/hour
97000412	BY-109 (P)	14	SAMPLE	S97T001577	0	F	FUSION01	SOLID	N/A	<u>1.8536</u>		g/L
			<u>.4634</u> → <u>.250L</u>									
97000412	BY-109 (P)	15	SAMPLE	S97T001577	0	F	DOSE-02	SOLID	N/A	<u>10</u>		mrad/hour
97000412	BY-109 (P)	16	DUP	S97T001577	0	F	FUSION01	SOLID	<u>1.8536</u>	<u>1.8980</u>	N/A	g/L
			<u>.4745</u> → <u>.250L</u>									
97000412	BY-109 (P)	17	DUP	S97T001577	0	F	DOSE-02	SOLID	<u>10</u>	<u>10</u>	N/A	mrad/hour

Data Entry Comments:

Submitted by K. Veng Added 7/23/97

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# 19385

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
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Final page for worklist # 19385

Kim Thomas 7-23-97
Analyst Signature Date

JK McFarlane 7-23-97
Analyst Signature Date

CHS Valid 7/23/97

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# 19386

Analyst: RR Instrument: FUS01 Book # NA

Method: LA-549-141 Rev/Mod F-0

Worklist Comment: BY109, FUSION01 skm

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 BLNK-PREP			FUSION01	SOLID	<u>1</u>	<u>0.250</u>	<u>N/A</u>	<u>g/L</u>
97000411	BY-109 (P)	2 SAMPLE <u>0.5215g → 0.2501</u>	S97T001541	0 F	FUSION01	SOLID	<u>N/A</u>	<u>2.0860</u>		<u>g/L</u>
97000411	BY-109 (P)	3 SAMPLE	S97T001541	0 F	DOSE-02	SOLID	<u>N/A</u>	<u>20</u>		<u>mrad/hour</u>
97000411	BY-109 (P)	4 DUP <u>0.5295g → 0.2502</u>	S97T001541	0 F	FUSION01	SOLID	<u>2.0860</u>	<u>2.1180</u>	<u>N/A</u>	<u>g/L</u>
97000411	BY-109 (P)	5 DUP	S97T001541	0 F	DOSE-02	SOLID	<u>20</u>	<u>20</u>	<u>N/A</u>	<u>mrad/hour</u>
97000411	BY-109 (P)	6 SAMPLE <u>0.4839g → 0.2502</u>	S97T001544	0 F	FUSION01	SOLID	<u>N/A</u>	<u>1.9356</u>		<u>g/L</u>
97000411	BY-109 (P)	7 SAMPLE	S97T001544	0 F	DOSE-02	SOLID	<u>N/A</u>	<u>35</u>		<u>mrad/hour</u>
97000411	BY-109 (P)	8 DUP <u>0.4943g → 0.2502</u>	S97T001544	0 F	FUSION01	SOLID	<u>1.9356</u>	<u>1.9772</u>	<u>N/A</u>	<u>g/L</u>
97000411	BY-109 (P)	9 DUP	S97T001544	0 F	DOSE-02	SOLID	<u>35</u>	<u>35</u>	<u>N/A</u>	<u>mrad/hour</u>
97000411	BY-109 (P)	10 SAMPLE <u>0.5134g → 0.2502</u>	S97T001549	0 F	FUSION01	SOLID	<u>N/A</u>	<u>2.0536</u>		<u>g/L</u>
97000411	BY-109 (P)	11 SAMPLE	S97T001549	0 F	DOSE-02	SOLID	<u>N/A</u>	<u>40</u>		<u>mrad/hour</u>
97000411	BY-109 (P)	12 DUP <u>0.5129g → 0.2502</u>	S97T001549	0 F	FUSION01	SOLID	<u>2.0536</u>	<u>2.0516</u>	<u>N/A</u>	<u>g/L</u>
97000411	BY-109 (P)	13 DUP	S97T001549	0 F	DOSE-02	SOLID	<u>40</u>	<u>40</u>	<u>N/A</u>	<u>mrad/hour</u>
97000411	BY-109 (P)	14 SAMPLE <u>0.5265g → 0.2502</u>	S97T001554	0 F	FUSION01	SOLID	<u>N/A</u>	<u>2.1060</u>		<u>g/L</u>
97000411	BY-109 (P)	15 SAMPLE	S97T001554	0 F	DOSE-02	SOLID	<u>N/A</u>	<u>5</u>		<u>mrad/hour</u>
97000411	BY-109 (P)	16 DUP <u>0.5249g → 0.2502</u>	S97T001554	0 F	FUSION01	SOLID	<u>2.1060</u>	<u>2.0996</u>	<u>N/A</u>	<u>g/L</u>
97000411	BY-109 (P)	17 DUP	S97T001554	0 F	DOSE-02	SOLID	<u>5</u>	<u>5</u>	<u>N/A</u>	<u>mrad/hour</u>

Data Entry Comments:

Fixed 7/24/97

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# 19386

GROUP	PROJECT	S. TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
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Final page for worklist # 19386

Rob King 7/24/97
Analyst Signature Date

Jim Muck 7-25-97
Analyst Signature Date

597T001482 → 597T001541
597T001483 → 597T001544
597T001484 → 597T001549
597T001485 → 597T001554

Data Entry Comments:

Validated
7/25/97
RK Fullw

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# 19406

Analyst: gsl Instrument: FUS01 Book # N/A

Method: LA-549-141 Rev/Mod F-0

Worklist Comment: BY109, FUSION01 skm

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 BLNK-PREP			FUSION01	SOLID	1	250	N/A	g/L
97000412	BY-109 (P)	2 SAMPLE	S97T001538	0 F	FUSION01	SOLID	N/A	1.9608		g/L
97000412	BY-109 (P)	3 SAMPLE	S97T001538	0 F	DOSE-02	SOLID	N/A	40		mrad/hour
97000412	BY-109 (P)	4 DUP	S97T001538	0 F	FUSION01	SOLID	1.9608	1.9820	N/A	g/L
97000412	BY-109 (P)	5 DUP	S97T001538	0 F	DOSE-02	SOLID	N/A	40	N/A	mrad/hour
97000412	BY-109 (P)	6 SAMPLE	S97T001738	0 F	FUSION01	SOLID	N/A	2.0192		g/L
97000412	BY-109 (P)	7 SAMPLE	S97T001738	0 F	DOSE-02	SOLID	N/A	20		mrad/hour
97000412	BY-109 (P)	8 DUP	S97T001738	0 F	FUSION01	SOLID	2.0192	2.0360	N/A	g/L
97000412	BY-109 (P)	9 DUP	S97T001738	0 F	DOSE-02	SOLID	N/A	20	N/A	mrad/hour
97000411	BY-109 (P)	10 SAMPLE	S97T001744	0 F	FUSION01	SOLID	N/A	2.0068		g/L
97000411	BY-109 (P)	11 SAMPLE	S97T001744	0 F	DOSE-02	SOLID	N/A	15		mrad/hour
97000411	BY-109 (P)	12 DUP	S97T001744	0 F	FUSION01	SOLID	2.0068	1.9836	N/A	g/L
97000411	BY-109 (P)	13 DUP	S97T001744	0 F	DOSE-02	SOLID	N/A	15	N/A	mrad/hour

Final page for worklist # 19406

Analyst Signature A. Lambel Date 07-25-97

Analyst Signature Justin Mark Date 7-26-97

Data Entry Comments:

Samples weighed by Scott Corbally Added 5m 4M HCL? 20 ml. Con.
H₂O: 1 % Solids. Color: Pale Green & Clear
HPT: Scott Corbally Dose Rate of Carton: 5mrads/hr

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.

Parent
S97T001536 → S97T001538
1736 → 1738
1742 → 1744

worklistrpt Version 2.1 05/15/95
07/21/97 10:30

Page: 1

LABCORE Data Entry Template for Worklist# 19407

Analyst: EAL Instrument: FUS01 Book # N/AMethod: LA-549-141 Rev/Mod F-0

Worklist Comment: BY109, FUSION01 skm

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 BLNK-PREP			FUSION01	SOLID	1	.250	N/A	g/L
97000411	BY-109 (P)	2 SAMPLE	S97T001787	0 F	FUSION01	SOLID	N/A	1.9948		g/L
97000411	BY-109 (P)	3 SAMPLE	S97T001787	0 F	DOSE-02	SOLID	N/A	20		mrad/hour
97000411	BY-109 (P)	4 DUP	S97T001787	0 F	FUSION01	SOLID	1.9948	1.9921	N/A	g/L
97000411	BY-109 (P)	5 DUP	S97T001787	0 F	DOSE-02	SOLID	N/A	20	N/A	mrad/hour
97000411	BY-109 (P)	6 SAMPLE	S97T001792	0 F	FUSION01	SOLID	N/A	1.9936		g/L
97000411	BY-109 (P)	7 SAMPLE	S97T001792	0 F	DOSE-02	SOLID	N/A	70		mrad/hour
97000411	BY-109 (P)	8 DUP	S97T001792	0 F	FUSION01	SOLID	1.9936	1.9848	N/A	g/L
97000411	BY-109 (P)	9 DUP	S97T001792	0 F	DOSE-02	SOLID	N/A	50	N/A	mrad/hour

Final page for worklist # 19407

A. Lambel 07.25.97
Analyst Signature Date

Frank Mueh 7-26-97
Analyst Signature Date

m. A. Ch
7/26/97

Data Entry Comments:

Samples weighed by Imbultor. Added 5 ml 4M HCl to 15 ml. Con.
Hitz. 8% Solids. Color: Pale Yellow + Clear
HPT: Scott Corabellay Dose Rate on carton: 8 mrad/hr.

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.

Parax Daughton
S97T001786 → S97T001787
1791 → 1792

LABCORE Data Entry Template for Worklist# 19391

Analyst: DCD Instrument: H2001 Book # N/A

Method: LA-504-101 Rev/Mod F-0

Worklist Comment: BY109, H2ODIG01 skm

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 BLNK-PREP			H2ODIG01	SOLID	<u>1</u>	<u>0.100</u>	<u>N/A</u>	g/L
97000412	BY-109 (P)	2 SAMPLE	S97T001350	0 W	H2ODIG01	SOLID	<u>N/A</u>	<u>4.978</u>		g/L
			<u>0.4978g → 0.100 l</u>							
97000412	BY-109 (P)	3 SAMPLE	S97T001350	0 W	DOSE-02	SOLID	<u>N/A</u>	<u>12.5</u>		mrad/hour
97000412	BY-109 (P)	4 DUP	S97T001350	0 W	H2ODIG01	SOLID	<u>4.978</u>	<u>5.046</u>	<u>N/A</u>	g/L
			<u>0.5046g → 0.100 l</u>							
97000412	BY-109 (P)	5 DUP	S97T001350	0 W	DOSE-02	SOLID	<u>12.5</u>	<u>12.5</u>	<u>N/A</u>	mrad/hour
97000411	BY-109 (P)	6 SAMPLE	S97T001559	0 W	H2ODIG01	SOLID	<u>N/A</u>	<u>5.031</u>		g/L
			<u>0.5031g → 0.100 l</u>							
97000411	BY-109 (P)	7 SAMPLE	S97T001559	0 W	DOSE-02	SOLID	<u>N/A</u>	<u>17.5</u>		mrad/hour
97000411	BY-109 (P)	8 DUP	S97T001559	0 W	H2ODIG01	SOLID	<u>5.031</u>	<u>5.049</u>	<u>N/A</u>	g/L
			<u>0.5049g → 0.100 l</u>							
97000411	BY-109 (P)	9 DUP	S97T001559	0 W	DOSE-02	SOLID	<u>17.5</u>	<u>17.5</u>	<u>N/A</u>	mrad/hour
97000412	BY-109 (P)	10 SAMPLE	S97T001574	0 W	H2ODIG01	SOLID	<u>N/A</u>	<u>5.089</u>		g/L
			<u>0.5089g → 0.100 l</u>							
97000412	BY-109 (P)	11 SAMPLE	S97T001574	0 W	DOSE-02	SOLID	<u>N/A</u>	<u>15</u>		mrad/hour
97000412	BY-109 (P)	12 DUP	S97T001574	0 W	H2ODIG01	SOLID	<u>5.089</u>	<u>5.200</u>	<u>N/A</u>	g/L
			<u>0.5200g → 0.100 l</u>							
97000412	BY-109 (P)	13 DUP	S97T001574	0 W	DOSE-02	SOLID	<u>15</u>	<u>15</u>	<u>N/A</u>	mrad/hour

Final page for worklist # 19391

David C Dunham 7-27-97
Analyst Signature Date

Shirley 7-27-97
Analyst Signature Date

Validated 7/28/97
CSL

Data Entry Comments:

Dose Rated By S. Corbaley

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# 19392

Analyst: DGD Instrument: H2001 Book # N/A

Method: LA-504-101 Rev/Mod F-0

Worklist Comment: BY109, H20DIG01 skm

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	BLNK-PREP		H20DIG01	SOLID	<u>1</u>	<u>0.100</u>	<u>N/A</u>	g/L
97000411	BY-109 (P)	2	SAMPLE S97T001543 0 W		H20DIG01	SOLID	<u>N/A</u>	<u>4.916</u>		g/L
			<u>0.4916 g → 0.100 L</u>							
97000411	BY-109 (P)	3	SAMPLE S97T001543 0 W		DOSE-02	SOLID	<u>N/A</u>	<u>5</u>		mrad/hour
97000411	BY-109 (P)	4	DUP S97T001543 0 W		H20DIG01	SOLID	<u>4.916</u>	<u>5.128</u>	<u>N/A</u>	g/L
			<u>0.5128 g → 0.100 L</u>							
97000411	BY-109 (P)	5	DUP S97T001543 0 W		DOSE-02	SOLID	<u>5</u>	<u>5</u>	<u>N/A</u>	mrad/hour
97000411	BY-109 (P)	6	SAMPLE S97T001546 0 W		H20DIG01	SOLID	<u>N/A</u>	<u>4.917</u>		g/L
			<u>0.4917 g → 0.100 L</u>							
97000411	BY-109 (P)	7	SAMPLE S97T001546 0 W		DOSE-02	SOLID	<u>N/A</u>	<u>17.5</u>		mrad/hour
97000411	BY-109 (P)	8	DUP S97T001546 0 W		H20DIG01	SOLID	<u>4.917</u>	<u>5.058</u>	<u>N/A</u>	g/L
			<u>0.5058 g → 0.100 L</u>							
97000411	BY-109 (P)	9	DUP S97T001546 0 W		DOSE-02	SOLID	<u>17.5</u>	<u>17.5</u>	<u>N/A</u>	mrad/hour
97000412	BY-109 (P)	10	SAMPLE S97T001579 0 W		H20DIG01	SOLID	<u>N/A</u>	<u>5.126</u>		g/L
			<u>0.5126 g → 0.100 L</u>							
97000412	BY-109 (P)	11	SAMPLE S97T001579 0 W		DOSE-02	SOLID	<u>N/A</u>	<u>10</u>		mrad/hour
97000412	BY-109 (P)	12	DUP S97T001579 0 W		H20DIG01	SOLID	<u>5.126</u>	<u>5.107</u>	<u>N/A</u>	g/L
			<u>0.5107 g → 0.100 L</u>							
97000412	BY-109 (P)	13	DUP S97T001579 0 W		DOSE-02	SOLID	<u>10</u>	<u>10</u>	<u>N/A</u>	mrad/hour

Final page for worklist # 19392

Analyst Signature: [Signature] Date: 7-26-97
[Signature] 7-27-97

Analyst Signature: [Signature] Date: 7-27-97
Validated 7/28/97
[Signature]

Data Entry Comments:

Dose dated by S Corbaleby

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.

worklist Version 2.1 05/15/95
07/18/97 10:58

Page: 1

LABCORE Data Entry Template for Worklist# 19393

Analyst: DCD Instrument: H2001 Book # N/AMethod: LA-504-101 Rev/Mod F-0

Worklist Comment: BY109, H2ODIG01 skm

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 BLNK-PREP			H2ODIG01	SOLID	<u>1</u>	<u>0.100</u>	<u>N/A</u>	g/L
97000411	BY-109 (P)	2 SAMPLE	S97T001551 0 W		H2ODIG01	SOLID	<u>N/A</u>	<u>5.040</u>		g/L
			<u>0.5040g → 0.100 L</u>							
97000411	BY-109 (P)	3 SAMPLE	S97T001551 0 W		DOSE-02	SOLID	<u>N/A</u>	<u>17.5</u>		mrad/hour
97000411	BY-109 (P)	4 DUP	S97T001551 0 W		H2ODIG01	SOLID	<u>5.040</u>	<u>5.064</u>	<u>N/A</u>	g/L
			<u>0.5064g → 0.100 L</u>							
97000411	BY-109 (P)	5 DUP	S97T001551 0 W		DOSE-02	SOLID	<u>17.5</u>	<u>17.5</u>	<u>N/A</u>	mrad/hour
97000411	BY-109 (P)	6 SAMPLE	S97T001556 0 W		H2ODIG01	SOLID	<u>N/A</u>	<u>5.160</u>		g/L
			<u>0.5160g → 0.100 L</u>							
97000411	BY-109 (P)	7 SAMPLE	S97T001556 0 W		DOSE-02	SOLID	<u>N/A</u>	<u>5</u>		mrad/hour
97000411	BY-109 (P)	8 DUP	S97T001556 0 W		H2ODIG01	SOLID	<u>5.160</u>	<u>4.965</u>	<u>N/A</u>	g/L
			<u>0.4965g → 0.100 L</u>							
97000411	BY-109 (P)	9 DUP	S97T001556 0 W		DOSE-02	SOLID	<u>5</u>	<u>5</u>	<u>N/A</u>	mrad/hour

Final page for worklist # 19393

Analyst Signature

Date

Analyst Signature

Date

Data Entry Comments:

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

LABCORE Data Entry Template for Worklist# 19417

Analyst: SMF Instrument: H2001 Book # N/A

Method: LA-504-101 Rev/Mod F-0

Worklist Comment: BY109 HEY, H2ODIG01, H2OICP01 skm

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 BLNK-PREP			H2ODIG01	SOLID	<u>1</u>	<u>0.100</u>	<u>N/A</u>	g/L
97000412	BY-109 (P)	2 SAMPLE	S97T001540	0 W	H2ODIG01	SOLID	<u>N/A</u>	<u>5.073</u>		g/L
		<u>0.5073g</u> → <u>0.100g</u>								
97000412	BY-109 (P)	3 SAMPLE	S97T001540	0 W	DOSE-02	SOLID	<u>N/A</u>	<u>2.5</u>		mrad/hour
97000412	BY-109 (P)	4 DUP	S97T001540	0 W	H2ODIG01	SOLID	<u>5.073</u>	<u>5.019</u>	<u>N/A</u>	g/L
		<u>0.5019g</u> → <u>0.100g</u>								
97000412	BY-109 (P)	5 DUP	S97T001540	0 W	DOSE-02	SOLID	<u>2.5</u>	<u>2.5</u>	<u>N/A</u>	mrad/hour
97000498	RGS	6 SAMPLE	S97R000284	0 I	H2OICP01	SOLID	<u>N/A</u>	<u>4.941</u>		g/L
97000498	RGS	7 SAMPLE	S97R000284	0 I	DOSE-02	SOLID	<u>N/A</u>	<u><0.5</u>		mrad/hour
97000498	RGS	8 DUP	S97R000284	0 I	H2OICP01	SOLID	<u>4.941</u>	<u>4.888</u>	<u>N/A</u>	g/L
97000498	RGS	9 DUP	S97R000284	0 I	DOSE-02	SOLID	<u><0.5</u>	<u><0.5</u>	<u>N/A</u>	mrad/hour
97000412	BY-109 (P)	10 SAMPLE	S97T001740	0 W	H2ODIG01	SOLID	<u>N/A</u>	<u>5.046</u>		g/L
		<u>0.5046g</u> → <u>0.100g</u>								
97000412	BY-109 (P)	11 SAMPLE	S97T001740	0 W	DOSE-02	SOLID	<u>N/A</u>	<u>10.0</u>		mrad/hour
97000412	BY-109 (P)	12 DUP	S97T001740	0 W	H2ODIG01	SOLID	<u>5.046</u>	<u>5.053</u>	<u>N/A</u>	g/L
		<u>0.5053g</u> → <u>0.100g</u>								
97000412	BY-109 (P)	13 DUP	S97T001740	0 W	DOSE-02	SOLID	<u>10.0</u>	<u>10.0</u>	<u>N/A</u>	mrad/hour
97000498	RGS	14 SAMPLE	S97R000285	0 I	H2OICP01	SOLID	<u>N/A</u>	<u>4.915</u>		g/L
97000498	RGS	15 SAMPLE	S97R000285	0 I	DOSE-02	SOLID	<u>N/A</u>	<u><0.5</u>		mrad/hour
97000498	RGS	16 DUP	S97R000285	0 I	H2OICP01	SOLID	<u>4.915</u>	<u>4.922</u>	<u>N/A</u>	g/L
97000498	RGS	17 DUP	S97R000285	0 I	DOSE-02	SOLID	<u><0.5</u>	<u><0.5</u>	<u>N/A</u>	mrad/hour
97000411	BY-109 (P)	18 SAMPLE	S97T001746	0 W	H2ODIG01	SOLID	<u>N/A</u>	<u>4.960</u>		g/L
		<u>0.4960g</u> → <u>0.100g</u>								

Data Entry Comments:

sample S97T001742 has grayish-white rocks sized from <1/8" to 1/4".

All H2OICP1 samples received 0.400 ml 1:1 HNO₃ in to 15ml sample.

Dose Rated by S. Corbally, HFT.

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# 19417

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
97000411	BY-109 (P)	19 SAMPLE	S97T001746	0 W	DOSE-02	SOLID	N/A	<0.5		mrad/hour
97000411	BY-109 (P)	20 DUP	S97T001746	0 W	H2O1G01	SOLID	4.960	4.939	N/A	g/L
97000411	BY-109 (P)	21 DUP	S97T001746	0 W	DOSE-02	SOLID	<0.5	<0.5	N/A	mrad/hour
97000498	RGS	22 SAMPLE	S97R000286	0 I	H2O1CP01	SOLID	N/A	4.831		g/L
97000498	RGS	23 SAMPLE	S97R000286	0 I	DOSE-02	SOLID	N/A	<0.5		mrad/hour
97000498	RGS	24 DUP	S97R000286	0 I	H2O1CP01	SOLID	4.831	4.811	N/A	g/L
97000498	RGS	25 DUP	S97R000286	0 I	DOSE-02	SOLID	<0.5	<0.5	N/A	mrad/hour

Final page for worklist # 19417

Susie M. Dutton 7-26-97
Analyst Signature Date

Don J. [Signature] 7-28-97
Analyst Signature Date

Parent H₂O Digest H₂O1CP01
 597T001536 → 597T001540 → 597R000284
 597T001736 → 597T001740 → 597R000285
 597T001742 → 597T001746 → 597R000286

Validated 7/28/97
[Signature]

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# 19418

Analyst: SMF Instrument: H2001 Book # N/A

Method: LA-504-101 Rev/Mod F-0

Worklist Comment: BY109 HEY, H2ODIG01, H2OICP01 skm

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 BLNK-PREP			H2ODIG01	SOLID	<u>1</u>	<u>0.100</u>	<u>N/A</u>	<u>g/L</u>
97000411	BY-109 (P)	2 SAMPLE	S97T001789	0 W	H2ODIG01	SOLID	<u>N/A</u>	<u>4.981</u>		<u>g/L</u>
		<u>0.4981g → 0.100L</u>								
97000411	BY-109 (P)	3 SAMPLE	S97T001789	0 W	DOSE-02	SOLID	<u>N/A</u>	<u>12.5</u>		<u>mrad/hour</u>
97000411	BY-109 (P)	4 DUP	S97T001789	0 W	H2ODIG01	SOLID	<u>4.981</u>	<u>5.025</u>	<u>N/A</u>	<u>g/L</u>
		<u>0.5025g → 0.100L</u>								
97000411	BY-109 (P)	5 DUP	S97T001789	0 W	DOSE-02	SOLID	<u>12.5</u>	<u>12.5</u>	<u>N/A</u>	<u>mrad/hour</u>
97000498	RGS	6 SAMPLE	S97R000287	0 I	H2OICP01	SOLID	<u>N/A</u>	<u>4.851</u>		<u>g/L</u>
97000498	RGS	7 SAMPLE	S97R000287	0 I	DOSE-02	SOLID	<u>N/A</u>	<u><0.5</u>		<u>mrad/hour</u>
97000498	RGS	8 DUP	S97R000287	0 I	H2OICP01	SOLID	<u>4.851</u>	<u>4.894</u>	<u>N/A</u>	<u>g/L</u>
97000498	RGS	9 DUP	S97R000287	0 I	DOSE-02	SOLID	<u><0.5</u>	<u><0.5</u>	<u>N/A</u>	<u>mrad/hour</u>
97000411	BY-109 (P)	10 SAMPLE	S97T001794	0 W	H2ODIG01	SOLID	<u>N/A</u>	<u>5.008</u>		<u>g/L</u>
		<u>0.5008g → 0.100L</u>								
97000411	BY-109 (P)	11 SAMPLE	S97T001794	0 W	DOSE-02	SOLID	<u>N/A</u>	<u>7.5</u>		<u>mrad/hour</u>
97000411	BY-109 (P)	12 DUP	S97T001794	0 W	H2ODIG01	SOLID	<u>5.008</u>	<u>5.055</u>	<u>N/A</u>	<u>g/L</u>
		<u>0.5055g → 0.100L</u>								
97000411	BY-109 (P)	13 DUP	S97T001794	0 W	DOSE-02	SOLID	<u>7.5</u>	<u>7.5</u>	<u>N/A</u>	<u>mrad/hour</u>
97000498	RGS	14 SAMPLE	S97R000288	0 I	H2OICP01	SOLID	<u>N/A</u>	<u>4.878</u>		<u>g/L</u>
97000498	RGS	15 SAMPLE	S97R000288	0 I	DOSE-02	SOLID	<u>N/A</u>	<u><0.5</u>		<u>mrad/hour</u>
97000498	RGS	16 DUP	S97R000288	0 I	H2OICP01	SOLID	<u>4.878</u>	<u>4.924</u>	<u>N/A</u>	<u>g/L</u>
97000498	RGS	17 DUP	S97R000288	0 I	DOSE-02	SOLID	<u><0.5</u>	<u><0.5</u>	<u>N/A</u>	<u>mrad/hour</u>

Data Entry Comments:

All H2OICP01 samples received 0.480 ml 1:1 HNO3 into 15ml San,
Dose Rated By S. Corbally, HPT.

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# 19418

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
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Final page for worklist # 19418

Susie M. Tutors 7-26-97
Analyst Signature Date

Jay Hummel 7-28-97
Analyst Signature Date

Validated 7/28/97
SLA

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# 19464

Analyst: RLM Instrument: H2001 Book # NA

Method: LA-504-101 Rev/Mod FO

Worklist Comment: BY109, H2ODIG01 skm

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 BLNK-PREP			H2ODIG01	SOLID	<u>1</u>	<u>0.100</u>	<u>N/A</u>	g/L
97000412	BY-109 (P)	2 SAMPLE	S97T001353	0 W	H2ODIG01	SOLID	<u>N/A</u>	<u>4.9550</u>		g/L
		<u>0.4955g</u> → <u>0.100g</u>								
97000412	BY-109 (P)	3 SAMPLE	S97T001353	0 W	DOSE-02	SOLID	<u>N/A</u>	<u>5</u>		mrad/hour
97000412	BY-109 (P)	4 DUP	S97T001353	0 W	H2ODIG01	SOLID	<u>4.9550</u>	<u>5.0200</u>	<u>N/A</u>	g/L
		<u>0.5020g</u> → <u>0.100g</u>								
97000412	BY-109 (P)	5 DUP	S97T001353	0 W	DOSE-02	SOLID	<u>5</u>	<u>5</u>	<u>N/A</u>	mrad/hour
97000411	BY-109 (P)	6 SAMPLE	S97T001548	0 W	H2ODIG01	SOLID	<u>N/A</u>	<u>5.5430</u>		g/L
		<u>0.5543g</u> → <u>0.100g</u>								
97000411	BY-109 (P)	7 SAMPLE	S97T001548	0 W	DOSE-02	SOLID	<u>N/A</u>	<u>10</u>		mrad/hour
97000411	BY-109 (P)	8 DUP	S97T001548	0 W	H2ODIG01	SOLID	<u>5.5430</u>	<u>5.5400</u>	<u>N/A</u>	g/L
		<u>0.5540g</u> → <u>0.100g</u>								
97000411	BY-109 (P)	9 DUP	S97T001548	0 W	DOSE-02	SOLID	<u>10</u>	<u>10</u>	<u>N/A</u>	mrad/hour
97000411	BY-109 (P)	10 SAMPLE	S97T001553	0 W	H2ODIG01	SOLID	<u>N/A</u>	<u>5.0070</u>		g/L
		<u>0.5007g</u> → <u>0.100g</u>								
97000411	BY-109 (P)	11 SAMPLE	S97T001553	0 W	DOSE-02	SOLID	<u>N/A</u>	<u>15</u>		mrad/hour
97000411	BY-109 (P)	12 DUP	S97T001553	0 W	H2ODIG01	SOLID	<u>5.0070</u>	<u>5.3210</u>	<u>N/A</u>	g/L
		<u>0.5321g</u> → <u>0.100g</u>								
97000411	BY-109 (P)	13 DUP	S97T001553	0 W	DOSE-02	SOLID	<u>15</u>	<u>15</u>	<u>N/A</u>	mrad/hour

Final page for worklist # 19464

RLMcCown 8/4/97
Analyst Signature Date

Judson Ben 8/10/97
Analyst Signature Date

Data Entry Comments:

weight by RLMcCown
submitted RLMcCown
Hpt Scott Carballey

Validated
8/4/97
RKFuller

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.

Parent Daughter
S97T001346 → S97T001353
S97T001486 → S97T001548
S97T001487 → S97T001553

LABCORE Data Entry Template for Worklist# 19468

Analyst: RLM Instrument: H2001 Book # RA

Method: LA-504-101 Rev/Mod F-0

Worklist Comment: BY109, H20DIG01 skm

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 BLNK-PREP			H20DIG01	SOLID	<u>1</u>	<u>0.100</u>	<u>N/A</u>	g/L
97000412	BY-109 (P)	2 SAMPLE	S97T001576	0 W	H20DIG01	SOLID	<u>N/A</u>	<u>5.0560</u>		g/L
		<u>0.50569</u> → <u>0.100 L</u>								
97000412	BY-109 (P)	3 SAMPLE	S97T001576	0 W	DOSE-02	SOLID	<u>N/A</u>	<u>15</u>		mrad/hour
97000412	BY-109 (P)	4 DUP	S97T001576	0 W	H20DIG01	SOLID	<u>5.0560</u>	<u>5.0830</u>	<u>N/A</u>	g/L
		<u>0.50839</u> → <u>0.100 L</u>								
97000412	BY-109 (P)	5 DUP	S97T001576	0 W	DOSE-02	SOLID	<u>15</u>	<u>15</u>	<u>N/A</u>	mrad/hour
97000412	BY-109 (P)	6 SAMPLE	S97T001581	0 W	H20DIG01	SOLID	<u>N/A</u>	<u>5.2300</u>		g/L
		<u>0.52309</u> → <u>0.100 L</u>								
97000412	BY-109 (P)	7 SAMPLE	S97T001581	0 W	DOSE-02	SOLID	<u>N/A</u>	<u>10</u>		mrad/hour
97000412	BY-109 (P)	8 DUP	S97T001581	0 W	H20DIG01	SOLID	<u>5.2300</u>	<u>5.1510</u>	<u>N/A</u>	g/L
		<u>0.51519</u> → <u>0.100 L</u>								
97000412	BY-109 (P)	9 DUP	S97T001581	0 W	DOSE-02	SOLID	<u>10</u>	<u>10</u>	<u>N/A</u>	mrad/hour

Final page for worklist # 19468

RLM 8/4/97
Analyst Signature Date

Susan Bue 8/04/97
Analyst Signature Date

Parent Daughter
S97T001463 → S97T001576
S97T001464 → S97T001581

Data Entry Comments:

weights by RLM
submitted RLM
HPT Scott Corbaley

*Validated
8/4/97
GPK/Fuller*

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# 19463

Analyst: Dcd Instrument: ACD01 Book # WHR-1A } 2.5 ml of
WMC-2 } each to 50 ml
 Volume, DF=20x

Method: LA-505-163 Rev/Mod A-0

Worklist Comment: BY109, ACIDIG01 skm

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 BLNK-PREP			ACIDIG01	SOLID	<u>1</u>	<u>0.050</u>	<u>N/A</u>	<u>g/L</u>
		2 STD-PREP			ACIDIG01	SOLID	<u>20</u>	<u>20</u>	<u>N/A</u>	<u>SPK D.F.</u>
97000412	BY-109 (P)	3 SAMPLE	S97T001352	0 A	ACIDIG01	SOLID	<u>N/A</u>	<u>5.4680</u>		<u>g/L</u>
		<u>0.27343</u> → <u>0.0501</u>								
97000412	BY-109 (P)	4 SAMPLE	S97T001352	0 A	DOSE-02	SOLID	<u>N/A</u>	<u>30</u>		<u>mrad/hour</u>
97000412	BY-109 (P)	5 DUP	S97T001352	0 A	ACIDIG01	SOLID	<u>5.4680</u>	<u>5.0380</u>	<u>N/A</u>	<u>g/L</u>
		<u>0.25199</u> → <u>0.0501</u>								
97000412	BY-109 (P)	6 DUP	S97T001352	0 A	DOSE-02	SOLID	<u>30</u>	<u>30</u>	<u>N/A</u>	<u>mrad/hour</u>
97000411	BY-109 (P)	7 SAMPLE	S97T001547	0 A	ACIDIG01	SOLID	<u>N/A</u>	<u>5.2120</u>		<u>g/L</u>
		<u>0.26069</u> → <u>0.0501</u>								
97000411	BY-109 (P)	8 SAMPLE	S97T001547	0 A	DOSE-02	SOLID	<u>N/A</u>	<u>20</u>		<u>mrad/hour</u>
97000411	BY-109 (P)	9 DUP	S97T001547	0 A	ACIDIG01	SOLID	<u>5.2120</u>	<u>5.1500</u>	<u>N/A</u>	<u>g/L</u>
		<u>0.25759</u> → <u>0.0501</u>								
97000411	BY-109 (P)	10 DUP	S97T001547	0 A	DOSE-02	SOLID	<u>20</u>	<u>20</u>	<u>N/A</u>	<u>mrad/hour</u>
97000411	BY-109 (P)	11 SAMPLE	S97T001552	0 A	ACIDIG01	SOLID	<u>N/A</u>	<u>4.8760</u>		<u>g/L</u>
		<u>0.24389</u> → <u>0.0501</u>								
97000411	BY-109 (P)	12 SAMPLE	S97T001552	0 A	DOSE-02	SOLID	<u>N/A</u>	<u>25</u>		<u>mrad/hour</u>
97000411	BY-109 (P)	13 DUP	S97T001552	0 A	ACIDIG01	SOLID	<u>4.8760</u>	<u>4.8900</u>	<u>N/A</u>	<u>g/L</u>
		<u>0.24459</u> → <u>0.0501</u>								
97000411	BY-109 (P)	14 DUP	S97T001552	0 A	DOSE-02	SOLID	<u>25</u>	<u>25</u>	<u>N/A</u>	<u>mrad/hour</u>
97000412	BY-109 (P)	15 SAMPLE	S97T001575	0 A	ACIDIG01	SOLID	<u>N/A</u>	<u>5.2140</u>		<u>g/L</u>
		<u>0.26079</u> → <u>0.0501</u>								
97000412	BY-109 (P)	16 SAMPLE	S97T001575	0 A	DOSE-02	SOLID	<u>N/A</u>	<u>25</u>		<u>mrad/hour</u>
97000412	BY-109 (P)	17 DUP	S97T001575	0 A	ACIDIG01	SOLID	<u>5.2140</u>	<u>5.0760</u>	<u>N/A</u>	<u>g/L</u>
		<u>0.25389</u> → <u>0.0501</u>								
97000412	BY-109 (P)	18 DUP	S97T001575	0 A	DOSE-02	SOLID	<u>25</u>	<u>25</u>	<u>N/A</u>	<u>mrad/hour</u>

Data Entry Comments:

and 8/4/97

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# 19463

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
97000412	BY-109 (P)	19 SAMPLE	S97T001580	0 A	ACID1601	SOLID	N/A	5.1840		g/L
		0.25929 → 0.0508								
97000412	BY-109 (P)	20 SAMPLE	S97T001580	0 A	DOSE-02	SOLID	N/A	15		mrad/hour
97000412	BY-109 (P)	21 DUP	S97T001580	0 A	ACID1601	SOLID	5.1840	5.0520	N/A	g/L
		0.25269 → 0.0508								
97000412	BY-109 (P)	22 DUP	S97T001580	0 A	DOSE-02	SOLID	15	15	N/A	mrad/hour

Final page for worklist # 19463

David D. Dunbar 8-4-97
Analyst Signature Date

Frank Mark 8-5-97
Analyst Signature Date

Parent		Daughter
S97T001346	→	S97T001352
S97T001486	→	S97T001547
S97T001487	→	S97T001552
S97T001463	→	S97T001575
S97T001464	→	S97T001580

Validated
8-5-97
R.H. Fuller

Data Entry Comments:

weight by R. Malcom

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# 19586

Analyst: RK Instrument: ACD01 Book # whc-1A → 2.5 ml
whc-2 → 2.5 ml

Method: LA-505-163 Rev/Mod A-0

Worklist Comment: BY109, ACIDIG01 skm

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 BLNK-PREP			ACIDIG01	SOLID	<u>1</u>	<u>.0500</u>	<u>N/A</u>	<u>g/L</u>
		2 STD-PREP			ACIDIG01	SOLID	<u>20</u>	<u>20</u>	<u>N/A</u>	<u>g/L</u> <i>DF * 24 mlt</i>
97000412	BY-109 (P)	3 SAMPLE	S97T001821 0 A		ACIDIG01	SOLID	<u>N/A</u>	<u>5.066</u>		<u>g/L</u>
97000412	BY-109 (P)	4 SAMPLE	S97T001821 0 A		DOSE-02	SOLID	<u>N/A</u>	<u>30</u>		<u>mrad/hour</u>
97000412	BY-109 (P)	5 DUP	S97T001821 0 A		ACIDIG01	SOLID	<u>5.066</u>	<u>5.162</u>	<u>N/A</u>	<u>g/L</u>
97000412	BY-109 (P)	6 DUP	S97T001821 0 A		DOSE-02	SOLID	<u>30</u>	<u>30</u>	<u>N/A</u>	<u>mrad/hour</u>
97000412	BY-109 (P)	7 SAMPLE	S97T001822 0 A		ACIDIG01	SOLID	<u>N/A</u>	<u>4.952</u>		<u>g/L</u>
97000412	BY-109 (P)	8 SAMPLE	S97T001822 0 A		DOSE-02	SOLID	<u>N/A</u>	<u>15</u>		<u>mrad/hour</u>
97000412	BY-109 (P)	9 DUP	S97T001822 0 A		ACIDIG01	SOLID	<u>4.952</u>	<u>4.914</u>	<u>N/A</u>	<u>g/L</u>
97000412	BY-109 (P)	10 DUP	S97T001822 0 A		DOSE-02	SOLID	<u>15</u>	<u>15</u>	<u>N/A</u>	<u>mrad/hour</u>
97000412	BY-109 (P)	11 SPK	S97T001822 0 A		ACIDIG01	SOLID	<u>N/A</u>	<u>4.940</u>	<u>N/A</u>	<u>g/L</u> <i>DF = 20 *</i>
97000412	BY-109 (P)	12 SPK	S97T001822 0 A		DOSE-02	SOLID	<u>N/A</u>	<u>15</u>	<u>N/A</u>	<u>mrad/hour</u>
97000411	BY-109 (P)	13 SAMPLE	S97T001823 0 A		ACIDIG01	SOLID	<u>N/A</u>	<u>5.098</u>		<u>g/L</u>
97000411	BY-109 (P)	14 SAMPLE	S97T001823 0 A		DOSE-02	SOLID	<u>N/A</u>	<u>20</u>		<u>mrad/hour</u>
97000411	BY-109 (P)	15 DUP	S97T001823 0 A		ACIDIG01	SOLID	<u>5.098</u>	<u>5.058</u>	<u>N/A</u>	<u>g/L</u>
97000411	BY-109 (P)	16 DUP	S97T001823 0 A		DOSE-02	SOLID	<u>20</u>	<u>20</u>	<u>N/A</u>	<u>mrad/hour</u>

*
Data Entry Comments: used 2.5 ml each of whc-1A and whc-2 for std and spike
filtered 597T001821 + Dup, 597T001823 + Dup with whatman #41 filters

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# 19586

GROUP	PROJECT	S TYPE	SAMPLE#	R A -----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
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Final page for worklist # 19586

Not King 8/3/97
Analyst Signature Date

Susan Bee 8/03/97
Analyst Signature Date

Parent 1536 → Daughter
597T001536 → 597T001821
597T001736 → 597T001822
597T001742 → 597T001823

[Signature] 8/4/97
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.

LABCORE Data Entry Template for Worklist# 19609

Analyst: JK Instrument: ACD01 Book # whc-1A → 2.5 ml
whc-2 → 2.5 ml * see note
Method: LA-505-163 Rev/Mod A-0
Worklist Comment: BY109, ACIDIG01 skm

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 BLNK-PREP			ACIDIG01	SOLID	<u>1</u>	<u>.050L</u>	N/A	g/L
		2 STD-PREP			ACIDIG01	SOLID	<u>20</u>	<u>20</u>	N/A	g/L <u>DF</u>
97000411	BY-109 (P)	3 SAMPLE .2603 → .050L	S97T001855 0 A		ACIDIG01	SOLID	N/A	<u>5.206</u>		g/L
97000411	BY-109 (P)	4 SAMPLE	S97T001855 0 A		DOSE-02	SOLID	N/A	<u>15</u>		mrad/hour
97000411	BY-109 (P)	5 DUP .2650 → .050L	S97T001855 0 A		ACIDIG01	SOLID	<u>5.206</u>	<u>5.300</u>	N/A	g/L
97000411	BY-109 (P)	6 DUP	S97T001855 0 A		DOSE-02	SOLID	<u>15</u>	<u>15</u>	N/A	mrad/hour
97000411	BY-109 (P)	7 SPK .2683 → .050L	S97T001855 0 A		ACIDIG01	SOLID	<u>1/4</u>	<u>5.366</u>	N/A	g/L <u>DF=20</u> <u>* see note</u>
97000411	BY-109 (P)	8 SPK	S97T001855 0 A		DOSE-02	SOLID	<u>1/4</u>	<u>20</u>	N/A	mrad/hour
97000411	BY-109 (P)	9 SAMPLE .2538 → .050L	S97T001866 0 A		ACIDIG01	SOLID	N/A	<u>5.076</u>		g/L
97000411	BY-109 (P)	10 SAMPLE	S97T001866 0 A		DOSE-02	SOLID	N/A	<u>25</u>		mrad/hour
97000411	BY-109 (P)	11 DUP .2666 → .050L	S97T001866 0 A		ACIDIG01	SOLID	<u>5.076</u>	<u>5.132</u>	N/A	g/L
97000411	BY-109 (P)	12 DUP	S97T001866 0 A		DOSE-02	SOLID	<u>25</u>	<u>25</u>	N/A	mrad/hour
97000411	BY-109 (P)	13 SAMPLE .2545 → .050L	S97T001869 0 A		ACIDIG01	SOLID	N/A	<u>5.190</u>		g/L
97000411	BY-109 (P)	14 SAMPLE	S97T001869 0 A		DOSE-02	SOLID	N/A	<u>25</u>		mrad/hour
97000411	BY-109 (P)	15 DUP .2585 → .050L	S97T001869 0 A		ACIDIG01	SOLID	<u>5.190</u>	<u>5.170</u>	N/A	g/L
97000411	BY-109 (P)	16 DUP	S97T001869 0 A		DOSE-02	SOLID	<u>25</u>	<u>25</u>	N/A	mrad/hour
97000411	BY-109 (P)	17 SPK .2588 → .050L	S97T001869 0 A		ACIDIG01	SOLID	N/A	<u>5.176</u>	N/A	g/L
97000411	BY-109 (P)	18 SPK	S97T001869 0 A		DOSE-02	SOLID	N/A	<u>25</u>	N/A	mrad/hour

Data Entry Comments: Used 2.5 ml each of whc-1A and whc-2 for std and spikes
*filled S97T001855 sample, Dup, spikes and S97T001872 sample and close
with whatman #41 filter paper

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# 19609

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
97000411	BY-109 (P)	19 SAMPLE	S97T001872	0 A	ACIDIG01	SOLID	N/A	5.042		g/L
		.2571 → .0501								
97000411	BY-109 (P)	20 SAMPLE	S97T001872	0 A	DOSE-02	SOLID	N/A	5		mrad/hour
97000411	BY-109 (P)	21 DUP	S97T001872	0 A	ACIDIG01	SOLID	5.042	5.038	N/A	g/L
		.2519 → .0501								
97000411	BY-109 (P)	22 DUP	S97T001872	0 A	DOSE-02	SOLID	5	5	N/A	mrad/hour
97000411	BY-109 (P)	23 SPK	S97T001872	0 A	ACIDIG01	SOLID	N/A	5.064	N/A	g/L
		.2532 → .0501								
97000411	BY-109 (P)	24 SPK	S97T001872	0 A	DOSE-02	SOLID	N/A	5	N/A	mrad/hour

Final page for worklist # 19609

Not King 8-2-97
Analyst Signature Date

Susan Bee 8/02/97
Analyst Signature Date

S97T001482 → S97T001855
S97T001483 → S97T001866
S97T001484 → S97T001869
S97T001485 → S97T001872

[Signature] 8-2-97
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.

LABCORE Data Entry Template for Worklist# 19634

Analyst: RK **Instrument:** ACD01 **Book #** WHC-1A → 2.5 ml
WHC-2 → 2.5 ml
Method: LA-505-163 Rev/Mod A-0
Worklist Comment: BY109, ACIDIG01 skm

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 BLNK-PREP			ACIDIG01	SOLID	<u>1</u>	<u>.0501</u>	<u>N/A</u>	<u>g/L</u>
		2 STD-PREP			ACIDIG01	SOLID	<u>20</u>	<u>20</u>	<u>N/A</u>	<u>g/L</u>
97000412	BY-109 (P)	3 SAMPLE	S97T001880 0 A		ACIDIG01	SOLID	<u>N/A</u>	<u>5.078</u>	<u>N/A</u>	<u>g/L</u>
			<u>.2539 → .0501</u>							
97000412	BY-109 (P)	4 SAMPLE	S97T001880 0 A		DOSE-02	SOLID	<u>N/A</u>	<u>30</u>	<u>N/A</u>	<u>mrad/hour</u>
97000412	BY-109 (P)	5 DUP	S97T001880 0 A		ACIDIG01	SOLID	<u>5.078</u>	<u>5.066</u>	<u>N/A</u>	<u>g/L</u>
			<u>.2533 → .0501</u>							
97000412	BY-109 (P)	6 DUP	S97T001880 0 A		DOSE-02	SOLID	<u>30</u>	<u>30</u>	<u>N/A</u>	<u>mrad/hour</u>
97000412	BY-109 (P)	7 SPK	S97T001880 0 A		ACIDIG01	SOLID	<u>N/A</u>	<u>5.124</u>	<u>N/A</u>	<u>g/L</u>
			<u>.2562 → .0501</u>							
97000412	BY-109 (P)	8 SPK	S97T001880 0 A		DOSE-02	SOLID	<u>N/A</u>	<u>30</u>	<u>N/A</u>	<u>mrad/hour</u>
97000412	BY-109 (P)	9 SAMPLE	S97T001881 0 A		ACIDIG01	SOLID	<u>N/A</u>	<u>5.008</u>	<u>N/A</u>	<u>g/L</u>
			<u>.2504 → .0501</u>							
97000412	BY-109 (P)	10 SAMPLE	S97T001881 0 A		DOSE-02	SOLID	<u>N/A</u>	<u>25</u>	<u>N/A</u>	<u>mrad/hour</u>
97000412	BY-109 (P)	11 DUP	S97T001881 0 A		ACIDIG01	SOLID	<u>5.008</u>	<u>5.086</u>	<u>N/A</u>	<u>g/L</u>
			<u>.2543 → .0501</u>							
97000412	BY-109 (P)	12 DUP	S97T001881 0 A		DOSE-02	SOLID	<u>25</u>	<u>25</u>	<u>N/A</u>	<u>mrad/hour</u>
97000412	BY-109 (P)	13 SPK	S97T001881 0 A		ACIDIG01	SOLID	<u>N/A</u>	<u>5.068</u>	<u>N/A</u>	<u>g/L</u>
			<u>.2534 → .0501</u>							
97000412	BY-109 (P)	14 SPK	S97T001881 0 A		DOSE-02	SOLID	<u>N/A</u>	<u>25</u>	<u>N/A</u>	<u>mrad/hour</u>
97000412	BY-109 (P)	15 SAMPLE	S97T001882 0 A		ACIDIG01	SOLID	<u>N/A</u>	<u>5.018</u>	<u>N/A</u>	<u>g/L</u>
			<u>.2509 → .0501</u>							
97000412	BY-109 (P)	16 SAMPLE	S97T001882 0 A		DOSE-02	SOLID	<u>N/A</u>	<u>10</u>	<u>N/A</u>	<u>mrad/hour</u>
97000412	BY-109 (P)	17 DUP	S97T001882 0 A		ACIDIG01	SOLID	<u>5.018</u>	<u>5.054</u>	<u>N/A</u>	<u>g/L</u>
			<u>.2527 → .0501</u>							
97000412	BY-109 (P)	18 DUP	S97T001882 0 A		DOSE-02	SOLID	<u>10</u>	<u>10</u>	<u>N/A</u>	<u>mrad/hour</u>

Data Entry Comments:

* Mixed 2.5 ml each of WHC-1A and WHC-2 for std and spikes
HPT - Bill Bishop

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# 19634

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
97000411	BY-109 (P)	19 SAMPLE	S97T001883	0 A	ACIDIG01	SOLID	N/A	4.968		g/L
			2484 → 0500							
97000411	BY-109 (P)	20 SAMPLE	S97T001883	0 A	DOSE-02	SOLID	N/A	20		mrad/hour
97000411	BY-109 (P)	21 DUP	S97T001883	0 A	ACIDIG01	SOLID	4.968	4.888	N/A	g/L
			2444 → 0500							
97000411	BY-109 (P)	22 DUP	S97T001883	0 A	DOSE-02	SOLID	20	20	N/A	mrad/hour
97000411	BY-109 (P)	23 SPK	S97T001883	0 A	ACIDIG01	SOLID	N/A	4.932	N/A	g/L D.F. = 20
			2466 → 0500							
97000411	BY-109 (P)	24 SPK	S97T001883	0 A	DOSE-02	SOLID	N/A	20	N/A	mrad/hour

Final page for worklist # 19634

Not Kim
Analyst Signature Date 8-5-97
Dave C. Dineen
Analyst Signature Date 8-5-97

Elizabeth Mark
Analyst Signature Date 8-5-97

*Validated
8/8/97 by
RKH Fuller*

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# 19691

Analyst: RR Instrument: ACD01 Book # whc-1A → 2.5 ml
whc-2 → 2.5 ml
 Method: LA-505-163 Rev/Med A-O
 Worklist Comment: BY109, ACIDIG01 skm

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 BLNK-PREP			ACIDIG01	SOLID	<u>1</u>	<u>.0500</u>	N/A	g/L
		2 STD-PREP			ACIDIG01	SOLID	<u>20</u>	<u>20</u>	N/A	g/L <i>OK DF X24</i>
97000411	BY-109 (P)	3 SAMPLE .2476 → .0500	S97T001937 0 A		ACIDIG01	SOLID	N/A	<u>4.952</u>		g/L
97000411	BY-109 (P)	4 SAMPLE	S97T001937 0 A		DOSE-02	SOLID	N/A	<u>20</u>		mrad/hour
97000411	BY-109 (P)	5 DUP .2469 → .0500	S97T001937 0 A		ACIDIG01	SOLID	<u>4.952</u>	<u>4.938</u>	N/A	g/L
97000411	BY-109 (P)	6 DUP	S97T001937 0 A		DOSE-02	SOLID	<u>20</u>	<u>17.5</u>	N/A	mrad/hour
97000411	BY-109 (P)	7 SPK .2480 → .0500	S97T001937 0 A		ACIDIG01	SOLID	<u>4.952</u>	<u>4.960</u>	N/A	g/L <i>DF=20</i>
97000411	BY-109 (P)	8 SPK	S97T001937 0 A		DOSE-02	SOLID	<u>4.952</u>	<u>20</u>	N/A	mrad/hour
97000411	BY-109 (P)	9 SAMPLE .2534 → .0500	S97T001938 0 A		ACIDIG01	SOLID	N/A	<u>5.068</u>		g/L
97000411	BY-109 (P)	10 SAMPLE	S97T001938 0 A		DOSE-02	SOLID	N/A	<u>50</u>		mrad/hour
97000411	BY-109 (P)	11 DUP .2531 → .0500	S97T001938 0 A		ACIDIG01	SOLID	<u>5.068</u>	<u>5.062</u>	N/A	g/L
97000411	BY-109 (P)	12 DUP	S97T001938 0 A		DOSE-02	SOLID	<u>50</u>	<u>60</u>	N/A	mrad/hour

Final page for worklist # 19691

RR 8/9/97
 Analyst Signature Date

Jay Hamm 8-9-97
 Analyst Signature Date

Parent Daughter
 S97T001786 → S97T001937
 S97T001791 → S97T001938

Jay Hamm 8-10-97
 REVIEWER SIGNATURE DATE

Data Entry Comments:

** added 2.5 ml each of whc-1A, whc-2 for std and spikes*
Fixed 8/9/97

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.

HNH-SD-WM-DP-259, REV. 0

BY-109 BULK DENSITY WORKSHEETS

HNF-SD-WM-DP-259, REV. 0

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Bulk Density Worksheet

Date: 7-1-97

HNFS-SD-WM-DP-259 REV. 0

Requestor: ESCH

Tank: 24-109 (P)

Core: 201

Seg: 2 LH

Auger:

Sample ID: 597601342

Start Time:
End Time:
Homogenization Time (Min.):

Jar#: 12574 mL
Jar/Vial Size: mL
Initial Weight: g
Final Weight: g
Net Weight: g

Cone#: 74
Final Vol: 8.5 mL
Initial Weight: 2.5 g
Final Weight: 23.2 g
Net Weight: 15.7 g

Sample ID:

Appearance/Narrative:

BIK DENOT = 15.7 / 8.5 = 1.85 g/mL

Start Time:
End Time:
Homogenization Time (Min.):

Jar#: mL
Jar/Vial Size: mL
Initial Weight: g
Final Weight: 74 g
Net Weight: g

Cone#:
Final Vol: mL
Initial Weight: g
Final Weight: g
Net Weight: g

Sample ID:

Appearance/Narrative:

Bulk Density Worksheet

Requestor: R. EschDate: 7-1-97Tank: B4-109Core: 201Seg: 2B-1-LHAuger: —Sample ID: SG-T001442Start Time: —End Time: —Homogenization Time (Min.): —Jar#: 12587Jar/Vial Size: — mLInitial Weight: — gFinal Weight: — gNet Weight: — gCone#: 12587Final Vol: 9.00 mLInitial Weight: 2.65 gFinal Weight: 22.83 gNet Weight: 15.18 gSample ID: —Appearance/Narrative: B/F Dec 01 = 15.18 g. 00 = 1.69 g/L Tank: —Core: —Seg: —Auger: —Sample ID: —Start Time: —End Time: —Homogenization Time (Min.): —Jar#: DL3Jar/Vial Size: 7.1 mLInitial Weight: — gFinal Weight: — gNet Weight: — gCone#: —Final Vol: — mLInitial Weight: — gFinal Weight: — gNet Weight: — gSample ID: —Appearance/Narrative: —

HNF-SD-WM-DP-259 REV. 0

Bulk Density Worksheet

Requestor: Eich

Date: 7/2/97

Tank: 114-109

Core: 361

Seg: 4 RGS

Auger: ---

Sample ID: 5977001735

Start Time: ---
End Time: ---
Homogenization Time (Min.): ---

Jar#: 12203
Jar/Vial Size: 250 mL
Initial Weight: 589.6 g
Final Weight: 537.4 g
Net Weight: 152.2 g

110

Cone#: 12203
Final Vol: 12.0 mL
Initial Weight: 7.66 g
Final Weight: 57.8 g
Net Weight: 50.14 g
Sample ID: 5977001735

Appearance/Narrative: ---

Jar#: ---
Jar/Vial Size: --- mL
Initial Weight: --- g
Final Weight: --- g
Net Weight: --- g

Cone#: ---
Final Vol: --- mL
Initial Weight: --- g
Final Weight: --- g
Net Weight: --- g
Sample ID: ---

Appearance/Narrative: ---

20.14
12.0 = 1.67 g/mL

HNF-SD-WM-DP-259 REV. 0

Bulk Density Worksheet

Requestor: A. Esch

Tank: BY109

Core: 203

Seg: 1 LH

Auger: 2

Sample ID: 5977001475

Start Time: _____
End Time: _____
Homogenization Time (Min.): _____

Jar#: _____
Jar/Vial Size: _____ mL
Initial Weight: _____ g
Final Weight: _____ g
Net Weight: _____ g

Cone#: 12369
Final Vol: 9.0 mL
Initial Weight: 7.51 g
Final Weight: 23.90 g
Net Weight: 16.39 g

Sample ID: 5977001475

Appearance/Narrative: 39
BULK DENSITY = 16.39 / 9.0 = 1.82 g/mL

Date: 7-1-97

HNF-SD-WM-DP-259, REV. 0

Tank: _____
Core: _____
Seg: _____
Auger: _____
Sample ID: ME 11/3/97

Start Time: _____
End Time: _____
Homogenization Time (Min.): _____

Jar#: _____
Jar/Vial Size: _____ mL
Initial Weight: _____ g
Final Weight: _____ g
Net Weight: _____ g

Cone#: _____
Final Vol: _____ mL
Initial Weight: _____ g
Final Weight: _____ g
Net Weight: _____ g

Sample ID: _____

Appearance/Narrative: _____

questor: Esch

Bulk Density Worksheet

Date: 7/21/97

Tank: B4-109
Core: 303
Seg: 2 RGS
Auger: _____
Sample ID: 5971001741

Start Time: _____
End Time: _____
Homogenization
Time (Min.): _____

Jar#: 15204
Jar/Vial Size: 250 mL
Initial Weight: 384.1 g
Final Weight: 232.1 g
Net Weight: 152.0 g

Cone#: 12204
Final Vol: 12.0 mL
Initial Weight: 7.65 g
Final Weight: 27.6 g
Net Weight: 19.9 g
Sample ID: 5971001741

Appearance/Narrative:

$$\frac{19.9}{120} = 1.66 \text{ g/cc}$$

Tank: _____
Core: _____
Seg: _____
Auger: _____
Sample ID: _____

Start Time: _____
End Time: _____
Homogenization
Time (Min.): _____

Jar#: _____
Jar/Vial Size: _____ mL
Initial Weight: _____ g
Final Weight: _____ g
Net Weight: _____ g

Cone#: RGE 11/13/97
Final Vol: _____ mL
Initial Weight: _____ g
Final Weight: _____ g
Net Weight: _____ g
Sample ID: _____

Appearance/Narrative:

Requestor: R. Esch Bulk Density Worksheet

Date: 7-1-97

Tank: BY-109
Core: 203
Seg: 3 LH
Auger: -
Sample ID: 597T001476

Tank: _____
Core: _____
Seg: _____
Auger: _____
Sample ID: _____

Start Time: _____
End Time: _____
Homogenization
Time (Min.): _____

Start Time: _____
End Time: _____
Homogenization
Time (Min.): _____

Jar#:
Jar/Vial Size: _____
Initial Weight: _____ g
Final Weight: _____ g
Net Weight: _____ g

Jar#:
Jar/Vial Size: _____ mL
Initial Weight: _____ g
Final Weight: _____ g
Net Weight: _____ g

Cone#: 12590
Final Vol: 11.0 mL
Initial Weight: 7.5 g
Final Weight: 26.43 g
Net Weight: 18.92 g

Cone#: _____
Final Vol: _____ mL
Initial Weight: _____ g
Final Weight: _____ g
Net Weight: _____ g

Sample ID: 597T001476

Appearance/Narrative: 18.92
Bulk Density = 18.92 / 11 ml = 1.72 g/ml

Appearance/Narrative: _____

113

HNF-SD-WM-DF-209 REV. D

Requestor: R. Esch

Bulk Density Worksheet

Date: 7-1-97

Tank: DY-109

Core: 203

Seg: 42A

Auger: -

Sample ID: 597T001477

Start Time: _____
End Time: _____
Homogenization
Time (Min.): _____

Jar#:

Jar/Vial Size: _____ mL

Initial Weight: _____ g

Final Weight: _____ g

Net Weight: _____ g

Cone#: 12592

Final Vol: 11.0 mL

Initial Weight: 7.43 g

Final Weight: 25.87 g

Net Weight: 18.44 g

Sample ID: _____

Appearance/Narrative:

SK DENOT = 18.44 / 11.00 = 1.68 g/mL

Tank: _____

Core: _____

Seg: _____

Auger: _____

Sample ID: _____

Start Time: _____
End Time: _____
Homogenization
Time (Min.): _____

Jar#:

Jar/Vial Size: _____ mL

Initial Weight: _____ g

Final Weight: _____ g

Net Weight: _____ g

Cone#: _____

Final Vol: _____ mL

Initial Weight: _____ g

Final Weight: _____ g

Net Weight: _____ g

Sample ID: _____

Appearance/Narrative:

INF-SD-MM-DP-209 REV C

Bulk Density Worksheet

Date: 7/21/97

Requestor: _____

Tank: B4109

Core: 203

Seg: 5 white seg

Auger: _____

Sample ID: 597720/1785

Start Time: _____

End Time: _____

Homogenization

Time (Min.): _____

Jar#: 12205

Jar/Vial Size: 250 ml

Initial Weight: 382.5 g

Final Weight: 497.8 g

Net Weight: 111.8 g

*Validated
2/2/97*

Jar#: _____

Jar/Vial Size: _____ ml

Initial Weight: _____ g

Final Weight: _____ g

Net Weight: _____ g

Start Time: _____

End Time: _____

Homogenization

Time (Min.): _____

Cone#: _____

Final Vol: _____ ml

Initial Weight: _____ g

Final Weight: _____ g

Net Weight: _____ g

Sample ID: _____

Appearance/Narrative: _____

Appearance/Narrative: _____

Cone#: 12305 (4)

Final Vol: 13.0 ml

Initial Weight: 7.76 g

Final Weight: 28.67 g

Net Weight: 20.91 g

Sample ID: 597801/1785

20.91

20.91

13.0 = 1.61 g

20.91

12 ml @ 50 g/l

Bulk Density Worksheet

Date: 7/24/97

Investigator: Esch

Tank: 114-109

Core: 203

Seg: 6 RGS

Auger:

Sample ID: 5971001790

Start Time: _____
End Time: _____
Homogenization Time (Min.): _____

Jar # _____
Jar/Vial Size: _____ mL
Initial Weight: _____ g
Final Weight: _____ g
Net Weight: _____ g

Start Time: _____
End Time: _____
Homogenization Time (Min.): _____

Jar # _____
Jar/Vial Size: _____ mL
Initial Weight: _____ g
Final Weight: _____ g
Net Weight: _____ g

Cone # _____
Final Vol: _____ mL
Initial Weight: _____ g
Final Weight: _____ g
Net Weight: _____ g
Sample ID: _____

Appearance/Narrative: _____

Jar # 13206

Jar/Vial Size: 250 mL

Initial Weight: 77.4 g

Final Weight: 377.0 g

Net Weight: 148.8 g

Cone # 13206

Final Vol: 14.5 mL

Initial Weight: 7.14 g

Final Weight: 32.1 g

Net Weight: 24.5 g

Sample ID: 5971001790

Appearance/Narrative: 14.5 = 1.69 g

Appearance/Narrative: _____

Appearance/Narrative: _____

Appearance/Narrative: _____

Appearance/Narrative: _____

Appearance/Narrative: _____

Requestor: RFSA

Bulk Density Worksheet

Date: 9-2-99

Tank: 6V-109

Core: 203

Seg: 7014

Auger: _____

Sample ID: 5977001481

Start Time: _____
End Time: _____
Homogenization
Time (Min.): _____

Jar#:

Jar/Vial Size: _____ mL

Initial Weight: _____ g

Final Weight: _____ g

Net Weight: _____ g

Cone#:

Final Vol: 12569 mL

Initial Weight: 11.5 g

Final Weight: 26.87 g

Net Weight: 19.4 g

Sample ID: 5977001481

Appearance/Narrative:

19.4 g / 11.5 mL = 1.69 g/mL

Tank: _____

Core: _____

Seg: _____

Auger: _____

Sample ID: _____

Start Time: _____
End Time: _____
Homogenization
Time (Min.): _____

Jar#:

Jar/Vial Size: _____ mL

Initial Weight: _____ g

Final Weight: _____ g

Net Weight: _____ g

Cone#:

Final Vol: _____ mL

Initial Weight: _____ g

Final Weight: _____ g

Net Weight: _____ g

Sample ID: _____

Appearance/Narrative:

Requestor: R. Esch

Bulk Density Worksheet

Date: 7/1/97

Tank: BX109

Core: 203

Seg: 7LA

Auger: _____

Sample ID: 5977001478

Start Time: _____

End Time: _____

Homogenization

Time (Min.): _____

Jar#: 12594

Jar/Vial Size: _____ mL

Initial Weight: _____ g

Final Weight: _____ g

Net Weight: _____ g

Cone#: 12594

Final Vol: 14.0 mL

Initial Weight: 2.49 g

Final Weight: 35.48 g

Net Weight: 27.99 g

Sample ID: 5977001478

Appearance/Narrative:

Super 01 = 27.99 / 14.0 = 2.00 g/mL

Tank: _____

Core: _____

Seg: _____

Auger: _____

Sample ID: _____

Start Time: _____

End Time: _____

Homogenization

Time (Min.): _____

Jar#: AKA

Jar/Vial Size: _____ mL

Initial Weight: _____ g

Final Weight: _____ g

Net Weight: _____ g

Cone#: _____

Final Vol: _____ mL

Initial Weight: _____ g

Final Weight: _____ g

Net Weight: _____ g

Sample ID: _____

Appearance/Narrative:

HNF-SD-WM-DP-259, REV. 0

INORGANIC ANALYSIS

HNF-SD-WM-DP-259, REV. 0

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LABCORE Data Entry Template for Worklist# 18825

Analyst: SMF Instrument: DSC0 3 Book # 12N14-13

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

Worklist Comment: BY-109 DSC, RUN UNDER N2. RCJ

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			DSC-03	LIQUID	<u>28.45</u>	<u>28.38*</u>	<u>N/A</u>	Joules/g
07000411	BY-109 (P)	2 SAMPLE	S97T001399	0	DSC-03	LIQUID	<u>N/A</u>	<u>0</u>		Joules/g
07000411	BY-109 (P)	3 DUP	S97T001399	0	DSC-03	LIQUID	<u>0</u>	<u>0</u>	<u>N/A</u>	Joules/g

Final page for worklist # 18825

Susie M. Dalton 7-19-97
Analyst Signature Date

Susie M. Dalton 7/22/97
Analyst Signature Date

Validated 7/24/97 Brackel

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: IOND071901 Sat Jul 19 07:20:05 1997

Sample Weight: 21.590 mg

12N14-B

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 122 TO 124

N2, EXOTHERM DOWN

TEMP: 140.0 °C TIME: 0.0 min RATE: 10.0 °C/min

AD MEYERS
PERKIN-ELMER
7 Series Thermal Analysis System
Sat Jul 19 22:17:26 1997

HNF-SD-WM-DP-259, REV. 0

S97T001399

N2 10C/min
TEMP1: 35.0 C
TEMP2: 500.0 C

TIME1: 0.0 min RATE1: 10.0 C/min

Temperature (°C)

SM FULTON
PERKIN-ELMER
7 Series Thermal Analysis System
Sun Jul 20 18:34:32 1997

HNF-SD-WM-DP-259, REV. 0

Curve 1: DSC

File info: SAM071906 Sun Jul 20 02:21:29 1997

Sample Weight: 10.000 mg

S97T001399 DUP

124

N2 10C/min
TEMP: 35.0 °C
TIME: 0.0 min

RATE: 10.0 °C/min

Temperature (°C)

SM FULTON
PERKIN-ELMER
7 Series Thermal Analysis System
Sun Jul 20 02:33:32 1997

HNF-SD-WM-DP-259, REV. 0

LABCORE Data Entry Template for Worklist# 19076

Analyst: RK Instrument: DSC0 3 Book # 12414-B

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

Worklist Comment: BY109, DSC-03 skm

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			DSC-03	SOLID	<u>28.45</u>	<u>28.07</u>	<u>N/A</u>	Joules/g
97000412	BY-109 (P)	2 SAMPLE	S97T001344	0	DSC-03	SOLID	<u>N/A</u>	<u>20.54</u>		Joules/g
97000412	BY-109 (P)	3 DUP	S97T001344	0	DSC-03	SOLID	<u>20.54</u>	<u>24.35</u>	<u>N/A</u>	Joules/g
97000412	BY-109 (P)	4 SAMPLE	S97T001346	0	DSC-03	SOLID	<u>N/A</u>	<u>19.62</u>		Joules/g
97000412	BY-109 (P)	5 DUP	S97T001346	0	DSC-03	SOLID	<u>19.62</u>	<u>20.96</u>	<u>N/A</u>	Joules/g

Final page for worklist # 19076

Rob Kim 7/12/97
Analyst Signature Date

Validated 7/16/97 @ Bachelor

R. Jones 7-15-97
Analyst Signature Date

Data Entry Comments:

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

Curve 1: DSC

File info: IND071201 Sat Jul 12 05:20:58 1997

Sample Weight: 10.010 mg

12N14-B

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 126 TO 130.

HNF-SD-WM-DP-259, REV. 0

N2, EXOTHERM DOWN

TEMP: 140.0 °C TIME: 0.0 min RATE: 10.0 °C/min

FW KING
PERKIN-ELMER
7 Series Thermal Analysis System
Sat Jul 12 05:31:50 1997

Curve 1: DSC

File info: SAM071205 Sat Jul 12 09:02:18 1997

Sample Weight: 25.610 mg

S97T001344

N2 10C/min

TEMP: 55.0 °C TIME: 0.0 min RATE: 10.0 °C/min

Temperature (°C)

RM KING
PERKIN-ELMER
7 Series Thermal Analysis System
Mon Jul 14 14:15:51 1997

HNF-SD-MM-DP-259, REV.0

Curve 1: DSC
File info: SAM071206 Sat Jul 12 09:59:47 1997
Sample Weight: 19.720 mg
S97T001344 DUP

128

HNF-SD-WM-DP-259, REV. 0

Curve 1: DSC
 File Info: SAM071207 Sat Jul 12 11:05:52 1997
 Sample Weight: 10.170 mg
 S97T001346

RW KING
 PERKIN-ELMER
 7 Series Thermal Analysis System
 Mon Jul 14 14:26:50 1997

Curve 1: DSC

File info: SAM071208 Sat Jul 12 12:50:49 1997

Sample Weight: 15.770 mg

S97T001346 DUP

HNF-SD-WM-DP-259, REV. 0

RW KING
PERKIN-ELMER
7 Series Thermal Analysis System
Mon Jul 14 14:33:33 1997

LABCORE Data Entry Template for Worklist# 19079

Analyst: NK Instrument: DSC0 3 Book # 12014-13

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

Worklist Comment: BY109, DSC-03 Run under Nitrogen. skm

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			DSC-03	LIQUID	<u>28.45</u>	<u>28.14*</u>	<u>N/A</u>	Joules/g
97000412	BY-109 (P)	2 SAMPLE	S97T001467	0	DSC-03	LIQUID	<u>N/A</u>	<u>0</u>		Joules/g
97000412	BY-109 (P)	3 DUP	S97T001467	0	DSC-03	LIQUID	<u>0</u>	<u>0</u>	<u>N/A</u>	Joules/g
97000412	BY-109 (P)	4 SAMPLE	S97T001468	0	DSC-03	LIQUID	<u>N/A</u>	<u>0</u>		Joules/g
97000412	BY-109 (P)	5 DUP	S97T001468	0	DSC-03	LIQUID	<u>0</u>	<u>0</u>	<u>N/A</u>	Joules/g

Final page for worklist # 19079

NK 7/12/97
Analyst Signature Date

R. Jones 7-15-97
Analyst Signature Date

Validated 7/16/97 R. Schelzer

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: IND071201 Sat Jul 12 05:20:58 1997

Sample Weight: 10.010 mg

12N14-B

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

N2, EXOTHERM DOWN

TEMP: 140.0 °C TIME: 0.0 min RATE: 10.0 °C/min
TEMP: 180.0 °C

Temperature (°C)

AW KING *Truway for LWK*
PERKIN-ELMER
7 Series Thermal Analysis System
Sat Jul 12 14:08:02 1997

HNF-SD-PW-OP-259, Rev. 0

Curve 1: DSC

File Info: SAM071209 Sat Jul 12 13:47:50 1997

Sample Weight: 15.300 mg

S97T001467

133

N2 10C/min

TIME: 35.0 g
TEMP: 500.0 g

TIME: 0.0 min RATE: 10.0 C/min

Temperature (°C)

RW KING

PERKIN-ELMER

7 Series Thermal Analysis System

Tue Jul 15 10:27:03 1997

H/LF-SD-MM-OP-259, Rev. 0

Curve 1: DSC

File info: SAM071210 Sat Jul 12 14:40:07 1997

Sample Weight: 15.180 mg

S97T001467 DUP

N2 10C/min

TIME: 33.0 s TIME: 0.0 min RATE: 10.0 C/min

Temperature (°C)

RN KING

PERKIN-ELMER

7 Series Thermal Analysis System

Tue Jul 15 10:35:49 1997

HNF-SD-WM-DA-959, Rev. C

Curve 1: DSC

File info: SAM071211 Sat Jul 12 15:34:28 1997

Sample Weight: 15.340 mg

S97T001468

N2 10C/min
TEMP: 25.0 °C
TIME: 000.0 s

TIME: 0.0 min RATE: 10.0 °/min

RW KING
PERKIN-ELMER
7 Series Thermal Analysis System
Tue Jul 15 10:41:34 1997

HUF-SD-WM-DA-759, Rev 0

Curve 1: DSC
File Info: SAM071212 Sat Jul 12 16:26:17 1997
Sample Weight: 17.350 mg
S97T001468 DUP

RW KING
PERKIN-ELMER
7 Series Thermal Analysis System
Tue Jul 15 10:21:02 1997

N2 10C/min
TEMP 50.0 °C
TIME 0.0 min RATE: 10.0 C/min

LABCORE Data Entry Template for Worklist# 19126

Analyst: Rm Instrument: DSC0 3 Book # 12N/4B

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

Worklist Comment: BY-109 DSC, RUN UNDER N2. RCJ

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			DSC-03	SOLID	<u>28.45</u>	<u>28.14</u>	<u>N/A</u>	Joules/g
97000412	BY-109 (P)	2 SAMPLE	S97T001459	0	DSC-03	SOLID	<u>N/A</u>	<u>0</u>		Joules/g
97000412	BY-109 (P)	3 DUP	S97T001459	0	DSC-03	SOLID	<u>0</u>	<u>0</u>	<u>N/A</u>	Joules/g
97000412	BY-109 (P)	4 SAMPLE	S97T001460	0	DSC-03	SOLID	<u>N/A</u>	<u>0</u>		Joules/g
97000412	BY-109 (P)	5 DUP	S97T001460	0	DSC-03	SOLID	<u>0</u>	<u>0</u>	<u>N/A</u>	Joules/g

Final page for worklist # 19126

Rm 5/13/97
Analyst Signature Date

R Jones 7-15-97
Analyst Signature Date

Validated 7/16/97 Bachelar

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: IND071201 Sat Jul 12 05:20:58 1997

Sample Weight: 10.010 mg

12N14-B

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 138 TO 142

HN-SD-WM-DP-259, REV. 0

N2, EXOTHERM DOWN

TEMP: 140.0 °C TIMES: 0.0 min RATES: 10.0 °C/min
TEMP: 180.0 °C

Temperature (°C)

RW KING *for RWK*
PERKIN-ELMER
7 Series Thermal Analysis System
Sat Jul 12 14:06:02 1997

Curve 1: DSC
 File info: SA0071213 Sat Jul 12 16:57:16 1997
 Sample Weight: 19.250 mg
 S97T001459

N2 10C/min
 RATE 10.0 C/min
 TIME 15.08 g
 RD MEYERS
 PERKIN-ELMER
 7 Series Thermal Analysis System
 Tue Jul 15 08:36:17 1997

Curve 1: DSC

File info: SAM071214 Sat Jul 12 21:49:17 1997

Sample Weight: 13.500 mg

S97T001459DUP

RD MEYERS
PERKIN-ELMER
7 Series Thermal Analysis System
Tue Jul 15 08:41:00 1997

HNF-SD-WM-DP-259, REV. 0

Curve 1: DSC

File info: SAM071215 Sat Jul 12 22:54:18 1997

Sample Weight: 13.820 mg

S97T001460

N2 10C/min

TEMP: 35.0 °C
TEMP: 500.0 °C

TIME: 0.0 min RATE: 10.0 °C/min

Temperature (°C)

RD MEYERS
PERKIN-ELMER
7 Series Thermal Analysis System
Sun Jul 13 00:46:19 1997

HNF-SD-WM-DP-259, REV. 0

Curve 1: DSC

File info: SAM071301 Sun Jul 13 01:45:24 1997

Sample Weight: 14.450 mg

S97T001460DUP

N2 10C/min
TEMP: 35.0 C
TEMP: 500.0 C

TIME: 0.0 min RATE: 10.0 C/min

RD MEYERS
PERKIN-ELMER
7 Series Thermal Analysis System
Sun Jul 13 03:07:08 1997

HNF-SD-WM-DP-259, REV.0

LABCORE Data Entry Template for Worklist# 19129

Analyst: R. Brown Instrument: DSC0 3 Book # 12N14B

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

Worklist Comment: BY-109 DSC, RUN UNDER N2. RCJ

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			DSC-03	SOLID	<u>28.45</u>	<u>28.93</u>	<u>N/A</u>	Joules/g
97000411	BY-109 (P)	2 SAMPLE	S97T001482	0	DSC-03	SOLID	<u>N/A</u>	<u>0</u>		Joules/g
97000411	BY-109 (P)	3 DUP	S97T001482	0	DSC-03	SOLID	<u>0</u>	<u>0</u>	<u>N/A</u>	Joules/g
97000411	BY-109 (P)	4 SAMPLE	S97T001483	0	DSC-03	SOLID	<u>N/A</u>	<u>25.77</u>		Joules/g
97000411	BY-109 (P)	5 DUP	S97T001483	0	DSC-03	SOLID	<u>25.77</u>	<u>30.13</u>	<u>N/A</u>	Joules/g

Final page for worklist # 19129

Analyst Signature R. Brown Date 8/15/97

Analyst Signature J. H. Warrall Date 8-19-97

David P. Brown 8/15/97

Validated by J. H. Warrall 8-19-97

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: IND801501 Fri Aug 15 07:35:56 1997

Sample Weight: 21.070 mg

12N14-B

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 144 TO 148.

N2, EXOTHERM DOWN

TEMP1: 140.0 °C TIME1: 0.0 min RATE1: 10.0 °C/min

TEMP2: 180.0 °C

Temperature (°C)

RD MEYERS
PERKIN-ELMER
7 Series Thermal Analysis System
Fri Aug 15 08:38:10 1997

HNF-SD-WM-DP-259, REV. 0

Curve 1: DSC

File info: SAM081509 Fri Aug 15 15: 58: 33 1997

Sample Weight: 37.390 mg

S97T001482

N2 10C/min

TEMP: 35.0 °C
TEMP: 500.0 °C

TIME1:

0.0 min

RATE1: 10.0 °C/min

Temperature (°C)

RD MEYERS
PERKIN-ELMER
7 Series Thermal Analysis System
Fri Aug 15 15: 59: 13 1997

HN:SD-WM-DP-259, REV. 0

Curve 1: DSC
File info: SAM081510 Fri Aug 15 16:51:09 1997
Sample Weight: 29.110 mg
S97T001482DUP

N2 10C/min
TEMP: 25.0 °C
TEMP: 300.0 °C
TIME: 0.0 min RATE: 10.0 °C/min

RD MEYERS
PERKIN-ELMER
7 Series Thermal Analysis System
Mon Aug 18 14:55:45 1997

HNF-SD-WM-DP-259, REV. 0

Curve 1: DSC

File info: SAM081511 Fri Aug 15 22: 37: 45 1997

Sample Weight: 7.320 mg

S97T001483SAM

N2 10C/min

TEMP: 35.0 °C
TEMP: 350.0 °C

TIME1: 0.0 min RATE1: 10.0 C/min

Temperature (°C)

DP BROMLEY
PERKIN-ELMER
7 Series Thermal Analysis System
Mon Aug 18 15: 22: 34 1997

HNF-SD-WM-DF-239, REV. 0

Curve 1: DSC

File info: SAM081512 Fri Aug 15 23: 29: 14 1997

Sample Weight: 8.360 mg

S97T0014B3DUP

148

N2 10C/min

TEMP: 35.0 °C
TEMP: 500.0 °C

TIME: 0.0 min RATE: 10.0 C/min

Temperature (°C)

DP BROMLEY
PERKIN-ELMER
7 Series Thermal Analysis System
Mon Aug 18 15: 27: 27 1997

HNF-SD-WM-DA 259, Rev. 0

LABCORE Data Entry Template for Worklist# 19130

Analyst: KRM Instrument: DSC0 3 Book # 12N14BMethod: LA-514-114 Rev/Mod D-1

Worklist Comment: BY-109 DSC, RUN UNDER N2. RCJ

EQUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			DSC-03	SOLID	<u>28.45</u>	<u>28.16</u>	<u>N/A</u>	Joules/g
"000411	BY-109 (P)	2 SAMPLE	S97T001484	0	DSC-03	SOLID	<u>N/A</u>	<u>79.26</u>		Joules/g
"000411	BY-109 (P)	3 DUP	S97T001484	0	DSC-03	SOLID	<u>79.26</u>	<u>78.37</u>	<u>N/A</u>	Joules/g
"000411	BY-109 (P)	4 SAMPLE	S97T001485	0	DSC-03	SOLID	<u>N/A</u>	<u>0</u>		Joules/g
"000411	BY-109 (P)	5 DUP	S97T001485	0	DSC-03	SOLID	<u>0</u>	<u>0</u>	<u>N/A</u>	Joules/g

Final page for worklist # 19130

Analyst Signature [Signature] Date 7-21-97Supervisor Signature [Signature] Date 7/22/97Bachelor Validated 7/24/97

Data Entry Comments:

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

Curve 1: DSC

File info: IND072001 Sun Jul 20 18: 46: 23 1997

Sample Weight: 21.590 mg

12N14-B

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 150 TO 154

N2, EXOTHERM DOWN

TEMP: 140.0 C TIME: 0.0 min RATE: 10.0 C/min

Temperature (°C)

KR MONTEITH
PERKIN-ELMER
7 Series Thermal Analysis System
Sun Jul 20 18: 48: 42 1997

HNF-SD-WM-DP-259, REV. 0

Curve 1: DSC

File info: SAM072005 Mon Jul 21 02:24:44 1997

Sample Weight: 32.900 mg

S97T001484

N2 10C/min
TEMP: 55.0 °C

TIME1: 0.0 min RATE1: 10.0 C/min

Temperature (°C)

KR MONTEITH
PERKIN-ELMER
7 Series Thermal Analysis System
Mon Jul 21 04:28:09 1997

HNF-SD-WM-DP-259, REV. 0

Curve 1: DSC

File info: SAM072006 Mon Jul 21 03:40:06 1997

Sample Weight: 25.910 mg

S97T001484 DUP

N2 10C/min

TEMP: 88.8 °C

TIME: 0.0 min RATE: 10.0 C/min

Temperature (°C)

KR MONTEITH
PERKIN-ELMER

7 Series Thermal Analysis System
Mon Jul 21 04:22:58 1997

HNF-SD-WM-DP-259, REV.0

Curve 1: DSC

File info: SAM072007 Mon Jul 21 05:06:08 1997

Sample Weight: 13.480 mg

S97T001485

N2 10C/min
TEMP: 25.0 °C
500.0 °C
TIME: 0.0 min
RATE: 10.0 °C/min

Temperature (°C)

KR MONTEITH
PERKIN-ELMER
7 Series Thermal Analysis System
Mon Jul 21 05:08:23 1997

HNF-SD-WM-DP-259, REV. 0

Curve 1: DSC

File info: SAM072008 Mon Jul 21 06:02:31 1997

Sample Weight: 31.980 mg

S97T001485 DUP

154

KR MONTEITH
PERKIN-ELMER
7 Series Thermal Analysis System
Mon Jul 21 06:34:38 1997

HNF-SD-WM-DP-259, REV.0

LABCORE Data Entry Template for Worklist# 19131

Analyst: KRM Instrument: DSC0 3 Book # 12N14B

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

Worklist Comment: BY-109 DSC, RUN UNDER N2. RCJ

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			DSC-03	SOLID	<u>28.45</u>	<u>28.16</u>	<u>N/A</u>	Joules/g
97000411	BY-109 (P)	2 SAMPLE	S97T001486 0		DSC-03	SOLID	<u>N/A</u>	<u>28.29</u>		Joules/g
97000411	BY-109 (P)	3 DUP	S97T001486 0		DSC-03	SOLID	<u>28.29</u>	<u>39.92</u>	<u>N/A</u>	Joules/g
97000411	BY-109 (P)	4 SAMPLE	S97T001487 0		DSC-03	SOLID	<u>N/A</u>	<u>45.07</u>		Joules/g
97000411	BY-109 (P)	5 DUP	S97T001487 0		DSC-03	SOLID	<u>45.07</u>	<u>87.85</u>	<u>N/A</u>	Joules/g

Final page for worklist # 19131

Analyst Signature [Signature] Date 7-20-97

Analyst Signature [Signature] Date 8-6-97

Validated 8/9/97 [Signature]

Data Entry Comments:

High RPDs due to sample inhomogeneities. Re-run only at customer request. 8/6/97

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: IND072001 Sun Jul 20 18:46:23 1997

Sample Weight: 21.590 mg

12N14-B

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 156 TO 160

N2, EXOTHERM DOWN

TEMP: 140.0 °C TIME: 0.0 min RATE: 10.0 °C/min

Temperature (°C)

KR MONTEITH
PERKIN-ELMER
7 Series Thermal Analysis System
Sun Jul 20 19:47:40 1997

4NF-SD-MM-DP-259, REV. 0

Curve 1: DSC

File info: SAM072001 Sun Jul 20 20:26:37 1997

Sample Weight: 24.140 mg

S97T001486

N2 10C/min

TEMP: 35.0 °C
TIME: 800.0 s

TIME: 0.0 min RATE: 10.0 °C/min

Temperature (°C)

KR MONTEITH
PERKIN-ELMER
7 Series Thermal Analysis System
Wed Aug 6 14:31:48 1997

HNF-SD-MM-DP-259, REV. 0

Curve 1: DSC

File info: SAM072002 Sun Jul 20 22: 25: 43 1997

Sample Weight: 21.350 mg

S97T001486 DUP

N2 10C/min

TEMP: 35.0 °C
TIME: 555.0 s

TIME1: 0.0 min RATE1: 10.0 C/min

Temperature (°C)

KR MONTEITH
PERKIN-ELMER
7 Series Thermal Analysis System
Wed Aug 6 14:40:23 1997

HNF-SD-WM-DP-259, REV. 0

Curve 1: DSC

File info: SAM072003 Sun Jul 20 23:37:56 1997

Sample Weight: 53.860 mg

S97T001487

N2 10C/min

TEMP: 35.0 °C
TEMP: 305.0 °C

TIMES: 0.0 min RATE: 10.0 C/min

Temperature (°C)

KR MONTEITH
PERKIN-ELMER
7 Series Thermal Analysis System
Wed Aug 6 14:44:04 1997

HNF-SD-WM-DP-259, REV. 0

Curve 1: DSC

File info: SAM072004 Mon Jul 21 00:34:51 1997

Sample Weight: 35.480 mg

S97T001487 DUP

N2 10C/min

TEMP: 35.0 °C
TEMP: 500.0 °C

TIME: 0.0 min RATE: 10.0 C/min

Temperature (°C)

KR MONTEITH
PERKIN-ELMER
7 Series Thermal Analysis System
Wed Aug 6 14:46:04 1997

HNF-SD-WM-DP-259, REV. 0

LABCORE Data Entry Template for Worklist# 19132

Analyst: RWK Instrument: DSC0 3 Book # 12N14B

Method: LA-514-114 Rev/Mod D/I

Worklist Comment: BY-109 DSC, RUN UNDER N2. gjh

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			DSC-03	SOLID	<u>28.45</u>	<u>27.66</u>	<u>N/A</u>	Joules/g
97000411	BY-109 (P)	2 SAMPLE	S97T001488	0	DSC-03	SOLID	<u>N/A</u>	<u>25.71</u>		Joules/g
97000411	BY-109 (P)	3 DUP	S97T001488	0	DSC-03	SOLID	<u>25.71</u>	<u>32.24</u>	<u>N/A</u>	Joules/g
97000411	BY-109 (P)	4 TRIPL	S97T001488	0	DSC-03	SOLID	<u>25.71</u>	<u>30.26</u>	<u>N/A</u>	Joules/g

Final page for worklist # 19132

See Attached
Analyst Signature _____ Date _____

7-29-97
Analyst Signature _____ Date _____

Validated 7/30/97 Drachlor

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# 19132

Analyst: RLK Instrument: DSC0 3 Book # 12/114-B

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

Worklist Comment: BY-109 DSC, RUN UNDER N2. RCJ

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			DSC-03	SOLID	28.45	27.66	N/A	Joules/g
97000411	BY-109 (P)	2 SAMPLE	S97T001488 0		DSC-03	SOLID	N/A	25.71		Joules/g
97000411	BY-109 (P)	3 DUP	S97T001488 0		DSC-03	SOLID	25.71	32.24	N/A	Joules/g
		4 TRIP	S97T001488 0		DSC-03	SOLID	25.71	30.26		Joules/g

Final page for worklist # 19132

RLK 7/21/97
Analyst Signature Date

Analyst Signature Date

Data Entry Comments:

TRIP in good agreement with DUP. Rerun only at customer request. RLK 7/29/97

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: IND072101 Mon Jul 21 06:34:55 1997

Sample Weight: 21.590 mg

12N14-B

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 1103 TO 1106.

N2, EXOTHERM DOWN

TEMP: 158.0 °C TIME: 0.0 min RATE: 10.0 °C/min

Temperature (°C)

RW KING
PERKIN-ELMER
7 Series Thermal Analysis System
Mon Jul 21 12:20:08 1997

HNF-SD-WM-DP-259, REV.0

Curve 1: DSC

File info: SAM072103 Mon Jul 21 12:45:04 1997

Sample Weight: 9.470 mg

S97T001488

164

N2 10C/min
TEMP: 25.0 °C
TEMP: 500.0 °C

TIME: 0.0 min RATE: 10.0 °C/min

RM KING
PERKIN-ELMER
7 Series Thermal Analysis System
Mon Jul 21 15:20:42 1997

HNF-SD-WM-DP-259, REV. 0

Curve 1: DSC
File info: SAM072104 Mon Jul 21 14:23:42 1997
Sample Weight: 19.930 mg
S97T001488 DUP

165

N2 10C/min
TEMP: 35.0 °C
TIME: 000.0 s
TIME: 0.0 min RATE: 10.0 C/min

RW KING
PERKIN-ELMER
7 Series Thermal Analysis System
Mon Jul 21 15:14:13 1997

HNF-SD-WM-DP-259, REV. 0

Curve 1: DSC

File info: SAM072104 Mon Jul 21 14:23:42 1997

Sample Weight: 19.930 mg

S97T001488 DUP TR1 PL

9/18/97

N2 10C/min

TEMP: 35.0 °C TIME1: 0.0 min RATE1: 10.0 °C/min

Temperature (°C)

RW KING

PERKIN-ELMER

7 Series Thermal Analysis System

Mon Jul 21 16:45:58 1997

HNF-SD-WM-DP-259, REV. 0

LABCORE Data Entry Template for Worklist# 19446

Analyst: ppb Instrument: DSC0 2 Book # NA

Method: LA-514-113 Rev/Mod 037/22/97

Worklist Comment: DSC-02 BY-109 solid. -ppb

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
97000412	BY-109 (P)	1 SAMPLE	S97T001344	0	DSC-02	SOLID	N/A	37.05		Joules/g Dry
97000412	BY-109 (P)	2 DUP	S97T001344	0	DSC-02	SOLID	27.05	43.93	N/A	Joules/g Dry
97000412	BY-109 (P)	3 SAMPLE	S97T001346	0	DSC-02	SOLID	N/A	34.38		Joules/g Dry
97000412	BY-109 (P)	4 DUP	S97T001346	0	DSC-02	SOLID	34.38 36.73	36.73	N/A	Joules/g Dry
97000412	BY-109 (P)	5 SAMPLE	S97T001459	0	DSC-02	SOLID	N/A	0		Joules/g Dry
97000412	BY-109 (P)	6 DUP	S97T001459	0	DSC-02	SOLID	0	0	N/A	Joules/g Dry
97000412	BY-109 (P)	7 SAMPLE	S97T001460	0	DSC-02	SOLID	N/A	0		Joules/g Dry
97000412	BY-109 (P)	8 DUP	S97T001460	0	DSC-02	SOLID	0	0	N/A	Joules/g Dry
97000412	BY-109 (P)	9 SAMPLE	S97T001463	0	DSC-02	SOLID	N/A	21.62		Joules/g Dry
97000412	BY-109 (P)	10 DUP	S97T001463	0	DSC-02	SOLID	21.62	24.61	N/A	Joules/g Dry
97000412	BY-109 (P)	11 SAMPLE	S97T001464	0	DSC-02	SOLID	N/A	0		Joules/g Dry
97000412	BY-109 (P)	12 DUP	S97T001464	0	DSC-02	SOLID	0	0	N/A	Joules/g Dry
97000411	BY-109 (P)	13 SAMPLE	S97T001482	0	DSC-02	SOLID	N/A	0		Joules/g Dry
97000411	BY-109 (P)	14 DUP	S97T001482	0	DSC-02	SOLID	0	0	N/A	Joules/g Dry
97000411	BY-109 (P)	15 SAMPLE	S97T001483	0	DSC-02	SOLID	N/A	38.90		Joules/g Dry
97000411	BY-109 (P)	16 DUP	S97T001483	0	DSC-02	SOLID	38.90	45.49	N/A	Joules/g Dry
97000411	BY-109 (P)	17 SAMPLE	S97T001484	0	DSC-02	SOLID	N/A	124.2		Joules/g Dry
97000411	BY-109 (P)	18 DUP	S97T001484	0	DSC-02	SOLID	124.2	122.8	N/A	Joules/g Dry

Data Entry Comments:

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

LABCORE Data Entry Template for Worklist# 19446

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
97000411	BY-109 (P)	19 SAMPLE	S97T001485	0	DSC-02	SOLID	N/A	0		Joules/g Dry
97000411	BY-109 (P)	20 DUP	S97T001485	0	DSC-02	SOLID	0	0	N/A	Joules/g Dry
97000411	BY-109 (P)	21 SAMPLE	S97T001486	0	DSC-02	SOLID	N/A	41.51		Joules/g Dry
97000411	BY-109 (P)	22 DUP	S97T001486	0	DSC-02	SOLID	41.51 58.57	58.57	N/A	Joules/g Dry
97000411	BY-109 (P)	23 SAMPLE	S97T001487	0	DSC-02	SOLID	N/A	71.40		Joules/g Dry
97000411	BY-109 (P)	24 DUP	S97T001487	0	DSC-02	SOLID	71.40	139.2	N/A	Joules/g Dry

Final page for worklist # 19446

Analyst Signature

8/19/97
Date

Analyst Signature

Date

Data Entry Comments:

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

LABCORE Data Entry Template for Worklist# 19448

Analyst: ppb Instrument: DSC0 2 Book # NA

Method: LA-514-113 Rev/Mod 8/18/97

Worklist Comment: DSC-02 BY-109 solid. -ppb

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
97000411	BY-109 (P)	1 SAMPLE	S97T001488	0	DSC-02	SOLID	N/A	45.01		Joules/g Dry
97000411	BY-109 (P)	2 DUP	S97T001488	0	DSC-02	SOLID	45.01	56.44	N/A	Joules/g Dry
97000412	BY-109 (P)	3 SAMPLE	S97T001536	0	DSC-02	SOLID	N/A	0		Joules/g Dry
97000412	BY-109 (P)	4 DUP	S97T001536	0	DSC-02	SOLID	0	0	N/A	Joules/g Dry
97000412	BY-109 (P)	5 SAMPLE	S97T001736	0	DSC-02	SOLID	N/A	38.10		Joules/g Dry
97000412	BY-109 (P)	6 DUP	S97T001736	0	DSC-02	SOLID	38.10	69.27	N/A	Joules/g Dry
97000411	BY-109 (P)	7 SAMPLE	S97T001742	0	DSC-02	SOLID	N/A	42.43	0.0	rec 10/30/97
97000411	BY-109 (P)	8 DUP	S97T001742	0	DSC-02	SOLID	42.43	0.0	rec 10/30/97	Joules/g Dry
97000411	BY-109 (P)	9 SAMPLE	S97T001786	0	DSC-02	SOLID	N/A	41.47	42.43	rec 10/30/97
97000411	BY-109 (P)	10 DUP	S97T001786	0	DSC-02	SOLID	41.47	42.43	rec 10/30/97	Joules/g Dry
97000411	BY-109 (P)	11 SAMPLE	S97T001791	0	DSC-02	SOLID	N/A	0		Joules/g Dry
97000411	BY-109 (P)	12 DUP	S97T001791	0	DSC-02	SOLID	0	0	N/A	Joules/g Dry

Final page for worklist # 19448

88 Nachelson 8/19/97
Analyst Signature Date

Analyst Signature Date

Data Entry Comments:

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

LABCORE Data Entry Template for Worklist# 19449

Analyst: ppb Instrument: DSC0 2 Book # NA

Method: LA-514-113 Rev/Mod 7/22/97

Worklist Comment: DSC-02 BY-109 liquid. -ppb

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
97000411	BY-109 (P)	1 SAMPLE	S97T001399	0	DSC-02	LIQUID	<u>N/A</u>	<u>0</u>		Joules/g Dry
97000411	BY-109 (P)	2 DUP	S97T001399	0	DSC-02	LIQUID	<u>0</u>	<u>0</u>	<u>N/A</u>	Joules/g Dry
97000412	BY-109 (P)	3 SAMPLE	S97T001467	0	DSC-02	LIQUID	<u>N/A</u>	<u>0</u>		Joules/g Dry
97000412	BY-109 (P)	4 DUP	S97T001467	0	DSC-02	LIQUID	<u>0</u>	<u>0</u>	<u>N/A</u>	Joules/g Dry
97000412	BY-109 (P)	5 SAMPLE	S97T001468	0	DSC-02	LIQUID	<u>N/A</u>	<u>0</u>		Joules/g Dry
97000412	BY-109 (P)	6 DUP	S97T001468	0	DSC-02	LIQUID	<u>0</u>	<u>0</u>	<u>N/A</u>	Joules/g Dry

Final page for worklist # 19449

B. Bachab 7/22/97
Analyst Signature Date

Analyst Signature Date

Data Entry Comments:

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

LABCORE Data Entry Template for Worklist# 19482

Analyst: R/K Instrument: DSC0 3 Book # 124148

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

Worklist Comment: BY-109 DSC, RUN UNDER N2. RCJ

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			DSC-03	SOLID	<u>28.45</u>	<u>29.06*</u>	<u>N/A</u>	Joules/g
97000412	BY-109 (P)	2 SAMPLE	S97T001536	0	DSC-03	SOLID	<u>N/A</u>	<u>0</u>		Joules/g
97000412	BY-109 (P)	3 DUP	S97T001536	0	DSC-03	SOLID	<u>0</u>	<u>0</u>	<u>N/A</u>	Joules/g
97000412	BY-109 (P)	4 SAMPLE	S97T001736	0	DSC-03	SOLID	<u>N/A</u>	<u>19.92</u>		Joules/g
97000412	BY-109 (P)	5 DUP	S97T001736	0	DSC-03	SOLID	<u>19.92</u>	<u>36.20</u>	<u>N/A</u>	Joules/g

Final page for worklist # 19482

Not Over 8/13/97
Analyst Signature Date

James M. Lardner 8-14-97
Analyst Signature Date

Validated 8/18/97 BB Bachelor

Data Entry Comments:

High RPD S97T001736 due to sample inhomogeneities. Rerun only at customer request. BB 8/13/97

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: IND081201 Tue Aug 12 09:56:51 1997

Sample Weight: 21.070 mg

12N14-B

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 172 TO 176.

N2, EXOTHERM DOWN

TEMP: 140.0 °C TIME: 0.0 min RATE: 10.0 °C/min

TEMP: 180.0 °C

EA LAMBEL
PERKIN-ELMER
7 Series Thermal Analysis System
Wed Aug 13 09:51:28 1997

HNF-SD-WM-DP-259, REV. 0

Curve 1: DSC

File info: SAM081207 Tue Aug 12 20:25:34 1997

Sample Weight: 26.040 mg

S97T001536

173

N2 10C/min

TEMP1: 35.0 °C
TEMP2: 500.0 °C

TIMES: 0.0 min RATE: 10.0 °C/min

RW KING

PERKIN-ELMER

7 Series Thermal Analysis System

Wed Aug 13 10:10:52 1997

HNF-SD-WM-DP-259, REV. 0

Curve 1: DSC

File info: SAM081208 Tue Aug 12 22:18:55 1997

Sample Weight: 16.360 mg

S97T001536 DUP

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

Temperature (°C)

RW KING
PERKIN-ELMER
7 Series Thermal Analysis System
Wed Aug 13 10:05:20 1997

HNF-SD-WM-DP-259, REV.0

Curve 1: DSC

File info: SAM081209 Tue Aug 12 23:11:23 1997

Sample Weight: 29.160 mg

S97T001736

N2 10C/min

TEMP: 35.0 °C
TEMP: 500.0 °C

TIME: 0.0 min RATE: 10.0 °C/min

RW KING
PERKIN-ELMER
7 Series Thermal Analysis System
Wed Aug 13 10:00:27 1997

HNF-SD-WM-DP-259, REV. 0

Curve 1: DSC

File info: SAM081210 Wed Aug 13 00:02:06 1997

Sample Weight: 16.680 mg

S97T001736 DUP

176

N2 10C/min
TEMP: 35.0 °C
TEMP: 500.0 °C
TIME: 0.0 min RATE: 10.0 °C/min

RW KING
PERKIN-ELMER
7 Series Thermal Analysis System
Wed Aug 13 09:41:59 1997

HNF-SD-WM-DP-259, REV. 0

LABCORE Data Entry Template for Worklist# 19483

Analyst: RM Instrument: DSC0 3 Book # 12114B

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

Worklist Comment: BY-109 DSC, RUN UNDER N2. RCJ

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			DSC-03	SOLID	28.45	29.06%	N/A	Joules/g
97000411	BY-109 (P)	2 SAMPLE	S97T001742	0	DSC-03	SOLID	N/A	0	10/30/97	Joules/g
97000411	BY-109 (P)	3 DUP	S97T001742	0	DSC-03	SOLID	N/A	0	N/A	Joules/g
97000411	BY-109 (P)	4 SAMPLE	S97T001786	0	DSC-03	SOLID	N/A	0	10/30/97	Joules/g
97000411	BY-109 (P)	5 DUP	S97T001786	0	DSC-03	SOLID	N/A	0	N/A	Joules/g

Final page for worklist #.19483

Analyst Signature RM Date 8/13/97

Analyst Signature Susan Boe Date 8/14/97

Validated 10/30/97 B. Brachet

Data Entry Comments: High RPD S97T001742⁸⁶ due to sample inhomogeneities Rerun only at customer request. 10/30/97

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: IND081201 Tue Aug 12 09:56:51 1997

Sample Weight: 21.070 mg

12N14-B

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 178 TO 183.

N2, EXOTHERM DOWN

TEMP1: 140.0 °C TIME1: 0.0 min RATE1: 10.0 °C/min
TEMP2: 180.0 °C

Temperature (°C)

EA LAMBEL
PERKIN-ELMER
7 Series Thermal Analysis System
Wed Aug 13 09:44:30 1997

HNF-SD-WM-DP-259, REV. 0

Curve 1: DSC

File info: SAM081301 Wed Aug 13 02:18:48 1997

Sample Weight: 20.020 mg

S97T004742

Curve 1: DSC

File info: SAM081302 Wed Aug 13 03:16:14 1997

Sample Weight: 18.810 mg

S97T001742 DUP

N2 10C/min
TEMP: 35.0 °C
TEMP: 555.0 °C
TIME: 0.0 min RATE: 10.0 °C/min

RW KING
PERKIN-ELMER
7 Series Thermal Analysis System
Wed Aug 13 09:18:15 1997

HNF-SD-WM-DP-259, REV. 0

Curve 1: DSC

File info: IND081301 Wed Aug 13 13:21:45 1997

Sample Weight: 21.070 mg

12N14-B

181

N2, EXOTHERM DOWN
TEMP: 140.0 °C
TIME: 0.0 min RATE: 10.0 °/min

AD PURINTON
PERKIN-ELMER
7 Series Thermal Analysis System
Wed Aug 13 15:46:16 1997

HNF-SD-WM-DP-259, REV. 0

Curve 1: DSC

File info: SAM081305 Wed Aug 13 15:24:32 1997

Sample Weight: 26.890 mg

S97T001786 TRP SAM 8/13/97

N2 10C/min

TEMP1: 35.0 °C
TEMP2: 500.0 °C

TIME1: 0.0 min RATE1: 10.0 C/min

Temperature (°C)

AD PURINTON
PERKIN-ELMER
7 Series Thermal Analysis System
Wed Aug 13 16:05:04 1997

Curve 1: DSC
File Info: SAM081306 Wed Aug 13 16: 46: 44 1997
Sample Weight: 29.250 mg
S97T004768 DUP
1786 dup

AD PURINTON
PERKIN-ELMER
7 Series Thermal Analysis System
Thu Aug 14 14:05:50 1997

LABCORE Data Entry Template for Worklist# 19484

Analyst: ADD Instrument: DSC0 3 Book # 12N14B

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

Worklist Comment: BY-109 DSC, RUN UNDER N2. RCJ

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			DSC-03	SOLID	<u>28.45</u>	<u>29.07%</u>	<u>N/A</u>	Joules/g
97000411	BY-109 (P)	2 SAMPLE	S97T001791 0		DSC-03	SOLID	<u>N/A</u>	<u>0</u>		Joules/g
97000411	BY-109 (P)	3 DUP	S97T001791 0		DSC-03	SOLID	<u>0</u>	<u>0</u>	<u>N/A</u>	Joules/g

Final page for worklist # 19484

Anthony Perreault 8-14-97
Analyst Signature Date

Anthony Perreault 8-18-97
Analyst Signature Date

Validated 8/22/97 Shachetor

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: IND081401 Thu Aug 14 10:24:39 1997

Sample Weight: 21.070 mg

12N14-B

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 185 TO 187

N2, EXOTHERM DOWN

TEMP: 140.0 °C TIME: 0.0 min RATE: 10.0 °C/min
TEMP: 180.0 °C

HNF-SD-WM-DP-259, REV.0

Curve 1: DSC
File info: SAM081407 Thu Aug 14 16:28:22 1997
Sample Weight: 11.430 mg
S97T001791 SAM

N2 10C/min
TEMP: 35.0 °C
TIME: 0.0 min RATE: 10.0 C/min

AD PURINTON
PERKIN-ELMER
7 Series Thermal Analysis System
Thu Aug 14 16:45:14 1997

Curve 1: DSC

File info: SAM081408 Thu Aug 14 17:36:04 1997

Sample Weight: 12.900 mg

S97T001791 DUP

N2 10C/min
TEMP: 50.0 °C

TIME: 0.0 min RATE: 10.0 C/min

Temperature (°C)

AD PURINTON
PERKIN-ELMER
7 Series Thermal Analysis System
Thu Aug 14 19:11:02 1997

HNF-SD-WM-DP-259, REV. 0

LABCORE Data Entry Template for Worklist# 19498

Analyst: BK Instrument: DSC0 3 Book # 12714-B

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

Worklist Comment: Rerun #1 due to wrong scan rate. Run under N2. -ppb

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			DSC-03	SOLID	<u>28.45</u>	<u>28.73*</u>	<u>N/A</u>	Joules/g
97000412	BY-109 (P)	2 SAMPLE	S97T001463 0		DSC-03	SOLID	<u>N/A</u>	<u>11.55</u>		Joules/g
97000412	BY-109 (P)	3 DUP	S97T001463 0		DSC-03	SOLID	<u>11.55</u>	<u>15.86</u>	<u>N/A</u>	Joules/g
97000412	BY-109 (P)	4 SAMPLE	S97T001464 0		DSC-03	SOLID	<u>N/A</u>	<u>0</u>		Joules/g
97000412	BY-109 (P)	5 DUP	S97T001464 0		DSC-03	SOLID	<u>0</u>	<u>0</u>	<u>N/A</u>	Joules/g

Final page for worklist # 19498

Bob King 8/14/97
Analyst Signature Date
Validated 8/22/97 Bachelor

Susan Bee 8/14/97
Analyst Signature Date

Data Entry Comments:
High RPD S97T001463 due to sample inhomogeneities. Rerun only at customer request 8/14/97

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: IND081301 Wed Aug 13 13:21:45 1997

Sample Weight: 21.070 mg

12N14-B

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 189 TO 193.

N2, EXOTHERM DOWN

TEMP: 140.0 °C TIME: 0.0 min RATE: 10.0 °C/min

TEMP: 180.0 °C

Temperature (°C)

AD-PURINTON *Not King* 8/13/97
PERKIN-ELMER
7 Series Thermal Analysis System
Wed Aug 13 19:30:02 1997

HNF-SD-WM-DP-259, REV. 0

Curve 1: DSC

File info: SAM081307 Wed Aug 13 20:09:22 1997

Sample Weight: 12.400 mg

S97T001463

N2 10C/min

TEMP: 25.0 °C
TEMP: 500.0 °C

TIME: 0.0 min RATE: 10.0 °C/min

Temperature (°C)

RW KING

PERKIN-ELMER

7 Series Thermal Analysis System
Thu Aug 14 14:14:30 1997

HNF-SD-WM-DP-259, REV. 0

Curve 1: DSC

File info: SAM081308 Wed Aug 13 22: 23: 25 1997

Sample Weight: 17.030 mg

S97T001463 DUP

N2 10C/min

TEMP: 35.0 °C
TIME: 000.0 s

TIME: 0.0 min RATE: 10.0 °C/min

Temperature (°C)

RW KING
PERKIN-ELMER
7 Series Thermal Analysis System
Thu Aug 14 14: 20: 13 1997

HNF-SD-WM-DP-259, REV. 0

Curve 1: DSC

File info: SAM081310 Wed Aug 13 23:27:03 1997

Sample Weight: 20.150 mg

S97T001464

N2 10C/min

TEMP: 35.0 °C TIMES: 0.0 min RATE: 10.0 °C/min

RW KING
PERKIN-ELMER
7 Series Thermal Analysis System
Thu Aug 14 01:29:51 1997

HNF-SD-WM-DP-259, REV. 0

Curve 1: DSC
File info: SAM081311 Thu Aug 14 00:19:08 1997
Sample Weight: 23.770 mg
S97T001464 DUP

N2 10C/min
TEMP: 25.0 °C
TEMP: 500.0 °C
TIMES: 0.0 min
RATE: 10.0 °C/min

RW KING
PERKIN-ELMER
7 Series Thermal Analysis System
Thu Aug 14 01:35:20 1997

HNF-SD-WM-DP-259, REV.0

LABCORE Data Entry Template for Worklist# 18823

Analyst: SMF Instrument: TGA0 3 Book # 103 N8-A

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

Worklist Comment: BY-109 TGA, RUN UNDER N2. RCJ

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			TGA-03	LIQUID	<u>59.0</u>	<u>58.67</u>	<u>N/A</u>	<u>%</u>
97000411	BY-109 (P)	2 SAMPLE	S97T001399	0	TGA-03	LIQUID	<u>N/A</u>	<u>99.73</u>		<u>%</u>
97000411	BY-109 (P)	3 DUP	S97T001399	0	TGA-03	LIQUID	<u>99.72</u>	<u>99.31</u>	<u>N/A</u>	<u>%</u>

Final page for worklist # 18823

Luis M. Dalton 7-19-97
Analyst Signature Date

Frank Meade 7-25-97
Analyst Signature Date

Validated Phachok 7/30/97

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: TER071901 Sat Jul 19 07:31:57 1997

Sample Weight: 13.821 mg

STD 103N8-A

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 195 TO 197.

195

Weight (Wt. %)

Luis M. Dalton 7-19-97

10C/MIN N2

Temperature (°C)

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

RD MEYERS
PERKIN-ELMER
7 Series Thermal Analysis System
Sat Jul 19 22:01:00 1997

HNF-SD-WM-DP-259, REV. 0

Curve 1: TGA

File info: SAM071905 Sat Jul 19 23: 54: 40 1997

Sample Weight: 10.140 mg

S97T001399

10C/MIN N2
TEMP: 35.0 °C
TIME: 500.0

TIME: 0.0 min RATE: 10.0 C/min

Temperature (°C)

SM FULTON
PERKIN-ELMER
7 Series Thermal Analysis System
Sun Jul 20 01: 35: 33 1997

HNF-SD-WM-DP-259, REV. 0

Curve 1: TGA

File info: SAM071906 Sun Jul 20 02:27:37 1997

Sample Weight: 10.464 mg

S97T001399 DUP

10C/MIN N2

TEMP: 25.0 °C TIME: 0.0 min RATE: 10.0 C/min

Temperature (°C)

SM FULTON
PERKIN-ELMER
7 Series Thermal Analysis System
Sun Jul 20 02:37:11 1997

HNF-SD-WM-DP-259, REV. 0

LABCORE Data Entry Template for Worklist# 19077

Analyst: RK Instrument: TGA0 3 Book # 103 118-A

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

Worklist Comment: BY109, TGA-03 .skm

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			TGA-03	SOLID	<u>59.0</u>	<u>58.80</u>	<u>N/A</u>	%
97000412	BY-109 (P)	2 SAMPLE	S97T001344	0	TGA-03	SOLID	<u>N/A</u>	<u>45.61</u>		%
97000412	BY-109 (P)	3 DUP	S97T001344	0	TGA-03	SOLID	<u>45.61</u>	<u>43.52</u>	<u>N/A</u>	%
97000412	BY-109 (P)	4 SAMPLE	S97T001346	0	TGA-03	SOLID	<u>N/A</u>	<u>45.91</u>		%
97000412	BY-109 (P)	5 DUP	S97T001346	0	TGA-03	SOLID	<u>45.91</u>	<u>39.96</u>	<u>N/A</u>	%

Final page for worklist # 19077

Not N/A 7/12/97
Analyst Signature Date

R. Jones 7-15-97
Analyst Signature Date

Validated 7/16/97 Shachar

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: TER071201 Sat Jul 12 05:38:32 1997

Sample Weight: 19.820 mg

STD 103N8-A

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 199 TO 203.

HNF-SD-WM-DP-259, REV.0

10C/MIN N2

TEMP: 35.0 C TIME: 0.0 min RATE: 10.0 C/min

RW KING
PERKIN-ELMER
7 Series Thermal Analysis System
Sat Jul 12 05:38:33 1997

Curve 1: TGA
File info: SAM071205 Sat Jul 12 08:58:49 1997
Sample Weight: 15.144 mg
S97T001344

10C/MIN N2

TEMP: 35.0 C TIME: 0.0 min RATE: 10.0 C/min

Temperature (°C)

RW KING
PERKIN-ELMER
7 Series Thermal Analysis System
Sat Jul 12 09:00:03 1997

HNF-SD-WM-DP-259, REV. 0

Curve 1: TGA
File info: SAM071206 Sat Jul 12 10:03:38 1997
Sample Weight: 17.449 mg
S97T001344 DUP

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

Temperature (°C)

RW KING
PERKIN-ELMER
7 Series Thermal Analysis System
Sat Jul 12 10:26:03 1997

HNF-SD-WM-DP-259, REV. 0

Curve 1: TGA

File info: SAM071207 Sat Jul 12 11:10:25 1997

Sample Weight: 7.377 mg

S97T001346

10C/MIN N2

TEMP: 25.0 °C TIME: 0.0 min RATE: 10.0 °C/min

Temperature (°C)

RW KING
PERKIN-ELMER
7 Series Thermal Analysis System
Sat Jul 12 12:06:20 1997

HNFS-SD-WM-DP-259, REV. 0

Curve 1: TGA

File info: SAM071208 Sat Jul 12 12:46:49 1997

Sample Weight: 11.235 mg

S97T001346 DUP

HNF-SD-WM-DP-259, REV. 0

10C/MIN N2
TEMP: 35.0 C
TIME: 0.0 min RATE: 10.0 C/min

RW KING
PERKIN-ELMER
7 Series Thermal Analysis System
Sat Jul 12 12:47:19 1997

LABCORE Data Entry Template for Worklist# 19083

Analyst: B/K Instrument: TGA0 3 Book # 10378-A

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

Worklist Comment: BY109, TGA-03 Run under Nitrogen. skm

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			TGA-03	LIQUID	<u>59.0</u>	<u>58.80*</u>	<u>N/A</u>	%
97000412	BY-109 (P)	2 SAMPLE	S97T001467	0	TGA-03	LIQUID	<u>N/A</u>	<u>54.38</u>		%
97000412	BY-109 (P)	3 DUP	S97T001467	0	TGA-03	LIQUID	<u>54.38</u>	<u>54.44</u>	<u>N/A</u>	%
97000412	BY-109 (P)	4 SAMPLE	S97T001468	0	TGA-03	LIQUID	<u>N/A</u>	<u>51.40</u>		%
97000412	BY-109 (P)	5 DUP	S97T001468	0	TGA-03	LIQUID	<u>51.40</u>	<u>52.22</u>	<u>N/A</u>	%

Final page for worklist # 19083

Not a King 7/12/97
Analyst Signature Date

[Signature] 7-15-97
Analyst Signature Date

Validated 7/16/97 [Signature]

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: TER071201 Sat Jul 12 05:38:32 1997

Sample Weight: 19.820 mg

STD 103N8-A

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 205 TO 209.

10C/MIN N2

TEMP: 35.0 °C TIME: 0.0 min RATE: 10.0 °C/min

Temperature (°C)

RM KING
PERKIN-ELMER
7 Series Thermal Analysis System
Sat Jul 12 14:38:16 1997

HNF-SD-WM-DP-259, REV.0

Curve 1: TGA
File info: SAM071209 Sat Jul 12 13:51:25 1997
Sample Weight: 19.199 mg
S97T001467

HNF-SD-WM-DP-259, REV. 0

10C/MIN N2
TEMP: 35.0 C
TEMP: 500.0 C
TIME: 0.0 min
RATE: 10.0 C/min

Temperature (°C)

RW KING
PERKIN-ELMER
7 Series Thermal Analysis System
Sat Jul 12 13:56:29 1997

Curve 1: TGA
File info: SAM071210 Sat Jul 12 14:56:00 1997
Sample Weight: 19.775 mg
S97T001467 DUP

HNF-SD-WM-DP-259, REV. 0

10C/MIN N2
TEMP: 30.0 °C TIME: 0.0 min RATE: 10.0 °C/min
TEMP: 500.0 °C

RW KING
PERKIN-ELMER
7 Series Thermal Analysis System
Sat Jul 12 14:56:48 1997

Curve 1: TGA

File info: SAM071211 Sat Jul 12 16:00:15 1997

Sample Weight: 14.823 mg

S97T001468

10C/MIN N2

TEMP: 35.0 C
TEMP: 500.0 C

TIME: 0.0 min RATE: 10.0 C/min

Temperature (°C)

RW KING
PERKIN-ELMER
7 Series Thermal Analysis System
Sat Jul 12 16:00:48 1997

HNF-SD-WM-DP-259, REV.0

802

Curve 1: TGA

File info: SAM071212 Sat Jul 12 17:04:21 1997

Sample Weight: 16.999 mg

S97T001468 DUP

10C/MIN N2

TEMP: 25.0 C TIME: 0.0 min RATE: 10.0 C/min

RW KING
PERKIN-ELMER
7 Series Thermal Analysis System
Sat Jul 12 17:06:48 1997

HNF-SD-WM-DP-259, REV.0

LABCORE Data Entry Template for Worklist# 19138

Analyst: Rom Instrument: TGA0 3 Book # 103NDA

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

Worklist Comment: BY-109 TGA, RUN UNDER N2. RCJ

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				TGA-03	SOLID	<u>59.0</u>	<u>58.80</u>	<u>X</u>	<u>N/A</u> %
97000412	BY-109 (P)	2	SAMPLE	S97T001459	0		TGA-03	SOLID	<u>N/A</u>	<u>50.41</u>		%
97000412	BY-109 (P)	3	DUP	S97T001459	0		TGA-03	SOLID	<u>50.41</u>	<u>53.65</u>	<u>N/A</u>	%
97000412	BY-109 (P)	4	SAMPLE	S97T001460	0		TGA-03	SOLID	<u>N/A</u>	<u>51.39</u>		%
97000412	BY-109 (P)	5	DUP	S97T001460	0		TGA-03	SOLID	<u>51.39</u>	<u>51.08</u>	<u>N/A</u>	%

Final page for worklist # 19138

Rom ^{7/15/97}
Analyst Signature Date

Rom ⁷⁻¹⁵⁻⁹⁷
Analyst Signature Date

Validated 7/15/97 Rachelor

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: TER071201 Sat Jul 12 05:36:32 1997

Sample Weight: 19.820 mg

STD 103N8-A

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

Curve 1: TGA

File info: SAM071213 Sat Jul 12 18:50:55 1997

Sample Weight: 15.413 mg

S97T001459

TEMP: 35.0 °C
TIME: 0.0 min RATE: 10.0 C/min

RD MEYERS
PERKIN-ELMER
7 Series Thermal Analysis System
Sat Jul 12 20:49:44 1997

Curve 1: TGA

File info: SAM071214 Sat Jul 12 21:46:18 1997

Sample Weight: 13.849 mg

S97T001459DUP

10C/MIN N2

TEMP: 55.0 °C TIME: 0.0 min RATE: 10.0 °C/min

Temperature (°C)

RD MEYERS
PERKIN-ELMER
7 Series Thermal Analysis System
Sat Jul 12 22:08:17 1997

HNF-SD-WM-DP-259, REV. 0

Curve 1: TGA

File info: SAM071215 Sat Jul 12 22:59:04 1997

Sample Weight: 15.753 mg

S97T001460

TEMP: 50.0 °C TIME: 0.0 min RATE: 10.0 °/min

RD MEYERS
PERKIN-ELMER
7 Series Thermal Analysis System
Sun Jul 13 00:40:31 1997

Curve 1: T6A

File info: SAM071301 Sun Jul 13 01:41:56 1997

Sample Weight: 14.121 mg

S97T001460DUP

10C/MIN N2

TEMP: 25.0 °C
TIME: 600.0 s

RATE: 0.0 min RATE: 10.0 °C/min

Temperature (°C)

RD MEYERS
PERKIN-ELMER
7 Series Thermal Analysis System
Sun Jul 13 03:14:08 1997

HNF-SD-WM-DP-259, REV. 0

LABCORE Data Entry Template for Worklist# 19139

Analyst: Jds Instrument: TGA0 3 Book # 103 N84

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

Worklist Comment: BY-109 TGA, RUN UNDER N2. RCJ

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			TGA-03	SOLID	<u>59.0</u>	<u>58.94</u>	<u>N/A</u>	%
97000412	BY-109 (P)	2 SAMPLE	S97T001463	0	TGA-03	SOLID	<u>N/A</u>	<u>49.91</u>		%
97000412	BY-109 (P)	3 DUP	S97T001463	0	TGA-03	SOLID	<u>49.91</u>	<u>43.25</u>	<u>N/A</u>	%
97000412	BY-109 (P)	4 SAMPLE	S97T001464	0	TGA-03	SOLID	<u>N/A</u>	<u>45.56</u>		%
97000412	BY-109 (P)	5 DUP	S97T001464	0	TGA-03	SOLID	<u>45.56</u>	<u>54.88</u>	<u>N/A</u>	%

Final page for worklist # 19139

Jds 7/18/97
Analyst Signature Date

Quinn Lee 7/22/97
Analyst Signature Date

Validated 7/24/97 Q. Pacheco

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: TER071801 Fri Jul 18 06:47:53 1997

Sample Weight: 13.856 mg

STD 103NB-A

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 217 TO 223.

10C/MIN N2
TEMP: 50.0 °C
TIME: 300.0 s

TIMER: 0.0 min RATE: 10.0 °C/min

Temperature (°C)

JD SPELLMAN
PERKIN-ELMER
7 Series Thermal Analysis System
Fri Jul 18 06:49:00 1997

Curve 1: TGA

File info: SAM071806 Fri Jul 18 07:57:34 1997

Sample Weight: 16.408 mg

S97T001463

10C/MIN N2

TEMP: 25.0 °C
TIME: 500.0 s

TIME: 0.0 min RATE: 10.0 g/min

Temperature (°C)

JD SPELLMAN
PERKIN-ELMER
7 Series Thermal Analysis System
Fri Jul 18 08:20:06 1997

HNF-SD-WM-DP-259, REV. 0

Curve 1: TGA

File info: SAM071807 Fri Jul 18 09:11:19 1997

Sample Weight: 22.104 mg

S97T001463DUP

10C/MIN N2

TEMP: 25.0 °C TIME: 0.0 min RATE: 10.0 °C/min

Temperature (°C)

JD SPELLMAN
PERKIN-ELMER
7 Series Thermal Analysis System
Fri Jul 18 09:11:38 1997

HNF-SD-WM-DP-259, REV. 0

Curve 1: T6A

File info: SAM071808 Fri Jul 18 10:16:38 1997

Sample Weight: 35.000 mg

S97T001464

10C/MIN N2

TEMP: 35.0 C
TIME: 55.0 C

TIME: 0.0 min RATE: 10.0 C/min

Temperature (°C)

JD SPELLMAN
PERKIN-ELMER
7 Series Thermal Analysis System
Fri Jul 18 10:53:38 1997

HNF-SD-WM-DP-259, REV. 0

Curve 1: TGA

File info: SAM071809 Fri Jul 18 11:46:59 1997

Sample Weight: 30.181 mg

S97T001464DUP

10C/MIN N2

TEMP: 25.0 °C
TIME: 000.8 s

TIME: 0.0 min RATE: 10.0 C/min

Temperature (°C)

JD SPELLMAN
PERKIN-ELMER
7 Series Thermal Analysis System
Fri Jul 18 12:50:41 1997

HNF-SD-WM-DP-259, REV.0

LABCORE Data Entry Template for Worklist# 19140

Analyst: RLM Instrument: TGA0 3 Book # 103 N8A

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

Worklist Comment: BY-109 TGA, RUN UNDER N2. RCJ

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			TGA-03	SOLID	<u>59.0</u>	<u>58.80</u>	<u>N/A</u>	%
97000411	BY-109 (P)	2 SAMPLE	S97T001482	0	TGA-03	SOLID	<u>N/A</u>	<u>41.16</u>		%
97000411	BY-109 (P)	3 DUP	S97T001482	0	TGA-03	SOLID	<u>41.16</u>	<u>41.68</u>	<u>N/A</u>	%
97000411	BY-109 (P)	4 SAMPLE	S97T001483	0	TGA-03	SOLID	<u>N/A</u>	<u>33.92</u>		%
97000411	BY-109 (P)	5 DUP	S97T001483	0	TGA-03	SOLID	<u>33.92</u>	<u>33.60</u>	<u>N/A</u>	%

Final page for worklist # 19140

RLM 7/13/97
Analyst Signature Date
Validated 7/15/97 Bachelor

RLM 7-15-97
Analyst Signature Date

Data Entry Comments:

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

Curve 1: TGA

File info: TER071301 Sun Jul 13 06:29:19 1997

Sample Weight: 17.157 mg

STD 103NB-A

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 223 TO 227

PJ MCCONN
PERKIN-ELMER
7 Series Thermal Analysis System
Sun Jul 13 06:30:44 1997

HNF-SD-WM-DP-259, REV. 0

Curve 1: TGA
 File info: SAM071302 Sun Jul 13 07:36:21 1997
 Sample Weight: 13.854 mg
 S97T001482

PJ MCCOMIN
 PERKIN-ELMER
 7 Series Thermal Analysis System
 Sun Jul 13 08:31 1997

10C/MIN N2
 TEMP: 35.0 C
 TIME: 000.0 S
 0.0 min RATE: 10.0 C/min

Curve 1: TGA
File info: SAM071303 Sun Jul 13 10: 04: 25 1997
Sample Weight: 17.780 mg
S97T001482 DUP

10C/MIN N2
TEMP: 35.0 C
TIME: 0.0 min RATE: 10.0 C/min

PJ MCCOWN
PERKIN-ELMER
7 Series Thermal Analysis System
Sun Jul 13 10: 16: 04 1997

HNF-SD-WM-DP-259, REV. 0

Curve 1: TGA

File Info: SAM071304 Sun Jul 13 11:16:10 1997

Sample Weight: 24.471 mg

S977001483

HNF-SD-WM-DP-259, REV. 0

10C/MIN N2

TEMP: 350.8 °C

TIME: 8

0.0 min RATE: 10.0 °C/min

Temperature (°C)

PJ MCCOWN
PERKIN-ELMER

7 Series Thermal Analysis System
Sun Jul 13 12:27:07 1997

Curve 1: TGA

File info: SAM071305 Sun Jul 13 13:21:11 1997

Sample Weight: 33.712 mg

S97T001483 DUP

10C/MIN N2

TEMP: 35.0 C TIME: 0.0 min RATE: 10.0 C/min

PJ MCCOWN
PERKIN-ELMER
7 Series Thermal Analysis System
Sun Jul 13 13:31:01 1997

HNF-SD-WM-DP-259, REV. 0

worklistrpt Version 2.1 05/15/95
07/07/97 12:25**LABCORE Data Entry Template for Worklist# 19141**Analyst: KRM Instrument: TGA0 3 Book # 103108AMethod: LA-514-114 Rev/Mod D-1

Worklist Comment: BY-109 TGA, RUN UNDER N2. RCJ

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			TGA-03	SOLID	59.0	58.36X	N/A	%
97000411	BY-109 (P)	2 SAMPLE	S97T001484	0	TGA-03	SOLID	N/A	36.06		%
97000411	BY-109 (P)	3 DUP	S97T001484	0	TGA-03	SOLID	36.06	36.32	N/A	%
97000411	BY-109 (P)	4 SAMPLE	S97T001485	0	TGA-03	SOLID	N/A	27.63 42.53	27.63 42.53	27.63 42.53
97000411	BY-109 (P)	5 DUP	S97T001485	0	TGA-03	SOLID	27.63 42.53	27.18 42.91	N/A	%

Final page for worklist # 19141Analyst Signature [Signature] Date 7-21-97Analyst Signature [Signature] Date 7/22/97Validated 7/24/97 [Signature]

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: TER072001 Sun Jul 20 19:11:13 1997

Sample Weight: 15.096 mg

STD 103NB-A

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 22 TO

HNF-SD-WM-DP-259, REV.0

Curve 1: TGA

File info: SAM072005 Mon Jul 21 02:24:40 1997

Sample Weight: 33.349 mg

S97T001484

10C/MIN N2

TEMP: 35.0 °C TIME: 0.0 min RATE: 10.0 C/min

KR MONTEITH
PERKIN-ELMER
7 Series Thermal Analysis System
Mon Jul 21 04:25:41 1997

HNF-SD-WM-DP-259, REV. 0

Curve 1: TGA

File info: SAM072006 Mon Jul 21 03:39:55 1997

Sample Weight: 22.538 mg

S97T001484 DUP

10C/MIN N2

TEMP: 35.0 °C

TIME: 0.0 min RATE: 10.0 C/min

Temperature (°C)

KR MONTEITH
PERKIN-ELMER
7 Series Thermal Analysis System
Mon Jul 21 04:20:38 1997

Curve 1: T6A
 File Info: SAM072007 Mon Jul 21 05: 05: 03 1997
 Sample Weight: 30.624 mg
 S97T001485

KR MONTEITH
 PERKIN-ELMER
 7 Series Thermal Analysis System
 Mon Jul 21 05: 05: 06 1997

10C/MIN N2
 TEMP: 35.0 °C
 TIME: 500.0 s
 0.0 min RATE: 10.0 C/min

Curve 1: TGA

File info: SAM072008 Mon Jul 21 06:08:37 1997

Sample Weight: 35.338 mg

S97T001485 DUP

10C/MIN N2

TEMP: 25.0 C TIME: 0.0 min RATE: 10.0 C/min

Temperature (°C)

KR MONTEITH
PERKIN-ELMER
7 Series Thermal Analysis System
Mon Jul 21 06:30:23 1997

HNF-SD-WM-DP-259, REV. 0

LABCORE Data Entry Template for Worklist# 19142Analyst: KRM Instrument: TGA0 3 Book # 10308AMethod: LA-514-114 Rev/Mod D-1

Worklist Comment: BY-109 TGA, RUN UNDER N2. RCJ

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			TGA-03	SOLID	<u>59.0</u>	<u>58.36</u>	<u>N/A</u>	%
97000411	BY-109 (P)	2 SAMPLE	S97T001486	0	TGA-03	SOLID	<u>N/A</u>	<u>32.15</u>		%
97000411	BY-109 (P)	3 DUP	S97T001486	0	TGA-03	SOLID	<u>32.15</u>	<u>31.53</u>	<u>N/A</u>	%
97000411	BY-109 (P)	4 SAMPLE	S97T001487	0	TGA-03	SOLID	<u>N/A</u>	<u>37.06</u>		%
97000411	BY-109 (P)	5 DUP	S97T001487	0	TGA-03	SOLID	<u>37.06</u>	<u>36.70</u>	<u>7/24/97</u>	%

Final page for worklist # 19142

Analyst Signature Date

Analyst Signature Date

Validated 7/24/97 Bachelor

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: TER072001 Sun Jul 20 19:11:13 1997

Sample Weight: 15.096 mg

STD 103NB-A

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 235 TO 239.

TEMP: 350.0 °C

TIME: 0.0 min RATE: 10.0 C/min

KR MONTEITH
PERKIN-ELMER
7 Series Thermal Analysis System
Sun Jul 20 19:44:17 1997

HNF-SD-WM-DP-259, REV. 0

Curve 1: TGA

File info: SAM072001 Sun Jul 20 20:26:50 1997

Sample Weight: 25.363 mg

S97T001485

10C/MIN N2

TEMP: 25.0 C
TEMP: 500.0 C

TIME: 0.0 min RATE: 10.0 C/min

Temperature (°C)

KA MONTEITH
PERKIN-ELMER
7 Series Thermal Analysis System
Sun Jul 20 21:40:20 1997

HNF-SD-WM-DP-259, REV.0

Curve 1: TGA

File info: SAM072002 Sun Jul 20 22:25:57 1997

Sample Weight: 27.039 mg

S97T001486 DUP

10C/MIN N2
TEMP: 35.0 C
TIME: 0.0 min RATE: 10.0 C/min

KR MONTEITH
PERKIN-ELMER
7 Series Thermal Analysis System
Sun Jul 20 22:31:46 1997

HNF-SD-WM-DP-259, REV. 0

Curve 1: TGA

File info: SAM072003 Sun Jul 20 23:38:13 1997

Sample Weight: 18.284 mg

S97T001487

238

10C/MIN N2

TEMP: 35.0 °C TIME: 0.0 min RATE: 10.0 C/min

KR MONTEITH
PERKIN-ELMER
7 Series Thermal Analysis System
Sun Jul 20 23:44:16 1997

HNF-SD-WM-DP-259, REV. 0

Curve 1: TGA

File info: SAM072004 Mon Jul 21 00:43:05 1997

Sample Weight: 25.118 mg

S97T001487 DUP

10C/MIN N2

TEMP1: 30.0 °C TIME1: 0.0 min RATE1: 10.0 °C/min

TEMP2: 500.0 °C

KR MONTEITH
PERKIN-ELMER
7 Series Thermal Analysis System
Mon Jul 21 01:39:00 1997

LABCORE Data Entry Template for Worklist# 19143

Analyst: KK Instrument: TGA0 3 Book # 10348-A

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

Worklist Comment: BY-109 TGA, RUN UNDER N2. RCJ

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			TGA-03	SOLID	<u>59.0</u>	<u>58.90*</u>	<u>N/A</u>	%
97000411	BY-109 (P)	2 SAMPLE	S97T001488	0	TGA-03	SOLID	<u>N/A</u>	<u>43.05</u>		%
97000411	BY-109 (P)	3 DUP	S97T001488	0	TGA-03	SOLID	<u>43.05</u>	<u>42.70</u>	<u>N/A</u>	%

Final page for worklist # 19143

Not Kim 7/21/97
Analyst Signature Date

Lydia Much 7-29-97
Analyst Signature Date

Validated 7/30/97 KK

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: TER072101 Mon Jul 21 06:50:26 1997

Sample Weight: 15.823 mg

STD 103NB-A

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 241 TO 242.

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

AW KING *Reslee Dig for Rut*
PERKIN-ELMER
7 Series Thermal Analysis System
Mon Jul 21 12:22:44 1997

HNF-SD-WM-DP-259, REV. 0

Curve 1: TGA

File info: SAM072103 Mon Jul 21 12: 42: 44 1997

Sample Weight: 17.425 mg

S97T001488

10C/MIN N2

TEMP: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min

Temperature (°C)

RW KING
PERKIN-ELMER
7 Series Thermal Analysis System
Mon Jul 21 15: 17: 09 1997

HNF-SD-WM-DP-259, REV.0

Curve 1: T6A

File info: SAM072104 Mon Jul 21 14:20:18 1997

Sample Weight: 12.286 mg

S97T001488 DUP

10C/MIN N2
TEMP: 85.0 °C
TIME: 0.0 min RATE: 10.0 °/min

Temperature (°C)

RW KING
PERKIN-ELMER
7 Series Thermal Analysis System
Mon Jul 21 15:10:56 1997

HNF-SD-WM-DP-259, REV. 0

LABCORE Data Entry Template for Worklist# 19476

Analyst: NA Instrument: TGA0 3 Book # 10318-A

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

Worklist Comment: BY-109 TGA, RUN UNDER N2. RCJ

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				TGA-03	SOLID	<u>59.0</u>	<u>59.53</u>	<u>N/A</u>	%
97000412	BY-109 (P)	2	SAMPLE	S97T001536	0		TGA-03	SOLID	<u>N/A</u>	<u>40.40</u>		%
97000412	BY-109 (P)	3	DUP	S97T001536	0		TGA-03	SOLID	<u>40.40</u>	<u>41.44</u>	<u>N/A</u>	%
97000412	BY-109 (P)	4	SAMPLE	S97T001736	0		TGA-03	SOLID	<u>N/A</u>	<u>49.01</u>		%
97000412	BY-109 (P)	5	DUP	S97T001736	0		TGA-03	SOLID	<u>49.01</u>	<u>46.42</u>	<u>N/A</u>	%

Final page for worklist # 19476

Moh King 8/13/97
Analyst Signature Date

AKM Leland 8-14-97
Analyst Signature Date

Validated 8/18/97 Bachelor

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: ter081201 Tue Aug 12 10:15:49 1997

Sample Weight: 20.197 mg

STD 103NB-A

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 245 TO 249.

HNF-SD-WM-DP-259, REV. 0

Curve 1: TGA

File info: SAM081208 Tue Aug 12 20:37:13 1997

Sample Weight: 18.724 mg

S97T001536

10C/MIN N2

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

RW KING
PERKIN-ELMER
7 Series Thermal Analysis System
Wed Aug 13 10:11:57 1997

HNF-SD-WM-DP-259, REV. 0

Curve 1: TGA

File info: SAM081209 Tue Aug 12 22: 10: 14 1997

Sample Weight: 17.252 mg

S97T001536 DUP

10C/MIN N2

TEMP: 35.0 C
TEMP: 500.0 C

TIME: 0.0 min RATE: 10.0 C/min

Temperature (°C)

RW KING
PERKIN-ELMER
7 Series Thermal Analysis System
Wed Aug 13 10:06:23 1997

HNF-SD-WM-DP-259, REV.0

Curve 1: TGA

File info: SAM081210 Tue Aug 12 23:15:46 1997

Sample Weight: 17.054 mg

S97T001736

248

10C/MIN N2

TEMP: 35.0 C TIME: 0.0 min RATE: 10.0 C/min

Temperature (°C)

RW KING
PERKIN-ELMER
7 Series Thermal Analysis System
Wed Aug 13 10:03:43 1997

HNF-SD-WM-DP-259, REV. 0

Curve 1: TGA

File info: SAM081211 Wed Aug 13 00:23:31 1997

Sample Weight: 16.968 mg

S97T001736 DUP

10C/MIN N2

TEMP: 35.0 °C

TEMP: 550.0 °C

TIME: 0.0 min RATE: 10.0 °C/min

RW KING

PERKIN-ELMER

7 Series Thermal Analysis System

Wed Aug 13 09:42:40 1997

HNF-SD-WM-DP-259, REV. 0

LABCORE Data Entry Template for Worklist# 19477

Analyst: PKM Instrument: TGA0 3 Book # 10328-A

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

Worklist Comment: BY-109 TGA, RUN UNDER N2. RCJ

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			TGA-03	SOLID	<u>59.0</u>	<u>59.53*</u>	<u>N/A</u>	%
97000411	BY-109 (P)	2 SAMPLE	S97T001742 0		TGA-03	SOLID	<u>N/A</u>	<u>33.05</u>		%
97000411	BY-109 (P)	3 DUP	S97T001742 0		TGA-03	SOLID	<u>33.05</u>	<u>30.61</u>	<u>N/A</u>	%
97000411	BY-109 (P)	4 SAMPLE	S97T001786 0		TGA-03	SOLID	<u>N/A</u>	<u>48.28</u>		%
97000411	BY-109 (P)	5 DUP	S97T001786 0		TGA-03	SOLID	<u>48.28</u>	<u>47.41</u>	<u>N/A</u>	%

Final page for worklist # 19477

Not Kim 8/13/97
Analyst Signature Date

Mark McLaughlin 8-14-97
Analyst Signature Date

Validated 8/10/97 PKM

Data Entry Comments:

S97T001742 exhibited weight loss above 200°C. PKM 8/13/97

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: ter081201 Tue Aug 12 10:15:49 1997

Sample Weight: 20.197 mg

STD 103NB-A

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 251 TO 255

HNF-SD-WM-DP-259, REV. 0

10C/MIN N2
TEMP: 35.0 °C
TEMP: 300.0 °C

TIME: 0.0 min RATE: 10.0 °C/min

Temperature (°C)

EA LAMBEL
PERKIN-ELMER
7 Series Thermal Analysis System
Wed Aug 13 09:49:52 1997

Curve 1: TGA

File info: SAM081301 Wed Aug 13 02:20:33 1997

Sample Weight: 18.491 mg

S97T001742

10C/MIN N2

Temperature (°C)

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

RW KING
PERKIN-ELMER
7 Series Thermal Analysis System
Wed Aug 13 09:36:15 1997

HNF-SD-WM-DP-259, REV.0

Curve 1: TGA
File Info: SAM081302 Wed Aug 13 03: 20: 14 1997
Sample Weight: 24.007 mg
S97T001742 DUP

RW KING
PERKIN-ELMER
7 Series Thermal Analysis System
Wed Aug 13 08: 26: 48 1997

100/MIN N2
TEMP: 33.8 °C
TIME: 550.8 s
RATE: 0.0 min RATE: 10.0 °C/min

Curve 1: TGA

File info: SAM081303 Wed Aug 13 04:19:25 1997

Sample Weight: 26.092 mg

S97T001786

10C/MIN N2

TEMP1: 35.0 °C
TEMP2: 600.0 °C

TIME1: 0.0 min RATE1: 10.0 °C/min

Temperature (°C)

RW KING
PERKIN-ELMER
7 Series Thermal Analysis System
Wed Aug 13 09:19:21 1997

HNF-SD-WM-DP-259, REV.0

Curve 1: TGA

File info: SAM081304 Wed Aug 13 05:26:24 1997

Sample Weight: 22.554 mg

S97T001786 DUP

10C/MIN N2
TIME: 0.0 min RATE: 10.0 C/min

Temperature (°C)

RW KING
PERKIN-ELMER
7 Series Thermal Analysis System
Wed Aug 13 09:16:13 1997

HNF-SD-WM-DP-259, REV. 0

LABCORE Data Entry Template for Worklist# 19478

Analyst: ADD Instrument: TGA0 3 Book # 103N8A

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

Worklist Comment: BY-109 TGA, RUN UNDER N2. RCJ

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			TGA-03	SOLID	<u>57.0</u>	<u>58.49</u>	N/A	%
97000411	BY-109 (P)	2 SAMPLE	S97T001791	0	TGA-03	SOLID	N/A	<u>41.30</u>		%
97000411	BY-109 (P)	3 DUP	S97T001791	0	TGA-03	SOLID	<u>41.30</u>	<u>39.90</u>	N/A	%

Final page for worklist # 19478

Anthony Purnith 8-14-97
Analyst Signature Date

R. Jones 8-18-97
Analyst Signature Date

Validated 8/22/97 Michael

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: TER081401 Thu Aug 14 10: 43: 13 1997

Sample Weight: 14.338 mg

103NB-A

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 257 TO 259.

HNF-SD-WM-DP-259, REV. 0

Curve 1: TGA

File info: SAM081406 Thu Aug 14 15: 44: 55 1997

Sample Weight: 25.053 mg

S97T001791 SAM

10C/MIN N2

TEMP: 25.0 C
TEMP: 600.0 C

TIME: 0.0 min RATE: 10.0 C/min

AD PURINTON
PERKIN-ELMER
7 Series Thermal Analysis System
Thu Aug 14 15: 45: 49 1997

Curve 1: TGA

File info: SAM081407 Thu Aug 14 16:56:45 1997

Sample Weight: 20.555 mg

S97T001791 DUP

10C/MIN N2

TEMP: 35.0 C TIMES: 0.0 min RATE: 10.0 C/min

Temperature (°C)

AD PURINTON
PERKIN-ELMER
7 Series Thermal Analysis System
Thu Aug 14 16:57:39 1997

HNF-SD-WM-DP-259, REV. 0

LABCORE Completed Worklist Report for Worklist# 19186

Analyst: rag

Instrument: BA001

Book# 133N16A

Method: LA510-112 Rev/Mod D-1

Worklist Comment: BY-109 SPG. RCJ

Seq Type	Sample#	R A	Test	Matrix	Actual	Found	DL or Yield	Unit
1 STD	0		SPG-01	L1QUID	1.39755	1.401	100.247 % Recovery	
2 SAMPLE	S97T001399	0	SPG-01	L1QUID	N/A	1.000	1.00e-002 Sp.G.	
3 DUP	S97T001399	0	SPG-01	L1QUID	1.000	.994	0.602 RPD	
4 SAMPLE	S97T001467	0	SPG-01	L1QUID	N/A	1.483	1.00e-002 Sp.G.	
5 DUP	S97T001467	0	SPG-01	L1QUID	1.483	1.509	1.738 RPD	
6 SAMPLE	S97T001468	0	SPG-01	L1QUID	N/A	1.483	1.00e-002 Sp.G.	
7 DUP	S97T001468	0	SPG-01	L1QUID	1.483	1.524	2.727 RPD	

Final page for worklist# 19186

Analyst Signature _____ Date _____

Analyst Signature _____ Date _____

RW Schweden 7/15/97
Reviewer Signature Date

LABCORE Data Entry Template for Worklist# 19186

Analyst: Ry Instrument: BA001 Book # 133N16-A
Method: LA-510-112 Rev/Mod G.O.D-1 RWS 7/15/97
Worklist Comment: BY-109 SPG. RCJ

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			SPG-01	LIQUID	<u>1.3976</u>	<u>1.401</u>	<u>N/A</u>	Sp.G.
97000411	BY-109 (P)	2 SAMPLE	S97T001399	0	SPG-01	LIQUID	<u>N/A</u>	<u>1.000</u>	<u>0.010</u>	Sp.G. RWS 7/15/97
97000411	BY-109 (P)	3 DUP	S97T001399	0	SPG-01	LIQUID	<u>1.080</u>	<u>0.994</u>	<u>N/A</u>	Sp.G. RWS 7/15/97
97000412	BY-109 (P)	4 SAMPLE	S97T001467	0	SPG-01	LIQUID	<u>1.483</u>	<u>1.483</u>	<u>0.010</u>	Sp.G. RWS 7/15/97
97000412	BY-109 (P)	5 DUP	S97T001467	0	SPG-01	LIQUID	<u>1.483</u>	<u>1.507</u>	<u>N/A</u>	Sp.G. RWS 7/15/97
97000412	BY-109 (P)	6 SAMPLE	S97T001468	0	SPG-01	LIQUID	<u>1.483</u>	<u>1.508</u>	<u>N/A</u>	Sp.G. RWS 7/15/97
97000412	BY-109 (P)	7 DUP	S97T001468	0	SPG-01	LIQUID	<u>1.483</u>	<u>1.525</u>	<u>N/A</u>	Sp.G. RWS 7/15/97

Final page for worklist # 19186

Rae Ann Green 07-10-97
Analyst Signature Date

Frank Mack 7-10-97
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.

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

SPECIFIC GRAVITY : LA-510-112 (D-1)

Type		STD	REPLICATE
STD	Gross Weight (W2)	1.4969	1.4600
Work List	Tare Weight (W1)	1.3925	1.3548
19186	Weight of Solution (W2-W1)	0.1044	0.1052
Test Code	Volume of Solution μ L	74.8300	74.8300
SPG-01	Specific Gravity	1.3952	1.4059
Matrix	Specific Gravity (Average)	1.4005	
LIQUID			
Sample #			
STD# 133N16A			
Instrument Code	Gross Weight (W2) = Wt. of vial + cap + cotton + solution		
BA001	Tare Weight (W1) = Wt. of vial + cap + cotton		
Analyst			
RAG	Specific Gravity = $[(W2-W1) * 1000 \mu\text{L/mL}] / [\text{Vol. of Solution } \mu\text{L} * 1.000 \text{ g/mL}]$		
Date			
07/10/97	ν RESULT ν		
Time	Specific Gravity Average =	1.401	
12:30 PM			

Data Entry by:

Date:

07/10/97

Approved by:

Date:

7/15/97

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

SPECIFIC GRAVITY : LA-510-112 (D-1)

Type		SAMPLE	Dup -REPLICATE-
SAMPLE	Gross Weight (W2)	1.4333	1.4720
Work List	Tare Weight (W1)	1.3585	1.3976
19186	Weight of Solution (W2-W1)	0.0748	0.0744
Test Code	Volume of Solution μ L	74.8300	74.8300
SPG-01	Specific Gravity	0.9996	0.9943
Matrix	Specific Gravity (Average)	0.9969	
LIQUID			
Sample #			
S97T001399			
Instrument Code	Gross Weight (W2) = Wt. of vial + cap + cotton + solution		
BA001	Tare Weight (W1) = Wt. of vial + cap + cotton		
Analyst			
RAG	Specific Gravity = $[(W2-W1) * 1000 \mu\text{L/mL}] / [\text{Vol. of Solution } \mu\text{L} * 1.000 \text{ g/mL}]$		
Date			
07/10/97			
Time			
12:30 PM			

v RESULT v	
Specific Gravity Average =	0.997

Data Entry by:

Date:

07/10/97

Approved by:

Date:

7/15/97

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

SPECIFIC GRAVITY : LA-510-112 (D-1)

Type		SAMPLE	REPLICATE
SAMPLE	Gross Weight (W2)	1.4526	1.4901
Work List	Tare Weight (W1)	1.3416	1.3772
19186	Weight of Solution (W2-W1)	0.111	0.1129
Test Code	Volume of Solution μ L	74.8300	74.8300
SPG-01	Specific Gravity	1.4834	1.5088
Matrix	Specific Gravity (Average)	1.4961	
LIQUID			
Sample #			
S97T001467			
Instrument Code	Gross Weight (W2) = Wt. of vial + cap + cotton + solution		
BA001	Tare Weight (W1) = Wt. of vial + cap + cotton		
Analyst	Specific Gravity = $[(W2-W1) * 1000 \mu\text{L/mL}] / [\text{Vol. of Solution } \mu\text{L} * 1.000 \text{ g/mL}]$		
RAG			
Date			
07/10/97	v RESULT v		
Time	Specific Gravity Average =	1.496	
12:30 PM			

Data Entry by:

Date:

07/10/97

Approved by:

Date:

7/14/97

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

SPECIFIC GRAVITY : LA-510-112 (D-1)

Type		SAMPLE	REPLICATE
SAMPLE	Gross Weight (W2)	1.4950	1.4992
Work List	Tare Weight (W1)	1.3840	1.3852
19186	Weight of Solution (W2-W1)	0.111	0.114
Test Code	Volume of Solution μ L	74.8300	74.8300
SPG-01	Specific Gravity	1.4834	1.5235
Matrix	Specific Gravity (Average)	1.5034	
LIQUID			
Sample #			
S97T001468			
Instrument Code	Gross Weight (W2) = Wt. of vial + cap + cotton + solution		
BA001	Tare Weight (W1) = Wt. of vial + cap + cotton		
Analyst			
RAG	Specific Gravity = $[(W2-W1) * 1000 \mu\text{L/mL}] / [\text{Vol. of Solution } \mu\text{L} * 1.000 \text{ g/mL}]$		
Date			
07/10/97	$\checkmark$ RESULT $\checkmark$		
Time	Specific Gravity Average =	1.503	
12:30 PM			

Dup

7/10/97

Data Entry by:

Date:

07/10/97

Approved by:

Date:

7/15/97

LABCORE Data Entry Template for Worklist# 19434

Analyst: Ra Instrument: BA001 Book # 103N8-A
Method: LA-564-101 Rev/Mod G-0
Worklist Comment: BY-109 %H2O. RCJ

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			WATER-01	SOLID	<u>5.90e</u>	<u>58.52</u>	N/A	%
97000412	BY-109 (P)	2 SAMPLE	S97T001344	0	WATER-01	SOLID	N/A	31.96	0.01	0.10 % RWS 7/29/97
97000412	BY-109 (P)	3 DUP	S97T001344	0	WATER-01	SOLID	31.96	41.72	N/A	0.10 % *
97000412	BY-109 (P)	4 SAMPLE	S97T001346	0	WATER-01	SOLID	<u>N/A</u>	<u>34.44</u>	<u>0.01</u>	<u>0.10</u> % RWS 7/29/97
97000412	BY-109 (P)	5 DUP	S97T001346	0	WATER-01	SOLID	<u>34.44</u>	<u>35.98</u>	<u>N/A</u>	%
97000412	BY-109 (P)	6 SAMPLE	S97T001459	0	WATER-01	SOLID	<u>N/A</u>	<u>39.67</u>	<u>0.01</u>	<u>0.10</u> % RWS 7/29/97
97000412	BY-109 (P)	7 DUP	S97T001459	0	WATER-01	SOLID	<u>39.67</u>	<u>40.47</u>	<u>N/A</u>	%
97000412	BY-109 (P)	8 SAMPLE	S97T001463	0	WATER-01	SOLID	<u>N/A</u>	<u>32.56</u>	<u>0.01</u>	<u>0.10</u> % RWS 7/29/97
97000412	BY-109 (P)	9 DUP	S97T001463	0	WATER-01	SOLID	<u>32.56</u>	<u>34.84</u>	<u>N/A</u>	%
97000411	BY-109 (P)	10 SAMPLE	S97T001483	0	WATER-01	SOLID	<u>N/A</u>	<u>32.37</u>	<u>0.01</u>	<u>0.10</u> % RWS 7/29/97
97000411	BY-109 (P)	11 DUP	S97T001483	0	WATER-01	SOLID	<u>32.37</u>	<u>34.67</u>	<u>N/A</u>	%

Final page for worklist # 19434

Rae Ann Green 7-25-97
Analyst Signature Date

Jim Mueh 7-27-97
Analyst Signature Date
Approved RWS 7/29/97

S97T001344 rejected, reanalysis requested. RWS 7/29/97

* QC Dup exceeds UCL

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.

