Sample Format IV Report

Note: Format IV Report is a 90-Day deliverable. Together, Format IV and Format VI constitute approximately 75% of the contractor’s data reporting effort.

DOCUMENT RELEASE FORM

(1) Document Number:	RPP-RPT-55492	(2) Revision Number: 0	(3) Effective Date: 08/08/2013
(4) Document Type:	☐ Digital Image ☐ Hard copy ☒ PDF ☐ Video	(a) Number of pages (including the DRF) or number of digital images 1,320	
(5) Release Type	☒ New ☐ Cancel	☐ Page Change ☐ Complete Revision	
(6) Document Title:	Final Report for Tank 241-C-109 Waste Solid Samples in Support of Tank Closure	(7) USQ No.: R- ☒ N/A USQ Evaluator Sign/Date	
(8) Change/Release Description:	NEW DOCUMENT		
(9) Change Justification:	N/A		

(10) Associated Structure, System, and Component (SSC) and Building Number:	(a) Structure Location: 241C, 200 East	(c) Building Number: N/A	(e) Project Number: N/A
	(b) System Designator: WST	(d) Equipment ID Number (EIN): 241-C-109	

(11) Impacted Documents:	(a) Document Type	(b) Document Number	(c) Document Revision
	N/A	N/A	N/A

(12) Approvals:

(a) Author (Print/Sign): C. S. Menjivar for J. A. Osborn — Date: 08-07-2013

(b) Reviewer (Optional) Print/Sign):

J. A. McCluskey — Date: 8-7-2013

Date:

Date:

Date:

Date:

Date:

Date:

(c) Responsible Manager (Print/Sign): J. R. Prilucik — Date:

(13) Distribution:

(a) Name	(b) MSIN	(a) Name	(b) MSIN
J. A. Osborn	T6-01		

Release Stamp

DATE: Aug 08, 2013 HANFORD RELEASE

(14) Clearance	(a) Cleared for Public Release	(b) Restricted Information?	(c) Restriction Type:
	☑ Yes ☐ No	☐ Yes ☑ No	

(15) Clearance Review (Print/Sign): APPROVED By Julia Raymer at 2:35 pm, Aug 08, 2013 — Date:

Final Report for Tank 241-C-109 Waste Solid Samples in Support of Tank Closure

Author Name:
J. A. Osborn
WRPS
Richland, WA 99352
U.S. Department of Energy Contract DE-AC27-08RV14800

EDT/ECN: DRF UC: N/A
Cost Center: N/A Charge Code: HGP00051
B&R Code: N/A Total Pages: 1,320

Key Words: 241-C-109, Waste Solid Samples, Tank Closure, Final Report, Solid Samples

Abstract: C-109, Samples, Closure, Waste, Report, 241-C-109

TRADEMARK DISCLAIMER. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof or its contractors or subcontractors.

APPROVED
By Julia Raymer at 2:36 pm, Aug 08, 2013
Release Approval Date

DATE:
Aug 08, 2013
HANFORD RELEASE
Release Stamp

Approved For Public Release

FINAL REPORT FOR TANK 241-C-109 WASTE SOLID SAMPLES IN SUPPORT OF TANK CLOSURE

ATL Document Number: 20130402

Julie A. Osborn
Advanced Technologies and Laboratories International, Inc.

Date Published
August 7, 2013

Prepared for:

John R. Prilucik
Washington River Protection Solutions, Inc.
P.O. Box 850
Richland, WA 99352
509-373-3830

Prepared by:

ATL International, Inc.
P.O. Box 250
Richland, WA 99352-0250
509-373-3328

Concurrence for J. Osborn 8-7-13
J. A. Osborn; ATL Project Coordinator

J. McCluskey 8-7-2013
J. A. McCluskey; ATL Quality Scientist

Table of Contents

NARRATIVE..... 1
1.0 Introduction..... 1
2.0 Sample Receipt and Appearance Information..... 1
3.0 Sample Breakdown..... 2
4.0 Analytical Results Summary..... 3
4.1 Holding Times..... 4
4.2 Sample Digestions..... 4
4.3 Inorganic Analyses..... 5
4.4 Radiochemical Analyses..... 9
4.5 Organic Analysis..... 11
5.0 Procedures..... 12
6.0 References..... 14
Attachment 1: DATA SUMMARY REPORT-PRIMARY AND SECONDARY ANALYTES..... 15
Attachment 2: TENTATIVELY IDENTIFIED COMPOUNDS..... 46
Attachment 3: SAMPLE BREAKDOWN DIAGRAMS..... 50
Attachment 4: HOLDING TIME REPORT..... 54
Attachment 5: CORRESPONDENCE..... 58
Attachment 6: SAMPLE PHOTOGRAPHS..... 66
Attachment 7: RECEIPT PAPERWORK..... 81
Attachment 8: RAW DATA..... 96
HOT CELL TESTS..... 101
Hot Cell Worksheets..... 97
Breakdown Pig-HC Batch 41227..... 101
INORGANIC RAW DATA..... 119
CN Batch 41364 & 41365..... 119
Hg Batch 41350..... 134
IC-Anions Batch 41504..... 149
IC-NH4 Batch 41311..... 215

ICP-Total Metals Batch 41494 255
ICP-Total Metals Batch 41718 387
MS Actinides Batch 41872 501
MS Antimony Batch 41812 579
MS TC-99 Batch 41736 629
Ni Tracer Batch 41410 708
pH Solid Batch 41279 731
TGA Batch 41281 744
TGA Batch 41312 750
RADIOCHEMISTRY RAW DATA 757
Am Batch 41432 757
C-14 Batch 41431 775
GEA Batch 41415 794
I-129 Batch 41744 818
Ni-63 Batch 41633 844
Pu Batch 41353 864
Pu-241 Batch 41628 882
Se-79 Batch 41355 908
Sr-90 Batch 41709 925
TC-99 Batch 41596 944
Th Batch 41395 963
Tritium Batch 41354 981
ORGANIC RAW DATA 1000
PCB Batch 41363 1000
SVOA Batch 41315 1060
VOA Batch 41632 1189

222-S LABORATORY

FINAL REPORT FOR TANK 241-C-109 WASTE SOLID SAMPLES IN SUPPORT OF TANK CLOSURE

1.0 INTRODUCTION

This data package presents the results for solid samples taken from tank 241-C-109 (C-109) on May 7, 2013 through May 9, 2013 using the Off-Riser Sampling System. The samples were analyzed in accordance with RPP-PLAN-53814, *ORSS Sampling and Analysis Plan for Waste Solids in Tank 241-C-109 to Support Tank Closure* (TSAP); ATL-MP-1011, *ATL Quality Assurance Project Plan for 222-S Laboratory* (QAPP); SW-846, *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods*; and the additional guidance given in verbal and electronic communications.

Due to the hazardous and complex nature of Hanford tank waste samples, most SW-846 test methods performed at the 222-S Laboratory contain deviations that are listed in an appendix to the analytical procedures. All other known deviations or variances from SW-846 are documented in this narrative.

The following attachments are included in this report.

Attachment 1	Data Summary Report - Primary and Secondary Analytes
Attachment 2	Tentatively Identified Compounds
Attachment 3	Sample Breakdown Diagrams
Attachment 4	Holding Time Report
Attachment 5	Correspondence
Attachment 6	Sample Photographs
Attachment 7	Receipt Paperwork
Attachment 8	Raw Data

No characterization change notices were issued in association with this sampling event.

2.0 SAMPLE RECEIPT AND APPEARANCE INFORMATION

One grab sample was received from C-109 on May 7, 2013; four grab samples were received on May 8, 2013; and four grab samples were received on May 9, 2013. All samples were taken from Riser 3. The-information on the chain of custody (COC) forms was verified at sample receipt, and the samples were loaded into the 11A hot cell. Photographs were taken both through the side of the jars and over the top after the jars were opened, before and after spatula homogenization, and after tissue homogenization (Attachment 6).

The appearance information is a visual description of the samples as viewed through the open jar. Sample descriptions from the COC forms may differ from those in Table 1.

Table 1. Sample Receipt

Sample Identification	Date Sampled	Date Received	Solid Weight (g)	Liquid Volume (mL)	Sample Description
9C-13-1	5/8/2013 13:35	5/9/2013 13:30	109.7	0	Partially full 240-mL bottle with large white chunks of solids; no organic layer visible
9C-13-2	5/8/2013 10:35	5/8/2013 14:10	158.5	5	Partially full 240-mL bottle with tan solids, white chunks and small black specks of solids; liquid was yellow in color; no organic layer visible
9C-13-3	5/7/2013 13:56	5/8/2013 14:10	343.8	19	Full 240-mL bottle of tan solids with black specks and brown liquid; no organic layer visible
9C-13-4	5/7/2013 14:30	5/8/2013 14:10	168.8	10	Partially full 240-mL bottle with brown and white wet solids; brown liquid; no organic layer visible
9C-13-5	5/9/2013 09:45	5/9/2013 13:30	282.5	7	Partially full 240-mL bottle of tan solids with small white and light brown chunks; liquid was dark yellow/green; no organic layer visible
9C-13-6	5/9/2013 10:02	5/9/2013 13:30	196.1	13	Partially full 240-mL bottle of tan solids with small white, light brown, and dark brown specks; liquid was dark yellow/green liquid; no organic layer visible
9C-13-7	5/7/2013 10:27	5/7/2013 14:00	367.3	55	Full 240-mL bottle of tan solids and clear liquid; no organic layer visible
9C-13-8	5/8/2013 13:10	5/8/2013 14:10	192.1	0	Partially full 240-mL bottle of tan solids with white chunks; no organic layer visible
9C-13-9	5/9/2013 10:24	5/9/2013 13:30	163.4	0	Partially full 240-mL bottle of light brown solids with white chunks; no organic layer visible

3.0 SAMPLE BREAKDOWN

Before compositing the samples, liquid was decanted from samples 9C-13-2 through 9C-13-7, combined, and stored in the archive. Solid composite samples were prepared using equal parts of approximately 150 g from each sample to form composite B and composite C as instructed in the TSAP. Because of the limited amount of sample in 9C-13-1, only approximately 100 g from each sample (9C-13-1, 9C-13-2, and 9C-13-3) were used to make composite A. The tank coordinator was notified of this deviation from the TSAP (see Attachment 5).

Each composited sample was stirred with a spatula and subsampled for ammonia and volatile organic analyses. A second set of subsamples were taken at this time and reserved for potential reruns. After spatulation, the remainder of each sample was homogenized with a mechanical homogenizer (tissue homogenizer) and a mortar and pestle, then subsampled for the remainder of the analyses specified in the TSAP. Approximately 40 g of material were taken from each tissue

homogenized composite sample and archived for potential future testing. After tissue homogenization, the samples still appeared somewhat inhomogeneous. The laboratory does not currently have a process or equipment that can reduce the particle size of sample for sufficient homogenization when the samples are resistant to breakage with a mortar and pestle. The laboratory is currently investigating alternative homogenization processes and equipment.

All subsamples were stored in a refrigerator at less than 6°C.

4.0 ANALYTICAL RESULTS SUMMARY

The Data Summary Report (Attachment 1) presents the final analytical results for the primary and secondary analytes identified in the TSAP. Results for the secondary analytes were appropriately flagged for quality control (QC) parameter failures based on QAPP and TSAP requirements, but they are not discussed in this narrative.

Required detection limits (RDLs) and target detection limits (TDLs) are defined in the TSAP and are specified for selected analytes. The TDLs are provided as goals for certain analytes. Reanalysis is not required if these limits are exceeded. If the result for an analyte is above the quantitation or estimated quantitation limit (EQL), the TSAP requirements for RDL and TDL are satisfied.

The “Det Limit” column in Attachment 1 contains the method detection limit (MDL) for non-radionuclide analyses or the minimum detectable activity (MDA) for radionuclides.

In Attachment 1, the column labeled “A#” indicates the aliquot class or the method used for sample preparation before analysis. For solid samples, the aliquot classes are defined as follows:

- “A” indicates samples were prepared by SW-846 3050B acid digest.
- “E” indicates samples were prepared by a strong nitric acid digest.
- “HG” indicates samples were prepared by SW-846 7471B acid digest
- “O” indicates samples were extracted for organic analysis by either SW-846 3540C or SW-846 3545A.
- “S” indicates samples were prepared by a distillation.
- “W” indicates samples were prepared by a water digest.
- “Z” indicates samples were prepared by a fusion digest using a zirconium crucible.

Samples without a letter identifier in the “A#” column were analyzed directly with no separate preparation analysis or with sample preparation performed as a part of the procedure steps.

The “Qual Flags” column in Attachment 1 contains data qualifier flags that are defined as follows:

- “B” indicates the analyte was detected in the method or preparation blank and in the sample, and the result for the blank is greater than 5% of the reported sample result.

- "E" indicates the result is outside of the calibration range.
- "I" indicates the calibration for the reported result used an indirect method (isotope substitution).
- "J" indicates the reported result should be considered an estimate because of increased uncertainty near the detection limit. The "J" flag is applied to sample concentrations that are greater than the MDL but less than the EQL, or have sample activity with a counting uncertainty greater than 30%.
- "N" indicates tentatively identified compound (TIC) identified based on an MS Library search, and the results are only an estimate and not quantitative.
- "T" indicates TIC identified by an MS Library search, or identified as unknowns after an MS Library search. The results are only an estimate.
- "U" indicates the reported result is less than the calculated detection limit.
- "Y" is a user-defined flag. See explanation below in sections 4.3.8 and 4.3.9.
- "a" indicates the laboratory control sample (LCS) recovery is outside of the limits specified in the TSAP.
- "b" indicates the matrix spike (MS) recovery is outside of the limits specified in the TSAP and the spike concentration added is greater than 25% of the associated sample concentration.
- "c" indicates the relative percent difference (RPD) between sample and duplicate results does not meet the requirement specified in the TSAP. This flag is not applicable if the sample or duplicate results are less than the EQL.

Manual calculations using rounded results from the Data Summary Report or result calculation forms may differ slightly from the actual results derived from the raw data.

