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To Distribution	From Characterization Plans and Reports	Page 1 of 2	
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Page 1 of 1

1. EDT No 612157

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**This document was reviewed following the
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May 30, 1995

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SUPPORTING DOCUMENT

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Signature

Organization/Charge Code 75310/MDR21

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WHC-SD-WM-DP-114, REV. 0

ANALYTICAL SERVICES

**60-DAY SAFETY SCREEN RESULTS AND FINAL REPORT FOR
TANK 241-C-111, AUGER SAMPLES 95-AUG-002, 95-AUG-003,
95-AUG-016 AND 95-AUG-017**

Date Printed:

MAY 24 1995

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WHC-SD-WM-DP-114, REV. 0

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NARRATIVE

Summary

Initial auger sampling of tank C-111 took place on 1/17/95. Two augers were taken. Sample recovery was deemed inadequate, so a second sampling event was planned and performed. The results from both sampling events have been combined into this report. This report represents the final deliverable for these two sampling events.

The four auger samples from tank C-111 were received by the 222-S laboratories, and underwent safety screening analysis (DSC, TGA, and Alpha Total), and the primary Ferrocyanide DQO analyses (ICP Ni, CN, TOC) in accordance with reference (1) below. No results exceeded the notification limits.

Sample Receipt and Extrusion

Auger 95-AUG-002

Auger 95-AUG-002, a 10 inch auger, was sampled on 1/17/95, and received at the 222-S laboratory the same day. Extrusion took place on 1/18. No sample was observed on the auger. No drainable liquid was recovered. The expected sample length was 8 inches.

Auger 95-AUG-003

Auger 95-AUG-003, a 20 inch auger, was sampled on 1/17/95, and received at the 222-S laboratory the same day. Extrusion took place on 1/18, with the total amount of solid material recovered being 3.56 grams. No drainable liquid was recovered. The expected sample length was 7 inches. The solid material was brown in color, dry and crumbly in appearance. The sample was located on the tip and lowest two flutes of the auger. Homogenization was not performed because this would result in unacceptable moisture and sample loss. The entire sample was provided to the laboratory for analysis. Due to the small amount of sample recovered, a memorandum of understanding (reference (2) below) was provided to the 222-S laboratory requesting that a DSC, TGA, and ICP Ni analysis be performed. Results for this sample appear on page 1 of table 1, the analytical data summary table.

Auger 94-AUG-016

Auger 95-AUG-016, a 20 inch auger, was sampled on 3/25/95, and received at the 222-S laboratory on 3/27. Extrusion took place on 3/31, with the total amount of solid material recovered being 275 grams. No drainable liquid was recovered. The expected sample length was 12 inches. The bottom 12 inches of the auger were completely full with sample material. The solid material was dark brown in color, with the bottom 4 inches being darker than the upper 8 inches. On the bottom flutes, beneath this dark layer of heavy paste, an inner layer of crumbly tan solids could be seen. Auger 16 was segregated into quarter segments, with flutes 1-9 designated as quarter segment B (82.0 grams), flutes 10-13 as quarter segment C (120 grams), and flutes 14-18 as quarter segment D (73.6 grams). Results for these quarter segments appear on page 2 of table 1.

Auger 95-AUG-017

Auger 95-AUG-017, a 20 inch auger, was sampled on 3/25/95, and received at the 222-S laboratory on 3/27. Extrusion took place on 3/31, with the total amount of solid material recovered being 47 grams. No drainable liquid was recovered. The expected sample length was 12.75 inches. The solids were very dry and crumbly in appearance, off white in color, and did not adhere to the auger but fell to the tray below upon extrusion. Based on its appearance, this sample was classified as "saltcake", and analyzed accordingly. The required analyses for "saltcake" samples are DSC and TGA only. Results for this sample appear on page 3 of table 1.

Analytical Results

TGA (Moisture)

The weight percent water by Thermogravimetric Analysis (TGA) was performed using procedures LA-560-112 Rev. A-2 (Mettler) and LA-514-114 Rev. B-0 (Perkin-Elmer) with a nitrogen purge. All results were above the notification limit, which is calculated for each sample based on the DSC results, therefore no notifications were made (TGA notification is made only when results are below the notification limit). Sample S95T000122, auger 95-AUG-003, exceeded the Tank Characterization Plan (TCP) precision criteria. The sample result was 26.5%, the duplicate 35.5%, with a relative percent deviation (RPD) of 28.9 between the sample and duplicate. A third analysis, identified as dup2, was performed. The dup2 result was 22.2%. The dup2 result does not appear in the summary table, but is contained in the raw data. Sample S95T000571, the "C" quarter segment from 95-AUG-016, also exceeded the 10% precision criteria, but by a smaller amount. The sample result was 44.7%, the duplicate 38.6%, with a relative percent deviation (RPD) of 14.8 between the sample and duplicate. A triplicate sample was run with the result of 38.5%. The triplicate result does not appear in the summary table, but is contained in the raw data. All samples met the TCP accuracy criteria of 10%.

The sample from 95-AUG-017, a "saltcake" sample (S95T000577), demonstrated zero weight loss in the region of water. This behavior was observed in a previous sample (core 59) from tank C-111, and indicates the sample is composed of a hydrophobic compound such as aluminum hydroxide. The core 59 sample was similar in appearance to the 95-AUG-017 "saltcake" sample. Notification was not required because the TGA limit is based on the DSC result. The DSC result for S95T000577 was less than detectable exotherms.

DSC

Differential thermal analyses (DSC) were performed using procedures LA-514-113 Rev. B-1 (Mettler), and LA-514-114 Rev. B-0 (Perkin Elmer) under a nitrogen purge. None of the samples contained exotherms above the instrument detection limit. No analytical problems were noted. All samples met the TCP accuracy and precision criteria of 10%.

Alpha Total

The Alpha Total (AT) analyses were performed using procedure LA-508-101 Rev. D-2. As required in references (1) and (2) below, only samples from 95-AUG-016 were analyzed for AT. The TCP requested Alpha Total analysis on a half segment level. Results have been provided on a quarter segment level because the fusion preparations are performed on quarter segments. The effort involved to provide the additional alpha results is minimal. All sample results were fifty to one hundred fold lower than the TCP notification limit of 41 uCi/g. No analytical problems were noted. The TCP accuracy and precision criteria of 20% were met in each case.

Total Organic Carbon

The total organic carbon (TOC) analyses were performed using procedure LA-342-100 Rev. A-0. As required in references (1) and (2) below, only samples from 95-AUG-016 were analyzed for TOC. Only one quarter segment was required to be analyzed for TOC, but batching efficiency allowed for all quarter segments to be analyzed with minimal additional effort. All sample results were far below the TCP notification limit of 30,000 ug/g. No analytical problems were noted. All TCP accuracy and precision criteria (20%) were met.

Cyanide

The cyanide (CN) analyses were performed using procedure LA-695-102 Rev. C-0. As required in references (1) and (2) below, only samples from 95-AUG-016 were analyzed for CN. Only one quarter segment was required to be analyzed for TOC, but batching efficiency allowed for all quarter segments to be analyzed with minimal additional effort. All sample results were far below the TCP notification limit of 39,000 ug/g. One rerun was performed due to high spike recovery. All TCP accuracy and precision criteria (10%) were met.

ICP Ni

The ICP Ni analyses were performed using procedure LA-505-161 Rev. A-1. As required in references (1) and (2) below, only samples from 95-AUG-003 and 95-AUG-016 were analyzed for Ni. Only every other quarter segment was required to be analyzed for Ni, but batching efficiency allowed for all quarter segments to be analyzed with minimal additional effort. The samples were prepared by fusion in zirconium crucibles. Nickel crucibles are typically used but are believed to introduce significant amounts of nickel to the sample during the fusion process. Quarter segments "B" and "C" of 95-AUG-016 exceeded the TCP precision criteria of 10%. This is most likely due to the two distinct layers observed in the sample (see extrusion discussion above). The TCP accuracy criteria (10%) were met.

WHC-SD-WM-DP-114, REV. 0

- References:
- (1) WHC-SD-WM-TP-209, REV. 1C, "Tank 241-C-111 Tank Characterization Plan", dated March 16, 1995, Westinghouse Hanford Company, Richland, WA 99352.
 - (2) WHC Internal Memo 71520-95-105, D. Bratzel to J. Kristofzski, "Memorandum of Understanding for Analysis of Tank 241-C-111 Sample 95-AUG-003", dated February 21, 1995.

WHC-SD-WM-DP-114, REV. 0

SAMPLE DATA SUMMARY

Table 1: 60 Day and Final Report for Augers 95-AUG-003/16/17
C-111

CORE NUMBER: n/a
SEGMENT #: 95-AUG-003

SEGMENT PORTION: W Whole Segment

Sample#	R	A#	Analyte	Unit	Action Limits		Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count	Err%
					Lower	Upper										
S95T000122			% Water by TGA using Mettler	%	-1.000	101.000	99.31	n/a	26.54	35.50	31.02	28.9	n/a	n/a		n/a
S95T000122			DSC Exotherm Dry Calculated	Joules/g Dry	-1.000	482.000	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a		n/a
S95T000122			DSC Exotherm using Mettler	Joules/g	-1.000	482.000	99.12	n/a	0.00e+00	0	0.000	n/a	n/a	n/a		n/a
S95T000123	Z		Nickel -ICP-Fusion	ug/g	None	None	102.6	5.520	2.11e+04	21400	21250	1.41	n/a	105.0		n/a

=> Limit violated
=> Selected Limit

Table 1: 60 Day and Final Report for Augers 95-AUG-003/16/17
C-111

CORE NUMBER: n/a
SEGMENT #: 95-AUG-016

SEGMENT PORTION: B Second Quarter of Segment

Sample#	R	A#	Analyte	Unit	Action Limits		Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count	Err%
					Lower	Upper										
S95T000570			TOC by Persulfate/Coulometry	ug/g	-1.000	30000.00	96.00	23.90	639.0	7.24e2	6.82e+02	12.5	n/a	80.00		n/a
S95T000570			% Water by TGA on Perkin Elmer	%	None	None	99.21	n/a	28.01	28.24	28.12	0.82	n/a	n/a		n/a
S95T000570			DSC Exotherm on Perkin Elmer	Joules/g	None	None	95.78	n/a	0.00e+00	0	0.000	n/a	n/a	n/a		n/a
S95T000570			DSC Exotherm Dry Calculated	Joules/g Dry	-1.000	482.000	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a		n/a
S95T000570			Cyanide by Microdist. & Spec.	ug/g	-1.000	30000.00	101.4	5.00e-01	93.80	83.6	88.70	11.5	97.70	1.500		n/a
S95T000573	Z		Nickel -ICP-Fusion	ug/g	None	None	101.5	1.46e-01	1.55e+04	20770.70	18131	29.1	95.40	206.0		n/a
S95T000573	Z		Alpha of Digested Solid	uCi/g	-1.000	41.000	81.76	<3.79e-02	6.82e-01	8.15e-1	7.48e-01	17.8	89.10	8.40e-02		14.9

C Third Quarter of Segment: C Third Quarter of Segment

Sample#	R	A#	Analyte	Unit	Action Limits		Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count	Err%
					Lower	Upper										
S95T000571			TOC by Persulfate/Coulometry	ug/g	-1.000	30000.00	96.00	23.90	1.22e+03	1.28e3	1.25e+03	4.80	98.60	80.00		n/a
S95T000571			% Water by TGA on Perkin Elmer	%	None	None	99.21	n/a	44.74	38.58	41.66	14.8	n/a	n/a		n/a
S95T000571			DSC Exotherm on Perkin Elmer	Joules/g	None	None	95.78	n/a	0.00e+00	0	0.000	n/a	n/a	n/a		n/a
S95T000571			DSC Exotherm Dry Calculated	Joules/g Dry	-1.000	482.000	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a		n/a
S95T000571			Cyanide by Microdist. & Spec.	ug/g	-1.000	30000.00	105.8	4.30e-01	155.0	151	153.0	2.61	106.0	2.400		n/a
S95T000574	Z		Nickel -ICP-Fusion	ug/g	None	None	101.5	1.46e-01	2.24e+04	27325.09	24878	19.7	88.00	197.0		n/a
S95T000574	Z		Alpha of Digested Solid	uCi/g	-1.000	41.000	81.76	<3.79e-02	3.80e-01	4.04e-1	3.92e-01	6.12	103.8	8.10e-02		21.3

D Bottom Quarter of Segment: D Bottom Quarter of Segment

Sample#	R	A#	Analyte	Unit	Action Limits		Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count	Err%
					Lower	Upper										
S95T000572			TOC by Persulfate/Coulometry	ug/g	-1.000	30000.00	94.33	37.20	909.0	8.93e2	9.01e+02	1.78	n/a	80.00		n/a
S95T000572			% Water by TGA using Mettler	%	-1.000	101.000	100.6	n/a	44.23	44.25	44.24	0.05	n/a	n/a		n/a
S95T000572			DSC Exotherm Dry Calculated	Joules/g Dry	-1.000	482.000	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a		n/a
S95T000572			DSC Exotherm using Mettler	Joules/g	-1.000	482.000	92.09	n/a	0.00e+00	0	0.000	n/a	n/a	n/a		n/a
S95T000572			Cyanide by Microdist. & Spec.	ug/g	-1.000	30000.00	105.8	4.30e-01	107.0	104	105.5	2.84	n/a	4.600		n/a
S95T000575	Z		Nickel -ICP-Fusion	ug/g	None	None	101.5	1.46e-01	1.15e+04	11424.04	11451	0.47	94.40	181.0		n/a
S95T000575	Z		Alpha of Digested Solid	uCi/g	-1.000	41.000	81.76	<3.32e-02	3.85e-01	4.06e-1	3.96e-01	5.31	90.00	7.40e-02		22.5

=> Limit violated
=> Selected Limit

WHC-SD-WM-DP-114 REV 0

Table 1: 60 Day and Final Report for Augers 95-AUG-003/16/17
C-111

CORE NUMBER: n/a
SEGMENT #: 95-AUG-017

SEGMENT PORTION: W Whole Segment

Sample#	R	A#	Analyte	Unit	Action Limits		Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
					Lower	Upper									
S95T000577			% Water by TGA using Mettler	%	-1.000	101.000	100.6	n/a	0.00e+00	0	0.000	n/a	n/a	n/a	n/a
S95T000577			DSC Exotherm Dry Calculated	Joules/g Dry	-1.000	482.000	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
S95T000577			DSC Exotherm using Mettler	Joules/g	-1.000	482.000	92.09	n/a	0.00e+00	0	0.000	n/a	n/a	n/a	n/a

=> Limit violated
=> Selected Limit

WHC-SD-WM-DP-114, REV. 0

CHAIN OF CUSTODY FORMS

CHAIN-OF-CUSTODY RECORD FOR AUGER SAMPLING

COPY

(1) Shipment Number 52094 (2) Sample Number 95-AUG-002 (3) Supervisor PRAZNIK
 (4) Tank C111 (5) Riser 2 (6) Cask Serial Number C1052

Radiation Survey Data:		(7) FIELD	(31) LABORATORY	(8) Shipment Description	
Over Top Dose Rate	<u><0.5</u>	<u><0.5</u>	<u><0.5</u>	A. Work Package Number	<u>2E-94-0699-12</u>
Side Dose Rate	<u><0.5</u>	<u><0.5</u>	<u><0.5</u>	B. Cask Seal Number	<u>3795</u>
Bottom Dose Rate	<u><0.5</u>	<u><0.5</u>	<u><0.5</u>	C. Date and Time Sample	<u>1-17-95 / 1130 hrs</u>
Smearable Contamination	<u><20 DPM</u> (Alpha)	<u><20 DPM</u> (Alpha)	<u><20 DPM</u> (Alpha)	Removed from Tank	<u>5%</u>
	<u><1000 DPM</u> (Beta-Gamma)	<u><1000 DPM</u> (Beta-Gamma)	<u><1000 DPM</u> (Beta-Gamma)	D. Expected Liquid Content	<u>95%</u>
RCT* <u>[Signature]</u> (Signature)	RCT* <u>[Signature]</u> (Signature)			E. Expected Solid Content	<u>1 mR/hr</u>
				F. Dose Rate Through Drill String	<u>8"</u>
				G. Expected Sample Length	

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

11

WHC-SD-WM-DP-114, REV. 0

(10) Field Comments	(32) Laboratory Comments

(11) Point of Origin <u>C-111/R/2</u>	(12) Destination <u>222 SLAB</u>	(13) Sender Name (Sign and PRINT) <u>PRAZNIK, R.J.</u>	(14) Date/Time <u>1-17-95</u>	(15) Sender Comments
(17) Relinquished By (Sign and PRINT) <u>PRAZNIK, R.J.</u>	(18) Received By (Sign and PRINT) <u>[Signature]</u>	(19) Date/Time <u>1-17-95 1409</u>	(20) Receiver Comments	
(21) Relinquished By (Sign and PRINT) <u>[Signature]</u>	(22) Received By (Sign and PRINT) <u>[Signature]</u>	(23) Date/Time <u>1-17-95 1525</u>	(24) Receiver Comments	
(25) Relinquished By (Sign and PRINT) <u>[Signature]</u>	(26) Received By (Sign and PRINT) <u>[Signature]</u>	(27) Date/Time	(28) Receiver Comments	

(16) Seal Intact Upon Release? ☒ Yes ☐ No	(29) Seal Intact Upon Receipt? ☒ Yes ☐ No	(30) Seal Data Consistent with this Record?	
		Shipment No. ☒ Yes ☐ No	Cask Seal No. ☒ Yes ☐ No
			Sample No. ☒ Yes ☐ No

CHAIN-OF-CUSTODY RECORD FOR AUGER SAMPLING

COPY

(1) Shipment Number 52094 (2) Sample Number 95-AUG-003 (3) Supervisor Proznick
(4) Tank C-111 (5) Riser 2 (6) Cask Serial Number C1034

Radiation Survey Data:		(7) FIELD	(31) LABORATORY	(8) Shipment Description	
Over Top Dose Rate	<u><0.5</u>		<u><0.5</u>	A. Work Package Number	<u>2E-94-0699-W</u>
Side Dose Rate	<u><0.5</u>		<u><0.5</u>	B. Cask Seal Number	<u>3793</u>
Bottom Dose Rate	<u>0.7</u>		<u>0.7</u>	C. Date and Time Sample	<u>1-17-95/1230hrs</u>
Smearable Contamination	<u><200PMI</u> (Alpha)		<u><200PMI</u> (Alpha)	Removed from Tank	
	<u><10000PMI</u> (Beta-Gamma)		<u><10000PMI</u> (Beta-Gamma)	D. Expected Liquid Content	<u>10%</u>
RCT*	<u>[Signature]</u> (Signature)		RCT*	<u>[Signature]</u> (Signature)	E. Expected Solid Content
				F. Dose Rate Through Drill String	<u>15 mR/hr</u>
				G. Expected Sample Length	<u>~ 7"</u>

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

12

WHCSD-WM-DP-114, REV 0

(10) Field Comments		(32) Laboratory Comments			
(11) Point of Origin <u>C-111 R/2</u>	(12) Destination <u>2225 Lab</u>	(13) Sender Name (Sign and PRINT) <u>Proznick, R.J.</u>		(14) Date/Time <u>1-17-95</u>	(15) Sender Comments
(17) Relinquished By (Sign and PRINT) <u>Proznick, R.J.</u>		(18) Received By (Sign and PRINT) <u>[Signature]</u>		(19) Date/Time <u>1-17-95 1409</u>	(20) Receiver Comments
(21) Relinquished By (Sign and PRINT) <u>[Signature]</u>		(22) Received By (Sign and PRINT) <u>[Signature]</u>		(23) Date/Time <u>1-17-95 1525</u>	(24) Receiver Comments
(25) Relinquished By (Sign and PRINT)		(26) Received By (Sign and PRINT)		(27) Date/Time	(28) Receiver Comments
(16) Seal Intact Upon Release? ☒ Yes ☐ No		(29) Seal Intact Upon Receipt? ☒ Yes ☐ No		(30) Seal Data Consistent with this Record? ☒ Yes ☐ No	
Shipment No. ☒ Yes ☐ No		Cask Seal No. ☒ Yes ☐ No		Sample No. ☒ Yes ☐ No	

CHAIN-OF-CUSTODY RECORD FOR AUGER SAMPLING

COPY

(1) Shipment Number 200W-08-TF (2) Sample Number 95-AUG-016 (3) Supervisor PRAZNIK, R.S.
 (4) Tank C-111 (5) Riser #6 (6) Cask Serial Number 1014C

Radiation Survey Data:		(7) FIELD	(31) LABORATORY	(8) Shipment Description	
Over Top Dose Rate	<u>40.5 mR/hr</u>		<u>< 5 mR/hr</u>	A. Work Package Number	<u>ES-94-00699-W</u>
Side Dose Rate	<u>40 mR/hr</u>		<u>40 mR/hr</u>	B. Cask Seal Number	<u># 1025</u>
Bottom Dose Rate	<u>2.1 mR/hr</u>		<u>2.0 mR/hr</u>	C. Date and Time Sample	<u>3-25-95 / 1045hrs</u>
Smearable Contamination	<u>< 200 dpm</u>		<u>< 20 dpm</u>	Removed from Tank	<u>10%</u>
	(Alpha)		(Alpha)	D. Expected Liquid Content	<u>90%</u>
	<u>1100 dpm</u>		<u>11K dpm</u>	E. Expected Solid Content	<u>2 R/hr uncorrected</u>
	(Beta-Gamma)		(Beta-Gamma)	F. Dose Rate Through Drill String	<u>12"</u>
RCT*	<u>Captal</u>	RCT*	<u>Sh. Praznik</u>	G. Expected Sample Length	
	(Signature)		(Signature)		

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

13

(10) Field Comments	(32) Laboratory Comments

(11) Point of Origin <u>CW 4/6</u>	(12) Destination <u>2225 LAB</u>	(13) Sender Name (Sign and PRINT) <u>PRAZNIK, R.S.</u>	(14) Date/Time <u>3-22-95/0830</u>	(15) Sender Comments <u>EVERYTHING INTACT</u>
(17) Relinquished By (Sign and PRINT) <u>KAREN LEE</u>	(18) Received By (Sign and PRINT) <u>KAREN LEE</u>	(19) Date/Time <u>3-22-95/130</u>	(20) Receiver Comments	
(21) Relinquished By (Sign and PRINT) <u>KAREN LEE</u>	(22) Received By (Sign and PRINT) <u>EE Dube</u>	(23) Date/Time <u>3-22-95/200</u>	(24) Receiver Comments	
(25) Relinquished By (Sign and PRINT)	(26) Received By (Sign and PRINT)	(27) Date/Time	(28) Receiver Comments	
(16) Seal Intact Upon Release?		(30) Seal Data Consistent with this Record?		
☒ Yes ☐ No	(29) Seal Intact Upon Receipt?			
☒ Yes ☐ No	☒ Yes ☐ No	Shipment No. ☒ Yes ☐ No	Cask Seal No. ☒ Yes ☐ No	Sample No. ☒ Yes ☐ No

WHC-SD-WM-DP-114, REV. 0

CHAIN-OF-CUSTODY RECORD FOR AUGER SAMPLING

COPY

(1) Shipment Number 200W-08TF (2) Sample Number 95-AUG-017 (3) Supervisor PRAZNIK, R.J.
 (4) Tank C111 (5) Riser #3 (6) Cask Serial Number 1007C

Radiation Survey Data:		(7) FIELD	(31) LABORATORY	(8) Shipment Description	
Over Top Dose Rate	<u>40.5 mR/hr</u>		<u>4.5 mR/hr</u>	A. Work Package Number	<u>ES-94-00689W</u>
Side Dose Rate	<u>40.5 mR/hr</u>		<u>4.5 mR/hr</u>	B. Cask Seal Number	<u>#1026</u>
Bottom Dose Rate	<u>1 mR/hr</u>		<u>4.5 mR/hr</u>	C. Date and Time Sample	<u>325-95/1645hr</u>
Smearable Contamination	<u>420 dpm</u>		<u>420 dpm</u>	Removed from Tank	<u>10%</u>
	(Alpha)		(Alpha)	D. Expected Liquid Content	<u>90%</u>
	<u>11000 dpm</u>		<u>11K dpm</u>	E. Expected Solid Content	<u>5 mR/hr</u>
	(Beta-Gamma)		(Beta-Gamma)	F. Dose Rate Through Drill String	<u>≈ 12 3/4"</u>
RCT*	<u>[Signature]</u>	RCT*	<u>[Signature]</u>	G. Expected Sample Length	
	(Signature)		(Signature)		

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

WHC-SD-WM-DP-114, REV. 0

(10) Field Comments		(32) Laboratory Comments	
(11) Point of Origin	(12) Destination	(13) Sender Name (Sign and PRINT)	(14) Date/Time
<u>C-111 R/3</u>	<u>222S LAB</u>	<u>PRAZNIK, R.J.</u>	<u>3-27-95/0830</u>
(17) Relinquished By (Sign and PRINT)	(18) Received By (Sign and PRINT)	(15) Sender Comments	(19) Date/Time
<u>[Signature]</u>	<u>[Signature]</u>	<u>EVERYTHING INTACT</u>	<u>3-27-95 1130</u>
(21) Relinquished By (Sign and PRINT)	(22) Received By (Sign and PRINT)	(20) Receiver Comments	(23) Date/Time
<u>[Signature]</u>	<u>[Signature]</u>		<u>3-27-95 1200</u>
(25) Relinquished By (Sign and PRINT)	(26) Received By (Sign and PRINT)	(24) Receiver Comments	(27) Date/Time
(28) Receiver Comments			

(16) Seal Intact Upon Release?

☒ Yes ☐ No

(29) Seal Intact Upon Receipt?

☒ Yes ☐ No

(30) Seal Data Consistent with this Record?

Shipment No.

☒ Yes ☐ No

Cask Seal No.

☒ Yes ☐ No

Sample No.