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

% WATER : LA-564-101 (G-0)

Type	STD	REPLICATE
STD	Tare Weight (W1) grams	14.8562
Work List	Gross Weight (W2) grams	16.2428
19434	First Residue Weight (W3) grams	15.4319
Test Code	Second Residue Weight (W4) grams	15.4313
WATER-01	Percent Difference	0.0039
Matrix	QC Check	Pass
SOLID	Percent Weight Loss	58.52
Sample #	(If it is necessary to do a 3rd heating then substitute the last weight measured for W4 and the second to last weight measured for W3 in the calculations above.)	
STD# 103N8A		
Instrument Code		
BA001	Sample = W2 - W1	= Gross Weight - Tare Weight
Analyst	Weight = W2 - W4	= Gross Weight - Residue Weight
RAG	Percent Difference	= Absolute Value of $[(W3-W4)/W4]*100.00$
Date	QC Check "Pass" if % Difference	= < +/- 0.1500%
07/25/97	Percent Water Weight Loss	= $[(W2-W4)/(W2-W1)]*100 = \% H2O$
Time	Percent Water (Average)	= $[(\% H2O \text{ for A}) + (\% H2O \text{ for B})] / 2$
10:45 AM		

RESULT

% H2O = 58.5

Data Entry by:

Date: 07/27/97

Approved by:

Date: 7/29/97

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

% WATER : LA-564-101 (G-0)

		len 7/27/97 Dup	
Type	Tare Weight (W1) grams	SAMPLE	REPLICATE
SAMPLE	Gross Weight (W2) grams	14.9691	14.9464
Work List	First Residue Weight (W3) grams	15.4795	15.4222
19434	Second Residue Weight (W4) grams	15.3162	15.2234
Test Code	Percent Difference	15.3164	15.2237
WATER-01	QC Check	0.0013	0.0020
Matrix	Percent Weight Loss	Pass	Pass
SOLID		31.96	41.72
Sample #	(If it is necessary to do a 3rd heating then substitute the last weight measured for W4 and the second to last weight measured for W3 in the calculations above.)		
S97T001344			
Instrument Code			
BA001			
Analyst	Sample = W2 - W1	= Gross Weight - Tare Weight	
RAG	Weight = W2 - W4	= Gross Weight - Residue Weight	
Date	Percent Difference	= Absolute Value of [(W3-W4)/W4]*100.00	
07/25/97	QC Check "Pass" if % Difference	= < +/- 0.1500%	
Time	Percent Water Weight Loss	= [(W2-W4)/(W2-W1)]*100 = % H2O	
10:45 AM	Percent Water (Average)	= [(% H2O for A) + (% H2O for B)] / 2	

RESULT

% H2O (Average) = 36.8

Data Entry by:

Date: 07/27/97

Approved by:

Date: 7/29/97

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

% WATER : LA-564-101 (G-0)

		em 7/27/97 Dup	
		SAMPLE	REPLICATE
Type	Tare Weight (W1) grams	14.7139	14.8349
SAMPLE	Gross Weight (W2) grams	15.2118	15.3927
Work List	First Residue Weight (W3) grams	15.0403	15.1923
19434	Second Residue Weight (W4) grams	15.0403	15.1920
Test Code	Percent Difference	0.0000	0.0020
WATER-01	QC Check	Pass	Pass
Matrix	Percent Weight Loss	34.44	35.98
SOLID	(If it is necessary to do a 3rd heating then substitute the last weight measured for W4 and the second to last weight measured for W3 in the calculations above.)		
Sample #			
S97T001346			
Instrument Code			
BA001	Sample = W2 - W1	= Gross Weight - Tare Weight	
Analyst	Weight = W2 - W4	= Gross Weight - Residue Weight	
RAG	Percent Difference	= Absolute Value of [(W3-W4)/W4]*100.00	
Date	QC Check "Pass" if % Difference	= < +/- 0.1500%	
07/25/97	Percent Water Weight Loss	= [(W2-W4)/(W2-W1)]*100 = % H2O	
Time	Percent Water (Average)	= [(% H2O for A) + (% H2O for B)] / 2	
10:45 AM			

RESULT

% H2O (Average) = 35.2

Data Entry by:

Date: 07/27/97

Approved by:

Date: 7/29/97

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

% WATER : LA-564-101 (G-0)

		SAMPLE	REPLICATE
Type	Tare Weight (W1) grams	14.8218	14.9187
SAMPLE	Gross Weight (W2) grams	15.5089	15.4463
Work List	First Residue Weight (W3) grams	15.2356	15.2324
19434	Second Residue Weight (W4) grams	15.2363	15.2328
Test Code	Percent Difference	0.0046	0.0026
WATER-01	QC Check	Pass	Pass
Matrix	Percent Weight Loss	39.67	40.47
SOLID	(If it is necessary to do a 3rd heating then substitute the last weight measured for W4 and the second to last weight measured for W3 in the calculations above.)		
Sample #			
S97T001459			
Instrument Code			
BA001	Sample = W2 - W1	= Gross Weight - Tare Weight	
Analyst	Weight = W2 - W4	= Gross Weight - Residue Weight	
RAG	Percent Difference	= Absolute Value of $[(W3-W4)/W4] \times 100.00$	
Date	QC Check "Pass" if % Difference	= < +/- 0.1500%	
07/25/97	Percent Water Weight Loss	= $[(W2-W4)/(W2-W1)] \times 100 = \% \text{ H}_2\text{O}$	
Time	Percent Water (Average)	= $[(\% \text{ H}_2\text{O for A}) + (\% \text{ H}_2\text{O for B})] / 2$	
10:45 AM			

RESULT

% H2O (Average) = 40.1

Data Entry by:	<i>[Signature]</i>	Date:	07/27/97
Approved by:	<i>[Signature]</i>	Date:	7/29/97

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

% WATER : LA-564-101 (G-0)

		SAMPLE	REPLICATE
Type	Tare Weight (W1) grams	14.8565	14.9402
SAMPLE	Gross Weight (W2) grams	15.4158	15.5866
Work List	First Residue Weight (W3) grams	15.2338	15.3612
19434	Second Residue Weight (W4) grams	15.2337	15.3614
Test Code	Percent Difference	0.0007	0.0013
WATER-01	QC Check	Pass	Pass
Matrix	Percent Weight Loss	32.56	34.84
SOLID	(If it is necessary to do a 3rd heating then substitute the last weight measured for W4 and the second to last weight measured for W3 in the calculations above.)		
Sample #			
S97T001463			
Instrument Code			
BA001	Sample = W2 - W1	= Gross Weight - Tare Weight	
Analyst	Weight = W2 - W4	= Gross Weight - Residue Weight	
RAG	Percent Difference	= Absolute Value of $[(W3-W4)/W4] \times 100.00$	
Date	QC Check "Pass" if % Difference	= < +/- 0.1500%	
07/25/97	Percent Water Weight Loss	= $[(W2-W4)/(W2-W1)] \times 100 = \% \text{ H}_2\text{O}$	
Time	Percent Water (Average)	= $[(\% \text{ H}_2\text{O for A}) + (\% \text{ H}_2\text{O for B})] / 2$	
10:45 AM			

RESULT

% H2O (Average) = 33.7

Data Entry by:

Date: 07/27/97

Approved by:

Date: 7/29/97

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

% WATER : LA-564-101 (G-0)

		7-27-97 <i>lem Dup</i>	
		SAMPLE	REPLICATE
Type	Tare Weight (W1) grams	14.9849	14.8335
SAMPLE	Gross Weight (W2) grams	15.4916	15.3743
Work List	First Residue Weight (W3) grams	15.3278	15.1865
19434	Second Residue Weight (W4) grams	15.3276	15.1868
Test Code	Percent Difference	0.0013	0.0020
WATER-01	QC Check	Pass	Pass
Matrix	Percent Weight Loss	32.37	34.67
SOLID	(If it is necessary to do a 3rd heating then substitute the last weight measured for W4 and the second to last weight measured for W3 in the calculations above.)		
Sample #			
S97T001483			
Instrument Code			
BA001	Sample = W2 - W1	= Gross Weight - Tare Weight	
Analyst	Weight = W2 - W4	= Gross Weight - Residue Weight	
RAG	Percent Difference	= Absolute Value of [(W3-W4)/W4]*100.00	
Date	QC Check "Pass" if % Difference	= < +/- 0.1500%	
07/25/97	Percent Water Weight Loss	= [(W2-W4)/(W2-W1)]*100 = % H2O	
Time	Percent Water (Average)	= [(% H2O for A) + (% H2O for B)] / 2	
10:45 AM			

RESULT

% H2O (Average) = 33.5

Data Entry by:

Date: 07/27/97

Approved by:

Date: 7/29/97

LABCORE Data Entry Template for Worklist# 19435

Analyst: RS Instrument: BA001 Book # 103N8-A

Method: LA-564-101 Rev/Mod G-0

Worklist Comment: BY-109 %H2O. RCJ

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			WATER-01	SOLID	<u>59.0</u>	<u>58.5</u>	<u>N/A</u>	%
97000411	BY-109 (P)	2 SAMPLE	S97T001484	0	WATER-01	SOLID	<u>N/A</u>	<u>36.3</u>	<u>0.10</u>	%
97000411	BY-109 (P)	3 DUP	S97T001484	0	WATER-01	SOLID	<u>36.3</u>	<u>35.3</u>	<u>N/A</u>	%
97000411	BY-109 (P)	4 SAMPLE	S97T001485	0	WATER-01	SOLID	<u>N/A</u>	<u>26.2</u>	<u>0.10</u>	%
97000411	BY-109 (P)	5 DUP	S97T001485	0	WATER-01	SOLID	<u>26.2</u>	<u>25.4</u>	<u>N/A</u>	%
97000411	BY-109 (P)	6 SAMPLE	S97T001486	0	WATER-01	SOLID	<u>N/A</u>	<u>31.8</u>	<u>0.10</u>	%
97000411	BY-109 (P)	7 DUP	S97T001486	0	WATER-01	SOLID	<u>31.8</u>	<u>32.0</u>	<u>N/A</u>	%
97000411	BY-109 (P)	8 SAMPLE	S97T001487	0	WATER-01	SOLID	<u>N/A</u>	<u>35.8</u>	<u>0.10</u>	%
97000411	BY-109 (P)	9 DUP	S97T001487	0	WATER-01	SOLID	<u>35.8</u>	<u>36.8</u>	<u>N/A</u>	%
97000411	BY-109 (P)	10 SAMPLE	S97T001488	0	WATER-01	SOLID	<u>N/A</u>	<u>40.2</u>	<u>0.10</u>	%
97000411	BY-109 (P)	11 DUP	S97T001488	0	WATER-01	SOLID	<u>40.2</u>	<u>39.8</u>	<u>N/A</u>	%

Final page for worklist # 19435

Rae Ann Green 07-24-97
Analyst Signature Date

Frank Mark 7-25-97
Analyst Signature Date

Approved RW/Schroeder 7/29/97

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.

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

NA

		STD	REPLICATE
Type	Tare Weight (W1) grams	14.9120	
STD	Gross Weight (W2) grams	16.3103	
Work List	First Residue Weight (W3) grams	15.4914	
19435	Second Residue Weight (W4) grams	15.4917	
Test Code	Percent Difference	0.0019	N/A
WATER-01	QC Check	Pass	N/A
Matrix	Percent Weight Loss	58.54	N/A
LIQUID	(If it is necessary to do a 3rd heating then substitute the last weight measured for W4 and the second to last weight measured for W3 in the calculations above.)		
Sample #			
STD# 103N8A			
Instrument Code			
BA001	Sample = W2 - W1	= Gross Weight - Tare Weight	
Analyst	Weight = W2 - W4	= Gross Weight - Residue Weight	
RAG	Percent Difference	= Absolute Value of $[(W3-W4)/W4] \times 100.00$	
Date	QC Check "Pass" if % Difference	= < +/- 0.1500%	
07/23/97	Percent Water Weight Loss	= $[(W2-W4)/(W2-W1)] \times 100 = \% H_2O$	
Time	Percent Water (Average)	= $[(\% H_2O \text{ for A}) + (\% H_2O \text{ for B})] / 2$	
03:00 PM			

RESULT

% H2O = 58.5

Data Entry by:

Date: 07/25/97

Approved by:

Date: 7/29/97

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

NA

		SAMPLE	REPLICATE
Type	Tare Weight (W1) grams	14.8352	
SAMPLE	Gross Weight (W2) grams	15.3270	
Work List	First Residue Weight (W3) grams	15.1479	
19435	Second Residue Weight (W4) grams	15.1483	
Test Code	Percent Difference	0.0026	N/A
WATER-01	QC Check	Pass	N/A
Matrix	Percent Weight Loss	36.34	N/A
LIQUID	(If it is necessary to do a 3rd heating then substitute the last weight measured for W4 and the second to last weight measured for W3 in the calculations above.)		
Sample #			
S97T001484			
Instrument Code			
BA001	Sample = W2 - W1	= Gross Weight - Tare Weight	
Analyst	Weight = W2 - W4	= Gross Weight - Residue Weight	
RAG	Percent Difference	= Absolute Value of $[(W3-W4)/W4] \times 100.00$	
Date	QC Check "Pass" if % Difference	= < +/- 0.1500%	
07/23/97	Percent Water Weight Loss	= $[(W2-W4)/(W2-W1)] \times 100 = \% \text{ H2O}$	
Time	Percent Water (Average)	= $[(\% \text{ H2O for A}) + (\% \text{ H2O for B})] / 2$	
03:00 PM			

RESULT

% H2O = 36.3

Data Entry by:

Date: 07/25/97

Approved by:

Date: 7/29/97

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

NA

		SAMPLE-DUP	REPLICATE
Type	Tare Weight (W1) grams	14.9447	
SAMPLE-DUP	Gross Weight (W2) grams	15.4847	
Work List	First Residue Weight (W3) grams	15.2937	
19435	Second Residue Weight (W4) grams	15.2940	
Test Code	Percent Difference	0.0020	N/A
WATER-01	QC Check	Pass	N/A
Matrix	Percent Weight Loss	35.31	N/A
LIQUID	(If it is necessary to do a 3rd heating then substitute the last weight measured for W4 and the second to last weight measured for W3 in the calculations above.)		
Sample #			
S97T001484			
Instrument Code			
BA001	Sample = W2 - W1	= Gross Weight - Tare Weight	
Analyst	Weight = W2 - W4	= Gross Weight - Residue Weight	
RAG	Percent Difference	= Absolute Value of [(W3-W4)/W4]*100.00	
Date	QC Check "Pass" if % Difference	= < +/- 0.1500%	
07/23/97	Percent Water Weight Loss	= [(W2-W4)/(W2-W1)]*100 = % H2O	
Time	Percent Water (Average)	= [(% H2O for A) + (% H2O for B)] / 2	
03:00 PM			

RESULT

% H2O = 35.3

Data Entry by:

Date:

07/25/97

Approved by:

Date:

7/29/97

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

NA

		SAMPLE	REPLICATE
Type	Tare Weight (W1) grams	14.9048	
SAMPLE	Gross Weight (W2) grams	15.4171	
Work List	First Residue Weight (W3) grams	15.2828	
19435	Second Residue Weight (W4) grams	15.2830	
Test Code	Percent Difference	0.0013	N/A
WATER-01	QC Check	Pass	N/A
Matrix	Percent Weight Loss	26.18	N/A
LIQUID	(If it is necessary to do a 3rd heating then substitute the last weight measured for W4 and the second to last weight measured for W3 in the calculations above.)		
Sample #			
S97T001485			
Instrument Code			
BA001	Sample = W2 - W1	= Gross Weight - Tare Weight	
Analyst	Weight = W2 - W4	= Gross Weight - Residue Weight	
RAG	Percent Difference	= Absolute Value of [(W3-W4)/W4]*100.00	
Date	QC Check "Pass" if % Difference	= < +/- 0.1500%	
07/23/97	Percent Water Weight Loss	= [(W2-W4)/(W2-W1)]*100 = % H2O	
Time	Percent Water (Average)	= [(% H2O for A) + (% H2O for B)] / 2	
03:00 PM			

RESULT

% H2O = 26.2

Data Entry by:

Date:

07/25/97

Approved by:

Date:

7/29/97

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

NA

		SAMPLE-DUP	REPLICATE
Type	Tare Weight (W1) grams	14.9466	
SAMPLE-DUP	Gross Weight (W2) grams	15.3211	
Work List	First Residue Weight (W3) grams	15.2259	
19435	Second Residue Weight (W4) grams	15.2261	
Test Code	Percent Difference	0.0013	N/A
WATER-01	QC Check	Pass	N/A
Matrix	Percent Weight Loss	25.37	N/A
LIQUID	(If it is necessary to do a 3rd heating then substitute the last weight measured for W4 and the second to last weight measured for W3 in the calculations above.)		
Sample #			
S97T001485			
Instrument Code			
BA001	Sample = W2 - W1	= Gross Weight - Tare Weight	
Analyst	Weight = W2 - W4	= Gross Weight - Residue Weight	
RAG	Percent Difference	= Absolute Value of [(W3-W4)/W4]*100.00	
Date	QC Check "Pass" if % Difference	= < +/- 0.1500%	
07/23/97	Percent Water Weight Loss	= [(W2-W4)/(W2-W1)]*100 = % H2O	
Time	Percent Water (Average)	= [(% H2O for A) + (% H2O for B)] / 2	
03:00 PM			

RESULT

% H2O = 25.4

Data Entry by:	<i>John J. Schuchman</i>	Date:	07/25/97
Approved by:	<i>Ren Schuchman</i>	Date:	7/29/97

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

NA

		SAMPLE	REPLICATE
Type	Tare Weight (W1) grams	14.9051	
SAMPLE	Gross Weight (W2) grams	15.3107	
Work List	First Residue Weight (W3) grams	15.1817	
19435	Second Residue Weight (W4) grams	15.1817	
Test Code	Percent Difference	0.0000	N/A
WATER-01	QC Check	Pass	N/A
Matrix	Percent Weight Loss	31.80	N/A
LIQUID	(If it is necessary to do a 3rd heating then substitute the last weight measured for W4 and the second to last weight measured for W3 in the calculations above.)		
Sample #			
S97T001486			
Instrument Code			
BA001	Sample = W2 - W1	= Gross Weight - Tare Weight	
Analyst	Weight = W2 - W4	= Gross Weight - Residue Weight	
RAG	Percent Difference	= Absolute Value of [(W3-W4)/W4]*100.00	
Date	QC Check "Pass" if % Difference	= < +/- 0.1500%	
07/23/97	Percent Water Weight Loss	= [(W2-W4)/(W2-W1)]*100 = % H2O	
Time	Percent Water (Average)	= [(% H2O for A) + (% H2O for B)] / 2	
03:00 PM			

RESULT

% H2O = 31.8

Data Entry by:

Date: 07/25/97

Approved by:

Date: 7/29/97

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

NA

	SAMPLE-DUP	REPLICATE
Type	Tare Weight (W1) grams	14.9235
SAMPLE-DUP	Gross Weight (W2) grams	15.5316
Work List	First Residue Weight (W3) grams	15.3370
19435	Second Residue Weight (W4) grams	15.3371
Test Code	Percent Difference	0.0007 N/A
WATER-01	QC Check	Pass N/A
Matrix	Percent Weight Loss	31.98 N/A
LIQUID	(If it is necessary to do a 3rd heating then substitute the last weight measured for W4 and the second to last weight measured for W3 in the calculations above.)	
Sample #		
S97T001486		
Instrument Code		
BA001	Sample = W2 - W1	= Gross Weight - Tare Weight
Analyst	Weight = W2 - W4	= Gross Weight - Residue Weight
RAG	Percent Difference	= Absolute Value of $[(W3-W4)/W4]*100.00$
Date	QC Check "Pass" if % Difference	= < +/- 0.1500%
07/23/97	Percent Water Weight Loss	= $[(W2-W4)/(W2-W1)]*100 = \% H_2O$
Time	Percent Water (Average)	= $[(\% H_2O \text{ for A}) + (\% H_2O \text{ for B})] / 2$
03:00 PM		

RESULT

% H2O = 32.0

Data Entry by:

Date: 07/25/97

Approved by:

Date: 7/29/97

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

NA

		SAMPLE	REPLICATE
Type	Tare Weight (W1) grams	14.9199	
SAMPLE	Gross Weight (W2) grams	15.3633	
Work List	First Residue Weight (W3) grams	15.2043	
19435	Second Residue Weight (W4) grams	15.2047	
Test Code	Percent Difference	0.0026	N/A
WATER-01	QC Check	Pass	N/A
Matrix	Percent Weight Loss	35.77	N/A
LIQUID	(If it is necessary to do a 3rd heating then substitute the last weight measured for W4 and the second to last weight measured for W3 in the calculations above.)		
Sample #			
S97T001487			
Instrument Code			
BA001	Sample = W2 - W1	= Gross Weight - Tare Weight	
Analyst	Weight = W2 - W4	= Gross Weight - Residue Weight	
RAG	Percent Difference	= Absolute Value of [(W3-W4)/W4]*100.00	
Date	QC Check "Pass" if % Difference	= < +/- 0.1500%	
07/23/97	Percent Water Weight Loss	= [(W2-W4)/(W2-W1)]*100 = % H2O	
Time	Percent Water (Average)	= [(% H2O for A) + (% H2O for B)] / 2	
03:00 PM			

RESULT

% H2O = 35.8

Data Entry by:

Date:

07/25/97

Approved by:

Date:

7/29/97

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

NA

		SAMPLE-DUP	REPLICATE
Type	Tare Weight (W1) grams	14.8904	
SAMPLE-DUP	Gross Weight (W2) grams	15.4565	
Work List	First Residue Weight (W3) grams	15.2475	
19435	Second Residue Weight (W4) grams	15.2483	
Test Code	Percent Difference	0.0052	N/A
WATER-01	QC Check	Pass	N/A
Matrix	Percent Weight Loss	36.78	N/A
LIQUID	(If it is necessary to do a 3rd heating then substitute the last weight measured for W4 and the second to last weight measured for W3 in the calculations above.)		
Sample #			
S97T001487			
Instrument Code			
BA001	Sample = W2 - W1	= Gross Weight - Tare Weight	
Analyst	Weight = W2 - W4	= Gross Weight - Residue Weight	
RAG	Percent Difference	= Absolute Value of $[(W3-W4)/W4]*100.00$	
Date	QC Check "Pass" if % Difference	= < +/- 0.1500%	
07/23/97	Percent Water Weight Loss	= $[(W2-W4)/(W2-W1)]*100 = \% H_2O$	
Time	Percent Water (Average)	= $[(\% H_2O \text{ for A}) + (\% H_2O \text{ for B})] / 2$	
03:00 PM			

RESULT

% H2O = 36.8

Data Entry by:

Date:

07/25/97

Approved by:

Date:

7/29/97

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

NA

		SAMPLE	REPLICATE
Type	Tare Weight (W1) grams	14.8524	
SAMPLE	Gross Weight (W2) grams	15.2881	
Work List	First Residue Weight (W3) grams	15.1124	
19435	Second Residue Weight (W4) grams	15.1129	
Test Code	Percent Difference	0.0033	N/A
WATER-01	QC Check	Pass	N/A
Matrix	Percent Weight Loss	40.21	N/A
LIQUID	(If it is necessary to do a 3rd heating then substitute the last weight measured for W4 and the second to last weight measured for W3 in the calculations above.)		
Sample #			
S97T001488			
Instrument Code			
BA001	Sample = W2 - W1	= Gross Weight - Tare Weight	
Analyst	Weight = W2 - W4	= Gross Weight - Residue Weight	
RAG	Percent Difference	= Absolute Value of $[(W3-W4)/W4] \times 100.00$	
Date	QC Check "Pass" if % Difference	= < +/- 0.1500%	
07/23/97	Percent Water Weight Loss	= $[(W2-W4)/(W2-W1)] \times 100 = \% \text{ H}_2\text{O}$	
Time	Percent Water (Average)	= $[(\% \text{ H}_2\text{O for A}) + (\% \text{ H}_2\text{O for B})] / 2$	
03:00 PM			

RESULT

% H2O = 40.2

Data Entry by:	<i>Janet Smith</i>	Date:	07/25/97
Approved by:	<i>DW Schroeder</i>	Date:	7/29/97

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

NA

	SAMPLE-DUP	REPLICATE
Type	Tare Weight (W1) grams	15.0563
SAMPLE-DUP	Gross Weight (W2) grams	15.6121
Work List	First Residue Weight (W3) grams	15.3905
19435	Second Residue Weight (W4) grams	15.3908
Test Code	Percent Difference	0.0019
WATER-01	QC Check	Pass
Matrix	Percent Weight Loss	39.82
LIQUID	(If it is necessary to do a 3rd heating then substitute the last weight measured for W4 and the second to last weight measured for W3 in the calculations above.)	
Sample #		
S97T001488		
Instrument Code		
BA001	Sample = W2 - W1	= Gross Weight - Tare Weight
Analyst	Weight = W2 - W4	= Gross Weight - Residue Weight
RAG	Percent Difference	= Absolute Value of $[(W3-W4)/W4]*100.00$
Date	QC Check "Pass" if % Difference	= < +/- 0.1500%
07/23/97	Percent Water Weight Loss	= $[(W2-W4)/(W2-W1)]*100 = \% \text{ H}_2\text{O}$
Time	Percent Water (Average)	= $[(\% \text{ H}_2\text{O for A}) + (\% \text{ H}_2\text{O for B})] / 2$
03:00 PM		

RESULT

% H2O = 39.8

Data Entry by:	Date:	07/25/97
Approved by:	Date:	7/29/97

LABCORE Data Entry Template for Worklist# 19575

Analyst: KRM Instrument: BA001 Book # 103 NBAMethod: LA-564-101 Rev/Mod G-0

Worklist Comment: BY-109 %H2O RERUN. RCJ

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			WATER-01	SOLID	<u>5.90e</u>	<u>57.5</u>	<u>N/A</u>	%
97000412	BY-109 (P)	2 SAMPLE	S97T001344	0	WATER-01	SOLID	<u>N/A</u>	<u>35.1</u>	<u>0.01</u>	%
97000412	BY-109 (P)	3 DUP	S97T001344	0	WATER-01	SOLID	<u>35.1</u>	<u>34.7</u>	<u>N/A</u>	%

Final page for worklist # 19575

Analyst Signature

Date

7-31-97

Analyst Signature

Date

8/02/97

Approved RW Schuch 8/4/97

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.

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

% WATER : LA-564-101 (G-0)

	STD	REPLICATE
Type	Tare Weight (W1) grams	13.1272
STD	Gross Weight (W2) grams	14.5063
Work List	First Residue Weight (W3) grams	13.7191
19575	Second Residue Weight (W4) grams	13.7138
Test Code	Percent Difference	0.0386
WATER-01	QC Check	Pass
Matrix	Percent Weight Loss	57.47
SOLID	(If it is necessary to do a 3rd heating then substitute the last weight measured for W4 and the second to last weight measured for W3 in the calculations above.)	
Sample #		
STD		
Instrument Code		
BA001	Sample = W2 - W1	= Gross Weight - Tare Weight
Analyst	Weight = W2 - W4	= Gross Weight - Residue Weight
KRM	Percent Difference	= Absolute Value of $[(W3-W4)/W4] \times 100.00$
Date	QC Check "Pass" if % Difference	= < +/- 0.1500%
07/31/97	Percent Water Weight Loss	= $[(W2-W4)/(W2-W1)] \times 100 = \% \text{ H}_2\text{O}$
Time	Percent Water (Average)	= $[(\% \text{ H}_2\text{O for A}) + (\% \text{ H}_2\text{O for B})] / 2$
01:30 AM		

RESULT

% H2O = 57.5

Data Entry by:	<i>K. J. Schuch</i>	Date:	08/02/97
Approved by:		Date:	8/4/97

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

% WATER : LA-564-101 (G-0)

		SAMPLE	REPLICATE
Type	Tare Weight (W1) grams	13.0578	
SAMPLE	Gross Weight (W2) grams	14.1094	
Work List	First Residue Weight (W3) grams	13.7402	
19575	Second Residue Weight (W4) grams	13.7401	
Test Code	Percent Difference	0.0007	N/A
WATER-01	QC Check	Pass	N/A
Matrix	Percent Weight Loss	35.12	N/A
SOLID	(If it is necessary to do a 3rd heating then substitute the last weight measured for W4 and the second to last weight measured for W3 in the calculations above.)		
Sample #			
S97T001344			
Instrument Code			
BA001	Sample = W2 - W1	= Gross Weight - Tare Weight	
Analyst	Weight = W2 - W4	= Gross Weight - Residue Weight	
KRM	Percent Difference	= Absolute Value of [(W3-W4)/W4]*100.00	
Date	QC Check "Pass" if % Difference	= < +/- 0.1500%	
07/31/97	Percent Water Weight Loss	= [(W2-W4)/(W2-W1)]*100 = % H2O	
Time	Percent Water (Average)	= [(% H2O for A) + (% H2O for B)] / 2	
01:30 AM			

RESULT

% H2O = 35.1

Data Entry by:	Date:	08/02/97
Approved by:	Date:	8/4/97

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

% WATER : LA-564-101 (G-0)

		DUP	REPLICATE
Type	Tare Weight (W1) grams	13.0352	
DUP	Gross Weight (W2) grams	13.9216	
Work List	First Residue Weight (W3) grams	13.6138	
19575	Second Residue Weight (W4) grams	13.6141	
Test Code	Percent Difference	0.0022	N/A
WATER-01	QC Check	Pass	N/A
Matrix	Percent Weight Loss	34.69	N/A
SOLID	(If it is necessary to do a 3rd heating then substitute the last weight measured for W4 and the second to last weight measured for W3 in the calculations above.)		
Sample #			
S97T001344			
Instrument Code			
BA001	Sample = W2 - W1	= Gross Weight - Tare Weight	
Analyst	Weight = W2 - W4	= Gross Weight - Residue Weight	
KRM	Percent Difference	= Absolute Value of $[(W3-W4)/W4] \times 100.00$	
Date	QC Check "Pass" if % Difference	= $< +/- 0.1500\%$	
07/31/97	Percent Water Weight Loss	= $[(W2-W4)/(W2-W1)] \times 100 = \% H2O$	
Time	Percent Water (Average)	= $[(\% H2O \text{ for A}) + (\% H2O \text{ for B})] / 2$	
01:30 AM			

RESULT

% H2O = 34.7

Data Entry by:	Date:	08/02/97
Approved by:	Date:	8/4/97

LABCORE Completed Worklist Report for Worklist# 18679

Analyst: rag

Instrument: IC02

Book# 220204

Method: 4-533-105 Rev/Mod D-1

Worklist Comment: BY-109 LI BR BLNK FOR IC. RCJ

Seq Type	Sample# R A	Test	Matrix	Actual	Found	DL or Yield	Unit
1	CCB	0	01C-QC	F	QC	1	<1.20e-2 ug/mL
1	CCB	0	01C-QC	CL	QC	1	<1.70e-2 ug/mL
1	CCB	0	01C-QC	NO2	QC	1	<1.08e-1 ug/mL
1	CCB	0	01C-QC	BR	QC	1	<1.25e-1 ug/mL
1	CCB	0	01C-QC	NO3	QC	1	<1.39e-1 ug/mL
1	CCB	0	01C-QC	PO4	QC	1	<1.20e-1 ug/mL
1	CCB	0	01C-QC	SO4	QC	1	<1.38e-1 ug/mL
1	CCB	0	01C-QC	OXALATE2	QC	1	<1.05e-1 ug/mL
2	CCV	0	01C-QC	F	QC	5.90e01	5.76e+01 97.627 % Recovery
2	CCV	0	01C-QC	CL	QC	7.90e01	8.21e+01 103.924 % Recovery
2	CCV	0	01C-QC	NO2	QC	5.43e02	5.55e+02 102.210 % Recovery
2	CCV	0	01C-QC	BR	QC	5.89e02	5.92e+02 100.509 % Recovery
2	CCV	0	01C-QC	NO3	QC	5.94e02	5.99e+02 100.842 % Recovery
2	CCV	0	01C-QC	PO4	QC	5.45e02	5.52e+02 101.284 % Recovery
2	CCV	0	01C-QC	SO4	QC	6.32e02	6.70e+02 106.013 % Recovery
2	CCV	0	01C-QC	OXALATE2	QC	5.34e02	5.57e+02 104.307 % Recovery
3	SAMPLE	S97T001368	0	01C-01	F-02	LIQUID	N/A < 1.323e+01 13.330 ug/mL
3	SAMPLE	S97T001368	0	01C-01	CL-02	LIQUID	N/A < 2.854e+01 18.890 ug/mL
3	SAMPLE	S97T001368	0	01C-01	NO2-02	LIQUID	N/A < 1.200e+02 120.000 ug/mL
3	SAMPLE	S97T001368	0	01C-01	BR-02	LIQUID	N/A < 2.431e+04 138.900 ug/mL
3	SAMPLE	S97T001368	0	01C-01	NO3-02	LIQUID	N/A < 1.805e+02 154.400 ug/mL
3	SAMPLE	S97T001368	0	01C-01	PO4-02	LIQUID	N/A < 1.333e+02 133.300 ug/mL
3	SAMPLE	S97T001368	0	01C-01	SO4-02	LIQUID	N/A < 2.012e+02 153.300 ug/mL
3	SAMPLE	S97T001368	0	01C-01	OXALATE2	LIQUID	N/A < 1.167e+02 116.700 ug/mL
4	DUP	S97T001368	0	01C-01	F-02	LIQUID	<1.33e1 <1.33e1 RPD
4	DUP	S97T001368	0	01C-01	CL-02	LIQUID	2.85e+01 3.50e+01 20.472 RPD
4	DUP	S97T001368	0	01C-01	NO2-02	LIQUID	<1.20e2 <1.20e2 RPD
4	DUP	S97T001368	0	01C-01	BR-02	LIQUID	2.43e+04 2.44e+04 0.411 RPD
4	DUP	S97T001368	0	01C-01	NO3-02	LIQUID	1.80e+02 <1.54e2 RPD
4	DUP	S97T001368	0	01C-01	PO4-02	LIQUID	<1.33e2 <1.33e2 RPD
4	DUP	S97T001368	0	01C-01	SO4-02	LIQUID	2.01e+02 2.15e+02 7.194 RPD
4	DUP	S97T001368	0	01C-01	OXALATE2	LIQUID	<1.17e2 <1.17e2 RPD

Final page for worklist# 18679

Analyst Signature

Date

Analyst Signature

Date

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

LABCORE Data Entry Template for Worklist# 18679

Analyst: RLS Instrument: IC0 2 Book# 72N20-A

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

Worklist Comment: BY-109 LI BR BLNK FOR IC. RCJ

S	Type	Sample#	R	A	Test	Matrix	Group#	Project
1	CCB				@IC-QC	QC		
2	CCV				@IC-QC	QC		
3	SAMPLE	S97T001368 0			@IC-01	LIQUID	97000412	BY-109 (P)
		Analytes Requested:	BR-02		CL-02		F-02	NO2-02
					OXALATE2,	PO4-02		NO3-02
							SO4-02	
4	DUP	S97T001368 0			@IC-01	LIQUID		

Final page for worklist # 18679

Rae Ann Green 06-18-97
Analyst Signature Date

Analyst Signature Date

Validated 6/20/97 JMF

Data Entry Comments:

18679 Jun. Sch

18679 Jun. CSV

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

=====

Sample Name: CCB	Date: 06/18/1997 14:54:33
Data File : C:\DX\DATA\97061801.D07	
Method : C:\DX\METHOD\ANIONS.MET	
ACI Address: 1 System: 1 Inject#: 7	Detector: CDM-1
Analyst : <i>Barbara Green</i>	Column: AG4A/AS4A anion column

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Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area	Reject
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External	1	1	3000	5Hz	0.00	10.00		50
----------	---	---	------	-----	------	-------	--	----

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	3.13	nitrate	0.124	23	162	1	-1.16
Totals			0.124	23	162		

File: 97061801.D07 Sample: CCB

SIGNATURE ABOVE REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 291 TO 294

Sample Name: CCV 72N20-A Date: 06/18/1997 15:05:36
 Data File : C:\DX\DATA\97061801.D08
 Method : C:\DX\METHOD\ANIONS.MET
 ACI Address: 1 System: 1 Inject#: 8 Detector: CDM-1
 Analyst : *Rachan Ganes* Column: AG4A/AS4A anion column

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area	Reject
External	1	101	3000	5Hz	0.00	10.00		50

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.87		0.000	95	410	2	
2	1.03	fluoride	57.621	1937	10491	2	1.65
3	1.38		0.000	31	132	1	
4	1.53	chloride	82.088	2452	11658	1	-0.43
5	1.83	nitrite	554.641	9060	53875	1	-1.79
6	2.73	bromide	592.096	4949	37121	1	-2.03
7	3.09	nitrate	599.365	5694	48976	1	-2.42
8	4.48	phosphate	552.142	1257	21627	1	0.60
9	5.76	sulfate	669.662	3177	73763	1	0.88
10	7.57	oxalate	556.988	1601	46704	1	-4.74
Totals			3664.603	30252	304758		

File: 97061801.D08 Sample: CCV 72N20-A

Sample Name: S97T001368 Date: 06/18/1997 15:39:00
 Data File : C:\DX\DATA\97061801.D12
 Method : C:\DX\METHOD\ANIONS.MET
 ACI Address: 1 System: 1 Inject#: 12 Detector: CDM-1
 Analyst: *RaeAnn Davis* Column: AG4A/AS4A anion column

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area	Reject
External	1	1111	3000	5Hz	0.00	10.00		50

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.89		0.000	57	308	1	
2	1.14		0.000	45	200	1	
3	1.37		0.000	23	115	1	
4	1.53	chloride	28.544	47	211	1	-0.43
5	2.71	bromide	24311.086	20037	150534	1	-2.75
6	3.13	nitrate	180.478	74	481	1	-1.16
7	5.81	sulfate	201.165	85	1815	1	1.81
Totals			24721.273	20368	153663		

File: 97061801.D12 Sample: S97T001368

Sample Name: S97T001368 DUP Date: 06/18/1997 15:49:39
 Data File : C:\DX\DATA\97061801.D13
 Method : C:\DX\METHOD\ANIONS.MET
 ACI Address: 1 System: 1 Inject#: 13 Detector: CDM-1
 Analyst : *Rae Ann Jones* Column: AG4A/AS4A anion column

Calibration Volume Dilution Points Rate Start Stop Area Reject

External 1 1111 3000 5Hz 0.00 10.00 50

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.89		0.000	64	358	1	
2	1.13		0.000	37	150	1	
3	1.38		0.000	42	272	2	
4	1.53	chloride	34.964	54	294	2	-0.87
5	2.71	bromide	24416.593	20079	151258	1	-2.75
6	5.81	sulfate	216.449	92	1965	1	1.81
Totals			24668.006	20368	154297		

File: 97061801.D13 Sample: S97T001368 DUP

LABCORE Completed Worklist Report for Worklist# 18926

Analyst: eal

Instrument: IC01

Book# 72 N204

Method: 64-533/05 Rev/Mod D-1

Worklist Comment: Rerun BY109 IC. jmf

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	6.10e-02	0.061	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	1.74e-01	0.174	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	CCV	0	@IC-QC F	QC	5.90e01	5.60e+01	94.315 % Recovery	
2	CCV	0	@IC-QC CL	QC	7.90e01	7.62e+01	96.456 % Recovery	
2	CCV	0	@IC-QC NO2	QC	5.43e02	5.20e+02	97.606 % Recovery	
2	CCV	0	@IC-QC BR	QC	5.89e02	5.80e+02	98.472 % Recovery	
2	CCV	0	@IC-QC NO3	QC	5.94e02	5.85e+02	98.485 % Recovery	
2	CCV	0	@IC-QC PO4	QC	5.45e02	4.93e+02	90.459 % Recovery	
2	CCV	0	@IC-QC SO4	QC	6.32e02	6.04e+02	95.570 % Recovery	
2	CCV	0	@IC-QC OXALATE2	QC	5.34e02	5.36e+02	100.375 % Recovery	
3	SAMPLE	S97T001399	@IC-01 F-02	LIQUID	N/A	< 1.200e-02	1.20e-002	ug/mL
3	SAMPLE	S97T001399	@IC-01 CL-02	LIQUID	N/A	< 1.700e-02	1.70e-002	ug/mL
3	SAMPLE	S97T001399	@IC-01 NO2-02	LIQUID	N/A	< 1.080e-01	0.108	ug/mL
3	SAMPLE	S97T001399	@IC-01 BR-02	LIQUID	N/A	< 1.250e-01	0.125	ug/mL
3	SAMPLE	S97T001399	@IC-01 NO3-02	LIQUID	N/A	< 1.630e-01	0.139	ug/mL
3	SAMPLE	S97T001399	@IC-01 PO4-02	LIQUID	N/A	< 1.200e-01	0.120	ug/mL
3	SAMPLE	S97T001399	@IC-01 SO4-02	LIQUID	N/A	< 1.380e-01	0.138	ug/mL
3	SAMPLE	S97T001399	@IC-01 OXALATE2	LIQUID	N/A	< 1.050e-01	0.105	ug/mL
4	DUP	S97T001399	@IC-01 F-02	LIQUID	<1.20e-2	<1.20e-2		RPD
4	DUP	S97T001399	@IC-01 CL-02	LIQUID	<1.70e-2	1.80e-02		RPD
4	DUP	S97T001399	@IC-01 NO2-02	LIQUID	<1.08e-1	<1.08e-1		RPD
4	DUP	S97T001399	@IC-01 BR-02	LIQUID	<1.25e-1	<1.25e-1		RPD
4	DUP	S97T001399	@IC-01 NO3-02	LIQUID	1.63e-01	<1.39e-1		RPD
4	DUP	S97T001399	@IC-01 PO4-02	LIQUID	<1.20e-1	<1.20e-1		RPD
4	DUP	S97T001399	@IC-01 SO4-02	LIQUID	<1.38e-1	<1.38e-1		RPD
4	DUP	S97T001399	@IC-01 OXALATE2	LIQUID	<1.05e-1	<1.05e-1		RPD

Final page for worklist# 18926

Analyst Signature

Date

Analyst Signature

Date

Jean M. Eys 7/1/97

LABCORE Data Entry Template for Worklist# 18926

Analyst: EAL Instrument: IC0 1 Book# 72N20-A

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

Worklist Comment: Rerun BY109 IC. jmf

S	Type	Sample#	R	A	Test	Matrix	Group#	Project
1	CCB				@IC-QC	QC		
2	CCV				@IC-QC	QC		
3	SAMPLE	S97T001399 0			@IC-01	LIQUID	97000411	BY-109 (P)
		Analytes Requested: BR-02 , CL-02 , F-02 , NO2-02 , NO3-02 , OXALATE2, PO4-02 , SO4-02						
4	DUP	S97T001399 0			@IC-01	LIQUID		

Final page for worklist # 18926

A. Lambert 06.28.97
Analyst Signature Date

Analyst Signature Date

uploaded 6-30-97
John Worell
18926JUN.CSV

Validated 6/30/97 gm Lye

Data Entry Comments:

Sample Name: INST. BLANK Date: 06/28/1997 19:03:13
 Data File : C:\DX\DATA\97062801.D01
 Method : C:\DX\METHOD\KIT.MET
 ACI Address: 1 System: 1 Inject#: 1 Detector: CDM-1
 Analyst : *Julie DeFord* Column: AG4A/AS4A anion column

Calibration Volume Dilution Points Rate Start Stop Area Reject

External 1 1 3000 5Hz 0.00 10.00 30

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	1.23		0.000	18	118	1	
2	1.63	chloride	0.061	168	858	1	2.09
3	3.19	nitrate	0.174	121	835	1	-1.74
4	5.76	sulfate	0.064	93	1552	1	-4.42
Totals			0.300	401	3363		

File: 97062801.D01 Sample: INST. BLANK

SIGNATURE ABOVE REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 297 TO 299


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Sample Name: 72N20-A STD.           Date: 06/28/1997 19:14:56
Data File : C:\DX\DATA\97062801.D02
Method    : C:\DX\METHOD\KIT.MET
ACI Address: 1 System: 1 Inject#: 2   Detector: CDM-1
Analyst   :                          Column: AG4A/AS4A anion column
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----- Calibration Volume Dilution Points Rate Start Stop Area Reject -----

External 1 101 3000 5Hz 0.00 10.00 30

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	1.09	fluoride	56.044	1390	10090	1	-2.38
2	1.59	chloride	76.188	1942	9944	1	0.00
3	1.86	nitrite	529.957	5586	41853	1	-3.46
4	2.73	bromide	579.551	5434	36218	1	0.12
5	3.09	nitrate	585.480	6099	48740	1	-5.03
6	4.40	phosphate	492.863	1711	21796	1	-4.62
7	5.60	sulfate	603.524	5476	74069	1	-7.08
8	7.31	oxalate	535.752	2708	47372	1	-6.80
Totals			3459.358	30346	290082		

File: 97062801.D02 Sample: 72N20-A STD.

Sample Name: S97T001399 Date: 06/28/1997 19:27:08
Data File : C:\DX\DATA\97062801.D03
Method : C:\DX\METHOD\KIT.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 1 3000 5Hz 0.00 10.00 30

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

Pk. Num.	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.37		0.000	23	191	1	
2	1.35		0.000	13	67	1	
3	1.65	chloride	0.016	48	279	1	3.35
4	3.20	nitrate	0.163	102	736	1	-1.54
Totals			0.179	186	1273		

File: 97062801.D03 Sample: S97T001399

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=====
Sample Name: S97T001399 DUP ~           Date: 06/28/1997 19:38:41
Data File  : C:\DX\DATA\97062801.D04
Method     : C:\DX\METHOD\KIT.MET
ACI Address: 1 System: 1 Inject#: 4       Detector: CDM-1
Analyst    :                           Column: AG4A/AS4A anion column
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Calibration Volume Dilution Points Rate Start Stop Area Reject
-----
External          1           1 3000 5Hz 0.00 10.00          30
=====

```

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	1.35		0.000	10	48	1	
2	1.65	chloride	0.018	52	305	1	3.35
3	3.20	nitrate	0.136	73	517	1	-1.54
Totals			0.155	135	870		

File: 97062801.D04 Sample: S97T001399 DUP

LABCORE Completed Worklist Report for Worklist# 19095

Analyst: krq

Instrument: IC02

Book# 834208

Method: 1A-533-05 Rev/Mod D-1

Worklist Comment: BY109, @IC-01 skm

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	P04	QC	1	<1.20e-1		ug/mL
1 CCB	0	@IC-QC	S04	QC	1	<1.38e-1		ug/mL
1 CCB	0	@IC-QC	OXALATE2	QC	1	<1.05e-1		ug/mL
2 CCV	0	@IC-QC	F	QC	5.90e01	5.90e+01	100.000 % Recovery	
2 CCV	0	@IC-QC	CL	QC	7.90e01	8.00e+01	101.266 % Recovery	
2 CCV	0	@IC-QC	NO2	QC	5.44e02	5.38e+02	98.897 % Recovery	
2 CCV	0	@IC-QC	BR	QC	5.89e02	5.63e+02	95.586 % Recovery	
2 CCV	0	@IC-QC	NO3	QC	5.94e02	5.82e+02	97.980 % Recovery	
2 CCV	0	@IC-QC	P04	QC	5.45e02	5.44e+02	99.817 % Recovery	
2 CCV	0	@IC-QC	S04	QC	6.32e02	6.34e+02	100.316 % Recovery	
2 CCV	0	@IC-QC	OXALATE2	QC	5.33e02	5.34e+02	100.188 % Recovery	
3 SAMPLE	S97T001355	0	@IC-01	F-02	LIQUID	N/A	6.551e+03	49.690 ug/mL
3 SAMPLE	S97T001355	0	@IC-01	CL-02	LIQUID	N/A	1.222e+03	70.400 ug/mL
3 SAMPLE	S97T001355	0	@IC-01	NO2-02	LIQUID	N/A	2.226e+04	447.200 ug/mL
3 SAMPLE	S97T001355	0	@IC-01	BR-02	LIQUID	N/A	3.504e+04	517.600 ug/mL
3 SAMPLE	S97T001355	0	@IC-01	NO3-02	LIQUID	N/A	6.661e+04	575.600 ug/mL
3 SAMPLE	S97T001355	0	@IC-01	P04-02	LIQUID	N/A	4.969e+02	496.900 ug/mL
3 SAMPLE	S97T001355	0	@IC-01	S04-02	LIQUID	N/A	2.732e+04	571.500 ug/mL
3 SAMPLE	S97T001355	0	@IC-01	OXALATE2	LIQUID	N/A	4.348e+02	434.800 ug/mL
4 DUP	S97T001355	0	@IC-01	F-02	LIQUID	6.55e+03	6.33e+03	3.416 RPD
4 DUP	S97T001355	0	@IC-01	CL-02	LIQUID	1.22e+03	1.16e+03	5.042 RPD
4 DUP	S97T001355	0	@IC-01	NO2-02	LIQUID	2.23e+04	2.18e+04	2.268 RPD
4 DUP	S97T001355	0	@IC-01	BR-02	LIQUID	3.50e+04	3.52e+04	0.570 RPD
4 DUP	S97T001355	0	@IC-01	NO3-02	LIQUID	6.66e+04	6.68e+04	0.300 RPD
4 DUP	S97T001355	0	@IC-01	P04-02	LIQUID	<4.97e2	<4.97e2	RPD
4 DUP	S97T001355	0	@IC-01	S04-02	LIQUID	2.73e+04	2.75e+04	0.730 RPD
4 DUP	S97T001355	0	@IC-01	OXALATE2	LIQUID	<4.35e2	<4.35e2	RPD
5 SAMPLE	S97T001470	0	@IC-01	F-02	LIQUID	N/A	5.588e+03	49.690 ug/mL
5 SAMPLE	S97T001470	0	@IC-01	CL-02	LIQUID	N/A	8.815e+02	70.400 ug/mL
5 SAMPLE	S97T001470	0	@IC-01	NO2-02	LIQUID	N/A	1.600e+04	447.200 ug/mL
5 SAMPLE	S97T001470	0	@IC-01	BR-02	LIQUID	N/A	4.635e+04	517.600 ug/mL
5 SAMPLE	S97T001470	0	@IC-01	NO3-02	LIQUID	N/A	4.110e+04	575.600 ug/mL
5 SAMPLE	S97T001470	0	@IC-01	P04-02	LIQUID	N/A	4.969e+02	496.900 ug/mL
5 SAMPLE	S97T001470	0	@IC-01	S04-02	LIQUID	N/A	2.178e+04	571.500 ug/mL
5 SAMPLE	S97T001470	0	@IC-01	OXALATE2	LIQUID	N/A	2.046e+03	434.800 ug/mL
6 DUP	S97T001470	0	@IC-01	F-02	LIQUID	5.59e+03	5.61e+03	0.357 RPD

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

LABCORE Completed Worklist Report for Worklist# 19095

Seq Type	Sample#	R A	Test	Matrix	Actual	Found	DL or Yield	Unit
6 DUP	S97T001470	0	QIC-01	CL-02	LIQUID	8.82e+02	9.62e+02	8.677 RPD
6 DUP	S97T001470	0	QIC-01	NO2-02	LIQUID	1.60e+04	1.58e+04	1.258 RPD
6 DUP	S97T001470	0	QIC-01	BR-02	LIQUID	4.64e+04	4.63e+04	0.216 RPD
6 DUP	S97T001470	0	QIC-01	NO3-02	LIQUID	4.11e+04	4.18e+04	1.689 RPD
6 DUP	S97T001470	0	QIC-01	PO4-02	LIQUID	<4.97e2	<4.97e2	RPD
6 DUP	S97T001470	0	QIC-01	S04-02	LIQUID	2.18e+04	2.18e+04	0.090 RPD
6 DUP	S97T001470	0	QIC-01	OXALATE2	LIQUID	2.05e+03	2.10e+03	2.410 RPD
7 SAMPLE	S97T001471	0	QIC-01	F-02	LIQUID	N/A	6.845e+02	49.690 ug/mL
7 SAMPLE	S97T001471	0	QIC-01	CL-02	LIQUID	N/A	5.588e+03	70.400 ug/mL
7 SAMPLE	S97T001471	0	QIC-01	NO2-02	LIQUID	N/A	9.702e+04	447.200 ug/mL
7 SAMPLE	S97T001471	0	QIC-01	BR-02	LIQUID	N/A	2.601e+03	517.600 ug/mL
7 SAMPLE	S97T001471	0	QIC-01	NO3-02	LIQUID	N/A	1.986e+05	575.600 ug/mL
7 SAMPLE	S97T001471	0	QIC-01	PO4-02	LIQUID	N/A	5.528e+02	496.900 ug/mL
7 SAMPLE	S97T001471	0	QIC-01	S04-02	LIQUID	N/A	1.506e+03	571.500 ug/mL
7 SAMPLE	S97T001471	0	QIC-01	OXALATE2	LIQUID	N/A	4.348e+02	424.800 ug/mL
8 DUP	S97T001471	0	QIC-01	F-02	LIQUID	6.84e+02	6.10e+02	11.437 RPD
8 DUP	S97T001471	0	QIC-01	CL-02	LIQUID	5.59e+03	5.45e+03	2.536 RPD
8 DUP	S97T001471	0	QIC-01	NO2-02	LIQUID	9.70e+04	9.89e+04	1.940 RPD
8 DUP	S97T001471	0	QIC-01	BR-02	LIQUID	2.60e+03	2.63e+03	1.147 RPD
8 DUP	S97T001471	0	QIC-01	NO3-02	LIQUID	1.99e+05	1.97e+05	1.010 RPD
8 DUP	S97T001471	0	QIC-01	PO4-02	LIQUID	5.53e+02	<4.97e2	RPD
8 DUP	S97T001471	0	QIC-01	S04-02	LIQUID	1.51e+03	1.54e+03	1.967 RPD
8 DUP	S97T001471	0	QIC-01	OXALATE2	LIQUID	<4.35e2	<4.35e2	RPD

Final page for worklist# 19095

Analyst Signature _____ Date _____

Analyst Signature _____ Date _____

James M. Smith
Reviewer Signature _____ Date *Sept 9/8/97*

LABCORE Data Entry Template for Worklist# 19095

Analyst: KAC Instrument: IC0 2 Book# 83K20-BMethod: LA-533-105 Rev/Mod D-1Worklist Comment: BY109, @IC-01 skm *Limited sample amount for 6977001355. Make dilutions if possible. SKM*

S Type	Sample#	R A	Test	Matrix	Group#	Project
1 CCB			@IC-QC	QC		
2 CCV			@IC-QC	QC		
3 SAMPLE	S97T001355 0		@IC-01	LIQUID	97000412	BY-109 (P)
	Analytes Requested:		BR-02 , CL-02 , F-02 , NO2-02 , NO3-02 , OXALATE2, PO4-02 , SO4-02			
4 DUP	S97T001355 0		@IC-01	LIQUID		
5 SAMPLE	S97T001470 0		@IC-01	LIQUID	97000412	BY-109 (P)
	Analytes Requested:		BR-02 , CL-02 , F-02 , NO2-02 , NO3-02 , OXALATE2, PO4-02 , SO4-02			
6 DUP	S97T001470 0		@IC-01	LIQUID		
7 SAMPLE	S97T001471 0		@IC-01	LIQUID	97000412	BY-109 (P)
	Analytes Requested:		BR-02 , CL-02 , F-02 , NO2-02 , NO3-02 , OXALATE2, PO4-02 , SO4-02			
8 DUP	S97T001471 0		@IC-01	LIQUID		

Final page for worklist # 19095

Analyst Signature

Date

Analyst Signature

Date

19095 aug. csv

Uploaded 9/8/97 M Lye

Validated 9/8/97 M Lye

Data Entry Comments:

Had to hand enter all of the data due to a problem with the electronic file. M Lye

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

Data Reprocessed On 08/24/1997 12:41:13

Sample Name: CCB Date: 08/23/1997 15:41:23
 Data File : C:\DX\DATA\97082321.d01
 Method : C:\DX\METHOD\ANIONSA.MET
 ACI Address: 1 System: 1 Inject#: 1 Detector: CDM-1
 Analyst: *[Signature]* Column: AG4A/AS4A anion column

Calibration Volume Dilution Points Rate Start Stop Area Reject

External 1 1 3000 5Hz 0.00 10.00 50

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	1.37		0.000	28	155	1	
Totals			0.000	28	155

Data Reprocessed On 08/24/1997 12:41:14

Sample Name: CCV 83N20-B Date: 08/23/1997 16:03:00
 Data File : C:\DX\DATA\97082321.d02
 Method : C:\DX\METHOD\ANIONSA.MET
 ACTI Address: 1 System: 1 Inject#: 2 Detector: CDM-1
 Analyst: *[Signature]* Column: AG4A/AS4A anion column

Calibration Volume Dilution Points Rate Start Stop Area Reject

External 1 101 3000 5Hz 0.00 10.00 50

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.89		0.000	74	323	2	
2	1.04	fluoride	59.020	2124	11359	3	0.65
3	1.35		0.000	55	383	4	
4	1.61	chloride	80.047	2532	11841	1	-0.82
5	1.94	nitrite	537.954	9685	51648	1	-2.68
6	2.97	bromide	563.059	5860	37373	1	0.91
7	3.38	nitrate	582.063	6221	49918	1	3.47
8	4.83	phosphate	543.544	1911	23095	1	-0.55
9	6.29	sulfate	634.152	5036	71319	1	-3.28
10	8.32	oxalate	533.776	2341	44756	1	-3.11
Totals			3533.614	35840	302014		

File: 97082321.d02 Sample: CCV 83N20-B

Data Reprocessed On 08/24/1997 12:41:14

Sample Name: S97T001355 SAMPLE Date: 08/23/1997 16:15:38
 Data File : C:\DX\DATA\97082321.d03
 Method : C:\DX\METHOD\ANIONSA.MET
 ACI Address: 1 System: 1 Inject#: 3 Detector: CDM-1
 Analyst: *[Signature]* Column: AG4A/AS4A anion column

Calibration Volume Dilution Points Rate Start Stop Area Reject
 External 1 4141 3000 5Hz 0.00 10.00 50

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.89		0.000	137	602	2	
2	1.04	fluoride	6550.980	5750	31698	2	0.65
3	1.60	chloride	1221.577	979	4689	1	-1.23
4	1.94	nitrite	22262.674	9531	52144	1	-2.68
5	2.95	bromide	35041.985	9332	57562	1	0.23
6	3.32	nitrate	66609.562	16703	143672	1	1.63
7	4.88	phosphate	313.970	20	217	1	0.55
8	6.29	sulfate	27317.191	5335	74990	1	-3.28
9	8.37	oxalate	275.063	95	1851	1	-2.48
Totals			159593.002	47881	367425		

File: 97082321.d03 Sample: S97T001355 SAMPLE

Data Reprocessed On 08/24/1997 12:41:15

Sample Name: S97T001355 DUP Date: 08/23/1997 16:28:16
 Data File : C:\DX\DATA\97082321.d04
 Method : C:\DX\METHOD\ANIONSA.MET
 ACI Address: 1 System: 1 Inject#: 4 Detector: CDM-1
 Analyst *[Signature]* Column: AG4A/AS4A anion column

Calibration Volume Dilution Points Rate Start Stop Area Reject
 External 1 4141 3000 5Hz 0.00 10.00 50

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.88		0.000	141	624	2	
2	1.03	fluoride	6331.547	5733	30583	2	0.00
3	1.59	chloride	1160.972	963	4482	1	-1.65
4	1.93	nitrite	21806.313	9559	51049	1	-3.34
5	2.93	bromide	35181.595	9368	57800	1	-0.23
6	3.30	nitrate	66838.778	16716	144192	1	1.02
7	4.83	phosphate	394.767	23	299	1	-0.55
8	6.24	sulfate	27452.580	5045	75367	1	-4.10
9	8.32	oxalate	191.546	94	1687	1	-3.11
Totals			159358.097	47641	366084		

File: 97082321.d04 Sample: S97T001355 DUP

Data Reprocessed On 08/24/1997 12:41:15

=====

Sample Name: S97T001470 SAMPLE Date: 08/23/1997 16:40:56

Data File : C:\DX\DATA\97082321.d05

Method : C:\DX\METHOD\ANIONSA.MET

ACI Address: 1 System: 1 Inject#: 5 Detector: CDM-1

Analyst *[Signature]* Column: AG4A/AS4A anion column

=====

Calibration Volume Dilution Points Rate Start Stop Area Reject

External 1 4141 3000 5Hz 0.00 10.00 50

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.88		0.000	115	492	2	
2	1.03	fluoride	5587.830	5012	26834	2	0.00
3	1.59	chloride	881.539	767	3525	1	-1.65
4	1.92	nitrite	15996.372	6793	37156	1	-3.68
5	2.93	bromide	46354.391	12328	77071	1	-0.45
6	3.32	nitrate	41097.688	10691	86977	1	1.63
7	6.24	sulfate	21784.904	4036	59620	1	-4.10
8	8.27	oxalate	2046.581	267	5337	1	-3.73

Totals 133749.307 40010. 297011

File: 97082321.d05 Sample: S97T001470 SAMPLE

Data Reprocessed On 08/24/1997 12:41:16

Sample Name: S97T001470 DUP Date: 08/23/1997 16:53:33
 Data File : C:\DX\DATA\97082321.d06
 Method : C:\DX\METHOD\ANIONSA.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	4141	3000	5Hz	0.00	10.00		50

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.87		0.000	120	533	2	
2	1.03	fluoride	5612.770	5041	26959	2	0.00
3	1.59	chloride	962.319	808	3801	1	-2.06
4	1.77		0.000	72	235	1	
5	1.92	nitrite	15756.293	6787	36583	1	-3.68
6	2.92	bromide	46310.954	12305	76995	1	-0.68
7	3.32	nitrate	41841.520	10831	88598	1	1.63
8	6.24	sulfate	21761.227	4106	59554	1	-4.10
9	8.27	oxalate	2100.509	277	5443	1	-3.73
Totals			134345.593	40346	298702		

File: 97082321.d06 Sample: S97T001470 DUP

Data Reprocessed On 08/24/1997 12:41:16

Sample Name: S97T001471 SAMPLE Date: 08/23/1997 17:06:13
 Data File : C:\DX\DATA\97082321.d07
 Method : C:\DX\METHOD\ANIONSA.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 4141 3000 5Hz 0.00 10.00 50

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.49		0.000	132	3294	2	
2	0.88		0.000	755	5103	2	
3	1.06	fluoride	684.460	659	3190	2	2.58
4	1.15		0.000	664	4643	2	
5	1.59	chloride	5588.506	3873	20048	1	-1.65
6	1.94	nitrite	97021.267	41299	238225	1	-2.68
7	2.95	bromide	2601.240	685	3735	1	0.45
8	3.21	nitrate	198605.506	46710	485607	1	-1.84
9	4.10		0.000	29	227	1	
10	4.85	phosphate	552.801	35	461	1	0.00
11	6.29	sulfate	1505.588	265	4363	1	-3.28

Totals 306559.367 95106 768896

File: 97082321.d07 Sample: S97T001471 SAMPLE

Data Reprocessed On 08/24/1997 12:41:16

Sample Name: S97T001471 DUP Date: 08/23/1997 17:18:51
 Data File : C:\DX\DATA\97082321.d08
 Method : C:\DX\METHOD\ANIONSA.MET
 ACI Address: 1 System: 1 Inject#: 8
 Analyst *[Signature]* Column: AG4A/AS4A anion column
 Detector: CDM-1

Calibration Volume Dilution Points Rate Start Stop Area Reject

External 1 4141 3000 5Hz 0.00 10.00 50

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.88		0.000	615	3671	2	
2	1.06	fluoride	609.912	591	2844	2	2.58
3	1.15		0.000	627	4238	2	
4	1.59	chloride	5448.824	3856	19545	1	-1.65
5	1.93	nitrite	98890.026	41170	243063	1	-3.01
6	2.95	bromide	2626.203	689	3775	1	0.45
7	3.21	nitrate	197374.161	46532	481896	1	-1.84
8	4.11		0.000	32	257	1	
9	4.85	phosphate	418.661	28	324	1	0.00
10	6.29	sulfate	1535.203	264	4443	1	-3.28
11	8.37	oxalate	-426.634	25	472	1	-2.48

Totals 306476.357 94429 764527

File: 97082321.d08 Sample: S97T001471 DUP

LABCORE Completed Worklist Report for Worklist# 19096

Analyst: rdm

Instrument: IC01

Book# 83N20B

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

Worklist Comment: BY109, HERTING @IC-01 skm

Seq Type	Sample#	R A	Test	Matrix	Actual	Found	DL or Yield	Unit
1	CCB	0	@IC-QC F	QC	1	1.80e-02	0.018	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 P04	QC	1	<1.20e-1		ug/mL
1	CCB	0	@IC-QC S04	QC	1	<1.38e-1		ug/mL
1	CCB	0	@IC-QC OXALATE2	QC	1	<1.05e-1		ug/mL
2	CCV	0	@IC-QC F	QC	5.90e01	5.74e+01	97.288 %	Recovery
2	CCV	0	@IC-QC CL	QC	7.90e01	7.20e+01	91.139 %	Recovery
2	CCV	0	@IC-QC NO2	QC	5.44e02	5.19e+02	95.404 %	Recovery
2	CCV	0	@IC-QC BR	QC	5.89e02	5.63e+02	95.586 %	Recovery
2	CCV	0	@IC-QC NO3	QC	5.94e02	5.56e+02	93.603 %	Recovery
2	CCV	0	@IC-QC P04	QC	5.45e02	5.44e+02	99.817 %	Recovery
2	CCV	0	@IC-QC S04	QC	6.32e02	6.04e+02	95.570 %	Recovery
2	CCV	0	@IC-QC OXALATE2	QC	5.33e02	5.11e+02	95.872 %	Recovery
3	SAMPLE	S97T001469	@IC-01 F-02	LIQUID	N/A	1.146e+03	61.810	ug/mL
3	SAMPLE	S97T001469	@IC-01 BR-02	LIQUID	N/A	4.017e+03	643.900	ug/mL
3	SAMPLE	S97T001469	@IC-01 P04-02	LIQUID	N/A	6.181e+02	618.100	ug/mL
3	SAMPLE	S97T001469	@IC-01 S04-02	LIQUID	N/A	7.108e+02	710.800	ug/mL
3	SAMPLE	S97T001469	@IC-01 OXALATE2	LIQUID	N/A	5.409e+02	540.900	ug/mL
4	DUP	S97T001469	@IC-01 F-02	LIQUID	1.15e+03	1.18e+03	2.575	RPD
4	DUP	S97T001469	@IC-01 CL-02	LIQUID	3.87e+03	3.83e+03	1.039	RPD
4	DUP	S97T001469	@IC-01 NO2-02	LIQUID	6.91e+04	6.82e+04	1.311	RPD
4	DUP	S97T001469	@IC-01 BR-02	LIQUID	4.02e+03	4.15e+03	3.182	RPD
4	DUP	S97T001469	@IC-01 NO3-02	LIQUID	1.82e+05	1.85e+05	1.635	RPD
4	DUP	S97T001469	@IC-01 P04-02	LIQUID	<6.18e2	<6.18e2		RPD
4	DUP	S97T001469	@IC-01 S04-02	LIQUID	<7.11e2	<7.11e2		RPD
4	DUP	S97T001469	@IC-01 OXALATE2	LIQUID	<5.41e2	<5.41e2		RPD
5	SPK	S97T001469	@IC-01 F-02	LIQUID	5.90e01	5.75e+01	97.458 %	Recovery
5	SPK	S97T001469	@IC-01 CL-02	LIQUID	7.90e01	4.58e+01	57.975 %	Recovery
5	SPK	S97T001469	@IC-01 NO2-02	LIQUID	5.44e02	6.09e+01	11.195 %	Recovery
5	SPK	S97T001469	@IC-01 BR-02	LIQUID	5.89e02	5.53e+02	93.898 %	Recovery
5	SPK	S97T001469	@IC-01 NO3-02	LIQUID	5.94e02	-6.63e2	-111.616 %	Recovery
5	SPK	S97T001469	@IC-01 P04-02	LIQUID	5.45e02	5.75e+02	105.688 %	Recovery
5	SPK	S97T001469	@IC-01 S04-02	LIQUID	6.32e02	6.09e+02	96.361 %	Recovery
5	SPK	S97T001469	@IC-01 OXALATE2	LIQUID	5.33e02	5.14e+02	96.435 %	Recovery
6	SAMPLE	S97R000260	@IC-01 F-02	LIQUID	N/A	1.772e+03	122.400	ug/mL
6	SAMPLE	S97R000260	@IC-01 CL-02	LIQUID	N/A	1.783e+04	173.400	ug/mL
6	SAMPLE	S97R000260	@IC-01 NO2-02	LIQUID	N/A	2.314e+05	1102.000	ug/mL
6	SAMPLE	S97R000260	@IC-01 BR-02	LIQUID	N/A	1.275e+03	1275.000	ug/mL

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

LABCORE Completed Worklist Report for Worklist# 19096

Seq Type	Sample#	R A	Test	Matrix	Actual	Found	DL or Yield	Unit
6 SAMPLE	S97R000260	0	@IC-01	NO3-02	LIQUID	N/A	3.715e+05	1418.000 ug/mL
6 SAMPLE	S97R000260	0	@IC-01	PO4-02	LIQUID	N/A	4.625e+03	1224.000 ug/mL
6 SAMPLE	S97R000260	0	@IC-01	SO4-02	LIQUID	N/A	3.018e+03	1408.000 ug/mL
6 SAMPLE	S97R000260	0	@IC-01	OXALATE2	LIQUID	N/A	1.071e+03	1071.000 ug/mL

Final page for worklist# 19096

Analyst Signature _____ Date _____

Analyst Signature _____ Date _____

James M. Lutz
Reviewer Signature Date 8/25/97

Re-run of S97T001469 Cl, NO₂ & NO₃ on

WKL1 9979
JMF

LABCORE Data Entry Template for Worklist# 19096

Analyst: PM Instrument: IC0 1 Book# 83N20B

Method: LA-533-105 Rev/Mod 0-1

Worklist Comment: BY109, HERTING @IC-01 skm

S Type	Sample#	R A	Test	Matrix	Group#	Project
1 CCB			@IC-QC	QC		
2 CCV			@IC-QC	QC		
3 SAMPLE	S97T001469 0		@IC-01	LIQUID	97000412	BY-109 (P)
Analytes Requested:			BR-02	CL-02	F-02	NO2-02 , NO3-02 ,
			OKALATE2	PO4-02	SO4-02	
4 DUP	S97T001469 0		@IC-01	LIQUID		
5 SPK	S97T001469 0		@IC-01	LIQUID		
6 SAMPLE	S97R000260 0		@IC-01	LIQUID	97000451	HERTING
Analytes Requested:			BR-02	CL-02	F-02	NO2-02 , NO3-02 ,
			OKALATE2	PO4-02	SO4-02	

Final page for worklist # 19096

Analyst Signature PM Date 8/21/97

Analyst Signature _____ Date _____

uploaded 8-22-97

John Worell

19096AUG.CSV

S97T001469 rejected for Cl, NO2 + NO3 due to very poor

Spikes - will be rerun on WKL 19979.

Rest validated 8/25/97 M. J. J.

Data Entry Comments:

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

Data Reprocessed On 08/22/1997 14:02:08

Sample Name: BLK Date: 08/21/1997 01:26:35
 Data File : F:\DATA\97082041.D12
 Method : C:\DX\METHOD\KIT.MET
 ACI Address: 1 System: 1 Inject#: 12 Detector: CDM-1
 Analyst *John J. J...* Column: AG4A/AS4A anion column

Calibration Volume Dilution Points Rate Start Stop Area Reject
 External 1 1 3000 5Hz 0.00 10.00 30

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	1.11	fluoride	0.018	24	78	1	6.03
2	1.54	chloride	-0.023	24	93	1	-4.94
3	3.28	nitrate	-0.021	56	339	1	0.00
4	6.03	sulfate	-0.138	115	1580	1	-5.83
Totals			-0.164	219	2090		

File: 97082041.D12 Sample: BLK

SIGNATURE ABOVE REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 315 TO 319.

Data Reprocessed On 08/22/1997 14:03:32

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Sample Name: 83N20-B                               Date: 08/21/1997 01:38:39
Data File  : F:\DATA\97082041.D13
Method     : C:\DX\METHOD\KIT.MET
ACI Address: 1 System: 1 Inject#: 13                Detector: CDM-1
Analyst    :                               Column: AG4A/AS4A anion column
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Calibration Volume Dilution Points Rate Start Stop Area Reject
=====
External          1          101    3000  5Hz   0.00 10.00          30
=====

```

```

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

```

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.84		0.000	103	468	2	
2	1.00	fluoride	57.445	2669	11562	2	-4.76
3	1.55	chloride	71.998	2236	10001	1	-4.53
4	1.87	nitrite	518.831	9325	47346	1	-4.76
5	2.85	bromide	562.563	5396	33486	1	-5.43
6	3.25	nitrate	555.852	5799	44306	1	-0.10
7	4.64	phosphate	544.492	1826	20269	1	-5.95
8	6.03	sulfate	603.658	4726	63246	1	-5.83
9	7.95	oxalate	511.339	2239	40137	1	-6.29
Totals			3426.176	34319	270820		

File: 97082041.D13 Sample: 83N20-B

Data Reprocessed On 08/22/1997 14:10:56

```

=====
Sample Name: S97T001469                      Date: 08/21/1997 02:46:09
Data File  : F:\DATA\97082041.D16
Method     : C:\DX\METHOD\KIT.MET
ACI Address: 1 System: 1 Inject#: 16          Detector: CDM-1
Analyst    :                               Column: AG4A/AS4A anion column
=====

```

```

=====
Calibration Volume Dilution Points Rate Start Stop Area Reject
-----
External          1          5151    3000 5Hz   0.00 10.00          30
=====

```

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.85		0.000	392	2072	2	
2	1.00	fluoride	1146.458	941	4346	2	-4.76
3	1.11		0.000	472	3053	2	
4	1.53	chloride	3871.296	2081	10529	1	-5.35
5	1.86	nitrite	69096.725	22906	123741	1	-5.10
6	2.83	bromide	4016.750	788	4434	1	0.12
7	3.12	nitrate	181542.255	32439	301423	1	0.00
8	4.67	phosphate	431.700	21	234	1	-5.41
9	6.03	sulfate	-399.369	144	2169	1	-5.83
Totals			259705.816	60185	452003		

File: 97082041.D16 Sample: S97T001469

Data Reprocessed On 08/22/1997 14:13:08

```

=====
Sample Name: S97T001469DUP                      Date: 08/21/1997 03:01:55
Data File  : F:\DATA\97082041.D17
Method     : C:\DX\METHOD\KIT.MET
ACI Address: 1 System: 1 Inject#: 17              Detector: CDM-1
Analyst    :                      Column: AG4A/AS4A anion column
=====

```

```

=====
Calibration Volume Dilution Points Rate Start Stop Area Reject
=====
External          1          5151    3000  5Hz   0.00 10.00          30
=====

```

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.84		0.000	396	2144	2	
2	1.00	fluoride	1175.335	950	4463	2	-4.76
3	1.11		0.000	484	3099	2	
4	1.53	chloride	3827.396	2107	10413	1	-5.35
5	1.85	nitrite	68190.744	23125	122125	1	-5.44
6	2.83	bromide	4150.401	802	4589	1	0.12
7	3.11	nitrate	184700.071	32894	307155	1	0.11
8	4.67	phosphate	343.493	18	171	1	-5.41
9	6.03	sulfate	-332.897	154	2296	1	-5.83
Totals			262054.543	60930	456455		

File: 97082041.D17 Sample: S97T001469DUP

Data Reprocessed On 08/22/1997 14:14:47

```

=====
Sample Name: S97T001469SPK                      Date: 08/21/1997 03:15:06
Data File  : F:\DATA\97082041.D18
Method     : C:\DX\METHOD\KIT.MET
ACI Address: 1 System: 1 Inject#: 18             Detector: CDM-1
Analyst    :                      Column: AG4A/AS4A anion column
=====

```

```

=====
Calibration Volume Dilution Points Rate Start Stop Area Reject
=====
External          1          5151    3000  5Hz   0.00 10.00          30
=====

```

```

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

```

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.84		0.000	311	1520	2	
2	0.99	fluoride	4052.000	3155	16105	2	-5.40
3	1.53	chloride	6181.933	3519	16701	1	-5.35
4	1.85	nitrite	72170.991	24639	129223	1	-5.44
5	2.81	bromide	31938.320	6236	37377	1	0.12
6	3.13	nitrate	148058.692	26587	241852	1	-0.11
7	4.64	phosphate	29111.889	1842	21277	1	-5.95
8	6.03	sulfate	30758.265	4853	63189	1	-5.83
9	7.09		0.000	41	350	1	
10	7.95	oxalate	25967.668	2268	39964	1	-6.29
Totals			348239.758	73451	567558		

File: 97082041.D18 Sample: S97T001469SPK

LABCORE Completed Worklist Report for Worklist# 19530

Analyst: rdm

Instrument: IC02

Book# 831200B

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

Worklist Comment: BY-109 IC. RCJ

Seq Type	Sample#	R A	Test	Matrix	Actual	Found	DL or Yield	Unit
1 CCB	0	0	@IC-QC F	QC	1	<1.20e-2		ug/mL
1 CCB	0	0	@IC-QC CL	QC	1	<1.70e-2		ug/mL
1 CCB	0	0	@IC-QC NO2	QC	1	<1.08e-1		ug/mL
1 CCB	0	0	@IC-QC BR	QC	1	<1.25e-1		ug/mL
1 CCB	0	0	@IC-QC NO3	QC	1	<1.39e-1		ug/mL
1 CCB	0	0	@IC-QC P04	QC	1	<1.20e-1		ug/mL
1 CCB	0	0	@IC-QC S04	QC	1	1.40e-01	0.140	ug/mL
1 CCB	0	0	@IC-QC OXALATE2	QC	1	<1.05e-1		ug/mL
2 CCV	0	0	@IC-QC F	QC	5.90e01	5.18e+01	87.797 %	Recovery
2 CCV	0	0	@IC-QC CL	QC	7.90e01	6.74e+01	85.316 %	Recovery
2 CCV	0	0	@IC-QC NO2	QC	5.44e02	4.89e+02	89.890 %	Recovery
2 CCV	0	0	@IC-QC BR	QC	5.89e02	4.98e+02	84.550 %	Recovery
2 CCV	0	0	@IC-QC NO3	QC	5.94e02	5.26e+02	88.552 %	Recovery
2 CCV	0	0	@IC-QC P04	QC	5.45e02	4.78e+02	87.706 %	Recovery
2 CCV	0	0	@IC-QC S04	QC	6.32e02	5.56e+02	87.975 %	Recovery
2 CCV	0	0	@IC-QC OXALATE2	QC	5.33e02	4.63e+02	86.867 %	Recovery
3 BLNK-PREP	0	0	@IC-01 F-02	SOLID	1	<1.21e0		ug/g
3 BLNK-PREP	0	0	@IC-01 CL-02	SOLID	1	<1.72e0		ug/g
3 BLNK-PREP	0	0	@IC-01 NO2-02	SOLID	1	<1.09e1		ug/g
3 BLNK-PREP	0	0	@IC-01 BR-02	SOLID	1	<1.26e1		ug/g
3 BLNK-PREP	0	0	@IC-01 NO3-02	SOLID	1	<1.40e1		ug/g
3 BLNK-PREP	0	0	@IC-01 P04-02	SOLID	1	<1.21e1		ug/g
3 BLNK-PREP	0	0	@IC-01 S04-02	SOLID	1	<1.39e1		ug/g
3 BLNK-PREP	0	0	@IC-01 OXALATE2	SOLID	1	<1.06e1		ug/g
4 SAMPLE	S97T001350	0 W	@IC-01 NO2-02	SOLID	N/A	2.693e+04	2192.000	ug/g
4 SAMPLE	S97T001350	0 W	@IC-01 NO3-02	SOLID	N/A	9.280e+04	2820.000	ug/g
4 SAMPLE	S97T001350	0 W	@IC-01 P04-02	SOLID	N/A	2.543e+03	2435.000	ug/g
4 SAMPLE	S97T001350	0 W	@IC-01 S04-02	SOLID	N/A	1.501e+05	2800.000	ug/g
5 DUP	S97T001350	0 W	@IC-01 F-02	SOLID	3.79e+04	4.14e+04	8.827	RPD
5 DUP	S97T001350	0 W	@IC-01 CL-02	SOLID	7.95e+02	9.86e+02	21.449	RPD
5 DUP	S97T001350	0 W	@IC-01 NO2-02	SOLID	2.69e+04	2.98e+04	10.229	RPD
5 DUP	S97T001350	0 W	@IC-01 BR-02	SOLID	<2.54e3	<2.50e3		RPD
5 DUP	S97T001350	0 W	@IC-01 NO3-02	SOLID	9.28e+04	1.02e+05	9.446	RPD
5 DUP	S97T001350	0 W	@IC-01 P04-02	SOLID	2.54e+03	<2.40e3		RPD
5 DUP	S97T001350	0 W	@IC-01 S04-02	SOLID	1.50e+05	1.64e+05	8.917	RPD
5 DUP	S97T001350	0 W	@IC-01 OXALATE2	SOLID	1.26e+04	1.42e+04	11.940	RPD
6 SPK	S97T001350	0 W	@IC-01 F-02	SOLID	5.90e01	6.51e+01	110.339 %	Recovery
6 SPK	S97T001350	0 W	@IC-01 CL-02	SOLID	7.90e01	7.77e+01	98.354 %	Recovery
6 SPK	S97T001350	0 W	@IC-01 NO2-02	SOLID	5.44e02	5.55e+02	102.022 %	Recovery
6 SPK	S97T001350	0 W	@IC-01 BR-02	SOLID	5.89e02	5.75e+02	97.623 %	Recovery
6 SPK	S97T001350	0 W	@IC-01 NO3-02	SOLID	5.94e02	6.11e+02	102.862 %	Recovery

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

LABCORE Completed Worklist Report for Worklist# 19530

Seq Type	Sample#	R A	Test	Matrix	Actual	Found	DL or Yield	Unit
6 SPK	S97T001350	0 W	ⒼIC-01	PO4-02	SOLID	5.45e02	5.39e+02	98.899 % Recovery
6 SPK	S97T001350	0 W	ⒼIC-01	SO4-02	SOLID	6.32e02	6.83e+02	108.070 % Recovery
6 SPK	S97T001350	0 W	ⒼIC-01	OXALATE2	SOLID	5.33e02	5.42e+02	101.689 % Recovery
7 SAMPLE	S97T001559	0 W	ⒼIC-01	NO2-02	SOLID	N/A	3.897e+04	2168.000 ug/g
7 SAMPLE	S97T001559	0 W	ⒼIC-01	NO3-02	SOLID	N/A	7.601e+04	2791.800 ug/g
7 SAMPLE	S97T001559	0 W	ⒼIC-01	PO4-02	SOLID	N/A	3.511e+04	2409.000 ug/g
7 SAMPLE	S97T001559	0 W	ⒼIC-01	SO4-02	SOLID	N/A	7.163e+04	2770.000 ug/g
8 DUP	S97T001559	0 W	ⒼIC-01	F-02	SOLID	1.87e+04	1.93e+04	3.158 RPD
8 DUP	S97T001559	0 W	ⒼIC-01	CL-02	SOLID	1.61e+03	1.68e+03	4.255 RPD
8 DUP	S97T001559	0 W	ⒼIC-01	NO2-02	SOLID	3.90e+04	3.98e+04	2.030 RPD
8 DUP	S97T001559	0 W	ⒼIC-01	BR-02	SOLID	<2.51e3	<2.50e3	RPD
8 DUP	S97T001559	0 W	ⒼIC-01	NO3-02	SOLID	7.60e+04	7.69e+04	1.177 RPD
8 DUP	S97T001559	0 W	ⒼIC-01	PO4-02	SOLID	3.51e+04	3.73e+04	6.077 RPD
8 DUP	S97T001559	0 W	ⒼIC-01	SO4-02	SOLID	7.17e+04	7.44e+04	3.696 RPD
8 DUP	S97T001559	0 W	ⒼIC-01	OXALATE2	SOLID	2.18e+04	2.26e+04	3.604 RPD
9 SPK	S97T001559	0 W	ⒼIC-01	F-02	SOLID	5.90e01	7.54e+01	127.797 % Recovery
9 SPK	S97T001559	0 W	ⒼIC-01	CL-02	SOLID	7.90e01	8.62e+01	109.114 % Recovery
9 SPK	S97T001559	0 W	ⒼIC-01	NO2-02	SOLID	5.44e02	6.33e+02	116.360 % Recovery
9 SPK	S97T001559	0 W	ⒼIC-01	BR-02	SOLID	5.89e02	6.01e+02	102.037 % Recovery
9 SPK	S97T001559	0 W	ⒼIC-01	NO3-02	SOLID	5.94e02	6.69e+02	112.626 % Recovery
9 SPK	S97T001559	0 W	ⒼIC-01	PO4-02	SOLID	5.45e02	5.90e+02	108.257 % Recovery
9 SPK	S97T001559	0 W	ⒼIC-01	SO4-02	SOLID	6.32e02	7.08e+02	112.025 % Recovery
9 SPK	S97T001559	0 W	ⒼIC-01	OXALATE2	SOLID	5.33e02	5.90e+02	110.694 % Recovery
10 SAMPLE	S97T001574	0 W	ⒼIC-01	NO2-02	SOLID	N/A	3.627e+04	2143.000 ug/g
10 SAMPLE	S97T001574	0 W	ⒼIC-01	NO3-02	SOLID	N/A	9.395e+04	2758.000 ug/g
10 SAMPLE	S97T001574	0 W	ⒼIC-01	PO4-02	SOLID	N/A	2.739e+03	2382.000 ug/g
10 SAMPLE	S97T001574	0 W	ⒼIC-01	SO4-02	SOLID	N/A	1.011e+05	2739.000 ug/g
11 DUP	S97T001574	0 W	ⒼIC-01	F-02	SOLID	2.48e+04	2.64e+04	6.250 RPD
11 DUP	S97T001574	0 W	ⒼIC-01	CL-02	SOLID	1.46e+03	1.54e+03	5.333 RPD
11 DUP	S97T001574	0 W	ⒼIC-01	NO2-02	SOLID	3.63e+04	3.70e+04	1.910 RPD
11 DUP	S97T001574	0 W	ⒼIC-01	BR-02	SOLID	3.08e+03	3.09e+03	0.324 RPD
11 DUP	S97T001574	0 W	ⒼIC-01	NO3-02	SOLID	9.40e+04	9.16e+04	2.586 RPD
11 DUP	S97T001574	0 W	ⒼIC-01	PO4-02	SOLID	2.74e+03	<2.33e3	RPD
11 DUP	S97T001574	0 W	ⒼIC-01	SO4-02	SOLID	1.01e+05	1.02e+05	0.985 RPD
11 DUP	S97T001574	0 W	ⒼIC-01	OXALATE2	SOLID	1.23e+04	1.21e+04	1.639 RPD
12 SPK	S97T001574	0 W	ⒼIC-01	F-02	SOLID	5.90e01	5.34e+01	90.508 % Recovery
12 SPK	S97T001574	0 W	ⒼIC-01	CL-02	SOLID	7.90e01	7.47e+01	94.557 % Recovery
12 SPK	S97T001574	0 W	ⒼIC-01	NO2-02	SOLID	5.44e02	5.27e+02	96.875 % Recovery
12 SPK	S97T001574	0 W	ⒼIC-01	BR-02	SOLID	5.89e02	5.50e+02	93.379 % Recovery
12 SPK	S97T001574	0 W	ⒼIC-01	NO3-02	SOLID	5.94e02	5.65e+02	95.118 % Recovery
12 SPK	S97T001574	0 W	ⒼIC-01	PO4-02	SOLID	5.45e02	5.21e+02	95.596 % Recovery
12 SPK	S97T001574	0 W	ⒼIC-01	SO4-02	SOLID	6.32e02	6.22e+02	98.418 % Recovery
12 SPK	S97T001574	0 W	ⒼIC-01	OXALATE2	SOLID	5.33e02	5.18e+02	97.186 % Recovery

Final page for worklist# 19530

Analyst Signature

Date _____

Analyst Signature

Date _____

FOI B-402 return on BKL 1995.9m

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

LABCORE Data Entry Template for Worklist# 19530

Analyst: RM Instrument: IC0 2 Book# 93N20-B
Method: LA-533-105 Rev/Mod D-1
Worklist Comment: BY-109 IC. RCJ

S Type	Sample#	R A	Test	Matrix	Group#	Project
1 CCB			@IC-QC	QC		
2 CCV			@IC-QC	QC		
3 BLNK-PREP			@IC-01	SOLID		
4 SAMPLE	S97T001350 0 W	@IC-01	SOLID		97000412	BY-109 (P)
Analytes Requested: BR-02 , CL-02 , F-02 , NO2-02 , NO3-02 , OXALATE2, PO4-02 , SO4-02						
5 DUP	S97T001350 0 W	@IC-01	SOLID			
6 SPK	S97T001350 0 W	@IC-01	SOLID			
7 SAMPLE	S97T001559 0 W	@IC-01	SOLID		97000411	BY-109 (P)
Analytes Requested: BR-02 , CL-02 , F-02 , NO2-02 , NO3-02 , OXALATE2, PO4-02 , SO4-02						
8 DUP	S97T001559 0 W	@IC-01	SOLID			
9 SPK	S97T001559 0 W	@IC-01	SOLID			
10 SAMPLE	S97T001574 0 W	@IC-01	SOLID		97000412	BY-109 (P)
Analytes Requested: BR-02 , CL-02 , F-02 , NO2-02 , NO3-02 , OXALATE2, PO4-02 , SO4-02						
11 DUP	S97T001574 0 W	@IC-01	SOLID			
12 SPK	S97T001574 0 W	@IC-01	SOLID			

Final page for worklist # 19530

Analyst Signature RM Date 9/21/97

uploaded 8-22-97
John W. Wall
Data Entry Comments: 19530AUG.CSV

Analyst Signature _____ Date _____

F, Cl, Br & Oxalate at former
due to standard failure on

WKL # 19985 . Root Validated
8/25/97 JMF

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

Data Reprocessed On 08/22/1997 12:49:24

Sample Name: BLK Date: 08/20/1997 22:49:53
Data File : E:\DATA\97082071.D08
Method : C:\DX\METHOD\ANIONS.MET
ACI Address: 1 System: 1 Inject#: 8 Detector: CDM-1
Analyst : *Jerry Lyle* Column: AG4A/AS4A anion column
for RDA 8/25/97

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	1.16		0.000	23	111	1	
2	1.61	chloride	-0.030	22	100	1	-0.82
3	3.45	nitrate	0.105	137	985	1	0.10
4	6.35	sulfate	0.140	129	1879	1	-2.46
Totals			0.215	311	3075

SIGNATURE ABOVE REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES ~~322~~ TO ~~324~~

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=====
Sample Name: 83N20-B                      Date: 08/20/1997 23:12:45
Data File  : C:\DX\DATA\97082071.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      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	0.88		0.000	70	308	2	
2	1.04	fluoride	51.777	1779	9946	2	0.65
3	1.60	chloride	67.415	2138	10028	1	-1.23
4	1.93	nitrite	489.266	8444	46865	1	-3.01
5	2.97	bromide	497.888	5123	32918	1	0.91
6	3.39	nitrate	526.470	5625	45086	1	3.67
7	4.80	phosphate	478.294	1714	20260	1	-1.10
8	6.29	sulfate	555.616	4375	62375	1	-3.28
9	8.32	oxalate	463.460	2014	38983	1	-3.11
Totals			3130.186	31282	266770		

File: 97082071.D10 Sample: 83N20-B

Data Reprocessed On 08/22/1997 12:50:30

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=====
Sample Name: PREP BLK                      Date: 08/20/1997 23:34:03
Data File  : E:\DATA\97082071.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	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	1.22		0.000	47	393	1	
2	1.61	chloride	0.614	84	610	1	-0.41
3	1.95	nitrite	10.806	72	325	1	-2.01
4	3.46	nitrate	13.691	186	1245	1	0.00
Totals			25.112	389	2575		

File: 97082071.D11 Sample: PREP BLK

Sample Name: S97T001350 Date: 08/20/1997 23:48:47
 Data File : C:\DX\DATA\97082071.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	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	0.88		0.000	46	190	1	
2	1.03	fluoride	188.743	7438	37805	1	0.00
3	1.60	chloride	3.957	239	1075	1	-1.23
4	1.93	nitrite	134.080	2249	12237	1	-3.01
5	2.99	bromide	8.701	23	118	1	1.81
6	3.39	nitrate	461.975	5048	39501	1	3.88
7	4.83	phosphate	12.657	38	426	1	-0.55
8	6.29	sulfate	747.328	6038	84286	1	-3.28
9	8.37	oxalate	62.769	324	6375	1	-2.48
Totals			1620.209	21443	182012		

File: 97082071.D12 Sample: S97T001350

```

=====
Sample Name: S97T001350DUP      Date: 08/21/1997 01:29:11
Data File  : C:\DX\DATA\97082071.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 1 101 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	0.87	•	0.000	64	266	1	
2	1.03	fluoride	208.694	8420	42086	1	0.00
3	1.60	chloride	4.975	266	1217	1	-1.23
4	1.94	nitrite	150.610	2563	13838	1	-2.68
5	3.00	bromide	8.730	24	120	1	2.04
6	3.40	nitrate	513.286	5567	43943	1	4.08
7	4.83	phosphate	9.093	23	277	1	-0.55
8	6.29	sulfate	828.588	6682	93655	1	-3.28
9	8.37	oxalate	71.771	353	7102	1	-2.48
Totals			1795.746	23962	202504		

File: 97082071.D13 Sample: S97T001350DUP

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Sample Name: S97T001350SPK	Date: 08/21/1997 01:41:26
Data File : C:\DX\DATA\97082071.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	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	0.88		0.000	142	622	2	
2	1.03	fluoride	253.842	10466	52017	2	0.00
3	1.60	chloride	81.624	2575	12068	1	-1.23
4	1.94	nitrite	689.174	12438	66561	1	-2.68
5	2.97	bromide	575.062	5955	38195	1	1.13
6	3.36	nitrate	1073.127	11341	93309	1	2.86
7	4.80	phosphate	551.531	1992	23443	1	-1.10
8	6.24	sulfate	1430.092	10642	164610	1	-4.10
9	8.32	oxalate	604.656	2643	50591	1	-3.11
Totals			5259.108	58193	501417		

File: 97082071.D14 Sample: S97T001350SPK

Sample Name: S97T001559 Date: 08/21/1997 01:53:58
 Data File : C:\DX\DATA\97082071.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	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	0.88		0.000	54	237	1	
2	1.04	fluoride	94.119	3460	18293	1	0.65
3	1.60	chloride	8.108	361	1653	1	-1.23
4	1.94	nitrite	196.054	3366	18245	1	-2.68
5	3.00	bromide	10.616	41	244	1	2.04
6	3.41	nitrate	382.407	4189	32639	1	4.29
7	4.83	phosphate	176.615	617	7333	1	-0.55
8	6.29	sulfate	360.671	2597	40364	1	-3.28
9	8.37	oxalate	109.577	532	10159	1	-2.48
Totals			1338.167	15216	129168		

File: 97082071.D15 Sample: S97T001559

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Sample Name: S97T001559DUP	Date: 08/21/1997 02:06:36
Data File : C:\DX\DATA\97082071.D16	
Method : C:\DX\METHOD\ANIONS.MET	
ACI Address: 1 System: 1 Inject#: 16	Detector: CDM-1
Analyst :	Column: AG4A/AS4A anion column

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Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area	Reject
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External	1	101	3300	5Hz	0.00	11.00		50
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***** Peak Report: All Peaks *****

Pk. Num.	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.88		0.000	58	257	2	
2	1.04	fluoride	97.530	3593	18976	2	0.65
3	1.60	chloride	8.499	369	1707	1	-1.23
4	1.94	nitrite	200.855	3461	18712	1	-2.68
5	2.99	bromide	10.737	43	252	1	1.81
6	3.41	nitrate	388.416	4273	33156	1	4.29
7	4.83	phosphate	188.127	649	7821	1	-0.55
8	6.29	sulfate	375.665	2770	42048	1	-3.28
9	8.37	oxalate	114.337	556	10544	1	-2.48

Totals			1384.165	15771	133473		
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File: 97082071.D16 Sample: S97T001559DUP

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Sample Name: S97T001559SPK      Date: 08/21/1997 02:23:11
Data File  : C:\DX\DATA\97082071.D17
Method     : C:\DX\METHOD\ANIONS.MET
ACI Address: 1 System: 1 Inject#: 17      Detector: CDM-1
Analyst    :                      Column: AG4A/AS4A anion column
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=====
Calibration Volume Dilution Points Rate Start Stop Area Reject
=====

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External      1      101    3300    5Hz    0.00 11.00      50
=====

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

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Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.88		0.000	158	707	2	
2	1.03	fluoride	169.540	6435	33742	2	0.00
3	1.60	chloride	94.325	2923	13903	1	-1.23
4	1.93	nitrite	828.618	14376	80391	1	-3.01
5	2.96	bromide	600.669	6428	39953	1	0.68
6	3.35	nitrate	1050.914	11068	91318	1	2.45
7	4.80	phosphate	767.083	2875	32917	1	-1.10
8	6.29	sulfate	1069.043	8955	121674	1	-3.28
9	8.32	oxalate	699.423	3089	58417	1	-3.11
Totals			5279.616	56306	473021		

File: 97082071.D17 Sample: S97T001559SPK

Sample Name: S97T001574 Date: 08/21/1997 02:36:06
 Data File : C:\DX\DATA\97082071.D18
 Method : C:\DX\METHOD\ANIONS.MET
 ACI Address: 1 System: 1 Inject#: 18 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	0.87		0.000	54	235	2	
2	1.04	fluoride	126.287	4754	24787	2	0.65
3	1.60	chloride	7.457	346	1562	1	-1.23
4	1.93	nitrite	184.599	3165	17134	1	-3.01
5	2.99	bromide	15.668	98	578	1	1.59
6	3.39	nitrate	478.120	5257	40897	1	3.67
7	4.83	phosphate	13.939	42	480	1	-0.55
8	6.29	sulfate	514.595	3951	57721	1	-3.28
9	8.37	oxalate	62.609	318	6362	1	-2.48
Totals			1403.274	17987	149756		

File: 97082071.D18 Sample: S97T001574

Sample Name: S97T001574DUP Date: 08/21/1997 02:48:43
 Data File : C:\DX\DATA\97082071.D19
 Method : C:\DX\METHOD\ANIONS.MET
 ACI Address: 1 System: 1 Inject#: 19 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	0.88		0.000	59	251	2	
2	1.04	fluoride	137.025	4935	26986	2	0.65
3	1.60	chloride	7.995	355	1637	1	-1.23
4	1.93	nitrite	192.297	3220	17881	1	-3.01
5	2.98	bromide	16.062	101	604	1	1.36
6	3.38	nitrate	476.211	5186	40732	1	3.47
7	4.83	phosphate	11.661	37	385	1	-0.55
8	6.29	sulfate	531.664	4059	59656	1	-3.28
9	8.37	oxalate	62.715	328	6371	1	-2.48
Totals			1435.630	18279	154501		

File: 97082071.D19 Sample: S97T001574DUP

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Sample Name: S97T001574SPK      Date: 08/21/1997 03:01:52
Data File  : C:\DX\DATA\97082071.D20
Method     : C:\DX\METHOD\ANIONS.MET
ACI Address: 1 System: 1 Inject#: 20      Detector: CDM-1
Analyst    :                      Column: AG4A/AS4A anion column
=====

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=====
Calibration Volume Dilution Points Rate Start Stop Area Reject
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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	0.88		0.000	141	623	2	
2	1.03	fluoride	179.641	7032	35872	2	0.00
3	1.60	chloride	82.111	2653	12138	1	-1.23
4	1.93	nitrite	711.573	12939	68778	1	-3.01
5	2.95	bromide	565.692	5873	37553	1	0.23
6	3.34	nitrate	1043.079	11111	90616	1	2.24
7	4.80	phosphate	535.212	1929	22732	1	-1.10
8	6.24	sulfate	1136.565	7946	129623	1	-4.10
9	8.32	oxalate	580.247	2574	48580	1	-3.11
Totals			4834.120	52199	446515		

File: 97082071.D20 Sample: S97T001574SPK

LABCORE Completed Worklist Report for Worklist# 19531

Analyst: rdm

Instrument: IC01

Book# 83420B

Method: 17533-105 Rev/Mod D-1

Worklist Comment: BY-109 IC. RCJ

Seq Type	Sample#	R A	Test	Matrix	Actual	Found	DL or Yield	Unit
1 CCB	0	@IC-QC	F	QC	1	1.70e-02	0.017	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	P04	QC	1	<1.20e-1		ug/mL
1 CCB	0	@IC-QC	S04	QC	1	<1.38e-1		ug/mL
1 CCB	0	@IC-QC	OXALATE2	QC	1	<1.05e-1		ug/mL
2 CCV	0	@IC-QC	F	QC	5.90e01	5.61e+01	95.085 % Recovery	
2 CCV	0	@IC-QC	CL	QC	7.90e01	7.14e+01	90.380 % Recovery	
2 CCV	0	@IC-QC	NO2	QC	5.44e02	5.23e+02	96.140 % Recovery	
2 CCV	0	@IC-QC	BR	QC	5.89e02	5.83e+02	98.981 % Recovery	
2 CCV	0	@IC-QC	NO3	QC	5.94e02	5.60e+02	94.276 % Recovery	
2 CCV	0	@IC-QC	P04	QC	5.45e02	5.58e+02	102.385 % Recovery	
2 CCV	0	@IC-QC	S04	QC	6.32e02	5.92e+02	93.671 % Recovery	
2 CCV	0	@IC-QC	OXALATE2	QC	5.33e02	5.17e+02	96.998 % Recovery	
3 BLNK-PREP	0	@IC-01	F-02	SOLID	1	<1.20e-2		ug/g
3 BLNK-PREP	0	@IC-01	CL-02	SOLID	1	<1.70e-2		ug/g
3 BLNK-PREP	0	@IC-01	NO2-02	SOLID	1	1.44e-01	0.144	ug/g
3 BLNK-PREP	0	@IC-01	BR-02	SOLID	1	<1.25e-1		ug/g
3 BLNK-PREP	0	@IC-01	NO3-02	SOLID	1	<1.39e-1		ug/g
3 BLNK-PREP	0	@IC-01	P04-02	SOLID	1	<1.20e-1		ug/g
3 BLNK-PREP	0	@IC-01	S04-02	SOLID	1	<1.38e-1		ug/g
3 BLNK-PREP	0	@IC-01	OXALATE2	SOLID	1	<1.05e-1		ug/g
4 SAMPLE	S97T001540	0 W	@IC-01	F-02	SOLID	N/A	3.151e+04	120.600 ug/g
4 SAMPLE	S97T001540	0 W	@IC-01	CL-02	SOLID	N/A	1.709e+02	170.900 ug/g
4 SAMPLE	S97T001540	0 W	@IC-01	NO2-02	SOLID	N/A	4.107e+03	1085.000 ug/g
4 SAMPLE	S97T001540	0 W	@IC-01	BR-02	SOLID	N/A	2.082e+03	1257.000 ug/g
4 SAMPLE	S97T001540	0 W	@IC-01	NO3-02	SOLID	N/A	7.236e+03	1397.000 ug/g
4 SAMPLE	S97T001540	0 W	@IC-01	P04-02	SOLID	N/A	1.633e+05	1206.000 ug/g
4 SAMPLE	S97T001540	0 W	@IC-01	S04-02	SOLID	N/A	1.529e+04	1387.000 ug/g
4 SAMPLE	S97T001540	0 W	@IC-01	OXALATE2	SOLID	N/A	6.363e+04	1056.000 ug/g
5 DUP	S97T001540	0 W	@IC-01	F-02	SOLID	3.15e+04	2.93e+04	7.237 RPD
5 DUP	S97T001540	0 W	@IC-01	CL-02	SOLID	<1.71e2	<1.73e2	RPD
5 DUP	S97T001540	0 W	@IC-01	NO2-02	SOLID	4.11e+03	4.32e+03	4.982 RPD
5 DUP	S97T001540	0 W	@IC-01	BR-02	SOLID	2.08e+03	2.21e+03	6.061 RPD
5 DUP	S97T001540	0 W	@IC-01	NO3-02	SOLID	7.24e+03	8.01e+03	10.098 RPD
5 DUP	S97T001540	0 W	@IC-01	P04-02	SOLID	1.63e+05	1.43e+05	13.072 RPD
5 DUP	S97T001540	0 W	@IC-01	S04-02	SOLID	1.53e+04	1.71e+04	11.111 RPD
5 DUP	S97T001540	0 W	@IC-01	OXALATE2	SOLID	6.36e+04	6.72e+04	5.505 RPD
6 SAMPLE	S97T001740	0 W	@IC-01	F-02	SOLID	N/A	2.991e+04	121.300 ug/g

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

LABCORE Completed Worklist Report for Worklist# 19531

Seq Type	Sample#	R A	Test	Matrix	Actual	Found	DL or Yield	Unit
6 SAMPLE	S97T001740	0 W	@IC-01	CL-02	SOLID	N/A	1.321e+03	171.800 ug/g
6 SAMPLE	S97T001740	0 W	@IC-01	N02-02	SOLID	N/A	2.825e+04	1091.000 ug/g
6 SAMPLE	S97T001740	0 W	@IC-01	BR-02	SOLID	N/A	1.263e+03	1263.000 ug/g
6 SAMPLE	S97T001740	0 W	@IC-01	N03-02	SOLID	N/A	6.364e+04	1405.000 ug/g
6 SAMPLE	S97T001740	0 W	@IC-01	P04-02	SOLID	N/A	9.622e+04	1213.000 ug/g
6 SAMPLE	S97T001740	0 W	@IC-01	S04-02	SOLID	N/A	4.181e+04	1395.000 ug/g
6 SAMPLE	S97T001740	0 W	@IC-01	OXALATE2	SOLID	N/A	5.663e+03	1061.000 ug/g
7 DUP	S97T001740	0 W	@IC-01	F-02	SOLID	2.99e+04	2.95e+04	1.347 RPD
7 DUP	S97T001740	0 W	@IC-01	CL-02	SOLID	1.32e+03	1.35e+03	2.247 RPD
7 DUP	S97T001740	0 W	@IC-01	N02-02	SOLID	2.82e+04	2.82e+04	0.000 RPD
7 DUP	S97T001740	0 W	@IC-01	BR-02	SOLID	<1.26e3	<1.26e3	RPD
7 DUP	S97T001740	0 W	@IC-01	N03-02	SOLID	6.36e+04	6.76e+04	6.098 RPD
7 DUP	S97T001740	0 W	@IC-01	P04-02	SOLID	9.62e+04	1.05e+05	8.748 RPD
7 DUP	S97T001740	0 W	@IC-01	S04-02	SOLID	4.18e+04	3.83e+04	8.739 RPD
7 DUP	S97T001740	0 W	@IC-01	OXALATE2	SOLID	5.66e+03	5.16e+03	9.242 RPD
8 SPK	S97T001740	0 W	@IC-01	F-02	SOLID	5.90e01	8.07e+01	136.780 % Recovery
8 SPK	S97T001740	0 W	@IC-01	CL-02	SOLID	7.90e01	7.89e+01	99.873 % Recovery
8 SPK	S97T001740	0 W	@IC-01	N02-02	SOLID	5.44e02	5.90e+02	108.456 % Recovery
8 SPK	S97T001740	0 W	@IC-01	BR-02	SOLID	5.89e02	5.72e+02	97.114 % Recovery
8 SPK	S97T001740	0 W	@IC-01	N03-02	SOLID	5.94e02	6.19e+02	104.209 % Recovery
8 SPK	S97T001740	0 W	@IC-01	P04-02	SOLID	5.45e02	6.29e+02	115.413 % Recovery
8 SPK	S97T001740	0 W	@IC-01	S04-02	SOLID	6.32e02	6.48e+02	102.532 % Recovery
8 SPK	S97T001740	0 W	@IC-01	OXALATE2	SOLID	5.33e02	5.21e+02	97.749 % Recovery
10 DUP	S97T001746	0 W	@IC-01	F-02	SOLID	2.90e+04	9.23e+04	104.369 RPD
10 DUP	S97T001746	0 W	@IC-01	CL-02	SOLID	1.18e+03	<3.48e2	RPD
10 DUP	S97T001746	0 W	@IC-01	N02-02	SOLID	2.67e+04	3.55e+03	153.058 RPD
10 DUP	S97T001746	0 W	@IC-01	BR-02	SOLID	<2.54e3	2.79e+03	RPD
10 DUP	S97T001746	0 W	@IC-01	N03-02	SOLID	5.97e+04	5.96e+03	163.692 RPD
10 DUP	S97T001746	0 W	@IC-01	P04-02	SOLID	9.47e+04	1.07e+05	12.196 RPD
10 DUP	S97T001746	0 W	@IC-01	S04-02	SOLID	3.64e+04	4.35e+04	17.772 RPD
10 DUP	S97T001746	0 W	@IC-01	OXALATE2	SOLID	4.96e+03	2.91e+04	141.750 RPD

Final page for worklist# 19531

Analyst Signature

Date

Analyst Signature

Date

James M. Lyle
Reviewer Signature Date 8/29/97

07/28/97 09:58
A-0004-1

Page: 1

LABCORE Data Entry Template for Worklist# 19531

Analyst: POW Instrument: IC0 1 Book# B3NWBMethod: LA-533-105 Rev/Mod D-1

Worklist Comment: BY-109 IC. RCJ

S Type	Sample#	R A	Test	Matrix	Group#	Project
1 CCB			@IC-QC	QC		
2 CCV			@IC-QC	QC		
3 BLNK-PREP			@IC-01	SOLID		
4 SAMPLE	S97T001540 0 W		@IC-01	SOLID	97000412	BY-109 (P)
Analytes Requested: BR-02 , CL-02 , F-02 , NO2-02 , NO3-02 , OXALATE2, PO4-02 , SO4-02						
5 DUP	S97T001540 0 W		@IC-01	SOLID		
6 SAMPLE	S97T001740 0 W		@IC-01	SOLID	97000412	BY-109 (P)
Analytes Requested: BR-02 , CL-02 , F-02 , NO2-02 , NO3-02 , OXALATE2, PO4-02 , SO4-02						
7 DUP	S97T001740 0 W		@IC-01	SOLID		
8 SPK	S97T001740 0 W		@IC-01	SOLID		
9 SAMPLE	S97T001746 0 W		@IC-01	SOLID	97000411	BY-109 (P)
Analytes Requested: BR-02 , CL-02 , F-02 , NO2-02 , NO3-02 , OXALATE2, PO4-02 , SO4-02						
10 DUP	S97T001746 0 W		@IC-01	SOLID		

Final page for worklist # 19531

Analyst Signature POW Date 8/22/97

Analyst Signature _____ Date _____

uploaded 8-27-97
John Wall
~~8-29-97~~ *8/27/97*
 19531AUG.CSV

Data Entry Comments:

S97T001746 had poor dup & will be rerun
on wk # 20111 The rest were
validated 8/29/97 JMW

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

Sample Name: BLK Date: 08/21/1997 20:10:54
 Data File : C:\DX\DATA\97082151.D01
 Method : C:\DX\METHOD\KIT.MET
 ACI Address: 1 System: 1 Inject#: 1 Detector: CDM-1
 Analyst : *James Fay for RDM* Column: AG4A/AS4A anion column

Calibration Volume Dilution Points Rate Start Stop Area Reject
 External 1 1 3000 5Hz 0.00 10.00 30

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	1.11	fluoride	0.017	20	54	1	5.40
2	1.29		0.000	26	131	1	
3	1.53	chloride	-0.023	23	97	1	-5.35
4	3.28	nitrate	0.028	107	720	1	0.92
5	6.03	sulfate	-0.107	131	1877	1	-5.83
Totals			-0.086	307	2879		

File: 97082151.D01 Sample: BLK

SIGNATURE ABOVE REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 236 TO 247

Sample Name: 83N20-B Date: 08/21/1997 20:39:42
 Data File : C:\DX\DATA\97082151.D02
 Method : C:\DX\METHOD\KIT.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	3000	5Hz	0.00	10.00		30

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

Pk. Num.	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.84		0.000	94	398	2	
2	1.00	fluoride	56.099	2643	11284	2	-4.76
3	1.31		0.000	21	103	1	
4	1.55	chloride	71.411	2240	9922	1	-4.53
5	1.87	nitrite	522.789	9300	47709	1	-4.76
6	2.85	bromide	583.063	5416	34737	1	0.12
7	3.25	nitrate	560.356	5873	44665	1	0.10
8	4.64	phosphate	557.500	1850	20767	1	-5.95
9	6.03	sulfate	592.110	4683	62061	1	-5.83
10	7.95	oxalate	516.846	2254	40576	1	-6.29
Totals			3460.174	34373	272221		

File: 97082151.D02 Sample: 83N20-B

```

=====
Sample Name: PREP BLK                      Date: 08/21/1997 22:26:50
Data File  : C:\DX\DATA\97082151.D03
Method     : C:\DX\METHOD\KIT.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      1    3000  5Hz    0.00 10.00      30
=====

```

```

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

```

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	1.54	chloride	-0.012	65	246	1	-4.94
2	1.87	nitrite	0.144	195	920	1	-4.76
3	2.87	bromide	0.083	52	283	1	0.58
4	3.30	nitrate	0.025	107	700	1	1.54
5	4.67	phosphate	0.078	20	214	1	-5.41
6	6.03	sulfate	-0.228	48	691	1	-5.83
Totals			0.090	487	3053		

File: 97082151.D03 Sample: PREP BLK

=====

Sample Name: S97T001540	Date: 08/21/1997 22:51:55
Data File : C:\DX\DATA\97082151.D05	
Method : C:\DX\METHOD\KIT.MBT	
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	51	3000	5Hz	0.00	10.00		30

=====

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.84		0.000	124	479	2	
2	1.00	fluoride	159.836	14752	65146	2	-4.76
3	1.53	chloride	-0.045	91	393	1	-5.35
4	1.85	nitrite	20.833	667	3388	1	-5.44
5	2.85	bromide	10.563	165	1019	1	0.12
6	3.27	nitrate	36.708	861	6175	1	0.51
7	4.59	phosphate	828.372	5733	64459	1	-7.03
8	6.03	sulfate	77.583	1371	17985	1	-5.83
9	7.89	oxalate	322.796	2786	50378	1	-6.92
Totals			1456.646	26549	209421		

=====

File: 97082151.D05 Sample: S97T001540

```

=====
Sample Name: S97T001540DUP      Date: 08/21/1997 23:09:15
Data File  : C:\DX\DATA\97082151.D06
Method     : C:\DX\METHOD\KIT.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      51    3000  5Hz    0.00  10.00      30
=====

```

```

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

```

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.84		0.000	120	494	2	
2	0.99	fluoride	147.074	13868	59910	2	-5.40
3	1.53	chloride	-0.106	88	377	1	-5.35
4	1.85	nitrite	21.689	702	3544	1	-5.78
5	2.84	bromide	11.076	173	1079	1	-0.35
6	3.26	nitrate	40.200	925	6716	1	0.31
7	4.59	phosphate	718.246	4879	55271	1	-7.03
8	6.03	sulfate	86.031	1504	19636	1	-5.83
9	7.89	oxalate	337.513	2957	52727	1	-6.92
Totals			1361.723	25216	199753		

File: 97082151.D06 Sample: S97T001540DUP

```

=====
Sample Name: S97T001740                      Date: 08/21/1997 23:21:16
Data File  : C:\DX\DATA\97082151.D07
Method     : C:\DX\METHOD\KIT.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 51 3000 5Hz 0.00 10.00 30

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.84		0.000	123	488	1	
2	1.00	fluoride	150.901	14446	61479	1	-4.76
3	1.53	chloride	6.664	475	2146	1	-5.35
4	1.85	nitrite	142.529	5063	25600	1	-5.44
5	2.85	bromide	2.782	22	112	1	0.12
6	3.22	nitrate	321.148	6577	50706	1	-0.92
7	4.61	phosphate	485.545	3317	36528	1	-6.49
8	5.97	sulfate	210.952	2815	44330	1	-6.67
9	7.95	oxalate	28.577	257	4560	1	-6.29
Totals			1349.097	33096	225949		

File: 97082151.D07 Sample: S97T001740

Sample Name: S97T001740DUP Date: 08/22/1997 01:42:01
 Data File : C:\DX\DATA\97082151.D08
 Method : C:\DX\METHOD\KIT.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	51	3000	5Hz	0.00	10.00		30
----------	---	----	------	-----	------	-------	--	----

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.83		0.000	161	714	2	
2	0.99	fluoride	149.307	14493	60825	2	-5.40
3	1.53	chloride	6.843	497	2193	1	-5.35
4	1.85	nitrite	142.669	5113	25626	1	-5.78
5	2.85	bromide	2.656	19	97	1	-0.12
6	3.21	nitrate	341.587	7054	53947	1	-1.13
7	4.59	phosphate	530.990	3422	40121	1	-7.03
8	6.03	sulfate	193.281	3100	40804	1	-5.83
9	7.95	oxalate	26.086	235	4180	1	-6.29
Totals			1393.421	34094	228508		

File: 97082151.D08 Sample: S97T001740DUP

Sample Name: S97T001740SPK Date: 08/22/1997 01:54:58
 Data File : C:\DX\DATA\97082151.D09
 Method : C:\DX\METHOD\KIT.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	51	3000	5Hz	0.00	10.00		30

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.84		0.000	247	1045	2	
2	1.00	fluoride	191.235	18018	78035	2	-4.76
3	1.54	chloride	46.102	2751	12615	1	-4.94
4	1.86	nitrite	437.729	15186	79236	1	-5.10
5	2.83	bromide	286.228	5521	33747	1	-0.58
6	3.20	nitrate	630.600	12517	100392	1	-1.54
7	4.61	phosphate	799.840	5644	62057	1	-6.49
8	5.97	sulfate	535.115	7282	111079	1	-6.67
9	7.95	oxalate	289.228	2547	45043	1	-6.29
Totals			3216.078	69712	523248		

File: 97082151.D09 Sample: S97T001740SPK

Sample Name: S97T001746 Date: 08/22/1997 02:29:16
 Data File : C:\DX\DATA\97082151.D11
 Method : C:\DX\METHOD\KIT.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	101	3000	5Hz	0.00	10.00		30

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.85		0.000	73	314	1	
2	1.00	fluoride	143.594	6955	29356	1	-4.76
3	1.54	chloride	5.873	277	1179	1	-4.94
4	1.85	nitrite	132.582	2357	11812	1	-5.44
5	2.86	bromide	4.615	11	59	1	0.35
6	3.25	nitrate	296.152	3147	23715	1	-0.10
7	4.64	phosphate	469.797	1565	17422	1	-5.95
8	6.03	sulfate	180.807	1538	20666	1	-5.83
9	7.95	oxalate	24.613	115	2104	1	-6.29
Totals			1258.033	16038	106627		

File: 97082151.D11 Sample: S97T001746

Sample Name: S97T001746DUP Date: 08/22/1997 02:48:59
 Data File : C:\DX\DATA\97082151.D12
 Method : C:\DX\METHOD\KIT.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	101	3000	5Hz	0.00	10.00		30

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.84		0.000	72	283	1	
2	1.00	fluoride	455.637	22389	93996	1	-4.76
3	1.53	chloride	-2.156	32	121	1	-5.35
4	1.85	nitrite	17.534	252	1198	1	-5.44
5	2.85	bromide	13.768	103	598	1	-0.12
6	3.27	nitrate	29.414	385	2796	1	0.72
7	4.61	phosphate	528.710	1715	19666	1	-6.49
8	6.03	sulfate	214.908	1823	24042	1	-5.83
9	7.95	oxalate	143.602	637	11271	1	-6.29
Totals			1401.417	27408	153971		

File: 97082151.D12 Sample: S97T001746DUP

LABCORE Completed Worklist Report for Worklist# 19532

Analyst: krq

Instrument: IC01

Book# 83N20B

Method: 14-533-105 Rev/Mod D-1

Worklist Comment: BY-109 IC. RCJ

Seq Type	Sample# R A	Test	Matrix	Actual	Found	DL or Yield	Unit
1 CCB	0	@IC-QC F	QC	1	2.49e-02	0.024	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 P04	QC	1	<1.20e-1		ug/mL
1 CCB	0	@IC-QC S04	QC	1	<1.38e-1		ug/mL
1 CCB	0	@IC-QC OXALATE2	QC	1	<1.05e-1		ug/mL
2 CCV	0	@IC-QC F	QC	5.90e01	5.82e+01	98.644 % Recovery	
2 CCV	0	@IC-QC CL	QC	7.90e01	7.39e+01	93.544 % Recovery	
2 CCV	0	@IC-QC NO2	QC	5.44e02	5.47e+02	100.551 % Recovery	
2 CCV	0	@IC-QC BR	QC	5.89e02	5.91e+02	100.340 % Recovery	
2 CCV	0	@IC-QC NO3	QC	5.94e02	5.72e+02	96.295 % Recovery	
2 CCV	0	@IC-QC P04	QC	5.45e02	5.62e+02	103.119 % Recovery	
2 CCV	0	@IC-QC S04	QC	6.32e02	6.26e+02	99.051 % Recovery	
2 CCV	0	@IC-QC OXALATE2	QC	5.33e02	5.27e+02	98.874 % Recovery	
3 BLNK-PREP	0	@IC-01 F-02	SOLID	1	<1.20e-2		ug/g
3 BLNK-PREP	0	@IC-01 CL-02	SOLID	1	<1.70e-2		ug/g
3 BLNK-PREP	0	@IC-01 NO2-02	SOLID	1	<1.08e-1		ug/g
3 BLNK-PREP	0	@IC-01 BR-02	SOLID	1	<1.25e-1		ug/g
3 BLNK-PREP	0	@IC-01 NO3-02	SOLID	1	<1.39e-1		ug/g
3 BLNK-PREP	0	@IC-01 P04-02	SOLID	1	<1.20e-1		ug/g
3 BLNK-PREP	0	@IC-01 S04-02	SOLID	1	<1.38e-1		ug/g
3 BLNK-PREP	0	@IC-01 OXALATE2	SOLID	1	<1.05e-1		ug/g
4 SAMPLE	S97T001543 0 W	@IC-01 F-02	SOLID	N/A	4.312e+04	100.100	ug/g
4 SAMPLE	S97T001543 0 W	@IC-01 CL-02	SOLID	N/A	< 1.418e+02	141.800	ug/g
4 SAMPLE	S97T001543 0 W	@IC-01 NO2-02	SOLID	N/A	2.220e+03	900.600	ug/g
4 SAMPLE	S97T001543 0 W	@IC-01 BR-02	SOLID	N/A	1.518e+03	1043.000	ug/g
4 SAMPLE	S97T001543 0 W	@IC-01 NO3-02	SOLID	N/A	4.194e+03	1159.000	ug/g
4 SAMPLE	S97T001543 0 W	@IC-01 P04-02	SOLID	N/A	1.414e+05	1001.000	ug/g
4 SAMPLE	S97T001543 0 W	@IC-01 S04-02	SOLID	N/A	4.301e+04	1151.000	ug/g
4 SAMPLE	S97T001543 0 W	@IC-01 OXALATE2	SOLID	N/A	4.532e+04	875.800	ug/g
5 DUP	S97T001543 0 W	@IC-01 F-02	SOLID	4.31e+04	3.71e+04	14.963 RPD	
5 DUP	S97T001543 0 W	@IC-01 CL-02	SOLID	<1.42e2	<1.36e2		RPD
5 DUP	S97T001543 0 W	@IC-01 NO2-02	SOLID	2.22e+03	2.12e+03	4.608 RPD	
5 DUP	S97T001543 0 W	@IC-01 BR-02	SOLID	1.52e+03	1.37e+03	10.381 RPD	
5 DUP	S97T001543 0 W	@IC-01 NO3-02	SOLID	4.19e+03	3.36e+03	21.987 RPD	
5 DUP	S97T001543 0 W	@IC-01 P04-02	SOLID	1.41e+05	1.25e+05	12.030 RPD	
5 DUP	S97T001543 0 W	@IC-01 S04-02	SOLID	4.30e+04	3.08e+04	33.062 RPD	
5 DUP	S97T001543 0 W	@IC-01 OXALATE2	SOLID	4.53e+04	3.91e+04	14.692 RPD	
6 SPK	S97T001543 0 W	@IC-01 F-02	SOLID	5.90e01	1.10e+01	18.644 % Recovery	

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

LABCORE Completed Worklist Report for Worklist# 19532

Seq Type	Sample#	R A	Test	Matrix	Actual	Found	DL or Yield	Unit
6 SPK	S97T001543	0 W	②IC-01	CL-02	SOLID	7.90e01	7.27e+01	92.025 % Recovery
6 SPK	S97T001543	0 W	②IC-01	NO2-02	SOLID	5.44e02	5.13e+02	94.301 % Recovery
6 SPK	S97T001543	0 W	②IC-01	BR-02	SOLID	5.89e02	5.65e+02	95.925 % Recovery
6 SPK	S97T001543	0 W	②IC-01	NO3-02	SOLID	5.94e02	5.69e+02	95.791 % Recovery
6 SPK	S97T001543	0 W	②IC-01	PO4-02	SOLID	5.45e02	3.91e+02	71.743 % Recovery
6 SPK	S97T001543	0 W	②IC-01	SO4-02	SOLID	6.32e02	5.71e+02	90.348 % Recovery
6 SPK	S97T001543	0 W	②IC-01	OXALATE2	SOLID	5.33e02	4.72e+02	88.555 % Recovery
7 SAMPLE	S97T001546	0 W	②IC-01	F-02	SOLID	N/A	5.172e+04	100.100 ug/g
7 SAMPLE	S97T001546	0 W	②IC-01	CL-02	SOLID	N/A	2.008e+03	141.700 ug/g
7 SAMPLE	S97T001546	0 W	②IC-01	NO2-02	SOLID	N/A	4.079e+04	900.400 ug/g
7 SAMPLE	S97T001546	0 W	②IC-01	BR-02	SOLID	N/A	1.042e+03	1042.000 ug/g
7 SAMPLE	S97T001546	0 W	②IC-01	NO3-02	SOLID	N/A	8.911e+04	1159.000 ug/g
7 SAMPLE	S97T001546	0 W	②IC-01	PO4-02	SOLID	N/A	2.627e+03	1001.000 ug/g
7 SAMPLE	S97T001546	0 W	②IC-01	SO4-02	SOLID	N/A	1.133e+05	1151.000 ug/g
7 SAMPLE	S97T001546	0 W	②IC-01	OXALATE2	SOLID	N/A	1.100e+04	875.400 ug/g
8 DUP	S97T001546	0 W	②IC-01	F-02	SOLID	5.17e+04	5.03e+04	2.745 RPD
8 DUP	S97T001546	0 W	②IC-01	CL-02	SOLID	2.01e+03	1.94e+03	3.544 RPD
8 DUP	S97T001546	0 W	②IC-01	NO2-02	SOLID	4.08e+04	4.01e+04	1.731 RPD
8 DUP	S97T001546	0 W	②IC-01	BR-02	SOLID	<1.04e3	<1.01e3	RPD
8 DUP	S97T001546	0 W	②IC-01	NO3-02	SOLID	8.91e+04	8.56e+04	4.007 RPD
8 DUP	S97T001546	0 W	②IC-01	PO4-02	SOLID	2.63e+03	3.80e+03	36.392 RPD
8 DUP	S97T001546	0 W	②IC-01	SO4-02	SOLID	1.13e+05	1.13e+05	0.000 RPD
8 DUP	S97T001546	0 W	②IC-01	OXALATE2	SOLID	1.10e+04	1.10e+04	0.000 RPD
9 SAMPLE	S97T001579	0 W	②IC-01	F-02	SOLID	N/A	1.650e+04	95.980 ug/g
9 SAMPLE	S97T001579	0 W	②IC-01	CL-02	SOLID	N/A	1.216e+03	136.000 ug/g
9 SAMPLE	S97T001579	0 W	②IC-01	NO2-02	SOLID	N/A	2.155e+04	863.900 ug/g
9 SAMPLE	S97T001579	0 W	②IC-01	BR-02	SOLID	N/A	9.938e+02	1000.000 ug/g
9 SAMPLE	S97T001579	0 W	②IC-01	NO3-02	SOLID	N/A	6.871e+04	1112.000 ug/g
9 SAMPLE	S97T001579	0 W	②IC-01	PO4-02	SOLID	N/A	1.508e+05	959.800 ug/g
9 SAMPLE	S97T001579	0 W	②IC-01	SO4-02	SOLID	N/A	4.076e+03	1104.000 ug/g
9 SAMPLE	S97T001579	0 W	②IC-01	OXALATE2	SOLID	N/A	2.948e+03	839.700 ug/g
10 DUP	S97T001579	0 W	②IC-01	F-02	SOLID	1.65e+04	1.61e+04	2.454 RPD
10 DUP	S97T001579	0 W	②IC-01	CL-02	SOLID	1.22e+03	9.89e+02	20.914 RPD
10 DUP	S97T001579	0 W	②IC-01	NO2-02	SOLID	2.16e+04	2.11e+04	2.342 RPD
10 DUP	S97T001579	0 W	②IC-01	BR-02	SOLID	<1.00e3	<1.00e3	RPD
10 DUP	S97T001579	0 W	②IC-01	NO3-02	SOLID	6.87e+04	8.11e+04	16.555 RPD
10 DUP	S97T001579	0 W	②IC-01	PO4-02	SOLID	1.51e+05	1.50e+05	0.664 RPD
10 DUP	S97T001579	0 W	②IC-01	SO4-02	SOLID	4.88e+03	4.02e+03	19.326 RPD
10 DUP	S97T001579	0 W	②IC-01	OXALATE2	SOLID	2.95e+03	1.87e+03	44.813 RPD

Final page for worklist# 19532

Analyst Signature

Date

Analyst Signature

Date

James L. Lyle 8/29/97
Reviewer Signature Date

LABCORE Data Entry Template for Worklist# 19532

Analyst: SPK Instrument: IC0 1 Book# 83W20-B
Method: LA-533-105 Rev/Mod D-1
Worklist Comment: BY-109 IC. RCJ

S Type	Sample#	R A	Test	Matrix	Group#	Project
1 CCB			@IC-QC	QC		
2 CCV			@IC-QC	QC		
3 BLNK-PREP			@IC-01	SOLID		
4 SAMPLE	S97T001543 0 W	@IC-01	SOLID		97000411	BY-109 (P)
Analytes Requested: BR-02 , CL-02 , F-02 , NO2-02 , NO3-02 , OXALATE2, PO4-02 , SO4-02						
5 DUP	S97T001543 0 W	@IC-01	SOLID			
6 SPK	S97T001543 0 W	@IC-01	SOLID			
7 SAMPLE	S97T001546 0 W	@IC-01	SOLID		97000411	BY-109 (P)
Analytes Requested: BR-02 , CL-02 , F-02 , NO2-02 , NO3-02 , OXALATE2, PO4-02 , SO4-02						
8 DUP	S97T001546 0 W	@IC-01	SOLID			
9 SAMPLE	S97T001579 0 W	@IC-01	SOLID		97000412	BY-109 (P)
Analytes Requested: BR-02 , CL-02 , F-02 , NO2-02 , NO3-02 , OXALATE2, PO4-02 , SO4-02						
10 DUP	S97T001579 0 W	@IC-01	SOLID			

Final page for worklist # 19532

Analyst Signature

Date

Analyst Signature

Date

Data Entry Comments:

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

Sample Name: CCB

Date: 08/22/1997 07:44:30

Data File : C:\DX\DATA\97082251.D01

Method : C:\DX\METHOD\KIT.MET

ACI Address: 1 System: 1 Inject#: 1

Detector: CDM-1

Analyst: *Barry R. Jones* Column: AG4A/AS4A anion column

Calibration Volume Dilution Points Rate Start Stop Area Reject

External 1 1 3000 5Hz 0.00 10.00 30

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.84		0.000	8	32	1	
2	1.01	fluoride	0.024	58	215	1	-4.13
3	1.32		0.000	107	678	1	
4	3.29	nitrate	-0.040	32	187	1	1.33
5	6.08	sulfate	-0.070	171	2241	1	-5.00

Totals			-0.086	376	3353		
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File: 97082251.D01 Sample: CCB

Sample Name: CCV 83N20-B Date: 08/22/1997 08:03:26
 Data File : C:\DX\DATA\97082251.D02
 Method : C:\DX\METHOD\KIT.MET
 ACI Address: 1 System: 1 Inject#: 2 Detector: CDM-1
 Analyst : *[Signature]* Column: AG4A/AS4A anion column

Calibration Volume Dilution Points Rate Start Stop Area Reject
 External 1 101 3000 5Hz 0.00 10.00 30

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.84		0.000	102	436	2	
2	1.00	fluoride	58.212	2736	11720	2	-4.76
3	1.30		0.000	78	467	1	
4	1.53	chloride	73.916	2373	10260	1	-5.35
5	1.85	nitrite	546.673	9863	49901	1	-5.44
6	2.82	bromide	591.455	5677	35249	1	-1.05
7	3.21	nitrate	572.264	6102	45614	1	-1.33
8	4.64	phosphate	561.644	1897	20925	1	-5.95
9	6.03	sulfate	626.249	5066	65567	1	-5.83
10	7.89	oxalate	526.609	2098	41354	1	-6.92
Totals			3557.021	35993	281494		

File: 97082251.D02 Sample: CCV 83N20-B

Sample Name: BLANK PREP WL#19532 Date: 08/22/1997 08:40:27
 Data File : C:\DX\DATA\97082251.D04
 Method : C:\DX\METHOD\KIT.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	1	3000	5Hz	0.00	10.00		30

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	1.55	chloride	-0.021	37	127	1	-4.53
2	1.85	nitrite	0.096	107	479	1	-5.44
3	3.27	nitrate	0.015	94	618	1	0.51
Totals			0.090	237	1224

Sample Name: S97T001543 SAMPLE Date: 08/22/1997 08:51:35
 Data File : C:\DX\DATA\97082251.D05
 Method : C:\DX\METHOD\KIT.MET
 ACI Address: 1 System: 1 Inject#: 5 Detector: CDM-1
 Analyst *[Signature]* Column: AG4A/AS4A anion column

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area	Reject
External	1	41	3000	5Hz	0.00	10.00		30

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.85		0.000	247	1234	2	
2	1.00	fluoride	211.973	25133	107817	2	-4.76
3	1.53	chloride	-0.420	60	268	1	-5.76
4	1.85	nitrite	10.913	418	2061	1	-5.78
5	2.83	bromide	7.462	141	870	1	-0.82
6	3.25	nitrate	20.620	613	4465	1	-0.10
7	4.59	phosphate	695.162	5854	67539	1	-7.03
8	6.03	sulfate	211.434	4257	54780	1	-5.83
9	7.89	oxalate	222.814	2346	43132	1	-6.92
Totals			1379.958	39068	282166		

File: 97082251.D05 Sample: S97T001543 SAMPLE

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Sample Name: S97T001543 DUP Date: 08/22/1997 11:17:38

Data File : C:\DX\DATA\97082251.D08

Method : C:\DX\METHOD\KIT.MET

ACI Address: 1 System: 1 Inject#: 8 Detector: CDM-1

Analyst: *[Signature]* Column: AG4A/AS4A anion column

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Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area	Reject
External	1	41	3000	5Hz	0.00	10.00		30

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.84		0.000	128	528	2	
2	1.00	fluoride	190.218	21892	96684	2	-4.76
3	1.54	chloride	-0.511	55	239	1	-4.94
4	1.85	nitrite	10.870	405	2052	1	-5.78
5	2.84	bromide	7.042	134	809	1	-0.35
6	3.25	nitrate	17.236	533	3814	1	0.10
7	4.61	phosphate	638.955	5636	61635	1	-6.49
8	6.03	sulfate	158.043	3137	41464	1	-5.83
9	7.89	oxalate	200.313	1974	38714	1	-6.92
Totals			1222.167	33893	245938		

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File: 97082251.D08 Sample: S97T001543 DUP

Sample Name: S97T001543 SPIKE Date: 08/22/1997 11:28:23
 Data File : C:\DX\DATA\97082251.D09
 Method : C:\DX\METHOD\KIT.MET
 ACI Address: 1 System: 1 Inject#: 9 Detector: CDM-1
 Analyst: *[Signature]* Column: AG4A/AS4A anion column

Calibration Volume Dilution Points Rate Start Stop Area Reject

External 1 41 3000 5Hz 0.00 10.00 30

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.84		0.000	223	962	2	
2	1.00	fluoride	216.367	25698	110067	2	-4.76
3	1.53	chloride	29.082	2230	9953	1	-5.35
4	1.85	nitrite	215.977	9672	48558	1	-5.44
5	2.82	bromide	233.444	5557	34249	1	-1.05
6	3.21	nitrate	248.246	6354	48750	1	-1.13
7	4.59	phosphate	851.555	7466	84468	1	-7.03
8	5.97	sulfate	439.743	7759	113605	1	-6.67
9	7.89	oxalate	411.610	4618	81012	1	-6.92
Totals			2646.024	69576	531624		

File: 97082251.D09 Sample: S97T001543 SPIKE

Sample Name: S97T001546 SAMPLE Date: 08/22/1997 09:04:35
 Data File : C:\DX\DATA\97082251.D06
 Method : C:\DX\METHOD\KIT.MET
 ACI Address: 1 System: 1 Inject#: 6 Detector: CDM-1
 Analyst *[Signature]* Column: AG4A/AS4A anion column

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area	Reject
External	1	41	3000	5Hz	0.00	10.00		30

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.84		0.000	175	743	2	
2	1.00	fluoride	254.290	28994	129498	2	-4.76
3	1.53	chloride	9.875	796	3621	1	-5.76
4	1.85	nitrite	200.549	8709	45069	1	-5.78
5	2.83	bromide	2.058	16	86	1	-0.82
6	3.17	nitrate	438.164	11100	86518	1	-2.36
7	4.64	phosphate	12.918	100	1089	1	-5.95
8	5.97	sulfate	556.939	10769	145105	1	-6.67
9	7.95	oxalate	54.094	593	10470	1	-6.29
Totals			1528.886	61251	422199		

File: 97082251.D06 Sample: S97T001546 SAMPLE

Sample Name: S97T001546 DUP- Date: 08/22/1997 11:41:20
 Data File : C:\DX\DATA\97082251.D10
 Method : C:\DX\METHOD\KIT.MET
 ACI Address: 1 System: 1 Inject#: 10 Detector: CDM-1
 Analyst *[Signature]* Column: AG4A/AS4A anion column

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area	Reject
External	1	41	3000	5Hz	0.00	10.00		30

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.84		0.000	183	763	1	
2	1.00	fluoride	254.166	29989	129435	1	-4.76
3	1.53	chloride	9.836	817	3608	1	-5.35
4	1.85	nitrite	202.723	8974	45561	1	-5.44
5	2.84	bromide	1.894	14	62	1	-0.35
6	3.19	nitrate	432.939	10741	85469	1	-1.74
7	4.64	phosphate	19.245	151	1660	1	-5.95
8	5.97	sulfate	573.023	10988	149504	1	-6.67
9	7.95	oxalate	55.536	606	10745	1	-6.29
Totals			1549.362	62462	426806		

File: 97082251.D10 Sample: S97T001546 DUP

Sample Name: S97T001579 SAMPLE Date: 08/22/1997 09:16:11
 Data File : C:\DX\DATA\97082251.D07
 Method : C:\DX\METHOD\KIT.MET
 ACI Address: 1 System: 1 Inject#: 7 Detector: CDM-1
 Analyst: *[Signature]* Column: AG4A/AS4A anion column

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area	Reject
External	1	41	3000	5Hz	0.00	10.00		30

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.84		0.000	144	601	2	
2	1.00	fluoride	84.603	10136	42760	2	-4.76
3	1.53	chloride	6.231	488	2431	1	-5.35
4	1.85	nitrite	110.486	4843	24671	1	-5.78
5	2.83	bromide	3.436	52	286	1	-0.82
6	3.19	nitrate	352.202	8895	69328	1	-1.95
7	4.59	phosphate	772.974	6755	75866	1	-7.03
8	6.03	sulfate	24.995	642	8941	1	-5.83
9	7.95	oxalate	15.109	168	3071	1	-6.29
Totals			1370.037	32124	227955		

File: 97082251.D07 Sample: S97T001579 SAMPLE

Sample Name: S97T001579 DUP Date: 08/22/1997 12:01:35
 Data File : C:\DX\DATA\97082251.D11
 Method : C:\DX\METHOD\KIT.MET
 ACI Address: 1 System: 1 Inject#: 11 Detector: CDM-1
 Analyst : *[Signature]* Column: AG4A/AS4A anion column

Calibration Volume Dilution Points Rate Start Stop Area Reject
 External 1 41 3000 5Hz 0.00 10.00 30

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.84		0.000	159	721	2	
2	1.00	fluoride	82.243	9737	41557	2	-4.76
3	1.53	chloride	5.052	464	2047	1	-5.35
4	1.85	nitrite	107.837	4769	24071	1	-5.78
5	2.83	bromide	3.532	53	300	1	-0.58
6	3.19	nitrate	414.427	10246	81755	1	-1.95
7	4.59	phosphate	765.848	6665	75096	1	-7.03
8	6.03	sulfate	20.526	587	7864	1	-5.83
9	7.95	oxalate	9.546	113	2020	1	-6.29
Totals			1409.011	32794	235429		

File: 97082251.D11 Sample: S97T001579 DUP

LABCORE Completed Worklist Report for Worklist# 19533

Analyst: krq

Instrument: IC02

Book# 83N20B

Method: 4-533705 Rev/Mod D-1

Worklist Comment: BY-109 IC. RCJ

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 CCV	0	@IC-QC F	QC	5.99e01	5.20e+01	88.136 % Recovery	
2 CCV	0	@IC-QC CL	QC	7.90e01	8.06e+01	102.025 % Recovery	
2 CCV	0	@IC-QC NO2	QC	5.44e02	5.81e+02	106.801 % Recovery	
2 CCV	0	@IC-QC BR	QC	5.89e02	5.90e+02	100.170 % Recovery	
2 CCV	0	@IC-QC NO3	QC	5.94e02	6.08e+02	102.357 % Recovery	
2 CCV	0	@IC-QC PO4	QC	5.45e02	5.94e+02	108.991 % Recovery	
2 CCV	0	@IC-QC SO4	QC	6.32e02	6.67e+02	105.538 % Recovery	
2 CCV	0	@IC-QC OXALATE2	QC	5.33e02	5.28e+02	99.062 % Recovery	
3 BLNK-PREP	0	@IC-01 F-02	SOLID	1	<1.20e-2		ug/g
3 BLNK-PREP	0	@IC-01 CL-02	SOLID	1	<1.70e-2		ug/g
3 BLNK-PREP	0	@IC-01 NO2-02	SOLID	1	1.32e-01	0.132	ug/g
3 BLNK-PREP	0	@IC-01 BR-02	SOLID	1	<1.25e-1		ug/g
3 BLNK-PREP	0	@IC-01 NO3-02	SOLID	1	1.78e-01	0.178	ug/g
3 BLNK-PREP	0	@IC-01 PO4-02	SOLID	1	<1.20e-1		ug/g
3 BLNK-PREP	0	@IC-01 SO4-02	SOLID	1	<1.38e-1		ug/g
3 BLNK-PREP	0	@IC-01 OXALATE2	SOLID	1	<1.05e-1		ug/g
4 SAMPLE	S97T001551 0 W	@IC-01 F-02	SOLID	N/A	2.465e+04	97.620	ug/g
4 SAMPLE	S97T001551 0 W	@IC-01 CL-02	SOLID	N/A	2.562e+03	138.300	ug/g
4 SAMPLE	S97T001551 0 W	@IC-01 NO2-02	SOLID	N/A	4.776e+04	878.600	ug/g
4 SAMPLE	S97T001551 0 W	@IC-01 BR-02	SOLID	N/A	1.017e+03	1017.000	ug/g
4 SAMPLE	S97T001551 0 W	@IC-01 NO3-02	SOLID	N/A	8.156e+04	1131.000	ug/g
4 SAMPLE	S97T001551 0 W	@IC-01 PO4-02	SOLID	N/A	1.302e+04	976.200	ug/g
4 SAMPLE	S97T001551 0 W	@IC-01 SO4-02	SOLID	N/A	9.364e+04	1123.000	ug/g
4 SAMPLE	S97T001551 0 W	@IC-01 OXALATE2	SOLID	N/A	2.730e+04	854.000	ug/g
5 DUP	S97T001551 0 W	@IC-01 F-02	SOLID	2.46e+04	2.48e+04	0.810	RPD
5 DUP	S97T001551 0 W	@IC-01 CL-02	SOLID	2.56e+03	2.60e+03	1.550	RPD
5 DUP	S97T001551 0 W	@IC-01 NO2-02	SOLID	4.77e+04	4.62e+04	3.195	RPD
5 DUP	S97T001551 0 W	@IC-01 BR-02	SOLID	<1.02e3	<1.01e3		RPD
5 DUP	S97T001551 0 W	@IC-01 NO3-02	SOLID	8.16e+04	8.67e+04	8.338	RPD
5 DUP	S97T001551 0 W	@IC-01 PO4-02	SOLID	1.30e+04	1.05e+04	21.277	RPD
5 DUP	S97T001551 0 W	@IC-01 SO4-02	SOLID	9.36e+04	9.76e+04	4.184	RPD
5 DUP	S97T001551 0 W	@IC-01 OXALATE2	SOLID	2.73e+04	2.87e+04	5.000	RPD
6 SPK	S97T001551 0 W	@IC-01 F-02	SOLID	5.90e01	5.28e+01	89.492 % Recovery	

-reported

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

LABCORE Completed Worklist Report for Worklist# 19533

Seq Type	Sample#	K A	Test	Matrix	Actual	Found	DL or Yield	Unit
6 SPK	S97T001551	0 W	@IC-01	CL-02	SOLID	7.90e01	9.16e+01	115.949 % Recovery
6 SPK	S97T001551	0 W	@IC-01	NO2-02	SOLID	5.44e02	6.39e+02	117.463 % Recovery
6 SPK	S97T001551	0 W	@IC-01	BR-02	SOLID	5.89e02	5.95e+02	101.019 % Recovery
6 SPK	S97T001551	0 W	@IC-01	NO3-02	SOLID	5.94e02	6.88e+02	115.825 % Recovery
6 SPK	S97T001551	0 W	@IC-01	PO4-02	SOLID	5.45e02	6.00e+02	110.092 % Recovery
6 SPK	S97T001551	0 W	@IC-01	SO4-02	SOLID	6.32e02	7.22e+02	114.241 % Recovery
6 SPK	S97T001551	0 W	@IC-01	OxALATE2	SOLID	5.33e02	5.56e+02	104.315 % Recovery
7 SAMPLE	S97T001556	0 W	@IC-01	F-02	SOLID	N/A	3.291e+02	95.370 ug/g
7 SAMPLE	S97T001556	0 W	@IC-01	CL-02	SOLID	N/A	1.287e+03	135.100 ug/g
7 SAMPLE	S97T001556	0 W	@IC-01	NO2-02	SOLID	N/A	1.743e+04	858.100 ug/g
7 SAMPLE	S97T001556	0 W	@IC-01	BR-02	SOLID	N/A	9.932e+02	993.000 ug/g
7 SAMPLE	S97T001556	0 W	@IC-01	NO3-02	SOLID	N/A	5.218e+04	1105.000 ug/g
7 SAMPLE	S97T001556	0 W	@IC-01	PO4-02	SOLID	N/A	7.003e+03	953.700 ug/g
7 SAMPLE	S97T001556	0 W	@IC-01	SO4-02	SOLID	N/A	2.867e+03	1096.000 ug/g
7 SAMPLE	S97T001556	0 W	@IC-01	OxALATE2	SOLID	N/A	8.343e+02	834.400 ug/g
8 DUP	S97T001556	0 W	@IC-01	F-02	SOLID	3.29e+02	3.60e+02	8.999 RPD
8 DUP	S97T001556	0 W	@IC-01	CL-02	SOLID	1.29e+03	1.18e+03	8.907 RPD
8 DUP	S97T001556	0 W	@IC-01	NO2-02	SOLID	1.74e+04	1.66e+04	4.706 RPD
8 DUP	S97T001556	0 W	@IC-01	BR-02	SOLID	9.93e+02	<1.03e3	RPD
8 DUP	S97T001556	0 W	@IC-01	NO3-02	SOLID	5.22e+04	4.98e+04	4.706 RPD
8 DUP	S97T001556	0 W	@IC-01	PO4-02	SOLID	7.00e+03	6.93e+03	1.005 RPD
8 DUP	S97T001556	0 W	@IC-01	SO4-02	SOLID	2.87e+03	3.04e+03	5.753 RPD
8 DUP	S97T001556	0 W	@IC-01	OxALATE2	SOLID	8.34e+02	8.67e+02	RPD
9 SPK	S97T001556	0 W	@IC-01	F-02	SOLID	5.90e01	5.84e+01	98.983 % Recovery
9 SPK	S97T001556	0 W	@IC-01	CL-02	SOLID	7.90e01	8.60e+01	108.861 % Recovery
9 SPK	S97T001556	0 W	@IC-01	NO2-02	SOLID	5.44e02	6.18e+02	113.603 % Recovery
9 SPK	S97T001556	0 W	@IC-01	BR-02	SOLID	5.89e02	6.13e+02	105.093 % Recovery
9 SPK	S97T001556	0 W	@IC-01	NO3-02	SOLID	5.94e02	6.36e+02	107.071 % Recovery
9 SPK	S97T001556	0 W	@IC-01	PO4-02	SOLID	5.45e02	6.04e+02	110.826 % Recovery
9 SPK	S97T001556	0 W	@IC-01	SO4-02	SOLID	6.32e02	6.56e+02	103.797 % Recovery
9 SPK	S97T001556	0 W	@IC-01	OxALATE2	SOLID	5.33e02	5.50e+02	103.189 % Recovery

Final page for worklist# 19533

Analyst Signature Date

Analyst Signature Date 8-27-97

Reviewer Signature Date

F rejected on both samples due to old failure it will be re-run on WKL 20179. Rest validated 9/4/97 JmL

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

LABCORE Data Entry Template for Worklist# 19533

Analyst: KRP Instrument: IC0 2 Book# 83W20-15

Method: LA-533-105 Rev/Mod _____

Worklist Comment: BY-109 IC. RCJ

S Type	Sample#	R A	Test	Matrix	Group#	Project
1 CCB			@IC-QC	QC		
2 CCV			@IC-QC	QC		
3 BLNK-PREP			@IC-01	SOLID		
4 SAMPLE	S97T001551 0 W	@IC-01	SOLID	97000411 BY-109 (P)		
Analytes Requested: BR-02 , CL-02 , F-02 , NO2-02 , NO3-02 , OXALATE2, PO4-02 , SO4-02						
5 DUP	S97T001551 0 W	@IC-01	SOLID			
6 SPK	S97T001551 0 W	@IC-01	SOLID			
7 SAMPLE	S97T001556 0 W	@IC-01	SOLID	97000411 BY-109 (P)		
Analytes Requested: BR-02 , CL-02 , F-02 , NO2-02 , NO3-02 , OXALATE2, PO4-02 , SO4-02						
8 DUP	S97T001556 0 W	@IC-01	SOLID			
9 SPK	S97T001556 0 W	@IC-01	SOLID			

Final page for worklist # 19533

Analyst Signature

Date

Analyst Signature

Date

Data Entry Comments:

Need to be reprocessed - done

19533 Aug. SCU

Get for NO3 labels - try to do it in lab

19533 Aug. CSV

So with have to re-analyze

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

GMF 8/27/97

NO3's

Data Reprocessed On 08/26/1997 15:34:23

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Sample Name: CCB                               Date: 08/22/1997 15:05:46
Data File  : E:\DATA\97082231.d13
Method     : C:\DX\METHOD\ANIONSA.MET
ACI Address: 1 System: 1 Inject#: 13           Detector: CDM-1
Analyst    : Leslie Dwyer KLG Column:
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Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area	Reject
External	1	1	3000	5Hz	0.00	10.00		50

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

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

File: 97082231.d13 Sample: CCB

SIGNATURE ABOVE REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
 COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 244 TO 272.