4.1 HOLDING TIMES

The laboratory met all holding times listed in the TSAP. The holding times and analysis dates/times for all applicable analyses are presented in Attachment 4.

4.2 SAMPLE DIGESTIONS

Three separate acid digests were used and are described below. The TSAP suggests the type of digest to be used for each analysis but also gives the laboratory latitude in determining which of these digests is most appropriate. Given that these were not homogeneous samples, comparing results between digests was difficult. However, the laboratory believes most of the variation was due to the inhomogeneous matrix.

4.2.1 Acid Digestion (SW-846)

The acid digestion used for metals analysis by inductively coupled plasma/atomic emission spectroscopy (ICP/AES) and inductively coupled plasma/mass spectroscopy (ICP/MS) actinides followed a procedure based on SW-846 Method 3050C and used nitric and hydrochloric acids (HCl). For the ^{99}Tc by ICP/MS analysis, the same digestion procedure was used with the

exception that HCl was not added because of chorine interference. Additional HCl was used with this digest for the ^{126}Sn ICP/MS analysis. For these digestions, approximately 0.25 g of sample was digested and diluted to a final volume of 50 mL. For the acid digestions with HCl, no solids remained undissolved in the first digestion batch, in the second digestion batch only a trace amount of solids remained undissolved. For the acid digestion without HCl (^{99}Tc), no solids remained undissolved after the digestion was complete. For the acid digestions with extra HCl (^{126}Sn and antimony), only a trace amount of solids remained undissolved.

4.2.2 Fusion Digestion

The potassium hydroxide fusion digestions were performed twice using approximately 0.5 g of sample. The digested samples were diluted to a volume of 250 mL with HCl and nitric acids. No solids remained after the digestions were complete.

4.2.3 Strong Acid Digestion

The strong nitric acid digestion was performed using approximately 0.25 g of sample and 50 mL of acid. Radiochemical analyses for ^{79}Se and ^{99}Tc were performed once in this digestion. No solids remained undissolved after the digestion was complete.

4.3 INORGANIC ANALYSES

4.3.1 Bulk Density

The bulk density analysis was performed on direct aliquots of each composited sample. There is no LCS available for this analysis, and results should be considered qualitative only. Approximately 40 g was used for this analysis. All results were approximately 1.7g/mL. All QC requirements in the TSAP and the QAPP were met.

4.3.2 pH

The pH analysis was performed on a 1:1 water leach of each sample. The LCS met the criteria listed in the TSAP. The results for samples 9C-13-Comp B and 9C-13-Comp C exceeded the upper limit calibration range of 13.0 pH units. These results have been flagged with an “E”.

4.3.3 Percent Water

The percent weight loss was measured using thermogravimetric analysis (TGA) on direct subsamples of each composited sample. The results were reported as percent water, as requested by the customer, with the assumption that all weight loss below 250°C was due to water loss. However, this assumption might be incorrect because there could be other gaseous reaction products that contribute to weight loss below 250°C that are not easily differentiated using the current method at the 222-S Laboratory. The percent water for composite A was approximately half of what was measured in composites B and C; this is consistent with the appearance of the composites. The LCS recoveries and RPDs met the criteria listed in the TSAP.

4.3.4 Cyanide

For the cyanide analysis, a distillation was performed on direct solid aliquots of each sample. All QC requirements and target detection limit requirements in the TSAP and the QAPP were met. Note the units for the results for the method blank are µg/mL, as indicated in the raw data, not µg/g, as indicated in Attachment 1.

4.3.5 Mercury

Analysis for mercury was performed on acid-digested aliquots from each sample. All QC and target detection limit requirements in the TSAP and the QAPP were met. The units for the results of the method blank are µg/mL, as indicated in the raw data.

4.3.6 Ammonium

Analysis for ammonium was performed on distilled aliquots of each sample. The preparation blank was greater than the MDL but less than the quantitation limit. The blank result was greater than 5% of the sample results, and a "B" flag was applied. Since the blank result was below the quantitation limit, the data usability was not affected and reanalysis was not required. All other QC requirements in the TSAP and the QAPP were met. No RDLs or TDLs are specified for ammonium in the TSAP. The units for the results of the preparation blank are µg/mL, as indicated in the raw data.

4.3.7 Ion Chromatography

Ion chromatography analysis was performed on water-digested aliquots of each sample. Nitrite and nitrate were detected in the preparation blank below the EQL and at greater than 5% of the sample result; therefore, "B" flags were applied. Since the blank result was less than the EQL, the usability of the data was not affected and reanalysis was not required. The units for the results of the method blank are µg/mL, as indicated in the raw data.

The RPD for fluoride and phosphate exceeded the 30% requirement in the TSAP at 34%. Since this was the reanalysis for the same issue, the results were accepted by the customer (see Attachment 5) and were reported with a "c" flag applied to the samples. The matrix spike duplicate recovery for fluoride and phosphate exceeded the requirement in the TSAP. Since the amount of spike was less than 25% of the sample result, "b" flags were not applied. Due to the levels of fluoride and phosphate in the samples, the laboratory was unable to obtain the TDLs for nitrate and nitrite.

4.3.8 Inductively Coupled Plasma/Atomic Emission Spectroscopy

The ICP/AES analysis was performed on a SW-846 3050B acid-digest and fusion-digest of each sample as directed in the TSAP.

For the acid digestion, the preparation blank results are not corrected for the digestion factor. Therefore, the correct units for the acid digestion preparation blank are µg/mL. For the fusion digestion, the digestion factor is accounted for in the preparation blank result, so the units are µg/g. Since the acid-digested preparation blank is not diluted prior to analysis and is not

corrected by the digestion factor, comparison to the sample results was performed using the raw data.

Fusion Digest: Aluminum was detected in the preparation blank below the EQL and at less than 5% of the sample result; therefore, no "B" flag was required and the usability of the data was not affected. Manganese, uranium, and vanadium were detected above the EQL in interference check standard A (ICSA), which could indicate a high bias due to an uncorrected inter-element interference. However, since manganese, uranium, and vanadium were not detected in the sample above the EQL, the data usability was not affected and reanalysis was not required. Thallium and cadmium were recovered in the ICSAB below the required 80% to 120% acceptance range at 77% and 79%, respectively. However, the ICSAB recoveries from these elements in the acid digest were acceptable; and since the acid digest is 50 times more sensitive than the fusion digest, reanalysis was not performed. A "Y" flag was applied to the thallium and cadmium results from the fusion digest, indicating a low ICSAB recovery.

Since the fusion digest uses potassium hydroxide as a reagent and was prepared using a zirconium crucible, secondary results for potassium and zirconium were not reported. The secondary analytes boron and rubidium were also not reported from the fusion digest because the laboratory believes the results are invalid.

Due to the large dilution needed to analyze fusion digest samples on the ICP/AES, the TDL for antimony, arsenic, chromium, lead, manganese (composite A and B only), molybdenum, selenium, silver, thallium, and uranium were exceeded. There were no other notable issues with this batch, and all other QC requirements in the TSAP and the QAPP were met.

Acid Digest: The ICSA standards contained results above the EQL for elements not in the standard; silver, manganese, and strontium. This could indicate a high bias for these analytes due to an uncorrected inter-element interference. Since the ICSAB passed and all other QC requirements for these analytes passed, the ICSA failures do not affect the usability of the data and a reanalysis was not required. Uranium was not reported for the acid digest because the laboratory believes the results are invalid; valid results can be found in the ^{238}U ICP/MS data. Since the SW-846 3050B acid digest is not appropriate for silicon, it was not reported. Additionally the secondary analytes boron, niobium, praseodymium, tantalum and zirconium were not report due to various QC failures.

The MS recoveries for aluminum, sodium, phosphorous, and iron exceeded the 75% to 135% requirement in the TSAP. Since the sample results for aluminum and iron were greater than four times the spike, this criterion does not apply. The serial dilution requirements failed for barium, copper, and strontium. However, since the results for these analytes were less than 50 times the MDL, this criterion does not apply.

The laboratory was unable to obtain the TDL specified in the TSAP for antimony, arsenic, selenium, silver, and thallium because of required dilutions.

4.3.9 Inductively Coupled Plasma/Mass Spectroscopy

Three separate ICP/MS analyses— technetium-99, actinides, and tin-126— were performed on each sample. For the acid digestion, the preparation blank results are not corrected for the

digestion factor; therefore, the correct units for the acid digestion preparation blank are µg/mL. Since the acid-digested preparation blank is not diluted prior to analysis and is not corrected by the digestion factor, comparison to the sample results was performed using the raw data.

Direct is the most accurate type of calibration; however, standard material is not commercially available for all isotopes of interest. Concentrations of those isotopes without available standards are estimated based on the instrument's response to another isotope of the same element, which is known as "isotopic substitution" and is an indirect method of calibration. All isotope concentrations determined using isotopic substitution are flagged with an "I".

Table 2. Inductively Coupled Plasma/Mass Spectroscopy Standards and Spikes

Standard Type	Isotopes
Direct calibration standards	^{232}Th, ^{233}U, ^{235}U, ^{238}U, ^{237}Np, ^{99}Tc, ^{117}Sn, ^{242}Pu
Matrix spike, laboratory control standard, and calibration verification standards	^{232}Th, ^{233}U, ^{235}U, ^{238}U, ^{237}Np, ^{99}Tc, ^{242}Pu
Isotope substitution	^{234}U (^{235}U), ^{236}U (^{235}U), ^{230}Th (^{232}Th), ^{231}Pa (Th^{232}), ^{126}Sn (^{117}Sn)

Technetium-99

The ICP/MS ^{99}Tc analysis was performed on the SW-846 3050B acid digest without the use of hydrochloric acid. The serial dilution had greater than 10% difference; however, since the sample result was less than the EQL, the acceptance criteria does not apply. All QC requirements in the TSAP and the QAPP were met. RDL and TDL requirements were met.

Tin-126

The ICP/MS analysis of ^{126}Sn was performed on the SW-846 3050B acid digest using additional hydrochloric acid. Since no standard for ^{126}Sn is available, ^{117}Sn is used to monitor precision and accuracy. The MS recovery for ^{117}Sn exceeded the requirement in the TSAP; however, since the sample results were below the MDL, the data usability was not affected. A "b" flag has been applied to all results in the batch. All other QC requirements in the TSAP and the QAPP were met. No RDL or TDL were requested for ^{126}Sn or antimony analyses.

Actinides

The ICP/MS analyses of actinides were performed on the SW-846 3050B acid digest. Uranium-238 was found in the preparation blank; however, since the blank result amount was less than the EQL and the amount was less than 5% of the reported sample result, a "B" flag was not applied. The spike recovery for ^{237}Np was above the acceptance criteria of 125% and a "b" flag was applied.

"Y" flags indicate the estimated sample results may be false-positive results due to low baseline signal responses for those masses. Although ^{232}Th was found at approximately 1.1 times the DL, samples were analyzed at a large enough dilution that ICS elements would not cause interference issues. Since direct calibration of ^{242}Pu is a new calibration method used in the laboratory, the new standard was not available when digestions were performed and therefore not analyzed in

the MS or the LCS. The results displayed in Attachment 1 are from the initial calibration verification standard and the post digestion spike. All other QC requirements in the TSAP and the QAPP were met.

Due to the large dilution required for ^{238}U, the RDL for ^{233}U could not be obtained and pre-digestion spikes were not analyzed. All other RDL requirements were met. The laboratory was unable to obtain the TDL specified in the TSAP for ^{232}Th and ^{228}Th due to the large dilution required for ^{238}U.

4.4 RADIOCHEMICAL ANALYSES

4.4.1 Gamma Energy Analysis

Gamma energy analysis (GEA) was performed on a fusion-digested aliquot of each sample. The only results above the MDA were for ^{137}Cs. The LCS consists of a standard of ^{60}Co and ^{137}Cs. All QC requirements in the TSAP and the QAPP were met.

The RDL requirements listed in the TSAP were satisfied. The laboratory was unable to obtain the TDL specified in the TSAP for ^{60}Co and $^{152,154,155}Eu$ due to ALARA concerns.

4.4.2 Strontium-89/90

The ^{90}Sr analyses by gas proportional counting was performed on fusion-digested aliquots of each sample. The TSAP requested ^{90}Sr, not $^{89/90}Sr$, be reported; however, the 222-S Laboratory only performs the latter analysis. Since the half-life for ^{89}Sr is approximately 51 days and ^{89}Sr has not been produced at Hanford for years, $^{89/90}Sr$ is essentially ^{90}Sr. There were no notable issues with this analysis, and all QC requirements in the TSAP and the QAPP were met. The RDL and TDL requirements specified in the TSAP were satisfied.

4.4.3 Carbon-14

The ^{14}C analysis by liquid scintillation counting (LSC) was performed on water-digested aliquots of each sample. All QC requirements in the TSAP and the QAPP were met. The laboratory's MDA met the RDL specified in the TSAP but exceeded the TDL.

4.4.4 Tritium

The ^{3}H analysis by LSC was performed on water-digested aliquots of each composite sample. All QC requirements in the TSAP and the QAPP were met. No RDL is specified for ^{3}H. The laboratory's MDA exceeded the TDL specified in the TSAP. The laboratory could not analyze a sufficient sample size to meet the TDL because of radiological constraints due to sample dose rate.

4.4.5 Nickel-63

The ^{63}Ni analysis by LSC was performed on fusion-digested aliquots of each composite sample. All QC requirements in the TSAP and the QAPP were met. No RDL is specified for ^{63}Ni. The laboratory MDA met the RDL specified in the TSAP but exceeded the TDL.

4.4.6 Technetium-99

The ^{99}Tc analysis by LSC was performed on a strong acid-digest of each composite sample. All QC requirements in the TSAP and the QAPP were met. The laboratory's MDA met the RDL specified in the TSAP but exceeded the TDL.

4.4.7 Iodine-129

The ^{129}I analysis by low energy GEA was performed on an iodine-specific fusion digest. All QC requirements in the TSAP and the QAPP were met. The RDL requirement specified in the TSAP was satisfied. The laboratory was unable to obtain the TDL specified in the TSAP due to ALARA concerns.