☒ Yes ☐ No

WHC-SD-WM-DP-114, REV. 0

PHOTOGRAPHS

C-111 95-AUG-002 RISER 2

95-AUG-003

RISE 2 TANK C-111

1-18-95

C-III 95 AUG-017 Riser #3 3-31-95

C-111 95-AUG-016 Riser #6 3-31-95

WHC-SD-WM-DP-114, REV. 0

HOT CELL LOGBOOK

DRS 1.5C

WHC-SD-WM-DP-114, REV. 0

RECORD COPY NOT FOR CIRCULATION MAY 14 1993 RECEIVED WHC BCSR DOCUMENT CONTROL	NOTEBOOK NUMBER			
	WHC-N-742 1			
	DATE OF ISSUE		SERIES AND COPY	
	5-14-93		1	
	TITLE (INDICATE SUBJECT CONTENT)			
TANK C-III				
AUTHOR(S) - DEPARTMENT AND SECTION				
R.K. Fuller				
222-S LABORATORY - Hot Cell Operations				
PERIOD COVERED (INCLUSIVE - MONTH, DATE, YEAR)				
FROM 4-14-94 TO				
IF CONTINUED FROM ANOTHER NOTEBOOK, GIVE NOTEBOOK NUMBER				
IF CONTINUED IN ANOTHER NOTEBOOK, GIVE NOTEBOOK NUMBER				
ROUTE TO	P.R. NO.	LOCATION	ROUTE DATE	SIGNATURE & DATE
R.K. Fuller	67528	T6-30	MAY 14 1994	Keith Fuller 5/18/94

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WHC-SD-WM-DP-114, REV. 0

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6	Chain of Custody information
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11	Homogenization C-III C 58 Segment #1
11-13	Extrusion info C-III C58 Seg. #1
14	C-III Core 58 Seg #1 35mm Photo
15	C-III Core 58 ⁵⁹ Seg #1 35mm Photo
16-18	C-III Field Blank Extrusion
19	Sample Information / Submitted to Lab
20-21	C-III Core 60 Seg #1 Extrusion
22	Photography C-III Core 60 Seg #1
23	C-III Core 58 SEGMENT #1 Rock
24	C-III Core 58 Segment #1 Rock - photograph
25	C-III CORE 58 SEGMENT #1 Rock
26	C-III CORE 58 SEGMENT #1 Rock - PHOTOGRAPH
27	
28	C-III 95-AUG-002 ^{Riser} Segment #2 (Change of Custody)
29	INF. photo ^{RH} ON 95-AUG-002. (Riser 2)
30	PHOTO ON 95 AUG-002 (Riser 2)
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33-37	C-III 95-AUG-017 (Riser 3)
38-41	C-III 95-AUG-016 (Riser 6)

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CHAIN-OF-CUSTODY RECORD FOR AUGER SAMPLING

COPY

(1) Shipment Number 52094 (2) Sample Number 95-AUG-002 (3) Supervisor PRAZNIK
 (4) Tank C111 (5) Riser 2 (6) Cask Serial Number C1052

Radiation Survey Data:		(7) FIELD	(31) LABORATORY	(8) Shipment Description	
Over Top Dose Rate	<u><0.5</u>		<u><0.5</u>	A. Work Package Number	<u>2E-94-0699-112</u>
Side Dose Rate	<u><0.5</u>		<u><0.5</u>	B. Cask Seal Number	<u>3795</u>
Bottom Dose Rate	<u><0.5</u>		<u><0.5</u>	C. Date and Time Sample	<u>1-17-95 / 1130 hrs</u>
Smearable Contamination	<u><200 DPM</u>		<u><200 DPM</u>	Removed from Tank	<u>5%</u>
	(Alpha)		(Alpha)	D. Expected Liquid Content	<u>95%</u>
	<u><1000 DPM</u>		<u><1000 DPM</u>	E. Expected Solid Content	<u>1 mR/hr</u>
	(Beta-Gamma)		(Beta-Gamma)	F. Dose Rate Through Drill String	<u>8"</u>
RCT*	<u>[Signature]</u>		<u>[Signature]</u>	G. Expected Sample Length	
	(Signature)		(Signature)		

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

(10) Field Comments

(32) Laboratory Comments

(11) Point of Origin <u>C-111/R12</u>	(12) Destination <u>222 SLAB</u>	(13) Sender Name (Sign and PRINT) <u>PRAZNIK, R.J.</u>	(14) Date/Time <u>1-17-95</u>	(15) Sender Comments
(17) Relinquished By (Sign and PRINT) <u>[Signature]</u>	(18) Received By (Sign and PRINT) <u>[Signature]</u>	(19) Date/Time <u>1-17-95 1409</u>	(20) Receiver Comments	
(21) Relinquished By (Sign and PRINT) <u>[Signature]</u>	(22) Received By (Sign and PRINT) <u>[Signature]</u>	(23) Date/Time <u>1-17-95 1525</u>	(24) Receiver Comments	
(25) Relinquished By (Sign and PRINT) <u>[Signature]</u>	(26) Received By (Sign and PRINT) <u>[Signature]</u>	(27) Date/Time	(28) Receiver Comments	

(16) Seal Intact Upon Release?

☒ Yes ☐ No

(29) Seal Intact Upon Receipt?

☒ Yes ☐ No

Shipment No.

☒ Yes ☐ No

(30) Seal Data Consistent with this Record?

Cask Seal No.

☒ Yes ☐ No

Sample No.

☒ Yes ☐ No

January 18/1995

Tank: C-III Riser 2. (95-AUG-002)
TCP# WHC-SD-WM-TP-209
CASH# C1052
Light # WHC-NI-742

Video Tape #1 (C farm)
Photos used: 2 & 3 with Hasselblad camera
workperfect directory for this tank -
(C:\WPDATA\WPPlans\C FARM\C-III)
word perfect file: C-III AUG. INF
work-tish #421

Balance Check = 20g - 19.94g SOLG - 500.00g
Temperature = 79.8 Humidity = 25%

There was NO liner liquid = Completely Empty
Description of Solids = NONE (Empty)
Auger = Completely Empty
Record dose rate through drill string (1 m2)

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R. Hunter 1/18/95

WHC-SD-WM-DP-114, REV. 0

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* See note

WHC-SD-WM-DP-114, REV.0

1/18/95

31

Tank C-III Riser 2

TCP#: WHC-SD-WM-TP209

Sample#: 95-AUG-003

Cask #: C1034

Logbook #: WHC-NI-742

Photo: Hasselblad camera was used on frame 4, 5

Video Tape Number #1 (C-Farm)

wordperfect directory: (C:\WPDATA\WRPlans\CFarm\CIII)

wordperfect file: C-III AUG.INF

work list # 420

Balance - Check = 20g = 19.991g 500g = 499.965g
Hot Cell Temp. 79.1 Humidity 25%

Description of Solids:

Small amount of Brown Solids on tip of Auger - no material on flute #1-18

Sample was very dry and brittle

A 20ml vial was used to collect sample.
At Time 14:06.

Vial # - 6486 = Sample description

Size - 20ml

Final wt. 30.829 gram

Initial wt. 27.261

Net 3.568g

~~C-III 95 AUG 003 Riser 2 Ret.~~
(C-III 95 AUG 003 Riser 2) 1/18/95

There were no liner liquids collected

* See Chain of Custody on Page 32. RK Fuller 1/18/95

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CHAIN-OF-CUSTODY RECORD FOR AUGER SAMPLING

(1) Shipment Number 52094 (2) Sample Number 95-ALB-DD3 (3) Supervisor Reznick (4) Tank C-11 (5) Riser 2 (6) Cask Serial Number C1034

Radiation Survey Data:		(7) FIELD		(31) LABORATORY		(8) Shipment Description	
Over Top Dose Rate	<0.5	<0.5	<0.5	A. Work Package Number	3793	B. Cask Seal Number	1-1795/1230hrs
Side Dose Rate	0.7	0.7	0.7	C. Date and Time Sample Removed from Tank	10%	D. Expected Liquid Content	90%
Bottom Dose Rate	<200 PPM	<200 PPM	<200 PPM	E. Expected Solid Content	15 m/hr	F. Dose Rate Through Drill String	~7"
Smearable Contamination	<1000 PPM	<1000 PPM	<1000 PPM	G. Expected Sample Length			
RCT* <u>[Signature]</u> (Beta-Gamma)		RCT* <u>[Signature]</u> (Beta-Gamma)					
(Alpha) <1000 PPM		(Alpha) <1000 PPM					
(Signature) <1000 PPM		(Signature) <1000 PPM					

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

(10) Field Comments

(11) Point of Origin C-11/14/2	(12) Destination 2225 Lab	(13) Sender Name (Sign and PRINT) Reznick, E.S.	(14) Date/Time 1-17-95	(15) Sender Comments
(17) Relinquished By (Sign and PRINT) [Signature]	(18) Received By (Sign and PRINT) [Signature]	(19) Date/Time 1-17-95	(20) Receiver Comments	
(21) Relinquished By (Sign and PRINT) [Signature]	(22) Received By (Sign and PRINT) [Signature]	(23) Date/Time 1-17-95	(24) Receiver Comments	
(25) Relinquished By (Sign and PRINT) [Signature]	(26) Received By (Sign and PRINT) [Signature]	(27) Date/Time 1-17-95	(28) Receiver Comments	

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

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

Shipment No. ☒ Yes ☐ No
 Cask Seal No. ☒ Yes ☐ No
 Sample No. ☒ Yes ☐ No
 (30) Seal Data Consistent with this Record?

WHC-SD-WM-DP-114, REV. 0

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R Hunter 1/18/95

CHAIN-OF-CUSTODY RECORD FOR AUGER SAMPLING

COPY

(1) Shipment Number 200W-08TF (2) Sample Number 95-AUG-017 (3) Supervisor PRAZNIK, R.J.
 (4) Tank C11 (5) Riser #3 (6) Cask Serial Number 1007C

Radiation Survey Data:		(7) FIELD	(31) LABORATORY	(8) Shipment Description	
Over Top Dose Rate	<u>40.5 mR/hr</u>		<u>1.5 mR/hr</u>	A. Work Package Number	<u>ES-94-00694W</u>
Side Dose Rate	<u>40.5 mR/hr</u>		<u>1.5 mR/hr</u>	B. Cask Seal Number	<u>#1026</u>
Bottom Dose Rate	<u>1 mR/hr</u>		<u>1.5 mR/hr</u>	C. Date and Time Sample	<u>3-25-95/1645hr</u>
Smearable Contamination	<u>220 dpm</u>		<u>220 dpm</u>	Removed from Tank	<u>10%</u>
	(Alpha)		(Alpha)	D. Expected Liquid Content	<u>90%</u>
	<u>11000 dpm</u>		<u>1.1K dpm</u>	E. Expected Solid Content	<u>5 mR/hr</u>
	(Beta-Gamma)		(Beta-Gamma)	F. Dose Rate Through Drill String	<u>≈ 12 3/4"</u>
RCT*	<u>[Signature]</u>	RCT*	<u>[Signature]</u>	G. Expected Sample Length	
	(Signature)		(Signature)		

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

(10) Field Comments

(32) Laboratory Comments

(11) Point of Origin <u>C-111 R/3</u>	(12) Destination <u>222S LAB</u>	(13) Sender Name (Sign and PRINT) <u>PRAZNIK, R.J.</u>	(14) Date/Time <u>3-27-95/0830</u>	(15) Sender Comments <u>EVERYTHING INTACT</u>
(17) Relinquished By (Sign and PRINT) <u>[Signature]</u>	(18) Received By (Sign and PRINT) <u>[Signature]</u>	(19) Date/Time <u>3-27-95/1130</u>	(20) Receiver Comments	
(21) Relinquished By (Sign and PRINT) <u>[Signature]</u>	(22) Received By (Sign and PRINT) <u>[Signature]</u>	(23) Date/Time <u>3-27-95/1200</u>	(24) Receiver Comments	
(25) Relinquished By (Sign and PRINT)	(26) Received By (Sign and PRINT)	(27) Date/Time	(28) Receiver Comments	

(16) Seal Intact Upon Release? ☒ Yes ☐ No	(29) Seal Intact Upon Receipt? ☒ Yes ☐ No	(30) Seal Data Consistent with this Record? ☒ Yes ☐ No
---	---	--

DISTRIBUTION: White - Office of Sample Management Yellow - Recipient of Sample Pink - Waste Tank Sampling, F7-12 Goldenrod - Tank Farm Operations, T4-01 BC-6001-326 (03/94)

WHC-SD-WM-DP-114, REV. 0

3/31/95

C-111

95-AUG-017

35

Labcore # 595T000479

WHC-SD-WM-DP-114, REV. 0

PC = Andy Rice

20 gm = 19.99

500 gm = 499.96

Temp. 82.1 (F)

Humidity 20%

Solids Description

Light cream color very dry and crumbly, fell off auger. Auger has 18 flutes, flutes 1-8 were clean flutes 9-18 contained sample. Collected solids in one jar.

Sample Description- C-111 95-AUG-017

Jar # 6679

Jar Size # 125 mL

(A) Anal wt 175.36 gms

(B) Int. wt 128.07 gms

(C) Net wt. 47.29 gms

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AB Campbell
3/31/95

3/31/95
36

C-111 95-205-017

WHC-SD-WM-DP-114, REV. 0

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CRB Complete
3-31-95

3/31/95

C-111

95-AUG-017

WHC-SD-WM-DP-114, REV 0

37

C-111 95-AUG-017 Riser #3 3-31-95

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CHAIN-OF-CUSTODY RECORD FOR AUGER SAMPLING

WHL

38

(1) Shipment Number 200W-08-TF (2) Sample Number 95-AUG-016 (3) Supervisor PRAZNIK, R.J.
 (4) Tank C-111 (5) Risor #6 (6) Cask Serial Number 1014C

Radiation Survey Data:		(7) FIELD	(31) LABORATORY	(8) Shipment Description	
Over Top Dose Rate	<u>20.5 mR/hr</u>		<u>4.5 mR/hr</u>	A. Work Package Number	<u>ES-94-00699-W</u>
Side Dose Rate	<u>40 mR/hr</u>		<u>40 mR/hr</u>	B. Cask Seal Number	<u># 1025</u>
Bottom Dose Rate	<u>2.1 mR/hr</u>		<u>2.0 mR/hr</u>	C. Date and Time Sample	<u>3-25-95 / 1045hrs</u>
Smearable Contamination	<u>220 dpm</u>		<u>220 dpm</u>	Removed from Tank	<u>10%</u>
	(Alpha)		(Alpha)	D. Expected Liquid Content	<u>90%</u>
	<u>1100 dpm</u>		<u>11K dpm</u>	E. Expected Solid Content	<u>2 R/hr uncorrected</u>
	(Beta-Gamma)		(Beta-Gamma)	F. Dose Rate Through Drill String	<u>12"</u>
RCT	<u>[Signature]</u>	RCT	<u>[Signature]</u>	G. Expected Sample Length	
	(Signature)		(Signature)		

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

(10) Field Comments

(32) Laboratory Comments

(11) Point of Origin <u>C111 R/G</u>	(12) Destination <u>222S LAB</u>	(13) Sender Name (Sign and PRINT) <u>PRAZNIK, R.J.</u>	(14) Date/Time <u>3-27-95/0830</u>	(15) Sender Comments <u>EVERYTHING INTACT</u>
(17) Relinquished By (Sign and PRINT) <u>[Signature]</u>	(18) Received By (Sign and PRINT) <u>KAREN LEE</u>	(19) Date/Time <u>3-27-95/1130</u>	(20) Receiver Comments	
(21) Relinquished By (Sign and PRINT) <u>[Signature]</u>	(22) Received By (Sign and PRINT) <u>E.E. [Signature]</u>	(23) Date/Time <u>3-27-95/2000</u>	(24) Receiver Comments	
(25) Relinquished By (Sign and PRINT)	(26) Received By (Sign and PRINT)	(27) Date/Time	(28) Receiver Comments	
(16) Seal Intact Upon Release? ☒ Yes ☐ No		(29) Seal Intact Upon Receipt? ☒ Yes ☐ No		(30) Seal Data Consistent with this Record? ☒ Yes ☐ No
Shipment No. ☒ Yes ☐ No		Cask Seal No. ☒ Yes ☐ No		Sample No. ☒ Yes ☐ No

TRIBUTION: White - Office of Sample Management Yellow - Recipient of Sample Pink - Waste Tank Sampling, F7-12 Goldenrod - Tank Farm Operations, T4-01 BC-6001-326 (03/94)

WMC-SD-MM-DP-114, REV. 0

3/31/95

C-111 95-Aug-016

WHC-SD-WM-DP-114 REV. A

39

Labcore # 595T000478

P.C. = Andy Rice

20 gm 19.99

500 gm 499.95

Temp 82.1 °F

Humidity 20%

BEST AVAILABLE COPY

Solids Description; milk chocolate brown,
 Paste consistency, Bulk of solids on flutes
 8-18 (Flutes are completely full of sample.
 Some of the solids are composed of a
 crumbly material tan in color.

Sample Description -

Jar # 6681	Jar size 125 ml	Flutes 14-18
(A) Final wt #	201.88 gms	
(B) INT WT #	128.30 gms	C-111 95-Aug-016
(C) Net WT #	73.58 gms	QTR Seg D

Jar 6682	Jar size 125 ml	Flutes 10-13
(A) Final wt #	247.76 gms	
(B) INT WT #	127.99 gms	C-111 95-Aug-016
(C) Net WT #	119.77 gms	QTR Seg C

Jar 6683	Jar size 125 ml	Flutes 1-9
(A) Final wt #	210.11	
(B) INT WT #	128.06	C-111 95-Aug-016
(C) Net WT #	82.05	QTR Seg B

Post Extrusion	Jar # 6681	WT 73.58	gms
	Jar # 6682	WT 119.77	gms
	Jar # 6683	WT 82.05	gms
	Total WT	275.40	gms

A B Campbell
 3/31/95

3/31/95
40

~~WHC-SD-WM-DP-114~~ DEVT *MMW*
5/24/95

WHC-SD-WM-DP-114, REV. 0

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J.R. Campbell
3/31/95

3-31-95

C-111 - 95-AUG-C12 WHC-SD-WM-DP-114, REV. 0

41

C-111 95-AUG-016 Riser #6 3-31-95

BEST AVAILABLE COPY

MARCH 31, 95

HOMOGENIZATION & SUBSAMPLING

C-111(AUGER) 95-AUG-017 Rise #3

JAR# 6679 (125 ml)
Initial wt. 175.20 gram
Final wt. 171.89
Net wt. 3.31 ↓

JAR# 6819 (20 ml)
Initial wt. 27.35 gram
Final wt. 30.45
Net wt. 3.10 ↓

- Transferred 3.10 grams into vial #6819, which was submitted to the Lab: DSC & TGA.

C-111(AUGER) 95-AUG-016 Rise #6

JAR# 6681 (125 ml)
Initial wt. 201.59 gram
Final wt. 193.03
Net wt. 8.56 ↓

- Transferred 5.63 grams into vial #6820, which was submitted to the Lab: DSC/TGA/CN/TOC/Fusion.

BEST AVAILABLE COPY

John B. Dwyer
3/31/95

MARCH 31, 95

HOMOGENIZATION & SUBSAMPLINGC-111 95 AUG - 016 Riser #6

JAR #6683 (125ml)
 Initial wt. 209.76 gram
 Final wt. 200.25
 Net wt. 9.51 ↓

JAR #6822 (20ml)
 Initial wt. 27.40 gram
 Final wt. 32.62
 Net wt. 5.22 ↓

- Transferred 5.22 grams into vial #6822, which
 was submitted to the Lab: DSC/TGA/CW/TOC/Fusion

C-111 95 AUG - 016 Riser #6

JAR #6682 (125ml)
 Initial wt. 248.51 gram
 Final wt. 238.16
 Net wt. 10.35 ↓

JAR #6821 (20ml)
 Initial wt. 27.08 gram
 Final wt. 32.44
 Net wt. 5.36 ↓

- Transferred 5.36 grams into vial #6821, which
 was submitted to the Lab: DSC/TGA/CW/TOC/Fusion

BEST AVAILABLE COPY

3/31/95
 A. B. [Signature]

WHC-SD-WM-DP-114, REV. 0

SAMPLE HANDLING

Analyst:

SC

Instrument: BA000

Method:

LO-160-103

A-6

Worklist Comment: C-111 95-AUG-003 Extrusion

Seg	Type	Sample#	Rep	AltTest	Matrix	Actual	Found	DL	Unit
1	INSTCHK01			EXTRUD01	SOLID	20	19.99	N/A	
2	INSTCHK02			EXTRUD01	SOLID	500	499.96	N/A	
3	SAMPLE	S95T000023	0	DLIQVOL1	SOLID	N/A	0		mL
4	SAMPLE	S95T000023	0	DLIQWT01	SOLID	N/A	0		g
5	SAMPLE	S95T000023	0	EST.G/ML	SOLID	N/A	0		g/mL
6	SAMPLE	S95T000023	0	EXTRUD01	SOLID	N/A	complete		
7	SAMPLE	S95T000023	0	LLIQWT01	SOLID	N/A	0		g
8	SAMPLE	S95T000023	0	NOTEBOOK	SOLID	N/A	WHC-N-742		
9	SAMPLE	S95T000023	0	SLDVOL01	SOLID	N/A	0		mL
10	SAMPLE	S95T000023	0	SLDWT-01	SOLID	N/A	3		g
11	SAMPLE	S95T000023	0	ORGVOL01	SOLID	N/A	0		mL
12	SAMPLE	S95T000023	0	FSLDWT01	SOLID	N/A	0		g

Final page for worklist # 420

Analyst Signature

Date

Data Entry Comments:

Reviewed by Al B. Bandy 1-18-95

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

Page:

1

WHC-SD-WM-DP-114 REV. 0
LABCORE Data Entry Template for Worklist# 421

Analyst: EC Instrument: BA000 Method: LO-160-103 A-6

Worklist Comment: C-111 95-AUG-002 Extrusion

Seg	Type	Sample#	Rep	AltTest	Matrix	Actual	Found	DL	Uni
1	INSTCHK01			EXTRUD01	SOLID	<u>20</u>	<u>19.94</u>	<u>N/A</u>	
2	INSTCHK02			EXTRUD01	SOLID	<u>500</u>	<u>500.00</u>	<u>N/A</u>	
3	SAMPLE	S95T000025	0	DLIQVOL1	SOLID	<u>N/A</u>	<u>0</u>		mL
4	SAMPLE	S95T000025	0	DLIQWT01	SOLID	<u>N/A</u>	<u>0</u>		g
5	SAMPLE	S95T000025	0	EST.G/ML	SOLID	<u>N/A</u>	<u>0</u>		g/mL
6	SAMPLE	S95T000025	0	EXTRUD01	SOLID	<u>N/A</u>	<u>complete EC 1-18-95</u>		
7	SAMPLE	S95T000025	0	LLIQWT01	SOLID	<u>N/A</u>	<u>0</u>		g
8	SAMPLE	S95T000025	0	NOTEBOOK	SOLID	<u>N/A</u>	<u>WHC-N-742</u>		
9	SAMPLE	S95T000025	0	SLDVOL01	SOLID	<u>N/A</u>	<u>0</u>		mL
10	SAMPLE	S95T000025	0	SLDWT-01	SOLID	<u>N/A</u>	<u>0</u>		g
11	SAMPLE	S95T000025	0	ORGVOL01	SOLID	<u>N/A</u>	<u>0</u>		mL
12	SAMPLE	S95T000025	0	FSLDWT01	SOLID	<u>N/A</u>	<u>0</u>		g

Final page for worklist # 421

EC
Analyst Signature

1-18-95
Date

John B. Long

1-18-95

Data Entry Comments:

Worklist Reviewed by John B. Long

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

Page: 1

LABCORE Data Entry Template for Worklist# 869

Analyst: EC Instrument: BA000 NA Book # NA

Method: LO-160-103 Rev/Mod A-7

Worklist Comment: C-111 95-AUG-016 Riser #6 Extrusion

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	INSTCHK01				EXTRUD01	SOLID	<u>20</u>	<u>19.99</u>	<u>N/A</u>	
		2	INSTCHK02				EXTRUD01	SOLID	<u>500</u>	<u>499.95</u>	<u>N/A</u>	
95000041	C-111	3	SAMPLE	S95T000478	0		DLIQVOL1	SOLID	<u>N/A</u>	<u>0</u>		mL
95000041	C-111	4	SAMPLE	S95T000478	0		DLIQWT01	SOLID	<u>N/A</u>	<u>0</u>		g
95000041	C-111	5	SAMPLE	S95T000478	0		EST.G/ML	SOLID	<u>N/A</u>	<u>0</u>		g/mL
95000041	C-111	6	SAMPLE	S95T000478	0		EXTRUD01	SOLID	<u>N/A</u>	<u>complete</u>		
95000041	C-111	7	SAMPLE	S95T000478	0		LLIQWT01	SOLID	<u>N/A</u>	<u>0</u>		g
95000041	C-111	8	SAMPLE	S95T000478	0		NOTEBOOK	SOLID	<u>N/A</u>	<u>WHC-N-742</u>		
95000041	C-111	9	SAMPLE	S95T000478	0		SLDVOL01	SOLID	<u>N/A</u>	<u>2.75</u>		mL
95000041	C-111	10	SAMPLE	S95T000478	0		SLDWT-01	SOLID	<u>N/A</u>	<u>275</u>		g
95000041	C-111	11	SAMPLE	S95T000478	0		ORGVOL01	SOLID	<u>N/A</u>	<u>0</u>		mL

Final page for worklist # 869

EC 4-3-95
Analyst Signature Date

EC 4-3-95
Analyst Signature Date

Data Entry Comments:

Reviewed 4/3/95
PK

LABCORE Data Entry Template for Worklist# 870

Analyst: EC Instrument: BA000 NA Book # NA

Method: LO-160-103 Rev/Mod A-7

Worklist Comment: C-111 95-AUG-017 Riser #3 Extrusion

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 INSTCHK01			EXTRUD01	SOLID	<u>20</u>	<u>19.99</u>	<u>N/A</u>	
		2 INSTCHK02			EXTRUD01	SOLID	<u>500</u>	<u>499.96</u>	<u>N/A</u>	
95000042	C-111	3 SAMPLE	S95T000479	0	DLIQVOL1	SOLID	<u>N/A</u>	<u>0</u>		mL
95000042	C-111	4 SAMPLE	S95T000479	0	DLIQWT01	SOLID	<u>N/A</u>	<u>0</u>		g
95000042	C-111	5 SAMPLE	S95T000479	0	EST.G/ML	SOLID	<u>N/A</u>	<u>0</u>		g/mL
95000042	C-111	6 SAMPLE	S95T000479	0	EXTRUD01	SOLID	<u>N/A</u>	<u>Complete</u>		
95000042	C-111	7 SAMPLE	S95T000479	0	LLIQWT01	SOLID	<u>N/A</u>	<u>0</u>		g
95000042	C-111	8 SAMPLE	S95T000479	0	NOTEBOOK	SOLID	<u>N/A</u>	<u>WHC-N-742</u>		
95000042	C-111	9 SAMPLE	S95T000479	0	SLDVOL01	SOLID	<u>N/A</u>	<u>47</u>		mL
95000042	C-111	10 SAMPLE	S95T000479	0	SLDWT-01	SOLID	<u>N/A</u>	<u>47</u>		g
95000042	C-111	11 SAMPLE	S95T000479	0	ORGVOL01	SOLID	<u>N/A</u>	<u>0</u>		mL

Final page for worklist # 870

EC 3-31-95
Analyst Signature Date

EC 3-31-95
Analyst Signature Date

Data Entry Comments:

Revised 4/3/95 PKA

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.