Data Reprocessed On 08/26/1997 15:34:25

Sample Name: CCV 83N20-B

Date: 08/22/1997 14:53:07

Data File : E:\DATA\97082231.d12

Method : C:\DX\METHOD\ANIONSA.MET

ACI Address: 1 System: 1 Inject#: 12

Detector: CDM-1

Analyst : Column:

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area	Reject
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External	1	101	3000	5Hz	0.00	10.00	50	
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***** Peak Report: All Peaks *****

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.88		0.000	59	252	1	
2	1.05	FLUORIDE	51.977	2055	10104	1	2.61
3	1.59	CHLORIDE	80.562	2418	10531	1	2.37
4	1.91	NITRITE	580.751	9783	50248	1	2.33
5	2.85	BROMIDE	590.028	6089	36968	2	0.59
6	3.25	NITRATE	608.425	6518	49361	2	3.07
7	4.89	PHOSPHATE	593.954	1953	22098	1	5.46
8	6.39	SULFATE	666.966	5003	68863	1	4.87
9	8.40	OXALATE	528.413	2286	41845	1	4.69
Totals			3701.076	36164	290270		

File: 97082231.d12 Sample: CCV 83N20-B

Data Reprocessed On 08/26/1997 15:34:24

Sample Name: BLANK PREP WL#19533
Data File : E:\DATA\97082231.d14
Method : C:\DX\METHOD\ANIONSA.MET
ACI Address: 1 System: 1 Inject#: 14
Analyst : Column:

Date: 08/22/1997 15:18:23

Detector: CDM-1

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area	Reject
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External	1	1	3000	5Hz	0.00	10.00		50
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***** Peak Report: All Peaks *****

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	1.29		0.000	34	266	1	
2	1.59	CHLORIDE	0.006	40	124	1	2.80
3	1.90	NITRITE	0.132	104	490	1	1.97
4	3.28	NITRATE	0.178	11	52	1	4.13
5	5.61		0.000	8	100	1	
Totals			0.316	197	1032		

File: 97082231.d14 Sample: BLANK PREP WL#19533

Data Reprocessed On 08/26/1997 15:34:26

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Sample Name: S97T001551 SAMPLE                      Date: 08/22/1997 15:31:01
Data File  : E:\DATA\97082231.d15
Method     : C:\DX\METHOD\ANIONSA.MET
ACI Address: 1 System: 1 Inject#: 15
Analyst    :                      Column:
Detector: CDM-1
=====

```

Calibration Volume Dilution Points Rate Start Stop Area Reject

External 1 41 3000 5Hz 0.00 10.00 50

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.89		0.000	145	640	2	
2	1.04	FLUORIDE	124.242	12556	62120	2	1.96
3	1.58	CHLORIDE	12.913	947	4152	2	1.94
4	1.89	NITRITE	240.627	9647	51307	1	1.61
5	3.21	NITRATE	411.081	11002	83978	1	2.01
6	4.89	PHOSPHATE	65.623	477	5581	1	5.32
7	5.51		0.000	10	171	1	
8	6.35	SULFATE	471.935	9045	122456	1	4.21
9	8.39	OXALATE	137.581	1454	26609	1	4.53
Totals			1464.002	45283	357013		

File: 97082231.d15 Sample: S97T001551 SAMPLE

Data Reprocessed On 08/26/1997 15:34:27

Sample Name: S97T001551 DUP	Date: 08/22/1997 15:43:39
Data File : E:\DATA\97082231.d16	
Method : C:\DX\METHOD\ANIONSA.MET	
ACI Address: 1 System: 1 Inject#: 16	Detector: CDM-1
Analyst :	Column:

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area	Reject
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External	1	41	3000	5Hz	0.00	10.00		50
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***** Peak Report: All Peaks *****

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.88		0.000	149	680	2	
2	1.05	FLUORIDE	125.549	13065	62803	2	2.61
3	1.59	CHLORIDE	13.182	923	4237	2	2.37
4	1.91	NITRITE	233.837	9481	49833	1	2.68
5	3.26	NITRATE	449.072	11625	92097	1	3.49
6	4.89	PHOSPHATE	53.263	403	4436	1	5.32
7	6.35	SULFATE	494.057	9460	128451	1	4.21
8	8.40	OXALATE	145.263	1517	28128	1	4.69
Totals			1514.222	46622	370665		

File: 97082231.d16 Sample: S97T001551 DUP

Data Reprocessed On 08/26/1997 15:34:28

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Sample Name: S97T001551 SPIKE                      Date: 08/22/1997 15:56:17
Data File  : E:\DATA\97082221.d17
Method     : C:\DX\METHOD\ANIONSA.MET
ACI Address: 1 System: 1 Inject#: 17                Detector: CDM-1
Analyst    :                      Column:
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Calibration Volume Dilution Points Rate Start Stop Area Reject
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External      1      41      3000  5Hz      0.00 10.00      50

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

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Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.88		0.000	217	923	2	
2	1.05	FLUORIDE	145.379	15334	73258	2	2.61
3	1.59	CHLORIDE	49.564	3437	16051	1	2.80
4	1.93	NITRITE	496.039	20124	107091	1	3.40
5	2.90	BROMIDE	237.890	6028	36706	2	2.47
6	3.26	NITRATE	686.315	17139	143745	2	3.49
7	4.85	PHOSPHATE	305.492	2474	28286	1	4.60
8	6.31	SULFATE	760.634	14810	202422	1	3.56
9	8.33	OXALATE	359.915	3790	70824	1	3.86
Totals			3041.227	83353	679305		

File: 97082221.d17 Sample: S97T001551 SPIKE

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Sample Name: S97T001556 SAMPLE                      Date: 08/22/1997 16:08:56
Data File  : E:\DATA\97082221.D18
Method     : C:\DX\METHOD\ANIONSA.MET
ACI Address: 1 System: 1 Inject#: 18
Analyst    :                      Column:
Detector: CDM-1
=====

```

Calibration Volume Dilution Points Rate Start Stop Area Reject

External 1 41 3000 5Hz 0.00 10.00 50

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.89		0.000	38	207	1	
2	1.05	FLUORIDE	1.698	194	711	1	3.27
3	1.61	CHLORIDE	6.643	467	2152	1	3.66
4	1.93	NITRITE	89.945	3486	18694	1	3.76
5	3.33	NITRATE	269.234	6901	54013	1	0.10
6	4.89	PHOSPHATE	36.133	242	2853	1	5.46
7	6.41	SULFATE	14.793	209	2939	1	5.31
Totals			418.446	11537	81569		

File: 97082221.D18 Sample: S97T001556 SAMPLE

Sample Name: S97T001556 DUP Date: 08/22/1997 16:21:34
Data File : E:\DATA\97082221.D19
Method : C:\DX\METHOD\ANIONSA.MET
ACI Address: 1 System: 1 Inject#: 19 Detector: CDM-1
Analyst : Column:

Calibration Volume Dilution Points Rate Start Stop Area Reject

External 1 41 3000 5Hz 0.00 10.00 50

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.89		0.000	36	203	1	
2	1.05	FLUORIDE	1.789	200	755	1	2.61
3	1.60	CHLORIDE	5.856	423	1902	1	3.23
4	1.93	NITRITE	82.221	3164	17028	1	3.76
5	3.35	NITRATE	247.294	6414	49426	1	-0.10
6	4.87	PHOSPHATE	34.423	243	2695	1	5.03
7	6.40	SULFATE	15.095	218	3015	1	5.09
8	8.44	OXALATE	3.148	12	137	1	5.19
Totals			389.826	10710	75161		

File: 97082221.D19 Sample: S97T001556 DUP

HNF-SD-WM-DP-259, REV. 0

Data Reprocessed On 08/26/1997 15:52:33

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Sample Name: S97T001556 SPIKE          Date: 08/22/1997 16:34:12
Data File  : E:\DATA\97082221.D20
Method     : C:\DX\METHOD\ANIONSA.MET
ACI Address: 1 System: 1 Inject#: 20    Detector: CDM-1
Analyst    :                          Column:
=====
  
```

Calibration Volume Dilution Points Rate Start Stop Area Reject

External 1 41 3000 5Hz 0.00 10.00 50

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.89		0.000	124	579	2	
2	1.05	FLUORIDE	25.062	2326	12036	2	2.61
3	1.60	CHLORIDE	41.042	2864	13251	2	3.23
4	1.93	NITRITE	336.979	13546	72276	2	3.76
5	2.94	BROMIDE	247.422	5968	38243	2	3.89
6	3.31	NITRATE	523.672	13204	108159	2	0.10
7	4.85	PHOSPHATE	277.600	2211	25596	1	4.60
8	5.49		0.000	8	74	1	
9	6.36	SULFATE	277.054	5098	70518	1	4.43
10	8.39	OXALATE	220.022	2285	42940	1	4.53
Totals			1948.853	47634	383672		

File: 97082221.D20 Sample: S97T001556 SPIKE

LABCORE Completed Worklist Report for Worklist# 19534

Analyst: krq

Instrument: IC01

Book# 83N208

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

Worklist Comment: BY-109 IC. RCJ

Seq Type	Sample#	R A	Test	Matrix	Actual	Found	DL or Yield	Unit
1 CCB	0	0	01C-QC	F	QC	1	<1.20e-2	ug/mL
1 CCB	0	0	01C-QC	CL	QC	1	<1.70e-2	ug/mL
1 CCB	0	0	01C-QC	NO2	QC	1	<1.08e-1	ug/mL
1 CCB	0	0	01C-QC	BR	QC	1	<1.25e-1	ug/mL
1 CCB	0	0	01C-QC	NO3	QC	1	<1.39e-1	ug/mL
1 CCB	0	0	01C-QC	P04	QC	1	<1.20e-1	ug/mL
1 CCB	0	0	01C-QC	S04	QC	1	<1.38e-1	ug/mL
1 CCB	0	0	01C-QC	OXALATE2	QC	1	<1.05e-1	ug/mL
2 CCV	0	0	01C-QC	F	QC	5.90e01	5.65e+01	95.763 % Recovery
2 CCV	0	0	01C-QC	CL	QC	7.90e01	7.31e+01	92.532 % Recovery
2 CCV	0	0	01C-QC	NO2	QC	5.44e02	5.32e+02	97.794 % Recovery
2 CCV	0	0	01C-QC	BR	QC	5.89e02	5.70e+02	96.774 % Recovery
2 CCV	0	0	01C-QC	NO3	QC	5.94e02	5.55e+02	93.434 % Recovery
2 CCV	0	0	01C-QC	P04	QC	5.45e02	5.54e+02	101.651 % Recovery
2 CCV	0	0	01C-QC	S04	QC	6.32e02	6.14e+02	97.152 % Recovery
2 CCV	0	0	01C-QC	OXALATE2	QC	5.33e02	5.12e+02	96.060 % Recovery
3 BLNK-PREP	0	0	01C-01	F-02	SOLID	1	<1.20e-2	ug/g
3 BLNK-PREP	0	0	01C-01	CL-02	SOLID	1	<1.70e-2	ug/g
3 BLNK-PREP	0	0	01C-01	NO2-02	SOLID	1	<1.08e-1	ug/g
3 BLNK-PREP	0	0	01C-01	BR-02	SOLID	1	<1.25e-1	ug/g
3 BLNK-PREP	0	0	01C-01	NO3-02	SOLID	1	<1.39e-1	ug/g
3 BLNK-PREP	0	0	01C-01	P04-02	SOLID	1	<1.20e-1	ug/g
3 BLNK-PREP	0	0	01C-01	S04-02	SOLID	1	<1.38e-1	ug/g
3 BLNK-PREP	0	0	01C-01	OXALATE2	SOLID	1	<1.05e-1	ug/g
5 DUP	S97T001789	0 W	01C-02	F-02	SOLID	2.79e+04	2.78e+04	0.359 RPD
5 DUP	S97T001789	0 W	01C-01	CL-02	SOLID	1.84e+03	1.75e+03	5.014 RPD
5 DUP	S97T001789	0 W	01C-01	NO2-02	SOLID	3.17e+04	3.13e+04	1.270 RPD
5 DUP	S97T001789	0 W	01C-01	BR-02	SOLID	<1.03e3	<1.02e3	RPD
5 DUP	S97T001789	0 W	01C-02	NO3-02	SOLID	6.61e+04	6.50e+04	1.678 RPD
5 DUP	S97T001789	0 W	01C-01	P04-02	SOLID	7.23e+04	7.45e+04	2.997 RPD
5 DUP	S97T001789	0 W	01C-01	S04-02	SOLID	4.13e+04	4.14e+04	0.242 RPD
5 DUP	S97T001789	0 W	01C-01	OXALATE2	SOLID	5.85e+03	5.80e+03	0.858 RPD
6 SPK	S97T001789	0 W	01C-01	F-02	SOLID	5.90e01	-1.37e2	-232.203 % Recovery
6 SPK	S97T001789	0 W	01C-01	CL-02	SOLID	7.90e01	2.43e+01	30.759 % Recovery
6 SPK	S97T001789	0 W	01C-01	NO2-02	SOLID	5.44e02	6.84e+01	12.574 % Recovery
6 SPK	S97T001789	0 W	01C-01	BR-02	SOLID	5.89e02	2.86e+02	48.557 % Recovery
6 SPK	S97T001789	0 W	01C-01	NO3-02	SOLID	5.94e02	-1.15e2	-19.360 % Recovery
6 SPK	S97T001789	0 W	01C-01	P04-02	SOLID	5.45e02	-1.53e2	-28.073 % Recovery
6 SPK	S97T001789	0 W	01C-01	S04-02	SOLID	6.32e02	4.73e+01	7.464 % Recovery
6 SPK	S97T001789	0 W	01C-01	OXALATE2	SOLID	5.33e02	2.12e+02	39.775 % Recovery
7 SAMPLE	S97T001794	0 W	01C-01	F-02	SOLID	N/A	1.566e+04	98.240 ug/g

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

LABCORE Completed Worklist Report for Worklist# 19534

Seq Type	Sample# R A	Test	Matrix	Actual	Found	DL or Yield	Unit
7 SAMPLE	S97T001794 0 W @IC-01	CL-02	SOLID	N/A	1.285e+03	139.200	ug/g
7 SAMPLE	S97T001794 0 W @IC-01	NO2-02	SOLID	N/A	2.268e+04	884.400	ug/g
7 SAMPLE	S97T001794 0 W @IC-01	BR-02	SOLID	N/A	1.023e+03	1023.000	ug/g
7 SAMPLE	S97T001794 0 W @IC-01	NO3-02	SOLID	N/A	1.156e+05	1138.000	ug/g
7 SAMPLE	S97T001794 0 W @IC-01	PO4-02	SOLID	N/A	1.079e+05	982.400	ug/g
7 SAMPLE	S97T001794 0 W @IC-01	SO4-02	SOLID	N/A	1.695e+04	1130.000	ug/g
7 SAMPLE	S97T001794 0 W @IC-01	OXALATE2	SOLID	N/A	5.554e+03	859.800	ug/g
8 DUP	S97T001794 0 W @IC-01	F-02	SOLID	1.57e+04	1.62e+04	3.135	RPD
8 DUP	S97T001794 0 W @IC-01	CL-02	SOLID	1.28e+03	1.28e+03	0.000	RPD
8 DUP	S97T001794 0 W @IC-01	NO2-02	SOLID	2.27e+04	2.33e+04	2.609	RPD
8 DUP	S97T001794 0 W @IC-01	BR-02	SOLID	<1.02e3	<1.01e3		RPD
8 DUP	S97T001794 0 W @IC-01	NO3-02	SOLID	1.16e+05	1.00e+05	14.815	RPD
8 DUP	S97T001794 0 W @IC-01	PO4-02	SOLID	1.08e+05	1.11e+05	2.740	RPD
8 DUP	S97T001794 0 W @IC-01	SO4-02	SOLID	1.70e+04	1.64e+04	3.593	RPD
8 DUP	S97T001794 0 W @IC-01	OXALATE2	SOLID	5.55e+03	5.28e+03	4.986	RPD

Final page for worklist# 19534

Analyst Signature _____ Date _____

Analyst Signature _____ Date _____

John M. Lutz 8/2/97
Reviewer Signature _____ Date _____

LABCORE Data Entry Template for Worklist# 19534

Analyst: KBL Instrument: IC0 1 Book# 83N20-B
Method: LA-533-105 Rev/Mod D-1
Worklist Comment: BY-109 IC. RCJ

S Type	Sample#	R A	Test	Matrix	Group#	Project
1 CCB			@IC-QC	QC		
2 CCV			@IC-QC	QC		
3 BLNK-PREP			@IC-01	SOLID		
4 SAMPLE	S97T001789 0 W		@IC-01	SOLID	97000411	BY-109 (P)
Analytes Requested: BR-02 , CL-02 , F-02 , NO2-02 , NO3-02 , OXALATE2, PO4-02 , SO4-02						
5 DUP	S97T001789 0 W		@IC-01	SOLID		
6 SPK	S97T001789 0 W		@IC-01	SOLID		
7 SAMPLE	S97T001794 0 W		@IC-01	SOLID	97000411	BY-109 (P)
Analytes Requested: BR-02 , CL-02 , F-02 , NO2-02 , NO3-02 , OXALATE2, PO4-02 , SO4-02						
8 DUP	S97T001794 0 W		@IC-01	SOLID		

Final page for worklist # 19534

Analyst Signature *Kathy B. Jure* Date 8-22-97

Analyst Signature _____ Date _____

uploaded 8-27-97
John W. Small
19534AUG.CSV

Reuploaded 9/2/97 after fixing labels. *GM Faye*
S97T001789 rejected due to spike failure on all analytes,
not validated. This sample will be re-run on WKL 20140.
Data Entry Comments: *GM Faye*
9/2/97

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

Sample Name: CCB Date: 08/22/1997 13:39:03
 Data File : C:\DX\DATA\97082251.D12
 Method : C:\DX\METHOD\KIT.MET
 ACI Address: 1 System: 1 Inject#: 12 Detector: CDM-1
 Analyst : *John J. [Signature]* Column: AG4A/AS4A anion column

Calibration Volume Dilution Points Rate Start Stop Area Reject
 External 1 1 3000 5Hz 0.00 10.00 30

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	3.27	nitrate	-0.034	36	233	1	0.51
2	6.03	sulfate	-0.138	120	1573	1	-5.83
Totals			-0.173	156	1806

SIGNATURE ABOVE REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
 COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES *376 TO 388*

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Sample Name: CCV 83N20-B	Date: 08/22/1997 13:50:27
Data File : C:\DX\DATA\97082251.D13	
Method : C:\DX\METHOD\KIT.MET	
ACI Address: 1 System: 1 Inject#: 13	Detector: CDM-1
Analyst :	Column: AG4A/AS4A anion column

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Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area	Reject
External	1	101	3000	5Hz	0.00	10.00		30

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.84		0.000	94	390	2	
2	1.00	fluoride	56.468	2624	11360	2	-4.76
3	1.31		0.000	23	129	1	
4	1.54	chloride	73.099	2269	10150	1	-4.94
5	1.85	nitrite	532.223	9430	48575	1	-5.44
6	2.83	bromide	569.783	5445	33926	1	-0.82
7	3.22	nitrate	555.106	5902	44246	1	-0.92
8	4.61	phosphate	553.613	1732	20618	1	-6.49
9	6.03	sulfate	613.528	4977	64259	1	-5.83
10	7.89	oxalate	512.116	2098	40199	1	-6.92
Totals			3465.936	34594	273853		

File: 97082251.D13 Sample: CCV 83N20-B

Sample Name: BLANK PREP WL#19534 Date: 08/22/1997 14:15:55
 Data File : C:\DX\DATA\97082261.D01
 Method : C:\DX\METHOD\KIT.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	1	3000	5Hz	0.00	10.00		30

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	1.54	chloride	-0.026	23	59	1	-4.94
2	3.26	nitrate	0.057	141	949	1	0.31
3	6.08	sulfate	-0.268	20	295	1	-5.00
Totals			-0.238	184	1303		

File: 97082261.D01 Sample: BLANK PREP WL#19534

Sample Name: S97T001789 Date: 08/22/1997 14:29:34
 Data File : C:\DX\DATA\97082261.D02
 Method : C:\DX\METHOD\KIT.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
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External	1	41	3000	5Hz	0.00	10.00		30
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***** Peak Report: All Peaks *****

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.84		0.000	164	718	2	
2	0.99	fluoride	138.910	16722	70462	2	-5.40
3	1.52	chloride	9.179	740	3393	1	-6.17
4	1.83	nitrite	157.951	6919	35428	1	-6.80
5	2.79	bromide	2.525	29	154	1	-2.22
6	3.14	nitrate	329.038	8612	64723	1	-3.38
7	4.61	phosphate	360.194	3155	33587	1	-6.49
8	5.97	sulfate	205.621	3762	53322	1	-6.67
9	7.89	oxalate	29.128	303	5726	1	-6.92

Totals			1232.545	40406	267512		
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File: 97082261.D02 Sample: S97T001789

Data Reprocessed On 09/02/1997 16:09:48

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Sample Name:  S97T001789 DUP                      Date: 08/22/1997 14:44:37
Data File   : F:\DATA\97082261.D04
Method      : C:\DX\METHOD\KIT.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          41    3000  5Hz   0.00 10.00          30
-----

```

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.84		0.000	157	675	2	
2	0.99	fluoride	139.483	17136	70754	2	-5.40
3	1.51	chloride	8.805	748	3271	1	-7.00
4	1.81	nitrite	157.410	7069	35305	1	0.18
5	2.74	bromide	2.376	28	132	1	-3.86
6	3.09	nitrate	326.872	8680	64293	1	-0.11
7	4.61	phosphate	374.277	3077	34958	1	-6.49
8	6.03	sulfate	208.091	4210	53942	1	-5.83
9	7.95	oxalate	29.152	333	5730	1	-6.29
Totals			1246.466	41438	269061

Sample Name: S97T001789 SPIKE Date: 08/22/1997 14:55:53
 Data File : C:\DX\DATA\97082261.D05
 Method : C:\DX\METHOD\KIT.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 41 3000 5Hz 0.00 10.00 30

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.86		0.000	135	645	2	
2	1.02	fluoride	83.955	10369	42429	2	-2.86
3	1.55	chloride	18.886	1573	6579	1	-4.53
4	1.86	nitrite	185.317	8773	41623	1	-5.10
5	2.77	bromide	114.251	2889	16497	1	-2.92
6	3.13	nitrate	283.122	7626	55628	1	-3.59
7	4.72	phosphate	298.958	2493	27675	1	-4.32
8	6.13	sulfate	224.546	4550	58074	1	-4.17
9	8.00	oxalate	113.879	1202	21923	1	-5.66
Totals			1322.914	39611	271073		

File: 97082261.D05 Sample: S97T001789 SPIKE

Data Reprocessed On 09/02/1997 16:15:27

```

=====
Sample Name:  S97T001794 SAMPLE          Date: 08/22/1997 15:07:01
Data File   : F:\DATA\97082261.D06
Method      : C:\DX\METHOD\KIT.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          41    3000  5Hz   0.00 10.00        30
=====

```

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.84		0.000	152	647	2	
2	0.99	fluoride	78.440	9543	39619	2	-5.40
3	1.50	chloride	6.434	553	2497	1	0.00
4	1.80	nitrite	113.606	5134	25379	1	0.00
5	2.69	bromide	3.990	69	366	1	-5.73
6	3.01	nitrate	578.874	15444	115011	1	0.11
7	4.64	phosphate	540.282	4693	51481	1	-5.95
8	6.03	sulfate	84.863	1593	23461	1	-5.83
9	7.95	oxalate	27.816	306	5477	1	-6.29
Totals			1434.305	37487	263939

Data Reprocessed On 09/02/1997 16:20:06

```

=====
Sample Name:  S97T001794 DUP                      Date: 08/22/1997 15:17:40
Data File   : F:\DATA\97082261.D07
Method      : C:\DX\METHOD\KIT.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          41 3000 5Hz 0.00 10.00          30
=====

```

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.84		0.000	149	652	2	
2	0.99	fluoride	81.948	9739	41406	2	-5.40
3	1.50	chloride	6.476	559	2511	1	0.00
4	1.80	nitrite	117.776	5260	26324	1	0.00
5	2.69	bromide	3.934	69	358	1	-5.73
6	3.02	nitrate	506.976	13427	100396	1	0.00
7	4.64	phosphate	560.796	4677	53570	1	-5.95
8	6.08	sulfate	82.918	1758	22987	1	-5.00
9	7.95	oxalate	26.684	276	5262	1	-6.29
Totals			1387.508	35915	253467

LABCORE Completed Worklist Report for Worklist# 19625

Analyst: krq

Instrument: IC02

Book# 83N20B

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

Worklist Comment: BY-109 IC. RCJ

Seq Type	Sample# R A	Test	Matrix	Actual	Found	DL or Yield	Unit
1 CCB	0	④IC-QC F	QC	1	<1.20e-2		ug/mL
1 CCB	0	④IC-QC CL	QC	1	<1.70e-2		ug/mL
1 CCB	0	④IC-QC NO2	QC	1	<1.08e-1		ug/mL
1 CCB	0	④IC-QC BR	QC	1	<1.25e-1		ug/mL
1 CCB	0	④IC-QC NO3	QC	1	<1.39e-1		ug/mL
1 CCB	0	④IC-QC PO4	QC	1	<1.20e-1		ug/mL
1 CCB	0	④IC-QC SO4	QC	1	<1.38e-1		ug/mL
1 CCB	0	④IC-QC OXALATE2	QC	1	<1.05e-1		ug/mL
2 CCV	0	④IC-QC F	QC	5.90e01	5.34e+01	90.508 % Recovery	
2 CCV	0	④IC-QC CL	QC	7.90e01	8.49e+01	107.468 % Recovery	
2 CCV	0	④IC-QC NO2	QC	5.44e02	6.06e+02	111.397 % Recovery	
2 CCV	0	④IC-QC BR	QC	5.89e02	6.31e+02	107.131 % Recovery	
2 CCV	0	④IC-QC NO3	QC	5.94e02	6.21e+02	104.545 % Recovery	
2 CCV	0	④IC-QC PO4	QC	5.45e02	6.25e+02	114.679 % Recovery	
2 CCV	0	④IC-QC SO4	QC	6.32e02	6.97e+02	110.285 % Recovery	
2 CCV	0	④IC-QC OXALATE2	QC	5.33e02	5.64e+02	105.816 % Recovery	
3 BLNK-PREP	0	④IC-01 F-02	SOLID	1	<1.20e-2		ug/g
3 BLNK-PREP	0	④IC-01 CL-02	SOLID	1	<1.70e-2		ug/g
3 BLNK-PREP	0	④IC-01 NO2-02	SOLID	1	<1.08e-1		ug/g
3 BLNK-PREP	0	④IC-01 BR-02	SOLID	1	<1.25e-1		ug/g
3 BLNK-PREP	0	④IC-01 NO3-02	SOLID	1	<1.39e-1		ug/g
3 BLNK-PREP	0	④IC-01 PO4-02	SOLID	1	<1.20e-1		ug/g
3 BLNK-PREP	0	④IC-01 SO4-02	SOLID	1	<1.38e-1		ug/g
3 BLNK-PREP	0	④IC-01 OXALATE2	SOLID	1	<1.05e-1		ug/g
4 SAMPLE	S97T001353	0 W ④IC-01 F-02	SOLID	N/A	1.099e+05	99.300	ug/g
4 SAMPLE	S97T001353	0 W ④IC-01 CL-02	SOLID	N/A	5.027e+02	140.700	ug/g
4 SAMPLE	S97T001353	0 W ④IC-01 NO2-02	SOLID	N/A	1.353e+04	893.800	ug/g
4 SAMPLE	S97T001353	0 W ④IC-01 BR-02	SOLID	N/A	2.004e+03	1034.000	ug/g
4 SAMPLE	S97T001353	0 W ④IC-01 NO3-02	SOLID	N/A	4.764e+04	1150.000	ug/g
4 SAMPLE	S97T001353	0 W ④IC-01 PO4-02	SOLID	N/A	4.819e+04	993.000	ug/g
4 SAMPLE	S97T001353	0 W ④IC-01 SO4-02	SOLID	N/A	6.015e+04	1142.000	ug/g
4 SAMPLE	S97T001353	0 W ④IC-01 OXALATE2	SOLID	N/A	3.466e+04	868.800	ug/g
5 DUP	S97T001353	0 W ④IC-01 F-02	SOLID	1.10e+05	1.12e+05	1.802	RPD
5 DUP	S97T001353	0 W ④IC-01 CL-02	SOLID	5.03e+02	5.73e+02	13.011	RPD
5 DUP	S97T001353	0 W ④IC-01 NO2-02	SOLID	1.35e+04	1.43e+04	5.755	RPD
5 DUP	S97T001353	0 W ④IC-01 BR-02	SOLID	2.00e+03	2.11e+03	5.353	RPD
5 DUP	S97T001353	0 W ④IC-01 NO3-02	SOLID	4.76e+04	5.08e+04	6.504	RPD
5 DUP	S97T001353	0 W ④IC-01 PO4-02	SOLID	4.82e+04	4.04e+04	17.607	RPD
5 DUP	S97T001353	0 W ④IC-01 SO4-02	SOLID	6.02e+04	6.45e+04	6.897	RPD
5 DUP	S97T001353	0 W ④IC-01 OXALATE2	SOLID	3.47e+04	3.66e+04	5.330	RPD
6 SAMPLE	S97T001548	0 W ④IC-01 F-02	SOLID	N/A	1.046e+05	88.770	ug/g

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

LABCORE Completed Worklist Report for Worklist# 19625

Seq Type	Sample# R A	Test	Matrix	Actual	Found	DL or Yield	Unit
6 SAMPLE	S97T001548 0 W	IC-01	CL-02	SOLID	N/A	8.232e+02	125.700 ug/g
6 SAMPLE	S97T001548 0 W	IC-01	NO2-02	SOLID	N/A	2.153e+04	798.700 ug/g - rejected
6 SAMPLE	S97T001548 0 W	IC-01	BR-02	SOLID	N/A	9.246e+02	924.600 ug/g
6 SAMPLE	S97T001548 0 W	IC-01	NO3-02	SOLID	N/A	8.507e+04	1028.000 ug/g
6 SAMPLE	S97T001548 0 W	IC-01	PO4-02	SOLID	N/A	4.122e+04	887.600 ug/g - rejected
6 SAMPLE	S97T001548 0 W	IC-01	SO4-02	SOLID	N/A	5.795e+04	1021.000 ug/g
6 SAMPLE	S97T001548 0 W	IC-01	OXALATE2	SOLID	N/A	2.119e+04	776.500 ug/g
7 DUP	S97T001548 0 W	IC-01	F-02	SOLID	1.05e+05	1.04e+05	0.957 RPD
7 DUP	S97T001548 0 W	IC-01	CL-02	SOLID	8.23e+02	9.03e+02	9.270 RPD
7 DUP	S97T001548 0 W	IC-01	NO2-02	SOLID	2.15e+04	2.19e+04	1.843 RPD
7 DUP	S97T001548 0 W	IC-01	BR-02	SOLID	<9.25e2		RPD
7 DUP	S97T001548 0 W	IC-01	NO3-02	SOLID	8.51e+04	8.45e+04	0.708 RPD
7 DUP	S97T001548 0 W	IC-01	PO4-02	SOLID	4.12e+04	4.40e+04	6.573 RPD
7 DUP	S97T001548 0 W	IC-01	SO4-02	SOLID	5.80e+04	5.63e+04	2.975 RPD
7 DUP	S97T001548 0 W	IC-01	OXALATE2	SOLID	2.12e+04	2.01e+04	5.327 RPD
8 SAMPLE	S97T001553 0 W	IC-01	F-02	SOLID	N/A	3.087e+04	98.280 ug/g
8 SAMPLE	S97T001553 0 W	IC-01	CL-02	SOLID	N/A	2.617e+03	139.200 ug/g
8 SAMPLE	S97T001553 0 W	IC-01	NO2-02	SOLID	N/A	4.887e+04	884.400 ug/g - rejected
8 SAMPLE	S97T001553 0 W	IC-01	BR-02	SOLID	N/A	1.768e+03	1024.000 ug/g
8 SAMPLE	S97T001553 0 W	IC-01	NO3-02	SOLID	N/A	9.239e+04	1138.000 ug/g
8 SAMPLE	S97T001553 0 W	IC-01	PO4-02	SOLID	N/A	2.742e+03	982.800 ug/g - rejected
8 SAMPLE	S97T001553 0 W	IC-01	SO4-02	SOLID	N/A	1.377e+05	1130.000 ug/g
8 SAMPLE	S97T001553 0 W	IC-01	OXALATE2	SOLID	N/A	1.562e+04	859.800 ug/g
9 DUP	S97T001553 0 W	IC-01	F-02	SOLID	3.09e+04	2.91e+04	6.000 RPD
9 DUP	S97T001553 0 W	IC-01	CL-02	SOLID	2.62e+03	2.44e+03	7.115 RPD
9 DUP	S97T001553 0 W	IC-01	NO2-02	SOLID	4.89e+04	4.63e+04	5.462 RPD
9 DUP	S97T001553 0 W	IC-01	BR-02	SOLID	1.77e+03	1.62e+03	8.850 RPD
9 DUP	S97T001553 0 W	IC-01	NO3-02	SOLID	9.24e+04	8.73e+04	5.676 RPD
9 DUP	S97T001553 0 W	IC-01	PO4-02	SOLID	2.74e+03	2.80e+03	2.166 RPD
9 DUP	S97T001553 0 W	IC-01	SO4-02	SOLID	1.38e+05	1.28e+05	7.519 RPD
9 DUP	S97T001553 0 W	IC-01	OXALATE2	SOLID	1.56e+04	1.47e+04	5.941 RPD

Final page for worklist# 19625

Analyst Signature _____ Date _____

Analyst Signature *[Signature]* Date 8-27-97

Reviewer Signature *[Signature]* Date 9/3/97

NO₂ & PO₄ rejected & out for re run^{WKL} 20171.
rest Validated 9/4/97 JMF

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

LABCORE Data Entry Template for Worklist# 19625

Analyst: KAC Instrument: IC0 2 Book# 83N20-B
Method: LA-533-105 Rev/Mod DY
Worklist Comment: BY-109 IC. RCJ

S	Type	Sample#	R	A	Test	Matrix	Group#	Project
1	CCB				@IC-QC	QC		
2	CCV				@IC-QC	QC		
3	BLNK-PREP				@IC-01	SOLID		
4	SAMPLE	S97T001353	0	W	@IC-01	SOLID	97000412	BY-109 (P)
		Analytes Requested: BR-02 , CL-02 , F-02 , NO2-02 , NO3-02 , OXALATE2, PO4-02 , SO4-02						
5	DUP	S97T001353	0	W	@IC-01	SOLID		
6	SAMPLE	S97T001548	0	W	@IC-01	SOLID	97000411	BY-109 (P)
		Analytes Requested: BR-02 , CL-02 , F-02 , NO2-02 , NO3-02 , OXALATE2, PO4-02 , SO4-02						
7	DUP	S97T001548	0	W	@IC-01	SOLID		
8	SAMPLE	S97T001553	0	W	@IC-01	SOLID	97000411	BY-109 (P)
		Analytes Requested: BR-02 , CL-02 , F-02 , NO2-02 , NO3-02 , OXALATE2, PO4-02 , SO4-02						
9	DUP	S97T001553	0	W	@IC-01	SOLID		

Final page for worklist # 19625

Analyst Signature

Date

8/22/97

Analyst Signature

Date

Data Entry Comments:

Needs to be reprocessed. -- Done JMF 8/27/97

19625 AUG. SCH

19625 AUG. CSJ

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

Data Reprocessed On 08/26/1997 15:43:54

=====

Sample Name: CCB	Date: 08/22/1997 07:56:06
Data File : E:\DATA\97082221.d04	
Method : C:\DX\METHOD\ANIONSA.MET	
ACI Address: 1 System: 1 Inject#: 4	Detector: CDM-1
Analyst : <i>John F. Lee</i>	Column:

=====

=====

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area	Reject
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=====

External	1	1	3000	5Hz	0.00	10.00	50
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=====

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	1.35		0.000	49	314	1	
Totals			0.000	49	314		

=====

SIGNATURE ABOVE REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 802 TO 895

Data Reprocessed On 08/27/1997 08:17:25

Sample Name: CCV 72N20-D 83N20B gmf 8/27/97 Date: 08/22/1997 08:08:44
 Data File : E:\DATA\97082221.D05
 Method : C:\DX\METHOD\ANIONSA.MET
 ACI Address: 1 System: 1 Inject#: 5 Detector: CDM-1
 Analyst : Column:

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area	Reject
External	1	101	3000	5Hz	0.00	10.00		50

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.88		0.000	76	316	1	
2	1.04	FLUORIDE	53.425	2091	10390	2	1.96
3	1.35		0.000	53	242	2	
4	1.60	CHLORIDE	84.922	2540	11107	1	3.23
5	1.93	NITRITE	606.363	10110	52506	1	3.76
6	2.95	BROMIDE	631.350	6107	39675	2	-0.11
7	3.36	NITRATE	621.089	6447	50435	2	0.00
8	4.83	PHOSPHATE	624.659	2031	23291	1	4.02
9	6.32	SULFATE	697.383	5233	72105	1	3.78
10	8.35	OXALATE	563.877	2392	44703	1	4.03

Totals	3883.069	37080	304770
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Data Reprocessed On 08/26/1997 15:43:54

```
=====
Sample Name: BLANK PREP WL#19625      Date: 08/22/1997 08:34:42
Data File  : E:\DATA\97082221.d07
Method     : C:\DX\METHOD\ANIONSA.MET
ACI Address: 1 System: 1 Inject#: 7    Detector: CDM-1
Analyst    :                          Column:
=====
```

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area	Reject
External	1	1	3000	5Hz	0.00	10.00		50

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

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

File: 97082221.d07 Sample: BLANK PREP WL#19625

Data Reprocessed On 08/27/1997 08:21:42

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=====
Sample Name: S97T001353 SAMPLE          Date: 08/22/1997 08:47:20
Data File  : E:\DATA\97082221.D08
Method     : C:\DX\METHOD\ANIONSA.MET
ACI Address: 1 System: 1 Inject#: 8      Detector: CDM-1
Analyst    :                          Column:
=====

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=====
Calibration Volume Dilution Points Rate Start Stop Area Reject
-----

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```

External      1      41      3000      5Hz      0.00      10.00      50
=====

```

```

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

```

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.88		0.000	129	467	1	
2	1.05	FLUORIDE	544.770	66864	334094	2	2.61
3	1.60	CHLORIDE	2.491	236	834	2	3.23
4	1.93	NITRITE	67.024	2679	13752	1	3.76
5	2.97	BROMIDE	9.928	118	703	1	0.11
6	3.36	NITRATE	236.061	6042	47082	1	0.00
7	4.83	PHOSPHATE	238.790	1901	21877	1	4.02
8	6.32	SULFATE	298.102	5483	76054	1	3.78
9	8.36	OXALATE	171.728	1782	33364	1	4.20
Totals			1568.893	85234	528227		

File: 97082221.D08 Sample: S97T001353 SAMPLE

Data Reprocessed On 08/27/1997 08:24:02

```

=====
Sample Name: S97T001353 DUP                      Date: 08/22/1997 09:41:34
Data File  : E:\DATA\97082221.D11
Method     : C:\DX\METHOD\ANIONSA.MET
ACI Address: 1 System: 1 Inject#: 11              Detector: CDM-1
Analyst    :                               Column:
=====

```

```

=====
Calibration Volume Dilution Points Rate Start Stop Area Reject
=====

```

```

External      1      41    3000    5Hz    0.00  10.00      50
=====

```

```

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

```

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.88		0.000	144	535	1	
2	1.05	FLUORIDE	562.938	69699	349777	2	2.61
3	1.60	CHLORIDE	2.874	255	955	2	3.23
4	1.93	NITRITE	71.734	2838	14767	1	3.76
5	2.97	BROMIDE	10.581	129	804	1	-0.11
6	3.37	NITRATE	255.089	6403	51054	1	-0.10
7	4.82	PHOSPHATE	202.889	1597	18458	1	3.88
8	6.31	SULFATE	323.675	5977	82803	1	3.56
9	8.33	OXALATE	183.846	1896	35765	1	3.86
Totals			1613.624	88938	554918		

File: 97082221.D11 Sample: S97T001353 DUP

Sample Name: S97T001548 SAMPLE Date: 08/22/1997 08:59:58
Data File : E:\DATA\97082221.D09
Method : C:\DX\METHOD\ANIONSA.MET
ACI Address: 1 System: 1 Inject#: 9 Detector: CDM-1
Analyst : Column:

Calibration Volume Dilution Points Rate Start Stop Area Reject

External 1 41 3000 5Hz 0.00 10.00 50

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.88		0.000	174	668	1	
2	1.05	FLUORIDE	579.618	71690	364707	2	2.61
3	1.60	CHLORIDE	4.563	400	1491	2	3.23
4	1.93	NITRITE	119.357	4834	25043	1	3.76
5	3.33	NITRATE	471.555	11942	96921	1	0.10
6	4.83	PHOSPHATE	228.488	1819	20893	1	4.02
7	6.32	SULFATE	321.209	5912	82151	1	3.78
8	8.37	OXALATE	117.472	1202	22637	1	4.36
Totals			1842.264	97972	614512		

File: 97082221.D09 Sample: S97T001548 SAMPLE

Data Reprocessed On 08/27/1997 08:27:14

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=====
Sample Name: S97T001548 DUP                      Date: 08/22/1997 09:54:14
Data File  : E:\DATA\97082221.D12
Method     : C:\DX\METHOD\ANIONSA.MET
ACI Address: 1 System: 1 Inject#: 12              Detector: CDM-1
Analyst    :                               Column:
=====

```

```

=====
Calibration Volume Dilution Points Rate Start Stop Area Reject
=====

```

```

External      1      41    3000    5Hz    0.00  10.00      50
=====

```

```

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

```

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.88		0.000	173	695	1	
2	1.05	FLUORIDE	578.916	71521	364067	2	2.61
3	1.59	CHLORIDE	5.002	407	1631	2	2.80
4	1.93	NITRITE	121.262	4722	25454	1	3.40
5	3.33	NITRATE	468.222	11721	96205	1	0.10
6	4.81	PHOSPHATE	243.881	1933	22363	1	3.74
7	6.31	SULFATE	311.654	5710	79627	1	3.56
8	8.36	OXALATE	111.141	1153	21387	1	4.20

```

-----
Totals      1840.077      97340      611430

```

File: 97082221.D12 Sample: S97T001548 DUP

Data Reprocessed On 08/27/1997 08:28:45

```

=====
Sample Name: S97T001553 SAMPLE          Date: 08/22/1997 09:12:36
Data File  : E:\DATA\97082221.D10
Method     : C:\DX\METHOD\ANIONSA.MET
ACI Address: 1 System: 1 Inject#: 10
Analyst    :                          Column:
=====

```

Detector: CDM-1

```

=====
Calibration Volume  Dilution Points Rate  Start  Stop Area Reject
=====

```

```

External      1      41    3000  5Hz    0.00  10.00      50
=====

```

```

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

```

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.88		0.000	146	640	2	
2	1.04	FLUORIDE	154.585	16314	78165	2	1.96
3	1.60	CHLORIDE	13.102	933	4212	2	3.23
4	1.93	NITRITE	244.689	9784	52189	1	3.76
5	2.97	BROMIDE	8.850	90	536	1	0.11
6	3.33	NITRATE	462.609	11689	95000	1	0.10
7	4.85	PHOSPHATE	13.728	79	789	1	4.45
8	6.29	SULFATE	689.710	13304	182419	1	3.34
9	8.39	OXALATE	78.212	793	14894	1	4.53

```

-----
Totals      1665.485      53132      428844
-----

```

File: 97082221.D10 Sample: S97T001553 SAMPLE

Data Reprocessed On 08/27/1997 08:30:09

```

=====
Sample Name: S97T001553 DUP                      Date: 08/22/1997 10:06:52
Data File  : E:\DATA\97082221.D13
Method     : C:\DX\METHOD\ANIONSA.MET
ACI Address: 1 System: 1 Inject#: 13              Detector: CDM-1
Analyst    :                               Column:
=====

```

```

=====
Calibration Volume Dilution Points Rate Start Stop Area Reject
=====

```

```

External      1      41    3000  5Hz    0.00  10.00      50
=====

```

```

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

```

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.88		0.000	146	612	2	
2	1.03	FLUORIDE	154.955	16096	78363	2	1.31
3	1.59	CHLORIDE	12.993	929	4177	2	2.80
4	1.93	NITRITE	246.276	9743	52534	1	3.40
5	2.97	BROMIDE	8.640	88	503	1	-0.11
6	3.33	NITRATE	464.746	11675	95459	1	-0.10
7	4.83	PHOSPHATE	14.884	86	895	1	4.02
8	6.27	SULFATE	683.572	13262	180700	1	2.90
9	8.36	OXALATE	78.146	797	14881	1	4.20
Totals			1664.212	52821	428124		

File: 97082221.D13 Sample: S97T001553 DUP

LABCORE Completed Worklist Report for Worklist# 19626

Analyst: kgh

Instrument: IC01

Book# 83A120B

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

Worklist Comment: BY-109 IC. RCJ

Seq Type	Sample# R A	Test	Matrix	Actual	Found	DL or Yield	Unit
1 CCB	0	④IC-QC F	QC	1	2.10e-02	0.021	ug/mL
1 CCB	0	④IC-QC CL	QC	1	<1.70e-2		ug/mL
1 CCB	0	④IC-QC NO2	QC	1	<1.09e-1		ug/mL
1 CCB	0	④IC-QC BR	QC	1	<1.25e-1		ug/mL
1 CCB	0	④IC-QC NO3	QC	1	<1.39e-1		ug/mL
1 CCB	0	④IC-QC PO4	QC	1	<1.20e-1		ug/mL
1 CCB	0	④IC-QC SO4	QC	1	<1.39e-1		ug/mL
1 CCB	0	④IC-QC OXALATE2	QC	1	<1.05e-1		ug/mL
2 CCV	0	④IC-QC F	QC	5.90e01	5.82e+01	98.644 % Recovery	
2 CCV	0	④IC-QC CL	QC	7.90e01	7.77e+01	98.354 % Recovery	
2 CCV	0	④IC-QC NO2	QC	5.44e02	5.42e+02	99.632 % Recovery	
2 CCV	0	④IC-QC BR	QC	5.89e02	5.70e+02	96.774 % Recovery	
2 CCV	0	④IC-QC NO3	QC	5.94e02	5.63e+02	94.781 % Recovery	
2 CCV	0	④IC-QC PO4	QC	5.45e02	5.54e+02	101.651 % Recovery	
2 CCV	0	④IC-QC SO4	QC	6.32e02	6.08e+02	96.203 % Recovery	
2 CCV	0	④IC-QC OXALATE2	QC	5.33e02	5.19e+02	97.373 % Recovery	
3 BLNK-PREP	0	④IC-01 F-02	SOLID	1	<1.20e-2		ug/g
3 BLNK-PREP	0	④IC-01 CL-02	SOLID	1	<1.70e-2		ug/g
3 BLNK-PREP	0	④IC-01 NO2-02	SOLID	1	<1.09e-1		ug/g
3 BLNK-PREP	0	④IC-01 BR-02	SOLID	1	<1.25e-1		ug/g
3 BLNK-PREP	0	④IC-01 NO3-02	SOLID	1	<1.39e-1		ug/g
3 BLNK-PREP	0	④IC-01 PO4-02	SOLID	1	<1.20e-1		ug/g
3 BLNK-PREP	0	④IC-01 SO4-02	SOLID	1	<1.39e-1		ug/g
3 BLNK-PREP	0	④IC-01 OXALATE2	SOLID	1	<1.05e-1		ug/g
4 SAMPLE	S97T001576	0 W ④IC-01 F-02	SOLID	N/A	3.460e+04	97.230	ug/g
4 SAMPLE	S97T001576	0 W ④IC-01 CL-02	SOLID	N/A	1.577e+03	137.800	ug/g
4 SAMPLE	S97T001576	0 W ④IC-01 NO2-02	SOLID	N/A	2.757e+04	875.800	ug/g
4 SAMPLE	S97T001576	0 W ④IC-01 BR-02	SOLID	N/A	1.343e+03	1014.000	ug/g
4 SAMPLE	S97T001576	0 W ④IC-01 NO3-02	SOLID	N/A	7.795e+04	1127.000	ug/g
4 SAMPLE	S97T001576	0 W ④IC-01 PO4-02	SOLID	N/A	1.378e+03	972.900	ug/g
4 SAMPLE	S97T001576	0 W ④IC-01 SO4-02	SOLID	N/A	1.461e+05	1119.000	ug/g
4 SAMPLE	S97T001576	0 W ④IC-01 OXALATE2	SOLID	N/A	6.085e+03	851.600	ug/g
5 DUF	S97T001576	0 W ④IC-01 F-02	SOLID	3.46e+04	3.82e+04	9.890	RPD
5 DUF	S97T001576	0 W ④IC-01 CL-02	SOLID	1.58e+03	1.48e+03	6.536	RPD
5 DUF	S97T001576	0 W ④IC-01 NO2-02	SOLID	2.76e+04	3.01e+04	8.666	RPD
5 DUF	S97T001576	0 W ④IC-01 BR-02	SOLID	1.34e+03	1.41e+03	5.091	RPD
5 DUF	S97T001576	0 W ④IC-01 NO3-02	SOLID	7.80e+04	8.52e+04	8.824	RPD
5 DUF	S97T001576	0 W ④IC-01 PO4-02	SOLID	1.39e+03	1.92e+03	32.727	RPD
5 DUF	S97T001576	0 W ④IC-01 SO4-02	SOLID	1.45e+05	1.58e+05	8.581	RPD
5 DUF	S97T001576	0 W ④IC-01 OXALATE2	SOLID	6.08e+03	6.76e+03	10.592	RPD
6 SAMPLE	S97T001581	0 W ④IC-01 F-02	SOLID	N/A	1.583e+04	94.030	ug/g

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

LABCORE Completed Worklist Report for Worklist# 19626

Seq Type	Sample#	R A	Test	Matrix	Actual	Found	DL or Yield	Unit
6 SAMPLE	S97T001581	0 W	@IC-01	CL-02	SOLID	N/A	1.161e+03	133.200 ug/g
6 SAMPLE	S97T001581	0 W	@IC-01	NO2-02	SOLID	N/A	2.327e+04	846.600 ug/g
6 SAMPLE	S97T001581	0 W	@IC-01	BR-02	SOLID	N/A	1.572e+03	979.900 ug/g
6 SAMPLE	S97T001581	0 W	@IC-01	NO3-02	SOLID	N/A	4.698e+04	1090.000 ug/g
6 SAMPLE	S97T001581	0 W	@IC-01	PO4-02	SOLID	N/A	1.059e+05	940.500 ug/g
6 SAMPLE	S97T001581	0 W	@IC-01	SO4-02	SOLID	N/A	2.042e+04	1082.000 ug/g
6 SAMPLE	S97T001581	0 W	@IC-01	OXALATE2	SOLID	N/A	8.275e+03	823.300 ug/g
7 DUP	S97T001581	0 W	@IC-01	F-02	SOLID	1.59e+04	1.61e+04	1.250 RPD
7 DUP	S97T001581	0 W	@IC-01	CL-02	SOLID	1.16e+03	1.32e+03	12.903 RPD
7 DUP	S97T001581	0 W	@IC-01	NO2-02	SOLID	2.33e+04	2.36e+04	1.279 RPD
7 DUP	S97T001581	0 W	@IC-01	BR-02	SOLID	1.57e+03	1.54e+03	1.929 RPD
7 DUP	S97T001581	0 W	@IC-01	NO3-02	SOLID	4.70e+04	4.89e+04	3.962 RPD
7 DUP	S97T001581	0 W	@IC-01	PO4-02	SOLID	1.06e+05	9.96e+04	6.226 RPD
7 DUP	S97T001581	0 W	@IC-01	SO4-02	SOLID	2.04e+04	2.59e+04	23.758 RPD
7 DUP	S97T001581	0 W	@IC-01	OXALATE2	SOLID	8.28e+03	1.13e+04	30.848 RPD

Final page for worklist# 19626

Analyst Signature

Date

Analyst Signature

Date

Reviewer Signature

Date

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

08/04/97 08:51
-4-0004-1

Page: 1

LABCORE Data Entry Template for Worklist# 19626

Analyst: KCN Instrument: IC0 1Book# 83620-BMethod: LA-533-105 Rev/Mod D-1

Worklist Comment: BY-109 IC. RCJ

S Type	Sample#	R A	Test	Matrix	Group#	Project
1 CCB			@IC-QC	QC		
2 CCV			@IC-QC	QC		
3 BLNK-PREP			@IC-01	SOLID		
-4 SAMPLE	S97T001576 0 W		@IC-01	SOLID	97000412	BY-109 (P)
	Analytes Requested: BR-02 , CL-02 , F-02 , NO2-02 , NO3-02 , OKALATE2, PO4-02 , SO4-02					
5 DUP	S97T001576 0 W		@IC-01	SOLID		
6 SAMPLE	S97T001581 0 W		@IC-01	SOLID	97000412	BY-109 (P)
	Analytes Requested: BR-02 , CL-02 , F-02 , NO2-02 , NO3-02 , OKALATE2, PO4-02 , SO4-02					
7 DUP	S97T001581 0 W		@IC-01	SOLID		

Final page for worklist # 19626

Analyst Signature

Date

Analyst Signature

Date

uploaded 9-18-97

JH Warrall

19626 AUG. CSV

Closed 9-19-97 Hea

Data Entry Comments:

19626 Sep. 5c4

19626 Sep. CSV

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

Sample Name: BLANK Date: 08/21/1997 10:36:54
 Data File : C:\DX\DATA\97082141.D01
 Method : C:\DX\METHOD\KIT.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	1	3000	5Hz	0.00	10.00		30

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	1.12	fluoride	0.021	28	147	1	6.67
2	1.31		0.000	17	75	1	
3	1.54	chloride	-0.016	46	194	1	-4.94
4	3.31	nitrate	0.011	87	593	1	-3.88
5	6.03	sulfate	-0.133	111	1626	1	-5.83
Totals			-0.116	290	2635		

File: 97082141.D01 Sample: BLANK

SIGNATURE ABOVE REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 38 TO 405

Data Reprocessed On 09/18/1997 16:01:31

```

=====
Sample Name: 83N20-B STD                      Date: 08/21/1997 10:52:48
Data File  : F:\DATA\97082141.D02
Method     : C:\DX\METHOD\KIT.MET
ACTI 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    3000   5Hz   0.00 10.00          30
=====

```

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.84		0.000	92	371	2	
2	1.00	fluoride	58.180	2669	11714	2	-4.76
3	1.54	chloride	77.695	2360	10771	1	-4.94
4	1.86	nitrite	541.884	9400	49462	1	-5.10
5	2.85	bromide	569.517	5435	33910	1	-5.43
6	3.25	nitrate	562.678	5902	44850	1	-0.10
7	4.64	phosphate	554.136	1838	20638	1	-5.95
8	6.03	sulfate	607.626	4753	63653	1	-5.83
9	7.95	oxalate	518.583	2249	40714	1	-6.29
Totals			3490.298	34697	276082		

File: 97082141.D02 Sample: 83N20-B STD

=====

Sample Name: PREP-BLANK	Date: 08/21/1997 11:04:09
Data File : C:\DX\DATA\97082141.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

external	1	1	3000	5Hz	0.00	10.00	30
----------	---	---	------	-----	------	-------	----

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	1.25		0.000	55	439	1	
2	1.55	chloride	0.003	33	441	1	-4.12
Totals			0.003	88	881		

File: 97082141.D03 Sample: PREP-BLANK

Data Reprocessed On 09/18/1997 16:03:00

```

=====
Sample Name: S97T001576 SAM                      Date: 08/21/1997 13:31:59
Data File  : F:\DATA\97082141.D05
Method     : C:\DX\METHOD\KIT.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 41 3000 5Hz 0.00 10.00 30

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.84		0.000	156	642	1	
2	1.00	fluoride	174.955	20675	88879	1	-4.76
3	1.54	chloride	7.975	655	3000	1	-4.94
4	1.85	nitrite	139.409	6108	31227	1	-5.44
5	2.85	bromide	6.790	134	772	1	-5.43
6	3.21	nitrate	394.128	9680	77692	1	-0.10
7	4.64	phosphate	6.968	53	552	1	-5.95
8	5.97	sulfate	733.870	14623	194575	1	-6.67
9	7.95	oxalate	30.764	328	6036	1	-6.29
Totals			1494.859	52412	403377		

File: 97082141.D05 Sample: S97T001576 SAM

Data Reprocessed On 09/18/1997 16:06:46

```

=====
Sample Name: S97T001576 DUP                      Date: 08/21/1997 13:51:09
Data File  : F:\DATA\97082141.D06
Method     : C:\DX\METHOD\KIT.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	41	3000	5Hz	0.00	10.00		30
----------	---	----	------	-----	------	-------	--	----

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.84		0.000	180	759	2	
2	1.00	fluoride	194.131	22876	98686	2	-4.76
3	1.54	chloride	7.532	631	2855	1	-4.94
4	1.85	nitrite	153.107	6736	34331	1	-5.44
5	2.85	bromide	7.180	146	829	1	-5.43
6	3.20	nitrate	433.266	10580	85534	1	0.00
7	4.64	phosphate	9.752	74	803	1	-5.95
8	5.97	sulfate	804.773	16384	215115	1	-6.67
9	7.95	oxalate	34.369	367	6720	1	-6.29
Totals			1644.110	57974	445633		

File: 97082141.D06 Sample: S97T001576 DUP

Data Reprocessed On 09/18/1997 16:07:57

```

=====
Sample Name: S97T001581 SAM                      Date: 08/21/1997 14:06:52
Data File  : F:\DATA\97082141.D07
Method     : C:\DX\METHOD\KIT.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 41 3000 5Hz 0.00 10.00 30

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.84		0.000	153	675	2	
2	0.99	fluoride	83.089	9490	41988	2	-5.40
3	1.53	chloride	6.073	531	2379	1	-5.35
4	1.85	nitrite	121.719	5350	27218	1	-5.44
5	2.85	bromide	8.219	158	980	1	-5.43
6	3.23	nitrate	245.699	6343	48249	1	-0.10
7	4.61	phosphate	553.905	4805	52867	1	-6.49
8	6.03	sulfate	106.812	2173	28831	1	-5.83
9	7.95	oxalate	43.276	450	8412	1	-6.29
Totals			1168.792	29453	211599		

File: 97082141.D07 Sample: S97T001581 SAM

Data Reprocessed On 09/18/1997 16:10:21

```

=====
Sample Name: S97T001581 DUP                      Date: 08/21/1997 14:20:40
Data File  : F:\DATA\97082141.D08
Method     : C:\DX\METHOD\KIT.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      41      3000  5Hz      0.00  10.00      30
=====

```

```

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

```

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.84		0.000	149	667	2	
2	0.99	fluoride	83.103	9589	41995	2	-5.40
3	1.53	chloride	6.809	569	2619	1	-5.35
4	1.85	nitrite	121.530	5401	27176	1	-5.44
5	2.85	bromide	7.936	160	939	1	-5.43
6	3.22	nitrate	251.771	6384	49444	1	0.00
7	4.61	phosphate	513.011	4491	48720	1	-6.49
8	6.03	sulfate	133.423	2653	35375	1	-5.83
9	7.95	oxalate	58.001	613	11215	1	-6.29
Totals			1175.585	30009	218150		

File: 97082141.D08 Sample: S97T001581 DUP

LABCORE Completed Worklist Report for Worklist# 19979

Analyst: eal

Instrument: IC01

Book# 83A003

Method: 14-533-05 Rev/Mod D-1

Worklist Comment: Rerun BY109 IC for Cl, NO3, NO2 due to spike. Try 10201.jmf

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	CCV	0	@IC-QC	F	QC	5.90e01	5.64e+01	95.593 % Recovery
2	CCV	0	@IC-QC	CL	QC	7.90e01	7.66e+01	96.962 % Recovery
2	CCV	0	@IC-QC	NO2	QC	5.44e02	5.33e+02	97.978 % Recovery
2	CCV	0	@IC-QC	BR	QC	5.89e02	5.74e+02	97.453 % Recovery
2	CCV	0	@IC-QC	NO3	QC	5.94e02	5.63e+02	94.781 % Recovery
2	CCV	0	@IC-QC	PO4	QC	5.45e02	5.55e+02	101.835 % Recovery
2	CCV	0	@IC-QC	SO4	QC	6.32e02	5.98e+02	94.620 % Recovery
2	CCV	0	@IC-QC	OXALATE2	QC	5.33e02	5.19e+02	97.373 % Recovery
3	SAMPLE	S97T001469	0	@IC-01	CL-02	LIQUID	N/A	3.925e+03
3	SAMPLE	S97T001469	0	@IC-01	NO2-02	LIQUID	N/A	6.750e+04
3	SAMPLE	S97T001469	0	@IC-01	NO3-02	LIQUID	N/A	1.823e+05
4	DUP	S97T001469	0	@IC-01	CL-02	LIQUID	3.92e+03	3.91e+03
4	DUP	S97T001469	0	@IC-01	NO2-02	LIQUID	6.75e+04	6.85e+04
4	DUP	S97T001469	0	@IC-01	NO3-02	LIQUID	1.82e+05	1.84e+05
5	SPK	S97T001469	0	@IC-01	CL-02	LIQUID	7.90e01	-1.85e1
5	SPK	S97T001469	0	@IC-01	NO2-02	LIQUID	5.44e02	-1.13e3
5	SPK	S97T001469	0	@IC-01	NO3-02	LIQUID	5.94e02	-3.94e3

Final page for worklist# 19979

Analyst Signature

Date

Analyst Signature

Date

James M. Lyle 9/4/97
Reviewer Signature Date

LABCORE Data Entry Template for Worklist# 19979

Analyst: KL Instrument: IC0 1 Book# P3N20.B

Method: LA-533-105 Rev/Mod 0.1

Worklist Comment: Rerun BY109 IC for Cl, NO3, NO2 due to spike. Try 10201.jmf

S Type	Sample#	R A	Test	Matrix	Group#	Project
1 CCB			@IC-QC	QC		
2 CCV			@IC-QC	QC		
3 SAMPLE	S97T001469 0	@IC-01	LIQUID	97000412 BY-109 (P)		
	Analytes Requested: CL-02 , NO2-02 , NO3-02					
4 DUP	S97T001469 0	@IC-01	LIQUID			
5 SPK	S97T001469 0	@IC-01	LIQUID			

Final page for worklist # 19979

Analyst Signature

Date

Analyst Signature

Date

19979 Aug.csv
uploaded 9/4/97

Spikes on Cl, NO₂ + NO₃ still fail. There may be a matrix problem. Will rerun again if PC desires.

Data Entry Comments:

Sample Name: INST. BLANK Date: 08/25/1997 21:49:30
 Data File : C:\DX\DATA\97082501.D01
 Method : C:\DX\METHOD\KIT.MET
 ACI Address: 1 System: 1 Inject#: 1 Detector: CDM-1
 Analyst : *Janet Jue* Column: AG4A/AS4A anion column
for EAL 8/24/97

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area	Reject
External	1	1	3000	5Hz	0.00	10.00		30

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	8.53	oxalate	-0.008	7	157	1	0.63
Totals			-0.008	7	157

SIGNATURE ABOVE REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 408 TO 412.

Sample Name: 83N20-B STD. Date: 08/25/1997 22:31:01
 Data File : C:\DX\DATA\97082511.D03
 Method : C:\DX\METHOD\KIT.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	3000	5Hz	0.00	10.00		30

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.84		0.000	115	563	2	
2	1.00	fluoride	56.389	2751	11344	2	-4.76
3	1.53	chloride	76.593	2334	10622	1	-5.35
4	1.85	nitrite	533.354	9548	48679	1	-5.44
5	2.82	bromide	573.568	5569	34157	1	-1.05
6	3.21	nitrate	563.418	6036	44909	1	-1.33
7	4.61	phosphate	554.527	1795	20653	1	-6.49
8	5.97	sulfate	597.770	4766	62642	1	-6.67
9	7.84	oxalate	518.610	2128	40716	1	-7.55
Totals			3474.229	35042	274285		

File: 97082511.D03 Sample: 83N20-B STD.

Data Reprocessed On 09/04/1997 14:09:33

```

=====
Sample Name: S97T001469                      Date: 08/25/1997 22:46:20
Data File  : F:\DATA\97082511.D04
Method     : C:\DX\METHOD\KIT.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	4141	3000	5Hz	0.00	10.00		30
----------	---	------	------	-----	------	-------	--	----

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.85		0.000	491	2535	2	
2	1.00	fluoride	1169.167	1203	5592	2	-4.76
3	1.11		0.000	473	3181	2	
4	1.53	chloride	3924.593	2633	13216	1	-5.76
5	1.85	nitrite	67497.875	28365	150212	1	-5.78
6	2.81	bromide	3936.167	973	5455	1	-1.29
7	3.08	nitrate	182334.578	40261	385631	1	0.00
8	3.93		0.000	23	162	1	
9	4.64	phosphate	461.365	30	336	1	-5.95
10	5.97	sulfate	-153.603	178	2567	1	-6.67
11	7.95	oxalate	80.755	21	369	1	-6.29
Totals			259250.896	74652	569255		

File: 97082511.D04 Sample: S97T001469

Data Reprocessed On 09/04/1997 14:11:58

```

=====
Sample Name: S97T001469 DUP.                      Date: 08/25/1997 22:59:14
Data File  : F:\DATA\97082511.D05
Method     : C:\DX\METHOD\KIT.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          4141    3000  5Hz    0.00 10.00          30
=====

```

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.85		0.000	499	2592	2	
2	1.00	fluoride	1163.767	1195	5564	2	-4.76
3	1.11		0.000	468	3108	2	
4	1.53	chloride	3907.568	2680	13159	1	-5.35
5	1.85	nitrite	68534.232	28838	152504	1	-5.44
6	2.82	bromide	3914.422	967	5423	1	-1.05
7	3.08	nitrate	183636.652	40258	388730	1	0.00
8	3.93		0.000	24	176	1	
9	4.64	phosphate	341.443	24	229	1	-5.95
10	5.97	sulfate	-152.002	176	2571	1	-6.67
11	7.95	oxalate	49.106	18	310	1	-6.29
Totals			261395.187	75147	574366		

File: 97082511.D05 Sample: S97T001469 DUP.

Sample Name: S97T001469 SPIKE Date: 08/25/1997 23:11:39
 Data File : C:\DX\DATA\97082511.D06
 Method : C:\DX\METHOD\KIT.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 4141 3000 5Hz 0.00 10.00 30

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.85		0.000	103	407	2	
2	1.00	fluoride	2300.341	2713	11286	2	-4.76
3	1.53	chloride	3177.525	2449	10744	1	-5.35
4	1.85	nitrite	21789.995	9556	48505	1	-5.78
5	2.81	bromide	24287.508	5623	35306	1	-1.29
6	3.21	nitrate	23528.296	6136	45742	1	-1.33
7	4.61	phosphate	23199.361	1851	21086	1	-6.49
8	5.97	sulfate	25639.318	4998	65474	1	-6.67
9	7.84	oxalate	21610.184	2236	41391	1	-7.55
Totals			145532.528	35664	279941		

File: 97082511.D06 Sample: S97T001469 SPIKE

HNF-SD-WM-DP-259, REV. 0

LABCORE Completed Worklist Report for Worklist# 19985

Analyst: rdm

Instrument: IC01

Book# _____

Method: _____ Rev/Mod _____

Worklist Comment: Rerun BY-109 IC for F, Cl, Br, Ox due to std fail. Use 41 df

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 CCV	0	@IC-QC F	QC	5.90e01	6.37e+01	107.366 % Recovery	
2 CCV	0	@IC-QC CL	QC	7.90e01	8.70e+01	110.127 % Recovery	
2 CCV	0	@IC-QC NO2	QC	5.44e02	6.14e+02	112.868 % Recovery	
2 CCV	0	@IC-QC BR	QC	5.89e02	6.46e+02	109.677 % Recovery	
2 CCV	0	@IC-QC NO3	QC	5.94e02	6.36e+02	107.071 % Recovery	
2 CCV	0	@IC-QC PO4	QC	5.45e02	6.17e+02	113.211 % Recovery	
2 CCV	0	@IC-QC SO4	QC	6.32e02	6.80e+02	107.595 % Recovery	
2 CCV	0	@IC-QC OXALATE2	QC	5.33e02	5.78e+02	108.443 % Recovery	
3 BLNK-PREP	0	@IC-01 F-02	SOLID	1	<1.20e-2		ug/g
3 BLNK-PREP	0	@IC-01 CL-02	SOLID	1	2.30e-02	0.023	ug/g
3 BLNK-PREP	0	@IC-01 NO2-02	SOLID	1	1.24e-01	0.124	ug/g
3 BLNK-PREP	0	@IC-01 BR-02	SOLID	1	<1.25e-1		ug/g
3 BLNK-PREP	0	@IC-01 NO3-02	SOLID	1	<1.39e-1		ug/g
3 BLNK-PREP	0	@IC-01 PO4-02	SOLID	1	<1.20e-1		ug/g
3 BLNK-PREP	0	@IC-01 SO4-02	SOLID	1	<1.38e-1		ug/g
3 BLNK-PREP	0	@IC-01 OXALATE2	SOLID	1	<1.05e-1		ug/g
4 SAMPLE	S97T001350	@IC-01 F-02	SOLID	N/A	3.948e+04	98.850	ug/g
4 SAMPLE	S97T001350	@IC-01 CL-02	SOLID	N/A	1.364e+03	140.000	ug/g
4 SAMPLE	S97T001350	@IC-01 OXALATE2	SOLID	N/A	1.470e+04	864.700	ug/g
5 DUP	S97T001350	@IC-01 F-02	SOLID	3.95e+04	3.98e+04	0.757	RPD
5 DUP	S97T001350	@IC-01 CL-02	SOLID	1.36e+03	1.43e+03	5.018	RPD
5 DUP	S97T001350	@IC-01 NO2-02	SOLID	?	2.80e+04		RPD
5 DUP	S97T001350	@IC-01 BR-02	SOLID	<1.03e3	<1.02e3		RPD
5 DUP	S97T001350	@IC-01 NO3-02	SOLID	?	9.77e+04		RPD
5 DUP	S97T001350	@IC-01 PO4-02	SOLID	?	1.38e+03		RPD
5 DUP	S97T001350	@IC-01 SO4-02	SOLID	?	1.51e+05		RPD
5 DUP	S97T001350	@IC-01 OXALATE2	SOLID	1.47e+04	1.59e+04	7.843	RPD
6 SPK	S97T001350	@IC-01 F-02	SOLID	5.90e01	1.08e+02	183.051 % Recovery	
6 SPK	S97T001350	@IC-01 CL-02	SOLID	7.90e01	8.30e+01	105.063 % Recovery	
6 SPK	S97T001350	@IC-01 NO2-02	SOLID	5.44e02	0.00e+00	0.000 % Recovery	
6 SPK	S97T001350	@IC-01 BR-02	SOLID	5.89e02	6.36e+02	107.980 % Recovery	
6 SPK	S97T001350	@IC-01 NO3-02	SOLID	5.94e02	0.00e+00	0.000 % Recovery	
6 SPK	S97T001350	@IC-01 PO4-02	SOLID	5.45e02	0.00e+00	0.000 % Recovery	

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

LABCORE Completed Worklist Report for Worklist# 19985

Seq Type	Sample# R A	Test	Matrix	Actual	Found	DL or Yield	Unit
6 SPK	S97T001350 0 W @IC-01	S04-02	SOLID	6.32e02	0.00e+00	0.000 %	Recovery
6 SPK	S97T001350 0 W @IC-01	OXALATE2	SOLID	5.33e02	5.85e+02	109.756 %	Recovery
7 SAMPLE	S97T001559 0 W @IC-01	F-02	SOLID	N/A	1.441e+04	97.780	ug/g
7 SAMPLE	S97T001559 0 W @IC-01	CL-02	SOLID	N/A	1.541e+03	138.500	ug/g
7 SAMPLE	S97T001559 0 W @IC-01	OXALATE2	SOLID	N/A	1.877e+04	855.700	ug/g
8 DUP	S97T001559 0 W @IC-01	F-02	SOLID	1.44e+04	1.89e+04	27.027	RPD
8 DUP	S97T001559 0 W @IC-01	CL-02	SOLID	1.54e+03	1.98e+03	25.000	RPD
8 DUP	S97T001559 0 W @IC-01	NO2-02	SOLID	?	3.82e+04		RPD
8 DUP	S97T001559 0 W @IC-01	BR-02	SOLID	1.07e+03	1.03e+03	3.810	RPD
8 DUP	S97T001559 0 W @IC-01	NO3-02	SOLID	?	7.57e+04		RPD
8 DUP	S97T001559 0 W @IC-01	PO4-02	SOLID	?	3.45e+04		RPD
8 DUP	S97T001559 0 W @IC-01	S04-02	SOLID	?	6.96e+04		RPD
8 DUP	S97T001559 0 W @IC-01	OXALATE2	SOLID	1.88e+04	2.45e+04	26.328	RPD
9 SPK	S97T001559 0 W @IC-01	F-02	SOLID	5.90e01	1.22e+02	206.780 %	Recovery
9 SPK	S97T001559 0 W @IC-01	CL-02	SOLID	7.90e01	8.26e+01	104.557 %	Recovery
9 SPK	S97T001559 0 W @IC-01	NO2-02	SOLID	5.44e02	0.00e+00	0.000 %	Recovery
9 SPK	S97T001559 0 W @IC-01	BR-02	SOLID	5.89e02	5.91e+02	100.240 %	Recovery
9 SPK	S97T001559 0 W @IC-01	NO3-02	SOLID	5.94e02	0.00e+00	0.000 %	Recovery
9 SPK	S97T001559 0 W @IC-01	PO4-02	SOLID	5.45e02	0.00e+00	0.000 %	Recovery
9 SPK	S97T001559 0 W @IC-01	S04-02	SOLID	6.32e02	0.00e+00	0.000 %	Recovery
9 SPK	S97T001559 0 W @IC-01	OXALATE2	SOLID	5.33e02	6.00e+02	112.570 %	Recovery
10 SAMPLE	S97T001574 0 W @IC-01	F-02	SOLID	N/A	2.511e+04	96.680	ug/g
10 SAMPLE	S97T001574 0 W @IC-01	CL-02	SOLID	N/A	1.855e+03	137.000	ug/g
10 SAMPLE	S97T001574 0 W @IC-01	OXALATE2	SOLID	N/A	1.409e+04	845.800	ug/g
11 DUP	S97T001574 0 W @IC-01	F-02	SOLID	2.51e+04	2.45e+04	2.419	RPD
11 DUP	S97T001574 0 W @IC-01	CL-02	SOLID	1.86e+03	1.82e+03	2.174	RPD
11 DUP	S97T001574 0 W @IC-01	NO2-02	SOLID	?	3.47e+04		RPD
11 DUP	S97T001574 0 W @IC-01	BR-02	SOLID	2.18e+03	2.12e+03	2.791	RPD
11 DUP	S97T001574 0 W @IC-01	NO3-02	SOLID	?	8.99e+04		RPD
11 DUP	S97T001574 0 W @IC-01	PO4-02	SOLID	?	2.60e+03		RPD
11 DUP	S97T001574 0 W @IC-01	S04-02	SOLID	?	3.89e+04		RPD
11 DUP	S97T001574 0 W @IC-01	OXALATE2	SOLID	1.41e+04	1.42e+04	0.707	RPD
12 SPK	S97T001574 0 W @IC-01	F-02	SOLID	5.90e01	5.58e+01	94.576 %	Recovery
12 SPK	S97T001574 0 W @IC-01	CL-02	SOLID	7.90e01	7.68e+01	97.215 %	Recovery
12 SPK	S97T001574 0 W @IC-01	NO2-02	SOLID	5.44e02	0.00e+00	0.000 %	Recovery
12 SPK	S97T001574 0 W @IC-01	BR-02	SOLID	5.89e02	5.74e+02	97.453 %	Recovery
12 SPK	S97T001574 0 W @IC-01	NO3-02	SOLID	5.94e02	0.00e+00	0.000 %	Recovery
12 SPK	S97T001574 0 W @IC-01	PO4-02	SOLID	5.45e02	0.00e+00	0.000 %	Recovery
12 SPK	S97T001574 0 W @IC-01	S04-02	SOLID	6.32e02	0.00e+00	0.000 %	Recovery
12 SPK	S97T001574 0 W @IC-01	OXALATE2	SOLID	5.33e02	5.25e+02	98.499 %	Recovery

Final page for worklist# 19985

Analyst Signature

Date

Analyst Signature

Date

[Signature] 9/9/97

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

LABCORE Completed Worklist Report for Worklist# 19985

Seq	Type	Sample#	R A	Test	Matrix	Actual	Found	DL or Yield	Unit	
				Reviewer Signature	Date					

LABCORE Data Entry Template for Worklist# 19985

Analyst: Ron Instrument: IC0 21 Book# 93N208

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

Worklist Comment: Rerun BY-109 IC for F, Cl, Br, Ox due to std fail. Use 41 df

S Type	Sample#	R A	Test	Matrix	Group#	Project
1 CCB			@IC-QC	QC		
2 CCV			@IC-QC	QC		
3 BLNK-PREP			@IC-01	SOLID		
4 SAMPLE	S97T001350 0 W	@IC-01	SOLID		97000412 BY-109 (P)	
	Analytes Requested: BR-02		, CL-02		, F-02	, OXALATE2
5 DUP	S97T001350 0 W	@IC-01	SOLID			
6 SPK	S97T001350 0 W	@IC-01	SOLID			
7 SAMPLE	S97T001559 0 W	@IC-01	SOLID		97000411 BY-109 (P)	
	Analytes Requested: BR-02		, CL-02		, F-02	, OXALATE2
8 DUP	S97T001559 0 W	@IC-01	SOLID			
9 SPK	S97T001559 0 W	@IC-01	SOLID			
10 SAMPLE	S97T001574 0 W	@IC-01	SOLID		97000412 BY-109 (P)	
	Analytes Requested: BR-02		, CL-02		, F-02	, OXALATE2
11 DUP	S97T001574 0 W	@IC-01	SOLID			
12 SPK	S97T001574 0 W	@IC-01	SOLID			

Final page for worklist # 19985

Analyst Signature [Signature] Date 8/27/97

Analyst Signature _____ Date _____

19985AUG.CSV

Data Entry Comments: Rejected Br on all samples, not validated.

Re-run on WKL 200209 [Signature] 9/8/97

Sample Name: BLK Date: 08/27/1997 08:31:17
 Data File : C:\DX\DATA\97082531.D03
 Method : C:\DX\METHOD\KIT.MET
 ACI Address: 1 System: 1 Inject#: 3 Detector: CDM-1
 Analyst *John D. ...* Column: AG4A/AS4A anion column

Calibration Volume Dilution Points Rate Start Stop Area Reject
 External 1 1 3000 5Hz 0.00 10.00 30

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.84		0.000	65	329	1	
2	1.32		0.000	60	452	1	
3	1.55	chloride	-0.004	87	350	1	-4.12
4	3.31	nitrate	-0.013	62	399	1	1.95
5	6.24	sulfate	-0.139	118	1569	1	-2.50
Totals			-0.156	393	3099		

File: 97082531.D03 Sample: BLK

SIGNATURE ABOVE REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
 COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 414 TO 428.

Sample Name: 83N20-B Date: 08/27/1997 08:43:32
 Data File : C:\DX\DATA\97082531.D04
 Method : C:\DX\METHOD\KIT.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	3000	5Hz	0.00	10.00		30

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.85		0.000	166	743	2	
2	1.00	fluoride	63.659	2998	12845	2	-4.76
3	1.31		0.000	19	84	1	
4	1.55	chloride	86.957	2628	12025	1	-4.53
5	1.87	nitrite	614.064	10932	56084	1	-4.42
6	2.86	bromide	646.360	6249	38610	1	0.35
7	3.25	nitrate	635.993	6689	50705	1	0.10
8	4.77	phosphate	616.553	1963	23034	1	-3.24
9	6.19	sulfate	679.553	4692	71062	1	-3.33
10	8.16	oxalate	577.694	2251	45436	1	-3.77
Totals			3920.832	38586	310628		

File: 97082531.D04 Sample: 83N20-B

Sample Name: PREP BLK Date: 08/27/1997 08:56:00
 Data File : C:\DX\DATA\97082531.D05
 Method : C:\DX\METHOD\KIT.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	1	3000	5Hz	0.00	10.00		30

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	1.24		0.000	61	479	1	
2	1.56	chloride	0.023	103	711	1	-3.70
3	1.88	nitrite	0.124	164	738	1	-4.08
4	2.89	bromide	0.090	58	324	1	1.52
5	3.31	nitrate	0.025	104	703	1	1.95
6	4.83	phosphate	0.081	21	226	1	-2.16
7	6.24	sulfate	-0.221	52	763	1	-2.50
8	8.27	oxalate	0.022	22	386	1	-2.52
Totals			0.145	586	4329		

File: 97082531.D05 Sample: PREP BLK

Sample Name: S97T001350 Date: 08/27/1997 09:19:04
Data File : C:\DX\DATA\97082531.D06
Method : C:\DX\METHOD\KIT.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 41 3000 5Hz 0.00 10.00 30

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.85		0.000	206	658	1	
2	1.01	fluoride	196.535	22776	99916	1	-4.13
3	1.55	chloride	6.790	601	2613	1	-4.53
4	1.87	nitrite	132.532	5895	29669	1	-4.76
5	2.87	bromide	3.595	56	309	1	0.58
6	3.22	nitrate	452.207	11431	89342	1	-0.92
7	4.80	phosphate	10.915	83	908	1	-2.70
8	6.19	sulfate	721.619	14202	191070	1	-3.33
9	8.21	oxalate	73.167	759	14110	1	-3.14
Totals			1597.361	56009	428595		

File: 97082531.D06 Sample: S97T001350

Sample Name: S97T001350DUP Date: 08/27/1997 09:32:46
 Data File : C:\DX\DATA\97082531.D07
 Method : C:\DX\METHOD\KIT.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	41	3000	5Hz	0.00	10.00		30

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.85		0.000	221	912	2	
2	1.01	fluoride	200.737	24031	102066	2	-4.13
3	1.55	chloride	7.234	627	2758	1	-4.53
4	1.87	nitrite	141.416	6302	31682	1	-4.76
5	2.87	bromide	3.812	61	340	1	0.58
6	3.21	nitrate	492.922	12281	97553	1	-1.13
7	4.80	phosphate	6.974	55	553	1	-2.70
8	6.13	sulfate	761.171	12372	202433	1	-4.17
9	8.21	oxalate	80.380	823	15490	1	-3.14
Totals			1694.645	56772	453787		

File: 97082531.D07 Sample: S97T001350DUP

Sample Name: S97T001350SPK

Date: 08/27/1997 09:57:56

Data File : C:\DX\DATA\97082531.D08

Method : C:\DX\METHOD\KIT.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	41	3000	5Hz	0.00	10.00		30

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.85		0.000	334	1380	2	
2	1.00	fluoride	239.760	27381	122050	2	-4.76
3	1.55	chloride	40.007	3040	13601	1	-4.53
4	1.87	nitrite	384.731	17010	86628	1	-4.76
5	2.85	bromide	254.592	6182	37434	1	-0.12
6	3.19	nitrate	753.845	18411	151083	1	-1.95
7	4.77	phosphate	253.408	2050	23330	1	-3.24
8	6.13	sulfate	1037.268	20570	285785	1	-4.17
9	8.16	oxalate	306.996	3203	59839	1	-3.77
Totals			3270.607	98180	781131		

File: 97082531.D08 Sample: S97T001350SPK

Sample Name: S97T001559 Date: 08/27/1997 10:21:19
Data File : C:\DX\DATA\97082531.D09
Method : C:\DX\METHOD\KIT.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 41 3000 5Hz 0.00 10.00 30

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.85		0.000	184	866	2	
2	1.00	fluoride	72.477	8421	36581	2	-4.76
3	1.55	chloride	7.753	660	2927	1	-4.53
4	1.87	nitrite	148.321	6585	33247	1	-4.76
5	2.87	bromide	5.371	97	567	1	0.82
6	3.24	nitrate	287.330	7156	56460	1	-0.31
7	4.77	phosphate	138.978	1046	12606	1	-3.24
8	6.19	sulfate	267.769	4697	69004	1	-3.33
9	8.21	oxalate	94.447	985	18186	1	-3.14
Totals			1022.446	29831	230444		

File: 97082531.D09 Sample: S97T001559

Sample Name: S97T001559DUP Date: 08/27/1997 10:38:40
Data File : C:\DX\DATA\97082531.D10
Method : C:\DX\METHOD\KIT.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 41 3000 5Hz 0.00 10.00 30

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.84		0.000	223	1055	2	
2	1.00	fluoride	95.441	11273	48283	2	-4.76
3	1.55	chloride	10.012	830	3666	1	-4.53
4	1.87	nitrite	193.091	8532	43382	1	-4.76
5	2.87	bromide	5.224	95	545	1	0.58
6	3.23	nitrate	382.026	9525	75274	1	-0.72
7	4.77	phosphate	174.016	1350	15862	1	-3.24
8	6.19	sulfate	351.265	6479	90430	1	-3.33
9	8.21	oxalate	123.724	1304	23821	1	-3.14
Totals			1334.799	39610	302317		

File: 97082531.D10 Sample: S97T001559DUP

Sample Name: S97T001559SPK Date: 08/27/1997 10:51:59
 Data File : C:\DX\DATA\97082531.D11
 Method : C:\DX\METHOD\KIT.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	41	3000	5Hz	0.00	10.00		30

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.85		0.000	302	1251	2	
2	1.00	fluoride	121.463	14457	61556	2	-4.76
3	1.55	chloride	40.777	3094	13860	1	-4.53
4	1.87	nitrite	426.922	18777	96120	1	-4.76
5	2.85	bromide	241.847	5679	35513	1	-0.12
6	3.20	nitrate	625.582	15237	124569	1	-1.54
7	4.75	phosphate	405.986	3224	38063	1	-3.78
8	6.19	sulfate	604.544	11709	158179	1	-3.33
9	8.16	oxalate	334.276	3507	65316	1	-3.77
Totals			2801.398	75986	594428		

File: 97082531.D11 Sample: S97T001559SPK

Sample Name: S97T001574 Date: 08/27/1997 11:08:48
 Data File : C:\DX\DATA\97082531.D12
 Method : C:\DX\METHOD\KIT.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	41	3000	5Hz	0.00	10.00		30

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.84		0.000	223	1048	2	
2	1.00	fluoride	127.783	14984	64782	2	-4.76
3	1.55	chloride	9.441	790	3479	1	-4.53
4	1.87	nitrite	179.541	7898	40316	1	-4.76
5	2.87	bromide	11.083	234	1396	1	0.58
6	3.22	nitrate	467.533	11540	92428	1	-0.92
7	4.77	phosphate	13.108	90	1106	1	-3.24
8	6.19	sulfate	496.990	9417	128874	1	-3.33
9	8.21	oxalate	71.708	747	13831	1	-3.14
Totals			1377.187	45922	347259		

File: 97082531.D12 Sample: S97T001574

Sample Name: S97T001574DUP Date: 08/27/1997 11:22:53
 Data File : C:\DX\DATA\97082531.D13
 Method : C:\DX\METHOD\KIT.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	41	3000	5Hz	0.00	10.00		30

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.85		0.000	222	959	2	
2	1.00	fluoride	127.538	15089	64656	2	-4.76
3	1.55	chloride	9.476	791	3490	1	-4.53
4	1.87	nitrite	180.606	7881	40557	1	-4.76
5	2.87	bromide	11.020	227	1387	1	0.58
6	3.23	nitrate	467.303	11504	92382	1	-0.72
7	4.77	phosphate	13.517	89	1143	1	-3.24
8	6.19	sulfate	503.636	9544	130661	1	-3.33
9	8.21	oxalate	73.922	766	14254	1	-3.14
Totals			1387.017	46114	349489		

File: 97082531.D13 Sample: S97T001574DUP

Sample Name: S97T001574SPK Date: 08/27/1997 11:35:31
 Data File : C:\DX\DATA\97082531.D14
 Method : C:\DX\METHOD\KIT.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 41 3000 5Hz 0.00 10.00 30

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.85		0.000	292	1177	1	
2	1.01	fluoride	150.103	18037	76178	1	-4.13
3	1.55	chloride	40.143	3022	13647	1	-4.53
4	1.87	nitrite	408.024	18217	91870	1	-4.42
5	2.85	bromide	240.688	5889	35338	1	0.12
6	3.20	nitrate	709.275	17053	141824	1	-1.54
7	4.77	phosphate	238.847	1897	21951	1	-3.24
8	6.13	sulfate	744.402	12988	197599	1	-4.17
9	8.16	oxalate	281.898	2934	54828	1	-3.77
Totals			2813.380	80328	634413		

File: 97082531.D14 Sample: S97T001574SPK

LABCORE Completed Worklist Report for Worklist# 20111

Analyst: pjm

Instrument: IC01

Book# _____

Method: _____ Rev/Mod _____

Worklist Comment: Rerun BY-109 IC. Try 41 df. jmf

Seq Type	Sample# R A	Test	Matrix	Actual	Found	DL or Yield	Unit
1 CCB	0	①IC-QC F	QC	1	<1.20e-2		ug/mL
1 CCB	0	①IC-QC CL	QC	1	<1.70e-2		ug/mL
1 CCB	0	①IC-QC NO2	QC	1	<1.08e-1		ug/mL
1 CCB	0	①IC-QC BR	QC	1	<1.25e-1		ug/mL
1 CCB	0	①IC-QC NO3	QC	1	<1.39e-1		ug/mL
1 CCB	0	①IC-QC P04	QC	1	<1.20e-1		ug/mL
1 CCB	0	①IC-QC SO4	QC	1	<1.38e-1		ug/mL
1 CCB	0	①IC-QC OXALATE2	QC	1	<1.05e-1		ug/mL
2 CCV	0	①IC-QC F	QC	5.90e01	5.88e+01	99.661 % Recovery	
2 CCV	0	①IC-QC CL	QC	8.00e01	7.60e+01	95.000 % Recovery	
2 CCV	0	①IC-QC NO2	QC	5.43e02	5.33e+02	98.158 % Recovery	
2 CCV	0	①IC-QC BR	QC	5.89e02	5.89e+02	100.000 % Recovery	
2 CCV	0	①IC-QC NO3	QC	5.94e02	5.80e+02	97.643 % Recovery	
2 CCV	0	①IC-QC P04	QC	5.45e02	5.68e+02	104.220 % Recovery	
2 CCV	0	①IC-QC SO4	QC	6.32e02	6.27e+02	99.209 % Recovery	
2 CCV	0	①IC-QC OXALATE2	QC	5.33e02	5.27e+02	98.874 % Recovery	
3 BLNK-PREP	0	①IC-01 F-02	SOLID	1	<1.20e-2		ug/g
3 BLNK-PREP	0	①IC-01 CL-02	SOLID	1	2.20e-02	0.022	ug/g
3 BLNK-PREP	0	①IC-01 NO2-02	SOLID	1	<1.08e-1		ug/g
3 BLNK-PREP	0	①IC-01 BR-02	SOLID	1	<1.25e-1		ug/g
3 BLNK-PREP	0	①IC-01 NO3-02	SOLID	1	<1.39e-1		ug/g
3 BLNK-PREP	0	①IC-01 P04-02	SOLID	1	<1.20e-1		ug/g
3 BLNK-PREP	0	①IC-01 SO4-02	SOLID	1	<1.38e-1		ug/g
3 BLNK-PREP	0	①IC-01 OXALATE2	SOLID	1	<1.05e-1		ug/g
4 SAMPLE	S97T001746	0 W ①IC-01 F-02	SOLID	N/A	9.051e+04	99.180	ug/g
4 SAMPLE	S97T001746	0 W ①IC-01 CL-02	SOLID	N/A	< 1.405e+02	140.500	ug/g
4 SAMPLE	S97T001746	0 W ①IC-01 NO2-02	SOLID	N/A	2.988e+03	892.600	ug/g
4 SAMPLE	S97T001746	0 W ①IC-01 BR-02	SOLID	N/A	2.616e+03	1033.000	ug/g
4 SAMPLE	S97T001746	0 W ①IC-01 NO3-02	SOLID	N/A	6.831e+03	1149.000	ug/g
4 SAMPLE	S97T001746	0 W ①IC-01 P04-02	SOLID	N/A	8.289e+04	991.800	ug/g
4 SAMPLE	S97T001746	0 W ①IC-01 SO4-02	SOLID	N/A	4.566e+04	1141.000	ug/g
4 SAMPLE	S97T001746	0 W ①IC-01 OXALATE2	SOLID	N/A	2.686e+04	868.000	ug/g
5 DUP	S97T001746	0 W ①IC-01 F-02	SOLID	9.05e+04	8.70e+04	3.944	RPD
5 DUP	S97T001746	0 W ①IC-01 CL-02	SOLID	<1.40e2	<1.41e2		RPD
5 DUP	S97T001746	0 W ①IC-01 NO2-02	SOLID	2.99e+03	2.68e+03	10.935	RPD
5 DUP	S97T001746	0 W ①IC-01 BR-02	SOLID	2.62e+03	2.30e+03	13.008	RPD
5 DUP	S97T001746	0 W ①IC-01 NO3-02	SOLID	6.83e+03	5.92e+03	14.275	RPD
5 DUP	S97T001746	0 W ①IC-01 P04-02	SOLID	8.29e+04	9.76e+04	16.288	RPD
5 DUP	S97T001746	0 W ①IC-01 SO4-02	SOLID	4.57e+04	4.45e+04	2.661	RPD
5 DUP	S97T001746	0 W ①IC-01 OXALATE2	SOLID	2.69e+04	2.58e+04	4.175	RPD

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

HNH-SD-WM-DP-259 REV. 0

LABCORE Completed Worklist Report for Worklist# 20111

Seq	Type	Sample#	R A	Test	Matrix	Actual	Found	DL or Yield	Unit
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Final page for worklist# 20111

Analyst Signature _____ Date _____

Analyst Signature _____ Date _____

B. Pacheco
Reviewer Signature

9/9/97
Date

LABCORE Data Entry Template for Worklist# 20111

Analyst: RJM Instrument: IC0 1 Book# 95N20A

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

Worklist Comment: Rerun BY-109 IC. Try 41 df. jmf

S Type	Sample#	R A	Test	Matrix	Group#	Project
1 CCB			@IC-QC	QC		
2 CCV			@IC-QC	QC		
3 BLNK-PREP			@IC-01	SOLID		
4 SAMPLE	S97T001746 0 W		@IC-01	SOLID	97000411	BY-109 (P)
	Analytes Requested: BR-02 , CL-02 , F-02 , NO2-02 , NO3-02 , OXALATE2, PO4-02 , SO4-02					
5 DUP	S97T001746 0 W		@IC-01	SOLID		

Final page for worklist # 20111

RJMclown 8/30/97
Analyst Signature Date

Analyst Signature Date

uploaded 9-9-97

John Howell

20111AUG.CSV

Validated 9/9/97 Bachelorz

Data Entry Comments:

Sample Name: CCV 95N20A Date: 08/30/1997 04:23:32
 Data File : C:\DX\DATA\97083001.D07
 Method : C:\DX\METHOD\KIT.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	3000	5Hz	0.00	10.00		30

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.84		0.000	139	740	2	
2	1.00	fluoride	58.832	2803	11848	2	-4.76
3	1.31		0.000	57	561	1	
4	1.53	chloride	75.977	2403	10538	1	-5.35
5	1.85	nitrite	532.533	9719	48604	1	-5.44
6	2.82	bromide	589.376	5712	35122	1	-1.05
7	3.21	nitrate	579.637	6092	46203	1	-1.33
8	4.61	phosphate	568.186	1881	21176	1	-6.49
9	5.97	sulfate	626.566	4920	65599	1	-6.67
10	7.84	oxalate	526.745	2190	41365	1	-7.55

Totals 3557.852 35915 281756

•100ML -10ML *Pat McClellan*
 File: 97083001.D07 Sample: CCV 95N20A

SIGNATURE ABOVE REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 432 TO 436.

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Sample Name: CCB                               Date: 08/30/1997 04:12:35
Data File : C:\DX\DATA\97083001.D06
Method    : C:\DX\METHOD\KIT.MET
ACI Address: 1 System: 1 Inject#: 6           Detector: CDM-1
Analyst   :                               Column: AG4A/AS4A anion column
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Calibration Volume Dilution Points Rate Start Stop Area Reject
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External          1          1 3000 5Hz 0.00 10.00          30
=====
  
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***** Peak Report: All Peaks *****

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.87		0.000	12	43	1	
2	1.53	chloride	-0.007	75	312	1	-5.35
Totals			-0.007	87	355		

DIRECT RUN
File: 97083001.D06 Sample: CCB

Sample Name: BLNK PREP Date: 08/30/1997 04:34:46
 Data File : C:\DX\DATA\97083001.D08
 Method : C:\DX\METHOD\KIT.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
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External	1	1	3000	5Hz	0.00	10.00		30
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***** Peak Report: All Peaks *****

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	1.22		0.000	69	431	1	
2	1.54	chloride	0.022	79	691	1	-4.94
3	1.85	nitrite	0.093	96	443	1	-5.44
4	3.27	nitrate	-0.026	50	298	1	0.51

Totals			0.088	293	1864		
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DIRECT RUN

File: 97083001.D08 Sample: BLNK PREP

Sample Name: S97T001746 Date: 08/30/1997 04:48:20
 Data File: C:\DX\DATA\97083001.D09
 Method: C:\DX\METHOD\KIT.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	41	3000	5Hz	0.00	10.00		30

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.85		0.000	154	579	2	
2	1.01	fluoride	448.906	51349	229636	2	-4.13
3	1.53	chloride	0.481	146	561	1	-5.35
4	1.85	nitrite	14.820	596	2950	1	-5.78
5	2.83	bromide	12.974	271	1670	1	-0.58
6	3.25	nitrate	33.881	952	7017	1	-0.10
7	4.59	phosphate	411.131	3439	38569	1	-7.03
8	5.97	sulfate	226.464	4400	58557	1	-6.67
9	7.84	oxalate	133.202	1311	25652	1	-7.55
Totals			1281.859	62618	365191		

• 250mL - 10mL Aliq

File: 97083001.D09 Sample: S97T001746

Data Reprocessed On 09/09/1997 10:06:23

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=====
Sample Name: S97T001746 DUP                               Date: 08/30/1997 04:59:00
Data File  : F:\DATA\97083001.D10
Method     : C:\DX\METHOD\KIT.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           41    3000  5Hz   0.00 10.00          30
=====

```

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.85		0.000	165	632	2	
2	1.01	fluoride	429.663	49421	219703	2	-4.13
3	1.53	chloride	0.483	137	561	1	-5.35
4	1.85	nitrite	13.234	527	2589	1	-5.44
5	2.84	bromide	11.361	233	1436	1	-0.35
6	3.25	nitrate	29.260	832	6127	1	0.10
7	4.59	phosphate	482.170	4054	45620	1	-7.03
8	5.97	sulfate	219.923	4216	56912	1	-6.67
9	7.89	oxalate	127.371	1370	24525	1	-6.92
Totals			1313.465	60955	358105		

File: 97083001.D10 Sample: S97T001746 DUP

LABCORE Completed Worklist Report for Worklist# 20140

Analyst: rdm

Instrument: IC02

Book# 95 N20 B

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

Worklist Comment: Rerun BY-109 IC. Spike failed first time. Try 41 df.jmf

Seq Type	Sample#	R A	Test	Matrix	Actual	Found	DL or Yield	Unit
1	CCB	0	①IC-QC F	QC	1	<1.20e-2		ug/mL
1	CCB	0	①IC-QC CL	QC	1	<1.70e-2		ug/mL
1	CCB	0	①IC-QC NO2	QC	1	<1.08e-1		ug/mL
1	CCB	0	①IC-QC BR	QC	1	<1.25e-1		ug/mL
1	CCB	0	①IC-QC NO3	QC	1	<1.39e-1		ug/mL
1	CCB	0	①IC-QC P04	QC	1	<1.20e-1		ug/mL
1	CCB	0	①IC-QC S04	QC	1	<1.38e-1		ug/mL
1	CCB	0	①IC-QC OXALATE2	QC	1	<1.05e-1		ug/mL
2	CCV	0	①IC-QC F	QC	5.90e01	5.78e+01	97.966 % Recovery	
2	CCV	0	①IC-QC CL	QC	8.00e01	7.79e+01	97.375 % Recovery	
2	CCV	0	①IC-QC NO2	QC	5.42e02	5.24e+02	96.679 % Recovery	
2	CCV	0	①IC-QC BR	QC	5.89e02	5.63e+02	95.586 % Recovery	
2	CCV	0	①IC-QC NO3	QC	5.94e02	5.59e+02	94.108 % Recovery	
2	CCV	0	①IC-QC P04	QC	5.45e02	5.38e+02	98.716 % Recovery	
2	CCV	0	①IC-QC S04	QC	6.32e02	6.09e+02	96.361 % Recovery	
2	CCV	0	①IC-QC OXALATE2	QC	5.26e02	5.28e+02	100.380 % Recovery	
3	BLNK-PREP	0	①IC-01 F-02	SOLID	1	<1.20e-2		ug/g
3	BLNK-PREP	0	①IC-01 CL-02	SOLID	1	2.80e-02	0.028	ug/g
3	BLNK-PREP	0	①IC-01 NO2-02	SOLID	1	<1.08e-1		ug/g
3	BLNK-PREP	0	①IC-01 BR-02	SOLID	1	<1.25e-1		ug/g
3	BLNK-PREP	0	①IC-01 NO3-02	SOLID	1	<1.39e-1		ug/g
3	BLNK-PREP	0	①IC-01 P04-02	SOLID	1	<1.20e-1		ug/g
3	BLNK-PREP	0	①IC-01 S04-02	SOLID	1	<1.38e-1		ug/g
3	BLNK-PREP	0	①IC-01 OXALATE2	SOLID	1	<1.05e-1		ug/g
4	SAMPLE	S97T001789	0 W ①IC-01 F-02	SOLID	N/A	2.721e+04	98.770	ug/g
4	SAMPLE	S97T001789	0 W ①IC-01 CL-02	SOLID	N/A	2.092e+03	139.900	ug/g
4	SAMPLE	S97T001789	0 W ①IC-01 NO2-02	SOLID	N/A	3.110e+04	888.900	ug/g
4	SAMPLE	S97T001789	0 W ①IC-01 BR-02	SOLID	N/A	1.029e+03	1029.000	ug/g
4	SAMPLE	S97T001789	0 W ①IC-01 NO3-02	SOLID	N/A	6.796e+04	1144.000	ug/g
4	SAMPLE	S97T001789	0 W ①IC-01 P04-02	SOLID	N/A	6.921e+04	987.700	ug/g
4	SAMPLE	S97T001789	0 W ①IC-01 S04-02	SOLID	N/A	4.150e+04	1136.000	ug/g
4	SAMPLE	S97T001789	0 W ①IC-01 OXALATE2	SOLID	N/A	6.396e+03	864.300	ug/g
5	DUP	S97T001789	0 W ①IC-01 F-02	SOLID	2.72e+04	2.76e+04	1.460	RPD
5	DUP	S97T001789	0 W ①IC-01 CL-02	SOLID	2.09e+03	2.08e+03	0.480	RPD
5	DUP	S97T001789	0 W ①IC-01 NO2-02	SOLID	3.11e+04	3.17e+04	1.911	RPD
5	DUP	S97T001789	0 W ①IC-01 BR-02	SOLID	<1.03e3	<1.02e3		RPD
5	DUP	S97T001789	0 W ①IC-01 NO3-02	SOLID	6.80e+04	6.68e+04	1.780	RPD
5	DUP	S97T001789	0 W ①IC-01 P04-02	SOLID	6.92e+04	7.08e+04	2.286	RPD
5	DUP	S97T001789	0 W ①IC-01 S04-02	SOLID	4.15e+04	4.10e+04	1.212	RPD
5	DUP	S97T001789	0 W ①IC-01 OXALATE2	SOLID	6.40e+03	6.34e+03	0.942	RPD
6	SPK	S97T001789	0 W ①IC-01 F-02	SOLID	5.90e01	6.85e+01	116.102 % Recovery	

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

LABCORE Completed Worklist Report for Worklist# 20140

Seq Type	Sample#	R	A	Test	Matrix	Actual	Found	DL or Yield	Unit
6 SPK	S97T001789	0	W	@IC-01	CL-02	SOLID	8.00e01	7.83e+01	97.875 % Recovery
6 SPK	S97T001789	0	W	@IC-01	NO2-02	SOLID	5.42e02	5.72e+02	105.535 % Recovery
6 SPK	S97T001789	0	W	@IC-01	BR-02	SOLID	5.89e02	5.44e+02	92.360 % Recovery
6 SPK	S97T001789	0	W	@IC-01	NO3-02	SOLID	5.94e02	6.14e+02	103.367 % Recovery
6 SPK	S97T001789	0	W	@IC-01	PO4-02	SOLID	5.45e02	5.66e+02	103.853 % Recovery
6 SPK	S97T001789	0	W	@IC-01	SO4-02	SOLID	6.32e02	6.31e+02	99.842 % Recovery
6 SPK	S97T001789	0	W	@IC-01	OXALATE2	SOLID	5.26e02	5.29e+02	100.570 % Recovery

Final page for worklist# 20140

Analyst Signature _____ Date _____

Analyst Signature _____ Date _____

Reviewer Signature _____ Date 9/29/97

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

Document number: SD-WM-DP-259

Section 2 of 2

Title: Pank 241-BV-109, Cores 201 and 203
Analytical Results for the Final Report

Date: 11/20/97 Revision: 0

Originator: Esch, RA

Co: WMH

Recipient: _____

Co: _____

References: EDT-623134

LABCORE Data Entry Template for Worklist# 20140

Analyst: PM Instrument: IC0 2 Book# 95N20B

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

Worklist Comment: Rerun BY-109 IC. Spike failed first time. Try 41 df.jmf

S Type	Sample#	R A	Test	Matrix	Group#	Project
1 CCB			@IC-QC	QC		
2 CCV			@IC-QC	QC		
3 BLNK-PREP			@IC-01	SOLID		
4 SAMPLE	S97T001789 0 W		@IC-01	SOLID	97000411	BY-109 (P)
Analytes Requested: BR-02 , CL-02 , F-02 , NO2-02 , NO3-02 , OXALATE2, PO4-02 , SO4-02						
5 DUP	S97T001789 0 W		@IC-01	SOLID		
6 SPK	S97T001789 0 W		@IC-01	SOLID		

Final page for worklist # 20140

PM 9/16/97
Analyst Signature Date

Analyst Signature Date

uploaded 9-24-97

John Wansell

20140 SEP.CSV

Re Datched after fixing labels 20140sp2.csv

Reup/loaded 9/29/97 gm Lye

Validated 9/29/97 gm Lye

Data Entry Comments:

Sample Name: BLK Date: 09/18/1997 22:14:08
 Data File : C:\DX\DATA\97091111.D04
 Method : C:\DX\METHOD\ANIONS.MET
 ACI Address: 1 System: 1 Inject#: 4 Detector: CDM-1
 Analyst : *James J. Jones* Column: AG4A/AS4A anion column
for RSDM 9/29/97

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	0.88		0.000	15	78	1	
2	1.37		0.000	144	1066	1	
3	3.49		0.000	20	123	1	
4	6.24	sulfate	0.034	75	1127	1	6.36
Totals			0.034	254	2394

SIGNATURE ABOVE REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
 COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 440 TO 440

Data Reprocessed On 09/29/1997 09:24:12

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=====
Sample Name: 95N20-B                      Date: 09/18/1997 20:27:19
Data File  : E:\DATA\97091111.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	0.88		0.000	88	363	2	
2	1.03	fluoride	57.769	2193	10947	2	0.32
3	1.35		0.000	81	506	2	
4	1.59	chloride	77.852	2423	10854	1	0.84
5	1.93	nitrite	524.090	9489	51502	1	0.35
6	2.95	bromide	563.324	5568	37138	1	-0.11
7	3.35	nitrate	559.473	5908	47872	1	2.55
8	4.72	phosphate	537.903	1855	23328	1	3.51
9	6.19	sulfate	609.134	4418	70425	1	5.45
10	8.16	oxalate	527.658	2058	45161	1	5.52
Totals			3457.202	34081	298095		

File: 97091111.D03 Sample: 95N20-B

Sample Name: BLK PREP Date: 09/18/1997 22:41:25
 Data File : C:\DX\DATA\97091111.D05
 Method : C:\DX\METHOD\ANIONS.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	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	1.24		0.000	49	401	1	
2	1.62	chloride	0.028	30	374	1	2.53
Totals			0.028	79	775		

File: 97091111.D05 Sample: BLK PREP

Data Reprocessed On 09/29/1997 09:25:26

```

=====
Sample Name: S97T001789                      Date: 09/18/1997 22:57:31
Data File  : E:\DATA\97091111.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         41    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	0.87		0.000	140	575	2	
2	1.03	fluoride	135.515	14842	71931	2	0.32
3	1.60	chloride	10.419	763	3527	1	1.27
4	1.93	nitrite	154.892	6524	37119	1	0.69
5	3.01	bromide	4.830	27	152	1	0.11
6	3.39	nitrate	338.501	8520	72516	1	3.57
7	4.67	phosphate	344.743	2813	37408	1	2.34
8	6.19	sulfate	206.699	3751	58815	1	5.45
9	8.21	oxalate	31.857	306	6906	1	6.21
Totals			1227.456	37686	288949

Data Reprocessed On 09/29/1997 09:26:19

```

=====
Sample Name: S97T001789DUP          Date: 09/18/1997 23:11:35
Data File  : E:\DATA\97091111.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      41    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	0.88		0.000	150	627	2	
2	1.03	fluoride	138.558	15019	73804	2	0.32
3	1.60	chloride	10.476	770	3547	1	1.27
4	1.93	nitrite	159.413	6570	38241	1	0.69
5	3.02	bromide	4.747	26	138	1	0.00
6	3.39	nitrate	335.780	8410	71910	1	3.77
7	4.69	phosphate	355.744	3046	38648	1	2.92
8	6.19	sulfate	206.172	3700	58665	1	5.45
9	8.21	oxalate	31.855	306	6906	1	6.21
Totals			1242.747	37997	292486		

File: 97091111.D07 Sample: S97T001789DUP

Data Reprocessed On 09/29/1997 09:27:28

```

=====
Sample Name: S97T001789DUP          Date: 09/18/1997 23:11:35
Data File  : E:\DATA\97091111.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          41    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	0.88		0.000	150	627	2	
2	1.03	fluoride	138.558	15019	73804	2	0.32
3	1.60	chloride	10.476	770	3547	1	1.27
4	1.93	nitrite	159.413	6570	38241	1	0.69
5	3.02	bromide	4.747	26	138	1	0.00
6	3.39	nitrate	335.780	8410	71910	1	3.77
7	4.69	phosphate	355.744	3046	38648	1	2.92
8	6.19	sulfate	206.172	3700	58665	1	5.45
9	8.21	oxalate	31.855	306	6906	1	6.21
Totals			1242.747	37997	292486

Data Reprocessed On 09/29/1997 09:34:32

```

=====
Sample Name: S97T001789SPK                      Date: 09/18/1997 23:26:26
Data File  : E:\DATA\97091111.D08
Method     : C:\DX\METHOD\ANIONS.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          41    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	0.88		0.000	232	967	2	
2	1.03	fluoride	162.916	17839	89366	2	0.32
3	1.60	chloride	41.745	3047	14420	1	1.27
4	1.93	nitrite	383.762	16128	94316	1	0.69
5	2.99	bromide	217.780	5398	35305	1	-0.11
6	3.35	nitrate	584.217	14523	128262	1	2.55
7	4.67	phosphate	571.116	5120	63448	1	2.34
8	6.13	sulfate	459.040	7678	132216	1	4.55
9	8.16	oxalate	243.285	2403	51322	1	5.52
Totals			2663.861	72366	609622		

File: 97091111.D08 Sample: S97T001789SPK

LABCORE Completed Worklist Report for Worklist# 20171

Analyst: eal

Instrument: IC02

Book# 95N20A

Method: LA533-105 Rev/Mod D-1

Worklist Comment: Rerun By-109 for NO2 and PO4. Use 41 df. jmf

Seq Type	Sample#	R A	Test	Matrix	Actual	Found	DL or Yield	Unit
1 CCB	0		④IC-QC F	QC	1	<1.20e-2		ug/mL
1 CCB	0		④IC-QC CL	QC	1	<1.70e-2		ug/mL
1 CCB	0		④IC-QC NO2	QC	1	<1.08e-1		ug/mL
1 CCB	0		④IC-QC BR	QC	1	<1.25e-1		ug/mL
1 CCB	0		④IC-QC NO3	QC	1	<1.39e-1		ug/mL
1 CCB	0		④IC-QC PO4	QC	1	<1.20e-1		ug/mL
1 CCB	0		④IC-QC SO4	QC	1	<1.38e-1		ug/mL
1 CCB	0		④IC-QC OXALATE2	QC	1	<1.05e-1		ug/mL
2 CCV	0		④IC-QC F	QC	5.90e01	5.77e+01	97.797 % Recovery	
2 CCV	0		④IC-QC CL	QC	8.00e01	8.22e+01	102.750 % Recovery	
2 CCV	0		④IC-QC NO2	QC	5.43e02	5.25e+02	96.685 % Recovery	
2 CCV	0		④IC-QC BR	QC	5.89e02	5.51e+02	93.548 % Recovery	
2 CCV	0		④IC-QC NO3	QC	5.94e02	5.60e+02	94.276 % Recovery	
2 CCV	0		④IC-QC PO4	QC	5.45e02	5.21e+02	95.596 % Recovery	
2 CCV	0		④IC-QC SO4	QC	6.32e02	5.92e+02	93.671 % Recovery	
2 CCV	0		④IC-QC OXALATE2	QC	5.33e02	5.12e+02	96.060 % Recovery	
3 BLNK-PREP	0		④IC-01 F-02	SOLID	1	<1.20e-2		ug/g
3 BLNK-PREP	0		④IC-01 CL-02	SOLID	1	3.40e-02	0.034	ug/g
3 BLNK-PREP	0		④IC-01 NO2-02	SOLID	1	<1.08e-1		ug/g
3 BLNK-PREP	0		④IC-01 BR-02	SOLID	1	<1.25e-1		ug/g
3 BLNK-PREP	0		④IC-01 NO3-02	SOLID	1	<1.39e-1		ug/g
3 BLNK-PREP	0		④IC-01 PO4-02	SOLID	1	<1.20e-1		ug/g
3 BLNK-PREP	0		④IC-01 SO4-02	SOLID	1	<1.38e-1		ug/g
3 BLNK-PREP	0		④IC-01 OXALATE2	SOLID	1	<1.05e-1		ug/g
4 SAMPLE	S97T001353	0 W	④IC-01 NO2-02	SOLID	N/A	1.287e+04	893.800	ug/g
4 SAMPLE	S97T001353	0 W	④IC-01 PO4-02	SOLID	N/A	4.159e+04	993.000	ug/g
5 DUP	S97T001353	0 W	④IC-01 F-02	SOLID	?	6.54e+04		RPD
5 DUP	S97T001353	0 W	④IC-01 CL-02	SOLID	?	7.71e+02		RPD
5 DUP	S97T001353	0 W	④IC-01 NO2-02	SOLID	1.29e+04	1.28e+04	0.778	RPD
5 DUP	S97T001353	0 W	④IC-01 BR-02	SOLID	?	<1.02e3		RPD
5 DUP	S97T001353	0 W	④IC-01 NO3-02	SOLID	?	4.58e+04		RPD
5 DUP	S97T001353	0 W	④IC-01 PO4-02	SOLID	4.16e+04	3.54e+04	16.104	RPD
5 DUP	S97T001353	0 W	④IC-01 SO4-02	SOLID	?	3.57e+04		RPD
5 DUP	S97T001353	0 W	④IC-01 OXALATE2	SOLID	?	3.33e+04		RPD
6 SAMPLE	S97T001548	0 W	④IC-01 NO2-02	SOLID	N/A	1.968e+04	798.700	ug/g
6 SAMPLE	S97T001548	0 W	④IC-01 PO4-02	SOLID	N/A	3.590e+04	887.600	ug/g
7 DUP	S97T001548	0 W	④IC-01 F-02	SOLID	?	5.84e+04		RPD
7 DUP	S97T001548	0 W	④IC-01 CL-02	SOLID	?	1.41e+03		RPD
7 DUP	S97T001548	0 W	④IC-01 NO2-02	SOLID	1.97e+04	1.90e+04	3.618	RPD
7 DUP	S97T001548	0 W	④IC-01 BR-02	SOLID	?	<9.25e2		RPD
7 DUP	S97T001548	0 W	④IC-01 NO3-02	SOLID	?	7.21e+04		RPD

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

LABCORE Completed Worklist Report for Worklist# 20171

Seq Type	Sample# R A	Test	Matrix	Actual	Found	DL or Yield	Unit
7 DUP	S97T001548 0 W @IC-01	PO4-02	SOLID	3.59e+04	3.70e+04	3.018	RPD
7 DUP	S97T001548 0 W @IC-01	SO4-02	SOLID	?	4.83e+04		RPD
7 DUP	S97T001548 0 W @IC-01	OXALATE2	SOLID	?	1.85e+04		RPD
8 SAMPLE	S97T001553 0 W @IC-01	NO2-02	SOLID	N/A	4.078e+04	884.400	ug/g
8 SAMPLE	S97T001553 0 W @IC-01	PO4-02	SOLID	N/A	1.919e+03	982.800	ug/g
9 DUP	S97T001553 0 W @IC-01	F-02	SOLID	?	2.87e+04		RPD
9 DUP	S97T001553 0 W @IC-01	CL-02	SOLID	?	2.59e+03		RPD
9 DUP	S97T001553 0 W @IC-01	NO2-02	SOLID	4.08e+04	4.21e+04	3.136	RPD
9 DUP	S97T001553 0 W @IC-01	BR-02	SOLID	?	<0.63e2		RPD
9 DUP	S97T001553 0 W @IC-01	NO3-02	SOLID	?	8.31e+04		RPD
9 DUP	S97T001553 0 W @IC-01	PO4-02	SOLID	1.92e+03	2.13e+03	9.429	RPD
9 DUP	S97T001553 0 W @IC-01	SO4-02	SOLID	?	1.16e+05		RPD
9 DUP	S97T001553 0 W @IC-01	OXALATE2	SOLID	?	1.36e+04		RPD

Final page for worklist# 20171

Analyst Signature

Date

Analyst Signature

Date

[Signature] 9/29/97
Reviewer Signature Date

LABCORE Data Entry Template for Worklist# 20171

Analyst: EAL Instrument: IC0 2 Book# 95N20-AMethod: LA-533-105 Rev/Mod DI

Worklist Comment: Rerun By-109 for NO2 and PO4. Use 41 df. jmf

S	Type	Sample#	R	A	Test	Matrix	Group#	Project
1	CCB				@IC-QC	QC		
2	CCV				@IC-QC	QC		
3	BLNK-PREP				@IC-01	SOLID		
4	SAMPLE	S97T001353 0 W			@IC-01	SOLID	97000412	BY-109 (P)
		Analytes Requested:		NO2-02		, PO4-02		
5	DUP	S97T001353 0 W			@IC-01	SOLID		
6	SAMPLE	S97T001548 0 W			@IC-01	SOLID	97000411	BY-109 (P)
		Analytes Requested:		NO2-02		, PO4-02		
7	DUP	S97T001548 0 W			@IC-01	SOLID		
8	SAMPLE	S97T001553 0 W			@IC-01	SOLID	97000411	BY-109 (P)
		Analytes Requested:		NO2-02		, PO4-02		
9	DUP	S97T001553 0 W			@IC-01	SOLID		

Final page for worklist # 20171

Analyst Signature H. Lambel Date 09-08-97

Analyst Signature _____ Date _____

uploaded 9-11-97
J. H. Warrall
20171SEP.CSVValidated 9/16/97 JMF

Data Entry Comments:

Sample Name: INST. BLANK Date: 09/08/1997 10:08:48
Data File : C:\DX\DATA\97090801.D34
Method : C:\DX\METHOD\ANIONS.MET
ACT Address: 1 System: 1 Inject#: 34 Detector: CDM-1
Analyst : *Amey Jay* Column: AG4A/AS4A anion column
for 97090801.D34

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	1.16		0.000	48	227	1	
2	1.35		0.000	75	489	1	
3	6.19	sulfate	0.032	61	1100	1	5.45
Totals			0.032	184	1816

SIGNATURE ABOVE REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 450 TO 458.

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=====
Sample Name: 95N20-A STD                      Date: 09/08/1997 10:25:01
Data File  : C:\DX\DATA\97090801.D35
Method     : C:\DX\METHOD\ANIONS.MET
ACI Address: 1 System: 1 Inject#: 35          Detector: CDM-1
Analyst    :                               Column: AG4A/AS4A anion column
=====

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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	0.87		0.000	94	397	2	
2	1.03	fluoride	57.658	2147	10925	2	0.32
3	1.35		0.000	76	477	2	
4	1.59	chloride	82.231	2458	11477	1	0.42
5	1.91	nitrite	524.978	9273	51592	1	-0.35
6	2.93	bromide	551.139	5592	36305	1	3.78
7	3.33	nitrate	559.521	5936	47877	1	1.94
8	4.69	phosphate	520.838	1826	22565	1	2.92
9	6.13	sulfate	591.908	3951	68419	1	4.55
10	8.11	oxalate	511.928	2008	43810	1	4.83
Totals			3400.201	33362	293843		

File: 97090801.D35 Sample: 95N20-A STD

=====

Sample Name: PREP. BLANK	Date: 09/08/1997 10:42:46
Data File : C:\DX\DATA\97090801.D36	
Method : C:\DX\METHOD\ANIONS.MET	
ACI Address: 1 System: 1 Inject#: 36	Detector: CDM-1
Analyst :	Column: AG4A/AS4A anion column

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Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area	Reject
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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	1.23		0.000	52	435	1	
2	1.61	chloride	0.034	33	455	1	1.69
Totals			0.034	85	889		

File: 97090801.D36 Sample: PREP. BLANK

Sample Name: S97T001353 Date: 09/08/1997 10:56:38
 Data File : C:\DX\DATA\97090801.D37
 Method : C:\DX\METHOD\ANIONS.MET
 ACI Address: 1 System: 1 Inject#: 37 Detector: CDM-1
 Analyst : Column: AG4A/AS4A anion column

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area	Reject
External	1	41	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	0.87		0.000	149	538	1	
2	1.04	fluoride	328.070	67703	344124	1	0.97
3	1.59	chloride	3.665	296	1225	1	0.42
4	1.91	nitrite	63.779	2629	14571	1	-0.35
5	2.95		0.000	114	682	1	
6	3.33	nitrate	223.931	5830	47174	1	1.94
7	4.69	phosphate	206.058	1789	21974	1	2.92
8	6.13	sulfate	267.404	4690	76211	1	4.55
9	8.11	oxalate	164.527	1533	34677	1	4.83
Totals			1257.435	84732	541176		

File: 97090801.D37 Sample: S97T001353

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Sample Name: S97T001353 DUP Date: 09/08/1997 11:10:36

Data File : C:\DX\DATA\97090801.D38

Method : C:\DX\METHOD\ANIONS.MET

ACI Address: 1 System: 1 Inject#: 38 Detector: CDM-1

Analyst : Column: AG4A/AS4A anion column

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Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area	Reject
-------------	--------	----------	--------	------	-------	------	------	--------

External	1	41	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	0.88		0.000	154	547	1	
2	1.04	fluoride	328.112	69011	343926	1	0.97
3	1.59	chloride	3.871	318	1295	1	0.42
4	1.91	nitrite	64.469	2729	14741	1	-0.35
5	2.95		0.000	120	750	1	
6	3.33	nitrate	230.136	6010	48536	1	1.73
7	4.69	phosphate	177.711	1476	18865	1	2.92
8	6.13	sulfate	279.638	4982	79737	1	4.55
9	8.11	oxalate	166.963	1593	35189	1	4.83
Totals			1250.900	86393	543587		

File: 97090801.D38 Sample: S97T001353 DUP

Sample Name: S97T001548 Date: 09/08/1997 14:06:27
 Data File : C:\DX\DATA\97090801.D39
 Method : C:\DX\METHOD\ANIONS.MET
 ACI Address: 1 System: 1 Inject#: 39 Detector: CDM-1
 Analyst : Column: AG4A/AS4A anion column

Calibration Volume Dilution Points Rate Start Stop Area Reject

External 1 41 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	0.87		0.000	189	713	1	
2	1.04	fluoride	319.405	72861	372026	1	0.97
3	1.59	chloride	6.449	505	2172	1	0.42
4	1.91	nitrite	109.099	4727	25771	1	-0.35
5	3.31	nitrate	452.141	11617	98054	1	1.12
6	4.69	phosphate	198.980	1699	21197	1	2.92
7	6.13	sulfate	284.208	4905	81056	1	4.55
8	8.16	oxalate	109.903	1107	23202	1	5.52
Totals			1480.184	97608	624190		

File: 97090801.D39 Sample: S97T001548

Sample Name: S97T001548 DUP Date: 09/08/1997 14:18:14
 Data File : C:\DX\DATA\97090801.D40
 Method : C:\DX\METHOD\ANIONS.MET
 ACI Address: 1 System: 1 Inject#: 40 Detector: CDM-1
 Analyst : Column: AG4A/AS4A anion column

Calibration Volume Dilution Points Rate Start Stop Area Reject

External 1 41 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	0.87		0.000	168	602	1	
2	1.04	fluoride	323.804	71090	359948	1	0.97
3	1.59	chloride	7.793	605	2630	1	0.42
4	1.91	nitrite	105.186	4586	24803	1	-0.35
5	3.29	nitrate	438.242	11196	94908	1	0.71
6	4.69	phosphate	204.802	1776	21836	1	2.92
7	6.13	sulfate	267.425	4814	76217	1	4.55
8	8.16	oxalate	102.523	1056	21656	1	5.52
Totals			1449.775	95292	602601		

File: 97090801.D40 Sample: S97T001548 DUP

Sample Name: S97T001553 Date: 09/08/1997 14:31:06
 Data File : C:\DX\DATA\97090801.D41
 Method : C:\DX\METHOD\ANIONS.MET
 ACI Address: 1 System: 1 Inject#: 41 Detector: CDM-1
 Analyst : Column: AG4A/AS4A anion column

Calibration Volume Dilution Points Rate Start Stop Area Reject

External 1 41 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	0.87		0.000	169	738	2	
2	1.03	fluoride	138.669	15172	73873	2	-0.32
3	1.59	chloride	12.870	972	4367	1	0.42
4	1.91	nitrite	204.188	9068	49370	1	-0.35
5	2.94		0.000	79	473	1	
6	3.30	nitrate	419.938	10841	90775	1	0.92
7	4.69	phosphate	9.609	66	726	1	2.92
8	6.13	sulfate	567.721	11511	164754	1	4.55
9	8.16	oxalate	70.293	703	14917	1	5.52
Totals			1423.287	48582	399993		

File: 97090801.D41 Sample: S97T001553

Sample Name: S97T001553 DUP Date: 09/08/1997 14:49:06
 Data File : C:\DX\DATA\97090801.D42
 Method : C:\DX\METHOD\ANIONS.MET
 ACI Address: 1 System: 1 Inject#: 42 Detector: CDM-1
 Analyst : Column: AG4A/AS4A anion column

Calibration Volume Dilution Points Rate Start Stop Area Reject

External 1 41 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	0.88		0.000	179	748	2	
2	1.03	fluoride	152.910	16729	82845	2	0.32
3	1.58	chloride	13.755	993	4671	1	0.00
4	1.91	nitrite	223.779	9624	54250	1	-0.35
5	2.94		0.000	84	469	1	
6	3.29	nitrate	442.297	11486	95825	1	0.71
7	4.69	phosphate	11.247	80	900	1	2.92
8	6.13	sulfate	617.588	12522	179882	1	4.55
9	8.16	oxalate	72.325	741	15342	1	5.52
Totals			1533.900	52437	434932		

File: 97090801.D42 Sample: S97T001553 DUP

LABCORE Completed Worklist Report for Worklist# 20179

Analyst: dgg

Instrument: IC01

Book# 95-N20A

Method: 14-33-05 Rev/Mod D-1

Worklist Comment: Rerun BY-109 IC for F. Use 41 df.jmf

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	3.70e-02	0.037	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	2.11e-01	0.211	ug/mL
1 CCB	0	⊗IC-QC P04	QC	1	<1.20e-1		ug/mL
1 CCB	0	⊗IC-QC S04	QC	1	1.62e-01	0.162	ug/mL
1 CCB	0	⊗IC-QC OXALATE2	QC	1	<1.05e-1		ug/mL
2 CCV	0	⊗IC-QC F	QC	5.90e01	5.61e+01	95.085 % Recovery	
2 CCV	0	⊗IC-QC CL	QC	8.00e01	7.43e+01	92.875 % Recovery	
2 CCV	0	⊗IC-QC NO2	QC	5.43e02	4.93e+02	90.792 % Recovery	
2 CCV	0	⊗IC-QC BR	QC	5.89e02	5.39e+02	91.511 % Recovery	
2 CCV	0	⊗IC-QC NO3	QC	5.94e02	5.43e+02	91.414 % Recovery	
2 CCV	0	⊗IC-QC P04	QC	5.45e02	5.02e+02	92.110 % Recovery	
2 CCV	0	⊗IC-QC S04	QC	6.32e02	5.84e+02	92.405 % Recovery	
2 CCV	0	⊗IC-QC OXALATE2	QC	5.33e02	4.84e+02	90.807 % Recovery	
3 BLNK-PREP	0	⊗IC-01 F-02	SOLID	1	<1.20e-2		ug/g
3 BLNK-PREP	0	⊗IC-01 CL-02	SOLID	1	7.00e-02	0.070	ug/g
3 BLNK-PREP	0	⊗IC-01 NO2-02	SOLID	1	1.97e-01	0.197	ug/g
3 BLNK-PREP	0	⊗IC-01 BR-02	SOLID	1	<1.25e-1		ug/g
3 BLNK-PREP	0	⊗IC-01 NO3-02	SOLID	1	2.08e-01	0.208	ug/g
3 BLNK-PREP	0	⊗IC-01 P04-02	SOLID	1	<1.20e-1		ug/g
3 BLNK-PREP	0	⊗IC-01 S04-02	SOLID	1	<1.38e-1		ug/g
3 BLNK-PREP	0	⊗IC-01 OXALATE2	SOLID	1	<1.05e-1		ug/g
4 SAMPLE	S97T001551	0 W ⊗IC-01 F-02	SOLID	N/A	2.243e+04	97.520	ug/g
5 DUP	S97T001551	0 W ⊗IC-01 F-02	SOLID	2.24e+04	2.40e+04	6.897	RPD
5 DUP	S97T001551	0 W ⊗IC-01 CL-02	SOLID	?	2.47e+03		RPD
5 DUP	S97T001551	0 W ⊗IC-01 NO2-02	SOLID	?	3.85e+04		RPD
5 DUP	S97T001551	0 W ⊗IC-01 BR-02	SOLID	?	1.69e+03		RPD
5 DUP	S97T001551	0 W ⊗IC-01 NO3-02	SOLID	?	7.53e+04		RPD
5 DUP	S97T001551	0 W ⊗IC-01 P04-02	SOLID	?	9.04e+03		RPD
5 DUP	S97T001551	0 W ⊗IC-01 S04-02	SOLID	?	8.07e+04		RPD
5 DUP	S97T001551	0 W ⊗IC-01 OXALATE2	SOLID	?	2.53e+04		RPD
6 SPK	S97T001551	0 W ⊗IC-01 F-02	SOLID	5.90e01	6.38e+01	108.136 % Recovery	
6 SPK	S97T001551	0 W ⊗IC-01 CL-02	SOLID	8.00e01	0.00e+00	0.000 % Recovery	
6 SPK	S97T001551	0 W ⊗IC-01 NO2-02	SOLID	5.43e02	0.00e+00	0.000 % Recovery	
6 SPK	S97T001551	0 W ⊗IC-01 BR-02	SOLID	5.89e02	0.00e+00	0.000 % Recovery	
6 SPK	S97T001551	0 W ⊗IC-01 NO3-02	SOLID	5.94e02	0.00e+00	0.000 % Recovery	
6 SPK	S97T001551	0 W ⊗IC-01 P04-02	SOLID	5.45e02	0.00e+00	0.000 % Recovery	
6 SPK	S97T001551	0 W ⊗IC-01 S04-02	SOLID	6.32e02	0.00e+00	0.000 % Recovery	
6 SPK	S97T001551	0 W ⊗IC-01 OXALATE2	SOLID	5.33e02	0.00e+00	0.000 % Recovery	

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

LABCORE Completed Worklist Report for Worklist# 20179

Seq Type	Sample# R A	Test	Matrix	Actual	Found	DL or Yield	Unit
7 SAMPLE	S97T001556 0 W @IC-01	F-02	SOLID	N/A	6.709e+02	95.370	ug/g
8 DUP	S97T001556 0 W @IC-01	F-02	SOLID	6.71e+02	6.33e+02	5.828	RPD
8 DUP	S97T001556 0 W @IC-01	CL-02	SOLID	?	1.22e+03		RPD
8 DUP	S97T001556 0 W @IC-01	NO2-02	SOLID	?	1.40e+04		RPD
8 DUP	S97T001556 0 W @IC-01	BR-02	SOLID	?	<1.03e3		RPD
8 DUP	S97T001556 0 W @IC-01	NO3-02	SOLID	?	4.29e+04		RPD
8 DUP	S97T001556 0 W @IC-01	PO4-02	SOLID	?	6.00e+03		RPD
8 DUP	S97T001556 0 W @IC-01	SO4-02	SOLID	?	2.05e+03		RPD
8 DUP	S97T001556 0 W @IC-01	OxALATE2	SOLID	?	<8.67e2		RPD

Final page for worklist# 20179

Analyst Signature

Date

Analyst Signature

Date

Reviewer Signature

9/29/97
Date

LABCORE Data Entry Template for Worklist# 20179

Analyst: NBB Instrument: IC0 1 Book# 95N20-A

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

Worklist Comment: Rerun BY-109 IC for F. Use 41 df.jmf

S Type	Sample#	R A	Test	Matrix	Group#	Project
1 CCB			@IC-QC	QC		
2 CCV			@IC-QC	QC		
3 BLNK-PREP			@IC-01	SOLID		
4 SAMPLE	S97T001551 0 W		@IC-01	SOLID	97000411	BY-109 (P)
	Analytes Requested: F-02					
5 DUP	S97T001551 0 W		@IC-01	SOLID		
6 SPK	S97T001551 0 W		@IC-01	SOLID		
7 SAMPLE	S97T001556 0 W		@IC-01	SOLID	97000411	BY-109 (P)
	Analytes Requested: F-02					
8 DUP	S97T001556 0 W		@IC-01	SOLID		

Final page for worklist # 20179

NBB 9-6-97
Analyst Signature Date

Analyst Signature Date

uploaded 9-11-97

John W. Wall

201795E.CSV

Validated 9/18/97 M. Lye

Data Entry Comments:

Sample Name: BLANK Date: 09/06/1997 10:34:04
 Data File : C:\DX\DATA\97090601.D01
 Method : C:\DX\METHOD\KIT.MET
 ACI Address: 1 System: 1 Inject#: 1 Detector: CDM-1
 Analyst : *AB* Column: AG4A/AS4A anion column

Calibration Volume Dilution Points Rate Start Stop Area Reject

External 1 1 3000 5Hz 0.00 10.00 30

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	1.12		0.000	64	377	2	
2	1.30		0.000	14	68	2	
3	1.53	chloride	0.037	76	319	1	0.44
4	3.25	nitrate	0.211	23	118	1	3.07
5	5.92	sulfate	0.162	70	966	1	5.71

Totals 0.410 246 1849

File: 97090601.D01 Sample: BLANK

SIGNATURE ABOVE REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 462 TO 469.

Sample Name: STD 95N20-A Date: 09/06/1997 10:46:58
 Data File : C:\DX\DATA\97090601.D02
 Method : C:\DX\METHOD\KIT.MET
 ACI Address: 1 System: 1 Inject#: 2 Detector: CDM-1
 Analyst : *OB Griffin* Column: AG4A/AS4A anion column

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area	Reject
External	1	101	3000	5Hz	0.00	10.00		30

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.84		0.000	80	355	2	
2	1.00	fluoride	56.095	2806	12224	2	1.01
3	1.53	chloride	74.314	2394	10520	1	0.88
4	1.85	nitrite	493.269	9787	49679	1	0.36
5	2.80	bromide	538.517	5728	35415	1	1.08
6	3.19	nitrate	543.078	6151	46202	1	1.16
7	4.51	phosphate	501.987	1914	21457	1	3.05
8	5.87	sulfate	583.717	4696	65425	1	4.76
9	7.73	oxalate	483.614	2294	41675	1	5.07
Totals			3274.591	35850	282953		

File: 97090601.D02 Sample: STD 95N20-A

Sample Name: PREP-BLANK Date: 09/06/1997 11:02:18
Data File : C:\DX\DATA\97090601.D03
Method : C:\DX\METHOD\KIT.MET
ACI Address: 1 System: 1 Inject#: 3 Detector: CDM-1
Analyst : *SB Sullivan* Column: AG4A/AS4A anion column

Calibration Volume Dilution Points Rate Start Stop Area Reject

External 1 1 3000 5Hz 0.00 10.00 30

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	1.24		0.000	149	1801	2	
2	1.55	chloride	0.070	49	802	2	1.75
3	1.85	nitrite	0.197	93	399	1	0.36
4	3.25	nitrate	0.208	15	93	1	3.07
Totals			0.475	306	3095		

File: 97090601.D03 Sample: PREP-BLANK

```

=====
Sample Name: S97T001551                      Date: 09/06/1997 11:14:54
Data File  : C:\DX\DATA\97090601.D04
Method     : C:\DX\METHOD\KIT.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 41 3000 5Hz 0.00 10.00 30

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.85		0.000	169	738	2	
2	1.00	fluoride	113.033	13796	61465	2	1.01
3	1.53	chloride	11.733	879	3955	1	0.44
4	1.84	nitrite	182.424	8762	45167	1	0.00
5	2.81	bromide	8.523	12	61	1	1.56
6	3.16	nitrate	333.375	9108	70843	1	0.32
7	4.51	phosphate	51.130	416	4810	1	3.05
8	5.87	sulfate	366.419	7517	101904	1	4.76
9	7.73	oxalate	116.166	1284	24307	1	5.07
Totals			1182.803	41943	313251		

File: 97090601.D04 Sample: S97T001551

Sample Name: S97T001551-DUP Date: 09/06/1997 11:26:56
 Data File : C:\DX\DATA\97090601.D05
 Method : C:\DX\METHOD\KIT.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	41	3000	5Hz	0.00	10.00		30

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.85		0.000	177	751	2	
2	1.00	fluoride	121.721	15203	66111	2	1.01
3	1.53	chloride	12.511	945	4232	1	0.44
4	1.83	nitrite	195.006	9160	48355	1	-0.36
5	2.81	bromide	8.544	14	65	1	1.32
6	3.15	nitrate	381.514	10566	81364	1	-0.11
7	4.51	phosphate	45.764	380	4227	1	3.05
8	5.87	sulfate	408.597	8521	113827	1	4.76
9	7.73	oxalate	128.039	1448	26891	1	5.07
Totals			1301.696	46414	345824		

File: 97090601.D05 Sample: S97T001551-DUP

Sample Name: S97T001551-SPK Date: 09/06/1997 11:38:17
 Data File : C:\DX\DATA\97090601.D06
 Method : C:\DX\METHOD\KIT.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	41	3000	5Hz	0.00	10.00		30

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.85		0.000	251	1038	2	
2	1.00	fluoride	138.553	16824	75069	2	1.01
3	1.53	chloride	41.515	3282	14562	1	0.44
4	1.83	nitrite	397.338	19135	98873	1	-0.36
5	2.78	bromide	219.182	5752	35513	1	0.36
6	3.13	nitrate	572.008	15190	123093	1	-0.74
7	4.48	phosphate	243.073	2270	25765	1	2.44
8	5.81	sulfate	620.290	11133	173964	1	3.81
9	7.68	oxalate	315.213	3550	67134	1	4.35
Totals			2547.171	77387	615010		

File: 97090601.D06 Sample: S97T001551-SPK

Sample Name: S97T001556 Date: 09/06/1997 11:49:10
 Data File : C:\DX\DATA\97090601.D07
 Method : C:\DX\METHOD\KIT.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	41	3000	5Hz	0.00	10.00		30

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.85		0.000	55	308	1	
2	1.00	fluoride	3.462	374	1450	2	1.01
3	1.11		0.000	75	227	2	
4	1.53	chloride	6.830	499	2209	1	0.44
5	1.83	nitrite	76.411	3644	18078	1	-0.36
6	2.80	bromide	8.424	13	45	1	1.08
7	3.16	nitrate	235.307	6483	49439	1	0.32
8	4.51	phosphate	30.029	220	2520	1	3.05
9	5.92	sulfate	10.902	162	2156	1	5.71
Totals			371.365	11524	76432		

File: 97090601.D07 Sample: S97T001556

Sample Name: S97T001556-DUP Date: 09/06/1997 12:00:06
Data File : C:\DX\DATA\97090601.D08
Method : C:\DX\METHOD\KIT.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	41	3000	5Hz	0.00	10.00		30

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.85		0.000	44	232	1	
2	1.00	fluoride	3.145	351	1273	1	1.01
3	1.53	chloride	6.041	435	1928	1	0.44
4	1.84	nitrite	69.403	3273	16273	1	0.00
5	3.17	nitrate	213.006	6008	44577	1	0.53
6	4.51	phosphate	29.797	224	2494	1	3.05
7	5.87	sulfate	10.174	123	1953	1	4.76
Totals			331.566	10459	68731		

File: 97090601.D08 Sample: S97T001556-DUP

LABCORE Completed Worklist Report for Worklist# 20209

Analyst: adp

Instrument: IC01

Book# 95N20A

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

Worklist Comment: BY-109 RR#2 for Br (STD out). Use DF = 41. -ppb

Seq Type	Sample#	R A	Test	Matrix	Actual	Found	DL or Yield	Unit
1	CCB	0	①IC-QC	F	QC	1	<1.20e-2	ug/mL
1	CCB	0	①IC-QC	CL	QC	1	1.90e-02	0.019 ug/mL
1	CCB	0	①IC-QC	NO2	QC	1	<1.08e-1	ug/mL
1	CCB	0	①IC-QC	BR	QC	1	<1.25e-1	ug/mL
1	CCB	0	①IC-QC	NO3	QC	1	<1.39e-1	ug/mL
1	CCB	0	①IC-QC	P04	QC	1	<1.20e-1	ug/mL
1	CCB	0	①IC-QC	SO4	QC	1	1.44e-01	0.144 ug/mL
1	CCB	0	①IC-QC	OxALATE2	QC	1	<1.05e-1	ug/mL
2	CCV	0	①IC-QC	F	QC	5.90e01	5.71e+01	96.780 % Recovery
2	CCV	0	①IC-QC	CL	QC	8.00e01	7.77e+01	97.125 % Recovery
2	CCV	0	①IC-QC	NO2	QC	5.43e02	4.93e+02	90.792 % Recovery
2	CCV	0	①IC-QC	BR	QC	5.89e02	5.41e+02	91.851 % Recovery
2	CCV	0	①IC-QC	NO3	QC	5.94e02	5.41e+02	91.077 % Recovery
2	CCV	0	①IC-QC	P04	QC	5.45e02	5.03e+02	92.294 % Recovery
2	CCV	0	①IC-QC	SO4	QC	6.32e02	5.91e+02	93.513 % Recovery
2	CCV	0	①IC-QC	OxALATE2	QC	5.33e02	4.95e+02	92.871 % Recovery
3	SAMPLE	S97T001350	0 W ①IC-01	BR-02	SOLID	N/A	2.049e+03	1030.000 ug/g
4	DUP	S97T001350	0 W ①IC-01	BR-02	SOLID	2.05e+03	2.13e+03	3.828 RPD
5	SPK	S97T001350	0 W ①IC-01	BR-02	SOLID	5.89e02	5.25e+02	89.134 % Recovery
6	SAMPLE	S97T001559	0 W ①IC-01	BR-02	SOLID	N/A	2.252e+03	1019.000 ug/g
7	DUP	S97T001559	0 W ①IC-01	BR-02	SOLID	2.25e+03	2.24e+03	0.445 RPD
8	SPK	S97T001559	0 W ①IC-01	BR-02	SOLID	5.89e02	5.24e+02	88.964 % Recovery
9	SAMPLE	S97T001574	0 W ①IC-01	BR-02	SOLID	N/A	3.212e+03	1007.000 ug/g
10	DUP	S97T001574	0 W ①IC-01	BR-02	SOLID	3.21e+03	3.14e+03	2.205 RPD
11	SPK	S97T001574	0 W ①IC-01	BR-02	SOLID	5.89e02	5.15e+02	87.436 % Recovery

Final page for worklist# 20209

Analyst Signature

Date

Analyst Signature

Date

Janet Lyle
Reviewer Signature

9/29/97
Date

LABCORE Data Entry Template for Worklist# 20209

Analyst: ADP Instrument: IC0 1 Book# 45N20-A

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

Worklist Comment: BY-109 RR#2 for Br (STD out). Use DF = 41. -ppb

S Type	Sample#	R A	Test	Matrix	Group#	Project
1 CCB			@IC-QC	QC		
2 CCV			@IC-QC	QC		
3 SAMPLE	S97T001350	0 W	@IC-01	SOLID	97000412	BY-109 (P)
Analytes Requested: BR-02						
4 DUP	S97T001350	0 W	@IC-01	SOLID		
5 SPK	S97T001350	0 W	@IC-01	SOLID		
6 SAMPLE	S97T001559	0 W	@IC-01	SOLID	97000411	BY-109 (P)
Analytes Requested: BR-02						
7 DUP	S97T001559	0 W	@IC-01	SOLID		
8 SPK	S97T001559	0 W	@IC-01	SOLID		
9 SAMPLE	S97T001574	0 W	@IC-01	SOLID	97000412	BY-109 (P)
Analytes Requested: BR-02						
10 DUP	S97T001574	0 W	@IC-01	SOLID		
11 SPK	S97T001574	0 W	@IC-01	SOLID		

Final page for worklist # 20209

SEE ORIGINAL

Analyst Signature _____ Date _____

uploaded 9-17-97

JH Wonnell

20209SEP.CSV

Validated 9/17/97 JM Lye

Analyst Signature _____ Date _____

Data Entry Comments:

LABCORE Data Entry Template for Worklist# 20209

Analyst: ADD Instrument: IC0 1 Book# 95N20-A

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

Worklist Comment: BY-109 RR#2 for Br (STD out). Use DF = 41. -ppb

S Type	Sample#	R A	Test	Matrix	Group#	Project
1 CCB			@IC-QC	QC		
2 CCV			@IC-QC	QC		
3 BLNK-PREP			@IC-01	SOLID		<i>deleted 9/17/97 JMF</i>
4 SAMPLE	S97T001350 0 W		@IC-01	SOLID	97000412	BY-109 (P)
	Analytes Requested: BR-02					
5 DUP	S97T001350 0 W		@IC-01	SOLID		
6 SPK	S97T001350 0 W		@IC-01	SOLID		
7 SAMPLE	S97T001559 0 W		@IC-01	SOLID	97000411	BY-109 (P)
	Analytes Requested: BR-02					
8 DUP	S97T001559 0 W		@IC-01	SOLID		
9 SPK	S97T001559 0 W		@IC-01	SOLID		
10 SAMPLE	S97T001574 0 W		@IC-01	SOLID	97000412	BY-109 (P)
	Analytes Requested: BR-02					
11 DUP	S97T001574 0 W		@IC-01	SOLID		
12 SPK	S97T001574 0 W		@IC-01	SOLID		

Final page for worklist # 20209

Anthony Parmiter 9-997
Analyst Signature Date

Analyst Signature Date

Data Entry Comments:

Blank - Prep was deleted off worklist because test did not run it. R, Ruth Exh. said it was ok because we had run of the Blank Prep from earlier worklists for these samples. JMF 9/17/97

Sample Name: BLANK Date: 09/09/1997 08:02:42
 Data File : C:\DX\DATA\97090631.D02
 Method : C:\DX\METHOD\KIT.MET
 ACI Address: 1 System: 1 Inject#: 2 Detector: CDM-1
 Analyst : *James Faye* Column: AG4A/AS4A anion column
for 97090631

Calibration Volume Dilution Points Rate Start Stop Area Reject

External 1 1 3000 5Hz 0.00 10.00 30

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.85		0.000	14	42	1	
2	1.31		0.000	9	33	1	
3	1.54	chloride	0.019	15	52	1	1.32
4	5.97	sulfate	0.144	44	769	1	6.67
Totals			0.163	82	897		

File: 97090631.D02 Sample: BLANK

SIGNATURE ABOVE REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 442 TO 483.

Sample Name: 95N20-A STD Date: 09/09/1997 09:40:52
 Data File : C:\DX\DATA\97090631.D04
 Method : C:\DX\METHOD\KIT.MET
 ACI Address: 1 System: 1 Inject#: 4 Detector: CDM-1
 Analyst : *Anthony J. Smith* Column: AG4A/AS4A anion column

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area	Reject
External	1	101	3000	5Hz	0.00	10.00		30

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.85		0.000	118	524	2	
2	1.00	fluoride	57.088	96.76	12448	2	1.01
3	1.54	chloride	77.721	97.15	11013	1	1.32
4	1.85	nitrite	493.074	90.81	49659	1	0.72
5	2.82	bromide	540.874	91.83	35577	1	1.81
6	3.20	nitrate	540.653	91.02	45987	1	1.59
7	4.56	phosphate	502.570	92.21	21483	1	4.27
8	5.97	sulfate	590.577	93.45	66208	1	6.67
9	7.84	oxalate	494.857	92.84	42659	1	6.52
Totals			3297.414	35578	285557		

File: 97090631.D04 Sample: 95N20-A STD

100-10

Sample Name: S97T001350 SAM Date: 09/09/1997 10:17:54
 Data File : C:\DX\DATA\97090631.D06
 Method : C:\DX\METHOD\KIT.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	41	3000	5Hz	0.00	10.00		30

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.85		0.000	183	774	2	
2	1.00	fluoride	196.777	23979	105615	2	1.01
3	1.53	chloride	8.451	625	2786	1	0.88
4	1.85	nitrite	129.362	6151	31659	1	0.36
5	2.82	bromide	10.198	59	343	1	1.81
6	3.17	nitrate	455.338	12183	97518	1	0.53
7	4.56	phosphate	15.281	88	920	1	4.27
8	5.92	sulfate	731.059	14350	205629	1	5.71
9	7.89	oxalate	72.545	817	14784	1	7.25
Totals			1619.012	58435	460029		

File: 97090631.D06 Sample: S97T001350 SAM

250-10

Sample Name: S97T001350 DUP Date: 09/09/1997 10:36:09
 Data File : C:\DX\DATA\97090631.D07
 Method : C:\DX\METHOD\KIT.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	41	3000	5Hz	0.00	10.00		30

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.85		0.000	176	732	2	
2	1.00	fluoride	185.705	23006	99857	2	1.01
3	1.53	chloride	9.093	674	3015	1	0.88
4	1.85	nitrite	124.993	5990	30543	1	0.36
5	2.82	bromide	10.738	70	433	1	1.81
6	3.16	nitrate	445.444	11874	95352	1	0.32
7	4.56	phosphate	11.568	48	518	1	4.27
8	5.92	sulfate	692.972	13431	194726	1	5.71
9	7.89	oxalate	74.378	805	15185	1	7.25
Totals			1554.891	56074	440361		

File: 97090631.D07 Sample: S97T001350 DUP

250-10

Sample Name: S97T001350 SPK Date: 09/09/1997 10:53:17
 Data File : C:\DX\DATA\97090631.D08
 Method : C:\DX\METHOD\KIT.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	41	3000	5Hz	0.00	10.00		30

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.85		0.000	247	949	2	
2	1.00	fluoride	228.416	26624	121940	2	1.01
3	1.53	chloride	38.293	2899	13414	1	0.44
4	1.84	nitrite	334.325	15771	83288	1	0.00
5	2.80	bromide	220.367	5737	35712	1	1.08
6	3.14	nitrate	682.591	17805	147387	1	-0.32
7	4.53	phosphate	204.476	1901	21534	1	3.66
8	5.92	sulfate	976.342	20662	276240	1	5.71
9	7.84	oxalate	265.096	3077	56446	1	6.52
Totals			2949.905	94722	756910		

File: 97090631.D08 Sample: S97T001350 SPK

250-10

Sample Name: S97T001559 SAM Date: 09/09/1997 11:06:16
 Data File : C:\DX\DATA\97090631.D09
 Method : C:\DX\METHOD\KIT.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	41	3000	5Hz	0.00	10.00		30

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.85		0.000	186	851	2	
2	1.00	fluoride	91.156	11698	49695	2	1.01
3	1.53	chloride	12.576	876	4255	1	0.44
4	1.84	nitrite	182.928	8658	45294	1	0.00
5	2.81	bromide	11.332	94	533	1	1.56
6	3.17	nitrate	360.117	9732	76687	1	0.53
7	4.56	phosphate	170.013	1500	17763	1	4.27
8	5.97	sulfate	336.083	6807	93340	1	6.67
9	7.89	oxalate	116.194	1351	24313	1	7.25
Totals			1280.399	40903	312731		

File: 97090631.D09 Sample: S97T001559 SAM

250-10

Sample Name: S97T001559 DUP Date: 09/09/1997 11:17:36
 Data File : C:\DX\DATA\97090631.D10
 Method : C:\DX\METHOD\KIT.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	41	3000	5Hz	0.00	10.00		30

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.85		0.000	197	965	2	
2	1.00	fluoride	92.880	11663	50626	2	1.01
3	1.53	chloride	11.942	796	4030	1	0.44
4	1.85	nitrite	183.347	8644	45401	1	0.36
5	2.81	bromide	11.293	95	526	1	1.56
6	3.17	nitrate	364.749	9857	77699	1	0.53
7	4.56	phosphate	158.714	1439	16528	1	4.27
8	5.97	sulfate	340.703	6938	94644	1	6.67
9	7.89	oxalate	119.983	1377	25138	1	7.25
Totals			1283.610	41006	315557		

File: 97090631.D10 Sample: S97T001559 DUP

250-10

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Sample Name: S97T001559 SPK      Date: 09/09/1997 11:31:00
Data File  : C:\DX\DATA\97090631.D11
Method     : C:\DX\METHOD\KIT.MET
ACI Address: 1 System: 1 Inject#: 11      Detector: CDM-1
Analyst    :                      Column: AG4A/AS4A anion column
=====

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=====
Calibration Volume Dilution Points Rate Start Stop Area Reject
-----
External          1          41 3000 5Hz 0.00 10.00          30
=====

```

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.85		0.000	260	1059	1	
2	1.00	fluoride	120.225	14491	65312	1	1.01
3	1.53	chloride	42.199	3114	14805	1	0.88
4	1.85	nitrite	402.904	19050	100243	1	0.36
5	2.80	bromide	220.846	5791	35793	1	1.08
6	3.15	nitrate	589.433	15779	126918	1	-0.11
7	4.53	phosphate	375.438	3503	40347	1	3.66
8	5.92	sulfate	579.639	10704	162378	1	5.71
9	7.84	oxalate	319.877	3761	68125	1	6.52
Totals			2650.559	76454	614980		

File: 97090631.D11 Sample: S97T001559 SPK

1250-10

Sample Name: S97T001574 SAM Date: 09/09/1997 11:42:03
 Data File : C:\DX\DATA\97090631.D12
 Method : C:\DX\METHOD\KIT.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	41	3000	5Hz	0.00	10.00		30

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.85		0.000	174	759	2	
2	1.00	fluoride	120.640	14876	65534	2	1.01
3	1.53	chloride	9.893	711	3300	1	0.44
4	1.84	nitrite	165.931	7665	40979	1	0.00
5	2.81	bromide	16.345	223	1375	1	1.56
6	3.16	nitrate	421.620	11462	90137	1	0.32
7	4.56	phosphate	14.844	73	873	1	4.27
8	5.92	sulfate	455.482	7776	127104	1	5.71
9	7.89	oxalate	69.816	747	14186	1	7.25
Totals			1274.571	43706	344247		

File: 97090631.D12 Sample: S97T001574 SAM

250-10

```

=====
Sample Name: S97T001574 DUP          Date: 09/09/1997 11:52:51
Data File  : C:\DX\DATA\97090631.D13
Method     : C:\DX\METHOD\KIT.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 41 3000 5Hz 0.00 10.00 30

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.85		0.000	180	776	2	
2	1.00	fluoride	123.797	15538	67219	2	1.01
3	1.53	chloride	10.157	745	3394	1	0.88
4	1.85	nitrite	168.531	8011	41640	1	0.36
5	2.81	bromide	16.336	230	1373	1	1.56
6	3.16	nitrate	447.389	11940	95778	1	0.32
7	4.56	phosphate	15.204	82	912	1	4.27
8	5.97	sulfate	480.691	10213	134252	1	6.67
9	7.89	oxalate	70.298	787	14292	1	7.25
Totals			1332.402	47726	359636		

File: 97090631.D13 Sample: S97T001574 DUP

250-10

Sample Name: S97T001574 SPK Date: 09/09/1997 12:07:28
 Data File : C:\DX\DATA\97090631.D14
 Method : C:\DX\METHOD\KIT.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	41	3000	5Hz	0.00	10.00		30

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

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.85		0.000	260	1127	2	
2	1.00	fluoride	144.610	18333	78278	2	1.01
3	1.53	chloride	38.247	2899	13398	1	0.44
4	1.85	nitrite	374.163	18170	93156	1	0.36
5	2.80	bromide	222.230	5988	36027	1	1.08
6	3.13	nitrate	678.070	17680	146393	1	-0.53
7	4.53	phosphate	208.492	1845	21974	1	3.66
8	5.92	sulfate	720.533	14434	202614	1	5.71
9	7.84	oxalate	262.559	3007	55903	1	6.52
Totals			2648.904	82616	648869		

File: 97090631.D14 Sample: S97T001574 SPK

LABCORE Data Entry Template for Worklist# 18730

Analyst: B. Goble Instrument: ICP^{OL}01 Book# 6784NA
Method: LA-505-¹³¹161 Rev/Mod C-2
6-18-97 10/31/97
Worklist Comment: ICP BY-109 (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	S97T001368 0 D	@ICP-D01	LIQUID	97000412 BY-109 (P)	
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	S97T001368 0 D	@ICP-D01	LIQUID		
8	ICSA		@ICP-QC	QC		
9	ICSAB		@ICP-QC	QC		
10	CCV		@ICP-QC	QC		
11	CCB		@ICP-QC	QC		

Final page for worklist # 18730

[Signature] 6-18-97
Analyst Signature Date

Revised & Validated by:
[Signature] 6/19/97
Analyst Signature Date

Data Entry Comments:

Li = 2.083 e+3 ug
ml

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

6-18-97

5-106 5925001320

B4-109 597 TW 136

By-101 597700124

IC 5 AB

501-9501

D.F.

1241-1)

5-1-85

20

587700 1368

$$, \sin 1 = 9.8 \text{ cm}$$

20

1368-12

 $1.5 \text{ m} - 8.5 \text{ m}$

20

CCV

CCB

597T001370_1

4.41 - 6.41 - 2.41 - 8.41

12.5

1320

class 1-6m

2.5-

71370.4

$$4m - 6m$$

2.5

19

1370-5

4 mil - 6 mil

2.1'

1370. X

4m1-6m1. -1m1-9m1

25.0

1370. AX

4m1-6m1 - 1m1 - 1m1 ex: XWITC 28+35 = 7m1 25.0

LCSA

IC57B

CCV

CCB

$$L_1 = 2.083 \times 10^{-3} \frac{\mu g}{ml}$$

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Analysis Report

Summary

#	Sample Name	File	Method	Date	Time	OpID	Type	Mode
1	ICV	970618B	ICP2	06/18/97	10:16	BJG	Q	CONC
2	ICB	970618B	ICP2	06/18/97	10:19	BJG	Q	CONC
3	LLS	970618B	ICP2	06/18/97	10:22	BJG	Q	CONC
4	ICSA	970618B	ICP2	06/18/97	10:25	BJG	Q	CONC
5	ICSAB	970618B	ICP2	06/18/97	10:29	BJG	Q	CONC
6	S97T001241	970618B	ICP2	06/18/97	10:33	BJG	S	CONC
7	S97T001241_D	970618B	ICP2	06/18/97	10:36	BJG	S	CONC
8	S97T001368	970618B	ICP2	06/18/97	10:39	BJG	S	CONC
9	S97T001368_D	970618B	ICP2	06/18/97	10:43	BJG	S	CONC
10	CCV	970618B	ICP2	06/18/97	10:47	BJG	Q	CONC
11	CCB	970618B	ICP2	06/18/97	10:50	BJG	Q	CONC
12	PREPSTDTJA	970618B	ICP2	06/18/97	10:55	BJG	Q	CONC
13	PREPBLKTJA	970618B	ICP2	06/18/97	10:59	BJG	Q	CONC
14	S97T001370_L	970618B	ICP2	06/18/97	11:06	BJG	S	CONC
15	S97T001370	970618B	ICP2	06/18/97	11:09	BJG	S	CONC
16	S97T001370_S	970618B	ICP2	06/18/97	11:12	BJG	S	CONC
17	S97T001370_D	970618B	ICP2	06/18/97	11:15	BJG	S	CONC
18	S97T001370_X	970618B	ICP2	06/18/97	11:19	BJG	S	CONC
19	S97T001370_AX	970618B	ICP2	06/18/97	11:22	BJG	S	CONC
20	ICSA	970618B	ICP2	06/18/97	11:25	BJG	Q	CONC
21	ICSAB	970618B	ICP2	06/18/97	11:28	BJG	Q	CONC
22	CCV	970618B	ICP2	06/18/97	11:31	BJG	Q	CONC
23	CCB	970618B	ICP2	06/18/97	11:36	BJG	Q	CONC

6-18-97

S97T001241 BY-101

S97T001368 BY-109

S97T001370 S-106 Acid Digest

FILE # 0970618.B.TXT

SIGNATURE ABOVE REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
 COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 486 TO 490.