4.4.8 Americium-241; Curium-242, 243/244

The ^{241}Am analyses by alpha energy analysis (AEA) were performed on two fusion digests of each sample. The second fusion digest was performed due to the failure of the duplicate for ^{241}Am. Since the samples were digested and analyzed twice, the laboratory believes this to be a systematic QC failure due to sample inhomogeneity and does not believe additional reruns would improve the data quality. Because the first run had the best QC result and the highest sample result, the first set of samples were reported and flagged with a "c" as agreed by the Tank Coordinator (see Attachment 5).

Small amounts of ^{241}Am were detected in the preparation blank below the EQL and at less than 5% of the sample result; therefore, no "B" flag was required and the usability of the data was not affected.

All other QC requirements in the TSAP and the QAPP were met. The TDL and RDL requirements specified in the TSAP were satisfied.

4.4.9 Isotopic Plutonium-238, 239/240

The isotopic plutonium analysis by AEA was performed on fusion digests of each sample. Small amounts of $^{239/240}$Pu were detected in the preparation blank below the EQL and at less than 5% of the sample result; therefore, no "B" flag was required and the usability of the data was not affected. All QC requirements in the TSAP and the QAPP were met. The TDL and RDL requirements specified in the TSAP were satisfied.

4.4.10 Selenium-79

The ^{79}Se analysis by LSC was performed on a strong acid-digest of each composite sample. All QC requirements in the TSAP and the QAPP were met. The TDL requirement specified in the TSAP was satisfied.

4.4.11 Plutonium-241

The ^{241}Pu analysis by LSC was performed on a fusion digest of each composite sample. All QC requirements in the TSAP and the QAPP were met. The TDL and RDL requirements specified in the TSAP were satisfied.

4.4.12 Thorium-228

The ^{228}Th analyses by AEA were performed on fusion digests of each sample. All QC requirements in the TSAP and the QAPP were met. The laboratory was unable to obtain the TDL specified in the TSAP due to ALARA concerns.

4.5 ORGANIC ANALYSIS

4.5.1 Polychlorinated Biphenyls Analysis

The polychlorinated biphenyls analysis (PCB) analysis by gas chromatography/electron capture detector (GC/ECD) was performed on a methylene chloride extraction of approximately two grams from each tank sample. There are no SW-846-specified holding times for PCBs. PCBs were not detected in any of the samples.

The TDL of 50 μg/kg was met for all sample results except for Aroclor 1016. The detection limits for this Aroclor 58.9 μg/kg to 63.1 μg/kg. All QC requirements in the TSAP and the QAPP were met.

4.5.2 Semivolatile Organic Analysis

Semivolatile organic analysis (SVOA) by gas chromatography/mass spectroscopy (GC/MS) was performed on methylene chloride extractions of direct sample aliquots. Approximately 3 g of sample was used. Samples were extracted and analyzed within the holding time requirement. The requested analyte listed in the TSAP for semivolatile organic analysis is tributyl phosphate (TBP). None of the secondary analytes listed in the TSAP were detected in the samples. The samples were analyzed for the 71 compounds that the laboratory currently reports, and none were detected. The complete analytical results for the SVOA analysis are available in Attachment 8. The MDL for TBP in these samples ranged from 0.63 mg/kg to 0.70 mg/kg, which meets the TDL of 0.70 mg/kg.

Surrogate recoveries are summarized in Attachment 8. Two of the acid surrogates failed to meet the statistical control limits for the tank samples. Hanford tank waste is known to contain high concentrations of nitrates and nitrites. In the past, it has been demonstrated that the loss of acid surrogates in the tank waste sample analysis was due to the nitration of the surrogates during the sample extraction. This would explain the loss of 2-fluorophenol and 2, 4, 6-tribromophenol in the tank samples. The laboratory does not believe these low recoveries affect the usability of the tributyl phosphate data. All other QC requirements in the TSAP and the QAPP were met.

As required in the TSAP, the TICs are reported in Attachment 2. The samples contained numerous alkanes and their alterations to ketones and acids.

4.5.3 Volatile Organic Analysis

Volatile organic compound (VOC) analysis by GC/MS was performed on direct subsamples and were analyzed for the 61 compounds that the laboratory currently reports. Approximately 0.5 g of sample was used. All TDLs were met. The 14-day holding time was met for all samples.

Of the secondary analytes listed in the TSAP, n-hexane and styrene were detected in the samples and have been reported in Attachment 1. The complete analytical results for the VOA analysis are available in Attachment 8.

The MS recovery of trichloroethene exceeded the 70% to 130% requirement at 202%. Since all results for trichloroethene were below the MDL, the data usability was not affected and reanalysis was not required. The affected sample results have been flagged with a "b". The RPD for acetone was above the acceptance criterion of 30% at 151%. The sample results were just above the LOQ in the sample and well below the LOQ in the duplicate, therefore the 30% criterion does not technically apply. Additionally the concentration for acetone in the sample was over 15 times lower than the client-requested target detection of 3.21 mg/kg, and well below any level of concern. The Tank Coordinator was notified and due to the low concentration and the expired hold time a reanalysis was not requested (Attachment 5). All other QC requirements in the TSAP and the QAPP were met.

As required in the TSAP, the TICs are reported in Attachment 2. The samples contained numerous alkanes and their alterations to ketones.

5.0 PROCEDURES

Table 3 lists the analytical procedures used for analysis of the C-109 solid grab samples.

Table 3. Analytical Procedures

Analysis	Preparation Method	Analysis Procedure
Inorganic Analyses		
Appearance	Direct	LA-519-151, Rev. L-0
Bulk Density	Direct	LA-519-132, Rev. K-0-A
pH	Direct	LA-212-105, Rev. I-0 (SW-846 9045D)
TGA	Direct	LA-514-115, Rev. G-0
Cyanide	LA-695-103, Rev. K-0 (SW-846 9010C)	LA-695-103, Rev. K-0 (SW-846 9014)
Mercury – Cold Vapor Atomic Absorption	LA-325-110, Rev. B-0 (SW-846 7471B)	LA-325-110, Rev. B-0 (SW-846 7471B)
Ammonia – IC	LA-544-112, Rev. G-0	LA-503-157, Rev. B-0-A EPA-300.7
Anions & Organic Acids – IC	Water digest – LA-504-101, Rev. N-0	LA-533-166, Rev. B-1-A (SW-846 9056A)

Table 3. Analytical Procedures

Analysis	Preparation Method	Analysis Procedure
Metals – ICP/AES	Acid digest – LA-505-163, Rev. H-0-A (SW-846 3050B) Fusion – LA-549-141, Rev. M-1-A	LA-505-174, Rev. A-0 (SW-846 6010C)
^{99}Tc – ICP/MS	Acid digest – LA-505-163, Rev. H-0-A (SW-846 3050B)	LA-506-103, Rev. B-1
^{126}Sn, Antimony – ICP/MS	Acid digest – LA-505-163, Rev. H-0-A (SW-846 3050B)	LA-506-102, Rev. G-1
Actinides – ICP/MS	Acid digest – LA-505-163, Rev. H-0-A (SW-846 3050B)	LA-506-102, Rev. G-1
Radiochemical Analyses		
GEA	Fusion – LA-549-141, Rev. M-1-A LA-548-120, Rev. J-0	LA-508-167, Rev. A-0-A
$^{89/90}$Sr – Separation/GPC	Fusion – LA-549-141, Rev. M-1-A LA-220-101, Rev. K-0	LA-508-114, Rev. H-1
^{14}C – LSC	Water digest – LA-544-113, Rev. A-0 LA-504-101, N-0	LA-508-121, Rev. G-0
^{79}Se – Separation/LSC	Acid digest – LA-544-101, Rev. I-0 LA-365-132, Rev. L-0	LA-508-121, Rev. G-0
^{3}H – LSC	Water digest – LA-544-113, Rev. A-0 LA-504-101, N-0	LA-508-121, Rev. G-0
^{63}Ni – Separation/LSC	Fusion – LA-549-141, Rev. M-1-A LA-285-102, Rev. G-0	LA-508-121, Rev. G-0
^{99}Tc – Separation/LSC	Acid digest – LA-544-101, Rev. I-0 LA-438-101, Rev. M-0	LA-508-121, Rev. G-0
^{129}I – Separation/GEA	Fusion digest – LA-378-104, Rev. H-0	LA-508-167, Rev. A-0-A
^{241}Am, $^{242, 243/244}$Cm – Separation/AEA	Fusion – LA-549-141, Rev. M-1-A LA-953-104, Rev. J-0-B-1	LA-508-168, Rev. A-0-A
Isotopic $^{238, 239/240}$Pu – Separation/AEA	Fusion – LA-549-141, Rev. M-1-A LA-953-104, Rev. J-0-B-1	LA-508-168, Rev. A-0-A
^{241}Pu – Separation/LSC	Fusion – LA-549-141, Rev. M-1-A LA-953-104, Rev. J-0-B-1	LA-508-121, Rev. G-0
^{228}Th – Separation/AEA	Fusion – LA-549-141, Rev. M-1-A LA-903-101, Rev. A-0	LA-508-168, Rev. A-0-A
Organic Analyses		
VOC – GC/MS	Purge and Trap	LA-523-118, Rev. H-0-B (SW-846 8260C)
SVOC – GC/MS	Extraction – (SW-846-3540C) LA-523-138, Rev. H-0	LA-523-135, Rev. E-0 (SW-846 8270D)
PCB – GC/ECD	Extraction – (SW-846-3545A) LA-523-144, Rev. E-0	LA-523-140, Rev. H-0-A (SW-846 8280A)

6.0 REFERENCES

ATL-MP-1011, 2012, *ATL Quality Assurance Project Plan for 222-S Laboratory*, Revision 11A, Advanced Technologies and Laboratories International, Inc., Richland, Washington.

RPP-PLAN-53814, *ORSS Sampling and Analysis Plan for Waste Solids in Tank 241 C-109 to Support Tank Closure*, Washington River Protection Solutions, LLC, Richland, Washington.

SW-846, 1986, *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods,* Third Edition, as amended, U.S. Environmental Protection Agency, Washington, D.C.

Attachment 1

DATA SUMMARY REPORT
PRIMARY AND SECONDARY ANALYTES

30 - Jul - 2013 10:15:43
DSRHardcopyWOLimits 2.7.31
DSR.Jar v. 2.7.31

C109 CLO
Data Summary Report

Sample Group: 20130402

Riser: 003

Segment Number: 9C-13-1

Segment Portion: Grab Sample (Total)

Sample# R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
Hot Cell Breakdown														
S13T004230		ORGVOL	Organic Volume Present	mL	n/a	n/a	0.0	n/a	n/a	n/a	n/a	n/a	n/a	Q
S13T004230		VOL%SETS	Volume percent settled solids	%	n/a	n/a	100	n/a	n/a	n/a	n/a	n/a	n/a	Q
Solids Recovered - Weight														
S13T004230		SLDWT01	Solid Weight	g	n/a	n/a	110	n/a	n/a	n/a	n/a	0.100	n/a	

NA = Not Analyzed, ND = Not Detected

Q - Qualitative
I - Indirect Calibration
c - RPD Outside Range
B - Blank Contamination
Y - Comment
U - Less Than Detection Limit
J - Estimated
b - MS/MSD Outside Range
E - Outside Calibration Range

30 - Jul - 2013 10:15:43
DSRHardcopyWOLimits 2.7.31
DSR.Jar v. 2.7.31

C109 CLO
Data Summary Report

Sample Group: 20130402

Riser: 003

Segment Number: 9C-13-2

Segment Portion: Grab Sample (Total)

Sample# R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
Hot Cell Breakdown														
S13T004231		ORGVOL	Organic Volume Present	mL	n/a	n/a	0.0	n/a	n/a	n/a	n/a	n/a	n/a	Q
S13T004231		VOL%SETS	Volume percent settled solids	%	n/a	n/a	91.4	n/a	n/a	n/a	n/a	n/a	n/a	Q
Liquid Recovered - Volume														
S13T004231		LIQVOL01	Volume of Liquid	mL	n/a	n/a	5.00	n/a	n/a	n/a	n/a	n/a	n/a	
Liquid Recovered - Weight														
S13T004231		LIQWT-01	Weight of Liquid	g	n/a	n/a	6.00	n/a	n/a	n/a	n/a	n/a	n/a	
Solids Recovered - Weight														
S13T004231		SLDWT01	Solid Weight	g	n/a	n/a	152	n/a	n/a	n/a	n/a	0.100	n/a	

NA = Not Analyzed, ND = Not Detected

Q - Qualitative
I - Indirect Calibration
c - RPD Outside Range
B - Blank Contamination
Y - Comment
U - Less Than Detection Limit
J - Estimated
b - MS/MSD Outside Range
E - Outside Calibration Range

30 - Jul - 2013 10:15:43
DSRHardcopyWOLimits 2.7.31
DSR.Jar v. 2.7.31

C109 CLO
Data Summary Report

Sample Group: 20130402

Riser: 003

Segment Number: 9C-13-3

Segment Portion: Grab Sample (Total)

Sample# R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
Hot Cell Breakdown														
S13T004232		ORGVOL	Organic Volume Present	mL	n/a	n/a	0.0	n/a	n/a	n/a	n/a	n/a	n/a	Q
S13T004232		VOL%SETS	Volume percent settled solids	%	n/a	n/a	92.9	n/a	n/a	n/a	n/a	n/a	n/a	Q
Liquid Recovered - Volume														
S13T004232		LIQVOL01	Volume of Liquid	mL	n/a	n/a	19.0	n/a	n/a	n/a	n/a	n/a	n/a	
Liquid Recovered - Weight														
S13T004232		LIQWT-01	Weight of Liquid	g	n/a	n/a	23.3	n/a	n/a	n/a	n/a	n/a	n/a	
Solids Recovered - Weight														
S13T004232		SLDWT01	Solid Weight	g	n/a	n/a	320	n/a	n/a	n/a	n/a	0.100	n/a	