WHC-SD-WM-DP-114, REV. 0

SAMPLE PREPARATIONS

LABCORE Data Entry Template for Worklist# 611

Analyst: lmh Instrument: FUS01 AL11066 Book # _____

Method: LA-549-141 Rev/Mod C-2

Worklist Comment: C-111 FUSION DIGEST (W/ZR. CRUCIBLE)-122->123, .25G--->.250L

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1, BLNK-PREP			FUS-ZR01	SOLID	<u>250</u>	<u>250</u>	N/A	g/L
95000005	C-111	2 SAMPLE	S95T000123	0 Z	FUS-ZR01	SOLID	N/A	<u>4.0008</u>		g/L
		<u>1.0002g</u> → <u>.250L</u>			<u>(4.0008 g/L)</u>					
95000005	C-111	3 DUP	S95T000123	0 Z	FUS-ZR01	SOLID	<u>4.0008</u>	<u>4.0020</u>	N/A	g/L
		<u>1.0005g</u> → <u>.250L</u>			<u>(4.0020 g/L)</u>					

Final page for worklist # 611

[Signature] 4-6-95
Analyst Signature Date

Bertrand Griffin II 4-7-95
Analyst Signature Date

Data Entry Comments:

HPT was Bob Clemons
4500 mrad
150 mR

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

worklistrpt Version 2.0 02/21/95
04/13/95 14:47

WHC-SD-WM-DP-114, REV. 0

4/13/95

Page: 1

LABCORE Data Entry Template for Worklist# 1129

Analyst:

l m h

Instrument: FUS01

AL11066

Book #

Method: LA-549-141 Rev/Mod

C-2

Worklist Comment: C-111 FUSION (ZR) - 572->575

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 BLNK-PREP			FUS-ZR01	SOLID	2.5000	2.5000	N/A	g/L
95000041	C-111	2 SAMPLE	S95T000575	0 Z	FUS-ZR01	SOLID	N/A	2.3260		g/L
			581.5g					2.3260		
95000041	C-111	3 DUP	S95T000575	0 Z	FUS-ZR01	SOLID	2.3260	2.3408	N/A	g/L
			583.2g					2.3408		

Final page for worklist # 1129

Analyst Signature

Date

4-18-95

Analyst Signature

Date

Bethand Griffin II 4-19-95

Data Entry Comments:

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HPT - 51g

OTR - 10 mrad

Bethand Griffin II

4-19-95

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# 1130

Analyst: lmh Instrument: FUS01 AL11066 Book # _____

Method: LA-549-141 Rev/Mod C-2

Worklist Comment: C-111 FUSION (ZR) - 570->573, 571->574

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 BLNK-PREP			FUS-ZR01	SOLID			N/A	g/L
95000041	C-111	2 SAMPLE	S95T000573	0 2	FUS-ZR01	SOLID	N/A	2.0400		g/L
								2.0400	2.0648	g/L
95000041	C-111	3 DUP	S95T000573	0 2	FUS-ZR01	SOLID	2.0648	2.1276	N/A	g/L
95000041	C-111	4 SAMPLE	S95T000574	0 2	FUS-ZR01	SOLID	N/A	2.1276		g/L
95000041	C-111	5 DUP	S95T000574	0 2	FUS-ZR01	SOLID	2.1276	2.1360	N/A	g/L

Final page for worklist # 1130

Analyst Signature

Date

4-18-95

Analyst Signature

Date

Bertrand Buffin II 4-24-95

Data Entry Comments:

Sig Landed

OTR 10 mrad/hr

Bertrand Buffin II

4-24-95

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.

WHC-SD-WM-DP-114, REV. 0

INORGANIC ANALYSES

LABCORE Data Entry Template for Worklist# 588

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

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

Worklist Comment: Please run C-111 DSC under N2. bdv

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			DSC-01	SOLID	<u>28.45</u>	<u>28.2</u>	<u>N/A</u>	Joules/g
95000005	C-111	2 SAMPLE	S95T000122	0	DSC-01	SOLID	<u>N/A</u>	<u>Ø</u>		Joules/g
95000005	C-111	3 DUP	S95T000122	0	DSC-01	SOLID	<u>Ø</u>	<u>Ø</u>	<u>N/A</u>	Joules/g
95000005	C-111	4 DUP2	S95T000122	0	DSC-01	SOLID	<u>Ø</u>	<u>Ø</u>	<u>N/A</u>	Joules/g

Final page for worklist # 588

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

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

Data Entry Comments:

dark brown clay like material, very crumbly. S95T000122
produced two endotherms one at 104.0°C with a delta H of 854.1 J/g
and the second at 300.6°C with a delta H of 231.7 J/g

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

WHC-SD-WM-DP-114, REV. 0
LABCORE Data Entry Template for Worklist# 588

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

Worklist Comment: Please run C-111 DSC under N2. bdv

Seg	Type	Sample#	Rep	AI	Test	Matrix	Actual	Found	DL	Unit
1	STD				DSC-01	SOLID	<u>28.45</u>	<u>28.2</u>	<u>N/A</u>	Joule
2	SAMPLE	S95T000122	0		DSC-01	SOLID	<u>N/A</u>	<u>Ø</u>		Joule
3	DUP	S95T000122	0		DSC-01	SOLID	<u>Ø</u>	<u>Ø</u>	<u>N/A</u>	Joule

Final page for worklist # 588

Susie M. Fulton
 Analyst Signature

3-18-95
 Date

Data Entry Comments:

Dark brown clay like material, very
crumbly.

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 51 TO 54.

DSC STD 12N14-A File: 00010.001 DSC METTLER 17-Mar-95
6.438 mg Rate: 10.0 °C/min Ident: 0.0 222-S Laboratory

180. 3/22/95

140.

120.

James M. Decker

LABCORE Data Entry Template for Worklist# 1009

Analyst: SMF Instrument: DSC-03 Book # 12 N14-A

Method: LA-514-114 Rev/Mod B-0

Worklist Comment: Please run C-111 DSC under N2. bdy

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
95000041	C-111	1 STD	DSC-03			SOLID	28.45	26.76	N/A	joules/g
95000041	C-111	2 SAMPLE	S95T000570	0		SOLID	N/A			joules/g
95000041	C-111	3 DUP	S95T000570	0		SOLID			N/A	joules/g
95000041	C-111	4 STD	DSC-03			SOLID	28.45	27.25	N/A	joules/g
95000041	C-111	5 SAMPLE	S95T000571	0		SOLID	N/A			joules/g
95000041	C-111	6 DUP	S95T000571	0		SOLID			N/A	joules/g

Final page for worklist # 1009

See attached for signatures 5/9/95 BGV
Analyst Signature Date
Analyst Signature Date
5-9-95

Verified by Beaudine-Raluyala 5/9/95

These samples and duplicate were analyzed on two different days. The respective standard is above the sample and duplicate. It produced two endothermic regions, one at 102.7°C with a delta H of 760.17g, and the second was at 264.7°C with a delta H of 363.5°C. Sample was a reddish-brown, thick clay like material.

S95T000571 was run first. It produced two endotherms one at 126.4°C with a delta H of 1110.27g and the second at 113.3-272.4°C with a delta H of 113.3.

Sample was a reddish brown thick clay 5/9/95 BGV like material. 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# 1009

Analyst: SMF Instrument: DSC01 Book # 12N14-17

Method: LA-514-¹¹⁴~~113~~ Rev/Mod B-0
SMF

Worklist Comment: Please run C-111 DSC under N2. bdv

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			DSC-01	SOLID			N/A	Joules/g
95000041	C-111	2 SAMPLE	S95T000570	0	DSC-01	SOLID	N/A			Joules/g
95000041	C-111	3 DUP	S95T000570	0	DSC-01	SOLID			N/A	Joules/g
95000041	C-111	4 SAMPLE	S95T000571	0	DSC-01	SOLID	N/A			Joules/g
95000041	C-111	5 DUP	S95T000571	0	DSC-01	SOLID			N/A	Joules/g

Final page for worklist # 1009

Susie M. Fulton 5-5-95
Analyst Signature Date

Analyst Signature Date

Data Entry Comments:

S95T000571 - Redish Brown, thick clay like material

S95T000570 - Same as S95T000570

Other instrument was used

Curve 1: DSC

File info: IND050801 Mon May 8 08:12:11 1995

Sample Weight: 6.746 mg

Indium at 10c/min SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 57 TO 62.

N2 exotherm down

TEMP1: 150.0 °C TIME1: 0.0 min RATE1: 10.0 °C/min
TEMP2: 170.0 °C

SM FULTON
Westinghouse Hanford Co.
222-S Lab
Mon May 8 08:28:34 1995

WHC-SD-WM-DP-114, REV.0

BEST AVAILABLE COPY

Curve 1: DSC

File info: SAM050801 Mon May 8 09:58:55 1995

Sample Weight: 25.330 mg

S95T000570, 10C/min

exotherm down, nitrogen purge gas

TEMP1: 33.0 °C TIME1: 0.0 min RATE1: 10.0 °C/min
TEMP2: 500.0 °C

Temperature (°C)

SM Fulton
Westinghouse Hanford Co.
222-S Lab
Mon May 8 10:00:31 1995

TEST AVAILABLE COPY
WHCSD-WM-DP-114, REV.0

Curve 1: DSC

File info: SAM050802 Mon May 8 12:34:57 1995

Sample Weight: 29.120 mg

S95T000570 (DUP), 10C/min

59

exotherm down, nitrogen purge gas

Temperature (°C)

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

SM Fulton
Westinghouse Hanford Co.
222-S Lab
Mon May 8 12:39:08 1995

2025 RELEASE COPY

WHC-SD-WM-DP-114, REV.0

Curve 1: DSC

File info: IND050501 Fri May 5 09:02:39 1995

Sample Weight: 6.746 mg

Indium at 10c/min

N2 exotherm down

TEMP1: 150.0 °C TIME1: 0.0 min RATE1: 10.0 °C/min

TEMP2: 170.0 °C

SM FULTON
Westinghouse Hanford Co.
222-S Lab
Fri May 5 09:06:51 1995

WHC-SD-WM-DP-114, REV.0

Curve 1: DSC

File info: SAM050501 Fri May 5 14:15:12 1995

Sample Weight: 26.590 mg

S95T000751, 10C/min

exotherm down, nitrogen purge gas

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

Temperature (°C)

SM Fulton
Westinghouse Hanford Co.
222-S Lab
Fri May 5 14:21:28 1995

2001 RELEASE COPY

WHC-SD-MM-DP-114, REV.0

Curve 1: DSC

File info: SAM050502 Fri May 5 12:16:15 1995

Sample Weight: 21.920 mg

S95T000571 (DUP), 10C/min

exotherm down, nitrogen purge gas

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

Temperature (°C)

SM Fulton
Westinghouse Hanford Co.
222-S Lab
Fri May 5 13:18:01 1995

WHC-SD-MM-DP-114, REV.0

LABCORE Data Entry Template for Worklist# 1011

Analyst: BW ^{BCIO} _{5/1/95} _{BDV} Instrument: DSC01 Book # 12N/4-A
Method: LA-514-113 Rev/Mod B-1

Worklist Comment: Please run C-111 DSC under N2. bdv

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			DSC-01	SOLID	<u>28.45</u>	<u>26.2</u>	<u>N/A</u>	Joules/g
95000041	C-111	2 SAMPLE	S95T000572	0	DSC-01	SOLID	<u>N/A</u>	<u>Ø</u>		Joules/g
95000041	C-111	3 DUP	S95T000572	0	DSC-01	SOLID	<u>Ø</u>	<u>Ø</u>	<u>N/A</u>	Joules/g
95000042	C-111	4 SAMPLE	S95T000577	0	DSC-01	SOLID	<u>N/A</u>	<u>Ø</u>		Joules/g
95000042	C-111	5 DUP	S95T000577	0	DSC-01	SOLID	<u>Ø</u>	<u>Ø</u>	<u>N/A</u>	Joules/g

Final page for worklist # 1011

B. Wegner 5/5/95
Analyst Signature Date

[Signature] 5/8/95
Analyst Signature Date

Verified by Blandina Valenzuela 5/9/95

Data Entry Comments:

S 95T000572 - Brownish Red Clay-Like Substan
S 95T000577 - Sand colored - very dry particle

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

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 64 TO 68.

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WHC-SD-WM-DP-114, REV. 0

64

S95T000577 N2

8.362 mg

Rate: 10.0 °C/min

File: 00078.001

Ident: 0.0

DSC METTLER

05-May-95

222-S Laboratory

LABCORE Data Entry Template for Worklist# 589

Analyst: SMF Instrument: TGA01 Book # 42N8-A

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

Worklist Comment: Please run C-111 TGA under N2. bdv

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			TGA-01	SOLID	<u>59.19</u>	<u>58.78</u>	<u>N/A</u>	%
95000005	C-111	2 SAMPLE	S95T000122	0	TGA-01	SOLID	<u>N/A</u>	<u>26.54</u>		%
95000005	C-111	3 DUP	S95T000122	0	TGA-01	SOLID	<u>26.54</u>	<u>35.50</u>	<u>N/A</u>	%
95000005	C-111	4 DUP2	S95T000122	0	TGA-01	SOLID	<u>26.54</u>	<u>22.15</u>	<u>N/A</u>	%

Final page for worklist # 589

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

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

Data Entry Comments:

Sample was dark brown clay like material and very crumbly.
S95T000122 produced a second weight loss step after the initial water loss
at 273.0°C with ^a 8.97% loss.

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.

WHC-SD-WM-DP-114 REV 0
LABCORE Data Entry Template for Worklist# 589

Analyst: SME Instrument: TGA01 _____ Method: LA-560-112/A-2

Worklist Comment: Please run C-111 TGA under N2. bdv

Seg	Type	Sample#	Rep	AI	Test	Matrix	Actual	Found	DL	Unit
1	STD				TGA-01	SOLID			N/A	%
2	SAMPLE	S95T000122	0		TGA-01	SOLID	N/A			%
3	DUP	S95T000122	0		TGA-01	SOLID			N/A	%

Final page for worklist # 589

Lusie M. Fulton
Analyst Signature

3-18-95
Date

Data Entry Comments:

sample dark brown clay like material
and very crumbly

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 71 TO 74.

TGA STD 42N8-A

16.273 mg

Rate: 10.0 °C/min

File: 00011.001

TG

METTLER

17-Mar-95

Ident: 0.0

222-S Laboratory

Step Analysis
Height -9.56 mg
-58.78 %
ResidC. 6.71 mg
41.22 %
Dpeak 87.5 °C

5. mg

BEST AVAILABLE COPY.

WHC-SD-WM-DP-114, REV 0

50.

100.

150.

200.

Lusie M. Dulcor

3/22/95 BDM

5.000 1.000
23.0 7.00

Rate: 20.0 °C/min

1.000 0.00 1.000

1.0 1.0 0.0

Step Analysis
Height -3.07 mg
-26.54 %
ResiC. 8.47 mg
73.16 %
Dpeak 59.0 °C

Step Analysis
Height -1.04 mg
-8.97 %
ResiC. 7.18 mg
62.04 %
Dpeak 273.0 °C

S95T000122 (DUP) N2

20.258 mg

Rate: 10.0 °C/min

File: 00015.001

TG

METTLER

17-Mar-95

Ident: 0.0

222-S Laboratory

Step Analysis

Height -7.19 mg

-35.50 %

ResiC. 13.01 mg

64.22 %

Dpeak 75.0 °C

Step Analysis

Height -1.60 mg

-7.88 %

ResiC. 11.07 mg

54.67 %

Dpeak 283.0 °C

S95T000122 (DUP2) N2

File: 00017.001 TG METTLER 17-Mar-95

14.967 mg

Rate: 10.0 °C/min

Ident: 0.0

222-S Laboratory

Step Analysis

Height -3.32 mg

-22.15 %

ResiC. 11.61 mg

77.57 %

Dpeak 49.0 °C

Step Analysis

Height -1.78 mg

-11.92 %

ResiC. 9.53 mg

63.68 %

Dpeak 285.0 °C

LABCORE Data Entry Template for Worklist# 1044

Analyst: SMF Instrument: TGA-03 Book # 42N8-A

Method: LA-514-114 Rev/Mod B-D 5/9/95 BDV

Worklist Comment: Please run C-111 TGA under N2. bdv

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			TGA-03	SOLID	59.19	58.72	N/A	%
95000041	C-111	2 SAMPLE	S95T000570	0	TGA-03	SOLID	N/A	28.01		%
95000041	C-111	3 DUP	S95T000570	0	TGA-03	SOLID	28.01	28.24	N/A	%
		4 STD			TGA-03	SOLID	59.19	58.54	N/A	%
95000041	C-111	5 SAMPLE	S95T000571	0	TGA-03	SOLID	44.74	38.58	5.16% 5/9/95 BDV	%
95000041	C-111	6 DUP	S95T000571	0	TGA-03	SOLID	44.74	38.58	N/A	%
95000041	C-111	7 TRIPL	S95T000571	0	TGA-03	SOLID	44.74	38.47	N/A	%

Final page for worklist # 1044

See attached for Signatures 5/9/95
Analyst Signature Date

Li Jones 5-9-95
Analyst Signature Date

Verified by Blandina Valenzuela 5/9/95

The samples were run on two different days. The respective standard is found above the sample and duplicate.
S95T000570 was run second. It produced a second weight loss step of 5.87% at approximately 280°C. A triple was run 5/9/95 BDV

Data Entry Comments:

S95T000571 was run first. It produced a second weight loss step of 5.87% at approximately 280°C. A triple was run due to high RPD's.

LABCORE Data Entry Template for Worklist# 1044

Analyst: SMF Instrument: TGA01 Book # 42 N8-17

Method: LA-560-112 Rev/Mod LA-514-114/B-0

Worklist Comment: Please run C-111 TGA under N2. bdv

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			TGA-01	SOLID			N/A	%
95000041	C-111	2 SAMPLE	S95T000570	0	TGA-01	SOLID	N/A			%
95000041	C-111	3 DUP	S95T000570	0	TGA-01	SOLID			N/A	%
95000041	C-111	4 SAMPLE	S95T000571	0	TGA-01	SOLID	N/A			%
95000041	C-111	5 DUP	S95T000571	0	TGA-01	SOLID			N/A	%

Final page for worklist # 1044

Lusie M. Fulton 5-5-95
Analyst Signature Date

Analyst Signature Date

Data Entry Comments:

S95T000570 - Redish-Brown thick, clay like material

S95T000570 - Same as S95T000571

Other instrument was used.

Curve 1: TGA

File info: TER050801 Mon May 8 08:48:50 1995

Sample Weight: 12.046 mg

42N8A Terliq

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 77 TO 83.

BEST AVAILABLE COPY

WHC-SD-WM-DP-114, REV. 0

N2
TEMP1: 35.0 °C
TEMP2: 250.0 °C
TIME1: 0.0 min
RATE1: 10.0 °C/min

SM Fulton
PERKIN-ELMER
7 Series Thermal Analysis System
Mon May 8 08:49:50 1995

Curve 1: TGA

File info: SAM050801 Mon May 8 09:59:20 1995

Sample Weight: 19.201 mg

S956T000570, 10C/min

N2
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
Mon May 8 10:08:17 1995

TEST AVAILABLE COPY WHC-SD-WM-DP-114, REV.0

BEST AVAILABLE COPY

Curve 1: TGA
 File Info: SAM050802 Mon May 8 11:05:38 1995
 Sample Weight: 24.761 mg
 S95T000570 (DUP), 10C/min

N2
 TEMPI: 35.0 C
 TEMPE: 300.0 C
 TIME1: 0.0 min
 RATE1: 10.0 C/min
 SM Fulton
 PERKIN-ELMER
 7 Series Thermal Analysis System
 Mon May 8 11:40:31 1995

Curve 1: TGA

File info: TER050501 Fri May 5 09:21:48 1995

Sample Weight: 13.854 mg

42N8A Terliq

NOT AVAILABLE COPY WHC-SD-WM-DP-114, REV.0

N2

TEMP1: 35.0 °C
TEMP2: 250.0 °C
TIME1: 0.0 min RATE1: 10.0 °C/min

SM Fulton
PERKIN-ELMER
7 Series Thermal Analysis System
Fri May 5 10:39:45 1995

Curve 1: TGA

File info: SAM050501 Fri May 5 14:17:08 1995

Sample Weight: 18.493 mg

S95T000571, 10C/min

TEST AVAILABLE COPY WHC-SD-WM-DP-114, REV.0

N2
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
Fri May 5 14:35:03 1995

Curve 1: TGA

File info: SAM050502 Fri May 5 12:27:10 1995

Sample Weight: 18.146 mg

S95T000571 (DUP), 10C/min

TEST AVAILABLE COPY

WHC-SD-WM-DP-114, REV.0

N2

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

SM Fulton
PERKIN-ELMER
7 Series Thermal Analysis System
Fri May 5 13:26:47 1995

Curve 1: TGA

File info: SAM050503 Fri May 5 15:26:46 1995

Sample Weight: 13.329 mg

S95T000571 (TRIPL), 10C/min

TEST AVAILABLE COPY

WHC-SD-WM-DP-114, REV.0

N2

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

SM Fulton
PERKIN-ELMER
7 Series Thermal Analysis System
Fri May 5 15:37:51 1995

LABCORE Data Entry Template for Worklist# 1045

Analyst: BCW Instrument: TGA01 Book # 42N8-A

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

Worklist Comment: Please run C-111 TGA under N2. bdv

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			TGA-01	SOLID	<u>59.19</u>	<u>59.54</u>	<u>N/A</u>	%
95000041	C-111	2 SAMPLE	S95T000572	0	TGA-01	SOLID	<u>N/A</u>	<u>44.23</u>		%
95000041	C-111	3 DUP	S95T000572	0	TGA-01	SOLID	<u>44.23</u>	<u>44.25</u>	<u>N/A</u>	%
		4 STD			TGA-01	SOLID	<u>59.19</u>	<u>59.05</u>	<u>N/A</u>	%
95000042	C-111	5 SAMPLE	S95T000577	0	TGA-01	SOLID	<u>N/A</u>	<u>Ø</u>		%
95000042	C-111	6 DUP	S95T000577	0	TGA-01	SOLID	<u>Ø</u>	<u>Ø</u>	<u>N/A</u>	%

Final page for worklist # 1045

See attached for signatures 5/10/95
Analyst Signature Date

[Signature] 5-12-95
Analyst Signature Date

Verified by Blandina Valenzuela 5/15/95

Data Entry Comments: S95T000572 produced a second weight loss step of
8.52% at 275°C. Sample ^{5/10/95 BDV} ~~was~~ S95T000577 was run a
couple of days after S95T000572, a corresponding standard was
run with it.

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# 1045

Analyst: BW Instrument: TGA01 Book # 42N8-A

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

Worklist Comment: Please run C-111 TGA under N2. bdv

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			TGA-01	SOLID	<u>59.19</u>	<u>59.54</u>	<u>N/A</u>	%
95000041	C-111	2 SAMPLE	S95T000572	0	TGA-01	SOLID	<u>N/A</u>			%
95000041	C-111	3 DUP	S95T000572	0	TGA-01	SOLID			<u>N/A</u>	%
95000042	C-111	4 SAMPLE	S95T000577	0	TGA-01	SOLID	<u>N/A</u>	<u>Ø</u>		%
95000042	C-111	5 DUP	S95T000577	0	TGA-01	SOLID	<u>Ø</u>	<u>Ø</u>	<u>N/A</u>	%

Final page for worklist # 1045

B. Wagner 5/5/95
Analyst Signature Date

Analyst Signature Date

Data Entry Comments:

S95T000572 - Brownish-red clay-like substance
S95T000577 - Tan coloured - very dry particles

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

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 86 TO 91.

BEST AVAILABLE COPY

WHC-SD-WM-DP-114, REV. 0

File: 00075.001 TC METTLER 06-May-95
 Ident: 0.0 222-S Laboratory

S95T000572 N2
 8.599 mg Rate: 10.0 °C/min

TGA STD 42N8-A

19.976 mg

Rate: 10.0 °C/min

File: 00034.001

TG

METTLER

10-May-95

Ident: 0.0

222-S Laboratory

Step Analysis

Height-11.80 mg

-59.05 %

Resid. 8.18 mg

40.95 %

Dpeak 91.7 °C

68

5. mg

LABCORE Data Entry Template for Worklist# 1186

Analyst: R

Instrument: SP01

Book # 54N8B

Method: LA-695-102 Rev/Mod C-O

Worklist Comment: C-111 Cyanide

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 BLNK			CN-01	SOLID	<u>1</u>	<u>0.5</u>	N/A	ug/g
		2 STD			CN-01	SOLID	<u>917</u>	<u>930</u>	N/A	ug/ml <u>ug/g</u> gwb 4/27/95
95000041	C-111	3 SAMPLE	S95T000570	0	CN-01	SOLID	N/A	<u>93.8</u>	<u>1.5</u>	ug/g
95000041	C-111	4 DUP	S95T000570	0	CN-01	SOLID	<u>93.8</u>	<u>83.6</u>	N/A	ug/g
95000041	C-111	5 SPK	S95T000570	0	CN-01	SOLID	<u>100</u>	<u>97.7</u>	N/A	<u>90</u> <u>ug/g</u> gwb 4/27/95
		6 STD			CN-01	SOLID	<u>917</u>	<u>926</u>	N/A	<u>ug/ml</u> <u>ug/g</u> gwb 4/27/95

Final page for worklist # 1186

Analyst Signature [Signature] Date 4.27.95

Analyst Signature [Signature] Date 4-27-95

4330 grams of S95T000570 in 5ml EDTA/CN - 0.250ml al quot
Std = .500ml of .250 to total of 2.5ml - 54N8B
spike = .250ml of Std dilution

Revised ^{up} RW Schneider 4-28-95

.038 Blank
.721 Standard
.344 Sample
.312 Duplicate
.680 spike
.719 Standard

Data Entry Comments:

(1) Blank $\frac{(0.038 - 0.014205)}{0.143914} = 0.165 \text{ } \mu\text{g CN}^-$

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$$\frac{0.165 \text{ } \mu\text{g}}{4.00 \text{ ml}} \times \frac{5.00 \text{ ml}}{0.4330 \text{ g}} = \underline{0.5 \text{ } \mu\text{g/g}}$$

(2) STD

$$\frac{(0.721 - 0.038) - 0.014205}{0.143914} = 4.65 \text{ } \mu\text{g CN}^-$$

$$\frac{4.65 \text{ } \mu\text{g CN}^-}{0.500 \text{ ml}} \times 100 \text{ d.f.} = \underline{930 \text{ ppm}}$$

9404/29/95

$$930/917 \times 100\% = 101\% \text{ rec.}$$

(3) Sample

$$\frac{(0.344 - 0.038) - 0.014205}{0.143914} = 2.03 \text{ } \mu\text{g CN}^-$$

$$\frac{2.03 \text{ } \mu\text{g}}{0.250 \text{ ml}} \times \frac{5.00 \text{ ml}}{0.4330 \text{ g}} = \underline{93.8 \text{ } \mu\text{g/g}}$$

(4) Dup

$$\frac{(0.312 - 0.038) - 0.014205}{0.143914} = 1.81 \text{ } \mu\text{g CN}^-$$

$$\frac{1.81 \text{ } \mu\text{g}}{0.250 \text{ ml}} \times \frac{5.00 \text{ ml}}{0.4330 \text{ g}} = \underline{83.6 \text{ } \mu\text{g/g}}$$

(5) Spike

$$\frac{(0.680 - 0.344) - 0.014205}{0.143914} = 2.24 \text{ } \mu\text{g CN}^-$$

$$\frac{2.24 \text{ } \mu\text{g CN}^-}{0.250 \text{ ml}} \times 100 \text{ d.f.} = 896 \text{ ppm}$$

$$896/917 \times 100\% = 97.7\% \text{ rec.}$$

93

(6) Std.

$$\frac{(0.719 - 0.038) - 0.014205}{0.143914} = 4.63 \text{ } \mu\text{g CN}^-$$

$$\frac{4.63 \text{ } \mu\text{g CN}^-}{0.500 \text{ ml}} \times 100 \text{ d.f.} = \underline{926 \text{ ppm}}$$

93

$$926/917 \times 100\% = 101\% \text{ rec.}$$

WHC-SD-WM-DP-114, REV. 0

Cyanide Calibration with EDTA/en and Ammonium Sulfamate

Date: April 18, 1995

Calibration Standard: 44N8C

Instrument ID: WA93252

Working Standard Concentration: 1026 ppm / 100 d.f. = 10.26 ppm

Sample	Vol. Working Std. (ml)	ug CN-	Net Abs.
1	0	0	0
2	0.05	0.513	0.054
3	0.2	2.05	0.358
4	0.4	4.1	0.605
5	0.6	6.16	0.909
6	1	10.26	1.5
7	1.2	12.31	1.767