HNF-SD-WM-DP-259, REV. 0

Analysis Report

Averages

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#	Sample Name	Ag	Al	As	B	Ba	Be
1	ICV	4.900	4.892	5.207	5.061	4.969	5.120
2	ICB	-.0007	-.0026	-.0100	.0035	.0001	.0001
3	LLS	.0207	.1066	.2052	.1047	.1017	.0110
4	ICSA	.0003	245.9	-.0250	-.0071	.0001	.0005
5	ICSAB	.9654	244.1	-.0504	-.0080	.4701	.4875
6	S97T001241	-.0358	-.0452	-.1148	.0600	.0628	.0043
7	S97T001241_D	-.0163	.0847	.0163	-.0098	.0628	.0043
8	S97T001368	-.0549	-.0953	-.0772	-.0496	.0580	.0052
9	S97T001368_D	-.0547	-.3220	-.1846	.0302	.0581	-.0009
10	CCV	4.860	4.824	5.115	4.976	4.835	5.050
11	CCB	-.0016	-.0045	.0062	.0005	.0001	.0004
12	PREPSTDTJA	.9740	4.810	5.047	4.978	4.730	5.088
13	PREPBLKTJA	-.0007	Q.0606	-.0101	Q.1709	.0011	.0002
14	S97T001370_L	.0613	58.80	-.0322	.7370	.0315	.0017
15	S97T001370	.0731	57.90	.0327	.6546	.0315	.0029
16	S97T001370_S	.0727	55.75	-.0214	.5096	.0288	.0011
17	S97T001370_D	.0724	56.67	.0015	.3067	.0302	.0020
18	S97T001370_X	.0158	58.58	-.3443	.6747	.0316	.0110
19	S97T001370_AX	191.0	300.0	250.7	247.1	246.7	248.0
20	ICSA	1.067	240.5	-.0498	-.0046	.0003	.0006
21	ICSAB	1.004	240.2	-.0127	-.0036	.4656	.4776
22	CCV	4.830	4.833	5.141	4.999	4.885	5.057
23	CCB	Q.0289	-.0137	-.0076	-.0005	.0001	-.0000

#	Sample Name	Bi	Ca	Cd	Ce	Co	Cr
1	ICV	5.072	4.917	4.993	4.937	5.071	4.960
2	ICB	.0048	.0001	.0000	.0011	.0000	.0000
3	LLS	.1943	.2137	.0097	.2063	.0399	.0203
4	ICSA	-.0167	249.8	.0009	-.0030	.0004	-.0035
5	ICSAB	-.0261	253.7	.9401	.0071	.4718	.4716
6	S97T001241	-.0725	.4011	-.0081	-.0603	-.0156	-.0086
7	S97T001241_D	-.1889	.4264	.0028	.1017	-.0234	-.0141
8	S97T001368	-.3630	.0137	.0119	-.1667	.0163	.0189
9	S97T001368_D	-.4296	.0387	-.0098	-.0584	-.0019	-.0110
10	CCV	4.992	5.003	4.960	4.807	5.054	4.949
11	CCB	.0076	-.0050	.0015	-.0077	-.0009	-.0003
12	PREPSTDTJA	4.837	4.864	4.760	4.867	4.927	4.801
13	PREPBLKTJA	-.0358	.0502	.0004	.0017	.0005	.0018
14	S97T001370_L	.8627	.9022	.0885	-.0109	.0084	29.66
15	S97T001370	.9047	1.011	.0899	.0277	.0103	28.90
16	S97T001370_S	.8860	1.056	.0762	.0202	.0146	27.92
17	S97T001370_D	.8869	1.152	.0808	.0210	.0103	28.27
18	S97T001370_X	.3545	.6903	.0795	-.0570	.0201	29.51
19	S97T001370_AX	251.6	252.4	245.6	246.3	245.0	275.2
20	ICSA	-.0282	249.3	.0028	.0065	.0008	-.0028
21	ICSAB	-.0344	248.4	.9215	.0044	.4599	.4612
22	CCV	4.979	4.930	4.907	4.810	5.011	4.891
23	CCB	.0219	-.0007	-.0010	.0008	-.0004	.0004

HNF-SD-WM-DP-259, REV. 0

Analysis Report

Averages

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#	Sample Name	Cu	Eu	Fe	K	La	Li
1	ICV	4.908	.0037	4.681	5.068	5.027	4.948
2	ICB	.0002	.0007	-.0011	-.0579	-.0001	.0005
3	LLS	.0179	-.0002	.0955	Q.3556	.1045	.0210
4	ICSA	-.0096	-.0026	93.61	-.0706	-.0048	.0022
5	ICSAB	.4409	-.0085	93.50	-.0127	-.0041	1.024
6	S97T001241	.0177	.0068	.1257	-3.360	-.0166	2185
7	S97T001241_D	.0224	-.0016	.0660	-.2473	-.0062	2169
8	S97T001368	.0098	.0211	-.0163	-2.020	-.0315	2083
9	S97T001368_D	-.0056	.0241	-.0291	-6.631	-.0103	2067
10	CCV	4.793	.0061	4.660	4.700	4.890	4.831
11	CCB	-.0006	.0008	-.0021	-.2613	-.0019	.0013
12	PREPSTDTJA	4.357	-.0034	4.676	4.906	4.884	4.928
13	PREPBLKTJA	.0093	-.0002	.0274	-.1714	.0003	.0003
14	S97T001370_L	-.0578	.0085	4.643	1.332	.0900	.5219
15	S97T001370	-.0549	.0035	4.525	2.104	.0953	.5231
16	S97T001370_S	-.0480	.0044	2.913	1.883	.0937	.4946
17	S97T001370_D	-.0487	.0029	3.270	2.002	.0913	.5115
18	S97T001370_X	-.0637	.0098	4.580	-2.760	.0794	.5393
19	S97T001370_AX	223.4	.1864	235.5	244.5	245.2	247.7
20	ICSA	-.0094	-.0101	92.07	.0010	-.0051	.0035
21	ICSAB	.4366	-.0043	91.74	.0919	-.0051	1.028
22	CCV	4.839	.0037	4.620	4.796	4.896	4.937
23	CCB	-.0002	.0009	-.0019	-.1329	-.0009	.0016

#	Sample Name	Mg	Mn	Mo	Na	Nd	Ni
1	ICV	5.038	4.880	5.064	5.138	5.029	4.978
2	ICB	-.0034	.0004	.0033	-.0101	.0017	-.0076
3	LLS	.2058	.0197	.1035	.1957	.2020	.0370
4	ICSA	255.7	-.0063	-.0061	199.9	.0019	-.0133
5	ICSAB	254.1	.4466	-.0103	194.0	-.0020	.9269
6	S97T001241	.0717	.0078	.0486	5.328	-.0386	1.037
7	S97T001241_D	.1345	.0058	.0412	5.312	-.0176	.0242
8	S97T001368	-.1248	.0094	.1009	4.620	.0080	-.1126
9	S97T001368_D	-.1490	.0074	.0566	4.411	-.0208	-.0381
10	CCV	4.949	4.853	5.031	4.998	4.873	4.925
11	CCB	-.0111	.0007	.0045	-.0217	-.0015	-.0065
12	PREPSTDTJA	4.832	4.688	4.800	4.970	4.790	4.898
13	PREPBLKTJA	-.0008	.0006	.0022	Q.2462	-.0010	-.0047
14	S97T001370_L	.0104	1.011	.0749	1057	.0558	.2395
15	S97T001370	.1016	.9912	.0818	1034	.0525	.2864
16	S97T001370_S	.1089	.9234	.0753	1038	.0578	.2564
17	S97T001370_D	.1293	.9471	.0864	1035	.0510	.2554
18	S97T001370_X	-.0963	1.019	.0612	1046	.0114	.0921
19	S97T001370_AX	258.1	247.3	245.1	1294	238.2	245.4
20	ICSA	251.7	-.0053	-.0046	193.3	-.0006	-.0004
21	ICSAB	250.9	.4389	-.0129	192.0	-.0019	.8916
22	CCV	4.961	4.817	4.989	5.049	4.881	4.890
23	CCB	-.0080	.0003	-.0017	-.0181	.0026	-.0077

Analysis Report

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#	Sample Name	P	Pb	S	Sb	Se	Si
1	ICV	5.109	4.921	4.989	4.812	4.733	4.813
2	ICB	.0023	.0142	.0001	.0028	.0069	.0046
3	LLS	.4090	.2199	.2040	.0944	.1891	.1893
4	ICSA	.0125	.0390	-.0494	.0038	.0312	-.0012
5	ICSAB	.0060	1.021	-.0294	-.0004	.0110	.0053
6	S97T001241	.1775	.3527	1.520	-.0057	.5747	2.108
7	S97T001241_D	.1517	.1893	1.617	-.0060	.5739	2.080
8	S97T001368	.1560	.4596	1.347	.0130	1.230	1.323
9	S97T001368_D	-.0507	-.0242	1.406	-.0243	.9671	1.239
10	CCV	5.028	4.925	4.935	4.760	4.673	4.733
11	CCB	.0048	.0058	-.0023	-.0029	.0336	.0080
12	PREFSTDTJA	4.829	4.746	4.914	4.792	4.539	6.694
13	PREPBLKTJA	.0118	.0312	Q.1037	.0006	.0363	Q.2065
14	S97T001370_L	110.6	.1837	27.24	.0113	.3034	.7748
15	S97T001370	109.2	.2368	27.02	.0096	.0529	.7468
16	S97T001370_S	103.1	.2146	27.80	-.0158	.0415	.1722
17	S97T001370_D	104.2	.2056	22.47	-.0103	.0580	1.955
18	S97T001370_X	109.1	.6606	26.30	-.1035	.7612	.8341
19	S97T001370_AX	354.1	249.3	269.8	248.6	240.2	246.8
20	ICSA	.0337	.0233	-.0572	.0148	.0387	.0175
21	ICSAB	.0185	.9699	-.0413	.0129	.0384	.0082
22	CCV	4.972	4.873	4.922	4.763	4.696	4.757
23	CCB	-.0066	.0000	.0055	-.0128	.0176	.0061

#	Sample Name	Sm	Sr	Th	Ti	Tl	U
1	ICV	4.928	4.977	.1198	4.958	4.766	9.702
2	ICB	.0068	.0002	-.0016	.0002	.0171	.0158
3	LLS	.2014	.0208	.0037	.0209	.4495	.4747
4	ICSA	-.0088	.0021	-.0125	.0001	.0447	.0548
5	ICSAB	.0036	.0020	-.0148	.0009	.0661	.0615
6	S97T001241	-.0013	.0082	-.1285	.0039	.2823	.6290
7	S97T001241_D	.0431	.0082	-.0068	.0044	.6403	.6436
8	S97T001368	.2574	.0109	-.1330	-.0056	.9068	1.605
9	S97T001368_D	.3251	.0108	-.2293	-.0154	.6482	1.796
10	CCV	4.803	4.853	.1249	4.882	4.728	9.461
11	CCB	.0100	.0004	-.0068	-.0000	.0233	.0307
12	PREFSTDTJA	4.722	4.739	.1172	4.436	4.500	9.266
13	PREPBLKTJA	-.0008	.0005	.0002	.0002	.0257	-.0101
14	S97T001370_L	.0567	.0308	.0238	.0168	.1286	1.796
15	S97T001370	.0355	.0287	.0565	.0123	.0768	1.651
16	S97T001370_S	.0406	.0278	.0486	.0129	.0690	1.631
17	S97T001370_D	.0286	.0270	.0537	.0117	.0993	1.642
18	S97T001370_X	.1625	.0319	-.0462	.0049	.5088	1.994
19	S97T001370_AX	238.6	244.4	6.263	245.4	240.3	466.8
20	ICSA	.0016	.0021	-.0063	.0004	.0998	.0790
21	ICSAB	-.0039	.0019	-.0078	.0006	.0638	.0502
22	CCV	4.826	4.858	.1299	4.869	4.635	9.499
23	CCB	.0137	.0003	-.0012	.0000	.0170	.0340

Analysis Report

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#	Sample Name	V	Y	Zn	Zr
1	ICV	5.054	.0065	4.859	4.968
2	ICB	.0011	.0001	.0011	.0004
3	LLS	.1010	.0000	.0197	.0193
4	ICSA	-.0014	.0069	.0053	-.0028
5	ICSAB	.4675	.0075	.9410	-.0011
6	S97T001241	.0173	-.0003	-1.415	.0159
7	S97T001241_D	-.0012	.0013	-1.375	.0068
8	S97T001368	.0630	.0103	-1.330	.0487
9	S97T001368_D	.0702	.0149	-1.354	.0557
10	CCV	5.009	.0069	4.865	4.869
11	CCB	.0023	.0005	.0015	.0015
12	PREPSTDJTJA	4.749	.0064	4.481	4.837
13	PREPBLKTJA	.0004	-.0002	.0065	.0000
14	S97T001370_L	.1665	.0149	.1692	.0594
15	S97T001370	.1571	.0124	.1825	.0538
16	S97T001370_S	.1502	.0128	.1675	.0511
17	S97T001370_D	.1465	.0116	.1720	.0591
18	S97T001370_X	.1824	.0187	.1824	.0602
19	S97T001370_AX	243.8	.3324	232.6	242.3
20	ICSA	.0010	.0073	.0071	-.0015
21	ICSAB	.4585	.0070	.9203	-.0025
22	CCV	4.978	.0064	4.805	4.847
23	CCB	.0023	.0005	-.0005	.0011

LABCORE Data Entry Template for Worklist# 18884

Analyst: B. GOSCHKE Instrument: ICP01 Book# 67848A

Method: LA-505-151 6-24-97 Rev/Mod E-1

Worklist Comment: ICP BY-109

S	Type	Sample#	R	A	Test	Matrix	Group#	Project
1	ICV				@ICP-QC	QC		
2	ICB				@ICP-QC	QC		
3	LIS				@ICP-QC	QC		
4	ICSA				@ICP-QC	QC		
5	ICSAB				@ICP-QC	QC		
6	SAMPLE	S97T001399 0 D			@ICP-D01	LIQUID	97000411	BY-109 (P)
		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	S97T001399 0 D			@ICP-D01	LIQUID		
8	ICSA				@ICP-QC	QC		
9	ICSAB				@ICP-QC	QC		
10	CCV				@ICP-QC	QC		
11	CCB				@ICP-QC	QC		

Final page for worklist # 18884

[Signature] 6-24-97
Analyst Signature Date

[Signature] 6/25/97
Analyst Signature Date

Data Entry Comments: Li = ND < 0.010 ug/ml

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

ICV

HNF-SD-WM-DP-259, REV. 0

ICB

US

ICSA

ICSAB

597T001389

BY-109

1389-D

597T001443

Aw-104

1443-D

CCV

CCB

PREP BLK ARL

597T001280-L

1280

1280-D

1280-A

BX-110

597T001281

1281-D

597T001282

1282-D

ICSA

ICSAB

KCV

CCB

HNF-SD-WM-DP-259, REV. 0

Identity 1: ICV Identity 2: Quality Control 1:00 PM June 24, 1997

Task name : OPTIMA

Sample Weight : 1.0000 Solution Volume : 1.00

On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	4.815	4.833	4.937	4.652	4.762	4.977	4.969	4.702
S.D.	0.008	0.016	0.012	0.006	0.007	0.012	0.016	0.026
% R.S.D.	0.157	0.335	0.241	0.130	0.148	0.244	0.328	0.553

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	5.102	4.922	4.855	4.920	4.665	4.849	5.019	9.591
S.D.	0.011	0.011	0.011	0.017	0.010	0.016	0.012	0.026
% R.S.D.	0.212	0.228	0.229	0.344	0.204	0.338	0.244	0.267

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Hg (ppm)	As (ppm)	Na (ppm)
Mean	4.716	4.881	4.807	4.963	4.783	4.875	5.024	4.908
S.D.	0.008	0.010	0.019	0.032	0.018	0.007	0.003	0.032
% R.S.D.	0.161	0.211	0.385	0.637	0.374	0.152	0.061	0.656

	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	4.961	5.065	4.858	4.747	4.932	4.963	4.902	4.944
S.D.	0.020	0.011	0.012	0.011	0.008	0.005	0.017	0.004
% R.S.D.	0.407	0.212	0.256	0.234	0.169	0.103	0.356	0.080

	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	4.636	5.012	4.997	5.014
S.D.	0.051	0.010	0.005	0.042
% R.S.D.	1.102	0.200	0.093	0.840

[Signature]
6-24-97

BY-109 DIRECT SP7T001389 (L&S)

AW-104 8-25 SP7T001443 (L&S)

BX-110 220-225 SP7T001280
1281 } Fusion
1282

FILE# 0870624A.DAT

SIGNATURE ABOVE REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 492 TO 503

HNF-SD-WM-DP-259, REV. 0

Identity 1: ICB Identity 2: Quality Control 1:05 PM June 24, 1997

Task name : OPTIMA

Sample Weight : 1.0000 Solution Volume : 1.00

On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	-0.001	0.000	0.023	0.002	0.003	0.010	0.000	0.000
S.D.	0.001	0.000	0.012	0.002	0.005	0.002	0.000	0.000
% R.S.D.	113.961	33.333	50.858	74.059	196.978	21.663	84.319	158.747

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.000	0.001	-0.005	-0.003	-0.000	-0.000	0.011	-0.030
S.D.	0.000	0.003	0.003	0.003	0.000	0.001	0.010	0.031
% R.S.D.	44.627	251.480	52.102	117.149	44.607	278.710	85.926	104.569

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	0.020	-0.035	0.000	0.002	0.007	0.000	-0.004	0.001
S.D.	0.008	0.007	0.000	0.005	0.003	0.000	0.008	0.002
% R.S.D.	41.319	20.145	52.915	203.883	44.599	0.010	185.023	299.985

	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	0.001	0.002	0.009	0.000	-0.000	0.007	0.162	0.000
S.D.	0.000	0.001	0.004	0.000	0.001	0.000	0.001	0.000
% R.S.D.	14.283	47.302	46.068	163.567	346.204	6.196	0.858	42.279

	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	0.015	0.000	0.001	0.056
S.D.	0.028	0.001	0.000	0.023
% R.S.D.	185.626	2178.980	30.209	41.880

HNF-SD-WM-DP-259, REV. 0

Identity 1: LLS Identity 2: Quality Control 1:07 PM June 24, 1997
 Task name : OPTIMA
 Sample Weight : 1.0000 Solution Volume : 1.00
 On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	0.022	0.020	0.196	0.119	0.075	0.050	0.019	0.018
S.D.	0.000	0.000	0.009	0.004	0.003	0.000	0.000	0.000
% R.S.D.	2.084	0.520	4.821	3.263	4.008	0.012	0.300	1.479

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.022	0.041	0.102	0.101	0.194	0.022	0.184	0.441
S.D.	0.000	0.001	0.001	0.003	0.000	0.002	0.007	0.025
% R.S.D.	1.077	3.100	0.751	2.909	0.206	9.010	3.572	5.763

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	0.145	0.193	0.096	0.400	0.225	0.217	0.192	0.181
S.D.	0.008	0.004	0.000	0.003	0.004	0.000	0.015	0.002
% R.S.D.	5.185	2.278	0.245	0.692	1.988	0.171	7.796	1.132

	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	0.104	0.024	0.228	0.020	0.011	0.108	0.601	0.021
S.D.	0.002	0.000	0.004	0.000	0.000	0.002	0.007	0.000
% R.S.D.	2.240	0.419	1.624	1.312	3.269	1.832	1.158	1.735

	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	0.071	0.102	0.011	0.377
S.D.	0.023	0.001	0.000	0.021
% R.S.D.	31.932	0.749	2.750	5.535

HNF-SD-WM-DP-259, REV. 0

Identity 1: ICSA Identity 2: Quality Control 1:11 PM June 24, 1997
 Task name : OPTIMA
 Sample Weight : 1.0000 Solution Volume : 1.00
 On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	0.001	0.002	-0.003	0.026	197.177	-0.002	-0.001	-0.000
S.D.	0.002	0.000	0.006	0.002	0.300	0.002	0.000	0.000
% R.S.D.	161.918	7.017	242.203	8.293	0.152	145.435	15.897	252.105

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.006	0.004	-0.003	97.624	99.084	0.002	-0.019	0.023
S.D.	0.001	0.001	0.002	0.123	0.112	0.001	0.009	0.037
% R.S.D.	8.637	36.142	79.258	0.126	0.113	54.169	50.856	159.835

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	-0.007	0.010	0.001	0.005	0.013	88.011	-0.004	178.139
S.D.	0.006	0.007	0.000	0.005	0.005	0.361	0.005	0.628
% R.S.D.	88.224	70.334	17.691	100.204	36.587	0.410	128.880	0.353

	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	-0.003	0.002	0.009	0.000	0.003	0.014	-0.018	0.010
S.D.	0.001	0.001	0.009	0.000	0.001	0.001	0.008	0.000
% R.S.D.	25.525	28.882	94.683	141.647	22.622	6.353	47.242	4.937

	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	0.019	-0.000	0.003	0.017
S.D.	0.011	0.001	0.000	0.016
% R.S.D.	56.392	244.644	4.827	91.720

HNF-SD-WM-DP-259, REV. 0

Identity 1: ICSAB Identity 2: Quality Control 1:14 PM June 24, 1997

Task name : OPTIMA

Sample Weight : 1.0000 Solution Volume : 1.00

On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	-0.005	0.002	-0.017	0.019	197.246	0.498	0.477	0.889
S.D.	0.001	0.000	0.005	0.006	0.198	0.003	0.001	0.009
% R.S.D.	18.036	4.811	28.461	33.772	0.100	0.677	0.202	1.014

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	1.017	0.996	-0.003	97.512	99.548	0.513	-0.009	-0.090
S.D.	0.002	0.006	0.002	0.398	0.265	0.004	0.007	0.051
% R.S.D.	0.189	0.557	75.051	0.408	0.266	0.722	79.566	57.051

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	0.043	-0.029	0.491	0.016	0.012	90.103	-0.010	179.349
S.D.	0.013	0.012	0.001	0.008	0.005	0.311	0.002	1.565
% R.S.D.	30.454	40.526	0.267	49.328	44.950	0.345	16.278	0.872

	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	0.001	1.068	1.026	-0.000	1.003	0.015	0.047	0.516
S.D.	0.001	0.003	0.007	0.000	0.002	0.002	0.019	0.001
% R.S.D.	96.234	0.307	0.726	145.726	0.174	11.430	41.098	0.252

	Sb (ppm)	V (ppm)	Se (ppm)	Tl (ppm)
Mean	0.095	0.501	0.494	0.050
S.D.	0.032	0.001	0.001	0.020
% R.S.D.	33.821	0.199	0.235	39.871

HNF-SD-WM-DP-259, REV. 0

Identity 1: S97T001399 Identity 2: direct

1:24 PM June 24, 1997

Task name: OPTIMA

Sample Weight: 1.0000 Solution Volume: 1.00

On-Peak Integrations: 3 Off-Peak Integrations: 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	-0.002	-0.000	-0.020	0.333	-0.010	-0.001	-0.001	-0.000
S.D.	0.001	0.000	0.006	0.003	0.005	0.002	0.000	0.000
R.S.D.	52.303	86.603	32.810	1.015	52.400	186.004	36.094	44.607

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	-0.000	0.001	-0.006	-0.004	0.046	-0.005	0.001	-0.077
S.D.	0.000	0.002	0.001	0.001	0.002	0.002	0.005	0.039
R.S.D.	53.570	343.082	23.115	34.091	4.694	37.897	592.434	51.268

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	-0.032	-0.029	-0.000	0.003	0.013	0.018	-0.008	0.380
S.D.	0.010	0.008	0.000	0.013	0.002	0.002	0.001	0.008
R.S.D.	31.116	27.684	50.442	412.884	18.019	8.584	8.566	2.158

	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	0.001	-0.002	0.012	-0.000	0.000	0.031	0.106	-0.001
S.D.	0.001	0.001	0.006	0.000	0.001	0.001	0.014	0.000
R.S.D.	48.248	42.868	54.714	151.811	174.246	2.342	12.922	40.959

	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	0.047	-0.001	0.000	0.025
S.D.	0.020	0.001	0.000	0.021
R.S.D.	42.757	73.747	45.643	81.532

HNF-SD-WM-DP-259, REV. 0

Identity 1: S97T001399_D Identity 2: direct 1:27 PM June 24, 1997

Task name: OPTIMA

Sample Weight : 1.0000 Solution Volume : 1.00

On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr	Sr	Bi	Si	Al	Co	Cu	Li
	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
Mean	0.004	0.000	0.003	0.306	0.014	0.004	0.001	0.001
±D.	0.002	0.000	0.005	0.001	0.006	0.002	0.000	0.000
± R.S.D.	35.838	75.000	151.460	0.466	41.886	55.892	63.326	37.500

	Zn	Ni	La	Fe	Ca	Cr	Nd	U
	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
Mean	0.000	-0.002	0.001	-0.006	0.037	-0.002	0.009	0.226
±D.	0.000	0.001	0.001	0.003	0.000	0.001	0.004	0.054
± R.S.D.	252.556	59.545	137.319	56.138	0.220	56.746	48.661	23.951

	Ce	Sm	Ba	P	S	Mg	As	Na
	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
Mean	0.021	0.023	0.001	0.005	0.016	0.014	-0.006	0.347
±D.	0.014	0.010	0.000	0.012	0.003	0.000	0.002	0.002
± R.S.D.	62.903	45.699	36.465	223.471	18.011	0.884	27.291	0.591

	Mo	Ag	Pb	Ti	Cd	B	K	Mn
	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
Mean	-0.001	0.002	0.039	0.002	-0.000	0.030	0.173	0.000
±D.	0.001	0.000	0.011	0.001	0.000	0.001	0.019	0.000
± R.S.D.	61.974	9.943	28.859	29.096	90.179	2.870	10.898	393.043

	Sb	V	Be	Tl
	(ppm)	(ppm)	(ppm)	(ppm)
Mean	-0.015	0.002	0.001	0.050
±D.	0.044	0.001	0.000	0.035
± R.S.D.	296.869	88.526	34.652	70.516

HNF-SD-WM-DP-259, REV. 0

Identity 1: ICSA Identity 2: Quality Control 2:33 PM June 24, 1997
 Task name : OPTIMA
 Sample Weight : 1.0000 Solution Volume : 1.00
 On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	0.005	0.003	-0.011	0.038	203.442	0.001	-0.001	0.000
.D.	0.002	0.001	0.004	0.007	1.198	0.003	0.001	0.001
R.S.D.	38.051	29.949	34.847	17.310	0.589	389.368	143.123	246.330
	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.008	0.007	-0.001	98.729	100.318	-0.003	-0.039	0.076
.D.	0.001	0.001	0.001	0.373	0.173	0.005	0.001	0.051
R.S.D.	8.414	19.439	60.945	0.378	0.172	172.628	3.757	67.414
	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Hg (ppm)	As (ppm)	Na (ppm)
Mean	-0.045	0.019	0.002	0.013	0.040	91.009	-0.007	181.784
.D.	0.009	0.010	0.001	0.007	0.010	0.281	0.006	1.482
R.S.D.	20.120	54.256	56.452	53.270	24.185	0.308	82.647	0.815
	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	-0.001	0.477	0.017	0.003	0.002	0.015	0.211	0.011
.D.	0.003	0.053	0.003	0.001	0.002	0.001	0.006	0.001
R.S.D.	231.944	11.125	16.685	55.370	118.310	9.756	3.019	8.628
	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)				
Mean	0.008	-0.002	0.005	-0.011				
.D.	0.080	0.002	0.001	0.028				
R.S.D.	963.072	82.291	15.127	259.405				

HNF-SD-WM-DP-259, REV. 0

Identity 1: ICSAB Identity 2: Quality Control 2:36 PM June 24, 1997
 Task name : OPTIMA
 Sample Weight : 1.0000 Solution Volume : 1.00
 On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	-0.003	0.002	-0.004	0.022	201.001	0.500	0.491	0.916
S.D.	0.001	0.000	0.002	0.001	0.259	0.010	0.000	0.003
% R.S.D.	28.772	4.811	53.324	5.152	0.129	2.035	0.048	0.316
	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	1.008	0.990	-0.002	97.424	99.875	0.497	-0.014	-0.021
S.D.	0.001	0.003	0.001	0.078	0.068	0.001	0.011	0.025
% R.S.D.	0.120	0.333	34.697	0.081	0.068	0.277	77.470	118.126
	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	0.024	0.002	0.502	0.009	0.011	88.397	-0.008	184.084
S.D.	0.009	0.005	0.000	0.002	0.009	0.241	0.005	0.564
% R.S.D.	38.635	269.764	0.055	23.643	74.902	0.272	60.694	0.306
	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	0.001	1.126	1.035	0.000	0.998	0.013	0.186	0.513
S.D.	0.002	0.005	0.012	0.000	0.003	0.000	0.015	0.002
% R.S.D.	190.634	0.479	1.122	468.207	0.299	1.820	7.811	0.308
	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)				
Mean	0.082	0.498	0.497	0.018				
S.D.	0.029	0.001	0.000	0.020				
% R.S.D.	34.969	0.198	0.080	112.434				

HNF-SD-WM-DP-259, REV. 0

Identity 1: CCV Identity 2: Quality Control 2:40 PM June 24, 1997
 Task name : OPTIMA
 Sample Weight : 1.0000 Solution Volume : 1.00
 On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	4.891	4.929	5.029	4.760	4.911	5.088	5.052	4.852
S.D.	0.010	0.015	0.002	0.005	0.013	0.007	0.014	0.016
% R.S.D.	0.209	0.301	0.047	0.098	0.274	0.128	0.279	0.331

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	5.237	4.983	4.900	4.962	4.720	4.907	5.027	9.701
S.D.	0.006	0.008	0.017	0.009	0.012	0.004	0.014	0.019
% R.S.D.	0.113	0.156	0.354	0.185	0.250	0.072	0.285	0.191

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	4.764	4.946	4.892	5.080	4.963	4.986	5.147	5.108
S.D.	0.013	0.013	0.015	0.057	0.042	0.003	0.029	0.012
% R.S.D.	0.274	0.273	0.314	1.122	0.841	0.069	0.566	0.244

	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	5.087	5.167	4.912	4.837	5.001	5.041	5.228	5.013
S.D.	0.023	0.005	0.041	0.011	0.012	0.019	0.040	0.005
% R.S.D.	0.445	0.106	0.826	0.222	0.232	0.379	0.758	0.104

	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	4.747	5.087	5.063	5.067
S.D.	0.042	0.003	0.008	0.020
% R.S.D.	0.890	0.054	0.152	0.397

Identity 1: CCB

Identity 2: Quality Control

2:42 PM June 24, 1997

HNF-SD-WM-DP-259, REV. 0

Task name : OPTIMA

Sample Weight : 1.0000 Solution Volume : 1.00

On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	0.000	0.001	-0.001	0.003	0.014	0.008	0.001	0.001
St.D.	0.001	0.000	0.005	0.001	0.008	0.002	0.000	0.000
% R.S.D.	115.101	14.434	401.079	42.104	56.426	28.884	6.837	16.879

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.001	-0.003	-0.001	0.001	0.001	0.003	0.014	-0.001
St.D.	0.000	0.002	0.001	0.002	0.003	0.001	0.005	0.020
% R.S.D.	57.211	67.538	57.489	108.679	278.330	45.111	35.270	3300.736

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	0.022	-0.013	0.001	0.003	0.014	0.005	-0.006	0.023
St.D.	0.003	0.002	0.000	0.005	0.002	0.003	0.002	0.003
% R.S.D.	13.248	13.572	11.658	181.273	15.960	57.732	35.671	13.886

	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	0.004	0.014	0.030	0.001	0.001	0.008	0.202	0.001
St.D.	0.001	0.001	0.006	0.000	0.000	0.000	0.009	0.000
% R.S.D.	31.234	6.004	20.225	26.032	57.239	0.665	4.507	0.313

	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	-0.002	0.002	0.002	0.045
St.D.	0.039	0.001	0.000	0.015
% R.S.D.	2253.747	35.733	8.892	33.898

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File # 0870722 A.TKT

HNF-SD-WM-DP-259, REV. 0

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LABCORE Data Entry Template for Worklist# 19465

Analyst: B. G. E. K. H. Instrument: ICP01 Book# 678498
Method: LA-505-151/161 Rev/Mod C-2 7-23-97
Worklist Comment: ICP BY-109 (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	S97T001355 0 D	@ICP-D01	LIQUID	97000412	BY-109 (P)
		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	S97T001355 0 D	@ICP-D01	LIQUID		
8	SAMPLE	S97T001470 0 D	@ICP-D01	LIQUID	97000412	BY-109 (P)
		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	S97T001470 0 D	@ICP-D01	LIQUID		
10	SAMPLE	S97T001471 0 D	@ICP-D01	LIQUID	97000412	BY-109 (P)
		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 ,				
S97T001355						
Data Entry Comments:						
L ₁ = 9.54 e + 2 ug						

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

LABCORE Data Entry Template for Worklist# 19465

S Type	Sample#	R	A	Test	Matrix	Group#	Project
				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			
11 DUP	S97T001471	0	D	@ICP-D01	LIQUID		
12 CCV				@ICP-QC	QC		
13 CCB				@ICP-QC	QC		
14 SERDIL	S97T001469	0	D	@ICP-D01	LIQUID		
15 SAMPLE	S97T001469	0	D	@ICP-D01	LIQUID	97000412	BY-109 (P)
	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						
16 DUP	S97T001469	0	D	@ICP-D01	LIQUID		
17 SPK	S97T001469	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 # 19465

[Signature] 7-24-97
Analyst Signature Date

Reviewed & Validated by:
[Signature] 7/28/97
Analyst Signature Date

Data Entry Comments:

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

HNF-SD-WM-DP-259, REV. 0

ICV

ICB

ILS

ICSA

ICSA B

597T001469-L .025-10-2-8

1469 .025-10

1469-D .025-10

1469-A .025-2-8 (2-1557)

1469-X .025-10-1-9

1469-AX .025-10-1- (Let X with 28135) -7-1

CCV

ICB

597T001470 .1-10

1470-D .1-10

597T001471 .025-10

1471-D .025-10

597T001355 .1-10

1355-D .1-10

ICSA

ICSA B

CCV

CCB

E. H. H. H.

7-23-87

BY-109

597T001469-1471, 135.

FILE # 0970725A78

HNF-SD-WM-DP-259, REV. 0

Analysis Report

Summary

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#	Sample Name	File	Method	Date	Time	OpID	Type	Mode
1	ICV	970723A	ICP2	07/23/97	13:40	BJG	Q	CONC
2	ICB	970723A	ICP2	07/23/97	13:43	BJG	Q	CONC
3	LLS	970723A	ICP2	07/23/97	13:49	BJG	Q	CONC
4	ICSA	970723A	ICP2	07/23/97	13:53	BJG	Q	CONC
5	ICSA B	970723A	ICP2	07/23/97	13:56	BJG	Q	CONC
6	S97T001469 L	970723A	ICP2	07/23/97	14:00	BJG	S	CONC
7	S97T001469	970723A	ICP2	07/23/97	14:03	BJG	S	CONC
8	S97T001469 D	970723A	ICP2	07/23/97	14:06	BJG	S	CONC
9	S97T001469 A	970723A	ICP2	07/23/97	14:10	BJG	S	CONC
10	S97T001469 X	970723A	ICP2	07/23/97	14:15	BJG	S	CONC
11	S97T001469 AX	970723A	ICP2	07/23/97	14:19	BJG	S	CONC
12	CCV	970723A	ICP2	07/23/97	14:31	BJG	Q	CONC
13	CCB	970723A	ICP2	07/23/97	14:34	BJG	Q	CONC
14	S97T001470	970723A	ICP2	07/23/97	14:42	BJG	S	CONC
15	S97T001470 D	970723A	ICP2	07/23/97	14:45	BJG	S	CONC
16	S97T001471	970723A	ICP2	07/23/97	14:48	BJG	S	CONC
17	S97T001471 D	970723A	ICP2	07/23/97	14:51	BJG	S	CONC
18	S97T001355	970723A	ICP2	07/23/97	14:56	BJG	S	CONC
19	S97T001355 D	970723A	ICP2	07/23/97	14:59	BJG	S	CONC
20	ICSA	970723A	ICP2	07/23/97	15:03	BJG	Q	CONC
21	ICSA B	970723A	ICP2	07/23/97	15:06	BJG	Q	CONC
22	CCV	970723A	ICP2	07/23/97	15:09	BJG	Q	CONC
23	CCB	970723A	ICP2	07/23/97	15:12	BJG	Q	CONC

7-23-97

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S97T001469-71, 1358

FILE# 0970723A.777

SIGNATURE ABOVE REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 507 TO 511.

HNF-SD-WM-DP-259, REV. 0

Analysis Report

Averages

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#	Sample Name	Ag	Al	As	B	Ba	Be
1	ICV	5.089	4.990	5.315	5.118	5.028	5.278
2	ICB	.0003	.0167	.0191	.0059	-.0001	.0002
3	LLS	.0208	.1159	.2204	.1021	.0991	.0109
4	ICSA	.0025	240.0	-.0337	-.0052	.0001	.0006
5	ICSAB	.9593	241.4	-.0239	-.0103	.4644	.4849
6	S97T001469 L	16.76	36160.	-240.9	23.74	.0865	.967
7	S97T001469-	15.18	35270.	-250.0	22.94	.0187	.5684
8	S97T001469 D	15.22	33820.	-228.7	22.94	.0451	.6712
9	S97T001469-A	387.4	34450.	189.7	418.1	385.6	415.0
10	S97T001469-X	19.00	34540.	-235.0	15.84	-.2609	1.205
11	S97T001469-AX	38740.	73960.	40610.	39920.	39750.	40210.
12	CCV	5.152	4.976	5.323	5.100	5.051	5.286
13	CCB	.0095	.0049	.0112	.0059	-.0000	.0002
14	S97T001470	2.191	260.9	-1476.	17.72	-.0032	.0339
15	S97T001470 D	2.229	259.1	-1464.	17.97	.0050	.0165
16	S97T001471-	14.64	41690.	-123.5	18.98	-.0415	.6728
17	S97T001471 D	14.78	44240.	-126.7	20.77	-.0265	.6728
18	S97T001355-	3.464	218.2	-837.5	17.92	-.0002	.0775
19	S97T001355_D	3.871	687.4	-879.1	19.77	.0581	.0599
20	ICSA	.0045	240.2	-.0899	-.0020	.0002	.0003
21	ICSAB	.9644	239.9	-.0328	-.0018	.4595	.4846
22	CCV	5.077	4.948	5.305	5.089	5.012	5.271
23	CCB	.0013	.0093	.0076	.0035	.0000	.0005

#	Sample Name	Bi	Ca	Gd	Ce	Co	Cr
1	ICV	5.222	5.181	5.170	5.067	5.125	5.186
2	ICB	-.0280	-.0012	.0007	-.0027	-.0017	.0012
3	LLS	Q.1375	.2062	.0117	.1984	.0408	.0213
4	ICSA	.0062	249.6	.0028	.0082	-.0021	-.0007
5	ICSAB	-.0022	251.3	.9405	.0046	.4707	.4677
6	S97T001469 L	-46.51	-3.561	1.229	13.37	-2.351	716.5
7	S97T001469-	-8.150	12.56	-.6844	1.099	1.847	697.1
8	S97T001469 D	-11.33	7.166	-.1631	3.094	2.108	667.2
9	S97T001469-A	398.3	427.4	400.7	396.0	395.1	1071.
10	S97T001469-X	-132.3	-29.27	.9397	16.12	.0305	698.7
11	S97T001469-AX	40850.	41670.	40390.	40040.	40310.	41200.
12	CCV	5.237	5.380	5.235	5.059	5.190	5.279
13	CCB	-.0212	.0028	.0024	-.0016	-.0021	.0006
14	S97T001470	-11.07	15.79	-6.125	14.30	3.737	69.43
15	S97T001470 D	-10.59	16.07	-5.843	15.08	4.149	69.75
16	S97T001471-	-10.70	.5597	.0748	1.220	1.372	193.0
17	S97T001471 D	-2.716	.6303	-.1068	-1.048	.6353	201.1
18	S97T001355-	-7.270	9.629	-3.353	8.531	2.505	203.7
19	S97T001355_D	-8.157	45.39	-3.328	9.745	2.476	225.5
20	ICSA	-.0178	252.6	.0030	.0088	-.0008	-.0017
21	ICSAB	-.0180	255.2	.9475	.0146	.4712	.4702
22	CCV	5.219	5.260	5.152	5.018	5.107	5.185
23	CCB	-.0160	-.0004	.0009	-.0020	-.0001	.0006

HNF-SD-WM-DP-259, REV. 0

Analysis Report

Averages

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#	Sample Name	Cu	Eu	Fe	K	La	Li
1	ICV	4.911	.0038	4.822	5.017	5.137	5.139
2	ICB	.0005	-.0002	.0003	.0381	-.0008	-.0001
3	LLS	.0176	.0002	.0921	.5104	.1018	.0206
4	ICSA	-.0087	-.0047	92.15	.2049	-.0048	.0022
5	ICSAB	.4419	-.0026	92.67	.0813	-.0050	.9926
6	S97T001469_L	-.4631	.7743	2.727	5774	.7706	2.247
7	S97T001469_	-1.960	.3642	2.797	5904	-.0283	2.203
8	S97T001469_D	-1.555	.1778	2.450	5701	.1356	1.798
9	S97T001469_A	.379.8	.3551	375.7	6212	404.4	413.0
10	S97T001469_X	2.659	1.894	-.9504	5994	.8318	1.794
11	S97T001469_AX	36120.	33.45	37760.	44650.	39870.	39250.
12	CCV	4.850	.0049	4.891	5.070	5.125	5.001
13	CCB	.0010	.0004	-.0004	.1099	-.0001	.0002
14	S97T001470	-.0247	.1440	-1.868	591.3	-.0387	1131.
15	S97T001470_D	-.0640	.2415	-1.861	591.7	.0095	1111.
16	S97T001471_	.4929	.2882	6.049	6256.	-.0155	.8089
17	S97T001471_D	.6071	.3360	6.996	6363.	-.0443	1.889
18	S97T001355_	-.2224	.0625	-.8622	1001.	.0138	954.5
19	S97T001355_D	1.172	.0922	11.22	1145.	.0490	1156.
20	ICSA	-.0084	-.0114	92.75	.1400	-.0044	.0030
21	ICSAB	.4344	-.0124	93.10	.3203	-.0029	.9747
22	CCV	4.874	.0044	4.816	5.054	5.088	5.075
23	CCB	.0006	.0006	.0002	.0653	-.0001	.0007

#	Sample Name	Mg	Mn	Mo	Na	Nd	Ni
1	ICV	5.223	5.036	5.126	4.955	5.149	5.131
2	ICB	.0023	.0002	-.0004	-.0059	.0014	.0047
3	LLS	.2095	.0202	.1042	.1777	.1979	.0469
4	ICSA	249.9	-.0058	-.0095	194.5	-.0020	-.0008
5	ICSAB	250.7	.4432	-.0134	194.2	-.0032	.9244
6	S97T001469_L	9.501	.8549	57.59	220100.	-1.308	5.471
7	S97T001469_	1.123	.4954	55.41	212900.	-.6648	7.999
8	S97T001469_D	3.180	.3694	53.17	205000.	.1109	7.442
9	S97T001469_A	395.4	383.0	455.9	208400.	401.7	405.7
10	S97T001469_X	4.291	.7358	51.63	212400.	4.609	17.85
11	S97T001469_AX	41510.	40130.	40430.	252800.	38810.	40270.
12	CCV	5.209	5.092	5.179	4.870	5.122	5.209
13	CCB	.0021	.0004	.0019	-.0129	.0003	.0038
14	S97T001470	.3438	1.548	4.953	30460.	-.4509	2.071
15	S97T001470_D	1.488	1.580	5.143	29990.	-.2275	2.645
16	S97T001471_	1.543	.3619	56.75	207700.	.5080	1.388
17	S97T001471_D	-.6958	.8235	58.92	211900.	-.1506	3.473
18	S97T001355_	.3585	.8914	9.512	48310.	-.1441	1.568
19	S97T001355_D	1.777	1.491	10.21	54250.	-.1774	9.921
20	ICSA	251.0	-.0058	-.0132	193.1	.0099	-.0066
21	ICSAB	250.7	.4446	-.0129	191.2	-.0010	.9302
22	CCV	5.188	5.008	5.109	4.882	5.103	5.129
23	CCB	.0047	.0005	.0013	-.0114	.0004	.0040

HNF-SD-WM-DP-259, REV. 0

Analysis Report

Averages

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#	Sample Name	P	Pb	S	Sb	Se	Si
1	ICV	5.110	5.218	4.971	4.864	4.937	4.957
2	ICB	.0106	-.0007	.0095	.0074	.0248	.0125
3	LLS	.4116	.2228	.2231	.1026	.2401	Q.1284
4	ICSA	.0332	.0338	-.0295	-.0029	.0283	.0081
5	ICSAB	.0205	1.012	-.0170	.0054	.0452	.0046
6	S97T001469 L	367.7	53.82	444.5	-8.758	102.8	180.2
7	S97T001469-	361.2	52.97	424.9	-6.382	35.39	164.5
8	S97T001469 D	342.8	53.83	373.8	-2.370	39.88	152.2
9	S97T001469-A	745.1	447.0	771.3	386.1	463.5	590.3
10	S97T001469-X	326.7	59.42	423.0	-6.499	183.2	301.7
11	S97T001469-AX	40920.	41120.	39950.	40740.	39470.	42840.
12	CCV	5.224	5.328	5.074	4.920	5.041	4.993
13	CCB	.0053	.0089	.0099	-.0057	.0410	.0174
14	S97T001470	36.98	-10.79	3458.	-2.291	41.16	508.8
15	S97T001470 D	36.22	-10.03	3486.	-2.124	41.52	540.6
16	S97T001471	307.7	63.36	219.5	2.116	31.68	282.7
17	S97T001471 D	317.6	63.55	267.7	-3.106	31.79	245.7
18	S97T001355-	83.63	-2.651	5029.	-.8428	29.07	547.1
19	S97T001355-D	101.2	-4.618	5647.	.4826	32.71	715.4
20	ICSA	.0461	.0426	-.0056	.0039	.0424	.2081
21	ICSAB	.0248	1.021	-.0237	.0070	.0370	.1207
22	CCV	5.121	5.209	5.005	4.879	5.051	5.052
23	CCB	.0192	.0062	.0166	-.0006	.0447	Q.1007

#	Sample Name	Sm	Sr	Th	Ti	Tl	U
1	ICV	4.961	5.018	.1335	4.975	4.925	9.668
2	ICB	-.0019	.0000	.0092	.0003	-.0046	-.0042
3	LLS	.2001	.0205	.0057	.0197	.4058	.5018
4	ICSA	-.0079	.0018	-.0038	.0011	.0375	.0247
5	ICSAB	-.0145	.0018	-.0004	.0004	.0338	.0064
6	S97T001469 L	9.474	.9914	15.48	.0473	-28.86	49.53
7	S97T001469-	2.868	.9378	-1.825	-.3020	-18.53	35.78
8	S97T001469 D	1.078	.8295	.1790	-.0151	-2.426	33.90
9	S97T001469-A	389.0	393.7	10.92	388.1	363.4	777.5
10	S97T001469-X	19.81	1.259	23.05	.0626	-1.719	105.4
11	S97T001469-AX	38530.	39760.	1101.	40110.	39630.	75500.
12	CCV	4.935	5.010	.1352	4.978	4.979	9.586
13	CCB	.0044	.0002	.0050	-.0002	-.0152	.0258
14	S97T001470	.3145	.0814	4.018	-.5750	-45.45	1.767
15	S97T001470 D	.9368	.0946	4.538	-.5272	-45.67	6.169
16	S97T001471	1.373	.1976	-.5828	-1.029	-2.921	17.66
17	S97T001471 D	1.681	.2154	-1.141	-1.060	-3.595	20.45
18	S97T001355-	-.1379	.0538	2.963	-.2753	-25.36	6.328
19	S97T001355-D	-.2707	.3076	2.938	-.3717	-25.23	9.760
20	ICSA	-.0062	.0018	.0031	.0007	.0310	.0183
21	ICSAB	-.0022	.0018	.0106	.0012	.0189	-.0066
22	CCV	4.920	4.989	.1382	4.959	4.954	9.590
23	CCB	.0060	.0003	.0024	.0000	-.0051	.0208

Analysis Report

Averages

Wed 07-23-97 03:16:03 PM

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#	Sample Name	V	Y	Zn	Zr
1	ICV	5.030	.0073	4.939	4.977
2	ICB	-.0002	-.0002	.0019	.0000
3	LLS	.1027	.0006	.0241	.0207
4	ICSA	-.0006	.0069	.0087	-.0024
5	ICSAB	.4659	.0070	.9440	-.0031
6	S97T001469 L	1.616	.2931	3.350	2.115
7	S97T001469	.7400	.1419	-.2222	2.213
8	S97T001469 D	.4501	-.0144	.6561	1.532
9	S97T001469 A	391.4	.4864	389.0	393.1
10	S97T001469 X	5.511	1.212	3.062	4.845
11	S97T001469 AX	40080.	53.37	38510.	39730.
12	CCV	5.071	.0081	5.019	5.001
13	CCB	.0016	.0003	.0014	.0013
14	S97T001470	.7694	.0230	-4.731	-.1693
15	S97T001470 D	.9983	.0686	-4.488	-.1115
16	S97T001471	.7673	.0867	3.592	1.330
17	S97T001471 D	.4695	.0856	3.659	1.369
18	S97T001355	.4091	.0052	-.1376	-.1310
19	S97T001355 D	.4354	.0038	5.257	.0008
20	ICSA	-.0001	.0073	.0080	-.0026
21	ICSAB	.4672	.0074	.9542	-.0030
22	CCV	5.009	.0076	4.930	4.945
23	CCB	.0020	.0004	.0009	.0015

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A-0004-1

Page: 1

LABCORE Data Entry Template for Worklist# 19683

Analyst: J. Worrell Instrument: ICP01 _____ Book# 676488Method: LA-505-151/461 ^{Rev 5-6-97} Rev/Mod E-1

Worklist Comment: ICP BY-109 (SOLID ACID DIGEST)

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	PREPSTDARL		@ICP-A01	SOLID		
7	PREPELKARL		@ICP-A01	SOLID		
8	SAMPLE	S97T001352 0 A	@ICP-A01	SOLID	97000412	BY-109 (P)
Analytes Requested: AG-A-01, AL-A-01, AS-A-01, B-A-01, BA-A-01, BE-A-01, BI-A-01, CA-A-01, CD-A-01, CE-A-01, CO-A-01, CR-A-01, CU-A-01, FE-A-01, K-A-01, LA-A-01, LI-A-01, MG-A-01, MN-A-01, MO-A-01, NA-A-01, ND-A-01, NI-A-01, P-A-01, PB-A-01, S-A-01, SB-A-01, SE-A-01, SI-A-01, SM-A-01, SR-A-01, TI-A-01, TL-A-01, U-A-01, V-A-01, ZN-A-01, ZR-A-01						
9	DUP	S97T001352 0 A	@ICP-A01	SOLID		
10	SAMPLE	S97T001547 0 A	@ICP-A01	SOLID	97000411	BY-109 (P)
Analytes Requested: AG-A-01, AL-A-01, AS-A-01, B-A-01, BA-A-01, BE-A-01, BI-A-01, CA-A-01, CD-A-01, CE-A-01, CO-A-01, CR-A-01, CU-A-01, FE-A-01, K-A-01, LA-A-01, LI-A-01, MG-A-01, MN-A-01, MO-A-01, NA-A-01, ND-A-01, NI-A-01, P-A-01, PB-A-01, S-A-01, SB-A-01, SE-A-01, SI-A-01, SM-A-01, SR-A-01, TI-A-01, TL-A-01, U-A-01, V-A-01, ZN-A-01, ZR-A-01						
11	DUP	S97T001547 0 A	@ICP-A01	SOLID		
12	SAMPLE	S97T001552 0 A	@ICP-A01	SOLID	97000411	BY-109 (P)

Data Entry Comments: S97T001352

$$L_1 = \frac{0.088 \mu\text{g}}{\text{ml}} \times \frac{1}{5.468 \frac{\text{g}}{\text{L}} + \frac{16}{1000 \text{ ml}}} = 1.02 \times 10^{-2} \mu\text{g}$$

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

08/06/97 13:53
A-0004-1

Page: 2

LABCORE Data Entry Template for Worklist# 19683

S Type	Sample#	R	A	Test	Matrix	Group#	Project
	Analytes Requested:			AG-A-01 ,	AL-A-01 ,	AS-A-01 ,	B-A-01 , BA-A-01 ,
				BE-A-01 ,	BI-A-01 ,	CA-A-01 ,	CD-A-01 , CE-A-01 , CO-A-01 ,
				CR-A-01 ,	CU-A-01 ,	FE-A-01 ,	K-A-01 , LA-A-01 , LI-A-01 ,
				MG-A-01 ,	MN-A-01 ,	MO-A-01 ,	NA-A-01 , ND-A-01 , NI-A-01 ,
				P-A-01 ,	PB-A-01 ,	S-A-01 ,	SB-A-01 , SE-A-01 , SI-A-01 ,
				SM-A-01 ,	SR-A-01 ,	TI-A-01 ,	TL-A-01 , U-A-01 , V-A-01 ,
				ZN-A-01 ,	ZR-A-01		
13 DUP	S97T001552	0	A	@ICP-A01	SOLID		
14 CCV				@ICP-QC	QC		
15 CCB				@ICP-QC	QC		
16 SAMPLE	S97T001575	0	A	@ICP-A01	SOLID	97000412	BY-109 (P)
	Analytes Requested:			AG-A-01 ,	AL-A-01 ,	AS-A-01 ,	B-A-01 , BA-A-01 ,
				BE-A-01 ,	BI-A-01 ,	CA-A-01 ,	CD-A-01 , CE-A-01 , CO-A-01 ,
				CR-A-01 ,	CU-A-01 ,	FE-A-01 ,	K-A-01 , LA-A-01 , LI-A-01 ,
				MG-A-01 ,	MN-A-01 ,	MO-A-01 ,	NA-A-01 , ND-A-01 , NI-A-01 ,
				P-A-01 ,	PB-A-01 ,	S-A-01 ,	SB-A-01 , SE-A-01 , SI-A-01 ,
				SM-A-01 ,	SR-A-01 ,	TI-A-01 ,	TL-A-01 , U-A-01 , V-A-01 ,
				ZN-A-01 ,	ZR-A-01		
17 DUP	S97T001575	0	A	@ICP-A01	SOLID		
18 SAMPLE	S97T001580	0	A	@ICP-A01	SOLID	97000412	BY-109 (P)
	Analytes Requested:			AG-A-01 ,	AL-A-01 ,	AS-A-01 ,	B-A-01 , BA-A-01 ,
				BE-A-01 ,	BI-A-01 ,	CA-A-01 ,	CD-A-01 , CE-A-01 , CO-A-01 ,
				CR-A-01 ,	CU-A-01 ,	FE-A-01 ,	K-A-01 , LA-A-01 , LI-A-01 ,
				MG-A-01 ,	MN-A-01 ,	MO-A-01 ,	NA-A-01 , ND-A-01 , NI-A-01 ,
				P-A-01 ,	PB-A-01 ,	S-A-01 ,	SB-A-01 , SE-A-01 , SI-A-01 ,
				SM-A-01 ,	SR-A-01 ,	TI-A-01 ,	TL-A-01 , U-A-01 , V-A-01 ,
				ZN-A-01 ,	ZR-A-01		
19 DUP	S97T001580	0	A	@ICP-A01	SOLID		
20 ICSA				@ICP-QC	QC		
21 ICSAB				@ICP-QC	QC		
22 CCV				@ICP-QC	QC		
23 CCB				@ICP-QC	QC		

Data Entry Comments:

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

LABCORE Data Entry Template for Worklist# 19683

S Type	Sample#	R A Test	Matrix	Group#	Project
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Final page for worklist # 19683

John Howell 8-6-97
Analyst Signature Date

Reviewed & Validated by:
Paul M. Pang 8/11/97
Analyst Signature Date

Data Entry Comments:

B4-109

970806A.DAT

HNF-SD-WM-DP-259, REV. 0

ICB

ICV

LLS

ICSA

ICSAB

PREP STD

PREP BLK

S97T00135Z SAM 1-9 - 10

DUP 1-9 10

1547 SAM 1-9 10

DUP 1-9 10

155Z SAM 1-9 10

DUP 1-9 10

CCV

CCB

1575 SAM 1-9 10

DUP 1-9 10

1580 SAM 1-9 10

DUP 1-9 10

ICSA

ICSAB

CCV

CCB

Identity 1: ICB Identity 2: Quality Control 10:27 AM August 6, 1997
 Task name : OPTIMA
 Sample Weight : 1.0000 Solution Volume : 1.00
 On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bf (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	-0.000	0.000	-0.011	-0.003	-0.001	0.006	0.000	0.001
S.D.	0.001	0.000	0.003	0.001	0.002	0.002	0.000	0.000
% R.S.D.	538.344	50.000	29.495	39.373	354.579	34.628	24.161	23.076
	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	-0.000	-0.004	-0.002	0.007	-0.000	0.001	0.017	-0.019
S.D.	0.000	0.000	0.002	0.002	0.000	0.001	0.003	0.017
% R.S.D.	104.692	8.133	69.348	32.520	8.660	115.581	18.867	87.090
	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Hg (ppm)	As (ppm)	Na (ppm)
Mean	0.031	0.006	0.000	0.009	0.008	-0.000	0.008	0.008
S.D.	0.006	0.004	0.000	0.004	0.002	0.000	0.001	0.001
% R.S.D.	20.441	59.932	8.660	51.075	26.510	300.381	16.879	15.745
	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	0.003	0.001	0.008	0.000	0.002	0.000	0.045	-0.000
S.D.	0.001	0.001	0.001	0.000	0.000	0.001	0.008	0.000
% R.S.D.	17.731	78.520	8.899	211.175	7.496	398.677	18.703	0.536
	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)				
Mean	0.055	0.002	0.000	0.048				
S.D.	0.024	0.000	0.000	0.011				
% R.S.D.	44.149	22.491	477.700	23.267				

8-6-97

JH Warell

ACID DIGEST

1-9ml

597700 1352, 1547, 1552, 1578 & 1580

970806A.DAT

SIGNATURE ABOVE REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
 COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 516 TO 528.

HNF-SD-WM-DP-259, REV. 0

Identity 1: ICV Identity 2: Quality Control 10:31 AM August 6, 1997

Task name : OPTIMA

Sample Weight : 1.0000 Solution Volume : 1.00

On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Rf (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	4.912	5.050	5.131	4.570	5.118	4.997	5.299	5.246
S.D.	0.005	0.002	0.021	0.007	0.007	0.014	0.011	0.036
% R.S.D.	0.109	0.041	0.408	0.143	0.146	0.272	0.198	0.678

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	5.079	5.001	5.053	4.944	4.869	4.933	5.254	9.577
S.D.	0.005	0.015	0.013	0.025	0.010	0.009	0.048	0.026
% R.S.D.	0.103	0.291	0.261	0.504	0.207	0.192	0.913	0.272

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	5.056	5.047	5.100	5.147	4.965	4.804	5.189	5.089
S.D.	0.022	0.007	0.002	0.027	0.009	0.012	0.025	0.035
% R.S.D.	0.444	0.143	0.030	0.528	0.180	0.253	0.476	0.691

	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	5.035	5.174	4.965	4.861	5.019	5.034	5.010	4.981
S.D.	0.019	0.008	0.032	0.004	0.004	0.020	0.048	0.009
% R.S.D.	0.378	0.160	0.645	0.081	0.085	0.397	0.957	0.180

	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	4.742	4.904	5.167	5.149
S.D.	0.043	0.008	0.006	0.020
% R.S.D.	0.908	0.170	0.118	0.380

HNF-SD-WM-DP-259, REV. 0

Identity 1: LLS Identity 2: Quality Control 10:34 AM August 6, 1997

Task name : OPTIMA

Sample Weight : 1.0000 Solution Volume : 1.00

On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	0.019	0.021	0.184	0.107	0.099	0.043	0.021	0.021
S.D.	0.001	0.000	0.011	0.002	0.006	0.002	0.000	0.000
% R.S.D.	5.930	0.313	6.115	1.783	6.533	4.832	2.320	1.716

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.021	0.042	0.104	0.106	0.194	0.019	0.209	0.403
S.D.	0.000	0.002	0.001	0.005	0.001	0.002	0.007	0.043
% R.S.D.	1.593	3.899	1.334	4.597	0.739	9.930	3.455	10.593

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	0.173	0.210	0.103	0.415	0.210	0.195	0.204	0.210
S.D.	0.012	0.009	0.000	0.011	0.009	0.000	0.004	0.003
% R.S.D.	7.143	4.461	0.114	2.636	4.456	0.187	1.839	1.559

	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	0.105	0.018	0.201	0.020	0.012	0.104	0.417	0.021
S.D.	0.002	0.001	0.007	0.000	0.000	0.001	0.021	0.000
% R.S.D.	1.702	6.523	3.659	1.982	2.978	0.995	4.967	0.987

	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	0.058	0.099	0.011	0.349
S.D.	0.074	0.001	0.000	0.018
% R.S.D.	126.986	1.284	2.513	5.251

Identity 1: JCSA Identity 2: Quality Control 10:37 AM August 6, 1997

Task name : OPTIMA

Sample Weight : 1.0000 Solution Volume : 1.00

On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	-0.001	0.003	-0.006	0.001	201.176	0.007	0.002	0.001
S.D.	0.001	0.000	0.007	0.001	0.232	0.002	0.000	0.000
% R.S.D.	49.812	2.500	126.045	84.672	0.115	25.997	5.855	6.754

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.007	-0.002	-0.003	97.150	103.135	0.005	0.055	-0.111
S.D.	0.000	0.002	0.003	0.314	0.200	0.003	0.004	0.030
% R.S.D.	3.482	78.906	115.157	0.324	0.194	64.828	7.361	26.786

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	0.060	-0.005	0.002	0.012	-0.108	103.634	-0.055	186.423
S.D.	0.006	0.007	0.000	0.005	0.016	0.190	0.009	0.706
% R.S.D.	10.402	161.018	6.368	40.945	15.058	0.183	16.500	0.379

	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	0.004	0.005	0.002	-0.000	0.003	0.013	-0.081	0.007
S.D.	0.002	0.000	0.011	0.000	0.000	0.001	0.003	0.001
% R.S.D.	52.290	10.380	438.711	68.932	2.525	4.796	3.939	10.879

	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	0.026	0.003	0.004	0.065
S.D.	0.011	0.001	0.000	0.019
% R.S.D.	44.193	29.138	4.297	29.994

Identity 1: ICSAB Identity 2: Quality Control 10:40 AM August 6, 1997
 Task name : OPTIMA
 Sample Weight : 1.0000 Solution Volume : 1.00
 On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	-0.004	0.002	-0.020	-0.002	203.943	0.508	0.503	0.935
S.D.	0.000	0.000	0.007	0.003	0.386	0.003	0.001	0.003
% R.S.D.	2.871	1.533	35.283	133.623	0.189	0.635	0.237	0.329
	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	1.016	0.989	-0.002	98.663	104.226	0.501	0.028	-0.047
S.D.	0.003	0.003	0.002	0.183	0.092	0.004	0.008	0.013
% R.S.D.	0.301	0.275	84.659	0.185	0.088	0.803	28.263	28.497
	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	0.045	0.003	0.500	0.002	-0.129	106.396	-0.046	185.286
S.D.	0.004	0.002	0.001	0.005	0.010	0.087	0.004	0.731
% R.S.D.	9.663	53.801	0.205	254.244	7.565	0.082	8.610	0.395
	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	0.002	1.062	1.040	-0.000	1.000	0.015	0.007	0.509
S.D.	0.003	0.000	0.022	0.000	0.002	0.001	0.012	0.002
% R.S.D.	107.850	0.046	2.111	533.483	0.173	7.066	180.923	0.343
	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)				
Mean	0.008	0.496	0.502	0.048				
S.D.	0.051	0.000	0.001	0.005				
% R.S.D.	639.517	0.093	0.185	10.968				

Identity 1: prepdarl Identity 2: direct 10:45 AM August 6, 1997

Task name : OPTIMA

Sample Weight : 1.0000 Solution Volume : 1.00

On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	4.928	4.812	4.782	6.771	4.961	4.999	4.699	4.782
S.D.	0.017	0.016	0.001	0.016	0.007	0.015	0.018	0.024
% R.S.D.	0.346	0.325	0.024	0.233	0.139	0.298	0.387	0.495
	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	4.905	4.960	4.996	4.910	4.801	4.753	5.125	9.143
S.D.	0.013	0.007	0.026	0.006	0.020	0.008	0.022	0.032
% R.S.D.	0.260	0.145	0.515	0.115	0.410	0.168	0.425	0.353
	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	4.923	4.815	4.798	4.891	4.908	4.689	5.041	5.159
S.D.	0.008	0.016	0.018	0.007	0.025	0.008	0.018	0.022
% R.S.D.	0.166	0.338	0.367	0.153	0.520	0.171	0.353	0.432
	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	4.915	0.829	4.676	4.426	4.834	5.349	4.856	4.883
S.D.	0.016	0.002	0.023	0.012	0.013	0.020	0.042	0.012
% R.S.D.	0.332	0.229	0.487	0.280	0.268	0.371	0.856	0.241
	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)				
Mean	4.774	4.836	5.032	4.863				
S.D.	0.033	0.014	0.016	0.029				
% R.S.D.	0.681	0.279	0.322	0.597				

z

Identity 1: prepblkarl Identity 2: direct 10:48 AM August 6, 1997

Task name : OPTIMA

Sample Weight : 1.0000 Solution Volume : 1.00

On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	0.000	0.001	-0.003	0.049	0.038	0.004	0.006	0.001
S.D.	0.001	0.000	0.009	0.004	0.003	0.002	0.000	0.000
% R.S.D.	198.667	3.765	285.517	7.500	6.659	55.936	5.094	21.953
	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.049	-0.001	0.002	0.027	0.201	0.004	0.010	-0.015
S.D.	0.000	0.001	0.001	0.001	0.000	0.002	0.002	0.027
% R.S.D.	0.824	63.450	60.244	4.596	0.192	43.070	21.786	183.367
	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	0.040	0.010	0.002	0.010	0.133	0.051	-0.007	0.592
S.D.	0.006	0.003	0.000	0.005	0.003	0.000	0.002	0.002
% R.S.D.	16.125	35.249	6.275	47.886	1.961	0.622	23.833	0.417
	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	0.003	0.005	0.002	0.001	0.002	0.393	0.039	0.001
S.D.	0.000	0.001	0.010	0.000	0.001	0.002	0.014	0.000
% R.S.D.	12.155	12.268	618.407	50.077	60.220	0.404	34.411	0.335
	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)				
Mean	-0.012	0.001	0.000	-0.040				
S.D.	0.045	0.001	0.000	0.008				
% R.S.D.	369.406	56.838	61.050	20.756				

†

Identity 1: s97t001352 Identity 2: 1ml-9ml 10:52 AM August 6, 1997

Task name : OPTIMA

Sample Weight : 1.0000 Solution Volume : 10.00

On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	0.892	1.195	0.052	128.544	63.355	0.494	0.100	0.559
S.D.	0.015	0.002	0.057	0.299	0.161	0.002	0.001	0.005
% R.S.D.	1.643	0.144	110.250	0.232	0.254	0.443	0.677	0.824

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.350	1.340	0.128	3.888	2.940	16.538	-0.032	6.128
S.D.	0.002	0.016	0.016	0.046	0.042	0.095	0.038	0.448
% R.S.D.	0.640	1.208	12.470	1.189	1.424	0.576	119.702	7.312

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	0.264	0.078	0.094	63.526	105.720	0.635	-0.050	1390.535
S.D.	0.106	0.076	0.002	0.726	0.960	0.042	0.031	9.378
% R.S.D.	39.948	97.597	1.726	1.142	0.908	6.629	61.855	0.674

	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	0.396	0.099	1.215	0.028	0.393	15.018	5.322	0.842
S.D.	0.001	0.010	0.111	0.002	0.008	0.064	0.210	0.009
% R.S.D.	0.243	10.612	9.175	6.628	2.056	0.423	3.941	1.068

	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	0.192	0.041	0.007	-0.047
S.D.	0.071	0.004	0.002	0.264
% R.S.D.	36.917	10.547	22.415	568.344

Identity 1: s97t001352_d Identity 2: 1ml-9ml

10:57 AM August 6, 1997

Task name : OPTIMA

Sample Weight : 1.0000 Solution Volume : 10.00

On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	0.804	1.052	0.041	114.788	56.652	0.490	0.109	0.581
S.D.	0.007	0.002	0.032	0.070	0.187	0.001	0.002	0.003
% R.S.D.	0.825	0.186	78.601	0.061	0.188	0.118	1.996	0.492

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.439	1.229	0.077	3.094	2.495	14.624	0.140	5.158
S.D.	0.006	0.031	0.016	0.066	0.003	0.055	0.050	0.233
% R.S.D.	1.324	4.156	21.023	2.145	0.112	0.379	36.062	4.523

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	0.525	0.046	0.087	62.221	99.919	0.574	0.085	1228.127
S.D.	0.095	0.044	0.002	0.408	0.445	0.002	0.023	2.572
% R.S.D.	18.109	97.079	1.854	0.656	0.446	0.366	27.634	0.209

	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	0.354	0.081	1.180	0.019	0.367	13.602	5.650	0.757
S.D.	0.004	0.003	0.019	0.001	0.009	0.060	0.138	0.012
% R.S.D.	1.084	3.161	1.605	4.079	2.409	0.439	2.447	1.521

	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	-0.219	0.053	0.005	0.750
S.D.	0.149	0.003	0.000	0.118
% R.S.D.	68.268	5.388	0.876	15.694

1

Identity 1: s97t001547 Identity 2: 1ml-9ml 11:01 AM August 6, 1997

Task name : OPTIMA

Sample Weight : 1.0000 Solution Volume : 10.00

On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	0.485	0.386	0.043	120.531	71.754	0.459	0.082	0.058
S.D.	0.005	0.001	0.007	0.465	0.108	0.019	0.001	0.001
% R.S.D.	1.094	0.258	15.342	0.386	0.150	4.161	1.269	1.213
	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.217	0.354	0.037	0.941	1.503	9.731	0.125	-0.703
S.D.	0.003	0.030	0.024	0.020	0.015	0.051	0.082	0.078
% R.S.D.	1.536	8.371	65.410	2.122	0.999	0.520	65.362	11.073
	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	0.515	-0.125	0.032	26.443	96.131	0.282	0.023	1334.951
S.D.	0.006	0.011	0.000	0.352	0.928	0.001	0.043	7.573
% R.S.D.	1.216	9.088	0.920	1.333	0.966	0.373	182.503	0.567
	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	0.431	0.061	0.858	0.023	0.243	14.095	10.495	0.358
S.D.	0.015	0.003	0.148	0.003	0.018	0.061	0.218	0.007
% R.S.D.	3.500	4.340	17.301	12.682	7.255	0.432	2.076	2.082
	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)				
Mean	-0.277	0.090	0.006	0.399				
S.D.	0.368	0.009	0.002	0.104				
% R.S.D.	133.130	10.378	26.551	26.120				

1

Identity 1: s97c001547_d Identity 2: 1ml-9ml 11:04 AM August 6, 1997

Task name : OPTIMA

Sample Weight : 1.0000 Solution Volume : 10.00

On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	0.468	0.318	-0.032	120.294	69.007	0.446	0.062	0.042
S.D.	0.014	0.000	0.062	0.089	0.196	0.002	0.000	0.002
% R.S.D.	3.045	0.118	191.320	0.074	0.284	0.495	0.229	5.869

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.106	0.391	-0.005	0.922	1.451	9.432	0.050	-0.346
S.D.	0.002	0.026	0.014	0.047	0.004	0.053	0.132	0.331
% R.S.D.	1.621	6.561	292.385	5.150	0.301	0.558	262.542	95.608

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	0.207	0.141	0.023	31.250	90.586	0.267	0.113	1331.707
S.D.	0.109	0.072	0.001	0.214	0.529	0.000	0.023	9.375
% R.S.D.	52.613	50.927	5.052	0.684	0.584	0.000	20.294	0.704

	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	0.411	0.037	0.554	0.018	0.232	13.930	10.486	0.340
S.D.	0.013	0.007	0.100	0.001	0.008	0.019	0.135	0.005
% R.S.D.	3.141	17.999	17.995	6.657	3.486	0.139	1.291	1.599

	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	0.268	0.090	0.007	0.144
S.D.	0.353	0.008	0.000	0.326
% R.S.D.	131.941	8.813	0.969	227.330

Identity 1: s97t001552 Identity 2: 1ml-9ml 11:07 AM August 6, 1997

Task name : OPTIMA

Sample Weight : 1.0000 Solution Volume : 10.00

On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	0.082	0.487	0.021	7.932	118.085	0.277	0.056	0.223
S.D.	0.006	0.001	0.072	0.011	0.401	0.019	0.002	0.001
% R.S.D.	7.388	0.279	341.584	0.137	0.340	6.694	3.949	0.551

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.162	1.302	-0.022	3.208	0.966	7.555	-0.024	2.103
S.D.	0.003	0.009	0.021	0.040	0.002	0.072	0.032	0.135
% R.S.D.	2.055	0.711	97.472	1.245	0.233	0.947	134.796	6.430

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	-0.030	0.082	0.021	2.695	176.392	0.154	0.006	1008.054
S.D.	0.011	0.022	0.000	0.066	0.897	0.000	0.026	9.083
% R.S.D.	35.707	27.139	1.376	2.464	0.508	0.001	433.329	0.901

	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	0.202	0.037	0.368	-0.000	0.084	1.201	14.547	0.137
S.D.	0.009	0.004	0.132	0.001	0.009	0.023	0.138	0.005
% R.S.D.	4.521	10.832	35.953	482.314	11.136	1.908	0.949	3.982

	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	0.469	-0.013	0.001	-0.453
S.D.	0.375	0.009	0.004	0.076
% R.S.D.	79.915	65.166	397.473	16.903

Identity 1: s97t001552_d Identity 2: 1ml-9ml

11:11 AM August 6, 1997

Task name : OPTIMA

Sample Weight : 1.0000 Solution Volume : 10.00

On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	0.075	0.506	0.014	4.471	119.676	0.316	0.035	0.224
S.D.	0.010	0.001	0.023	0.021	0.355	0.022	0.002	0.001
% R.S.D.	13.955	0.197	164.376	0.469	0.297	6.971	5.220	0.482

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.326	0.463	-0.027	1.422	0.553	7.533	-0.066	2.008
S.D.	0.004	0.017	0.021	0.034	0.000	0.050	0.027	0.124
% R.S.D.	1.241	3.639	79.713	2.383	0.073	0.665	41.193	6.196

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	0.100	0.040	0.024	3.684	179.534	0.131	-0.044	1017.022
S.D.	0.071	0.037	0.001	0.067	1.648	0.001	0.075	5.591
% R.S.D.	71.141	92.447	3.069	1.805	0.918	0.803	170.831	0.550

	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	0.205	0.047	0.512	0.001	0.073	0.553	13.962	0.115
S.D.	0.003	0.005	0.019	0.003	0.003	0.010	0.288	0.005
% R.S.D.	1.618	10.018	3.647	613.031	4.200	1.755	2.065	4.764

	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	0.241	0.001	0.000	0.407
S.D.	0.369	0.007	0.002	0.227
% R.S.D.	152.988	1262.930	1377.226	55.690

Identity 1: CCV Identity 2: Quality Control 11:14 AM August 6, 1997

Task name : OPTIMA

Sample Weight : 1.0000 Solution Volume : 1.00

On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	4.927	5.011	5.104	4.586	5.094	5.009	5.266	5.141
S.D.	0.007	0.012	0.017	0.008	0.008	0.013	0.005	0.015
% R.S.D.	0.140	0.242	0.326	0.164	0.150	0.251	0.100	0.296

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	5.125	5.042	5.135	5.068	4.895	4.981	5.408	9.486
S.D.	0.005	0.004	0.021	0.040	0.010	0.020	0.009	0.018
% R.S.D.	0.107	0.085	0.404	0.795	0.209	0.407	0.159	0.188

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	4.977	5.009	5.061	5.057	4.899	4.835	5.159	5.026
S.D.	0.033	0.010	0.011	0.005	0.025	0.011	0.026	0.018
% R.S.D.	0.665	0.193	0.210	0.104	0.502	0.221	0.506	0.354

	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	5.016	5.225	5.049	4.851	5.073	5.127	5.139	5.057
S.D.	0.012	0.007	0.036	0.009	0.012	0.014	0.021	0.007
% R.S.D.	0.244	0.127	0.708	0.182	0.230	0.269	0.415	0.135

	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	4.808	4.950	5.227	5.228
S.D.	0.033	0.011	0.013	0.003
% R.S.D.	0.678	0.218	0.241	0.065

1

Identity 1: CCB Identity 2: Quality Control 11:19 AM August 6, 1997

Task name : OPTIMA

Sample Weight : 1.0000 Solution Volume : 1.00

On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	-0.001	0.000	-0.006	-0.004	-0.003	0.010	0.001	0.000
S.D.	0.001	0.000	0.013	0.002	0.004	0.002	0.001	0.000
% R.S.D.	87.817	65.465	211.041	52.537	139.764	21.688	46.395	53.574

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.000	-0.001	-0.003	0.002	-0.001	-0.000	-0.001	-0.093
S.D.	0.000	0.002	0.001	0.004	0.000	0.001	0.009	0.026
% R.S.D.	280.559	155.927	42.539	188.531	17.625	1386.859	605.056	27.902

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	0.021	0.001	0.000	0.004	0.006	-0.000	-0.005	0.017
S.D.	0.007	0.005	0.000	0.004	0.001	0.000	0.007	0.003
% R.S.D.	31.180	421.038	40.865	85.947	22.798	75.031	149.168	19.092

	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	0.005	0.005	0.016	0.000	0.001	0.002	0.041	-0.000
S.D.	0.000	0.000	0.005	0.000	0.000	0.001	0.012	0.000
% R.S.D.	6.336	9.027	28.084	249.640	25.056	52.145	29.062	89.376

	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	-0.010	0.001	0.001	0.004
S.D.	0.014	0.001	0.000	0.011
% R.S.D.	139.953	81.469	28.092	265.555

HNF-SD-WM-DP-259, REV. 0

Identity 1: s97t001575 Identity 2: 1ml-9ml 11:23 AM August 6, 1997

Task name : OPTIMA

Sample Weight : 1.0000 Solution Volume : 10.00

On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	0.083	0.277	-0.088	18.726	94.693	0.357	0.052	0.964
S.D.	0.011	0.000	0.079	0.055	0.119	0.035	0.007	0.003
% R.S.D.	13.532	0.136	89.312	0.293	0.125	9.835	12.970	0.306
	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.184	0.354	-0.013	1.631	0.591	10.187	0.098	0.561
S.D.	0.004	0.024	0.021	0.040	0.000	0.045	0.034	0.304
% R.S.D.	2.439	6.755	158.976	2.475	0.068	0.440	34.123	54.173
	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	0.496	-0.058	0.029	5.495	275.591	0.129	0.019	1100.325
S.D.	0.154	0.071	0.002	0.161	3.811	0.001	0.023	3.835
% R.S.D.	31.091	122.017	7.581	2.935	1.383	0.813	121.102	0.349
	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	0.184	0.065	0.503	-0.001	0.089	2.163	13.232	0.140
S.D.	0.004	0.010	0.047	0.003	0.011	0.016	0.183	0.002
% R.S.D.	2.392	15.133	9.294	512.319	12.022	0.732	1.382	1.495
	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)				
Mean	0.732	0.033	0.003	0.065				
S.D.	0.335	0.012	0.002	0.158				
% R.S.D.	45.744	36.618	48.039	244.559				

2

Identity 1: s97t001575_d Identity 2: 1ml-9ml 11:26 AM August 6, 1997

Task name : OPTIMA

Sample Weight : 1.0000 Solution Volume : 10.00

On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	0.119	0.277	0.131	18.308	92.872	0.357	0.035	0.978
S.D.	0.011	0.001	0.060	0.080	0.032	0.001	0.001	0.002
% R.S.D.	9.626	0.271	45.452	0.434	0.034	0.279	3.838	0.182

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.328	0.402	0.024	1.691	0.578	10.254	-0.126	2.292
S.D.	0.017	0.000	0.000	0.008	0.002	0.076	0.082	0.244
% R.S.D.	5.232	0.030	0.459	0.477	0.319	0.743	65.082	10.631

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Hg (ppm)	As (ppm)	Na (ppm)
Mean	0.105	0.111	0.022	5.107	273.660	0.119	-0.027	1101.302
S.D.	0.079	0.046	0.002	0.189	1.359	0.001	0.058	4.390
% R.S.D.	75.240	41.097	8.364	3.697	0.497	0.884	219.547	0.399

	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	0.143	0.036	0.353	0.012	0.065	1.989	11.987	0.136
S.D.	0.007	0.005	0.072	0.004	0.009	0.009	0.151	0.002
% R.S.D.	5.250	12.787	20.418	34.070	13.615	0.438	1.261	1.527

	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	0.487	0.000	0.009	0.257
S.D.	0.140	0.002	0.001	0.208
% R.S.D.	28.735	677.578	16.639	80.683

Identity 1: s97t001580 Identity 2: 1ml-9ml 11:28 AM August 6, 1997

Task name : OPTIMA

Sample Weight : 1.0000 Solution Volume : 10.00

On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bf (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	0.002	0.035	-0.083	4.137	85.486	0.266	0.051	1.011
S.D.	0.002	0.000	0.115	0.021	0.218	0.021	0.002	0.001
% R.S.D.	111.196	1.083	138.396	0.506	0.255	7.761	3.978	0.107

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.162	0.388	0.010	3.603	0.197	1.925	0.026	0.070
S.D.	0.001	0.011	0.014	0.104	0.001	0.023	0.057	0.100
% R.S.D.	0.397	2.950	142.211	2.894	0.737	1.179	217.920	142.346

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	-0.056	0.188	0.011	190.921	37.331	0.073	0.118	934.155
S.D.	0.011	0.042	0.001	0.542	0.207	0.001	0.044	2.989
% R.S.D.	19.538	22.446	6.741	0.284	0.555	1.445	37.461	0.320

	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	0.126	0.030	0.119	0.001	0.021	0.620	9.418	0.082
S.D.	0.009	0.003	0.043	0.002	0.002	0.025	0.048	0.004
% R.S.D.	7.243	11.146	36.103	175.028	8.097	3.991	0.505	4.381

	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	0.174	0.384	0.001	0.059
S.D.	0.124	0.006	0.002	0.081
% R.S.D.	71.474	1.558	185.032	136.752

Identity 1: s97c001580_d Identity 2: 1ml-9ml 11:31 AM August 6, 1997

Task name : OPTIMA

Sample Weight : 1.0000 Solution Volume : 10.00

On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	-0.015	0.033	-0.038	4.668	82.143	0.318	0.070	0.948
S.D.	0.009	0.001	0.056	0.061	0.126	0.021	0.004	0.004
% R.S.D.	59.973	2.294	147.398	1.316	0.153	6.622	6.253	0.457

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.184	0.390	-0.037	3.225	0.255	1.848	-0.064	-0.860
S.D.	0.004	0.014	0.008	0.106	0.001	0.034	0.068	0.420
% R.S.D.	2.083	3.681	21.520	3.299	0.316	1.824	107.467	48.899

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	0.361	-0.276	0.015	180.049	35.703	0.072	0.056	903.600
S.D.	0.099	0.064	0.001	1.555	0.267	0.001	0.039	1.345
% R.S.D.	27.358	23.141	7.723	0.864	0.747	1.467	69.889	0.149

	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	0.125	0.046	0.180	-0.005	0.036	0.277	8.988	0.078
S.D.	0.010	0.007	0.018	0.004	0.003	0.004	0.042	0.004
% R.S.D.	8.284	14.527	10.210	84.852	8.447	1.296	0.467	4.550

	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	0.246	0.401	-0.002	0.708
S.D.	0.368	0.006	0.002	0.209
% R.S.D.	150.074	1.561	80.627	29.531

Identity 1: ICSA Identity 2: Quality Control 11:35 AM August 6, 1997

Task name : OPTIMA

Sample Weight : 1.0000 Solution Volume : 1.00

On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	-0.001	0.002	-0.029	-0.004	203.073	0.009	0.001	0.001
S.D.	0.002	0.000	0.015	0.001	0.436	0.002	0.000	0.000
% R.S.D.	249.920	3.985	52.048	12.422	0.215	20.366	35.096	11.394

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.007	-0.002	-0.004	98.449	103.994	0.002	0.055	-0.093
S.D.	0.000	0.002	0.002	0.165	0.155	0.001	0.009	0.037
% R.S.D.	6.534	149.396	41.805	0.168	0.149	48.509	16.263	39.395

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	0.048	0.006	0.002	0.019	-0.113	105.645	-0.053	186.672
S.D.	0.009	0.006	0.000	0.002	0.003	0.202	0.006	0.748
% R.S.D.	18.127	91.746	2.776	11.491	2.793	0.191	11.489	0.401

	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	0.001	0.004	0.020	-0.000	0.003	0.012	0.007	0.007
S.D.	0.002	0.001	0.007	0.000	0.001	0.000	0.014	0.000
% R.S.D.	275.357	15.401	35.603	57.987	25.509	3.255	184.956	1.554

	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	0.077	0.002	0.004	0.026
S.D.	0.029	0.002	0.000	0.017
% R.S.D.	37.773	94.311	8.662	68.034

Identity 1: ICSAB Identity 2: Quality Control 11:38 AM August 6, 1997
 Task name : OPTIMA
 Sample Weight : 1.0000 Solution Volume : 1.00
 On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	-0.003	0.002	-0.029	-0.002	203.775	0.506	0.500	0.934
S.D.	0.000	0.000	0.006	0.000	0.552	0.002	0.001	0.003
% R.S.D.	15.140	4.449	19.565	0.911	0.271	0.432	0.173	0.300
	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	1.015	0.985	-0.006	98.225	103.552	0.496	0.040	-0.053
S.D.	0.000	0.004	0.003	0.260	0.243	0.004	0.007	0.012
% R.S.D.	0.047	0.406	48.949	0.264	0.235	0.715	18.084	22.780
	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	0.037	0.010	0.497	0.008	-0.092	106.192	-0.051	185.567
S.D.	0.006	0.003	0.001	0.013	0.011	0.179	0.003	0.454
% R.S.D.	15.052	29.115	0.182	162.775	12.254	0.168	6.565	0.244
	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	0.002	1.053	0.975	0.000	0.990	0.015	0.063	0.506
S.D.	0.001	0.001	0.012	0.000	0.003	0.001	0.010	0.000
% R.S.D.	36.617	0.087	1.242	125.003	0.352	4.216	15.391	0.081
	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)				
Mean	0.037	0.491	0.499	0.030				
S.D.	0.017	0.000	0.001	0.013				
% R.S.D.	45.193	0.100	0.141	41.466				

1

Identity 1: CCV Identity 2: Quality Control 11:42 AM August 6, 1997
 Task name : OPTIMA
 Sample Weight : 1.0000 Solution Volume : 1.00
 On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bf (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	4.949	5.017	5.176	4.641	5.121	5.103	5.245	5.122
S.D.	0.008	0.006	0.026	0.009	0.023	0.016	0.004	0.022
% R.S.D.	0.160	0.113	0.505	0.185	0.457	0.307	0.077	0.432

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	5.234	5.115	5.154	5.131	4.892	5.064	5.380	9.520
S.D.	0.010	0.010	0.011	0.038	0.008	0.019	0.019	0.009
% R.S.D.	0.182	0.205	0.218	0.740	0.170	0.385	0.348	0.095

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	4.960	5.004	5.047	5.156	5.003	4.924	5.231	5.036
S.D.	0.027	0.007	0.006	0.032	0.007	0.015	0.024	0.027
% R.S.D.	0.538	0.135	0.112	0.617	0.148	0.310	0.459	0.532

	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	5.099	5.311	5.131	4.879	5.129	5.155	5.259	5.125
S.D.	0.015	0.007	0.044	0.008	0.007	0.009	0.041	0.011
% R.S.D.	0.300	0.129	0.854	0.170	0.129	0.166	0.779	0.224

	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	4.782	4.999	5.240	5.231
S.D.	0.081	0.004	0.004	0.020
% R.S.D.	1.685	0.086	0.075	0.377

Identity 1: CCB Identity 2: Quality Control 11:45 AM August 6, 1997
 Task name : OPTIMA
 Sample Weight : 1.0000 Solution Volume : 1.00
 On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	-0.001	-0.000	-0.003	0.000	-0.001	0.001	0.000	-0.000
S.D.	0.000	0.000	0.003	0.003	0.003	0.004	0.000	0.000
% R.S.D.	35.147	173.205	96.571	616.881	249.483	302.625	799.772	526.794

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	-0.001	-0.003	-0.006	0.005	-0.001	-0.001	-0.001	-0.029
S.D.	0.000	0.001	0.002	0.001	0.000	0.002	0.003	0.018
% R.S.D.	49.549	50.537	38.075	14.431	6.662	165.368	262.221	62.921

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	0.001	0.006	-0.000	-0.015	0.004	0.000	0.002	0.011
S.D.	0.008	0.005	0.000	0.015	0.002	0.000	0.003	0.002
% R.S.D.	700.097	97.587	210.713	96.986	50.811	43.251	166.596	18.750

	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	0.004	0.002	0.005	0.000	0.002	-0.000	-0.121	-0.001
S.D.	0.001	0.000	0.000	0.000	0.000	0.000	0.007	0.000
% R.S.D.	18.986	29.794	0.357	323.968	7.543	140.783	6.013	24.611

	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	-0.050	-0.001	0.000	0.014
S.D.	0.062	0.001	0.000	0.013
% R.S.D.	123.473	77.399	181.542	95.303

LABCORE Data Entry Template for Worklist# 19749

Analyst: J. WORRELL Instrument: ICP01 _____ Book# 67248B

Method: LA-505-151/161 Rev/Mod E1

Worklist Comment: ICP BY-109 (SOLID ACID DIGEST)

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	PREPSTDARL		@ICP-A01	SOLID		
7	PREPBLKARL		@ICP-A01	SOLID		
8	SAMPLE	S97T001821 0 A	@ICP-A01	SOLID	97000412	BY-109 (P)
	Analytes Requested: AG-A-01 , AL-A-01 , AS-A-01 , B-A-01 , BA-A-01 , BE-A-01 , BI-A-01 , CA-A-01 , CD-A-01 , CE-A-01 , CO-A-01 , CR-A-01 , CU-A-01 , FE-A-01 , K-A-01 , LA-A-01 , LI-A-01 , MG-A-01 , MN-A-01 , MO-A-01 , NA-A-01 , ND-A-01 , NI-A-01 , P-A-01 , PB-A-01 , S-A-01 , SB-A-01 , SE-A-01 , SI-A-01 , SM-A-01 , SR-A-01 , TI-A-01 , TL-A-01 , U-A-01 , V-A-01 , ZN-A-01 , ZR-A-01					
9	DUP	S97T001821 0 A	@ICP-A01	SOLID		
10	SAMPLE	S97T001822 0 A	@ICP-A01	SOLID	97000412	BY-109 (P)
	Analytes Requested: AG-A-01 , AL-A-01 , AS-A-01 , B-A-01 , BA-A-01 , BE-A-01 , BI-A-01 , CA-A-01 , CD-A-01 , CE-A-01 , CO-A-01 , CR-A-01 , CU-A-01 , FE-A-01 , K-A-01 , LA-A-01 , LI-A-01 , MG-A-01 , MN-A-01 , MO-A-01 , NA-A-01 , ND-A-01 , NI-A-01 , P-A-01 , PB-A-01 , S-A-01 , SB-A-01 , SE-A-01 , SI-A-01 , SM-A-01 , SR-A-01 , TI-A-01 , TL-A-01 , U-A-01 , V-A-01 , ZN-A-01 , ZR-A-01					
11	DUP	S97T001822 0 A	@ICP-A01	SOLID		
12	SPK-PREDIG	S97T001822 0 A	@ICP-A01	SOLID		

Data Entry Comments:

LABCORE Data Entry Template for Worklist# 19749

S Type	Sample#	R A	Test	Matrix	Group#	Project
13 SAMPLE	S97T001823	0 A	@ICP-A01	SOLID	97000411	BY-109 (P)
Analytes Requested: AG-A-01, AL-A-01, AS-A-01, B-A-01, BA-A-01, BE-A-01, BI-A-01, CA-A-01, CD-A-01, CE-A-01, CO-A-01, CR-A-01, CU-A-01, FE-A-01, K-A-01, LA-A-01, LI-A-01, MG-A-01, MN-A-01, MO-A-01, NA-A-01, ND-A-01, NI-A-01, P-A-01, PB-A-01, S-A-01, SB-A-01, SE-A-01, SI-A-01, SM-A-01, SR-A-01, TI-A-01, TL-A-01, U-A-01, V-A-01, ZN-A-01, ZR-A-01						
14 DUP	S97T001823	0 A	@ICP-A01	SOLID		
15 ICSA			@ICP-QC	QC		
16 ICSAB			@ICP-QC	QC		
17 CCV			@ICP-QC	QC		
18 CCB			@ICP-QC	QC		

Final page for worklist # 19749

John W. Howell 8-12-97
Analyst Signature Date

Reviewed + Validated by:
Sam M. Parag 8/12/97
Analyst Signature Date

S97T001821

$$Li = 0.619 \frac{\mu g}{ml} \times \frac{1}{5.066 \frac{g}{L} \times \frac{1L}{1000ml}} = 1.22 \times 10^{-2} \frac{\mu g}{g}$$

S97T001822

spike recovery:

$$Li = \frac{4.531 - 0.119}{5} \times 100 = 88.2\%$$

result:

$$Li = 0.119 \frac{\mu g}{ml} \times \frac{1}{4.952 \frac{g}{L} \times \frac{1L}{1000ml}} = 2.40 \times 10^{-1} \frac{\mu g}{g}$$

Data Entry Comments:

970807A.DAT

8-7-97

ICV
ICB
LLS
ICSA
ICSAB

S977001821 SAM 1-9 10
DUP 1-9 10

1822 SAM 1-9 10
DUP 1-9 10
DISPK 1-9 10
1823 SAM 1-9 10
DUP 1-9 10

ICSA
ICSAB
ICB
ICV

Identity 1: ICB Identity 2: Quality Control

1:01 PM August 7, 1997

Task name : OPTIMA

Sample Weight : 1.0000 Solution Volume : 1.00

On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	4.964	5.156	5.160	4.614	5.157	5.075	5.375	5.375
S.D.	0.017	0.010	0.025	0.014	0.004	0.017	0.012	0.011
% R.S.D.	0.345	0.189	0.479	0.296	0.086	0.340	0.223	0.211

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	5.090	4.998	5.014	4.826	4.912	4.960	5.080	9.907
S.D.	0.012	0.026	0.030	0.029	0.023	0.013	0.049	0.047
% R.S.D.	0.229	0.521	0.596	0.607	0.473	0.252	0.968	0.476

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	5.218	5.127	5.197	5.325	5.166	4.970	5.249	5.239
S.D.	0.011	0.016	0.012	0.017	0.017	0.011	0.016	0.018
% R.S.D.	0.211	0.315	0.227	0.320	0.331	0.226	0.314	0.344

	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	5.113	5.153	4.948	4.917	5.033	4.977	5.007	4.945
S.D.	0.016	0.014	0.024	0.010	0.018	0.027	0.038	0.023
% R.S.D.	0.315	0.281	0.487	0.211	0.361	0.535	0.760	0.455

	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	4.740	4.901	5.160	5.096
S.D.	0.098	0.020	0.020	0.021
% R.S.D.	2.062	0.415	0.388	0.405

8-7-97
 J. W. Howell

ACID DIGEST

5977801821, 1822, 1823

69-109

FILE NO = 970807B.DAT

SIGNATURE ABOVE REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 542 TO 561.

Identity 1: ICB Identity 2: Quality Control

1:03 PM August 7, 1997

Task name : OPTIMA

Sample Weight : 1.0000 Solution Volume : 1.00

On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	0.000	0.001	0.002	0.002	0.014	0.001	0.001	0.002
S.D.	0.000	0.000	0.002	0.002	0.003	0.000	0.000	0.000
% R.S.D.	96.920	7.767	109.911	112.290	18.579	0.305	13.893	16.262
	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.001	-0.002	0.002	0.000	0.017	0.002	-0.005	-0.044
S.D.	0.000	0.003	0.002	0.002	0.001	0.001	0.008	0.022
% R.S.D.	28.025	200.999	87.910	558.552	3.707	61.608	162.203	49.922
	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	-0.008	-0.009	0.001	-0.007	0.015	0.015	0.012	0.031
S.D.	0.004	0.003	0.000	0.011	0.001	0.000	0.004	0.002
% R.S.D.	49.173	32.554	6.644	170.140	4.291	0.746	29.561	7.699
	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	0.005	-0.001	0.000	0.001	0.001	0.007	-0.053	0.002
S.D.	0.002	0.001	0.009	0.000	0.001	0.001	0.008	0.000
% R.S.D.	43.165	90.154	18570.862	22.473	96.179	9.584	15.275	10.809
	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)				
Mean	0.026	-0.001	0.001	-0.098				
S.D.	0.011	0.001	0.000	0.011				
% R.S.D.	41.055	65.125	11.185	11.066				

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Identity 1: ICV Identity 2: Quality Control

1:06 PM August 7, 1997

Task name : OPTIMA

Sample Weight : 1.0000 Solution Volume : 1.00

On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	4.985	5.092	5.172	4.613	5.082	5.117	5.288	5.132
S.D.	0.005	0.005	0.034	0.004	0.011	0.026	0.012	0.058
% R.S.D.	0.108	0.092	0.656	0.094	0.214	0.501	0.232	1.121

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	5.183	5.099	5.126	5.025	4.947	5.066	5.289	9.630
S.D.	0.010	0.028	0.010	0.022	0.004	0.021	0.004	0.023
% R.S.D.	0.198	0.546	0.203	0.436	0.081	0.424	0.074	0.237

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Hg (ppm)	As (ppm)	Na (ppm)
Mean	5.104	5.040	5.125	5.207	5.010	5.051	5.237	4.993
S.D.	0.020	0.001	0.004	0.015	0.016	0.017	0.004	0.049
% R.S.D.	0.393	0.012	0.073	0.292	0.327	0.332	0.084	0.989

	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	5.125	5.262	5.075	4.921	5.127	5.085	5.009	5.084
S.D.	0.015	0.009	0.009	0.009	0.011	0.010	0.070	0.016
% R.S.D.	0.289	0.166	0.185	0.182	0.210	0.189	1.397	0.320

	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	4.772	4.997	5.234	5.188
S.D.	0.073	0.013	0.009	0.020
% R.S.D.	1.540	0.263	0.175	0.386

Identity 1: ICB Identity 2: Quality Control

1:11 PM August 7, 1997

Task name : OPTIMA

Sample Weight : 1.0000 Solution Volume : 1.00

On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	0.001	0.000	0.009	-0.000	-0.014	0.007	-0.001	-0.000
S.D.	0.001	0.000	0.009	0.003	0.001	0.002	0.000	0.000
% R.S.D.	65.323		110.386	2572.766	6.750	28.827	58.561	72.175

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.001	-0.002	-0.000	-0.007	-0.004	-0.003	-0.013	-0.011
S.D.	0.000	0.001	0.002	0.001	0.000	0.001	0.002	0.023
% R.S.D.	38.364	61.041	42536.879	9.379	3.117	26.967	18.442	215.301

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	-0.014	-0.014	-0.000	0.006	0.006	-0.000	0.002	0.002
S.D.	0.008	0.005	0.000	0.004	0.001	0.000	0.008	0.001
% R.S.D.	61.208	38.307	21.917	70.516	9.705	43.292	442.997	57.703

	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	0.000	-0.003	0.024	0.000	0.000	0.007	0.169	0.000
S.D.	0.001	0.001	0.016	0.000	0.001	0.001	0.007	0.000
% R.S.D.	175.659	25.078	66.215	115.014	38667.951	21.161	3.933	1.050

	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	0.018	-0.002	0.001	-0.008
S.D.	0.031	0.000	0.000	0.007
% R.S.D.	174.453	16.780	66.147	84.153

Identity 1: LLS Identity 2: Quality Control 1:13 PM August 7, 1997
 Task name : OPTIMA
 Sample Weight : 1.0000 Solution Volume : 1.00
 On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	0.022	0.021	0.206	0.112	0.109	0.054	0.020	0.020
S.D.	0.002	0.000	0.003	0.004	0.006	0.002	0.001	0.000
% R.S.D.	7.863	0.478	1.285	3.771	5.564	3.954	3.491	2.064

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.023	0.042	0.107	0.097	0.190	0.021	0.189	0.483
S.D.	0.000	0.001	0.001	0.003	0.000	0.002	0.013	0.050
% R.S.D.	1.011	2.493	1.292	3.277	0.244	9.812	6.787	10.372

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	0.203	0.203	0.103	0.443	0.231	0.219	0.220	0.203
S.D.	0.015	0.010	0.000	0.004	0.001	0.001	0.001	0.003
% R.S.D.	7.285	4.946	0.092	1.005	0.587	0.316	0.621	1.575

	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	0.108	0.017	0.199	0.021	0.010	0.108	0.717	0.022
S.D.	0.002	0.001	0.007	0.000	0.000	0.001	0.017	0.000
% R.S.D.	1.744	5.895	3.646	0.767	1.780	0.815	2.366	0.025

	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	0.161	0.104	0.011	0.387
S.D.	0.001	0.001	0.000	0.030
% R.S.D.	0.838	1.281	1.330	7.810

1

Identity 1: ICSA Identity 2: Quality Control

1:17 PM August 7, 1997

Task name : OPTIMA

Sample Weight : 1.0000 Solution Volume : 1.00

On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	0.002	0.002	0.002	0.013	202.697	0.004	-0.001	0.000
S.D.	0.002	0.000	0.007	0.006	0.387	0.002	0.001	0.000
% R.S.D.	68.195	7.217	301.496	46.087	0.191	47.437	42.386	286.790

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.008	0.001	0.003	97.083	101.596	-0.001	0.024	-0.016
S.D.	0.001	0.002	0.001	0.039	0.121	0.005	0.006	0.052
% R.S.D.	9.065	465.940	26.791	0.040	0.119	755.011	24.926	325.164

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	-0.001	-0.007	0.001	0.012	-0.072	97.895	-0.053	181.992
S.D.	0.014	0.012	0.000	0.005	0.003	0.449	0.006	1.600
% R.S.D.	1472.992	166.928	18.173	42.822	4.054	0.459	11.761	0.879

	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	-0.000	-0.001	0.007	0.001	0.001	0.015	0.054	0.013
S.D.	0.000	0.001	0.022	0.001	0.000	0.002	0.019	0.000
% R.S.D.	312.205	123.568	308.670	85.378	41.278	11.009	35.472	2.638

	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	0.064	-0.001	0.003	-0.093
S.D.	0.009	0.001	0.000	0.040
% R.S.D.	14.789	205.371	7.971	42.539

1

Identity 1: ICSAB Identity 2: Quality Control

1:20 PM August 7, 1997

Task name : OPTIMA

Sample Weight : 1.0000 Solution Volume : 1.00

On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	-0.001	0.002	-0.006	0.005	201.922	0.501	0.504	0.918
S.D.	0.002	0.000	0.002	0.002	0.167	0.004	0.001	0.000
% R.S.D.	129.965	5.196	37.659	40.859	0.083	0.762	0.155	0.027

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.995	0.984	0.004	95.538	100.215	0.495	0.043	0.017
S.D.	0.003	0.002	0.002	0.158	0.112	0.005	0.007	0.053
% R.S.D.	0.257	0.184	36.991	0.166	0.112	0.999	17.084	316.833

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	0.024	-0.009	0.507	0.019	-0.074	95.569	-0.065	182.467
S.D.	0.012	0.012	0.000	0.005	0.010	0.247	0.001	0.083
% R.S.D.	48.361	133.527	0.064	28.017	13.953	0.259	2.092	0.045

	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	-0.002	1.033	0.992	-0.000	0.984	0.014	0.002	0.506
S.D.	0.001	0.002	0.006	0.000	0.004	0.000	0.010	0.001
% R.S.D.	34.983	0.169	0.614	110.615	0.389	2.394	456.264	0.107

	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	-0.038	0.487	0.493	0.008
S.D.	0.057	0.001	0.001	0.015
% R.S.D.	148.753	0.264	0.169	192.837

1

1:24 PM August 7, 1997

Task name : OPTIMA

Sample Weight : 1.0000 Solution Volume : 1.00

On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr	Sr	Bi	Si	Al	Co	Cu	Li
	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
Mean	0.002	0.001	0.004	1.184	0.144	0.012	0.007	0.001
S.D.	0.002	0.000	0.002	0.005	0.007	0.004	0.001	0.000
% R.S.D.	112.029	17.843	59.375	0.430	4.705	29.824	8.417	24.114
	Zn	Ni	La	Fe	Ca	Cr	Nd	U
	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
Mean	0.055	-0.001	0.002	0.048	0.200	-0.007	0.015	-0.089
S.D.	0.000	0.002	0.001	0.002	0.001	0.001	0.013	0.068
% R.S.D.	0.413	130.446	36.818	4.578	0.593	13.194	87.315	76.763
	Ce	Sm	Ba	P	S	Mg	As	Na
	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
Mean	0.030	-0.041	0.001	-0.006	0.120	0.064	-0.000	0.689
S.D.	0.021	0.013	0.000	0.004	0.001	0.001	0.006	0.001
% R.S.D.	70.853	32.271	23.310	68.716	1.009	1.167	7641.807	0.175
	Mo	Ag	Pb	Ti	Cd	B	K	Mn
	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
Mean	-0.001	0.002	0.043	0.000	0.000	0.356	0.174	0.002
S.D.	0.000	0.001	0.012	0.001	0.001	0.003	0.011	0.000
% R.S.D.	23.065	71.604	28.011	171.430	181.869	0.708	6.308	10.211
	Sb	V	Be	Tl				
	(ppm)	(ppm)	(ppm)	(ppm)				
Mean	0.040	0.002	0.001	0.048				
S.D.	0.016	0.001	0.000	0.045				
% R.S.D.	41.473	80.368	49.581	93.263				

Identity 1: prepsdard Identity 2: direct 1:27 PM August 7, 1997

Task name : OPTIMA

Sample Weight : 1.0000 Solution Volume : 1.00

On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	4.902	4.841	4.821	7.847	4.985	5.135	4.633	4.555
S.D.	0.003	0.003	0.013	0.003	0.011	0.006	0.008	0.036
% R.S.D.	0.067	0.070	0.278	0.036	0.227	0.109	0.175	0.792

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	4.996	5.034	4.941	4.919	4.917	4.880	4.887	9.123
S.D.	0.012	0.008	0.010	0.029	0.002	0.010	0.018	0.024
% R.S.D.	0.237	0.167	0.200	0.581	0.049	0.201	0.368	0.260

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	4.988	4.761	4.788	4.955	4.971	4.918	5.063	5.211
S.D.	0.013	0.003	0.002	0.032	0.020	0.002	0.008	0.044
% R.S.D.	0.258	0.071	0.047	0.653	0.404	0.050	0.163	0.837

	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	4.982	1.188	4.672	4.418	4.880	5.424	4.582	4.918
S.D.	0.001	0.000	0.018	0.000	0.009	0.009	0.042	0.004
% R.S.D.	0.023	0.031	0.382	0.011	0.180	0.171	0.919	0.071

	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	4.703	4.862	5.036	4.786
S.D.	0.084	0.004	0.007	0.031
% R.S.D.	1.794	0.080	0.140	0.645

Identity 1: s97t001821 Identity 2: 1ml-9ml 1:31 PM August 7, 1997

Task name : OPTIMA

Sample Weight : 1.0000 Solution Volume : 10.00

On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	0.403	1.118	0.245	10.407	143.435	0.455	0.054	0.619
S.D.	0.013	0.002	0.072	0.017	0.075	0.022	0.001	0.001
% R.S.D.	3.171	0.171	29.312	0.165	0.053	4.729	2.571	0.129

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.465	1.888	0.126	11.764	2.829	9.374	-0.154	16.684
S.D.	0.003	0.022	0.022	0.073	0.007	0.010	0.117	0.416
% R.S.D.	0.559	1.169	17.135	0.624	0.242	0.110	75.734	2.494

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Hg (ppm)	As (ppm)	Na (ppm)
Mean	-0.024	0.288	0.170	231.922	26.213	1.432	0.122	837.364
S.D.	0.127	0.059	0.001	0.335	0.165	0.002	0.004	1.486
% R.S.D.	522.487	20.322	0.867	0.145	0.629	0.138	3.113	0.177

	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	0.056	0.043	0.632	0.034	0.252	0.941	3.905	0.729
S.D.	0.004	0.007	0.111	0.003	0.013	0.014	0.159	0.004
% R.S.D.	7.576	15.584	17.603	10.088	5.177	1.474	4.073	0.575

	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	0.162	0.253	0.009	-0.304
S.D.	0.714	0.007	0.002	0.243
% R.S.D.	441.693	2.648	17.899	79.973

Identity 1: s97t001821_d Identity 2: 1ml-9ml 1:34 PM August 7, 1997

Task name : OPTIMA

Sample Weight : 1.0000 Solution Volume : 10.00

On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	0.635	1.413	0.409	10.722	181.865	0.468	0.079	0.717
S.D.	0.019	0.001	0.037	0.043	0.335	0.038	0.004	0.004
% R.S.D.	3.044	0.047	8.929	0.406	0.184	8.189	4.754	0.590
	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.471	2.238	0.133	8.784	3.540	10.475	-0.024	21.129
S.D.	0.005	0.017	0.021	0.066	0.006	0.027	0.085	0.496
% R.S.D.	0.992	0.767	16.012	0.753	0.176	0.253	352.379	2.349
	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	0.028	0.248	0.213	214.313	51.203	1.648	0.080	909.436
S.D.	0.088	0.127	0.002	0.662	0.158	0.003	0.040	7.012
% R.S.D.	319.544	51.466	0.810	0.309	0.308	0.207	49.537	0.771
	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	0.047	0.078	0.929	0.034	0.321	0.901	2.956	0.830
S.D.	0.008	0.010	0.094	0.005	0.007	0.012	0.254	0.008
% R.S.D.	16.418	13.342	10.122	13.365	2.026	1.371	8.579	0.914
	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)				
Mean	0.409	0.260	0.008	-0.026				
S.D.	0.118	0.011	0.004	0.310				
% R.S.D.	28.740	4.252	49.409	1189.419				

Identity 1: s97t001822 Identity 2: 1ml-9ml 1:38 PM August 7, 1997

Task name : OPTIMA

Sample Weight : 1.0000 Solution Volume : 10.00

On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	0.180	0.114	0.234	12.737	82.973	0.279	0.030	0.119
S.D.	0.010	0.002	0.108	0.034	0.151	0.001	0.005	0.003
% R.S.D.	5.599	1.343	46.235	0.266	0.182	0.456	14.879	2.319

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.688	0.386	0.017	0.895	1.011	7.051	0.023	6.864
S.D.	0.003	0.006	0.028	0.023	0.002	0.020	0.092	0.343
% R.S.D.	0.433	1.659	163.230	2.554	0.205	0.290	400.705	4.992

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	0.167	-0.109	0.020	143.082	77.319	0.228	0.080	917.811
S.D.	0.096	0.059	0.002	0.370	0.414	0.001	0.047	5.502
% R.S.D.	57.585	54.367	12.394	0.259	0.535	0.499	59.214	0.599

	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	0.123	0.051	0.331	0.002	0.045	1.429	10.343	0.612
S.D.	0.012	0.007	0.058	0.006	0.007	0.005	0.100	0.002
% R.S.D.	9.786	13.979	17.625	284.115	16.101	0.367	0.966	0.351

	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	0.449	0.256	0.002	-0.031
S.D.	0.317	0.012	0.003	0.182
% R.S.D.	70.548	4.701	162.505	596.931

Identity 1: s97t001822_d Identity 2: 1ml-9ml 1:41 PM August 7, 1997

Task name : OPTIMA

Sample Weight : 1.0000 Solution Volume : 10.00

On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	0.173	0.121	0.100	13.958	74.459	0.319	0.027	0.102
S.D.	0.007	0.000	0.119	0.051	0.075	0.036	0.003	0.002
% R.S.D.	4.020	0.316	119.112	0.364	0.100	11.298	9.803	2.067

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.365	0.406	0.018	1.128	0.832	7.523	0.070	7.313
S.D.	0.003	0.012	0.014	0.024	0.002	0.056	0.082	0.279
% R.S.D.	0.765	2.880	80.439	2.093	0.264	0.742	116.135	3.821

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	0.104	-0.272	0.018	170.806	73.285	0.244	0.105	935.762
S.D.	0.077	0.055	0.002	0.392	0.050	0.000	0.095	3.489
% R.S.D.	74.328	20.141	8.459	0.230	0.068	0.000	90.320	0.373

	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	0.114	0.043	0.215	-0.002	0.053	1.823	10.185	0.686
S.D.	0.004	0.006	0.058	0.003	0.003	0.015	0.145	0.006
% R.S.D.	3.956	14.134	27.094	134.296	5.902	0.825	1.427	0.808

	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	-0.234	0.319	0.006	-0.107
S.D.	0.216	0.007	0.002	0.023
% R.S.D.	92.548	2.211	28.516	21.102

Identity 1: s97t001822_s Identity 2: 1ml-9ml

1:43 PM August 7, 1997

Task name : OPTIMA

Sample Weight : 1.0000 Solution Volume : 10.00

On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	2.367	4.861	4.855	13.223	98.720	5.444	4.594	4.531
S.D.	0.006	0.007	0.166	0.033	0.038	0.020	0.000	0.020
% R.S.D.	0.246	0.150	3.422	0.250	0.038	0.374	0.010	0.434

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	5.073	5.304	4.763	5.581	5.127	11.565	4.442	15.535
S.D.	0.010	0.027	0.025	0.045	0.004	0.030	0.047	0.282
% R.S.D.	0.204	0.518	0.514	0.800	0.079	0.256	1.050	1.814

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	5.012	4.436	4.690	142.777	63.399	5.024	5.101	885.883
S.D.	0.061	0.034	0.007	0.681	0.303	0.004	0.008	3.950
% R.S.D.	1.208	0.770	0.156	0.477	0.477	0.082	0.149	0.446

	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	5.041	1.179	5.171	4.324	4.879	5.615	17.033	5.398
S.D.	0.009	0.004	0.125	0.003	0.028	0.047	0.107	0.011
% R.S.D.	0.188	0.327	2.411	0.067	0.574	0.835	0.626	0.206

	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	4.916	4.981	4.764	5.307
S.D.	0.264	0.016	0.022	0.333
% R.S.D.	5.362	0.331	0.472	6.270

Identity 1: s97t001823 Identity 2: 1ml-9ml 1:46 PM August 7, 1997

Task name : OPTIMA

Sample Weight : 1.0000 Solution Volume : 10.00

On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	0.469	0.556	0.152	77.697	119.922	0.423	0.077	0.724
S.D.	0.005	0.000	0.017	0.221	0.274	0.040	0.001	0.006
% R.S.D.	1.142	0.069	11.420	0.285	0.228	9.417	1.921	0.857

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.259	0.685	0.112	21.470	2.650	7.717	-0.107	3.297
S.D.	0.010	0.030	0.033	0.054	0.003	0.030	0.004	0.225
% R.S.D.	3.964	4.421	28.940	0.252	0.095	0.388	3.928	6.826

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	0.112	0.099	0.038	173.634	103.787	0.708	0.063	1171.980
S.D.	0.092	0.040	0.001	0.429	0.415	0.001	0.073	10.101
% R.S.D.	82.107	40.797	2.665	0.247	0.399	0.161	117.222	0.862

	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	0.386	0.030	0.904	0.043	0.306	10.287	3.930	0.633
S.D.	0.008	0.007	0.007	0.000	0.004	0.035	0.015	0.004
% R.S.D.	2.080	23.487	0.806	0.270	1.176	0.340	0.387	0.663

	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	0.013	0.211	0.003	-0.030
S.D.	0.187	0.004	0.003	0.083
% R.S.D.	1386.843	1.791	89.858	275.528

Identity 1: s97c001823-d Identity 2: 1ml-9ml

1:50 PM August 7, 1997

Task name : OPTIMA

Sample Weight : 1.0000 Solution Volume : 10.00

On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	0.363	0.518	0.011	33.283	228.729	0.324	0.088	1.644
S.D.	0.013	0.002	0.119	0.153	0.425	0.037	0.005	0.022
% R.S.D.	3.552	0.321	1042.775	0.461	0.186	11.320	5.489	1.357

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.433	0.660	0.072	6.487	2.379	7.376	0.010	2.227
S.D.	0.005	0.037	0.014	0.036	0.008	0.067	0.131	0.441
% R.S.D.	1.170	5.669	19.667	0.561	0.351	0.912	1369.956	19.818

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	0.113	0.037	0.034	158.234	87.668	0.616	0.101	1061.078
S.D.	0.143	0.129	0.003	0.438	0.261	0.001	0.033	11.879
% R.S.D.	126.178	348.715	8.224	0.277	0.298	0.185	32.737	1.119

	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	0.320	0.024	0.375	0.021	0.269	5.993	2.056	0.457
S.D.	0.001	0.012	0.088	0.003	0.005	0.017	0.081	0.006
% R.S.D.	0.308	51.736	23.585	16.185	1.766	0.277	3.922	1.214

	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	0.643	0.227	0.006	-0.358
S.D.	0.105	0.011	0.000	0.352
% R.S.D.	16.295	4.721	1.522	98.301

Identity 1: ICSA Identity 2: Quality Control 1:53 PM August 7, 1997

Task name : OPTIMA

Sample Weight : 1.0000 Solution Volume : 1.00

On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	0.002	0.002	-0.002	0.012	200.886	0.006	0.000	0.001
S.D.	0.000	0.000	0.013	0.003	0.200	0.000	0.000	0.000
% R.S.D.	5.691	1.533	760.088	21.910	0.100	6.125	97.894	11.820

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.007	0.005	-0.000	93.273	99.871	0.001	0.062	0.004
S.D.	0.000	0.002	0.002	0.283	0.236	0.002	0.011	0.024
% R.S.D.	1.570	42.503	7789.580	0.304	0.236	109.494	18.248	558.406

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Hg (ppm)	As (ppm)	Na (ppm)
Mean	0.041	0.009	0.002	0.006	-0.057	93.491	-0.066	185.597
S.D.	0.007	0.004	0.000	0.015	0.013	0.118	0.003	0.755
% R.S.D.	16.272	45.522	4.009	247.747	22.329	0.126	4.494	0.407

	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	0.002	0.002	0.022	-0.000	-0.000	0.014	0.024	0.013
S.D.	0.001	0.000	0.015	0.000	0.001	0.001	0.015	0.001
% R.S.D.	56.699	2.245	68.779	94.641	1279.134	4.217	63.174	8.986

	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	-0.014	0.002	0.004	-0.004
S.D.	0.032	0.001	0.000	0.012
% R.S.D.	229.486	51.572	4.396	294.748

Identity 1: ICSAB Identity 2: Quality Control 1:56 PM August 7, 1997

Task name : OPTIMA

Sample Weight : 1.0000 Solution Volume : 1.00

On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	-0.004	0.002	-0.019	0.001	202.746	0.525	0.495	0.889
S.D.	0.001	0.000	0.004	0.005	0.330	0.003	0.001	0.004
% R.S.D.	26.222	2.752	20.899	519.484	0.163	0.663	0.236	0.409

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	1.026	1.002	-0.001	97.356	101.024	0.513	0.044	-0.066
S.D.	0.001	0.004	0.001	0.186	0.166	0.004	0.002	0.045
% R.S.D.	0.115	0.443	185.910	0.191	0.164	0.722	5.380	67.890

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	0.036	-0.002	0.501	0.013	-0.088	99.273	-0.052	178.297
S.D.	0.005	0.006	0.001	0.009	0.004	0.192	0.004	0.647
% R.S.D.	13.915	298.859	0.162	68.896	4.000	0.193	8.541	0.363

	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	-0.001	1.053	1.018	-0.000	1.010	0.017	0.170	0.518
S.D.	0.002	0.002	0.007	0.000	0.003	0.001	0.018	0.003
% R.S.D.	206.733	0.217	0.651	180.738	0.307	4.192	10.854	0.590

	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	0.069	0.499	0.497	-0.012
S.D.	0.020	0.002	0.002	0.025
% R.S.D.	28.697	0.356	0.442	210.446

Identity 1: ICB Identity 2: Quality Control

2:00 PM August 7, 1997

Task name : OPTIMA

Sample Weight : 1.0000 Solution Volume : 1.00

On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	0.001	0.000	0.014	0.002	0.005	0.004	0.001	0.000
S.D.	0.002	0.000	0.007	0.003	0.003	0.002	0.000	0.000
% R.S.D.	129.641	57.735	53.704	138.077	62.645	57.278	22.566	171.060

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.001	0.000	0.004	-0.004	-0.001	0.002	0.002	0.020
S.D.	0.000	0.001	0.002	0.004	0.001	0.001	0.002	0.049
% R.S.D.	10.351	284.337	57.419	122.218	63.099	53.813	110.715	241.230

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	0.025	-0.014	0.000	0.004	-0.003	0.003	0.010	0.038
S.D.	0.014	0.008	0.000	0.003	0.002	0.001	0.004	0.003
% R.S.D.	55.395	56.146	80.802	60.589	54.507	25.493	45.400	8.487

	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	0.000	0.000	0.001	0.001	0.001	0.005	0.248	0.000
S.D.	0.001	0.000	0.006	0.000	0.000	0.001	0.014	0.000
% R.S.D.	793.193	99.338	697.952	33.579	35.213	25.060	5.459	87.691

	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	0.073	0.002	0.001	0.010
S.D.	0.035	0.001	0.000	0.027
% R.S.D.	48.338	39.224	20.260	259.156

Identity 1: ICV Identity 2: Quality Control 2:03 PM August 7, 1997

Task name : OPTIMA

Sample Weight : 1.0000 Solution Volume : 1.00

On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	5.017	5.088	5.244	4.667	5.108	5.269	5.202	4.869
S.D.	0.002	0.002	0.017	0.006	0.013	0.019	0.007	0.022
% R.S.D.	0.048	0.045	0.318	0.128	0.245	0.357	0.142	0.453
	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	5.307	5.201	5.145	5.119	4.932	5.225	5.212	9.580
S.D.	0.006	0.009	0.010	0.015	0.007	0.007	0.012	0.015
% R.S.D.	0.119	0.168	0.197	0.300	0.132	0.135	0.233	0.152
	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	5.071	5.005	5.083	5.301	5.133	5.195	5.323	4.803
S.D.	0.010	0.004	0.005	0.027	0.015	0.009	0.008	0.018
% R.S.D.	0.195	0.077	0.098	0.517	0.289	0.183	0.154	0.370
	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	5.258	5.352	5.143	4.960	5.231	5.086	4.948	5.203
S.D.	0.004	0.007	0.014	0.002	0.003	0.009	0.020	0.005
% R.S.D.	0.081	0.124	0.266	0.043	0.064	0.185	0.400	0.095
	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)				
Mean	4.758	5.072	5.242	5.129				
S.D.	0.005	0.005	0.009	0.023				
% R.S.D.	0.099	0.092	0.176	0.441				

1

LABCORE Data Entry Template for Worklist# 19753

Analyst: DKS Instrument: ICP012 8-7-97 Book# 67848BMethod: LA-505-151/161 Rev/Mod C-28-7-97

Worklist Comment: ICP BY-109 (SOLID ACID DIGEST)

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	PREPSTD TJ A		@ICP-A01	SOLID		
7	PREPBLK TJ A		@ICP-A01	SOLID		
8	SERDIL	S97T001855 0 A	@ICP-A01	SOLID		
9	SAMPLE	S97T001855 0 A	@ICP-A01	SOLID	97000411	BY-109 (P)
	Analytes Requested: AG-A-01 , AL-A-01 , AS-A-01 , B-A-01 , BA-A-01 , BE-A-01 , BI-A-01 , CA-A-01 , CD-A-01 , CE-A-01 , CO-A-01 , CR-A-01 , CU-A-01 , FE-A-01 , K-A-01 , LA-A-01 , LI-A-01 , MG-A-01 , MN-A-01 , MO-A-01 , NA-A-01 , ND-A-01 , NI-A-01 , P-A-01 , PB-A-01 , S-A-01 , SE-A-01 , SE-A-01 , SI-A-01 , SM-A-01 , SR-A-01 , TI-A-01 , TL-A-01 , U-A-01 , V-A-01 , ZN-A-01 , ZR-A-01					
10	DUP	S97T001855 0 A	@ICP-A01	SOLID		
11	SPK-PREDIG	S97T001855 0 A	@ICP-A01	SOLID		
12	CCV		@ICP-QC	QC		
13	CCB		@ICP-QC	QC		
14	SAMPLE	S97T001866 0 A	@ICP-A01	SOLID	97000411	BY-109 (P)
	Analytes Requested: AG-A-01 , AL-A-01 , AS-A-01 , B-A-01 , BA-A-01 , BE-A-01 , BI-A-01 , CA-A-01 , CD-A-01 , CE-A-01 , CO-A-01 , CR-A-01 , CU-A-01 , FE-A-01 , K-A-01 , LA-A-01 , LI-A-01 ,					

Data Entry Comments:

LABCORE Data Entry Template for Worklist# 19753

S Type	Sample#	R A	Test	Matrix	Group#	Project
			MG-A-01 ,	MN-A-01 ,	MO-A-01 ,	NA-A-01 , ND-A-01 , NI-A-01 ,
			P-A-01 ,	PE-A-01 ,	S-A-01 ,	SE-A-01 , SE-A-01 , SI-A-01 ,
			SM-A-01 ,	SR-A-01 ,	TI-A-01 ,	TL-A-01 , U-A-01 , V-A-01 ,
			ZN-A-01 ,	ZR-A-01		
15 DUP	S97T001866	0 A	@ICP-A01	SOLID		
16 SERDIL	S97T001869	0 A	@ICP-A01	SOLID		
17 SAMPLE	S97T001869	0 A	@ICP-A01	SOLID	97000411	BY-109 (P)
	Analytes Requested: AG-A-01 , AL-A-01 , AS-A-01 , B-A-01 , BA-A-01 ,					
	BE-A-01 , BI-A-01 , CA-A-01 , CD-A-01 , CE-A-01 , CO-A-01 ,					
	CR-A-01 , CU-A-01 , FE-A-01 , K-A-01 , LA-A-01 , LI-A-01 ,					
	MG-A-01 , MN-A-01 , MO-A-01 , NA-A-01 , ND-A-01 , NI-A-01 ,					
	P-A-01 , PE-A-01 , S-A-01 , SE-A-01 , SE-A-01 , SI-A-01 ,					
	SM-A-01 , SR-A-01 , TI-A-01 , TL-A-01 , U-A-01 , V-A-01 ,					
	ZN-A-01 , ZR-A-01					
18 DUP	S97T001869	0 A	@ICP-A01	SOLID		
19 SPK-PREDIG	S97T001869	0 A	@ICP-A01	SOLID		
20 CCV			@ICP-QC	QC		
21 CCB			@ICP-QC	QC		
22 SERDIL	S97T001872	0 A	@ICP-A01	SOLID		
23 SAMPLE	S97T001872	0 A	@ICP-A01	SOLID	97000411	BY-109 (P)
	Analytes Requested: AG-A-01 , AL-A-01 , AS-A-01 , B-A-01 , BA-A-01 ,					
	BE-A-01 , BI-A-01 , CA-A-01 , CD-A-01 , CE-A-01 , CO-A-01 ,					
	CR-A-01 , CU-A-01 , FE-A-01 , K-A-01 , LA-A-01 , LI-A-01 ,					
	MG-A-01 , MN-A-01 , MO-A-01 , NA-A-01 , ND-A-01 , NI-A-01 ,					
	P-A-01 , PE-A-01 , S-A-01 , SE-A-01 , SE-A-01 , SI-A-01 ,					
	SM-A-01 , SR-A-01 , TI-A-01 , TL-A-01 , U-A-01 , V-A-01 ,					
	ZN-A-01 , ZR-A-01					
24 DUP	S97T001872	0 A	@ICP-A01	SOLID		
25 SPK-PREDIG	S97T001872	0 A	@ICP-A01	SOLID		
26 ICSA			@ICP-QC	QC		
27 ICSAB			@ICP-QC	QC		

Data Entry Comments:

LABCORE Data Entry Template for Worklist# 19753

S Type	Sample#	R A	Test	Matrix	Group#	Project
28 CCV			@ICP-QC	QC		
29 CCB			@ICP-QC	QC		

Final page for worklist # 19753

JK JLB 08-07-97

Analyst Signature	Date
Prep'd ITC direct	1, DF 1
Prep'd ITC direct	1
S977001855 L, 2-6-2-8, DF	20
S977001855	2-6, 4
S977001855 D	2-6, 4
S977001855 S	2-6, 4
S977001866	2-6, DF 4
S977001866 D	2-6, 4
S977001866 L, 2-6-2-8, DF	20
S977001866	2-6, 4
S977001866 D	2-6, 4
S977001866 S	2-6, 4
S977001872 L, 2-6-2-8, DF	15
S977001872	2-6, 3
S977001872 D	2-6, 3
S977001872 S	2-6, 3

Revised & Validated by:
Paul R. Pang 8/12/97
Analyst Signature Date

S977001855

$$L_i = 0.7676 \frac{\mu\text{g}}{\text{ml}} \times \frac{1}{3.206 \frac{\text{g}}{\text{L}} \times \frac{1\text{L}}{1\text{mmol}}} = 1.47 \text{e} + 2 \frac{\mu\text{g}}{\text{g}}$$

Spike:

$$L_i = \frac{5.662 - 0.7676}{5} \times 100 = 97.9\%$$

S977001869

$$L_i = 0.0516 \frac{\mu\text{g}}{\text{ml}} \times \frac{1}{5.190 \frac{\text{g}}{\text{L}} \times \frac{1\text{L}}{1\text{mmol}}} = 9.94 \frac{\mu\text{g}}{\text{g}}$$

Spike:

$$L_i = \frac{4.802 - 0.0516}{5} \times 100 = 95.0\%$$

S977001872

$$L_i = 0.0420 \frac{\mu\text{g}}{\text{ml}} \times \frac{1}{3.042 \frac{\text{g}}{\text{L}} \times \frac{1\text{L}}{1\text{mmol}}} = 8.33 \frac{\mu\text{g}}{\text{g}}$$

$$\text{Spike: } L_i = \frac{5.049 - 0.0420}{5} \times 100 = 100.1\%$$

Data Entry Comments:

HNF-SD-WM-DP-259, REV. 0

Analysis Report

Summary

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#	Sample Name	File	Method	Date	Time	OpID	Type	Mode
1	ICV	970807A	ICP2	08/07/97	12:56	DKS	Q	CONC
2	ICB	970807A	ICP2	08/07/97	13:00	DKS	Q	CONC
3	LLS	970807A	ICP2	08/07/97	13:03	DKS	Q	CONC
4	ICSA	970807A	ICP2	08/07/97	13:06	DKS	Q	CONC
5	ICSAB	970807A	ICP2	08/07/97	13:10	DKS	Q	CONC
6	PREPSTD TJ A	970807A	ICP2	08/07/97	13:13	DKS	Q	CONC
7	PREPBLK TJ A	970807A	ICP2	08/07/97	13:17	DKS	Q	CONC
8	S97T001855 L	970807A	ICP2	08/07/97	13:20	DKS	S	CONC
9	S97T001855 -	970807A	ICP2	08/07/97	13:23	DKS	S	CONC
10	S97T001855 D	970807A	ICP2	08/07/97	13:27	DKS	S	CONC
11	S97T001855 -S	970807A	ICP2	08/07/97	13:33	DKS	S	CONC
12	CCV	970807A	ICP2	08/07/97	13:39	DKS	Q	CONC
13	CCB	970807A	ICP2	08/07/97	13:43	DKS	Q	CONC
14	S97T001866	970807A	ICP2	08/07/97	13:46	DKS	S	CONC
15	S97T001866 D	970807A	ICP2	08/07/97	13:49	DKS	S	CONC
16	S97T001869 -L	970807A	ICP2	08/07/97	13:53	DKS	S	CONC
17	S97T001869 -	970807A	ICP2	08/07/97	13:57	DKS	S	CONC
18	S97T001869 D	970807A	ICP2	08/07/97	14:00	DKS	S	CONC
19	S97T001869 -S	970807A	ICP2	08/07/97	14:04	DKS	S	CONC
20	CCV 1	970807A	ICP2	08/07/97	14:21	DKS	Q	CONC
21	CCB 1	970807A	ICP2	08/07/97	14:24	DKS	Q	CONC
22	S97T001872 L	970807A	ICP2	08/07/97	14:27	DKS	S	CONC
23	S97T001872 -	970807A	ICP2	08/07/97	14:31	DKS	S	CONC
24	S97T001872 D	970807A	ICP2	08/07/97	14:34	DKS	S	CONC
25	S97T001872 -S	970807A	ICP2	08/07/97	14:38	DKS	S	CONC
26	ICSA	970807A	ICP2	08/07/97	14:42	DKS	Q	CONC
27	ICSAB	970807A	ICP2	08/07/97	14:47	DKS	Q	CONC
28	CCV 2	970807A	ICP2	08/07/97	14:50	DKS	Q	CONC
29	CCB 2	970807A	ICP2	08/07/97	14:53	DKS	Q	CONC

H SA

08-07-97

BY-109 5977001855
5977001866
5977001869
5977001872SIGNATURE ABOVE REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 566 TO 590

HNF-SD-WM-DP-259, REV. 0

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#	Sample Name	Ag	Al	As	B	Ba	Be
1	ICV	5.049	4.902	5.158	5.013	4.981	5.140
2	ICB	- .0001	- .0007	.0033	.0010	.0001	.0000
3	LLS	.0220	.0993	.2182	.1019	.0994	.0106
4	ICSA	.0024	240.2	- .0418	- .0074	.0002	.0001
5	ICSAB	.9614	240.5	- .0695	- .0004	.4646	.4773
6	PREPSTD TJJA	.9283	4.726	4.814	5.220	4.687	4.935
7	PREPBLKTJJA	.0002	Q.1112	.0025	Q.4595	.0008	.0000
8	S97T001855 L	.0897	264.1	- .2957	.8470	.0541	.0007
9	S97T001855	.0924	256.3	- .0903	.7997	.0517	.0016
10	S97T001855 D	.0827	372.0	- .0566	.8048	.0512	.0014
11	S97T001855 S	.9688	282.0	4.851	5.564	4.690	4.889
12	CCV	4.991	4.827	5.100	4.952	4.894	5.116
13	CCB	- .0005	- .0140	- .0073	- .0010	.0001	- .0001
14	S97T001866	.1316	99.28	- .0637	4.105	.0170	.0017
15	S97T001866 D	.1297	107.9	- .1827	4.043	.0180	.0015
16	S97T001869 L	.1328	131.3	- .1247	1.100	.0382	.0075
17	S97T001869	.1089	129.0	- .1441	1.082	.0359	.0027
18	S97T001869 D	.1092	121.9	- .1234	1.135	.0378	.0025
19	S97T001869 S	1.083	128.3	4.898	5.734	4.644	4.838
20	CCV 1	5.096	5.019	5.309	5.121	5.148	5.286
21	CCB 1	- .0007	- .0018	- .0048	.0046	.0001	.0003
22	S97T001872 L	.0100	1011.	.3115	.0937	.0028	.0047
23	S97T001872	.0214	996.6	- .1655	.0860	.0045	.0023
24	S97T001872 D	.0208	993.6	- .0896	.0813	.0040	.0013
25	S97T001872 S	.8627	1028.	5.197	4.951	4.777	5.149
26	ICSA	.0018	243.0	- .0366	- .0040	.0001	.0006
27	ICSAB	.9586	240.1	- .0456	- .0089	.4612	.4824
28	CCV 2	5.085	4.993	5.282	5.087	5.084	5.293
29	CCB 2	- .0000	.0060	.0010	.0005	- .0001	.0002

#	Sample Name	Bi	Ca	Cd	Ce	Co	Cr
1	ICV	5.046	5.113	5.049	4.966	5.002	5.098
2	ICB	- .0334	.0020	.0003	.0030	.0021	.0010
3	LLS	Q.0968	.2074	.0111	.2020	.0432	.0213
4	ICSA	- .0278	249.9	.0040	.0096	.0009	- .0018
5	ICSAB	- .0200	251.7	.9339	.0171	.4630	.4642
6	PREPSTD TJJA	4.591	5.011	4.615	4.818	4.793	4.693
7	PREPBLKTJJA	.0018	Q.1678	.0014	- .0004	.0017	.0019
8	S97T001855 L	.1152	2.413	.1731	.1513	.0852	4.614
9	S97T001855	.0538	2.324	.1625	.0515	.0813	4.383
10	S97T001855 D	.0319	2.802	.1641	.0663	.0930	4.647
11	S97T001855 S	4.878	7.737	4.984	4.890	5.008	9.390
12	CCV	4.946	5.163	5.035	4.896	4.972	5.082
13	CCB	- .0068	.0021	.0011	- .0023	.0011	.0002
14	S97T001866	- .0073	1.243	.0824	.0378	.0376	9.204
15	S97T001866 D	.0576	1.431	.0839	.0538	.0366	9.329
16	S97T001869 L	- .1698	1.404	.0978	.1378	.0906	10.65
17	S97T001869	.0925	1.366	.0770	.0073	.0675	10.51
18	S97T001869 D	.1006	2.052	.0823	.0197	.0686	11.00
19	S97T001869 S	4.781	8.321	4.880	4.831	4.990	15.63
20	CCV 1	5.227	5.141	5.155	5.155	5.082	5.175

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#	Sample Name	Bi	Ca	Cd	Ce	Co	Cr
21	CCB_1	.0183	.0031	.0000	.0047	.0021	.0008
22	S97T001872_L	.5817	1.080	.0319	.0855	.0362	.0810
23	S97T001872_	.0186	1.087	.0043	.0155	.0117	.0815
24	S97T001872_D	.0713	.5574	.0014	.0274	.0149	.0822
25	S97T001872_S	4.851	5.216	4.828	4.982	4.931	4.900
26	ICSA	.0166	249.9	.0036	.0077	.0031	.0024
27	ICSAB	.0276	249.6	.9385	.0095	.4656	.4686
28	CCV_2	5.234	5.135	5.120	5.091	5.041	5.147
29	CCB_2	.0063	.0025	.0008	.0073	.0033	.0003

#	Sample Name	Ga	Eu	Fe	K	La	Li
1	ICV	4.777	.0047	4.724	4.903	5.024	5.081
2	ICB	.0004	.0002	.0009	.1351	.0005	.0000
3	LLS	.0169	.0009	.0925	.5390	.1018	.0210
4	ICSA	.0095	.0045	92.01	.1265	.0036	.0027
5	ICSAB	4.338	.0056	92.10	.2063	.0026	.9854
6	PREPSTDITJA	4.216	.0044	4.425	4.587	4.824	4.821
7	PREPBLKTJA	.0077	.0004	Q.0592	.0837	.0001	.0006
8	S97T001855_L	.0637	.0131	10.14	3.808	.0608	.8022
9	S97T001855_	.0571	.0055	9.680	1.943	.0455	.7676
10	S97T001855_D	.0800	.0047	39.13	1.682	.0444	.9392
11	S97T001855_S	4.283	.0100	22.24	6.547	4.890	5.662
12	CCV	4.693	.0050	4.700	4.900	4.932	4.942
13	CCB	.0005	.0007	.0006	.0044	.0003	.0004
14	S97T001866	.0093	.0051	1.589	14.07	.0729	.0562
15	S97T001866_D	.0047	.0057	6.789	14.74	.0734	.0469
16	S97T001869_L	.0009	.0198	4.090	17.67	.0383	.0684
17	S97T001869_	.0101	.0044	4.024	16.95	.0140	.0516
18	S97T001869_D	.0130	.0061	4.214	15.65	.0133	.0543
19	S97T001869_S	4.169	.0119	10.38	20.51	4.821	4.802
20	CCV_1	4.960	.0008	4.811	4.985	5.232	5.248
21	CCB_1	.0007	.0004	.0009	.0478	.0008	.0002
22	S97T001872_L	.1021	.0002	1.103	3.398	.0202	.0383
23	S97T001872_	.0927	.0036	1.069	4.042	.0007	.0420
24	S97T001872_D	.0917	.0015	1.089	5.121	.0016	.0387
25	S97T001872_S	4.504	.0029	5.506	10.52	5.039	5.049
26	ICSA	.0090	.0172	93.56	.0139	.0046	.0022
27	ICSAB	.4321	.0179	92.49	.0256	.0044	.9835
28	CCV_2	4.952	.0013	4.781	4.965	5.173	5.234
29	CCB_2	.0003	.0017	.0021	.2080	.0010	.0017

#	Sample Name	Mg	Mn	Mo	Na	Nd	Ni
1	ICV	5.158	4.968	5.005	5.186	5.054	5.077
2	ICB	.0027	.0002	.0009	.0031	.0019	.0095
3	LLS	.2133	.0202	.1018	.1575	.2000	.0468
4	ICSA	249.6	.0055	.0095	193.9	.0021	.0060
5	ICSAB	249.8	.4425	.0093	194.0	.0005	.9283
6	PREPSTDITJA	4.697	4.592	4.687	5.486	4.741	4.805
7	PREPBLKTJA	.0400	.0009	.0028	Q.5498	.0005	Q.0282
8	S97T001855_L	.5812	.3640	.0775	.925.9	.0598	.9805

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#	Sample Name	Mg	Mn	Mo	Na	Nd	Ni
9	S97T001855	.5372	.3434	.0593	896.1	.0424	.8754
10	S97T001855 D	.5670	.5119	.0533	814.2	.0512	.8759
11	S97T001855_S	5.393	5.064	4.845	886.8	4.783	5.892
12	CCV	5.081	4.922	4.969	5.078	4.945	5.039
13	CCB	.0001	.0001	.0011	-.0062	.0003	.0044
14	S97T001866	.3174	.1297	.2034	1138.	.1013	.3909
15	S97T001866 D	.3181	.1499	.2140	1112.	.0904	.3773
16	S97T001869_L	.3653	.2580	.1491	1068.	-.0001	1.271
17	S97T001869_D	.2433	.2454	.1928	1051.	.0237	1.126
18	S97T001869_D	.3175	.2594	.1826	1058.	.0259	1.204
19	S97T001869_S	5.614	4.899	4.983	1053.	4.725	6.390
20	CCV 1	5.253	5.041	5.104	5.188	5.251	5.113
21	CCB_1	-.0109	-.0001	-.0010	.0123	.0017	.0013
22	S97T001872_L	.0873	.0087	-.0025	330.1	.0246	.5712
23	S97T001872_D	.0872	.0100	.0370	324.7	-.0025	.4597
24	S97T001872_D	.0941	.0083	.0185	334.4	.0008	.4708
25	S97T001872_S	4.855	4.650	4.852	360.4	4.944	5.360
26	ICSA	254.1	-.0062	-.0101	197.5	.0016	-.0006
27	ICSAB	251.1	.4426	-.0151	193.8	.0004	.9257
28	CCV 2	5.226	4.997	5.061	5.184	5.204	5.094
29	CCB_2	-.0031	-.0007	.0011	.0400	-.0002	.0014

#	Sample Name	P	Pb	S	Sb	Se	Si
1	ICV	4.962	5.125	4.963	4.723	4.887	4.843
2	ICB	-.0244	.0047	-.0301	.0020	-.0062	.0015
3	LLS	.3846	.2025	.1972	.1002	.2052	Q.1499
4	ICSA	.0035	.0222	-.0578	-.0009	-.0040	.0073
5	ICSAB	.0067	1.005	-.0452	-.0017	-.0042	.0050
6	PREPSTD TJJA	4.634	4.596	4.727	4.595	4.390	7.523
7	PREPBLKTJJA	.0004	-.0181	Q.1432	-.0034	.0048	Q.5457
8	S97T001855_L	237.4	.2670	56.06	.0627	.0991	8.995
9	S97T001855_D	231.2	.4245	54.75	-.0323	.0525	8.446
10	S97T001855_D	204.1	.5229	30.64	-.0335	.0394	6.632
11	S97T001855_S	218.2	5.403	57.15	4.789	4.640	13.95
12	CCV	4.926	5.085	4.935	4.700	4.822	4.796
13	CCB	-.0095	-.0204	-.0194	-.0067	.0282	.0045
14	S97T001866	23.37	.3634	216.0	.0017	.1095	32.09
15	S97T001866 D	14.26	.3728	201.1	.0195	.1234	31.51
16	S97T001869_L	15.60	.4204	148.1	-.0829	.3474	9.091
17	S97T001869_D	15.66	.5178	146.8	.0294	.1374	8.734
18	S97T001869_D	19.08	.5435	154.2	.0088	.0738	9.442
19	S97T001869_S	26.23	5.423	155.4	4.813	4.635	16.09
20	CCV 1	5.105	5.157	4.965	4.842	4.978	4.908
21	CCB_1	-.0118	.0079	.0047	-.0070	.0039	.0008
22	S97T001872_L	11.09	.9150	2.345	.1228	.5969	3.725
23	S97T001872_D	10.56	.7081	2.210	-.0209	.3194	3.466
24	S97T001872_D	11.18	.6457	2.190	-.0107	.2448	3.481
25	S97T001872_S	14.03	5.398	7.052	4.785	4.872	7.046
26	ICSA	.0000	.0563	-.0248	-.0056	.0266	.0076
27	ICSAB	.0244	1.006	-.0331	.0035	.0171	.0051
28	CCV 2	5.178	5.130	5.042	4.860	4.956	4.906
29	CCB_2	.0116	.0242	.0027	-.0088	-.0161	-.0059

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#	Sample Name	Sm	Sr	Th	Ti	Tl	U
1	ICV	4.851	4.909	.1280	4.842	4.869	9.423
2	ICB	.0037	.0001	.0024	.0002	-.0078	.0078
3	LLS	.2082	.0203	.0036	.0206	.3928	.5091
4	ICSA	-.0023	.0018	-.0048	.0011	.0428	.0326
5	ICSAB	-.0023	.0018	-.0059	.0014	.0482	.0393
6	PREPSTD TJ A	4.640	4.670	.1199	4.339	4.410	9.113
7	PREPBLK TJ A	-.0041	.0004	.0063	.0007	-.0320	-.0240
8	S97T001855 L	.1647	.4734	.1332	.0402	-.0960	5.049
9	S97T001855	.0488	.4576	.1456	.0357	-.0196	4.499
0	S97T001855 D	.0409	.4660	.1194	.0338	-.0018	4.415
1	S97T001855 S	4.667	5.205	.2754	4.402	4.368	14.02
2	CCV	4.765	4.830	.1351	4.794	4.781	9.243
3	CCB	.0109	.0001	-.0028	.0000	-.0151	.0246
4	S97T001866	.0581	.2392	.0568	.0146	-.0503	1.285
5	S97T001866 D	.0593	.2396	.0690	.0128	-.0079	1.294
6	S97T001869 L	.2630	1.213	.2253	.0032	-.1202	5.379
7	S97T001869	.0531	1.205	.1556	.0133	-.1481	4.587
8	S97T001869 D	.0673	1.286	.1716	.0290	-.0888	5.059
9	S97T001869 S	4.647	6.007	.2997	4.705	4.396	13.70
0	CCV 1	5.067	5.090	.0842	4.989	4.927	9.843
1	CCB 1	-.0077	.0000	.0013	.0007	.0156	-.0230
2	S97T001872 L	-.1007	.0144	.0129	.0179	.0963	.8297
3	S97T001872	-.0317	.0150	-.0130	.0090	-.0229	1.009
4	S97T001872 D	-.0474	.0140	-.0080	.0112	.0117	.9967
5	S97T001872 S	4.860	4.864	.0589	4.460	4.596	10.39
6	ICSA	-.0122	.0019	-.0075	.0011	.0126	.1297
7	ICSAB	-.0012	.0018	-.0135	.0013	.0724	.1473
8	CCV 2	5.015	5.050	.0780	4.948	4.911	9.739
9	CCB 2	-.0230	-.0003	.0060	.0000	.0174	-.0886

#	Sample Name	V	Y	Zn	Zr
1	ICV	4.902	.0076	4.849	4.850
2	ICB	.0005	.0001	-.0002	.0001
3	LLS	.1032	.0009	.0212	.0213
4	ICSA	.0005	.0073	.0055	-.0016
5	ICSAB	.4605	.0074	.9367	-.0014
6	PREPSTD TJ A	4.639	.0061	4.359	4.745
7	PREPBLK TJ A	-.0007	-.0004	.0497	.0006
8	S97T001855 L	.2168	.0135	.1615	.2669
9	S97T001855	.1881	.0097	.1545	.2425
0	S97T001855 D	.1792	.0100	.1670	.2392
1	S97T001855 S	4.902	.0172	4.790	2.331
2	CCV	4.861	.0078	4.830	4.788
3	CCB	.0021	.0004	-.0010	.0015
4	S97T001866	.0403	.0161	.0772	.2573
5	S97T001866 D	.0203	.0148	.0777	.2589
6	S97T001869 L	.0794	.0181	.1117	.1392
7	S97T001869	.0403	.0065	.0992	.1090
8	S97T001869 D	.0466	.0079	.1115	.1181
9	S97T001869 S	4.753	.0152	4.721	4.915
0	CCV 1	5.005	.0063	4.856	5.001

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#	Sample Name	V	Y	Zn	Zr
21	CCB_1	-.0009	-.0002	.0002	-.0001
22	S97T001872_L	.0265	-.0027	.2460	-.0017
23	S97T001872	.0420	-.0014	.2137	.0064
24	S97T001872_D	.0403	-.0023	.2034	.0029
25	S97T001872_S	4.804	.0038	4.742	2.077
26	ICSA	-.0020	.0066	.0074	-.0026
27	ICSAB	.4620	.0070	.9391	-.0008
28	CCV_2	4.980	.0065	4.861	4.955
29	CCB_2	-.0048	-.0011	.0008	-.0028

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08-07-97

08/13/97 12:02
A-0004-1

File # 0970813A TH

Page: 1

LABCORE Data Entry Template for Worklist# 19774

Analyst: B. GLOCKE Instrument: ICPST81 Book# 68844
 Method: LA-505 8-17/161 Rev/Mod C-2
8-18-51
 Worklist Comment: ICP BY-109 (SOLID ACID DIGEST)

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	PREPSTDITJA		@ICP-A01	SOLID		
7	PREPBKTIJA		@ICP-A01	SOLID		
8	SERDIL	S97T001937 0 A	@ICP-A01	SOLID		
9	SAMPLE	S97T001937 0 A	@ICP-A01	SOLID	97000411	BY-109 (P)
	Analytes Requested: AG-A-01 , AL-A-01 , AS-A-01 , B-A-01 , BA-A-01 , BE-A-01 , BI-A-01 , CA-A-01 , CD-A-01 , CE-A-01 , CO-A-01 , CR-A-01 , CU-A-01 , FE-A-01 , K-A-01 , LA-A-01 , LI-A-01 , MG-A-01 , MN-A-01 , MO-A-01 , NA-A-01 , ND-A-01 , NI-A-01 , P-A-01 , PB-A-01 , S-A-01 , SB-A-01 , SE-A-01 , SI-A-01 , SM-A-01 , SR-A-01 , TI-A-01 , TL-A-01 , U-A-01 , V-A-01 , ZN-A-01 , ZR-A-01					
10	DUP	S97T001937 0 A	@ICP-A01	SOLID		
11	SPK-PREDIG	S97T001937 0 A	@ICP-A01	SOLID		
12	CCV		@ICP-QC	QC		
13	CCB		@ICP-QC	QC		
14	SAMPLE	S97T001938 0 A	@ICP-A01	SOLID	97000411	BY-109 (P)
	Analytes Requested: AG-A-01 , AL-A-01 , AS-A-01 , B-A-01 , BA-A-01 , BE-A-01 , BI-A-01 , CA-A-01 , CD-A-01 , CE-A-01 , CO-A-01 , CR-A-01 , CU-A-01 , FE-A-01 , K-A-01 , LA-A-01 , LI-A-01 ,					

Data Entry Comments:

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

LABCORE Data Entry Template for Worklist# 19774

S Type	Sample#	R A	Test	Matrix	Group#	Project
				MG-A-01 , MN-A-01 , MO-A-01 , NA-A-01 , ND-A-01 , NI-A-01 , P-A-01 , PB-A-01 , S-A-01 , SB-A-01 , SE-A-01 , SI-A-01 , SM-A-01 , SR-A-01 , TI-A-01 , TL-A-01 , U-A-01 , V-A-01 , ZN-A-01 , ZR-A-01		
15 DUP	S97T001938	0 A	@ICP-A01	SOLID		
16 ICSA			@ICP-QC	QC		
17 ICSAB			@ICP-QC	QC		
18 CCV			@ICP-QC	QC		
19 CCB			@ICP-QC	QC		

Final page for worklist # 19774

8-13-97
Analyst Signature Date

Reviewed & Validated by:
8/13/97
Analyst Signature Date

Data Entry Comments:

HNF-SD-WM-DP-259, REV. 0

ICV

ICB

LLS

ICSA

ICSA B

PREP STD TTA

PREP BLK TTA

597MOD0145

145-1)

145-5

DIRECT

DIRECT

2-1-6-1

2-1-6-1

2-1-6-1

Df.

1

1

5

5

5

PREP STD TTA

PREP BLK TTA

DIRECT

DIRECT

1

1

CCV

CCB

597T001938

1938-D

4-1-6-1

4-1-6-1

2.5

2.5

597T001937-L

1937

1937-D

1937-5

4-1-6-1-2-1-6-1

4-1-6-1

4-1-6-1

4-1-6-1

12.5

2.5

2.5

2.5

ICSA

ICSA B

CCV

CCB

Spencer
8-13-97

224 CELL 597MOD0145

84-108 597T001937-28

FILE # 0970813A.TXT

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Analysis Report

Summary

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#	Sample Name	File	Method	Date	Time	OpID	Type	Mode
1	ICV	970813A	ICP2	08/13/97	13:08	BJG	Q	CONC
2	ICB	970813A	ICP2	08/13/97	13:11	BJG	Q	CONC
3	LLS	970813A	ICP2	08/13/97	13:15	BJG	Q	CONC
4	ICSA	970813A	ICP2	08/13/97	13:18	BJG	Q	CONC
5	ICSAB	970813A	ICP2	08/13/97	13:21	BJG	Q	CONC
6	PREPSTDITJA	970813A	ICP2	08/13/97	13:25	BJG	Q	CONC
7	PREPBLKTJA	970813A	ICP2	08/13/97	13:28	BJG	Q	CONC
8	S97M000145	970813A	ICP2	08/13/97	13:33	BJG	S	CONC
9	S97M000145 D	970813A	ICP2	08/13/97	13:36	BJG	S	CONC
10	S97M000145 S	970813A	ICP2	08/13/97	13:40	BJG	S	CONC
11	PREPSTDITJA	970813A	ICP2	08/13/97	13:43	BJG	Q	CONC
12	PREPBLKTJA	970813A	ICP2	08/13/97	13:46	BJG	Q	CONC
13	CCV	970813A	ICP2	08/13/97	13:50	BJG	Q	CONC
14	CCB	970813A	ICP2	08/13/97	13:53	BJG	Q	CONC
15	S97T001938	970813A	ICP2	08/13/97	13:56	BJG	S	CONC
16	S97T001938 D	970813A	ICP2	08/13/97	13:59	BJG	S	CONC
17	S97T001937 L	970813A	ICP2	08/13/97	14:03	BJG	S	CONC
18	S97T001937	970813A	ICP2	08/13/97	14:07	BJG	S	CONC
19	S97T001937 D	970813A	ICP2	08/13/97	14:10	BJG	S	CONC
20	S97T001937 S	970813A	ICP2	08/13/97	14:15	BJG	S	CONC
21	ICSA	970813A	ICP2	08/13/97	14:19	BJG	Q	CONC
22	ICSAB	970813A	ICP2	08/13/97	14:22	BJG	Q	CONC
23	CCV	970813A	ICP2	08/13/97	14:25	BJG	Q	CONC
24	CCB	970813A	ICP2	08/13/97	14:28	BJG	Q	CONC

8-13-97

By: 109 S97T001937-SK

224 CELL S97M000145

FILE # 0870813A.TXT

S97T001937

$$L_i = 0.0649 \frac{\mu\text{g}}{\text{ml}} \times \frac{1}{4.952 \frac{\text{g}}{\text{L}} \times \frac{1\text{L}}{1000\text{ml}}} = 1.312 + 1 \frac{\mu\text{g}}{\text{g}}$$

Spike:

$$L_i = \frac{5.007 - 0.0649}{5} \times 100 = 98.8\%$$

SIGNATURE ABOVE REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 544 TO 548.