NA = Not Analyzed, ND = Not Detected

Q - Qualitative
I - Indirect Calibration
c - RPD Outside Range
B - Blank Contamination
Y - Comment
U - Less Than Detection Limit
J - Estimated
b - MS/MSD Outside Range
E - Outside Calibration Range

30 - Jul - 2013 10:15:43
DSRHardcopyWOLimits 2.7.31
DSR.Jar v. 2.7.31

C109 CLO
Data Summary Report

Sample Group: 20130402

Riser: 003

Segment Number: 9C-13-4

Segment Portion: Grab Sample (Total)

Sample# R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
Hot Cell Breakdown														
S13T004257		ORGVOL	Organic Volume Present	mL	n/a	n/a	0.0	n/a	n/a	n/a	n/a	n/a	n/a	Q
S13T004257		VOL%SETS	Volume percent settled solids	%	n/a	n/a	94.3	n/a	n/a	n/a	n/a	n/a	n/a	Q
Liquid Recovered - Volume														
S13T004257		LIQVOL01	Volume of Liquid	mL	n/a	n/a	10.0	n/a	n/a	n/a	n/a	n/a	n/a	
Liquid Recovered - Weight														
S13T004257		LIQWT-01	Weight of Liquid	g	n/a	n/a	13.5	n/a	n/a	n/a	n/a	n/a	n/a	
Solids Recovered - Weight														
S13T004257		SLDWT01	Solid Weight	g	n/a	n/a	155	n/a	n/a	n/a	n/a	0.100	n/a	

NA = Not Analyzed, ND = Not Detected

Q - Qualitative
I - Indirect Calibration
c - RPD Outside Range
B - Blank Contamination
Y - Comment
U - Less Than Detection Limit
J - Estimated
b - MS/MSD Outside Range
E - Outside Calibration Range

C109 CLO
Data Summary Report

Sample Group: 20130402

Riser: 003

Segment Number: 9C-13-5

Segment Portion: Grab Sample (Total)

Sample# R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
Hot Cell Breakdown														
S13T004258		ORGVOL	Organic Volume Present	mL	n/a	n/a	0.0	n/a	n/a	n/a	n/a	n/a	n/a	Q
S13T004258		VOL%SETS	Volume percent settled solids	%	n/a	n/a	92.3	n/a	n/a	n/a	n/a	n/a	n/a	Q
Liquid Recovered - Volume														
S13T004258		LIQVOL01	Volume of Liquid	mL	n/a	n/a	7.00	n/a	n/a	n/a	n/a	n/a	n/a	
Liquid Recovered - Weight														
S13T004258		LIQWT-01	Weight of Liquid	g	n/a	n/a	8.30	n/a	n/a	n/a	n/a	n/a	n/a	
Solids Recovered - Weight														
S13T004258		SLDWT01	Solid Weight	g	n/a	n/a	274	n/a	n/a	n/a	n/a	0.100	n/a	

NA = Not Analyzed, ND = Not Detected

Q - Qualitative
I - Indirect Calibration
c - RPD Outside Range
B - Blank Contamination
Y - Comment
U - Less Than Detection Limit
J - Estimated
b - MS/MSD Outside Range
E - Outside Calibration Range

C109 CLO
Data Summary Report

Sample Group: 20130402

Riser: 003

Segment Number: 9C-13-6

Segment Portion: Grab Sample (Total)

Sample# R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
Hot Cell Breakdown														
S13T004259		ORGVOL	Organic Volume Present	mL	n/a	n/a	0.0	n/a	n/a	n/a	n/a	n/a	n/a	Q
S13T004259		VOL%SETS	Volume percent settled solids	%	n/a	n/a	80.0	n/a	n/a	n/a	n/a	n/a	n/a	Q
Liquid Recovered - Volume														
S13T004259		LIQVOL01	Volume of Liquid	mL	n/a	n/a	13.0	n/a	n/a	n/a	n/a	n/a	n/a	
Liquid Recovered - Weight														
S13T004259		LIQWT-01	Weight of Liquid	g	n/a	n/a	19.1	n/a	n/a	n/a	n/a	n/a	n/a	
Solids Recovered - Weight														
S13T004259		SLDWT01	Solid Weight	g	n/a	n/a	179	n/a	n/a	n/a	n/a	0.100	n/a	

NA = Not Analyzed, ND = Not Detected

Q - Qualitative
I - Indirect Calibration
c - RPD Outside Range
B - Blank Contamination
Y - Comment
U - Less Than Detection Limit
J - Estimated
b - MS/MSD Outside Range
E - Outside Calibration Range

C109 CLO
Data Summary Report

Sample Group: 20130402

Riser: 003

Segment Number: 9C-13-7

Segment Portion: Grab Sample (Total)

Sample# R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
Hot Cell Breakdown														
S13T004284		ORGVOL	Organic Volume Present	mL	n/a	n/a	0.0	n/a	n/a	n/a	n/a	n/a	n/a	Q
S13T004284		VOL%SETS	Volume percent settled solids	%	n/a	n/a	87.5	n/a	n/a	n/a	n/a	n/a	n/a	Q
Liquid Recovered - Volume														
S13T004284		LIQVOL01	Volume of Liquid	mL	n/a	n/a	55.0	n/a	n/a	n/a	n/a	n/a	n/a	
Liquid Recovered - Weight														
S13T004284		LIQWT-01	Weight of Liquid	g	n/a	n/a	68.0	n/a	n/a	n/a	n/a	n/a	n/a	
Solids Recovered - Weight														
S13T004284		SLDWT01	Solid Weight	g	n/a	n/a	297	n/a	n/a	n/a	n/a	0.100	n/a	

NA = Not Analyzed, ND = Not Detected

Q - Qualitative
I - Indirect Calibration
c - RPD Outside Range
B - Blank Contamination
Y - Comment
U - Less Than Detection Limit
J - Estimated
b - MS/MSD Outside Range
E - Outside Calibration Range

C109 CLO
Data Summary Report

Sample Group: 20130402

Riser: 003

Segment Number: 9C-13-8

Segment Portion: Grab Sample (Total)

Sample# R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
Hot Cell Breakdown														
S13T004285		ORGVOL	Organic Volume Present	mL	n/a	n/a	0.0	n/a	n/a	n/a	n/a	n/a	n/a	Q
S13T004285		VOL%SETS	Volume percent settled solids	%	n/a	n/a	100	n/a	n/a	n/a	n/a	n/a	n/a	Q
Solids Recovered - Weight														
S13T004285		SLDWT01	Solid Weight	g	n/a	n/a	192	n/a	n/a	n/a	n/a	0.100	n/a	

NA = Not Analyzed, ND = Not Detected

Q - Qualitative
I - Indirect Calibration
c - RPD Outside Range
B - Blank Contamination
Y - Comment
U - Less Than Detection Limit
J - Estimated
b - MS/MSD Outside Range
E - Outside Calibration Range

C109 CLO
Data Summary Report

Sample Group: 20130402

Riser: 003

Segment Number: 9C-13-9

Segment Portion: Grab Sample (Total)

Sample# R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
Hot Cell Breakdown														
S13T004286		ORGVOL	Organic Volume Present	mL	n/a	n/a	0.0	n/a	n/a	n/a	n/a	n/a	n/a	Q
S13T004286		VOL%SETS	Volume percent settled solids	%	n/a	n/a	100	n/a	n/a	n/a	n/a	n/a	n/a	Q
Solids Recovered - Weight														
S13T004286		SLDWT01	Solid Weight	g	n/a	n/a	163	n/a	n/a	n/a	n/a	0.100	n/a	

NA = Not Analyzed, ND = Not Detected

Q - Qualitative
I - Indirect Calibration
c - RPD Outside Range
B - Blank Contamination
Y - Comment
U - Less Than Detection Limit
J - Estimated
b - MS/MSD Outside Range
E - Outside Calibration Range

C109 CLO
Data Summary Report

Sample Group: 20130402

Riser: 003

Segment Number: 9C-13-Comp A

Segment Portion: Tank Composite-Solid (Total)

Sample# R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
% Water by TGA														
S13T004246		%WATER	Percent water	%	103	n/a	17.6	15.6	16.6	11.8	n/a	0.0100	n/a	
Am241,Cm243 by TRU-Spec Resin														
S13T004254	Z	CM-243/244	Curium-243/244	uCi/g	n/a	<5.16E-04	<7.62E-05	<1.19E-04	n/a	n/a	n/a	7.62E-05	n/a	U
S13T004254	Z	14596-10-2	Americium-241	uCi/g	102	6.53E-05	0.0213	0.0348	0.0280	48.1	n/a	7.71E-05	2.02	c
S13T004254	Z	15510-73-3	Curium-242	uCi/g	n/a	<2.39E-05	7.42E-05	<6.13E-05	n/a	n/a	n/a	2.51E-05	37.50	J
Ammonium by IC														
S13T004241	S	14798-03-9	Ammonium	ug/g	106	0.0430	2.70	2.81	2.75	3.84	101	0.540	n/a	BJ
Anions and Small Organic Acids														
S13T004251	W	16984-48-8	Fluoride	ug/g	101	<1.61E-03	8.47E+03	6.02E+03	7.25E+03	33.8	-495	20.1	n/a	c
S13T004251	W	666-14-8	Glycolate	ug/g	101	<9.37E-03	<64.3	<65.3	n/a	n/a	103	64.3	n/a	U
S13T004251	W	71-50-1	Acetate	ug/g	103	<6.04E-03	<113	<114	n/a	n/a	103	113	n/a	U
S13T004251	W	12311-97-6	Formate	ug/g	103	<4.67E-03	<169	<171	n/a	n/a	101	169	n/a	U
S13T004251	W	16887-00-6	Chloride	ug/g	102	0.0140	<64.3	<65.3	n/a	n/a	96.3	64.3	n/a	BU
S13T004251	W	14797-65-0	Nitrite	ug/g	98.9	0.0650	<281	288	n/a	n/a	97.4	281	n/a	BU
S13T004251	W	14808-79-8	Sulfate	ug/g	103	0.0710	255	209	232	19.7	97.1	185	n/a	BJ
S13T004251	W	338-70-5	Oxalate	ug/g	100	<0.0231	<104	<106	n/a	n/a	100	104	n/a	U
S13T004251	W	24959-67-9	Bromide	ug/g	101	<0.0580	<60.3	<61.2	n/a	n/a	103	60.3	n/a	U
S13T004251	W	14797-55-8	Nitrate	ug/g	103	0.104	352	<257	n/a	n/a	94.4	253	n/a	BJ
S13T004251	W	14265-44-2	Phosphate	ug/g	101	<0.0167	8.55E+04	6.04E+04	7.30E+04	34.4	-553	80.4	n/a	c
Bulk Density of Sample in 11A Hot Cell														
S13T004242		BULKDENSI	Bulk Density	g/mL	n/a	n/a	1.66	n/a	n/a	n/a	n/a	1.00E-03	n/a	
Carbon 14 by LSC														
S13T004253	W	14762-75-5	Carbon-14	uCi/g	89.4	<5.91E-05	<5.90E-05	<6.18E-05	n/a	n/a	89.6	5.90E-05	n/a	U
Cyanide EDTA/Distillation														
S13T004246		57-12-5	Cyanide	ug/g	95.8	<8.12E-03	19.7	19.2	19.4	2.62	92.2	0.722	n/a	
GEA														
S13T004254	Z	10198-40-0	Cobalt-60	uCi/g	97.8	<0.0169	<0.0189	<0.0395	n/a	n/a	n/a	0.0189	n/a	U
S13T004254	Z	14234-35-6	Antimony-125	uCi/g	101	<0.0490	<0.0650	<0.123	n/a	n/a	n/a	0.0650	n/a	U

NA = Not Analyzed, ND = Not Detected

Q - Qualitative
Y - Comment
E - Outside Calibration Range
I - Indirect Calibration
U - Less Than Detection Limit
c - RPD Outside Range
J - Estimated
B - Blank Contamination
b - MS/MSD Outside Range

C109 CLO
Data Summary Report

Sample Group: 20130402

Riser: 003

Segment Number: 9C-13-Comp A

Segment Portion: Tank Composite-Solid (Total)