Regression Output:

Constant	0.014205
Std Err of Y Est	0.029141
R Squared	0.998507
No. of Observations	7
Degrees of Freedom	5

X Coefficient(s)	0.143914
Std Err of Coef.	0.002489

Handwritten signature
4/27/95

LABCORE Data Entry Template for Worklist# 1274

Analyst: CR Instrument: SP01 W/93252 Book #

Method: LA-695-102 Rev/Mod C-O

Worklist Comment: C-111 Cyanide Rerun

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 BLNK			CN-01	SOLID	1	0.43	N/A	ug/g
		2 STD			CN-01	SOLID	917	943	N/A	ug/g ^{ug/ml} _{ug/g} ^{gwb 5/3/95}
95000041	C-111	3 SAMPLE	S95T000571	0	CN-01	SOLID	N/A	155	2.4 4.5	ug/g ^{gwb 5/2/95}
95000041	C-111	4 DUP	S95T000571	0	CN-01	SOLID	155	151	N/A	ug/g
95000041	C-111	5 SPK	S95T000571	0	CN-01	SOLID	100	106	N/A	ug/g ^{ug/ml} _{ug/g} ^{gwb 5/3/95}
95000041	C-111	6 SAMPLE	S95T000572	0	CN-01	SOLID	N/A	107	4.6 4.5	ug/g ^{gwb 5/3/95}
95000041	C-111	7 DUP	S95T000572	0	CN-01	SOLID	107	104	N/A	ug/g
		8 STD			CN-01	SOLID	917	970	N/A	ug/g ^{ug/ml} _{ug/g} ^{gwb 5/3/95}

Final page for worklist # 1274

Analyst Signature

Date

Analyst Signature

Date

Light 5.2.95
S95T000571 = .6250g into 5ml EDTA/en
S95T000572 = .3290g into 5ml EDTA/en
Sample size = .250ml
Std Dilution = .250ml of 54N83 to 100. 25ml
Std size = .500ml
Spike = .250ml of Std dilution

5-3-95
045 Blank
738 Std
755 571
737 571 Duplicate
1103 571 spiked
313 572
306 572
757 Std

Data Entry Comments:

LABCORE IS ROUNDING DL BACK TO 2.0. RCJ

WHC-SD-WM-DP-114, REV. 0

Cyanide Calibration with EDTA/en and Ammonium Sulfamate

Date: April 18, 1995

Calibration Standard: 44N8C

Instrument ID: WA93252

Working Standard Concentration: 1026 ppm / 100 d.f. = 10.26 ppm

Sample	Vol. Working Std. (ml)	ug CN-	Net Abs.
1	0	0	0.
2	0.05	0.513	0.054
3	0.2	2.05	0.358
4	0.4	4.1	0.605
5	0.6	6.16	0.909
6	1	10.26	1.5
7	1.2	12.31	1.767

Regression Output:

Constant	0.014205
Std Err of Y Est	0.029141
R Squared	0.998507
No. of Observations	7
Degrees of Freedom	5

X Coefficient(s)	0.143914
Std Err of Coef.	0.002489

[Signature]
5/3/95

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

CN- DETERMINATION : LA-695-102 (C-0) BLANK, LIQUID, SOLID

Type	SAMPLE	
Solid	Sample Weight in grams (SS)	0.62500
Work List	Dissolution Volume (EDTA/en + sample) (DV)	5.00000
1274	Aliquot Analyzed from Dissolution (A)	4.00000
Test Code	Dilution Factor (DF)	1.250
CN-01	Absorbance of Blank	0.000
Matrix	Absorbance of Sample	0.045
Liquid	Y-Intercept Value	0.014205
Sample #	Slope Value	0.143914
Blank	µg of Cyanide	0.214
Instrument Code	µg CN- /g	4.28E-01
WA93252		
Analyst	µg of Cyanide = [(Absorb. of Sample - Absorb. of Blank) - (Y-Intercept)] / Slope Value	
Knight	µg/g of Cyanide = µg Cyanide / SS (g) * DF	
Date	Dilution Factor = (DV / SS) * A	
05/02/95	Detection Limit = 0.1µg Cyanide / SS * DF	
Time	v RESULTS v	
	Cyanide Concentration (µg/g)	4.28E-01
Calibration Date		Detection Limit
04/18/95		µg CN- / g
		2.00E-01

Data Entry by: *[Signature]* Date: 05/03/95
 Approved by: *[Signature]* Date: 5-3-95

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

CN- DETERMINATION : LA-695-102 (C-0) SPIKE, STANDARD

Type	NA	STANDARD
Standard	Standard Aliquot in mL	0.250
Work List	Diluent + Standard Volume	25.00
1274	Diluted Standard in mL to be Analyzed	0.500
Test Code	True Value CN- Concentration (µg/mL)	917
CN-01	Absorbance of Blank	0.045
Matrix	Absorbance of Standard	0.738
Liquid	Y-Intercept Value	0.014205
Sample #	Slope Value	0.143914
54N8B	µg of CN in Standard	4.717
Instrument Code		
WA93252		
Analyst		
Knight		
Date	µg of CN-/mL in Standard	943
05/02/95		
Time	Standard % Recovery	102.9%
Calibration Date	Slope and Y-Intercept calculated from working curve calibration	
04/18/95	Original Sample Calculation from Form 695102C1	

$$\mu\text{g of CN- in Sample+Spike} = [(\text{Absorbance of Sample+Spike} - \text{Absorbance of Blank}) - (\text{Y-Intercept})] / \text{Slope Value}$$

$$\mu\text{g/mL of CN-} = \mu\text{g of CN- in Standard} / \text{Diluted Standard} * \text{Dilution Factor}$$

$$\text{Dilution Factor} = \text{Flask Volume} / \text{Standard Aliquot}$$

$$\text{Standard \% Recovery} = (\mu\text{g of CN-/mL in Standard} / \text{True Value CN- Concentration} (\mu\text{g/mL})) * 100$$

Data Entry by:	<i>[Signature]</i>	Date:	05/03/95
Approved by:	<i>RW Schneider</i>	Date:	

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

CN- DETERMINATION : LA-695-102 (C-0) BLANK, LIQUID, SOLID

Type	SAMPLE	
Solid	Sample Weight in grams (SS)	0.62500
Work List	Dissolution Volume (EDTA/en + sample) (DV)	5.00000
1274	Aliquot Analyzed from Dissolution (A)	0.25000
Test Code	Dilution Factor (DF)	20.000
CN-01	Absorbance of Blank	0.045
Matrix	Absorbance of Sample	0.755
Solid	Y-Intercept Value	0.014205
Sample #	Slope Value	0.143914
S95T000571	µg of Cyanide	4.835
Instrument Code	µg CN- /g	1.55E+02
WA93252		
Analyst	µg of Cyanide = [(Absorb. of Sample - Absorb. of Blank) - (Y-Intercept)] / Slope Value	
Knight	µg/g of Cyanide = µg Cyanide / SS (g) * DF	
Date	Dilution Factor = (DV / SS) * A	
05/02/95	Detection Limit = 0.1µg Cyanide / SS * DF	
Time	v RESULTS v	
	Cyanide Concentration (µg/g)	1.55E+02
Calibration Date		Detection Limit
04/18/95		µg CN- / g
		3.20E+00 +5
		2.40E+00
Data Entry by:	Date: 05/03/95	
Approved by:	Date: 5-3-95	

Form 695102C Rev. 1.4

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PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

CN- DETERMINATION : LA-695-102 (C-0) BLANK, LIQUID, SOLID

Type	SAMPLE	
Solid	Sample Weight in grams (SS)	0.62500
Work List	Dissolution Volume (EDTA/en + sample) (DV)	5.00000
1274	Aliquot Analyzed from Dissolution (A)	0.25000
Test Code	Dilution Factor (DF)	20.000
CN-01	Absorbance of Blank	0.045
Matrix	Absorbance of Sample	0.737
Solid	Y-Intercept Value	0.014205
Sample #	Slope Value	0.143914
S95T000571dup	µg of Cyanide	4.710
Instrument Code	µg CN- /g	1.51E+02
WA93252		
Analyst	µg of Cyanide = [(Absorb. of Sample - Absorb. of Blank) - (Y-Intercept)] / Slope Value	
Knight	µg/g of Cyanide = µg Cyanide / SS (g) * DF	
Date	Dilution Factor = (DV / SS) * A	
05/02/95	Detection Limit = 0.1µg Cyanide / SS * DF	
Time	v RESULTS v	
	Cyanide Concentration (µg/g)	1.51E+02
Calibration Date		Detection Limit
04/18/95		µg CN- / g
		3.20E+00 $\times 5$
		2.40E+00
Data Entry by: <i>[Signature]</i>	Date:	05/03/95
Approved by: <i>Rw. Schroeder</i>	Date:	5-3-95

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

CN- DETERMINATION : LA-695-102 (C-0) SPIKE, STANDARD

Type		SPIKE	NA
Spike	Spike Aliquot in mL	0.250	
Work List	Diluent + Spike Standard Volume	25.00	
1274	Diluted Spike Standard in mL	0.250	
Test Code	True Value CN- Concentration (µg/mL)	917	
CN-01	Absorbance of Blank	0.045	
Matrix	Absorbance of Sample+Spike	1.103	
Liquid	Y-Intercept Value	0.014205	
Sample #	Slope Value	0.143914	
S95T000571	µg of CN- in Sample+Spike	7.253	ERR
Instrument Code			
WA93252			
Analyst	Known µg of CN- in Original Sample	4.8350	
Knight			
Date	µg of CN- in Spike	2.2925	
05/02/95			
Time	Spike % Recovery	105.5%	
Calibration Date	Slope and Y-Intercept calculated from working curve calibration		
04/18/95	Original Sample Calculation from Form 695102C1		

$\mu\text{g of CN- in Sample (Corrected)} = \text{Known } \mu\text{g of CN- in Original Sample} * \text{g of Sample in Spike} / \text{g Used in Original Sample}$
 $\mu\text{g of CN- in Sample+Spike} = [(\text{Absorbance of Sample+Spike} - \text{Absorbance of Blank}) - (\text{Y-Intercept})] / \text{Slope Value}$
 $\mu\text{g of CN- in Spike} = \text{LMCS Value (ppm)} / \text{Dilution Factor} * \text{Diluted Spike Standard}$
 $\text{Dilution Factor} = \text{Spike Dilution Volume} / \text{Spike Aliquot}$
 $\text{Spike \% Recovery} = (\mu\text{g of CN- in Sample+Spike}) - (\mu\text{g of CN- in Sample}) / (\mu\text{g of CN- in Spike}) * 100\%$

Data Entry by: <i>[Signature]</i>	Date: 05/03/95
Approved by: <i>[Signature]</i>	Date: 5-3-95

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

CN- DETERMINATION : LA-695-102 (C-0) BLANK, LIQUID, SOLID

Type	SAMPLE	
Solid	Sample Weight in grams (SS)	0.32900
Work List	Dissolution Volume (EDTA/en + sample) (DV)	5.00000
1274	Aliquot Analyzed from Dissolution (A)	0.25000
Test Code	Dilution Factor (DF)	20.000
CN-01	Absorbance of Blank	0.045
Matrix	Absorbance of Sample	0.313
Solid	Y-Intercept Value	0.014205
Sample #	Slope Value	0.143914
S95T000572	µg of Cyanide	1.764
Instrument Code	µg CN-/g	1.07E+02
WA93252		
Analyst	µg of Cyanide = [(Absorb. of Sample - Absorb. of Blank) - (Y-Intercept)] / Slope Value	
Knight	µg/g of Cyanide = µg Cyanide / SS (g) * DF	
Date	Dilution Factor = (DV / SS) * A	
05/02/95	Detection Limit = 0.1µg Cyanide / SS * DF	
Time	v RESULTS v	
	Cyanide Concentration (µg/g)	1.07E+02
Calibration Date		Detection Limit µg CN-/g
04/18/95		6.08E+00

Data Entry by: *[Signature]* Date: 05/03/95
 Approved by: *[Signature]* Date: 5-3-95
 Form 695102C-1 Rev. 1.4 Page 1 of 1

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

CN- DETERMINATION : LA-695-102 (C-0) BLANK, LIQUID, SOLID

Type	SAMPLE	
Solid	Sample Weight in grams (SS)	0.32900
Work List	Dissolution Volume (EDTA/en + sample) (DV)	5.00000
1274	Aliquot Analyzed from Dissolution (A)	0.25000
Test Code	Dilution Factor (DF)	20.000
CN-01	Absorbance of Blank	0.045
Matrix	Absorbance of Sample	0.306
Solid	Y-Intercept Value	0.014205
Sample #	Slope Value	0.143914
S95T000572dup	µg of Cyanide	1.715
Instrument Code	µg CN- /g	1.04E+02
WA93252		
Analyst	µg of Cyanide = [(Absorb. of Sample - Absorb. of Blank) - (Y-Intercept)] / Slope Value	
Knight	µg/g of Cyanide = µg Cyanide / SS (g) * DF	
Date	Dilution Factor = (DV / SS) * A	
05/02/95	Detection Limit = 0.1µg Cyanide / SS * DF	
Time	v RESULTS v	
	Cyanide Concentration (µg/g)	1.04E+02
Calibration Date		Detection Limit
04/18/95		µg CN- / g
		6.08E+00
		4.6E+00
Data Entry by:	Date:	05/03/95
Approved by:	Date:	5-3-95

Form 69510201 Rev. 1.4

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

CN- DETERMINATION : LA-695-102 (C-0) SPIKE, STANDARD

Type		NA	STANDARD
Standard	Standard Aliquot in mL		0.250
Work List	Diluent + Standard Volume		25.00
1274	Diluted Standard in mL to be Analyzed		0.500
Test Code	True Value CN- Concentration (µg/mL)		917
CN-01	Absorbance of Blank		0.045
Matrix	Absorbance of Standard		0.757
Liquid	Y-Intercept Value		0.014205
Sample #	Slope Value		0.143914
54N8B	µg of CN in Standard		4.849
Instrument Code			
WA93252			
Analyst			
Knight			
Date	µg of CN-/mL in Standard		970
05/02/95			
Time	Standard % Recovery		105.8%
Calibration Date	Slope and Y-Intercept calculated from working curve calibration		
04/18/95	Original Sample Calculation from Form 695102C1		

$$\mu\text{g of CN- in Sample+Spike} = [(\text{Absorbance of Sample+Spike} - \text{Absorbance of Blank}) - (\text{Y-Intercept})] / \text{Slope Value}$$

$$\mu\text{g/mL of CN-} = \mu\text{g of CN- in Standard} / \text{Diluted Standard} * \text{Dilution Factor}$$

$$\text{Dilution Factor} = \text{Flask Volume} / \text{Standard Aliquot}$$

$$\text{Standard \% Recovery} = (\mu\text{g of CN-/mL in Standard} / \text{True Value CN- Concentration} (\mu\text{g/mL})) * 100$$
Data Entry by: *[Signature]*

Date: 05/03/95

Approved by: *[Signature]*

Date: 5-3-95

Form X2 Rev. 1.0

Page 1 of 1

THE FOLLOWING ANALYSES ARE INCLUDED IN THE DATA PACKAGE BUT THE RESULTS HAVE NOT BEEN REPORTED IN THE FINAL SUMMARY REPORTS.

LABCORE Data Entry Template for Worklist# 1187

Analyst: R Instrument: SP01 WA 93252 Book #

Method: LA-695-102 Rev/Mod C-0

Worklist Comment: C-111 Cyanide

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 BLNK			CN-01	SOLID	1	0.2	N/A	ug/g
		2 STD			CN-01	SOLID	9.17	9.17	N/A	ug/g
95000041	C-111	3 SAMPLE	S95T000571	0	CN-01	SOLID	N/A	7.12	1.5	ug/g
95000041	C-111	4 DUP	S95T000571	0	CN-01	SOLID	7.12	7.47	N/A	ug/g
95000041	C-111	5 SPK	S95T000571	0	CN-01	SOLID	100	127.3	N/A	ug/g
95000041	C-111	6 SAMPLE	S95T000572	0	CN-01	SOLID	N/A	5.51	1.5	ug/g
95000041	C-111	7 DUP	S95T000572	0	CN-01	SOLID	5.51	5.42	N/A	ug/g
		8 STD			CN-01	SOLID	9.17	9.49	N/A	ug/g

Final page for worklist # 1187

Analyst Signature [Signature] Date 4-27-95

Analyst Signature [Signature] Date 4-28-95

S95T000571 = .6250g into 5ml EDTA/cu
S95T000572 = .5290g into 5ml EDTA/cu

Sample Size .250ml

Standard = .500ml of .250ml + .250ml Volume 54N8B

Spike = .250ml of .250(54N8B) Brought to Volume w/ .125ml NaOH

- .031 Blank
- .692 Standard
- .686 S95T000571
- .717 Duplicate
- 1.106 Spike
- .306 S95T000572
- .302 Duplicate
- .728 Standard

Data Entry Comments:

Spill Recovery 002 (127%)

NOTE: The D.L. reported is The MDL.

Cyanide Calibration with EDTA/en and Ammonium Sulfamate

Date: April 18, 1995

Calibration Standard: 44N8C

Instrument ID: WA93252

Working Standard Concentration: 1026 ppm / 100 d.f. = 10.26 ppm

Sample	Vol. Working Std. (ml)	ug CN-	Net Abs.
1	0	0	0
2	0.05	0.513	0.054
3	0.2	2.05	0.358
4	0.4	4.1	0.605
5	0.6	6.16	0.909
6	1	10.26	1.5
7	1.2	12.31	1.767

Regression Output:

Constant	0.014205
Std Err of Y Est	0.029141
R Squared	0.998507
No. of Observations	7
Degrees of Freedom	5

X Coefficient(s)	0.143914
Std Err of Coef.	0.002489

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

CN- DETERMINATION : LA-695-102 (C-0) SPIKE, STANDARD

Type		NA	STANDARD
STANDARD	Standard Aliquot in mL		0.250
Work List	Diluent + Standard Volume		25.00
1187	Diluted Standard in mL to be Analyzed		0.500
Test Code	True Value CN- Concentration (µg/mL)		917
CN-01	Absorbance of Blank		0.031
Matrix	Absorbance of Standard		0.692
LIQUID	Y-Intercept Value		0.014205
Sample #	Slope Value		0.143914
STD	µg of CN in Standard		4.494
Instrument Code			
WA93252			
Analyst			
KNIGHT			
Date	µg of CN-/mL in Standard		899
04/27/95			
Time	Standard % Recovery		98.0%
Calibration Date	Slope and Y-Intercept calculated from working curve calibration		
04/18/95	Original Sample Calculation from Form 695102C1		

$$\mu\text{g of CN- in Sample+Spike} = [(\text{Absorbance of Sample+Spike} - \text{Absorbance of Blank}) - (\text{Y-Intercept})] / \text{Slope Value}$$

$$\mu\text{g/mL of CN-} = \mu\text{g of CN- in Standard} / \text{Diluted Standard} * \text{Dilution Factor}$$

$$\text{Dilution Factor} = \text{Flask Volume} / \text{Standard Aliquot}$$

$$\text{Standard \% Recovery} = (\mu\text{g of CN-/mL in Standard} / \text{True Value CN- Concentration } (\mu\text{g/mL})) * 100$$

Data Entry by:	Date: 04/28/95
Approved by:	Date: 5/1/95

WHC-SD-WM-DP-114, REV. 0

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

CN- DETERMINATION : LA-695-102 (C-0) BLANK, LIQUID, SOLID

Type	SAMPLE	
Solid	Sample Weight in grams (SS)	0.62500
Work List	Dissolution Volume (EDTA/en + sample) (DV)	5.00000
1187	Aliquot Analyzed from Dissolution (A)	4.00000
Test Code	Dilution Factor (DF)	1.250
CN-01	Absorbance of Blank	0.000
Matrix	Absorbance of Sample	0.031
Blank	Y-Intercept Value	0.014205
Sample #	Slope Value	0.143914
S95T000571sam	µg of Cyanide	0.117
Instrument Code	µg CN- /g	2.33E-01
WA93252		
Analyst	µg of Cyanide = [(Absorb. of Sample - Absorb. of Blank) - (Y-Intercept)] / Slope Value	
Knight	µg/g of Cyanide = µg Cyanide / SS (g) * DF	
Date	Dilution Factor = (DV / SS) * A	
04/27/95	Detection Limit = 0.1µg Cyanide / SS * DF	
Time	v RESULTS v	
	Cyanide Concentration (µg/g)	2.33E-01
Calibration Date		Detection Limit
04/18/95		µg CN- / g
		2.00E-01

Data Entry by: *[Signature]* Date: 05/01/95

Approved by: *[Signature]* Date: 5/1/95

Form 695102C1 Rev. 1.4

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PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

CN- DETERMINATION : LA-695-102 (C-0) BLANK, LIQUID, SOLID

Type	SAMPLE	
Solid	Sample Weight in grams (SS)	0.62500
Work List	Dissolution Volume (EDTA/en + sample) (DV)	5.00000
1187	Aliquot Analyzed from Dissolution (A)	0.25000
Test Code	Dilution Factor (DF)	20.000
CN-01	Absorbance of Blank	0.031
Matrix	Absorbance of Sample	0.686
Solid	Y-Intercept Value	0.014205
Sample #	Slope Value	0.143914
S95T000571sam	µg of Cyanide	4.453
Instrument Code	µg CN- /g	1.42E+02
WA93252		
Analyst	µg of Cyanide = [(Absorb. of Sample - Absorb. of Blank) - (Y-Intercept)] / Slope Value	
Knight	µg/g of Cyanide = µg Cyanide / SS (g) * DF	
Date	Dilution Factor = (DV / SS) * A	
04/27/95	Detection Limit = 0.1µg Cyanide / SS * DF	
Time	v RESULTS v	
	Cyanide Concentration (µg/g)	1.42E+02
Calibration Date		Detection Limit
04/18/95		µg CN- / g
		3.20E+00

Data Entry by: <i>Amber</i>	Date: 05/01/95
Approved by: <i>Amber</i>	Date: 5/1/95

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

CN- DETERMINATION : LA-695-102 (C-0) BLANK, LIQUID, SOLID

Type	SAMPLE	
Solid	Sample Weight in grams (SS)	0.62500
Work List	Dissolution Volume (EDTA/en + sample) (DV)	5.00000
1187	Aliquot Analyzed from Dissolution (A)	0.25000
Test Code	Dilution Factor (DF)	20.000
CN-01	Absorbance of Blank	0.031
Matrix	Absorbance of Sample	0.717
Solid	Y-Intercept Value	0.014205
Sample #	Slope Value	0.143914
S95T000571dup	µg of Cyanide	4.668
Instrument Code	µg CN- /g	1.49E+02
WA93252		
Analyst	µg of Cyanide = [(Absorb. of Sample - Absorb. of Blank) - (Y-Intercept)] / Slope Value	
Knight	µg/g of Cyanide = µg Cyanide / SS (g) * DF	
Date	Dilution Factor = (DV / SS) * A	
04/27/95	Detection Limit = 0.1µg Cyanide / SS * DF	
Time	v RESULTS v	
	Cyanide Concentration (µg/g)	1.49E+02
Calibration Date		Detection Limit
04/18/95		µg CN- / g
		3.20E+00

Data Entry by: *[Signature]* Date: 05/01/95
 Approved by: *[Signature]* Date: 5/1/95

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

CN- DETERMINATION : LA-695-102 (C-0) SPIKE, STANDARD

Type		SPIKE	NA
SPIKE	Spike Aliquot in mL	0.250	
Work List	Diluent + Spike Standard Volume	25.00	
1187	Diluted Spike Standard in mL	0.250	
Test Code	True Value CN- Concentration (µg/mL)	917	
CN-01	Absorbance of Blank	0.031	
Matrix	Absorbance of Sample+Spike	1.106	
LIQUID	Y-Intercept Value	0.014205	
Sample #	Slope Value	0.143914	
S95T571SPK	µg of CN- in Sample+Spike	7.371	
Instrument Code			
WA93252			
Analyst	Known µg of CN- in Original Sample	4.4530	
KNIGHT			
Date	µg of CN- in Spike	2.2925	
04/27/95			
Time	Spike % Recovery	127.3%	
Calibration Date	Slope and Y-Intercept calculated from working curve calibration		
04/18/95	Original Sample Calculation from Form 695102C1		

$$\mu\text{g of CN- in Sample (Corrected)} = \text{Known } \mu\text{g of CN- in Original Sample} * \text{g of Sample in Spike} / \text{g Used in Original Sample}$$

$$\mu\text{g of CN- in Sample+Spike} = [(\text{Absorbance of Sample+Spike} - \text{Absorbance of Blank}) - (\text{Y-Intercept})] / \text{Slope Value}$$

$$\mu\text{g of CN- in Spike} = \text{LMCS Value (ppm)} / \text{Dilution Factor} * \text{Diluted Spike Standard}$$

$$\text{Dilution Factor} = \text{Spike Dilution Volume} / \text{Spike Aliquot}$$

$$\text{Spike \% Recovery} = (\mu\text{g of CN- in Sample+Spike}) - (\mu\text{g of CN- in Sample}) / (\mu\text{g of CN- in Spike}) * 100\%$$

Data Entry by:	Date: 04/28/95
Approved by:	Date: 5/1/95

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

CN- DETERMINATION : LA-695-102 (C-0) BLANK, LIQUID, SOLID

Type	SAMPLE	
Solid	Sample Weight in grams (SS)	0.32900
Work List	Dissolution Volume (EDTA/en + sample) (DV)	5.00000
1187	Aliquot Analyzed from Dissolution (A)	0.25000
Test Code	Dilution Factor (DF)	20.000
CN-01	Absorbance of Blank	0.031
Matrix	Absorbance of Sample	0.306
Solid	Y-Intercept Value	0.014205
Sample #	Slope Value	0.143914
S95T000572sam	µg of Cyanide	1.812
Instrument Code	µg CN- /g	1.10E+02
WA93252		
Analyst	µg of Cyanide = [(Absorb. of Sample - Absorb. of Blank) - (Y-Intercept)] / Slope Value	
Knight	µg/g of Cyanide = µg Cyanide / SS (g) * DF	
Date	Dilution Factor = (DV / SS) * A	
04/27/95	Detection Limit = 0.1µg Cyanide / SS * DF	
Time	v RESULTS v	
	Cyanide Concentration (µg/g)	1.10E+02
Calibration Date		Detection Limit
04/18/95		µg CN- / g
		6.08E+00

Data Entry by: *[Signature]* Date: 05/01/95
 Approved by: *[Signature]* Date: 5/1/95