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Analysis Report

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#	Sample Name	Ag	Al	As	B	Ba	Be
1	ICV	4.918	4.864	5.156	5.072	4.843	5.139
2	ICB	.0014	.0022	-.0034	.0010	.0001	.0001
3	LLS	.0231	.1152	.2120	.0978	.0994	.0111
4	ICSA	.0046	240.2	-.0744	-.0070	.0002	.0006
5	ICSAB	.9661	241.1	-.0334	-.0010	.4658	.4897
6	PREPSTD TJ A	.9533	4.806	4.912	5.323	4.739	5.092
7	PREPBLK TJ A	.0027	Q.1262	-.0030	Q.4054	.0013	.0004
8	S97M000145	.0108	5.112	.0437	.3934	.0685	.0030
9	S97M000145 D	.0023	5.625	-.0810	.4894	.0657	.0027
10	S97M000145 S	.9721	11.81	5.236	4.902	4.813	5.021
11	PREPSTD TJ A	.7296	4.898	5.058	5.435	4.845	5.148
12	PREPBLK TJ A	.0016	Q.1291	-.0042	Q.5132	.0012	.0003
13	CCV	4.971	4.959	5.236	5.163	4.995	5.198
14	CCB	.0014	.0189	-.0033	.0010	.0001	.0005
15	S97T001938	.1484	80.17	-.0940	.9313	.0594	.0034
16	S97T001938 D	.1461	86.14	-.0729	.8731	.0575	.0028
17	S97T001937 L	.1364	115.5	-.2799	1.352	.0199	.0048
18	S97T001937	.1238	112.0	-.0992	1.314	.0188	.0029
19	S97T001937 D	.1151	103.1	-.1384	1.416	.0172	.0027
20	S97T001937 S	1.105	101.1	5.098	6.247	4.775	5.099
21	ICSA	.0025	243.6	-.0466	.0010	.0001	.0005
22	ICSAB	.9760	241.4	.0060	-.0007	.4674	.4877
23	CCV	4.957	4.893	5.208	5.088	4.935	5.152
24	CCB	.0006	.0079	-.0044	.0015	.0001	.0006

#	Sample Name	Bi	Ga	Gd	Ce	Co	Cr
1	ICV	5.208	4.991	5.008	4.870	5.116	5.007
2	ICB	-.0091	.0052	-.0006	.0051	-.0019	.0008
3	LLS	Q.1117	.2085	.0115	.2041	.0422	.0217
4	ICSA	.0041	248.7	.0014	.0134	.0021	-.0023
5	ICSAB	-.0114	253.5	.9454	.0110	.4665	.4731
6	PREPSTD TJ A	4.858	4.974	4.660	4.893	4.813	4.749
7	PREPBLK TJ A	-.0015	Q.2750	.0014	.0071	.0006	.0043
8	S97M000145	.0923	4.274	.0672	.0419	.0155	3.561
9	S97M000145 D	.1246	6.881	.0746	-.0082	-.0023	1.215
10	S97M000145 S	4.976	14.19	4.971	4.948	5.000	6.171
11	PREPSTD TJ A	4.949	5.374	4.761	4.987	4.920	4.836
12	PREPBLK TJ A	.0157	Q.3911	-.0012	.0041	-.0012	.0019
13	CCV	5.290	5.092	5.051	4.940	5.166	5.048
14	CCB	-.0248	.0015	-.0013	.0027	-.0014	.0009
15	S97T001938	.3546	1.485	.0456	.3674	.1056	12.76
16	S97T001938 D	.2922	1.627	.0398	.3161	.1046	11.06
17	S97T001937 L	.2781	.8240	.0446	.0318	.0010	4.464
18	S97T001937	.0983	.8237	.0325	.0014	.0137	4.272
19	S97T001937 D	.1232	1.442	.0317	-.0019	.0151	4.008
20	S97T001937 S	5.159	6.048	4.900	4.943	4.972	9.025
21	ICSA	.0219	260.5	.0020	.0142	-.0010	-.0019
22	ICSAB	.0391	260.1	.9513	.0159	.4723	.4803
23	CCV	5.265	5.133	5.042	4.880	5.161	5.045
24	CCB	-.0154	-.0080	-.0003	-.0017	.0009	.0008

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#	Sample Name	Cu	Eu	Fe	K	La	Li
1	ICV	4.991	.0030	4.667	4.803	4.941	4.830
2	ICB	.0011	.0002	.0005	.0134	.0011	.0003
3	LLS	.0182	-.0002	.0925	Q.2963	.1026	.0207
4	ICSA	-.0079	-.0078	92.27	.2140	-.0029	.0022
5	ICSAB	.4481	-.0108	93.21	.1627	-.0036	.9836
6	PREPSTDTJA	4.387	.0025	4.479	4.616	4.922	4.880
7	PREPBLKTJA	.0075	-.0013	Q.0605	Q1.014	.0011	-.0007
8	S97M000145	.2253	.0003	26.88	1652.	.0082	.0062
9	S97M000145 D	.3451	.0009	26.94	1572.	.0005	.0044
10	S97M000145 S	4.796	.0096	31.79	1636.	4.958	4.811
11	PREPSTDTJA	4.479	.0021	4.597	4.592	5.007	4.983
12	PREPBLKTJA	.0034	-.0006	.0301	.0316	.0015	-.0003
13	CCV	5.106	.0023	4.746	4.930	5.032	4.983
14	CCB	.0009	-.0009	.0011	-.1229	.0005	-.0003
15	S97T001938	.0121	.0027	8.731	8.194	.3044	.2750
16	S97T001938 D	.0211	.0036	8.169	9.445	.2626	.2850
17	S97T001937 L	.0099	-.0054	.6891	11.61	.0153	.0646
18	S97T001937 S	.0049	-.0048	.6635	13.12	.0046	.0649
19	S97T001937 D	.0036	-.0040	.6607	11.94	.0040	.0619
20	S97T001937 S	4.440	-.0004	5.237	16.12	4.997	5.007
21	ICSA	-.0081	-.0268	94.93	-.1009	-.0041	.0031
22	ICSAB	.4415	-.0256	94.12	.1182	-.0027	.9696
23	CCV	5.024	.0035	4.721	4.676	4.975	4.844
24	CCB	.0004	-.0003	-.0022	-.1464	-.0006	.0000

#	Sample Name	Mg	Mn	Mo	Na	Nd	Ni
1	ICV	4.977	4.897	5.067	5.005	4.932	5.002
2	ICB	-.0046	.0002	-.0027	-.0028	.0038	.0028
3	LLS	.2145	.0199	.0995	.1952	.2006	.0489
4	ICSA	250.5	-.0060	-.0130	193.6	.0043	-.0020
5	ICSAB	251.0	.4474	-.0111	192.5	.0062	.9383
6	PREPSTDTJA	4.791	4.628	4.728	5.565	4.824	4.819
7	PREPBLKTJA	.0543	.0016	-.0021	Q.6009	.0051	.0032
8	S97M000145	1.611	.1721	.0045	2.404	.0311	.2517
9	S97M000145 D	1.708	.1779	-.0099	2.878	.0163	.1547
10	S97M000145 S	6.726	4.899	4.882	7.282	4.878	5.180
11	PREPSTDTJA	4.912	4.730	4.857	5.699	4.928	4.949
12	PREPBLKTJA	.0543	.0018	-.0025	Q.6375	.0048	-.0001
13	CCV	5.098	4.955	5.130	5.147	5.030	5.079
14	CCB	.0038	.0001	-.0013	.0115	.0018	-.0059
15	S97T001938	.4178	16.77	.0655	1030.	.3849	1.639
16	S97T001938 D	.3969	13.37	.0681	955.6	.3293	1.789
17	S97T001937 L	.2731	.0896	.1137	1047.	.0351	.2154
18	S97T001937 S	.2286	.0808	.1411	1022.	.0113	.2138
19	S97T001937 D	2.638	.0768	1.375	980.7	.0156	.2103
20	S97T001937 S	5.071	4.789	5.012	1002.	4.874	5.210
21	ICSA	254.3	-.0054	-.0099	194.0	.0023	-.0019
22	ICSAB	251.9	.4520	-.0109	190.7	.0020	.9352
23	CCV	5.005	4.940	5.115	5.032	4.965	5.048
24	CCB	-.0050	.0002	.0008	-.0132	.0020	-.0067

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#	Sample Name	P	Pb	S	Sb	Se	Si
1	ICV	5.119	4.972	5.023	4.808	4.749	4.959
2	ICB	.0107	-.0162	-.0000	.0033	.0342	.0014
3	LLS	.3951	.2027	.2097	.0959	.2334	Q.1481
4	ICSA	.0111	.0070	-.0286	.0043	.0330	.0033
5	ICSAB	.0042	1.008	-.0302	.0018	.0551	.0027
6	PREPSTD TJJA	4.722	4.596	4.743	4.654	4.500	7.684
7	PREPBLKTJA	-.0111	.0003	Q.0735	-.0056	.0559	Q.9501
8	S97M000145	.8880	15.68	1.467	.9747	.2525	6.936
9	S97M000145 D	.6889	6.035	1.403	.2879	.2044	7.246
10	S97M000145 S	5.595	11.32	6.453	5.204	4.821	17.07
11	PREPSTD TJJA	4.792	4.707	4.912	4.778	4.591	6.944
12	PREPBLKTJA	.0176	-.0182	Q.0835	-.0109	.0462	Q1.134
13	CCV	5.158	5.004	5.072	4.869	4.843	5.024
14	CCB	-.0024	-.0080	.0039	-.0037	.0456	.0011
15	S97T001938	197.1	.5597	29.11	-.0202	.1537	8.798
16	S97T001938 D	176.9	.5281	32.19	-.0181	.1348	7.828
17	S97T001937 L	123.9	.1182	75.40	-.0541	.7433	11.61
18	S97T001937	120.3	.2562	72.42	-.0020	.1300	11.07
19	S97T001937 D	119.4	.2853	67.84	-.0119	.1434	12.91
20	S97T001937 S	130.4	5.091	78.78	4.903	4.786	16.34
21	ICSA	.0388	.0155	-.0361	.0033	.0474	.0114
22	ICSAB	.0210	1.011	-.0467	-.0137	.0668	.0123
23	CCV	5.128	5.023	5.063	4.840	4.754	5.005
24	CCB	-.0039	-.0069	.0062	-.0053	.0406	.0050

#	Sample Name	Sm	Sr	Th	Ti	Tl	U
1	ICV	4.839	4.898	.1222	4.918	4.806	9.496
2	ICB	.0029	.0000	.0034	.0002	.0161	.0172
3	LLS	.1968	.0203	.0072	.0203	.3985	.4823
4	ICSA	-.0137	.0017	.0061	.0019	.0516	.0104
5	ICSAB	-.0141	.0017	.0083	.0010	.1007	-.0176
6	PREPSTD TJJA	4.757	4.764	.1238	4.421	4.506	9.275
7	PREPBLKTJA	-.0166	.0006	.0086	.0012	.0212	-.0519
8	S97M000145	-.0355	.0184	.1057	.8222	.0810	1.278
9	S97M000145 D	-.0581	.0212	.0825	.3977	.1131	2.611
10	S97M000145 S	4.748	4.816	.1672	4.911	4.705	10.76
11	PREPSTD TJJA	4.830	4.850	.1231	4.512	4.540	9.448
12	PREPBLKTJA	-.0109	.0008	.0037	.0014	-.0092	-.0291
13	CCV	4.940	4.989	.1310	4.988	4.874	9.704
14	CCB	-.0073	-.0000	.0063	-.0005	.0031	-.0222
15	S97T001938	.0427	.8042	.6953	.0183	.0498	3.152
16	S97T001938 D	.0546	.8080	.6438	.0175	.0753	3.253
17	S97T001937 L	.0034	.1770	.2293	.0108	-.1456	15.57
18	S97T001937	-.0203	.1716	.2348	.0068	.0424	15.06
19	S97T001937 D	-.0238	.1699	.1969	.0056	.0271	13.74
20	S97T001937 S	4.777	4.978	.3475	4.459	4.612	24.25
21	ICSA	-.0065	.0016	-.0001	.0014	.0573	-.0218
22	ICSAB	-.0020	.0016	.0008	.0014	.0607	-.0110
23	CCV	4.865	4.936	.1239	4.953	4.847	9.566
24	CCB	-.0031	.0000	.0009	-.0002	.0205	-.0039

HNF-SD-WM-DP-259, REV. 0

Analysis Report

Averages

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#	Sample Name	V	Y	Zn	Zr
1	ICV	5.066	.0067	4.967	4.909
2	ICB	.0007	.0003	.0006	.0001
3	LLS	.1007	.0003	.0217	.0194
4	ICSA	-.0018	.0066	.0063	-.0040
5	ICSAB	.4650	.0070	.9410	-.0043
6	PREPSTD TJ A	4.707	.0055	4.378	4.825
7	PREPBLK TJ A	-.0031	-.0006	0.0651	.0001
8	S97M000145	.0050	.0002	15.99	-.0053
9	S97M000145 D	.0010	.0001	19.79	-.0101
10	S97M000145 S	4.845	.0084	21.91	4.854
11	PREPSTD TJ A	4.800	.0056	4.493	4.938
12	PREPBLK TJ A	-.0026	-.0004	0.0687	.0008
13	CCV	5.127	.0063	4.994	4.975
14	CCB	-.0020	-.0002	.0020	-.0018
15	S97T001938	.4013	.0439	.1436	.0719
16	S97T001938 D	.3709	.0356	.1482	.0630
17	S97T001937 L	.1953	.0061	.1067	.2301
18	S97T001937	.1823	.0044	.0922	.2216
19	S97T001937 D	.1751	.0036	.0883	.2042
20	S97T001937 S	5.004	.0112	4.732	4.172
21	ICSA	-.0001	.0075	.0078	-.0021
22	ICSAB	.4692	.0077	.9580	-.0019
23	CCV	5.110	.0068	5.003	4.943
24	CCB	-.0005	.0001	.0001	-.0004

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A-0004-1

File # 970815A.DAT

Page: 1

LABCORE Data Entry Template for Worklist# 19826

Analyst: B. Golick Instrument: ICP01⁰¹ Book# 688458Method: LA-505-151/161 Rev/Mod E-1
⁸⁻¹⁵⁻⁹⁷

Worklist Comment: ICP BY-109 (SOLID ACID DIGEST)

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	PREPSTD TJA		@ICP-A01	SOLID		
7	PREPBLKTJA		@ICP-A01	SOLID		
8	SERDIL	S97T001880 0 A	@ICP-A01	SOLID		
9	SAMPLE	S97T001880 0 A	@ICP-A01	SOLID	97000412	BY-109 (P)
Analytes Requested: AG-A-01 , AL-A-01 , AS-A-01 , B-A-01 , BA-A-01 , BE-A-01 , BI-A-01 , CA-A-01 , CD-A-01 , CE-A-01 , CO-A-01 , CR-A-01 , CU-A-01 , FE-A-01 , K-A-01 , LA-A-01 , LI-A-01 , MG-A-01 , MN-A-01 , MO-A-01 , NA-A-01 , ND-A-01 , NI-A-01 , P-A-01 , PB-A-01 , S-A-01 , SB-A-01 , SE-A-01 , SI-A-01 , SM-A-01 , SR-A-01 , TI-A-01 , TL-A-01 , U-A-01 , V-A-01 , ZN-A-01 , ZR-A-01						
10	DUP	S97T001880 0 A	@ICP-A01	SOLID		
11	SPK-PREDIG	S97T001880 0 A	@ICP-A01	SOLID		
12	CCV		@ICP-QC	QC		
13	CCB		@ICP-QC	QC		
14	SERDIL	S97T001881 0 A	@ICP-A01	SOLID		
15	SAMPLE	S97T001881 0 A	@ICP-A01	SOLID	97000412	BY-109 (P)
Analytes Requested: AG-A-01 , AL-A-01 , AS-A-01 , B-A-01 , BA-A-01 ,						

Data Entry Comments:

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

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A-0004-1

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LABCORE Data Entry Template for Worklist# 19826

S Type	Sample#	R	A	Test	Matrix	Group#	Project
				BE-A-01 ,	BI-A-01 ,	CA-A-01 ,	CD-A-01 , CE-A-01 , CO-A-01 ,
				CR-A-01 ,	CU-A-01 ,	FE-A-01 ,	K-A-01 , LA-A-01 , LI-A-01 ,
				MG-A-01 ,	MN-A-01 ,	MO-A-01 ,	NA-A-01 , ND-A-01 , NI-A-01 ,
				P-A-01 ,	PB-A-01 ,	S-A-01 ,	SB-A-01 , SE-A-01 , SI-A-01 ,
				SM-A-01 ,	SR-A-01 ,	TI-A-01 ,	TL-A-01 , U-A-01 , V-A-01 ,
				ZN-A-01 ,	ZR-A-01		
16 DUP	S97T001881	0	A	@ICP-A01	SOLID		
17 SPK-PREDIG	S97T001881	0	A	@ICP-A01	SOLID		
18 SAMPLE	S97T001882	0	A	@ICP-A01	SOLID	97000412	BY-109 (P)
	Analytes Requested: AG-A-01 , AL-A-01 , AS-A-01 , B-A-01 , BA-A-01 ,						
	BE-A-01 , BI-A-01 , CA-A-01 , CD-A-01 , CE-A-01 , CO-A-01 ,						
	CR-A-01 , CU-A-01 , FE-A-01 , K-A-01 , LA-A-01 , LI-A-01 ,						
	MG-A-01 , MN-A-01 , MO-A-01 , NA-A-01 , ND-A-01 , NI-A-01 ,						
	P-A-01 , PB-A-01 , S-A-01 , SB-A-01 , SE-A-01 , SI-A-01 ,						
	SM-A-01 , SR-A-01 , TI-A-01 , TL-A-01 , U-A-01 , V-A-01 ,						
	ZN-A-01 , ZR-A-01						
19 DUP	S97T001882	0	A	@ICP-A01	SOLID		
20 CCV				@ICP-QC	QC		
21 CCB				@ICP-QC	QC		
22 SERDIL	S97T001883	0	A	@ICP-A01	SOLID		
23 SAMPLE	S97T001883	0	A	@ICP-A01	SOLID	97000411	BY-109 (P)
	Analytes Requested: AG-A-01 , AL-A-01 , AS-A-01 , B-A-01 , BA-A-01 ,						
	BE-A-01 , BI-A-01 , CA-A-01 , CD-A-01 , CE-A-01 , CO-A-01 ,						
	CR-A-01 , CU-A-01 , FE-A-01 , K-A-01 , LA-A-01 , LI-A-01 ,						
	MG-A-01 , MN-A-01 , MO-A-01 , NA-A-01 , ND-A-01 , NI-A-01 ,						
	P-A-01 , PB-A-01 , S-A-01 , SB-A-01 , SE-A-01 , SI-A-01 ,						
	SM-A-01 , SR-A-01 , TI-A-01 , TL-A-01 , U-A-01 , V-A-01 ,						
	ZN-A-01 , ZR-A-01						
24 DUP	S97T001883	0	A	@ICP-A01	SOLID		
25 SPK-PREDIG	S97T001883	0	A	@ICP-A01	SOLID		
26 ICSA				@ICP-QC	QC		
27 ICSAB				@ICP-QC	QC		

Data Entry Comments:

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

LABCORE Data Entry Template for Worklist# 19826

S Type	Sample#	R A Test	Matrix	Group#	Project
28 CCV		@ICP-QC	QC		
29 CCB		@ICP-QC	QC		

Final page for worklist # 19826

[Signature] 8-15-97
Analyst Signature Date

Revised & Validated by:
[Signature] 8/18/97
Analyst Signature Date

597T001880

$$L_i = 0.283 \frac{\mu g}{ml} \times \frac{1}{5.078 \frac{g}{L} \times \frac{1L}{1000ml}} = 5.572 \pm 1 \frac{\mu g}{g}$$

$$Spike: L_i = \frac{5.18 - 0.283}{5} \times 100 = 98.0 \%$$

597T001881

$$L_i = 1.419 \frac{\mu g}{ml} \times \frac{1}{5.008 \frac{g}{L} \times \frac{1L}{1000ml}} = 2.832 \pm 2 \frac{\mu g}{g}$$

$$Spike: L_i = \frac{6.299 - 1.419}{5} \times 100 = 97.6 \%$$

Data Entry Comments:

HNF-SD-WM-DP-259, REV. 0

ICV

ICB

LCS

ICSA

ICSAB

PREPSTD AXL DIRECT

PREPBLK AXL DIRECT

597700 1880-L 2-1-8-1-2-1-1-1

1880 2-8

1880-D 2-8

1880-S 2-8

8.

8-15-97

BY-109

ACAD
DIGEST

1

1

597700 1880-1883

25

FILE # 970815 A.D.M.T

5

5

5

CCV

CCB

597700 1881-L 2-8-2-8

1881 2-8

1881-D 2-8

1881-S 2-8

25

5

5

5

597700 1882-L 2-8

1882-D 2-8

5

5

CCV

CCB

597700 1883-L 2-8-2-8

1883 2-8

1883-D 2-8

1883-S 2-8

25

5

5

5

ICSA

ICSAB

CCV

CCB

HNF-SD-WM-DP-259, REV. 0

Identity 1: ICV Identity 2: Quality Control

12:55 PM August 15, 1997

Task name : OPTIMA

Sample Weight : 1.0000 Solution Volume : 1.00

On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	4.876	5.028	5.065	4.745	4.962	4.972	5.287	5.128
S.D.	0.008	0.008	0.009	0.008	0.003	0.020	0.024	0.023
% R.S.D.	0.157	0.163	0.171	0.169	0.054	0.397	0.456	0.439
	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	5.071	4.847	4.948	4.829	4.732	4.744	5.223	9.841
S.D.	0.009	0.004	0.017	0.020	0.018	0.020	0.060	0.020
% R.S.D.	0.177	0.093	0.335	0.420	0.390	0.414	1.146	0.208
	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	4.999	5.123	5.021	5.241	4.947	4.647	5.128	5.369
S.D.	0.017	0.021	0.014	0.027	0.039	0.013	0.032	0.018
% R.S.D.	0.349	0.409	0.287	0.507	0.797	0.275	0.630	0.326
	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	4.951	4.981	4.796	4.786	4.893	5.015	5.049	4.838
S.D.	0.024	0.004	0.025	0.005	0.002	0.021	0.021	0.009
% R.S.D.	0.491	0.090	0.519	0.115	0.033	0.427	0.424	0.192
	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)				
Mean	4.733	4.978	5.055	5.045				
S.D.	0.030	0.001	0.020	0.010				
% R.S.D.	0.632	0.016	0.386	0.189				

[Signature]
8-15-97

B4-109 AND
B4-109

2nd - 8-15-97
597 TW 1880 - 83

FILE# 970815A.DAT

SIGNATURE ABOVE REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 385 TO 611.

HNF-SD-WM-DP-259, REV. 0

Identity 1: ICB Identity 2: Quality Control 12:57 PM August 15, 1997

Task name : OPTIMA

Sample Weight : 1.0000 Solution Volume : 1.00

On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	-0.005	0.001	-0.025	-0.012	0.032	0.004	0.004	0.002
S.D.	0.002	0.000	0.012	0.002	0.003	0.002	0.001	0.000
% R.S.D.	35.388	30.839	45.899	18.913	9.801	58.201	15.661	25.035

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.001	-0.002	-0.002	-0.002	0.001	0.009	0.026	-0.215
S.D.	0.001	0.002	0.002	0.001	0.001	0.001	0.008	0.046
% R.S.D.	62.185	97.308	99.024	40.186	67.821	6.827	32.015	21.356

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	0.060	-0.049	0.002	0.013	-0.011	0.000	-0.004	0.009
S.D.	0.014	0.012	0.000	0.016	0.002	0.000	0.004	0.003
% R.S.D.	23.859	24.629	20.433	122.269	15.035	74.238	105.472	38.198

	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	-0.000	0.005	-0.001	-0.000	0.001	0.003	-0.065	0.001
S.D.	0.001	0.001	0.005	0.001	0.001	0.001	0.012	0.000
% R.S.D.	202.261	13.900	825.878	279.407	66.048	44.050	18.092	58.478

	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	0.012	0.005	0.001	0.114
S.D.	0.030	0.001	0.000	0.038
% R.S.D.	253.058	14.967	18.405	33.197

HNF-SD-WM-DP-259, REV. 0

Identity 1: LLS Identity 2: Quality Control 1:00 PM August 15, 1997
 Task name : OPTIMA
 Sample Weight : 1.0000 Solution Volume : 1.00
 On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	0.018	0.021	0.191	0.111	0.094	0.047	0.021	0.020
S.D.	0.001	0.000	0.010	0.004	0.001	0.002	0.000	0.000
% R.S.D.	7.711	0.193	5.254	3.316	0.820	4.833	2.255	1.240

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.022	0.040	0.106	0.108	0.185	0.026	0.218	0.315
S.D.	0.000	0.003	0.001	0.002	0.000	0.001	0.001	0.053
% R.S.D.	1.314	7.286	0.781	1.856	0.216	4.305	0.470	16.693

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	0.216	0.188	0.101	0.428	0.206	0.203	0.198	0.201
S.D.	0.009	0.012	0.000	0.016	0.002	0.000	0.004	0.003
% R.S.D.	4.210	6.308	0.115	3.760	1.042	0.059	1.802	1.631

	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	0.099	0.025	0.178	0.019	0.012	0.107	0.583	0.021
S.D.	0.001	0.001	0.006	0.000	0.000	0.002	0.017	0.000
% R.S.D.	1.238	4.179	3.628	1.195	2.722	1.652	2.893	2.126

	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	0.087	0.106	0.011	0.507
S.D.	0.003	0.001	0.001	0.027
% R.S.D.	3.304	1.382	5.093	5.428

HNF-SD-WM-DP-259, REV. 0

Identity 1: ICSA Identity 2: Quality Control 1:04 PM August 15, 1997
 Task name : OPTIMA
 Sample Weight : 1.0000 Solution Volume : 1.00
 On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	0.003	0.003	-0.030	0.019	200.859	0.009	0.001	0.001
Σ.D.	0.001	0.000	0.005	0.003	0.538	0.002	0.000	0.000
% R.S.D.	50.011	4.259	15.918	16.445	0.268	23.012	15.273	4.815

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.008	0.009	0.004	98.912	105.063	0.004	0.012	0.020
Σ.D.	0.000	0.003	0.003	0.176	0.207	0.002	0.011	0.040
% R.S.D.	5.490	29.590	76.703	0.178	0.197	56.649	93.722	195.945

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Hg (ppm)	As (ppm)	Na (ppm)
Mean	0.064	0.036	0.002	0.012	-0.057	104.179	-0.020	183.090
Σ.D.	0.012	0.008	0.000	0.012	0.012	0.144	0.000	0.649
% R.S.D.	18.567	22.893	10.232	104.132	20.397	0.139	2.337	0.354

	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	0.000	0.003	-0.001	0.001	0.002	0.015	0.099	0.009
Σ.D.	0.003	0.001	0.004	0.001	0.001	0.001	0.014	0.001
% R.S.D.	1421.299	35.437	502.370	129.230	21.343	8.725	13.686	10.687

	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	0.085	0.002	0.003	0.108
Σ.D.	0.048	0.000	0.000	0.037
% R.S.D.	55.944	19.718	4.999	33.876

HNF-SD-WM-DP-259, REV. 0

Identity 1: ICSAB Identity 2: Quality Control

1:06 PM August 15, 1997

Task name: OPTIMA

Sample Weight: 1.0000 Solution Volume: 1.00

On-Peak Integrations: 3 Off-Peak Integrations: 1

	Zr	Sr	Bi	Si	Al	Co	Cu	Li
	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
Mean	-0.003	0.002	-0.031	0.006	203.586	0.512	0.490	0.937
S.D.	0.001	0.000	0.010	0.004	0.331	0.006	0.000	0.006
% R.S.D.	36.579	4.856	32.904	74.471	0.163	1.162	0.094	0.639
<hr/>								
	Zn	Ni	La	Fe	Ca	Cr	Nd	U
	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
Mean	1.018	1.012	0.003	98.183	104.312	0.519	0.008	-0.065
S.D.	0.005	0.012	0.002	0.154	0.193	0.003	0.005	0.033
% R.S.D.	0.501	1.200	60.698	0.157	0.185	0.502	62.147	51.209
<hr/>								
	Ce	Sm	Ba	P	S	Mg	As	Na
	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
Mean	0.025	0.012	0.507	0.023	-0.072	103.648	-0.021	187.523
S.D.	0.011	0.006	0.000	0.004	0.005	0.497	0.004	1.089
% R.S.D.	44.731	48.929	0.090	15.758	7.386	0.480	19.278	0.581
<hr/>								
	Mo	Ag	Pb	Ti	Cd	B	K	Mn
	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
Mean	-0.001	1.075	0.999	-0.000	1.013	0.013	-0.000	0.518
S.D.	0.000	0.002	0.006	0.001	0.002	0.001	0.011	0.003
% R.S.D.	13.678	0.183	0.640	203.242	0.201	5.860	2762.166	0.571
<hr/>								
	Sb	V	Be	Tl				
	(ppm)	(ppm)	(ppm)	(ppm)				
Mean	-0.004	0.499	0.503	0.050				
S.D.	0.028	0.002	0.001	0.029				
% R.S.D.	661.928	0.344	0.114	58.769				

HNF-SD-WM-DP-259, REV. 0

Identity 1: prepsdarl Identity 2: direct 1:09 PM August 15, 1997

Task name : OPTIMA

Sample Weight : 1.0000 Solution Volume : 1.00

On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	4.824	4.816	4.763	7.922	4.898	4.814	4.586	4.728
S.D.	0.015	0.013	0.017	0.026	0.027	0.036	0.004	0.027
R.S.D.	0.320	0.268	0.356	0.325	0.561	0.738	0.081	0.576

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	4.720	4.883	4.967	4.798	4.877	4.681	5.276	9.366
S.D.	0.027	0.032	0.018	0.015	0.015	0.035	0.005	0.049
R.S.D.	0.574	0.651	0.356	0.323	0.309	0.747	0.097	0.523

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Hg (ppm)	As (ppm)	Na (ppm)
Mean	5.011	4.964	4.805	4.838	4.728	4.612	4.950	5.305
S.D.	0.027	0.014	0.009	0.030	0.019	0.031	0.015	0.022
R.S.D.	0.530	0.276	0.183	0.629	0.399	0.680	0.296	0.423

	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	4.732	1.178	4.644	4.295	4.774	5.309	4.672	4.782
S.D.	0.038	0.005	0.051	0.017	0.023	0.007	0.017	0.034
R.S.D.	0.806	0.460	1.098	0.400	0.476	0.132	0.374	0.708

	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	4.692	4.746	5.072	4.782
S.D.	0.027	0.024	0.006	0.061
R.S.D.	0.585	0.508	0.114	1.272

HNF-SD-WM-DP-259, REV. 0

Identity 1: PREPBLK Identity 2: Quality Control

1:13 PM August 15, 1997

Task name : OPTIMA

Sample Weight : 1.0000 Solution Volume : 1.00

On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	-0.001	0.002	-0.019	1.700	0.184	0.007	0.012	0.003
St.D.	0.000	0.000	0.002	0.007	0.002	0.000	0.000	0.000
R.S.D.	72.733	5.036	11.826	0.435	1.127	0.125	1.424	2.521

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.048	0.003	0.003	0.020	0.206	-0.003	0.042	-0.181
St.D.	0.000	0.001	0.002	0.004	0.000	0.001	0.006	0.026
R.S.D.	0.792	25.735	76.605	20.991	0.073	29.447	13.125	14.370

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	0.119	-0.051	0.003	0.030	0.177	0.050	-0.005	1.026
St.D.	0.009	0.005	0.000	0.009	0.005	0.001	0.005	0.002
R.S.D.	7.331	10.724	5.138	29.835	2.891	1.268	118.885	0.209

	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	0.003	0.008	0.025	0.001	0.002	0.374	0.055	0.001
St.D.	0.001	0.000	0.007	0.000	0.001	0.001	0.007	0.000
R.S.D.	20.660	2.905	28.267	18.397	43.949	0.335	13.531	15.039

	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	0.011	0.007	0.000	0.192
St.D.	0.035	0.001	0.000	0.016
R.S.D.	329.203	15.300	64.087	8.065

HNF-SD-WM-DP-259, REV. 0

Identity 1: S97T001880_L Identity 2: 2ml-8ml-2ml-8ml

1:17 PM August 15, 1997

Mask name: OPTIMA

Sample Weight: 1.0000 Solution Volume: 25.00

On-Peak Integrations: 3 Off-Peak Integrations: 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	0.604	0.511	-0.233	26.503	77.141	0.409	0.049	0.289
SD	0.030	0.003	0.253	0.054	0.200	0.057	0.006	0.004
R.S.D.	4.971	0.521	108.348	0.203	0.259	13.860	12.774	1.517

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.132	0.810	0.177	2.019	1.698	15.523	0.051	1.537
SD	0.008	0.034	0.073	0.101	0.003	0.046	0.226	0.991
R.S.D.	6.112	4.169	41.542	5.025	0.184	0.294	440.366	64.473

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	0.361	-0.400	0.042	9.964	288.191	0.493	0.102	1125.389
SD	0.226	0.172	0.005	0.365	2.667	0.006	0.064	2.897
R.S.D.	62.811	43.053	11.042	3.663	0.925	1.207	62.333	0.257

	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	0.090	0.044	-0.011	0.012	0.173	2.947	13.106	0.309
SD	0.029	0.013	0.113	0.007	0.017	0.023	0.422	0.010
R.S.D.	32.078	28.630	1047.801	59.001	9.942	0.787	3.217	3.117

	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	-0.058	-0.024	-0.012	1.610
SD	0.873	0.023	0.008	0.553
R.S.D.	1508.774	98.069	66.134	34.340

HNF-SD-WM-DP-259, REV. 0

Identity 1: S97T001880 Identity 2: 2mL-8mL 1:20 PM August 15, 1997
 Ask name : OPTIMA
 Sample Weight : 1.0000 Solution Volume : 5.00
 On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
mean	0.608	0.508	0.034	26.371	77.114	0.369	0.048	0.283
SD	0.005	0.001	0.032	0.034	0.466	0.010	0.002	0.000
R.S.D.	0.854	0.209	91.841	0.129	0.604	2.793	4.606	0.123
	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
mean	0.125	0.749	0.120	2.109	1.639	15.651	0.211	1.813
SD	0.001	0.004	0.015	0.018	0.005	0.046	0.015	0.151
R.S.D.	0.992	0.519	12.203	0.860	0.332	0.291	7.258	8.343
	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
mean	0.286	-0.074	0.044	9.880	287.315	0.438	-0.017	1069.945
SD	0.039	0.036	0.001	0.049	0.871	0.001	0.010	4.910
R.S.D.	13.541	47.982	1.788	0.496	0.303	0.136	59.932	0.459
	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
mean	0.110	0.089	0.650	0.008	0.136	2.892	10.929	0.307
SD	0.005	0.002	0.136	0.001	0.005	0.025	0.041	0.003
R.S.D.	4.615	2.099	20.849	15.468	3.887	0.873	0.378	0.946
	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)				
mean	0.037	0.022	0.003	0.315				
SD	0.038	0.005	0.001	0.130				
R.S.D.	103.267	24.554	27.178	41.203				

HNF-SD-WM-DP-259, REV. 0

Identity 1: S97T001880_D Identity 2: 2ml-8ml

1:23 PM August 15, 1997

Task name : OPTIMA

Sample Weight : 1.0000 Solution Volume : 5.00

On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	0.598	0.521	-0.054	28.285	80.003	0.328	0.052	0.342
S.D.	0.004	0.001	0.077	0.019	0.124	0.013	0.001	0.003
% R.S.D.	0.719	0.102	141.395	0.068	0.155	4.047	1.220	0.765

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.127	0.761	0.130	2.353	1.472	15.925	0.236	2.430
S.D.	0.001	0.021	0.000	0.004	0.002	0.030	0.016	0.122
% R.S.D.	1.124	2.780	0.044	0.186	0.126	0.187	6.608	5.007

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	0.168	0.051	0.043	5.890	292.220	0.420	-0.034	1089.773
S.D.	0.040	0.026	0.001	0.085	1.543	0.001	0.011	7.920
% R.S.D.	23.580	50.634	1.872	1.445	0.528	0.142	31.884	0.727

	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	0.116	0.079	0.608	0.012	0.139	2.787	10.964	0.324
S.D.	0.010	0.002	0.081	0.001	0.003	0.011	0.059	0.004
% R.S.D.	8.303	1.963	13.302	5.308	2.476	0.406	0.537	1.226

	Sb (ppm)	V (ppm)	Se (ppm)	Tl (ppm)
Mean	0.067	0.006	0.002	0.372
S.D.	0.125	0.003	0.001	0.158
% R.S.D.	186.207	49.835	45.792	42.456

HNF-SD-WM-DP-259, REV. 0

Identity 1: S97T001880_S Identity 2: 2ml-8ml 1:26 PM August 15, 1997

Task name : OPTIMA

Sample Weight : 1.0000 Solution Volume : 5.00

On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	5.552	5.549	4.968	18.289	86.097	5.414	4.825	5.180
S.D.	0.007	0.005	0.073	0.004	1.521	0.040	0.010	0.013
% R.S.D.	0.132	0.091	1.468	0.020	1.766	0.742	0.200	0.245

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	5.040	5.820	5.250	7.519	6.644	20.494	5.396	12.123
S.D.	0.004	0.039	0.043	0.047	0.008	0.028	0.022	0.066
% R.S.D.	0.078	0.663	0.814	0.627	0.122	0.136	0.407	0.541

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	5.267	5.148	5.024	11.197	289.733	5.258	5.091	1110.986
S.D.	0.042	0.019	0.005	0.164	1.070	0.003	0.060	2.541
% R.S.D.	0.805	0.362	0.095	1.461	0.369	0.057	1.184	0.229

	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	4.992	1.205	5.449	4.453	5.086	8.125	15.626	5.267
S.D.	0.008	0.011	0.060	0.006	0.019	0.019	0.107	0.007
% R.S.D.	0.166	0.929	1.093	0.130	0.365	0.233	0.685	0.137

	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	5.261	4.913	4.997	5.218
S.D.	0.115	0.007	0.009	0.006
% R.S.D.	2.177	0.148	0.176	0.111

HNF-SD-WM-DP-259, REV. 0

Identity 1: CCV Identity 2: Quality Control 1:28 PM August 15, 1997
 Task name : OPTIMA
 Sample Weight : 1.0000 Solution Volume : 1.00
 On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	4.878	4.962	5.209	4.708	4.874	4.940	5.225	4.861
S.D.	0.012	0.017	0.262	0.006	0.007	0.024	0.027	0.052
% R.S.D.	0.242	0.345	5.032	0.123	0.154	0.485	0.524	1.075

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	5.062	4.888	4.995	4.931	4.749	4.788	5.381	9.890
S.D.	0.005	0.002	0.021	0.015	0.013	0.012	0.029	0.026
% R.S.D.	0.095	0.040	0.423	0.310	0.277	0.244	0.535	0.260

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	4.838	5.089	4.960	5.088	4.804	4.642	5.072	5.133
S.D.	0.009	0.017	0.021	0.040	0.024	0.008	0.010	0.049
% R.S.D.	0.188	0.325	0.426	0.791	0.506	0.164	0.191	0.948

	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	4.891	4.989	4.827	4.750	4.920	5.059	4.969	4.909
S.D.	0.014	0.006	0.021	0.011	0.016	0.008	0.029	0.011
% R.S.D.	0.280	0.129	0.444	0.229	0.322	0.161	0.582	0.227

	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	4.703	5.008	5.107	5.062
S.D.	0.047	0.008	0.020	0.014
% R.S.D.	0.992	0.159	0.390	0.273

HNF-SD-WM-DP-259, REV. 0

Identity 1: CCB Identity 2: Quality Control

1:31 PM August 15, 1997

Task name : OPTIMA

Sample Weight : 1.0000 Solution Volume : 1.00

On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	-0.003	0.001	-0.022	-0.015	0.015	0.013	0.002	0.001
S.D.	0.000	0.000	0.009	0.002	0.012	0.002	0.001	0.001
% R.S.D.	13.712	36.078	39.658	17.025	79.097	17.361	33.488	40.818

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.001	-0.003	-0.002	-0.001	0.001	0.005	0.018	-0.216
S.D.	0.000	0.001	0.001	0.003	0.000	0.002	0.003	0.027
% R.S.D.	33.403	29.212	58.053	387.024	22.354	47.891	15.198	12.504

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	0.035	-0.022	0.001	0.013	-0.003	0.001	-0.001	0.028
S.D.	0.010	0.004	0.000	0.006	0.003	0.000	0.008	0.008
% R.S.D.	29.123	18.384	25.819	45.684	93.975	38.185	823.515	29.122

	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	0.002	0.015	0.002	-0.001	0.001	0.006	0.027	0.000
S.D.	0.001	0.002	0.008	0.000	0.001	0.001	0.022	0.001
% R.S.D.	49.127	13.469	531.484	35.946	35.367	18.876	81.715	272.812

	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	-0.045	0.003	0.001	0.061
S.D.	0.010	0.001	0.001	0.025
% R.S.D.	22.565	27.096	95.708	41.185

HNF-SD-WM-DP-259, REV. 0

Identity 1: S97T001881_L Identity 2: 2ml-8ml-2ml-8ml

1:35 PM August 15, 1997

Task name : OPTIMA

Sample Weight : 1.0000 Solution Volume : 25.00

On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr	Sr	Bi	Si	Al	Co	Cu	Li
	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
Mean	-0.002	0.607	-0.195	11.367	104.461	0.537	0.093	1.482
S.D.	0.028	0.002	0.198	0.060	0.035	0.056	0.006	0.015
% R.S.D.	1395.120	0.287	101.543	0.530	0.034	10.474	5.976	0.998
<hr/>								
	Zn	Ni	La	Fe	Ca	Cr	Nd	U
	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
Mean	0.144	0.768	0.012	6.449	0.964	13.545	0.466	-1.800
S.D.	0.004	0.087	0.105	0.127	0.003	0.155	0.101	0.846
% R.S.D.	2.443	11.338	897.355	1.961	0.286	1.145	21.596	47.020
<hr/>								
	Ce	Sm	Ba	P	S	Mg	As	Na
	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
Mean	1.057	-0.680	0.043	5.856	178.115	0.225	-0.217	982.338
S.D.	0.218	0.175	0.003	0.105	1.228	0.003	0.071	10.001
% R.S.D.	20.639	25.753	7.692	1.800	0.689	1.322	32.712	1.018
<hr/>								
	Mo	Ag	Pb	Ti	Cd	B	K	Mn
	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
Mean	0.116	0.095	0.252	-0.012	0.160	0.826	16.147	0.196
S.D.	0.051	0.025	0.094	0.006	0.022	0.015	0.098	0.009
% R.S.D.	43.680	26.070	37.124	52.677	13.600	1.829	0.609	4.819
<hr/>								
	Sb	V	Be	Tl				
	(ppm)	(ppm)	(ppm)	(ppm)				
Mean	-0.602	0.079	0.006	2.558				
S.D.	0.751	0.021	0.008	0.722				
% R.S.D.	124.808	26.841	134.114	28.215				

HNF-SD-WM-DP-259, REV. 0

Identity 1: S97T001881 Identity 2: 2ml-8ml

1:37 PM August 15, 1997

Task name : OPTIMA

Sample Weight : 1.0000 Solution Volume : 5.00

On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr	Sr	Bi	Si	Al	Co	Cu	Li
	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
Mean	0.109	0.601	0.008	11.571	108.393	0.319	0.057	1.419
S.D.	0.011	0.003	0.032	0.023	0.568	0.013	0.004	0.008
% R.S.D.	10.132	0.495	418.555	0.202	0.524	4.031	7.396	0.589
	Zn	Ni	La	Fe	Ca	Cr	Nd	U
	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
Mean	0.136	0.892	0.019	6.409	1.007	13.605	0.026	3.150
S.D.	0.003	0.007	0.014	0.031	0.006	0.036	0.054	0.369
% R.S.D.	2.101	0.738	75.855	0.481	0.605	0.262	205.467	11.698
	Ce	Sm	Ba	P	S	Hg	As	Na
	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
Mean	0.137	0.163	0.027	5.583	180.476	0.191	-0.026	942.790
S.D.	0.093	0.064	0.002	0.029	1.109	0.000	0.013	6.275
% R.S.D.	67.796	39.495	6.229	0.524	0.615	0.000	49.328	0.666
	Mo	Ag	Pb	Ti	Cd	B	K	Mn
	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
Mean	0.151	0.043	0.326	0.010	0.077	0.807	13.820	0.201
S.D.	0.009	0.010	0.033	0.004	0.003	0.009	0.059	0.001
% R.S.D.	5.883	22.852	10.038	37.932	3.299	1.077	0.430	0.565
	Sb	V	Be	Tl				
	(ppm)	(ppm)	(ppm)	(ppm)				
Mean	-0.148	0.010	0.002	0.925				
S.D.	0.134	0.009	0.002	0.199				
% R.S.D.	90.531	84.117	85.180	21.507				

HNF-SD-WM-DP-259, REV. 0

Identity 1: S97T001881_D Identity 2: 2ml-8ml 1:40 PM August 15, 1997

Task name : OPTIMA

Sample Weight : 1.0000 Solution Volume : 5.00

On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr	Sr	Bi	Si	Al	Co	Cu	Li
	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
Mean	0.083	0.543	0.046	7.505	109.458	0.290	0.048	1.339
S.D.	0.005	0.002	0.016	0.024	0.181	0.001	0.001	0.008
% R.S.D.	5.798	0.289	33.956	0.326	0.166	0.309	3.050	0.594
	Zn	Ni	La	Fe	Ca	Cr	Nd	U
	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
Mean	0.119	0.777	0.020	4.673	0.794	12.287	0.039	2.117
S.D.	0.002	0.006	0.011	0.017	0.002	0.067	0.005	0.213
% R.S.D.	1.392	0.755	53.214	0.368	0.215	0.544	13.151	10.083
	Ce	Sm	Ba	P	S	Mg	As	Na
	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
Mean	0.010	-0.020	0.023	4.844	156.080	0.181	-0.007	953.420
S.D.	0.088	0.046	0.002	0.044	0.871	0.001	0.035	3.877
% R.S.D.	867.038	225.923	7.346	0.914	0.558	0.656	498.038	0.407
	Mo	Ag	Pb	Ti	Cd	B	K	Mn
	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
Mean	0.153	0.027	0.281	0.002	0.073	0.405	14.500	0.172
S.D.	0.008	0.007	0.030	0.002	0.002	0.004	0.129	0.001
% R.S.D.	5.150	24.514	10.855	110.742	2.268	0.874	0.892	0.629
	Sb	V	Be	Tl				
	(ppm)	(ppm)	(ppm)	(ppm)				
Mean	0.167	-0.001	0.001	0.249				
S.D.	0.083	0.003	0.002	0.120				
% R.S.D.	50.058	228.633	121.404	47.998				

HNF-SD-WM-DP-259, REV. 0

Identity 1: S97T001881_S Identity 2: 2ml-8ml

1:43 PM August 15, 1997

Task name : OPTIMA

Sample Weight : 1.0000 Solution Volume : 5.00

On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	5.045	5.603	5.057	14.105	112.879	5.306	4.836	6.299
S.D.	0.004	0.014	0.063	0.068	0.158	0.041	0.004	0.004
% R.S.D.	0.076	0.252	1.241	0.480	0.140	0.769	0.089	0.064

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	4.986	5.850	5.121	21.702	5.676	17.118	5.327	12.092
S.D.	0.019	0.038	0.025	0.056	0.005	0.033	0.030	0.073
% R.S.D.	0.386	0.657	0.483	0.260	0.088	0.191	0.563	0.606

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Hg (ppm)	As (ppm)	Na (ppm)
Mean	5.304	5.169	5.025	10.091	170.163	4.866	5.094	974.332
S.D.	0.060	0.027	0.009	0.061	1.467	0.019	0.019	1.015
% R.S.D.	1.123	0.528	0.185	0.606	0.862	0.387	0.383	0.104

	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	5.027	1.245	5.298	4.449	4.980	5.547	18.936	5.225
S.D.	0.036	0.003	0.027	0.010	0.020	0.026	0.148	0.010
% R.S.D.	0.718	0.204	0.507	0.231	0.404	0.469	0.783	0.183

	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	5.278	4.903	5.001	5.314
S.D.	0.036	0.021	0.010	0.110
% R.S.D.	0.675	0.418	0.191	2.076

HNF-SD-WM-DP-259, REV. 0

Identity 1: S97T001882 Identity 2: 2ml-8ml 1:45 PM August 15, 1997

Task name : OPTIMA

Sample Weight : 1.0000 Solution Volume : 5.00

On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr	Sr	Bi	Si	Al	Co	Cu	Li
	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
Mean	-0.009	0.041	0.035	4.679	74.745	0.291	0.038	0.274
S.D.	0.005	0.001	0.029	0.002	0.505	0.020	0.002	0.001
% R.S.D.	52.891	1.460	80.704	0.050	0.676	6.939	4.732	0.381
	Zn	Ni	La	Fe	Ca	Cr	Nd	U
	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
Mean	0.076	0.197	-0.017	0.828	0.296	1.916	0.122	-1.065
S.D.	0.001	0.004	0.008	0.038	0.001	0.018	0.019	0.146
% R.S.D.	1.674	2.044	47.965	4.621	0.255	0.946	15.635	13.709
	Ce	Sm	Ba	P	S	Hg	As	Na
	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
Mean	0.392	-0.267	0.017	222.209	5.808	0.104	0.065	964.580
S.D.	0.030	0.018	0.001	1.466	0.030	0.001	0.028	2.492
% R.S.D.	7.570	6.689	4.973	0.660	0.514	0.572	42.622	0.258
	Mo	Ag	Pb	Ti	Cd	B	K	Mn
	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
Mean	0.098	0.055	0.176	-0.006	0.020	0.293	8.937	0.084
S.D.	0.004	0.002	0.039	0.002	0.001	0.007	0.104	0.002
% R.S.D.	4.250	4.193	21.981	40.234	4.906	2.378	1.163	2.611
	Sb	V	Be	Tl				
	(ppm)	(ppm)	(ppm)	(ppm)				
Mean	-0.090	0.510	0.002	0.369				
S.D.	0.080	0.005	0.001	0.082				
% R.S.D.	89.156	1.023	31.114	22.185				

HNF-SD-WM-DP-259, REV. 0

Identity 1: S971001882_D Identity 2: 2ml-8ml 1:48 PM August 15, 1997

Mask name: OPTIMA

Sample Weight: 1.0000 Solution Volume: 5.00

On-Peak Integrations: 3 Off-Peak Integrations: 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	0.008	0.034	-0.050	5.424	73.325	0.296	0.025	0.246
±D.	0.008	0.001	0.028	0.038	1.583	0.011	0.002	0.001
±R.S.D.	97.172	1.575	56.571	0.696	2.159	3.863	9.372	0.590

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.072	0.215	-0.007	0.882	0.274	1.674	0.040	-0.312
±D.	0.001	0.004	0.004	0.023	0.000	0.002	0.016	0.109
±R.S.D.	0.954	1.827	57.176	2.580	0.076	0.108	39.324	34.812

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	0.141	-0.024	0.010	215.778	9.663	0.082	0.033	927.270
±D.	0.024	0.018	0.000	1.032	0.084	0.001	0.013	2.916
±R.S.D.	17.186	74.288	3.683	0.478	0.869	0.722	40.168	0.315

	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	0.102	0.032	0.015	0.000	0.009	0.210	9.554	0.070
±D.	0.005	0.002	0.032	0.001	0.002	0.004	0.007	0.001
±R.S.D.	4.973	7.788	209.117	417.274	22.160	2.093	0.078	1.555

	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	0.044	0.501	0.002	0.410
±D.	0.087	0.003	0.001	0.079
±R.S.D.	197.421	0.551	45.542	19.395

HNF-SD-WM-DP-259, REV. 0

Identity 1: CCV Identity 2: Quality Control 1:51 PM August 15, 1997
 Task name : OPTIMA
 Sample Weight : 1.0000 Solution Volume : 1.00
 On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
mean	4.959	5.016	5.168	4.885	4.995	5.304	5.120	4.753
SD	0.003	0.013	0.017	0.009	0.025	0.010	0.019	0.041
R.S.D.	0.056	0.252	0.324	0.186	0.508	0.188	0.376	0.858

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
mean	5.411	5.091	4.970	5.033	4.721	5.097	5.062	9.484
SD	0.011	0.012	0.004	0.010	0.009	0.019	0.031	0.021
R.S.D.	0.203	0.237	0.071	0.207	0.182	0.370	0.605	0.219

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
mean	5.051	4.952	4.934	5.404	5.102	4.976	5.277	5.112
SD	0.018	0.011	0.016	0.033	0.017	0.013	0.013	0.037
R.S.D.	0.347	0.212	0.323	0.603	0.340	0.260	0.244	0.729

	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
mean	5.233	5.233	4.985	4.886	5.126	5.078	5.086	5.117
SD	0.018	0.011	0.022	0.007	0.013	0.019	0.015	0.010
R.S.D.	0.343	0.213	0.441	0.135	0.253	0.367	0.296	0.190

	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
mean	4.758	5.185	5.112	5.081
SD	0.014	0.008	0.004	0.006
R.S.D.	0.286	0.155	0.073	0.116

HNF-SD-WM-DP-259, REV. 0

Identity 1: CCB Identity 2: Quality Control 1:53 PM August 15, 1997
 Mask name : OPTIMA
 Sample Weight : 1.0000 Solution Volume : 1.00
 On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	-0.003	0.001	-0.004	-0.014	-0.003	0.005	0.000	0.001
SD	0.001	0.000	0.014	0.002	0.005	0.002	0.000	0.000
R.S.D.	23.510	41.379	381.391	16.041	160.709	43.550	104.618	47.889

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.001	-0.005	-0.002	0.003	0.001	0.003	-0.004	-0.113
SD	0.000	0.002	0.001	0.004	0.000	0.000	0.005	0.030
R.S.D.	22.708	31.939	58.626	117.366	27.152	8.908	125.510	26.122

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	0.002	0.000	0.000	0.007	-0.008	0.000	-0.005	0.028
SD	0.004	0.004	0.000	0.007	0.006	0.000	0.003	0.007
R.S.D.	225.065	86320.013	68.560	99.222	70.175	42.879	67.588	23.501

	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	0.002	0.009	-0.022	-0.000	0.002	0.007	0.114	0.001
SD	0.001	0.001	0.013	0.000	0.001	0.001	0.008	0.000
R.S.D.	34.367	11.724	59.007	136.679	41.768	8.233	7.251	18.867

	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	0.035	0.001	0.000	0.033
SD	0.004	0.000	0.000	0.015
R.S.D.	12.689	42.468	63.565	44.208

HNF-SD-WM-DP-259, REV. 0

Identity 1: S97T001883_L Identity 2: 2ml-8ml-2ml-8ml

1:55 PM August 15, 1997

mask name : OPTIMA

sample Weight : 1.0000 Solution Volume : 25.00

Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
mean	-0.058	0.083	-0.346	5.241	154.442	0.453	0.027	0.273
D.	0.021	0.002	0.131	0.056	0.191	0.058	0.005	0.009
R.S.D.	35.802	2.098	37.979	1.060	0.123	12.869	17.473	3.202

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
mean	0.085	0.769	-0.071	1.903	0.747	0.279	-0.022	-1.274
D.	0.006	0.034	0.041	0.047	0.001	0.029	0.212	0.387
R.S.D.	7.406	4.402	57.628	2.452	0.140	10.529	956.248	30.343

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
mean	0.017	-0.078	0.017	61.668	126.804	0.249	0.015	1000.824
D.	0.230	0.131	0.001	0.290	0.464	0.005	0.072	5.473
R.S.D.	1344.092	166.834	5.249	0.470	0.366	2.069	479.060	0.547

	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
mean	0.112	0.037	0.134	-0.012	0.016	0.189	14.571	0.028
D.	0.023	0.017	0.056	0.005	0.019	0.035	0.111	0.005
R.S.D.	20.545	46.914	41.688	38.676	119.181	18.678	0.764	19.739

	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
mean	-1.284	0.211	0.007	1.702
D.	0.534	0.011	0.004	0.078
R.S.D.	41.549	5.413	58.936	4.584

HNF-SD-WM-DP-259, REV. 0

Entity 1: S97T001883 Identity 2: 2ml-8ml 1:57 PM August 15, 1997
 Task name : OPTIMA
 Sample Weight : 1.0000 Solution Volume : 5.00
 -Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	-0.009	0.080	-0.009	4.950	155.695	0.388	0.034	0.263
SD	0.007	0.001	0.038	0.016	0.346	0.012	0.002	0.001
NR.S.D.	70.770	0.663	419.288	0.327	0.222	3.141	5.811	0.305

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.081	0.853	0.014	1.895	0.733	0.250	0.003	0.243
SD	0.000	0.023	0.011	0.038	0.001	0.004	0.046	0.182
NR.S.D.	0.445	2.730	74.852	1.998	0.103	1.668	1334.524	75.081

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	0.162	-0.027	0.017	61.005	126.312	0.210	-0.037	976.830
SD	0.071	0.047	0.001	0.149	0.216	0.001	0.028	8.090
NR.S.D.	43.609	174.204	8.911	0.244	0.171	0.492	76.598	0.828

	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	0.153	0.037	0.257	0.001	0.006	0.184	14.198	0.023
SD	0.006	0.005	0.081	0.002	0.004	0.004	0.007	0.001
NR.S.D.	3.966	12.993	31.478	136.153	67.864	2.360	0.052	4.955

	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	0.074	0.235	0.005	0.332
SD	0.073	0.007	0.001	0.150
NR.S.D.	98.772	2.996	17.388	45.073

HNF-SD-WM-DP-259, REV. 0

Identity 1: S97T001883_D Identity 2: 2ml-8ml 1:59 PM August 15, 1997

Mask name : OPTIMA

Sample Weight : 1.0000 Solution Volume : 5.00

On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr	Sr	Bf	Si	Al	Co	Cu	Li
	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
Mean	-0.007	0.070	-0.019	4.752	151.116	0.365	0.029	0.264
D.	0.003	0.000	0.006	0.017	0.209	0.013	0.000	0.002
R.S.D.	45.637	0.496	31.574	0.357	0.138	3.457	0.732	0.897
	Zn	Ni	La	Fe	Ca	Cr	Nd	U
	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
Mean	0.076	0.803	-0.002	1.616	0.684	0.265	0.049	0.090
D.	0.002	0.003	0.016	0.022	0.001	0.011	0.025	0.102
R.S.D.	1.984	0.340	764.188	1.362	0.092	4.208	50.941	113.502
	Ce	Sm	Ba	P	S	Mg	As	Na
	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
Mean	0.045	-0.117	0.012	59.053	121.549	0.177	0.007	964.781
D.	0.009	0.023	0.000	0.477	0.574	0.000	0.025	9.063
R.S.D.	20.471	19.883	0.728	0.807	0.472	0.000	350.888	0.939
	Mo	Ag	Pb	Ti	Cd	B	K	Mn
	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
Mean	0.140	0.025	0.217	-0.002	0.009	0.192	14.061	0.018
D.	0.006	0.002	0.037	0.001	0.003	0.002	0.148	0.001
R.S.D.	4.625	7.616	17.250	70.666	36.849	1.206	1.055	6.072
	Sb	V	Be	Tl				
	(ppm)	(ppm)	(ppm)	(ppm)				
Mean	0.042	0.229	0.001	0.266				
D.	0.111	0.005	0.001	0.120				
R.S.D.	266.840	2.052	56.850	45.046				

HNF-SD-WM-DP-259, REV. 0

Identity 1: S97T001883_S Identity 2: 2ml-Bal 2:01 PM August 15, 1997

Task name : OPTIMA

Sample Weight : 1.0000 Solution Volume : 5.00

On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	3.991	5.026	5.033	10.592	146.901	5.426	4.719	5.043
St.D.	0.008	0.003	0.039	0.034	0.136	0.018	0.009	0.046
% R.S.D.	0.212	0.051	0.785	0.319	0.092	0.331	0.193	0.918

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	4.911	5.792	4.982	6.422	5.039	5.042	5.181	9.270
St.D.	0.022	0.044	0.019	0.065	0.010	0.019	0.041	0.228
% R.S.D.	0.439	0.757	0.375	1.017	0.190	0.371	0.782	2.455

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	5.476	4.777	4.924	78.192	125.883	4.830	5.137	967.878
St.D.	0.037	0.035	0.004	0.320	0.571	0.012	0.055	8.245
% R.S.D.	0.673	0.740	0.091	0.409	0.453	0.245	1.077	0.852

	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	5.033	1.233	5.169	4.391	4.853	5.035	18.072	4.881
St.D.	0.032	0.007	0.049	0.009	0.033	0.020	0.088	0.024
% R.S.D.	0.628	0.605	0.943	0.201	0.686	0.400	0.484	0.496

	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	4.688	5.110	4.902	5.313
St.D.	0.091	0.020	0.012	0.137
% R.S.D.	1.933	0.384	0.244	2.583

HNF-SD-WM-DP-259, REV. 0

Identity 1: ICSA Identity 2: Quality Control 2:04 PM August 15, 1997

Task name : OPTIMA

Sample Weight : 1.0000 Solution Volume : 1.00

On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	0.001	0.003	-0.032	0.001	204.507	0.015	0.001	0.001
S.D.	0.001	0.000	0.015	0.002	0.674	0.000	0.000	0.000
% R.S.D.	58.959	3.637	45.459	279.608	0.330	1.348	27.840	19.730

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.008	0.000	-0.004	97.485	104.670	0.012	0.017	-0.155
S.D.	0.000	0.003	0.001	0.105	0.173	0.001	0.003	0.029
% R.S.D.	0.941	1955.565	19.754	0.108	0.165	11.338	18.736	18.714

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	0.082	-0.008	0.003	0.017	-0.074	104.736	-0.044	190.054
S.D.	0.015	0.007	0.000	0.002	0.006	0.387	0.001	1.075
% R.S.D.	18.313	82.368	3.420	13.207	8.432	0.369	1.360	0.565

	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	0.001	0.007	-0.011	-0.001	0.004	0.014	0.102	0.011
S.D.	0.001	0.001	0.001	0.000	0.000	0.001	0.016	0.001
% R.S.D.	100.536	9.173	7.212	60.734	10.960	7.878	15.332	8.322

	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	0.044	0.003	0.004	0.069
S.D.	0.015	0.000	0.000	0.014
% R.S.D.	35.165	9.528	11.535	20.182

HNF-SD-WM-DP-259, REV. 0

Identity 1: ICSAB Identity 2: Quality Control 2:06 PM August 15, 1997

Mask name: OPTIMA

Sample Weight: 1.0000 Solution Volume: 1.00

On-Peak Integrations: 3 Off-Peak Integrations: 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	-0.005	0.003	-0.043	0.002	203.400	0.525	0.484	0.919
SD	0.000	0.000	0.005	0.001	0.333	0.000	0.001	0.004
R.S.D.	8.799	1.468	11.439	30.947	0.164	0.044	0.194	0.429

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	1.034	1.015	0.002	98.811	104.044	0.524	0.012	-0.077
SD	0.001	0.003	0.001	0.218	0.121	0.004	0.008	0.014
R.S.D.	0.073	0.302	45.785	0.220	0.116	0.735	65.160	18.313

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	0.063	0.008	0.501	0.042	-0.062	105.633	-0.020	185.680
SD	0.005	0.006	0.001	0.008	0.011	0.087	0.009	0.665
R.S.D.	8.383	76.056	0.156	20.265	17.365	0.082	45.338	0.358

	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	0.004	1.086	1.041	-0.000	1.023	0.015	0.170	0.523
SD	0.001	0.001	0.019	0.000	0.003	0.001	0.013	0.000
R.S.D.	19.118	0.073	1.834	32.592	0.263	4.130	7.452	0.068

	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	0.007	0.506	0.502	0.100
SD	0.014	0.002	0.001	0.016
R.S.D.	205.264	0.318	0.188	15.735

HNF-SD-WM-DP-259, REV. 0

Identity 1: CCV Identity 2: Quality Control 2:09 PM August 15, 1997
 Task name : OPTIMA
 Sample Weight : 1.0000 Solution Volume : 1.00
 Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
mean	4.996	5.078	5.198	4.907	5.107	5.308	5.192	4.825
D.	0.002	0.006	0.016	0.012	0.017	0.025	0.007	0.015
R.S.D.	0.047	0.112	0.316	0.254	0.331	0.478	0.143	0.305
	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
mean	5.398	5.095	5.009	5.043	4.765	5.069	5.090	9.729
D.	0.010	0.017	0.017	0.020	0.004	0.021	0.033	0.010
R.S.D.	0.194	0.330	0.332	0.395	0.083	0.405	0.658	0.100
	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
mean	5.134	5.063	5.006	5.431	5.141	4.979	5.303	5.188
D.	0.018	0.006	0.002	0.062	0.026	0.015	0.025	0.017
R.S.D.	0.357	0.123	0.034	1.141	0.503	0.310	0.478	0.335
	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
mean	5.250	5.236	4.986	4.924	5.140	5.067	5.091	5.105
D.	0.017	0.005	0.060	0.009	0.016	0.008	0.033	0.007
R.S.D.	0.316	0.099	1.197	0.176	0.310	0.161	0.639	0.146
	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)				
mean	4.845	5.198	5.138	5.098				
D.	0.016	0.007	0.005	0.025				
R.S.D.	0.330	0.132	0.089	0.489				

HNF-SD-WM-DP-259, REV. 0

Identity 1: CCB Identity 2: Quality Control

2:11 PM August 15, 1997

Task name : OPTIMA

Sample Weight : 1.0000 Solution Volume : 1.00

On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr	Sr	Bi	Si	Al	Co	Cu	Li
	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
Mean	-0.001	0.001	0.008	-0.005	-0.003	-0.000	0.001	0.001
S.D.	0.002	0.001	0.005	0.006	0.013	0.002	0.001	0.001
% R.S.D.	200.008	101.368	61.607	109.366	461.058	21696.542	175.224	150.030
	Zn	Ni	La	Fe	Ca	Cr	Nd	U
	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
Mean	0.001	-0.001	0.002	0.003	0.005	0.003	-0.001	-0.058
S.D.	0.001	0.002	0.004	0.004	0.003	0.001	0.005	0.073
% R.S.D.	101.412	318.048	153.851	121.171	57.411	27.807	835.609	126.771
	Ce	Sm	Ba	P	S	Mg	As	Na
	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
Mean	-0.012	0.010	0.001	-0.015	-0.006	0.004	-0.001	0.028
S.D.	0.019	0.014	0.001	0.011	0.003	0.003	0.002	0.010
% R.S.D.	166.490	138.129	127.676	70.152	52.265	73.570	138.075	34.687
	Mo	Ag	Pb	Ti	Cd	B	K	Mn
	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
Mean	0.001	0.003	-0.029	0.000	-0.000	0.005	0.024	0.001
S.D.	0.002	0.002	0.005	0.001	0.002	0.002	0.022	0.000
% R.S.D.	217.500	59.098	17.895	212.285	762.079	41.338	89.849	59.584
	Sb	V	Be	Tl				
	(ppm)	(ppm)	(ppm)	(ppm)				
Mean	0.024	0.001	0.001	0.070				
S.D.	0.043	0.002	0.001	0.043				
% R.S.D.	180.860	207.582	118.936	60.824				

LABCORE Completed Worklist Report for Worklist# 19733

Analyst: slh

Instrument: CARB2

Book# TIC 25N12B
TOC 26N12C

Method: LA3A2-100 Rev/Mod E-0

Worklist Comment: BY-109 TIC/TOC. RCI

Seq Type	Sample#	R A	Test	Matrix	Actual	Found	DL or Yield	Unit
1 BLNK	0	0	@TICTOCI TIC-02	SOLID	1	4.00E+0	4.000	ug/g
1 BLNK	0	0	@TICTOCI TOC-02	SOLID	1	2.00E-1	0.200	ug/g
2 STD	0	0	@TICTOCI TIC-02	SOLID	6.02E+02	5.84E+2	97.010 % Recovery	
2 STD	0	0	@TICTOCI TOC-02	SOLID	3.00E+03	2.75E+3	91.667 % Recovery	
3 SAMPLE	S97T001344	0	@TICTOCI TIC-02	SOLID	N/A	3.56E+03	5.000	ug/g
3 SAMPLE	S97T001344	0	@TICTOCI TOC-02	SOLID	N/A	6.04E+03	40.000	ug/g
4 DUP	S97T001344	0	@TICTOCI TIC-02	SOLID	3.56E+3	3.78E+2	5.995	RPD
4 DUP	S97T001344	0	@TICTOCI TOC-02	SOLID	6.04E+3	6.20E+3	2.614	RPD
5 SPK	S97T001344	0	@TICTOCI TIC-02	SOLID	1.00E+02	9.37E+01	93.700 % Recovery	
5 SPK	S97T001344	0	@TICTOCI TOC-02	SOLID	1.00E+02	1.12E+02	112.000 % Recovery	
6 SAMPLE	S97T001346	0	@TICTOCI TIC-02	SOLID	N/A	3.39E+03	5.000	ug/g
6 SAMPLE	S97T001346	0	@TICTOCI TOC-02	SOLID	N/A	9.23E+03	40.000	ug/g
7 DUP	S97T001346	0	@TICTOCI TIC-02	SOLID	3.39E+3	2.88E+3	16.268	RPD
7 DUP	S97T001346	0	@TICTOCI TOC-02	SOLID	9.23E+3	1.08E+4	15.676	RPD
8 SAMPLE	S97T001486	0	@TICTOCI TIC-02	SOLID	N/A	5.04E+03	5.000	ug/g
8 SAMPLE	S97T001486	0	@TICTOCI TOC-02	SOLID	N/A	7.53E+03	40.000	ug/g
9 DUP	S97T001486	0	@TICTOCI TIC-02	SOLID	5.04E+3	5.13E+3	1.770	RPD
9 DUP	S97T001486	0	@TICTOCI TOC-02	SOLID	7.53E+3	7.43E+3	1.337	RPD

Final page for worklist# 19733

Analyst Signature

Date

Analyst Signature

Date

Reviewer Signature

Date

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

LABCORE Data Entry Template for Worklist# 19733

Analyst: _____ Instrument: CARB2 _____ Book# _____

Method: LA-342-100 Rev/Mod _____

Worklist Comment: BY-109 TICTOC. RCJ

S Type	Sample#	R A	Test	Matrix	Group#	Project
1 BLNK			@TICTOC1	SOLID		
2 STD			@TICTOC1	SOLID		
3 SAMPLE	S97T001344 0		@TICTOC1	SOLID	97000412	BY-109 (P)
	Analytes Requested: TIC-02 , TOC-02					
4 DUP	S97T001344 0		@TICTOC1	SOLID		
5 SPK	S97T001344 0		@TICTOC1	SOLID		
6 SAMPLE	S97T001346 0		@TICTOC1	SOLID	97000412	BY-109 (P)
	Analytes Requested: TIC-02 , TOC-02					
7 DUP	S97T001346 0		@TICTOC1	SOLID		
8 SAMPLE	S97T001486 0		@TICTOC1	SOLID	97000411	BY-109 (P)
	Analytes Requested: TIC-02 , TOC-02					
9 DUP	S97T001486 0		@TICTOC1	SOLID		

Final page for worklist # 19733

See ATTACHED

Analyst Signature _____ Date _____

Analyst Signature _____ Date _____

Data Entry Comments:

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

LABCORE Data Entry Template for Worklist# 19733

Analyst: SLH Instrument: CARB2 _____ Book# TIC 25N12-B
TOC 26N12-C

Method: LA-342-100 Rev/Mod _____

Worklist Comment: BY-109 TICTOC. RCJ

S Type	Sample#	R A	Test	Matrix	Group#	Project
1 BLNK			@TICTOC1	SOLID		
2 STD			@TICTOC1	SOLID		
3 SAMPLE	S97T001344 0		@TICTOC1	SOLID	97000412	BY-109 (P)
	Analytes Requested: TIC-02 , TOC-02					
4 DUP	S97T001344 0		@TICTOC1	SOLID		
5 SPK	S97T001344 0		@TICTOC1	SOLID		
6 SAMPLE	S97T001346 0		@TICTOC1	SOLID	97000412	BY-109 (P)
	Analytes Requested: TIC-02 , TOC-02					
7 DUP	S97T001346 0		@TICTOC1	SOLID		

Final page for worklist # 19733

Sandra L. Hood Boatright
Analyst Signature Date
8-14-97

Analyst Signature Date

Data Entry Comments:

S97T01486 added to the WL from 19734

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: STD 2

Date: 08/14/97

Time: 10:04:24

Sample Size = 1000 uL
Dil Factor = 1
Blank ID # =
Blank Value = .32 ug/minute C

Analyst : SL HOOD
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading ==	==== Analysis Time ==	==== Coulometer ==	==== % Difference ==
1	0.51	2.70	0.00
2	1.01	61.20	95.59
3	1.51	195.00	68.62
4	2.00	327.40	40.44
5	2.50	424.30	22.84
6	3.00	493.00	13.94
7	3.50	536.50	8.11
8	4.00	559.20	4.06
9	4.50	571.20	2.10
10	5.00	577.10	1.02
11	5.50	580.40	0.57
12	6.00	582.30	0.33
13	6.50	583.30	0.17
14	7.00	584.30	0.17
15	7.50	585.00	0.12
16	8.00	585.40	0.07
17	8.50	585.80	0.07
18	9.00	586.20	0.07
19	9.50	586.60	0.07
20	10.00	587.10	0.09
21	10.50	587.40	0.05
22	11.00	587.80	0.07

USER INPUT BLANK VALUE

BLANK VALUE = 3.519043 micrograms carbon

BLANK FACTOR = 3.519043 / 10.99701 = +3.2E-01 ug/min Carbon

SAMPLE RESULTS:

(587.8 - 3.519941) (1)/(1000) = +5.843E-01 g/L Carbon
(587.8 - 3.519941) (1)/(1000) (12) = +4.869E-02 Molar Carbon

Sample Run By:

SL HOOD Boatright
SL HOOD

00002

SIGNATURE ABOVE REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 113 TO 143

SS 1ml
25012-B

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: STD

Date: 08/14/97

Time: 10:18:09

Sample Size = 200 uL

Dil Factor = 1

Blank ID # =

Blank Value = 1.99 ug/minute C

Analyst : SL HOOD

Min Readings = 22

Max Readings = 22

% Difference = 10

== Reading ==	==== Analysis Time ==	==== Coulometer ==	==== % Difference ==
1	0.51	0.20	0.00
2	1.01	0.70	71.43
3	1.50	7.10	90.14
4	2.00	44.20	83.94
5	2.50	116.10	61.93
6	3.00	218.90	46.96
7	3.50	336.50	34.95
8	4.00	431.90	22.09
9	4.50	493.70	12.52
10	5.00	530.00	6.85
11	5.50	549.20	3.50
12	6.00	558.00	1.58
13	6.50	562.40	0.78
14	7.00	565.30	0.51
15	7.50	567.10	0.32
16	8.00	568.40	0.23
17	8.50	569.00	0.11
18	9.00	569.80	0.14
19	9.50	570.30	0.09
20	10.00	570.80	0.09
21	10.50	571.30	0.09
22	11.00	571.70	0.07

USER INPUT BLANK VALUE

BLANK VALUE = 21.88405 micrograms carbon

BLANK FACTOR = 21.88405 / 10.99701 = +2.0E+00 ug/min Carbon

SAMPLE RESULTS:

(571.7 - 21.88575) (1)/(200) = +2.749E+00 g/L Carbon
 (571.7 - 21.88575) (1)/(200) (12) = +2.291E-01 Molar Carbon

<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!>>>>

Sample Run By:

SL HOOD

00002

SS. 200ml
26N12-e

HNF-SD-WM-DP-259, REV.0

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0
<<< BLANK ANALYSIS >>>

Sample: BASE 2

Date: 08/14/97

Time: 09:15:33

Sample Size = 1 uL
Dil Factor = 1
Blank ID # = BASE 2
Blank Value = N/A

Analyst : SL HOOD
Min Readings = 22
Max Readings = 22
% Difference = 10

Reading	Analysis Time	Coulometer	% Difference
1	0.51	0.00	0.00
2	1.01	0.20	100.00
3	1.51	0.30	33.33
4	2.01	0.60	50.00
5	2.51	0.80	25.00
6	3.00	1.00	20.00
7	3.50	1.20	16.67
8	4.00	1.40	14.29
9	4.50	1.60	12.50
10	5.00	1.70	5.88
11	5.50	1.80	5.56
12	6.00	2.00	10.00
13	6.50	2.20	9.09
14	7.00	2.30	4.35
15	7.50	2.50	8.00
16	8.00	2.50	0.00
17	8.50	2.80	10.71
18	9.00	3.00	6.67
19	9.50	3.00	0.00
20	10.00	3.30	9.09
21	10.50	3.40	2.94
22	11.00	3.50	2.86

BLANK VALUE = 3.5 micrograms carbon
BLANK FACTOR = 3.5 / 10.99884 =

+3.2E-01 ug/min Carbon

Sample Run By:

SL HOOD

00002

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT

TICTOC REV 2.0

<<< BLANK ANALYSIS >>>

Sample: BASE 2

Date: 08/14/97

Time: 09:29:08

Sample Size = 1 uL

Dil Factor = 1

Blank ID # = BASE 2

Blank Value = N/A

Analyst : SL HOOD

Min Readings = 22

Max Readings = 22

% Difference = 10

== Reading ==	==== Analysis Time ==	==== Coulometer ==	==== % Difference ==
1	0.51	0.00	0.00
2	1.01	0.20	100.00
3	1.50	1.90	89.47
4	2.00	5.50	65.45
5	2.50	9.30	40.86
6	3.00	12.60	26.19
7	3.50	15.00	16.00
8	4.00	16.50	9.09
9	4.50	17.40	5.17
10	5.00	18.10	3.87
11	5.50	18.40	1.63
12	6.00	19.00	3.16
13	6.50	19.40	2.06
14	7.00	19.70	1.52
15	7.50	20.20	2.48
16	8.00	20.40	0.98
17	8.50	20.60	0.97
18	9.00	21.00	1.90
19	9.50	21.20	0.94
20	10.00	21.40	0.93
21	10.50	21.80	1.83
22	11.00	21.90	0.46

BLANK VALUE = 21.9 micrograms carbon

BLANK FACTOR = 21.9 / 10.99701 =

+1.99E+00 ug/min Carbon

<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!>>>>

Sample Run By:

SL HOOD

00002

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: BLK 2

Date: 08/14/97

Time: 10:30:34

Sample Size = 1 uL
 Dil Factor = 1
 Blank ID # =
 Blank Value = .32 ug/minute C

Analyst : SL HOOD
 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	1.50	1.40	57.14
4	2.00	2.10	33.33
5	2.50	2.60	19.23
6	3.00	3.20	18.75
7	3.50	3.50	8.57
8	4.00	3.80	7.89
9	4.50	4.10	7.32
10	5.00	4.40	6.82
11	5.50	4.60	4.35
12	6.00	4.90	6.12
13	6.50	5.10	3.92
14	7.00	5.40	5.56
15	7.50	5.70	5.26
16	8.00	5.90	3.39
17	8.50	6.20	4.84
18	9.00	6.50	4.62
19	9.50	6.60	1.52
20	10.00	6.90	4.35
21	10.50	7.20	4.17
22	11.00	7.50	4.00

USER INPUT BLANK VALUE

BLANK VALUE = 3.519043 micrograms carbon

BLANK FACTOR = 3.519043 / 10.99701 = +3.2E-01 ug/min Carbon

SAMPLE RESULTS:

(7.5 - 3.518711) (1)/(1) = +4.0E+00 g/L Carbon
 (7.5 - 3.518711) (1)/(1) (12) = +3.3E-01 Molar Carbon

Sample Run By:

SL HOOD

00002

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: BLK 2

Date: 08/14/97

Time: 10:42:54.

Sample Size = 1 uL

Dil Factor = 1

Blank ID # =

Blank Value = 1.99 ug/minute C

Analyst : SL HOOD

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	1.51	2.20	77.27
4	2.01	6.40	65.63
5	2.51	9.90	35.35
6	3.01	12.60	21.43
7	3.51	14.60	13.70
8	4.00	15.90	8.18
9	4.50	16.80	5.36
10	5.00	17.60	4.55
11	5.50	18.10	2.76
12	6.00	18.50	2.16
13	6.50	18.90	2.12
14	7.00	19.30	2.07
15	7.50	19.60	1.53
16	8.00	20.00	2.00
17	8.50	20.40	1.96
18	9.00	20.60	0.97
19	9.50	20.90	1.44
20	10.00	21.10	0.95
21	10.50	21.50	1.86
22	11.00	21.70	0.92

USER INPUT BLANK VALUE

BLANK VALUE = 21.88405 micrograms carbon

BLANK FACTOR = 21.88405 / 10.99701 = +2.0E+00 ug/min Carbon

SAMPLE RESULTS:

(21.7 - 21.88939) (1)/(1) = < 5.00 E-3 g/L Carbon
 (21.7 - 21.88939) (1)/(1) (12) = < 4.17 E-4 Molar Carbon
 <<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!>>>

Sample Run By:

SL HOOD

00002

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S97T01344

Date: 08/14/97

Time: 10:58:16

Sample Size = 1 uL

Dil Factor = 1

Blank ID # =

Blank Value = .32 ug/minute C

Analyst : SL HOOD

Min Readings = 22

Max Readings = 22

% Difference = 10

== Reading ==	Analysis Time ==	Coulometer ==	% Difference ==
1	0.51	0.30	0.00
2	1.00	0.70	57.14
3	1.50	1.80	61.11
4	2.00	12.60	85.71
5	2.50	47.80	73.64
6	3.00	107.50	55.53
7	3.50	178.30	39.71
8	4.00	240.20	25.77
9	4.50	288.00	16.60
10	5.00	321.00	10.28
11	5.50	343.10	6.44
12	6.00	356.70	3.81
13	6.50	367.10	2.83
14	7.00	374.40	1.95
15	7.50	380.70	1.65
16	8.00	385.20	1.17
17	8.50	389.10	1.00
18	9.00	392.70	0.92
19	9.50	395.70	0.76
20	10.00	398.60	0.73
21	10.50	401.20	0.65
22	11.00	403.60	0.59

USER INPUT BLANK VALUE

BLANK VALUE = 3.519043 micrograms carbon

BLANK FACTOR = 3.519043 / 10.99701 = +3.2E-01 ug/min Carbon

SAMPLE RESULTS:

(403.6 - 3.519043) (1)/(1)	=	+4.001E+02	g/L Carbon
(403.6 - 3.519043) (1)/(1) (12)	=	+3.334E+01	Molar Carbon

Sample Run By:

SL HOOD

00002

55 .1123g

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S97T01344

Date: 08/14/97

Time: 12:19:25

Sample Size = 1 uL

Dil Factor = 1

Blank ID # =

Blank Value = 1.99 ug/minute C

Analyst : SL HOOD

Min Readings = 22

Max Readings = 22

% Difference = 10

== Reading ==	Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	1.80	0.00
2	1.01	3.50	48.57
3	1.51	39.30	91.09
4	2.00	213.30	81.58
5	2.50	385.90	44.73
6	3.00	495.90	22.18
7	3.50	569.50	12.92
8	4.00	616.10	7.56
9	4.50	645.10	4.50
10	5.00	661.00	2.41
11	5.50	671.80	1.61
12	6.00	678.80	1.03
13	6.50	683.40	0.67
14	7.00	686.80	0.50
15	7.50	689.60	0.41
16	8.00	691.90	0.33
17	8.50	694.00	0.30
18	9.00	695.70	0.24
19	9.50	697.00	0.19
20	10.00	698.40	0.20
21	10.50	699.80	0.20
22	11.00	700.60	0.11

USER INPUT BLANK VALUE

BLANK VALUE = 21.88405 micrograms carbon

BLANK FACTOR = 21.88405 / 10.99701 = +2.0E+00 ug/min Carbon

SAMPLE RESULTS:

(700.6 - 21.88405) (1)/(1) = +6.787E+02 g/L Carbon
 (700.6 - 21.88405) (1)/(1) (12) = +5.656E+01 Molar Carbon
 <<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!>>>>

Sample Run By:

SL HOOD

00002

55 . 1123g

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S97T01344 DUP Date: 08/14/97 Time: 12:36:50

Sample Size = 1 uL Analyst : SL HOOD
Dil Factor = 1 Min Readings = 22
Blank ID # = Max Readings = 22
Blank Value = .32 ug/minute C % Difference = 10

== Reading ==	Analysis Time ==	Coulometer ==	% Difference ==
1	0.51	0.30	0.00
2	1.01	0.60	50.00
3	1.51	1.80	66.67
4	2.00	16.00	88.75
5	2.50	55.70	71.27
6	3.00	117.30	52.51
7	3.50	185.70	36.83
8	4.00	243.90	23.86
9	4.50	290.20	15.95
10	5.00	319.80	9.26
11	5.50	340.00	5.94
12	6.00	354.00	3.95
13	6.50	364.30	2.83
14	7.00	371.80	2.02
15	7.50	378.40	1.74
16	8.00	383.80	1.41
17	8.50	387.80	1.03
18	9.00	391.90	1.05
19	9.50	395.70	0.96
20	10.00	399.40	0.93
21	10.50	401.40	0.50
22	11.00	404.20	0.69

USER INPUT BLANK VALUE

BLANK VALUE = 3.519043 micrograms carbon

BLANK FACTOR = 3.519043 / 10.99701 = +3.2E-01 ug/min Carbon

SAMPLE RESULTS:

(404.2 - 3.519043) (1)/(1) = +4.007E+02 g/L Carbon
(404.2 - 3.519043) (1)/(1) (12) = +3.339E+01 Molar Carbon

Sample Run By:

SL HOOD

00002

55 .10603

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S97T01344 DUP Date: 08/14/97 Time: 12:51:13

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 1.99 ug/minute C

Analyst : SL HOOD
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading ==	==== Analysis Time ==	==== Coulometer ==	==== % Difference ==
1	0.51	1.40	0.00
2	1.01	3.10	54.84
3	1.51	17.50	82.29
4	2.00	97.10	81.98
5	2.51	219.50	55.76
6	3.01	333.50	34.18
7	3.51	427.90	22.06
8	4.01	505.40	15.33
9	4.50	563.50	10.31
10	5.00	602.00	6.40
11	5.50	625.30	3.73
12	6.00	641.70	2.56
13	6.50	651.50	1.50
14	7.00	657.70	0.94
15	7.50	662.70	0.75
16	8.00	667.10	0.66
17	8.50	669.50	0.36
18	9.00	672.10	0.39
19	9.50	674.40	0.34
20	10.00	676.40	0.30
21	10.50	677.70	0.19
22	11.00	679.30	0.24

USER INPUT BLANK VALUE

BLANK VALUE = 21.88405 micrograms carbon

BLANK FACTOR = 21.88405 / 10.99701 = +2.0E+00 ug/min Carbon

SAMPLE RESULTS:

(679.3 - 21.88769) (1)/(1) = +6.574E+02 g/L Carbon
(679.3 - 21.88769) (1)/(1) (12) = +5.478E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!>>>>

Sample Run By:

SL HOOD

00002

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S97T01344 SPK Date: 08/14/97 Time: 13:06:03

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .32 ug/minute C

Analyst : SL HOOD
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading ==	Analysis Time ==	Coulometer ==	% Difference ==
1	0.51	1.40	0.00
2	1.00	2.50	44.00
3	1.50	29.80	91.61
4	2.00	117.70	74.68
5	2.50	198.40	40.68
6	3.00	259.50	23.55
7	3.50	309.60	16.18
8	4.00	346.30	10.60
9	4.50	372.90	7.13
10	5.00	392.50	4.99
11	5.50	406.20	3.37
12	6.00	418.20	2.87
13	6.50	430.50	2.86
14	7.00	446.00	3.48
15	7.50	471.10	5.33
16	8.00	504.90	6.69
17	8.50	543.50	7.10
18	9.00	584.00	6.93
19	9.50	625.40	6.62
20	10.00	667.20	6.26
21	10.50	708.40	5.82
22	11.00	749.70	5.51

USER INPUT BLANK VALUE

BLANK VALUE = 3.519043 micrograms carbon

BLANK FACTOR = 3.519043 / 10.99701 = +3.2E-01 ug/min Carbon

SAMPLE RESULTS:

(749.7 - 3.519043) (1) / (1) = +7.462E+02 g/L Carbon
(749.7 - 3.519043) (1) / (1) (12) = +6.218E+01 Molar Carbon

Sample Run By:

SL HOOD

00002

SS .1301g

+ spike 500ml 25N12-B

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S97T01344 SPK

Date: 08/14/97

Time: 13:18:22

Sample Size = 1 uL

Dil Factor = 1

Blank ID # =

Blank Value = 1.99 ug/minute C

Analyst : SL HOOD

Min Readings = 22

Max Readings = 22

% Difference = 10

== Reading ==	==== Analysis Time ==	==== Coulometer ==	==== % Difference ==
1	0.51	37.70	0.00
2	1.01	76.00	50.39
3	1.50	114.10	33.39
4	2.00	153.20	25.52
5	2.50	193.70	20.91
6	3.00	236.60	18.13
7	3.50	298.00	20.60
8	4.00	424.10	29.73
9	4.50	532.90	20.42
10	5.00	606.10	12.08
11	5.50	658.10	7.90
12	6.00	702.80	6.36
13	6.50	748.00	6.04
14	7.00	793.10	5.69
15	7.50	838.10	5.37
16	8.00	883.30	5.12
17	8.50	928.40	4.86
18	9.00	973.30	4.61
19	9.50	1017.30	4.33
20	10.00	1061.50	4.16
21	10.50	1105.60	3.99
22	11.00	1147.10	3.62

USER INPUT BLANK VALUE

BLANK VALUE = 21.88405 micrograms carbon

BLANK FACTOR = 21.88405 / 10.99701 = +2.0E+00 ug/min Carbon

SAMPLE RESULTS:

(1147.1 - 21.88575) (1)/(1) = +1.1252E+03 g/L Carbon

(1147.1 - 21.88575) (1)/(1)(12) = +9.3768E+01 Molar Carbon

<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!>>>>

Sample Run By:

SL HOOD

00002

55.1301g

+ 1.000e spike
26/12-2

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S97T01346

Date: 08/14/97

Time: 13:45:43

Sample Size = 1 uL

Dil Factor = 1

Blank ID # =

Blank Value = .32 ug/minute C

Analyst : SL HOOD

Min Readings = 22

Max Readings = 22

% Difference = 10

== Reading ==== Analysis Time ==== Coulometer ==== % Difference ==

1	0.51	0.80	0.00
2	1.01	1.10	27.27
3	1.51	5.10	78.43
4	2.01	39.60	87.12
5	2.50	101.60	61.02
6	3.00	170.90	40.55
7	3.50	239.90	28.76
8	4.00	298.70	19.69
9	4.50	341.50	12.53
10	5.00	371.10	7.98
11	5.50	390.60	4.99
12	6.00	404.60	3.46
13	6.50	414.40	2.36
14	7.00	422.60	1.94
15	7.50	428.10	1.28
16	8.00	433.30	1.20
17	8.50	438.10	1.10
18	9.00	441.60	0.79
19	9.50	445.10	0.79
20	10.00	448.20	0.69
21	10.50	451.40	0.71
22	11.00	454.30	0.64

USER INPUT BLANK VALUE

BLANK VALUE = 3.519043 micrograms carbon

BLANK FACTOR = 3.519043 / 10.99701 = +3.2E-01 ug/min Carbon

SAMPLE RESULTS:

(454.3 - 3.519316) (1)/(1) = +4.508E+02 g/L Carbon
 (454.3 - 3.519316) (1)/(1) (12) = +3.757E+01 Molar Carbon

Sample Run By:

SL HOOD

00002

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S97T01346

Date: 08/14/97

Time: 13:59:02

Sample Size = 1 uL

Dil Factor = 1

Blank ID # =

Blank Value = 1.99 ug/minute C

Analyst : SL HOOD

Min Readings = 22

Max Readings = 22

% Difference = 10

== Reading ==	==== Analysis Time ==	==== Coulometer ==	==== % Difference ==
1	0.51	2.40	0.00
2	1.01	4.30	44.19
3	1.50	73.30	94.13
4	2.00	395.00	81.44
5	2.50	701.40	43.68
6	3.00	887.30	20.95
7	3.50	1009.40	12.10
8	4.00	1091.60	7.53
9	4.50	1144.40	4.61
10	5.00	1178.10	2.86
11	5.50	1197.30	1.60
12	6.00	1210.10	1.06
13	6.50	1218.50	0.69
14	7.00	1225.20	0.55
15	7.50	1230.10	0.40
16	8.00	1234.40	0.35
17	8.50	1237.40	0.24
18	9.00	1240.10	0.22
19	9.50	1243.20	0.25
20	10.00	1244.70	0.12
21	10.50	1247.10	0.19
22	11.00	1248.60	0.12

USER INPUT BLANK VALUE

BLANK VALUE = 21.88405 micrograms carbon

BLANK FACTOR = 21.88405 / 10.99701 = +2.0E+00 ug/min Carbon

SAMPLE RESULTS:

(1248.6 - 21.88405) (1)/(1) = +1.2267E+03 g/L Carbon
 (1248.6 - 21.88405) (1)/(1) (12) = +1.0223E+02 Molar Carbon
 <<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!>>>>

Sample Run By:

SL HOOD

00002

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S97T01346 DUP

Date: 08/14/97

Time: 14:13:34

Sample Size = 1 uL

Analyst : SL HOOD

Dil Factor = 1

Min Readings = 22

Blank ID # =

Max Readings = 22

Blank Value = .32 ug/minute C

% Difference = 10

== Reading ==	==== Analysis Time ==	==== Coulometer ==	==== % Difference ==
1	0.51	1.60	0.00
2	1.01	2.70	40.74
3	1.51	4.60	41.30
4	2.00	19.00	75.79
5	2.50	51.50	63.11
6	3.00	98.10	47.50
7	3.50	152.40	35.63
8	4.00	202.90	24.89
9	4.50	243.50	16.67
10	5.00	271.60	10.35
11	5.50	289.10	6.05
12	6.00	302.00	4.27
13	6.50	311.30	2.99
14	7.00	317.70	2.01
15	7.50	322.80	1.58
16	8.00	327.10	1.31
17	8.50	331.10	1.21
18	9.00	335.30	1.25
19	9.50	338.30	0.89
20	10.00	340.80	0.73
21	10.50	343.70	0.84
22	11.00	345.70	0.58

USER INPUT BLANK VALUE

BLANK VALUE = 3.519043 micrograms carbon

BLANK FACTOR = 3.519043 / 10.99701 =

+3.2E-01 ug/min Carbon

SAMPLE RESULTS:

(345.7 - 3.519355) (1)/(1) =

+3.422E+02 g/L Carbon

(345.7 - 3.519355) (1)/(1) (12) =

+2.852E+01 Molar Carbon

Sample Run By:

SL HOOD

00002

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S97T01346 DUP

Date: 08/14/97

Time: 14:30:49

Sample Size = 1 uL

Dil Factor = 1

Blank ID # =

Blank Value = 1.99 ug/minute C

Analyst : SL HOOD

Min Readings = 22

Max Readings = 22

% Difference = 10

== Reading ==	==== Analysis Time ==	==== Coulometer ==	==== % Difference ==
1	0.51	1.30	0.00
2	1.01	2.90	55.17
3	1.51	56.70	94.89
4	2.00	328.70	82.75
5	2.50	635.90	48.31
6	3.00	846.90	24.91
7	3.50	995.50	14.93
8	4.00	1099.70	9.48
9	4.50	1170.30	6.03
10	5.00	1216.40	3.79
11	5.50	1246.30	2.40
12	6.00	1263.50	1.36
13	6.50	1275.50	0.94
14	7.00	1283.90	0.65
15	7.50	1289.50	0.43
16	8.00	1294.60	0.39
17	8.50	1298.10	0.27
18	9.00	1301.50	0.26
19	9.50	1304.30	0.21
20	10.00	1307.00	0.21
21	10.50	1309.00	0.15
22	11.00	1311.00	0.15

USER INPUT BLANK VALUE

BLANK VALUE = 21.88405 micrograms carbon

BLANK FACTOR = 21.88405 / 10.99701 = +2.0E+00 ug/min Carbon

SAMPLE RESULTS:

(1311 - 21.88235) (1)/(1) = +1.2891E+03 g/L Carbon
 (1311 - 21.88235) (1)/(1) (12) = +1.0743E+02 Molar Carbon
 <<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!>>>>

Sample Run By:

SL HOOD

00002

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
 TICTOC REV 2.0

Sample: S97T01486

Date: 08/14/97

Time: 14:46:39

Sample Size = 1 uL

Dil Factor = 1

Blank ID # =

Blank Value = .32 ug/minute C

Analyst : SL HOOD

Min Readings = 22

Max Readings = 22

% Difference = 10

== Reading ==== Analysis Time ==== Coulometer ==== % Difference ==

1	0.51	1.10	0.00
2	1.00	1.90	42.11
3	1.50	13.10	85.50
4	2.00	87.40	85.01
5	2.50	217.80	59.87
6	3.00	350.40	37.84
7	3.50	457.60	23.43
8	4.00	535.10	14.48
9	4.50	590.10	9.32
10	5.00	627.30	5.93
11	5.50	652.40	3.85
12	6.00	669.60	2.57
13	6.50	682.50	1.89
14	7.00	691.70	1.33
15	7.50	700.80	1.30
16	8.00	707.40	0.93
17	8.50	714.70	1.02
18	9.00	720.60	0.82
19	9.50	727.60	0.96
20	10.00	735.60	1.09
21	10.50	745.20	1.29
22	11.00	759.40	1.87

USER INPUT BLANK VALUE

BLANK VALUE = 3.519043 micrograms carbon

BLANK FACTOR = 3.519043 / 10.99701 = +3.2E-01 ug/min Carbon

SAMPLE RESULTS:

(759.4 - 3.519043) (1)/(1)	=	+7.559E+02	g/L Carbon
(759.4 - 3.519043) (1)/(1) (12)	=	+6.299E+01	Molar Carbon

Sample Run By:

SL HOOD

00002

25 .1499g

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S97T01486

Date: 08/14/97

Time: 15:01:38

Sample Size = 1 uL

Analyst : SL HOOD

Dil Factor = 1

Min Readings = 22

Blank ID # =

Max Readings = 22

Blank Value = 1.99 ug/minute C

% Difference = 10

== Reading ==	==== Analysis Time ==	==== Coulometer ==	==== % Difference ==
1	0.51	25.40	0.00
2	1.00	50.60	49.80
3	1.50	76.00	33.42
4	2.00	113.90	33.27
5	2.50	271.40	58.03
6	3.00	426.50	36.37
7	3.50	550.80	22.57
8	4.00	643.20	14.37
9	4.50	710.20	9.43
10	5.00	757.10	6.19
11	5.50	795.10	4.78
12	6.00	830.00	4.20
13	6.50	863.30	3.86
14	7.00	896.50	3.70
15	7.50	929.30	3.53
16	8.00	961.40	3.34
17	8.50	993.20	3.20
18	9.00	1024.90	3.09
19	9.50	1056.70	3.01
20	10.00	1088.10	2.89
21	10.50	1119.20	2.78
22	11.00	1150.00	2.68

USER INPUT BLANK VALUE

BLANK VALUE = 21.88405 micrograms carbon

BLANK FACTOR = 21.88405 / 10.99701 = +2.0E+00 ug/min Carbon

SAMPLE RESULTS:

(1150 - 21.88405) (1)/(1) = +1.1281E+03 g/L Carbon

(1150 - 21.88405) (1)/(1) (12) = +9.4010E+01 Molar Carbon

<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!>>>>

Sample Run By:

SL HOOD

00002

SS .1499g

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S97T01486 DUP

Date: 08/14/97

Time: 15:48:46

Sample Size = 1 uL

Analyst : SL HOOD

Dil Factor = 1

Min Readings = 22

Blank ID # =

Max Readings = 22

Blank Value = .32 ug/minute C

% Difference = 10

== Reading ==	Analysis Time	Coulometer	% Difference ==
1	0.51	1.70	0.00
2	1.01	3.10	45.16
3	1.51	12.90	75.97
4	2.01	95.80	86.53
5	2.51	233.90	59.04
6	3.01	366.20	36.13
7	3.51	469.10	21.94
8	4.01	539.20	13.00
9	4.50	586.40	8.05
10	5.00	615.40	4.71
11	5.50	634.80	3.06
12	6.00	647.40	1.95
13	6.50	657.10	1.48
14	7.00	664.40	1.10
15	7.50	670.50	0.91
16	8.00	676.20	0.84
17	8.50	681.10	0.72
18	9.00	686.00	0.71
19	9.50	690.70	0.68
20	10.00	695.00	0.62
21	10.50	698.90	0.56
22	11.00	702.70	0.54

USER INPUT BLANK VALUE

BLANK VALUE = 3.519043 micrograms carbon

BLANK FACTOR = 3.519043 / 10.99701 = +3.2E-01 ug/min Carbon

SAMPLE RESULTS:

(702.7 - 3.519902) (1)/(1)	=	+6.992E+02	g/L Carbon
(702.7 - 3.519902) (1)/(1) (12)	=	+5.827E+01	Molar Carbon

Sample Run By:

SL HOOD

00002

SS .1364g

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV. 2.0

Sample: S97T01486 DUP

Date: 08/14/97

Time: 16:02:19

Sample Size = 1 uL

Analyst : SL HOOD

Dil Factor = 1

Min Readings = 22

Blank ID # =

Max Readings = 22

Blank Value = 1.99 ug/minute C

% Difference = 10

== Reading ==	==== Analysis Time ==	==== Coulometer ==	==== % Difference ==
1	0.51	2.40	0.00
2	1.01	5.00	52.00
3	1.51	72.50	93.10
4	2.00	310.00	76.61
5	2.50	534.80	42.03
6	3.00	694.10	22.95
7	3.50	809.70	14.28
8	4.00	886.20	8.63
9	4.50	936.00	5.32
10	5.00	967.20	3.23
11	5.50	986.30	1.94
12	6.00	998.00	1.17
13	6.50	1006.20	0.81
14	7.00	1012.60	0.63
15	7.50	1017.00	0.43
16	8.00	1021.00	0.39
17	8.50	1023.60	0.25
18	9.00	1026.60	0.29
19	9.50	1029.20	0.25
20	10.00	1031.10	0.18
21	10.50	1033.20	0.20
22	11.00	1034.70	0.14

USER INPUT BLANK VALUE

BLANK VALUE = 21.88405 micrograms carbon

BLANK FACTOR = 21.88405 / 10.99701 = +2.0E+00 ug/min Carbon

SAMPLE RESULTS:

(1034.7 - 21.88041) (1)/(1) = +1.0128E+03 g/L Carbon
 (1034.7 - 21.88041) (1)/(1) (12) = +8.4402E+01 Molar Carbon
 <<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!>>>>

Sample Run By:

SL HOOD

00002

SS .1364g

WORKBOOK PAGE: BLANK1

TIC/TOC : LA-342-100 (E-0)

SOLIDS

		TIC	TOC
Type	Sample Size in g (SS)	0.0000	0.0000
BLNK	Dilution Factor (DF)	1	1
Work List	µg of Carbon in Sample (C1)	7.5	21.7
19733	µg of Carbon from Baseline (C2)	3.5	21.9
Test Code			
@TICTOC1			
Matrix			
SOLID			
Batch Number			
97003870			
Rerun	µg of Carbon = C1-C2		
0			
Sample Prep			
N/A			
Sample #			
BLANK			
Instrument Code			
CARB2			
Prepared By			
RCJ			
Chemist			
RWS			
Analyst			
SLH			
Date Complete			
08/19/97			
Analysis Date			
08/14/97			
Analysis Time	Method Detection Limit in ug/g	TIC	TOC
		5	40
Sample Point	µg of Carbon	TIC	TOC
BY-109		4.00E+00	2.00E-01

Data Entered By:	RCJ	Date:	08/19/97
Signature of Chemist:	<i>Ren Schmitt</i>	Date:	8/21/97

BLANK.WB1 REV 1.0

342100ML

WORKBOOK PAGE: STD2

TIC/TOC : LA-342-100 (E-0)

LIQUIDS

Type	Sample Size in mL	(SS)	TIC	TOC
STD	Dilution Factor	(DF)	1.0000	0.2000
Worklist	Final Coulometer Reading in μg	(C1)	1	1
19733	μg of Carbon from Baseline	(C2)	587.8	571.7
Test Code	Standard Book Number		3.5	21.9
@TIC/TOC1	Standard Value ($\mu\text{g}/\text{mL}$)		25N12B	26N12C
			602	3000

Matrix
LIQUIDBatch Number
97003870Rerun
0Sample Prep
N/ASample #
STANDARDInstrument Code
CARB2Prepared By
RCJChemist
RWSAnalyst
SLHDate Complete
08/19/97Analysis Date
08/14/97

Analysis Time

Sample Point
BY-109QC Actual in $\mu\text{g}/\text{mL}$ = Standard Value ($\mu\text{g}/\text{mL}$)QC Found in $\mu\text{g}/\text{mL}$ = (C1 - C2) * DF / SSQC Found in $\mu\text{g}/\text{mL}$ for TIC = 5 if C1 < C2QC Found in $\mu\text{g}/\text{mL}$ for TOC = 40 if C1 < C2

% Recovery = QC Found / QC Actual * 100

	TIC	TOC
Method Detection Limit in $\mu\text{g}/\text{mL}$	5	40
QC Actual in $\mu\text{g}/\text{mL}$	6.02E+02	3.00E+03
QC Found in $\mu\text{g}/\text{mL}$	5.84E+02	2.75E+03
Percent Standard Recovery	97.1	91.6

Data Entered By:

Signature of Chemist:

STANDARD.WB1 REV 1.0

342100ML

RCJ

Date: 08/19/97

Date: 8/21/97

WORKBOOK PAGE: SAM3

TIC/TOC : LA-342-100 (E-0)

SOLIDS

			TIC	TOC
Type	Sample Size in g	(SS)	0.1123	0.1123
SAMPLE	Dilution Factor	(DF)	1	1
Work List	µg of Carbon in Sample	(C1)	403.6	700.6
19733	µg of Carbon from Baseline	(C2)	3.5	21.9
Test Code				
@TICTOC1				

Matrix:
SOLIDBatch Number
97003870Rerun
0

$\mu\text{g of Carbon/g} = (C1-C2) * DF / SS$
 $\mu\text{g of Carbon/g for TIC} = 5 \text{ if } C1 < C2$
 $\mu\text{g of Carbon/g for TOC} = 40 \text{ if } C1 < C2$

Sample Prep
N/ASample #
S97T001344Instrument Code
CARB2Prepared By
RCJChemist
RWSAnalyst
SLHDate Complete
08/19/97Analysis Date
08/14/97

Analysis Time

Method Detection Limit in ug/g

Sample Point
BY-109

µg of Carbon/g

TIC	TOC
5	40
3.56E+03	6.04E+03

Data Entered By:

RCJ

Date: 08/19/97

Signature of Chemist:

Rui Schneider

Date: 8/21/97

SAMPLE.WB1 REV 1.0

342100ML

WORKBOOK PAGE: DUP4

TIC/TOC : LA-342-100 (E-0)

SOLIDS

		TIC	TOC
Type	Sample Size in g (SS)	0.1060	0.1060
DUP	Dilution Factor (DF)	1	1
Work List	µg of Carbon in Sample (C1)	404.2	679.3
19733	µg of Carbon from Baseline (C2)	3.5	21.9
Test Code	Known µg of C from Original Sample	3.56E+3	6.04E+3
@TICTOC1			
Matrix			
SOLID			
Batch Number			
97003870			
Rerun	µg of Carbon/g = (C1-C2) * DF / SS		
0	µg of Carbon/g for TIC = 5 if C1 < C2		
Sample Prep	µg of Carbon/g for TOC = 40 if C1 < C2		
N/A			
Sample #			
S97T001344			
Instrument Code			
CARB2			
Prepared By			
RCJ			
Chemist			
RWS			
Analyst			
SLH			
Date Complete			
08/19/97			
Analysis Date			
08/19/97			
Analysis Time	Method Detection Limit in ug/g	TIC	TOC
		5	40
Sample Point	µg of Carbon/g	3.78E+03	6.20E+03
BY-109			

Data Entered By:	RCJ	Date:	08/19/97
Signature of Chemist:	<i>RWS</i>	Date:	8/21/97

SAMPLE.WB1 REV 1.0

342100ML

TIC/TOC : LA-342-100 (E-0)

SOLIDS

Type	Sample Vial Data	TIC	TOC
SPK	Sample Size in g (SS)	0.1123	0.1123
Work List	Final Coulometer Reading in µg (C1)	403.6	700.6
19733	Spiked Vial Data		
Test Code	Sample Size in g (SPK SS)	0.1301	0.1301
@TICTOC1	Amount of Spike Std. in mL (SPK VOL)	0.500	0.100
Matrix	Final Coulometer Reading in µg (C2)	749.7	1147.1
SOLID	Spike Book Number	25N12B	26N12C
Batch Number	Spike Standard Value in µg/mL (SPK CONC)	602	3000

97003870

Rerun

0

Sample Prep

N/A

Sample #

S97T001344

$$\text{Percent Spike Recovery} = (C2 - C1 * (\text{SPK SS}) / \text{SS}) / ((\text{SPK CONC}) * (\text{SPK VOL})) * 1$$

Instrument Code

CARB2

QC Actual in µg/mL = Spike Value (µg/mL)

QC Found in µg/mL = (Percent Spike Recovery) * (QC Actual) / 100

Prepared By

RCJ

Chemist

RWS

Analyst

SLH

Date Complete

08/19/97

Analysis Date

08/14/97

Analysis Time

	TIC	TOC
QC Actual in µg/mL	6.02E+02	3.00E+03
QC Found in µg/mL	5.64E+02	3.35E+03
Percent Spike Recovery	93.7	111.8

Sample Point

BY-109

Data Entered By:

RCJ

Date: 08/19/97

Signature of Chemist:

Date: 8/21/97

WORKBOOK PAGE: SAM6

TIC/TOC : LA-342-100 (E-0)

SOLIDS

Type	Sample Size in g (SS)	TIC	TOC
SAMPLE	Dilution Factor (DF)	1	1
Work List	µg of Carbon in Sample (C1)	454.3	1248.6
19733	µg of Carbon from Baseline (C2)	3.5	21.9
Test Code			
@TICTOC1			

Matrix
SOLIDBatch Number
97003870Rerun
0Sample Prep
N/ASample #
S97T001346Instrument Code
CARB2Prepared By
RCJChemist
RWSAnalyst
SLHDate Complete
08/19/97Analysis Date
08/14/97

Analysis Time

Sample Point

BY-109

µg of Carbon/g = (C1-C2) * DF / SS
 µg of Carbon/g for TIC = 5 if C1 < C2
 µg of Carbon/g for TOC = 40 if C1 < C2

Analysis Time	Method Detection Limit in ug/g	TIC	TOC
		5	40
Sample Point	µg of Carbon/g	3.39E+03	9.23E+03
BY-109			

Data Entered By:	RCJ	Date:	08/19/97
Signature of Chemist:	<i>RWS</i>	Date:	8/21/97

SAMPLE.WB1 REV 1.0

342100ML

WORKBOOK PAGE: DUP7

TIC/TOC : LA-342-100 (E-0)

SOLIDS

		TIC	TOC
Type	Sample Size in g (SS)	0.1189	0.1189
DUP	Dilution Factor (DF)	1	1
Work List	µg of Carbon in Sample (C1)	345.7	1311
19733	µg of Carbon from Baseline (C2)	3.5	21.9
Test Code	Known µg of C from Original Sample	3.39E+3	9.23E+3
@TIC/TOC1			

Matrix
SOLID
Batch Number
97003870
Rerun
0
Sample Prep
N/A
Sample #
S97T001346
Instrument Code
CARB2
Prepared By
RCJ
Chemist
RWS
Analyst
SLH
Date Complete
08/19/97
Analysis Date
08/14/97
Analysis Time
BY-109

$\mu\text{g of Carbon/g} = (C1-C2) * DF / SS$
 $\mu\text{g of Carbon/g for TIC} = 5 \text{ if } C1 < C2$
 $\mu\text{g of Carbon/g for TOC} = 40 \text{ if } C1 < C2$

		TIC	TOC
Analysis Time	Method Detection Limit in ug/g	5	40
Sample Point	µg of Carbon/g	2.88E+03	1.08E+04
BY-109			

Data Entered By:	RCJ	Date:	08/19/97
Signature of Chemist:	<i>R. W. Schroeder</i>	Date:	8/21/97

SAMPLE.WB1 REV 1.0

342100ML

WORKBOOK PAGE: SAM8

TIC/TOC : LA-342-100 (E-0)

SOLIDS

		TIC	TOC
Type	Sample Size in g (SS)	0.1499	0.1499
SAMPLE	Dilution Factor (DF)	1	1
Work List	µg of Carbon in Sample (C1)	759.4	1150
19733	µg of Carbon from Baseline (C2)	3.5	21.9
Test Code			
@TICTOC1			

Matrix
SOLID
Batch Number
97003870
Rerun
0
Sample Prep
N/A
Sample #
S97T001486
Instrument Code
CARB2
Prepared By
RCJ
Chemist
RWS
Analyst
SLH
Date Complete
08/19/97
Analysis Date
08/14/97
Analysis Time
Sample Point
BY-109

$\mu\text{g of Carbon/g} = (C1-C2) * DF / SS$
 $\mu\text{g of Carbon/g for TIC} = 5 \text{ if } C1 < C2$
 $\mu\text{g of Carbon/g for TOC} = 40 \text{ if } C1 < C2$

		TIC	TOC
Analysis Time	Method Detection Limit in ug/g	5	40
Sample Point	µg of Carbon/g	5.04E+03	7.53E+03
BY-109			

Data Entered By:	RCJ	Date:	08/19/97
Signature of Chemist:	<i>RW Schmitt</i>	Date:	8/21/97

SAMPLE.WB1 REV 1.0

342100ML

WORKBOOK PAGE: DUP9

TIC/TOC : LA-342-100 (E-0)

SOLIDS

		TIC	TOC
Type	Sample Size in g (SS)	0.1364	0.1364
DUP	Dilution Factor (DF)	1	1
Work List	µg of Carbon in Sample (C1)	702.7	1034.7
19733	µg of Carbon from Baseline (C2)	3.5	21.9
Test Code	Known µg of C from Original Sample	5.04E+3	7.53E+3
@TIC/TOC1			

Matrix
SOLIDBatch Number
97003870Rerun
0Sample Prep
N/ASample #
S97T001486Instrument Code
CARB2Prepared By
RCJChemist
RWSAnalyst
SLHDate Complete
08/19/97Analysis Date
08/14/97

Analysis Time

Sample Point
BY-109

$\mu\text{g of Carbon/g} = (C1-C2) * DF / SS$
 $\mu\text{g of Carbon/g for TIC} = 5 \text{ if } C1 < C2$
 $\mu\text{g of Carbon/g for TOC} = 40 \text{ if } C1 < C2$

	TIC	TOC
Method Detection Limit in ug/g	5	40
µg of Carbon/g	5.13E+03	7.43E+03

Data Entered By:

RCJ

Date: 08/19/97

Signature of Chemist:

Date: 8/21/97

SAMPLE.WB1 REV 1.0

342100ML

LABCORE Completed Worklist Report for Worklist# 19734

Analyst: slh

Instrument: CARB1

Book# 25N12B TIC
26N12C TOC

Method: LA342-100 Rev/Mod E-O

Worklist Comment: BY-109 TIC/TOC. RCJ

Seq Type	Sample#	R A	Test	Matrix	Actual	Found	DL or Yield	Unit
1 BLNK	0		@TICTOC1 TIC-02	SOLID	1	8.00E-1	0.800	ug/g
1 BLNK	0		@TICTOC1 TOC-02	SOLID	1	1.25E+1	12.500	ug/g
2 STD	0		@TICTOC1 TIC-02	SOLID	6.02E+02	5.70E+2	94.684	% Recovery
2 STD	0		@TICTOC1 TOC-02	SOLID	3.00E+03	2.82E+3	94.000	% Recovery
3 SAMPLE	S97T001484	0	@TICTOC1 TIC-02	SOLID	N/A	6.40E+03	5.000	ug/g
3 SAMPLE	S97T001484	0	@TICTOC1 TOC-02	SOLID	N/A	1.02E+04	40.000	ug/g
4 DUP	S97T001484	0	@TICTOC1 TIC-02	SOLID	6.40E+3	5.43E+3	16.399	RPD
4 DUP	S97T001484	0	@TICTOC1 TOC-02	SOLID	1.02E+4	1.03E+4	0.976	RPD
5 SPK	S97T001484	0	@TICTOC1 TIC-02	SOLID	1.00E+02	7.83E+01	78.300	% Recovery
5 SPK	S97T001484	0	@TICTOC1 TOC-02	SOLID	1.00E+02	9.29E+01	92.900	% Recovery

Final page for worklist# 19734

Analyst Signature

Date

Analyst Signature

Date

Reviewer Signature

Date

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

LABCORE Data Entry Template for Worklist# 19734

Analyst: _____ Instrument: CARB2 _____ Book# _____

Method: LA-342-100 Rev/Mod _____

Worklist Comment: BY-109 TICTOC. RCJ

S	Type	Sample#	R	A	Test	Matrix	Group#	Project
1	BLNK				@TICTOC1	SOLID		
2	STD				@TICTOC1	SOLID		
3	SAMPLE	S97T001484	0		@TICTOC1	SOLID	97000411	BY-109 (P)
		Analytes Requested: TIC-02 , TOC-02						
4	DUP	S97T001484	0		@TICTOC1	SOLID		
5	SPK	S97T001484	0		@TICTOC1	SOLID		

Final page for worklist # 19734

Analyst Signature _____ Date _____

Analyst Signature _____ Date _____

Data Entry Comments:

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

LABCORE Data Entry Template for Worklist# 19734

Analyst: SLH Instrument: CARB2 Book# TR 25N12-B

Method: LA-342-100 Rev/Mod _____
TOC 26N12-C

Worklist Comment: BY-109 TICTOC. RCJ

S	Type	Sample#	R	A	Test	Matrix	Group#	Project
1	BLNK				@TICTOC1	SOLID		
2	STD				@TICTOC1	SOLID		
3	SAMPLE	S97T001484 0			@TICTOC1	SOLID	97000411	BY-109 (P)
		Analytes Requested: TIC-02 , TOC-02						
4	DUP	S97T001484 0			@TICTOC1	SOLID		
5	SPK	S97T001484 0			@TICTOC1	SOLID		
6	SAMPLE	S97T001486 0			@TICTOC1	SOLID	97000411	BY-109 (P)
		Analytes Requested: TIC-02 , TOC-02						
7	DUP	S97T001486 0			@TICTOC1	SOLID		

Final page for worklist # 19734

Sandra J Hood Boatright
Analyst Signature Date
8-14-97

Analyst Signature Date

Data Entry Comments:

sample S97T01486 added to WL #19733

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: STD 1

Date: 08/14/97

Time: 12:55:01

Sample Size = 1000 uL
 Dil Factor = 1
 Blank ID # =
 Blank Value = .79 ug/minute C

Analyst : SL HOOD
 Min Readings = 22
 Max Readings = 22
 % Difference = 10

== Reading ==	==== Analysis Time ==	==== Coulometer ==	==== % Difference ==
1	0.51	0.10	0.00
2	1.01	10.70	99.07
3	1.51	93.30	88.53
4	2.00	233.90	60.11
5	2.50	358.50	34.76
6	3.00	448.80	20.12
7	3.50	509.00	11.83
8	4.00	543.90	6.42
9	4.50	561.30	3.10
10	5.00	569.10	1.37
11	5.50	572.80	0.65
12	6.00	574.40	0.28
13	6.50	575.30	0.16
14	7.00	576.00	0.12
15	7.50	576.50	0.09
16	8.00	576.80	0.05
17	8.50	577.10	0.05
18	9.00	577.40	0.05
19	9.50	577.70	0.05
20	10.00	578.10	0.07
21	10.50	578.20	0.02
22	11.00	578.60	0.07

USER INPUT BLANK VALUE

BLANK VALUE = 8.689084 micrograms carbon

BLANK FACTOR = 8.689084 / 10.99884 = +7.9E-01 ug/min Carbon

SAMPLE RESULTS:

(578.6 - 8.687637) (1)/(1000) = +5.699E-01 g/L Carbon
 (578.6 - 8.687637) (1)/(1000) (12) = +4.749E-02 Molar Carbon

Sample Run By:

SL HOOD

00001

SIGNATURE ABOVE REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
 COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 047 TO 062.

50 ml 25012-B

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: STD 1

Date: 08/14/97

Time: 13:09:03

Sample Size = 200 uL

Dil Factor = 1

Blank ID # =

Blank Value = 2.39 ug/minute C

Analyst : SL HOOD

Min Readings = 22

Max Readings = 22

% Difference = 10

== Reading ==	Analysis Time	Coulometer	% Difference
1	0.51	0.40	0.00
2	1.01	0.90	55.56
3	1.50	16.10	94.41
4	2.00	104.80	84.64
5	2.50	250.20	58.11
6	3.00	396.00	36.82
7	3.50	492.00	19.51
8	4.00	545.40	9.79
9	4.50	569.80	4.28
10	5.00	579.30	1.64
11	5.50	583.30	0.69
12	6.00	584.80	0.26
13	6.50	585.80	0.17
14	7.00	586.60	0.14
15	7.50	587.30	0.12
16	8.00	587.80	0.09
17	8.50	588.20	0.07
18	9.00	588.70	0.08
19	9.50	589.10	0.07
20	10.00	589.50	0.07
21	10.50	589.80	0.05
22	11.00	590.10	0.05

USER INPUT BLANK VALUE

BLANK VALUE = 26.28723 micrograms carbon

BLANK FACTOR = 26.28723 / 10.99884 = +2.4E+00 ug/min Carbon

SAMPLE RESULTS:

(590.1 - 26.28489) (1) / (200) = +2.819E+00 g/L Carbon
 (590.1 - 26.28489) (1) / (200) (12) = +2.349E-01 Molar Carbon
 <<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!>>>>

Sample Run By:

SL Hood
SL HOOD

00001

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT

TICTOC REV 2.0

<<< BLANK ANALYSIS >>>

Sample: BASE 1

Date: 08/14/97

Time: 10:56:44

Sample Size = 1 uL
 Dil Factor = 1
 Blank ID # = BASE 1
 Blank Value = N/A

Analyst : SL HOOD
 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	1.10	45.45
4	2.00	2.70	59.26
5	2.50	4.00	32.50
6	3.00	4.70	14.89
7	3.50	5.20	9.62
8	4.00	5.60	7.14
9	4.50	5.90	5.08
10	5.00	6.00	1.67
11	5.50	6.30	4.76
12	6.00	6.60	4.55
13	6.50	6.80	2.94
14	7.00	7.00	2.86
15	7.50	7.20	2.78
16	8.00	7.50	4.00
17	8.50	7.60	1.32
18	9.00	7.90	3.80
19	9.50	8.10	2.47
20	10.00	8.40	3.57
21	10.50	8.50	1.18
22	11.00	8.70	2.30

BLANK VALUE = 8.7 micrograms carbon

BLANK FACTOR = 8.7 / 10.99695 =

+7.9E-01

ug/min Carbon

Sample Run By:

SL HOOD

00001

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT

TICTOC REV 2.0

<<< BLANK ANALYSIS >>>

Sample: BASE 1

Date: 08/14/97

Time: 11:12:00

Sample Size = 1 uL

Analyst : SL HOOD

Dil Factor = 1

Min Readings = 22

Blank ID # = BASE 1

Max Readings = 22

Blank Value = N/A

% Difference = 10

== Reading ==	==== Analysis Time ==	==== Coulometer ==	==== % Difference ==
1	0.51	0.10	0.00
2	1.00	0.80	87.50
3	1.50	3.60	77.78
4	2.00	9.40	61.70
5	2.50	14.50	35.17
6	3.00	18.00	19.44
7	3.50	20.10	10.45
8	4.00	21.20	5.19
9	4.50	22.00	3.64
10	5.00	22.60	2.65
11	5.50	22.90	1.31
12	6.00	23.30	1.72
13	6.50	23.70	1.69
14	7.00	24.00	1.25
15	7.50	24.30	1.23
16	8.00	24.60	1.22
17	8.50	25.00	1.60
18	9.00	25.20	0.79
19	9.50	25.50	1.18
20	10.00	25.80	1.16
21	10.50	26.10	1.15
22	11.00	26.30	0.76

BLANK VALUE = 26.3 micrograms carbon

BLANK FACTOR = 26.3 / 10.99884 =

+2.39E+00 ug/min Carbon

<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!!>>>>

Sample Run By:

SL HOOD

00001

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: BLK

Date: 08/14/97

Time: 14:31:45

Sample Size = 1 uL
 Dil Factor = 1
 Blank ID # =
 Blank Value = .79 ug/minute C

Analyst : SL HOOD
 Min Readings = 22
 Max Readings = 22
 % Difference = 10

== Reading ==	==== Analysis Time ==	==== Coulometer ==	==== % Difference ==
1	0.51	0.40	0.00
2	1.01	1.00	60.00
3	1.50	1.80	44.44
4	2.00	2.70	33.33
5	2.50	3.40	20.59
6	3.00	3.90	12.82
7	3.50	4.40	11.36
8	4.00	4.90	10.20
9	4.50	5.20	5.77
10	5.00	5.60	7.14
11	5.50	6.00	6.67
12	6.00	6.40	6.25
13	6.50	6.60	3.03
14	7.00	6.90	4.35
15	7.50	7.20	4.17
16	8.00	7.60	5.26
17	8.50	8.10	6.17
18	9.00	8.30	2.41
19	9.50	8.60	3.49
20	10.00	8.80	2.27
21	10.50	9.20	4.35
22	11.00	9.50	3.16

USER INPUT BLANK VALUE

BLANK VALUE = 8.689084 micrograms carbon

BLANK FACTOR = 8.689084 / 10.99884 = +7.9E-01 ug/min Carbon

SAMPLE RESULTS:

(9.5 - 8.688457) (1) / (1) =
 (9.5 - 8.688457) (1) / (1) (12) =

+8.1E-01 g/L Carbon
 +6.8E-02 Molar Carbon

Sample Run By:

SL HOOD

00001

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: BLK 1

Date: 08/14/97

Time: 14:45:02

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 2.39 ug/minute C

Analyst : SL HOOD
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading ==	==== Analysis Time ==	==== Coulometer ==	==== % Difference ==
1	0.51	0.50	0.00
2	1.01	1.10	54.55
3	1.50	2.50	56.00
4	2.00	9.20	72.83
5	2.50	17.20	46.51
6	3.00	23.80	27.73
7	3.50	28.10	15.30
8	4.00	30.40	7.57
9	4.50	31.80	4.40
10	5.00	32.80	3.05
11	5.50	33.60	2.38
12	6.00	34.20	1.75
13	6.50	34.90	2.01
14	7.00	35.20	0.85
15	7.50	35.70	1.40
16	8.00	36.10	1.11
17	8.50	36.60	1.37
18	9.00	36.90	0.81
19	9.50	37.30	1.07
20	10.00	37.60	0.80
21	10.50	38.10	1.31
22	11.00	38.80	1.80

USER INPUT BLANK VALUE

BLANK VALUE = 26.28723 micrograms carbon

BLANK FACTOR = 26.28723 / 10.99884 = +2.4E+00 ug/min Carbon

SAMPLE RESULTS:

(38.8 - 26.28081) (1)/(1) = +1.25E+01 g/L Carbon
 (38.8 - 26.28081) (1)/(1) (12) = +1.04E+00 Molar Carbon
 <<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!>>>>

Sample Run By:

SL HOOD

00001

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S97T01484

Date: 08/14/97

Time: 15:04:48

Sample Size = 1 uL

Dil Factor = 1

Blank ID # =

Blank Value = .79 ug/minute C

Analyst : SL HOOD

Min Readings = 22

Max Readings = 22

% Difference = 10

== Reading ==	==== Analysis Time ==	==== Coulometer ==	==== % Difference ==
1	0.51	0.30	0.00
2	1.01	0.90	66.67
3	1.50	1.90	52.63
4	2.00	10.40	81.73
5	2.50	76.80	86.46
6	3.00	213.30	63.99
7	3.50	370.00	42.35
8	4.00	490.80	24.61
9	4.50	572.30	14.24
10	5.00	620.00	7.69
11	5.50	644.60	3.82
12	6.00	656.60	1.83
13	6.50	661.90	0.80
14	7.00	664.60	0.41
15	7.50	666.20	0.24
16	8.00	667.30	0.16
17	8.50	668.00	0.10
18	9.00	668.70	0.10
19	9.50	669.30	0.09
20	10.00	669.90	0.09
21	10.50	670.40	0.07
22	11.00	671.10	0.10

USER INPUT BLANK VALUE

BLANK VALUE = 8.689084 micrograms carbon

BLANK FACTOR = 8.689084 / 10.99884 = +7.9E-01 ug/min Carbon

SAMPLE RESULTS:

(671.1 - 8.687637) (1)/(1)	=	+6.624E+02	g/L Carbon
(671.1 - 8.687637) (1)/(1) (12)	=	+5.520E+01	Molar Carbon

Sample Run By:

SL HOOD

00001

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S97T01484

Date: 08/14/97

Time: 15:21:45

Sample Size = 1 uL

Dil Factor = 1

Blank ID # =

Blank Value = 2.39 ug/minute C

Analyst: SL HOOD

Min Readings = 22

Max Readings = 22

% Difference = 10

== Reading ==	==== Analysis Time ==	==== Coulometer ==	==== % Difference ==
1	0.51	0.30	0.00
2	1.01	1.20	75.00
3	1.51	59.40	97.98
4	2.01	335.40	82.29
5	2.51	613.60	45.34
6	3.01	798.10	23.12
7	3.51	916.80	12.95
8	4.01	987.00	7.11
9	4.50	1026.70	3.87
10	5.00	1047.00	1.94
11	5.50	1058.50	1.09
12	6.00	1065.20	0.63
13	6.50	1070.10	0.46
14	7.00	1073.40	0.31
15	7.50	1076.10	0.25
16	8.00	1077.70	0.15
17	8.50	1079.40	0.16
18	9.00	1080.70	0.12
19	9.50	1081.40	0.06
20	10.00	1082.20	0.07
21	10.50	1083.00	0.07
22	11.00	1083.60	0.06

USER INPUT BLANK VALUE

BLANK VALUE = 26.28723 micrograms carbon

BLANK FACTOR = 26.28723 / 10.99884 = +2.4E+00 ug/min Carbon

SAMPLE RESULTS:

(1083.6 - 26.28723) (1)/(1) = +1.0573E+03 g/L Carbon
 (1083.6 - 26.28723) (1)/(1) (12) = +8.8109E+01 Molar Carbon
 <<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!>>>>

Sample Run By:

SL HOOD

00001

55 .1035g

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S97T01484 DUP

Date: 08/14/97

Time: 15:36:07

Sample Size = 1 uL

Dil Factor = 1

Blank ID # =

Blank Value = .79 ug/minute C

Analyst : SL HOOD

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	1.51	2.00	60.00
4	2.00	27.70	92.78
5	2.50	127.60	78.29
6	3.00	266.00	52.03
7	3.50	380.10	30.02
8	4.00	457.00	16.83
9	4.50	503.40	9.22
10	5.00	527.80	4.62
11	5.50	539.60	2.19
12	6.00	546.30	1.23
13	6.50	551.30	0.91
14	7.00	556.40	0.92
15	7.50	562.90	1.15
16	8.00	569.90	1.23
17	8.50	575.70	1.01
18	9.00	579.30	0.62
19	9.50	581.60	0.40
20	10.00	583.10	0.26
21	10.50	584.10	0.17
22	11.00	584.80	0.12

USER INPUT BLANK VALUE

BLANK VALUE = 8.689084 micrograms carbon

BLANK FACTOR = 8.689084 / 10.99884 = +7.9E-01 ug/min Carbon

SAMPLE RESULTS:

(584.8 - 8.688313) (1)/(1)	=	+5.761E+02	g/L Carbon
(584.8 - 8.688313) (1)/(1) (12)	=	+4.801E+01	Molar Carbon

Sample Run By:

SL HOOD

00001

55 .10 60g

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S97T01484 DUP

Date: 08/14/97

Time: 15:49:12

Sample Size = 1 uL

Analyst : SL HOOD

Dil Factor = 1

Min Readings = 22

Blank ID # =

Max Readings = 22

Blank Value = 2.39 ug/minute C

% Difference = 10

== Reading ==== Analysis Time ==== Coulometer ==== % Difference ==

1	0.51	0.80	0.00
2	1.01	1.40	42.86
3	1.51	57.30	97.56
4	2.00	379.80	84.91
5	2.50	692.80	45.18
6	3.00	872.60	20.61
7	3.50	978.20	10.80
8	4.00	1038.30	5.79
9	4.50	1069.50	2.92
10	5.00	1086.50	1.56
11	5.50	1095.90	0.86
12	6.00	1102.30	0.58
13	6.50	1106.30	0.36
14	7.00	1109.50	0.29
15	7.50	1111.60	0.19
16	8.00	1113.60	0.18
17	8.50	1115.10	0.13
18	9.00	1116.20	0.10
19	9.50	1117.10	0.08
20	10.00	1118.00	0.08
21	10.50	1118.80	0.07
22	11.00	1119.40	0.05

USER INPUT BLANK VALUE

BLANK VALUE = 26.28723 micrograms carbon

BLANK FACTOR = 26.28723 / 10.99884 = +2.4E+00 ug/min Carbon

SAMPLE RESULTS:

(1119.4 - 26.28285) (1)/(1) = +1.0931E+03 g/L Carbon
 (1119.4 - 26.28285) (1)/(1) (12) = +9.1093E+01 Molar Carbon
 <<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!>>>>

Sample Run By:

SL HOOD

00001

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S97T01484 SPK

Date: 08/14/97

Time: 16:03:39

Sample Size = 1 uL

Analyst : SL HOOD

Dil Factor = 1

Min Readings = 22

Blank ID # =

Max Readings = 22

Blank Value = .79 ug/minute C

% Difference = 10

== Reading ==	==== Analysis Time ==	==== Coulometer ==	==== % Difference ==
1	0.51	0.50	0.00
2	1.01	0.80	37.50
3	1.51	6.10	86.89
4	2.00	76.40	92.02
5	2.50	219.60	65.21
6	3.00	389.70	43.65
7	3.50	549.20	29.04
8	4.00	668.80	17.88
9	4.50	748.70	10.67
10	5.00	793.60	5.66
11	5.50	814.60	2.58
12	6.00	822.80	1.00
13	6.50	826.60	0.46
14	7.00	828.40	0.22
15	7.50	829.50	0.13
16	8.00	830.50	0.12
17	8.50	831.20	0.08
18	9.00	832.10	0.11
19	9.50	832.80	0.08
20	10.00	833.20	0.05
21	10.50	833.70	0.06
22	11.00	834.20	0.06

USER INPUT BLANK VALUE

BLANK VALUE = 8.689084 micrograms carbon

BLANK FACTOR = 8.689084 / 10.99884 = +7.9E-01 ug/min Carbon

SAMPLE RESULTS:

(834.2 - 8.687637) (1)/(1) =

+8.255E+02 g/L Carbon

(834.2 - 8.687637) (1)/(1) (12) =

+6.879E+01 Molar Carbon

Sample Run By:

SL HOOD

00001

SS .0923 g/L
+ .500 ml spike 25N12-B

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S97T01484 SPK

Date: 08/14/97

Time: 16:19:27

Sample Size = 1 uL

Analyst : SL HOOD

Dil Factor = 1

Min Readings = 22

Blank ID # =

Max Readings = 22

Blank Value = 2.39 ug/minute C

% Difference = 10

== Reading ==	==== Analysis Time ==	==== Coulometer ==	==== % Difference ==
1	0.51	0.50	0.00
2	1.00	7.70	93.51
3	1.50	170.90	95.49
4	2.00	547.10	68.76
5	2.50	833.60	34.37
6	3.00	1008.50	17.34
7	3.50	1110.50	9.19
8	4.00	1170.40	5.12
9	4.50	1200.80	2.53
10	5.00	1215.30	1.19
11	5.50	1223.40	0.66
12	6.00	1228.60	0.42
13	6.50	1232.20	0.29
14	7.00	1234.90	0.22
15	7.50	1237.10	0.18
16	8.00	1238.60	0.12
17	8.50	1240.10	0.12
18	9.00	1241.20	0.09
19	9.50	1242.30	0.09
20	10.00	1243.30	0.08
21	10.50	1244.20	0.07
22	11.00	1245.00	0.06

USER INPUT BLANK VALUE

BLANK VALUE = 26.28723 micrograms carbon

BLANK FACTOR = 26.28723 / 10.99884 = +2.4E+00 ug/min Carbon

SAMPLE RESULTS:

(1245 - 26.28504) (1)/(1) = +1.2187E+03 g/L Carbon
 (1245 - 26.28504) (1)/(1) (12) = +1.0156E+02 Molar Carbon
 <<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!>>>

Sample Run By:

SL HOOD

00001

SS .0923g + 100ml
spike 26.28504 658

WORKBOOK PAGE: BLANK1

TIC/TOC : LA-342-100 (E-0)

SOLIDS

Type	Sample Size in g	(SS)	TIC	TOC
BLNK	Dilution Factor	(DF)	0.0000	0.0000
Work List	µg of Carbon in Sample	(C1)	1	1
19734	µg of Carbon from Baseline	(C2)	9.5	38.8
			8.7	26.3

Test Code
@TICTOC1
Matrix
SOLID
Batch Number
97003871
Rerun
0
Sample Prep
N/A
Sample #
BLANK
Instrument Code
CARB1
Prepared By
RCJ
Chemist
RWS
Analyst
SLH
Date Complete
08/19/97
Analysis Date
08/14/97
Analysis Time
Method Detection Limit in ug/g
Sample Point
BY-109

µg of Carbon = |C1-C2|

TIC	TOC
5	40
8.00E-01	1.25E+01

Data Entered By:
Signature of Chemist:

BLANK.WB1 REV 1.0

342100ML

RCJ
RW Schneider

Date: 08/19/97

Date: 8/21/97

WORKBOOK PAGE: STD2

TIC/TOC : LA-342-100 (E-0)

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)	578.6	590.1
19734	µg of Carbon from Baseline (C2)	8.7	26.3
Test Code	Standard Book Number	25N12B	26N12C
@TIC/TOC1	Standard Value (µg/ml)	602	3000
Matrix			
LIQUID			
Batch Number			
97003871			
Rerun			
0	QC Actual in µg/mL = Standard Value (µg/mL)		
Sample Prep	QC Found in µg/mL = (C1 - C2) * DF / SS		
N/A	QC Found in µg/mL for TIC = 5 if C1 < C2		
Sample #	QC Found in µg/mL for TOC = 40 if C1 < C2		
STANDARD			
Instrument Code	% Recovery = QC Found / QC Actual * 100		
CARB1			
Prepared By			
RCJ			
Chemist			
RWS			
Analyst			
SLH			
Date Complete			
08/19/97			
Analysis Date			
08/14/97			
Analysis Time	Method Detection Limit in µg/mL	5	40
	QC Actual in µg/mL	6.02E+02	3.00E+03
Sample Point	QC Found in µg/mL	5.70E+02	2.82E+03
BY-109	Percent Standard Recovery	94.7	94.0

Data Entered By:	RCJ	Date:	08/19/97
Signature of Chemist:	<i>RW Schneider</i>	Date:	8/21/97

STANDARD.WB1 REV 1.0

342100ML

WORKBOOK PAGE: SAM3

TIC/TOC : LA-342-100 (E-0)

SOLIDS

		TIC	TOC
Type	Sample Size in g (SS)	0.1035	0.1035
SAMPLE	Dilution Factor (DF)	1	1
Work List	µg of Carbon in Sample (C1)	671.1	1083.6
19734	µg of Carbon from Baseline (C2)	8.7	26.3
Test Code			
@TIC/TOC1			

Matrix
SOLID
Batch Number
97003871
Rerun
0
Sample Prep
N/A
Sample #
S97T001484
Instrument Code
CARB1
Prepared By
RCJ
Chemist
RWS
Analyst
SLH
Date Complete
08/19/97
Analysis Date
08/14/97
Analysis Time
Sample Point
BY-109

$\mu\text{g of Carbon/g} = (C1-C2) * DF / SS$
 $\mu\text{g of Carbon/g for TIC} = 5 \text{ if } C1 < C2$
 $\mu\text{g of Carbon/g for TOC} = 40 \text{ if } C1 < C2$

	TIC	TOC
Method Detection Limit in ug/g	5	40
µg of Carbon/g	6.40E+03	1.02E+04

Data Entered By:

RCJ

Date: 08/19/97

Signature of Chemist:

Date: 8/21/97

SAMPLE.WB1 REV 1.0

342100ML

WORKBOOK PAGE: DUP4

TIC/TOC : LA-342-100 (E-0)

SOLIDS

Type	Sample Size in g	(SS)	TIC	TOC
DUP	Dilution Factor	(DF)	0.1060	0.1060
Work List	µg of Carbon in Sample	(C1)	1	1
19734	µg of Carbon from Baseline	(C2)	584.8	1119.4
Test Code	µg of Carbon from Original Sample		8.7	26.3
@TIC/TOC1			6.40E+3	1.02E+4

Matrix
SOLID
Batch Number
97003871
Rerun
0
Sample Prep
N/A
Sample #
S97T001484
Instrument Code
CARB1
Prepared By
RCJ
Chemist
RWS
Analyst
SLH
Date Complete
08/19/97
Analysis Date
08/14/97
Analysis Time
Method Detection Limit in ug/g
Sample Point
BY-109

$\mu\text{g of Carbon/g} = (C1 - C2) * DF / SS$
 $\mu\text{g of Carbon/g for TIC} = 5 \text{ if } C1 < C2$
 $\mu\text{g of Carbon/g for TOC} = 40 \text{ if } C1 < C2$

	TIC	TOC
Method Detection Limit in ug/g	5	40
µg of Carbon/g	5.43E+03	1.03E+04

Data Entered By:

RCJ

Date: 08/19/97

Signature of Chemist:

R. J. Schwed

Date: 8/21/97

SAMPLE WB1 REV 1.0

342100ML

WORKBOOK PAGE: SPIKE5

TIC/TOC : LA-342-100 (E-0)

SOLIDS

Type	Sample Vial Data	TIC	TOC
SPK	Sample Size in g (SS)	0.1035	0.1035
Worklist	Final Coulometer Reading in µg (C1)	671.1	1083.6
19734	Spiked Vial Data		
Test Code	Sample Size in g (SPK SS)	0.0923	0.0923
@TIC/TOC1	Amount of Spike Std. in mL (SPK VOL)	0.500	0.100
Matrix	Final Coulometer Reading in µg (C2)	834.2	1245
SOLID	Spike Book Number	25N12B	26N12C
Batch Number	Spike Standard Value in µg/mL (SPK CONC)	602	3000
97003871			
Rerun			
0			
Sample Prep			
N/A			
Sample #	Percent Spike Recovery = (C2 - C1 * (SPK SS) / SS) / ((SPK CONC) * (SPK VOL)) * 1		
S97T001484			
Instrument Code	QC Actual in µg/mL = Spike Value (µg/mL)		
CARB1	QC Found in µg/mL = (Percent Spike Recovery) * (QC Actual) / 100		
Prepared By			
RCJ			
Chemist			
RWS			
Analyst			
SLH			
Date Complete			
08/19/97			
Analysis Date			
08/14/97			
Analysis Time			
		TIC	TOC
	QC Actual in µg/mL	6.02E+02	3.00E+03
Sample Point	QC Found in µg/mL	4.71E+02	2.79E+03
BY-109	Percent Spike Recovery	78.3	92.9

Data Entered By:	RCJ	Date:	08/19/97
Signature of Chemist:	<i>[Signature]</i>	Date:	8/21/97

SPIKE.WB1 REV 1.1

342100ML

LABCORE Completed Worklist Report for Worklist# 19735

Analyst: krm

Instrument: CARB1

Book# 25N12B
26N12C

Method: LA 342-100 Rev/Mod E-0

Worklist Comment: BY-109 TICTOC. RCJ

Seq Type	Sample# R A	Test	Matrix	Actual	Found	DL or Yield	Unit
1 BLNK	0	@TICTOCI TIC-02	SOLID	1	4.30E+0	4.300	ug/g
1 BLNK	0	@TICTOCI TOC-02	SOLID	1	1.30E+0	1.300	ug/g
2 STD	0	@TICTOCI TIC-02	SOLID	6.02E+02	5.97E+2	99.169 % Recovery	
2 STD	0	@TICTOCI TOC-02	SOLID	3.00E+03	2.93E+3	97.667 % Recovery	
3 SAMPLE	S97T001487 0	@TICTOCI TIC-02	SOLID	N/A	4.61E+03	5.000	ug/g
3 SAMPLE	S97T001487 0	@TICTOCI TOC-02	SOLID	N/A	5.26E+03	40.000	ug/g
4 DUP	S97T001487 0	@TICTOCI TIC-02	SOLID	4.61E+3	4.64E+3	0.649 RPD	
4 DUP	S97T001487 0	@TICTOCI TOC-02	SOLID	5.26E+3	5.50E+3	4.461 RPD	
5 SAMPLE	S97T001488 0	@TICTOCI TIC-02	SOLID	N/A	1.65E+03	5.000	ug/g
5 SAMPLE	S97T001488 0	@TICTOCI TOC-02	SOLID	N/A	8.27E+03	40.000	ug/g
6 DUP	S97T001488 0	@TICTOCI TIC-02	SOLID	1.65E+3	4.15E+2	119.613 RPD	
6 DUP	S97T001488 0	@TICTOCI TOC-02	SOLID	8.27E+3	9.91E+3	18.042 RPD	
7 TRIPL	S97T001488 0	@TICTOCI TIC-02	SOLID	1.65E+3	1.11E+3	39.130 RPD	
7 TRIPL	S97T001488 0	@TICTOCI TOC-02	SOLID	8.27E+3	8.75E+3	5.640 RPD	
8 SPK	S97T001488 0	@TICTOCI TIC-02	SOLID	1.00E+02	8.41E+01	84.100 % Recovery	
8 SPK	S97T001488 0	@TICTOCI TOC-02	SOLID	1.00E+02	9.46E+01	94.600 % Recovery	

Final page for worklist# 19735

Analyst Signature

Date

Analyst Signature

Date

Reviewer Signature

Date

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

LABCORE Data Entry Template for Worklist# 19735

Analyst: KRM Instrument: CARB2 _____ Book# _____

Method: LA-342-100 Rev/Mod _____

Worklist Comment: BY-109 TICTOC. RCJ

S	Type	Sample#	R	A	Test	Matrix	Group#	Project
1	BLNK				@TICTOC1	SOLID		
2	STD				@TICTOC1	SOLID		
3	SAMPLE	S97T001487 0			@TICTOC1	SOLID	97000411	BY-109 (P)
		Analytes Requested: TIC-02 , TOC-02						
4	DUP	S97T001487 0			@TICTOC1	SOLID		
5	SAMPLE	S97T001488 0			@TICTOC1	SOLID	97000411	BY-109 (P)
		Analytes Requested: TIC-02 , TOC-02						
6	DUP	S97T001488 0			@TICTOC1	SOLID		
7	TRIP1	S97T001488 0			@TICTOC1	SOLID		
8	SPK	S97T001488 0			@TICTOC1	SOLID		

Final page for worklist # 19735

Sub Attached
Analyst Signature _____ Date _____

Analyst Signature _____ Date _____

Data Entry Comments:

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

08/12/97 08:11
A-0004-1

Page: 1

LABCORE Data Entry Template for Worklist# 19735

Analyst: KRM Instrument: CARB2 Book# 25N12B
26N12CMethod: LA-342-100 Rev/Mod 3

Worklist Comment: BY-109 TICTOC. RCJ

S Type	Sample#	R A	Test	Matrix	Group#	Project
✓1 BLNK			@TICTOC1	SOLID		
✓2 STD			@TICTOC1	SOLID		
3 SAMPLE	S97T001487 0		@TICTOC1	SOLID	97000411	BY-109 (P)
	Analytes Requested: TIC-02 , TOC-02					
4 DUP	S97T001487 0		@TICTOC1	SOLID		
5 SAMPLE	S97T001488 0		@TICTOC1	SOLID	97000411	BY-109 (P)
	Analytes Requested: TIC-02 , TOC-02					
6 DUP	S97T001488 0		@TICTOC1	SOLID		
7 SPK	S97T001488 0		@TICTOC1	SOLID		

Final page for worklist # 19735

8-22-97

Analyst Signature

Date

Analyst Signature

Date

Data Entry Comments:

RAN. TRIPLICATE ON S97T001488

WORKBOOK PAGE: BLANK1

TIC/TOC : LA-342-100 (E-0)

SOLIDS

		TIC	TOC
Type	Sample Size in g (SS)	0.0000	0.0000
BLNK	Dilution Factor (DF)	1	1
Work List	ug of Carbon in Sample (C1)	10.2	27.8
19735	ug of Carbon from Baseline (C2)	5.9	29.1

Test Code
@TICTOC1
Matrix
SOLID
Batch Number
97003872
Rerun
0
ug of Carbon = |C1-C2|

Sample Prep
N/A

Sample #
BLANK

Instrument Code
CARB1

Prepared By
RCJ

Chemist
RWS

Analyst
KRM

Date Complete
08/27/97

Analysis Date
08/22/97

Analysis Time
05:00 PM
Method Detection Limit in ug/g

Sample Point BY-109	ug of Carbon	TIC 4.30E+00	TOC 1.30E+00
------------------------	--------------	-----------------	-----------------

Data Entered By:	RCJ	Date:	08/27/97
Signature of Chemist:	<i>RW Schneider</i>	Date:	8/29/97

BLANK WB1 REV 1.0

342100ML

WORKBOOK PAGE: STD2

TIC/TOC : LA-342-100 (E-0)

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)	602.6	614.6
19735	μg of Carbon from Baseline (C2)	5.9	29.1
Test Code	Standard Book Number	25N12B	26N12C
@TICTOC1	Standard Value ($\mu\text{g}/\text{mL}$)	602	3000
Matrix			
LIQUID			
Batch Number			
97003872			
Rerun			
0	QC Actual in $\mu\text{g}/\text{mL}$ = Standard Value ($\mu\text{g}/\text{mL}$)		
Sample Prep	QC Found in $\mu\text{g}/\text{mL}$ = $(C1 - C2) * DF / SS$		
N/A	QC Found in $\mu\text{g}/\text{mL}$ for TIC = 5 if $C1 < C2$		
Sample #	QC Found in $\mu\text{g}/\text{mL}$ for TOC = 40 if $C1 < C2$		
STANDARD			
Instrument Code	% Recovery = QC Found / QC Actual * 100		
CARB1			
Prepared By			
RCJ			
Chemist			
RWS			
Analyst			
KRM			
Date Complete			
08/27/97			
Analysis Date			
08/22/97			
Analysis Time	Method Detection Limit in $\mu\text{g}/\text{mL}$	5	40
05:00 PM	QC Actual in $\mu\text{g}/\text{mL}$	6.02E+02	3.00E+03
Sample Point	QC Found in $\mu\text{g}/\text{mL}$	5.97E+02	2.93E+03
BY-109	Percent Standard Recovery	99.1	97.6

Data Entered By:

Signature of Chemist:

RCJ

Date: 08/27/97

Date: 8/29/97

STANDARD.WB1 REV 1.0

342100ML

WORKBOOK PAGE: SAM3

TIC/TOC : LA-342-100 (E-0)

SOLIDS

Type	Sample Size in g	(SS)	TIC	TOC
SAMPLE	Dilution Factor	(DF)	0.2774	0.2774
Work List	µg of Carbon in Sample	(C1)	1	1
19735	µg of Carbon from Baseline	(C2)	1283.5	1489.3
Test Code			5.9	29.1
@TICTOC1				

Matrix
SOLID
Batch Number
97003872
Rerun
0
Sample Prep
N/A
Sample #
S97T001487
Instrument Code
CARB1
Prepared By
RCJ
Chemist
RWS
Analyst
KRM
Date Complete
08/27/97
Analysis Date
08/22/97
Analysis Time
05:08 PM
Sample Point
BY-109

$\mu\text{g of Carbon/g} = (C1 - C2) * DF / SS$
 $\mu\text{g of Carbon/g for TIC} = 5 \text{ if } C1 < C2$
 $\mu\text{g of Carbon/g for TOC} = 40 \text{ if } C1 < C2$

	TIC	TOC
Method Detection Limit in ug/g	5	40
µg of Carbon/g	4.61E+03	5.26E+03

Data Entered By:	RCJ	Date:	08/27/97
Signature of Chemist:	<i>RCJ</i>	Date:	8/29/97

SAMPLE.WB1 REV 1.0

342100ML

WORKBOOK PAGE: DUP4

TIC/TOC : LA-342-100 (E-0)

SOLIDS

		TIC	TOC
Type	Sample Size in g (SS)	0.1413	0.1413
DUP	Dilution Factor (DF)	1	1
Work List	µg of Carbon in Sample (C1)	661.2	805.9
19735	µg of Carbon from Baseline (C2)	5.9	29.1
Test Code	Known µg of C from Original Sample	4.61E+3	5.26E+3
@TICTOC1			

Matrix	
SOLID	
Batch Number	
97003872	
Rerun	µg of Carbon/g = (C1-C2) * DF / SS
0	µg of Carbon/g for TIC = 5 if C1 < C2
Sample Prep	µg of Carbon/g for TOC = 40 if C1 < C2
N/A	
Sample #	
S97T001487	
Instrument Code	
CARB1	
Prepared By	
RCJ	
Chemist	
RWS	
Analyst	
KRM	
Date Complete	
08/27/97	
Analysis Date	
08/22/97	
Analysis Time	Method Detection Limit in ug/g
05:00 PM	
Sample Point	µg of Carbon/g
BY-109	

TIC	TOC
5	40
4.64E+03	5.50E+03

Data Entered By:	RCJ	Date:	08/27/97
Signature of Chemist:	<i>R. J. Schneider</i>	Date:	8/29/97

SAMPLE.WB1 REV 1.0

342100ML

WORKBOOK PAGE: SAM5

TIC/TOC : LA-342-100 (E-0)

SOLIDS

		TIC	TOC
Type	Sample Size in g (SS)	0.1333	0.1333
SAMPLE	Dilution Factor (DF)	1	1
Work List	µg of Carbon in Sample (C1)	225.4	1131.7
19735	µg of Carbon from Baseline (C2)	5.9	29.1
Test Code			
@TICTOC1			

Matrix
SOLIDBatch Number
97003872Rerun
0 $\mu\text{g of Carbon/g} = (C1-C2) * DF / SS$ $\mu\text{g of Carbon/g for TIC} = 5 \text{ if } C1 < C2$ Sample Prep
N/A $\mu\text{g of Carbon/g for TOC} = 40 \text{ if } C1 < C2$ Sample #
S97T001488Instrument Code
CARB1Prepared By
RCJChemist
RWSAnalyst
KRMDate Complete
08/27/97Analysis Date
08/22/97Analysis Time
05:00 PMSample Point
BY-109

Method Detection Limit in ug/g

TIC	TOC
5	40
1.65E+03	8.27E+03

Data Entered By:

RCJ

Date: 08/27/97

Signature of Chemist:

R. W. Schreder

Date: 8/29/97

SAMPLE.WB1 REV 1.0

342100ML

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I:\342100\OUT\19735.WB1

08/27/97

13:30:30

WORKBOOK PAGE: DUP6

TIC/TOC : LA-342-100 (E-0)

SOLIDS

		TIC	TOC
Type	Sample Size in g (SS)	0.1253	0.1253
DUP	Dilution Factor (DF)	1	1
Work List	µg of Carbon in Sample (C1)	57.9	1271.3
19735	µg of Carbon from Baseline (C2)	5.9	29.1
Test Code	Known µg of C from Original Sample	1.65E+3	8.27E+3
@TIC/TOC1			

Matrix
SOLIDBatch Number
97003872Rerun
0Sample Prep
N/ASample #
S97T001488Instrument Code
CARB1Prepared By
RCJChemist
RWSAnalyst
KRMDate Complete
08/27/97Analysis Date
08/22/97Analysis Time
05:00 PMSample Point
BY-109

µg of Carbon/g = (C1-C2) * DF / SS
 µg of Carbon/g for TIC = 5 if C1 < C2
 µg of Carbon/g for TOC = 40 if C1 < C2

	TIC	TOC
Method Detection Limit in ug/g	5	40
µg of Carbon/g	4.15E+02	9.91E+03

Data Entered By:	RCJ	Date: 08/27/97
Signature of Chemist:	<i>P.W. Schmeda</i>	Date: 8/29/97

SAMPLE.WB1 REV 1.0

342100ML

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WORKBOOK PAGE: TRIPL7

TIC/TOC : LA-342-100 (E-0)

SOLIDS

Type		TIC	TOC
Sample Size in g	(SS)	0.1039	0.1039
TRIPL	Dilution Factor (DF)	1	1
Work List	µg of Carbon in Sample (C1)	121.2	938.2
19735	µg of Carbon from Baseline (C2)	5.9	29.1
Test Code	Known µg of C from Original Sample	1.65E+3	8.27E+3
@TICTOC1	Duplicate Result	4.15E+2	9.91E+3

Matrix
SOLID
Batch Number
97003872
Retun
0
Sample Prep
N/A
Sample #
S97T001488
Instrument Code
CARB1
Prepared By
RCJ
Chemist
RWS
Analyst
KRM
Date Complete
08/27/97
Analysis Date
08/22/97
Analysis Time
05:00 PM
Sample Point
BY-109

$\mu\text{g of Carbon/g} = (C1 - C2) * DF / SS$
 $\mu\text{g of Carbon/g for TIC} = 5 \text{ if } C1 < C2$
 $\mu\text{g of Carbon/g for TOC} = 40 \text{ if } C1 < C2$

	TIC	TOC
Method Detection Limit in ug/g	5	40
µg of Carbon/g	1.11E+03	8.75E+03

Data Entered By:	RCJ	Date: 08/27/97
Signature of Chemist:	<i>RWS</i>	Date: 8/29/97

SAMPLE.WB1 REV 1.0

342100ML

WORKBOOK PAGE: SPIKE8

TIC/TOC : LA-342-100 (E-0)

SOLIDS

Type	Sample Vial Data	TIC	TOC
SPK	Sample Size in g (SS)	0.1333	0.1333
Work List	Final Coulometer Reading in μg (C1)	225.4	1131.7
19735	Spiked Vial Data		
Test Code	Sample Size in g (SPK SS)	0.1168	0.1168
@TICTOC1	Amount of Spike Std. in mL (SPK VOL)	0.500	0.100
Matrix	Final Coulometer Reading in μg (C2)	450.7	1275.4
SOLID	Spike Book Number	25N12B	26N12C
Batch Number	Spike Standard Value in $\mu\text{g}/\text{mL}$ (SPK CONC)	602	3000
97003872			
Rerun			
0			
Sample Prep			
N/A			
Sample #	Percent Spike Recovery = $(C2 - C1 * (\text{SPK SS}) / \text{SS}) / ((\text{SPK CONC}) * (\text{SPK VOL})) * 10$		
S977001488			
Instrument Code	QC Actual in $\mu\text{g}/\text{mL}$ = Spike Value ($\mu\text{g}/\text{mL}$)		
CARB1	QC Found in $\mu\text{g}/\text{mL}$ = (Percent Spike Recovery)*(QC Actual) / 100		
Prepared By			
RCJ			
Chemist			
RWS			
Analyst			
KRM			
Date Complete			
08/27/97			
Analysis Date			
08/22/97			
Analysis Time			
05:00 PM	QC Actual in $\mu\text{g}/\text{mL}$	6.02E+02	3.00E+03
Sample Point	QC Found in $\mu\text{g}/\text{mL}$	5.06E+02	2.84E+03
BY-109	Percent Spike Recovery	84.1	94.6

Data Entered By:	RCJ	Date:	08/27/97
Signature of Chemist:	<i>RW Schreder</i>	Date:	8/29/97

SPIKE.WB1 REV 1.1

342100ML

HNF-SD-WM-DP-259, REV. 0

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT

TICTOC REV 2.0

<<< BLANK ANALYSIS >>>

Sample: BASE1

Date: 08/22/97

Time: 07:34:42

Sample Size = 1 uL
Dil Factor = 1
Blank ID # = BASE1
Blank Value = N/A

Analyst : KR MONTEITH
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading ==	== Analysis Time ==	== Coulometer ==	== % Difference ==
1	0.51	0.10	0.00
2	1.01	0.40	75.00
3	1.50	0.70	42.86
4	2.00	1.10	36.36
5	2.50	1.60	31.25
6	3.00	2.00	20.00
7	3.50	2.20	9.09
8	4.00	2.40	8.33
9	4.50	2.70	11.11
10	5.00	2.90	6.90
11	5.50	3.20	9.37
12	6.00	3.50	8.57
13	6.50	3.70	5.41
14	7.00	3.90	5.13
15	7.50	4.10	4.88
16	8.00	4.40	6.82
17	8.50	4.70	6.38
18	9.00	4.90	4.08
19	9.50	5.20	5.77
20	10.00	5.40	3.70
21	10.50	5.70	5.26
22	11.00	5.90	3.39

BLANK VALUE = 5.9 micrograms carbon

BLANK FACTOR = 5.9 / 10.99884 =

+5.4E-01

ug/min Carbon

Sample Run By:

KR MONTEITH

00000

SIGNATURE ABOVE REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 675 TO 692

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT

TICTOC REV 2.0

<<< BLANK ANALYSIS >>>

Sample: BASE1

Date: 08/22/97

Time: 09:15:51

Sample Size = 1 uL
 Dil Factor = 1
 Blank ID # = BASE1
 Blank Value = N/A

Analyst : KR MONTEITH
 Min Readings = 22
 Max Readings = 22
 % Difference = 10

== Reading ==	==== Analysis Time ==	==== Coulometer ==	==== % Difference ==
1	0.51	0.20	0.00
2	1.04	5.60	96.43
3	1.54	14.40	61.11
4	2.04	19.00	24.21
5	2.54	21.40	11.21
6	3.04	22.30	4.04
7	3.54	23.30	4.29
8	4.04	23.70	1.69
9	4.54	24.20	2.07
10	5.04	24.60	1.63
11	5.54	25.10	1.99
12	6.04	25.50	1.57
13	6.54	25.70	0.78
14	7.04	26.20	1.91
15	7.54	26.60	1.50
16	8.04	27.00	1.48
17	8.54	27.30	1.10
18	9.04	27.70	1.44
19	9.54	28.10	1.42
20	10.04	28.40	1.06
21	10.54	28.80	1.39
22	11.04	29.10	1.03

BLANK VALUE = 29.1 micrograms carbon

BLANK FACTOR = 29.1 / 11.03632 = +2.64E+00 ug/min Carbon

<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!>>>>

Sample Run By:

KR MONTEITH

00000

HNF-SD-WM-DP-259, REV. 0
TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: STD1

Date: 08/22/97

Time: 09:32:41

Sample Size = 1000 uL
Dil Factor = 1
Blank ID # =
Blank Value = .54 ug/minute C

Analyst : KR MONTEITH
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading ==	==== Analysis Time ==	==== Coulometer ==	==== % Difference ==
1	0.51	0.60	0.00
2	1.01	1.30	53.85
3	1.51	39.30	96.69
4	2.00	202.50	80.59
5	2.50	376.40	46.20
6	3.00	494.80	23.93
7	3.50	554.10	10.70
8	4.00	578.70	4.25
9	4.50	588.90	1.73
10	5.00	593.00	0.69
11	5.50	595.00	0.34
12	6.00	596.30	0.22
13	6.50	597.50	0.20
14	7.00	598.20	0.12
15	7.50	598.90	0.12
16	8.00	599.50	0.10
17	8.50	600.10	0.10
18	9.00	600.70	0.10
19	9.50	601.30	0.10
20	10.00	601.70	0.07
21	10.50	602.20	0.08
22	11.00	602.60	0.07

USER INPUT BLANK VALUE

BLANK VALUE = 5.959611 micrograms carbon

BLANK FACTOR = 5.959611 / 11.03632 = +5.4E-01 ug/min Carbon

SAMPLE RESULTS:

(602.6 - 5.938912) (1)/(1000) = +5.967E-01 g/L Carbon
(602.6 - 5.938912) (1)/(1000) (12) = +4.972E-02 Molar Carbon

Sample Run By:

KR MONTEITH

00000

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: STD1

Date: 08/22/97

Time: 09:44:31

Sample Size = 200 uL

Dil Factor = 1

Blank ID # =

Blank Value = 2.64 ug/minute C

Analyst : KR MONTEITH

Min Readings = 22

Max Readings = 22

% Difference = 10

== Reading ==	Analysis Time	Coulometer	% Difference
1	0.51	0.40	0.00
2	1.01	1.80	77.78
3	1.50	104.50	98.28
4	2.00	361.90	71.12
5	2.50	527.10	31.34
6	3.00	580.10	9.14
7	3.50	594.60	2.44
8	4.00	600.20	0.93
9	4.50	603.00	0.46
10	5.00	605.00	0.33
11	5.50	606.40	0.23
12	6.00	607.70	0.21
13	6.50	608.70	0.16
14	7.00	609.50	0.13
15	7.50	610.50	0.16
16	8.00	611.10	0.10
17	8.50	611.80	0.11
18	9.00	612.40	0.10
19	9.50	613.10	0.11
20	10.00	613.60	0.08
21	10.50	614.10	0.08
22	11.00	614.60	0.08

USER INPUT BLANK VALUE

BLANK VALUE = 29.13588 micrograms carbon

BLANK FACTOR = 29.13588 / 11.03632 = +2.6E+00 ug/min Carbon

SAMPLE RESULTS:

(614.6 - 29.03468) (1)/(200) = +2.928E+00 g/L Carbon
 (614.6 - 29.03468) (1)/(200) (12) = +2.440E-01 Molar Carbon
 <<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!>>>>

Sample Run By:

KR MONTEITH

00000

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV: 2.0

Sample: BLK1

Date: 08/22/97

Time: 10:03:48

Sample Size = 1 uL

Dil Factor = 1

Blank ID # =

Blank Value = .54 ug/minute C

Analyst : KR MONTEITH

Min Readings = 22

Max Readings = 22

% Difference = 10

== Reading ==	==== Analysis Time ==	==== Coulometer ==	==== % Difference ==
1	0.51	1.50	0.00
2	1.01	2.60	42.31
3	1.51	3.20	18.75
4	2.00	3.90	17.95
5	2.50	4.40	11.36
6	3.00	4.70	6.38
7	3.50	5.10	7.84
8	4.00	5.60	8.93
9	4.50	5.80	3.45
10	5.00	6.10	4.92
11	5.50	6.50	6.15
12	6.00	6.90	5.80
13	6.50	7.10	2.82
14	7.00	7.40	4.05
15	7.50	7.80	5.13
16	8.00	8.30	6.02
17	8.50	8.60	3.49
18	9.00	8.80	2.27
19	9.50	9.20	4.35
20	10.00	9.50	3.16
21	10.50	9.90	4.04
22	11.00	10.20	2.94

USER INPUT BLANK VALUE

BLANK VALUE = 5.959611 micrograms carbon

BLANK FACTOR = 5.959611 / 11.03632 = +5.4E-01 ug/min Carbon

SAMPLE RESULTS:

(10.2 - 5.938847) (1)/(1) = +4.26E+00 g/L Carbon

(10.2 - 5.938847) (1)/(1) (12) = +3.55E-01 Molar Carbon

Sample Run By:

KR MONTEITH

00000

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: BLK1

Date: 08/22/97

Time: 10:15:50

Sample Size = 1 uL

Analyst : KR MONTEITH

Dil Factor = 1

Min Readings = 22

Blank ID # =

Max Readings = 22

Blank Value = 2.64 ug/minute C

% Difference = 10

== Reading ==	Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.30	0.00
2	1.01	0.80	62.50
3	1.51	6.50	87.69
4	2.00	14.00	53.57
5	2.50	17.30	19.08
6	3.00	19.40	10.82
7	3.50	20.40	4.90
8	4.00	21.20	3.77
9	4.50	21.80	2.75
10	5.00	22.40	2.68
11	5.50	22.80	1.75
12	6.00	23.40	2.56
13	6.50	23.80	1.68
14	7.00	24.20	1.65
15	7.50	24.70	2.02
16	8.00	25.20	1.98
17	8.50	25.60	1.56
18	9.00	26.10	1.92
19	9.50	26.50	1.51
20	10.00	27.00	1.85
21	10.50	27.30	1.10
22	11.00	27.80	1.80

USER INPUT BLANK VALUE

BLANK VALUE = 29.13588 micrograms carbon

BLANK FACTOR = 29.13588 / 11.03632 = +2.6E+00 ug/min Carbon

SAMPLE RESULTS:

{ 27.8 - 29.03485 } (1)/(1) = < 5.00 E-3 g/L Carbon
 { 27.8 - 29.03485 } (1)/(1) (12) = < 4.17 E-4 Molar Carbon
 <<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!>>>>

Sample Run By:

KR MONTEITH

00000

HNF-SD-WM-DP-259, REV. 0
TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S97T1487-1

Date: 08/22/97

Time: 10:27:43

Sample Size = 1 uL

Dil Factor = 1

Blank ID # =

Blank Value = .54 ug/minute C

Analyst : KR MONTEITH

Min Readings = 22

Max Readings = 22

% Difference = 10

== Reading ==	Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.50	0.00
2	1.00	0.90	44.44
3	1.50	16.20	94.44
4	2.00	189.00	91.43
5	2.50	569.90	66.84
6	3.00	908.80	37.29
7	3.50	1107.40	17.93
8	4.00	1203.00	7.95
9	4.50	1244.30	3.32
10	5.00	1261.70	1.38
11	5.50	1268.80	0.56
12	6.00	1272.20	0.27
13	6.50	1274.40	0.17
14	7.00	1276.00	0.13
15	7.50	1277.30	0.10
16	8.00	1278.50	0.09
17	8.50	1279.40	0.07
18	9.00	1280.30	0.07
19	9.50	1281.30	0.08
20	10.00	1282.10	0.06
21	10.50	1282.70	0.05
22	11.00	1283.50	0.06

USER INPUT BLANK VALUE

BLANK VALUE = 5.959611 micrograms carbon

BLANK FACTOR = 5.959611 / 11.03632 = +5.4E-01 ug/min Carbon

SAMPLE RESULTS:

(1283.5 - 5.938385) (1) / (1) = +1.2776E+03 g/L Carbon
(1283.5 - 5.938385) (1) / (1) (12) = +1.0646E+02 Molar Carbon

Sample Run By:

KR MONTEITH

00000

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S97T1487-1

Date: 08/22/97

Time: 10:39:48

Sample Size = 1 uL

Dil Factor = 1

Blank ID # =

Blank Value = 2.64 ug/minute C

Analyst : KR MONTEITH

Min Readings = 22

Max Readings = 22

% Difference = 10

== Reading ==	==== Analysis Time ==	==== Coulometer ==	==== % Difference ==
1	0.51	0.90	0.00
2	1.01	5.20	82.69
3	1.50	367.20	98.58
4	2.00	1084.60	66.14
5	2.50	1335.20	18.77
6	3.00	1409.70	5.28
7	3.50	1438.60	2.01
8	4.00	1454.00	1.06
9	4.50	1462.50	0.58
10	5.00	1468.20	0.39
11	5.50	1472.60	0.30
12	6.00	1475.70	0.21
13	6.50	1478.30	0.18
14	7.00	1480.40	0.14
15	7.50	1482.30	0.13
16	8.00	1483.70	0.09
17	8.50	1484.90	0.08
18	9.00	1485.90	0.07
19	9.50	1486.80	0.06
20	10.00	1487.80	0.07
21	10.50	1488.50	0.05
22	11.00	1489.30	0.05

USER INPUT BLANK VALUE

BLANK VALUE = 29.13588 micrograms carbon

BLANK FACTOR = 29.13588 / 11.03632 = +2.6E+00 ug/min Carbon

SAMPLE RESULTS:

(1489.3 - 29.03436) (1)/(1) = +1.4603E+03 g/L Carbon

(1489.3 - 29.03436) (1)/(1)(12) = +1.2169E+02 Molar Carbon

<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!>>>>

Sample Run By:

KR MONTEITH

00000

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S97T1487DUP-1

Date: 08/22/97

Time: 10:51:49

Sample Size = 1 uL

Dil Factor = 1

Blank ID # =

Blank Value = .54 ug/minute C

Analyst : KR MONTEITH

Min Readings = 22

Max Readings = 22

% Difference = 10

== Reading ==	==== Analysis Time ==	==== Coulometer ==	==== % Difference ==
1	0.51	0.80	0.00
2	1.01	1.50	46.67
3	1.50	5.90	74.58
4	2.00	56.10	89.48
5	2.50	184.70	69.63
6	3.00	367.70	49.77
7	3.50	512.20	28.21
8	4.00	586.20	12.62
9	4.50	620.60	5.54
10	5.00	634.10	2.13
11	5.50	640.40	0.98
12	6.00	643.30	0.45
13	6.50	645.90	0.40
14	7.00	648.30	0.37
15	7.50	650.60	0.35
16	8.00	652.80	0.34
17	8.50	654.50	0.26
18	9.00	656.20	0.26
19	9.50	657.70	0.23
20	10.00	659.00	0.20
21	10.50	660.40	0.21
22	11.00	661.20	0.12

USER INPUT BLANK VALUE

BLANK VALUE = 5.959611 micrograms carbon

BLANK FACTOR = 5.959611 / 11.03632 =

+5.4E-01 ug/min Carbon

SAMPLE RESULTS:

(661.2 - 5.938814) (1)/(1) =

+6.553E+02 g/L Carbon

(661.2 - 5.938814) (1)/(1)(12) =

+5.461E+01 Molar Carbon

Sample Run By:

KR MONTEITH

00000

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S97T1487DUP-1

Date: 08/22/97

Time: 13:28:58

Sample Size = 1 uL

Dil Factor = 1

Blank ID # =

Blank Value = 2.64 ug/minute C

Analyst : KR MONTEITH

Min Readings = 22

Max Readings = 22

% Difference = 10

== Reading ==== Analysis Time ==== Coulometer ==== % Difference ==

1	0.51	0.80	0.00
2	1.01	3.80	78.95
3	1.51	196.10	98.06
4	2.00	557.00	64.79
5	2.50	706.40	21.15
6	3.00	754.90	6.42
7	3.50	773.50	2.40
8	4.00	782.90	1.20
9	4.50	788.10	0.66
10	5.04	791.80	0.47
11	5.54	794.50	0.34
12	6.04	796.50	0.25
13	6.54	798.10	0.20
14	7.03	799.50	0.18
15	7.53	800.60	0.14
16	8.03	801.60	0.12
17	8.53	802.40	0.10
18	9.03	803.30	0.11
19	9.53	803.90	0.07
20	10.03	804.70	0.10
21	10.53	805.20	0.06
22	11.03	805.90	0.09

USER INPUT BLANK VALUE

BLANK VALUE = 29.13588 micrograms carbon

BLANK FACTOR = 29.13588 / 11.03632 = +2.6E+00 ug/min Carbon

SAMPLE RESULTS:

(805.9 - 29.12621) (1)/(1) = +7.768E+02 g/L Carbon
 (805.9 - 29.12621) (1)/(1) (12) = +6.473E+01 Molar Carbon
 <<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!>>>

Sample Run By:

KR MONTEITH

00000

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S97T1488-1

Date: 08/22/97

Time: 14:00:00

Sample Size = 1 uL

Dil Factor = 1

Blank ID # =

Blank Value = .54 ug/minute C

Analyst : KR MONTEITH

Min Readings = 22

Max Readings = 22

% Difference = 10

== Reading ==	==== Analysis Time ==	==== Coulometer ==	==== % Difference ==
1	0.51	9.00	0.00
2	1.01	19.10	52.88
3	1.51	40.40	52.72
4	2.00	69.40	41.79
5	2.50	120.10	42.21
6	3.00	164.90	27.17
7	3.50	191.30	13.80
8	4.00	202.90	5.72
9	4.50	208.70	2.78
10	5.00	211.20	1.18
11	5.50	213.20	0.94
12	6.00	214.70	0.70
13	6.50	215.90	0.56
14	7.00	217.20	0.60
15	7.50	218.30	0.50
16	8.00	219.40	0.50
17	8.50	220.50	0.50
18	9.00	221.50	0.45
19	9.50	222.50	0.45
20	10.00	223.50	0.45
21	10.50	224.40	0.40
22	11.00	225.40	0.44

USER INPUT BLANK VALUE

BLANK VALUE = 0 micrograms carbon

BLANK FACTOR = 0 / 0 =

+5.4E-01 ug/min Carbon

SAMPLE RESULTS:

(225.4 - 5.938946) (1)/(1) =

+2.195E+02 g/L Carbon

(225.4 - 5.938946) (1)/(1) (12) =

+1.829E+01 Molar Carbon

Sample Run By:

KR MONTEITH

00000

HNF-SD-WM-DP-259, REV. 0
 TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
 TIC/TOC REV 2.0

Sample: S97T1488-1

Date: 08/22/97

Time: 14:12:52

Sample Size = 1 uL

Dil Factor = 1

Blank ID # =

Blank Value = 2.64 ug/minute C-

Analyst : KR MONTEITH

Min Readings = 22

Max Readings = 22

% Difference = 10

== Reading ==	==== Analysis Time ==	==== Coulometer ==	==== % Difference ==
1	0.51	1.10	0.00
2	1.01	49.20	97.76
3	1.50	444.80	88.94
4	2.00	905.80	50.89
5	2.50	1046.70	13.46
6	3.00	1086.90	3.70
7	3.50	1101.80	1.35
8	4.00	1108.40	0.60
9	4.50	1112.50	0.37
10	5.00	1115.50	0.27
11	5.50	1118.10	0.23
12	6.00	1119.90	0.16
13	6.50	1121.60	0.15
14	7.00	1123.10	0.13
15	7.50	1124.40	0.12
16	8.00	1125.60	0.11
17	8.50	1126.60	0.09
18	9.00	1127.90	0.12
19	9.50	1128.80	0.08
20	10.00	1129.70	0.08
21	10.50	1130.70	0.09
22	11.00	1131.70	0.09

USER INPUT BLANK VALUE

BLANK VALUE = 0 micrograms carbon

BLANK FACTOR = 0 / 0 =

+2.6E+00 ug/min Carbon

SAMPLE RESULTS:

(1131.7 - 29.03211) (1)/(1) =

+1.1027E+03 g/L Carbon

(1131.7 - 29.03211) (1)/(1) (12) =

+9.1889E+01 Molar Carbon

<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!>>>>

Sample Run By:

KR MONTEITH

00000

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S97T1488DUP-1

Date: 08/22/97

Time: 14:25:32

Sample Size = 1 uL

Dil Factor = 1

Blank ID # =

Blank Value = .54 ug/minute C

Analyst : KR MONTEITH

Min Readings = 22

Max Readings = 22

% Difference = 10

== Reading ==	==== Analysis Time ==	==== Coulometer ==	==== % Difference ==
1	0.51	0.40	0.00
2	1.00	1.20	66.67
3	1.50	2.10	42.86
4	2.00	3.30	36.36
5	2.50	3.30	0.00
6	3.00	3.30	0.00
7	3.50	3.30	0.00
8	4.00	3.30	0.00
9	4.50	3.40	2.94
10	5.00	7.30	53.42
11	5.50	9.90	26.26
12	6.00	12.80	22.66
13	6.50	25.30	49.41
14	7.00	37.70	32.89
15	7.50	44.80	15.85
16	8.00	48.60	7.82
17	8.50	50.90	4.52
18	9.00	52.80	3.60
19	9.50	54.40	2.94
20	10.00	55.50	1.98
21	10.50	57.00	2.63
22	11.00	57.90	1.55

USER INPUT BLANK VALUE

BLANK VALUE = 0 micrograms carbon

BLANK FACTOR = 0 / 0 =

+5.4E-01 ug/min Carbon

SAMPLE RESULTS:

(57.9 - 5.938814) (1)/(1) =

+5.20E+01 g/L Carbon

(57.9 - 5.938814) (1)/(1) (12) =

+4.33E+00 Molar Carbon

Sample Run By:

KR MONTEITH

00000

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S97T1488DUP-1

Date: 08/22/97

Time: 14:38:01

Sample Size = 1 uL

Dil Factor = 1

Blank ID # =

Blank Value = 2.64 ug/minute C

Analyst : KR MONTEITH

Min Readings = 22

Max Readings = 22

% Difference = 10

== Reading ==	==== Analysis Time ==	==== Coulometer ==	==== % Difference ==
1	0.51	1.20	0.00
2	1.01	2.10	42.86
3	1.51	5.50	61.82
4	2.00	237.60	97.69
5	2.51	919.80	74.17
6	3.00	1139.10	19.25
7	3.50	1207.30	5.65
8	4.00	1237.90	2.47
9	4.50	1249.70	0.94
10	5.00	1255.10	0.43
11	5.50	1258.30	0.25
12	6.00	1260.50	0.17
13	6.50	1262.30	0.14
14	7.00	1264.90	0.21
15	7.50	1266.90	0.16
16	8.00	1268.60	0.13
17	8.50	1269.60	0.08
18	9.00	1270.70	0.09
19	9.50	1271.30	0.05
20	10.00	1271.30	0.00
21	10.50	1271.30	0.00
22	11.00	1271.30	0.00

USER INPUT BLANK VALUE

BLANK VALUE = 0 micrograms carbon

BLANK FACTOR = 0 / 0 =

+2.6E+00 ug/min Carbon

SAMPLE RESULTS:

(1271.3 - 29.03678) (1)/(1) = +1.2423E+03 g/L Carbon
 (1271.3 - 29.03678) (1)/(1) (12) = +1.0352E+02 Molar Carbon
 <<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!>>>>

Sample Run By:

KR MONTEITH

00000

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S97T1488TRP-1

Date: 08/22/97

Time: 16:06:26

Sample Size = 1 uL

Dil Factor = 1

Blank ID # =

Blank Value = .54 ug/minute C

Analyst : KR MONTEITH

Min Readings = 22

Max Readings = 22

% Difference = 10

== Reading ==	==== Analysis Time ==	==== Coulometer ==	==== % Difference ==
1	0.51	0.20	0.00
2	1.01	0.60	66.67
3	1.51	1.60	62.50
4	2.00	7.00	77.14
5	2.50	25.50	72.55
6	3.00	49.80	48.80
7	3.50	67.60	26.33
8	4.00	80.00	15.50
9	4.50	87.80	8.88
10	5.00	92.90	5.49
11	5.50	96.90	4.13
12	6.00	100.30	3.39
13	6.50	103.30	2.90
14	7.00	105.80	2.36
15	7.50	108.20	2.22
16	8.00	110.50	2.08
17	8.50	112.50	1.78
18	9.00	114.40	1.66
19	9.50	116.30	1.63
20	10.00	117.90	1.36
21	10.50	119.80	1.59
22	11.00	121.20	1.16

USER INPUT BLANK VALUE

BLANK VALUE = 0 micrograms carbon

BLANK FACTOR = 0 / 0 =

+5.4E-01 ug/min Carbon

SAMPLE RESULTS:

(121.2 - 5.939374) (1)/(1) =

+1.153E+02 g/L Carbon

(121.2 - 5.939374) (1)/(1) (12) =

+9.605E+00 Molar Carbon

Sample Run By:

KR MONTEITH

00000

HNF-SD-WM-DP-259, REV. 0

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S97T1488TRP-1

Date: 08/22/97

Time: 16:18:20

Sample Size = 1 uL

Dil Factor = 1

Blank ID # =

Blank Value = 2.64 ug/minute C

Analyst : KR MONTEITH

Min Readings = 22

Max Readings = 22

% Difference = 10

== Reading ==	==== Analysis Time ==	==== Coulometer ==	==== % Difference ==
1	0.51	1.80	0.00
2	1.01	7.70	76.62
3	1.50	327.70	97.65
4	2.00	720.60	54.52
5	2.50	816.70	11.77
6	3.00	854.60	4.43
7	3.50	872.80	2.09
8	4.00	883.90	1.26
9	4.50	891.90	0.90
10	5.00	898.50	0.73
11	5.50	903.90	0.60
12	6.00	908.70	0.53
13	6.50	912.90	0.46
14	7.00	916.80	0.43
15	7.50	919.90	0.34
16	8.00	923.20	0.36
17	8.50	926.20	0.32
18	9.00	929.10	0.31
19	9.50	931.50	0.26
20	10.00	933.90	0.26
21	10.50	936.00	0.22
22	11.00	938.20	0.23

USER INPUT BLANK VALUE

BLANK VALUE = 0 micrograms carbon

BLANK FACTOR = 0 / 0 =

+2.6E+00 ug/min Carbon

SAMPLE RESULTS:

(938.2 - 29.03694) (1)/(1) = +9.092E+02 g/L Carbon
 (938.2 - 29.03694) (1)/(1) (12) = +7.576E+01 Molar Carbon
 <<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!!>>>>

Sample Run By:

KR MONTEITH

00000

HNF-SD-WM-DP-259, REV. 0
TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S97T1488SPK-1

Date: 08/22/97

Time: 16:32:07

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .54 ug/minute C

Analyst : KR MONTEITH
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading ==	==== Analysis Time ==	==== Coulometer ==	==== % Difference ==
1	0.51	2.00	0.00
2	1.01	3.70	45.95
3	1.50	7.40	50.00
4	2.01	43.30	82.91
5	2.50	132.30	67.27
6	3.00	233.30	43.29
7	3.50	311.90	25.20
8	4.00	359.80	13.31
9	4.50	386.90	7.00
10	5.00	402.30	3.83
11	5.50	411.60	2.26
12	6.00	417.60	1.44
13	6.50	423.00	1.28
14	7.00	427.00	0.94
15	7.50	430.90	0.91
16	8.00	434.50	0.83
17	8.50	437.70	0.73
18	9.00	440.60	0.66
19	9.50	443.50	0.65
20	10.00	445.90	0.54
21	10.50	448.30	0.54
22	11.00	450.70	0.53

USER INPUT BLANK VALUE

BLANK VALUE = 0 micrograms carbon

BLANK FACTOR = 0 / 0 =

+5.4E-01 ug/min Carbon

SAMPLE RESULTS:

(450.7 - 5.939836) (1)/(1) =
(450.7 - 5.939836) (1)/(1) (12) =

+4.448E+02 g/L Carbon
+3.706E+01 Molar Carbon

Sample Run By:

KR MONTEITH

00000

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S97T1488SPK-1

Date: 08/22/97

Time: 16:45:14

Sample Size = 1 uL

Dil Factor = 1

Blank ID # =

Blank Value = 2.64 ug/minute C

Analyst : KR MONTEITH

Min Readings = 22

Max Readings = 22

% Difference = 10

== Reading ==	==== Analysis Time ==	==== Coulometer ==	==== % Difference ==
1	0.51	2.30	0.00
2	1.01	3.90	41.03
3	1.51	50.00	92.20
4	2.01	436.90	88.56
5	2.50	883.00	50.52
6	3.00	1094.30	19.31
7	3.50	1167.00	6.23
8	4.00	1199.90	2.74
9	4.50	1217.40	1.44
10	5.00	1227.70	0.84
11	5.50	1234.90	0.58
12	6.04	1241.20	0.51
13	6.54	1246.50	0.43
14	7.04	1250.90	0.35
15	7.53	1254.70	0.30
16	8.04	1258.40	0.29
17	8.53	1262.00	0.29
18	9.03	1264.60	0.21
19	9.53	1267.70	0.24
20	10.03	1270.40	0.21
21	10.53	1273.00	0.20
22	11.03	1275.40	0.19

USER INPUT BLANK VALUE

BLANK VALUE = 0 micrograms carbon

BLANK FACTOR = 0 / 0 =

+2.6E+00 ug/min Carbon

SAMPLE RESULTS:

(1275.4 - 29.12621) (1)/(1) =

+1.2463E+03 g/L Carbon

(1275.4 - 29.12621) (1)/(1) (12) =

+1.0386E+02 Molar Carbon

<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!>>>>

Sample Run By:

KR MONTEITH

00000

LABCORE Completed Worklist Report for Worklist# 20958

Analyst: slh

Instrument: CARB2

Book# TIC 25N128
TOC 26N128

Method: LA 342-100 Rev/Mod E-0

Worklist Comment: BY109 (P), @TICTOC1 STD: TIC=1.0mL, TOC=0.200mL skw

Seq Type	Sample#	R A	Test	Matrix	Actual	Found	DL or Yield	Unit
1 BLNK	0		@TICTOC1 TIC-02	SOLID	1	5.00E+0	5.000	ug/g
1 BLNK	0		@TICTOC1 TOC-02	SOLID	1	1.37E+1	13.700	ug/g
2 STD	0		@TICTOC1 TIC-02	SOLID	6.02E+02	5.74E+2	95.349 % Recovery	
2 STD	0		@TICTOC1 TOC-02	SOLID	3.00E+03	2.76E+3	92.000 % Recovery	
3 SAMPLE	S97T001463	0	@TICTOC1 TIC-02	SOLID	N/A	3.95E+03	5.000	ug/g
3 SAMPLE	S97T001463	0	@TICTOC1 TOC-02	SOLID	N/A	5.33E+03	40.000	ug/g
4 DUP	S97T001463	0	@TICTOC1 TIC-02	SOLID	3.95E+3	3.83E+3	3.085 RPD	
4 DUP	S97T001463	0	@TICTOC1 TOC-02	SOLID	5.33E+3	2.96E+3	57.177 RPD	
5 TRIPL	S97T001463	0	@TICTOC1 TIC-02	SOLID	3.95E+3	3.92E+3	0.762 RPD	
5 TRIPL	S97T001463	0	@TICTOC1 TOC-02	SOLID	5.33E+3	3.43E+3	43.379 RPD	
6 SPK	S97T001463	0	@TICTOC1 TIC-02	SOLID	1.00E+02	9.47E+01	94.700 % Recovery	
6 SPK	S97T001463	0	@TICTOC1 TOC-02	SOLID	1.00E+02	9.82E+00	9.820 % Recovery	
7 SAMPLE	S97T001736	0	@TICTOC1 TIC-02	SOLID	N/A	1.65E+03	5.000	ug/g
7 SAMPLE	S97T001736	0	@TICTOC1 TOC-02	SOLID	N/A	2.20E+03	40.000	ug/g
8 DUP	S97T001736	0	@TICTOC1 TIC-02	SOLID	1.65E+3	1.50E+3	9.524 RPD	
8 DUP	S97T001736	0	@TICTOC1 TOC-02	SOLID	2.20E+3	3.54E+3	46.690 RPD	
9 TRIPL	S97T001736	0	@TICTOC1 TIC-02	SOLID	1.65E+3	1.50E+3	9.524 RPD	
9 TRIPL	S97T001736	0	@TICTOC1 TOC-02	SOLID	2.20E+3	3.50E+3	45.614 RPD	

Final page for worklist# 20958

Analyst Signature _____ Date _____

Susan Bee 10/31/97
Analyst Signature Date

R. W. Schaefer 11/7/97
Reviewer Signature Date

LABCORE Data Entry Template for Worklist# 20958

Analyst: _____ Instrument: CARB2 _____ Book# _____

Method: LA-342-100 Rev/Mod _____

Worklist Comment: BY109 (P), @TICTOC1 STD: TIC=1.0mL, TOC=0.200mL skw

S Type	Sample#	R A	Test	Matrix	Group#	Project
1 BLNK			@TICTOC1	SOLID		
2 STD			@TICTOC1	SOLID		
3 SAMPLE	S97T001463 0		@TICTOC1	SOLID	97000412	BY-109 (P)
	Analytes Requested: TIC-02 , TOC-02					
4 DUP	S97T001463 0		@TICTOC1	SOLID		
5 TRIPL	S97T001463 0		@TICTOC1	SOLID		
6 SPK	S97T001463 0		@TICTOC1	SOLID		
7 SAMPLE	S97T001736 0		@TICTOC1	SOLID	97000412	BY-109 (P)
	Analytes Requested: TIC-02 , TOC-02					
8 DUP	S97T001736 0		@TICTOC1	SOLID		
9 TRIPL	S97T001736 0		@TICTOC1	SOLID		

Final page for worklist # 20958

Analyst Signature _____ Date _____

Analyst Signature _____ Date _____

Data Entry Comments:

LABCORE Data Entry Template for Worklist# 20958

Analyst: SLH Instrument: CARB2 Book# TIC 25N12-B
TOC 26N12-B

Method: LA-342-100 Rev/Mod _____

Worklist Comment: BY109 (P), @TICTOC1 STD: TIC=1.0mL, TOC=0.200mL skw

S Type	Sample#	R A	Test	Matrix	Group#	Project
1 BLNK			@TICTOC1	SOLID		
2 STD			@TICTOC1	SOLID		
3 SAMPLE	S97T001463 0		@TICTOC1	SOLID	97000412	BY-109 (P)
	Analytes Requested: TIC-02 , TOC-02					
4 DUP	S97T001463 0		@TICTOC1	SOLID		
5 SAMPLE	S97T001736 0		@TICTOC1	SOLID	97000412	BY-109 (P)
	Analytes Requested: TIC-02 , TOC-02					
6 DUP	S97T001736 0		@TICTOC1	SOLID		
7 SPK	S97T001736 0		@TICTOC1	SOLID		

Final page for worklist # 20958

Andro L. H. Bostricht
Analyst Signature Date
10-31-97

Analyst Signature Date

Data Entry Comments:

WORKBOOK PAGE: BLANK1

TIC/TOC : LA-342-100 (E-0)

SOLIDS

		TIC	TOC
Type	Sample Size in g (SS)	0.0934	0.0934
BLNK	Dilution Factor (DF)	1	1
Work List	µg of Carbon in Sample (C1)	8.7	20.4
20958	µg of Carbon from Baseline (C2)	3.7	34.1

Test Code
@TICTOC1
Matrix
SOLID
Batch Number
97005155
Rerun
0
Sample Prep
N/A
Sample #
BLANK
Instrument Code
CARB2
Prepared By
SKB
Chemist
RWS
Analyst
SLH
Date Complete
10/31/97
Analysis Date
10/31/97
Analysis Time
05:00 AM
Sample Point
BY-109

µg of Carbon = |C1-C2|

	TIC	TOC
Method Detection Limit in ug/g	5	40
µg of Carbon	5.00E+00	1.37E+01

Data Entered By:

Signature of Chemist:

SKB

Date: 10/31/97

Date: 11/7/97

BLANK.WB1 REV 1.0

342100ML

WORKBOOK PAGE: STD2

TIC/TOC : LA-342-100 (E-0)

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)	577.2	586.8
20958	μg of Carbon from Baseline (C2)	3.7	34.1
Test Code	Standard Book Number	25N12B	26N12B
@TIC/TOC1	Standard Value ($\mu\text{g}/\text{mL}$)	602	3000

Matrix
LIQUID
Batch Number
97005155
Rerun
0
Sample Prep
N/A
Sample #
Instrument Code
CARB2
Prepared By
SKB
Chemist
RWS
Analyst
SLH
Date Complete
10/31/97
Analysis Date
10/31/97
Analysis Time
05:00 AM
Sample Point
BY-109

QC Actual in $\mu\text{g}/\text{mL}$ = Standard Value ($\mu\text{g}/\text{mL}$)QC Found in $\mu\text{g}/\text{mL}$ = (C1 - C2) * DF / SSQC Found in $\mu\text{g}/\text{mL}$ for TIC = 5 if C1 < C2QC Found in $\mu\text{g}/\text{mL}$ for TOC = 40 if C1 < C2

% Recovery = QC Found / QC Actual * 100

	TIC	TOC
Method Detection Limit in $\mu\text{g}/\text{mL}$	5	40
QC Actual in $\mu\text{g}/\text{mL}$	6.02E+02	3.00E+03
QC Found in $\mu\text{g}/\text{mL}$	5.74E+02	2.76E+03
Percent Standard Recovery	95.3	92.1

Data Entered By:

Signature of Chemist:

STANDARD.WB1 REV 1.0

342100ML

SKB
SKB

Date: 10/31/97

Date: 11/9/97

WORKBOOK PAGE: SAM3

TIC/TOC : LA-342-100 (E-0)

SOLIDS

		TIC	TOC
Type	Sample Size in g (SS)	0.0934	0.0934
SAMPLE	Dilution Factor (DF)	1	1
Work List	µg of Carbon in Sample (C1)	372.2	531.7
20958	µg of Carbon from Baseline (C2)	3.7	34.1
Test Code			
@TICTOC1			
Matrix			
SOLID			
Batch Number			
97005155			
Rerun			
0	µg of Carbon/g = (C1-C2) * DF / SS		
Sample Prep	µg of Carbon/g for TIC = 5 if C1 < C2		
N/A	µg of Carbon/g for TOC = 40 if C1 < C2		
Sample #			
S97T001463			
Instrument Code			
CARB2			
Prepared By			
SKB			
Chemist			
RWS			
Analyst			
SLH			
Date Complete			
10/31/97			
Analysis Date			
10/31/97			
Analysis Time	Method Detection Limit in ug/g	5	40
05:00 AM			
Sample Point	µg of Carbon/g	3.95E+03	5.33E+03
BY-109			

Data Entered By:

SKB

Date: 10/31/97

Signature of Chemist:

R. J. Schmedt

Date: 11/7/97

SAMPLE.WB1 REV 1.0

342100ML

WORKBOOK PAGE: DUP4

TIC/TOC : LA-342-100 (E-0)

SOLIDS

		TIC	TOC
Type	Sample Size in g (SS)	0.0896	0.0896
DUP	Dilution Factor (DF)	1	1
Work List	µg of Carbon in Sample (C1)	346.9	299.6
20958	µg of Carbon from Baseline (C2)	3.7	34.1
Test Code	Known µg of C from Original Sample	3.95E+3	5.33E+3
@TIC/TOC1			

Matrix
SOLID
Batch Number
97005155
Rerun
0
Sample Prep
N/A
Sample #
S97T001463
Instrument Code
CARB2
Prepared By
SKE
Chemist
RWS
Analyst
SLH
Date Complete
10/31/97
Analysis Date
10/31/97
Analysis Time
05:00 AM
Sample Point
BY-109

$\mu\text{g of Carbon/g} = (C1-C2) * DF / SS$
 $\mu\text{g of Carbon/g for TIC} = 5 \text{ if } C1 < C2$
 $\mu\text{g of Carbon/g for TOC} = 40 \text{ if } C1 < C2$

	TIC	TOC
Method Detection Limit in ug/g	5	40
µg of Carbon/g	3.83E+03	2.96E+03

Data Entered By:

SKB

Date: 10/31/97

Signature of Chemist:

R. W. Schmidt

Date: 11/2/97

WORKBOOK PAGE: TRIPL5

TIC/TOC : LA-342-100 (E-0)

SOLIDS

		TIC	TOC
Type	Sample Size in g (SS)	0.0931	0.0931
TRIPL	Dilution Factor (DF)	1	1
Work List	µg of Carbon in Sample (C1)	368.3	353.7
20958	µg of Carbon from Baseline (C2)	3.7	34.1
Test Code	Known µg of C from Original Sample	3.95E+3	5.33E+3
@TICTOC1	Duplicate Result	3.83E+3	2.96E+3

Matrix
SOLID
Batch Number
97005155
Rerun
0
Sample Prep
N/A
Sample #
S97T001463
Instrument Code
CARB2
Prepared By
SKB
Chemist
RWS
Analyst
SLH
Date Complete
10/31/97
Analysis Date
10/31/97
Analysis Time
05:00 AM
Sample Point
BY-109

$\mu\text{g of Carbon/g} = (C1 - C2) * DF / SS$
 $\mu\text{g of Carbon/g for TIC} = 5 \text{ if } C1 < C2$
 $\mu\text{g of Carbon/g for TOC} = 40 \text{ if } C1 < C2$

	TIC	TOC
Method Detection Limit in ug/g	5	40
µg of Carbon/g	3.92E+03	3.43E+03

Data Entered By:

SKB

Date: 10/31/97

Signature of Chemist:

Date: 11/7/97

SAMPLE.WB1 REV 1.0

342100ML

700

WORKBOOK PAGE: SPIKE6

TIC/TOC : LA-342-100 (E-0)

SOLIDS

Type	Sample Vial Data	TIC	TOC
SPK	Sample Size in g (SS)	0.0934	0.0934
Work List	Final Coulometer Reading in µg (C1)	372.2	531.7
20958	Spiked Vial Data		
Test Code	Sample Size in g (SPK SS)	0.1131	0.1131
@TICTOC1	Amount of Spike Std. in mL (SPK VOL)	0.500	0.100
Matrix	Final Coulometer Reading in µg (C2)	735.7	673.3
SOLID	Spike Book Number	25N12B	26N12B
Batch Number	Spike Standard Value in µg/mL (SPK CONC)	602	3000
97005155			
Rerun			
0			
Sample Prep			
N/A			
Sample #	Percent Spike Recovery = $(C2 - C1 * (SPK SS) / SS) / ((SPK CONC) * (SPK VOL)) *$		
S97T001463			
Instrument Code	QC Actual in µg/mL = Spike Value (µg/mL)		
CARB2	QC Found in µg/mL = (Percent Spike Recovery)*(QC Actual) / 100		
Prepared By			
SKB			
Chemist			
RWS			
Analyst			
SLH			
Date Complete			
10/31/97			
Analysis Date			
10/31/97			
Analysis Time			
05:00 AM	QC Actual in µg/mL	6.02E+02	3.00E+03
Sample Point	QC Found in µg/mL	5.70E+02	2.95E+02
BY-109	Percent Spike Recovery	94.7	9.8

Data Entered By:

SKB

Date: 10/31/97

Signature of Chemist:

Rew. Schneider

Date: 11/7/97

SPIKE.WB1 REV 1.1

342100ML

701

I:\342100\OUT\20958.WB1

10/31/97

11:29:38

WORKBOOK PAGE: SAM7

TIC/TOC : LA-342-100 (E-0)

SOLIDS

		TIC	TOC
Type	Sample Size in g (SS)	0.1748	0.1748
SAMPLE	Dilution Factor (DF)	1	1
Work List	µg of Carbon in Sample (C1)	291.9	419
20958	µg of Carbon from Baseline (C2)	3.7	34.1
Test Code			
@TIC/TOC1			
Matrix			
SOLID			
Batch Number			
97005155			
Rerun			
0			
Sample Prep			
N/A			
Sample #			
S97T001736			
Instrument Code			
CARB2			
Prepared By			
SKB			
Chemist			
RWS			
Analyst			
SLH			
Date Complete			
10/31/97			
Analysis Date			
10/31/97			
Analysis Time	Method Detection Limit in ug/g	5	40
05:00 AM			
Sample Point	µg of Carbon/g	1.65E+03	2.20E+03
BY-109			

$\mu\text{g of Carbon/g} = (C1 - C2) * DF / SS$
 $\mu\text{g of Carbon/g for TIC} = 5 \text{ if } C1 < C2$
 $\mu\text{g of Carbon/g for TOC} = 40 \text{ if } C1 < C2$

Data Entered By:

SKB

Date: 10/31/97

Signature of Chemist:

Date: 11/7/97

SAMPLE.WB1 REV 1.0

342100ML

702

WORKBOOK PAGE: DUP8

TIC/TOC : LA-342-100 (E-0)

SOLIDS

		TIC	TOC
Type	Sample Size in g (SS)	0.1283	0.1283
DUP	Dilution Factor (DF)	1	1
Work List	µg of Carbon in Sample (C1)	195.7	488.9
20958	µg of Carbon from Baseline (C2)	3.7	34.1
Test Code	Known µg of C from Original Sample	1.65E+3	2.20E+3
@TIC/TOC1			
Matrix			
SOLID			
Batch Number			
97005155			
Rerun	µg of Carbon/g = (C1-C2) * DF / SS		
0	µg of Carbon/g for TIC = 5 if C1 < C2		
Sample Prep	µg of Carbon/g for TOC = 40 if C1 < C2		
N/A			
Sample #			
S97T001736			
Instrument Code			
CARB2			
Prepared By			
SKB			
Chemist			
RWS			
Analyst			
SLH			
Date Complete			
10/31/97			
Analysis Date			
10/31/97			
Analysis Time	Method Detection Limit in ug/g	TIC	TOC
05:00 AM		5	40
Sample Point	µg of Carbon/g	1.50E+03	3.54E+03
BY-109			

Data Entered By:	SKB	Date:	10/31/97
Signature of Chemist:	<i>Reilly Schmitt</i>	Date:	11/7/97

SAMPLE.WB1 REV 1.0

342100ML

703

WORKBOOK PAGE: TRIPL9

TIC/TOC : LA-342-100 (E-0)

SOLIDS

Type	Sample Size in g (SS)	TIC	TOC
TRIPL	Dilution Factor (DF)	0.1008	0.1008
Work List	µg of Carbon in Sample (C1)	1	1
20958	µg of Carbon from Baseline (C2)	155.3	387.2
Test Code	Known µg of C from Original Sample	3.7	34.1
@TICTOC1	Duplicate Result	1.65E+3	2.20E+3
		1.50E+3	3.80E+5

Matrix
SOLID
Batch Number
97005155
Rerun
0
Sample Prep
N/A
Sample #
S97T001736
Instrument Code
CARB2
Prepared By
SKB
Chemist
RWS
Analyst
SLH
Date Complete
10/31/97
Analysis Date
10/31/97
Analysis Time
05:00 AM
Sample Point
BY-109

$\mu\text{g of Carbon/g} = (C1 - C2) * DF / SS$
 $\mu\text{g of Carbon/g for TIC} = 5 \text{ if } C1 < C2$
 $\mu\text{g of Carbon/g for TOC} = 40 \text{ if } C1 < C2$

	TIC	TOC
Method Detection Limit in ug/g	5	40
µg of Carbon/g	1.50E+03	3.50E+03

Data Entered By:	SKB	Date:	10/31/97
Signature of Chemist:	<i>R. Schneider</i>	Date:	11/7/97

SAMPLE.WB1 REV 1.0

342100ML

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: STD 1

Date: 10/30/97

Time: 20:38:01

Sample Size = 1000 uL

Analyst : SL HOOD

Dil Factor = 1

Min Readings = 22

Blank ID # =

Max Readings = 22

Blank Value = .34 ug/minute C

% Difference = 10

== Reading ==	Analysis Time	Coulometer	% Difference ==
1	0.51	4.00	0.00
2	1.01	108.10	96.30
3	1.51	298.40	63.77
4	2.00	430.40	30.67
5	2.50	500.50	14.01
6	3.00	540.70	7.43
7	3.50	559.90	3.43
8	4.00	568.20	1.46
9	4.50	572.00	0.66
10	5.00	573.60	0.28
11	5.50	574.30	0.12
12	6.00	574.80	0.09
13	6.50	575.20	0.07
14	7.00	575.40	0.03
15	7.50	575.70	0.05
16	8.00	575.90	0.03
17	8.50	576.20	0.05
18	9.00	576.40	0.03
19	9.50	576.60	0.03
20	10.00	576.80	0.03
21	10.50	577.00	0.03
22	11.00	577.20	0.03

USER INPUT BLANK VALUE

BLANK VALUE = 3.739917 micrograms carbon

BLANK FACTOR = 3.739917 / 10.99976 = +3.4E-01 ug/min Carbon

SAMPLE RESULTS:

(577.2 - 3.739004) (1)/(1000) =	+5.735E-01	g/L Carbon
(577.2 - 3.739004) (1)/(1000) (12) =	+4.779E-02	Molar Carbon

Sample Run By:

SL HOOD

00001

Inl = 25N12-B

SIGNATURE ABOVE REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 705 TO 706

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: STD 1

Date: 10/30/97

Time: 20:52:52

Sample Size = 200 uL

Dil Factor = 1

Blank ID # =

Blank Value = 3.1 ug/minute C

Analyst : SL HOOD

Min Readings = 22

Max Readings = 22

% Difference = 10

== Reading ==== Analysis Time ==== Coulometer ==== % Difference ==

1	0.51	0.10	0.00
2	1.00	0.70	85.71
3	1.50	10.50	93.33
4	2.00	55.00	80.91
5	2.50	140.70	60.91
6	3.00	269.10	47.71
7	3.50	410.90	34.51
8	4.00	503.00	18.31
9	4.50	547.50	8.13
10	5.00	565.40	3.17
11	5.50	572.10	1.17
12	6.00	574.90	0.49
13	6.50	576.80	0.33
14	7.00	579.50	0.47
15	7.50	581.20	0.29
16	8.00	582.50	0.22
17	8.50	583.40	0.15
18	9.00	584.40	0.17
19	9.50	585.10	0.12
20	10.00	585.80	0.12
21	10.50	586.40	0.10
22	11.00	586.80	0.07

USER INPUT BLANK VALUE

BLANK VALUE = 34.09924 micrograms carbon

BLANK FACTOR = 34.09924 / 10.99976 = +3.1E+00 ug/min Carbon

SAMPLE RESULTS:

(586.8 - 34.09319) (1)/(200) = +2.764E+00 g/L Carbon
 (586.8 - 34.09319) (1)/(200) (12) = +2.303E-01 Molar Carbon

<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!>>>>

Sample Run By:

SL HOOD

00001

200ul 26N12-B

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT

TICTOC REV. 2.0

<<< BLANK ANALYSIS >>>

HNF-SD-WM-DP-259, REV. 0

Sample: BASE 1

Date: 10/30/97

Time: 20:07:52

Sample Size = 1 uL

Dil Factor = 1

Blank ID # = BASE 1

Blank Value = N/A

Analyst : SL HOOD

Min Readings = 22

Max Readings = 22

% Difference = 10

== Reading ==	==== Analysis Time ==	==== Coulometer ==	==== % Difference ==
1	0.51	0.00	0.00
2	1.01	0.20	100.00
3	1.51	0.40	50.00
4	2.00	0.80	50.00
5	2.50	1.10	27.27
6	3.00	1.30	15.38
7	3.50	1.50	13.33
8	4.00	1.70	11.76
9	4.50	1.80	5.56
10	5.00	2.00	10.00
11	5.50	2.10	4.76
12	6.00	2.30	8.70
13	6.50	2.40	4.17
14	7.00	2.60	7.69
15	7.50	2.70	3.70
16	8.00	2.80	3.57
17	8.50	3.00	6.67
18	9.00	3.10	3.23
19	9.50	3.30	6.06
20	10.00	3.40	2.94
21	10.50	3.60	5.56
22	11.00	3.70	2.70

BLANK VALUE = 3.7 micrograms carbon

BLANK FACTOR = $3.7 / 10.99695 =$

+3.4E-01

ug/min Carbon

Sample Run By:

SL HOOD

00001

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT

TICTOC REV 2.0

<<< BLANK ANALYSIS >>>

Sample: BASE 1

Date: 10/30/97

Time: 20:21:56

Sample Size = 1 uL

Dil Factor = 1

Blank ID # = BASE 1

Blank Value = N/A

Analyst : SL HOOD

Min Readings = 22

Max Readings = 22

% Difference = 10

Reading	Analysis Time	Coulometer	% Difference
1	0.51	0.10	0.00
2	1.01	0.10	0.00
3	1.50	0.20	50.00
4	2.00	0.40	50.00
5	2.50	0.40	0.00
6	3.00	0.50	20.00
7	3.50	0.80	37.50
8	4.00	2.10	61.90
9	4.50	5.70	63.16
10	5.00	10.90	47.71
11	5.50	16.60	34.34
12	6.00	22.10	24.89
13	6.50	25.90	14.67
14	7.00	28.70	9.76
15	7.50	30.50	5.90
16	8.00	31.50	3.17
17	8.50	32.30	2.48
18	9.00	32.90	1.82
19	9.50	33.40	1.50
20	10.00	33.60	0.60
21	10.50	33.90	0.88
22	11.00	34.10	0.59

BLANK VALUE = 34.1 micrograms carbon

BLANK FACTOR = 34.1 / 10.99976 = +3.10E+00 ug/min Carbon

<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!>>>>

Sample Run By:

SL HOOD

00001

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: BLK

Date: 10/30/97

Time: 22:23:31

Sample Size = 1 uL

Dil Factor = 1

Blank ID # =

Blank Value = .34 ug/minute C

Analyst : SL HOOD

Min Readings = 22

Max Readings = 22

% Difference = 10

== Reading ==== Analysis Time ==== Coulometer ==== % Difference ==

1	0.51	0.40	0.00
2	1.01	1.70	76.47
3	1.51	2.70	37.04
4	2.01	3.30	18.18
5	2.51	3.80	13.16
6	3.00	4.20	9.52
7	3.50	4.60	8.70
8	4.00	4.90	6.12
9	4.50	5.10	3.92
10	5.00	5.40	5.56
11	5.50	5.70	5.26
12	6.00	5.90	3.39
13	6.50	6.20	4.84
14	7.00	6.40	3.13
15	7.50	6.70	4.48
16	8.00	7.00	4.29
17	8.50	7.30	4.11
18	9.00	7.60	3.95
19	9.50	7.90	3.80
20	10.00	8.10	2.47
21	10.50	8.40	3.57
22	11.00	8.70	3.45

USER INPUT BLANK VALUE

BLANK VALUE = 3.739917 micrograms carbon

BLANK FACTOR = 3.739917 / 10.99976 = +3.4E-01 ug/min Carbon

SAMPLE RESULTS:

(8.7 - 3.739917) (1)/(1)	=	+5.0E+00	g/L Carbon
(8.7 - 3.739917) (1)/(1) (12)	=	+4.1E-01	Molar Carbon

Sample Run By:

SL HOOD

00001

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: BLK 1

Date: 10/30/97

Time: 22:38:28

Sample Size = 1 uL
 Dil Factor = 1
 Blank ID # =
 Blank Value = 3.1 ug/minute C

Analyst : SL HOOD
 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	1.51	2.90	75.86
4	2.00	6.80	57.35
5	2.50	10.20	33.33
6	3.00	12.20	16.39
7	3.50	13.50	9.63
8	4.00	14.40	6.25
9	4.50	15.20	5.26
10	5.00	15.70	3.18
11	5.50	16.20	3.09
12	6.00	16.80	3.57
13	6.50	17.30	2.89
14	7.00	17.60	1.70
15	7.50	17.90	1.68
16	8.00	18.30	2.19
17	8.50	18.70	2.14
18	9.00	18.90	1.06
19	9.50	19.40	2.58
20	10.00	19.60	1.02
21	10.50	20.00	2.00
22	11.00	20.40	1.96

USER INPUT BLANK VALUE

BLANK VALUE = 34.09924 micrograms carbon

BLANK FACTOR = 34.09924 / 10.99976 = +3.1E+00 ug/min Carbon

SAMPLE RESULTS:

(20.4 - 34.09092) (1)/(1) = < 5.00 E-3 g/L Carbon
 (20.4 - 34.09092) (1)/(1) (12) = < 4.17 E-4 Molar Carbon
 <<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!>>>

Sample Run By:

SL HOOD

00001

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S97T01463

Date: 10/30/97

Time: 22:56:06

Sample Size = 1 uL

Dil Factor = 1

Blank ID # =

Blank Value = .34 ug/minute C

Analyst : SL HOOD

Min Readings = 22

Max Readings = 22

% Difference = 10

== Reading ==== Analysis Time ==== Coulometer ==== % Difference ==

1	0.51	0.20	0.00
2	1.01	0.80	75.00
3	1.50	17.20	95.35
4	2.00	98.90	82.61
5	2.50	199.50	50.43
6	3.00	276.60	27.87
7	3.50	324.70	14.81
8	4.00	350.50	7.36
9	4.50	360.30	2.72
10	5.00	364.80	1.23
11	5.50	366.30	0.41
12	6.00	367.20	0.25
13	6.50	368.00	0.22
14	7.00	368.60	0.16
15	7.50	369.10	0.14
16	8.00	369.60	0.14
17	8.50	370.20	0.16
18	9.00	370.60	0.11
19	9.50	370.90	0.08
20	10.00	371.50	0.16
21	10.50	371.90	0.11
22	11.00	372.20	0.08

USER INPUT BLANK VALUE

BLANK VALUE = 3.739917 micrograms carbon

BLANK FACTOR = 3.739917 / 10.99976 =

+3.4E-01

ug/min Carbon

SAMPLE RESULTS:

(372.2 - 3.738962) (1)/(1) =
 (372.2 - 3.738962) (1)/(1) (12) =

+3.685E+02 g/L Carbon

+3.071E+01 Molar Carbon

Sample Run By:

SL HOOD

00001

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S97T001463

Date: 10/30/97

Time: 23:10:24

Sample Size = 1 uL

Dil Factor = 1

Blank ID # =

Blank Value = 3.1 ug/minute C

Analyst : SL HOOD

Min Readings = 22

Max Readings = 22

% Difference = 10

== Reading ==	Analysis Time ==	Coulometer ==	% Difference ==
1	0.51	0.30	0.00
2	1.01	1.10	72.73
3	1.51	26.10	95.79
4	2.00	81.80	68.09
5	2.50	166.20	50.78
6	3.00	296.70	43.98
7	3.50	396.90	25.25
8	4.00	449.80	11.76
9	4.50	474.60	5.23
10	5.00	490.30	3.20
11	5.50	500.00	1.94
12	6.00	505.50	1.09
13	6.50	510.70	1.02
14	7.00	516.50	1.12
15	7.50	520.30	0.73
16	8.00	523.20	0.55
17	8.50	525.60	0.46
18	9.00	527.40	0.34
19	9.50	528.80	0.26
20	10.00	530.00	0.23
21	10.50	530.80	0.15
22	11.00	531.70	0.17

USER INPUT BLANK VALUE

BLANK VALUE = 34.09924 micrograms carbon

BLANK FACTOR = 34.09924 / 10.99976 = +3.1E+00 ug/min Carbon

SAMPLE RESULTS:

(531.7 - 34.09659) (1)/(1) = +4.976E+02 g/L Carbon
 (531.7 - 34.09659) (1)/(1) (12) = +4.147E+01 Molar Carbon

<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!>>>>

Sample Run By:

SL HOOD

00001

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S97T01463 DUP

Date: 10/30/97

Time: 23:24:28

Sample Size = 1 uL

Dil Factor = 1

Blank ID # =

Blank Value = .34 ug/minute C

Analyst : SL HOOD

Min Readings = 22

Max Readings = 22

% Difference = 10

== Reading ==	==== Analysis Time ==	==== Coulometer ==	==== % Difference ==
1	0.51	0.40	0.00
2	1.01	0.90	55.56
3	1.51	8.70	89.66
4	2.00	63.50	86.30
5	2.50	155.00	59.03
6	3.00	234.40	33.87
7	3.50	285.50	17.90
8	4.00	315.10	9.39
9	4.50	329.30	4.31
10	5.00	335.40	1.82
11	5.50	338.70	0.97
12	6.00	340.50	0.53
13	6.50	341.70	0.35
14	7.00	342.50	0.23
15	7.50	343.20	0.20
16	8.00	343.80	0.17
17	8.50	344.30	0.15
18	9.00	344.90	0.17
19	9.50	345.40	0.14
20	10.00	345.80	0.12
21	10.50	346.30	0.14
22	11.00	346.90	0.17

USER INPUT BLANK VALUE

BLANK VALUE = 3.739917 micrograms carbon

BLANK FACTOR = 3.739917 / 10.99976 = +3.4E-01 ug/min Carbon

SAMPLE RESULTS:

(346.9 - 3.739876) (1)/(1) = +3.432E+02 g/L Carbon
 (346.9 - 3.739876) (1)/(1) (12) = +2.860E+01 Molar Carbon

Sample Run By:

SL HOOD

00001

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S97T01463 DUP Date: 10/30/97 Time: 23:40:24

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 3.1 ug/minute C

Analyst : SL HOOD
Min Readings = 22
Max Readings = 22
% Difference = 10

Reading	Analysis Time	Coulometer	% Difference
1	0.51	0.40	0.00
2	1.01	1.60	75.00
3	1.50	37.70	95.76
4	2.00	108.70	65.32
5	2.50	173.40	37.31
6	3.00	223.30	22.35
7	3.50	256.50	12.94
8	4.00	272.90	6.01
9	4.50	281.40	3.02
10	5.00	286.20	1.68
11	5.50	289.30	1.07
12	6.00	291.20	0.65
13	6.50	292.80	0.55
14	7.00	294.00	0.41
15	7.50	295.00	0.34
16	8.00	296.20	0.41
17	8.50	296.70	0.17
18	9.00	297.40	0.24
19	9.50	298.10	0.23
20	10.00	298.50	0.13
21	10.50	299.10	0.20
22	11.00	299.60	0.17

USER INPUT BLANK VALUE

BLANK VALUE = 34.09924 micrograms carbon

BLANK FACTOR = 34.09924 / 10.99976 = +3.1E+00 ug/min Carbon

SAMPLE RESULTS:

(299.6 - 34.09319) (1)/(1) = +2.655E+02 g/L Carbon
(299.6 - 34.09319) (1)/(1) (12) = +2.213E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!>>>>

Sample Run By:

SL HOOD

00001

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S97T01463 TRP

Date: 10/30/97

Time: 23:54:35

Sample Size = 1 uL

Analyst : SL HOOD

Dil Factor = 1

Min Readings = 22

Blank ID # =

Max Readings = 22

Blank Value = .34 ug/minute C

% Difference = 10

== Reading == Analysis Time == Coulometer == % Difference ==

1	0.51	0.30	0.00
2	1.01	0.90	66.67
3	1.50	16.10	94.41
4	2.00	79.70	79.80
5	2.50	171.90	53.64
6	3.00	258.10	33.40
7	3.50	311.20	17.06
8	4.00	340.00	8.47
9	4.50	354.00	3.95
10	5.00	359.30	1.48
11	5.50	361.70	0.66
12	6.00	362.90	0.33
13	6.50	363.70	0.22
14	7.00	364.30	0.16
15	7.50	364.90	0.16
16	8.00	365.50	0.16
17	8.50	366.00	0.14
18	9.00	366.50	0.14
19	9.50	366.90	0.11
20	10.00	367.40	0.14
21	10.50	367.90	0.14
22	11.00	368.30	0.11

USER INPUT BLANK VALUE

BLANK VALUE = 3.739917 micrograms carbon

BLANK FACTOR = 3.739917 / 10.99976 = +3.4E-01 ug/min Carbon

SAMPLE RESULTS:

(368.3 - 3.739585) (1)/(1) =

+3.646E+02 g/L Carbon

(368.3 - 3.739585) (1)/(1)(12) =

+3.038E+01 Molar Carbon

Sample Run By:

SL HOOD

00001

50 = .0931g

715

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S97T01463 TRP Date: 10/31/97 Time: 02:23:13

Sample Size = 1 uL Analyst : SL HOOD
Dil Factor = 1 Min Readings = 22
Blank ID # = Max Readings = 22
Blank Value = 3.1 ug/minute C % Difference = 10

== Reading ==	Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.40	0.00
2	1.01	2.40	83.33
3	1.50	55.70	95.69
4	2.00	137.80	59.58
5	2.50	209.20	34.13
6	3.00	258.70	19.13
7	3.50	284.80	9.16
8	%-1436.00	298.70	4.65
9	%-1435.50	305.00	2.07
10	%-1435.00	309.20	1.36
11	%-1434.50	312.20	0.96
12	%-1434.00	314.40	0.70
13	%-1433.50	315.60	0.38
14	%-1433.00	316.90	0.41
15	%-1432.50	317.80	0.28
16	%-1432.00	319.50	0.53
17	%-1431.50	327.00	2.29
18	%-1431.00	338.70	3.45
19	%-1430.50	346.70	2.31
20	%-1430.00	350.90	1.20
21	%-1429.50	352.70	0.51
22	%-1429.00	353.70	0.28

USER INPUT BLANK VALUE

BLANK VALUE = 34.09924 micrograms carbon

BLANK FACTOR = 34.09924 / 10.99976 = +3.1E+00 ug/min Carbon

SAMPLE RESULTS:

(353.7 --4429.906) (1)/(1) = +4.784E+03 g/L Carbon
(353.7 --4429.906) (1)/(1) (12) = +3.986E+02 Molar Carbon
<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!>>>

Recalculate please

Sample Run By:

SL HOOD

00001

SS = 1074 SUBS
10-31-97

SS .0931

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S97T01463 SPK

Date: 10/31/97

Time: 02:43:37

Sample Size = 1 uL

Dil Factor = 1

Blank ID # =

Blank Value = .34 ug/minute C

Analyst : SL HOOD

Min Readings = 22

Max Readings = 22

% Difference = 10

== Reading ==	Analysis Time ==	Coulometer ==	% Difference ==
1	0.51	0.20	0.00
2	1.00	0.80	75.00
3	1.50	51.30	98.44
4	2.00	226.20	77.32
5	2.50	407.80	44.53
6	3.00	536.60	24.00
7	3.50	616.20	12.92
8	4.00	666.40	7.53
9	4.50	696.30	4.29
10	5.00	711.20	2.10
11	5.50	718.40	1.00
12	6.00	722.40	0.55
13	6.50	725.40	0.41
14	7.00	727.30	0.26
15	7.50	728.80	0.21
16	8.00	730.10	0.18
17	8.50	731.50	0.19
18	9.00	732.50	0.14
19	9.50	733.30	0.11
20	10.00	734.20	0.12
21	10.50	735.00	0.11
22	11.00	735.70	0.10

USER INPUT BLANK VALUE

BLANK VALUE = 3.739917 micrograms carbon

BLANK FACTOR = 3.739917 / 10.99976 = +3.4E-01 ug/min Carbon

SAMPLE RESULTS:

(735.7 - 3.738983) (1)/(1) =	+7.320E+02	g/L Carbon
(735.7 - 3.738983) (1)/(1) (12) =	+6.100E+01	Molar Carbon

Sample Run By:

SL HOOD

00001

SS = .113/g + .500ml spk

25N12-B

717

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S97T01463 SPK

Date: 10/31/97

Time: 02:59:02

Sample Size = 1 uL

Analyst : SL HOOD

Dil Factor = 1

Min Readings = 22

Blank ID # =

Max Readings = 22

Blank Value = 3.1 ug/minute C

% Difference = 10

== Reading ==	Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.70	0.00
2	1.00	6.10	88.52
3	1.50	88.30	93.09
4	2.00	211.80	58.31
5	2.50	365.40	42.04
6	3.00	505.00	27.64
7	3.50	587.10	13.98
8	4.00	624.80	6.03
9	4.50	642.80	2.80
10	5.00	651.30	1.31
11	5.50	655.40	0.63
12	6.00	658.40	0.46
13	6.50	660.50	0.32
14	7.00	662.00	0.23
15	7.50	663.20	0.18
16	8.00	664.60	0.21
17	8.50	667.10	0.37
18	9.00	669.70	0.39
19	9.50	671.00	0.19
20	10.00	672.00	0.15
21	10.50	672.70	0.10
22	11.00	673.30	0.09

USER INPUT BLANK VALUE

BLANK VALUE = 34.09924 micrograms carbon

BLANK FACTOR = 34.09924 / 10.99976 = +3.1E+00 ug/min Carbon

SAMPLE RESULTS:

(673.3 - 34.08756) (1)/(1) = +6.392E+02 g/L Carbon
 (673.3 - 34.08756) (1)/(1) (12) = +5.327E+01 Molar Carbon

<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!>>>>

Sample Run By:

SL HOOD

00001

SS = .113g + .100ml spk

26N12-B

718

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S97T01736

Date: 10/31/97

Time: 03:52:16

Sample Size = 1 uL

Dil Factor = 1

Blank ID # =

Blank Value = .34 ug/minute C

Analyst : SL HOOD

Min Readings = 22

Max Readings = 22

% Difference = 10

== Reading ==== Analysis Time ==== Coulometer ==== % Difference ==

1	0.51	0.80	0.00
2	1.01	1.40	42.86
3	1.50	7.00	80.00
4	2.00	49.10	85.74
5	2.50	120.70	59.32
6	3.00	187.90	35.76
7	3.50	233.30	19.46
8	4.00	258.50	9.75
9	4.50	270.70	4.51
10	5.00	276.80	2.20
11	5.50	279.80	1.07
12	6.00	281.80	0.71
13	6.50	282.90	0.39
14	7.00	284.00	0.39
15	7.50	284.90	0.32
16	8.00	285.90	0.35
17	8.50	286.80	0.31
18	9.00	287.80	0.35
19	9.50	288.80	0.35
20	10.00	289.80	0.35
21	10.50	290.80	0.34
22	11.00	291.90	0.38

USER INPUT BLANK VALUE

BLANK VALUE = 3.739917 micrograms carbon

BLANK FACTOR = 3.739917 / 10.99976 = +3.4E-01 ug/min Carbon

SAMPLE RESULTS:

(291.9 - 3.739943) (1)/(1) = +2.882E+02 g/L Carbon
 (291.9 - 3.739943) (1)/(1) (12) = +2.401E+01 Molar Carbon

Sample Run By:

SL HOOD

00001

SS = .17483

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S97T01736

Date: 10/31/97

Time: 04:06:13

Sample Size = 1 uL

Dil Factor = 1

Blank ID # =

Blank Value = 3.1 ug/minute C

Analyst : SL HOOD

Min Readings = 22

Max Readings = 22

% Difference = 10

== Reading ==	==== Analysis Time ==	==== Coulometer ==	==== % Difference ==
1	0.51	1.00	0.00
2	1.01	8.70	88.51
3	1.50	82.40	89.44
4	2.00	173.90	52.62
5	2.50	249.10	30.19
6	3.00	303.70	17.98
7	3.50	342.20	11.25
8	4.00	367.00	6.76
9	4.50	381.20	3.73
10	5.00	389.80	2.21
11	5.50	395.30	1.39
12	6.00	399.30	1.00
13	6.50	402.30	0.75
14	7.00	405.40	0.76
15	7.50	408.00	0.64
16	8.00	409.90	0.46
17	8.50	411.90	0.49
18	9.00	413.40	0.36
19	9.50	415.00	0.39
20	10.00	416.50	0.36
21	10.50	417.80	0.31
22	11.00	419.00	0.29

USER INPUT BLANK VALUE

BLANK VALUE = 34.09924 micrograms carbon

BLANK FACTOR = 34.09924 / 10.99976 = +3.1E+00 ug/min Carbon

SAMPLE RESULTS:

(419 - 34.09073) (1)/(1) = +3.849E+02 g/L Carbon
 (419 - 34.09073) (1)/(1) (12) = +3.208E+01 Molar Carbon

<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!>>>>

Sample Run By:

SL HOOD

00001

SS = .1748

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S97T01736 DUP

Date: 10/31/97

Time: 04:22:39

Sample Size = 1 uL

Dil Factor = 1

Blank ID # =

Blank Value = .34 ug/minute C

Analyst : SL HOOD

Min Readings = 22

Max Readings = 22

% Difference = 10

== Reading ==	==== Analysis Time ==	==== Coulometer ==	==== % Difference ==
1	0.51	0.80	0.00
2	1.01	2.20	63.64
3	1.51	6.70	67.16
4	2.01	30.40	77.96
5	2.51	71.60	57.54
6	3.00	111.70	35.90
7	3.50	140.90	20.72
8	4.00	159.50	11.66
9	4.50	171.40	6.94
10	5.00	177.90	3.65
11	5.50	181.30	1.88
12	6.00	183.40	1.15
13	6.50	185.00	0.86
14	7.00	186.40	0.75
15	7.50	187.70	0.69
16	8.00	188.80	0.58
17	8.50	190.10	0.68
18	9.00	191.10	0.52
19	9.50	192.20	0.57
20	10.00	193.30	0.57
21	10.50	194.50	0.62
22	11.00	195.70	0.61

USER INPUT BLANK VALUE

BLANK VALUE = 3.739917 micrograms carbon

BLANK FACTOR = 3.739917 / 10.99976 = +3.4E-01 ug/min Carbon

SAMPLE RESULTS:

(195.7 - 3.739263) (1)/(1) =	+1.920E+02	g/L Carbon
(195.7 - 3.739263) (1)/(1) (12) =	+1.600E+01	Molar Carbon

Sample Run By:

SL HOOD

00001

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S97T01736 DUP Date: 10/31/97 Time: 04:35:49

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 3.1 ug/minute C

Analyst : SL HOOD
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading ==	Analysis Time ==	Coulometer ==	% Difference ==
1	0.51	1.00	0.00
2	1.00	5.00	80.00
3	1.50	67.20	92.56
4	2.00	186.90	64.04
5	2.50	291.70	35.93
6	3.00	360.80	19.15
7	3.50	405.10	10.94
8	4.00	430.50	5.90
9	4.50	443.00	2.82
10	5.00	450.20	1.60
11	5.50	456.90	1.47
12	6.00	462.70	1.25
13	6.50	467.60	1.05
14	7.00	472.20	0.97
15	7.50	475.50	0.69
16	8.00	478.50	0.63
17	8.50	481.00	0.52
18	9.00	482.90	0.39
19	9.50	484.70	0.37
20	10.00	486.10	0.29
21	10.50	487.60	0.31
22	11.00	488.90	0.27

USER INPUT BLANK VALUE

BLANK VALUE = 34.09924 micrograms carbon

BLANK FACTOR = 34.09924 / 10.99976 = +3.1E+00 ug/min Carbon

SAMPLE RESULTS:

(488.9 - 34.09375) (1)/(1) = +4.548E+02 g/L Carbon
(488.9 - 34.09375) (1)/(1) (12) = +3.790E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!>>>>

Sample Run By:

SL HOOD

00001

SS = .1283g

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S97T01736 TRP

Date: 10/31/97

Time: 04:51:26

Sample Size = 1 uL

Analyst : SL HOOD

Dil Factor = 1

Min Readings = 22

Blank ID # =

Max Readings = 22

Blank Value = .34 ug/minute C

% Difference = 10

== Reading ==	Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	1.10	0.00
2	1.01	2.00	45.00
3	1.50	5.90	66.10
4	2.00	22.20	73.42
5	2.50	51.60	56.98
6	3.00	85.00	39.29
7	3.50	112.40	24.38
8	4.00	129.00	12.87
9	4.50	136.70	5.63
10	5.00	140.60	2.77
11	5.50	142.80	1.54
12	6.00	144.30	1.04
13	6.50	145.40	0.76
14	7.00	146.70	0.89
15	7.50	147.60	0.61
16	8.00	148.70	0.74
17	8.50	149.70	0.67
18	9.00	151.10	0.93
19	9.50	152.10	0.66
20	10.00	153.10	0.65
21	10.50	154.30	0.78
22	11.00	155.30	0.64

USER INPUT BLANK VALUE

BLANK VALUE = 3.739917 micrograms carbon

BLANK FACTOR = 3.739917 / 10.99976 = +3.4E-01 ug/min Carbon

SAMPLE RESULTS:

(155.3 - 3.739595) (1)/(1) =	+1.516E+02	g/L Carbon
(155.3 - 3.739595) (1)/(1) (12) =	+1.263E+01	Molar Carbon

Sample Run By:

SL HOOD

00001

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S97T01736 TRP Date: 10/31/97 Time: 05:03:41

Sample Size = 1 uL Analyst : SL HOOD
Dil Factor = 1 Min Readings = 22
Blank ID # = Max Readings = 22
Blank Value = 3.1 ug/minute C % Difference = 10

== Reading ==	Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	1.00	0.00
2	1.01	13.20	92.42
3	1.51	95.40	86.16
4	2.00	195.60	51.23
5	2.50	265.80	26.41
6	3.00	310.20	14.31
7	3.50	336.80	7.90
8	4.00	350.20	3.83
9	4.50	357.60	2.07
10	5.00	362.50	1.35
11	5.50	366.50	1.09
12	6.00	369.60	0.84
13	6.50	372.50	0.78
14	7.00	375.00	0.67
15	7.50	377.20	0.58
16	8.00	378.90	0.45
17	8.50	380.70	0.47
18	9.00	382.30	0.42
19	9.50	383.60	0.34
20	10.00	384.80	0.31
21	10.50	386.30	0.39
22	11.00	387.20	0.23

USER INPUT BLANK VALUE

BLANK VALUE = 34.09924 micrograms carbon

BLANK FACTOR = 34.09924 / 10.99976 = +3.1E+00 ug/min Carbon

SAMPLE RESULTS:

(387.2 - 34.08827) (1)/(1) = +3.531E+02 g/L Carbon
(387.2 - 34.08827) (1)/(1) (12) = +2.943E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!>>>>

Sample Run By:

SL HOOD

00001

SS .1008g

724

LABCORE Completed Worklist Report for Worklist# 20959

Analyst: slh

Instrument: CARB2

Book# TIC 25N128
TOC 26N128

Method: 1A342-100 Rev/Mod E-O

Worklist Comment: BY109 (P), @TICTOC1 STD: TIC=1.0mL, TOC=0.200mL skw

Seq Type	Sample# R A	Test	Matrix	Actual	Found	DL or Yield	Unit
1 BLNK	0	@TICTOC1 TIC-02	SOLID	1	4.50E+0	4.500	ug/g
1 BLNK	0	@TICTOC1 TOC-02	SOLID	1	3.10E+0	3.100	ug/g
2 STD	0	@TICTOC1 TIC-02	SOLID	6.02E+02	5.68E+2	94.352 % Recovery	
2 STD	0	@TICTOC1 TOC-02	SOLID	3.00E+03	2.74E+3	91.333 % Recovery	
3 SAMPLE	S97T001483 0	@TICTOC1 TIC-02	SOLID	N/A	2.62E+03	5.000	ug/g
3 SAMPLE	S97T001483 0	@TICTOC1 TOC-02	SOLID	N/A	4.57E+03	40.000	ug/g
4 DUP	S97T001483 0	@TICTOC1 TIC-02	SOLID	2.62E+3	4.20E+3	46.334	RPD
4 DUP	S97T001483 0	@TICTOC1 TOC-02	SOLID	4.57E+3	4.80E+3	4.909	RPD
5 TRIPL	S97T001483 0	@TICTOC1 TIC-02	SOLID	2.62E+3	2.69E+3	2.637	RPD
5 TRIPL	S97T001483 0	@TICTOC1 TOC-02	SOLID	4.57E+3	4.69E+3	2.592	RPD
6 SPK	S97T001483 0	@TICTOC1 TIC-02	SOLID	1.00E+02	2.03E+02	203.000 % Recovery	
6 SPK	S97T001483 0	@TICTOC1 TOC-02	SOLID	1.00E+02	9.17E+01	91.700 % Recovery	
7 SAMPLE	S97T001786 0	@TICTOC1 TIC-02	SOLID	N/A	1.66E+03	5.000	ug/g
7 SAMPLE	S97T001786 0	@TICTOC1 TOC-02	SOLID	N/A	3.21E+03	40.000	ug/g
8 DUP	S97T001786 0	@TICTOC1 TIC-02	SOLID	1.66E+3	1.74E+3	4.706	RPD
8 DUP	S97T001786 0	@TICTOC1 TOC-02	SOLID	3.21E+3	2.73E+3	16.162	RPD

Final page for worklist# 20959

Analyst Signature

Date

Analyst Signature

Date

Reviewer Signature

Date

S97T001483 TIC run in triplicate. The spike is out of control & Dup. It appears that TIC is non-homogenous within the sample. No reanalysis requested. RWS 11/7/97

LABCORE Data Entry Template for Worklist# 20959

Analyst: _____ Instrument: CARB2 _____ Book# _____

Method: LA-342-100 Rev/Mod _____

Worklist Comment: BY109 (P), @TICTOC1 STD: TIC=1.0mL, TOC=0.200mL skw

S Type	Sample#	R A	Test	Matrix	Group#	Project
1 BLNK			@TICTOC1	SOLID		
2 STD			@TICTOC1	SOLID		
3 SAMPLE	S97T001483 0		@TICTOC1	SOLID	97000411	BY-109 (P)
	Analytes Requested: TIC-02 , TOC-02					
4 DUP	S97T001483 0		@TICTOC1	SOLID		
5 TRIPL	S97T001483 0		@TICTOC1	SOLID		
6 SPK	S97T001483 0		@TICTOC1	SOLID		
7 SAMPLE	S97T001786 0		@TICTOC1	SOLID	97000411	BY-109 (P)
	Analytes Requested: TIC-02 , TOC-02					
8 DUP	S97T001786 0		@TICTOC1	SOLID		

Final page for worklist # 20959

Analyst Signature _____ Date _____

Analyst Signature _____ Date _____

Data Entry Comments:

LABCORE Data Entry Template for Worklist# 20959

Analyst: SLH Instrument: CARB2 Book# TIC 25N12-B
TOC 26N12-B

Method: LA-342-100 Rev/Mod _____

Worklist Comment: BY109 (P), @TICTOC1 STD: TIC=1.0mL, TOC=0.200mL skw

S Type	Sample#	R A	Test	Matrix	Group#	Project
1 BLNK			@TICTOC1	SOLID		
2 STD			@TICTOC1	SOLID		
3 SAMPLE	S97T001483 0		@TICTOC1	SOLID	97000411	BY-109 (P)
	Analytes Requested: TIC-02 , TOC-02					
4 DUP	S97T001483 0		@TICTOC1	SOLID		
5 SAMPLE	S97T001786 0		@TICTOC1	SOLID	97000411	BY-109 (P)
	Analytes Requested: TIC-02 , TOC-02					
6 DUP	S97T001786 0		@TICTOC1	SOLID		
7 SPK	S97T001786 0		@TICTOC1	SOLID		

Final page for worklist # 20959

Sandra Pittard Beatright
Analyst Signature Date
10-31-97

Analyst Signature Date

Data Entry Comments:

WORKBOOK PAGE: BLANK1

TIC/TOC : LA-342-100 (E-0)

SOLIDS

		TIC	TOC
Type	Sample Size in g (SS)	0.0679	0.0679
BLNK	Dilution Factor (DF)	1	1
Work List	µg of Carbon in Sample (C1)	9.1	14.8
20959	µg of Carbon from Baseline (C2)	4.6	17.9
Test Code			
@TICTOC1			
Matrix			
SOLID			
Batch Number			
97005156			
Rerun	µg of Carbon = C1-C2		
0			
Sample Prep			
N/A			
Sample #			
BLANK			
Instrument Code			
CARB2			
Prepared By			
SKB			
Chemist			
RWS			
Analyst			
SLH			
Date Complete			
10/31/97			
Analysis Date			
10/31/97			
Analysis Time	Method Detection Limit in ug/g	5	40
08:24 PM			
Sample Point	µg of Carbon	4.50E+00	3.10E+00
BY-109			

Data Entered By:	SKB	Date:	10/31/97
Signature of Chemist:	<i>RW Schmitt</i>	Date:	11/7/97

BLANK.WB1 REV 1.0

342100ML

WORKBOOK PAGE: STD2

TIC/TOC : LA-342-100 (E-0)

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)	572.5	565.5
20959	µg of Carbon from Baseline (C2)	4.6	17.9
Test Code	Standard Book Number	25N12B	26N12B
@TIC/TOC1	Standard Value (µg/ml)	602	3000

Matrix
LIQUID
Batch Number
97005156
Rerun
0
Sample Prep
N/A
Sample #
STANDARD
Instrument Code
CARB2
Prepared By
SKB
Chemist
RWS
Analyst
SLH
Date Complete
10/31/97
Analysis Date
10/31/97
Analysis Time
08:24 PM
Sample Point
BY-109

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	5.68E+02	2.74E+03
Percent Standard Recovery	94.3	91.3

Data Entered By:

Signature of Chemist:

SKB

Date: 10/31/97

Date: 11/7/97

STANDARD.WB1 REV 1.0

342100ML

WORKBOOK PAGE: SAM3

TIC/TOC : LA-342-100 (E-0)

SOLIDS

		TIC	TOC
Type	Sample Size in g (SS)	0.0679	0.0679
SAMPLE	Dilution Factor (DF)	1	1
Work List	µg of Carbon in Sample (C1)	182.2	328.2
20959	µg of Carbon from Baseline (C2)	4.6	17.9
Test Code			
@TICTOC1			
Matrix			
SOLID			
Batch Number			
97005156			
Rerun	µg of Carbon/g = (C1-C2) * DF / SS		
0	µg of Carbon/g for TIC = 5 if C1 < C2		
Sample Prep	µg of Carbon/g for TOC = 40 if C1 < C2		
N/A			
Sample #			
S97T001483			
Instrument Code			
CARB2			
Prepared By			
SKB			
Chemist			
RWS			
Analyst			
SLH			
Date Complete			
10/31/97			
Analysis Date			
10/31/97			
Analysis Time	Method Detection Limit in ug/g	TIC	TOC
08:24 PM		5	40
Sample Point	µg of Carbon/g	2.62E+03	4.57E+03
BY-109			

Data Entered By:

SKB

Date: 10/31/97

Signature of Chemist:

D. Schneider

Date: 11/7/97

SAMPLE.WB1 REV 1.0

342100ML

WORKBOOK PAGE: DUP4

TIC/TOC : LA-342-100 (E-0)

SOLIDS

		TIC	TOC
Type	Sample Size in g (SS)	0.0824	0.0824
DUP	Dilution Factor (DF)	1	1
Work List	µg of Carbon in Sample (C1)	350.6	413.2
20959	µg of Carbon from Baseline (C2)	4.6	17.9
Test Code	Known µg of C from Original Sample	2.62E+3	4.57E+3
@TIC/TOC1			
Matrix			
SOLID			
Batch Number			
97005156			
Rerun	µg of Carbon/g = (C1-C2) * DF / SS		
0	µg of Carbon/g for TIC = 5 if C1 < C2		
Sample Prep	µg of Carbon/g for TOC = 40 if C1 < C2		
N/A			
Sample #			
S97T001483			
Instrument Code			
CARB2			
Prepared By			
SKB			
Chemist			
RWS			
Analyst			
SLH			
Date Complete			
10/31/97			
Analysis Date			
10/31/97			
Analysis Time	Method Detection Limit in ug/g	5	40
08:24 PM			
Sample Point	µg of Carbon/g	4.20E+03	4.80E+03
BY-109			

Data Entered By:

SKB

Date: 10/31/97

Signature of Chemist:

Date: 11/7/97

SAMPLE.WB1 REV 1.0

342100ML

WORKBOOK PAGE: TRIPL5

TIC/TOC : LA-342-100 (E-0)

SOLIDS

		TIC	TOC
Type	Sample Size in g (SS)	0.1074	0.1074
TRIPL	Dilution Factor (DF)	1	1
Work List	µg of Carbon in Sample (C1)	293.1	522
20959	µg of Carbon from Baseline (C2)	4.6	17.9
Test Code	Known µg of C from Original Sample	2.62E+3	4.57E+3
@TICTOC1	Duplicate Result	4.20E+3	4.80E+3
Matrix			
SOLID			
Batch Number			
97005156			
Rerun			
0	µg of Carbon/g = (C1-C2) * DF / SS		
	µg of Carbon/g for TIC = 5 if C1 < C2		
Sample Prep	µg of Carbon/g for TOC = 40 if C1 < C2		
N/A			
Sample #			
S97T001483			
Instrument Code			
CARB2			
Prepared By			
SKB			
Chemist			
RWS			
Analyst			
SLH			
Date Complete			
10/31/97			
Analysis Date			
10/31/97			
Analysis Time	Method Detection Limit in ug/g	5	40
08:24 PM			
Sample Point	µg of Carbon/g	2.69E+03	4.69E+03
BY-109			

Data Entered By:

SKB

Date: 10/31/97

Signature of Chemist:

Date: 11/9/97

SAMPLE.WB1 REV 1.0

342100ML

WORKBOOK PAGE: SPIKE6

TIC/TOC : LA-342-100 (E-0)

SOLIDS

Type	Sample Vial Data	TIC	TOC
SPK	Sample Size in g (SS)	0.0679	0.0679
Work List	Final Coulometer Reading in μg (C1)	182.2	328.2
20959	Spiked Vial Data		
Test Code	Sample Size in g (SPK SS)	0.0917	0.0917
@TICTOC1	Amount of Spike Std. in mL (SPK VOL)	0.500	0.100
Matrix	Final Coulometer Reading in μg (C2)	857.1	718.3
SOLID	Spike Book Number	25N12B	26N12B
Batch Number	Spike Standard Value in $\mu\text{g/mL}$ (SPK CONC)	602	3000
97005156			
Rerun			
0			
Sample Prep			
N/A			
Sample #	Percent Spike Recovery = $(C2 - C1 * (\text{SPK SS}) / (\text{SPK VOL})) * (\text{SPK CONC})$		
S97T001483			
Instrument Code	QC Actual in $\mu\text{g/mL}$ = Spike Value ($\mu\text{g/mL}$)		
CARB2	QC Found in $\mu\text{g/mL}$ = (Percent Spike Recovery)*(QC Actual) / 100		
Prepared By			
SKB			
Chemist			
RWS			
Analyst			
SLH			
Date Complete			
10/31/97			
Analysis Date			
10/31/97			
Analysis Time			
08:24 PM			
Sample Point	QC Actual in $\mu\text{g/mL}$	6.02E+02	3.00E+03
BY-109	QC Found in $\mu\text{g/mL}$	1.22E+03	2.75E+03
	Percent Spike Recovery	203.0	91.7

Data Entered By:	SKB	Date:	10/31/97
Signature of Chemist:	<i>RW Schaefer</i>	Date:	11/7/97

WORKBOOK PAGE: SAM7

TIC/TOC : LA-342-100 (E-0)

SOLIDS

		TIC	TOC
Type	Sample Size in g (SS)	0.1714	0.1714
SAMPLE	Dilution Factor (DF)	1	1
Work List	µg of Carbon in Sample (C1)	289.1	567.4
20959	µg of Carbon from Baseline (C2)	4.6	17.9
Test Code			
@TICTOC1			
Matrix			
SOLID			
Batch Number			
97005156			
Rerun	µg of Carbon/g = (C1-C2) * DF / SS		
0	µg of Carbon/g for TIC = 5 if C1 < C2		
Sample Prep	µg of Carbon/g for TOC = 40 if C1 < C2		
N/A			
Sample #			
S97T001786			
Instrument Code			
CARB2			
Prepared By			
SKB			
Chemist			
RWS			
Analyst			
SLH			
Date Complete			
10/31/97			
Analysis Date			
10/31/97			
Analysis Time	Method Detection Limit in ug/g	5	40
08:24 PM			
Sample Point	µg of Carbon/g	1.66E+03	3.21E+03
BY-109			

Data Entered By:	SKB	Date:	10/31/97
Signature of Chemist:	<i>SKB</i>	Date:	11/7/97

WORKBOOK PAGE: DUP8

TIC/TOC : LA-342-100 (E-0)

SOLIDS

		TIC	TOC
Type	Sample Size in g (SS)	0.1500	0.1500
DUP	Dilution Factor (DF)	1	1
Work List	µg of Carbon in Sample (C1)	266.2	427.1
20959	µg of Carbon from Baseline (C2)	4.6	17.9
Test Code	Known µg of C from Original Sample	1.66E+3	3.21E+3
@TICTOC1			
Matrix			
SOLID			
Batch Number			
97005156			
Rerun	µg of Carbon/g = (C1-C2) * DF / SS		
0	µg of Carbon/g for TIC = 5 if C1 < C2		
Sample Prep	µg of Carbon/g for TOC = 40 if C1 < C2		
N/A			
Sample #			
S97T001786			
Instrument Code			
CARB2			
Prepared By			
SKB			
Chemist			
RWS			
Analyst			
SLH			
Date Complete			
10/31/97			
Analysis Date			
10/31/97			
Analysis Time	Method Detection Limit in ug/g	TIC	TOC
08:24 PM		5	40
Sample Point	µg of Carbon/g	1.74E+03	2.73E+03
BY-109			

Data Entered By:	SKB	Date:	10/31/97
Signature of Chemist:	<i>Ken Schmidt</i>	Date:	11/7/97

SAMPLE.WB1 REV 1.0

342100ML

735

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: STD 2

Date: 10/30/97

Time: 20:54:31

Sample Size = 1000 uL
 Dil Factor = 1
 Blank ID # =
 Blank Value = .42 ug/minute C

Analyst : SL HOOD
 Min Readings = 22
 Max Readings = 22
 % Difference = 10

== Reading ==	==== Analysis Time ==	==== Coulometer ==	==== % Difference ==
1	0.51	0.20	0.00
2	1.00	2.50	92.00
3	1.50	67.90	96.32
4	2.00	192.30	64.69
5	2.50	308.20	37.61
6	3.00	401.80	23.30
7	3.50	470.00	14.51
8	4.00	514.80	8.70
9	4.50	541.90	5.00
10	5.00	556.40	2.61
11	5.50	562.90	1.15
12	6.00	566.20	0.58
13	6.50	568.30	0.37
14	7.00	569.10	0.14
15	7.50	569.80	0.12
16	8.00	570.70	0.16
17	8.50	570.80	0.02
18	9.00	571.20	0.07
19	9.50	571.60	0.07
20	10.00	572.10	0.09
21	10.50	572.30	0.03
22	11.00	572.50	0.03

USER INPUT BLANK VALUE

BLANK VALUE = 4.619538 micrograms carbon

BLANK FACTOR = 4.619538 / 10.9989 = +4.2E-01 ug/min Carbon

SAMPLE RESULTS:

(572.5 - 4.618718) (1) / (1000) = +5.679E-01 g/L Carbon
 (572.5 - 4.618718) (1) / (1000) (12) = +4.732E-02 Molar Carbon

Sample Run By:

SL HOOD

00002

SIGNATURE ABOVE REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
 COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 120 TO 123

ml = 25 ml

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: STD 2

Date: 10/30/97

Time: 21:09:50

Sample Size = 200 uL

Analyst : SL HOOD

Dil Factor = 1

Min Readings = 22

Blank ID # =

Max Readings = 22

Blank Value = 1.63 ug/minute C

% Difference = 10

== Reading ==	Analysis Time	Coulometer	% Difference ==
1	0.51	0.10	0.00
2	1.00	0.60	83.33
3	1.50	15.10	96.03
4	2.00	67.00	77.46
5	2.50	144.40	53.60
6	3.00	238.80	39.53
7	3.50	338.00	29.35
8	4.00	421.30	19.77
9	4.50	480.50	12.32
10	5.00	518.40	7.31
11	5.50	539.90	3.98
12	6.00	551.40	2.09
13	6.50	556.10	0.85
14	7.00	559.00	0.52
15	7.50	560.90	0.34
16	8.00	562.00	0.20
17	8.50	562.80	0.14
18	9.00	563.40	0.11
19	9.50	564.10	0.12
20	10.00	564.70	0.11
21	10.50	565.10	0.07
22	11.00	565.50	0.07

USER INPUT BLANK VALUE

BLANK VALUE = 17.92821 micrograms carbon

BLANK FACTOR = 17.92821 / 10.9989 = +1.6E+00 ug/min Carbon

SAMPLE RESULTS:

(565.5 - 17.92821) (1)/(200) = +2.738E+00 g/L Carbon
 (565.5 - 17.92821) (1)/(200) (12) = +2.282E-01 Molar Carbon

<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!>>>>

Sample Run By:

SL Hood Boatright
SL HOOD

00002

.200 ml 26N12-B

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT

TICTOC REV 2.0

<<< BLANK ANALYSIS >>>

Sample: BASE 2

Date: 10/30/97

Time: 20:24:51

Sample Size = 1 uL
 Dil Factor = 1
 Blank ID # = BASE 2
 Blank Value = N/A

Analyst : SL HOOD
 Min Readings = 22
 Max Readings = 22
 % Difference = 10

Reading	Analysis	Time	Coulometer	% Difference
1	0.51		0.00	0.00
2	1.01		0.20	100.00
3	1.50		0.40	50.00
4	2.00		0.90	55.56
5	2.50		1.10	18.18
6	3.00		1.30	15.38
7	3.50		1.70	23.53
8	4.00		1.90	10.53
9	4.50		2.00	5.00
10	5.00		2.40	16.67
11	5.50		2.70	11.11
12	6.00		2.70	0.00
13	6.50		2.90	6.90
14	7.00		3.10	6.45
15	7.50		3.40	8.82
16	8.00		3.50	2.86
17	8.50		3.70	5.41
18	9.00		3.90	5.13
19	9.50		4.10	4.88
20	10.00		4.30	4.65
21	10.50		4.50	4.44
22	11.00		4.60	2.17

BLANK VALUE = 4.6 micrograms carbon

BLANK FACTOR = 4.6 / 10.99695 =

+4.2E-01 ug/min Carbon

Sample Run By:

SL HOOD

00002

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT

TICTOC REV 2.0

<<< BLANK ANALYSIS >>>

Sample: BASE 2

Date: 10/30/97

Time: 20:37:20

Sample Size = 1 uL

Dil Factor = 1

Blank ID # = BASE 2

Blank Value = N/A

Analyst : SL HOOD

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	1.40	64.29
4	2.00	3.70	62.16
5	2.50	6.20	40.32
6	3.00	8.90	30.34
7	3.50	10.70	16.82
8	4.00	12.30	13.01
9	4.50	13.20	6.82
10	5.00	13.90	5.04
11	5.50	14.70	5.44
12	6.00	15.00	2.00
13	6.50	15.50	3.23
14	7.00	15.80	1.90
15	7.50	16.10	1.86
16	8.00	16.50	2.42
17	8.50	16.60	0.60
18	9.00	17.00	2.35
19	9.50	17.30	1.73
20	10.00	17.60	1.70
21	10.50	17.80	1.12
22	11.00	17.90	0.56

BLANK VALUE = 17.9 micrograms carbon

BLANK FACTOR = 17.9 / 10.9989 = +1.63E+00 ug/min Carbon

<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!>>>>

Sample Run By:

SL HOOD

00002

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: BLK 2

Date: 10/30/97

Time: 22:40:29

Sample Size = 1 uL

Analyst : SL HOOD

Dil Factor = 1

Min Readings = 22

Blank, ID # =

Max Readings = 22

Blank Value = .42 ug/minute C

% Difference = 10

== Reading ==	==== Analysis Time ==	==== Coulometer ==	==== % Difference ==
1	0.51	0.20	0.00
2	1.01	0.50	60.00
3	1.50	1.90	73.68
4	2.00	3.00	36.67
5	2.50	3.70	18.92
6	3.00	4.20	11.90
7	3.50	4.70	10.64
8	4.00	4.90	4.08
9	4.50	5.30	7.55
10	5.00	5.50	3.64
11	5.50	5.90	6.78
12	6.00	6.20	4.84
13	6.50	6.50	4.62
14	7.00	6.70	2.99
15	7.50	7.00	4.29
16	8.00	7.30	4.11
17	8.50	7.60	3.95
18	9.00	7.90	3.80
19	9.50	8.10	2.47
20	10.00	8.40	3.57
21	10.50	8.70	3.45
22	11.00	9.10	4.40

USER INPUT BLANK VALUE

BLANK VALUE = 4.619538 micrograms carbon

BLANK FACTOR = 4.619538 / 10.9989 = +4.2E-01 ug/min Carbon

SAMPLE RESULTS:

(9.1 - 4.619128) (1)/(1) =

+4.5E+00 g/L Carbon

(9.1 - 4.619128) (1)/(1) (12) =

+3.7E-01 Molar Carbon

Sample Run By:

SL HOOD

00002

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: BLK 2

Date: 10/30/97

Time: 22:55:26

Sample Size = 1. uL

Dil Factor = 1

Blank ID # =

Blank Value = 1.63 ug/minute C

Analyst : SL HOOD

Min Readings = 22

Max Readings = 22

% Difference = 10

== Reading ==	==== Analysis Time ==	==== Coulometer ==	==== % Difference ==
1	0.51	0.00	0.00
2	1.00	0.30	100.00
3	1.50	0.80	62.50
4	2.00	1.80	55.56
5	2.50	3.10	41.94
6	3.00	3.80	18.42
7	3.50	5.00	24.00
8	4.00	6.20	19.35
9	4.50	7.40	16.22
10	5.00	8.50	12.94
11	5.50	9.50	10.53
12	6.00	10.30	7.77
13	6.50	10.90	5.50
14	7.00	11.40	4.39
15	7.50	12.00	5.00
16	8.00	12.50	4.00
17	8.50	13.00	3.85
18	9.00	13.30	2.26
19	9.50	13.80	3.62
20	10.00	14.10	2.13
21	10.50	14.50	2.76
22	11.00	14.80	2.03

USER INPUT BLANK VALUE

BLANK VALUE = 17.92821 micrograms carbon

BLANK FACTOR = 17.92821 / 10.9989 = +1.6E+00 ug/min Carbon

SAMPLE RESULTS:

(14.8 - 17.92761) (1)/(1) = < 5.00 E-3 g/L Carbon
 (14.8 - 17.92761) (1)/(1) (12) = < 4.17 E-4 Molar Carbon
 <<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!>>>>

Sample Run By:

SL HOOD

00002

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S97T01483

Date: 10/30/97

Time: 23:13:05

Sample Size = 1 uL
 Dil Factor = 1
 Blank ID # =
 Blank Value = .42 ug/minute C

Analyst : SL HOOD
 Min Readings = 22
 Max Readings = 22
 % Difference = 10

== Reading ==	==== Analysis Time ==	==== Coulometer ==	==== % Difference ==
1	0.51	0.00	0.00
2	1.01	0.80	100.00
3	1.50	2.40	66.67
4	2.00	13.60	82.35
5	2.50	47.80	71.55
6	3.00	91.30	47.65
7	3.50	127.50	28.39
8	4.00	151.30	15.73
9	4.50	164.80	8.19
10	5.00	171.30	3.79
11	5.50	174.90	2.06
12	6.00	176.70	1.02
13	6.50	178.00	0.73
14	7.00	178.70	0.39
15	7.50	179.30	0.33
16	8.00	179.80	0.28
17	8.50	180.40	0.33
18	9.00	180.70	0.17
19	9.50	181.00	0.17
20	10.00	181.50	0.28
21	10.50	181.90	0.22
22	11.00	182.20	0.16

USER INPUT BLANK VALUE

BLANK VALUE = 4.619538 micrograms carbon

BLANK FACTOR = 4.619538 / 10.9989 = +4.2E-01 ug/min Carbon

SAMPLE RESULTS:

(182.2 - 4.61918) (1)/(1) = +1.776E+02 g/L Carbon
 (182.2 - 4.61918) (1)/(1) (12) = +1.480E+01 Molar Carbon

Sample Run By:

SL HOOD

00002

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S97T001483

Date: 10/30/97

Time: 23:27:23

Sample Size = 1 uL

Dil Factor = 1

Blank ID # =

Blank Value = 1.63 ug/minute C

Analyst : SL HOOD

Min Readings = 22

Max Readings = 22

% Difference = 10

== Reading ==	==== Analysis Time ==	==== Coulometer ==	==== % Difference ==
1	0.51	0.10	0.00
2	1.01	1.10	90.91
3	1.51	27.30	95.97
4	2.00	93.30	70.74
5	2.50	154.00	39.42
6	3.00	203.40	24.29
7	3.50	241.50	15.78
8	4.00	268.90	10.19
9	4.50	287.20	6.37
10	5.00	298.10	3.66
11	5.50	305.20	2.33
12	6.00	310.30	1.64
13	6.50	314.10	1.21
14	7.00	317.10	0.95
15	7.50	319.30	0.69
16	8.00	321.50	0.68
17	8.50	322.90	0.43
18	9.00	324.20	0.40
19	9.50	325.50	0.40
20	10.00	326.50	0.31
21	10.50	327.40	0.27
22	11.00	328.20	0.24

USER INPUT BLANK VALUE

BLANK VALUE = 17.92821 micrograms carbon

BLANK FACTOR = 17.92821 / 10.9989 = +1.6E+00 ug/min Carbon

SAMPLE RESULTS:

(328.2 - 17.92224) (1)/(1) = +3.103E+02 g/L Carbon
 (328.2 - 17.92224) (1)/(1) (12) = +2.586E+01 Molar Carbon

<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!>>>>

Sample Run By:

SL HOOD

00002

SS = .06793

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S97T01483 DUP

Date: 10/30/97

Time: 23:41:26

Sample Size = 1 uL

Analyst : SL HOOD

Dil Factor = 1

Min Readings = 22

Blank ID # =

Max Readings = 22

Blank Value = .42 ug/minute C

% Difference = 10

== Reading ==	Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.40	0.00
2	1.01	1.10	63.64
3	1.50	3.70	70.27
4	2.00	41.00	90.98
5	2.50	120.20	65.89
6	3.00	199.70	39.81
7	3.50	260.60	23.37
8	4.00	299.60	13.02
9	4.50	322.30	7.04
10	5.00	333.80	3.45
11	5.50	338.90	1.50
12	6.00	341.70	0.82
13	6.50	343.20	0.44
14	7.00	344.20	0.29
15	7.50	345.00	0.23
16	8.00	346.00	0.29
17	8.50	346.60	0.17
18	9.00	347.60	0.29
19	9.50	348.50	0.26
20	10.00	349.30	0.23
21	10.50	349.90	0.17
22	11.00	350.60	0.20

USER INPUT BLANK VALUE

BLANK VALUE = 4.619538 micrograms carbon

BLANK FACTOR = 4.619538 / 10.9989 = +4.2E-01 ug/min Carbon

SAMPLE RESULTS:

(350.6 - 4.619487) (1) / (1) =	+3.460E+02 g/L Carbon
(350.6 - 4.619487) (1) / (1) (12) =	+2.883E+01 Molar Carbon

Sample Run By:

SL HOOD

00002

SS = .0824g

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S97T01483 DUP

Date: 10/30/97

Time: 23:57:22

Sample Size = 1 uL

Analyst : SL HOOD

Dil Factor = 1

Min Readings = 22

Blank ID # =

Max Readings = 22

Blank Value = 1.63 ug/minute C

% Difference = 10

== Reading ==	Analysis Time ==	Coulometer ==	% Difference ==
1	0.51	0.30	0.00
2	1.01	2.10	85.71
3	1.51	42.80	95.09
4	2.01	127.00	66.30
5	2.50	199.70	36.40
6	3.00	260.20	23.25
7	3.50	308.60	15.68
8	4.00	343.60	10.19
9	4.50	366.20	6.17
10	5.00	380.40	3.73
11	5.50	388.30	2.03
12	6.00	394.30	1.52
13	6.50	398.60	1.08
14	7.00	401.60	0.75
15	7.50	403.80	0.54
16	8.00	405.90	0.52
17	8.50	408.00	0.51
18	9.00	409.30	0.32
19	9.50	410.60	0.32
20	10.00	411.30	0.17
21	10.50	412.30	0.24
22	11.00	413.20	0.22

USER INPUT BLANK VALUE

BLANK VALUE = 17.92821 micrograms carbon

BLANK FACTOR = 17.92821 / 10.9989 = +1.6E+00 ug/min Carbon

SAMPLE RESULTS:

(413.2 - 17.92522) (1)/(1) = +3.953E+02 g/L Carbon
 (413.2 - 17.92522) (1)/(1) (12) = +3.294E+01 Molar Carbon
 <<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!>>>>

Sample Run By:

SL HOOD

00002

SS .08243

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S97T01483 TRP

Date: 10/31/97

Time: 00:11:33

Sample Size = 1 uL

Dil Factor = 1

Blank ID # =

Blank Value = .42 ug/minute C

Analyst : SL HOOD

Min Readings = 22

Max Readings = 22

% Difference = 10

== Reading ==	==== Analysis Time ==	==== Coulometer ==	==== % Difference ==
1	0.51	0.70	0.00
2	1.01	1.30	46.15
3	1.50	2.80	53.57
4	2.00	19.90	85.93
5	2.50	69.70	71.45
6	3.00	129.00	45.97
7	3.50	182.00	29.12
8	4.00	221.60	17.87
9	4.50	248.10	10.68
10	5.00	264.40	6.16
11	5.50	273.50	3.33
12	6.00	278.70	1.87
13	6.50	282.50	1.35
14	7.00	285.10	0.91
15	7.50	286.70	0.56
16	8.00	288.00	0.45
17	8.50	289.20	0.41
18	9.00	290.20	0.34
19	9.50	291.30	0.38
20	10.00	291.80	0.17
21	10.50	292.50	0.24
22	11.00	293.10	0.20

USER INPUT BLANK VALUE

BLANK VALUE = 4.619538 micrograms carbon

BLANK FACTOR = 4.619538 / 10.9989 = +4.2E-01 ug/min Carbon

SAMPLE RESULTS:

(293.1 - 4.61909) (1)/(1) =

+2.885E+02 g/L Carbon

(293.1 - 4.61909) (1)/(1) (12) =

+2.404E+01 Molar Carbon

Sample Run By:

SL HOOD

00002

SS = .1074g

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S97T011483 TRP Date: 10/31/97 Time: 02:39:42

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 1.63 ug/minute C

Analyst : SL HOOD
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading ==	==== Analysis Time ==	==== Coulometer ==	==== % Difference ==
1	0.51	1.00	0.00
2	1.01	2.00	50.00
3	1.50	18.80	89.36
4	2.00	114.40	83.57
5	2.50	215.20	46.84
6	3.00	293.50	26.68
7	3.50	357.30	17.86
8	4.00	407.00	12.21
9	4.50	442.00	7.92
10	5.00	465.70	5.09
11	5.50	480.90	3.16
12	6.00	490.10	1.88
13	6.50	497.10	1.41
14	7.00	502.20	1.02
15	7.50	506.20	0.79
16	8.00	509.90	0.73
17	8.50	512.60	0.53
18	9.00	515.30	0.52
19	9.50	517.50	0.43
20	10.00	519.20	0.33
21	10.50	520.60	0.27
22	11.00	522.00	0.27

USER INPUT BLANK VALUE

BLANK VALUE = 17.92821 micrograms carbon

BLANK FACTOR = 17.92821 / 10.9989 = +1.6E+00 ug/min Carbon

SAMPLE RESULTS:

(522 - 17.92647) (1)/(1) = +5.041E+02 g/L Carbon
(522 - 17.92647) (1)/(1) (12) = +4.201E+01 Molar Carbon

<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!>>>>

Sample Run By:

SL HOOD

00002

SS = 0.07319 ²⁴⁴³ 10-31-97 SLH
SS = 0.1074g 10-31-97

* SS = .1074
747

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S97T01483 SPK Date: 10/31/97 Time: 03:00:35

Sample Size = 1 uL
 Dil Factor = 1
 Blank ID # =
 Blank Value = .42 ug/minute C

Analyst : SL HOOD
 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	1.50	7.40	91.89
4	2.00	104.60	92.93
5	2.50	293.20	64.32
6	3.00	477.70	38.62
7	3.50	621.90	23.19
8	4.00	716.30	13.18
9	4.50	774.90	7.56
10	5.00	810.50	4.39
11	5.50	831.10	2.48
12	6.00	840.90	1.17
13	6.50	845.60	0.56
14	7.00	848.70	0.37
15	7.50	850.00	0.15
16	8.00	851.50	0.18
17	8.50	852.90	0.16
18	9.00	853.80	0.11
19	9.50	854.90	0.13
20	10.00	855.80	0.11
21	10.50	856.60	0.09
22	11.00	857.10	0.06

USER INPUT BLANK VALUE

BLANK VALUE = 4.619538 micrograms carbon

BLANK FACTOR = 4.619538 / 10.9989 = +4.2E-01 ug/min Carbon

SAMPLE RESULTS:

(857.1 - 4.618744) (1)/(1) = +8.525E+02 g/L Carbon
 (857.1 - 4.618744) (1)/(1) (12) = +7.104E+01 Molar Carbon

Sample Run By:

SL HOOD

00002

SS = .0917g + .500ml
 spl 25N12-B

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S97T01483 SPK Date: 10/31/97 Time: 03:16:00

Sample Size = 1 uL Analyst : SL HOOD
Dil Factor = 1 Min Readings = 22
Blank ID # = Max Readings = 22
Blank Value = 1.63 ug/minute C % Difference = 10

== Reading ==	Analysis Time	Coulometer	% Difference
1	0.51	0.40	0.00
2	1.01	0.90	55.56
3	1.50	13.10	93.13
4	2.00	81.90	84.00
5	2.50	165.90	50.63
6	3.00	246.60	32.73
7	3.50	331.80	25.68
8	4.00	422.00	21.37
9	4.50	511.90	17.56
10	5.00	583.70	12.30
11	5.50	632.20	7.67
12	6.00	664.20	4.82
13	6.50	683.70	2.85
14	7.00	694.60	1.57
15	7.50	701.30	0.96
16	8.00	705.90	0.65
17	8.50	708.90	0.42
18	9.00	711.90	0.42
19	9.50	713.90	0.28
20	10.00	715.70	0.25
21	10.50	717.00	0.18
22	11.00	718.30	0.18

USER INPUT BLANK VALUE

BLANK VALUE = 17.92821 micrograms carbon

BLANK FACTOR = 17.92821 / 10.9989 = +1.6E+00 ug/min Carbon

SAMPLE RESULTS:

(718.3 - 17.92513) (1)/(1) = +7.004E+02 g/L Carbon
(718.3 - 17.92513) (1)/(1) (12) = +5.836E+01 Molar Carbon

<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!>>>>

Sample Run By:

SL HOOD

00002

SS = .0917g + .100 ml spk
26N12-B 749

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S97T01786

Date: 10/31/97

Time: 03:40:32

Sample Size = 1 uL

Dil Factor = 1

Blank ID # =

Blank Value = .42 ug/minute C

Analyst : SL HOOD

Min Readings = 22

Max Readings = 22

% Difference = 10

== Reading ==	==== Analysis Time ==	==== Coulometer ==	==== % Difference ==
1	0.51	0.40	0.00
2	1.01	1.30	69.23
3	1.51	2.50	48.00
4	2.00	11.60	78.45
5	2.50	42.10	72.45
6	3.00	91.70	54.09
7	3.50	145.00	36.76
8	4.00	191.10	24.12
9	4.50	225.10	15.10
10	5.00	247.30	8.98
11	5.50	260.20	4.96
12	6.00	268.40	3.06
13	6.50	274.00	2.04
14	7.00	277.10	1.12
15	7.50	279.30	0.79
16	8.00	281.50	0.78
17	8.50	283.30	0.64
18	9.00	284.50	0.42
19	9.50	285.70	0.42
20	10.00	287.00	0.45
21	10.50	288.00	0.35
22	11.00	289.10	0.38

USER INPUT BLANK VALUE

BLANK VALUE = 4.619538 micrograms carbon

BLANK FACTOR = 4.619538 / 10.9989 = +4.2E-01 ug/min Carbon

SAMPLE RESULTS:

(289.1 - 4.61916) (1) / (1) =

+2.845E+02 g/L Carbon

(289.1 - 4.61916) (1) / (1) (12) =

+2.371E+01 Molar Carbon

Sample Run By:

SL HOOD

00002

25 = .1714g

750

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S97T01786

Date: 10/31/97

Time: 03:54:58

Sample Size = 1 uL

Dil Factor = 1

Blank ID # =

Blank Value = 1.63 ug/minute C

Analyst : SL HOOD

Min Readings = 22

Max Readings = 22

% Difference = 10

```

== Reading ==== Analysis Time ==== Coulometer ==== % Difference ==
 1          0.51          0.30          0.00
 2          1.00          0.80         62.50
 3          1.50         14.90         94.63
 4          2.00         89.40         83.33
 5          2.50        180.30         50.42
 6          3.00        266.60         32.37
 7          3.50        344.10         22.52
 8          4.00        407.80         15.62
 9          4.50        456.20         10.61
10          5.00        489.40          6.78
11          5.50        510.40          4.11
12          6.00        524.20          2.63
13          6.50        533.30          1.71
14          7.00        540.40          1.31
15          7.50        545.90          1.01
16          8.00        550.30          0.80
17          8.50        553.90          0.65
18          9.00        557.80          0.70
19          9.50        560.80          0.53
20         10.00        563.50          0.48
21         10.50        565.50          0.35
22         11.00        567.40          0.33

```

USER INPUT BLANK VALUE

BLANK VALUE = 17.92821 micrograms carbon

BLANK FACTOR = 17.92821 / 10.9989 = +1.6E+00 ug/min Carbon

SAMPLE RESULTS:

```

( 567.4 - 17.92948 ) (1)/(1) = +5.495E+02 g/L Carbon
( 567.4 - 17.92948 ) (1)/(1) (12) = +4.579E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!>>>>

```

Sample Run By:

SL HOOD

00002

SS = .1714g

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S97T01786 DUP Date: 10/31/97 Time: 04:09:14

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .42 ug/minute CAnalyst : SL HOOD
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading ==	==== Analysis Time ==	==== Coulometer ==	==== % Difference ==
1	0.51	1.20	0.00
2	1.01	2.00	40.00
3	1.50	3.30	39.39
4	2.00	14.60	77.40
5	2.50	45.20	67.70
6	3.00	88.50	48.93
7	3.50	132.50	33.21
8	4.00	170.90	22.47
9	4.50	202.70	15.69
10	5.00	225.70	10.19
11	5.50	241.60	6.58
12	6.00	250.10	3.40
13	6.50	254.90	1.88
14	7.00	258.10	1.24
15	7.50	259.70	0.62
16	8.00	260.80	0.42
17	8.50	261.90	0.42
18	9.00	262.90	0.38
19	9.50	263.80	0.34
20	10.00	264.50	0.26
21	10.50	265.30	0.30
22	11.00	266.20	0.34

USER INPUT BLANK VALUE

BLANK VALUE = 4.619538 micrograms carbon

BLANK FACTOR = 4.619538 / 10.9989 = +4.2E-01 ug/min Carbon

SAMPLE RESULTS:

(266.2 - 4.61909) (1)/(1) =	+2.616E+02 g/L Carbon
(266.2 - 4.61909) (1)/(1) (12) =	+2.180E+01 Molar Carbon

Sample Run By:

SL HOOD

00002

55 = .1500g

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S97T01768 DUP Date: 10/31/97 Time: 04:23:11

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 1.63 ug/minute C

Analyst : SL HOOD
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading ==	Analysis Time ==	Coulometer ==	% Difference ==
1	0.51	0.90	0.00
2	1.01	1.30	30.77
3	1.50	14.50	91.03
4	2.00	81.60	82.23
5	2.50	155.80	47.63
6	3.00	221.80	29.76
7	3.50	278.30	20.30
8	4.00	321.90	13.54
9	4.50	352.90	8.78
10	5.00	373.50	5.52
11	5.50	387.10	3.51
12	6.00	396.00	2.25
13	6.50	402.00	1.49
14	7.00	407.30	1.30
15	7.50	410.90	0.88
16	8.00	414.80	0.94
17	8.50	417.10	0.55
18	9.00	419.90	0.67
19	9.50	421.60	0.40
20	10.00	423.20	0.38
21	10.50	425.00	0.42
22	11.00	427.10	0.49

USER INPUT BLANK VALUE

BLANK VALUE = 17.92821 micrograms carbon

BLANK FACTOR = 17.92821 / 10.9989 = +1.6E+00 ug/min Carbon

SAMPLE RESULTS:

(427.1 - 17.92348) (1)/(1) = +4.092E+02 g/L Carbon
(427.1 - 17.92348) (1)/(1) (12) = +3.410E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!>>>>

Sample Run By:

SL HOOD

00002

SS = .1500g

753

HNF-SD-WM-DP-259, REV. 0

RADIOCHEMICAL ANALYSIS

LABCORE Completed Worklist Report for Worklist# 19058

Analyst: adp

Instrument: AB16

Book# _____

Method: _____ Rev/Med _____

Worklist Comment: (BY109) HERTING, S.S. by Ludlum. Std: 1.0mL, Spk: 0.1mL skm

Seq Type	Sample#	R A	Test	Matrix	Actual	Found	DL or Yield	Unit
1 STD	0		@ALPHA01 ALPHA01 LIQUID		2.00E-04	1.55E-4	77.500 % Recovery	
1 STD	0		@ALPHA01 ALPHA01E LIQUID		1.00	3.89E+00	3.890 % Ct. Error	
2 BLNK	0		@ALPHA01 ALPHA01 LIQUID		1	<6.57E-7		uCi/mL
2 BLNK	0		@ALPHA01 ALPHA01E LIQUID		1.00	2.95E+02	299.000	uCi/mL
3 BLNK/BKG	0		@ALPHA01 ALPHA01 LIQUID		1.00E+00	1.39E+00	1.390	BLNK/BKG
4 SAMPLE	S97T001399	0	@ALPHA01 ALPHA01 LIQUID		N/A <	6.57E-07	9.36E-007	uCi/mL
4 SAMPLE	S97T001399	0	@ALPHA01 ALPHA01E LIQUID		N/A	4.38E+02		% Ct. Error
5 DUF	S97T001399	0	@ALPHA01 ALPHA01 LIQUID		<6.57E-7	<7.88E-7		RPD
5 DUF	S97T001399	0	@ALPHA01 ALPHA01E LIQUID		1.00	5.00E+02	500.000	% Ct. Error
6 SAMPLE	S97T001467	0	@ALPHA01 ALPHA01 LIQUID		N/A <	1.61E-02	1.91E-002	uCi/mL
6 SAMPLE	S97T001467	0	@ALPHA01 ALPHA01E LIQUID		N/A	2.30E+02		% Ct. Error
7 DUF	S97T001467	0	@ALPHA01 ALPHA01 LIQUID		<1.61E-2	<1.47E-2		RPD
7 DUF	S97T001467	0	@ALPHA01 ALPHA01E LIQUID		1.00	1.88E+02	188.000	% Ct. Error
8 SPK	S97T001467	0	@ALPHA01 ALPHA01 LIQUID		2.63E-02	2.36E-02	89.734 % Recovery	
9 SAMPLE	S97T001468	0	@ALPHA01 ALPHA01 LIQUID		N/A <	1.74E-02	1.91E-002	uCi/mL
9 SAMPLE	S97T001468	0	@ALPHA01 ALPHA01E LIQUID		N/A	1.40E+02		% Ct. Error
10 DUF	S97T001468	0	@ALPHA01 ALPHA01 LIQUID		<1.74E-2	1.14E-2		RPD
10 DUF	S97T001468	0	@ALPHA01 ALPHA01E LIQUID		1.00	1.13E+02	113.000	% Ct. Error
11 SAMPLE	S97R000260	0	@ALPHA01 ALPHA01 LIQUID		N/A	2.28E-02	3.82E-002	uCi/mL
11 SAMPLE	S97R000260	0	@ALPHA01 ALPHA01E LIQUID		N/A	1.04E+02		% Ct. Error

Final page for worklist# 19058

Analyst Signature

Date

Analyst Signature

Date

Reviewer Signature

Date

LABCORE Data Entry Template for Worklist# 19058

Analyst: ADP Instrument: AB00 14 Book# 79B56Method: LA-508-101 Rev/Mod 6-0

Worklist Comment: BY109, HERTING, S.S. by Ludlum. Std: 1.0mL, Spk: 0.1mL skm

^{Flashed WASTE}

S Type	Sample#	R A	Test	Matrix	Group#	Project
1 STD			@ALPHA01	LIQUID		
2 BLNK			@ALPHA01	LIQUID		
3 BLNK/BKG			@ALPHA01	LIQUID		
4 SAMPLE	S97T001399 0		@ALPHA01	LIQUID	97000411	BY-109 (P)
	Analytes Requested: ALPHA01 , ALPHA01E					
5 DUP	S97T001399 0		@ALPHA01	LIQUID		
6 SAMPLE	S97T001467 0		@ALPHA01	LIQUID	97000412	BY-109 (P)
	Analytes Requested: ALPHA01 , ALPHA01E					
7 DUP	S97T001467 0		@ALPHA01	LIQUID		
8 SPK	S97T001467 0		@ALPHA01	LIQUID		
9 SAMPLE	S97T001468 0		@ALPHA01	LIQUID	97000412	BY-109 (P)
	Analytes Requested: ALPHA01 , ALPHA01E					
10 DUP	S97T001468 0		@ALPHA01	LIQUID		
11 SAMPLE	S97R000260 0		@ALPHA01	LIQUID	97000451	HERTING
	Analytes Requested: ALPHA01 , ALPHA01E					

Final page for worklist # 19058

Analyst Signature Anthony Purnell Date 7-9-97Analyst Signature MCB Date 7/10/97
C. Purnell 7/10/97Data Entry Comments: Spike # 131B43

WORKBOOK PAGE: STD1

AT : LA-508-101 (E-1)

LA-508-113 (B-0) STANDARD

		STANDARD	REPLICATE
Type	DETECTOR NUMBER	16	16
STD	DISH SIZE (1, 2, or 5)	(MS)	2
Work List	GROSS COUNTS	(GC)	2564
19058	COUNT TIME IN MINUTES	(CT)	30
AT or TB ?	BACKGROUND IN cpm	(BKG)	0.3
AT	SAMPLE SIZE in mL	(SS)	1.000
Test Code	DILUTION FACTOR	(DF)	1
@ALPHA01	STANDARD BOOK NUMBER	(Std BN)	79B56
Matrix	EFFICIENCY FACTOR	(EFF)	0.2683
LIQUID	Lc, Rmax, or Rs, (SAMPLE RATE) as APPROPRIATE		85.167
Batch Number	Standard Value in $\mu\text{Ci/mL}$		2.00E-04
97003163	Concentration in $\mu\text{Ci/L}$	=	1.43E-01
Rerun	Replicate Concentration in $\mu\text{Ci/L}$	=	1.66E-01
0	AVERAGE CONCENTRATION in $\mu\text{Ci/L}$	=	1.5454E-01

Sample Prep

N/A

Rs (Sample Count Rate) = $(\text{TC} / \text{CT}) - \text{BKG}$

Sample #

ALPHA TOTAL $\mu\text{Ci/L}$ = $\text{Rs} * 1000\text{mL/L} * \text{DF} / (\text{EFF} * \text{SS} * 2220000\text{dpm}/\mu\text{Ci})$

WL19058-STD

ALPHA TOTAL $\mu\text{Ci/mL}$ = $\text{ALPHA TOTAL } \mu\text{Ci/L} / 1000\text{mL/L}$

Instrument Code

Relative Counting Error = $[(\text{The Square Root of } \text{TC} + \text{BKG} * \text{CT}) / (\text{TC} - \text{BKG} * \text{CT})] * 1.96 * 100$

WB27806

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

Prepared By

MCB

Chemist

SLF

ALPHA TOTAL CONCENTRATION in $\mu\text{Ci/mL}$ = 1.55E-04

Analyst

ADP

Date Complete

07/10/97

RELATIVE COUNTING ERROR = 3.9%

Analysis Date

07/09/97

Analysis Time

02:35 AM

Sample Point

BY-109 (P)

DETECTION

LEVEL

9.36E-07

 $\mu\text{Ci/mL}$

Analyst:

MCB

Date: 10-Jul-97

Signature of Chemist:

SLF

Date: 7/11/97

STANDARD.WB1 Rev. 1.0

508101ML

The RPD for the STD + STD/REP is slightly elevated, however the low sample alpha activities make a rerun unwarranted (further reruns would not improve data quality.).

WORKBOOK PAGE: BLANK2

AT : LA-508-101 (E-1) LIQUIDS

		BLNK	REPLICATE
Type	DETECTOR NUMBER	16	16
BLNK	DISH SIZE (1, 2, or 5) (MS)	2	2
Work List	GROSS COUNTS (GC)	13	12
19058	COUNT TIME in MINUTES (CT)	30	30
AT or TB ?	BACKGROUND in cpm (BKG)	0.3	0.3
AT	SAMPLE SIZE in mL (SS)	1.000	1.000
Test Code	DILUTION FACTOR (DF)	1	1
@ALPHA01	DIGEST DILUTION FACTOR (DDF)	1	1
Matrix	EFFICIENCY FACTOR (EFF)	0.2683	0.2683
LIQUID	Lc, Rmax, or Rs.(SAMPLE RATE) as APPROPRIATE	0.391	0.352
Batch Number			
97003163	Blank Concentration in $\mu\text{Ci/L}$	< 6.57E-04	
Rerun	Replicate Concentration in $\mu\text{Ci/L}$	< 5.91E-04	
0	Maximum Concentration in $\mu\text{Ci/L}$	< 6.5697E-04	
Sample Prep			
N/A	Rs (Sample Count Rate) = $(TC / CT) - BKG$		
Sample #	ALPHA TOTAL $\mu\text{Ci/L}$ = $Rs * 1000\text{mL/L} * DF * DDF / (EFF * SS * 2220000\text{dpm}/\mu\text{Ci})$		
WL19058-BLNK	ALPHA TOTAL $\mu\text{Ci/mL}$ = ALPHA TOTAL $\mu\text{Ci/L} / 1000\text{mL/L}$		
Instrument Code	Relative Counting Error = $[(The Square Root of TC + BKG * CT) / (TC - BKG * CT)] * 1.96 * 100$		
WB27806	Detection Levels and Less Than Values are determined from Procedure LA-508-002.		
Prepared By			
MCB			
Chemist			
SLF	ALPHA TOTAL in $\mu\text{Ci/mL}$ (Maximum) =	< 6.57E-07	DETECTION LEVEL
Analyst			
ADP	LESS THAN Value was Determined from Rmax.		
Date/Complete			9.36E-07
07/10/97	RELATIVE COUNTING ERROR	299.4%	$\mu\text{Ci/mL}$
Analysis Date			
07/09/97			
Analysis Time			
02:35 AM			
Sample Point			
BY-109 (P)			

Analyst:	ADP	Date: 10-Jul-97
Signature of Chemist:	SLF	Date: 7/11/97
BLANK.WB1 Rev. 1.0	508101ML	

WORKBOOK PAGE: SAM4

AT : LA-508-101 (E-1) LIQUIDS

		SAMPLE	REPLICATE
Type	DETECTOR NUMBER	16	16
SAMPLE	DISH SIZE (1, 2, or 5) (MS)	2	2
Work List	GROSS COUNTS (GC)	13	11
19058	COUNT TIME in MINUTES (CT)	30	30
AT or TB ?	BACKGROUND in cpm (BKG)	0.3	0.3
AT	SAMPLE SIZE in mL (SS)	1.000	1.000
Test Code	DILUTION FACTOR (DF)	1	1
@ALPHA01	DIGEST DILUTION FACTOR (DDF)	1	1
Matrix	EFFICIENCY FACTOR (EFF)	0.2683	0.2683
LIQUID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE	0.391	0.313
Batch Number			
97003163	Blank Concentration in $\mu\text{Ci/L}$	<	6.57E-04
Rerun	Replicate Concentration in $\mu\text{Ci/L}$	<	5.25E-04
0	Maximum Concentration in $\mu\text{Ci/L}$	<	6.5697E-04
Sample Prep			
N/A	Rs (Sample Count Rate) = $(\text{TC} / \text{CT}) - \text{BKG}$		
Sample #	ALPHA TOTAL $\mu\text{Ci/L}$ = $\text{Rs} * 1000\text{mL/L} * \text{DF} * \text{DDF} / (\text{EFF} * \text{SS} * 2220000\text{dpm}/\mu\text{Ci})$		
S97T001399	ALPHA TOTAL $\mu\text{Ci/mL}$ = ALPHA TOTAL $\mu\text{Ci/L} / 1000\text{mL/L}$		
Instrument Code	Relative Counting Error = $[(\text{The Square Root of TC} + \text{BKG} * \text{CT}) / (\text{TC} - \text{BKG} * \text{CT})] * 1.96 * 100$		
WB27806	Detection Levels and Less Than Values are determined from Procedure LA-508-002.		
Prepared By			
MCB			
Chemist			
SLF	ALPHA TOTAL in $\mu\text{Ci/mL}$ (Maximum) =	< 6.57E-07	DETECTION LEVEL
Analyst			
ADP	LESS THAN Value was Determined from Rmax.		
Date Complete			9.36E-07
07/10/97	RELATIVE COUNTING ERROR	438.3%	$\mu\text{Ci/mL}$
Analysis Date			
07/09/97			
Analysis Time			
02:35 AM			
Sample Point			
BY-109 (P)			

Analyst:	ADP	Date: 10-Jul-97
Signature of Chemist:	SLF	Date: 7/11/97

SAMPLE.WB1 Rev. 1.0

508101ML

WORKBOOK PAGE: DUPS

AT : LA-508-101 (E-1) LIQUIDS

		DUP	REPLICATE
Type	DETECTOR NUMBER	16	16
DUP	DISH SIZE (1, 2, or 5) (MS)	2	2
Work List	GROSS COUNTS (GC)	11	15
19058	COUNT TIME in MINUTES (CT)	30	30
AT or TB ?	BACKGROUND in cpm (BKG)	0.3	0.3
AT	SAMPLE SIZE in mL (SS)	1.000	1.000
Test Code	DILUTION FACTOR (DF)	1	1
@ALPHA01	DIGEST DILUTION FACTOR (DDF)	1	1
Matrix	EFFICIENCY FACTOR (EFF)	0.2683	0.2683
LIQUID	Lc, Rmax, or Rs (SAMPLE RATE) as APPROPRIATE	0.313	0.469
Batch Number			
97003163	Blank Concentration in $\mu\text{Ci/L}$	< 5.25E-04	
Rerun	Replicate Concentration in $\mu\text{Ci/L}$	< 7.88E-04	
0	Maximum Concentration in $\mu\text{Ci/L}$	< 7.8815E-04	
Sample Prep			
N/A	R_s (Sample Count Rate) = $(TC / CT) - BKG$		
Sample #	ALPHA TOTAL $\mu\text{Ci/L}$ = $R_s * 1000\text{mL/L} * DF * DDF / (EFF * SS * 2220000\text{dpm}/\mu\text{Ci})$		
S97T001399	ALPHA TOTAL $\mu\text{Ci/mL}$ = ALPHA TOTAL $\mu\text{Ci/L} / 1000\text{mL/L}$		
Instrument Code	Relative Counting Error = $[(\text{The Square Root of } TC + BKG * CT) / (TC - BKG * CT)] * 1.96 * 100$		
WB27806	Detection Levels and Less Than Values are determined from Procedure LA-508-002.		
Prepared By			
MCB			
Chemist			
SLF	ALPHA TOTAL in $\mu\text{Ci/mL}$ (Maximum) =	< 7.88E-07	DETECTION LEVEL
Analyst	LESS THAN Value was Determined from Rmax.		
ADP			
Date Complete	RELATIVE COUNTING ERROR	500.0%	9.36E-07 $\mu\text{Ci/mL}$
07/10/97			
Analysis Date			
07/09/97			
Analysis Time			
02:35 AM			
Sample Point			
BY-109 (P)			

Analyst:	ADP	Date: 10-Jul-97
Signature of Chemist:	SLF	Date: 7/11/97
SAMPLE.WB1 Rev. 1.0	508101ML	

WORKBOOK PAGE: SAM6

AT : LA-508-101 (E-1) LIQUIDS

		SAMPLE	REPLICATE
Type	DETECTOR NUMBER	16	16
SAMPLE	DISH SIZE (1, 2, or 5) (MS)	2	2
Work List	GROSS COUNTS (GC)	13	15
19058	COUNT TIME in MINUTES (CT)	30	30
AT or TB ?	BACKGROUND in cpm (BKG)	0.3	0.3
AT	SAMPLE SIZE in mL (SS)	0.500	0.500
Test Code	DILUTION FACTOR (DF)	10201	10201
@ALPHA01	DIGEST DILUTION FACTOR (DDF)	1	1
Matrix	EFFICIENCY FACTOR (EFF)	0.2683	0.2683
LIQUID	Lc, Rmax, or Rs (SAMPLE RATE) as APPROPRIATE	0.391	0.469
Batch Number			
97003163	Blank Concentration in $\mu\text{Ci/L}$	< 1.34E+01	
Rerun	Replicate Concentration in $\mu\text{Ci/L}$	< 1.61E+01	
0	Maximum Concentration in $\mu\text{Ci/L}$	< 1.6080E+01	
Sample Prep			
N/A	R_s (Sample Count Rate) = $(TC / CT) - BKG$		
Sample #	ALPHA TOTAL $\mu\text{Ci/L}$ = $R_s * 1000\text{mL/L} * DF * DDF / (EFF * SS * 2220000\text{dpm}/\mu\text{Ci})$		
S97T001467	ALPHA TOTAL $\mu\text{Ci/mL}$ = ALPHA TOTAL $\mu\text{Ci/L} / 1000\text{mL/L}$		
Instrument Code	Relative Counting Error = $[(The\ Square\ Root\ of\ TC + BKG * CT) / (TC - BKG * CT)] * 1.96 * 100$		
WB27806	Detection Levels and Less Than Values are determined from Procedure LA-508-002.		
Prepared By			
MCB			
Chemist			
SLF	ALPHA TOTAL in $\mu\text{Ci/mL}$ (Maximum) =	< 1.61E-02	DETECTION LEVEL
Analyst			
ADP	LESS THAN Value was Determined from Rmax.		
Date/Complete			1.91E-02
07/10/97	RELATIVE COUNTING ERROR	229.8%	$\mu\text{Ci/mL}$
Analysis Date			
07/09/97			
Analysis Time			
02:35 AM			
Sample Point			
BY-109 (P)			

Analyst:	ADP	Date: 10-Jul-97
Signature of Chemist:	SLF	Date: 7/11/97

SAMPLE.WB1 Rev. 1.0

508101ML

WORKBOOK PAGE: DUP7

AT : LA-508-101 (E-1) LIQUIDS

		DUP	REPLICATE
Type	DETECTOR NUMBER	16	16
DUP	DISH SIZE (1, 2, or 5) (MS)	2	2
Work List	GROSS COUNTS (GC)	18	14
19058	COUNT TIME in MINUTES (CT)	30	30
AT or TB ?	BACKGROUND in cpm (BKG)	0.3	0.3
AT	SAMPLE SIZE in mL (SS)	0.500	0.500
Test Code	DILUTION FACTOR (DF)	10201	10201
@ALPHA01	DIGEST DILUTION FACTOR (DDF)	1	1
Matrix	EFFICIENCY FACTOR (EFF)	0.2683	0.2683
LIQUID	Lc, Rmax, or Rs, (SAMPLE RATE) as APPROPRIATE	0.300	0.430

Batch Number	97003163	Blank Concentration in $\mu\text{Ci/L}$	1.03E+01
Rerun	0	Replicate Concentration in $\mu\text{Ci/L}$	< 1.47E+01
Sample Prep		Maximum Concentration in $\mu\text{Ci/L}$	< 1.4744E+01

N/A	Rs (Sample Count Rate) = $(\text{TC} / \text{CT}) - \text{BKG}$
Sample #	ALPHA TOTAL $\mu\text{Ci/L}$ = $\text{Rs} * 1000\text{mL/L} * \text{DF} * \text{DDF} / (\text{EFF} * \text{SS} * 2220000\text{dpm}/\mu\text{Ci})$
S97T001467	ALPHA TOTAL $\mu\text{Ci/mL}$ = ALPHA TOTAL $\mu\text{Ci/L}$ / 1000mL/L
Instrument Code	Relative Counting Error = $[(\text{The Square Root of TC} + \text{BKG} * \text{CT}) / (\text{TC} - \text{BKG} * \text{CT})] * 1.96 * 100$
WB27806	Detection Levels and Less Than Values are determined from Procedure LA-508-002.

Prepared By	MCB
Chemist	SLF
Analyst	ADP
Date Complete	07/10/97
Analysis Date	07/09/97
Analysis Time	02:35 AM
Sample Point	BY-109 (P)

ALPHA TOTAL in $\mu\text{Ci/mL}$ (Maximum)	=	< 1.47E-02	DETECTION LEVEL
LESS THAN Value was Determined from Rs.			1.91E-02 $\mu\text{Ci/mL}$
RELATIVE COUNTING ERROR		188.0%	

Analyst:	ADP	Date: 10-Jul-97
Signature of Chemist:	SLF	Date: 7/11/97

SAMPLE.WB1 Rev. 1.0

508101ML

WORKBOOK PAGE: SPK8

AT : LA-508-101 (E-1) LA-508-113 (B-0) SPIKED SAMPLE

		SPIKE	REPLICATE
Type	DETECTOR NUMBER	16	16
SPK	DISH SIZE 1, 2, or 5 (MS)	2	2
Work List	TOTAL COUNTS (TC)	40533	43947
19058	COUNT TIME in MINUTES (CT)	30	30
At or TB ?	BACKGROUND in cpm (BKG)	0.3	0.3
AT	SAMPLE VOLUME in mL (Spiked Vial) (SS)	0.500	0.500
Test Code	SAMPLE DILUTION FACTOR (Spiked Vial) (DF)	10201	10201
@ALPHA01	DIGEST DILUTION FACTOR (DDF)	1	1
Matrix	SPIKE VOLUME in mL (SVol)	0.100	0.100
LIQUID	SPIKE DILUTION FACTOR (SDF)	1	1
Batch Number	SPIKE BOOK NUMBER (Spk BN)	131B43	131B43
97003163	SPIKE VALUE in $\mu\text{Ci/mL}$ (SVal)	2.6288E-02	2.6288E-02
Rerun	INSTRUMENT EFFICIENCY FACTOR (EFF)	0.2683	0.2683
0	SAMPLE + SPIKE $\mu\text{Ci/mL}$ (S+S)	4.63E+01	5.02E+01
Sample Prep	AVERAGE or MAXIMUM $\mu\text{Ci/mL}$ in SAMPLE	1.6080E-02	
N/A			
Sample #			
S97T001467			
Instrument Code	Rs (Sample Count Rate) = (TC / CT) - BKG		
WB27806	SAMPLE + SPIKE $\mu\text{Ci/mL}$ = Rs * DF * DDF / (EFF * SS * 2220000dpm/ μCi)		
Prepared By	QC ACTUAL = SVal		
MCB	QC FOUND = (((S+S $\mu\text{Ci/mL}$ - SAMPLE $\mu\text{Ci/mL}$) * ((SDF/SVol)/(DF*DDF/SS))))		
Chemist	PERCENT SPIKE RECOVERY = (QC FOUND / QC ACTUAL) * 100		
SLF			
Analyst			
ADP			
Date Complete	NOTE: Original Sample result was a LESS THAN value. Zero (0) was subtracted from the spiked value for QC found calculation.		
07/10/97			
Analysis Date			
07/09/97	QC ACTUAL =	2.63E-02	
Analysis Time	QC FOUND =	2.36E-02	
02:35 AM	AVG. PERCENT SPIKE RECOVERY =	89.9%	
Sample Point			
BY-109 (P)			

Analyst:	MCB	Date: 10-Jul-97
Signature of Chemist:	SLF	Date: 7/11/97
SPIKE.WB1 Rev. 1.0	508101ML	

WORKBOOK PAGE: SAM9

AT : LA-508-101 (E-1) LIQUIDS

		SAMPLE	REPLICATE
Type	DETECTOR NUMBER	16	16
SAMPLE	DISH SIZE (1 , 2 , or 5)	(MS)	2
Work List	GROSS COUNTS	(GC)	16
19058	COUNT TIME in MINUTES	(CT)	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.3
AT	SAMPLE SIZE in mL	(SS)	0.500
Test Code	DILUTION FACTOR	(DF)	10201
@ALPHA01	DIGEST DILUTION FACTOR	(DDF)	1
Matrix	EFFICIENCY FACTOR	(EFF)	0.2683
LIQUID	Lc, Rmax, or Rs, (SAMPLE RATE) as APPROPRIATE	0.508	0.267

Batch Number	97003163	Blank Concentration in $\mu\text{Ci/L}$	< 1.74E+01
Rerun	0	Replicate Concentration in $\mu\text{Ci/L}$	9.13E+00
Sample Prep		Maximum Concentration in $\mu\text{Ci/L}$	< 1.7412E+01

N/A	Rs (Sample Count Rate) = $(\text{TC} / \text{CT}) - \text{BKG}$
Sample #	ALPHA TOTAL $\mu\text{Ci/L}$ = $\text{Rs} * 1000\text{mL/L} * \text{DF} * \text{DDF} / (\text{EFF} * \text{SS} * 2220000\text{dpm}/\mu\text{Ci})$
S97T001468	ALPHA TOTAL $\mu\text{Ci/mL}$ = $\text{ALPHA TOTAL } \mu\text{Ci/L} / 1000\text{mL/L}$
Instrument Code	Relative Counting Error = $[(\text{The Square Root of } \text{TC} + \text{BKG} * \text{CT}) / (\text{TC} - \text{BKG} * \text{CT})] * 1.96 * 100$
WB27806	Detection Levels and Less Than Values are determined from Procedure LA-508-002.

Prepared By	MCB
Chemist	SLF
Analyst	ADP
Date Complete	07/10/97
Analysis Date	07/09/97
Analysis Time	02:35 AM
Sample Point	BY-109 (P)

Analyst:		Date: 10-Jul-97
Signature of Chemist:	SLF	Date: 7/11/97

SAMPLE.WB1 Rev. 1.0

508101ML

WORKBOOK PAGE: DUP10

AT : LA-508-101 (E-1) LIQUIDS

	DUP	REPLICATE
Type	DETECTOR NUMBER	16
DUP	DISH SIZE (1 , 2 , or 6) (MS)	2
Work List	GROSS COUNTS (GC)	20
19058	COUNT TIME in MINUTES (CT)	30
AT or TB ?	BACKGROUND in cpm (BKG)	0.3
AT	SAMPLE SIZE in mL (SS)	0.500
Test Code	DILUTION FACTOR (DF)	10201
@ALPHA01	DIGEST DILUTION FACTOR (DDF)	1
Matrix	EFFICIENCY FACTOR (EFF)	0.2683
LIQUID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE	0.367
Batch Number		
97003163	Blank Concentration in $\mu\text{Ci/L}$	1.26E+01
Rerun	Replicate Concentration in $\mu\text{Ci/L}$	1.03E+01
0	Average Concentration in $\mu\text{Ci/L}$	1.1418E+01
Sample Prep		
N/A	Rs (Sample Count Rate) = $(TC / CT) - BKG$	
Sample #	ALPHA TOTAL $\mu\text{Ci/L}$ = $Rs * 1000\text{mL/L} * DF * DDF / (EFF * SS * 2220000\text{dpm}/\mu\text{Ci})$	
S97T001468	ALPHA TOTAL $\mu\text{Ci/mL}$ = $ALPHA\ TOTAL\ \mu\text{Ci/L} / 1000\text{mL/L}$	
Instrument Code	Relative Counting Error = $[(The\ Square\ Root\ of\ TC + BKG * CT) / (TC - BKG * CT)] * 1.96 * 100$	
WB27806	Detection Levels and Less Than Values are determined from Procedure LA-508-002.	
Prepared By		
MCB		
Chemist		
SLF	ALPHA TOTAL in $\mu\text{Ci/mL}$ (Average) =	1.14E-02
Analyst		DETECTION LEVEL
ADP		
Date Complete		1.91E-02
07/10/97	RELATIVE COUNTING ERROR	113.2%
Analysis Date		
07/09/97		
Analysis Time		
02:35 AM		
Sample Point		
BY-109 (P)		

Analyst:	ADP	Date: 10-Jul-97
Signature of Chemist:	SLF	Date: 7/11/97
SAMPLE.WB1 Rev. 1.0	508101ML	

LABCORE Completed RadChem Report for Worklist#: 19470

Analyst: rdm

Instrument: AB20

Book# _____

Method: _____ Rev/Mod _____

Worklist Comment: BY109, @ALPHA01 S.S. by Ludlum. Std:1.0mL, Spk:0.1mL skm

Seq Type	Sample# R A	Test	Matrix	Actual	Found	DL or Yield	Unit
1 STD	0	@ALPHA01 ALPHA01	SOLID	2.00E-04	1.97E-4	98.500	% Recovery
1 STD	0	@ALPHA01 ALPHA01E	SOLID	1.00	3.06E+00	3.060	% Ct. Erro
2 BLNK-PREF	0	@ALPHA01 ALPHA01	SOLID	1	<4.72E-3		uCi/g
2 BLNK-PREF	0	@ALPHA01 ALPHA01E	SOLID	1.00	5.00E+02	500.000	uCi/g
3 BLNK/BKG	0	@ALPHA01 ALPHA01	SOLID	1.00E+00	9.52E-01	0.952	BLNK/BKG
4 SAMPLE	S97T001348	0 F @ALPHA01 ALPHA01	SOLID	N/A	1.41E-01	968.0e-005	uCi/g
4 SAMPLE	S97T001348	0 F @ALPHA01 ALPHA01E	SOLID	N/A	1.73E+01	0.0e+000	% Ct. Error
5 DUP	S97T001348	0 F @ALPHA01 ALPHA01	SOLID	1.41E-1	1.56E-1	10.101	RPD
5 DUP	S97T001348	0 F @ALPHA01 ALPHA01E	SOLID	1.00	1.59E+01	15.900	% Ct. Erro
6 SPK	S97T001348	0 F @ALPHA01 ALPHA01	SOLID	2.63E-02	2.85E-02	108.365	% Recovery
7 SAMPLE	S97T001557	0 F @ALPHA01 ALPHA01	SOLID	N/A	1.00E-02	502.0e-005	uCi/g
7 SAMPLE	S97T001557	0 F @ALPHA01 ALPHA01E	SOLID	N/A	5.53E+01	0.0e+000	% Ct. Error
8 DUP	S97T001557	0 F @ALPHA01 ALPHA01	SOLID	1.00E-2	9.79E-3	2.122	RPD
8 DUP	S97T001557	0 F @ALPHA01 ALPHA01E	SOLID	1.00	5.33E+01	53.300	% Ct. Erro
9 SPK	S97T001557	0 F @ALPHA01 ALPHA01	SOLID	2.63E-02	2.53E-02	96.198	% Recovery
10 SAMPLE	S97T001572	0 F @ALPHA01 ALPHA01	SOLID	N/A	5.43E-02	529.0e-005	uCi/g
10 SAMPLE	S97T001572	0 F @ALPHA01 ALPHA01E	SOLID	N/A	2.23E+01	0.0e+000	% Ct. Error
11 DUP	S97T001572	0 F @ALPHA01 ALPHA01	SOLID	5.43E-2	5.66E-2	4.148	RPD
11 DUP	S97T001572	0 F @ALPHA01 ALPHA01E	SOLID	1.00	2.10E+01	21.000	% Ct. Erro
12 SPK	S97T001572	0 F @ALPHA01 ALPHA01	SOLID	2.63E-02	2.02E-02	76.806	% Recovery
13 SAMPLE	S97T001577	0 F @ALPHA01 ALPHA01	SOLID	N/A	1.71E-02	533.0e-005	uCi/g
13 SAMPLE	S97T001577	0 F @ALPHA01 ALPHA01E	SOLID	N/A	4.15E+01	0.0e+000	% Ct. Error
14 DUP	S97T001577	0 F @ALPHA01 ALPHA01	SOLID	1.71E-2	1.17E-2	37.500	RPD
14 DUP	S97T001577	0 F @ALPHA01 ALPHA01E	SOLID	1.00	4.98E+01	49.800	% Ct. Erro

Final page for worklist# 19470

Analyst Signature

Date

Analyst Signature

Date

Reviewer Signature

7/29/97
Date

the RPD for 1577 is acceptable due to
low sample alpha activity.

7/29/97

LABCORE Data Entry Template for Worklist# 19470

Analyst: RM Instrument: AB00 20 Book# 79356Method: LA-508-101 Rev/Mod: G-0

Worklist Comment: BY109, @ALPHA01 S.S. by Ludlum. Std:1.0mL, Spk:0.1mL skm

S Type	Sample#	R A	Test	Matrix	Group#	Project
1 STD			@ALPHA01	SOLID		
2 BLNK-PREP			@ALPHA01	SOLID		
3 BLNK/BKG			@ALPHA01	SOLID		
4 SAMPLE	S97T001348	0 F	@ALPHA01	SOLID	97000412	BY-109 (P)
	Analytes Requested: ALPHA01 , ALPHA01E					
5 DUP	S97T001348	0 F	@ALPHA01	SOLID		
6 SPK	S97T001348	0 F	@ALPHA01	SOLID		
7 SAMPLE	S97T001557	0 F	@ALPHA01	SOLID	97000411	BY-109 (P)
	Analytes Requested: ALPHA01 , ALPHA01E					
8 DUP	S97T001557	0 F	@ALPHA01	SOLID		
9 SPK	S97T001557	0 F	@ALPHA01	SOLID		
10 SAMPLE	S97T001572	0 F	@ALPHA01	SOLID	97000412	BY-109 (P)
	Analytes Requested: ALPHA01 , ALPHA01E					
11 DUP	S97T001572	0 F	@ALPHA01	SOLID		
12 SPK	S97T001572	0 F	@ALPHA01	SOLID		
13 SAMPLE	S97T001577	0 F	@ALPHA01	SOLID	97000412	BY-109 (P)
	Analytes Requested: ALPHA01 , ALPHA01E					
14 DUP	S97T001577	0 F	@ALPHA01	SOLID		

Final page for worklist # 19470

RM 7/24/97L. Hogan 7-28-97
C. Opine 7/28/97

Data Entry Comments:

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

07/23/97 13:26
A-0004-1

Page: 2

LABCORE Data Entry Template for Worklist# 19470

S Type	Sample#	R A Test	Matrix	Group#	Project	
Analyst Signature		Date		Analyst Signature		Date

Data Entry Comments:

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

WORKBOOK PAGE: STD1

AT : LA-508-101 (E-1)

LA-508-113 (B-0) STANDARD

	STANDARD	REPLICATE
Detector Number	20	20
STD	DISH SIZE (1, 2, or 5)	(MS) 2 2
Work List	GROSS COUNTS	(GC) 4099 4243
19470	COUNT TIME in MINUTES	(CT) 30 30
Alison By	BACKGROUND In cpm	(BKG) 0.07 0.07
AT	SAMPLE SIZE in mL	(SS) 1.000 1.000
Test Code	DILUTION FACTOR	(DF) 1 1
@ALPHA01	STANDARD BOOK NUMBER	(Std BN) 79B56 79B56
Matrix	EFFICIENCY FACTOR	(EFF) 0.3173 0.3173
LIQUID	Lc, Rmax, or Rs, (SAMPLE RATE) as APPROPRIATE	136.563 141.363
Batch Number	Standard Value in $\mu\text{Ci/mL}$	2.00E-04
97003592	Concentration in $\mu\text{Ci/L}$	= 1.94E-01
Repur	Replicate Concentration in $\mu\text{Ci/L}$	= 2.01E-01
0	AVERAGE CONCENTRATION in $\mu\text{Ci/L}$	= 1.9728E-01

Sample Prep	N/A	R_s (Sample Count Rate) = $(TC / CT) - BKG$
Sample	WL19470	$\text{ALPHA TOTAL } \mu\text{Ci/L} = R_s * 1000\text{mL/L} * DF / (EFF * SS * 2220000\text{dpm}/\mu\text{Ci})$
Instrument Code	WC16101	$\text{ALPHA TOTAL } \mu\text{Ci/mL} = \text{ALPHA TOTAL } \mu\text{Ci/L} / 1000\text{mL/L}$
Prepared By	SEH	Relative Counting Error = $[(\text{The Square Root of } TC + BKG * CT) / (TC - BKG * CT)] * 1.96 * 100$
Chemist	SLF	Detection Levels and Less Than Values are determined from Procedure LA-508-002.

Analyst	SLF	ALPHA TOTAL CONCENTRATION in $\mu\text{Ci/mL}$ = 1.97E-04	DETECTION LEVEL
Date Complete	07/28/97	RELATIVE COUNTING ERROR = 3.1%	4.49E-07 $\mu\text{Ci/mL}$
Analysis Date	07/24/97		
Analysis Time	10:45 PM		
Sample Point	BY-109 (P)		

Analyst:	SEH	Date: 28-Jul-97
Signature of Chemist:	SLF	Date: 7/29/97

STANDARD.WB1 Rev. 1.0

508101ML

WORKBOOK PAGE: BLANK2

AT : LA-508-101 (E-1) SOLIDS

		BLNK-PREP	REPLICATE
Type	DETECTOR NUMBER	20	20
BLNK-PREP	DISH SIZE (1, 2, or 5) (MS)	2	2
WorkList	GROSS COUNTS (GC)	1	3
19470	COUNT TIME in MINUTES (CT)	30	30
AT	BACKGROUND in cpm (BKG)	0.07	0.07
AT	SAMPLE SIZE in mL (SS)	0.250	0.250
Test Code	DILUTION FACTOR (DF)	11	11
@ALPHA01	DIGEST GRAMS OF SOLIDS / L (Dg/L)	2.0404	2.0404
Matrix	EFFICIENCY FACTOR (EFF)	0.3173	0.3173
SOLID	Lc, Rmax, or Rs (SAMPLE RATE) as APPROPRIATE	0.113	0.154
Batch Number			
97003592	Blank Concentration in $\mu\text{Ci/g}$	< 3.45E-03	
Re-run	Replicate Concentration in $\mu\text{Ci/g}$	< 4.72E-03	
0	Maximum Concentration in $\mu\text{Ci/g}$	< 4.7208E-03	
Sample Prep			
N/A	R_s (Sample Count Rate) = $(TC / CT) - BKG$		
Sample	$\text{ALPHA TOTAL } \mu\text{Ci/g} = R_s * 1000\text{mL/L} * DF / (EFF * SS * Dg/L * 2220000\text{dpm}/\mu\text{Ci})$		
WL19470			
Instrument Code	Relative Counting Error = $[(\text{The Square Root of } TC + BKG * CT) / (TC - BKG * CT)] * 1.96 * 100$		
WC16101	Detection Levels and Less Than Values are determined from Procedure LA-508-002.		
Prepared By			
SEH			
Chemist			
SLF	ALPHA TOTAL in $\mu\text{Ci/g}$ (Maximum) =	< 4.72E-03	DETECTION LEVEL
Analyst	LESS Than Value was Determined from Lc.		
RDM			
Date Complete			9.68E-03
07/28/97	RELATIVE COUNTING ERROR	500.0%	$\mu\text{Ci/g}$
Analysis Date			
07/24/97			
Analysis Time			
10:45 PM			
Sample Point			
BY-109 (P)			

Analyst:	RDM	Date: 28-Jul-97
Signature of Chemist:	SLF	Date: 7/29/97
BLANK.WB1 Rev. 1.0	508101ML	

WORKBOOK PAGE: SAM4

AT : LA-508-101 (E-1) SOLIDS

		SAMPLE	REPLICATE
Type	DETECTOR NUMBER	20	20
SAMPLE	DISH SIZE (1, 2, or 5)	(MS)	2
WorkList	GROSS COUNTS	(GC)	146
19470	COUNT TIME in MINUTES	(CT)	30
Atmos B?	BACKGROUND in cpm	(BKG)	0.07
AT	SAMPLE SIZE in mL	(SS)	0.250
Test Code	DILUTION FACTOR	(DF)	11
@ALPHA01	DIGEST GRAMS of SOLIDS / L	(Dg/L)	2.0404
Matrix	EFFICIENCY FACTOR	(EFF)	0.3173
SOLID	Lc, Rmax, or Rs (SAMPLE RATE) as APPROPRIATE		4.797
Batch Number			
97003592	Blank Concentration in $\mu\text{Ci/g}$	1.47E-01	
ReRun	Replicate Concentration in $\mu\text{Ci/g}$	1.35E-01	
0	Average Concentration in $\mu\text{Ci/g}$	1.4072E-01	
Sample Prep			
FUSION01	R_s (Sample Count Rate) = $(TC / CT) - BKG$		
Sample #	$\text{ALPHA TOTAL } \mu\text{Ci/g} = R_s * 1000 \text{ mL} * DF / (EFF * SS * Dg/L * 2220000 \text{ dpm}/\mu\text{Ci})$		
S97T001348			
Instrument Code	Relative Counting Error = $[(\text{The Square Root of } TC + BKG * CT) / (TC - BKG * CT)] * 1.96 * 100$		
WC16101	Detection Levels and Less Than Values are determined from Procedure LA-508-002.		
Prepared By			
SEH			
Chemist			
SLF	ALPHA TOTAL in $\mu\text{Ci/g}$ (Average)	=	1.41E-01
Analyst			DETECTION LEVEL
RDM			9.68E-03
Date Complete			$\mu\text{Ci/g}$
07/28/97	RELATIVE COUNTING ERROR	17.3%	
Analysis Date			
07/24/97			
Analysis Time			
10:45 PM			
Sample Point			
BY-109 (P)			

// system:axi()yes-

Analyst:	RDM	Date: 28-Jul-97
Signature of Chemist:	SLF	Date: 7/29/97
SAMPLE.WB1 Rev. 1.0 508101ML		

WORKBOOK PAGE: DUP5

AT : LA-508-101 (E-1)

SOLIDS

		DUP	REPLICATE
ANALYST	DETECTOR NUMBER	20	20
DUP	DISH SIZE (1, 2, or 5)	2	2
Work List	GROSS COUNTS	158	163
19470	COUNT TIME in MINUTES	30	30
ANALYST BY	BACKGROUND in cpm	0.07	0.07
AT	SAMPLE SIZE in mL	0.250	0.250
Test Code	DILUTION FACTOR	11	11
@ALPHA01	DIGEST GRAMS of SOLIDS / L	2.1156	2.1156
Matrix	EFFICIENCY FACTOR	0.3173	0.3173
SOLID	Lc, Rmax, or Rs, (SAMPLE RATE) as APPROPRIATE	5.197	5.363
Batch Number			
97003592	Blank Concentration in $\mu\text{Ci/g}$	1.53E-01	
Re-run	Replicate Concentration in $\mu\text{Ci/g}$	1.58E-01	
0	Average Concentration in $\mu\text{Ci/g}$	1.5589E-01	

Sample Prep	
FUSION01	Rs (Sample Count Rate) = (TC / CT) - BKG
Sample #	ALPHA TOTAL $\mu\text{Ci/g}$ = $Rs * 1000\text{mL/L} * DF / (EFF * SS * Dg/L * 2220000\text{dpm}/\mu\text{Ci})$
S97T001348	
Instrument Code	Relative Counting Error = $[1 / (\text{The Square Root of } TC + BKG * CT) / (TC - BKG * CT)] * 1.96 * 100$
WC16101	Detection Levels and Less Than Values are determined from Procedure LA-508-002.