Sample# R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
GEA														
S13T004254	Z	10045-97-3	Cesium-137	uCi/g	101	<0.0276	2.90	3.09	2.99	6.35	n/a	0.0254	0.66	
S13T004254	Z	14683-23-9	Europium-152	uCi/g	n/a	<0.0504	<0.0680	<0.154	n/a	n/a	n/a	0.0680	n/a	U
S13T004254	Z	15585-10-1	Europium-154	uCi/g	n/a	<0.0516	<0.0408	<0.106	n/a	n/a	n/a	0.0408	n/a	U
S13T004254	Z	14391-16-3	Europium-155	uCi/g	n/a	<0.0360	<0.0806	<0.175	n/a	n/a	n/a	0.0806	n/a	U
ICP-AES														
S13T004252	A	7440-22-4	Silver	ug/g	100	<1.00E-03	2.18	2.27	2.23	4.36	97.8	0.994	n/a	J
S13T004252	A	7429-90-5	Aluminum	ug/g	101	<6.00E-03	1.93E+05	2.04E+05	1.99E+05	5.51	-820	5.96	n/a	
S13T004252	A	7440-38-2	Arsenic	ug/g	99.5	<5.00E-03	7.53	7.36	7.45	2.31	96.2	4.97	n/a	J
S13T004252	A	7440-42-8	Boron	ug/g	94.6	<1.00E-03	<0.994	<0.989	n/a	n/a	113	0.994	n/a	U
S13T004252	A	7440-39-3	Barium	ug/g	104	<1.00E-03	7.53	9.24	8.38	20.5	97.9	0.994	n/a	J
S13T004252	A	7440-41-7	Beryllium	ug/g	99.1	<1.00E-03	<0.994	<0.989	n/a	n/a	100	0.994	n/a	U
S13T004252	A	7440-69-9	Bismuth	ug/g	101	<6.00E-03	134	160	147	17.6	97.0	5.96	n/a	
S13T004252	A	7440-70-2	Calcium	ug/g	107	0.104	737	836	787	12.6	93.3	79.5	n/a	J
S13T004252	A	7440-43-9	Cadmium	ug/g	102	<1.00E-03	<0.994	<0.989	n/a	n/a	98.6	0.994	n/a	U
S13T004252	A	7440-45-1	Cerium	ug/g	118	<6.00E-03	<5.96	<5.93	n/a	n/a	114	5.96	n/a	U
S13T004252	A	7440-48-4	Cobalt	ug/g	104	<1.00E-03	<0.994	<0.989	n/a	n/a	98.3	0.994	n/a	U
S13T004252	A	7440-47-3	Chromium	ug/g	88.2	<1.00E-03	9.62	8.79	9.20	8.92	87.8	1.02	n/a	J
S13T004252	A	7440-50-8	Copper	ug/g	104	<2.00E-03	34.1	38.0	36.1	10.8	100	1.99	n/a	
S13T004252	A	7440-53-1	Europium	ug/g	118	<1.00E-03	<0.994	<0.989	n/a	n/a	112	0.994	n/a	U
S13T004252	A	7439-89-6	Iron	ug/g	99.3	<0.0100	5.36E+03	6.13E+03	5.74E+03	13.5	-22.8	9.94	n/a	
S13T004252	A	7440-09-7	Potassium	ug/g	102	<0.0200	<19.9	<19.8	n/a	n/a	99.4	19.9	n/a	U
S13T004252	A	7439-91-0	Lanthanum	ug/g	105	<1.00E-03	5.36	8.65	7.00	46.8	99.0	0.994	n/a	J
S13T004252	A	7439-93-2	Lithium	ug/g	111	<1.00E-03	1.35	1.28	1.31	5.27	103	0.994	n/a	J
S13T004252	A	7439-95-4	Magnesium	ug/g	102	<2.00E-03	70.2	79.5	74.8	12.4	100	1.99	n/a	
S13T004252	A	7439-96-5	Manganese	ug/g	101	<1.00E-03	27.7	34.2	30.9	21.1	97.8	0.994	n/a	
S13T004252	A	7439-98-7	Molybdenum	ug/g	101	<1.00E-03	<0.994	<0.989	n/a	n/a	115	0.994	n/a	U
S13T004252	A	7440-23-5	Sodium	ug/g	104	<0.0400	7.11E+04	7.11E+04	7.11E+04	0.0556	3430	39.7	n/a	

NA = Not Analyzed, ND = Not Detected

Q - Qualitative
Y - Comment
E - Outside Calibration Range
I - Indirect Calibration
U - Less Than Detection Limit
c - RPD Outside Range
J - Estimated
B - Blank Contamination
b - MS/MSD Outside Range

30 - Jul - 2013 10:15:43
DSRHardcopyWOLimits 2.7.31
DSR.Jar v. 2.7.31

C109 CLO
Data Summary Report

Sample Group: 20130402

Riser: 003

Segment Number: 9C-13-Comp A

Segment Portion: Tank Composite-Solid (Total)

Sample# R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
ICP-AES														
S13T004252	A	7440-00-8	Neodymium	ug/g	116	<3.00E-03	6.96	10.0	8.49	35.9	111	2.98	n/a	J
S13T004252	A	7440-02-0	Nickel	ug/g	102	<1.00E-03	564	639	602	12.5	88.8	0.994	n/a	
S13T004252	A	7723-14-0	Phosphorus	ug/g	96.9	5.58E-03	1.80E+04	1.71E+04	1.76E+04	5.27	1280	2.98	n/a	
S13T004252	A	7439-92-1	Lead	ug/g	101	<6.00E-03	385	446	416	14.8	93.0	5.96	n/a	
S13T004252	A	7440-05-3	Palladium	ug/g	113	<9.00E-03	<8.94	<8.90	n/a	n/a	108	8.94	n/a	U
S13T004252	A	7440-17-7	Rubidium	ug/g	109	<0.0300	<29.8	<29.7	n/a	n/a	114	29.8	n/a	U
S13T004252	A	7440-16-6	Rhodium	ug/g	112	<8.00E-03	<7.95	<7.91	n/a	n/a	107	7.95	n/a	U
S13T004252	A	7440-18-8	Ruthenium	ug/g	107	<4.00E-03	<3.97	<3.95	n/a	n/a	103	3.97	n/a	U
S13T004252	A	7704-34-9	Sulfur	ug/g	95.8	6.01E-03	63.9	67.1	65.5	4.84	114	4.97	n/a	
S13T004252	A	7440-36-0	Antimony	ug/g	95.9	<6.00E-03	<5.96	<5.93	n/a	n/a	107	5.96	n/a	U
S13T004252	A	7782-49-2	Selenium	ug/g	102	<6.00E-03	<5.96	<5.93	n/a	n/a	98.0	5.96	n/a	U
S13T004252	A	7440-19-9	Samarium	ug/g	116	0.0309	29.2	29.2	29.2	0.0555	111	4.97	n/a	J
S13T004252	A	7440-31-5	Tin	ug/g	108	<3.00E-03	<2.98	<2.97	n/a	n/a	107	2.98	n/a	U
S13T004252	A	7440-24-6	Strontium	ug/g	102	<2.00E-03	24.5	27.4	25.9	11.1	95.6	1.99	n/a	
S13T004252	A	13494-80-9	Tellurium	ug/g	107	<5.00E-03	<4.97	<4.94	n/a	n/a	109	4.97	n/a	U
S13T004252	A	7440-29-1	Thorium	ug/g	113	<5.00E-03	6.55	9.74	8.14	39.2	108	4.97	n/a	J
S13T004252	A	7440-32-6	Titanium	ug/g	96.8	<1.00E-03	3.72	3.47	3.59	7.07	110	0.994	n/a	J
S13T004252	A	7440-28-0	Thallium	ug/g	109	<6.00E-03	6.87	<5.93	n/a	n/a	102	5.96	n/a	J
S13T004252	A	7440-62-2	Vanadium	ug/g	102	<1.00E-03	<0.994	<0.989	n/a	n/a	96.2	0.994	n/a	U
S13T004252	A	7440-33-7	Tungsten	ug/g	111	<6.00E-03	<5.96	<5.93	n/a	n/a	73.3	5.96	n/a	Ub
S13T004252	A	7440-65-5	Yttrium	ug/g	113	<2.00E-03	<1.99	2.63	2.31	27.8	109	1.99	n/a	U
S13T004252	A	7440-66-6	Zinc	ug/g	97.7	<4.00E-03	52.6	58.9	55.8	11.4	96.7	3.97	n/a	
S13T004254	Z	7440-22-4	Silver	ug/g	102	<53.4	<53.4	<51.9	n/a	n/a	93.7	53.4	n/a	U
S13T004254	Z	7429-90-5	Aluminum	ug/g	99.6	674	2.20E+05	2.06E+05	2.13E+05	6.55	95.3	320	n/a	
S13T004254	Z	7440-38-2	Arsenic	ug/g	98.5	<267	<267	<260	n/a	n/a	96.8	267	n/a	U
S13T004254	Z	7440-39-3	Barium	ug/g	101	<53.4	<53.4	<51.9	n/a	n/a	95.3	53.4	n/a	U
S13T004254	Z	7440-41-7	Beryllium	ug/g	100	<53.4	<53.4	<51.9	n/a	n/a	93.8	53.4	n/a	U

NA = Not Analyzed, ND = Not Detected

Q - Qualitative
I - Indirect Calibration
c - RPD Outside Range
B - Blank Contamination
Y - Comment
U - Less Than Detection Limit
J - Estimated
b - MS/MSD Outside Range
E - Outside Calibration Range

30 - Jul - 2013 10:15:43
DSRHardcopyWOLimits 2.7.31
DSR.Jar v. 2.7.31

C109 CLO
Data Summary Report

Sample Group: 20130402
Riser: 003
Segment Number: 9C-13-Comp A
Segment Portion: Tank Composite-Solid (Total)

Sample# R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
ICP-AES														
S13T004254	Z	7440-69-9	Bismuth	ug/g	99.7	<320	<320	328	n/a	n/a	93.8	320	n/a	U
S13T004254	Z	7440-70-2	Calcium	ug/g	102	<4.27E+03	<4.27E+03	<4.15E+03	n/a	n/a	92.7	4.27E+03	n/a	U
S13T004254	Z	7440-43-9	Cadmium	ug/g	101	<53.4	<53.4	<51.9	n/a	n/a	95.2	53.4	n/a	UY
S13T004254	Z	7440-45-1	Cerium	ug/g	93.7	<320	450	<312	n/a	n/a	92.0	320	n/a	J
S13T004254	Z	7440-48-4	Cobalt	ug/g	101	<53.4	<53.4	<51.9	n/a	n/a	95.7	53.4	n/a	U
S13T004254	Z	7440-47-3	Chromium	ug/g	101	<53.4	<53.4	<51.9	n/a	n/a	94.6	53.4	n/a	U
S13T004254	Z	7440-50-8	Copper	ug/g	101	<107	<107	<104	n/a	n/a	96.1	107	n/a	U
S13T004254	Z	7440-53-1	Europium	ug/g	99.8	<53.4	<53.4	<51.9	n/a	n/a	93.2	53.4	n/a	U
S13T004254	Z	7439-89-6	Iron	ug/g	102	<534	4.12E+03	4.46E+03	4.29E+03	7.91	94.0	534	n/a	J
S13T004254	Z	7439-91-0	Lanthanum	ug/g	101	<53.4	<53.4	<51.9	n/a	n/a	94.1	53.4	n/a	U
S13T004254	Z	7439-93-2	Lithium	ug/g	105	<53.4	<53.4	<51.9	n/a	n/a	95.7	53.4	n/a	U
S13T004254	Z	7439-95-4	Magnesium	ug/g	102	<107	<107	<104	n/a	n/a	95.2	107	n/a	U
S13T004254	Z	7439-96-5	Manganese	ug/g	103	<53.4	<53.4	<51.9	n/a	n/a	94.7	53.4	n/a	U
S13T004254	Z	7439-98-7	Molybdenum	ug/g	95.9	<53.4	<53.4	<51.9	n/a	n/a	93.1	53.4	n/a	U
S13T004254	Z	7440-23-5	Sodium	ug/g	100	<2.14E+03	5.32E+04	6.00E+04	5.66E+04	12.1	91.7	2.14E+03	n/a	
S13T004254	Z	7440-00-8	Neodymium	ug/g	98.5	<160	<160	<156	n/a	n/a	92.5	160	n/a	U
S13T004254	Z	7440-02-0	Nickel	ug/g	102	<53.4	742	813	777	9.11	96.0	53.4	n/a	
S13T004254	Z	7440-30-1	Niobium	ug/g	98.1	<160	<160	<156	n/a	n/a	93.4	160	n/a	U
S13T004254	Z	7723-14-0	Phosphorus	ug/g	97.9	<160	1.05E+04	1.44E+04	1.25E+04	31.3	95.3	160	n/a	c
S13T004254	Z	7439-92-1	Lead	ug/g	102	<320	417	319	368	26.5	101	320	n/a	J
S13T004254	Z	7440-05-3	Palladium	ug/g	102	<481	<481	<467	n/a	n/a	93.3	481	n/a	U
S13T004254	Z	7440-10-0	Praseodymium	ug/g	97.5	<214	<214	<208	n/a	n/a	90.6	214	n/a	U
S13T004254	Z	7440-16-6	Rhodium	ug/g	93.2	<427	<427	<415	n/a	n/a	91.1	427	n/a	U
S13T004254	Z	7440-18-8	Ruthenium	ug/g	102	<214	<214	<208	n/a	n/a	90.0	214	n/a	U
S13T004254	Z	7704-34-9	Sulfur	ug/g	99.0	<267	<267	<260	n/a	n/a	96.9	267	n/a	U
S13T004254	Z	7440-36-0	Antimony	ug/g	95.9	<320	<320	<312	n/a	n/a	107	320	n/a	U
S13T004254	Z	7782-49-2	Selenium	ug/g	98.4	<320	<320	<312	n/a	n/a	96.3	320	n/a	U

NA = Not Analyzed, ND = Not Detected

Q - Qualitative
I - Indirect Calibration
c - RPD Outside Range
B - Blank Contamination
Y - Comment
U - Less Than Detection Limit
J - Estimated
b - MS/MSD Outside Range
E - Outside Calibration Range

C109 CLO
Data Summary Report

Sample Group: 20130402

Riser: 003

Segment Number: 9C-13-Comp A

Segment Portion: Tank Composite-Solid (Total)