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

CN- DETERMINATION : LA-695-102 (C-0) BLANK, LIQUID, SOLID

Type	SAMPLE	
Solid	Sample Weight in grams (SS)	0.32900
Work List	Dissolution Volume (EDTA/en + sample) (DV)	5.00000
1187	Aliquot Analyzed from Dissolution (A)	0.25000
Test Code	Dilution Factor (DF)	20.000
CN-01	Absorbance of Blank	0.031
Matrix	Absorbance of Sample	0.302
Solid	Y-Intercept Value	0.014205
Sample #	Slope Value	0.143914
S95T000572dup	µg of Cyanide	1.784
Instrument Code	µg CN- /g	1.08E+02
WA93252	$\mu\text{g of Cyanide} = [(\text{Absorb. of Sample} - \text{Absorb. of Blank}) - (\text{Y-Intercept})] / \text{Slope Value}$	
Analyst	$\mu\text{g/g of Cyanide} = \mu\text{g Cyanide} / \text{SS (g)} * \text{DF}$	
Knight	$\text{Dilution Factor} = (\text{DV} / \text{SS}) * \text{A}$	
Date	$\text{Detection Limit} = 0.1 \mu\text{g Cyanide} / \text{SS} * \text{DF}$	
04/27/95	v RESULTS v	
Time	Cyanide Concentration (µg/g)	1.08E+02
Calibration Date		Detection Limit µg CN- / g
04/18/95		6.08E+00

Data Entry by: *[Signature]* Date: 05/01/95
 Approved by: *[Signature]* Date: 5/1/95

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

CN- DETERMINATION : LA-695-102 (C-0) SPIKE, STANDARD

Type		NA	STANDARD
STANDARD	Standard Aliquot in mL		0.250
Work List	Diluent + Standard Volume		25.00
1187	Diluted Standard in mL to be Analyzed		0.500
Test Code	True Value CN- Concentration (µg/mL)		917
CN-01	Absorbance of Blank		0.031
Matrix	Absorbance of Standard		0.728
LIQUID	Y-Intercept Value		0.014205
Sample #	Slope Value		0.143914
STD	µg of CN in Standard		4.744
Instrument Code			
WA93252			
Analyst			
KNIGHT			
Date	µg of CN-/mL in Standard		949
04/27/95			
Time	Standard % Recovery		103.5%
Calibration Date	Slope and Y-Intercept calculated from working curve calibration		
04/18/95	Original Sample Calculation from Form 695102C1		

$$\mu\text{g of CN- in Sample+Spoke} = [(\text{Absorbance of Sample+Spoke} - \text{Absorbance of Blank}) - (\text{Y-Intercept})] / \text{Slope Value}$$

$$\mu\text{g/mL of CN-} = \mu\text{g of CN- in Standard} / \text{Diluted Standard} * \text{Dilution Factor}$$

$$\text{Dilution Factor} = \text{Flask Volume} / \text{Standard Aliquot}$$

$$\text{Standard \% Recovery} = (\mu\text{g of CN-/mL in Standard} / \text{True Value CN- Concentration } (\mu\text{g/mL})) * 100$$

Data Entry by:		Date:	04/28/95
Approved by:		Date:	5/1/95

A-0004-0

LABCORE Data Entry Template for Worklist# 624

Analyst: JK Setu Instrument: ICP012 Method: LA-505-151 Book# 408480

Worklist Comment: ICP Fusion C111

Seq	Type	Sample#	R A	Test	Matrix	Analytes Requested
1	ICV			@ICP-QC	QC	
2	ICB			@ICP-QC	QC	
3	ICSA			@ICP-QC	QC	
4	ICSAB	<u>4-14-95</u>		@ICP-QC	QC	
5	PREPBLK	<u>TK</u>		@ICP-F02	SOLID	
6	SAMPLE	S95T000123	0 F	@ICP-F02	SOLID	AL-F-01 , CA-F-01 , CR-F-01 , FE-F-01 , K-F-01 , NA-F-01 , NI-F-01 , ZN-F-01 , ZR-F-01
7	DUP	S95T000123	0 F	@ICP-F02	SOLID	
8	ICSA			@ICP-QC	QC	
9	ICSAB			@ICP-QC	QC	
10	CCV			@ICP-QC	QC	
11	CCB			@ICP-QC	QC	

Final page for worklist # 624

Analyst Signature _____ Date _____ Analyst Signature _____ Date _____

S95T000123-L 1.0002g → 250 μ l, 5-10-2-8 (105 x 250)/1.0002 = 26245

S95T000123 1.0002g → 250 5-10 (41 x 250)/1.0002 = 5249

S95T000123-D 1.0005g → 250 5-10 (41 x 250)/1.0005 = 5249

S95T000123-Q 1.0002g → 250 5-10 (41 x 250)/1.0002 = 5249

Post Spike .5 ml sample + 2 ml SST5 + 8 ml 2% HNO₃

PrepblK TQ 1-9 ml

Data Entry Comments:

WHC-SD-WM-DP-114. REV 0

Analysis Report

Summary

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Sample Name	File	Method	Date	Time	OpID	Type	Mode
1 ICV	950414A	ICP2	04/14/95	09:58	DKS	Q	CONC
2 ICB	950414A	ICP2	04/14/95	10:02	DKS	Q	CONC
3 ICSA	950414A	ICP2	04/14/95	10:06	DKS	Q	CONC
4 ICSAB	950414A	ICP2	04/14/95	10:09	DKS	Q	CONC
5 PREPBLKTJA	950414A	ICP2	04/14/95	10:21	DKS	S	CONC
6 S95T000123_L	950414A	ICP2	04/14/95	10:26	DKS	S	CONC
7 S95T000123	950414A	ICP2	04/14/95	10:31	DKS	S	CONC
8 S95T000123_D	950414A	ICP2	04/14/95	10:36	DKS	S	CONC
9 S95T000123_A	950414A	ICP2	04/14/95	10:43	DKS	S	CONC
10 ICSA	950414A	ICP2	04/14/95	10:52	DKS	Q	CONC
11 ICSAB	950414A	ICP2	04/14/95	10:56	DKS	Q	CONC
12 CCV_1	950414A	ICP2	04/14/95	11:02	DKS	Q	CONC
13 CCB_1	950414A	ICP2	04/14/95	11:06	DKS	Q	CONC

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DK LGA

04-14-95

C-111 S95T000123

WHC-SD-WM-DP-114, REV. 0

Analysis Report

Averages

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#	Sample Name	Ag 243	Al	As	B	Ba	Be
1	ICV	5.089	4.959	5.109	4.957	4.972	5.256
2	ICB	.0004	-.0071	-.0172	-.0016	.0001	-.0001
3	ICSA	.0029	243.6	-.0158	-.0061	.0020	.0001
4	ICSAB	Q.5139	244.6	-.0031	-.0050	.4817	.5084
5	PREPBLKTJA	.0060	.0426	.0273	-.0489	.0287	-.0018
6	S95T000123 L	64.56	119500.	74.67	-116.1	58.59	-2.332
7	S95T000123	57.23	118300.	-35.30	1.883	55.29	1.127
8	S95T000123 D	62.99	118100.	-45.34	4.936	55.13	1.347
9	S95T000123-A	1561.	123300.	5328.	5016.	5048.	5340.
10	ICSA	.0012	252.6	-.0373	-.0015	.0018	.0002
11	ICSAB	.9716	234.3	-.0462	.0005	.4763	.5002
12	CCV 1	5.281	5.179	5.320	5.173	5.276	Q5.539
13	CCB-1	.0014	-.0024	-.0038	-.0027	.0000	-.0000

#	Sample Name	Bi	Ca 525	Cd	Ce	Co	Cr 52.5
1	ICV	5.000	5.058	5.165	5.065	5.132	5.191
2	ICB	.0667	.0178	.0000	-.0002	.0038	.0004
3	ICSA	.0809	250.7	.0010	.0072	.0074	.0011
4	ICSAB	.0856	255.0	.9952	.0030	.4933	.4923
5	PREPBLKTJA	-10.45	.5043	-.0188	-.0833	.0437	.0248
6	S95T000123 L	177.3	15440.	16.60	55.55	36.50	319.1
7	S95T000123	-422.0	15280.	4.944	21.99	17.59	300.9
8	S95T000123 D	-553.0	15560.	2.836	45.37	10.09	301.7
9	S95T000123-A	4521.	20510.	5255.	5205.	5222.	5577.
10	ICSA	.0986	255.5	.0001	-.0004	.0061	-.0010
11	ICSAB	.1066	248.4	.9616	.0008	.4746	.4739
12	CCV 1	5.264	5.370	5.422	5.389	5.373	5.448
13	CCB-1	.0601	.0174	.0005	-.0044	.0027	-.0005

#	Sample Name	Cu	Eu	Fe 242	K n/a	La	Li
1	ICV	4.992	.0081	5.090	4.874	4.980	4.973
2	ICB	-.0008	.0025	.0045	.0521	.0004	.0025
3	ICSA	-.0089	-.0134	92.80	.1239	-.0029	.0053
4	ICSAB	.4772	-.0163	94.08	.0039	-.0045	.9706
5	PREPBLKTJA	.0068	.0415	.1127	15270.	-.0022	.0317
6	S95T000123 L	52.75	38.21	54230.	2315e3	37.44	37.85
7	S95T000123	57.50	19.49	53450.	2253e3	46.25	12.11
8	S95T000123 D	57.56	23.01	54070.	2236e3	49.78	16.14
9	S95T000123-A	5083.	27.61	58470.	2242e3	5137.	4977.
10	ICSA	-.0096	-.0130	95.20	-.0585	-.0046	.0044
11	ICSAB	.4761	-.0068	92.82	.0173	-.0025	.9698
12	CCV 1	5.255	.0081	5.338	5.179	5.292	5.179
13	CCB-1	-.0010.	.0017	.0033	.0265	-.0004	.0017

4249

Al 122,549.0

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Ca 30,529.0

Cr 5,549.90

Fe 58,677.0

K n/a

WHC-SD-WM-DP-114, REV. 0

Analysis Report

Averages

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#	Sample Name	Mg	Mn	Mo	Na ⁵²	Nd	Ni ¹⁰¹
1	ICV	4.907	5.050	5.060	4.973	5.051	5.134
2	ICB	.0005	.0011	.0024	.0197	.0014	.0090
3	ICSA	239.5	-.0021	-.0141	190.6	.0058	.0004
4	ICSAB	240.5	.4788	-.0131	190.4	.0020	.9658
5	PREPBLKTJA	.2176	.0681	.0221	4.955	.0247	5.519
6	S95T000123 L	2911.	447.7	-19.48	15190.	43.82	21800.
7	S95T000123-	2668.	434.0	-11.09	14710.	68.32	21050.
8	S95T000123 D	2614.	440.1	-12.29	14440.	66.68	21360.
9	S95T000123-A	7508.	5475.	5179.	19590.	5216.	26260.
10	ICSA	247.5	-.0029	-.0117	200.6	.0015	-.0052
11	ICSAB	239.6	.4617	-.0148	192.6	.0031	.9260
12	CCV 1	5.136	5.295	5.323	5.202	5.352	5.389
13	CCB-1	.0012	.0007	-.0011	.0153	.0006	-.0011

#	Sample Name	P.	Pb	S	Sb	Se	Si
1	ICV	5.214	5.035	5.043	4.855	4.995	4.935
2	ICB	.0251	.0416	.0016	.0043	.0267	.0227
3	ICSA	.1249	.1215	-.0286	-.0112	.1048	.0432
4	ICSAB	.1198	1.101	-.0081	-.0037	.1220	.0427
5	PREPBLKTJA	.4634	.8862	-.1752	-.0436	-2.650	.7127
6	S95T000123 L	19760.	6136.	-62.40	-13.53	186.5	8643.
7	S95T000123-	18990.	5485.	78.62	31.58	-288.4	8515.
8	S95T000123 D	19280.	5602.	130.4	50.78	-303.2	8557.
9	S95T000123-A	24450.	10540.	5312.	4961.	4759.	13490.
10	ICSA	.1203	.0884	-.0278	.0050	.1044	.0339
11	ICSAB	.1346	1.008	.0080	-.0136	.1177	.0695
12	CCV 1	Q5.617	5.249	5.321	5.108	5.255	5.139
13	CCB-1	.0471	.0331	-.0023	-.0014	.0415	.0176

#	Sample Name	Sm	Sr	Th	Ti	Tl	U
1	ICV	4.899	4.957	-.0661	4.883	4.878	9.348
2	ICB	.0293	.0008	-.0101	.0005	-.0204	.0997
3	ICSA	.0256	.0014	-.0289	.0018	.0214	.1145
4	ICSAB	.0238	.0016	-.0206	.0013	.0621	.0758
5	PREPBLKTJA	.4126	.0114	.1333	.0153	.0424	-2.730
6	S95T000123 L	349.3	263.6	-71.68	155.0	-110.4	26490.
7	S95T000123-	83.34	249.9	-86.44	152.0	-159.6	25190.
8	S95T000123 D	139.7	250.5	-76.90	149.5	-9.617	25080.
9	S95T000123-A	5056.	5288.	-142.9	5125.	4779.	34340.
10	ICSA	.0092	.0014	-.0302	.0010	.0130	.0778
11	ICSAB	.0099	.0017	-.0254	.0010	.0294	.0751
12	CCV 1	5.199	5.241	-.0571	5.148	5.097	9.882
13	CCB-1	.0176	.0006	-.0052	.0000	.0102	.0645

Na 19,999.0

Ni 26,299.0

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WHC-SD-WM-DP-114, REV. 0

Analysis Report

Averages

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Sample Name	V	Y	Zn	Zr
1 ICV	4.948	.0120	5.134	4.951
2 ICB	.0051	.0013	.0015	.0049
3 ICSA	.0076	.0081	-.0118	.0037
4 ICSAB	.4942	.0084	.9899	.0028
5 PPEPRIKTJA	.0946	.0204	.0160	.0966
6 S95T000123 L	72.58	32.90	450.5	38.12
7 S95T000123	34.43	22.21	417.2	18.41
8 S95T000123 D	42.13	24.67	420.6	39.78
9 S95T000123 A	5077.	33.73	5628.	5083.
10 ICSA	.0039	.0074	-.0130	.0026
11 ICSAB	.4796	.0076	.9490	.0034
12 CCV 1	5.206	.0122	5.319	5.232
13 CC3-1	.0041	.0009	.0010	.0024

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DX SA

04-14-95.

C-111 S95T000123

04/06/95 14:19
A-0004-1

WHC-SD-WM-DP-114, REV. 0

Page: 1

LABCORE Data Entry Template for Worklist# 1004

Analyst: JK Seto Instrument: ICP01 Book# 40848B

Method: LA-505-151 Rev/Mod D-2

Worklist Comment: ICP C-111 FUSION DIGEST

S	Type	Sample#	R	A	Test	Matrix	Group#	Project
1	ICV				@ICP-QC	QC		
2	ICB				@ICP-QC	QC		
3	ICSA				@ICP-QC	QC		
4	ICSAB				@ICP-QC	QC		
5	PREPBLKARL				@ICP-F02	SOLID		
6	SAMPLE	S95T000573	0	F	@ICP-F02	SOLID	95000041	C-111
		Analytes Requested: NI-F-01						
7	DUP	S95T000573	0	F	@ICP-F02	SOLID		
8	SPK	S95T000573	0	F	@ICP-F02	SOLID		
9	CCV				@ICP-QC	QC		
10	CCB				@ICP-QC	QC		
11	SAMPLE	S95T000574	0	F	@ICP-F02	SOLID	95000041	C-111
		Analytes Requested: NI-F-01						
12	DUP	S95T000574	0	F	@ICP-F02	SOLID		
13	SPK	S95T000574	0	F	@ICP-F02	SOLID		
14	SAMPLE	S95T000575	0	F	@ICP-F02	SOLID	95000041	C-111
		Analytes Requested: NI-F-01						
15	DUP	S95T000575	0	F	@ICP-F02	SOLID		
16	SPK	S95T000575	0	F	@ICP-F02	SOLID		
17	ICSA				@ICP-QC	QC		

Data Entry Comments:

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

LABCORE Data Entry Template for Worklist# 1004

S Type	Sample#	R A	Test	Matrix	Group#	Project
18 ICSAB			@ICP-QC	QC		
19 CCV			@ICP-QC	QC		
20 CCB			@ICP-QC	QC		

Final page for worklist # 1004

[Signature]

04-26-95

Analyst Signature

Date

Analyst Signature

Date

Prepb/kqrl .5-10

595T000573-L .5100g in 250ml .5-10-1-4 (250 x 105) / .5100 = 51470

595T000573 .5100g in 250 .5-10 (250 x 21) / .5100 = 10294

595T000573-D .5142g in 250 .5-10 (250 x 21) / .5142 = 10170

595T000573-Q .5100g in 250 .5-10 (250 x 21) / .5100 = 10294 .5ml sample/c + 2ml SST5 + 8ml HNO₃

595T000574-L .5319g in 250ml .5-10-1-4 (250 x 105) / .5319 = 49351

595T000574 .5319g in 250 .5-10 (250 x 21) / .5319 = 9870

595T000574-D .5340g in 250 .5-10 (250 x 21) / .5340 = 9831

595T000574-Q .5319g in 250 .5-10 (250 x 21) / .5319 = 9870 .5ml sample/c + 2ml SST5 + 8ml HNO₃

Prepb/kqrl .5-10

595T000575-L .5815g in 250ml .5-10-1-4 (250 x 105) / .5815 = 45142

595T000575 .5815g in 250 .5-10 (250 x 21) / .5815 = 9028

595T000575-D .5852g in 250 .5-10 (250 x 21) / .5852 = 8971

595T000575-Q .5815g in 250 .5-10 (250 x 21) / .5815 = 9028

Data Entry Comments:

SP 04/27/95

04/27/95 06:54
A-0004-1

WHC-SD-WM-DP-114, REV. 0

Page: 1

LABCORE Data Entry Template for Worklist# 1004

Analyst: _____ Instrument: ICP01 _____ Book# _____

Method: LA-505-151 Rev/Mod _____

Worklist Comment: ICP C-111 FUSION DIGEST

S	Type	Sample#	R	A	Test	Matrix	Group#	Project
1	ICV				@ICP-QC	QC		
2	ICB				@ICP-QC	QC		
3	ICSA				@ICP-QC	QC		
4	ICSAB				@ICP-QC	QC		
5	PREPBLKARL				@ICP-F02	SOLID		
6	SAMPLE	S95T000573	0	F	@ICP-F02	SOLID	95000041	C-111
		Analytes Requested: NI-F-01						
7	DUP	S95T000573	0	F	@ICP-F02	SOLID		
8	SPK	S95T000573	0	F	@ICP-F02	SOLID		
9	CCV				@ICP-QC	QC		
10	CCB				@ICP-QC	QC		
11	SAMPLE	S95T000574	0	F	@ICP-F02	SOLID	95000041	C-111
		Analytes Requested: NI-F-01						
12	DUP	S95T000574	0	F	@ICP-F02	SOLID		
13	SPK	S95T000574	0	F	@ICP-F02	SOLID		
14	CCV				@ICP-QC	QC		
15	CCB				@ICP-QC	QC		
16	PREPBLKARL				@ICP-F02	SOLID		
17	SAMPLE	S95T000575	0	F	@ICP-F02	SOLID	95000041	C-111
		Analytes Requested: NI-F-01						

Data Entry Comments:

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

LABCORE Data Entry Template for Worklist# 1004

S	Type	Sample#	R	A	Test	Matrix	Group#	Project
18	DUP	S95T000575	0	F	@ICP-F02	SOLID		
19	SPK	S95T000575	0	F	@ICP-F02	SOLID		
20	ICSA				@ICP-QC	QC		
21	ICSAB				@ICP-QC	QC		
22	CCV				@ICP-QC	QC		
23	CCB				@ICP-QC	QC		

Final page for worklist # 1004

Analyst Signature **Date**

Analyst Signature **Date***Data Entry Comments:*

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

ICP MACRO																			
OUTPUT	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1	1004	1			ICV	AG				4.9679			1.0000	04/26/95	13:16	da	0.01	ICP-QC	
2	1004	1			ICV	AL				5.1132			1.0000	04/26/95	13:16	da	0.05	ICP-QC	
3	1004	1			ICV	AS				5.0653			1.0000	04/26/95	13:16	da	0.05	ICP-QC	
4	1004	1			ICV	BA				5.0763			1.0000	04/26/95	13:16	da	0.05	ICP-QC	
5	1004	1			ICV	BE				5.0345			1.0000	04/26/95	13:16	da	0.05	ICP-QC	
6	1004	1			ICV	BI				5.2178			1.0000	04/26/95	13:16	da	0.05	ICP-QC	
7	1004	1			ICV	BO				5.0783			1.0000	04/26/95	13:16	da	0.01	ICP-QC	
8	1004	1			ICV	CA				5.1179			1.0000	04/26/95	13:16	da	0.1	ICP-QC	
9	1004	1			ICV	CD				5.0640			1.0000	04/26/95	13:16	da	0.01	ICP-QC	
10	1004	1			ICV	CE				5.1505			1.0000	04/26/95	13:16	da	0.1	ICP-QC	
11	1004	1			ICV	CO				5.1842			1.0000	04/26/95	13:16	da	0.02	ICP-QC	
12	1004	1			ICV	CR				5.1239			1.0000	04/26/95	13:16	da	0.01	ICP-QC	
13	1004	1			ICV	CJ				5.1285			1.0000	04/26/95	13:16	da	0.01	ICP-QC	
14	1004	1			ICV	FE				5.0254			1.0000	04/26/95	13:16	da	0.05	ICP-QC	
15	1004	1			ICV	K				5.0028			1.0000	04/26/95	13:16	da	0.3	ICP-QC	
16	1004	1			ICV	LA				4.9878			1.0000	04/26/95	13:16	da	0.05	ICP-QC	
17	1004	1			ICV	LI				5.2210			1.0000	04/26/95	13:16	da	0.01	ICP-QC	
18	1004	1			ICV	MG				5.1236			1.0000	04/26/95	13:16	da	0.1	ICP-QC	
19	1004	1			ICV	MN				5.0521			1.0000	04/26/95	13:16	da	0.01	ICP-QC	
20	1004	1			ICV	MO				5.2872			1.0000	04/26/95	13:16	da	0.25	ICP-QC	
21	1004	1			ICV	NA				5.1823			1.0000	04/26/95	13:16	da	0.1	ICP-QC	
22	1004	1			ICV	ND				4.9740			1.0000	04/26/95	13:16	da	0.1	ICP-QC	
23	1004	1			ICV	NI				5.0725			1.0000	04/26/95	13:16	da	0.02	ICP-QC	
24	1004	1			ICV	P				5.3404			1.0000	04/26/95	13:16	da	0.2	ICP-QC	
25	1004	1			ICV	PS				5.0521			1.0000	04/26/95	13:16	da	0.1	ICP-QC	
26	1004	1			ICV	S				5.3690			1.0000	04/26/95	13:16	da	0.05	ICP-QC	
27	1004	1			ICV	SB				4.8850			1.0000	04/26/95	13:16	da	0.2	ICP-QC	
28	1004	1			ICV	SE				5.8219			1.0000	04/26/95	13:16	da	0.1	ICP-QC	
29	1004	1			ICV	SI				4.9225			1.0000	04/26/95	13:16	da	0.05	ICP-QC	
30	1004	1			ICV	SM				5.2912			1.0000	04/26/95	13:16	da	0.1	ICP-QC	
31	1004	1			ICV	SR				5.0278			1.0000	04/26/95	13:16	da	0.01	ICP-QC	
32	1004	1			ICV	TI				5.0280			1.0000	04/26/95	13:16	da	0.01	ICP-QC	
33	1004	1			ICV	TL				4.9578			1.0000	04/26/95	13:16	da	0.2	ICP-QC	
34	1004	1			ICV	U				8.9588			1.0000	04/26/95	13:16	da	0.4	ICP-QC	
35	1004	1			ICV	V				5.0381			1.0000	04/26/95	13:16	da	0.05	ICP-QC	
36	1004	1			ICV	ZN				5.1791			1.0000	04/26/95	13:16	da	0.01	ICP-QC	
37	1004	1			ICV	ZR				5.0287			1.0000	04/26/95	13:16	da	0.01	ICP-QC	
38	1004	2			ICB	AG				0.0048			1.0000	04/26/95	13:24	da	0.01	ICP-QC	
39	1004	2			ICB	AL				0.0012			1.0000	04/26/95	13:24	da	0.05	ICP-QC	
40	1004	2			ICB	AS				-0.0022			1.0000	04/26/95	13:24	da	0.01	ICP-QC	
41	1004	2			ICB	B				0.0007			1.0000	04/26/95	13:24	da	0.05	ICP-QC	
42	1004	2			ICB	BA				0.0014			1.0000	04/26/95	13:24	da	0.05	ICP-QC	
43	1004	2			ICB	BE				0.0015			1.0000	04/26/95	13:24	da	0.05	ICP-QC	
44	1004	2			ICB	BI				-0.0052			1.0000	04/26/95	13:24	da	0.01	ICP-QC	
45	1004	2			ICB	BO				0.0038			1.0000	04/26/95	13:24	da	0.1	ICP-QC	
46	1004	2			ICB	CA				0.0038			1.0000	04/26/95	13:24	da	0.01	ICP-QC	
47	1004	2			ICB	CE				0.0158			1.0000	04/26/95	13:24	da	0.1	ICP-QC	
48	1004	2			ICB	CO				0.0000			1.0000	04/26/95	13:24	da	0.02	ICP-QC	
49	1004	2			ICB	CR				0.0038			1.0000	04/26/95	13:24	da	0.01	ICP-QC	
50	1004	2			ICB	CJ				-0.0035			1.0000	04/26/95	13:24	da	0.01	ICP-QC	
51	1004	2			ICB	FE				-0.0031			1.0000	04/26/95	13:24	da	0.05	ICP-QC	
52	1004	2			ICB	K				-0.1446			1.0000	04/26/95	13:24	da	0.3	ICP-QC	
53	1004	2			ICB	LA				0.0033			1.0000	04/26/95	13:24	da	0.05	ICP-QC	
54	1004	2			ICB	LI				0.0018			1.0000	04/26/95	13:24	da	0.01	ICP-QC	
55	1004	2			ICB	MG				0.0028			1.0000	04/26/95	13:24	da	0.1	ICP-QC	
56	1004	2			ICB	MN				-0.0025			1.0000	04/26/95	13:24	da	0.01	ICP-QC	
57	1004	2			ICB	MO				0.0020			1.0000	04/26/95	13:24	da	0.05	ICP-QC	
58	1004	2			ICB	NA				0.0105			1.0000	04/26/95	13:24	da	0.1	ICP-QC	
59	1004	2			ICB	ND				0.0088			1.0000	04/26/95	13:24	da	0.1	ICP-QC	
60	1004	2			ICB	NI				0.0043			1.0000	04/26/95	13:24	da	0.02	ICP-QC	
61	1004	2			ICB	P				0.0085			1.0000	04/26/95	13:24	da	0.2	ICP-QC	
62	1004	2			ICB	PB				-0.0110			1.0000	04/26/95	13:24	da	0.1	ICP-QC	
63	1004	2			ICB	S				-0.0024			1.0000	04/26/95	13:24	da	0.05	ICP-QC	
64	1004	2			ICB	SB				0.0427			1.0000	04/26/95	13:24	da	0.2	ICP-QC	
65	1004	2			ICB	SE				-0.0021			1.0000	04/26/95	13:24	da	0.1	ICP-QC	
66	1004	2			ICB	SI				0.0013			1.0000	04/26/95	13:24	da	0.05	ICP-QC	
67	1004	2			ICB	SM				0.0118			1.0000	04/26/95	13:24	da	0.1	ICP-QC	
68	1004	2			ICB	SR				0.0014			1.0000	04/26/95	13:24	da	0.01	ICP-QC	
69	1004	2			ICB	TI				0.0007			1.0000	04/26/95	13:24	da	0.01	ICP-QC	
70	1004	2			ICB	TL				0.0188			1.0000	04/26/95	13:24	da	0.2	ICP-QC	
71	1004	2			ICB	U				0.0179			1.0000	04/26/95	13:24	da	0.4	ICP-QC	
72	1004	2			ICB	V				0.0029			1.0000	04/26/95	13:24	da	0.05	ICP-QC	
73	1004	2			ICB	ZN				-0.0180			1.0000	04/26/95	13:24	da	0.01	ICP-QC	
74	1004	2			ICB	ZR				0.0021			1.0000	04/26/95	13:24	da	0.01	ICP-QC	
75	1004	3			ICSA	AG				0.0058			1.0000	04/26/95	13:28	da	0.01	ICP-QC	
76	1004	3			ICSA	AL				211.5595			1.0000	04/26/95	13:28	da	0.05	ICP-QC	
77	1004	3			ICSA	AS				-0.0028			1.0000	04/26/95	13:28	da	0.05	ICP-QC	
78	1004	3			ICSA	B				-0.0442			1.0000	04/26/95	13:28	da	0.05	ICP-QC	
79	1004	3			ICSA	BA				0.0012			1.0000	04/26/95	13:28	da	0.05	ICP-QC	
80	1004	3			ICSA	BE				0.0031			1.0000	04/26/95	13:28	da	0.05	ICP-QC	
81	1004	3			ICSA	BI				0.0081			1.0000	04/26/95	13:28	da	0.1	ICP-QC	
82	1004	3			ICSA	BO				-18.2828			1.0000	04/26/95	13:28	da	0.1	ICP-QC	
83	1004	3			ICSA	CA				0.0148			1.0000	04/26/95	13:28	da	0.01	ICP-QC	
84	1004	3			ICSA	CE				0.0238			1.0000	04/26/95	13:28	da	0.1	ICP-QC	
85	1004	3			ICSA	CO				0.0045			1.0000	04/26/95	13:28	da	0.02	ICP-QC	
86	1004	3			ICSA	CR				-0.0079			1.0000	04/26/95	13:28	da	0.01	ICP-Q	