Prepared By			
SEH			
Chemist			
SLF	ALPHA TOTAL in $\mu\text{Ci/g}$ (Average)	=	1.56E-01
Analyst			
RDM			
Date Complete			
07/28/97	RELATIVE COUNTING ERROR	15.9%	DETECTION LEVEL 9.33E-03 $\mu\text{Ci/g}$
Analysis Date			
07/24/97			
Analysis Time			
10:46 PM			
Sample Point			
BY-109 (P)			

/ system exit yes~

Analyst:		RDM	Date: 28-Jul-97
Signature of Chemist:		SLF	Date: 7/29/97
SAMPLE.WB1 Rev. 1.0	508101ML		

WORKBOOK PAGE: SPK6

AT : LA-508-101 (E-1) LA-508-113 (B-0) SPIKED SAMPLE

		SPIKE	REPLICATE
Type	DETECTOR NUMBER	20	20
SPK	DISH SIZE 1, 2, or 5 (MS)	2	2
Work List	TOTAL COUNTS (TC)	66062	54687
19470	COUNT TIME in MINUTES (CT)	30	30
Alpha B	BACKGROUND in cpm (BKG)	0.07	0.07
AT	SAMPLE VOLUME in mL (Spiked Vial) (SS)	0.250	0.250
Test Code	SAMPLE DILUTION FACTOR (Spiked Vial) (DF)	11	11
@ALPHA01	DIGEST GRAMS of SOLIDS / L (Dg/L)	2.0404	2.0404
Matrix	SPIKE VOLUME in mL (SVol)	0.100	0.100
SOLID	SPIKE DILUTION FACTOR (SDF)	1	1
Batch Number	SPIKE BOOK NUMBER (Spk BN)	131B43	131B43
97003592	SPIKE VALUE in µCi/mL (SVal)	2.6286E-02	2.6286E-02
Rerun	INSTRUMENT EFFICIENCY FACTOR (EFF)	0.3173	0.3173
0	SAMPLE + SPIKE µCi/g (S+S)	6.74E+01	5.58E+01
Sample Prep	AVERAGE or MAXIMUM µCi/g in SAMPLE	1.4072E-01	
FUSION01			
Sample			
S97T001348	Rs (Sample Count Rate) = (TC / CT) - BKG		
Instrument Code	SAMPLE + SPIKE µCi/g = Rs * 1000mL/L * DF / ((EFF * SS * Dg/L * 2220000dpm/µCi)		
WC16101	QC ACTUAL = SVal		
Prepared By	QC FOUND = (((S+S µCi/g - SAMPLE µCi/g) * ((SDF/(SVol*1000))/(DF/SS/Dg/L))))		
SEH	PERCENT SPIKE RECOVERY = (QC FOUND / QC ACTUAL) * 100		
Chemist			
SLF			
Analyst			
RDM			
Date Complete			
07/28/97			
Analysis Date			
07/24/97	QC ACTUAL =	2.63E-02	
Analysis Time	QC FOUND =	2.85E-02	
10:45 PM	AVG. PERCENT SPIKE RECOVERY =	108.4%	
Sample Point			
BY-109 (P)			

Analyst:	SEH	Date: 28-Jul-97
Signature of Chemist:	SLF	Date: 7/29/97
SPIKE.WB1 Rev. 1.0	508101ML	

The RPD for the SPK + SPK/REP is slightly elevated however the low activity level of the associated sample makes a rerun unwarranted.

SEH
7/29/97

WORKBOOK PAGE: SAM7

AT : LA-508-101 (E-1) SOLIDS

	SAMPLE	REPLICATE
Detector Number	20	20
SAMPLE DISH SIZE (1, 2, or 5)	(MS)	2
Work Dis GROSS COUNTS	(GC)	18
19470 COUNT TIME in MINUTES	(CT)	30
AT Form B BACKGROUND in cpm	(BKG)	0.07
AT SAMPLE SIZE in mL	(SS)	0.500
Test Code DILUTION FACTOR	(DF)	11
@ ALPHA01 DIGEST GRAMS of SOLIDS / L	(Dg/L)	1.9648
Matrix EFFICIENCY FACTOR	(EFF)	0.3173
SOLID Lc, Rmax, or Rs (SAMPLE RATE) as APPROPRIATE		0.530
Batch Number		0.730
97003592 Blank Concentration in µCi/g		8.42E-03
Rerun Replicate Concentration in µCi/g		1.16E-02
0 Average Concentration in µCi/g		1.0014E-02

Sample Prep FUSION01	Rs (Sample Count Rate) = (TC / CT) - BKG
Sample S97T001657	ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)
Instrument Code WC16101	Relative Counting Error = [(The Square Root of TC + BKG * CT) / (TC - BKG * CT)] * 1.96 * 100
Prepared By SEH	Detection Levels and Less Than Values are determined from Procedure LA-508-002.

Chemist SLF	ALPHA TOTAL in µCi/g (Average)	=	1.00E-02	DETECTION LEVEL
Analyst RDM				
Date Complete 07/28/97	RELATIVE COUNTING ERROR		55.3%	5.02E-03 µCi/g
Analysis Date 07/24/97				
Analysis Time 10:45 PM				
Sample Point BY-109 (P)				

/ system:exit yes~

Analyst:	RDM	Date: 28-Jul-97
Signature of Chemist:	SLF	Date: 7/29/97
SAMPLE.WB1 Rev. 1.0	508101ML	

WORKBOOK PAGE: DUP8

AT : LA-508-101 (E-1) SOLIDS

		DUP	REPLICATE
Type	DETECTOR NUMBER	20	20
DUP	DISH SIZE (1, 2, or 5)	(MS)	2
Work List	GROSS COUNTS	(GC)	19
19470	COUNT TIME In MINUTES	(CT)	30
19470	BACKGROUND In cpm	(BKG)	0.07
AT	SAMPLE SIZE In mL	(SS)	0.500
Test Code	DILUTION FACTOR	(DF)	11
@ALPHA01	DIGEST GRAMS of SOLIDS / L	(Dg/L)	2.0088
Matrix	EFFICIENCY FACTOR	(EFF)	0.3173
SOLID	Lc, Rmax, or Rs (SAMPLE RATE) as APPROPRIATE		0.563
Batch Number			0.697
97003592	Blank Concentration in $\mu\text{Ci/g}$	8.76E-03	
Retrun	Replicate Concentration in $\mu\text{Ci/g}$	1.08E-02	
0	Average Concentration in $\mu\text{Ci/g}$	9.7950E-03	

Sample Prep
FUSION01
Sample
S97T001557
Instrument Code
WC16101
Prepared By
SEH
Chemist

Rs (Sample Count Rate) = $(TC / CT) - BKG$
 ALPHA TOTAL $\mu\text{Ci/g}$ = $Rs * 1000\text{mL/L} * DF / (EFF * SS * Dg/L * 2220000\text{dpm}/\mu\text{Ci})$

Relative Counting Error = $[(\text{The Square Root of } TC + BKG * CT) / (TC - BKG * CT)] * 1.96 * 100$
 Detection Levels and Less Than Values are determined from Procedure LA-508-002.

SEH	ALPHA TOTAL in $\mu\text{Ci/g}$ (Average)	=	9.79E-03	DETECTION LEVEL
SLF				
Analyst				
RDM				
Date Complete				4.91E-03
07/28/97	RELATIVE COUNTING ERROR		53.3%	$\mu\text{Ci/g}$
Analysis Date				
07/24/97				
Analysis Time				
10:45 PM				
Sample Point				
BY-109 (P)				

/ system:exit;yes-

Analyst:		RDM	Date: 28-Jul-97
Signature of Chemist:		SLF	Date: 7/29/97
SAMPLE.WB1 Rev. 1.0	508101ML		

WORKBOOK PAGE: SPK9

AT : LA-508-101 (E-1) LA-508-113 (B-0) SPIKED SAMPLE

		SPIKE	REPLICATE
Detector Number	DETECTOR NUMBER	20	20
SPK	DISH SIZE 1, 2, or 5 (MS)	2	2
Worklist	TOTAL COUNTS (TC)	52437	54651
19470	COUNT TIME in MINUTES (CT)	30	30
19470	BACKGROUND in cpm (BKG)	0.07	0.07
AT	SAMPLE VOLUME in mL (Spiked Vial) (SS)	0.500	0.500
Test Code	SAMPLE DILUTION FACTOR (Spiked Vial) (DF)	11	11
@ALPHA01	DIGEST GRAMS of SOLIDS / L (Dg/L)	1.9648	1.9648
Matrix	SPIKE VOLUME in mL (SVol)	0.100	0.100
SOLID	SPIKE DILUTION FACTOR (SDF)	1	1
Batch Number	SPIKE BOOK NUMBER (Spk BN)	131B43	131B43
97003592	SPIKE VALUE in µCi/mL (SVal)	2.6286E-02	2.6286E-02
Return	INSTRUMENT EFFICIENCY FACTOR (EFF)	0.3173	0.3173
0	SAMPLE + SPIKE µCi/g (S+S)	2.78E+01	2.90E+01
Sample Prep	AVERAGE or MAXIMUM µCi/g in SAMPLE	1.0014E-02	
FUSION01			
Sample #			
S97T001557	Rs (Sample Count Rate) = (TC / CT) - BKG		
Instrument Code	SAMPLE + SPIKE µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)		
WC16101	QC ACTUAL = SVal		
Prepared By	QC FOUND = (((S+S µCi/g - SAMPLE µCi/g) * ((SDF/(SVol*1000)))/(DF/SS/Dg/L))))		
SEH	PERCENT SPIKE RECOVERY = (QC FOUND / QC ACTUAL) * 100		
Chemist			
SLF			
Analyst			
RDM			
Date Complete			
07/28/97			
Analysis Date			
07/24/97	QC ACTUAL =	2.63E-02	
Analysis Time	QC FOUND =	2.53E-02	
10:45 PM	AVG. PERCENT SPIKE RECOVERY =	96.4%	
Sample Point			
BY-109 (P)			

Analyst: SEH Date: 28-Jul-97
 Signature of Chemist: SLF Date: 7/29/97
 SPIKE.WB1 Rev. 1.0 508101ML 7/29/97

WORKBOOK PAGE: SAM10

AT : LA-508-101 (E-1)

SOLIDS

			SAMPLE	REPLICATE
DETECTOR NUMBER			20	20
SAMPLE DISH SIZE (1, 2, or 5)	(MS)		2	2
GROSS COUNTS	(GC)		116	83
COUNT TIME in MINUTES	(CT)		30	30
BACKGROUND in cpm	(BKG)		0.07	0.07
SAMPLE SIZE in mL	(SS)		0.500	0.500
DILUTION FACTOR	(DF)		11	11
DIGEST GRAMS of SOLIDS / L	(Dg/L)		1.868	1.868
EFFICIENCY FACTOR	(EFF)		0.3173	0.3173
Lc, Rmax, or Rs, (SAMPLE RATE) as APPROPRIATE			3.797	2.697

Batch Number	
97003592	Blank Concentration in $\mu\text{Ci/g}$ 6.35E-02
Replicate	Replicate Concentration in $\mu\text{Ci/g}$ 4.51E-02
0	Average Concentration in $\mu\text{Ci/g}$ 5.4283E-02

Sample Prep	
FUSION01	R_s (Sample Count Rate) = $(TC / CT) - BKG$
Sample #	$\text{ALPHA TOTAL } \mu\text{Ci/g} = R_s * 1000\text{mL/L} * DF / (EFF * SS * Dg/L * 2220000\text{dpm}/\mu\text{Ci})$
S97T001572	

Instrument Code	Relative Counting Error = $[(\text{The Square Root of } TC + BKG * CT) / (TC - BKG * CT)] * 1.96 * 100$
WC16101	Detection Levels and Less Than Values are determined from Procedure LA-508-002.

Prepared By
SEH

Chemist

SLF

Analyst

RDM

Date Complete

07/28/97

Analysis Date

07/24/97

Analysis Time

10:45 PM

Sample Point

BY-109 (P)

ALPHA TOTAL in $\mu\text{Ci/g}$ (Average)	=	5.43E-02	DETECTION LEVEL
			5.29E-03 $\mu\text{Ci/g}$
RELATIVE COUNTING ERROR		22.3%	

/ system exit yes-

Analyst:	RDM	Date: 28-Jul-97
Signature of Chemist:	SLF	Date: 7/29/97

SAMPLE.WB1 Rev. 1.0

508101ML

WORKBOOK PAGE: DUP11

AT : LA-508-101 (E-1) SOLIDS

		DUP	REPLICATE
Type	DETECTOR NUMBER	20	20
DUP	DISH SIZE (1, 2, or 5) (MS)	2	2
Worklist	GROSS COUNTS (GC)	93	112
19470	COUNT TIME In MINUTES (CT)	30	30
Author	BACKGROUND In cpm (BKG)	0.07	0.07
AT	SAMPLE SIZE in mL (SS)	0.500	0.500
Test Code	DILUTION FACTOR (DF)	11	11
@ALPHA01	DIGEST GRAMS of SOLIDS / L (Dg/L)	1.8464	1.8464
Matrix	EFFICIENCY FACTOR (EFF)	0.3173	0.3173
SOLID	Lc, Rmax, or Rs, (SAMPLE RATE) as APPROPRIATE	3.030	3.663
Batch Number			

97003592	Blank Concentration in $\mu\text{Ci/g}$	5.13E-02
Retun	Replicate Concentration in $\mu\text{Ci/g}$	6.20E-02
0	Average Concentration in $\mu\text{Ci/g}$	5.6609E-02

Sample Prep	FUSION01	Rs (Sample Count Rate) = (TC / CT) - BKG
Sample #	S97T001572	ALPHA TOTAL $\mu\text{Ci/g}$ = $Rs * 1000\text{mL/L} * DF / (EFF * SS * Dg/L * 2220000\text{dpm}/\mu\text{Ci})$

Instrument Code	WC16101	Relative Counting Error = $[(\text{The Square Root of TC} + \text{BKG} * \text{CT}) / (\text{TC} - \text{BKG} * \text{CT})] * 1.96 * 100$
Prepared By	SEH	Detection Levels and Less Than Values are determined from Procedure LA-508-002.

Chemist	SLF	ALPHA TOTAL in $\mu\text{Ci/g}$ (Average) =	5.66E-02	DETECTION LEVEL
Analyst	RDM			
Date Complete	07/28/97	RELATIVE COUNTING ERROR	21.0%	5.35E-03 $\mu\text{Ci/g}$

Analysis Date	07/24/97
Analysis Time	10:45 PM
Sample Point	BY-109 (P)

(/ system exit)yes~

Analyst:	RDM	Date: 28-Jul-97
Signature of Chemist:	SLF	Date: 7/29/97

SAMPLE.WB1 Rev. 1.0

508101ML

WORKBOOK PAGE: SPK12

AT : LA-508-101 (E-1) LA-508-113 (B-0) SPIKED SAMPLE

		SPIKE	REPLICATE
Type	DETECTOR NUMBER	20	20
SPK	DISH SIZE 1, 2, or 5 (MS)	2	2
WorkList	TOTAL COUNTS (TC)	45168	40603
18470	COUNT TIME in MINUTES (CT)	30	30
AT or B?	BACKGROUND in cpm (BKG)	0.07	0.07
AT	SAMPLE VOLUME in mL (Spiked Vial) (SS)	0.500	0.500
Test Code	SAMPLE DILUTION FACTOR (Spiked Vial) (DF)	11	11
@ALPHA01	DIGEST GRAMS of SOLIDS / L (Dg/L)	1.868	1.868
Matrix	SPIKE VOLUME in mL (SVol)	0.100	0.100
SOLID	SPIKE DILUTION FACTOR (SDF)	1	1
Batch Number	SPIKE BOOK NUMBER (Spk BN)	131B43	131B43
97003582	SPIKE VALUE in $\mu\text{Ci/mL}$ (SVal)	2.6286E-02	2.6286E-02
Run	INSTRUMENT EFFICIENCY FACTOR (EFF)	0.3173	0.3173
0	SAMPLE + SPIKE $\mu\text{Ci/g}$ (S+S)	2.52E+01	2.26E+01
Sample Prep	AVERAGE or MAXIMUM $\mu\text{Ci/g}$ in SAMPLE	5.4283E-02	
FUSION01			
Sample #			
S97T001572	R_s (Sample Count Rate) = $(TC / CT) - BKG$		
Instrument Code	SAMPLE + SPIKE $\mu\text{Ci/g}$ = $R_s * 1000\text{mL/L} * DF / (EFF * SS * Dg/L * 2220000\text{dpm}/\mu\text{Ci})$		
WC16101	QC ACTUAL = SVal		
Prepared By	QC FOUND = $((S+S \mu\text{Ci/g} - \text{SAMPLE } \mu\text{Ci/g}) * ((SDF/(SVol*1000)))/(DF/SS/Dg/L)))$		
SEH	PERCENT SPIKE RECOVERY = $(QC \text{ FOUND} / QC \text{ ACTUAL}) * 100$		
Chemist			
SLF			
Analyst			
RDM			
Date Complete			
07/28/97			
Analysis Date			
07/24/97	QC ACTUAL =	2.63E-02	
Analysis Time	QC FOUND =	2.02E-02	
10:45 PM	AVG. PERCENT SPIKE RECOVERY =	77.0%	
Sample Point			
BY-109 (P)			

Analyst:	SEH	Date: 28-Jul-97
Signature of Chemist:	SLF	Date: 7/29/97

SPIKE.WB1 Rev. 1.0

508101ML

WORKBOOK PAGE: SAM13

AT : LA-508-101 (E-1) SOLIDS

		SAMPLE	REPLICATE
Type	DETECTOR NUMBER	28	28
SAMPLE	DISH SIZE (1, 2, or 5) (MS)	2	2
Work List	GROSS COUNTS (GC)	37	28
19470	COUNT TIME in MINUTES (CT)	30	30
AT 001 B	BACKGROUND In cpm (BKG)	0.07	0.07
AT	SAMPLE SIZE in mL (SS)	0.500	0.500
Test Code	DILUTION FACTOR (DF)	11	11
@ALPHA01	DIGEST GRAMS of SOLIDS / L (Dg/L)	1.8536	1.8536
Matrix	EFFICIENCY FACTOR (EFF)	0.3173	0.3173
SOLID	Lc, Rmax, or Rs, (SAMPLE RATE) as APPROPRIATE	1.183	0.863
Batch Number			
97003592	Blank Concentration in $\mu\text{Ci/g}$	1.96E-02	
ReRun	Replicate Concentration in $\mu\text{Ci/g}$	1.45E-02	
0	Average Concentration in $\mu\text{Ci/g}$	1.7074E-02	
Sample Prep			
FUSION01	R_s (Sample Count Rate) = $(TC / CT) - BKG$		
Sample #	$ALPHA\ TOTAL\ \mu\text{Ci/g} = R_s * 1000\text{mL/L} * DF / (EFF * SS * Dg/L * 2220000\text{dpm}/\mu\text{Ci})$		
S97T001577			
Instrument Code	Relative Counting Error = $[(\text{The Square Root of } TC + BKG * CT) / (TC - BKG * CT)] * 1.96 * 100$		
WC16101	Detection Levels and Less Than Values are determined from Procedure LA-508-002.		
Prepared By			
SEH			
Chemist			
SLF	ALPHA TOTAL in $\mu\text{Ci/g}$ (Average) =	1.71E-02	
Analyst			
RDM			
Date Complete			
07/28/97	RELATIVE COUNTING ERROR	41.5%	
Analysis Date			
07/24/97			
Analysis Time			
10:45 PM			
Sample Point			
BY-109 (P)			

(/ system.exit)yes~

Analyst:	RDM	Date: 28-Jul-97
Signature of Chemist:	SLF	Date: 7/29/97
SAMPLE.WB1 Rev. 1.0 508101ML		

WORKBOOK PAGE: DUP14

AT : LA-508-101 (E-1)

SOLIDS

		DUP	REPLICATE
Type	DETECTOR NUMBER	20	20
DUP	DISH SIZE (1, 2, or 5)	(MS)	2
WorkList	GROSS COUNTS	(GC)	26
19470	COUNT TIME in MINUTES	(CT)	30
Alford By	BACKGROUND in cpm	(BKG)	0.07
AT	SAMPLE SIZE in mL	(SS)	0.500
TestCode	DILUTION FACTOR	(DF)	11
@ALPHA01	DIGEST GRAMS of SOLIDS / L	(Dg/L)	1.898
Matrix	EFFICIENCY FACTOR	(EFF)	0.3173
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		0.630
BatchNumber		0.797	

97003592	Blank Concentration in $\mu\text{Ci/g}$	1.31E-02
ReRun	Replicate Concentration in $\mu\text{Ci/g}$	1.04E-02
0	Average Concentration in $\mu\text{Ci/g}$	1.1738E-02

Sample Prep	FUSION01	R_s (Sample Count Rate) = $(TC / CT) - BKG$
Sample #	S97T001577	$\text{ALPHA TOTAL } \mu\text{Ci/g} = R_s * 1000\text{mL/L} * DF / (EFF * SS * Dg/L * 2220000\text{dpm}/\mu\text{Ci})$
Instrument Code	WC16101	Relative Counting Error = $[(\text{The Square Root of } TC + BKG * CT) / (TC - BKG * CT)] * 1.96 * 100$
Prepared By	SEH	Detection Levels and Less Than Values are determined from Procedure LA-508-002.

Chemist	SLF	ALPHA TOTAL in $\mu\text{Ci/g}$ (Average)	=	1.17E-02	DETECTION LEVEL
Analyst	RDM				
Date Complete	07/28/97	RELATIVE COUNTING ERROR		49.8%	5.20E-03 $\mu\text{Ci/g}$
Analysis Date	07/24/97				
Analysis Time	10:45 PM				
Sample Point	BY-109 (P)				

(/ system; exit; yes-

Analyst:	RDM	Date: 28-Jul-97
Signature of Chemist:	SLF	Date: 7/29/97

SAMPLE.WB1 Rev. 1.0

508101ML

LABCORE Completed RadChem Report for Worklist#: 19519

Analyst: knt Instrument: AB16 Book#

Method: Rev/Mod

Worklist Comment: BY-109 @ALPHA01. USE 1ML ENVCRB STD .100ML SPK. 1cm

Seq Type	Sample#	R A	Test	Matrix	Actual	Found	DL or Yield	Unit
1 STD		0	0ALPHA01 ALPHA01	SOLID	2.00E-04	1.77E-4	88.500	% Recovery
1 STD		0	0ALPHA01 ALPHA01E	SOLID	1.00	3.51E+00	3.510	% Ct. Error
2 BLNK-PREP		0	0ALPHA01 ALPHA01	SOLID	1	<2.58E-3		uCi/g
2 BLNK-PREP		0	0ALPHA01 ALPHA01E	SOLID	1.00	5.00E+02	500.000	uCi/g
3 BLNK/BKG		0	0ALPHA01 ALPHA01	SOLID	1.00E+00	9.67E-01	0.967	BLNK/BKG
4 SAMPLE	S97T001538	0 F	0ALPHA01 ALPHA01	SOLID	N/A	9.06E-02	594.0e-005	uCi/g
4 SAMPLE	S97T001538	0 F	0ALPHA01 ALPHA01E	SOLID	N/A	1.16E+01	0.0e+000	% Ct. Error
5 DUP	S97T001538	0 F	0ALPHA01 ALPHA01	SOLID	9.06E-2	8.81E-2	2.798	RPD
5 DUP	S97T001538	0 F	0ALPHA01 ALPHA01E	SOLID	1.00	1.17E+01	11.700	% Ct. Error
6 SAMPLE	S97T001738	0 F	0ALPHA01 ALPHA01	SOLID	N/A	3.05E-02	576.0e-005	uCi/g
6 SAMPLE	S97T001738	0 F	0ALPHA01 ALPHA01E	SOLID	N/A	2.21E+01	0.0e+000	% Ct. Error
7 DUP	S97T001738	0 F	0ALPHA01 ALPHA01	SOLID	3.05E-2	3.13E-2	2.589	RPD
7 DUP	S97T001738	0 F	0ALPHA01 ALPHA01E	SOLID	1.00	2.06E+01	20.600	% Ct. Error
8 SPK	S97T001744	0 F	0ALPHA01 ALPHA01	SOLID	2.63E-02	1.70E-02	64.639	% Recovery
9 SAMPLE	S97T001744	0 F	0ALPHA01 ALPHA01	SOLID	N/A	3.36E-02	580.0e-005	uCi/g
9 SAMPLE	S97T001744	0 F	0ALPHA01 ALPHA01E	SOLID	N/A	2.05E+01	0.0e+000	% Ct. Error
0 DUP	S97T001744	0 F	0ALPHA01 ALPHA01	SOLID	3.36E-2	3.61E-2	7.174	RPD
0 DUP	S97T001744	0 F	0ALPHA01 ALPHA01E	SOLID	1.00	2.03E+01	20.300	% Ct. Error

Final page for worklist# 19519

Analyst Signature	Date
--------------------------	-------------

Analyst Signature _____ **Date** _____

Reviewer Signature

Date _____

SPK recovery is within method control limits for the STD. A rerun would not improve data quality (Low SPK recovery is result of dissolved solids content of sample).
No rerun requested.

7/30/98

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

LABCORE Data Entry Template for Worklist# 19519

Analyst: KNT Instrument: AB00 16 Book# 79856

Method: LA-508-101 Rev/Mod G-0

Worklist Comment: BY-109 @ALPHA01. USE 1ML ENVCRB STD .100ML SPK. lcm

S Type	Sample#	R A	Test	Matrix	Group#	Project
1 STD			@ALPHA01	SOLID		
2 BLNK-PREP			@ALPHA01	SOLID		
3 BLNK/BKG			@ALPHA01	SOLID		
4 SAMPLE	S97T001538	0 F	@ALPHA01	SOLID	97000412	BY-109 (P)
	Analytes Requested: ALPHA01 , ALPHA01E					
5 DUP	S97T001538	0 F	@ALPHA01	SOLID		
6 SAMPLE	S97T001738	0 F	@ALPHA01	SOLID	97000412	BY-109 (P)
	Analytes Requested: ALPHA01 , ALPHA01E					
7 DUP	S97T001738	0 F	@ALPHA01	SOLID		
8 SPK	S97T001744	0 F	@ALPHA01	SOLID		
9 SAMPLE	S97T001744	0 F	@ALPHA01	SOLID	97000411	BY-109 (P)
	Analytes Requested: ALPHA01 , ALPHA01E					
10 DUP	S97T001744	0 F	@ALPHA01	SOLID		

Final page for worklist # 19519

Kim Thomas 7-28-97
Analyst Signature Date

Lue Hogan 7-29-97
Analyst Signature Date
Angela 7-29-97

Data Entry Comments:

WORKBOOK PAGE: STD1

AT : LA-508-101 (E-1)

LA-508-113 (B-0) STANDARD

	STANDARD	REPLICATE
Detector Number	16	16
STD	2	2
DISH SIZE (1, 2, or 5)	(MS)	
GROSS COUNTS	(GC)	3163
19519	(CT)	30
COUNT TIME in MINUTES	(BKG)	0.5
BACKGROUND in cpm	(SS)	1.000
SAMPLE SIZE in mL	(DF)	1
DILUTION FACTOR	(Std BN)	79B56
STANDARD BOOK NUMBER	(EFF)	0.2683
EFFICIENCY FACTOR		104.933
LIQUID		2.00E-04
Batch Number		1.76E-01
97003645		1.78E-01
Replicate Concentration in $\mu\text{Ci/L}$		1.7701E-01
AVERAGE CONCENTRATION in $\mu\text{Ci/L}$		

Sample Prep	N/A	R_s (Sample Count Rate) = $(TC / CT) - BKG$
Matrix	WL19519	$\text{ALPHA TOTAL } \mu\text{Ci/L} = R_s * 1000\text{mL/L} * DF / (EFF * SS * 2220000\text{dpm}/\mu\text{Ci})$
Instrument Code	WB27806	$\text{ALPHA TOTAL } \mu\text{Ci/mL} = \text{ALPHA TOTAL } \mu\text{Ci/L} / 1000\text{mL/L}$
Prepared By	SEH	$\text{Relative Counting Error} = [(The Square Root of TC + BKG * CT) / (TC - BKG * CT)] * 1.96 * 100$
Chemist		Detection Levels and Less Than Values are determined from Procedure LA-508-002.

SLF	ALPHA TOTAL CONCENTRATION in $\mu\text{Ci/mL}$ =	1.77E-04	DETECTION LEVEL
KNT			
Date/Complete	RELATIVE COUNTING ERROR =	3.5%	1.16E-06 $\mu\text{Ci/mL}$
07/29/97			
Analysis Date			
07/28/97			
Analysis time			
01:30 PM			
Sample Point			
BY-109 (P)			

Analyst:	SEH	Date: 29-Jul-97
Signature of Chemist:	SLF	Date: 7/30/97
STANDARD:WB1 Rev. 1.0	508101ML	

WORKBOOK PAGE: BLANK2

AT : LA-508-101 (E-1)

SOLIDS

		BLNK-PREP	REPLICATE
Type	DETECTOR NUMBER	16	16
BLNK-PREP	DISH SIZE (1, 2, or 5) (MS)	2	2
Worklist	GROSS COUNTS (GC)	15	14
19519	COUNT TIME in MINUTES (CT)	30	30
Blank	BACKGROUND in cpm (BKG)	0.5	0.5
AT	SAMPLE SIZE in mL (SS)	0.100	0.100
Test Code	DILUTION FACTOR (DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS / L (Dg/L)	1.9608	1.9608
Matrix	EFFICIENCY FACTOR (EFF)	0.2683	0.2683
SOLID	Lc, Rmax, or Rs, (SAMPLE RATE) as APPROPRIATE	0.301	0.301
Batch Number			
97003645	Blank Concentration in $\mu\text{Ci/g}$	< 2.58E-03	
ReRun	Replicate Concentration in $\mu\text{Ci/g}$	< 2.58E-03	
0	Maximum Concentration in $\mu\text{Ci/g}$	< 2.5794E-03	
Sample Prep			
N/A	R_s (Sample Count Rate) = $(TC / CT) - BKG$		
Sample	ALPHA TOTAL $\mu\text{Ci/g}$ = $R_s * 1000\text{mL/L} * DF / (EFF * SS * Dg/L * 2220000\text{dpm}/\mu\text{Ci})$		
WL19519			
Instrument Code	Relative Counting Error = $[(\text{The Square Root of } TC + BKG * CT) / (TC - BKG * CT)] * 1.96 * 100$		
WB27805	Detection Levels and Less Than Values are determined from Procedure LA-508-002.		
Prepared By			
SEH			
Chemist			
SLF	ALPHA TOTAL in $\mu\text{Ci/g}$ (Maximum) =	< 2.58E-03	DETECTION LEVEL
Analyst	LESS THAN Value was Determined from Rmax.		
KNT			5.94E-03
Date Complete	RELATIVE COUNTING ERROR	500.0%	$\mu\text{Ci/g}$
07/29/97			
Analysis Date			
07/28/97			
Analysis Time			
01:30 PM			
Sample Point			
BY-109 (P)			

Analyst:		Date: 29-Jul-97
Signature of Chemist:	SLF	Date: 7/30/97
BLANK.WB1 Rev. 1.0	508101M1	

WORKBOOK PAGE: SAM4

AT : LA-508-101 (E-1) SOLIDS

		SAMPLE	REPLICATE
Type	DETECTOR NUMBER	16	16
SAMPLE	DISH SIZE (1, 2, or 5)	2	2
WorkList	GROSS COUNTS	330	335
19519	COUNT TIME in MINUTES	30	30
Ator/B	BACKGROUND in cpm	0.5	0.5
AT	SAMPLE SIZE in mL	0.100	0.100
Test Code	DILUTION FACTOR	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS / L	1.9608	1.9608
Matrix	EFFICIENCY FACTOR	0.2683	0.2683
SOLID	Lc, Rmax, or Rs, (SAMPLE RATE) as APPROPRIATE	10.500	10.667

Batch Number	
97003645	Blank Concentration in $\mu\text{Ci/g}$ 8.99E-02
Rerun	Replicate Concentration in $\mu\text{Ci/g}$ 9.13E-02
0	Average Concentration in $\mu\text{Ci/g}$ 9.0618E-02

Sample/Prep	
FUSION01	R_s (Sample Count Rate) = $(TC / CT) - BKG$
Sample	$\text{ALPHA TOTAL } \mu\text{Ci/g} = R_s * 1000\text{mL/L} * DF / (EFF * SS * \text{Dg/L} * 2220000\text{dpm/pCi})$
S97T001538	

Instrument Code	Relative Counting Error = $[(\text{The Square Root of } TC + BKG * CT) / (TC - BKG * CT)] * 1.96 * 100$
WB27806	Detection Levels and Less Than Values are determined from Procedure LA-508-002.

Prepared By
SEH

Chemist

SLF	ALPHA TOTAL in $\mu\text{Ci/g}$ (Average) =	9.06E-02	DETECTION LEVEL
Analyst			
KNT			
Date Complete			5.94E-03
07/29/97	RELATIVE COUNTING ERROR	11.6%	$\mu\text{Ci/g}$

Analysis Date

07/28/97

Analysis Time

01:30 PM

Sample Point

BY-103 (P)

(/ system;exit)yes-

Analyst:	KNT	Date: 29-Jul-97
Signature of Chemist:	SLF	Date: 7/30/97

SAMPLE:WB1 Rev. 1.0

508101ML

AT : LA-508-101 (E-1) SOLIDS

	DUP	REPLICATE
DETECTOR NUMBER	16	16
DISH SIZE (1, 2, or 5) (MS)	2	2
GROSS COUNTS (GC)	323	331
COUNT TIME IN MINUTES (CT)	30	30
BACKGROUND In cpm (BKG)	0.5	0.5
SAMPLE SIZE In mL (SS)	0.100	0.100
DILUTION FACTOR (DF)	1	1
DIGEST GRAMS of SOLIDS / L (Dg/L)	1.982	1.982
EFFICIENCY FACTOR (EFF)	0.2683	0.2683
Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE	10.267	10.533

Blank Concentration In µCi/g	8.70E-02
Replicate Concentration in µCi/g	8.92E-02
Average Concentration in µCi/g	8.8096E-02

Rs (Sample Count Rate) = (TC / CT) - BKG
ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)
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/g (Average)	=	8.81E-02	DETECTION LEVEL
RELATIVE COUNTING ERROR		11.7%	5.87E-03 µCi/g

// system exit/yes~

Analyst:		KNT	Date: 29-Jul-97
Signature of Chemist:		SLF	Date: 7/30/97

WORKBOOK PAGE: SAM6

AT: LA-508-101 (E-1) SOLIDS

	SAMPLE	REPLICATE
DETECTOR NUMBER	16	16
SAMPLE DISH SIZE (1, 2, or 5)	2	2
GROSS COUNTS	117	133
COUNT TIME IN MINUTES	30	30
BACKGROUND IN cpm	0.5	0.5
SAMPLE SIZE IN mL	0.100	0.100
DILUTION FACTOR	1	1
DIGEST GRAMS OF SOLIDS / L	2.0192	2.0192
EFFICIENCY FACTOR	0.2683	0.2683
Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE	3.400	3.933

Batch Number	
97003645	Blank Concentration in $\mu\text{Ci/g}$ 2.83E-02
Replicate	Replicate Concentration in $\mu\text{Ci/g}$ 3.27E-02
0	Average Concentration in $\mu\text{Ci/g}$ 3.0487E-02

Sample Prep	Rs (Sample Count Rate) = $(\text{TC} / \text{CT}) - \text{BKG}$
FUSION01	ALPHA TOTAL $\mu\text{Ci/g}$ = $\text{Rs} * 1000\text{mL/L} * \text{DF} / (\text{EFF} * \text{SS} * \text{Dg/L} * 2220000\text{dpm}/\mu\text{Ci})$
Sample #	
S97T001738	
Instrument Code	Relative Counting Error = $[(\text{The Square Root of TC} + \text{BKG} * \text{CT}) / (\text{TC} - \text{BKG} * \text{CT})] * 1.96 * 100$
WB27806	Detection Levels and Less Than Values are determined from Procedure LA-508-002.

Prepared By	SEH		
Chemist	SLF		
ALPHA TOTAL in $\mu\text{Ci/g}$ (Average)	=	3.05E-02	DETECTION LEVEL
Analyst			
KNT			
Date Complete			5.76E-03
07/29/97	RELATIVE COUNTING ERROR	22.1%	$\mu\text{Ci/g}$
Analysis Date			
07/28/97			
Analysis Time			
01:30 PM			
Sample Point			
BY-109 (P)			

(/ system;exit)yes~

Analyst	KNT	Date: 29-Jul-97
Signature of Chemist:	SLF	Date: 7/30/97

SAMPLE:WB1 Rev. 1.0

508101ML

WORKBOOK PAGE: DUP7

AT : LA-508-101 (E-1) SOLIDS

		DUP	REPLICATE
Detector	DETECTOR NUMBER	16	16
DUP	DISH SIZE (1, 2, or 5)	(MS) 2	2
Work List	GROSS COUNTS	(GC) 129	129
19519	COUNT TIME in MINUTES	(CT) 30	30
AT 1021B	BACKGROUND in cpm	(BKG) 0.5	0.5
AT	SAMPLE SIZE in mL	(SS) 0.100	0.100
Test Code	DILUTION FACTOR	(DF) 1	1
@ALPHA01	DIGEST GRAMS of SOLIDS / L	(Dg/L) 2.036	2.036
Matrix	EFFICIENCY FACTOR	(EFF) 0.2683	0.2683
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE	3.800	3.800

Batch Number	97003645	Blank Concentration in $\mu\text{Ci/g}$	3.13E-02
Repur		Replicate Concentration in $\mu\text{Ci/g}$	3.13E-02
0		Average Concentration in $\mu\text{Ci/g}$	3.1335E-02

Sample Prep	FUSION01	Rs (Sample Count Rate) = (TC / CT) - BKG
Sample #	S97T001738	ALPHA TOTAL $\mu\text{Ci/g}$ = $R_s * 1000\text{mL/L} * DF / (EFF * SS * Dg/L * 2220000\text{dpm}/\mu\text{Ci})$
Instrument Code	WB27806	Relative Counting Error = $[(\text{The Square Root of } TC + BKG * CT) / (TC - BKG * CT)] * 1.96 * 100$
Prepared By	SEH	Detection Levels and Less Than Values are determined from Procedure LA-508-002.

Chemist	SLF	ALPHA TOTAL in $\mu\text{Ci/g}$ (Average)	=	3.13E-02	DETECTION LEVEL
Analyst	KNT				
Date Complete	07/29/97	RELATIVE COUNTING ERROR		20.6%	5.72E-03 $\mu\text{Ci/g}$
Analysis Date	07/28/97				
Analysis Time	01:30 PM				
Sample Point	BY-109 (P)				

/ system exit/yes-

Analyst:	KNT	Date: 29-Jul-97
Signature of Chemist:	SLF	Date: 7/30/97

SAMPLE.WB1 Rev. 1.0

508101ML

WORKBOOK PAGE: SPK8

AT : LA-508-101 (E-1) LA-508-113 (B-0) SPIKED SAMPLE

		SPIKE	REPLICATE
Type	DETECTOR NUMBER	16	16
SPK	DISH SIZE 1, 2, or 5 (MS)	2	2
Worklist	TOTAL COUNTS (TC)	29709	31301
19519	COUNT TIME in MINUTES (CT)	30	30
At Source?	BACKGROUND in cpm (BKG)	0.5	0.5
AT	SAMPLE VOLUME in mL (Spiked Vial) (SS)	0.100	0.100
Test Code	SAMPLE DILUTION FACTOR (Spiked Vial) (DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS / L (Dg/L)	2.0192	2.0192
Matrix	SPIKE VOLUME in mL (SVol)	0.100	0.100
SOLID	SPIKE DILUTION FACTOR (SDF)	1	1
Batch Number	SPIKE BOOK NUMBER (Spk BN)	131B43	131B43
97003845	SPIKE VALUE in $\mu\text{Ci/mL}$ (SVol)	2.6285E-02	2.6285E-02
Rerun	INSTRUMENT EFFICIENCY FACTOR (EFF)	0.2683	0.2683
0	SAMPLE + SPIKE $\mu\text{Ci/g}$ (S+S)	8.23E+00	8.67E+00
Sample Prep	AVERAGE or MAXIMUM $\mu\text{Ci/g}$ in SAMPLE	3.0487E-02	
FUSION01			
Sample #			
S97T001744	R_s (Sample Count Rate) = $(TC / CT) - BKG$		
Instrument Code	SAMPLE + SPIKE $\mu\text{Ci/g}$ = $R_s * 1000\text{mL/L} * DF / ((EFF * SS * Dg/L * 2220000\text{dpm}/\mu\text{Ci}))$		
WB27806	QC ACTUAL = SVol		
Prepared By	QC FOUND = $((S+S \mu\text{Ci/g} - \text{SAMPLE } \mu\text{Ci/g}) * ((SDF/(SVol*1000))/(DF/SS/Dg/L))))$		
SEH	PERCENT SPIKE RECOVERY = $(QC \text{ FOUND} / QC \text{ ACTUAL}) * 100$		
Chemist			
SLF			
Analyst			
KNT			
Date Complete			
07/29/97			
Analysis Date			
07/28/97	QC ACTUAL =	2.63E-02	
Analysis time	QC FOUND =	1.70E-02	
01:30 PM	AVG. PERCENT SPIKE RECOVERY =	64.7%	
Sample Point			
BY-109 (P)			

Analyst:	SEH	Date: 28-Jul-97
Signature of Chemist:	SLF	Date: 7/30/97

SPIKE.WB1 Rev. 1.0

508101ML

WORKBOOK PAGE: SAM9

AT : LA-508-101 (E-1)

SOLIDS

		SAMPLE	REPLICATE
Type	DETECTOR NUMBER	16	16
SAMPLE	DISH SIZE (1, 2, or 5)	(MS) 2	2
Work List	GROSS COUNTS	(GC) 130	141
19519	COUNT TIME in MINUTES	(CT) 30	30
Ator TB?	BACKGROUND in cpm	(BKG) 0.6	0.6
AT	SAMPLE SIZE in mL	(SS) 0.100	0.100
Test Code	DILUTION FACTOR	(DF) 1	1
@ALPHA01	DIGEST GRAMS of SOLIDS / L	(Dg/L) 2.0068	2.0068
Matrix	EFFICIENCY FACTOR	(EFF) 0.2683	0.2683
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE	3.833	4.200

Batch Number	
97003645	Blank Concentration in $\mu\text{Ci/g}$ 3.21E-02
Return	Replicate Concentration in $\mu\text{Ci/g}$ 3.61E-02
0	Average Concentration in $\mu\text{Ci/g}$ 3.3604E-02

Sample Prep	
FUSION01	R_s (Sample Count Rate) = $(TC / CT) - BKG$
Sample #	$\text{ALPHA TOTAL } \mu\text{Ci/g} = R_s * 1000\text{mL/L} * DF / (EFF * SS * Dg/L * 2220000\text{dpm}/\mu\text{Ci})$
S97T001744	
Instrument Code	Relative Counting Error = $[(\text{The Square Root of } TC + BKG * CT) / (TC - BKG * CT)] * 1.96 * 100$
WB27805	Detection Levels and Less Than Values are determined from Procedure LA-508-002.

Detection Levels and Limits: Values are determined from 10,000 DPMs (0.22)				
Prepared By	SEH			
Chemist	SLF			
ALPHA TOTAL in $\mu\text{Ci/g}$ (Average)	=	3.36E-02	DETECTION LEVEL	
Analyst				
KNT				
Date Complete			5.80E-03	
07/29/97	RELATIVE COUNTING ERROR		20.5% $\mu\text{Ci/g}$	
Analysis Date				
07/28/97				
Analysis Time				
01:30 PM				
Sample Point				
BY-109 (P)				

/ system exit/yes-

Analyst:	KNT	Date: 29-Jul-97
Signature of Chemist:	SLF	Date: 7/30/97

SAMPLE.WB1 Rev. 1.0

508101ML

AT : LA-508-101 (E-1)

SOLIDS

	DUP	REPLICATE
type	DETECTOR NUMBER	16
DUP	DISH SIZE (1, 2, or 5)	2
Worklist	GROSS COUNTS	132
19519	COUNT TIME in MINUTES	30
Amort/Et	BACKGROUND in cpm	0.5
AT	SAMPLE SIZE in mL	0.100
Test Code	DILUTION FACTOR	1
@ALPHA01	DIGEST GRAMS of SOLIDS / L	1.9836
Matrix	EFFICIENCY FACTOR	0.2683
SOLID	Lc, Rmax, or Rs, (SAMPLE RATE) as APPROPRIATE	3.900
Batch Number		4.633
87003645	Blank Concentration in $\mu\text{Ci/g}$	3.30E-02
ReRun	Replicate Concentration in $\mu\text{Ci/g}$	3.92E-02
0	Average Concentration in $\mu\text{Ci/g}$	3.6113E-02

Sample Prep	FUSION01	R_s (Sample Count Rate) = $(TC / CT) - BKG$
Sample #	S97T001744	$\text{ALPHA TOTAL } \mu\text{Ci/g} = R_s * 1000\text{mL/L} * DF / (EFF * SS * \text{Dg/L} * 2220000\text{dpm}/\mu\text{Ci})$
Instrument Code	WB27806	Relative Counting Error = $[(\text{The Square Root of } TC + BKG * CT) / (TC - BKG * CT)] * 1.96 * 100$
Prepared By	SEH	Detection Levels and Less Than Values are determined from Procedure LA-508-002.

Chemist	SLF	ALPHA TOTAL in $\mu\text{Ci/g}$ (Average)	=	3.61E-02	DETECTION LEVEL
Analyst	KNT				
Date Complete	07/29/97	RELATIVE COUNTING ERROR		20.3%	5.87E-03 $\mu\text{Ci/g}$
Analysis Date	07/28/97				
Analysis Time	01:30 PM				
Sample Point	BY-109 (P)				

(/ system exit) yes~

Analyst:	KNT	Date: 29-Jul-97
Signature of Chemist:	SLF	Date: 7/30/97

SAMPLE:WB1 Rev. 1.0

508101ML

LABCORE Completed RadChem Report for Worklist#: 19520

Analyst: krq

Instrument: AB18

Book# _____

Method: _____ Rev/Mod _____

Worklist Comment: BY-109 @ALPHA01. USE 1ML ENVCRB STD .100ML SPK. lcn

Seq Type	Sample# R A	Test	Matrix	Actual	Found	DL or Yield	Unit
1 STD	0	@ALPHA01 ALPHA01	SOLID	2.00E-04	1.85E-4	92.500	% Recovery
1 STD	0	@ALPHA01 ALPHA01E	SOLID	1.00	3.45E+00	3.450	% Ct. Erro
2 BLNK-PREP	0	@ALPHA01 ALPHA01	SOLID	1	<6.25E-3		uCi/g
2 BLNK-PREP	0	@ALPHA01 ALPHA01E	SOLID	1.00	1.84E+02	184.000	uCi/g
3 BLNK/BKG	0	@ALPHA01 ALPHA01	SOLID	1.00E+00	1.89E+00	3.890	BLNK/BKG
4 SAMPLE	S97T001787	0 F @ALPHA01 ALPHA01	SOLID	N/A	4.21E-02	834.0e-005	uCi/g
4 SAMPLE	S97T001787	0 F @ALPHA01 ALPHA01E	SOLID	N/A	3.74E+01	0.0e+000	% Ct. Error
5 DUP	S97T001787	0 F @ALPHA01 ALPHA01	SOLID	4.21E-2	3.69E-2	13.165	RPD
5 DUP	S97T001787	0 F @ALPHA01 ALPHA01E	SOLID	1.00	3.74E+01	37.400	% Ct. Erro
6 SPK	S97T001787	0 F @ALPHA01 ALPHA01	SOLID	2.63E-02	2.60E-02	98.859	% Recovery
7 SAMPLE	S97T001792	0 F @ALPHA01 ALPHA01	SOLID	N/A	2.86E-01	167.0e-004	uCi/g
7 SAMPLE	S97T001792	0 F @ALPHA01 ALPHA01E	SOLID	N/A	1.92E+01	0.0e+000	% Ct. Error
8 DUP	S97T001792	0 F @ALPHA01 ALPHA01	SOLID	2.86E-1	2.33E-1	20.424	RPD
8 DUP	S97T001792	0 F @ALPHA01 ALPHA01E	SOLID	1.00	2.16E+01	21.600	% Ct. Erro

Final page for worklist# 19520

Analyst Signature

Date

Analyst Signature

Date

Reviewer Signature

Date

The RPD for 1792 is acceptable due to low sample alpha activity.

7/29/97

LABCORE Data Entry Template for Worklist# 19520

Analyst: KBB Instrument: AB00 18 Book# 79856

Method: LA-508-101 Rev/Mod G-0

Worklist Comment: BY-109 @ALPHA01. USE 1ML ENVCRB STD .100ML SPK. lcm

S Type	Sample#	R A	Test	Matrix	Group#	Project
1 STD			@ALPHA01	SOLID		
2 BLNK-PREP			@ALPHA01	SOLID		
3 BLNK/BKG			@ALPHA01	SOLID		
4 SAMPLE	S97T001787	0 F	@ALPHA01	SOLID	97000411	BY-109 (P)
	Analytes Requested: ALPHA01 , ALPHA01E					
5 DUP	S97T001787	0 F	@ALPHA01	SOLID		
6 SPK	S97T001787	0 F	@ALPHA01	SOLID		
7 SAMPLE	S97T001792	0 F	@ALPHA01	SOLID	97000411	BY-109 (P)
	Analytes Requested: ALPHA01 , ALPHA01E					
8 DUP	S97T001792	0 F	@ALPHA01	SOLID		

Final page for worklist # 19520

Analyst Signature [Signature] Date 7/27/97

Analyst Signature [Signature] Date 7-28-97
C.G. Quinn 7/28/97

Data Entry Comments:

I could not use the 5ml required for
this sample according to the procedure because of the
high beta count.

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

WORKBOOK PAGE: STD1

AT : LA-508-101 (E-1) LA-508-113 (B-0) STANDARD

	STANDARD	REPLICATE
Type	DETECTOR NUMBER	18
STD	DISH SIZE (1, 2, or 5) (MS)	2
WorkList	GROSS COUNTS (GC)	3278
19520	COUNT TIME in MINUTES (CT)	30
Matrix	BACKGROUND in cpm (BKG)	0.03
AT	SAMPLE SIZE in mL (SS)	1.000
Test Code	DILUTION FACTOR (DF)	1
@ALPHA01	STANDARD BOOK NUMBER (Std BN)	79B56
LIQUID	EFFICIENCY FACTOR (EFF)	0.2644
Batch Number	Lc, Rmax, or Rs (SAMPLE RATE) as APPROPRIATE	109.237
97003646	Standard Value in $\mu\text{Ci/mL}$	2.00E-04
0	Concentration in $\mu\text{Ci/L}$	1.86E-01
Sample Prep	Replicate Concentration in $\mu\text{Ci/L}$	1.84E-01
N/A	AVERAGE CONCENTRATION in $\mu\text{Ci/L}$	1.8488E-01

Sample	Rs (Sample Count Rate) = (TC / CT) - BKG
WL19520	ALPHA TOTAL $\mu\text{Ci/L}$ = Rs * 1000mL/L * DF / (EFF * SS * 2220000dpm/ μCi)
Instrument Code	ALPHA TOTAL $\mu\text{Ci/mL}$ = ALPHA TOTAL $\mu\text{Ci/L}$ / 1000mL/L
WB27809	Relative Counting Error = [(The Square Root of TC + BKG * CT) / (TC - BKG * CT)] * 1.96 * 100
Prepared By	Detection Levels and Less Than Values are determined from Procedure LA-508-002.
SEH	

Chemist	SLF	ALPHA TOTAL CONCENTRATION in $\mu\text{Ci/mL}$ = 1.85E-04	DETECTION LEVEL
Analyst	KRQ		
Date Complete	07/28/97	RELATIVE COUNTING ERROR = 3.4%	4.06E-07 $\mu\text{Ci/mL}$
Analysis Date	07/27/97		
Analysis Time	11:40 AM		
Sample Point	BY-109 (P)		

Analyst:	SEH	Date: 28-Jul-97
Signature of Chemist:	SLF	Date: 7/27/97

STANDARD.WB1 Rev. 1.0

508101ML

WORKBOOK PAGE: BLANK2

AT: LA-508-101 (E-1)

SOLIDS

		BLNK-PREP	REPLICATE
DETECTOR NUMBER		18	18
BLNK-PREP	DISH SIZE (1, 2, or 5)	2	2
Work List	GROSS COUNTS	3	4
19520	COUNT TIME in MINUTES	30	30
AT	BACKGROUND in cpm	0.03	0.03
AT	SAMPLE SIZE in mL	1.000	1.000
Test Code	DILUTION FACTOR	41	41
@ALPHA01	DIGEST GRAMS of SOLIDS / L	1.9948	1.9948
Matrix	EFFICIENCY FACTOR	0.2644	0.2644
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE	0.179	0.103

Batch Number	
97003646	Blank Concentration in $\mu\text{Ci/g}$ < 6.25E-03
Re-run	Replicate Concentration in $\mu\text{Ci/g}$ 3.62E-03
0	Maximum Concentration in $\mu\text{Ci/g}$ < 6.2545E-03

Sample Prep	N/A	R_s (Sample Count Rate) = $(TC / CT) - BKG$
Sample #	WL19520	$\text{ALPHA TOTAL } \mu\text{Ci/g} = R_s * 1000\text{mL/L} * DF / (EFF * SS * \text{Dg/L} * 2220000\text{dpm}/\mu\text{Ci})$

Instrument Code	WB27809	Relative Counting Error = $[(\text{The Square Root of } TC + BKG * CT) / (TC - BKG * CT)] * 1.96 * 100$
Prepared By	SEH	Detection Levels and Less Than Values are determined from Procedure LA-508-002.

Chemist	SLF	ALPHA TOTAL in $\mu\text{Ci/g}$ (Maximum) = < 6.25E-03	DETECTION LEVEL
Analyst	KRQ	LESS THAN Value was Determined from Rmax.	
Date Complete	07/28/97	RELATIVE COUNTING ERROR 184.3%	8.34E-03 $\mu\text{Ci/g}$
Analysis Date	07/27/97		
Analysis Time	11:40 AM		
Sample Point	BY-109 (P)		

Analyst:	KRQ	Date: 28-Jul-97
Signature of Chemist:	SLF	Date: 7/29/97
BLANK.WB1 Rev. 1.0	508101ML	

WORKBOOK PAGE: SAM4

AT : LA-508-101 (E-1) SOLIDS

		SAMPLE	REPLICATE
Detector	DETECTOR NUMBER	18	18
SAMPLE	DISH SIZE (1, 2, or 5) (MS)	2	2
Worklist	GROSS COUNTS (GC)	30	44
19520	COUNT TIME IN MINUTES (CT)	30	30
AT	BACKGROUND in cpm (BKG)	0.03	0.03
AT	SAMPLE SIZE in mL (SS)	1.000	1.000
Test Code	DILUTION FACTOR (DF)	41	41
@ALPHA01	DIGEST GRAMS of SOLIDS / L (Dg/L)	1.9948	1.9948
Matrix	EFFICIENCY FACTOR (EFF)	0.2644	0.2644
SOLID	Lc, Rmax, or Rs, (SAMPLE RATE) as APPROPRIATE	0.970	1.437

Batch Number	
97003646	Blank Concentration in $\mu\text{Ci/g}$ 3.40E-02
Repur	Replicate Concentration in $\mu\text{Ci/g}$ 5.03E-02
0	Average Concentration in $\mu\text{Ci/g}$ 4.2136E-02

Sample/Prep	Rs (Sample Count Rate) = (TC / CT) - BKG
FUSION01	ALPHA TOTAL $\mu\text{Ci/g}$ = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 22200000dpm/ μCi)
Sample #	
S97T001787	
Instrument Code	Relative Counting Error = [(The Square Root of TC + BKG * CT) / (TC - BKG * CT)] * 1.96 * 100
WB27809	Detection Levels and Less Than Values are determined from Procedure LA-508-002.

Prepared By	SEH
Chemist	
SLF	ALPHA TOTAL in $\mu\text{Ci/g}$ (Average) = 4.21E-02
Analyst	
KRQ	
Date/Complete	
07/28/97	RELATIVE COUNTING ERROR 37.4%
Analysis Date	
07/27/97	
Analysis Time	
11:40 AM	
Sample Point	
BY-109 (P)	

// system;exit yes-

Analyst:	KRQ	Date: 28-Jul-97
Signature of Chemist:	SLF	Date: 7/29/97

SAMPLE.WB1 Rev. 1.0

508101ML

WORKBOOK PAGE: DUP5

AT : LA-508-101 (E-1)

SOLIDS

		DUP	REPLICATE
Type	DETECTOR NUMBER	18	18
DUP	DISH SIZE (1, 2, or 5)	2	2
Work List	GROSS COUNTS	30	35
19520	COUNT TIME in MINUTES	30	30
AT	BACKGROUND in cpm	0.03	0.03
AT	SAMPLE SIZE in mL	1.000	1.000
Test Code	DILUTION FACTOR	41	41
@ALPHA01	DIGEST GRAMS of SOLIDS / L	1.9924	1.9924
Matrix	EFFICIENCY FACTOR	0.2644	0.2644
SOLID	Lc, Rmax, or Rs.(SAMPLE RATE) as APPROPRIATE	0.970	1.137

Batch Number	Blank Concentration in $\mu\text{Ci/g}$	3.40E-02
97003646	Replicate Concentration in $\mu\text{Ci/g}$	3.98E-02
Rerun	Average Concentration in $\mu\text{Ci/g}$	3.6928E-02
0		

Sample Prep

FUSION01

Sample #

S97T001787

Instrument Code

WB27809

Prepared By

SEH

Chemist

SLF

Analyst

KRQ

Date Complete

07/28/97

Analysis Date

07/27/97

Analysis Time

11:40 AM

Sample Point

BY-109 (P)

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL $\mu\text{Ci/g}$ = $R_s * 1000 \text{ mL/L} * DF / (EFF * SS * \text{Dg/L} * 2220000 \text{ dpm}/\mu\text{Ci})$ Relative Counting Error = $[(\text{The Square Root of } TC + BKG * CT) / (TC - BKG * CT)] * 1.96 * 100$

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

ALPHA TOTAL in $\mu\text{Ci/g}$ (Average)	=	3.69E-02	DETECTION LEVEL
			8.35E-03 $\mu\text{Ci/g}$
RELATIVE COUNTING ERROR		37.4%	

/ system;exit;yes~

Analyst:	KRQ	Date: 28-Jul-97
Signature of Chemist:	SLF	Date: 7/29/97

SAMPLE.WB1 Rev. 1.0

508101ML

AT : LA-508-101 (E-1) LA-508-113 (B-0) SPIKED SAMPLE

		SPIKE	REPLICATE
Type	DETECTOR NUMBER	18	18
SPK	DISH SIZE 1, 2, or 5 (MS)	2	2
Work List	TOTAL COUNTS (TC)	45419	46080
19520	COUNT TIME in MINUTES (CT)	30	30
19520	BACKGROUND in cpm (BKG)	0.03	0.03
AT	SAMPLE VOLUME in mL (Spiked Vial) (SS)	1.000	1.000
Test Code	SAMPLE DILUTION FACTOR (Spiked Vial) (DF)	41	41
@ALPHA01	DIGEST GRAMS of SOLIDS / L (Dg/L)	1.9948	1.9948
Matrix	SPIKE VOLUME in mL (SVol)	0.100	0.100
SOLID	SPIKE DILUTION FACTOR (SDF)	1	1
Batch Number	SPIKE BOOK NUMBER (Spk BN)	131B43	131B43
97003646	SPIKE VALUE in $\mu\text{Ci/mL}$ (SVal)	2.6286E-02	2.6286E-02
Rerun	INSTRUMENT EFFICIENCY FACTOR (EFF)	0.2644	0.2644
0	SAMPLE + SPIKE $\mu\text{Ci/g}$ (S+S)	5.30E+01	5.38E+01
Sample Prep	AVERAGE or MAXIMUM $\mu\text{Ci/g}$ in SAMPLE	4.2136E-02	
FUSION01			
Sample #	Rs (Sample Count Rate) = $(TC / CT) - BKG$		
S97T001787	SAMPLE + SPIKE $\mu\text{Ci/g}$ = $Rs * 1000\text{mL/L} * DF / ((EFF * SS * \text{Dg/L} * 2220000\text{dpm}/\mu\text{Ci}))$		
Instrument Code	QC ACTUAL = SVal		
WB27809	QC FOUND = $((S+S \mu\text{Ci/g} - \text{SAMPLE } \mu\text{Ci/g}) * ((SDF/(SVol * 1000)) / (DF / (SS / \text{Dg/L}))))$		
Prepared By	PERCENT SPIKE RECOVERY = $(QC \text{ FOUND} / QC \text{ ACTUAL}) * 100$		
SEH			
Chemist			
SLF			
Analyst			
KRQ			
Date Complete			
07/28/97			
Analysis Date			
07/27/97	QC ACTUAL =	2.63E-02	
Analysis Time	QC FOUND =	2.60E-02	
11:40 AM	AVG. PERCENT SPIKE RECOVERY =	98.8%	
Sample Point			
BY-109 (P)			

Analyst:	SEH	Date: 28-Jul-97
Signature of Chemist:	SLF	Date: 7/29/97

SPIKE.WB1 Rev. 1.0

508101ML

WORKBOOK PAGE: SAM7

AT : LA-508-101 (E-1) SOLIDS

		SAMPLE	REPLICATE
Type	DETECTOR NUMBER	18	18
SAMPLE	DISH SIZE (1, 2, or 5) (MS)	2	2
Work List	GROSS COUNTS (GC)	107	140
19520	COUNT TIME in MINUTES (CT)	30	30
At 101 BY	BACKGROUND in cpm (BKG)	0.03	0.03
AT	SAMPLE SIZE in mL (SS)	0.500	0.500
Test Code	DILUTION FACTOR (DF)	41	41
@ALPHA01	DIGEST GRAMS of SOLIDS / L (Dg/L)	1.9936	1.9936
Matrix	EFFICIENCY FACTOR (EFF)	0.2644	0.2644
SOLID	Lc, Rmax, or Rs, (SAMPLE RATE) as APPROPRIATE	3.537	4.637
Batch Number			
97003846	Blank Concentration in $\mu\text{Ci/g}$	2.48E-01	
Re-run	Replicate Concentration in $\mu\text{Ci/g}$	3.25E-01	
0	Average Concentration in $\mu\text{Ci/g}$	2.8637E-01	
Sample Prep			
FUSION01	R_s (Sample Count Rate) = $(TC / CT) - BKG$		
Sample #	$ALPHA\ TOTAL\ \mu\text{Ci/g} = R_s * 1000\text{mL/L} * DF / (EFF * SS * Dg/L * 2220000\text{dpm}/\mu\text{Ci})$		
S97T001792			
Instrument Code	Relative Counting Error = $[(The\ Square\ Root\ of\ TC + BKG * CT) / (TC - BKG * CT)] * 1.96 * 100$		
WB27809	Detection Levels and Less Than Values are determined from Procedure LA-508-002.		
Prepared By			
SEH			
Chemist			
SLF	ALPHA TOTAL in $\mu\text{Ci/g}$ (Average) =	2.86E-01	
Analyst			
KRQ			
Date Complete			
07/28/97	RELATIVE COUNTING ERROR	19.2%	
Analysis Date			
07/27/97			
Analysis Time			
11:40 AM			
Sample Point			
BY-109 (P)			

// system.exit(yes-

Analyst:	KRQ	Date: 28-Jul-97
Signature of Chemist:	SLF	Date: 7/29/97
SAMPLE.WB1 Rev. 1.0	508101ML	

WORKBOOK PAGE: DUP8

AT: LA-508-101 (E-1)

SOLIDS

		DUP	REPLICATE
Type	DETECTOR NUMBER	18	18
DUP	DISH SIZE (1, 2, or 5)	2	2
Work List	GROSS COUNTS	86	115
19520	COUNT TIME in MINUTES	30	30
AT	BACKGROUND in cpm	0.03	0.03
AT	SAMPLE SIZE in mL	0.500	0.500
Test Code	DILUTION FACTOR	41	41
@ALPHA01	DIGEST GRAMS of SOLIDS / L	1.9848	1.9848
Matrix	EFFICIENCY FACTOR	0.2644	0.2644
SOLID	Lc, Rmax, or Rs, (SAMPLE RATE) as APPROPRIATE	2.803	3.803

Batch Number	
87003646	Blank Concentration in $\mu\text{Ci/g}$
	1.97E-01
Rerun	Replicate Concentration in $\mu\text{Ci/g}$
0	2.68E-01
	Average Concentration in $\mu\text{Ci/g}$
	2.3251E-01

Sample Prep
FUSION01
Sample
S97T001792

Instrument Code
WB27809

Prepared By
SEH

Chemist
SLF

Analyst
KRQ

Date Complete
07/28/97

Analysis Date
07/27/97

Analysis Time
11:40 AM

Sample Point
BY-109 (P)

Rs (Sample Count Rate) = $(TC / CT) - BKG$ ALPHA TOTAL $\mu\text{Ci/g}$ = $Rs * 1000\text{mL/L} * DF / (EFF * SS * \text{Dg/L} * 2220000\text{dpm}/\mu\text{Ci})$ Relative Counting Error = $[(\text{The Square Root of } TC + BKG * CT) / (TC - BKG * CT)] * 1.96 * 100$

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

ALPHA TOTAL in $\mu\text{Ci/g}$ (Average)	=	2.33E-01	DETECTION LEVEL 1.68E-02 $\mu\text{Ci/g}$
RELATIVE COUNTING ERROR		21.6%	

(/ system exit) yes~

Analyst:		Date: 28-Jul-97
Signature of Chemist:		Date: 7/29/97
SAMPLE.WB1 Rev. 1.0	508101ML	SLF

LABCORE Completed RadChem Report for Worklist#: 19725

Analyst: knt

Instrument: AB14

Book# _____

Method: _____ Rev/Mod _____

Worklist Comment: Use .1-10-.5 mL sample size. Rerun #3. SLF

Seq Type	Sample# R A	Test	Matrix	Actual	Found	DL or Yield	Unit
1 STD	0	0ALPHA01 ALPHA01	SOLID	2.00E-04	1.82E-4	91.000	% Recovery
1 STD	0	0ALPHA01 ALPHA01E	SOLID	1.00	3.45E+00	3.450	% Ct. Error
2 BLNK-PREP	0	0ALPHA01 ALPHA01	SOLID	1	2.75E-2		uCi/g
2 BLNK-PREP	0	0ALPHA01 ALPHA01E	SOLID	1.00	3.03E+02	303.000	uCi/g
3 BLNK/BKG	0	0ALPHA01 ALPHA01	SOLID	1.00E+00	4.44E+00	4.440	BLNK/BKG
4 SAMPLE	S97T001541	0 F 0ALPHA01 ALPHA01	SOLID	N/A	5.73E-2	386.0e-004	uCi/g
4 SAMPLE	S97T001541	0 F 0ALPHA01 ALPHA01E	SOLID	N/A	7.11E+01	0.0e+000	% Ct. Error
5 DUP	S97T001541	0 F 0ALPHA01 ALPHA01	SOLID	5.73E-2	7.50E-2	26.757	RPD
5 DUP	S97T001541	0 F 0ALPHA01 ALPHA01E	SOLID	1.00	6.04E+01	60.400	% Ct. Error
6 SPK	S97T001541	0 F 0ALPHA01 ALPHA01	SOLID	2.63E-02	2.54E-02	96.578	% Recovery
7 SAMPLE	S97T001544	0 F 0ALPHA01 ALPHA01	SOLID	N/A	7.33E-02	416.0e-004	uCi/g
7 SAMPLE	S97T001544	0 F 0ALPHA01 ALPHA01E	SOLID	N/A	6.69E+01	0.0e+000	% Ct. Error
8 DUP	S97T001544	0 F 0ALPHA01 ALPHA01	SOLID	7.33E-2	8.89E-2	19.236	RPD
8 DUP	S97T001544	0 F 0ALPHA01 ALPHA01E	SOLID	1.00	5.54E+01	55.400	% Ct. Error
9 SAMPLE	S97T001549	0 F 0ALPHA01 ALPHA01	SOLID	N/A	6.09E-02	392.0e-004	uCi/g
9 SAMPLE	S97T001549	0 F 0ALPHA01 ALPHA01E	SOLID	N/A	7.61E+01	0.0e+000	% Ct. Error
10 DUP	S97T001549	0 F 0ALPHA01 ALPHA01	SOLID	6.09E-2	5.55E-2	9.278	RPD
10 DUP	S97T001549	0 F 0ALPHA01 ALPHA01E	SOLID	1.00	7.11E+01	71.100	% Ct. Error
11 SPK	S97T001549	0 F 0ALPHA01 ALPHA01	SOLID	2.63E-02	2.60E-02	98.853	% Recovery
12 SAMPLE	S97T001554	0 F 0ALPHA01 ALPHA01	SOLID	N/A	3.80E-02	382.0e-004	uCi/g
12 SAMPLE	S97T001554	0 F 0ALPHA01 ALPHA01E	SOLID	N/A	1.84E+02	0.0e+000	% Ct. Error
13 DUP	S97T001554	0 F 0ALPHA01 ALPHA01	SOLID	3.80E-2	3.54E-2		RPD
13 DUP	S97T001554	0 F 0ALPHA01 ALPHA01E	SOLID	1.00	1.01E+02	101.000	% Ct. Error
14 SPK	S97T001554	0 F 0ALPHA01 ALPHA01	SOLID	2.63E-02	2.60E-02	98.853	% Recovery

Final page for worklist# 19725

Analyst Signature

Date

Analyst Signature

Date

Reviewer Signature

Date

The RPD for 1541 is acceptable due to low sample alpha activity.

8/14/97

LABCORE Data Entry Template for Worklist# 19725

Analyst: KNT Instrument: AB00 14 Book# 79B56

Method: LA-508-101 Rev/Mod G-0

Worklist Comment: Use .1-10-.5 mL sample size. Rerun #3. SLF

S Type	Sample#	R A	Test	Matrix	Group#	Project
1 STD			@ALPHA01	SOLID		
2 BLNK-PREP			@ALPHA01	SOLID		
3 BLNK/BKG			@ALPHA01	SOLID		
4 SAMPLE	S97T001541	0 F	@ALPHA01	SOLID	97000411	BY-109 (P)
Analytes Requested: ALPHA01 , ALPHA01E						
5 DUP	S97T001541	0 F	@ALPHA01	SOLID		
6 SPK	S97T001541	0 F	@ALPHA01	SOLID		
7 SAMPLE	S97T001544	0 F	@ALPHA01	SOLID	97000411	BY-109 (P)
Analytes Requested: ALPHA01 , ALPHA01E						
8 DUP	S97T001544	0 F	@ALPHA01	SOLID		
9 SAMPLE	S97T001549	0 F	@ALPHA01	SOLID	97000411	BY-109 (P)
Analytes Requested: ALPHA01 , ALPHA01E						
10 DUP	S97T001549	0 F	@ALPHA01	SOLID		
11 SPK	S97T001549	0 F	@ALPHA01	SOLID		
12 SAMPLE	S97T001554	0 F	@ALPHA01	SOLID	97000411	BY-109 (P)
Analytes Requested: ALPHA01 , ALPHA01E						
13 DUP	S97T001554	0 F	@ALPHA01	SOLID		
14 SPK	S97T001554	0 F	@ALPHA01	SOLID		

Final page for worklist # 19725

Data Entry Comments:

Lee E. Hogan 8-13-97
MGB 8/13/97

08/11/97 12:12

A-0004-1

Page: 2

LABCORE Data Entry Template for Worklist# 19725

S Type	Sample#	R A Test	Matrix	Group#	Project	Date
Analyst Signature		Date		Analyst Signature		
Kim Thomas		8-12-97				

*Data Entry Comments:**S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.*

WORKBOOK PAGE: STD1

AT : LA-508-101 (E-1) LA-508-113 (B-0) STANDARD

	STANDARD	REPLICATE
Type	DETECTOR NUMBER	14
STD	DISH SIZE (1, 2, or 5) (MS)	2
Work List	GROSS COUNTS (GC)	3237
19725	COUNT TIME in MINUTES (CT)	30
Work By	BACKGROUND in cpm (BKG)	0.03
AT	SAMPLE SIZE in mL (SS)	1.000
Test Code	DILUTION FACTOR (DF)	1
@ALPHA01	STANDARD BOOK NUMBER (Std BN)	79B56
Matrix	EFFICIENCY FACTOR (EFF)	0.2692
LIQUID	Lc, Rmax, or Rs, (SAMPLE RATE) as APPROPRIATE	107.870
Batch Number	Standard Value in $\mu\text{Ci/mL}$	2.00E-04
97003863	Concentration in $\mu\text{Ci/L}$ =	1.80E-01
Re-run	Replicate Concentration in $\mu\text{Ci/L}$ =	1.83E-01
0	AVERAGE CONCENTRATION in $\mu\text{Ci/L}$ =	1.8178E-01

Sample Prep	N/A	R_s (Sample Count Rate) = $(TC / CT) - BKG$
Sample #	WL19725	$\text{ALPHA TOTAL } \mu\text{Ci/L} = R_s * 1000\text{mL/L} * DF / (EFF * SS * 222000\text{dpm}/\mu\text{Ci})$
Instrument Code	WB27807	$\text{ALPHA TOTAL } \mu\text{Ci/mL} = \text{ALPHA TOTAL } \mu\text{Ci/L} / 1000\text{mL/L}$
Prepared By	SEH	$\text{Relative Counting Error} = [(\text{The Square Root of } TC + BKG * CT) / (TC - BKG * CT)] * 1.96 * 100$
Chemist	SLF	Detection Levels and Less Than Values are determined from Procedure LA-508-002.

Analyst	SLF	ALPHA TOTAL CONCENTRATION in $\mu\text{Ci/mL}$ =	1.82E-04	DETECTION LEVEL
KNT				
Date Complete	08/13/97	RELATIVE COUNTING ERROR =	3.4%	3.99E-07 $\mu\text{Ci/mL}$
Analysis Date	08/12/97			
Analysis Time	03:05 AM			
Sample Point	BY-109 (P)			

Analyst:	SEH	Date: 13-Aug-97
Signature of Chemist:	SLF	Date: 8/14/97
STANDARD.WB1 Rev. 1.0	508101ML	

WORKBOOK PAGE: BLANK2

AT : LA-508-101 (E-1) SOLIDS

		BLNK-PREP	REPLICATE
Type	DETECTOR NUMBER	14	14
BLNK-PREP	DISH SIZE (1, 2, or 5) (MS)	2	2
WorkList	GROSS COUNTS (GC)	6	2
19725	COUNT TIME in MINUTES (CT)	30	30
Analysis By	BACKGROUND in cpm (BKG)	0.03	0.03
AT	SAMPLE SIZE in mL (SS)	0.500	0.500
Test Code	DILUTION FACTOR (DF)	101	101
@ALPHA01	DIGEST GRAMS of SOLIDS / L (Dg/L)	2.086	2.086
Matrix	EFFICIENCY FACTOR (EFF)	0.2692	0.2692
SOLID	Lc, Rmax, or Rs, (SAMPLE RATE) as APPROPRIATE	0.170	0.130
Batch Number			
97003863	Blank Concentration in $\mu\text{Ci/g}$	2.75E-02	
ReRun	Replicate Concentration in $\mu\text{Ci/g}$	< 2.11E-02	
0	Maximum Concentration in $\mu\text{Ci/g}$	< 2.7646E-02	
Sample Prep			
N/A	Rs (Sample Count Rate) = $(TC / CT) - BKG$		
Sample	ALPHA TOTAL $\mu\text{Ci/g}$ = $Rs * 1000\text{mL/L} * DF / (EFF * SS * Dg/L * 2220000\text{dpm}/\mu\text{Ci})$		
WL19725			
Instrument Code	Relative Counting Error = $[(The\ Square\ Root\ of\ TC + BKG * CT) / (TC - BKG * CT)] * 1.98 * 100$		
WB27807	Detection Levels and Less Than Values are determined from Procedure LA-508-002.		
Prepared By			
SEH			
Chemist			
SLF	ALPHA TOTAL in $\mu\text{Ci/g}$ (Maximum) =	< 2.75E-02	DETECTION LEVEL
Analyst			
KNT	LESS THAN Value was Determined from Rs.		
Date Complete			3.86E-02
08/13/97	RELATIVE COUNTING ERROR	303.4%	$\mu\text{Ci/g}$
Analysis Date			
08/12/97			
Analysis Time			
03:05 AM			
Sample Point			
BY-109 (P)			

Analyst:	KNT	Date: 13-Aug-97
Signature of Chemist:	SLF	Date: 8/14/97
BLANK.WB1 Rev. 1.0	508101ML	

WORKBOOK PAGE: SAM4

AT : LA-508-101 (E-1)

SOLIDS

		SAMPLE	REPLICATE
Detector Type	DETECTOR NUMBER	14	14
SAMPLE	DISH SIZE (1, 2, or 5)	2	2
Worklist	GROSS COUNTS	13	10
19725	COUNT TIME in MINUTES	30	30
ALPHA01	BACKGROUND in cpm	0.03	0.03
AT	SAMPLE SIZE in mL	0.500	0.500
Test Code	DILUTION FACTOR	101	101
@ALPHA01	DIGEST GRAMS of SOLIDS / L	2.086	2.086
Matrix	EFFICIENCY FACTOR	0.2692	0.2692
SOLID	Lc, Rmax, or Rs, (SAMPLE RATE) as APPROPRIATE	0.403	0.303

Batch Number	97003863	Blank Concentration in $\mu\text{Ci/g}$	6.54E-02
Rerun	3	Replicate Concentration in $\mu\text{Ci/g}$	4.92E-02
		Average Concentration in $\mu\text{Ci/g}$	5.7252E-02

Sample Prep

FUSION01

Sample #

S97T001541

Instrument Code

WB27807

Prepared By

SEH

Chemist

SLF

Analyst

KNT

Date Complete

08/13/97

Analysis Date

08/12/97

Analysis Time

03:05 AM

Sample Point

BY-109 (P)

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL $\mu\text{Ci/g}$ = $R_s * 1000 \text{ mL/L} * DF / (EFF * SS * \text{Dg/L} * 2220000 \text{ dpm}/\mu\text{Ci})$ Relative Counting Error = $[(\text{The Square Root of } TC + BKG * CT) / (TC - BKG * CT)] * 1.96 * 100$

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

ALPHA TOTAL in $\mu\text{Ci/g}$ (Average)	=	5.73E-02	DETECTION LEVEL 3.86E-02 $\mu\text{Ci/g}$
RELATIVE COUNTING ERROR		71.1%	

(/ system exit) yes-

Analyst:	KNT	Date: 13-Aug-97
Signature of Chemist:	SLF	Date: 8/14/97

SAMPLE:WB1 Rev. 1.0

508101ML

WORKBOOK PAGE: DUP5

AT : LA-508-101 (E-1)

SOLIDS

		DUP	REPLICATE
Type	DETECTOR NUMBER	14	14
DUP	DISH SIZE (1, 2, or 5)	(MS)	2
Work List	GROSS COUNTS	(GC)	17
19725	COUNT TIME IN MINUTES	(CT)	30
Analysis By	BACKGROUND In cpm	(BKG)	0.03
AT	SAMPLE SIZE In mL	(SS)	0.500
Test Code	DILUTION FACTOR	(DF)	101
@ALPHA01	DIGEST GRAMS of SOLIDS / L	(Dg/L)	2.118
Matrix	EFFICIENCY FACTOR	(EFF)	0.2692
SOLID	Lc, Rmax, or Rs, (SAMPLE RATE) as APPROPRIATE		0.403

Batch Number	
97003863	Blank Concentration in $\mu\text{Ci/g}$
Repur	Replicate Concentration in $\mu\text{Ci/g}$
3	Average Concentration in $\mu\text{Ci/g}$

Sample Prep	FUSION01	Rs (Sample Count Rate) = (TC / CT) - BKG
Sample #	S97T001541	ALPHA TOTAL $\mu\text{Ci/g}$ = $Rs * 1000\text{mL} / L * DF / (EFF * SS * Dg/L * 2220000\text{dpm}/\mu\text{Ci})$

Instrument Code	WB27807	Relative Counting Error = $[(\text{The Square Root of } TC + BKG * CT) / (TC - BKG * CT)] * 1.96 * 100$
Prepared By	SEH	Detection Levels and Less Than Values are determined from Procedure LA-508-002.

Chemist	SLF	ALPHA TOTAL in $\mu\text{Ci/g}$ (Average)	=	7.50E-02	DETECTION LEVEL
Analyst	KNT				
Date Complete	08/13/97	RELATIVE COUNTING ERROR		60.4%	3.80E-02 $\mu\text{Ci/g}$

Analysis Date	08/12/97
Analysis Time	03:05 AM
Sample Point	BY-109 (P)

/ system;out/yes-

Analyst:		KNT	Date: 13-Aug-97
Signature of Chemist:	<i>SLF</i>	SLF	Date: 8/14/97

SAMPLE.WB1 Rev. 1.0

508101ML

WORKBOOK PAGE: SPK6

AT : LA-508-101 (E-1) LA-508-113 (B-0) SPIKED SAMPLE

		SPIKE	REPLICATE
Type	DETECTOR NUMBER	14	14
SPK	DISH SIZE 1, 2, or 5 (MS)	2	2
Work List	TOTAL COUNTS (TC)	46709	44511
19725	COUNT TIME in MINUTES (CT)	30	30
A 602 B7	BACKGROUND in cpm (BKG)	0.03	0.03
AT	SAMPLE VOLUME in mL (Spiked Vial) (SS)	0.500	0.500
Test Code	SAMPLE DILUTION FACTOR (Spiked Vial) (DF)	101	101
@ALPHA01	DIGEST GRAMS of SOLIDS / L (Dg/L)	2.086	2.086
Matrix	SPIKE VOLUME in mL (SVol)	0.100	0.100
SOLID	SPIKE DILUTION FACTOR (SDF)	1	1
Batch Number	SPIKE BOOK NUMBER (Spk BN)	131B43	131B43
97003863	SPIKE VALUE in $\mu\text{Ci/mL}$ (SVal)	2.6284E-02	2.6284E-02
Rerun	INSTRUMENT EFFICIENCY FACTOR (EFF)	0.2692	0.2692
3	SAMPLE + SPIKE $\mu\text{Ci/g}$ (S+S)	2.52E+02	2.40E+02
Sample Prep	AVERAGE or MAXIMUM $\mu\text{Ci/g}$ in SAMPLE	5.7252E-02	
FUSION01			
Sample			
S97T001541	R_s (Sample Count Rate) = $(TC / CT) - BKG$		
Instrument Code	SAMPLE + SPIKE $\mu\text{Ci/g}$ = $R_s * 1000\text{mL/L} * DF / (EFF * SS * Dg/L * 2220000\text{dpm}/\mu\text{Ci})$		
WB27807	QC ACTUAL = SVal		
Prepared By	QC FOUND = $((S+S \mu\text{Ci/g} - \text{SAMPLE } \mu\text{Ci/g}) * ((SDF/(SVol*1000))/(DF/SS/Dg/L)))$		
SEH	PERCENT SPIKE RECOVERY = $(QC \text{ FOUND} / QC \text{ ACTUAL}) * 100$		
Chemist			
SLF			
Analyst			
KNT			
Date Complete			
08/13/97			
Analysis Date			
08/12/97	QC ACTUAL =	2.63E-02	
Analysis Time	QC FOUND =	2.54E-02	
03:05 AM	AVG. PERCENT SPIKE RECOVERY =	98.8%	
Sample Point			
BY-109 (P)			

Analyst:	SEH	Date: 13-Aug-97
Signature of Chemist:	SLF	Date: 8/13/97
SPIKE.WB1 Rev. 1.0	508101ML	

WORKBOOK PAGE: SAM7

AT : LA-508-101 (E-1)

SOLIDS

		SAMPLE	REPLICATE
DETECTOR NUMBER		14	14
SAMPLE	DISH SIZE (1, 2, or 5)	(MS)	2
GROSS COUNTS	(GC)	16	11
19725	COUNT TIME in MINUTES	(CT)	30
BACKGROUND in cpm	(BKG)	0.03	0.03
AT	SAMPLE SIZE in mL	(SS)	0.500
DILUTION FACTOR	(DF)	101	101
DIGEST GRAMS of SOLIDS / L	(Dg/L)	1.9356	1.9356
EFFICIENCY FACTOR	(EFF)	0.2692	0.2692
Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		0.503	0.337

Batch Number	
97003863	Blank Concentration in $\mu\text{Ci/g}$ 8.79E-02
Replicate Concentration in $\mu\text{Ci/g}$	5.88E-02
3	Average Concentration in $\mu\text{Ci/g}$ 7.3343E-02

Sample Prep	FUSION01	R_s (Sample Count Rate) = $(TC / CT) - BKG$
Sample #	S97T001544	$ALPHA\ TOTAL\ \mu\text{Ci/g} = R_s * 1000\text{mL/L} * DF / (EFF * SS * Dg/L * 2220000\text{dpm}/\mu\text{Ci})$
Instrument Code	WB27807	Relative Counting Error = $[(The\ Square\ Root\ of\ TC + BKG * CT) / (TC - BKG * CT)] * 1.96 * 100$
Prepared By	SEH	Detection Levels and Less Than Values are determined from Procedure LA-508-002.
Chemist	SLF	

ALPHA TOTAL in $\mu\text{Ci/g}$ (Average)	=	7.33E-02	DETECTION LEVEL
KNT			4.16E-02 $\mu\text{Ci/g}$
Date Complete	RELATIVE COUNTING ERROR	66.9%	
08/13/97			

Analysis Date	08/12/97
Analysis Time	03:05 AM
Sample Point	BY-109 (P)

/ system;oxityes-

Analyst:	KNT	Date: 13-Aug-97
Signature of Chemist:	SLF	Date: 8/13/97

SAMPLE.WB1 Rev. 1.0

508101ML

WORKBOOK PAGE: DUP8

AT : LA-508-101 (E-1) SOLIDS

	DUP	REPLICATE
Detector Number	14	14
DUP		
DISH SIZE (1, 2, or 5)	(MS)	2
GROSS COUNTS	(GC)	18
19725		15
COUNT TIME In MINUTES	(CT)	30
19725		30
BACKGROUND In cpm	(BKG)	0.03
AT		0.03
SAMPLE SIZE In mL	(SS)	0.500
DILUTION FACTOR	(DF)	101
DIGEST GRAMS of SOLIDS / L	(Dg/L)	1.9772
EFFICIENCY FACTOR	(EFF)	0.2692
Lc, Rmax, or Rs.(SAMPLE RATE) as APPROPRIATE		0.570
0.570		0.470
Blank Concentration In $\mu\text{Ci/g}$	9.74E-02	
Replicate Concentration In $\mu\text{Ci/g}$	8.03E-02	
Average Concentration In $\mu\text{Ci/g}$	8.8895E-02	

Sample Prep

FUSION01

Sample

S97T001844

Instrument Code

WB27807

Prepared By

SEH

Chemist

SLF

Analyst

KNT

Date Complete

08/13/97

Analysis Date

08/12/97

Analysis Time

03:05 AM

Sample Point

BY-109 (P)

Rs (Sample Count Rate) = $(TC / CT) - BKG$ ALPHA TOTAL $\mu\text{Ci/g}$ = $Rs * 1000\text{mL/L} * DF / (EFF * SS * Dg/L * 2220000\text{dpm}/\mu\text{Ci})$ 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 $\mu\text{Ci/g}$ (Average)	=	8.89E-02	DETECTION LEVEL
			4.07E-02 $\mu\text{Ci/g}$
RELATIVE COUNTING ERROR		55.4%	

(/ system;exit)yes-

Analyst:	KNT	Date: 13-Aug-97
Signature of Chemist:	SLF	Date: 8/13/97

SAMPLE.WB1 Rev. 1.0

508101ML

WORKBOOK PAGE: SAM9

AT : LA-508-101 (E-1) SOLIDS

		SAMPLE	REPLICATE
Type	DETECTOR NUMBER	14	14
SAMPLE	DISH SIZE (1, 2, or 5)	(MS)	2
Work List	GROSS COUNTS	(GC)	16
19725	COUNT TIME in MINUTES	(CT)	30
Antoni B?	BACKGROUND in cpm	(BKG)	0.03
AT	SAMPLE SIZE in mL	(SS)	0.500
Test Code	DILUTION FACTOR	(DF)	101
@ALPHA01	DIGEST GRAMS OF SOLIDS / L	(Dg/L)	2.0536
Matrix	EFFICIENCY FACTOR	(EFF)	0.2692
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		0.470
Batch Number			0.270
97003863	Blank Concentration in $\mu\text{Ci/g}$		7.74E-02
Re-run	Replicate Concentration in $\mu\text{Ci/g}$		4.44E-02
3	Average Concentration in $\mu\text{Ci/g}$		6.0899E-02
Sample Prep			
FUSION01	R_s (Sample Count Rate) = $(TC / CT) - BKG$		
Sample	$\text{ALPHA TOTAL } \mu\text{Ci/g} = R_s * 1000\text{mL/L} * DF / (\text{EFF} * SS * \text{Dg/L} * 2220000\text{dpm}/\mu\text{Ci})$		
S97T001549			
Instrument Code	Relative Counting Error = $[(\text{The Square Root of } TC + BKG * CT) / (TC - BKG * CT)] * 1.96 * 100$		
WB27807	Detection Levels and Less Than Values are determined from Procedure LA-508-002.		
Prepared By			
SEH			
Chemist			
SLF	ALPHA TOTAL in $\mu\text{Ci/g}$ (Average) =	6.09E-02	DETECTION LEVEL
Analyst			
KNT			3.92E-02
Date Complete			$\mu\text{Ci/g}$
08/13/97	RELATIVE COUNTING ERROR	76.1%	
Analysis Date			
08/12/97			
Analysis Time			
03:05 AM			
Sample Point			
BY-109 (P)			

(/ system exit)yes-

Analyst:	KNT	Date: 13-Aug-97
Signature of Chemist:	SLF	Date: 8/13/97
SAMPLE.WB1 Rev. 1.0	508101ML	

WORKBOOK PAGE: DUP10

AT : LA-508-101 (E-1)

SOLIDS

		DUP	REPLICATE
Type	DETECTOR NUMBER	14	14
DUP	DISH SIZE (1, 2, or 5)	(MS)	2
Work List	GROSS COUNTS	(GC)	12
19725	COUNT TIME in MINUTES	(CT)	30
AT 101 B 2	BACKGROUND in cpm	(BKG)	0.03
AT	SAMPLE SIZE in mL	(SS)	0.500
Test Code	DILUTION FACTOR	(DF)	101
@ALPHA01	DIGEST GRAMS of SOLIDS / L	(Dg/L)	2.0516
Matrix	EFFICIENCY FACTOR	(EFF)	0.2692
SOLID	Lc, Rmax, or Rs, (SAMPLE RATE) as APPROPRIATE		0.370

Batch Number	Blank Concentration in $\mu\text{Ci/g}$	6.10E-02
97003863	Replicate Concentration in $\mu\text{Ci/g}$	5.00E-02
Re-run	Average Concentration in $\mu\text{Ci/g}$	5.5467E-02
3		

Sample Prep

FUSION01

Sample #

S97T001549

Instrument Code

WB27807

Prepared By

SEH

Chemist

SLF

Analyst

KNT

Date Complete

08/13/97

Analysis Date

08/12/97

Analysis Time

03:05 AM

Sample Point

BY-109 (P)

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL $\mu\text{Ci/g}$ = $Rs * 1000\text{mL/L} * DF / (EFF * SS * \text{Dg/L} * 2220000\text{dpm}/\mu\text{Ci})$ Relative Counting Error = $[(\text{The Square Root of } TC + BKG * CT) / (TC - BKG * CT)] * 1.96 * 100$

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

ALPHA TOTAL in $\mu\text{Ci/g}$ (Average)	=	5.55E-02	DETECTION LEVEL
			3.93E-02 $\mu\text{Ci/g}$
RELATIVE COUNTING ERROR		71.1%	

{/ system,exit}yes~

Analyst:	KNT	Date: 13-Aug-97
Signature of Chemist:	SLF	Date: 8/13/97

SAMPLE:WB1 Rev. 1.0

508101ML

WORKBOOK PAGE: SPK11

AT: LA-508-101 (E-1) LA-508-113 (B-0) SPIKED SAMPLE

		SPIKE	REPLICATE
Type	DETECTOR NUMBER	14	14
SPK	DISH SIZE 1, 2, or 5 (MS)	2	2
Worklist	TOTAL COUNTS (TC)	46132	47225
19725	COUNT TIME in MINUTES (CT)	30	30
19725	BACKGROUND in cpm (BKG)	0.03	0.03
AT	SAMPLE VOLUME in mL (Spiked Vial) (SS)	0.500	0.500
Test Code	SAMPLE DILUTION FACTOR (Spiked Vial) (DF)	101	101
@ALPHA01	DIGEST GRAMS of SOLIDS / L (Dg/L)	2.0536	2.0536
Matrix	SPIKE VOLUME in mL (SVol)	0.100	0.100
SOLID	SPIKE DILUTION FACTOR (SDF)	1	1
Batch Number	SPIKE BOOK NUMBER (Spk BN)	131B43	131B43
97003863	SPIKE VALUE in $\mu\text{Ci/mL}$ (SVal)	2.6284E-02	2.6284E-02
Rerun	INSTRUMENT EFFICIENCY FACTOR (EFF)	0.2692	0.2692
3	SAMPLE + SPIKE $\mu\text{Ci/g}$ (S+S)	2.53E+02	2.59E+02
Sample Prep	AVERAGE or MAXIMUM $\mu\text{Ci/g}$ in SAMPLE	6.0899E-02	
FUSION01			
Sample			
S97T001549	R_s (Sample Count Rate) = (TC / CT) - BKG		
Instrument Code	SAMPLE + SPIKE $\mu\text{Ci/g}$ = $R_s * 1000\text{mL/L} * DF / (EFF * SS * Dg/L * 2220000\text{dpm}/\mu\text{Ci})$		
WB27807	QC ACTUAL = SVal		
Prepared By	QC FOUND = $((S+S \mu\text{Ci/g} - \text{SAMPLE } \mu\text{Ci/g}) * ((SDF/(SVol*1000)) / (DF/SS/Dg/L))))$		
SEH	PERCENT SPIKE RECOVERY = (QC FOUND / QC ACTUAL) * 100		
Chemist			
SLF			
Analyst			
KNT			
Date Complete			
08/13/97			
Analysis Date			
08/12/97	QC ACTUAL =	2.63E-02	
Analysis Time	QC FOUND =	2.60E-02	
03:05 AM	AVG. PERCENT SPIKE RECOVERY =	99.0%	
Sample Point			
BY-109 (P)			

Analyst:	SEH	Date: 13-Aug-97
Signature of Chemist:	SLF	Date: 8/13/97

SPIKE.WB1 Rev. 1.0

508101ML

WORKBOOK PAGE: SAM12

AT : LA-508-101 (E-1) SOLIDS

		SAMPLE	REPLICATE
Type	DETECTOR NUMBER	14	14
SAMPLE	DISH SIZE (1, 2, or 5)	(MS)	2
Work List	GROSS COUNTS	(GC)	3
19725	COUNT TIME in MINUTES	(CT)	30
At or B?	BACKGROUND in cpm	(BKG)	0.03
AT	SAMPLE SIZE in mL	(SS)	0.500
Test Code	DILUTION FACTOR	(DF)	101
@ALPHA01	DIGEST GRAMS of SOLIDS / L	(Dg/L)	2.106
Matrix	EFFICIENCY FACTOR	(EFF)	0.2692
SOLID	Lc, Rmax, or Rs, (SAMPLE RATE) as APPROPRIATE		0.179
Batch Number			0.237
97003863	Blank Concentration in $\mu\text{Ci/g}$	<	2.87E-02
Rerun	Replicate Concentration in $\mu\text{Ci/g}$		3.80E-02
3	Maximum Concentration in $\mu\text{Ci/g}$	<	3.7984E-02
Sample Prep			
FUSION01	Rs (Sample Count Rate) = $(TC / CT) - BKG$		
Sample #	ALPHA TOTAL $\mu\text{Ci/g}$ = $Rs * 1000\text{mL/L} * DF / (EFF * SS * Dg/L * 2220000\text{dpm}/\mu\text{Ci})$		
S97T001554			
Instrument Code	Relative Counting Error = $[(\text{The Square Root of } TC + BKG * CT) / (TC - BKG * CT)] * 1.96 * 100$		
WB27807	Detection Levels and Less Than Values are determined from Procedure LA-508-002.		
Prepared By			
SEH			
Chemist			
SLF	ALPHA TOTAL in $\mu\text{Ci/g}$ (Maximum) =	< 3.80E-02	DETECTION LEVEL
Analyst			
KNT	LESS THAN Value was Determined from Rmax.		
Date Complete			3.82E-02
08/13/97	RELATIVE COUNTING ERROR	184.3%	$\mu\text{Ci/g}$
Analysis Date			
08/12/97			
Analysis Time			
03:05 AM			
Sample Point			
BY-109 (P)			

/ system;exit;yes-

Analyst:	KNT	Date: 13-Aug-97
Signature of Chemist:	SLF	Date: 8/13/97
SAMPLE.WB1 Rev. 1.0 508101ML		

WORKBOOK PAGE: DUP13

AT : LA-508-101 (E-1)

SOLIDS

		DUP	REPLICATE
Type	DETECTOR NUMBER	14	14
DUP	DISH SIZE (1, 2, or 5)	(MS) 2	2
WorkList	GROSS COUNTS	(GC) 6	9
19725	COUNT TIME in MINUTES	(CT) 30	30
AT on B	BACKGROUND in cpm	(BKG) 0.03	0.03
AT	SAMPLE SIZE in mL	(SS) 0.500	0.500
Test Code	DILUTION FACTOR	(DF) 101	101
@ALPHA01	DIGEST GRAMS of SOLIDS / L	(Dg/L) 2.0996	2.0996
Matrix	EFFICIENCY FACTOR	(EFF) 0.2692	0.2692
SOLID	Lc, Rmax, or Rs, (SAMPLE RATE) as APPROPRIATE	0.170	0.270

Batch Number	Blank Concentration in $\mu\text{Ci/g}$	2.74E-02
97003863	Replicate Concentration in $\mu\text{Ci/g}$	4.35E-02
ReRun	Average Concentration in $\mu\text{Ci/g}$	3.5417E-02
3		

Sample Prep	FUSION01	Rs (Sample Count Rate) = (TC / CT) - BKG
Sample #	S97T001554	ALPHA TOTAL $\mu\text{Ci/g}$ = $Rs * 1000\text{mL/L} * DF / (EFF * SS * \text{Dg/L} * 2220000\text{dpm}/\mu\text{Ci})$
Instrument Code	WB27807	Relative Counting Error = $[(The \text{ Square Root of } TC + BKG * CT) / (TC - BKG * CT)] * 1.96 * 100$
Prepared By	SEH	Detection Levels and Less Than Values are determined from Procedure LA-508-002.
Chemist	SLF	

SLF	ALPHA TOTAL in $\mu\text{Ci/g}$ (Average)	=	3.54E-02	DETECTION LEVEL
KNT				
Date Complete	08/13/97	RELATIVE COUNTING ERROR	101.0%	3.84E-02 $\mu\text{Ci/g}$

Analysis Date	08/12/97
Analysis Time	03:05 AM
Sample Point	BY-109 (P)

{/ system,exit}yes-

Analyst:	KNT	Date: 13-Aug-97
Signature of Chemist:	SLF	Date: 8/13/97
SAMPLE.WB1 Rev. 1.0	508101ML	

WORKBOOK PAGE: SPK14

AT: LA-508-101 (E-1) LA-508-113 (B-0) SPIKED SAMPLE

		SPIKE	REPLICATE
Type	DETECTOR NUMBER	14	14
SPK	DISH SIZE 1, 2, or 5 (MS)	2	2
WorkList	TOTAL COUNTS (TC)	47672	45575
19725	COUNT TIME IN MINUTES (CT)	30	30
Ator18	BACKGROUND In cpm (BKG)	0.03	0.03
AT	SAMPLE VOLUME In mL (Spiked Vial) (SS)	0.500	0.500
TestCode	SAMPLE DILUTION FACTOR (Spiked Vial) (DF)	101	101
@ALPHA01	DIGEST GRAMS of SOLIDS / L (Dg/L)	2.106	2.106
Matrix	SPIKE VOLUME In mL (SVol)	0.100	0.100
SOLID	SPIKE DILUTION FACTOR (SDF)	1	1
Batch Number	SPIKE BOOK NUMBER (Spk BN)	131B43	131B43
97003863	SPIKE VALUE In µCi/mL (SVal)	2.6284E-02	2.6284E-02
Rerun	INSTRUMENT EFFICIENCY FACTOR (EFF)	0.2692	0.2692
3	SAMPLE + SPIKE µCi/g (S+S)	2.55E+02	2.44E+02
Sample Prep	AVERAGE or MAXIMUM µCi/g in SAMPLE	<	3.7984E-02
FUSION01			
Sample #			
S97T001554	Rs (Sample Count Rate) = (TC / CT) - BKG		
Instrument Code	SAMPLE + SPIKE µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)		
WB27807	QC ACTUAL = SVal		
Prepared By	QC FOUND = (((S+S µCi/g - SAMPLE µCi/g) * ((SDF/(SVol*1000)))/(DF/SS/Dg/L))))		
SEH	PERCENT SPIKE RECOVERY = (QC FOUND / QC ACTUAL) * 100		
Chemist			
SLF			
Analyst			
KNT			
Date Complete	NOTE: Original Sample result was a LESS THAN value. Zero (0) was subtracted from the spiked value for QC found calculation.		
08/13/97			
Analysis Date			
08/12/97	QC ACTUAL =	2.63E-02	
Analysis Time	QC FOUND =	2.60E-02	
03:05 AM	AVG. PERCENT SPIKE RECOVERY =	98.9%	
Sample Point			
BY-109 (P)			

Analyst:	SEH	Date: 13-Aug-97
Signature of Chemist:	SLF	Date: 8/18/97

SPIKE.WB1 Rev. 1.0

508101ML

HNF-SD-WM-DP-259, REV. 0

APPENDIX A

OPPORTUNISTIC ANALYTE RESULTS

HNH-SD-WM-DP-259, REV. 0

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Appendix A: Opportunistic Analyte Results
BY-109 (P)

CORE NUMBER: 201
SEGMENT #: n/a

SEGMENT PORTION: Hydrostatic Head Fluid

Sample#	R A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S97T001368	D	Silver-ICP-Acid Dil.	ug/ml	98.00	<1.00e-02	<2.00e-01	<2.00e-1	n/a	n/a	n/a	2.00e-01	n/a
S97T001368	D	Aluminum-ICP-Acid Dil.	ug/ml	97.80	<5.00e-02	< 1.000	<1.00e0	n/a	n/a	n/a	1.000	n/a
S97T001368	D	Arsenic-ICP-Acid Dil.	ug/ml	104.2	<1.00e-01	< 2.000	<2.00e0	n/a	n/a	n/a	2.000	n/a
S97T001368	D	Boron-ICP-Acid Dil.	ug/ml	101.2	<5.00e-02	< 1.000	<1.00e0	n/a	n/a	n/a	1.000	n/a
S97T001368	D	Barium-ICP-Acid Dil.	ug/ml	99.40	<5.00e-02	< 1.000	<1.00e0	n/a	n/a	n/a	1.000	n/a
S97T001368	D	Beryllium-ICP-Acid Dil.	ug/ml	102.4	<5.00e-03	<1.00e-01	<1.00e-1	n/a	n/a	n/a	1.00e-01	n/a
S97T001368	D	Bismuth-ICP-Acid Dil.	ug/ml	101.4	<1.00e-01	< 2.000	<2.00e0	n/a	n/a	n/a	2.000	n/a
S97T001368	D	Calcium-ICP-Acid Dil.	ug/ml	98.40	<1.00e-01	< 2.000	<2.00e0	n/a	n/a	n/a	2.000	n/a
S97T001368	D	Cadmium-ICP-Acid Dil.	ug/ml	99.80	<5.00e-03	<1.00e-01	<1.00e-1	n/a	n/a	n/a	1.00e-01	n/a
S97T001368	D	Cerium-ICP-Acid Dil.	ug/ml	98.80	<1.00e-01	< 2.000	<2.00e0	n/a	n/a	n/a	2.000	n/a
S97T001368	D	Cobalt-ICP-Acid Dil.	ug/ml	101.4	<2.00e-02	<4.00e-01	<4.00e-1	n/a	n/a	n/a	4.00e-01	n/a
S97T001368	D	Chromium-ICP-Acid Dil.	ug/ml	99.20	<1.00e-02	<2.00e-01	<2.00e-1	n/a	n/a	n/a	2.00e-01	n/a
S97T001368	D	Copper-ICP-Acid Dil.	ug/ml	98.20	<1.00e-02	<2.00e-01	<2.00e-1	n/a	n/a	n/a	2.00e-01	n/a
S97T001368	D	Iron-ICP-Acid Dil.	ug/ml	93.60	<5.00e-02	< 1.000	<1.00e0	n/a	n/a	n/a	1.000	n/a
S97T001368	D	Potassium-ICP-Acid Dil.	ug/ml	101.4	<5.00e-01	< 10.00	<1.00e1	n/a	n/a	n/a	10.000	n/a
S97T001368	D	Lanthanum-ICP-Acid Dil.	ug/ml	100.6	<5.00e-02	< 1.000	<1.00e0	n/a	n/a	n/a	1.000	n/a
S97T001368	D	Magnesium-ICP-Acid Dil.	ug/ml	100.8	<1.00e-01	< 2.000	<2.00e0	n/a	n/a	n/a	2.000	n/a
S97T001368	D	Manganese-ICP-Acid Dil.	ug/ml	97.60	<1.00e-02	<2.00e-01	<2.00e-1	n/a	n/a	n/a	2.00e-01	n/a
S97T001368	D	Molybdenum-ICP-Acid Dil.	ug/ml	101.2	<5.00e-02	< 1.000	<1.00e0	n/a	n/a	n/a	1.000	n/a
S97T001368	D	Sodium-ICP-Acid Dil.	ug/ml	102.8	<1.00e-01	4.620	4.410	4.515	4.65	n/a	2.000	n/a
S97T001368	D	Neodymium-ICP-Acid Dil.	ug/ml	100.6	<1.00e-01	< 2.000	<2.00e0	n/a	n/a	n/a	2.000	n/a
S97T001368	D	Nickel-ICP-Acid Dil.	ug/ml	99.60	<2.00e-02	<4.00e-01	<4.00e-1	n/a	n/a	n/a	4.00e-01	n/a
S97T001368	D	Phosphorus-ICP-Acid Dil.	ug/ml	102.2	<2.00e-01	< 4.000	<4.00e0	n/a	n/a	n/a	4.000	n/a
S97T001368	D	Lead-ICP-Acid Dil.	ug/ml	98.40	<1.00e-01	< 2.000	<2.00e0	n/a	n/a	n/a	2.000	n/a
S97T001368	D	Sulfur-ICP-Acid Dil.	ug/ml	99.80	<1.00e-01	< 2.000	<2.00e0	n/a	n/a	n/a	2.000	n/a
S97T001368	D	Antimony-ICP-Acid Dil.	ug/ml	96.20	<6.00e-02	< 1.200	<1.20e0	n/a	n/a	n/a	1.200	n/a
S97T001368	D	Selenium-ICP-Acid Dil.	ug/ml	94.60	<1.00e-01	< 2.000	<2.00e0	n/a	n/a	n/a	2.000	n/a
S97T001368	D	Silicon-ICP-Acid Dil.	ug/ml	96.20	<5.00e-02	1.320	1.300	1.310	1.53	n/a	1.000	n/a
S97T001368	D	Samarium-ICP-Acid Dil.	ug/ml	98.60	<1.00e-01	< 2.000	<2.00e0	n/a	n/a	n/a	2.000	n/a
S97T001368	D	Strontium-ICP-Acid Dil.	ug/ml	99.60	<1.00e-02	<2.00e-01	<2.00e-1	n/a	n/a	n/a	2.00e-01	n/a
S97T001368	D	Titanium-ICP-Acid Dil.	ug/ml	99.20	<1.00e-02	< 4.000	<2.00e-1	n/a	n/a	n/a	2.00e-01	n/a
S97T001368	D	Thallium-ICP-Acid Dil.	ug/ml	95.40	<2.00e-01	< 4.000	<4.00e0	n/a	n/a	n/a	4.000	n/a
S97T001368	D	Uranium-ICP-Acid Dil.	ug/ml	97.00	<5.00e-01	< 10.00	<1.00e1	n/a	n/a	n/a	10.000	n/a
S97T001368	D	Vanadium-ICP-Acid Dil.	ug/ml	101.0	<5.00e-02	< 1.000	<1.00e0	n/a	n/a	n/a	1.000	n/a
S97T001368	D	Zinc-ICP-Acid Dil.	ug/ml	97.20	<1.00e-02	<2.00e-01	<2.00e-1	n/a	n/a	n/a	2.00e-01	n/a
S97T001368	D	Zirconium-ICP-Acid Dil.	ug/ml	99.40	<1.00e-02	<2.00e-01	<2.00e-1	n/a	n/a	n/a	2.00e-01	n/a
S97T001368	D	Fluoride-IC-Dionex 4000/4500	ug/ml	97.63	<1.20e-02	< 13.33	<1.33e1	n/a	n/a	n/a	13.33	n/a
S97T001368	D	Chloride-IC-Dionex 4000/4500	ug/ml	103.9	<1.70e-02	28.54	35.00	31.77	20.5	n/a	18.89	n/a
S97T001368	D	Nitrite-IC - Dionex 4000/4500	ug/ml	102.2	<1.08e-01	<1.20e+02	<1.20e2	n/a	n/a	n/a	120.0	n/a
S97T001368	D	Nitrate by IC-Dionex 4000/4500	ug/ml	100.8	<1.39e-01	1.80e+02	<1.54e2	n/a	n/a	n/a	154.4	n/a
S97T001368	D	Phosphate IC-Dionex 4000/4500	ug/ml	101.3	<1.20e-01	<1.33e+02	<1.33e2	n/a	n/a	n/a	133.3	n/a
S97T001368	D	Sulfate by IC-Dionex 4000/4500	ug/ml	106.0	<1.38e-01	2.01e+02	216.0	208.6	7.19	n/a	153.3	n/a
S97T001368	D	Oxalate-IC-Dionex 4000/450	ug/ml	104.3	<1.05e-01	<1.17e+02	<1.17e2	n/a	n/a	n/a	116.7	n/a

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HN-SD-WM-DP-259 REV.0

Appendix A: Opportunistic Analyte Results
BY-109 (P)

CORE NUMBER: 201
SEGMENT #: 1

SEGMENT PORTION: W Whole Segment

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S97T001540	W		Fluoride-IC-Dionex 4000/4500	ug/g	95.08	<1.20e-02	3.15e+04	2.93e+04	3.04e+04	7.24	n/a	120.6	n/a
S97T001540	W		Chloride-IC-Dionex 4000/4500	ug/g	90.38	<1.70e-02	<1.71e+02	<1.73e2	n/a	n/a	n/a	170.9	n/a
S97T001540	W		Nitrite-IC - Dionex 4000/4500	ug/g	96.14	1.44e-01	4.11e+03	4.32e+03	4.21e+03	4.98	n/a	1.09e+03	n/a
S97T001540	W		Nitrate by IC-Dionex 4000/4500	ug/g	94.28	<1.39e-01	7.24e+03	8.01e+03	7.62e+03	10.1	n/a	1.40e+03	n/a
S97T001540	W		Phosphate-IC-Dionex 4000/4500	ug/g	102.4	<1.20e-01	1.63e+05	1.43e+05	1.53e+05	13.1	n/a	1.21e+03	n/a
S97T001540	W		Sulfate by IC-Dionex 4000/4500	ug/g	93.67	<1.38e-01	1.53e+04	1.71e+04	1.62e+04	11.1	n/a	1.39e+03	n/a
S97T001540	W		Oxalate-IC-Dionex 4000/4500	ug/g	97.00	<1.05e-01	6.36e+04	6.72e+04	6.54e+04	5.50	n/a	1.06e+03	n/a
S97T001821	A		Silver -ICP-Acid Digest	ug/g	119.0	<1.00e-02	< 19.70	<1.94e1	n/a	n/a	n/a	19.70	n/a
S97T001821	A		Aluminium -ICP-Acid Digest	ug/g	99.80	1.44e-01	2.83e+04	3.52e+04	3.18e+04	21.7	n/a	98.70	n/a
S97T001821	A		Arsenic -ICP-Acid Digest	ug/g	101.2	<1.00e-01	<1.97e+02	<1.94e2	n/a	n/a	n/a	197.0	n/a
S97T001821	A		Boron -ICP-Acid Digest	ug/g	108.4	3.56e-01	1.86e+02	175.0	180.5	6.09	n/a	98.70	n/a
S97T001821	A		Barium -ICP-Acid Digest	ug/g	95.80	<5.00e-02	< 98.70	<9.69e1	n/a	n/a	n/a	98.70	n/a
S97T001821	A		Beryllium -ICP-Acid Digest	ug/g	100.8	<5.00e-03	< 9.870	<9.69e0	n/a	n/a	n/a	9.870	n/a
S97T001821	A		Bismuth -ICP-Acid Digest	ug/g	96.40	<1.00e-01	<1.97e+02	<1.94e2	n/a	n/a	n/a	197.0	n/a
S97T001821	A		Calcium -ICP-Acid Digest	ug/g	98.40	2.00e-01	5.58e+02	686.0	622.0	20.6	n/a	197.0	n/a
S97T001821	A		Cadmium -ICP-Acid Digest	ug/g	97.60	<5.00e-03	49.70	62.20	55.95	22.3	n/a	9.870	n/a
S97T001821	A		Cerium -ICP-Acid Digest	ug/g	99.80	<1.00e-01	<1.97e+02	<1.94e2	n/a	n/a	n/a	197.0	n/a
S97T001821	A		Cobalt -ICP-Acid Digest	ug/g	102.8	<2.00e-02	89.80	90.60	90.20	0.89	n/a	39.50	n/a
S97T001821	A		Chromium -ICP-Acid Digest	ug/g	97.60	<1.00e-02	1.85e+03	2.03e+03	1.94e+03	9.28	n/a	19.70	n/a
S97T001821	A		Copper -ICP-Acid Digest	ug/g	92.60	<1.00e-02	< 19.70	<1.94e1	n/a	n/a	n/a	19.70	n/a
S97T001821	A		Iron -ICP-Acid Digest	ug/g	98.40	<5.00e-02	2.32e+03	1.70e+03	2.01e+03	30.8	n/a	98.70	n/a
S97T001821	A		Potassium -ICP-Acid Digest	ug/g	91.60	<5.00e-01	<9.87e+02	<9.69e2	n/a	n/a	n/a	987.0	n/a
S97T001821	A		Lanthanum -ICP-Acid Digest	ug/g	98.80	<5.00e-02	< 98.70	<9.69e1	n/a	n/a	n/a	98.70	n/a
S97T001821	A		Manganese -ICP-Acid Digest	ug/g	98.40	<1.00e-01	2.84e+02	319.0	301.0	12.0	n/a	197.0	n/a
S97T001821	A		Manganese -ICP-Acid Digest	ug/g	98.40	<1.00e-02	1.44e+02	161.0	152.5	11.1	n/a	19.70	n/a
S97T001821	A		Molybdenum -ICP-Acid Digest	ug/g	99.60	<5.00e-02	< 98.70	<9.69e1	n/a	n/a	n/a	98.70	n/a
S97T001821	A		Sodium -ICP-Acid Digest	ug/g	104.2	6.89e-01	1.65e+05	1.76e+05	1.70e+05	6.45	n/a	197.0	n/a
S97T001821	A		Neodymium -ICP-Acid Digest	ug/g	97.80	<1.00e-01	<1.97e+02	<1.94e2	n/a	n/a	n/a	197.0	n/a
S97T001821	A		Nickel -ICP-Acid Digest	ug/g	100.6	<2.00e-02	3.73e+02	433.0	403.0	14.9	n/a	39.50	n/a
S97T001821	A		Phosphorus -ICP-Acid Digest	ug/g	99.20	<2.00e-01	4.58e+04	4.15e+04	4.36e+04	9.85	n/a	395.0	n/a
S97T001821	A		Lead -ICP-Acid Digest	ug/g	93.40	<1.00e-01	<1.97e+02	<1.94e2	n/a	n/a	n/a	197.0	n/a
S97T001821	A		Sulfur -ICP-Acid Digest	ug/g	99.40	1.20e-01	5.17e+03	9.92e+03	7.54e+03	63.0	n/a	118.0	n/a
S97T001821	A		Antimony -ICP-Acid Digest	ug/g	94.00	<6.00e-02	<1.18e+02	<1.16e2	n/a	n/a	n/a	197.0	n/a
S97T001821	A		Silicon -ICP-Acid Digest	ug/g	157.0	1.180	2.05e+03	2.08e+03	2.06e+03	1.45	n/a	98.70	n/a
S97T001821	A		Samarium -ICP-Acid Digest	ug/g	95.20	<1.00e-01	<1.97e+02	<1.94e2	n/a	n/a	n/a	197.0	n/a
S97T001821	A		Strontium -ICP-Acid Digest	ug/g	96.80	<1.00e-02	2.21e+02	274.0	247.5	21.4	n/a	19.70	n/a
S97T001821	A		Titanium-ICP-Acid Digest	ug/g	88.40	<1.00e-02	< 19.70	<1.94e1	n/a	n/a	n/a	19.70	n/a
S97T001821	A		Thallium -ICP-Acid Digest	ug/g	95.80	<2.00e-01	<3.95e+02	<3.87e2	n/a	n/a	n/a	395.0	n/a
S97T001821	A		Uranium -ICP-Acid Digest	ug/g	91.20	<5.00e-01	3.29e+03	4.09e+03	3.69e+03	21.7	n/a	987.0	n/a
S97T001821	A		Vanadium -ICP-Acid Digest	ug/g	97.20	<5.00e-02	< 98.70	<9.69e1	n/a	n/a	n/a	98.70	n/a
S97T001821	A		Zinc -ICP-Acid Digest	ug/g	100.0	5.50e-02	91.70	91.20	n/a	0.55	n/a	19.70	n/a
S97T001821	A		Zirconium -ICP-Acid Digest	ug/g	98.00	<1.00e-02	79.60	123.0	101.3	42.8	n/a	19.70	n/a

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HNF-SD-WM-DP-253 REV. 0

Appendix A: Opportunistic Analyte Results
BY-109 (P)

CORE NUMBER: 201
SEGMENT #: 2

SEGMENT PORTION: Liner Liquid

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S97T001355	D		Silver-ICP-Acid Dil.	ug/mL	101.8	<1.00e-02	3.460	3.870	3.665	11.2	n/a	1.010	n/a
S97T001355	D		Aluminum-ICP-Acid Dil.	ug/mL	99.80	<5.00e-02	2.18e+02	687.0	452.5	104	n/a	5.050	n/a
S97T001355	D		Arsenic-ICP-Acid Dil.	ug/mL	106.2	<1.00e-01	< 10.10	<1.01e1	n/a	n/a	n/a	10.10	n/a
S97T001355	D		Boron-ICP-Acid Dil.	ug/mL	102.4	<5.00e-02	17.90	19.80	18.85	10.1	n/a	5.050	n/a
S97T001355	D		Barium-ICP-Acid Dil.	ug/mL	100.6	<5.00e-02	< 5.050	<5.05e0	n/a	n/a	n/a	5.050	n/a
S97T001355	D		Beryllium-ICP-Acid Dil.	ug/mL	105.6	<5.00e-03	<5.05e-01	<5.05e-1	n/a	n/a	n/a	5.05e-01	n/a
S97T001355	D		Bismuth-ICP-Acid Dil.	ug/mL	104.4	<1.00e-01	< 10.10	<1.01e1	n/a	n/a	n/a	10.10	n/a
S97T001355	D		Calcium-ICP-Acid Dil.	ug/mL	103.6	<1.00e-01	< 10.10	45.40	n/a	n/a	n/a	10.10	n/a
S97T001355	D		Cadmium-ICP-Acid Dil.	ug/mL	103.4	<5.00e-03	<5.05e-01	<5.05e-1	n/a	n/a	n/a	5.05e-01	n/a
S97T001355	D		Cerium-ICP-Acid Dil.	ug/mL	101.4	<1.00e-01	< 10.10	<1.01e1	n/a	n/a	n/a	10.10	n/a
S97T001355	D		Cobalt-ICP-Acid Dil.	ug/mL	102.4	<2.00e-02	2.500	2.480	2.490	0.80	n/a	2.020	n/a
S97T001355	D		Chromium-ICP-Acid Dil.	ug/mL	103.8	<1.00e-02	2.04e+02	225.0	214.5	9.79	n/a	1.010	n/a
S97T001355	D		Copper-ICP-Acid Dil.	ug/mL	98.20	<1.00e-02	< 1.010	1.170	n/a	n/a	n/a	1.010	n/a
S97T001355	D		Iron-ICP-Acid Dil.	ug/mL	96.40	<5.00e-02	< 5.050	11.20	n/a	n/a	n/a	5.050	n/a
S97T001355	D		Potassium-ICP-Acid Dil.	ug/mL	100.4	<5.00e-01	1.00e+03	1.14e+03	1.07e+03	13.1	n/a	50.50	n/a
S97T001355	D		Lanthanum-ICP-Acid Dil.	ug/mL	102.8	<5.00e-02	< 5.050	<5.05e0	n/a	n/a	n/a	5.050	n/a
S97T001355	D		Magnesium-ICP-Acid Dil.	ug/mL	104.4	<1.00e-01	< 10.10	<1.01e1	n/a	n/a	n/a	10.10	n/a
S97T001355	D		Manganese-ICP-Acid Dil.	ug/mL	100.8	<1.00e-02	< 1.010	1.490	n/a	n/a	n/a	1.010	n/a
S97T001355	D		Molybdenum-ICP-Acid Dil.	ug/mL	102.6	<5.00e-02	9.510	10.20	9.855	7.00	n/a	5.050	n/a
S97T001355	D		Sodium-ICP-Acid Dil.	ug/mL	99.00	<1.00e-01	4.83e+04	5.43e+04	5.13e+04	11.7	n/a	10.10	n/a
S97T001355	D		Neodymium-ICP-Acid Dil.	ug/mL	103.0	<1.00e-01	< 10.10	<1.01e1	n/a	n/a	n/a	10.10	n/a
S97T001355	D		Nickel-ICP-Acid Dil.	ug/mL	102.6	<2.00e-02	< 2.020	9.920	n/a	n/a	n/a	2.020	n/a
S97T001355	D		Phosphorus-ICP-Acid Dil.	ug/mL	102.2	<2.00e-01	83.60	101.0	92.30	18.9	n/a	20.20	n/a
S97T001355	D		Lead-ICP-Acid Dil.	ug/mL	104.4	<1.00e-01	< 10.10	<1.01e1	n/a	n/a	n/a	10.10	n/a
S97T001355	D		Sulfur-ICP-Acid Dil.	ug/mL	99.40	<1.00e-01	5.03e+03	5.65e+03	5.34e+03	11.6	n/a	10.10	n/a
S97T001355	D		Antimony-ICP-Acid Dil.	ug/mL	97.20	<6.00e-02	< 6.060	<6.06e0	n/a	n/a	n/a	6.060	n/a
S97T001355	D		Selenium-ICP-Acid Dil.	ug/mL	98.80	<1.00e-01	29.10	32.70	30.90	11.7	n/a	10.10	n/a
S97T001355	D		Silicon-ICP-Acid Dil.	ug/mL	99.20	<5.00e-02	5.47e+02	715.0	631.0	26.6	n/a	5.050	n/a
S97T001355	D		Samarium-ICP-Acid Dil.	ug/mL	99.20	<1.00e-01	< 10.10	<1.01e1	n/a	n/a	n/a	10.10	n/a
S97T001355	D		Strontium-ICP-Acid Dil.	ug/mL	100.4	<1.00e-02	< 1.010	<1.01e0	n/a	n/a	n/a	1.010	n/a
S97T001355	D		Thallium-ICP-Acid Dil.	ug/mL	99.40	<1.00e-02	< 1.010	<1.01e0	n/a	n/a	n/a	1.010	n/a
S97T001355	D		Titanium-ICP-Acid Dil.	ug/mL	98.40	<2.00e-01	< 20.20	<2.02e1	n/a	n/a	n/a	20.20	n/a
S97T001355	D		Uranium-ICP-Acid Dil.	ug/mL	96.70	<5.00e-01	< 50.50	<5.05e1	n/a	n/a	n/a	50.50	n/a
S97T001355	D		Vanadium-ICP-Acid Dil.	ug/mL	100.6	<5.00e-02	< 5.050	<5.05e0	n/a	n/a	n/a	5.050	n/a
S97T001355	D		Zinc-ICP-Acid Dil.	ug/mL	98.80	<1.00e-02	< 1.010	5.260	n/a	n/a	n/a	1.010	n/a
S97T001355	D		Zirconium-ICP-Acid Dil.	ug/mL	99.60	<1.00e-02	< 1.010	<1.01e0	n/a	n/a	n/a	1.010	n/a
S97T001355	D		Fluoride-IC-Dionex 4000/4500	ug/mL	100.0	<1.20e-02	6.55e+03	6.33e+03	6.44e+03	3.42	n/a	49.69	n/a
S97T001355	D		Chloride-IC-Dionex 4000/4500	ug/mL	101.3	<1.70e-02	1.22e+03	1.16e+03	1.19e+03	5.04	n/a	70.40	n/a
S97T001355	D		Nitrite-IC - Dionex 4000/4500	ug/mL	98.90	<1.08e-01	2.23e+04	2.18e+04	2.20e+04	2.27	n/a	447.2	n/a
S97T001355	D		Nitrate by IC-Dionex 4000/4500	ug/mL	97.98	<1.39e-01	6.66e+04	6.68e+04	6.67e+04	0.30	n/a	375.6	n/a
S97T001355	D		Phosphate-IC-Dionex 4000/4500	ug/mL	99.82	<1.20e-01	4.97e+02	4.97e2	n/a	n/a	n/a	496.9	n/a
S97T001355	D		Sulfate by IC-Dionex 4000/4500	ug/mL	100.3	<1.38e-01	2.73e+04	2.75e+04	2.74e+04	0.73	n/a	371.5	n/a
S97T001355	D		Oxalate-IC-Dionex 4000/450	ug/mL	100.2	<1.05e-01	4.35e+02	4.35e2	n/a	n/a	n/a	434.8	n/a

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Upper half of Segment: U Upper half of Segment

Sample#	R#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec	Det Limit	Count Err%
S971001546	M	TiC by Acid/Coulometry	ug/g	97.01	4.000	3.39e+03	2.88e+03	3.14e+03	16.3	n/a	5.000	n/a
S971001552	M	Silver - ICP-Acid Digest	ug/g	82.90	<1.00e-02	<18.30	<1.98e1	<1.16e+04	3.51	n/a	18.30	n/a
S971001552	M	Aluminum - ICP-Acid Digest	ug/g	99.20	<5.00e-02	<1.85e+02	<1.98e1	<1.12e+04	3.51	n/a	18.30	n/a
S971001552	M	Arsenic - ICP-Acid Digest	ug/g	107.0	<1.00e-01	<1.85e+02	<1.98e1	<1.12e+04	3.51	n/a	18.30	n/a
S971001552	M	Boron - ICP-Acid Digest	ug/g	100.8	<3.39e-01	<2.75e+03	<2.70e+03	<2.72e+03	1.83	n/a	18.30	n/a
S971001552	M	Barium - ICP-Acid Digest	ug/g	100.6	<5.00e-02	<9.14e0	<9.92e1	n/a	n/a	n/a	18.30	n/a
S971001552	M	Beryllium - ICP-Acid Digest	ug/g	99.69	<5.00e-03	<1.85e+02	<1.98e1	<1.12e+04	3.51	n/a	18.30	n/a
S971001552	M	Bismuth - ICP-Acid Digest	ug/g	99.69	<2.01e-01	<5.38e+02	<1.98e1	<1.12e+04	3.51	n/a	18.30	n/a
S971001552	M	Calcium - ICP-Acid Digest	ug/g	96.00	<2.01e-01	<5.38e+02	<1.98e1	<1.12e+04	3.51	n/a	18.30	n/a
S971001552	M	Cadmium - ICP-Acid Digest	ug/g	96.69	<1.00e-03	<1.85e+02	<1.98e1	<1.12e+04	3.51	n/a	18.30	n/a
S971001552	M	Cerium - ICP-Acid Digest	ug/g	98.60	<1.00e-03	<1.85e+02	<1.98e1	<1.12e+04	3.51	n/a	18.30	n/a
S971001552	M	Cobalt - ICP-Acid Digest	ug/g	100.0	<2.00e-02	<97.40	<97.40	<2.96e+03	2.96	n/a	18.30	n/a
S971001552	M	Chromium - ICP-Acid Digest	ug/g	99.00	<1.00e-02	<3.02e+03	<2.90e+03	<2.96e+03	4.05	n/a	18.30	n/a
S971001552	M	Copper - ICP-Acid Digest	ug/g	94.00	<1.00e-02	<18.30	<21.60	<1.20e+04	6.67	n/a	18.30	n/a
S971001552	M	Iron - ICP-Acid Digest	ug/g	98.20	<1.00e-02	<7.11e+02	<614.0	<662.5	14.6	n/a	18.30	n/a
S971001552	M	Potassium - ICP-Acid Digest	ug/g	97.20	<5.00e-02	<9.73e+02	<1.12e+03	<1.05e+03	14.0	n/a	18.30	n/a
S971001552	M	Lanthanum - ICP-Acid Digest	ug/g	100.0	<5.00e-02	<9.14e0	<9.92e1	n/a	n/a	n/a	18.30	n/a
S971001552	M	Magnesium - ICP-Acid Digest	ug/g	93.80	<1.00e-02	<1.85e+02	<1.98e1	<1.12e+04	3.51	n/a	18.30	n/a
S971001552	M	Manganese - ICP-Acid Digest	ug/g	97.60	<1.00e-02	<1.54e+02	<150.0	<152.0	2.63	n/a	18.30	n/a
S971001552	M	Molybdenum - ICP-Acid Digest	ug/g	98.40	<5.00e-02	<9.14e0	<9.92e1	n/a	n/a	n/a	18.30	n/a
S971001552	M	Sodium - ICP-Acid Digest	ug/g	103.2	<5.29e-01	<2.44e+05	<2.44e+05	<2.49e+05	4.02	n/a	18.30	n/a
S971001552	M	Neodymium - ICP-Acid Digest	ug/g	102.6	<1.00e-01	<1.85e+02	<1.98e1	<1.12e+04	3.51	n/a	18.30	n/a
S971001552	M	Nickel - ICP-Acid Digest	ug/g	99.20	<1.00e-02	<2.45e+02	<244.0	<244.5	0.41	n/a	18.30	n/a
S971001552	M	Phosphorus - ICP-Acid Digest	ug/g	97.80	<1.00e-01	<1.16e+04	<1.24e+04	<1.20e+04	6.67	n/a	18.30	n/a
S971001552	M	Lead - ICP-Acid Digest	ug/g	93.60	<1.00e-01	<2.22e+02	<224.0	<228.0	5.26	n/a	18.30	n/a
S971001552	M	Sulfur - ICP-Acid Digest	ug/g	98.20	<1.35e-01	<1.93e+04	<1.96e+04	<1.96e+04	2.56	n/a	18.30	n/a
S971001552	M	Antimony - ICP-Acid Digest	ug/g	95.40	<6.00e-02	<1.10e+02	<1.19e2	n/a	n/a	n/a	18.30	n/a
S971001552	M	Silicon - ICP-Acid Digest	ug/g	135.4	<5.00e-02	<2.35e+04	<2.28e+04	<2.32e+04	3.02	n/a	18.30	n/a
S971001552	M	Samarium - ICP-Acid Digest	ug/g	96.20	<1.00e-01	<1.85e+02	<1.98e1	<1.12e+04	3.51	n/a	18.30	n/a
S971001552	M	Tantalum - ICP-Acid Digest	ug/g	88.60	<1.00e-02	<18.30	<1.98e1	<1.12e+04	3.51	n/a	18.30	n/a
S971001552	M	Thallium - ICP-Acid Digest	ug/g	97.20	<2.00e-01	<3.66e+02	<3.97e2	<3.97e2	n/a	n/a	18.30	n/a
S971001552	M	Uranium - ICP-Acid Digest	ug/g	91.40	<5.00e-01	<1.12e+03	<1.02e+03	<1.07e+03	9.35	n/a	18.30	n/a
S971001552	M	Vanadium - ICP-Acid Digest	ug/g	96.80	<5.00e-02	<9.14e0	<9.92e1	n/a	n/a	n/a	18.30	n/a
S971001552	M	Zinc - ICP-Acid Digest	ug/g	98.00	<4.90e-02	<63.90	<87.10	<75.50	30.7	n/a	18.30	n/a
S971001552	M	Zirconium - ICP-Acid Digest	ug/g	98.60	<1.00e-02	<1.65e+02	<160.0	<161.5	1.86	n/a	18.30	n/a
S971001553	M	Fluoride - ICP-Dioxex 4000/4500	ug/g	90.51	<1.20e-02	<1.10e+05	<1.12e+05	<1.11e+05	1.80	n/a	99.30	n/a
S971001553	M	Chloride - ICP-Dioxex 4000/4500	ug/g	107.5	<1.70e-02	<5.05e+02	<5.05e+02	<5.05e+02	573.0	n/a	140.7	n/a
S971001553	M	Nitrate - ICP - Dioxex 4000/4500	ug/g	96.69	<1.08e-01	<1.29e+04	<1.28e+04	<1.28e+04	0.78	n/a	893.8	n/a
S971001553	M	Nitrate by IC-Dioxex 4000/4500	ug/g	104.5	<1.39e-01	<4.76e+04	<4.92e+04	<4.92e+04	6.50	n/a	1,151e+03	n/a
S971001553	M	Phosphate by IC-Dioxex 4000/4500	ug/g	95.60	<1.20e-01	<4.16e+04	<3.54e+04	<3.85e+04	16.1	n/a	993.0	n/a
S971001553	M	Sulfate by IC-Dioxex 4000/4500	ug/g	110.3	<1.38e-01	<6.02e+04	<6.45e+04	<6.23e+04	6.90	n/a	1,144e+03	n/a
S971001553	M	Oxalate-IC-Dioxex 4000/4500	ug/g	105.8	<1.05e-01	<3.47e+04	<3.66e+04	<3.56e+04	5.33	n/a	868.8	n/a

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HNF-SD-WM-DP-263, REV.0

L Lower Half of Segment: L Lower Half of Segment

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count	Err%
S97T001344			TIC by Acid/Coulometry	ug/g	97.01	4.000	3.56e+03	3.78e+03	3.67e+03	5.99	93.70	5.000	n/a	
S97T001349	A		Silver -ICP-Acid Digest	ug/g	45.00	<1.00e-02	29.00	28.10	28.55	3.15	48.00	14.10	n/a	
S97T001349			Aluminum -ICP-Acid Digest	ug/g	94.90	6.90e-02	1.48e+04	1.52e+04	1.50e+04	2.67	83.30	70.30	n/a	
S97T001349			Arsenic -ICP-Acid Digest	ug/g	98.90	<1.00e-01	<1.41e+02	<1.39e2	n/a	n/a	86.90	141.0	n/a	
S97T001349			Boron -ICP-Acid Digest	ug/g	2.08	2.73e-01	5.32e+02	545.0	538.5	2.41	1.36e-01	70.30	n/a	
S97T001349			Barium -ICP-Acid Digest	ug/g	97.10	<5.00e-02	< 70.30	<6.97e1	n/a	n/a	84.30	70.30	n/a	
S97T001349			Beryllium -ICP-Acid Digest	ug/g	102.0	<5.00e-03	< 7.030	<6.97e0	n/a	n/a	87.60	7.030	n/a	
S97T001349			Bismuth -ICP-Acid Digest	ug/g	95.60	<1.00e-01	<1.41e+02	<1.39e2	n/a	n/a	87.90	141.0	n/a	
S97T001349			Calcium -ICP-Acid Digest	ug/g	95.60	1.65e-01	2.03e+02	226.0	214.5	10.7	88.30	141.0	n/a	
S97T001349			Cadmium -ICP-Acid Digest	ug/g	93.70	<5.00e-03	23.70	22.80	23.25	3.87	86.10	7.030	n/a	
S97T001349			Cerium -ICP-Acid Digest	ug/g	97.90	<1.00e-01	<1.41e+02	<1.39e2	n/a	n/a	88.30	141.0	n/a	
S97T001349			Cobalt -ICP-Acid Digest	ug/g	96.50	<2.00e-02	< 28.10	<2.79e1	n/a	n/a	88.90	28.10	n/a	
S97T001349			Chromium -ICP-Acid Digest	ug/g	94.60	<1.00e-02	2.81e+03	2.79e+03	2.80e+03	0.71	76.00	14.10	n/a	
S97T001349			Copper -ICP-Acid Digest	ug/g	86.60	1.10e-02	< 14.10	<1.39e1	n/a	n/a	76.50	14.10	n/a	
S97T001349			Iron -ICP-Acid Digest	ug/g	90.90	<5.00e-02	4.47e+02	466.0	456.5	4.16	82.90	70.30	n/a	
S97T001349			Potassium -ICP-Acid Digest	ug/g	93.30	<5.00e-01	2.42e+03	2.17e+03	2.30e+03	10.9	67.70	703.0	n/a	
S97T001349			Lanthanum -ICP-Acid Digest	ug/g	98.40	<5.00e-02	< 70.30	<6.97e1	n/a	n/a	89.30	70.30	n/a	
S97T001349			Magnesium -ICP-Acid Digest	ug/g	92.70	<1.00e-01	<1.41e+02	<1.39e2	n/a	n/a	86.80	141.0	n/a	
S97T001349			Manganese -ICP-Acid Digest	ug/g	94.10	<1.00e-02	47.70	48.50	48.10	1.66	82.20	14.10	n/a	
S97T001349			Molybdenum -ICP-Acid Digest	ug/g	<0.50	<5.00e-02	< 70.30	<6.97e1	n/a	n/a	1.530	70.30	n/a	
S97T001349			Sodium -ICP-Acid Digest	ug/g	99.30	4.04e-01	2.07e+05	2.08e+05	2.08e+05	0.48	-5.350e1	141.0	n/a	
S97T001349			Neodymium -ICP-Acid Digest	ug/g	96.10	<1.00e-01	<1.41e+02	<1.39e2	n/a	n/a	87.60	141.0	n/a	
S97T001349			Nickel -ICP-Acid Digest	ug/g	96.40	<2.00e-02	1.32e+02	127.0	129.5	3.86	88.60	28.10	n/a	
S97T001349			Phosphorus -ICP-Acid Digest	ug/g	<2.00	<2.00e-01	9.16e+02	585.0	750.5	44.1	-2.380e1	281.0	n/a	
S97T001349			Lead -ICP-Acid Digest	ug/g	93.20	<1.00e-01	1.69e+02	<1.39e2	n/a	n/a	80.30	141.0	n/a	
S97T001349			Sulfur -ICP-Acid Digest	ug/g	<1.00	<1.00e-01	4.95e+04	5.00e+04	4.98e+04	1.01	-4.310e1	141.0	n/a	
S97T001349			Antimony -ICP-Acid Digest	ug/g	<0.60	<6.00e-02	< 84.40	<8.36e1	n/a	n/a	3.98e-01	84.40	n/a	
S97T001349			Selenium -ICP-Acid Digest	ug/g	90.00	<1.00e-01	<1.41e+02	<1.39e2	n/a	n/a	82.40	141.0	n/a	
S97T001349			Silicon -ICP-Acid Digest	ug/g	26.00	2.23e-01	5.09e+03	5.20e+03	5.14e+03	2.14	1.22e-01	70.30	n/a	
S97T001349			Samarium -ICP-Acid Digest	ug/g	95.40	<1.00e-01	<1.41e+02	<1.39e2	n/a	n/a	84.00	141.0	n/a	
S97T001349			Strontium -ICP-Acid Digest	ug/g	95.50	<1.00e-02	84.20	90.60	87.40	7.32	84.70	14.10	n/a	
S97T001349			Titanium -ICP-Acid Digest	ug/g	<0.10	<1.00e-02	< 14.10	<1.39e1	n/a	n/a	4.48e-01	14.10	n/a	
S97T001349			Thallium -ICP-Acid Digest	ug/g	90.30	<2.00e-01	<2.81e+02	<2.79e2	n/a	n/a	80.20	281.0	n/a	
S97T001349			Uranium -ICP-Acid Digest	ug/g	93.00	<5.00e-01	<7.03e+02	<6.97e2	n/a	n/a	96.00	703.0	n/a	
S97T001349			Vanadium -ICP-Acid Digest	ug/g	94.30	<5.00e-02	< 70.30	<6.97e1	n/a	n/a	84.50	70.30	n/a	
S97T001349			Zinc -ICP-Acid Digest	ug/g	87.90	3.40e-02	34.60	33.70	34.15	2.64	81.10	14.10	n/a	
S97T001349			Zirconium -ICP-Acid Digest	ug/g	<0.10	<1.00e-02	1.02e+02	104.0	103.0	1.94	-2.88e-1	14.10	n/a	
S97T001350			Fluoride-IC-Dionex 4000/4500	ug/g	108.0	<1.20e-02	3.95e+04	3.98e+04	3.96e+04	0.76	183.1	98.85	n/a	
S97T001350			Chloride-IC-Dionex 4000/4500	ug/g	110.1	2.30e-02	1.36e+03	1.43e+03	1.40e+03	5.02	105.1	140.0	n/a	
S97T001350			Nitrite-IC - Dionex 4000/4500	ug/g	89.89	<10.90	2.69e+04	2.98e+04	2.84e+04	10.2	102.0	2.19e+03	n/a	
S97T001350			Nitrate by IC-Dionex 4000/4500	ug/g	88.55	<14.00	9.28e+04	1.02e+05	9.74e+04	9.45	102.9	2.82e+03	n/a	
S97T001350			Phosphate-IC-Dionex 4000/4500	ug/g	87.71	<12.10	2.54e+03	<2.40e3	n/a	n/a	98.90	2.44e+03	n/a	
S97T001350			Sulfate by IC-Dionex 4000/4500	ug/g	87.97	<13.90	1.50e+05	1.64e+05	1.57e+05	8.92	108.1	2.80e+03	n/a	
S97T001350			Oxalate-IC-Dionex 4000/4500	ug/g	108.4	<1.05e-01	1.47e+04	1.59e+04	1.53e+04	7.84	109.8	864.7	n/a	
S97T001880			Silver -ICP-Acid Digest	ug/g	118.0	<1.00e-02	17.60	15.60	16.60	12.0	112.0	9.850	n/a	
S97T001880			Aluminum -ICP-Acid Digest	ug/g	98.00	1.84e-01	1.52e+04	1.58e+04	1.55e+04	3.87	179.6	49.20	n/a	
S97T001880			Arsenic -ICP-Acid Digest	ug/g	99.00	<1.00e-01	< 98.50	<9.87e1	n/a	n/a	101.8	98.50	n/a	
S97T001880			Boron -ICP-Acid Digest	ug/g	106.2	3.74e-01	5.69e+02	550.0	559.5	3.40	104.6	49.20	n/a	
S97T001880			Barium -ICP-Acid Digest	ug/g	96.00	<5.00e-02	< 49.20	<4.93e1	n/a	n/a	100.4	49.20	n/a	

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HN-SD-WM-DP-259, REV. 0

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S97T001880		A	Beryllium - ICP-Acid Digest	ug/g	101.4	< 5.00e-03	< 4.920	< 4.93e0	n/a	n/a	100.0	4.920	n/a
S97T001880		A	Bismuth - ICP-Acid Digest	ug/g	95.20	< 1.00e-01	< 98.50	< 9.87e1	n/a	n/a	99.40	98.50	n/a
S97T001880		A	Calcium - ICP-Acid Digest	ug/g	97.60	2.06e-01	3.23e+02	291.0	307.0	10.4	100.0	98.50	n/a
S97T001880		A	Cadmium - ICP-Acid Digest	ug/g	95.40	< 5.00e-03	26.90	27.30	27.10	1.48	99.00	4.920	n/a
S97T001880		A	Cerium - ICP-Acid Digest	ug/g	100.2	1.19e-01	< 98.50	< 9.87e1	n/a	n/a	105.4	98.50	n/a
S97T001880		A	Cobalt - ICP-Acid Digest	ug/g	96.20	< 2.00e-02	72.70	64.80	68.75	11.5	101.0	19.70	n/a
S97T001880		A	Chromium - ICP-Acid Digest	ug/g	93.60	< 1.00e-02	3.08e+03	3.14e+03	3.11e+03	1.93	96.80	9.850	n/a
S97T001880		A	Copper - ICP-Acid Digest	ug/g	91.80	1.20e-02	< 9.850	10.30	n/a	n/a	96.60	9.850	n/a
S97T001880		A	Iron - ICP-Acid Digest	ug/g	96.00	< 5.00e-02	4.15e+02	464.0	439.5	11.1	108.2	49.20	n/a
S97T001880		A	Potassium - ICP-Acid Digest	ug/g	93.40	< 5.00e-01	2.15e+03	2.16e+03	2.16e+03	0.46	94.00	492.0	n/a
S97T001880		A	Lanthanum - ICP-Acid Digest	ug/g	99.40	< 5.00e-02	< 49.20	< 4.93e1	n/a	n/a	105.0	49.20	n/a
S97T001880		A	Magnesium - ICP-Acid Digest	ug/g	92.20	< 1.00e-01	< 98.50	< 9.87e1	n/a	n/a	105.2	98.50	n/a
S97T001880		A	Manganese - ICP-Acid Digest	ug/g	95.60	< 1.00e-02	60.40	63.90	62.15	5.63	99.20	9.850	n/a
S97T001880		A	Molybdenum - ICP-Acid Digest	ug/g	94.60	< 5.00e-02	< 49.20	< 4.93e1	n/a	n/a	99.80	49.20	n/a
S97T001880		A	Sodium - ICP-Acid Digest	ug/g	106.2	1.030	2.11e+05	2.15e+05	2.13e+05	1.88	820.0	98.50	n/a
S97T001880		A	Neodymium - ICP-Acid Digest	ug/g	105.6	< 1.00e-01	< 98.50	< 9.87e1	n/a	n/a	108.0	98.50	n/a
S97T001880		A	Nickel - ICP-Acid Digest	ug/g	97.60	< 2.00e-02	1.48e+02	150.0	149.0	1.34	101.4	19.70	n/a
S97T001880		A	Phosphorus - ICP-Acid Digest	ug/g	96.80	< 2.00e-01	1.95e+03	1.16e+03	1.56e+03	50.8	26.40	197.0	n/a
S97T001880		A	Lead - ICP-Acid Digest	ug/g	92.80	< 1.00e-01	1.28e+02	120.0	124.0	6.45	96.00	98.50	n/a
S97T001880		A	Sulfur - ICP-Acid Digest	ug/g	94.60	1.77e-01	5.66e+04	5.77e+04	5.72e+04	1.92	48.40	98.50	n/a
S97T001880		A	Antimony - ICP-Acid Digest	ug/g	93.80	< 6.00e-02	< 59.10	< 5.92e1	n/a	n/a	105.2	59.00	n/a
S97T001880		A	Silicon - ICP-Acid Digest	ug/g	158.4	1.700	5.19e+03	5.58e+03	5.38e+03	7.24	-1.620e2	49.20	n/a
S97T001880		A	Samarium - ICP-Acid Digest	ug/g	99.20	< 1.00e-01	< 98.50	< 9.87e1	n/a	n/a	103.0	98.50	n/a
S97T001880		A	Strontium - ICP-Acid Digest	ug/g	96.40	< 1.00e-02	1.00e+02	103.0	101.5	2.96	100.8	9.850	n/a
S97T001880		A	Titanium - ICP-Acid Digest	ug/g	85.80	< 1.00e-02	< 9.850	< 9.87e0	n/a	n/a	89.00	9.850	n/a
S97T001880		A	Thallium - ICP-Acid Digest	ug/g	95.60	< 2.00e-01	< 1.97e+02	< 1.97e2	n/a	n/a	104.4	197.0	n/a
S97T001880		A	Uranium - ICP-Acid Digest	ug/g	93.70	< 5.00e-01	< 4.92e+02	< 4.93e2	n/a	n/a	121.0	492.0	n/a
S97T001880		A	Vanadium - ICP-Acid Digest	ug/g	95.00	< 5.00e-02	< 49.20	< 4.93e1	n/a	n/a	98.20	49.20	n/a
S97T001880		A	Zinc - ICP-Acid Digest	ug/g	94.40	4.90e-02	24.60	25.00	24.80	1.61	98.40	9.850	n/a
S97T001880		A	Zirconium - ICP-Acid Digest	ug/g	96.40	< 1.00e-02	1.20e+02	118.0	119.0	1.68	98.80	9.850	n/a

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HNE-SD-MM-DP-223, REV. 0

Appendix A: Opportunistic Analyte Results
BY-109 (P)

CORE NUMBER: 201
SEGMENT #: 3R1

SEGMENT PORTION: Linear Liquid

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count	Err%
S97T001470	D		Silver-ICP-Acid Dil.	ug/ml	101.8	<1.00e-02	2.190	2.230	2.210	1.81	n/a	1.010	n/a	
S97T001470	D		Aluminum-ICP-Acid Dil.	ug/ml	99.80	<5.00e-02	2.61e+02	259.0	260.0	0.77	n/a	5.050	n/a	
S97T001470	D		Arsenic-ICP-Acid Dil.	ug/ml	106.2	<1.00e-01	< 10.10	<1.01e1	n/a	n/a	n/a	10.10	n/a	
S97T001470	D		Boron-ICP-Acid Dil.	ug/ml	102.4	<5.00e-02	17.70	18.00	17.85	1.68	n/a	5.050	n/a	
S97T001470	D		Barium-ICP-Acid Dil.	ug/ml	100.6	<5.00e-02	< 5.050	<5.05e0	n/a	n/a	n/a	5.050	n/a	
S97T001470	D		Beryllium-ICP-Acid Dil.	ug/ml	105.6	<5.00e-03	<5.05e-01	<5.05e-1	n/a	n/a	n/a	5.05e-01	n/a	
S97T001470	D		Bismuth-ICP-Acid Dil.	ug/ml	104.4	<1.00e-01	< 10.10	<1.01e1	n/a	n/a	n/a	10.10	n/a	
S97T001470	D		Calcium-ICP-Acid Dil.	ug/ml	103.6	<1.00e-01	15.80	16.10	15.95	1.88	n/a	10.10	n/a	
S97T001470	D		Cadmium-ICP-Acid Dil.	ug/ml	103.4	<5.00e-03	<5.05e-01	<5.05e-1	n/a	n/a	n/a	5.05e-01	n/a	
S97T001470	D		Cerium-ICP-Acid Dil.	ug/ml	101.4	<1.00e-01	14.30	15.10	14.70	5.44	n/a	10.10	n/a	
S97T001470	D		Cobalt-ICP-Acid Dil.	ug/ml	102.4	<2.00e-02	3.740	4.150	3.945	10.4	n/a	2.020	n/a	
S97T001470	D		Chromium-ICP-Acid Dil.	ug/ml	103.8	<1.00e-02	69.40	69.80	69.60	0.57	n/a	1.010	n/a	
S97T001470	D		Copper-ICP-Acid Dil.	ug/ml	98.20	<1.00e-02	< 1.010	<1.01e0	n/a	n/a	n/a	1.010	n/a	
S97T001470	D		Iron-ICP-Acid Dil.	ug/ml	96.40	<5.00e-02	< 5.050	<5.05e0	n/a	n/a	n/a	5.050	n/a	
S97T001470	D		Potassium-ICP-Acid Dil.	ug/ml	100.4	<5.00e-01	5.91e+02	592.0	591.5	0.17	n/a	50.50	n/a	
S97T001470	D		Lanthanum-ICP-Acid Dil.	ug/ml	102.8	<5.00e-02	< 5.050	<5.05e0	n/a	n/a	n/a	5.050	n/a	
S97T001470	D		Magnesium-ICP-Acid Dil.	ug/ml	104.4	<1.00e-01	< 10.10	<1.01e1	n/a	n/a	n/a	10.10	n/a	
S97T001470	D		Manganese-ICP-Acid Dil.	ug/ml	100.8	<1.00e-02	1.550	1.580	1.565	1.92	n/a	1.010	n/a	
S97T001470	D		Molybdenum-ICP-Acid Dil.	ug/ml	102.6	<5.00e-02	< 5.050	5.140	n/a	n/a	n/a	5.050	n/a	
S97T001470	D		Sodium-ICP-Acid Dil.	ug/ml	99.00	<1.00e-01	3.05e+04	3.00e+04	3.02e+04	1.65	n/a	10.10	n/a	
S97T001470	D		Neodymium-ICP-Acid Dil.	ug/ml	103.0	<1.00e-01	< 10.10	<1.01e1	n/a	n/a	n/a	10.10	n/a	
S97T001470	D		Nickel-ICP-Acid Dil.	ug/ml	102.6	<2.00e-02	2.070	2.650	2.360	24.6	n/a	2.020	n/a	
S97T001470	D		Phosphorus-ICP-Acid Dil.	ug/ml	102.2	<2.00e-01	37.00	36.20	36.60	2.19	n/a	20.20	n/a	
S97T001470	D		Lead-ICP-Acid Dil.	ug/ml	104.4	<1.00e-01	< 10.10	<1.01e1	n/a	n/a	n/a	10.10	n/a	
S97T001470	D		Sulfur-ICP-Acid Dil.	ug/ml	99.40	<1.00e-01	3.46e+03	3.49e+03	3.48e+03	0.86	n/a	10.10	n/a	
S97T001470	D		Antimony-ICP-Acid Dil.	ug/ml	97.20	<6.00e-02	< 6.060	<6.06e0	n/a	n/a	n/a	6.060	n/a	
S97T001470	D		Selenium-ICP-Acid Dil.	ug/ml	98.80	<1.00e-01	41.20	41.50	41.35	0.73	n/a	10.10	n/a	
S97T001470	D		Silicon-ICP-Acid Dil.	ug/ml	99.20	<5.00e-02	5.09e+02	541.0	525.0	6.10	n/a	5.050	n/a	
S97T001470	D		Samarium-ICP-Acid Dil.	ug/ml	99.20	<1.00e-01	< 10.10	<1.01e1	n/a	n/a	n/a	10.10	n/a	
S97T001470	D		Strontium-ICP-Acid Dil.	ug/ml	100.4	<1.00e-02	< 1.010	<1.01e0	n/a	n/a	n/a	1.010	n/a	
S97T001470	D		Titanium-ICP-Acid Dil.	ug/ml	99.40	<1.00e-02	< 1.010	<1.01e0	n/a	n/a	n/a	1.010	n/a	
S97T001470	D		Thallium-ICP-Acid Dil.	ug/ml	98.40	<2.00e-01	< 20.20	<2.02e1	n/a	n/a	n/a	20.20	n/a	
S97T001470	D		Uranium-ICP-Acid Dil.	ug/ml	96.70	<5.00e-01	< 50.50	<5.05e1	n/a	n/a	n/a	50.50	n/a	
S97T001470	D		Vanadium-ICP-Acid Dil.	ug/ml	100.6	<5.00e-02	< 5.050	<5.05e0	n/a	n/a	n/a	5.050	n/a	
S97T001470	D		Zinc-ICP-Acid Dil.	ug/ml	98.80	<1.00e-02	< 1.010	<1.01e0	n/a	n/a	n/a	1.010	n/a	
S97T001470	D		Zirconium-ICP-Acid Dil.	ug/ml	99.60	<1.00e-02	< 1.010	<1.01e0	n/a	n/a	n/a	1.010	n/a	
S97T001470			Fluoride-IC-Dionex 4000/4500	ug/ml	100.0	<1.20e-02	5.59e+03	5.61e+03	5.60e+03	0.36	n/a	49.69	n/a	
S97T001470			Chloride-IC-Dionex 4000/4500	ug/ml	101.3	<1.70e-02	8.82e+02	962.0	921.8	8.68	n/a	70.40	n/a	
S97T001470			Nitrite-IC - Dionex 4000/4500	ug/ml	98.90	<1.08e-01	1.60e+04	1.58e+04	1.59e+04	1.26	n/a	447.2	n/a	
S97T001470			Nitrate by IC-Dionex 4000/4500	ug/ml	97.98	<1.39e-01	4.11e+04	4.18e+04	4.14e+04	1.69	n/a	575.6	n/a	
S97T001470			Phosphate-IC-Dionex 4000/4500	ug/ml	99.82	<1.20e-01	<4.97e+02	<4.97e2	n/a	n/a	n/a	496.9	n/a	
S97T001470			Sulfate by IC-Dionex 4000/4500	ug/ml	100.3	<1.38e-01	2.18e+04	2.18e+04	2.18e+04	0.00	n/a	571.5	n/a	
S97T001470			Oxalate-IC-Dionex 4000/450	ug/ml	100.2	<1.05e-01	2.05e+03	2.10e+03	2.07e+03	2.41	n/a	434.8	n/a	