Sample# R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
ICP-AES														
S13T004254	Z	7440-21-3	Silicon	ug/g	96.0	<267	1.15E+03	1.44E+03	1.30E+03	22.3	96.4	267	n/a	J
S13T004254	Z	7440-19-9	Samarium	ug/g	97.3	<267	<267	<260	n/a	n/a	92.7	267	n/a	U
S13T004254	Z	7440-31-5	Tin	ug/g	97.8	<160	<160	<156	n/a	n/a	90.5	160	n/a	U
S13T004254	Z	7440-24-6	Strontium	ug/g	102	<107	<107	<104	n/a	n/a	95.2	107	n/a	U
S13T004254	Z	7440-25-7	Tantalum	ug/g	99.8	<267	<267	<260	n/a	n/a	94.9	267	n/a	U
S13T004254	Z	13494-80-9	Tellurium	ug/g	96.6	<267	<267	<260	n/a	n/a	92.8	267	n/a	U
S13T004254	Z	7440-29-1	Thorium	ug/g	99.1	<267	<267	<260	n/a	n/a	92.6	267	n/a	U
S13T004254	Z	7440-32-6	Titanium	ug/g	98.6	<53.4	<53.4	<51.9	n/a	n/a	92.7	53.4	n/a	U
S13T004254	Z	7440-28-0	Thallium	ug/g	98.8	<320	<320	<312	n/a	n/a	89.8	320	n/a	UY
S13T004254	Z	7440-61-1	Uranium	ug/g	95.8	<1.07E+03	2.23E+03	2.00E+03	2.12E+03	11.0	93.0	1.07E+03	n/a	J
S13T004254	Z	7440-62-2	Vanadium	ug/g	101	<53.4	<53.4	<51.9	n/a	n/a	95.2	53.4	n/a	U
S13T004254	Z	7440-33-7	Tungsten	ug/g	98.8	<320	<320	<312	n/a	n/a	92.4	320	n/a	U
S13T004254	Z	7440-65-5	Yttrium	ug/g	101	<107	<107	<104	n/a	n/a	93.6	107	n/a	U
S13T004254	Z	7440-66-6	Zinc	ug/g	101	<214	<214	<208	n/a	n/a	95.9	214	n/a	U
ICP/MS														
S13T004249	A	SN-117	Tin-117	ug/g	112	<1.00E-03	<0.204	<0.207	n/a	n/a	142	0.204	n/a	Ub
S13T004249	A	15832-50-5	Tin-126	ug/g	n/a	<2.00E-05	<4.08E-03	<4.14E-03	n/a	n/a	n/a	4.08E-03	n/a	IUb
S13T004250	A	14133-76-7	Technetium-99	ug/g	99.4	<6.00E-05	0.0435	0.0409	0.0422	6.25	83.5	0.0116	n/a	J
S13T004252	A	14269-63-7	Thorium-230	ug/g	n/a	<3.50E-04	<0.0696	<0.0692	n/a	n/a	n/a	0.0696	n/a	IU
S13T004252	A	14331-85-2	Protactinium-231	ug/g	n/a	<3.50E-04	<0.0696	<0.0692	n/a	n/a	n/a	0.0696	n/a	IU
S13T004252	A	TH-232	Thorium-232	ug/g	109	<0.0250	6.56	6.97	6.76	6.08	n/a	4.97	n/a	J
S13T004252	A	13968-55-3	Uranium-233	ug/g	101	<0.0100	<1.99	<1.98	n/a	n/a	n/a	1.99	n/a	U
S13T004252	A	13966-29-5	Uranium-234	ug/g	n/a	<2.50E-04	<0.0497	<0.0494	n/a	n/a	n/a	0.0497	n/a	IU
S13T004252	A	15117-96-1	Uranium-235	ug/g	110	<5.00E-04	11.5	12.0	11.7	4.71	n/a	0.0994	n/a	
S13T004252	A	13982-70-2	Uranium-236	ug/g	n/a	<2.00E-04	0.113	<0.0395	n/a	n/a	n/a	0.0397	n/a	IJY
S13T004252	A	13994-20-2	Neptunium-237	ug/g	100	<5.00E-03	<0.994	<0.989	n/a	n/a	n/a	0.994	n/a	Ub
S13T004252	A	U-238	Uranium-238	ug/g	107	0.0656	1.64E+03	1.83E+03	1.73E+03	10.6	n/a	4.97	n/a	

NA = Not Analyzed, ND = Not Detected

Q - Qualitative
I - Indirect Calibration
c - RPD Outside Range
B - Blank Contamination
Y - Comment
U - Less Than Detection Limit
J - Estimated
b - MS/MSD Outside Range
E - Outside Calibration Range

C109 CLO
Data Summary Report

Sample Group: 20130402

Riser: 003

Segment Number: 9C-13-Comp A

Segment Portion: Tank Composite-Solid (Total)

Sample# R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
ICP/MS														
S13T004252	A	13982-10-0	Plutonium-242	ug/g	102	<1.73E-05	<3.44E-03	<3.42E-03	n/a	n/a	n/a	3.44E-03	n/a	U
Iodine-129 for Solids Only														
S13T004246		15046-84-1	Iodine-129	uCi/g	91.2	<1.52E-05	<1.10E-05	<9.97E-06	n/a	n/a	n/a	1.10E-05	n/a	U
Mercury by CVAA														
S13T005629	HG	7439-97-6	Mercury	ug/g	99.7	<1.10E-05	0.946	0.956	0.951	1.03	105	2.20E-03	n/a	
Nickel-63														
S13T004254	Z	13981-37-8	Nickel-63	uCi/g	98.3	<1.43E-03	0.0681	0.0564	0.0622	18.8	n/a	1.37E-03	4.29	
PCB (EPA 8082) Dry Weight Analysis by ASE prep														
S13T004248	O	12674-11-2	Aroclor 1016 Dry	ug/kg	n/a	<43.4	<50.0	<49.7	n/a	n/a	n/a	50.0	n/a	U
S13T004248	O	11104-28-2	Aroclor 1221 Dry	ug/kg	n/a	<7.17	<8.26	<8.21	n/a	n/a	n/a	8.26	n/a	U
S13T004248	O	11141-16-5	Aroclor 1232 Dry	ug/kg	n/a	<12.2	<14.0	<13.9	n/a	n/a	n/a	14.0	n/a	U
S13T004248	O	53469-21-9	Aroclor 1242 Dry	ug/kg	n/a	<29.0	<33.4	<33.2	n/a	n/a	n/a	33.4	n/a	U
S13T004248	O	12672-29-6	Aroclor 1248 Dry	ug/kg	n/a	<16.4	<18.9	<18.8	n/a	n/a	n/a	18.9	n/a	U
S13T004248	O	11097-69-1	Aroclor 1254 Dry	ug/kg	84.7	<10.5	<12.1	<12.0	n/a	n/a	82.7	12.1	n/a	U
S13T004248	O	11096-82-5	Aroclor 1260 Dry	ug/kg	n/a	<17.0	<19.6	<19.5	n/a	n/a	n/a	19.6	n/a	U
Plutonium-241 by LSC														
S13T004254	Z	14119-32-5	Plutonium-241	uCi/g	84.0	<6.51E-04	0.0522	0.0540	0.0531	3.39	n/a	4.96E-04	0.75	
Pu238,239 by TRU-SPEC Resin														
S13T004254	Z	PU-239/240	Plutonium-239/240	uCi/g	116	1.01E-04	0.0268	0.0281	0.0274	4.74	n/a	5.50E-05	1.31	
S13T004254	Z	13981-16-3	Plutonium-238	uCi/g	n/a	<5.02E-05	1.19E-03	1.24E-03	1.22E-03	4.12	n/a	4.57E-05	8.44	
SVOA 222S SOLID														
S13T004247	O	126-73-8	Tributyl phosphate	ug/kg	110	<719	<695	<689	n/a	n/a	117	695	n/a	U
Selenium-79 by LSC														
S13T004255	E	15758-45-9	Selenium-79	uCi/g	n/a	<3.17E-04	<3.14E-04	<3.48E-04	n/a	n/a	n/a	3.14E-04	n/a	U
Solids Recovered - Weight														
S13T004233		SLDWT01	Solid Weight	g	n/a	n/a	304	n/a	n/a	n/a	n/a	0.100	n/a	
Sr-89/90 by GPC														
S13T004254	Z	SR-89/90	Strontium-89/90	uCi/g	103	0.0235	233	245	239	4.65	n/a	0.0200	0.485	

NA = Not Analyzed, ND = Not Detected

Q - Qualitative
I - Indirect Calibration
c - RPD Outside Range
B - Blank Contamination
Y - Comment
U - Less Than Detection Limit
J - Estimated
b - MS/MSD Outside Range
E - Outside Calibration Range

C109 CLO
Data Summary Report

Sample Group: 20130402

Riser: 003

Segment Number: 9C-13-Comp A

Segment Portion: Tank Composite-Solid (Total)

Sample# R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
Technetium - Liq. Scint.														
S13T004255	E	14133-76-7	Technetium-99	uCi/g	98.9	<1.67E-04	<1.65E-04	<1.81E-04	n/a	n/a	n/a	1.65E-04	n/a	U
Thorium														
S13T004254	Z	14274-82-9	Thorium-228	uCi/g	n/a	<1.63E-05	2.34E-05	2.43E-05	2.38E-05	3.77	n/a	1.84E-05	36.02	J
Tritium (H3) by LSC														
S13T004253	W	10028-17-8	Tritium	uCi/g	87.5	<3.92E-04	<3.90E-04	<4.12E-04	n/a	n/a	86.4	3.90E-04	n/a	U
VOA Solid Samples from Tanks														
S13T004239		78-93-3	2-Butanone	ug/kg	107	<19.6	<17.5	<20.2	n/a	n/a	132	17.5	n/a	U
S13T004239		67-64-1	Acetone	ug/kg	107	<22.0	200	27.8	114	151	104	19.6	n/a	
S13T004239		110-54-3	Hexane	ug/kg	102	<2.57	44.3	<2.64	n/a	n/a	94.1	2.29	n/a	
S13T004239		106-42-3	Xylene (m & p)	ug/kg	102	<1.67	<1.49	<1.72	n/a	n/a	102	1.49	n/a	U
S13T004239		108-10-1	Hexone	ug/kg	116	<17.1	<15.2	<17.5	n/a	n/a	137	15.2	n/a	U
S13T004239		95-47-6	o-Xylene	ug/kg	107	<0.920	<0.820	<0.945	n/a	n/a	107	0.820	n/a	U
S13T004239		100-42-5	Styrene	ug/kg	113	<1.27	1.36	<1.30	n/a	n/a	112	1.13	n/a	J
S13T004239		1330-20-7	Xylenes (total)	ug/kg	104	<2.03	<1.81	<2.09	n/a	n/a	104	1.81	n/a	U
S13T004239		79-01-6	Trichloroethene	ug/kg	114	<1.21	<1.08	<1.24	n/a	n/a	202	1.08	n/a	Ub
pH on Solid Samples														
S13T004245		PH	pH	unitless	n/a	n/a	12.7	13.0	12.8	1.95	n/a	0.0100	n/a	

NA = Not Analyzed, ND = Not Detected

Q - Qualitative
Y - Comment
E - Outside Calibration Range
I - Indirect Calibration
U - Less Than Detection Limit
c - RPD Outside Range
J - Estimated
B - Blank Contamination
b - MS/MSD Outside Range

C109 CLO
Data Summary Report

Sample Group: 20130402

Riser: 003

Segment Number: 9C-13-Comp B

Segment Portion: Tank Composite-Solid (Total)

Sample# R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
% Water by TGA														
S13T004274		%WATER	Percent water	%	103	n/a	32.3	34.6	33.4	6.88	n/a	0.0100	n/a	
Am241,Cm243 by TRU-Spec Resin														
S13T004282	Z	CM-243/244	Curium-243/244	uCi/g	n/a	<5.16E-04	<9.08E-05	n/a	n/a	n/a	n/a	9.08E-05	n/a	U
S13T004282	Z	14596-10-2	Americium-241	uCi/g	102	6.53E-05	0.0354	n/a	n/a	n/a	n/a	9.20E-05	1.62	c
S13T004282	Z	15510-73-3	Curium-242	uCi/g	n/a	<2.39E-05	<6.46E-05	n/a	n/a	n/a	n/a	6.46E-05	n/a	U
Ammonium by IC														
S13T004268	S	14798-03-9	Ammonium	ug/g	106	0.0430	3.62	n/a	n/a	n/a	n/a	0.542	n/a	BJ
Anions and Small Organic Acids														
S13T004279	W	16984-48-8	Fluoride	ug/g	101	<1.61E-03	8.14E+03	n/a	n/a	n/a	n/a	20.1	n/a	c
S13T004279	W	666-14-8	Glycolate	ug/g	101	<9.37E-03	<64.4	n/a	n/a	n/a	n/a	64.4	n/a	U
S13T004279	W	71-50-1	Acetate	ug/g	103	<6.04E-03	<113	n/a	n/a	n/a	n/a	113	n/a	U
S13T004279	W	12311-97-6	Formate	ug/g	103	<4.67E-03	<169	n/a	n/a	n/a	n/a	169	n/a	U
S13T004279	W	16887-00-6	Chloride	ug/g	102	0.0140	<64.4	n/a	n/a	n/a	n/a	64.4	n/a	BU
S13T004279	W	14797-65-0	Nitrite	ug/g	98.9	0.0650	293	n/a	n/a	n/a	n/a	282	n/a	BJ
S13T004279	W	14808-79-8	Sulfate	ug/g	103	0.0710	261	n/a	n/a	n/a	n/a	185	n/a	BJ
S13T004279	W	338-70-5	Oxalate	ug/g	100	<0.0231	<105	n/a	n/a	n/a	n/a	105	n/a	U
S13T004279	W	24959-67-9	Bromide	ug/g	101	<0.0580	<60.4	n/a	n/a	n/a	n/a	60.4	n/a	U
S13T004279	W	14797-55-8	Nitrate	ug/g	103	0.104	430	n/a	n/a	n/a	n/a	254	n/a	BJ
S13T004279	W	14265-44-2	Phosphate	ug/g	101	<0.0167	8.25E+04	n/a	n/a	n/a	n/a	80.5	n/a	c
Bulk Density of Sample in 11A Hot Cell														
S13T004269		BULKDENSI	Bulk Density	g/mL	n/a	n/a	1.78	n/a	n/a	n/a	n/a	1.00E-03	n/a	
Carbon 14 by LSC														
S13T004281	W	14762-75-5	Carbon-14	uCi/g	89.4	<5.91E-05	<5.69E-05	n/a	n/a	n/a	n/a	5.69E-05	n/a	U
Cyanide EDTA/Distillation														
S13T004274		57-12-5	Cyanide	ug/g	97.4	<8.12E-03	39.5	n/a	n/a	n/a	n/a	1.37	n/a	
GEA														
S13T004282	Z	10198-40-0	Cobalt-60	uCi/g	97.8	<0.0169	<0.0204	n/a	n/a	n/a	n/a	0.0204	n/a	U
S13T004282	Z	14234-35-6	Antimony-125	uCi/g	101	<0.0490	<0.138	n/a	n/a	n/a	n/a	0.138	n/a	U

NA = Not Analyzed, ND = Not Detected

Q - Qualitative
Y - Comment
E - Outside Calibration Range
I - Indirect Calibration
U - Less Than Detection Limit
c - RPD Outside Range
J - Estimated
B - Blank Contamination
b - MS/MSD Outside Range