ICP MACRO

OUTPUT	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
309	1004	15			CCB	BI				-0.0018			1.0000	04/25/95	1435	da	0.1	ICP-QC		
310	1004	15			CCB	CA				0.0044			1.0000	04/25/95	1435	da	0.1	ICP-QC		
311	1004	15			CCB	CD				0.0048			1.0000	04/25/95	1435	da	0.1	ICP-QC		
312	1004	15			CCB	CE				0.0164			1.0000	04/25/95	1435	da	0.1	ICP-QC		
313	1004	15			CCB	CO				0.0063			1.0000	04/25/95	1435	da	0.02	ICP-QC		
314	1004	15			CCB	CR				0.0072			1.0000	04/25/95	1435	da	0.01	ICP-QC		
315	1004	15			CCB	CU				-0.0014			1.0000	04/25/95	1435	da	0.01	ICP-QC		
316	1004	15			CCB	FE				0.0023			1.0000	04/25/95	1435	da	0.05	ICP-QC		
317	1004	15			CCB	K				0.4429			1.0000	04/25/95	1435	da	0.3	ICP-QC		
318	1004	15			CCB	LA				0.0068			1.0000	04/25/95	1435	da	0.05	ICP-QC		
319	1004	15			CCB	LI				0.0040			1.0000	04/25/95	1435	da	0.01	ICP-QC		
320	1004	15			CCB	LO				0.0035			1.0000	04/25/95	1435	da	0.1	ICP-QC		
321	1004	15			CCB	MA				-0.0008			1.0000	04/25/95	1435	da	0.01	ICP-QC		
322	1004	15			CCB	MO				0.0050			1.0000	04/25/95	1435	da	0.05	ICP-QC		
323	1004	15			CCB	NA				0.0035			1.0000	04/25/95	1435	da	0.1	ICP-QC		
324	1004	15			CCB	ND				0.0073			1.0000	04/25/95	1435	da	0.1	ICP-QC		
325	1004	15			CCB	NI				0.0050			1.0000	04/25/95	1435	da	0.02	ICP-QC		
326	1004	15			CCB	P				0.0062			1.0000	04/25/95	1435	da	0.2	ICP-QC		
327	1004	15			CCB	PB				0.0028			1.0000	04/25/95	1435	da	0.1	ICP-QC		
328	1004	15			CCB	S				0.0036			1.0000	04/25/95	1435	da	0.05	ICP-QC		
329	1004	15			CCB	SB				0.0615			1.0000	04/25/95	1435	da	0.2	ICP-QC		
330	1004	15			CCB	SE				0.0131			1.0000	04/25/95	1435	da	0.1	ICP-QC		
331	1004	15			CCB	SI				0.0128			1.0000	04/25/95	1435	da	0.05	ICP-QC		
332	1004	15			CCB	SM				0.0702			1.0000	04/25/95	1435	da	0.1	ICP-QC		
333	1004	15			CCB	SR				0.0034			1.0000	04/25/95	1435	da	0.01	ICP-QC		
334	1004	15			CCB	TI				0.0047			1.0000	04/25/95	1435	da	0.01	ICP-QC		
335	1004	15			CCB	TL				0.1238			1.0000	04/25/95	1435	da	0.2	ICP-QC		
336	1004	15			CCB	U				0.2621			1.0000	04/25/95	1435	da	0.4	ICP-QC		
337	1004	15			CCB	V				0.0090			1.0000	04/25/95	1435	da	0.05	ICP-QC		
338	1004	15			CCB	ZH				0.0081			1.0000	04/25/95	1435	da	0.01	ICP-QC		
339	1004	15			CCB	ZR				0.0098			1.0000	04/25/95	1435	da	0.01	ICP-QC		
340	1004	16			PREPBUKARL	AG-F-01				0.6783			21.0000	04/25/95	1440	da	0.01	ICP-F02		
341	1004	16			PREPBUKARL	AL-F-01				-0.0127			21.0000	04/25/95	1440	da	0.05	ICP-F02		
342	1004	16			PREPBUKARL	AS-F-01				-0.0910			21.0000	04/25/95	1440	da	0.05	ICP-F02		
343	1004	16			PREPBUKARL	BA-F-01				0.0422			21.0000	04/25/95	1440	da	0.05	ICP-F02		
344	1004	16			PREPBUKARL	BA-F-01				0.0335			21.0000	04/25/95	1440	da	0.05	ICP-F02		
345	1004	16			PREPBUKARL	BE-F-01				0.0208			21.0000	04/25/95	1440	da	0.025	ICP-F02		
346	1004	16			PREPBUKARL	BI-F-01				-0.2802			21.0000	04/25/95	1440	da	0.1	ICP-F02		
347	1004	16			PREPBUKARL	CA-F-01				0.0412			21.0000	04/25/95	1440	da	0.1	ICP-F02		
348	1004	16			PREPBUKARL	CD-F-01				0.0373			21.0000	04/25/95	1440	da	0.01	ICP-F02		
349	1004	16			PREPBUKARL	CE-F-01				-0.1884			21.0000	04/25/95	1440	da	0.1	ICP-F02		
350	1004	16			PREPBUKARL	CD-F-01				0.0168			21.0000	04/25/95	1440	da	0.02	ICP-F02		
351	1004	16			PREPBUKARL	CI-F-01				0.0736			21.0000	04/25/95	1440	da	0.05	ICP-F02		
352	1004	16			PREPBUKARL	CU-F-01				-0.0940			21.0000	04/25/95	1440	da	0.01	ICP-F02		
353	1004	16			PREPBUKARL	FE-F-01				0.1308			21.0000	04/25/95	1440	da	0.05	ICP-F02		
354	1004	16			PREPBUKARL	K-F-01				12163.2022			21.0000	04/25/95	1440	da	0.2	ICP-F02		
355	1004	16			PREPBUKARL	LA-F-01				0.0538			21.0000	04/25/95	1440	da	0.05	ICP-F02		
356	1004	16			PREPBUKARL	LI-F-01				0.0263			21.0000	04/25/95	1440	da	0.01	ICP-F02		
357	1004	16			PREPBUKARL	LO-F-01				0.0819			21.0000	04/25/95	1440	da	0.1	ICP-F02		
358	1004	16			PREPBUKARL	MA-F-01				-0.0951			21.0000	04/25/95	1440	da	0.01	ICP-F02		
359	1004	16			PREPBUKARL	MO-F-01				0.0637			21.0000	04/25/95	1440	da	0.05	ICP-F02		
360	1004	16			PREPBUKARL	NA-F-01				4.5248			21.0000	04/25/95	1440	da	0.1	ICP-F02		
361	1004	16			PREPBUKARL	NI-F-01				0.1501			21.0000	04/25/95	1440	da	0.1	ICP-F02		
362	1004	16			PREPBUKARL	NI-F-01				0.1458			21.0000	04/25/95	1440	da	0.02	ICP-F02		
363	1004	16			PREPBUKARL	P-F-01				0.1479			21.0000	04/25/95	1440	da	0.2	ICP-F02		
364	1004	16			PREPBUKARL	PB-F-01				0.0883			21.0000	04/25/95	1440	da	0.1	ICP-F02		
365	1004	16			PREPBUKARL	S-F-01				-0.0618			21.0000	04/25/95	1440	da	0.05	ICP-F02		
366	1004	16			PREPBUKARL	SB-F-01				0.0039			21.0000	04/25/95	1440	da	0.2	ICP-F02		
367	1004	16			PREPBUKARL	SE-F-01				0.0780			21.0000	04/25/95	1440	da	0.1	ICP-F02		
368	1004	16			PREPBUKARL	SI-F-01				0.4287			21.0000	04/25/95	1440	da	0.05	ICP-F02		
369	1004	16			PREPBUKARL	SM-F-01				0.0000			21.0000	04/25/95	1440	da	0.1	ICP-F02		
370	1004	16			PREPBUKARL	SR-F-01				0.0273			21.0000	04/25/95	1440	da	0.1	ICP-F02		
371	1004	16			PREPBUKARL	TI-F-01				0.0325			21.0000	04/25/95	1440	da	0.01	ICP-F02		
372	1004	16			PREPBUKARL	TL-F-01				0.3944			21.0000	04/25/95	1440	da	0.2	ICP-F02		
373	1004	16			PREPBUKARL	U-F-01				1.3882			21.0000	04/25/95	1440	da	0.4	ICP-F02		
374	1004	16			PREPBUKARL	VA-F-01				0.0730			21.0000	04/25/95	1440	da	0.05	ICP-F02		
375	1004	16			PREPBUKARL	ZH-F-01				-0.6388			21.0000	04/25/95	1440	da	0.01	ICP-F02		
376	1004	16			PREPBUKARL	ZR-F-01				0.3127			21.0000	04/25/95	1440	da	0.01	ICP-F02		
377	1004	17	595T000575		DUP	NI-F-01				11477.5510			9028.3749	04/25/95	1448	da	0.02	ICP-F02		
378	1004	18	595T000575		DUP	NI-F-01				11424.0464			8871.2318	04/25/95	1451	da	0.02	ICP-F02		
379	1004	19	595T000575_A		DUP	NI-F-01				20032.0331			9028.3749	04/25/95	1455	da	0.02	ICP-F02		
380	1004	20			ICSA	AG				0.1790			1.0000	04/25/95	1501	da	0.01	ICP-QC		
381	1004	20			ICSA	AL				210.3048			1.0000	04/25/95	1501	da	0.05	ICP-QC		
382	1004	20			ICSA	AS				0.0047			1.0000	04/25/95	1501	da	0.05	ICP-QC		
383	1004	20			ICSA	B				-0.0444			1.0000	04/25/95	1501	da	0.05	ICP-QC		
384	1004	20			ICSA	BA				0.0008			1.0000	04/25/95	1501	da	0.05	ICP-QC		
385	1004	20			ICSA	BE				0.0028			1.0000	04/25/95	1501	da	0.005	ICP-QC		
386	1004	20			ICSA	BI				0.0007			1.0000	04/25/95	1501	da	0.1	ICP-QC		
387	1004	20			ICSA	CA				18.9524			1.0000	04/25/95	1501	da	0.1	ICP-QC		
388	1004	20			ICSA	CD				0.0168			1.0000	04/25/95	1501	da	0.01	ICP-QC		
389	1004	20			ICSA	CE				-0.0059			1.0000	04/25/95	1501	da	0.1</			

53/22/102

ADOC FESTIVAL 1988

[illegible]

LABCORE Data Entry Template for Worklist# 1203

Analyst: KRM Instrument: TOC01 Book # 10N126

Method: LA-342-100 Rev/Mod A-0

Worklist Comment: C-111, TOC-02 (Persulfate) include TIC data w/ batch.

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 BLNK			TOC-02	SOLID	<u>1</u>	<u>23.9</u>	N/A	ug/g
		2 STD			TOC-02	SOLID	<u>3.00E³</u>	<u>2.88E³</u>	N/A	ug/g <i>not in gwb 5/8/95</i>
95000041	C-111	3 SAMPLE	S95T000570	0	TOC-02	SOLID	N/A	<u>6.39E²</u>	<u>80</u>	ug/g
95000041	C-111	4 DUP	S95T000570	0	TOC-02	SOLID	<u>6.39E²</u>	<u>7.24E²</u>	N/A	ug/g
95000041	C-111	5 SAMPLE	S95T000571	0	TOC-02	SOLID	N/A	<u>1.22E³</u>	<u>80</u>	ug/g
95000041	C-111	6 DUP	S95T000571	0	TOC-02	SOLID	<u>1.22E³</u>	<u>1.28E³</u>	N/A	ug/g
95000041	C-111	7 SPK	S95T000571	0	TOC-02	SOLID	<u>100</u>	<u>98.6</u>	N/A	ug/g <i>gwb 5/8/95</i>

Final page for worklist # 1203

[Signature] 4-28-95
Analyst Signature Date

[Signature] 5-8-95
Analyst Signature Date

[Signature] 5/8/95

Data Entry Comments:

WHC-SD-WM-DP-114, REV. 0

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT

TICTOC REV 2.0

<<< BLANK ANALYSIS >>>

Sample: BLK

Date: 04/27/95

Time: 08:33:42

Sample Size = 1 uL

Dil Factor = 1

Blank ID # = BLK

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	0.20	50.00
3	1.50	0.70	71.43
4	2.01	1.00	30.00
5	2.51	1.20	16.67
6	3.01	1.30	7.69
7	3.51	1.50	13.33
8	4.00	1.60	6.25
9	4.50	1.70	5.88
10	5.00	1.80	5.56
11	5.50	1.90	5.26
12	6.00	2.00	5.00
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	2.60	3.85
18	9.00	2.80	7.14
19	9.50	2.90	3.45
20	10.00	3.00	3.33
21	10.50	3.10	3.23
22	11.00	3.20	3.13

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 130 TO 143.

BLANK VALUE = 3.2 micrograms carbon

BLANK FACTOR = $3.2 / 10.99982 = +2.9E-01$ ug/min Carbon

Sample Run By:

KR MONTEITH

00000

WHC-SD-WM-DP-114, REV.0

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT

TICTOC REV 2.0

<<< BLANK ANALYSIS >>>

Sample: BLK

Date: 04/27/95

Time: 08:47:13

Sample Size = 1 uL

Dil Factor = 1

Blank ID # = BLK

Blank Value = N/A

Analyst : KR MONTEITH

Min Readings = 22

Max Readings = 22

% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.00	0.00
2	1.01	3.20	100.00
3	1.51	11.20	71.43
4	2.00	15.30	26.80
5	2.50	16.80	8.93
6	3.00	17.80	5.62
7	3.50	18.50	3.78
8	4.00	19.20	3.65
9	4.50	20.10	4.48
10	5.00	20.60	2.43
11	5.50	20.90	1.44
12	6.00	21.30	1.88
13	6.50	21.70	1.84
14	7.00	22.00	1.36
15	7.50	22.30	1.35
16	8.00	22.50	0.89
17	8.50	22.80	1.32
18	9.00	23.00	0.87
19	9.50	23.20	0.86
20	10.00	23.50	1.28
21	10.50	23.80	1.26
22	11.00	23.90	0.42

BLANK VALUE = 23.9 micrograms carbon

BLANK FACTOR = 23.9 / 10.99884 =

+2.17E+00 ug/min Carbon

<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!>>>>

Sample Run By:

KR MONTEITH

00000

WHC-SD-WM-DP-114, REV. 0

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT TICTOC REV 2.0

Sample: STD

Date: 04/27/95

Time: 09:00:18

Sample Size = 1000 uL

Dil Factor = 1

Blank ID # = .

Blank Value = .29 ug/minute C

Analyst : KR MONTEITH

Min Readings = 22

Max Readings = 22

% Difference = 10

Reading	Analysis Time	Coulometer	% Difference
1	0.51	0.00	0.00
2	1.00	95.70	100.00
3	1.50	338.20	71.70
4	2.00	482.70	29.94
5	2.50	547.80	11.88
6	3.00	568.00	3.56
7	3.50	573.70	0.99
8	4.00	575.70	0.35
9	4.50	576.70	0.17
10	5.00	577.30	0.10
11	5.50	577.80	0.09
12	6.00	578.70	0.16
13	6.50	579.30	0.10
14	7.00	579.60	0.05
15	7.50	580.00	0.07
16	8.00	580.30	0.05
17	8.50	580.60	0.05
18	9.00	580.70	0.02
19	9.50	580.90	0.03
20	10.00	581.10	0.03
21	10.50	581.30	0.03
22	11.00	581.40	0.02

USER INPUT BLANK VALUE

BLANK VALUE = 3.189664 micrograms carbon

BLANK FACTOR = 3.189664 / 10.99884 = +2.9E-01 ug/min Carbon

SAMPLE RESULTS:

(581.4 - 3.189664) (1)/(1000) = +5.782E-01 g/L Carbon
 (581.4 - 3.189664) (1)/(1000) (12) = +4.818E-02 Molar Carbon

Sample Run By:

KR MONTEITH

00000

WHC-SD-WM-DP-114, REV. 0

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT TICTOC REV 2.0

Sample: STD

Date: 04/27/95

Time: 09:12:22

Sample Size = 250 uL

Dil Factor = 1

Blank ID # =

Blank Value = 2.17 ug/minute C

Analyst : KR MONTEITH

Min Readings = 22

Max Readings = 22

% Difference = 10

== Reading ==	Analysis Time ==	Coulometer ==	% Difference ==
1	0.51	0.00	0.00
2	1.01	53.40	100.00
3	1.51	337.60	84.18
4	2.00	618.50	45.42
5	2.50	705.70	12.36
6	3.00	725.10	2.68
7	3.50	732.00	0.94
8	4.00	735.00	0.41
9	4.50	736.10	0.15
10	5.00	737.20	0.15
11	5.50	738.00	0.11
12	6.00	739.00	0.14
13	6.50	739.50	0.07
14	7.00	740.10	0.08
15	7.50	740.60	0.07
16	8.00	741.00	0.05
17	8.50	741.60	0.08
18	9.00	741.90	0.04
19	9.50	742.20	0.04
20	10.00	742.60	0.05
21	10.50	742.90	0.04
22	11.00	743.10	0.03

USER INPUT BLANK VALUE

BLANK VALUE = 23.86749 micrograms carbon

BLANK FACTOR = 23.86749 / 10.99884 = +2.2E+00 ug/min Carbon

SAMPLE RESULTS:

(743.1 - 23.87146) (1) / (250) = +2.877E+00 g/L Carbon
 (743.1 - 23.87146) (1) / (250) (12) = +2.397E-01 Molar Carbon

<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!>>>>

Sample Run By:

KR MONTEITH

00000

WHC-SD-WM-DP-114, REV. 0

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT TICTOC REV 2.0

P

Sample: 570

Date: 04/27/95

Time: 12:04:37

Sample Size = 1 uL

Dil Factor = 1

Blank ID # =

Blank Value = .29 ug/minute C

Analyst : KR MONTEITH

Min Readings = 22

Max Readings = 22

% Difference = 10

== Reading ==	==== Analysis Time ==	==== Coulometer ==	==== % Difference ==
1	0.51	0.00	0.00
2	1.01	2.80	100.00
3	1.51	28.60	90.21
4	2.00	89.90	68.19
5	2.50	141.10	36.29
6	3.00	165.50	14.74
7	3.50	175.00	5.43
8	4.00	178.50	1.96
9	4.50	180.00	0.83
10	5.00	180.70	0.39
11	5.50	181.30	0.33
12	6.00	181.60	0.17
13	6.50	182.00	0.22
14	7.00	182.30	0.16
15	7.50	182.50	0.11
16	8.00	182.80	0.16
17	8.50	182.90	0.05
18	9.00	183.20	0.16
19	9.50	183.30	0.05
20	10.00	183.50	0.11
21	10.50	183.70	0.11
22	11.00	183.90	0.11

USER INPUT BLANK VALUE

BLANK VALUE = 3.189664 micrograms carbon

BLANK FACTOR = 3.189664 / 10.99884 = +2.9E-01 ug/min Carbon

SAMPLE RESULTS:

(183.9 - 3.189646) (1) / (1) = +1.807E+02 g/L Carbon
 (183.9 - 3.189646) (1) / (1) (12) = +1.506E+01 Molar Carbon

Sample Run By:

KR MONTEITH

00000

WHC-SD-WM-DP-114, REV.0

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT TICTOC REV 2.0

Sample: 570

Date: 04/27/95

Time: 12:18:12

Sample Size = 1 uL

Dil Factor = 1

Blank ID # =

Blank Value = 2.17 ug/minute C

Analyst : KR MONTEITH

Min Readings = 22

Max Readings = 22

% Difference = 10

== Reading ==	==== Analysis Time ==	==== Coulometer ==	==== % Difference ==
1	0.51	0.00	0.00
2	1.01	6.60	100.00
3	1.51	25.30	73.91
4	2.00	40.20	37.06
5	2.50	49.00	17.96
6	3.00	54.00	9.26
7	3.50	56.50	4.42
8	4.00	58.60	3.58
9	4.50	59.90	2.17
10	5.00	61.40	2.44
11	5.50	62.30	1.44
12	6.00	63.00	1.11
13	6.50	63.70	1.10
14	7.00	64.40	1.09
15	7.50	65.30	1.38
16	8.00	66.10	1.21
17	8.50	66.70	0.90
18	9.00	67.30	0.89
19	9.50	67.70	0.59
20	10.00	68.10	0.59
21	10.50	68.50	0.58
22	11.00	68.90	0.58

USER INPUT BLANK VALUE

BLANK VALUE = 23.86749 micrograms carbon

BLANK FACTOR = 23.86749 / 10.99884 = +2.2E+00 ug/min Carbon

SAMPLE RESULTS:

(68.9 - 23.87371) (1)/(1) = +4.50E+01 g/L Carbon
 (68.9 - 23.87371) (1)/(1) (12) = +3.75E+00 Molar Carbon

<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!!>>>>

Sample Run By:

KR MONTEITH

00000

WHC-SD-WM-DP-114, REV.0

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT TICTOC REV 2.0

Sample: 570

Date: 04/27/95

Time: 12:34:57

Sample Size = 1 uL

Dil Factor = 1

Blank ID # =

Blank Value = .29 ug/minute C

Analyst : KR MONTEITH

Min Readings = 22

Max Readings = 22

% Difference = 10

== Reading ==	==== Analysis Time ==	==== Coulometer ==	==== % Difference ==
1	0.51	1.30	0.00
2	1.01	8.00	83.75
3	1.50	112.20	92.87
4	2.00	318.30	64.75
5	2.50	487.20	34.67
6	3.00	573.70	15.08
7	3.50	616.20	6.90
8	4.00	635.60	3.05
9	4.50	643.20	1.18
10	5.00	646.50	0.51
11	5.50	648.60	0.32
12	6.00	650.10	0.23
13	6.50	651.30	0.18
14	7.00	652.10	0.12
15	7.50	652.90	0.12
16	8.00	653.60	0.11
17	8.50	654.20	0.09
18	9.00	654.80	0.09
19	9.50	655.40	0.09
20	10.00	655.80	0.06
21	10.50	656.30	0.08
22	11.00	656.70	0.06

USER INPUT BLANK VALUE

BLANK VALUE = 3.189664 micrograms carbon

BLANK FACTOR = 3.189664 / 10.99884 = +2.9E-01 ug/min Carbon

SAMPLE RESULTS:

(656.7 - 3.189664) (1)/(1) = +6.535E+02 g/L Carbon
 (656.7 - 3.189664) (1)/(1)(12) = +5.446E+01 Molar Carbon

Sample Run By:

KR MONTEITH

00000

WHC-SD-WM-DP-114. REV. 0

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT TICTOC REV 2.0

Sample: 570

Date: 04/27/95

Time: 12:47:24

Sample Size = 1 uL

Dil Factor = 1

Blank ID # =

Blank Value = .2.17 ug/minute C

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	10.80	99.07
3	1.51	51.40	78.99
4	2.01	98.90	48.03
5	2.51	134.20	26.30
6	3.01	155.40	13.64
7	3.51	167.80	7.39
8	4.01	175.90	4.60
9	4.50	182.00	3.35
10	5.00	186.50	2.41
11	5.50	190.40	2.05
12	6.00	193.60	1.65
13	6.50	196.00	1.22
14	7.00	198.40	1.21
15	7.50	200.20	0.90
16	8.00	202.00	0.89
17	8.50	203.40	0.69
18	9.00	204.80	0.68
19	9.50	206.20	0.68
20	10.00	207.80	0.77
21	10.50	209.20	0.67
22	11.00	210.40	0.57

USER INPUT BLANK VALUE

BLANK VALUE = 23.86749 micrograms carbon

BLANK FACTOR = 23.86749 / 10.99884 = +2.2E+00 ug/min Carbon

SAMPLE RESULTS:

(210.4 - 23.87358) (1)/(1) = +1.865E+02 g/L Carbon
 (210.4 - 23.87358) (1)/(1) (12) = +1.554E+01 Molar Carbon
 <<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!>>>>

Sample Run By:

KR MONTEITH

00000

137

25752

WHC-SD-WM-DP-114. REV. 0

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT TICTOC REV 2.0

Sample: 571

Date: 04/27/95

Time: 13:03:32

Sample Size = 1 uL

Dil Factor = 1

Blank ID # =

Blank Value = .29 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	14.20	97.18
3	1.51	130.20	89.09
4	2.00	385.50	66.23
5	2.50	670.60	42.51
6	3.00	857.70	21.81
7	3.50	949.70	9.69
8	4.00	993.60	4.42
9	4.50	1014.60	2.07
10	5.00	1022.60	0.78
11	5.50	1026.90	0.42
12	6.00	1029.60	0.26
13	6.50	1031.70	0.20
14	7.00	1033.20	0.15
15	7.50	1034.90	0.16
16	8.00	1035.80	0.09
17	8.50	1036.80	0.10
18	9.00	1037.80	0.10
19	9.50	1038.80	0.10
20	10.00	1039.60	0.08
21	10.50	1040.30	0.07
22	11.00	1041.00	0.07

USER INPUT BLANK VALUE

BLANK VALUE = 3.189664 micrograms carbon

BLANK FACTOR = 3.189664 / 10.99884 = +2.9E-01 ug/min Carbon

SAMPLE RESULTS:

(1041 - 3.189965) (1)/(1) = +1.0378E+03 g/L Carbon
 (1041 - 3.189965) (1)/(1) (12) = +8.6484E+01 Molar Carbon