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HNF-SD-WM-DP-253, REV. D

U Upper Half of Segment: U Upper Half of Segment

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S97T001463			TIC by Acid/Coulometry	ug/g	95.35	5.000	3.95e+03	3.83e+03	3.89e+03	3.08	94.70	5.000	n/a
S97T001575	A		Silver -ICP-Acid Digest	ug/g	82.90	<1.00e-02	< 19.20	<1.97e1	n/a	n/a	n/a	19.20	n/a
S97T001575	A		Aluminum -ICP-Acid Digest	ug/g	99.20	<5.00e-02	1.82e+04	1.83e+04	1.82e+04	0.55	n/a	95.90	n/a
S97T001575	A		Arsenic -ICP-Acid Digest	ug/g	100.8	<1.00e-01	<1.92e+02	<1.97e2	n/a	n/a	n/a	192.0	n/a
S97T001575	A		Boron -ICP-Acid Digest	ug/g	107.0	3.95e-01	4.15e+02	392.0	403.5	5.70	n/a	95.90	n/a
S97T001575	A		Barium -ICP-Acid Digest	ug/g	96.00	<5.00e-02	< 95.90	<9.85e1	n/a	n/a	n/a	95.90	n/a
S97T001575	A		Beryllium -ICP-Acid Digest	ug/g	100.6	<5.00e-03	< 9.590	<9.85e0	n/a	n/a	n/a	9.590	n/a
S97T001575	A		Bismuth -ICP-Acid Digest	ug/g	95.60	<1.00e-01	<1.92e+02	<1.97e2	n/a	n/a	n/a	192.0	n/a
S97T001575	A		Calcium -ICP-Acid Digest	ug/g	96.00	2.01e-01	<1.92e+02	<1.97e2	n/a	n/a	n/a	192.0	n/a
S97T001575	A		Cadmium -ICP-Acid Digest	ug/g	96.60	<5.00e-03	17.10	12.80	14.95	28.8	n/a	9.590	n/a
S97T001575	A		Cerium -ICP-Acid Digest	ug/g	98.40	<1.00e-01	<1.92e+02	<1.97e2	n/a	n/a	n/a	192.0	n/a
S97T001575	A		Cobalt -ICP-Acid Digest	ug/g	100.0	<2.00e-02	68.40	70.40	69.40	2.88	n/a	38.40	n/a
S97T001575	A		Chromium -ICP-Acid Digest	ug/g	95.00	<1.00e-02	1.95e+03	2.02e+03	1.98e+03	3.53	n/a	19.20	n/a
S97T001575	A		Copper -ICP-Acid Digest	ug/g	94.00	<1.00e-02	< 19.20	<1.97e1	n/a	n/a	n/a	19.20	n/a
S97T001575	A		Iron -ICP-Acid Digest	ug/g	98.20	<5.00e-02	3.13e+02	333.0	323.0	6.19	n/a	95.90	n/a
S97T001575	A		Potassium -ICP-Acid Digest	ug/g	97.20	<5.00e-01	2.54e+03	2.36e+03	2.45e+03	7.35	n/a	959.0	n/a
S97T001575	A		Lanthanum -ICP-Acid Digest	ug/g	100.0	<5.00e-02	< 95.90	<9.85e1	n/a	n/a	n/a	95.90	n/a
S97T001575	A		Magnesium -ICP-Acid Digest	ug/g	93.80	<1.00e-01	<1.92e+02	<1.97e2	n/a	n/a	n/a	192.0	n/a
S97T001575	A		Manganese -ICP-Acid Digest	ug/g	97.60	<1.00e-02	26.80	26.80	26.80	0.00	n/a	19.20	n/a
S97T001575	A		Molybdenum -ICP-Acid Digest	ug/g	98.40	<5.00e-02	< 95.90	<9.85e1	n/a	n/a	n/a	95.90	n/a
S97T001575	A		Sodium -ICP-Acid Digest	ug/g	103.2	5.92e-01	2.11e+05	2.17e+05	2.14e+05	2.80	n/a	192.0	n/a
S97T001575	A		Neodymium -ICP-Acid Digest	ug/g	102.6	<1.00e-01	<1.92e+02	<1.97e2	n/a	n/a	n/a	192.0	n/a
S97T001575	A		Nickel -ICP-Acid Digest	ug/g	99.20	<2.00e-02	67.90	79.10	73.50	15.2	n/a	38.40	n/a
S97T001575	A		Phosphorus -ICP-Acid Digest	ug/g	97.80	<2.00e-01	1.05e+03	1.01e+03	1.03e+03	3.88	n/a	384.0	n/a
S97T001575	A		Lead -ICP-Acid Digest	ug/g	93.60	<1.00e-01	<1.92e+02	<1.97e2	n/a	n/a	n/a	192.0	n/a
S97T001575	A		Sulfur -ICP-Acid Digest	ug/g	98.20	1.33e-01	5.29e+04	5.39e+04	5.34e+04	1.87	n/a	192.0	n/a
S97T001575	A		Antimony -ICP-Acid Digest	ug/g	95.40	<6.00e-02	1.40e+02	<1.82e2	n/a	n/a	n/a	115.0	n/a
S97T001575	A		Silicon -ICP-Acid Digest	ug/g	135.4	<5.00e-02	3.59e+03	3.61e+03	3.60e+03	0.56	n/a	95.90	n/a
S97T001575	A		Samarium -ICP-Acid Digest	ug/g	96.20	<1.00e-01	<1.92e+02	<1.97e2	n/a	n/a	n/a	192.0	n/a
S97T001575	A		Strontium -ICP-Acid Digest	ug/g	96.20	<1.00e-02	53.20	54.60	53.90	2.60	n/a	19.20	n/a
S97T001575	A		Titanium -ICP-Acid Digest	ug/g	88.60	<1.00e-02	< 19.20	<1.97e1	n/a	n/a	n/a	19.20	n/a
S97T001575	A		Thallium -ICP-Acid Digest	ug/g	97.20	<2.00e-01	<3.84e+02	<3.94e2	n/a	n/a	n/a	384.0	n/a
S97T001575	A		Uranium -ICP-Acid Digest	ug/g	91.40	<5.00e-01	<9.59e+02	<9.85e2	n/a	n/a	n/a	959.0	n/a
S97T001575	A		Vanadium -ICP-Acid Digest	ug/g	96.80	<5.00e-02	< 95.90	<9.85e1	n/a	n/a	n/a	95.90	n/a
S97T001575	A		Zinc -ICP-Acid Digest	ug/g	98.00	4.90e-02	35.20	64.60	49.90	58.9	n/a	19.20	n/a
S97T001575	A		Zirconium -ICP-Acid Digest	ug/g	98.60	<1.00e-02	< 19.20	23.40	n/a	n/a	n/a	19.20	n/a
S97T001576	W		Fluoride-IC-Dionex 4000/4500	ug/g	98.64	<1.20e-02	3.46e+04	3.82e+04	3.64e+04	9.89	n/a	97.29	n/a
S97T001576	W		Chloride-IC-Dionex 4000/4500	ug/g	98.35	<1.70e-02	1.58e+03	1.48e+03	1.53e+03	6.54	n/a	137.8	n/a
S97T001576	W		Nitrite-IC - Dionex 4000/4500	ug/g	99.63	<1.08e-01	2.76e+04	3.01e+04	2.88e+04	8.67	n/a	875.8	n/a
S97T001576	W		Nitrate by IC-Dionex 4000/4500	ug/g	94.78	<1.39e-01	7.80e+04	8.52e+04	8.16e+04	8.82	n/a	1.13e+03	n/a
S97T001576	W		Phosphate-IC-Dionex 4000/4500	ug/g	101.7	<1.20e-01	1.38e+03	1.92e+03	1.65e+03	32.7	n/a	972.9	n/a
S97T001576	W		Sulfate by IC-Dionex 4000/4500	ug/g	96.20	<1.38e-01	1.45e+05	1.58e+05	1.52e+05	8.58	n/a	1.12e+03	n/a
S97T001576	W		Oxalate-IC-Dionex 4000/4500	ug/g	97.37	<1.05e-01	6.08e+03	6.76e+03	6.42e+03	10.6	n/a	851.6	n/a

HNF-SD-WM-DP-253 REV.0

L Lower Half of Segment: L Lower Half of Segment

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S97T001574	W		Fluoride-IC-Dionex 4000/4500	ug/g	108.0	<1.20e-02	2.51e+04	2.45e+04	2.48e+04	2.42	94.58	96.68	n/a
S97T001574	W		Chloride-IC-Dionex 4000/4500	ug/g	110.1	2.30e-02	1.86e+03	1.82e+03	1.84e+03	2.17	97.22	137.0	n/a
S97T001574	W		Nitrite-IC - Dionex 4000/4500	ug/g	89.89	<10.90	3.63e+04	3.70e+04	3.66e+04	1.91	96.88	2.14e+03	n/a
S97T001574	W		Nitrate by IC-Dionex 4000/4500	ug/g	88.55	<14.00	9.40e+04	9.16e+04	9.28e+04	2.59	95.12	2.76e+03	n/a
S97T001574	W		Phosphate-IC-Dionex 4000/4500	ug/g	87.71	<12.10	2.74e+03	<2.33e3	n/a	n/a	95.60	2.38e+03	n/a
S97T001574	W		Sulfate by IC-Dionex 4000/4500	ug/g	87.97	<13.90	1.01e+05	1.02e+05	1.02e+05	0.99	98.42	2.74e+03	n/a
S97T001574	W		Oxalate-IC-Dionex 4000/4500	ug/g	108.4	<1.05e-01	1.41e+04	1.42e+04	1.41e+04	0.71	98.50	845.8	n/a
S97T001881	A		Silver -ICP-Acid Digest	ug/g	118.0	<1.00e-02	< 9.980	<9.83e0	n/a	n/a	124.0	10.00	n/a
S97T001881	A		Aluminum -ICP-Acid Digest	ug/g	98.00	1.84e-01	2.16e+04	2.15e+04	2.16e+04	0.46	89.80	49.90	n/a
S97T001881	A		Arsenic -ICP-Acid Digest	ug/g	99.00	<1.00e-01	< 99.80	<9.83e1	n/a	n/a	101.8	100.0	n/a
S97T001881	A		Boron -ICP-Acid Digest	ug/g	106.2	3.74e-01	1.61e+02	79.70	120.3	67.6	94.80	49.90	n/a
S97T001881	A		Barium -ICP-Acid Digest	ug/g	96.00	<5.00e-02	< 49.90	<4.92e1	n/a	n/a	100.4	49.90	n/a
S97T001881	A		Beryllium -ICP-Acid Digest	ug/g	101.4	<5.00e-03	< 4.990	<4.92e0	n/a	n/a	100.0	4.990	n/a
S97T001881	A		Bismuth -ICP-Acid Digest	ug/g	95.20	<1.00e-01	< 99.80	<9.83e1	n/a	n/a	101.2	100.0	n/a
S97T001881	A		Calcium -ICP-Acid Digest	ug/g	97.60	2.06e-01	2.01e+02	156.0	178.5	25.2	93.40	100.0	n/a
S97T001881	A		Cadmium -ICP-Acid Digest	ug/g	95.40	<5.00e-03	15.30	14.30	14.80	6.76	98.00	4.990	n/a
S97T001881	A		Cerium -ICP-Acid Digest	ug/g	100.2	1.19e-01	< 99.80	<9.83e1	n/a	n/a	106.0	100.0	n/a
S97T001881	A		Cobalt -ICP-Acid Digest	ug/g	96.20	<2.00e-02	63.70	57.00	60.35	11.1	99.80	20.00	n/a
S97T001881	A		Chromium -ICP-Acid Digest	ug/g	93.60	<1.00e-02	2.72e+03	2.42e+03	2.57e+03	11.7	70.20	10.00	n/a
S97T001881	A		Copper -ICP-Acid Digest	ug/g	91.80	1.20e-02	11.50	<9.83e0	n/a	n/a	95.60	10.00	n/a
S97T001881	A		Iron -ICP-Acid Digest	ug/g	96.00	<5.00e-02	1.28e+03	919.0	1.10e+03	32.8	306.0	49.90	n/a
S97T001881	A		Potassium -ICP-Acid Digest	ug/g	93.40	<5.00e-01	2.76e+03	2.85e+03	2.80e+03	3.21	102.4	499.0	n/a
S97T001881	A		Lanthanum -ICP-Acid Digest	ug/g	99.40	<5.00e-02	< 49.90	<4.92e1	n/a	n/a	102.4	49.90	n/a
S97T001881	A		Magnesium -ICP-Acid Digest	ug/g	92.20	<1.00e-01	< 99.80	<9.83e1	n/a	n/a	97.40	100.0	n/a
S97T001881	A		Manganese -ICP-Acid Digest	ug/g	95.60	<1.00e-02	40.10	33.80	36.95	17.1	100.4	10.00	n/a
S97T001881	A		Molybdenum -ICP-Acid Digest	ug/g	94.60	<5.00e-02	< 49.90	<4.92e1	n/a	n/a	100.6	49.90	n/a
S97T001881	A		Sodium -ICP-Acid Digest	ug/g	106.2	1.030	1.88e+05	1.87e+05	1.88e+05	0.53	630.0	100.0	n/a
S97T001881	A		Neodymium -ICP-Acid Digest	ug/g	105.6	<1.00e-01	< 99.80	<9.83e1	n/a	n/a	106.6	100.0	n/a
S97T001881	A		Nickel -ICP-Acid Digest	ug/g	97.60	<2.00e-02	1.78e+02	153.0	165.5	15.1	99.20	20.00	n/a
S97T001881	A		Phosphorus -ICP-Acid Digest	ug/g	96.80	<2.00e-01	1.11e+03	952.0	1.03e+03	15.3	90.20	200.0	n/a
S97T001881	A		Lead -ICP-Acid Digest	ug/g	92.80	<1.00e-01	< 99.80	<9.83e1	n/a	n/a	106.0	100.0	n/a
S97T001881	A		Sulfur -ICP-Acid Digest	ug/g	94.60	1.77e-01	3.60e+04	3.07e+04	3.34e+04	15.9	-2.06e2	100.0	n/a
S97T001881	A		Antimony -ICP-Acid Digest	ug/g	93.80	<6.00e-02	< 59.90	<5.90e1	n/a	n/a	105.6	60.00	n/a
S97T001881	A		Silicon -ICP-Acid Digest	ug/g	158.4	1.700	2.31e+03	1.48e+03	1.90e+03	43.8	50.60	49.90	n/a
S97T001881	A		Samarium -ICP-Acid Digest	ug/g	99.20	<1.00e-01	< 99.80	<9.83e1	n/a	n/a	103.4	100.0	n/a
S97T001881	A		Strontium -ICP-Acid Digest	ug/g	96.40	<1.00e-02	1.20e+02	107.0	113.5	11.5	100.0	10.00	n/a
S97T001881	A		Titanium -ICP-Acid Digest	ug/g	85.80	<1.00e-02	< 9.980	<9.83e0	n/a	n/a	89.00	10.00	n/a
S97T001881	A		Thallium -ICP-Acid Digest	ug/g	95.60	<2.00e-01	<2.00e+02	<1.97e2	n/a	n/a	106.2	200.0	n/a
S97T001881	A		Uranium -ICP-Acid Digest	ug/g	93.70	<5.00e-01	6.29e+02	<4.92e2	n/a	n/a	89.40	499.0	n/a
S97T001881	A		Vanadium -ICP-Acid Digest	ug/g	95.00	<5.00e-02	< 49.90	<4.92e1	n/a	n/a	98.00	49.90	n/a
S97T001881	A		Zinc -ICP-Acid Digest	ug/g	94.40	4.90e-02	27.10	23.40	25.25	14.7	97.00	10.00	n/a
S97T001881	A		Zirconium -ICP-Acid Digest	ug/g	96.40	<1.00e-02	21.80	16.30	19.05	28.9	98.80	10.00	n/a

HNF-SD-WM-DP-259 REV. 0

Drainable Liquid: Drainable Liquid

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count	Err%
S97T001469	D		Silver-ICP-Acid Dil.	ug/ml	101.8	<1.00e-02	15.20	15.20	15.20	0.00	92.80	4.010	n/a	
S97T001469	D		Aluminium-ICP-Acid Dil.	ug/ml	99.80	<5.00e-02	3.53e+04	3.38e+04	3.46e+04	4.34	-2.040e2	20.10	n/a	
S97T001469	D		Arsenic-ICP-Acid Dil.	ug/ml	106.2	<1.00e-01	< 40.10	<4.01e1	n/a	n/a	47.30	40.10	n/a	
S97T001469	D		Boron-ICP-Acid Dil.	ug/ml	102.4	<5.00e-02	22.90	22.90	22.90	0.00	98.50	20.10	n/a	
S97T001469	D		Barium-ICP-Acid Dil.	ug/ml	100.6	<5.00e-02	< 20.10	<2.01e1	n/a	n/a	96.20	20.10	n/a	
S97T001469	D		Beryllium-ICP-Acid Dil.	ug/ml	105.6	<5.00e-03	< 2.000	<2.00e0	n/a	n/a	103.0	2.000	n/a	
S97T001469	D		Bismuth-ICP-Acid Dil.	ug/ml	104.4	<1.00e-01	< 40.10	<4.01e1	n/a	n/a	99.30	40.10	n/a	
S97T001469	D		Calcium-ICP-Acid Dil.	ug/ml	103.6	<1.00e-01	< 40.10	<4.01e1	n/a	n/a	107.0	40.10	n/a	
S97T001469	D		Cadmium-ICP-Acid Dil.	ug/ml	103.4	<5.00e-03	< 2.000	<2.00e0	n/a	n/a	99.90	2.000	n/a	
S97T001469	D		Cerium-ICP-Acid Dil.	ug/ml	101.4	<1.00e-01	< 40.10	<4.01e1	n/a	n/a	98.70	40.10	n/a	
S97T001469	D		Cobalt-ICP-Acid Dil.	ug/ml	102.4	<2.00e-02	< 8.020	<8.02e0	n/a	n/a	98.50	8.020	n/a	
S97T001469	D		Chromium-ICP-Acid Dil.	ug/ml	103.8	<1.00e-02	6.97e+02	667.0	682.0	4.40	93.30	4.010	n/a	
S97T001469	D		Copper-ICP-Acid Dil.	ug/ml	98.20	<1.00e-02	< 4.010	<4.01e0	n/a	n/a	94.70	4.010	n/a	
S97T001469	D		Iron-ICP-Acid Dil.	ug/ml	96.40	<5.00e-02	< 20.10	<2.01e1	n/a	n/a	93.70	20.10	n/a	
S97T001469	D		Potassium-ICP-Acid Dil.	ug/ml	100.4	<5.00e-01	5.90e+03	5.70e+03	5.80e+03	3.45	76.60	200.0	n/a	
S97T001469	D		Lanthanum-ICP-Acid Dil.	ug/ml	102.8	<5.00e-02	< 20.10	<2.01e1	n/a	n/a	101.0	20.10	n/a	
S97T001469	D		Magnesium-ICP-Acid Dil.	ug/ml	104.4	<1.00e-01	< 40.10	<4.01e1	n/a	n/a	98.60	40.10	n/a	
S97T001469	D		Manganese-ICP-Acid Dil.	ug/ml	100.8	<1.00e-02	< 4.010	<4.01e0	n/a	n/a	95.50	4.010	n/a	
S97T001469	D		Molybdenum-ICP-Acid Dil.	ug/ml	102.6	<5.00e-02	55.40	53.20	54.30	4.05	99.90	20.10	n/a	
S97T001469	D		Sodium-ICP-Acid Dil.	ug/ml	99.00	<1.00e-01	2.13e+05	2.05e+05	2.09e+05	3.83	-1.130e3	40.10	n/a	
S97T001469	D		Neodymium-ICP-Acid Dil.	ug/ml	103.0	<1.00e-01	< 40.10	<4.01e1	n/a	n/a	100.0	40.10	n/a	
S97T001469	D		Nickel-ICP-Acid Dil.	ug/ml	102.6	<2.00e-02	< 8.020	<8.02e0	n/a	n/a	101.0	8.020	n/a	
S97T001469	D		Phosphorus-ICP-Acid Dil.	ug/ml	102.2	<2.00e-01	3.61e+02	343.0	352.0	5.11	95.70	80.20	n/a	
S97T001469	D		Lead-ICP-Acid Dil.	ug/ml	104.4	<1.00e-01	53.00	53.80	53.40	1.50	98.30	40.10	n/a	
S97T001469	D		Sulfur-ICP-Acid Dil.	ug/ml	99.40	<1.00e-01	4.25e+02	374.0	399.5	12.8	86.40	40.10	n/a	
S97T001469	D		Antimony-ICP-Acid Dil.	ug/ml	97.20	<6.00e-02	< 24.10	<2.41e1	n/a	n/a	96.30	24.10	n/a	
S97T001469	D		Selenium-ICP-Acid Dil.	ug/ml	98.80	<1.00e-01	< 40.10	<4.01e1	n/a	n/a	116.0	40.10	n/a	
S97T001469	D		Silicon-ICP-Acid Dil.	ug/ml	99.20	<5.00e-02	1.65e+02	152.0	158.5	8.20	106.0	20.10	n/a	
S97T001469	D		Samarium-ICP-Acid Dil.	ug/ml	99.20	<1.00e-01	< 40.10	<4.01e1	n/a	n/a	97.00	40.10	n/a	
S97T001469	D		Strontium-ICP-Acid Dil.	ug/ml	100.4	<1.00e-02	< 4.010	<4.01e0	n/a	n/a	98.20	4.010	n/a	
S97T001469	D		Titanium-ICP-Acid Dil.	ug/ml	99.40	<1.00e-02	< 4.010	<4.01e0	n/a	n/a	96.80	4.010	n/a	
S97T001469	D		Thallium-ICP-Acid Dil.	ug/ml	98.40	<2.00e-01	< 80.20	<8.02e1	n/a	n/a	90.60	80.20	n/a	
S97T001469	D		Uranium-ICP-Acid Dil.	ug/ml	96.70	<5.00e-01	<2.00e+02	<2.00e2	n/a	n/a	97.00	200.0	n/a	
S97T001469	D		Vanadium-ICP-Acid Dil.	ug/ml	100.6	<5.00e-02	< 20.10	<2.01e1	n/a	n/a	97.60	20.10	n/a	
S97T001469	D		Zinc-ICP-Acid Dil.	ug/ml	98.80	<1.00e-02	< 4.010	<4.01e0	n/a	n/a	97.00	4.010	n/a	
S97T001469	D		Zirconium-ICP-Acid Dil.	ug/ml	99.60	<1.00e-02	< 4.010	<4.01e0	n/a	n/a	98.00	4.010	n/a	
S97T001469	D		Fluoride-IC-Dionex 4000/4500	ug/ml	97.29	1.80e-02	1.15e+03	1.18e+03	1.16e+03	2.58	97.46	61.81	n/a	
S97T001469	D		Chloride-IC-Dionex 4000/4500	ug/ml	96.96	<1.70e-02	3.92e+03	3.91e+03	3.92e+03	0.26	-2.340e1	70.40	n/a	
S97T001469	D		Nitrite-IC - Dionex 4000/4500	ug/ml	97.98	<1.08e-01	6.75e+04	6.85e+04	6.80e+04	1.47	-2.080e2	447.2	n/a	
S97T001469	D		Nitrate by IC-Dionex 4000/4500	ug/ml	94.78	<1.39e-01	1.82e+05	1.84e+05	1.83e+05	1.09	-6.630e2	575.6	n/a	
S97T001469	D		Phosphate-IC-Dionex 4000/4500	ug/ml	99.82	<1.20e-01	<6.18e+02	<6.18e2	n/a	n/a	105.7	618.1	n/a	
S97T001469	D		Sulfate by IC-Dionex 4000/4500	ug/ml	95.57	<1.38e-01	<7.11e+02	<7.11e2	n/a	n/a	96.36	710.8	n/a	
S97T001469	D		Oxalate-IC-Dionex 4000/450	ug/ml	95.87	<1.05e-01	<5.41e+02	<5.41e2	n/a	n/a	96.44	540.9	n/a	

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HNF-SD-MM-DP-282 REV. 0

Appendix A: Opportunistic Analyte Results
BY-109 (P)

CORE NUMBER: 201
SEGMENT #: 4

SEGMENT PORTION: W Whole Segment

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count	Err%
S97T001736			TIC by Acid/Coulometry	ug/g	95.35	5.000	1.65e+03	1.50e+03	1.58e+03	9.52	n/a	5.000	n/a	
S97T001740	W		Fluoride-IC-Dionex 4000/4500	ug/g	95.08	<1.20e-02	2.99e+04	2.95e+04	2.97e+04	1.35	136.8	121.3	n/a	
S97T001740	W		Chloride-IC-Dionex 4000/4500	ug/g	90.38	<1.70e-02	1.32e+03	1.35e+03	1.34e+03	2.25	99.87	171.8	n/a	
S97T001740	W		Nitrite-IC - Dionex 4000/4500	ug/g	96.14	1.44e-01	2.82e+04	2.82e+04	2.82e+04	0.00	108.5	1.09e+03	n/a	
S97T001740	W		Nitrate by IC-Dionex 4000/4500	ug/g	94.28	<1.39e-01	6.36e+04	6.76e+04	6.56e+04	6.10	104.2	1.40e+03	n/a	
S97T001740	W		Phosphate-IC-Phonex 4000/4500	ug/g	102.4	<1.20e-01	9.62e+04	1.05e+05	1.01e+05	8.75	115.4	1.21e+03	n/a	
S97T001740	W		Sulfate by IC-Dionex 4000/4500	ug/g	93.67	<1.38e-01	4.18e+04	3.83e+04	4.01e+04	8.74	102.5	1.40e+03	n/a	
S97T001740	W		Oxalate-IC-Dionex 4000/4500	ug/g	97.00	<1.05e-01	5.66e+03	5.16e+03	5.41e+03	9.24	97.75	1.06e+03	n/a	
S97T001822	A		Silver -ICP-Acid Digest	ug/g	119.0	<1.00e-02	< 20.20	<2.04e1	n/a	n/a	118.0	20.20	n/a	
S97T001822	A		Aluminium -ICP-Acid Digest	ug/g	99.80	1.44e-01	1.68e+04	1.52e+04	1.60e+04	10.0	314.0	101.0	n/a	
S97T001822	A		Arsenic -ICP-Acid Digest	ug/g	101.2	<1.00e-01	<2.02e02	<2.04e2	n/a	n/a	102.0	202.0	n/a	
S97T001822	A		Boron -ICP-Acid Digest	ug/g	108.4	3.56e-01	2.89e+02	371.0	330.0	24.8	83.80	101.0	n/a	
S97T001822	A		Barium -ICP-Acid Digest	ug/g	95.80	<5.00e-02	<1.01e02	<1.02e2	n/a	n/a	93.80	101.0	n/a	
S97T001822	A		Beryllium -ICP-Acid Digest	ug/g	100.8	<5.00e-03	< 10.10	<1.02e1	n/a	n/a	95.20	10.10	n/a	
S97T001822	A		Bismuth -ICP-Acid Digest	ug/g	96.40	<1.00e-01	<2.02e02	<2.04e2	n/a	n/a	97.00	202.0	n/a	
S97T001822	A		Calcium -ICP-Acid Digest	ug/g	98.40	2.00e-01	2.04e+02	<2.04e2	n/a	n/a	82.40	202.0	n/a	
S97T001822	A		Cadmium -ICP-Acid Digest	ug/g	97.60	<5.00e-03	< 10.10	10.80	n/a	n/a	97.60	10.10	n/a	
S97T001822	A		Cerium -ICP-Acid Digest	ug/g	99.80	<1.00e-01	<2.02e02	<2.04e2	n/a	n/a	100.2	202.0	n/a	
S97T001822	A		Cobalt -ICP-Acid Digest	ug/g	102.8	<2.00e-02	56.40	64.90	60.65	14.0	103.2	40.40	n/a	
S97T001822	A		Chromium -ICP-Acid Digest	ug/g	97.60	<1.00e-02	1.42e+03	1.53e+03	1.48e+03	7.46	90.20	20.20	n/a	
S97T001822	A		Copper -ICP-Acid Digest	ug/g	92.60	<1.00e-02	< 20.20	<2.04e1	n/a	n/a	91.80	20.20	n/a	
S97T001822	A		Iron -ICP-Acid Digest	ug/g	98.40	<5.00e-02	1.81e+02	230.0	205.5	23.8	93.80	101.0	n/a	
S97T001822	A		Potassium -ICP-Acid Digest	ug/g	91.60	<5.00e-01	2.09e+03	2.07e+03	2.08e+03	0.96	133.8	1.01e+03	n/a	
S97T001822	A		Lanthanum -ICP-Acid Digest	ug/g	98.80	<5.00e-02	<1.01e02	<1.02e2	n/a	n/a	95.20	101.0	n/a	
S97T001822	A		Magnesium -ICP-Acid Digest	ug/g	98.40	<1.00e-01	<2.02e02	<2.04e2	n/a	n/a	100.4	202.0	n/a	
S97T001822	A		Manganese -ICP-Acid Digest	ug/g	98.40	<1.00e-02	1.23e+02	140.0	131.5	12.9	95.80	20.20	n/a	
S97T001822	A		Molybdenum -ICP-Acid Digest	ug/g	99.60	<5.00e-02	<1.01e02	<1.02e2	n/a	n/a	100.8	101.0	n/a	
S97T001822	A		Sodium -ICP-Acid Digest	ug/g	104.2	6.89e-01	1.85e+05	1.90e+05	1.88e+05	2.67	-6.380e2	202.0	n/a	
S97T001822	A		Neodymium -ICP-Acid Digest	ug/g	97.80	<1.00e-01	<2.02e02	<2.04e2	n/a	n/a	88.80	202.0	n/a	
S97T001822	A		Nickel -ICP-Acid Digest	ug/g	100.6	<2.00e-02	78.00	82.60	80.30	5.73	98.40	40.40	n/a	
S97T001822	A		Phosphorus -ICP-Acid Digest	ug/g	99.20	<2.00e-01	2.89e+04	3.48e+04	3.18e+04	18.5	-6.080e0	404.0	n/a	
S97T001822	A		Lead -ICP-Acid Digest	ug/g	93.40	<1.00e-01	<2.02e02	<2.04e2	n/a	n/a	103.4	202.0	n/a	
S97T001822	A		Sulfur -ICP-Acid Digest	ug/g	99.40	1.20e-01	1.56e+04	1.49e+04	1.52e+04	4.59	-2.780e2	202.0	n/a	
S97T001822	A		Antimony -ICP-Acid Digest	ug/g	94.00	<6.00e-02	<1.21e02	<1.22e2	n/a	n/a	98.40	121.0	n/a	
S97T001822	A		Silicon -ICP-Acid Digest	ug/g	157.0	1.180	2.57e+03	2.84e+03	2.70e+03	9.98	9.720	101.0	n/a	
S97T001822	A		Samarium -ICP-Acid Digest	ug/g	95.20	<1.00e-01	<2.02e02	<2.04e2	n/a	n/a	88.80	202.0	n/a	
S97T001822	A		Strontium -ICP-Acid Digest	ug/g	96.80	<1.00e-02	22.90	24.50	23.70	6.75	95.00	20.20	n/a	
S97T001822	A		Titanium-ICP-Acid Digest	ug/g	88.40	<1.00e-02	< 20.20	<2.04e1	n/a	n/a	86.40	20.20	n/a	
S97T001822	A		Thallium -ICP-Acid Digest	ug/g	95.80	<2.00e-01	<4.04e02	<4.07e2	n/a	n/a	106.2	404.0	n/a	
S97T001822	A		Uranium -ICP-Acid Digest	ug/g	91.20	<5.00e-01	1.39e+03	1.49e+03	1.44e+03	6.94	86.70	1.01e+03	n/a	
S97T001822	A		Vanadium -ICP-Acid Digest	ug/g	97.20	<5.00e-02	<1.01e02	<1.02e2	n/a	n/a	99.60	101.0	n/a	
S97T001822	A		Zinc -ICP-Acid Digest	ug/g	100.0	5.50e-02	1.39e+02	74.40	106.7	60.5	87.80	20.20	n/a	
S97T001822	A		Zirconium -ICP-Acid Digest	ug/g	98.00	<1.00e-02	36.40	35.30	35.85	3.07	43.80	20.20	n/a	

HNF-SD-MM-DC-253, REV. 0

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Appendix A: Opportunistic Analyte Results
BY-109 (P)

CORE NUMBER: 201
SEGMENT #: 5

SEGMENT PORTION: U Upper Half of Segment

Sample#	R A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S97T001580	A	Silver -ICP-Acid Digest	ug/g	82.90	<1.00e-02	< 19.30	<1.98e1	n/a	n/a	n/a	19.30	n/a
S97T001580	A	Aluminum -ICP-Acid Digest	ug/g	99.20	<5.00e-02	1.65e+04	1.63e+04	1.64e+04	1.22	n/a	96.50	n/a
S97T001580	A	Arsenic -ICP-Acid Digest	ug/g	100.8	<1.00e-01	<1.93e+02	<1.98e2	n/a	n/a	n/a	193.0	n/a
S97T001580	A	Boron -ICP-Acid Digest	ug/g	107.0	3.95e-01	1.20e+02	<9.90e1	n/a	n/a	n/a	96.50	n/a
S97T001580	A	Barium -ICP-Acid Digest	ug/g	96.00	<5.00e-02	< 96.50	<9.90e1	n/a	n/a	n/a	96.50	n/a
S97T001580	A	Beryllium -ICP-Acid Digest	ug/g	100.6	<5.00e-03	< 9.650	<9.90e0	n/a	n/a	n/a	9.650	n/a
S97T001580	A	Bismuth -ICP-Acid Digest	ug/g	95.60	<1.00e-01	<1.93e+02	<1.98e2	n/a	n/a	n/a	193.0	n/a
S97T001580	A	Calcium -ICP-Acid Digest	ug/g	96.00	2.01e-01	<1.93e+02	<1.98e2	n/a	n/a	n/a	193.0	n/a
S97T001580	A	Cadmium -ICP-Acid Digest	ug/g	96.60	<5.00e-03	< 9.650	<9.90e0	n/a	n/a	n/a	9.650	n/a
S97T001580	A	Cerium -ICP-Acid Digest	ug/g	98.40	<1.00e-01	<1.93e+02	<1.98e2	n/a	n/a	n/a	193.0	n/a
S97T001580	A	Cobalt -ICP-Acid Digest	ug/g	100.0	<2.00e-02	51.40	63.00	57.20	20.3	n/a	38.60	n/a
S97T001580	A	Chromium -ICP-Acid Digest	ug/g	95.00	<1.00e-02	3.71e+02	366.0	368.5	1.36	n/a	19.30	n/a
S97T001580	A	Copper -ICP-Acid Digest	ug/g	94.00	<1.00e-02	< 19.30	<1.98e1	n/a	n/a	n/a	19.30	n/a
S97T001580	A	Iron -ICP-Acid Digest	ug/g	98.20	<5.00e-02	6.95e+02	638.0	666.5	8.55	n/a	96.50	n/a
S97T001580	A	Potassium -ICP-Acid Digest	ug/g	97.20	<5.00e-01	1.82e+03	1.78e+03	1.80e+03	2.22	n/a	965.0	n/a
S97T001580	A	Lanthanum -ICP-Acid Digest	ug/g	100.0	<5.00e-02	< 96.50	<9.90e1	n/a	n/a	n/a	96.50	n/a
S97T001580	A	Magnesium -ICP-Acid Digest	ug/g	93.80	<1.00e-01	<1.93e+02	<1.98e2	n/a	n/a	n/a	193.0	n/a
S97T001580	A	Manganese -ICP-Acid Digest	ug/g	97.60	<1.00e-02	< 19.30	<1.98e1	n/a	n/a	n/a	19.30	n/a
S97T001580	A	Molybdenum -ICP-Acid Digest	ug/g	98.40	<5.00e-02	< 96.50	<9.90e1	n/a	n/a	n/a	96.50	n/a
S97T001580	A	Sodium -ICP-Acid Digest	ug/g	103.2	5.92e-01	1.80e+05	1.79e+05	1.80e+05	0.56	n/a	193.0	n/a
S97T001580	A	Neodymium -ICP-Acid Digest	ug/g	102.6	<1.00e-01	<1.93e+02	<1.98e2	n/a	n/a	n/a	193.0	n/a
S97T001580	A	Nickel -ICP-Acid Digest	ug/g	99.20	<2.00e-02	74.90	77.20	76.05	3.02	n/a	38.60	n/a
S97T001580	A	Phosphorus -ICP-Acid Digest	ug/g	97.80	<2.00e-01	3.68e+04	3.56e+04	3.62e+04	3.31	n/a	386.0	n/a
S97T001580	A	Lead -ICP-Acid Digest	ug/g	93.60	<1.00e-01	<1.93e+02	<1.98e2	n/a	n/a	n/a	193.0	n/a
S97T001580	A	Sulfur -ICP-Acid Digest	ug/g	98.20	1.33e-01	7.20e+03	7.07e+03	7.14e+03	1.82	n/a	193.0	n/a
S97T001580	A	Antimony -ICP-Acid Digest	ug/g	95.40	<6.00e-02	<1.16e+02	<1.19e2	n/a	n/a	n/a	116.0	n/a
S97T001580	A	Silicon -ICP-Acid Digest	ug/g	135.4	<5.00e-02	7.98e+02	924.0	861.0	14.6	n/a	96.50	n/a
S97T001580	A	Samarium -ICP-Acid Digest	ug/g	96.20	<1.00e-01	<1.93e+02	<1.98e2	n/a	n/a	n/a	193.0	n/a
S97T001580	A	Strontium -ICP-Acid Digest	ug/g	96.20	<1.00e-02	< 19.30	<1.98e1	n/a	n/a	n/a	19.30	n/a
S97T001580	A	Titanium-ICP-Acid Digest	ug/g	88.60	<1.00e-02	< 19.30	<1.98e1	n/a	n/a	n/a	19.30	n/a
S97T001580	A	Thallium -ICP-Acid Digest	ug/g	97.20	<2.00e-01	<3.86e+02	<3.96e2	n/a	n/a	n/a	386.0	n/a
S97T001580	A	Uranium -ICP-Acid Digest	ug/g	91.40	<5.00e-01	<9.65e+02	<9.90e2	n/a	n/a	n/a	965.0	n/a
S97T001580	A	Vanadium -ICP-Acid Digest	ug/g	96.80	<5.00e-02	< 96.50	<9.90e1	n/a	n/a	n/a	96.50	n/a
S97T001580	A	Zinc -ICP-Acid Digest	ug/g	98.00	4.90e-02	31.30	36.40	33.85	15.1	n/a	19.30	n/a
S97T001580	A	Zirconium -ICP-Acid Digest	ug/g	98.60	<1.00e-02	< 19.30	<1.98e1	n/a	n/a	n/a	19.30	n/a
S97T001581	W	Fluoride-IC-Dionex 4000/4500	ug/g	98.64	<1.20e-02	1.59e+04	1.61e+04	1.60e+04	1.25	n/a	94.05	n/a
S97T001581	W	Chloride-IC-Dionex 4000/4500	ug/g	98.35	<1.70e-02	1.16e+03	1.32e+03	1.24e+03	12.9	n/a	133.2	n/a
S97T001581	W	Nitrite-IC - Dionex 4000/4500	ug/g	99.63	<1.08e-01	2.33e+04	2.36e+04	2.34e+04	1.28	n/a	846.6	n/a
S97T001581	W	Nitrate by IC-Dionex 4000/4500	ug/g	94.78	<1.39e-01	4.70e+04	4.89e+04	4.79e+04	3.96	n/a	1.09e+03	n/a
S97T001581	W	Phosphate-IC-Dionex 4000/4500	ug/g	101.7	<1.20e-01	1.06e+05	9.96e+04	1.03e+05	6.23	n/a	940.5	n/a
S97T001581	W	Sulfate by IC-Dionex 4000/4500	ug/g	96.20	<1.38e-01	2.04e+04	2.59e+04	2.32e+04	23.8	n/a	1.08e+03	n/a
S97T001581	W	Oxalate-IC-Dionex 4000/4500	ug/g	97.37	<1.05e-01	8.28e+03	1.13e+04	9.79e+03	30.8	n/a	823.3	n/a

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HNF-SD-WM-DF-259 REV. D

L Lower Half of Segment: L Lower Half of Segment

Sample#	R#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S97T001579	W	Fluoride-IC-Dionex 4000/4500	ug/g	98.64	<1.20e-02	1.65e+04	1.61e+04	1.63e+04	2.45	n/a	95.98	n/a
S97T001579	W	Chloride-IC-Dionex 4000/4500	ug/g	93.54	<1.70e-02	1.22e+03	989.0	1.10e+03	20.9	n/a	136.0	n/a
S97T001579	W	Nitrite-IC - Dionex 4000/4500	ug/g	100.6	<1.08e-01	2.16e+04	2.11e+04	2.13e+04	2.34	n/a	863.9	n/a
S97T001579	W	Nitrate by IC-Dionex 4000/4500	ug/g	96.30	<1.39e-01	6.87e+04	8.11e+04	7.49e+04	16.6	n/a	1.11e+03	n/a
S97T001579	W	Phosphate-IC-Dionex 4000/4500	ug/g	103.1	<1.20e-01	1.51e+05	1.50e+05	1.50e+05	0.66	n/a	959.8	n/a
S97T001579	W	Sulfate by IC-Dionex 4000/4500	ug/g	99.05	<1.38e-01	4.88e+03	4.02e+03	4.45e+03	19.3	n/a	1.10e+03	n/a
S97T001579	W	Oxalate-IC-Dionex 4000/4500	ug/g	98.87	<1.05e-01	2.95e+03	1.87e+03	2.41e+03	44.8	n/a	839.7	n/a
S97T001882	A	Silver -ICP-Acid Digest	ug/g	118.0	<1.00e-02	11.00	<9.89e0	n/a	n/a	n/a	9.950	n/a
S97T001882	A	Aluminum -ICP-Acid Digest	ug/g	98.00	1.84e-01	1.49e+04	1.45e+04	1.47e+04	2.72	n/a	49.80	n/a
S97T001882	A	Arsenic -ICP-Acid Digest	ug/g	99.00	<1.00e-01	< 99.60	<9.89e1	n/a	n/a	n/a	99.50	n/a
S97T001882	A	Boron -ICP-Acid Digest	ug/g	106.2	3.74e-01	58.30	<4.95e1	n/a	n/a	n/a	49.80	n/a
S97T001882	A	Barium -ICP-Acid Digest	ug/g	96.00	<5.00e-02	< 49.80	<4.95e1	n/a	n/a	n/a	49.80	n/a
S97T001882	A	Beryllium -ICP-Acid Digest	ug/g	101.4	<5.00e-03	< 4.980	<4.95e0	n/a	n/a	n/a	4.980	n/a
S97T001882	A	Bismuth -ICP-Acid Digest	ug/g	95.20	<1.00e-01	< 99.60	<9.89e1	n/a	n/a	n/a	99.50	n/a
S97T001882	A	Calcium -ICP-Acid Digest	ug/g	97.60	2.06e-01	< 99.60	<9.89e1	n/a	n/a	n/a	99.50	n/a
S97T001882	A	Cadmium -ICP-Acid Digest	ug/g	95.40	<5.00e-03	< 4.980	<4.95e0	n/a	n/a	n/a	4.980	n/a
S97T001882	A	Cerium -ICP-Acid Digest	ug/g	100.2	1.19e-01	< 99.60	<9.89e1	n/a	n/a	n/a	99.50	n/a
S97T001882	A	Cobalt -ICP-Acid Digest	ug/g	96.20	<2.00e-02	58.10	58.50	58.30	0.69	n/a	20.00	n/a
S97T001882	A	Chromium -ICP-Acid Digest	ug/g	93.60	<1.00e-02	3.82e+02	331.0	356.5	14.3	n/a	9.950	n/a
S97T001882	A	Copper -ICP-Acid Digest	ug/g	91.80	1.20e-02	< 9.960	<9.89e0	n/a	n/a	n/a	9.950	n/a
S97T001882	A	Iron -ICP-Acid Digest	ug/g	96.00	<5.00e-02	1.65e+02	175.0	170.0	5.88	n/a	49.80	n/a
S97T001882	A	Potassium -ICP-Acid Digest	ug/g	93.40	<5.00e-01	1.78e+03	1.89e+03	1.84e+03	5.99	n/a	498.0	n/a
S97T001882	A	Lanthanum -ICP-Acid Digest	ug/g	99.40	<5.00e-02	< 49.80	<4.95e1	n/a	n/a	n/a	49.80	n/a
S97T001882	A	Magnesium -ICP-Acid Digest	ug/g	92.20	<1.00e-01	< 99.60	<9.89e1	n/a	n/a	n/a	99.50	n/a
S97T001882	A	Manganese -ICP-Acid Digest	ug/g	95.60	<1.00e-02	16.80	13.90	15.35	18.9	n/a	9.950	n/a
S97T001882	A	Molybdenum -ICP-Acid Digest	ug/g	94.60	<5.00e-02	< 49.80	<4.95e1	n/a	n/a	n/a	49.80	n/a
S97T001882	A	Sodium -ICP-Acid Digest	ug/g	106.2	1.030	1.92e+05	1.83e+05	1.88e+05	4.80	n/a	99.50	n/a
S97T001882	A	Neodymium -ICP-Acid Digest	ug/g	105.6	<1.00e-01	< 99.60	<9.89e1	n/a	n/a	n/a	99.50	n/a
S97T001882	A	Nickel -ICP-Acid Digest	ug/g	97.60	<2.00e-02	39.20	42.50	40.85	8.08	n/a	20.00	n/a
S97T001882	A	Phosphorus -ICP-Acid Digest	ug/g	96.80	<2.00e-01	4.43e+04	4.27e+04	4.35e+04	3.68	n/a	200.0	n/a
S97T001882	A	Lead -ICP-Acid Digest	ug/g	92.80	<1.00e-01	< 99.60	<9.89e1	n/a	n/a	n/a	99.50	n/a
S97T001882	A	Sulfur -ICP-Acid Digest	ug/g	94.60	1.77e-01	1.16e+03	1.91e+03	1.54e+03	48.9	n/a	99.50	n/a
S97T001882	A	Antimony -ICP-Acid Digest	ug/g	93.80	<6.00e-02	< 59.80	<5.94e1	n/a	n/a	n/a	60.00	n/a
S97T001882	A	Silicon -ICP-Acid Digest	ug/g	158.4	1.700	9.32e+02	1.07e+03	1.00e+03	13.8	n/a	49.80	n/a
S97T001882	A	Samarium -ICP-Acid Digest	ug/g	99.20	<1.00e-01	< 99.60	<9.89e1	n/a	n/a	n/a	99.50	n/a
S97T001882	A	Strontium -ICP-Acid Digest	ug/g	96.40	<1.00e-02	< 9.960	<9.89e0	n/a	n/a	n/a	9.950	n/a
S97T001882	A	Titanium-ICP-Acid Digest	ug/g	85.80	<1.00e-02	< 9.960	<9.89e0	n/a	n/a	n/a	9.950	n/a
S97T001882	A	Thallium -ICP-Acid Digest	ug/g	95.60	<2.00e-01	<1.99e+02	<1.98e2	n/a	n/a	n/a	200.0	n/a
S97T001882	A	Uranium -ICP-Acid Digest	ug/g	93.70	<5.00e-01	<4.98e+02	<4.95e2	n/a	n/a	n/a	498.0	n/a
S97T001882	A	Vanadium -ICP-Acid Digest	ug/g	95.00	<5.00e-02	1.02e+02	99.10	100.5	2.88	n/a	49.80	n/a
S97T001882	A	Zinc -ICP-Acid Digest	ug/g	94.40	4.90e-02	15.20	14.20	14.70	6.80	n/a	9.950	n/a
S97T001882	A	Zirconium -ICP-Acid Digest	ug/g	96.40	<1.00e-02	< 9.960	<9.89e0	n/a	n/a	n/a	9.950	n/a

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HN-SD-WM-DP-259, REV. 0

Drainable Liquid: Drainable Liquid

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S97T001471	D		Silver-ICP-Acid Dil.	ug/ml	101.8	<1.00e-02	14.60	14.80	14.70	1.36	n/a	4.010	n/a
S97T001471	D		Aluminium-ICP-Acid Dil.	ug/ml	99.80	<5.00e-02	4.17e+04	4.42e+04	4.30e+04	5.82	n/a	20.10	n/a
S97T001471	D		Arsenic-ICP-Acid Dil.	ug/ml	106.2	<1.00e-01	< 40.10	<4.01e1	n/a	n/a	n/a	40.10	n/a
S97T001471	D		Boron-ICP-Acid Dil.	ug/ml	102.4	<5.00e-02	< 20.10	<2.01e1	n/a	n/a	n/a	20.10	n/a
S97T001471	D		Barium-ICP-Acid Dil.	ug/ml	100.6	<5.00e-02	< 20.10	<2.01e1	n/a	n/a	n/a	20.10	n/a
S97T001471	D		Beryllium-ICP-Acid Dil.	ug/ml	105.6	<5.00e-03	< 2.000	<2.00e0	n/a	n/a	n/a	2.000	n/a
S97T001471	D		Bismuth-ICP-Acid Dil.	ug/ml	104.4	<1.00e-01	< 40.10	<4.01e1	n/a	n/a	n/a	40.10	n/a
S97T001471	D		Calcium-ICP-Acid Dil.	ug/ml	103.6	<1.00e-01	< 40.10	<4.01e1	n/a	n/a	n/a	40.10	n/a
S97T001471	D		Cadmium-ICP-Acid Dil.	ug/ml	103.4	<5.00e-03	< 2.000	<2.00e0	n/a	n/a	n/a	2.000	n/a
S97T001471	D		Cerium-ICP-Acid Dil.	ug/ml	101.4	<1.00e-01	< 40.10	<4.01e1	n/a	n/a	n/a	40.10	n/a
S97T001471	D		Cobalt-ICP-Acid Dil.	ug/ml	102.4	<2.00e-02	< 8.020	<8.02e0	n/a	n/a	n/a	8.020	n/a
S97T001471	D		Chromium-ICP-Acid Dil.	ug/ml	103.8	<1.00e-02	1.93e+02	201.0	197.0	4.06	n/a	4.010	n/a
S97T001471	D		Copper-ICP-Acid Dil.	ug/ml	98.20	<1.00e-02	< 4.010	<4.01e0	n/a	n/a	n/a	4.010	n/a
S97T001471	D		Iron-ICP-Acid Dil.	ug/ml	96.40	<5.00e-02	< 20.10	<2.01e1	n/a	n/a	n/a	20.10	n/a
S97T001471	D		Potassium-ICP-Acid Dil.	ug/ml	100.4	<5.00e-01	6.26e+03	6.36e+03	6.31e+03	1.58	n/a	200.0	n/a
S97T001471	D		Lanthanum-ICP-Acid Dil.	ug/ml	102.8	<5.00e-02	< 20.10	<2.01e1	n/a	n/a	n/a	20.10	n/a
S97T001471	D		Magnesium-ICP-Acid Dil.	ug/ml	104.4	<1.00e-01	< 40.10	<4.01e1	n/a	n/a	n/a	40.10	n/a
S97T001471	D		Manganese-ICP-Acid Dil.	ug/ml	100.8	<1.00e-02	< 4.010	<4.01e0	n/a	n/a	n/a	4.010	n/a
S97T001471	D		Molybdenum-ICP-Acid Dil.	ug/ml	102.6	<5.00e-02	56.70	58.90	57.80	3.81	n/a	20.10	n/a
S97T001471	D		Sodium-ICP-Acid Dil.	ug/ml	99.00	<1.00e-01	2.08e+05	2.12e+05	2.10e+05	1.90	n/a	40.10	n/a
S97T001471	D		Neodymium-ICP-Acid Dil.	ug/ml	103.0	<1.00e-01	< 40.10	<4.01e1	n/a	n/a	n/a	40.10	n/a
S97T001471	D		Nickel-ICP-Acid Dil.	ug/ml	102.6	<2.00e-02	< 8.020	<8.02e0	n/a	n/a	n/a	8.020	n/a
S97T001471	D		Phosphorus-ICP-Acid Dil.	ug/ml	102.2	<2.00e-01	3.08e+02	318.0	313.0	3.19	n/a	80.20	n/a
S97T001471	D		Lead-ICP-Acid Dil.	ug/ml	104.4	<1.00e-01	63.40	63.60	63.50	0.31	n/a	40.10	n/a
S97T001471	D		Sulfur-ICP-Acid Dil.	ug/ml	99.40	<1.00e-01	2.19e+02	268.0	243.5	20.1	n/a	40.10	n/a
S97T001471	D		Antimony-ICP-Acid Dil.	ug/ml	97.20	<6.00e-02	< 24.10	<2.41e1	n/a	n/a	n/a	24.10	n/a
S97T001471	D		Selenium-ICP-Acid Dil.	ug/ml	98.80	<1.00e-01	< 40.10	<4.01e1	n/a	n/a	n/a	40.10	n/a
S97T001471	D		Silicon-ICP-Acid Dil.	ug/ml	99.20	<5.00e-02	2.83e+02	246.0	264.5	14.0	n/a	20.10	n/a
S97T001471	D		Samarium-ICP-Acid Dil.	ug/ml	99.20	<1.00e-01	< 40.10	<4.01e1	n/a	n/a	n/a	40.10	n/a
S97T001471	D		Strontium-ICP-Acid Dil.	ug/ml	100.4	<1.00e-02	< 4.010	<4.01e0	n/a	n/a	n/a	4.010	n/a
S97T001471	D		Titanium-ICP-Acid Dil.	ug/ml	99.40	<1.00e-02	< 4.010	<4.01e0	n/a	n/a	n/a	4.010	n/a
S97T001471	D		Thallium-ICP-Acid Dil.	ug/ml	98.40	<2.00e-01	< 80.20	<8.02e1	n/a	n/a	n/a	80.20	n/a
S97T001471	D		Uranium-ICP-Acid Dil.	ug/ml	96.70	<5.00e-01	<2.00e+02	<2.00e2	n/a	n/a	n/a	200.0	n/a
S97T001471	D		Vanadium-ICP-Acid Dil.	ug/ml	100.6	<5.00e-02	< 20.10	<2.01e1	n/a	n/a	n/a	20.10	n/a
S97T001471	D		Zinc-ICP-Acid Dil.	ug/ml	98.80	<1.00e-02	< 4.010	<4.01e0	n/a	n/a	n/a	4.010	n/a
S97T001471	D		Zirconium-ICP-Acid Dil.	ug/ml	99.60	<1.00e-02	< 4.010	<4.01e0	n/a	n/a	n/a	4.010	n/a
S97T001471	D		Fluoride-IC-Dionex 4000/4500	ug/ml	100.0	<1.20e-02	6.84e+02	610.0	647.2	11.4	n/a	49.69	n/a
S97T001471	D		Chloride-IC-Dionex 4000/4500	ug/ml	101.3	<1.70e-02	5.59e+03	5.45e+03	5.52e+03	2.54	n/a	70.40	n/a
S97T001471	D		Nitrite-IC - Dionex 4000/4500	ug/ml	98.90	<1.08e-01	9.70e+04	9.89e+04	9.80e+04	1.94	n/a	447.2	n/a
S97T001471	D		Nitrate by IC-Dionex 4000/4500	ug/ml	97.98	<1.39e-01	1.99e+05	1.97e+05	1.98e+05	1.01	n/a	575.6	n/a
S97T001471	D		Phosphate-IC-Dionex 4000/4500	ug/ml	99.82	<1.20e-01	5.53e+02	<4.97e2	n/a	n/a	n/a	496.9	n/a
S97T001471	D		Sulfate by IC-Dionex 4000/4500	ug/ml	100.3	<1.38e-01	1.51e+03	1.54e+03	1.52e+03	1.97	n/a	571.5	n/a
S97T001471	D		Oxalate-IC-Dionex 4000/450	ug/ml	100.2	<1.05e-01	<4.35e+02	<4.35e2	n/a	n/a	n/a	434.8	n/a

HNE-SD-MM-DP-339, REV. D

Appendix A: Opportunistic Analyte Results
BY-109 (P)

CORE NUMBER: 203
SEGMENT #: N/A

SEGMENT PORTION: Field Blank

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count	Err%
S97T001399	D		Silver-ICP-Acid Dil.	ug/ml	101.4	<1.00e-02	<1.00e-02	<1.00e-2	n/a	n/a	n/a	1.00e-02	n/a	
S97T001399	D		Aluminum-ICP-Acid Dil.	ug/ml	95.20	<5.00e-02	<5.00e-02	<5.00e-2	n/a	n/a	n/a	5.00e-02	n/a	
S97T001399	D		Arsenic-ICP-Acid Dil.	ug/ml	100.4	<1.00e-01	<1.00e-01	<1.00e-1	n/a	n/a	n/a	1.00e-01	n/a	
S97T001399	D		Boron-ICP-Acid Dil.	ug/ml	99.20	<5.00e-02	<5.00e-02	<5.00e-2	n/a	n/a	n/a	5.00e-02	n/a	
S97T001399	D		Barium-ICP-Acid Dil.	ug/ml	96.20	<5.00e-02	<5.00e-02	<5.00e-2	n/a	n/a	n/a	5.00e-02	n/a	
S97T001399	D		Beryllium-ICP-Acid Dil.	ug/ml	100.0	<5.00e-03	<5.00e-03	<5.00e-3	n/a	n/a	n/a	5.00e-03	n/a	
S97T001399	D		Bismuth-ICP-Acid Dil.	ug/ml	98.80	<1.00e-01	<1.00e-01	<1.00e-1	n/a	n/a	n/a	1.00e-01	n/a	
S97T001399	D		Calcium-ICP-Acid Dil.	ug/ml	93.40	<1.00e-01	<1.00e-01	<1.00e-1	n/a	n/a	n/a	1.00e-01	n/a	
S97T001399	D		Cadmium-ICP-Acid Dil.	ug/ml	98.60	<5.00e-03	<5.00e-03	<5.00e-3	n/a	n/a	n/a	5.00e-03	n/a	
S97T001399	D		Cerium-ICP-Acid Dil.	ug/ml	94.40	<1.00e-01	<1.00e-01	<1.00e-1	n/a	n/a	n/a	1.00e-01	n/a	
S97T001399	D		Cobalt-ICP-Acid Dil.	ug/ml	99.60	<2.00e-02	<2.00e-02	<2.00e-2	n/a	n/a	n/a	2.00e-02	n/a	
S97T001399	D		Chromium-ICP-Acid Dil.	ug/ml	97.00	<1.00e-02	<1.00e-02	<1.00e-2	n/a	n/a	n/a	1.00e-02	n/a	
S97T001399	D		Copper-ICP-Acid Dil.	ug/ml	99.40	<1.00e-02	<1.00e-02	<1.00e-2	n/a	n/a	n/a	1.00e-02	n/a	
S97T001399	D		Iron-ICP-Acid Dil.	ug/ml	98.40	<5.00e-02	<5.00e-02	<5.00e-2	n/a	n/a	n/a	5.00e-02	n/a	
S97T001399	D		Potassium-ICP-Acid Dil.	ug/ml	98.00	<5.00e-01	<5.00e-01	<5.00e-1	n/a	n/a	n/a	5.00e-01	n/a	
S97T001399	D		Lanthanum-ICP-Acid Dil.	ug/ml	97.20	<5.00e-02	<5.00e-02	<5.00e-2	n/a	n/a	n/a	5.00e-02	n/a	
S97T001399	D		Magnesium-ICP-Acid Dil.	ug/ml	97.60	<1.00e-01	<1.00e-01	<1.00e-1	n/a	n/a	n/a	1.00e-01	n/a	
S97T001399	D		Manganese-ICP-Acid Dil.	ug/ml	98.80	<1.00e-02	<1.00e-02	<1.00e-2	n/a	n/a	n/a	1.00e-02	n/a	
S97T001399	D		Molybdenum-ICP-Acid Dil.	ug/ml	99.20	<5.00e-02	<5.00e-02	<5.00e-2	n/a	n/a	n/a	5.00e-02	n/a	
S97T001399	D		Sodium-ICP-Acid Dil.	ug/ml	98.20	<1.00e-01	3.80e-01	3.47e-01	3.63e-01	9.08	n/a	1.00e-01	n/a	
S97T001399	D		Neodymium-ICP-Acid Dil.	ug/ml	100.4	<1.00e-01	<1.00e-01	<1.00e-1	n/a	n/a	n/a	1.00e-01	n/a	
S97T001399	D		Nickel-ICP-Acid Dil.	ug/ml	98.40	<2.00e-02	<2.00e-02	<2.00e-2	n/a	n/a	n/a	2.00e-02	n/a	
S97T001399	D		Phosphorus-ICP-Acid Dil.	ug/ml	99.20	<2.00e-01	<2.00e-01	<2.00e-1	n/a	n/a	n/a	2.00e-01	n/a	
S97T001399	D		Lead-ICP-Acid Dil.	ug/ml	97.20	<1.00e-01	<1.00e-01	<1.00e-1	n/a	n/a	n/a	1.00e-01	n/a	
S97T001399	D		Sulfur-ICP-Acid Dil.	ug/ml	95.60	<1.00e-01	<1.00e-01	<1.00e-1	n/a	n/a	n/a	1.00e-01	n/a	
S97T001399	D		Antimony-ICP-Acid Dil.	ug/ml	92.80	<6.00e-02	<6.00e-02	<6.00e-2	n/a	n/a	n/a	6.00e-02	n/a	
S97T001399	D		Silicon-ICP-Acid Dil.	ug/ml	93.00	<5.00e-02	3.33e-01	3.06e-01	3.20e-01	8.45	n/a	5.00e-02	n/a	
S97T001399	D		Samarium-ICP-Acid Dil.	ug/ml	97.60	<1.00e-01	<1.00e-01	<1.00e-1	n/a	n/a	n/a	1.00e-01	n/a	
S97T001399	D		Strontium-ICP-Acid Dil.	ug/ml	96.60	<1.00e-02	<1.00e-02	<1.00e-2	n/a	n/a	n/a	1.00e-02	n/a	
S97T001399	D		Titanium-ICP-Acid Dil.	ug/ml	95.00	<1.00e-02	<1.00e-02	<1.00e-2	n/a	n/a	n/a	1.00e-02	n/a	
S97T001399	D		Thallium-ICP-Acid Dil.	ug/ml	100.2	<2.00e-01	<2.00e-01	<2.00e-1	n/a	n/a	n/a	2.00e-01	n/a	
S97T001399	D		Uranium-ICP-Acid Dil.	ug/ml	95.90	<5.00e-01	<5.00e-01	<5.00e-1	n/a	n/a	n/a	5.00e-01	n/a	
S97T001399	D		Vanadium-ICP-Acid Dil.	ug/ml	100.2	<5.00e-02	<5.00e-02	<5.00e-2	n/a	n/a	n/a	5.00e-02	n/a	
S97T001399	D		Zinc-ICP-Acid Dil.	ug/ml	102.0	<1.00e-02	<1.00e-02	<1.00e-2	n/a	n/a	n/a	1.00e-02	n/a	
S97T001399	D		Zirconium-ICP-Acid Dil.	ug/ml	96.40	<1.00e-02	<1.00e-02	<1.00e-2	n/a	n/a	n/a	1.00e-02	n/a	
S97T001399	D		Fluoride-IC-Dionex 4000/4500	ug/ml	94.92	<1.20e-02	<1.20e-02	<1.20e-2	n/a	n/a	n/a	1.20e-02	n/a	
S97T001399	D		Chloride-IC-Dionex 4000/4500	ug/ml	96.46	6.10e-02	1.70e-02	1.80e-02	n/a	n/a	n/a	1.70e-02	n/a	
S97T001399	D		Nitrite-IC - Dionex 4000/4500	ug/ml	97.61	<1.08e-01	<1.08e-01	<1.08e-1	n/a	n/a	n/a	1.08e-01	n/a	
S97T001399	D		Nitrate by IC-Dionex 4000/4500	ug/ml	98.48	1.74e-01	1.63e-01	<1.39e-1	n/a	n/a	n/a	1.39e-01	n/a	
S97T001399	D		Phosphate-IC-Dionex 4000/4500	ug/ml	90.46	<1.20e-01	<1.20e-01	<1.20e-1	n/a	n/a	n/a	1.20e-01	n/a	
S97T001399	D		Sulfate by IC-Dionex 4000/4500	ug/ml	95.57	<1.38e-01	<1.38e-01	<1.38e-1	n/a	n/a	n/a	1.38e-01	n/a	
S97T001399	D		Oxalate-IC-Dionex 4000/450	ug/ml	100.4	<1.05e-01	<1.05e-01	<1.05e-1	n/a	n/a	n/a	1.05e-01	n/a	

HNF-SD-MM-DP-229 REV. 0

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Appendix A: Opportunistic Analyte Results
BY-109 (P)

CORE NUMBER: 203
SEGMENT #: 1

SEGMENT PORTION: L Lower Half of Segment

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count	Err%
S97T001543	W		Fluoride-IC-Dionex 4000/4500	ug/g	98.64	<1.20e-02	4.31e+04	3.71e+04	4.01e+04	15.0	18.64	100.1	n/a	n/a
S97T001543	W		Chloride-IC-Dionex 4000/4500	ug/g	93.54	<1.70e-02	<1.42e+02	<1.36e+02	n/a	n/a	92.03	141.8	n/a	n/a
S97T001543	W		Nitrite-IC - Dionex 4000/4500	ug/g	100.6	<1.08e-01	2.22e+03	2.12e+03	2.17e+03	4.61	94.30	900.8	n/a	n/a
S97T001543	W		Nitrate by IC-Dionex 4000/4500	ug/g	96.30	<1.39e-01	4.19e+03	3.36e+03	3.78e+03	22.0	95.79	1.16e+03	n/a	n/a
S97T001543	W		Phosphate-IC-Dionex 4000/4500	ug/g	103.1	<1.20e-01	1.41e+05	1.25e+05	1.33e+05	12.0	71.74	1.00e+03	n/a	n/a
S97T001543	W		Sulfate by IC-Dionex 4000/4500	ug/g	99.05	<1.38e-01	4.30e+04	3.08e+04	3.69e+04	33.1	90.35	1.15e+03	n/a	n/a
S97T001543	W		Oxalate-IC-Dionex 4000/4500	ug/g	98.87	<1.05e-01	4.53e+04	3.91e+04	4.22e+04	14.7	88.56	875.8	n/a	n/a
S97T001855	A		Silver -ICP-Acid Digest	ug/g	92.80	<1.00e-02	17.80	15.60	16.70	13.2	87.60	7.680	n/a	n/a
S97T001855	A		Aluminium -ICP-Acid Digest	ug/g	94.60	1.11e-01	4.92e+04	7.02e+04	5.97e+04	35.2	514.0	38.40	n/a	n/a
S97T001855	A		Arsenic -ICP-Acid Digest	ug/g	96.20	<1.00e-01	< 76.80	<7.55e1	n/a	n/a	97.00	76.80	n/a	n/a
S97T001855	A		Boron -ICP-Acid Digest	ug/g	104.4	4.59e-01	1.54e+02	152.0	153.0	1.31	95.20	38.40	n/a	n/a
S97T001855	A		Barium -ICP-Acid Digest	ug/g	93.80	<5.00e-02	< 38.40	<3.77e1	n/a	n/a	93.80	38.40	n/a	n/a
S97T001855	A		Beryllium -ICP-Acid Digest	ug/g	98.80	<5.00e-03	< 3.840	<3.77e0	n/a	n/a	97.80	3.840	n/a	n/a
S97T001855	A		Bismuth -ICP-Acid Digest	ug/g	91.80	<1.00e-01	< 76.80	<7.55e1	n/a	n/a	97.60	76.80	n/a	n/a
S97T001855	A		Calcium -ICP-Acid Digest	ug/g	100.2	1.68e-01	4.46e+02	529.0	487.5	17.0	108.2	76.80	n/a	n/a
S97T001855	A		Cadmium -ICP-Acid Digest	ug/g	92.40	<5.00e-03	31.20	31.00	31.10	0.64	96.40	3.840	n/a	n/a
S97T001855	A		Cerium -ICP-Acid Digest	ug/g	96.40	<1.00e-01	< 76.80	<7.55e1	n/a	n/a	97.80	76.80	n/a	n/a
S97T001855	A		Cobalt -ICP-Acid Digest	ug/g	95.80	<2.00e-02	15.60	17.50	16.55	11.5	98.60	15.40	n/a	n/a
S97T001855	A		Chromium -ICP-Acid Digest	ug/g	93.80	<1.00e-02	8.42e+02	877.0	859.5	4.07	100.2	7.680	n/a	n/a
S97T001855	A		Copper -ICP-Acid Digest	ug/g	84.40	<1.00e-02	11.00	15.10	13.05	31.4	84.60	7.680	n/a	n/a
S97T001855	A		Iron -ICP-Acid Digest	ug/g	88.40	5.90e-02	1.86e+03	7.38e+03	4.62e+03	119	252.0	38.40	n/a	n/a
S97T001855	A		Potassium -ICP-Acid Digest	ug/g	91.80	<5.00e-01	<3.84e+02	<3.77e2	n/a	n/a	131.0	384.0	n/a	n/a
S97T001855	A		Lanthanum -ICP-Acid Digest	ug/g	96.40	<5.00e-02	< 38.40	<3.77e1	n/a	n/a	97.80	38.40	n/a	n/a
S97T001855	A		Magnesium -ICP-Acid Digest	ug/g	94.00	<1.00e-01	1.03e+02	107.0	105.0	3.81	97.20	76.80	n/a	n/a
S97T001855	A		Manganese -ICP-Acid Digest	ug/g	91.80	<1.00e-02	66.00	96.60	81.30	37.6	94.40	7.680	n/a	n/a
S97T001855	A		Molybdenum -ICP-Acid Digest	ug/g	93.80	<5.00e-02	< 38.40	<3.77e1	n/a	n/a	97.00	38.40	n/a	n/a
S97T001855	A		Sodium -ICP-Acid Digest	ug/g	109.8	5.50e-01	1.72e+05	1.54e+05	1.63e+05	11.0	-1.880e2	76.80	n/a	n/a
S97T001855	A		Neodymium -ICP-Acid Digest	ug/g	94.80	<1.00e-01	< 76.80	<7.55e1	n/a	n/a	95.60	76.80	n/a	n/a
S97T001855	A		Nickel -ICP-Acid Digest	ug/g	96.20	2.80e-02	1.68e+02	165.0	166.5	1.80	100.4	15.40	n/a	n/a
S97T001855	A		Phosphorus -ICP-Acid Digest	ug/g	92.60	<2.00e-01	4.44e+04	3.85e+04	4.14e+04	14.2	-2.580e2	154.0	n/a	n/a
S97T001855	A		Lead -ICP-Acid Digest	ug/g	92.00	<1.00e-01	81.50	98.70	90.10	19.1	99.60	76.80	n/a	n/a
S97T001855	A		Sulfur -ICP-Acid Digest	ug/g	94.60	1.43e-01	1.05e+04	5.78e+03	8.14e+03	58.0	48.00	76.80	n/a	n/a
S97T001855	A		Antimony -ICP-Acid Digest	ug/g	92.00	<6.00e-02	< 46.10	<4.53e1	n/a	n/a	95.80	46.00	n/a	n/a
S97T001855	A		Selenium -ICP-Acid Digest	ug/g	87.80	<1.00e-01	< 76.80	<7.55e1	n/a	n/a	92.80	76.80	n/a	n/a
S97T001855	A		Silicon -ICP-Acid Digest	ug/g	150.4	5.46e-01	1.62e+03	1.25e+03	1.44e+03	25.8	110.0	38.40	n/a	n/a
S97T001855	A		Samarium -ICP-Acid Digest	ug/g	92.80	<1.00e-01	< 76.80	<7.55e1	n/a	n/a	93.40	76.80	n/a	n/a
S97T001855	A		Strontium -ICP-Acid Digest	ug/g	93.40	<1.00e-02	87.90	87.90	87.90	0.00	95.00	7.680	n/a	n/a
S97T001855	A		Titanium-ICP-Acid Digest	ug/g	86.80	<1.00e-02	< 7.680	<7.55e0	n/a	n/a	88.00	7.680	n/a	n/a
S97T001855	A		Thallium -ICP-Acid Digest	ug/g	88.20	<2.00e-01	<1.54e+02	<1.51e2	n/a	n/a	87.40	154.0	n/a	n/a
S97T001855	A		Uranium -ICP-Acid Digest	ug/g	91.10	<5.00e-01	8.64e+02	833.0	848.5	3.65	95.20	384.0	n/a	n/a
S97T001855	A		Vanadium -ICP-Acid Digest	ug/g	92.80	<5.00e-02	< 38.40	<3.77e1	n/a	n/a	98.00	38.40	n/a	n/a
S97T001855	A		Zinc -ICP-Acid Digest	ug/g	87.20	5.00e-02	29.70	31.50	30.60	5.88	92.80	7.680	n/a	n/a
S97T001855	A		Zirconium -ICP-Acid Digest	ug/g	94.80	<1.00e-02	46.60	45.10	45.85	3.27	41.80	7.680	n/a	n/a

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HNF-SD-WM-DP-259, REV. 0

Appendix A: Opportunistic Analyte Results
BY-109 (P)

CORE NUMBER: 203
SEGMENT #: 2

SEGMENT PORTION: W Whole Segment

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S97T001746	W		Fluoride-IC-Dionex 4000/4500	ug/g	99.66	<1.20e-02	9.05e+04	8.70e+04	8.88e+04	3.94	n/a	99.18	n/a
S97T001746	W		Chloride-IC-Dionex 4000/4500	ug/g	95.00	2.20e-02	<1.40e+02	<1.41e2	n/a	n/a	n/a	140.5	n/a
S97T001746	W		Nitrite-IC - Dionex 4000/4500	ug/g	98.16	<1.08e-01	2.99e+03	2.68e+03	2.83e+03	10.9	n/a	892.6	n/a
S97T001746	W		Nitrate by IC-Dionex 4000/4500	ug/g	97.64	<1.39e-01	6.83e+03	5.92e+03	6.38e+03	14.3	n/a	1.15e+03	n/a
S97T001746	W		Phosphate-IC-Dionex 4000/4500	ug/g	104.2	<1.20e-01	8.29e+04	9.76e+04	9.02e+04	16.3	n/a	991.8	n/a
S97T001746	W		Sulfate by IC-Dionex 4000/4500	ug/g	99.21	<1.38e-01	4.57e+04	4.45e+04	4.51e+04	2.66	n/a	1.14e+03	n/a
S97T001746	W		Oxalate-IC-Dionex 4000/4500	ug/g	98.87	<1.05e-01	2.69e+04	2.58e+04	2.63e+04	4.17	n/a	868.0	n/a
S97T001823	A		Silver -ICP-Acid Digest	ug/g	119.0	<1.00e-02	< 19.60	<1.98e1	n/a	n/a	n/a	19.60	n/a
S97T001823	A		Aluminium -ICP-Acid Digest	ug/g	99.80	1.44e-01	2.35e+04	4.52e+04	3.44e+04	63.2	n/a	98.10	n/a
S97T001823	A		Arsenic -ICP-Acid Digest	ug/g	101.2	<1.00e-01	<1.96e+02	<1.98e2	n/a	n/a	n/a	196.0	n/a
S97T001823	A		Boron -ICP-Acid Digest	ug/g	108.4	3.56e-01	2.02e+03	1.18e+03	1.60e+03	52.5	n/a	98.10	n/a
S97T001823	A		Barium -ICP-Acid Digest	ug/g	95.80	<5.00e-02	< 98.10	<9.89e1	n/a	n/a	n/a	98.10	n/a
S97T001823	A		Beryllium -ICP-Acid Digest	ug/g	100.8	<5.00e-03	< 9.810	<9.89e0	n/a	n/a	n/a	9.810	n/a
S97T001823	A		Bismuth -ICP-Acid Digest	ug/g	96.40	<1.00e-01	<1.96e+02	<1.98e2	n/a	n/a	n/a	196.0	n/a
S97T001823	A		Calcium -ICP-Acid Digest	ug/g	98.40	2.00e-01	5.20e+02	470.0	495.0	10.1	n/a	196.0	n/a
S97T001823	A		Cadmium -ICP-Acid Digest	ug/g	97.60	<5.00e-03	60.10	53.20	56.65	12.2	n/a	9.810	n/a
S97T001823	A		Cerium -ICP-Acid Digest	ug/g	99.80	<1.00e-01	<1.96e+02	<1.98e2	n/a	n/a	n/a	196.0	n/a
S97T001823	A		Cobalt -ICP-Acid Digest	ug/g	102.8	<2.00e-02	83.10	64.00	73.55	26.0	n/a	39.20	n/a
S97T001823	A		Chromium -ICP-Acid Digest	ug/g	97.60	<1.00e-02	1.51e+03	1.46e+03	1.48e+03	3.37	n/a	19.60	n/a
S97T001823	A		Copper -ICP-Acid Digest	ug/g	92.60	<1.00e-02	< 19.60	<1.98e1	n/a	n/a	n/a	19.60	n/a
S97T001823	A		Iron -ICP-Acid Digest	ug/g	98.40	<5.00e-02	4.21e+03	1.28e+03	2.74e+03	107	n/a	98.10	n/a
S97T001823	A		Potassium -ICP-Acid Digest	ug/g	91.60	<5.00e-01	<9.81e+02	<9.89e2	n/a	n/a	n/a	981.0	n/a
S97T001823	A		Lanthanum -ICP-Acid Digest	ug/g	98.80	<5.00e-02	< 98.10	<9.89e1	n/a	n/a	n/a	98.10	n/a
S97T001823	A		Magnesium -ICP-Acid Digest	ug/g	98.40	<1.00e-01	<1.96e+02	<1.98e2	n/a	n/a	n/a	196.0	n/a
S97T001823	A		Manganese -ICP-Acid Digest	ug/g	98.40	<1.00e-02	1.24e+02	90.40	107.2	31.3	n/a	19.60	n/a
S97T001823	A		Molybdenum -ICP-Acid Digest	ug/g	99.60	<5.00e-02	< 98.10	<9.89e1	n/a	n/a	n/a	98.10	n/a
S97T001823	A		Sodium -ICP-Acid Digest	ug/g	104.2	6.89e-01	2.30e+05	2.10e+05	2.20e+05	9.09	n/a	196.0	n/a
S97T001823	A		Neodymium -ICP-Acid Digest	ug/g	97.80	<1.00e-01	<1.96e+02	<1.98e2	n/a	n/a	n/a	196.0	n/a
S97T001823	A		Nickel -ICP-Acid Digest	ug/g	100.6	<2.00e-02	1.34e+02	131.0	132.5	2.26	n/a	39.20	n/a
S97T001823	A		Phosphorus -ICP-Acid Digest	ug/g	99.20	<2.00e-01	3.41e+04	3.13e+04	3.27e+04	8.56	n/a	98.10	n/a
S97T001823	A		Lead -ICP-Acid Digest	ug/g	93.40	<1.00e-01	<1.96e+02	<1.98e2	n/a	n/a	n/a	196.0	n/a
S97T001823	A		Sulfur -ICP-Acid Digest	ug/g	99.40	1.20e-01	2.04e+04	1.73e+04	1.88e+04	16.4	n/a	196.0	n/a
S97T001823	A		Antimony -ICP-Acid Digest	ug/g	94.00	<6.00e-02	<1.18e+02	127.0	n/a	n/a	n/a	118.0	n/a
S97T001823	A		Silicon -ICP-Acid Digest	ug/g	157.0	1.180	1.52e+04	6.58e+03	1.09e+04	79.2	n/a	98.10	n/a
S97T001823	A		Samarium -ICP-Acid Digest	ug/g	95.20	<1.00e-01	<1.96e+02	<1.98e2	n/a	n/a	n/a	196.0	n/a
S97T001823	A		Strontium -ICP-Acid Digest	ug/g	96.80	<1.00e-02	1.09e+02	102.0	105.5	6.64	n/a	19.60	n/a
S97T001823	A		Titanium -ICP-Acid Digest	ug/g	88.40	<1.00e-02	< 19.60	<1.98e1	n/a	n/a	n/a	19.60	n/a
S97T001823	A		Thallium -ICP-Acid Digest	ug/g	95.80	<2.00e-01	<3.92e+02	<3.95e2	n/a	n/a	n/a	392.0	n/a
S97T001823	A		Uranium -ICP-Acid Digest	ug/g	91.20	<5.00e-01	<9.81e+02	<9.89e2	n/a	n/a	n/a	981.0	n/a
S97T001823	A		Vanadium -ICP-Acid Digest	ug/g	97.20	<5.00e-02	< 98.10	<9.89e1	n/a	n/a	n/a	98.10	n/a
S97T001823	A		Zinc -ICP-Acid Digest	ug/g	100.0	5.50e-02	50.80	85.70	68.25	51.1	n/a	19.60	n/a
S97T001823	A		Zirconium -ICP-Acid Digest	ug/g	98.00	<1.00e-02	91.90	71.80	81.85	24.6	n/a	19.60	n/a

HNF-SD-WM-DP-222, REV. 0

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Appendix A: Opportunistic Analyte Results
BY-109 (P)

CORE NUMBER: 203
SEGMENT #: 3

SEGMENT PORTION: U Upper Half of Segment

Sample#	R A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S97T001486		TIC by Acid/Coulometry	ug/g	97.01	4.000	5.04e+03	5.13e+03	5.08e+03	1.77	n/a	5.000	n/a
S97T001547	A	Silver -ICP-Acid Digest	ug/g	82.90	<1.00e-02	< 19.20	<1.94e1	n/a	n/a	n/a	19.20	n/a
S97T001547	A	Aluminium -ICP-Acid Digest	ug/g	99.20	<5.00e-02	1.38e+04	1.34e+04	1.36e+04	2.94	n/a	95.90	n/a
S97T001547	A	Arsenic -ICP-Acid Digest	ug/g	100.8	<1.00e-01	<1.92e+02	<1.94e2	n/a	n/a	n/a	192.0	n/a
S97T001547	A	Boron -ICP-Acid Digest	ug/g	107.0	3.93e-01	2.70e+03	2.70e+03	2.70e+03	0.00	n/a	95.90	n/a
S97T001547	A	Barium -ICP-Acid Digest	ug/g	96.00	<5.00e-02	< 95.90	<9.71e1	n/a	n/a	n/a	95.90	n/a
S97T001547	A	Beryllium -ICP-Acid Digest	ug/g	100.6	<5.00e-03	< 9.590	<9.71e0	n/a	n/a	n/a	9.590	n/a
S97T001547	A	Bismuth -ICP-Acid Digest	ug/g	95.60	<1.00e-01	<1.92e+02	<1.94e2	n/a	n/a	n/a	192.0	n/a
S97T001547	A	Calcium -ICP-Acid Digest	ug/g	96.00	2.01e-01	2.88e+02	282.0	285.0	2.11	n/a	192.0	n/a
S97T001547	A	Cadmium -ICP-Acid Digest	ug/g	96.60	<5.00e-03	46.70	45.10	45.90	3.49	n/a	9.590	n/a
S97T001547	A	Cerium -ICP-Acid Digest	ug/g	98.40	<1.00e-01	<1.92e+02	<1.94e2	n/a	n/a	n/a	192.0	n/a
S97T001547	A	Cobalt -ICP-Acid Digest	ug/g	100.0	<2.00e-02	88.00	86.50	87.25	1.72	n/a	38.40	n/a
S97T001547	A	Chromium -ICP-Acid Digest	ug/g	95.00	<1.00e-02	1.87e+03	1.83e+03	1.85e+03	2.16	n/a	19.20	n/a
S97T001547	A	Copper -ICP-Acid Digest	ug/g	94.00	<1.00e-02	< 19.20	<1.94e1	n/a	n/a	n/a	19.20	n/a
S97T001547	A	Iron -ICP-Acid Digest	ug/g	98.20	<5.00e-02	1.81e+02	179.0	180.0	1.11	n/a	95.90	n/a
S97T001547	A	Potassium -ICP-Acid Digest	ug/g	97.20	<5.00e-01	2.01e+03	2.04e+03	2.02e+03	1.48	n/a	959.0	n/a
S97T001547	A	Lanthanum -ICP-Acid Digest	ug/g	100.0	<5.00e-02	< 95.90	<9.71e1	n/a	n/a	n/a	95.90	n/a
S97T001547	A	Magnesium -ICP-Acid Digest	ug/g	93.80	<1.00e-01	<1.92e+02	<1.94e2	n/a	n/a	n/a	192.0	n/a
S97T001547	A	Manganese -ICP-Acid Digest	ug/g	97.60	<1.00e-02	68.70	66.10	67.40	3.86	n/a	19.20	n/a
S97T001547	A	Molybdenum -ICP-Acid Digest	ug/g	98.40	<5.00e-02	< 95.90	<9.71e1	n/a	n/a	n/a	95.90	n/a
S97T001547	A	Sodium -ICP-Acid Digest	ug/g	103.2	5.92e-01	2.56e+05	2.59e+05	2.58e+05	1.17	n/a	192.0	n/a
S97T001547	A	Neodymium -ICP-Acid Digest	ug/g	102.6	<1.00e-01	<1.92e+02	<1.94e2	n/a	n/a	n/a	192.0	n/a
S97T001547	A	Nickel -ICP-Acid Digest	ug/g	99.20	<2.00e-02	68.00	76.00	72.00	11.1	n/a	38.40	n/a
S97T001547	A	Phosphorus -ICP-Acid Digest	ug/g	97.80	<2.00e-01	5.07e+03	6.07e+03	5.57e+03	18.0	n/a	384.0	n/a
S97T001547	A	Lead -ICP-Acid Digest	ug/g	93.60	<1.00e-01	<1.92e+02	<1.94e2	n/a	n/a	n/a	192.0	n/a
S97T001547	A	Sulfur -ICP-Acid Digest	ug/g	98.20	1.33e-01	1.84e+04	1.76e+04	1.80e+04	4.44	n/a	192.0	n/a
S97T001547	A	Antimony -ICP-Acid Digest	ug/g	95.40	<6.00e-02	<1.15e+02	<1.17e2	n/a	n/a	n/a	115.0	n/a
S97T001547	A	Silicon -ICP-Acid Digest	ug/g	135.4	<5.00e-02	2.31e+04	2.34e+04	2.32e+04	1.29	n/a	95.90	n/a
S97T001547	A	Samarium -ICP-Acid Digest	ug/g	96.20	<1.00e-01	<1.92e+02	<1.94e2	n/a	n/a	n/a	192.0	n/a
S97T001547	A	Strontium -ICP-Acid Digest	ug/g	96.20	<1.00e-02	74.00	61.70	67.85	18.1	n/a	19.20	n/a
S97T001547	A	Titanium -ICP-Acid Digest	ug/g	88.60	<1.00e-02	< 19.20	<1.94e1	n/a	n/a	n/a	19.20	n/a
S97T001547	A	Thallium -ICP-Acid Digest	ug/g	97.20	<2.00e-01	<3.84e+02	<3.88e2	n/a	n/a	n/a	384.0	n/a
S97T001547	A	Uranium -ICP-Acid Digest	ug/g	91.40	<5.00e-01	<9.59e+02	<9.71e2	n/a	n/a	n/a	959.0	n/a
S97T001547	A	Vanadium -ICP-Acid Digest	ug/g	96.80	<5.00e-02	< 95.90	<9.71e1	n/a	n/a	n/a	95.90	n/a
S97T001547	A	Zinc -ICP-Acid Digest	ug/g	98.00	4.90e-02	41.70	20.60	31.15	67.7	n/a	19.20	n/a
S97T001547	A	Zirconium -ICP-Acid Digest	ug/g	98.60	<1.00e-02	93.10	91.00	92.05	2.28	n/a	19.20	n/a
S97T001548	W	Fluoride-IC-Dionex 4000/4500	ug/g	90.51	<1.20e-02	1.05e+05	1.04e+05	1.04e+05	0.96	n/a	88.77	n/a
S97T001548	W	Chloride-IC-Dionex 4000/4500	ug/g	107.5	<1.70e-02	8.25e+02	903.0	863.1	9.27	n/a	125.7	n/a
S97T001548	W	Nitrite-IC - Dionex 4000/4500	ug/g	96.69	<1.08e-01	1.97e+04	1.90e+04	1.93e+04	3.62	n/a	798.7	n/a
S97T001548	W	Nitrate by IC-Dionex 4000/4500	ug/g	104.5	<1.39e-01	8.51e+04	8.45e+04	8.48e+04	0.71	n/a	1.03e+03	n/a
S97T001548	W	Phosphate-IC-Dionex 4000/4500	ug/g	95.60	<1.20e-01	3.59e+04	3.70e+04	3.64e+04	3.02	n/a	887.6	n/a
S97T001548	W	Sulfate by IC-Dionex 4000/4500	ug/g	110.3	<1.38e-01	5.80e+04	5.63e+04	5.71e+04	2.97	n/a	1.02e+03	n/a
S97T001548	W	Oxalate-IC-Dionex 4000/4500	ug/g	105.8	<1.05e-01	2.12e+04	2.01e+04	2.06e+04	5.33	n/a	776.5	n/a

HNF-SD-WM-DP-209, REV. 2

L Lower Half of Segment: L Lower Half of Segment

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S97T001483			TIC by Acid/Coulometry	ug/g	94.35	4.500	2.62e+03	4.20e+03	3.41e+03	46.3	203.0	5.000	n/a
S97T001546	W		Fluoride-IC-Dionex 4000/4500	ug/g	98.64	<1.20e-02	5.17e+04	5.03e+04	5.10e+04	2.75	n/a	100.1	n/a
S97T001546	W		Chloride-IC-Dionex 4000/4500	ug/g	93.54	<1.70e-02	2.01e+03	1.94e+03	1.97e+03	3.54	n/a	141.7	n/a
S97T001546	W		Nitrite-IC - Dionex 4000/4500	ug/g	100.6	<1.08e-01	4.08e+04	4.01e+04	4.04e+04	1.73	n/a	900.4	n/a
S97T001546	W		Nitrate by IC-Dionex 4000/4500	ug/g	96.30	<1.39e-01	8.91e+04	8.56e+04	8.74e+04	4.01	n/a	1.16e+03	n/a
S97T001546	W		Phosphate-IC-Dionex 4000/4500	ug/g	103.1	<1.20e-01	2.63e+03	3.80e+03	3.21e+03	36.4	n/a	1.00e+03	n/a
S97T001546	W		Sulfate by IC-Dionex 4000/4500	ug/g	99.05	<1.38e-01	1.13e+05	1.13e+05	1.13e+05	0.00	n/a	1.15e+03	n/a
S97T001546	W		Oxalate-IC-Dionex 4000/4500	ug/g	98.87	<1.05e-01	1.10e+04	1.10e+04	1.10e+04	0.00	n/a	875.4	n/a
S97T001866	A		Silver -ICP-Acid Digest	ug/g	92.80	<1.00e-02	25.90	25.30	25.60	2.34	n/a	7.880	n/a
S97T001866	A		Aluminium -ICP-Acid Digest	ug/g	94.60	1.11e-01	1.96e+04	2.10e+04	2.03e+04	6.90	n/a	39.40	n/a
S97T001866	A		Arsenic -ICP-Acid Digest	ug/g	96.20	<1.00e-01	< 78.80	< 7.79e1	n/a	n/a	n/a	78.80	n/a
S97T001866	A		Boron -ICP-Acid Digest	ug/g	104.4	4.59e-01	8.09e+02	788.0	798.5	2.63	n/a	39.40	n/a
S97T001866	A		Barium -ICP-Acid Digest	ug/g	93.80	<5.00e-02	< 39.40	< 3.90e1	n/a	n/a	n/a	39.40	n/a
S97T001866	A		Beryllium -ICP-Acid Digest	ug/g	98.80	<5.00e-03	< 3.940	< 3.90e0	n/a	n/a	n/a	3.940	n/a
S97T001866	A		Bismuth -ICP-Acid Digest	ug/g	91.80	<1.00e-01	< 78.80	< 7.79e1	n/a	n/a	n/a	78.80	n/a
S97T001866	A		Calcium -ICP-Acid Digest	ug/g	100.2	1.68e-01	2.45e+02	279.0	262.0	13.0	n/a	78.80	n/a
S97T001866	A		Cadmium -ICP-Acid Digest	ug/g	92.40	<5.00e-03	16.20	16.30	16.25	0.62	n/a	3.940	n/a
S97T001866	A		Cerium -ICP-Acid Digest	ug/g	96.40	<1.00e-01	< 78.80	< 7.79e1	n/a	n/a	n/a	78.80	n/a
S97T001866	A		Cobalt -ICP-Acid Digest	ug/g	95.80	<2.00e-02	< 15.80	< 1.56e1	n/a	n/a	n/a	15.80	n/a
S97T001866	A		Chromium -ICP-Acid Digest	ug/g	93.80	<1.00e-02	1.81e+03	1.82e+03	1.82e+03	0.55	n/a	7.880	n/a
S97T001866	A		Copper -ICP-Acid Digest	ug/g	84.40	<1.00e-02	< 7.880	< 7.79e0	n/a	n/a	n/a	7.880	n/a
S97T001866	A		Iron -ICP-Acid Digest	ug/g	88.40	5.90e-02	3.13e+02	1.32e+03	816.5	123	n/a	39.40	n/a
S97T001866	A		Potassium -ICP-Acid Digest	ug/g	91.80	<5.00e-01	2.77e+03	2.87e+03	2.82e+03	3.55	n/a	394.0	n/a
S97T001866	A		Lanthanum -ICP-Acid Digest	ug/g	96.40	<5.00e-02	< 39.40	< 3.90e1	n/a	n/a	n/a	39.40	n/a
S97T001866	A		Magnesium -ICP-Acid Digest	ug/g	94.00	<1.00e-01	< 78.80	< 7.79e1	n/a	n/a	n/a	78.80	n/a
S97T001866	A		Manganese -ICP-Acid Digest	ug/g	91.80	<1.00e-02	25.50	29.20	27.35	13.5	n/a	7.880	n/a
S97T001866	A		Molybdenum -ICP-Acid Digest	ug/g	93.80	<5.00e-02	40.10	41.70	40.90	3.91	n/a	39.40	n/a
S97T001866	A		Sodium -ICP-Acid Digest	ug/g	109.8	5.50e-01	2.24e+05	2.17e+05	2.20e+05	3.17	n/a	78.80	n/a
S97T001866	A		Neodymium -ICP-Acid Digest	ug/g	94.80	<1.00e-01	< 78.80	< 7.79e1	n/a	n/a	n/a	78.80	n/a
S97T001866	A		Nickel -ICP-Acid Digest	ug/g	96.20	2.80e-02	77.00	73.50	75.25	4.65	n/a	15.80	n/a
S97T001866	A		Phosphorus -ICP-Acid Digest	ug/g	92.60	<1.00e-01	4.60e+03	2.78e+03	3.69e+03	49.3	n/a	158.0	n/a
S97T001866	A		Lead -ICP-Acid Digest	ug/g	92.00	<1.00e-01	< 78.80	< 7.79e1	n/a	n/a	n/a	78.80	n/a
S97T001866	A		Sulfur -ICP-Acid Digest	ug/g	94.60	1.43e-01	4.26e+04	3.92e+04	4.09e+04	8.31	n/a	78.80	n/a
S97T001866	A		Antimony -ICP-Acid Digest	ug/g	92.00	<6.00e-02	< 47.30	< 4.68e1	n/a	n/a	n/a	47.20	n/a
S97T001866	A		Selenium -ICP-Acid Digest	ug/g	87.80	<1.00e-01	< 78.80	< 7.79e1	n/a	n/a	n/a	78.80	n/a
S97T001866	A		Silicon -ICP-Acid Digest	ug/g	150.4	5.46e-01	6.32e+03	6.14e+03	6.23e+03	2.89	n/a	39.40	n/a
S97T001866	A		Samarium -ICP-Acid Digest	ug/g	92.80	<1.00e-01	< 78.80	< 7.79e1	n/a	n/a	n/a	78.80	n/a
S97T001866	A		Strontium -ICP-Acid Digest	ug/g	93.40	<1.00e-02	47.10	46.70	46.90	0.85	n/a	7.880	n/a
S97T001866	A		Titanium -ICP-Acid Digest	ug/g	86.80	<1.00e-02	< 7.880	< 7.79e0	n/a	n/a	n/a	7.880	n/a
S97T001866	A		Thallium -ICP-Acid Digest	ug/g	88.20	<2.00e-01	< 1.58e+02	< 1.56e2	n/a	n/a	n/a	158.0	n/a
S97T001866	A		Uranium -ICP-Acid Digest	ug/g	91.10	<5.00e-01	< 3.94e+02	< 3.90e2	n/a	n/a	n/a	394.0	n/a
S97T001866	A		Vanadium -ICP-Acid Digest	ug/g	92.80	<5.00e-02	< 39.40	< 3.90e1	n/a	n/a	n/a	39.40	n/a
S97T001866	A		Zinc -ICP-Acid Digest	ug/g	87.20	5.00e-02	15.20	15.10	15.15	0.66	n/a	7.880	n/a
S97T001866	A		Zirconium -ICP-Acid Digest	ug/g	94.80	<1.00e-02	50.70	50.40	50.55	0.59	n/a	7.880	n/a

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HNE-SD-WM-DP-252 REV. 0

Appendix A: Opportunistic Analyte Results
BY-109 (P)

CORE NUMBER: 203
SEGMENT #: 4

SEGMENT PORTION: U Upper Half of Segment

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count	Err%
S97T001487			TIC by Acid/Coulometry	ug/g	99.17	4.300	4.61e+03	4.64e+03	4.62e+03	0.65	n/a	5,000	n/a	
S97T001552	A		Silver -ICP-Acid Digest	ug/g	82.90	<1.00e-02	< 20.50	<2.04e1	n/a	n/a	n/a	20.50	n/a	n/a
S97T001552	A		Aluminium -ICP-Acid Digest	ug/g	99.20	<5.00e-02	2.42e+04	2.45e+04	2.44e+04	1.23	n/a	103.0	n/a	n/a
S97T001552	A		Arsenic -ICP-Acid Digest	ug/g	100.8	<1.00e-01	<2.05e+02	<2.04e2	n/a	n/a	n/a	205.0	n/a	n/a
S97T001552	A		Boron -ICP-Acid Digest	ug/g	107.0	3.95e-01	2.46e+02	113.0	179.5	74.1	n/a	103.0	n/a	n/a
S97T001552	A		Barium -ICP-Acid Digest	ug/g	96.00	<5.00e-02	<1.03e+02	<1.02e2	n/a	n/a	n/a	103.0	n/a	n/a
S97T001552	A		Beryllium -ICP-Acid Digest	ug/g	100.6	<5.00e-03	< 10.30	<1.02e1	n/a	n/a	n/a	10.30	n/a	n/a
S97T001552	A		Bismuth -ICP-Acid Digest	ug/g	95.60	<1.00e-01	<2.05e+02	<2.04e2	n/a	n/a	n/a	205.0	n/a	n/a
S97T001552	A		Calcium -ICP-Acid Digest	ug/g	96.00	2.01e-01	<2.05e+02	<2.04e2	n/a	n/a	n/a	205.0	n/a	n/a
S97T001552	A		Cadmium -ICP-Acid Digest	ug/g	96.60	<5.00e-03	17.20	14.90	16.05	14.3	n/a	10.30	n/a	n/a
S97T001552	A		Cerium -ICP-Acid Digest	ug/g	98.40	<1.00e-01	<2.05e+02	<2.04e2	n/a	n/a	n/a	205.0	n/a	n/a
S97T001552	A		Cobalt -ICP-Acid Digest	ug/g	100.0	<2.00e-02	56.70	64.70	60.70	13.2	n/a	41.00	n/a	n/a
S97T001552	A		Chromium -ICP-Acid Digest	ug/g	95.00	<1.00e-02	1.55e+03	1.54e+03	1.54e+03	0.65	n/a	20.50	n/a	n/a
S97T001552	A		Copper -ICP-Acid Digest	ug/g	94.00	<1.00e-02	< 20.50	<2.04e1	n/a	n/a	n/a	20.50	n/a	n/a
S97T001552	A		Iron -ICP-Acid Digest	ug/g	98.20	<5.00e-02	6.58e+02	291.0	474.5	77.3	n/a	103.0	n/a	n/a
S97T001552	A		Potassium -ICP-Acid Digest	ug/g	97.20	<5.00e-01	2.98e+03	2.86e+03	2.92e+03	4.11	n/a	1.03e+03	n/a	n/a
S97T001552	A		Lanthanum -ICP-Acid Digest	ug/g	100.0	<5.00e-02	<1.03e+02	<1.02e2	n/a	n/a	n/a	103.0	n/a	n/a
S97T001552	A		Magnesium -ICP-Acid Digest	ug/g	93.80	<1.00e-01	<2.05e+02	<2.04e2	n/a	n/a	n/a	205.0	n/a	n/a
S97T001552	A		Manganese -ICP-Acid Digest	ug/g	97.60	<1.00e-02	28.10	23.50	25.80	17.8	n/a	20.50	n/a	n/a
S97T001552	A		Molybdenum -ICP-Acid Digest	ug/g	98.40	<5.00e-02	<1.03e+02	<1.02e2	n/a	n/a	n/a	103.0	n/a	n/a
S97T001552	A		Sodium -ICP-Acid Digest	ug/g	103.2	5.92e-01	2.07e+05	2.08e+05	2.08e+05	0.48	n/a	205.0	n/a	n/a
S97T001552	A		Neodymium -ICP-Acid Digest	ug/g	102.6	<1.00e-01	<2.05e+02	<2.04e2	n/a	n/a	n/a	205.0	n/a	n/a
S97T001552	A		Nickel -ICP-Acid Digest	ug/g	99.20	<2.00e-02	2.67e+02	94.70	180.8	95.3	n/a	41.00	n/a	n/a
S97T001552	A		Phosphorus -ICP-Acid Digest	ug/g	97.80	<2.00e-01	5.53e+02	753.0	653.0	30.6	n/a	410.0	n/a	n/a
S97T001552	A		Lead -ICP-Acid Digest	ug/g	93.60	<1.00e-01	<2.05e+02	<2.04e2	n/a	n/a	n/a	205.0	n/a	n/a
S97T001552	A		Sulfur -ICP-Acid Digest	ug/g	98.20	1.35e-01	3.62e+04	3.67e+04	3.64e+04	1.37	n/a	205.0	n/a	n/a
S97T001552	A		Antimony -ICP-Acid Digest	ug/g	95.40	<6.00e-02	<1.23e+02	<1.23e2	n/a	n/a	n/a	123.0	n/a	n/a
S97T001552	A		Silicon -ICP-Acid Digest	ug/g	135.4	<5.00e-02	1.63e+03	914.0	1.27e+03	56.3	n/a	103.0	n/a	n/a
S97T001552	A		Samarium -ICP-Acid Digest	ug/g	96.20	<1.00e-01	<2.05e+02	<2.04e2	n/a	n/a	n/a	205.0	n/a	n/a
S97T001552	A		Strontium -ICP-Acid Digest	ug/g	96.20	<1.00e-02	99.80	103.0	101.4	3.16	n/a	20.50	n/a	n/a
S97T001552	A		Titanium -ICP-Acid Digest	ug/g	88.60	<1.00e-02	< 20.50	<2.04e1	n/a	n/a	n/a	20.50	n/a	n/a
S97T001552	A		Thallium -ICP-Acid Digest	ug/g	97.20	<1.00e-01	<4.10e+02	<4.09e2	n/a	n/a	n/a	410.0	n/a	n/a
S97T001552	A		Uranium -ICP-Acid Digest	ug/g	91.40	<5.00e-01	<1.03e+03	<1.02e3	n/a	n/a	n/a	1.03e+03	n/a	n/a
S97T001552	A		Vanadium -ICP-Acid Digest	ug/g	96.80	<5.00e-02	<1.03e+02	<1.02e2	n/a	n/a	n/a	103.0	n/a	n/a
S97T001552	A		Zinc -ICP-Acid Digest	ug/g	98.00	4.90e-02	33.30	66.70	50.00	66.8	n/a	20.50	n/a	n/a
S97T001552	A		Zirconium -ICP-Acid Digest	ug/g	98.60	<1.00e-02	< 20.50	<2.04e1	n/a	n/a	n/a	20.50	n/a	n/a
S97T001553	W		Fluoride-IC-Dionex 4000/4500	ug/g	90.51	<1.20e-02	3.09e+04	2.91e+04	3.00e+04	6.00	n/a	98.28	n/a	n/a
S97T001553	W		Chloride-IC-Dionex 4000/4500	ug/g	107.5	<1.70e-02	2.62e+03	2.44e+03	2.53e+03	7.11	n/a	139.2	n/a	n/a
S97T001553	W		Nitrite-IC - Dionex 4000/4500	ug/g	96.69	<1.08e-01	4.08e+04	4.21e+04	4.14e+04	3.14	n/a	884.4	n/a	n/a
S97T001553	W		Nitrate by IC-Dionex 4000/4500	ug/g	104.5	<1.39e-01	9.24e+04	8.73e+04	8.98e+04	5.68	n/a	1.14e+03	n/a	n/a
S97T001553	W		Phosphate-IC-Dionex 4000/4500	ug/g	95.60	<1.20e-01	1.92e+03	2.11e+03	2.01e+03	9.43	n/a	982.8	n/a	n/a
S97T001553	W		Sulfate by IC-Dionex 4000/4500	ug/g	110.3	<1.38e-01	1.38e+05	1.28e+05	1.33e+05	7.52	n/a	1.13e+03	n/a	n/a
S97T001553	W		Oxalate-IC-Dionex 4000/4500	ug/g	105.8	<1.05e-01	1.56e+04	1.47e+04	1.52e+04	5.94	n/a	859.8	n/a	n/a

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HN-SD-MM-DP-253A REV. 0

L Lower Half of Segment: L Lower Half of Segment

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S97T001484			TIC by Acid/Coulometry	ug/g	94.68	8.00e-01	6.40e+03	5.43e+03	5.92e+03	16.4	78.30	5,000	n/a
S97T001551	W		Fluoride-IC-Dionex 4000/4500	ug/g	95.08	<1.20e-02	2.24e+04	2.40e+04	2.32e+04	6.90	108.1	97.62	n/a
S97T001551			Chloride-IC-Dionex 4000/4500	ug/g	102.0	<1.70e-02	2.56e+03	2.60e+03	2.58e+03	1.55	115.9	138.3	n/a
S97T001551			Nitrite-IC - Dionex 4000/4500	ug/g	106.8	1.32e-01	4.77e+04	4.62e+04	4.70e+04	3.19	117.5	878.6	n/a
S97T001551			Nitrate by IC-Dionex 4000/4500	ug/g	102.4	1.78e-01	8.16e+04	8.87e+04	8.51e+04	8.34	115.8	1.13e+03	n/a
S97T001551			Phosphate-IC-Dionex 4000/4500	ug/g	109.0	<1.20e-01	1.30e+04	1.05e+04	1.18e+04	21.3	110.1	976.2	n/a
S97T001551			Sulfate by IC-Dionex 4000/4500	ug/g	105.5	<1.38e-01	9.36e+04	9.76e+04	9.56e+04	4.18	114.2	1.12e+03	n/a
S97T001551			Oxalate-IC-Dionex 4000/4500	ug/g	99.06	<1.05e-01	2.73e+04	2.87e+04	2.80e+04	5.00	104.3	854.0	n/a
S97T001869	A		Silver -ICP-Acid Digest	ug/g	92.80	<1.00e-02	21.00	21.10	21.05	0.48	97.40	7.720	n/a
S97T001869	A		Aluminum -ICP-Acid Digest	ug/g	94.60	1.11e-01	2.49e+04	2.36e+04	2.42e+04	5.36	-1.410e1	38.50	n/a
S97T001869	A		Arsenic -ICP-Acid Digest	ug/g	96.20	<1.00e-01	< 77.10	<7.74e1	n/a	n/a	98.00	77.20	n/a
S97T001869	A		Boron -ICP-Acid Digest	ug/g	104.4	4.59e-01	2.08e+02	219.0	213.5	5.15	93.00	38.50	n/a
S97T001869	A		Barium -ICP-Acid Digest	ug/g	93.80	<5.00e-02	< 38.50	<3.87e1	n/a	n/a	92.80	38.50	n/a
S97T001869	A		Beryllium -ICP-Acid Digest	ug/g	98.80	<5.00e-03	< 3.850	<3.87e0	n/a	n/a	96.80	3.850	n/a
S97T001869	A		Bismuth -ICP-Acid Digest	ug/g	91.80	<1.00e-01	< 77.10	<7.74e1	n/a	n/a	95.60	77.20	n/a
S97T001869	A		Calcium -ICP-Acid Digest	ug/g	100.2	1.68e-01	2.63e+02	397.0	330.0	40.6	139.2	77.20	n/a
S97T001869	A		Cadmium -ICP-Acid Digest	ug/g	92.40	<5.00e-03	14.80	15.90	15.35	7.17	96.00	3.850	n/a
S97T001869	A		Cerium -ICP-Acid Digest	ug/g	96.40	<1.00e-01	< 77.10	<7.74e1	n/a	n/a	96.60	77.20	n/a
S97T001869	A		Cobalt -ICP-Acid Digest	ug/g	95.80	<2.00e-02	< 15.40	<1.55e1	n/a	n/a	99.80	15.40	n/a
S97T001869	A		Chromium -ICP-Acid Digest	ug/g	93.80	<1.00e-02	2.02e+03	2.13e+03	2.08e+03	5.30	102.4	7.720	n/a
S97T001869	A		Copper -ICP-Acid Digest	ug/g	84.40	<1.00e-02	< 7.710	<7.74e0	n/a	n/a	83.40	7.720	n/a
S97T001869	A		Iron -ICP-Acid Digest	ug/g	88.40	5.90e-02	7.75e+02	815.0	795.0	5.03	127.2	38.50	n/a
S97T001869	A		Potassium -ICP-Acid Digest	ug/g	91.80	<5.00e-01	3.27e+03	3.03e+03	3.15e+03	7.62	71.20	385.0	n/a
S97T001869	A		Lanthanum -ICP-Acid Digest	ug/g	96.40	<5.00e-02	< 38.50	<3.87e1	n/a	n/a	96.40	38.50	n/a
S97T001869	A		Magnesium -ICP-Acid Digest	ug/g	94.00	<1.00e-01	< 77.10	<7.74e1	n/a	n/a	112.2	77.20	n/a
S97T001869	A		Manganese -ICP-Acid Digest	ug/g	91.80	<1.00e-02	47.30	50.20	48.75	5.95	93.00	7.720	n/a
S97T001869	A		Molybdenum -ICP-Acid Digest	ug/g	93.80	<5.00e-02	< 38.50	<3.87e1	n/a	n/a	99.60	38.50	n/a
S97T001869	A		Sodium -ICP-Acid Digest	ug/g	109.8	5.50e-01	2.03e+05	2.05e+05	2.04e+05	0.98	36.00	77.20	n/a
S97T001869	A		Neodymium -ICP-Acid Digest	ug/g	94.80	<1.00e-01	< 77.10	<7.74e1	n/a	n/a	94.60	77.20	n/a
S97T001869	A		Nickel -ICP-Acid Digest	ug/g	96.20	2.80e-02	2.17e+02	233.0	225.0	7.11	105.2	15.40	n/a
S97T001869	A		Phosphorus -ICP-Acid Digest	ug/g	92.60	<2.00e-01	3.02e+03	3.69e+03	3.36e+03	20.0	212.0	154.0	n/a
S97T001869	A		Lead -ICP-Acid Digest	ug/g	92.00	<1.00e-01	99.80	105.0	102.4	5.08	98.20	77.20	n/a
S97T001869	A		Sulfur -ICP-Acid Digest	ug/g	94.60	1.43e-01	2.83e+04	2.98e+04	2.90e+04	5.16	171.8	77.20	n/a
S97T001869	A		Antimony -ICP-Acid Digest	ug/g	92.00	<6.00e-02	< 46.20	<4.64e1	n/a	n/a	96.20	46.40	n/a
S97T001869	A		Selenium -ICP-Acid Digest	ug/g	87.80	<1.00e-01	< 77.10	<7.74e1	n/a	n/a	92.80	77.20	n/a
S97T001869	A		Silicon -ICP-Acid Digest	ug/g	150.4	5.46e-01	1.68e+03	1.83e+03	1.76e+03	8.55	147.2	38.50	n/a
S97T001869	A		Samarium -ICP-Acid Digest	ug/g	92.80	<1.00e-01	< 77.10	<7.74e1	n/a	n/a	93.00	77.20	n/a
S97T001869	A		Strontium -ICP-Acid Digest	ug/g	93.40	<1.00e-02	2.32e+02	249.0	240.5	7.07	96.00	7.720	n/a
S97T001869	A		Titanium-ICP-Acid Digest	ug/g	86.80	<1.00e-02	< 7.710	<7.74e0	n/a	n/a	94.20	7.720	n/a
S97T001869	A		Thallium -ICP-Acid Digest	ug/g	88.20	<2.00e-01	<1.54e+02	<1.55e2	n/a	n/a	88.00	154.0	n/a
S97T001869	A		Uranium -ICP-Acid Digest	ug/g	91.10	<5.00e-01	8.84e+02	979.0	931.5	10.2	91.10	385.0	n/a
S97T001869	A		Vanadium -ICP-Acid Digest	ug/g	92.80	<5.00e-02	< 38.50	<3.87e1	n/a	n/a	95.00	38.50	n/a
S97T001869	A		Zinc -ICP-Acid Digest	ug/g	87.20	5.00e-02	19.10	21.60	20.35	12.3	92.40	7.720	n/a
S97T001869	A		Zirconium -ICP-Acid Digest	ug/g	94.80	<1.00e-02	21.00	22.80	21.90	8.22	96.20	7.720	n/a

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HN-SD-WM-DP-253, REV. 0

Appendix A: Opportunistic Analyte Results
BY-109 (P)

CORE NUMBER: 203
SEGMENT #: 5

SEGMENT PORTION: W Whole Segment

Sample#	R A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S97T001786		TIC by Acid/Coulometry	ug/g	94.35	4.500	1.66e+03	1.74e+03	1.70e+03	4.71	n/a	5.000	n/a
S97T001789	W	Fluoride-IC-Dionex 4000/4500	ug/g	97.97	<1.20e-02	2.72e+04	2.76e+04	2.74e+04	1.46	116.1	98.77	n/a
S97T001789	W	Chloride-IC-Dionex 4000/4500	ug/g	97.38	2.80e-02	2.09e+03	2.08e+03	2.09e+03	0.48	97.88	139.9	n/a
S97T001789	W	Nitrite-IC - Dionex 4000/4500	ug/g	96.68	<1.08e-01	3.11e+04	3.17e+04	3.14e+04	1.91	105.5	888.9	n/a
S97T001789	W	Nitrate by IC-Dionex 4000/4500	ug/g	94.11	<1.39e-01	6.80e+04	6.68e+04	6.74e+04	1.78	103.4	1.14e+03	n/a
S97T001789	W	Phosphate-IC-Dionex 4000/4500	ug/g	98.72	<1.20e-01	6.92e+04	7.08e+04	7.00e+04	2.29	103.9	987.7	n/a
S97T001789	W	Sulfate by IC-Dionex 4000/4500	ug/g	96.36	<1.38e-01	4.15e+04	4.10e+04	4.12e+04	1.21	99.84	1.14e+03	n/a
S97T001789	W	Oxalate-IC-Dionex 4000/4500	ug/g	100.4	<1.05e-01	6.40e+03	6.34e+03	6.37e+03	0.94	100.6	864.3	n/a
S97T001937	A	Silver -ICP-Acid Digest	ug/g	95.30	<1.00e-02	25.00	23.30	24.15	7.04	98.10	5.050	n/a
S97T001937	A	Aluminum -ICP-Acid Digest	ug/g	96.20	1.26e-01	2.26e+04	2.09e+04	2.18e+04	7.82	-2.180e2	25.20	n/a
S97T001937	A	Arsenic -ICP-Acid Digest	ug/g	98.20	<1.00e-01	< 50.50	<5.06e1	n/a	n/a	102.0	50.50	n/a
S97T001937	A	Boron -ICP-Acid Digest	ug/g	106.4	4.05e-01	2.65e+02	287.0	276.0	7.97	98.60	25.20	n/a
S97T001937	A	Barium -ICP-Acid Digest	ug/g	94.80	<5.00e-02	< 25.20	<2.53e1	n/a	n/a	95.60	25.20	n/a
S97T001937	A	Beryllium -ICP-Acid Digest	ug/g	101.8	<5.00e-03	< 2.520	<2.53e0	n/a	n/a	102.0	2.520	n/a
S97T001937	A	Bismuth -ICP-Acid Digest	ug/g	97.20	<1.00e-01	< 50.50	<5.06e1	n/a	n/a	103.2	50.50	n/a
S97T001937	A	Calcium -ICP-Acid Digest	ug/g	99.40	2.75e-01	1.66e+02	292.0	229.0	55.0	104.4	50.50	n/a
S97T001937	A	Cadmium -ICP-Acid Digest	ug/g	93.20	<5.00e-03	6.570	6.420	6.495	2.31	97.40	2.520	n/a
S97T001937	A	Cerium -ICP-Acid Digest	ug/g	97.80	<1.00e-01	< 50.50	<5.06e1	n/a	n/a	98.80	50.50	n/a
S97T001937	A	Cobalt -ICP-Acid Digest	ug/g	96.20	<2.00e-02	< 10.10	<1.01e1	n/a	n/a	99.40	10.10	n/a
S97T001937	A	Chromium -ICP-Acid Digest	ug/g	95.00	<1.00e-02	8.63e+02	812.0	837.5	6.09	95.00	5.050	n/a
S97T001937	A	Copper -ICP-Acid Digest	ug/g	87.80	<1.00e-02	< 5.050	<5.06e0	n/a	n/a	88.80	5.050	n/a
S97T001937	A	Iron -ICP-Acid Digest	ug/g	89.60	6.00e-02	1.34e+02	134.0	134.0	0.00	91.40	25.20	n/a
S97T001937	A	Potassium -ICP-Acid Digest	ug/g	92.40	1.010	2.65e+03	2.42e+03	2.54e+03	9.07	60.00	252.0	n/a
S97T001937	A	Lanthanum -ICP-Acid Digest	ug/g	98.40	<5.00e-02	< 25.20	<2.53e1	n/a	n/a	100.0	25.20	n/a
S97T001937	A	Magnesium -ICP-Acid Digest	ug/g	95.80	<1.00e-01	< 50.50	53.40	n/a	n/a	101.4	50.50	n/a
S97T001937	A	Manganese -ICP-Acid Digest	ug/g	92.60	<1.00e-02	16.30	15.60	15.95	4.39	94.00	5.050	n/a
S97T001937	A	Molybdenum -ICP-Acid Digest	ug/g	94.60	<5.00e-02	28.50	27.80	28.15	2.49	97.40	25.20	n/a
S97T001937	A	Sodium -ICP-Acid Digest	ug/g	111.4	6.01e-01	2.06e+05	1.99e+05	2.02e+05	3.46	-3.940e2	50.50	n/a
S97T001937	A	Neodymium -ICP-Acid Digest	ug/g	96.40	<1.00e-01	< 50.50	<5.06e1	n/a	n/a	97.40	50.50	n/a
S97T001937	A	Nickel -ICP-Acid Digest	ug/g	96.40	<2.00e-02	43.20	42.60	42.90	1.40	100.0	10.10	n/a
S97T001937	A	Phosphorus -ICP-Acid Digest	ug/g	94.40	<2.00e-01	2.43e+04	2.42e+04	2.42e+04	0.41	202.0	101.0	n/a
S97T001937	A	Lead -ICP-Acid Digest	ug/g	92.00	<1.00e-01	51.70	57.80	54.75	11.1	96.60	50.50	n/a
S97T001937	A	Sulfur -ICP-Acid Digest	ug/g	94.80	<1.00e-01	1.46e+04	1.37e+04	1.42e+04	6.36	127.2	50.50	n/a
S97T001937	A	Antimony -ICP-Acid Digest	ug/g	93.00	<6.00e-02	< 30.30	<3.04e1	n/a	n/a	98.00	30.20	n/a
S97T001937	A	Selenium -ICP-Acid Digest	ug/g	90.00	<1.00e-01	< 50.50	<5.06e1	n/a	n/a	95.80	50.50	n/a
S97T001937	A	Silicon -ICP-Acid Digest	ug/g	153.6	9.50e-01	2.24e+03	2.61e+03	2.42e+03	15.3	105.4	25.20	n/a
S97T001937	A	Samarium -ICP-Acid Digest	ug/g	95.20	<1.00e-01	< 50.50	<5.06e1	n/a	n/a	95.60	50.50	n/a
S97T001937	A	Strontium -ICP-Acid Digest	ug/g	95.20	<1.00e-02	34.70	34.40	34.55	0.87	96.20	5.050	n/a
S97T001937	A	Titanium -ICP-Acid Digest	ug/g	88.40	<1.00e-02	< 5.050	<5.06e0	n/a	n/a	89.20	5.050	n/a
S97T001937	A	Thallium -ICP-Acid Digest	ug/g	90.20	<2.00e-01	<1.01e+02	<1.01e2	n/a	n/a	92.20	101.0	n/a
S97T001937	A	Uranium -ICP-Acid Digest	ug/g	92.80	<5.00e-01	3.04e+03	2.78e+03	2.91e+03	8.93	91.80	252.0	n/a
S97T001937	A	Vanadium -ICP-Acid Digest	ug/g	94.20	<5.00e-02	36.80	35.50	36.15	3.60	96.40	25.20	n/a
S97T001937	A	Zinc -ICP-Acid Digest	ug/g	87.60	6.50e-02	18.60	17.90	18.25	3.84	92.80	5.050	n/a
S97T001937	A	Zirconium -ICP-Acid Digest	ug/g	96.40	<1.00e-02	44.80	41.40	43.10	7.89	79.00	5.050	n/a

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HNF-SD-WM-DP-203, REV. 0

Appendix A: Opportunistic Analyte Results
BY-109 (P)

CORE NUMBER: 203
SEGMENT #: 6

SEGMENT PORTION: W Whole Segment

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count	Err%
S97T001794	W		Fluoride-IC-Dionex 4000/4500	ug/g	95.76	<1.20e-02	1.57e+04	1.62e+04	1.59e+04	3.13	n/a	98.24	n/a	
S97T001794	W		Chloride-IC-Dionex 4000/4500	ug/g	92.53	<1.70e-02	1.28e+03	1.28e+03	1.28e+03	0.00	n/a	139.2	n/a	
S97T001794	W		Nitrite-IC - Dionex 4000/4500	ug/g	97.79	<1.08e-01	2.27e+04	2.33e+04	2.30e+04	2.61	n/a	884.4	n/a	
S97T001794	W		Nitrate by IC-Dionex 4000/4500	ug/g	93.43	<1.39e-01	1.16e+05	1.00e+05	1.08e+05	14.8	n/a	1.14e+03	n/a	
S97T001794	W		Phosphate-IC-Dionex 4000/4500	ug/g	101.7	<1.20e-01	1.08e+05	1.11e+05	1.09e+05	2.74	n/a	982.4	n/a	
S97T001794	W		Sulfate by IC-Dionex 4000/4500	ug/g	97.15	<1.38e-01	1.70e+04	1.64e+04	1.67e+04	3.59	n/a	1.13e+03	n/a	
S97T001794	W		Oxalate-IC-Dionex 4000/4500	ug/g	96.06	<1.05e-01	5.55e+03	5.28e+03	5.42e+03	4.99	n/a	859.8	n/a	
S97T001938	A		Silver -ICP-Acid Digest	ug/g	95.30	<1.00e-02	29.30	28.90	29.10	1.37	n/a	4.920	n/a	
S97T001938	A		Aluminum -ICP-Acid Digest	ug/g	96.20	1.26e-01	1.58e+04	1.70e+04	1.64e+04	7.32	n/a	24.70	n/a	
S97T001938	A		Arsenic -ICP-Acid Digest	ug/g	98.20	<1.00e-01	< 49.30	<4.94e1	n/a	n/a	n/a	49.20	n/a	
S97T001938	A		Boron -ICP-Acid Digest	ug/g	106.4	4.05e-01	1.84e+02	172.0	178.0	6.74	n/a	24.70	n/a	
S97T001938	A		Barium -ICP-Acid Digest	ug/g	94.80	<5.00e-02	< 24.70	<2.47e1	n/a	n/a	n/a	24.70	n/a	
S97T001938	A		Beryllium -ICP-Acid Digest	ug/g	101.8	<5.00e-03	< 2.470	<2.47e0	n/a	n/a	n/a	2.470	n/a	
S97T001938	A		Bismuth -ICP-Acid Digest	ug/g	97.20	<1.00e-01	70.00	57.70	63.85	19.3	n/a	49.20	n/a	
S97T001938	A		Calcium -ICP-Acid Digest	ug/g	99.40	2.75e-01	2.93e+02	322.0	307.5	9.43	n/a	49.20	n/a	
S97T001938	A		Cadmium -ICP-Acid Digest	ug/g	93.20	<5.00e-03	8.990	7.860	8.425	13.4	n/a	2.470	n/a	
S97T001938	A		Cerium -ICP-Acid Digest	ug/g	97.80	<1.00e-01	72.50	62.40	67.45	15.0	n/a	49.20	n/a	
S97T001938	A		Cobalt -ICP-Acid Digest	ug/g	96.20	<2.00e-02	20.80	20.70	20.75	0.48	n/a	9.880	n/a	
S97T001938	A		Chromium -ICP-Acid Digest	ug/g	95.00	<1.00e-02	2.52e+03	2.18e+03	2.35e+03	14.5	n/a	4.920	n/a	
S97T001938	A		Copper -ICP-Acid Digest	ug/g	87.80	<1.00e-02	< 4.930	<4.94e0	n/a	n/a	n/a	4.920	n/a	
S97T001938	A		Iron -ICP-Acid Digest	ug/g	89.60	6.00e-02	1.72e+03	1.61e+03	1.66e+03	6.61	n/a	24.70	n/a	
S97T001938	A		Potassium -ICP-Acid Digest	ug/g	92.40	1.010	1.62e+03	1.87e+03	1.74e+03	14.3	n/a	247.0	n/a	
S97T001938	A		Lanthanum -ICP-Acid Digest	ug/g	98.40	<5.00e-02	60.10	51.90	56.00	14.6	n/a	24.70	n/a	
S97T001938	A		Magnesium -ICP-Acid Digest	ug/g	95.80	<1.00e-01	82.40	78.40	80.40	4.98	n/a	49.20	n/a	
S97T001938	A		Manganese -ICP-Acid Digest	ug/g	92.60	<1.00e-02	3.31e+03	2.64e+03	2.98e+03	22.5	n/a	4.920	n/a	
S97T001938	A		Molybdenum -ICP-Acid Digest	ug/g	94.60	<5.00e-02	< 24.70	<2.47e1	n/a	n/a	n/a	24.70	n/a	
S97T001938	A		Sodium -ICP-Acid Digest	ug/g	111.4	6.01e-01	2.03e+05	1.89e+05	1.96e+05	7.14	n/a	49.20	n/a	
S97T001938	A		Neodymium -ICP-Acid Digest	ug/g	96.40	<1.00e-01	76.00	65.10	70.55	15.5	n/a	49.20	n/a	
S97T001938	A		Nickel -ICP-Acid Digest	ug/g	96.40	<2.00e-02	3.23e+02	353.0	338.0	8.88	n/a	9.880	n/a	
S97T001938	A		Phosphorus -ICP-Acid Digest	ug/g	94.40	<2.00e-01	3.89e+04	3.49e+04	3.69e+04	10.8	n/a	98.80	n/a	
S97T001938	A		Lead -ICP-Acid Digest	ug/g	92.00	<1.00e-01	1.10e+02	104.0	107.0	5.61	n/a	49.20	n/a	
S97T001938	A		Sulfur -ICP-Acid Digest	ug/g	94.80	<1.00e-01	5.74e+03	6.36e+03	6.05e+03	10.2	n/a	49.20	n/a	
S97T001938	A		Antimony -ICP-Acid Digest	ug/g	93.00	<6.00e-02	< 29.60	<2.96e1	n/a	n/a	n/a	29.50	n/a	
S97T001938	A		Selenium -ICP-Acid Digest	ug/g	90.00	<1.00e-01	< 49.30	<4.94e1	n/a	n/a	n/a	49.20	n/a	
S97T001938	A		Silicon -ICP-Acid Digest	ug/g	153.6	9.50e-01	1.74e+03	1.55e+03	1.64e+03	11.6	n/a	24.70	n/a	
S97T001938	A		Samarium -ICP-Acid Digest	ug/g	95.20	<1.00e-01	< 49.30	<4.94e1	n/a	n/a	n/a	49.20	n/a	
S97T001938	A		Strontium -ICP-Acid Digest	ug/g	95.20	<1.00e-02	1.59e+02	160.0	159.5	0.63	n/a	4.920	n/a	
S97T001938	A		Titanium-ICP-Acid Digest	ug/g	88.40	<1.00e-02	< 4.930	<4.94e0	n/a	n/a	n/a	4.920	n/a	
S97T001938	A		Thallium -ICP-Acid Digest	ug/g	90.20	<2.00e-01	< 98.70	<9.88e1	n/a	n/a	n/a	98.80	n/a	
S97T001938	A		Uranium -ICP-Acid Digest	ug/g	92.80	<5.00e-01	6.22e+02	643.0	632.5	3.32	n/a	247.0	n/a	
S97T001938	A		Vanadium -ICP-Acid Digest	ug/g	94.20	<5.00e-02	79.20	73.30	76.25	7.74	n/a	24.70	n/a	
S97T001938	A		Zinc -ICP-Acid Digest	ug/g	87.60	6.50e-02	28.30	29.30	28.80	3.47	n/a	4.920	n/a	
S97T001938	A		Zirconium -ICP-Acid Digest	ug/g	96.40	<1.00e-02	14.20	12.40	13.30	13.5	n/a	4.920	n/a	

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HF-SD-MM-DP-259, REV. 0

Appendix A: Opportunistic Analyte Results
BY-109 (P)

CORE NUMBER: 203
SEGMENT #: 7

SEGMENT PORTION: U Upper Half of Segment

Sample#	R A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S97T001488		TIC by Acid/Coulometry	ug/g	99.17	4.300	1.65e+03	415.0	1.03e+03	120	84.10	5,000	n/a
S97T001559	W	Fluoride-IC-Dionex 4000/4500	ug/g	108.0	<1.20e-02	1.44e+04	1.89e+04	1.67e+04	27.0	206.8	97.78	n/a
S97T001559	W	Chloride-IC-Dionex 4000/4500	ug/g	110.1	2.30e-02	1.54e+03	1.98e+03	1.76e+03	25.0	104.6	138.5	n/a
S97T001559	W	Nitrite-IC - Dionex 4000/4500	ug/g	89.89	<10.90	3.90e+04	3.98e+04	3.94e+04	2.03	116.4	2.17e+03	n/a
S97T001559	W	Nitrate by IC-Dionex 4000/4500	ug/g	88.55	<14.00	7.60e+04	7.69e+04	7.65e+04	1.18	112.6	2.79e+03	n/a
S97T001559	W	Phosphate-IC-Dionex 4000/4500	ug/g	87.71	<12.10	3.51e+04	3.73e+04	3.62e+04	6.08	108.3	2.41e+03	n/a
S97T001559	W	Sulfate by IC-Dionex 4000/4500	ug/g	87.97	<13.90	7.17e+04	7.44e+04	7.30e+04	3.70	112.0	2.77e+03	n/a
S97T001559	W	Oxalate-IC-Dionex 4000/4500	ug/g	108.4	<1.05e-01	1.88e+04	2.45e+04	2.16e+04	26.3	112.6	855.7	n/a
S97T001883	A	Silver -ICP-Acid Digest	ug/g	118.0	<1.00e-02	< 10.10	<1.02e1	n/a	n/a	123.0	10.00	n/a
S97T001883	A	Aluminium -ICP-Acid Digest	ug/g	98.00	1.84e-01	3.13e+04	3.09e+04	3.11e+04	1.29	-1.760e2	50.50	n/a
S97T001883	A	Arsenic -ICP-Acid Digest	ug/g	99.00	<1.00e-01	<1.01e+02	<1.02e2	n/a	n/a	102.8	100.0	n/a
S97T001883	A	Boron -ICP-Acid Digest	ug/g	106.2	3.74e-01	< 50.30	<5.11e1	n/a	n/a	100.6	50.50	n/a
S97T001883	A	Barium -ICP-Acid Digest	ug/g	96.00	<5.00e-02	< 50.30	<5.11e1	n/a	n/a	98.40	50.50	n/a
S97T001883	A	Beryllium -ICP-Acid Digest	ug/g	101.4	<5.00e-03	< 5.030	<5.11e0	n/a	n/a	98.00	5.050	n/a
S97T001883	A	Bismuth -ICP-Acid Digest	ug/g	95.20	<1.00e-01	<1.01e+02	<1.02e2	n/a	n/a	100.6	100.0	n/a
S97T001883	A	Calcium -ICP-Acid Digest	ug/g	97.60	2.06e-01	1.47e+02	140.0	143.5	4.88	86.20	100.0	n/a
S97T001883	A	Cadmium -ICP-Acid Digest	ug/g	95.40	<5.00e-03	< 5.030	<5.11e0	n/a	n/a	97.00	5.050	n/a
S97T001883	A	Cerium -ICP-Acid Digest	ug/g	100.2	1.19e-01	<1.01e+02	<1.02e2	n/a	n/a	109.6	100.0	n/a
S97T001883	A	Cobalt -ICP-Acid Digest	ug/g	96.20	<2.00e-02	78.10	74.70	76.40	4.45	100.8	20.20	n/a
S97T001883	A	Chromium -ICP-Acid Digest	ug/g	93.60	<1.00e-02	50.20	54.20	52.20	7.66	95.80	10.00	n/a
S97T001883	A	Copper -ICP-Acid Digest	ug/g	91.80	1.20e-02	< 10.10	<1.02e1	n/a	n/a	94.40	10.00	n/a
S97T001883	A	Iron -ICP-Acid Digest	ug/g	96.00	<5.00e-02	3.81e+02	331.0	356.0	14.0	90.60	50.50	n/a
S97T001883	A	Potassium -ICP-Acid Digest	ug/g	93.40	<5.00e-01	2.86e+03	2.88e+03	2.87e+03	0.70	77.40	505.0	n/a
S97T001883	A	Lanthanum -ICP-Acid Digest	ug/g	99.40	<5.00e-02	< 50.30	<5.11e1	n/a	n/a	99.60	50.50	n/a
S97T001883	A	Magnesium -ICP-Acid Digest	ug/g	92.20	<1.00e-01	<1.01e+02	<1.02e2	n/a	n/a	96.60	100.0	n/a
S97T001883	A	Manganese -ICP-Acid Digest	ug/g	95.60	<1.00e-02	< 10.10	<1.02e1	n/a	n/a	97.60	10.00	n/a
S97T001883	A	Molybdenum -ICP-Acid Digest	ug/g	94.60	<5.00e-02	< 50.30	<5.11e1	n/a	n/a	100.6	50.50	n/a
S97T001883	A	Sodium -ICP-Acid Digest	ug/g	106.2	1.030	1.97e+05	1.97e+05	1.97e+05	0.00	-1.790e2	100.0	n/a
S97T001883	A	Neodymium -ICP-Acid Digest	ug/g	105.6	<1.00e-01	<1.01e+02	<1.02e2	n/a	n/a	103.6	100.0	n/a
S97T001883	A	Nickel -ICP-Acid Digest	ug/g	97.60	<2.00e-02	1.72e+02	164.0	168.0	4.76	98.80	20.20	n/a
S97T001883	A	Phosphorus -ICP-Acid Digest	ug/g	96.80	<2.00e-01	1.23e+04	1.21e+04	1.22e+04	1.64	344.0	202.0	n/a
S97T001883	A	Lead -ICP-Acid Digest	ug/g	92.80	<1.00e-01	<1.01e+02	<1.02e2	n/a	n/a	103.4	100.0	n/a
S97T001883	A	Sulfur -ICP-Acid Digest	ug/g	94.80	1.77e-01	2.54e+04	2.49e+04	2.52e+04	1.99	-8.580e0	100.0	n/a
S97T001883	A	Antimony -ICP-Acid Digest	ug/g	93.60	<6.00e-02	< 60.40	<6.14e1	n/a	n/a	93.80	60.50	n/a
S97T001883	A	Silicon -ICP-Acid Digest	ug/g	158.4	1.700	9.96e+02	972.0	984.0	2.44	112.8	50.50	n/a
S97T001883	A	Samarium -ICP-Acid Digest	ug/g	99.20	<1.00e-01	<1.01e+02	<1.02e2	n/a	n/a	95.60	100.0	n/a
S97T001883	A	Strontium -ICP-Acid Digest	ug/g	96.40	<1.00e-02	16.10	14.40	15.25	11.1	99.00	10.00	n/a
S97T001883	A	Titanium-ICP-Acid Digest	ug/g	85.80	<1.00e-02	< 10.10	<1.02e1	n/a	n/a	87.80	10.00	n/a
S97T001883	A	Thallium -ICP-Acid Digest	ug/g	95.60	<2.00e-01	<2.01e+02	<2.05e2	n/a	n/a	106.2	202.0	n/a
S97T001883	A	Uranium -ICP-Acid Digest	ug/g	93.70	<5.00e-01	<5.03e+02	<5.11e2	n/a	n/a	92.70	505.0	n/a
S97T001883	A	Vanadium -ICP-Acid Digest	ug/g	95.00	<5.00e-02	< 50.30	<5.11e1	n/a	n/a	102.2	50.50	n/a
S97T001883	A	Zinc -ICP-Acid Digest	ug/g	94.40	4.90e-02	16.30	15.60	15.95	4.39	96.60	10.00	n/a
S97T001883	A	Zirconium -ICP-Acid Digest	ug/g	96.40	<1.00e-02	< 10.10	<1.02e1	n/a	n/a	79.80	10.00	n/a

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HNF-SD-WM-DP-259 REV. D

L Lower Half of Segment: L Lower Half of Segment

Sample#	R#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count	Err%
S97T001556	W	Fluoride-IC-Dionex 4000/4500	ug/g	95.08	<1.20e-02	6.71e+02	633.0	652.0	5.83	n/a	95.37	n/a	
S97T001556	W	Chloride-IC-Dionex 4000/4500	ug/g	102.0	<1.70e-02	1.29e+03	1.18e+03	1.23e+03	8.91	108.9	135.1	n/a	
S97T001556	W	Nitrite-IC - Dionex 4000/4500	ug/g	106.8	1.32e-01	1.74e+04	1.66e+04	1.70e+04	4.71	113.6	858.1	n/a	
S97T001556	W	Nitrate by IC-Dionex 4000/4500	ug/g	102.4	1.78e-01	5.22e+04	4.98e+04	5.10e+04	4.71	107.1	1,10e+03	n/a	
S97T001556	W	Phosphate-IC-Dionex 4000/4500	ug/g	109.0	<1.20e-01	7.00e+03	6.93e+03	6.97e+03	1.01	110.8	953.7	n/a	
S97T001556	W	Sulfate by IC-Dionex 4000/4500	ug/g	105.5	<1.38e-01	2.87e+03	3.04e+03	2.95e+03	5.75	103.8	1,10e+03	n/a	
S97T001556	W	Oxalate-IC-Dionex 4000/4500	ug/g	99.06	<1.05e-01	<8.34e+02	<8.67e2	n/a	n/a	103.2	834.4	n/a	
S97T001872	A	Silver -ICP-Acid Digest	ug/g	92.80	<1.00e-02	< 5.950	<5.95e0	n/a	n/a	86.30	5.940	n/a	
S97T001872	A	Aluminum -ICP-Acid Digest	ug/g	94.60	1.11e-01	1.98e+05	1.97e+05	1.98e+05	0.51	636.0	29.80	n/a	
S97T001872	A	Arsenic -ICP-Acid Digest	ug/g	96.20	<1.00e-01	< 59.50	<5.95e1	n/a	n/a	104.0	59.40	n/a	
S97T001872	A	Boron -ICP-Acid Digest	ug/g	104.4	4.59e-01	< 29.80	<2.98e1	n/a	n/a	99.00	29.80	n/a	
S97T001872	A	Barium -ICP-Acid Digest	ug/g	93.80	<5.00e-02	< 29.80	<2.98e1	n/a	n/a	95.60	29.80	n/a	
S97T001872	A	Beryllium -ICP-Acid Digest	ug/g	98.80	<5.00e-03	< 2.980	<2.98e0	n/a	n/a	103.0	2.980	n/a	
S97T001872	A	Bismuth -ICP-Acid Digest	ug/g	91.80	<1.00e-01	< 59.50	<5.95e1	n/a	n/a	97.00	59.40	n/a	
S97T001872	A	Calcium -ICP-Acid Digest	ug/g	100.2	1.68e-01	2.16e+02	111.0	163.5	64.2	82.60	59.40	n/a	
S97T001872	A	Cadmium -ICP-Acid Digest	ug/g	92.40	<5.00e-03	< 2.980	<2.98e0	n/a	n/a	96.60	2.980	n/a	
S97T001872	A	Cerium -ICP-Acid Digest	ug/g	96.40	<1.00e-01	< 59.50	<5.95e1	n/a	n/a	99.60	59.40	n/a	
S97T001872	A	Cobalt -ICP-Acid Digest	ug/g	95.80	<2.00e-02	< 11.90	<1.19e1	n/a	n/a	98.60	11.90	n/a	
S97T001872	A	Chromium -ICP-Acid Digest	ug/g	93.80	<1.00e-02	16.20	16.30	16.25	0.62	96.40	5.940	n/a	
S97T001872	A	Copper -ICP-Acid Digest	ug/g	84.40	<1.00e-02	18.40	18.20	18.30	1.09	88.20	5.940	n/a	
S97T001872	A	Iron -ICP-Acid Digest	ug/g	88.40	5.90e-02	2.12e+02	216.0	214.0	1.87	88.80	29.80	n/a	
S97T001872	A	Potassium -ICP-Acid Digest	ug/g	91.80	<5.00e-01	8.02e+02	1.02e+03	911.0	23.9	129.6	298.0	n/a	
S97T001872	A	Lanthanum -ICP-Acid Digest	ug/g	96.40	<5.00e-02	< 29.80	<2.98e1	n/a	n/a	100.8	29.80	n/a	
S97T001872	A	Magnesium -ICP-Acid Digest	ug/g	94.00	<1.00e-01	< 59.50	<5.95e1	n/a	n/a	97.20	59.40	n/a	
S97T001872	A	Manganese -ICP-Acid Digest	ug/g	91.80	<1.00e-02	< 5.950	<5.95e0	n/a	n/a	93.00	5.940	n/a	
S97T001872	A	Molybdenum -ICP-Acid Digest	ug/g	93.80	<5.00e-02	< 29.80	<2.98e1	n/a	n/a	97.20	29.80	n/a	
S97T001872	A	Sodium -ICP-Acid Digest	ug/g	109.8	5.50e-01	6.44e+04	6.64e+04	6.54e+04	3.06	716.0	59.40	n/a	
S97T001872	A	Neodymium -ICP-Acid Digest	ug/g	94.80	<1.00e-01	< 59.50	<5.95e1	n/a	n/a	98.80	59.40	n/a	
S97T001872	A	Nickel -ICP-Acid Digest	ug/g	96.20	2.80e-02	91.20	93.40	92.30	2.38	98.00	11.90	n/a	
S97T001872	A	Phosphorus -ICP-Acid Digest	ug/g	92.60	<2.00e-01	2.10e+03	2.22e+03	2.16e+03	5.56	69.20	119.0	n/a	
S97T001872	A	Lead -ICP-Acid Digest	ug/g	92.00	<1.00e-01	1.40e+02	128.0	134.0	8.96	93.80	59.40	n/a	
S97T001872	A	Sulfur -ICP-Acid Digest	ug/g	94.60	1.43e-01	4.38e+02	435.0	436.5	0.69	96.80	59.40	n/a	
S97T001872	A	Antimony -ICP-Acid Digest	ug/g	92.00	<6.00e-02	< 35.70	<3.57e1	n/a	n/a	95.80	35.70	n/a	
S97T001872	A	Selenium -ICP-Acid Digest	ug/g	87.80	<1.00e-01	63.30	<5.95e1	n/a	n/a	91.00	59.40	n/a	
S97T001872	A	Silicon -ICP-Acid Digest	ug/g	150.4	5.46e-01	6.87e+02	691.0	689.0	0.58	71.60	29.80	n/a	
S97T001872	A	Samarium -ICP-Acid Digest	ug/g	92.80	<1.00e-01	< 59.50	<5.95e1	n/a	n/a	97.20	59.40	n/a	
S97T001872	A	Strontium -ICP-Acid Digest	ug/g	93.40	<1.00e-02	< 5.950	<5.95e0	n/a	n/a	97.20	5.940	n/a	
S97T001872	A	Titanium -ICP-Acid Digest	ug/g	86.80	<1.00e-02	< 5.950	<5.95e0	n/a	n/a	89.20	5.940	n/a	
S97T001872	A	Thallium -ICP-Acid Digest	ug/g	88.20	<2.00e-01	<1.19e+02	<1.19e2	n/a	n/a	92.00	119.0	n/a	
S97T001872	A	Uranium -ICP-Acid Digest	ug/g	91.10	<5.00e-01	<2.98e+02	<2.98e2	n/a	n/a	104.0	298.0	n/a	
S97T001872	A	Vanadium -ICP-Acid Digest	ug/g	92.80	<5.00e-02	< 29.80	<2.98e1	n/a	n/a	96.00	29.80	n/a	
S97T001872	A	Zinc -ICP-Acid Digest	ug/g	87.20	5.00e-02	42.40	40.40	41.40	4.83	90.60	5.940	n/a	
S97T001872	A	Zirconium -ICP-Acid Digest	ug/g	94.80	<1.00e-02	< 5.950	<5.95e0	n/a	n/a	41.60	5.940	n/a	

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HN-SD-WM-DP-223 REV. 0

HNH-SD-WM-DP-259, REV. 0

APPENDIX B

NEAR INFRARED MOISTURE RESULTS

HNF-SD-WM-DP-259, REV. 0

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Hanford Corporation

An SGN/Cogema, Inc. Company

Internal

Memo

From: Analytical Technology
 Phone: 373-1972 T6-50
 Date: August 27, 1997
 Subject: NEAR INFRARED MOISTURE RESULTS FROM TANK 241-BY-109

To: R. A. Esch T6-50

cc: K. M. Hall R2-12
 J. W. Hunt R2-12
 J. G. Kristofzski R2-12
 A. D. Rice T6-06
 R. W. Schroeder T6-50
 W. I. Winters *[Signature]* T6-50
 BAC File/LB T6-50

Reference: Controlled Notebook WHC-N-977, B. A. Crawford and
 T. V. Rebagay "Fiber Optic Experiments," p. 120.

A series of standards and samples from core 201 obtained from tank 241-BY-109 have been analyzed for moisture content by near infrared spectroscopy. Results from these analyses are included in this report. One sample (jar # 13044) from segment 7 upper half solids was not reported because the sample was not located in the hot cells.

The following standards were run using the near Infrared hot cell probe. Table 1 below represents data obtained from the Terliq standard mounted on KBr salt. Values appear to be consistently low with respect to the standard both over the period of time the Terliq standard has been run on the near IR system (7 months) and over the time the tank 241-BY-109 samples have been analyzed (last three months). Therefore, the values obtained from the tank samples should be considered conservative estimates of moisture content in tank 241-BY-109 waste.

Table 1- Standard Results over time tank 241-BY-109 results were obtained

Data collection period	Standard Value	Average Value	Relative % Standard Deviation	% Recovery on Standard
7 months	59.4	52.25	7.77	87.96
last 3 months	59.4	48.03	9.27	80.86

Data reported for tank 241-BY-109 samples were obtained from homogenized segments which consisted of a mixture of dry salt cake and sludges. The drier samples were obtained from segments 2 LH, 3 UH and 7 LH.

Gravimetric water analyses and TGA samples were obtained from the identical segments that were used for near IR analysis. However, the samples were obtained prior to analysis by near IR and may have dried out after sampling. This seems to be substantiated by the lower gravimetric results obtained from the samples when compared with original TGA results. These lower results may be due to drying over time of storage as the gravimetric samples were obtained after the material had been stored for approximately 4 weeks. Lower water results were observed by near IR analysis in segments from 2 UH and 4 UH as well as those mentioned previously.

Results from samples taken from segments 1 LH, 3 LH, 3R1 LH and 4 LH are higher than results obtained from TGA or gravimetric analyses. These results may be high due to separation of liquid from sludge solids or a layer of water on the top surface of the stored solids. This illustrates the problems encountered from analysis using a surface technique and the need for complete and thorough mixing for sample that may separated before analysis of the material.

Table 2 - Tank 241-BY-109 Core 201 Results

Jar #	Tank loc.	TGA	Grav	NIR-1	NIR-2	NIR-AV
13038	S1 LH	41.16	IS	58.36	10.16	34.26
13030	S2 UH	45.91	34.4	7.46	58.03	32.75
13029	S2 LH	45.61	35.1	6.78	8.08	7.43
13039	S3 UH	32.15	31.80	8.41	6.90	7.66
13040	S3 LH	33.92	32.37	52.81	53.89	53.35
13035	S3R1 UH	49.91	32.56	54.28	54.72	54.5
13034	S3R1 LH	50.41	39.67	52.39	50.57	51.48
13042	S4 UH	37.06	35.80	56.46	5.85	31.16
13041	S4 LH	36.06	36.30	54.40	55.02	54.71
13044	S7 UH	43.05	40.20	NOT	LOCATED	
13043	S7 LH	27.63	26.20	5.73	7.18	6.45

Process notes (Attachment 1) and results from standards and samples (Attachment 2) are attached to this report for further reference. If you have any further questions concerning this data please call me at 373-1972.

B. A. Crawford, PhD.
Scientist II
Analytical Technology

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Attachments 2

Attachment 1

Process Notes and Results from Stanards and Samples

Consisting of 2 pages, including the coversheet

8-5-97

BY 109, moisture analysis

Sample	Filename	Tank/Case	Seg
13035	035a	BY109 201	3RIUH
"	035b	" "	"
13042	042a	" 203	4UH
"	042b	" 203	4UH
13029	029a	" 201	22H
"	029b	" 201	"
13039	039a	" 203	3UH
"	039b	" 203	"
13038	038a	" 203	12H
"	038b	" 203	"
13034	034a	" 201	3RI2H
"	034b	" 201	"
13041	041a	" 203	42H
"	041b	" 203	"
13030	030a	" 201	2UH
"	030b	" 201	"
12725	725a	" 201	54H
"	725b	" 201	"
12726	726a	" 201	5UH
"	726b	" 201	"
13040	040a	" 203	32H
"	040b	" 203	32H

Jerry M. Kunkel
8-5-97

Attachment 2

Process Notes and Results from Standards and Samples

Consisting of 10 pages, including the coversheet

Bio-Rad PCR/PLS system 08/05/97 21:55
Run: Digilab
val 0
035a7 (1): F=2.2 PASS
data: 3.67

Bio-Rad PCR/PLS system 08/05/97 21:55
Run: Digilab
val 0
035a7 (1): F=2.1 PASS
data: 54.28

Bio-Rad PCR/PLS system 08/05/97 21:56
Run: Digilab
val 0
035b7 (1): F=2.5 PASS
data: 1.90

Bio-Rad PCR/PLS system 08/05/97 21:56
Run: Digilab
val 0
035b7 (1): F=2.3 PASS
data: 54.72

Bio-Rad PCR/PLS system 08/05/97 21:57
Run: Digilab
val 0
042a7 (1): F=3.4 PASS
data: 2.45

Bio-Rad PCR/PLS system 08/05/97 21:57
Run: Digilab
val 0
042a7 (1): F=3.3 PASS
data: 56.46

Bio-Rad PCR/PLS system 08/05/97 21:57
Run: Digilab
val 0
042b7 (1): F=3.7 PASS
data: 5.85

Bio-Rad PCR/PLS system 08/05/97 21:58
Run: Digilab
val 0

042b7 (1): F=4.0 PASS
data:56.14

HNFS-SD-WM-DP-259, REV. 0

Bio-Rad PCR/PLS system 08/05/97 21:58
Run: Digilab
val 0

029a7 (1): F=1.6 PASS
data: 6.78

Bio-Rad PCR/PLS system 08/05/97 21:58
Run: Digilab

val 0
029a7 (1): F=2.0 PASS
data:54.44

Bio-Rad PCR/PLS system 08/05/97 21:59

Run: Digilab
val 0
029b7 (1): F=2.2 PASS
data: 8.08

Bio-Rad PCR/PLS system 08/05/97 21:59

Run: Digilab
val 0
029b7 (1): F=2.5 PASS
data:55.18

Bio-Rad PCR/PLS system 08/05/97 22:00

Run: Digilab
val 0
039a7 (1): F=2.8 PASS
data: 8.41

Bio-Rad PCR/PLS system 08/05/97 22:00

Run: Digilab
val 0
039a7 (1): F=3.0 PASS
data:58.07

Bio-Rad PCR/PLS system 08/05/97 22:01

Run: Digilab
val 0
039b7 (1): F=2.2 PASS
data: 6.90

Bio-Rad PCR/PLS system 08/05/97 22:01

Run: Digilab

val 0

039b7 (1): F=2.3 PASS

data:53.14

HNF-SD-WM-DP-259 REV. 0

Bio-Rad PCR/PLS system

08/06/97 15:58

Run: Digilab

val 0

038a7 (1): F=8.0 FAIL-WARNING!

*** WARNING: Poor spectrum ***

data:10.16

Bio-Rad PCR/PLS system

08/06/97 15:59

Run: Digilab

val 0

038a7 (1): F=8.5 FAIL-WARNING!

*** WARNING: Poor spectrum ***

data:60.31

Bio-Rad PCR/PLS system

08/06/97 15:59

Run: Digilab

val 0

038b7 (1): F=7.6 FAIL-WARNING!

*** WARNING: Poor spectrum ***

data: 7.09

Bio-Rad PCR/PLS system

08/06/97 16:00

Run: Digilab

val 0

038b7 (1): F=7.5 FAIL-WARNING!

*** WARNING: Poor spectrum ***

data:58.36

Bio-Rad PCR/PLS system

08/06/97 16:00

Run: Digilab

val 0

034a7 (1): F=3.9 PASS

data: 4.68

Bio-Rad PCR/PLS system

08/06/97 16:00

Run: Digilab

val 0

034a7 (1): F=3.6 PASS

data:52.39

Bio-Rad PCR/PLS system

08/06/97 16:01

Run: Digilab

val 0
034b7 (1): F=3.6 PASS
data: 5.63

Bio-Rad PCR/PLS system 08/06/97 16:01
Run: Digilab
val 0
034b7 (1): F=3.4 PASS
data: 50.57

Bio-Rad PCR/PLS system 08/06/97 16:02
Run: Digilab
val 0
041a7 (1): F=4.0 PASS
data: -0.93*

Bio-Rad PCR/PLS system 08/06/97 16:02
Run: Digilab
val 0
041a7 (1): F=3.3 PASS
data: 54.40

Bio-Rad PCR/PLS system 08/06/97 16:03
Run: Digilab
val 0
041b7 (1): F=3.8 PASS
data: 3.03

Bio-Rad PCR/PLS system 08/06/97 16:03
Run: Digilab
val 0
041b7 (1): F=3.6 PASS
data: 55.02

Bio-Rad PCR/PLS system 08/06/97 16:03
Run: Digilab
val 0
030a7 (1): F=2.3 PASS
data: 7.46

Bio-Rad PCR/PLS system 08/06/97 16:04
Run: Digilab
val 0
030a7 (1): F=2.5 PASS
data: 58.35

Bio-Rad PCR/PLS system 08/06/97 16:04
Run: Digilab
val 0
030b7 (1): F=3.0 PASS
data: 5.05

Bio-Rad PCR/PLS system 08/06/97 16:04
Run: Digilab
val 0
030b7 (1): F=2.8 PASS
data:58.03

Bio-Rad PCR/PLS system 08/06/97 16:05
Run: Digilab
val 0
725a7 (1): F=7.6 FAIL-WARNING!
*** WARNING: Poor spectrum ***
data:-8.46*

Bio-Rad PCR/PLS system 08/06/97 16:05
Run: Digilab
val 0
725a7 (1): F=4.1 PASS
data:49.76

Bio-Rad PCR/PLS system 08/06/97 16:06
Run: Digilab
val 0
725b7 (1): F=7.5 FAIL-WARNING!
*** WARNING: Poor spectrum ***
data:-4.93*

Bio-Rad PCR/PLS system 08/06/97 16:06
Run: Digilab
val 0
725b7 (1): F=4.8 PASS
data:49.64

Bio-Rad PCR/PLS system 08/06/97 16:07
Run: Digilab
val 0
726a7 (1): F=4.4 PASS
data:-1.69*

Bio-Rad PCR/PLS system 08/06/97 16:07
Run: Digilab
val 0

726a7 (1): F=3.3 PASS
data:54.85

HNF-SD-WM-DP-259.REV.0

Bio-Rad PCR/PLS system 08/06/97 16:07

Run: Digilab

val 0

726b7 (1): F=5.5 PASS

data:-5.85*

Bio-Rad PCR/PLS system 08/06/97 16:08

Run: Digilab

val 0

726b7 (1): F=3.4 PASS

data:53.22

Bio-Rad PCR/PLS system 08/06/97 16:08

Run: Digilab

val 0

040a7 (1): F=4.3 PASS

data: 3.86

Bio-Rad PCR/PLS system 08/06/97 16:08

Run: Digilab

val 0

040a7 (1): F=3.9 PASS

data:52.81

Bio-Rad PCR/PLS system 08/06/97 16:09

Run: Digilab

val 0

040b7 (1): F=4.5 PASS

data: 3.34

Bio-Rad PCR/PLS system 08/06/97 16:10

Run: Digilab

val 0

040b7 (1): F=3.8 PASS

data:53.89

Bio-Rad PCR/PLS system
Run: Digilab
val 0
Std17 (1): F=3.4 PASS
data:10.54

08/25/97 13:25

Bio-Rad PCR/PLS system
Run: Digilab
val 0
Std17 (1): F=2.9 PASS
data:54.53

08/25/97 13:25

Bio-Rad PCR/PLS system
Run: Digilab
val 0
Std27 (1): F=2.9 PASS
data:13.17

08/25/97 13:26

Bio-Rad PCR/PLS system
Run: Digilab
val 0
Std27 (1): F=2.6 PASS
data:51.27

08/25/97 13:27

647b7 (1): F=7.2 FAIL-WARNING!
*** WARNING: Poor spectrum ***
data: 5.17

HNF-SD-WM-DP-259 REV. 0

Bio-Rad PCR/PLS system 08/25/97 12:08
Run: Digilab
val 0
647b7 (1): F=4.9 PASS
data:45.19

Bio-Rad PCR/PLS system 08/25/97 12:08
Run: Digilab
val 0
021a7 (1): F=7.3 FAIL-WARNING!
*** WARNING: Poor spectrum ***
data: 3.87

Bio-Rad PCR/PLS system 08/25/97 12:09
Run: Digilab
val 0
021a7 (1): F=5.4 PASS
data:52.18

Bio-Rad PCR/PLS system 08/25/97 12:09
Run: Digilab
val 0
021b7 (1): F=9.6 FAIL-WARNING!
*** WARNING: Poor spectrum ***
data: 1.08

Bio-Rad PCR/PLS system 08/25/97 12:10
Run: Digilab
val 0
021b7 (1): F=6.3 FAIL-WARNING!
*** WARNING: Poor spectrum ***
data:55.15

Bio-Rad PCR/PLS system 08/25/97 12:10
Run: Digilab
val 0
043a7 (1): F=3.1 PASS
data: 5.73

Bio-Rad PCR/PLS system 08/25/97 12:10
Run: Digilab
val 0
043a7 (1): F=4.7 PASS

data:57.82

Bio-Rad PCR/PLS system 08/25/97 12:11
Run: Digilab
val 0
043b7 (1): F=4.8 PASS
data: 7.18

Bio-Rad PCR/PLS system 08/25/97 12:12
Run: Digilab
val 0
043b7 (1): F=8.0 FAIL-WARNING!
*** WARNING: Poor spectrum ***
data:60.92

Bio-Rad PCR/PLS system 08/25/97 12:12
Run: Digilab
val 0
033a7 (1): F=6.1 FAIL-WARNING!
*** WARNING: Poor spectrum ***
data: 5.70

Bio-Rad PCR/PLS system 08/25/97 12:13
Run: Digilab
val 0
033a7 (1): F=4.5 PASS
data:48.34

Bio-Rad PCR/PLS system 08/25/97 12:13
Run: Digilab
val 0
033b7 (1): F=6.1 FAIL-WARNING!
*** WARNING: Poor spectrum ***
data: 4.55

Bio-Rad PCR/PLS system 08/25/97 12:13
Run: Digilab
val 0
033b7 (1): F=4.5 PASS
data:56.34

Bio-Rad PCR/PLS system 08/25/97 12:14
Run: Digilab
val 0
022a7 (1): F=3.5 PASS
data: 2.24

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