C109 CLO
Data Summary Report

Sample Group: 20130402

Riser: 003

Segment Number: 9C-13-Comp B

Segment Portion: Tank Composite-Solid (Total)

Sample# R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
GEA														
S13T004282	Z	10045-97-3	Cesium-137	uCi/g	101	<0.0276	4.15	n/a	n/a	n/a	n/a	0.0542	1.28	
S13T004282	Z	14683-23-9	Europium-152	uCi/g	n/a	<0.0504	<0.133	n/a	n/a	n/a	n/a	0.133	n/a	U
S13T004282	Z	15585-10-1	Europium-154	uCi/g	n/a	<0.0516	<0.0660	n/a	n/a	n/a	n/a	0.0660	n/a	U
S13T004282	Z	14391-16-3	Europium-155	uCi/g	n/a	<0.0360	<0.234	n/a	n/a	n/a	n/a	0.234	n/a	U
ICP-AES														
S13T004280	A	7440-22-4	Silver	ug/g	100	<1.00E-03	14.8	n/a	n/a	n/a	n/a	0.982	n/a	
S13T004280	A	7429-90-5	Aluminum	ug/g	101	<6.00E-03	1.10E+05	n/a	n/a	n/a	n/a	5.89	n/a	
S13T004280	A	7440-38-2	Arsenic	ug/g	99.5	<5.00E-03	5.29	n/a	n/a	n/a	n/a	4.91	n/a	J
S13T004280	A	7440-42-8	Boron	ug/g	94.6	<1.00E-03	<0.982	n/a	n/a	n/a	n/a	0.982	n/a	U
S13T004280	A	7440-39-3	Barium	ug/g	104	<1.00E-03	14.0	n/a	n/a	n/a	n/a	0.982	n/a	
S13T004280	A	7440-41-7	Beryllium	ug/g	99.1	<1.00E-03	<0.982	n/a	n/a	n/a	n/a	0.982	n/a	U
S13T004280	A	7440-69-9	Bismuth	ug/g	101	<6.00E-03	180	n/a	n/a	n/a	n/a	5.89	n/a	
S13T004280	A	7440-70-2	Calcium	ug/g	107	0.104	1.60E+03	n/a	n/a	n/a	n/a	78.5	n/a	
S13T004280	A	7440-43-9	Cadmium	ug/g	102	<1.00E-03	<0.982	n/a	n/a	n/a	n/a	0.982	n/a	U
S13T004280	A	7440-45-1	Cerium	ug/g	118	<6.00E-03	<5.89	n/a	n/a	n/a	n/a	5.89	n/a	U
S13T004280	A	7440-48-4	Cobalt	ug/g	104	<1.00E-03	<0.982	n/a	n/a	n/a	n/a	0.982	n/a	U
S13T004280	A	7440-47-3	Chromium	ug/g	88.2	<1.00E-03	16.5	n/a	n/a	n/a	n/a	1.01	n/a	
S13T004280	A	7440-50-8	Copper	ug/g	104	<2.00E-03	49.0	n/a	n/a	n/a	n/a	1.96	n/a	
S13T004280	A	7440-53-1	Europium	ug/g	118	<1.00E-03	<0.982	n/a	n/a	n/a	n/a	0.982	n/a	U
S13T004280	A	7439-89-6	Iron	ug/g	99.3	<0.0100	1.07E+04	n/a	n/a	n/a	n/a	9.82	n/a	
S13T004280	A	7440-09-7	Potassium	ug/g	102	<0.0200	<19.6	n/a	n/a	n/a	n/a	19.6	n/a	U
S13T004280	A	7439-91-0	Lanthanum	ug/g	105	<1.00E-03	7.34	n/a	n/a	n/a	n/a	0.982	n/a	J
S13T004280	A	7439-93-2	Lithium	ug/g	111	<1.00E-03	1.88	n/a	n/a	n/a	n/a	0.982	n/a	J
S13T004280	A	7439-95-4	Magnesium	ug/g	102	<2.00E-03	130	n/a	n/a	n/a	n/a	1.96	n/a	
S13T004280	A	7439-96-5	Manganese	ug/g	101	<1.00E-03	71.5	n/a	n/a	n/a	n/a	0.982	n/a	
S13T004280	A	7439-98-7	Molybdenum	ug/g	101	<1.00E-03	2.24	n/a	n/a	n/a	n/a	0.982	n/a	J
S13T004280	A	7440-23-5	Sodium	ug/g	104	<0.0400	1.41E+05	n/a	n/a	n/a	n/a	39.3	n/a	

NA = Not Analyzed, ND = Not Detected

Q - Qualitative
I - Indirect Calibration
c - RPD Outside Range
B - Blank Contamination
Y - Comment
U - Less Than Detection Limit
J - Estimated
b - MS/MSD Outside Range
E - Outside Calibration Range

C109 CLO
Data Summary Report

Sample Group: 20130402

Riser: 003

Segment Number: 9C-13-Comp B

Segment Portion: Tank Composite-Solid (Total)

Sample# R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
ICP-AES														
S13T004280	A	7440-00-8	Neodymium	ug/g	116	<3.00E-03	10.7	n/a	n/a	n/a	n/a	2.94	n/a	J
S13T004280	A	7440-02-0	Nickel	ug/g	102	<1.00E-03	1.27E+03	n/a	n/a	n/a	n/a	0.982	n/a	
S13T004280	A	7723-14-0	Phosphorus	ug/g	96.9	5.58E-03	3.64E+04	n/a	n/a	n/a	n/a	2.94	n/a	
S13T004280	A	7439-92-1	Lead	ug/g	101	<6.00E-03	396	n/a	n/a	n/a	n/a	5.89	n/a	
S13T004280	A	7440-05-3	Palladium	ug/g	113	<9.00E-03	<8.83	n/a	n/a	n/a	n/a	8.83	n/a	U
S13T004280	A	7440-17-7	Rubidium	ug/g	109	<0.0300	<29.4	n/a	n/a	n/a	n/a	29.4	n/a	U
S13T004280	A	7440-16-6	Rhodium	ug/g	112	<8.00E-03	10.5	n/a	n/a	n/a	n/a	7.85	n/a	J
S13T004280	A	7440-18-8	Ruthenium	ug/g	107	<4.00E-03	<3.93	n/a	n/a	n/a	n/a	3.93	n/a	U
S13T004280	A	7704-34-9	Sulfur	ug/g	95.8	6.01E-03	87.9	n/a	n/a	n/a	n/a	4.91	n/a	
S13T004280	A	7440-36-0	Antimony	ug/g	95.9	<6.00E-03	<5.89	n/a	n/a	n/a	n/a	5.89	n/a	U
S13T004280	A	7782-49-2	Selenium	ug/g	102	<6.00E-03	<5.89	n/a	n/a	n/a	n/a	5.89	n/a	U
S13T004280	A	7440-19-9	Samarium	ug/g	116	0.0309	35.5	n/a	n/a	n/a	n/a	4.91	n/a	J
S13T004280	A	7440-31-5	Tin	ug/g	108	<3.00E-03	<2.94	n/a	n/a	n/a	n/a	2.94	n/a	U
S13T004280	A	7440-24-6	Strontium	ug/g	102	<2.00E-03	56.4	n/a	n/a	n/a	n/a	1.96	n/a	
S13T004280	A	13494-80-9	Tellurium	ug/g	107	<5.00E-03	<4.91	n/a	n/a	n/a	n/a	4.91	n/a	U
S13T004280	A	7440-29-1	Thorium	ug/g	113	<5.00E-03	18.5	n/a	n/a	n/a	n/a	4.91	n/a	J
S13T004280	A	7440-32-6	Titanium	ug/g	96.8	<1.00E-03	6.27	n/a	n/a	n/a	n/a	0.982	n/a	J
S13T004280	A	7440-28-0	Thallium	ug/g	109	<6.00E-03	<5.89	n/a	n/a	n/a	n/a	5.89	n/a	U
S13T004280	A	7440-62-2	Vanadium	ug/g	102	<1.00E-03	<0.982	n/a	n/a	n/a	n/a	0.982	n/a	U
S13T004280	A	7440-33-7	Tungsten	ug/g	111	<6.00E-03	7.51	n/a	n/a	n/a	n/a	5.89	n/a	Jb
S13T004280	A	7440-65-5	Yttrium	ug/g	113	<2.00E-03	<1.96	n/a	n/a	n/a	n/a	1.96	n/a	U
S13T004280	A	7440-66-6	Zinc	ug/g	97.7	<4.00E-03	48.0	n/a	n/a	n/a	n/a	3.93	n/a	
S13T004282	Z	7440-22-4	Silver	ug/g	102	<53.4	360	n/a	n/a	n/a	n/a	55.9	n/a	J
S13T004282	Z	7429-90-5	Aluminum	ug/g	99.6	674	1.11E+05	n/a	n/a	n/a	n/a	335	n/a	
S13T004282	Z	7440-38-2	Arsenic	ug/g	98.5	<267	<279	n/a	n/a	n/a	n/a	279	n/a	U
S13T004282	Z	7440-39-3	Barium	ug/g	101	<53.4	<55.9	n/a	n/a	n/a	n/a	55.9	n/a	U
S13T004282	Z	7440-41-7	Beryllium	ug/g	100	<53.4	<55.9	n/a	n/a	n/a	n/a	55.9	n/a	U

NA = Not Analyzed, ND = Not Detected

Q - Qualitative
I - Indirect Calibration
c - RPD Outside Range
B - Blank Contamination
Y - Comment
U - Less Than Detection Limit
J - Estimated
b - MS/MSD Outside Range
E - Outside Calibration Range

C109 CLO
Data Summary Report

Sample Group: 20130402

Riser: 003

Segment Number: 9C-13-Comp B

Segment Portion: Tank Composite-Solid (Total)

Sample# R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
ICP-AES														
S13T004282	Z	7440-69-9	Bismuth	ug/g	99.7	<320	<335	n/a	n/a	n/a	n/a	335	n/a	U
S13T004282	Z	7440-70-2	Calcium	ug/g	102	<4.27E+03	<4.47E+03	n/a	n/a	n/a	n/a	4.47E+03	n/a	U
S13T004282	Z	7440-43-9	Cadmium	ug/g	101	<53.4	<55.9	n/a	n/a	n/a	n/a	55.9	n/a	UY
S13T004282	Z	7440-45-1	Cerium	ug/g	93.7	<320	<335	n/a	n/a	n/a	n/a	335	n/a	U
S13T004282	Z	7440-48-4	Cobalt	ug/g	101	<53.4	<55.9	n/a	n/a	n/a	n/a	55.9	n/a	U
S13T004282	Z	7440-47-3	Chromium	ug/g	101	<53.4	<55.9	n/a	n/a	n/a	n/a	55.9	n/a	U
S13T004282	Z	7440-50-8	Copper	ug/g	101	<107	134	n/a	n/a	n/a	n/a	112	n/a	J
S13T004282	Z	7440-53-1	Europium	ug/g	99.8	<53.4	<55.9	n/a	n/a	n/a	n/a	55.9	n/a	U
S13T004282	Z	7439-89-6	Iron	ug/g	102	<534	6.07E+03	n/a	n/a	n/a	n/a	559	n/a	
S13T004282	Z	7439-91-0	Lanthanum	ug/g	101	<53.4	<55.9	n/a	n/a	n/a	n/a	55.9	n/a	U
S13T004282	Z	7439-93-2	Lithium	ug/g	105	<53.4	<55.9	n/a	n/a	n/a	n/a	55.9	n/a	U
S13T004282	Z	7439-95-4	Magnesium	ug/g	102	<107	148	n/a	n/a	n/a	n/a	112	n/a	J
S13T004282	Z	7439-96-5	Manganese	ug/g	103	<53.4	<55.9	n/a	n/a	n/a	n/a	55.9	n/a	U
S13T004282	Z	7439-98-7	Molybdenum	ug/g	95.9	<53.4	<55.9	n/a	n/a	n/a	n/a	55.9	n/a	U
S13T004282	Z	7440-23-5	Sodium	ug/g	100	<2.14E+03	9.89E+04	n/a	n/a	n/a	n/a	2.24E+03	n/a	
S13T004282	Z	7440-00-8	Neodymium	ug/g	98.5	<160	<168	n/a	n/a	n/a	n/a	168	n/a	U
S13T004282	Z	7440-02-0	Nickel	ug/g	102	<53.4	1.49E+03	n/a	n/a	n/a	n/a	55.9	n/a	
S13T004282	Z	7440-30-1	Niobium	ug/g	98.1	<160	<168	n/a	n/a	n/a	n/a	168	n/a	U
S13T004282	Z	7723-14-0	Phosphorus	ug/g	97.9	<160	2.23E+04	n/a	n/a	n/a	n/a	168	n/a	c
S13T004282	Z	7439-92-1	Lead	ug/g	102	<320	579	n/a	n/a	n/a	n/a	335	n/a	J
S13T004282	Z	7440-05-3	Palladium	ug/g	102	<481	<503	n/a	n/a	n/a	n/a	503	n/a	U
S13T004282	Z	7440-10-0	Praseodymium	ug/g	97.5	<214	<224	n/a	n/a	n/a	n/a	224	n/a	U
S13T004282	Z	7440-16-6	Rhodium	ug/g	93.2	<427	<447	n/a	n/a	n/a	n/a	447	n/a	U
S13T004282	Z	7440-18-8	Ruthenium	ug/g	102	<214	<224	n/a	n/a	n/a	n/a	224	n/a	U
S13T004282	Z	7704-34-9	Sulfur	ug/g	99.0	<267	<279	n/a	n/a	n/a	n/a	279	n/a	U
S13T004282	Z	7440-36-0	Antimony	ug/g	95.9	<320	<335	n/a	n/a	n/a	n/a	335	n/a	U
S13T004282	Z	7782-49-2	Selenium	ug/g	98.4	<320	412	n/a	n/a	n/a	n/a	335	n/a	J