Sample Run By:

KR MONTEITH

00000

WHC-SD-WM-DP-114, REV. 0

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT TICTOC REV 2.0

Sample: 571

Date: 04/27/95

Time: 13:22:07

Sample Size = 1 uL

Dil Factor = 1

Blank ID # =

Blank Value = 2.17 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	1.01	16.30	96.93
3	1.51	75.20	78.32
4	2.00	149.70	49.77
5	2.50	206.50	27.51
6	3.00	245.70	15.95
7	3.50	270.10	9.03
8	4.00	286.30	5.66
9	4.50	297.40	3.73
10	5.00	305.70	2.72
11	5.50	311.50	1.86
12	6.00	316.50	1.58
13	6.50	320.70	1.31
14	7.00	323.80	0.96
15	7.50	326.80	0.92
16	8.00	329.40	0.79
17	8.50	331.80	0.72
18	9.00	334.00	0.66
19	9.50	335.80	0.54
20	10.00	337.80	0.59
21	10.50	339.90	0.62
22	11.00	341.80	0.56

USER INPUT BLANK VALUE

BLANK VALUE = 23.86749 micrograms carbon

BLANK FACTOR = 23.86749 / 10.99884 = +2.2E+00 ug/min Carbon

SAMPLE RESULTS:

(341.8 - 23.86563) (1)/(1) = +3.179E+02 g/L Carbon
 (341.8 - 23.86563) (1)/(1) (12) = +2.649E+01 Molar Carbon
 <<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!>>>>

Sample Run By:

KR MONTEITH

00000

WHC-SD-WM-DP-114. REV. 0

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 571

Date: 04/27/95

Time: 13:34:01

Sample Size = 1 uL

Dil Factor = 1

Blank ID # =

Blank Value = .29 ug/minute C

Analyst : KR MONTEITH

Min Readings = 22

Max Readings = 22

% Difference = 10

== Reading ==	==== Analysis Time ==	==== Coulometer ==	==== % Difference ==
1	0.51	2.80	0.00
2	1.01	99.80	97.19
3	1.51	472.70	78.89
4	2.01	906.90	47.88
5	2.51	1173.30	22.71
6	3.00	1301.50	9.85
7	3.50	1362.50	4.48
8	4.00	1392.60	2.16
9	4.50	1405.70	0.93
10	5.00	1412.20	0.46
11	5.50	1416.40	0.30
12	6.00	1419.70	0.23
13	6.50	1422.50	0.20
14	7.00	1424.30	0.13
15	7.50	1426.00	0.12
16	8.00	1427.60	0.11
17	8.50	1429.10	0.10
18	9.00	1430.50	0.10
19	9.50	1431.70	0.08
20	10.00	1432.80	0.08
21	10.50	1433.60	0.06
22	11.00	1434.10	0.03

USER INPUT BLANK VALUE

BLANK VALUE = 3.189664 micrograms carbon

BLANK FACTOR = 3.189664 / 10.99884 = +2.9E-01 ug/min Carbon

SAMPLE RESULTS:

(1434.1 - 3.190442) (1) / (1) =

+1.4309E+03 g/L Carbon

(1434.1 - 3.190442) (1) / (1) (12) =

+1.1924E+02 Molar Carbon

Sample Run By:

KR MONTEITH

00000

35672

140

WHC-SD-WM-DP-114, REV.0

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT TICTOC REV 2.0

Sample: 571

Date: 04/27/95

Time: 13:46:32

Sample Size = 1 uL

Dil Factor = 1

Blank ID # =

Blank Value = 2.17 ug/minute C

Analyst : KR MONTEITH

Min Readings = 22

Max Readings = 22

% Difference = 10

== Reading ==	Analysis Time	Coulometer	% Difference
1	0.51	2.20	0.00
2	1.01	22.30	90.13
3	1.51	132.50	83.17
4	2.01	238.20	44.37
5	2.51	303.70	21.57
6	3.00	344.00	11.72
7	3.51	372.20	7.58
8	4.01	391.70	4.98
9	4.50	407.20	3.81
10	5.00	418.60	2.72
11	5.50	429.10	2.45
12	6.00	437.80	1.99
13	6.50	444.50	1.51
14	7.00	451.20	1.48
15	7.50	455.90	1.03
16	8.00	460.60	1.02
17	8.50	465.20	0.99
18	9.00	468.70	0.75
19	9.50	472.10	0.72
20	10.00	475.10	0.63
21	10.50	477.50	0.50
22	11.00	480.10	0.54

USER INPUT BLANK VALUE

BLANK VALUE = 23.86749 micrograms carbon

BLANK FACTOR = 23.86749 / 10.99884 = +2.2E+00 ug/min Carbon

SAMPLE RESULTS:

(480.1 - 23.87132) (1)/(1) = +4.562E+02 g/L Carbon
 (480.1 - 23.87132) (1)/(1) (12) = +3.802E+01 Molar Carbon
 <<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!>>>>

Sample Run By:

KR MONTEITH

00000

3567

141

WHC-SD-WM-DP-114, REV. 0

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT TICTOC REV 2.0

Sample: 571 + SPK

Date: 04/27/95

Time: 13:58:34

Sample Size = 1 uL

Dil Factor = 1

Blank ID # =

Blank Value = .29 ug/minute C

Analyst : KR MONTEITH

Min Readings = 22

Max Readings = 22

% Difference = 10

== Reading ==	==== Analysis Time ==	==== Coulometer ==	==== % Difference ==
1	0.51	2.70	0.00
2	1.01	46.10	94.14
3	1.51	383.40	87.98
4	2.01	893.10	57.07
5	2.51	1266.30	29.47
6	3.01	1457.80	13.14
7	3.51	1542.60	5.50
8	4.01	1582.70	2.53
9	4.50	1601.80	1.19
10	5.00	1610.80	0.56
11	5.50	1616.10	0.33
12	6.01	1619.70	0.22
13	6.51	1623.00	0.20
14	7.00	1625.90	0.18
15	7.50	1627.80	0.12
16	8.00	1630.00	0.13
17	8.50	1631.80	0.11
18	9.00	1633.70	0.12
19	9.50	1635.10	0.09
20	10.00	1636.60	0.09
21	10.50	1638.10	0.09
22	11.00	1639.30	0.07

USER INPUT BLANK VALUE

BLANK VALUE = 3.189664 micrograms carbon

BLANK FACTOR = 3.189664 / 10.99884 = +2.9E-01 ug/min Carbon

SAMPLE RESULTS:

(1639.3 - 3.190478) (1)/(1) = +1.6361E+03 g/L Carbon
 (1639.3 - 3.190478) (1)/(1) (12) = +1.3634E+02 Molar Carbon

Sample Run By:

KR MONTEITH

00000

142

31882 + 500ml 15N12R

WHC-SD-WM-DP-114, REV. 0

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT TICTOC REV 2.0

Sample: 571 + SPK

Date: 04/27/95

Time: 14:10:42

Sample Size = 1 uL

Dil Factor = 1

Blank ID # =

Blank Value = 2.17 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	58.60	96.59
3	1.51	268.70	78.19
4	2.00	463.10	41.98
5	2.50	550.10	15.82
6	3.00	593.10	7.25
7	3.50	618.90	4.17
8	4.00	636.10	2.70
9	4.50	648.30	1.88
10	5.00	658.20	1.50
11	5.50	666.00	1.17
12	6.00	673.50	1.11
13	6.50	679.10	0.82
14	7.00	683.80	0.69
15	7.50	688.50	0.68
16	8.00	692.30	0.55
17	8.50	695.80	0.50
18	9.00	698.90	0.44
19	9.50	701.80	0.41
20	10.00	704.40	0.37
21	10.50	706.40	0.28
22	11.00	708.60	0.31

USER INPUT BLANK VALUE

BLANK VALUE = 23.86749 micrograms carbon

BLANK FACTOR = 23.86749 / 10.99884 = +2.2E+00 ug/min Carbon

SAMPLE RESULTS:

(708.6 - 23.86563) (1)/(1) = +6.847E+02 g/L Carbon
 (708.6 - 23.86563) (1)/(1) (12) = +5.706E+01 Molar Carbon
 <<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!>>>>

Sample Run By:

KR MONTEITH

00000

143

3188g + 100 mg 10N12E

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT

TICTOC REV 2.0

<<< BLANK ANALYSIS >>> WHC-SD-WM-DP-114, REV. 0

Sample: BLK

Date: 05/05/95

Time: 17:11:41

Sample Size = 1 uL

Dil Factor = 1

Blank ID # = BLK

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	0.20	50.00
3	1.51	0.50	60.00
4	2.01	0.80	37.50
5	2.51	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	1.90	10.53
10	5.00	2.10	9.52
11	5.50	2.30	8.70
12	6.00	2.40	4.17
13	6.50	2.50	4.00
14	7.00	2.80	10.71
15	7.50	2.90	3.45
16	8.00	3.00	3.33
17	8.50	3.20	6.25
18	9.00	3.40	5.88
19	9.50	3.60	5.56
20	10.00	3.70	2.70
21	10.50	3.90	5.13
22	11.00	4.10	4.88

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 145 TO 156.

BLANK VALUE = 4.1 micrograms carbon

BLANK FACTOR = 4.1 / 11.00073 =

+3.7E-01

ug/min Carbon

Sample Run By

KR MONTEITH5-6-95
00000

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT

TICTOC REV 2.0

<<< BLANK ANALYSIS >>> WHC-SD-WM-DP-114, REV. 0

Sample: BLK

Date: 05/05/95

Time: 17:29:54

Sample Size = 1 uL

Dil Factor = 1

Blank ID # = BLK

Blank Value = N/A

Analyst : KR MONTEITH

Min Readings = 22

Max Readings = 22

% Difference = 10

== Reading ==	==== Analysis Time ==	==== Coulometer ==	==== % Difference ==
1	0.51	0.00	0.00
2	1.01	4.40	100.00
3	1.50	11.80	62.71
4	2.00	18.70	36.90
5	2.50	23.90	21.76
6	3.01	26.50	9.81
7	3.51	28.00	5.36
8	4.01	29.30	4.44
9	4.50	30.30	3.30
10	5.00	31.00	2.26
11	5.50	31.70	2.21
12	6.00	32.30	1.86
13	6.50	32.80	1.52
14	7.00	33.30	1.50
15	7.50	33.80	1.48
16	8.00	34.40	1.74
17	8.50	34.90	1.43
18	9.00	35.40	1.41
19	9.50	35.80	1.12
20	10.00	36.20	1.10
21	10.50	36.70	1.36
22	11.00	37.20	1.34

BLANK VALUE = 37.2 micrograms carbon

BLANK FACTOR = 37.2 / 11.00073 = +3.38E+00 ug/min 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

WHC-SD-WM-DP-114, REV. 0

Sample: STD

Date: 05/05/95

Time: 17:45:45

Sample Size = 1000 uL
Dil Factor = 1
Blank ID # =
Blank Value = .37 ug/minute C

Analyst : KR MONTEITH
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading ==	Analysis Time ==	Coulometer ==	% Difference ==
1	0.51	123.10	0.00
2	1.01	285.60	56.90
3	1.51	398.90	28.40
4	2.00	465.90	14.38
5	2.50	505.10	7.76
6	3.00	526.90	4.14
7	3.50	536.20	1.73
8	4.00	541.20	0.92
9	4.50	543.70	0.46
10	5.00	545.50	0.33
11	5.50	546.70	0.22
12	6.00	547.40	0.13
13	6.50	548.20	0.15
14	7.00	548.90	0.13
15	7.50	549.60	0.13
16	8.00	550.10	0.09
17	8.50	550.70	0.11
18	9.00	551.20	0.09
19	9.50	551.60	0.07
20	10.00	552.10	0.09
21	10.50	552.40	0.05
22	11.00	552.80	0.07

USER INPUT BLANK VALUE

BLANK VALUE = 4.070271 micrograms carbon

BLANK FACTOR = 4.070271 / 11.00073 = +3.7E-01 ug/min Carbon

SAMPLE RESULTS:

(552.8 - 4.069955) (1) / (1000) = +5.487E-01 g/L Carbon
(552.8 - 4.069955) (1) / (1000) (12) = +4.573E-02 Molar Carbon

Sample Run By:

KR MONTEITH

00000

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-114, REV.0

Sample: STD

Date: 05/05/95

Time: 17:57:57

Sample Size = 300 uL

Dil Factor = 1

Blank ID # =

Blank Value = 3.38 ug/minute C

Analyst : KR MONTEITH

Min Readings = 22

Max Readings = 22

% Difference = 10

Reading	Analysis Time	Coulometer	% Difference
1	0.51	0.00	0.00
2	1.01	24.40	100.00
3	1.51	182.80	86.65
4	2.00	505.40	63.83
5	2.50	741.50	31.84
6	3.00	823.00	9.90
7	3.50	853.80	3.61
8	4.00	865.90	1.40
9	4.50	871.00	0.59
10	5.00	874.40	0.39
11	5.50	876.40	0.23
12	6.00	878.30	0.22
13	6.50	879.70	0.16
14	7.00	881.00	0.15
15	7.50	882.00	0.11
16	8.00	882.90	0.10
17	8.50	883.70	0.09
18	9.00	884.50	0.09
19	9.50	885.30	0.09
20	10.00	885.80	0.06
21	10.50	886.60	0.09
22	11.00	887.10	0.06

USER INPUT BLANK VALUE

BLANK VALUE = 37.18248 micrograms carbon

BLANK FACTOR = 37.18248 / 11.00073 = +3.4E+00 ug/min Carbon

SAMPLE RESULTS:

(887.1 - 37.18536) (1)/(300) = +2.833E+00 g/L Carbon
 (887.1 - 37.18536) (1)/(300) (12) = +2.361E-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

WHC-SD-WM-DP-114, REV. 0

Sample: 572

Date: 05/05/95

Time: 18:34:50

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .37 ug/minute C

Analyst : KR MONTEITH
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading ==	==== Analysis Time ==	==== Coulometer ==	==== % Difference ==
1	0.51	0.30	0.00
2	1.01	4.70	93.62
3	1.51	50.00	90.60
4	2.00	152.70	67.26
5	2.50	277.00	44.87
6	3.00	372.30	25.60
7	3.50	432.10	13.84
8	4.00	467.70	7.61
9	4.50	485.30	3.63
10	5.00	494.10	1.78
11	5.50	498.40	0.86
12	6.00	501.10	0.54
13	6.50	503.40	0.46
14	7.00	505.50	0.42
15	7.50	507.00	0.30
16	8.00	508.40	0.28
17	8.50	509.40	0.20
18	9.00	510.50	0.22
19	9.50	511.30	0.16
20	10.00	512.30	0.20
21	10.50	512.90	0.12
22	11.00	513.80	0.18

USER INPUT BLANK VALUE

BLANK VALUE = 4.070271 micrograms carbon

BLANK FACTOR = 4.070271 / 11.00073 = +3.7E-01 ug/min Carbon

SAMPLE RESULTS:

(513.8 - 4.069955) (1) / (1) = +5.097E+02 g/L Carbon
(513.8 - 4.069955) (1) / (1) (12) = +4.248E+01 Molar Carbon

Sample Run By:

KR MONTEITH

00000

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC. REV 2.0

WHC-SD-WM-DP-114, REV. 0

Sample: 572

Date: 05/05/95

Time: 18:46:38

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 3.38 ug/minute C

Analyst : KR MONTEITH
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading ==	==== Analysis Time ==	==== Coulometer ==	==== % Difference ==
1	0.51	0.70	0.00
2	1.01	13.30	94.74
3	1.50	56.40	76.42
4	2.00	104.70	46.13
5	2.50	141.90	26.22
6	3.00	166.10	14.57
7	3.50	182.70	9.09
8	4.00	195.00	6.31
9	4.50	205.50	5.11
10	5.00	213.70	3.84
11	5.50	220.60	3.13
12	6.00	226.20	2.48
13	6.50	231.50	2.29
14	7.00	235.60	1.74
15	7.50	239.20	1.51
16	8.00	241.90	1.12
17	8.50	244.60	1.10
18	9.00	247.00	0.97
19	9.50	249.20	0.88
20	10.00	250.90	0.68
21	10.50	252.80	0.75
22	11.00	254.40	0.63

USER INPUT BLANK VALUE

BLANK VALUE = 37.18248 micrograms carbon

BLANK FACTOR = 37.18248 / 11.00073 = +3.4E+00 ug/min Carbon

SAMPLE RESULTS:

(254.4 - 37.17588) (1)/(1) = +2.172E+02 g/L Carbon
(254.4 - 37.17588) (1)/(1) (12) = +1.810E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!>>>>

Sample Run By:

KR MONTEITH

00000

2390g 150

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT

TICTOC REV 2.0

WHC-SD-WM-DP-114, REV. 0

Sample: 572

Date: 05/05/95

Time: 18:58:23

Sample Size = 1 uL

Dil Factor = 1

Blank ID # =

Blank Value = .37 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	5.80	74.14
3	1.51	46.40	87.50
4	2.00	157.70	70.58
5	2.50	305.70	48.41
6	3.01	432.80	29.37
7	3.51	519.10	16.62
8	4.01	571.20	9.12
9	4.50	598.80	4.61
10	5.00	612.20	2.19
11	5.50	619.80	1.23
12	6.00	623.80	0.64
13	6.50	626.70	0.46
14	7.00	628.70	0.32
15	7.50	630.20	0.24
16	8.00	631.60	0.22
17	8.50	633.10	0.24
18	9.00	634.30	0.19
19	9.50	635.50	0.19
20	10.00	636.40	0.14
21	10.50	637.60	0.19
22	11.00	638.40	0.13

USER INPUT BLANK VALUE

BLANK VALUE = 4.070271 micrograms carbon

BLANK FACTOR = 4.070271 / 11.00073 = +3.7E-01 ug/min Carbon

SAMPLE RESULTS:

(638.4 - 4.070903) (1)/(1) =

+6.343E+02 g/L Carbon

(638.4 - 4.070903) (1)/(1)(12) =

+5.286E+01 Molar Carbon

Sample Run By:

KR MONTEITH

00000

151

-3265

SUPPORTING
DATA

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-114. REV 0

Sample: 572

Date: 05/05/95

Time: 20:25:15

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 3.38 ug/minute C

Analyst : KR MONTEITH
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading ==	==== Analysis Time ==	==== Coulometer ==	==== % Difference ==
1	0.51	1.30	0.00
2	1.01	23.70	94.51
3	1.51	115.40	79.46
4	2.00	171.40	32.67
5	2.50	204.40	16.14
6	3.00	229.20	10.82
7	3.50	250.40	8.47
8	4.00	264.90	5.47
9	4.50	270.10	1.93
10	5.00	279.00	3.19
11	5.50	287.20	2.86
12	6.00	300.40	4.39
13	6.50	307.90	2.44
14	7.00	312.40	1.44
15	7.50	315.80	1.08
16	8.00	318.50	0.85
17	8.50	320.70	0.69
18	9.00	322.50	0.56
19	9.50	324.20	0.52
20	10.00	325.90	0.52
21	10.50	327.30	0.43
22	11.00	328.80	0.46

USER INPUT BLANK VALUE

BLANK VALUE = 37.18248 micrograms carbon

BLANK FACTOR = 37.18248 / 11.00073 = +3.4E+00 ug/min Carbon

SAMPLE RESULTS:

(328.8 - 37.18206) (1)/(1) = +2.916E+02 g/L Carbon
(328.8 - 37.18206) (1)/(1) (12) = +2.430E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!>>>>

Sample Run By:

KR MONTEITH

00000

152

3265g

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-114, REV 0

Sample: 639

Date: 05/05/95

Time: 20:39:35

Sample Size = 1 uL

Dil Factor = 1

Blank ID # =

Blank Value = .37 ug/minute C

Analyst : KR MONTEITH

Min Readings = 22

Max Readings = 22

% Difference = 10

== Reading ==	== Analysis Time ==	== Coulometer ==	== % Difference ==
1	0.51	0.30	0.00
2	1.01	6.30	95.24
3	1.51	71.00	91.13
4	2.00	165.10	57.00
5	2.50	234.40	29.56
6	3.00	280.20	16.35
7	3.50	311.30	9.99
8	4.00	331.90	6.21
9	4.50	344.80	3.74
10	5.00	352.20	2.10
11	5.50	357.60	1.51
12	6.00	361.60	1.11
13	6.50	364.50	0.80
14	7.00	367.30	0.76
15	7.50	369.60	0.62
16	8.00	371.60	0.54
17	8.50	373.30	0.46
18	9.00	375.00	0.45
19	9.50	376.60	0.42
20	10.00	378.00	0.37
21	10.50	379.60	0.42
22	11.00	380.80	0.32

USER INPUT BLANK VALUE

BLANK VALUE = 4.070271 micrograms carbon

BLANK FACTOR = 4.070271 / 11.00073 = +3.7E-01 ug/min Carbon

SAMPLE RESULTS:

(380.8 - 4.06991) (1)/(1) = +3.767E+02 g/L Carbon
(380.8 - 4.06991) (1)/(1) (12) = +3.139E+01 Molar Carbon

Sample Run By:

KR MONTEITH

00000

97292

153

SUPPORTING
DATA

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-114, REV. 0

Sample: 639

Date: 05/05/95

Time: 20:51:47

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 3.38 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	5.00	76.00
3	1.51	17.30	71.10
4	2.01	37.60	53.99
5	2.51	54.20	30.63
6	3.01	64.30	15.71
7	3.51	70.60	8.92
8	4.01	74.90	5.74
9	4.51	78.60	4.71
10	5.00	81.40	3.44
11	5.50	84.00	3.10
12	6.00	86.30	2.67
13	6.50	88.50	2.49
14	7.00	89.90	1.56
15	7.50	91.60	1.86
16	8.00	93.40	1.93
17	8.50	94.80	1.48
18	9.00	96.00	1.25
19	9.50	97.30	1.34
20	10.00	98.40	1.12
21	10.50	99.70	1.30
22	11.00	100.90	1.19

USER INPUT BLANK VALUE

BLANK VALUE = 37.18248 micrograms carbon

BLANK FACTOR = 37.18248 / 11.00073 = +3.4E+00 ug/min Carbon

SAMPLE RESULTS:

(100.9 - 37.18867) (1)/(1) = +6.371E+01 g/L Carbon
(100.9 - 37.18867) (1)/(1) (12) = +5.309E+00 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!>>>>

Sample Run By:

KR MONTEITH

00000

4729

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-114, REV.0

Sample: 639

Date: 05/05/95

Time: 21:06:02

Sample Size = 1 uL

Dil Factor = 1

Blank ID # =

Blank Value = .37 ug/minute C

Analyst : KR MONTEITH

Min Readings = 22

Max Readings = 22

% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	1.30	0.00
2	1.01	9.40	86.17
3	1.50	97.20	90.33
4	2.00	214.80	54.75
5	2.50	297.00	27.68
6	3.00	349.30	14.97
7	3.50	385.90	9.48
8	4.00	416.70	7.39
9	4.50	445.70	6.51
10	5.00	471.60	5.49
11	5.50	492.90	4.32
12	6.00	510.40	3.43
13	6.50	522.20	2.26
14	7.00	530.70	1.60
15	7.50	535.60	0.91
16	8.00	539.20	0.67
17	8.50	542.10	0.53
18	9.00	544.20	0.39
19	9.50	546.10	0.35
20	10.00	547.70	0.29
21	10.50	549.20	0.27
22	11.00	550.70	0.27

USER INPUT BLANK VALUE

BLANK VALUE = 4.070271 micrograms carbon

BLANK FACTOR = 4.070271 / 11.00073 = +3.7E-01 ug/min Carbon

SAMPLE RESULTS:

(550.7 - 4.070226) (1)/(1) = +5.466E+02 g/L Carbon
(550.7 - 4.070226) (1)/(1) (12) = +4.555E+01 Molar Carbon

Sample Run By:

KR MONTEITH

00000

155

1.18612

SUPPORTING DATA

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-114, REV. 0

Sample: 639

Date: 05/05/95

Time: 21:39:19

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 3.38 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	7.00	94.29
3	1.50	28.60	75.52
4	2.00	51.50	44.47
5	2.50	66.30	22.32
6	3.00	74.70	11.24
7	3.50	80.70	7.43
8	4.00	85.60	5.72
9	4.50	89.20	4.04
10	5.00	92.40	3.46
11	5.50	95.20	2.94
12	6.00	97.70	2.56
13	6.50	100.30	2.59
14	7.00	102.20	1.86
15	7.50	104.20	1.92
16	8.00	105.90	1.61
17	8.50	107.60	1.58
18	9.00	109.30	1.56
19	9.50	110.80	1.35
20	10.00	112.10	1.16
21	10.50	113.50	1.23
22	11.00	115.00	1.30

USER INPUT BLANK VALUE

BLANK VALUE = 37.18248 micrograms carbon

BLANK FACTOR = 37.18248 / 11.00073 = +3.4E+00 ug/min Carbon

SAMPLE RESULTS:

(115 - 37.17876) (1)/(1) = +7.782E+01 g/L Carbon
(115 - 37.17876) (1)/(1) (12) = +6.485E+00 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!>>>>

Sample Run By:

KR MONTEITH

00000

WHC-SD-WM-DP-114, REV. 0

RADIOCHEMICAL ANALYSES

RUSH

RUSH

14.15

LABCORE Data Entry Template for Worklist# 1196

Analyst: AKL Instrument: AB00 15 Book # 107B52

Method: LA-508-101 Rev/Mod 0-2 WB26872

Worklist Comment: Run under RWP 273. Determine sample size using Ludlum. SLF

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			@ALPHA01 ALPHA01	SOLID			N/A	uCi/g
		1 STD			@ALPHA01 ALPHA01E	SOLID			N/A	% Ct. Error
		2 BLNK-PREP			@ALPHA01 ALPHA01	SOLID			N/A	uCi/g
		2 BLNK-PREP			@ALPHA01 ALPHA01E	SOLID			N/A	% Ct. Error
		3 BLNK/BKG	<u>33</u>		@ALPHA01 ALPHA01	SOLID			N/A	uCi/g
95000041	C-111	4 SAMPLE	S95T000573	0	@ALPHA01 ALPHA01	SOLID	N/A			uCi/g
95000041	C-111	4 SAMPLE	S95T000573	0	@ALPHA01 ALPHA01E	SOLID	N/A			% Ct. Error
95000041	C-111	5 DUP	S95T000573	0	@ALPHA01 ALPHA01	SOLID			N/A	uCi/g
95000041	C-111	5 DUP	S95T000573	0	@ALPHA01 ALPHA01E	SOLID			N/A	% Ct. Error
95000041	C-111	6 SPK	S95T000573	0	@ALPHA01 ALPHA01	SOLID			N/A	uCi/g
95000041	C-111	7 SAMPLE	S95T000574	0	@ALPHA01 ALPHA01	SOLID	N/A			uCi/g
95000041	C-111	7 SAMPLE	S95T000574	0	@ALPHA01 ALPHA01E	SOLID	N/A			% Ct. Error
95000041	C-111	8 DUP	S95T000574	0	@ALPHA01 ALPHA01	SOLID			N/A	uCi/g
95000041	C-111	8 DUP	S95T000574	0	@ALPHA01 ALPHA01E	SOLID			N/A	% Ct. Error
95000041	C-111	9 SPK	S95T000574	0	@ALPHA01 ALPHA01	SOLID			N/A	uCi/g
		10 STD			@ALPHA01 ALPHA01	SOLID			N/A	uCi/g
		10 STD			@ALPHA01 ALPHA01E	SOLID			N/A	% Ct. Error
		11 BLNK-PREP			@ALPHA01 ALPHA01	SOLID			N/A	uCi/g

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# 1196

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL*	FOUND	DL	UNIT
		11 BLNK-PREP			@ALPHA01 ALPHA01E	SOLID	_____	_____	N/A	% Ct. Error
		12 BLNK/BKG	31		@ALPHA01 ALPHA01	SOLID	_____	_____	N/A	uCi/g
95000041	C-111	13 SAMPLE	S95T000575	0	@ALPHA01 ALPHA01	SOLID	N/A	_____	_____	uCi/g
95000041	C-111	13 SAMPLE	S95T000575	0	@ALPHA01 ALPHA01E	SOLID	N/A	_____	_____	% Ct. Error
95000041	C-111	14 DUP	S95T000575	0	@ALPHA01 ALPHA01	SOLID	_____	_____	N/A	uCi/g
95000041	C-111	14 DUP	S95T000575	0	@ALPHA01 ALPHA01E	SOLID	_____	_____	N/A	% Ct. Error
95000041	C-111	15 SPK	S95T000575	0	@ALPHA01 ALPHA01	SOLID	_____	_____	N/A	uCi/g

Final page for worklist # 1196

Alita Lewis 4/27/95
Analyst Signature Date

Shawn Holden 4-28-95
Analyst Signature Date

Data Entry Comments:

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

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

AT : LA-508-101 (D-2)

LA-548-101 (A-3) LIQUIDS

		STANDARD	REPLICATE
Type	DETECTOR NUMBER	15	15
STANDARD	DISH SIZE 1, 2, or 5 (MS)	2	2
Work List	TOTAL COUNTS (TC)	3601	4112
1196	COUNT TIME in MINUTES (CT)	30	30
AT or TB ?	BACKGROUND in cpm (BKG)	0.9	0.9
AT	SAMPLE SIZE in mL (SS)	10.000	10.000
Test Code	DILUTION FACTOR (DF)	1	1
@ALPHA01	DIGEST DILUTION FACTOR (DDF)	1	1
Matrix	EFFICIENCY FACTOR (EFF)	0.2380	0.2380
LIQUID	Lc, Rmax, or Rs, (SAMPLE RATE) as APPROPRIATE	119.133	136.167
Sample #	Sample Concentration in $\mu\text{Ci/L}$	2.25E-02	BOOK#
WRKLIST 1196	Replicate Concentration in $\mu\text{Ci/L}$	2.58E-02	107B52
Instrument Code			
WB26872	Average Concentration in $\mu\text{Ci/L}$	2.4160E-02	
Analyst			
AKL	Rs (Sample Count Rate) = $(TC / CT) - BKG$		
Date	ALPHA TOTAL $\mu\text{Ci/L}$ = $Rs \cdot 1000\text{mL/L} \cdot DF \cdot DDF / (EFF \cdot SS \cdot 2220000\text{dpm}/\mu\text{Ci})$		
04/27/95	ALPHA TOTAL $\mu\text{Ci/mL}$ = ALPHA TOTAL $\mu\text{Ci/L} / 1000\text{mL/L}$		
Time	Relative Counting Error = $[(The\ Square\ Root\ of\ TC + BKG \cdot CT) / (TC - BKG \cdot CT)] \cdot 1.96 \cdot 100$		
02:00 PM	Detection Levels and Less Than Values are determined from Procedure LA-508-002.		

v RESULTS v

ALPHA TOTAL	in $\mu\text{Ci/mL}$	(Average) =	2.42E-05	DETECTION LEVEL
				1.70E-07 $\mu\text{Ci/mL}$
RELATIVE COUNTING ERROR		=	3.3%	

Data Entry by: *Sharon L. Hatcher*
 Approved by: *St. Hatcher*
 Form 508101_C Rev. 1.3

Date: 04/28/95

Date: 5/1/95

Page 1 of 1

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

AT : LA-508-101 (D-2)

LA-548-101 (A-3)

SOLIDS

		BLANK	REPLICATE
Type	DETECTOR NUMBER	15	15
BLANK	DISH SIZE 1, 2, or 5 (MS)	2	2
Work List	TOTAL COUNTS (TC)	11	7
1196	COUNT TIME in MINUTES (CT)	30	30
AT or TB ?	BACKGROUND in cpm (BKG)	0.9	0.9
AT	SAMPLE SIZE in mL (SS)	1.000	1.000
Test Code	DILUTION FACTOR (DF)	101	101
@ALPHA01	DIGEST GRAMS of SOLIDS/L (Dg/L)	2.04	2.04
Matrix	EFFICIENCY FACTOR (EFF)	0.2380	0.2380
SOLID	Lc, Rmax, or Rs, (SAMPLE RATE) as APPROPRIATE	0.404	0.404
Sample #	Sample Concentration in $\mu\text{Ci/g}$	< 3.79E-02	BOOK#
S95T573	Replicate Concentration in $\mu\text{Ci/g}$	< 3.79E-02	
Instrument Code			
WB26872	Maximum Concentration in $\mu\text{Ci/g}$	< 3.7872E-02	
Analyst			
AKL	Rs (Sample Count Rate) = $(TC / CT) - BKG$		
Date	ALPHA TOTAL $\mu\text{Ci/g}$ = $Rs * 1000\text{mL/L} * DF / (EFF * SS * Dg/L * 2220000\text{dpm}/\mu\text{Ci})$		
04/27/95			
Time	Relative Counting Error = $[(\text{The Square Root of } TC + BKG * CT) / (TC - BKG * CT)] * 1.96 * 100$		
02:00 PM	Detection Levels and Less Than Values are determined from Procedure LA-508-002.		

v RESULTS v

ALPHA TOTAL	in $\mu\text{Ci/g}$	(Maximum) =	< 3.79E-02	DETECTION LEVEL
LESS Than Value was Determined from Lc.				8.42E-02
RELATIVE COUNTING ERROR		=	75.5%	$\mu\text{Ci/g}$

Data Entry by: <i>Sharon H. Halden</i>	Date: 04/28/95
Approved by: <i>St. J. H.</i>	Date: 5/1/95

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

AT : LA-508-101 (D-2)

LA-548-101 (A-3)

SOLIDS

		SAMPLE	REPLICATE
Type	DETECTOR NUMBER	15	15
SAMPLE	DISH SIZE 1, 2, or 5 (MS)	2	2
Work List	TOTAL COUNTS (TC)	247	244
1196	COUNT TIME in MINUTES (CT)	30	30
AT or TB ?	BACKGROUND in cpm (BKG)	0.9	0.9
AT	SAMPLE SIZE in mL (SS)	1.000	1.000
Test Code	DILUTION FACTOR (DF)	101	101
@ALPHA01	DIGEST GRAMS of SOLIDS/L (Dg/L)	2.04	2.04
Matrix	EFFICIENCY FACTOR (EFF)	0.2380	0.2380
SOLID	Lc, Rmax, or Rs, (SAMPLE RATE) as APPROPRIATE	7.333	7.233
Sample #	Sample Concentration in $\mu\text{Ci/g}$	6.87E-01	BOOK#
S95T573	Replicate Concentration in $\mu\text{Ci/g}$	6.78E-01	
Instrument Code			
WB26872	Average Concentration in $\mu\text{Ci/g}$	6.8248E-01	
Analyst			
AKL	R_s (Sample Count Rate) = $(TC / CT) - BKG$		
Date	ALPHA TOTAL $\mu\text{Ci/g}$ = $R_s * 1000\text{mL/L} * DF / (EFF * SS * Dg/L * 2220000\text{dpm}/\mu\text{Ci})$		
04/27/95			
Time	Relative Counting Error = $[(\text{The Square Root of } TC + BKG * CT) / (TC - BKG * CT)] * 1.96 * 100$		
02:00 PM	Detection Levels and Less Than Values are determined from Procedure LA-508-002.		

v RESULTS v

VRESSETSV						
ALPHA TOTAL	in $\mu\text{Ci/g}$	(Average)	=	6.82E-01	DETECTION LEVEL	
RELATIVE COUNTING ERROR				=	14.9%	8.42E-02 $\mu\text{Ci/g}$

Data Entry by: *Sharon J. Halden* Date: 04/28/95
 Approved by: *St. J. Halden* Date: 5/1/95

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

AT : LA-508-101 (D-2)

LA-548-101 (A-3)

SOLIDS

Type	DETECTOR NUMBER	SAMPLE	REPLICATE
DUPLICATE	DISH SIZE 1, 2, or 5 (MS)	15	15
Work List	TOTAL COUNTS (TC)	2	2
1196	COUNT TIME in MINUTES (CT)	294	288
AT or TB ?	BACKGROUND in cpm (BKG)	30	30
AT	SAMPLE SIZE in mL (SS)	0.9	0.9
Test Code	DILUTION FACTOR (DF)	1.000	1.000
@ALPHA01	DIGEST GRAMS of SOLIDS/L (Dg/L)	101	101
Matrix	EFFICIENCY FACTOR (EFF)	2.0648	2.0648
SOLID	Lc, Rmax, or Rs, (SAMPLE RATE) as APPROPRIATE	0.2380	0.2380
Sample #	Sample Concentration in $\mu\text{Ci/g}$	8.900	8.700
S95T573	Replicate Concentration in $\mu\text{Ci/g}$	8.24E-01	BOOK#
Instrument Code		8.05E-01	
WB26872	Average Concentration in $\mu\text{Ci/g}$	8.1470E-01	
Analyst			
AKL	Rs (Sample Count Rate) = (TC / CT) - BKG		
Date	ALPHA TOTAL $\mu\text{Ci/g}$ = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/ μCi)		
04/27/95			
Time	Relative Counting Error = [(The Square Root of TC + BKG * CT) / (TC - BKG * CT)] * 1.96 * 100		
02:00 PM	Detection Levels and Less Than Values are determined from Procedure LA-508-002.		

v RESULTS v

ALPHA TOTAL	in $\mu\text{Ci/g}$	(Average)	=	8.15E-01	DETECTION LEVEL
					8.32E-02 $\mu\text{Ci/g}$
RELATIVE COUNTING ERROR				=	13.3%

Data Entry by: <i>Sharon J. Valdez</i>	Date: 04/28/95
Approved by: <i>ix</i>	Date: 5/1/95

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

AT : LA-508-101 (D-2)

LA-548-101 (A-3)

SOLIDS

		SPIKE	REPLICATE
Type	DETECTOR NUMBER	15	15
SPIKE	DISH SIZE 1, 2, or 5 (MS)	2	2
Work List	TOTAL COUNTS (TC)	53477	49730
1196	COUNT TIME in MINUTES (CT)	30	30
AT or TB ?	BACKGROUND in cpm (BKG)	0.9	0.9
AT	SAMPLE VOLUME in mL (Spiked Vial) (SS)	1.000	1.000
Test Code	SAMPLE DILUTION FACTOR (Spiked Vial) (DF)	101	101
@ALPHA01	DIGEST GRAMS of SOLIDS/L (Dg/L)	2.04	2.04
Matrix	SPIKE VOLUME in mL (SVol)	0.100	0.100
SOLID	SPIKE DILUTION FACTOR (SDF)	1	1
Sample #	SPIKE VALUE in $\mu\text{Ci/L}$ (SVal)	36.372	36.372
S95T573	INSTRUMENT EFFICIENCY FACTOR (EFF)	0.238	0.238
Instrument Code	SAMPLE + SPIKE $\mu\text{Ci/g}$ (S+S)	1.67E+02	1.55E+02
WB26872	AVERAGE or MAXIMUM $\mu\text{Ci/g}$ from FORM C	6.8248E-01	
Analyst	BOOK#	94B43	
AKL	R_s (Sample Count Rate) = $(TC / CT) - BKG$		
Date	$SAMPLE + SPIKE \mu\text{Ci/g} = R_s * 1000\text{mL/L} * DF / (EFF * SS * Dg/L * 2220000\text{dpm}/\mu\text{Ci})$		
04/27/95	PERCENT SPIKE RECOVERY = $((S+S \mu\text{Ci/g} - SAMPLE \mu\text{Ci/g}) * ((SDF/SVol)/(DF/SS/Dg/L))) / SVal * 100$		
Time			
02:00 PM			

RESULT **AVG. PERCENT SPIKE RECOVERY = 89.1%**

Data Entry by: <i>Sharon J. Halden</i>	Date: 28-Apr-95
Approved by: <i>[Signature]</i>	Date: 5/1/95

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

AT : LA-508-101 (D-2)

LA-548-101 (A-3) SOLIDS

		SAMPLE	REPLICATE
Type	DETECTOR NUMBER	15	15
SAMPLE	DISH SIZE 1, 2, or 5 (MS)	2	2
Work List	TOTAL COUNTS (TC)	149	159
1196	COUNT TIME in MINUTES (CT)	30	30
AT or TB ?	BACKGROUND in cpm (BKG)	0.9	0.9
AT	SAMPLE SIZE in mL (SS)	1.000	1.000
Test Code	DILUTION FACTOR (DF)	101	101
@ALPHA01	DIGEST GRAMS of SOLIDS/L (Dg/L)	2.1276	2.1276
Matrix	EFFICIENCY FACTOR (EFF)	0.2380	0.2380
SOLID	Lc, Rmax, or Rs, (SAMPLE RATE) as APPROPRIATE	4.067	4.400
Sample #	Sample Concentration in $\mu\text{Ci/g}$	3.65E-01	BOOK#
S95T574	Replicate Concentration in $\mu\text{Ci/g}$	3.95E-01	
Instrument Code			
WB26872	Average Concentration in $\mu\text{Ci/g}$	3.8035E-01	
Analyst			
AKL	Rs (Sample Count Rate) = $(TC / CT) - BKG$		
Date	ALPHA TOTAL $\mu\text{Ci/g}$ = $Rs * 1000\text{mL/L} * DF / (EFF * SS * Dg/L * 2220000\text{dpm}/\mu\text{Ci})$		
04/27/95			
Time	Relative Counting Error = $[(\text{The Square Root of } TC + BKG * CT) / (TC - BKG * CT)] * 1.96 * 100$		
02:00 PM	Detection Levels and Less Than Values are determined from Procedure LA-508-002.		

v RESULTS v

ALPHA TOTAL	in $\mu\text{Ci/g}$	(Average)	=	3.80E-01	DETECTION LEVEL
					8.08E-02 $\mu\text{Ci/g}$
RELATIVE COUNTING ERROR			=	21.3%	

Data Entry by:	<i>Sharon J. Whitaker</i>	Date:	04/28/95
Approved by:	<i>St. J. Whitaker</i>	Date:	5/1/95

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

AT : LA-508-101 (D-2)

LA-548-101 (A-3)

SOLIDS

		SAMPLE	REPLICATE
Type	DETECTOR NUMBER	15	15
DUPLICATE	DISH SIZE 1, 2, or 5 (MS)	2	2
Work List	TOTAL COUNTS (TC)	156	169
1196	COUNT TIME in MINUTES (CT)	30	30
AT or TB?	BACKGROUND in cpm (BKG)	0.9	0.9
AT	SAMPLE SIZE in mL (SS)	1.000	1.000
Test Code	DILUTION FACTOR (DF)	101	101
@ALPHA01	DIGEST GRAMS of SOLIDS/L (Dg/L)	2.136	2.136
Matrix	EFFICIENCY FACTOR (EFF)	0.2380	0.2380
SOLID	Lc, Rmax, or Rs, (SAMPLE RATE) as APPROPRIATE	4.300	4.733
Sample #	Sample Concentration in $\mu\text{Ci/g}$	3.85E-01	BOOK#
S95T574	Replicate Concentration in $\mu\text{Ci/g}$	4.24E-01	
Instrument Code			
WB26872	Average Concentration in $\mu\text{Ci/g}$	4.0421E-01	
Analyst			
AKL	Rs (Sample Count Rate) = $(TC / CT) - BKG$		
Date	ALPHA TOTAL $\mu\text{Ci/g}$ = $Rs * 1000\text{mL/L} * DF / (EFF * SS * Dg/L * 2220000\text{dpm}/\mu\text{Ci})$		
04/27/95			
Time	Relative Counting Error = $[(The\ Square\ Root\ of\ TC + BKG * CT) / (TC - BKG * CT)] * 1.96 * 100$		
02:00 PM	Detection Levels and Less Than Values are determined from Procedure LA-508-002.		

v RESULTS v

ALPHA TOTAL	in $\mu\text{Ci/g}$	(Average)	=	4.04E-01	DETECTION LEVEL
					8.05E-02 $\mu\text{Ci/g}$
RELATIVE COUNTING ERROR			=	20.6%	

Data Entry by: <i>Sharon L. Halden</i>	Date: 04/28/95
Approved by: <i>[Signature]</i>	Date: 5/1/95

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

AT : LA-508-101 (D-2)

LA-548-101 (A-3) SOLIDS

		SPIKE	REPLICATE
Type	DETECTOR NUMBER	15	15
SPIKE	DISH SIZE 1, 2, or 5 (MS)	2	2
Work List	TOTAL COUNTS (TC)	59836	60198
1196	COUNT TIME in MINUTES (CT)	30	30
AT or TB ?	BACKGROUND in cpm (BKG)	0.9	0.9
AT	SAMPLE VOLUME in mL (Spiked Vial) (SS)	1.000	1.000
Test Code	SAMPLE DILUTION FACTOR (Spiked Vial) (DF)	101	101
@ALPHA01	DIGEST GRAMS of SOLIDS/L (Dg/L)	2.1276	2.1276
Matrix	SPIKE VOLUME in mL (SVol)	0.100	0.100
SOLID	SPIKE DILUTION FACTOR (SDF)	1	1
Sample #	SPIKE VALUE in $\mu\text{Ci/L}$ (SVal)	36.372	36.372
S95T574	INSTRUMENT EFFICIENCY FACTOR (EFF)	0.238	0.238
Instrument Code	SAMPLE + SPIKE $\mu\text{Ci/g}$ (S+S)	1.79E+02	1.80E+02
WB26872	AVERAGE or MAXIMUM $\mu\text{Ci/g}$ from FORM C	3.8035E-01	
Analyst	BOOK#	94B43	
AKL	$R_s \text{ (Sample Count Rate)} = (TC / CT) - BKG$		
Date	$\text{SAMPLE + SPIKE } \mu\text{Ci/g} = R_s * 1000\text{mL/L} * DF / (EFF * SS * Dg/L * 2220000\text{dpm}/\mu\text{Ci})$		
04/27/95	$\text{PERCENT SPIKE RECOVERY} = (((S+S \mu\text{Ci/g} - \text{SAMPLE } \mu\text{Ci/g}) * ((SDF/SVol)/(DF/SS/Dg/L)))/SVal)*100$		
Time			
02:00 PM			

RESULT **AVG. PERCENT SPIKE RECOVERY = 103.8%**

Data Entry by: <i>Sharon H. Halden</i>	Date: 28-Apr-95
Approved by: <i>A. Halden</i>	Date: 5/1/95

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER.

AT : LA-508-101 (D-2)

LA-548-101 (A-3)

SOLIDS

		BLANK	REPLICATE
Type	DETECTOR NUMBER	15	15
BLANK	DISH SIZE 1, 2, or 5 (MS)	2	2
Work List	TOTAL COUNTS (TC)	8	9
1195	COUNT TIME in MINUTES (CT)	30	30
AT or TB ?	BACKGROUND in cpm (BKG)	0.9	0.9
AT	SAMPLE SIZE in mL (SS)	1.000	1.000
Test Code	DILUTION FACTOR (DF)	101	101
@ALPHA01	DIGEST GRAMS of SOLIDS/L (Dg/L)	2.326	2.326
Matrix	EFFICIENCY FACTOR (EFF)	0.2380	0.2380
SOLID	Lc, Rmax, or Rs, (SAMPLE RATE) as APPROPRIATE	0.404	0.404
Sample #	Sample Concentration in $\mu\text{Ci/g}$	< 3.32E-02	BOOK#
S951575	Replicate Concentration in $\mu\text{Ci/g}$	< 3.32E-02	
Instrument Code			
WB26872	Maximum Concentration in $\mu\text{Ci/g}$	< 3.3216E-02	
Analyst			
AKL	Rs (Sample Count Rate) = (TC / CT) - BKG		
Date	ALPHA TOTAL $\mu\text{Ci/g}$ = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/ μCi)		
04/27/95			
Time	Relative Counting Error = [(The Square Root of TC + BKG * CT) / (TC - BKG * CT)] * 1.96 * 100		
02:00 PM	Detection Levels and Less Than Values are determined from Procedure LA-508-002.		

v RESULTS v

ALPHA TOTAL	in $\mu\text{Ci/g}$	(Maximum) =	< 3.32E-02	DETECTION LEVEL
LESS Than Value was Determined from Lc.				7.39E-02
RELATIVE COUNTING ERROR	=	65.3%		$\mu\text{Ci/g}$

Data Entry by: <i>Sharon H. Hatcher</i>	Date: 04/28/95
Approved by: <i>AKL</i>	Date: 5/1/95

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

AT : LA-508-101 (D-2)

LA-548-101 (A-3)

SOLIDS

		SAMPLE	REPLICATE
Type	DETECTOR NUMBER	15	15
SAMPLE	DISH SIZE 1, 2, or 5 (MS)	2	2
Work List	TOTAL COUNTS (TC)	196	139
1195	COUNT TIME in MINUTES (CT)	30	30
AT or TB ?	BACKGROUND in cpm (BKG)	0.9	0.9
AT	SAMPLE SIZE in mL (SS)	1.000	1.000
Test Code	DILUTION FACTOR (DF)	101	101
@ALPHA01	DIGEST GRAMS of SOLIDS/L (Dg/L)	2.326	2.326
Matrix	EFFICIENCY FACTOR (EFF)	0.2380	0.2380
SOLID	Lc, Rmax, or Rs, (SAMPLE RATE) as APPROPRIATE	5.633	3.733
Sample #	Sample Concentration in $\mu\text{Ci/g}$	4.63E-01	BOOK#
S95T575	Replicate Concentration in $\mu\text{Ci/g}$	3.07E-01	
Instrument Code			
WB26872	Average Concentration in $\mu\text{Ci/g}$	3.8489E-01	
Analyst			
AKL	Rs (Sample Count Rate) = $(TC / CT) - BKG$		
Date	ALPHA TOTAL $\mu\text{Ci/g}$ = $Rs * 1000\text{mL/L} * DF / (EFF * SS * Dg/L * 2220000\text{dpm}/\mu\text{Ci})$		
04/27/95			
Time	Relative Counting Error = $[(\text{The Square Root of } TC + BKG * CT) / (TC - BKG * CT)] * 1.96 * 100$		
02:00 PM	Detection Levels and Less Than Values are determined from Procedure LA-508-002.		

v RESULTS v

ALPHA TOTAL	in $\mu\text{Ci/g}$	(Average)	=	3.85E-01	DETECTION LEVEL
					7.39E-02 $\mu\text{Ci/g}$
RELATIVE COUNTING ERROR			=	22.5%	

Data Entry by: <i>Sharon L. Hylleberg</i>	Date: 04/28/95
Approved by: <i>[Signature]</i>	Date: 5/1/95

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

AT : LA-508-101 (D-2)

LA-548-101 (A-3) SOLIDS

		SAMPLE	REPLICATE
Type	DETECTOR NUMBER	15	15
DUPLICATE	DISH SIZE 1, 2, or 5 (MS)	2	2
Work List	TOTAL COUNTS (TC)	178	174
1195	COUNT TIME in MINUTES (CT)	30	30
AT or TB ?	BACKGROUND in cpm (BKG)	0.9	0.9
AT	SAMPLE SIZE in mL (SS)	1.000	1.000
Test Code	DILUTION FACTOR (DF)	101	101
@ALPHA01	DIGEST GRAMS of SOLIDS/L (Dg/L)	2.3408	2.3408
Matrix	EFFICIENCY FACTOR (EFF)	0.2380	0.2380
SOLID	Lc, Rmax, or Rs, (SAMPLE RATE) as APPROPRIATE	5.033	4.900
Sample #	Sample Concentration in $\mu\text{Ci/g}$	4.11E-01	BOOK#
S951575	Replicate Concentration in $\mu\text{Ci/g}$	4.00E-01	
Instrument Code			
WB26872	Average Concentration in $\mu\text{Ci/g}$	4.0559E-01	
Analyst			
AKL	Rs (Sample Count Rate) = (TC / CT) - BKG		
Date	ALPHA TOTAL $\mu\text{Ci/g}$ = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/ μCi)		
04/27/95			
Time	Relative Counting Error = [(The Square Root of TC + BKG * CT) / (TC - BKG * CT)] * 1.96 * 100		
02:00 PM	Detection Levels and Less Than Values are determined from Procedure LA-508-002.		

v RESULTS v

ALPHA TOTAL	in $\mu\text{Ci/g}$	(Average)	=	4.06E-01	DETECTION LEVEL
					7.34E-02 $\mu\text{Ci/g}$
RELATIVE COUNTING ERROR			=	18.9%	

Data Entry by: <i>Sharon J. Halpin</i>	Date: 04/28/95
Approved by: <i>[Signature]</i>	Date: 5/1/95

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

AT : LA-508-101 (D-2)

LA-548-101 (A-3)

SOLIDS

		SPIKE	REPLICATE
Type	DETECTOR NUMBER	15	15
SPIKE	DISH SIZE 1, 2, or 5 (MS)	2	2
Work List	TOTAL COUNTS (TC)	49186	54876
1196	COUNT TIME in MINUTES (CT)	30	30
AT or TB ?	BACKGROUND in cpm (BKG)	0.9	0.9
AT	SAMPLE VOLUME in mL (Spiked Vial) (SS)	1.000	1.000
Test Code	SAMPLE DILUTION FACTOR (Spiked Vial) (DF)	101	101
@ALPHA01	DIGEST GRAMS of SOLIDS/L (Dg/L)	2.326	2.326
Matrix	SPIKE VOLUME in mL (SVol)	0.100	0.100
SOLID	SPIKE DILUTION FACTOR (SDF)	1	1
Sample #	SPIKE VALUE in $\mu\text{Ci/L}$ (SVal)	36.372	36.372
S95T575	INSTRUMENT EFFICIENCY FACTOR (EFF)	0.238	0.238
Instrument Code	SAMPLE + SPIKE $\mu\text{Ci/g}$ (S+S)	1.35E+02	1.50E+02
WB26872	AVERAGE or MAXIMUM $\mu\text{Ci/g}$ from FORM C	3.8489E-01	
Analyst	BOOK#	94B43	
AKL	R_s (Sample Count Rate) = $(TC / CT) - BKG$		
Date	$SAMPLE + SPIKE \mu\text{Ci/g} = R_s * 1000\text{mL/L} * DF / (EFF * SS * Dg/L * 2220000\text{dpm}/\mu\text{Ci})$		
04/27/95	$PERCENT \text{ SPIKE RECOVERY} = (((S+S \mu\text{Ci/g} - SAMPLE \mu\text{Ci/g}) * ((SDF/SVol)/(DF/SS/Dg/L)))/(SVal))*100$		
Time			
02:00 PM			

RESULT **AVG. PERCENT SPIKE RECOVERY** = **90.0%**

Data Entry by: <i>Sharon J. Hester</i>	Date: 28-Apr-95
Approved by: <i>[Signature]</i>	Date: 5/1/95

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