NA = Not Analyzed, ND = Not Detected

Q - Qualitative
I - Indirect Calibration
c - RPD Outside Range
B - Blank Contamination
Y - Comment
U - Less Than Detection Limit
J - Estimated
b - MS/MSD Outside Range
E - Outside Calibration Range

C109 CLO
Data Summary Report

Sample Group: 20130402

Riser: 003

Segment Number: 9C-13-Comp B

Segment Portion: Tank Composite-Solid (Total)

Sample# R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
ICP-AES														
S13T004282	Z	7440-21-3	Silicon	ug/g	96.0	<267	3.94E+03	n/a	n/a	n/a	n/a	279	n/a	
S13T004282	Z	7440-19-9	Samarium	ug/g	97.3	<267	<279	n/a	n/a	n/a	n/a	279	n/a	U
S13T004282	Z	7440-31-5	Tin	ug/g	97.8	<160	<168	n/a	n/a	n/a	n/a	168	n/a	U
S13T004282	Z	7440-24-6	Strontium	ug/g	102	<107	<112	n/a	n/a	n/a	n/a	112	n/a	U
S13T004282	Z	7440-25-7	Tantalum	ug/g	99.8	<267	<279	n/a	n/a	n/a	n/a	279	n/a	U
S13T004282	Z	13494-80-9	Tellurium	ug/g	96.6	<267	<279	n/a	n/a	n/a	n/a	279	n/a	U
S13T004282	Z	7440-29-1	Thorium	ug/g	99.1	<267	<279	n/a	n/a	n/a	n/a	279	n/a	U
S13T004282	Z	7440-32-6	Titanium	ug/g	98.6	<53.4	<55.9	n/a	n/a	n/a	n/a	55.9	n/a	U
S13T004282	Z	7440-28-0	Thallium	ug/g	98.8	<320	<335	n/a	n/a	n/a	n/a	335	n/a	UY
S13T004282	Z	7440-61-1	Uranium	ug/g	95.8	<1.07E+03	5.56E+03	n/a	n/a	n/a	n/a	1.12E+03	n/a	J
S13T004282	Z	7440-62-2	Vanadium	ug/g	101	<53.4	<55.9	n/a	n/a	n/a	n/a	55.9	n/a	U
S13T004282	Z	7440-33-7	Tungsten	ug/g	98.8	<320	<335	n/a	n/a	n/a	n/a	335	n/a	U
S13T004282	Z	7440-65-5	Yttrium	ug/g	101	<107	<112	n/a	n/a	n/a	n/a	112	n/a	U
S13T004282	Z	7440-66-6	Zinc	ug/g	101	<214	<224	n/a	n/a	n/a	n/a	224	n/a	U
ICP/MS														
S13T004277	A	SN-117	Tin-117	ug/g	112	<1.00E-03	<0.201	n/a	n/a	n/a	n/a	0.201	n/a	Ub
S13T004277	A	15832-50-5	Tin-126	ug/g	n/a	<2.00E-05	<4.02E-03	n/a	n/a	n/a	n/a	4.02E-03	n/a	IUb
S13T004278	A	14133-76-7	Technetium-99	ug/g	99.4	<6.00E-05	0.0438	n/a	n/a	n/a	n/a	0.0116	n/a	J
S13T004280	A	14269-63-7	Thorium-230	ug/g	n/a	<3.50E-04	<0.0687	n/a	n/a	n/a	n/a	0.0687	n/a	IU
S13T004280	A	14331-85-2	Protactinium-231	ug/g	n/a	<3.50E-04	<0.0687	n/a	n/a	n/a	n/a	0.0687	n/a	IU
S13T004280	A	TH-232	Thorium-232	ug/g	109	<0.0250	8.71	n/a	n/a	n/a	n/a	4.91	n/a	J
S13T004280	A	13968-55-3	Uranium-233	ug/g	101	<0.0100	<1.96	n/a	n/a	n/a	n/a	1.96	n/a	U
S13T004280	A	13966-29-5	Uranium-234	ug/g	n/a	<2.50E-04	0.120	n/a	n/a	n/a	n/a	0.0491	n/a	IJ
S13T004280	A	15117-96-1	Uranium-235	ug/g	110	<5.00E-04	20.8	n/a	n/a	n/a	n/a	0.0982	n/a	
S13T004280	A	13982-70-2	Uranium-236	ug/g	n/a	<2.00E-04	0.212	n/a	n/a	n/a	n/a	0.0393	n/a	IJY
S13T004280	A	13994-20-2	Neptunium-237	ug/g	100	<5.00E-03	<0.982	n/a	n/a	n/a	n/a	0.982	n/a	Ub
S13T004280	A	U-238	Uranium-238	ug/g	107	0.0656	3.18E+03	n/a	n/a	n/a	n/a	4.91	n/a	

NA = Not Analyzed, ND = Not Detected

Q - Qualitative
I - Indirect Calibration
c - RPD Outside Range
B - Blank Contamination
Y - Comment
U - Less Than Detection Limit
J - Estimated
b - MS/MSD Outside Range
E - Outside Calibration Range

C109 CLO
Data Summary Report

Sample Group: 20130402

Riser: 003

Segment Number: 9C-13-Comp B

Segment Portion: Tank Composite-Solid (Total)

Sample# R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
ICP/MS														
S13T004280	A	13982-10-0	Plutonium-242	ug/g	102	<1.73E-05	9.09E-03	n/a	n/a	n/a	n/a	3.40E-03	n/a	JY
Iodine-129 for Solids Only														
S13T004274		15046-84-1	Iodine-129	uCi/g	91.2	<1.52E-05	<1.17E-05	n/a	n/a	n/a	n/a	1.17E-05	n/a	U
Mercury by CVAA														
S13T005630	HG	7439-97-6	Mercury	ug/g	99.7	<1.10E-05	2.31	n/a	n/a	n/a	n/a	2.23E-03	n/a	
Nickel-63														
S13T004282	Z	13981-37-8	Nickel-63	uCi/g	98.3	<1.43E-03	0.0703	n/a	n/a	n/a	n/a	1.45E-03	4.35	
PCB (EPA 8082) Dry Weight Analysis by ASE prep														
S13T004276	O	12674-11-2	Aroclor 1016 Dry	ug/kg	n/a	<43.4	<58.9	n/a	n/a	n/a	n/a	58.9	n/a	U
S13T004276	O	11104-28-2	Aroclor 1221 Dry	ug/kg	n/a	<7.17	<9.74	n/a	n/a	n/a	n/a	9.74	n/a	U
S13T004276	O	11141-16-5	Aroclor 1232 Dry	ug/kg	n/a	<12.2	<16.5	n/a	n/a	n/a	n/a	16.5	n/a	U
S13T004276	O	53469-21-9	Aroclor 1242 Dry	ug/kg	n/a	<29.0	<39.4	n/a	n/a	n/a	n/a	39.4	n/a	U
S13T004276	O	12672-29-6	Aroclor 1248 Dry	ug/kg	n/a	<16.4	<22.3	n/a	n/a	n/a	n/a	22.3	n/a	U
S13T004276	O	11097-69-1	Aroclor 1254 Dry	ug/kg	84.7	<10.5	<14.3	n/a	n/a	n/a	n/a	14.3	n/a	U
S13T004276	O	11096-82-5	Aroclor 1260 Dry	ug/kg	n/a	<17.0	<23.1	n/a	n/a	n/a	n/a	23.1	n/a	U
Plutonium-241 by LSC														
S13T004282	Z	14119-32-5	Plutonium-241	uCi/g	84.0	<6.51E-04	0.0565	n/a	n/a	n/a	n/a	5.62E-04	0.77	
Pu238,239 by TRU-SPEC Resin														
S13T004282	Z	PU-239/240	Plutonium-239/240	uCi/g	116	1.01E-04	0.0507	n/a	n/a	n/a	n/a	4.57E-05	0.97	
S13T004282	Z	13981-16-3	Plutonium-238	uCi/g	n/a	<5.02E-05	1.64E-03	n/a	n/a	n/a	n/a	4.22E-05	6.91	
SVOA 222S SOLID														
S13T004275	O	126-73-8	Tributyl phosphate	ug/kg	110	<719	<626	n/a	n/a	n/a	n/a	626	n/a	U
Selenium-79 by LSC														
S13T004283	E	15758-45-9	Selenium-79	uCi/g	n/a	<3.17E-04	<3.49E-04	n/a	n/a	n/a	n/a	3.49E-04	n/a	U
Solids Recovered - Weight														
S13T004260		SLDWT01	Solid Weight	g	n/a	n/a	427	n/a	n/a	n/a	n/a	0.100	n/a	
Sr-89/90 by GPC														
S13T004282	Z	SR-89/90	Strontium-89/90	uCi/g	103	0.0235	218	n/a	n/a	n/a	n/a	0.0211	0.516	

NA = Not Analyzed, ND = Not Detected

Q - Qualitative
Y - Comment
E - Outside Calibration Range
I - Indirect Calibration
U - Less Than Detection Limit
c - RPD Outside Range
J - Estimated
B - Blank Contamination
b - MS/MSD Outside Range

C109 CLO
Data Summary Report

Sample Group: 20130402

Riser: 003

Segment Number: 9C-13-Comp B

Segment Portion: Tank Composite-Solid (Total)

Sample# R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
Technetium - Liq. Scint.														
S13T004283	E	14133-76-7	Technetium-99	uCi/g	98.9	<1.67E-04	<1.90E-04	n/a	n/a	n/a	n/a	1.90E-04	n/a	U
Thorium														
S13T004282	Z	14274-82-9	Thorium-228	uCi/g	n/a	<1.63E-05	3.14E-05	n/a	n/a	n/a	n/a	2.69E-05	36.42	J
Tritium (H3) by LSC														
S13T004281	W	10028-17-8	Tritium	uCi/g	87.5	<3.92E-04	<3.78E-04	n/a	n/a	n/a	n/a	3.78E-04	n/a	U
VOA Solid Samples from Tanks														
S13T004266		78-93-3	2-Butanone	ug/kg	107	<19.6	<18.3	n/a	n/a	n/a	n/a	18.3	n/a	U
S13T004266		67-64-1	Acetone	ug/kg	107	<22.0	94.5	n/a	n/a	n/a	n/a	20.5	n/a	J
S13T004266		110-54-3	Hexane	ug/kg	102	<2.57	16.0	n/a	n/a	n/a	n/a	2.39	n/a	J
S13T004266		106-42-3	Xylene (m & p)	ug/kg	102	<1.67	<1.56	n/a	n/a	n/a	n/a	1.56	n/a	U
S13T004266		108-10-1	Hexone	ug/kg	116	<17.1	<15.9	n/a	n/a	n/a	n/a	15.9	n/a	U
S13T004266		95-47-6	o-Xylene	ug/kg	107	<0.920	<0.857	n/a	n/a	n/a	n/a	0.857	n/a	U
S13T004266		100-42-5	Styrene	ug/kg	113	<1.27	1.79	n/a	n/a	n/a	n/a	1.18	n/a	J
S13T004266		1330-20-7	Xylenes (total)	ug/kg	104	<2.03	<1.89	n/a	n/a	n/a	n/a	1.89	n/a	U
S13T004266		79-01-6	Trichloroethene	ug/kg	114	<1.21	<1.13	n/a	n/a	n/a	n/a	1.13	n/a	Ub
pH on Solid Samples														
S13T004273		PH	pH	unitless	n/a	n/a	13.5	n/a	n/a	n/a	n/a	0.0100	n/a	E

NA = Not Analyzed, ND = Not Detected

Q - Qualitative
I - Indirect Calibration
c - RPD Outside Range
B - Blank Contamination
Y - Comment
U - Less Than Detection Limit
J - Estimated
b - MS/MSD Outside Range
E - Outside Calibration Range

C109 CLO
Data Summary Report

Sample Group: 20130402

Riser: 003

Segment Number: 9C-13-Comp C

Segment Portion: Tank Composite-Solid (Total)

Sample# R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
% Water by TGA														
S13T004301		%WATER	Percent water	%	103	n/a	32.6	n/a	n/a	n/a	n/a	0.0100	n/a	
Am241,Cm243 by TRU-Spec Resin														
S13T004309	Z	CM-243/244	Curium-243/244	uCi/g	n/a	<5.16E-04	<7.32E-05	n/a	n/a	n/a	n/a	7.32E-05	n/a	U
S13T004309	Z	14596-10-2	Americium-241	uCi/g	102	6.53E-05	0.0238	n/a	n/a	n/a	n/a	5.66E-05	1.77	c
S13T004309	Z	15510-73-3	Curium-242	uCi/g	n/a	<2.39E-05	<5.30E-05	n/a	n/a	n/a	n/a	5.30E-05	n/a	U
Ammonium by IC														
S13T004295	S	14798-03-9	Ammonium	ug/g	106	0.0430	2.55	n/a	n/a	n/a	n/a	0.486	n/a	BJ
Anions and Small Organic Acids														
S13T004306	W	16984-48-8	Fluoride	ug/g	101	<1.61E-03	6.65E+03	n/a	n/a	n/a	n/a	19.9	n/a	c
S13T004306	W	666-14-8	Glycolate	ug/g	101	<9.37E-03	<63.7	n/a	n/a	n/a	n/a	63.7	n/a	U
S13T004306	W	71-50-1	Acetate	ug/g	103	<6.04E-03	<111	n/a	n/a	n/a	n/a	111	n/a	U
S13T004306	W	12311-97-6	Formate	ug/g	103	<4.67E-03	<167	n/a	n/a	n/a	n/a	167	n/a	U
S13T004306	W	16887-00-6	Chloride	ug/g	102	0.0140	<63.7	n/a	n/a	n/a	n/a	63.7	n/a	BU
S13T004306	W	14797-65-0	Nitrite	ug/g	98.9	0.0650	293	n/a	n/a	n/a	n/a	279	n/a	BJ
S13T004306	W	14808-79-8	Sulfate	ug/g	103	0.0710	241	n/a	n/a	n/a	n/a	183	n/a	BJ
S13T004306	W	338-70-5	Oxalate	ug/g	100	<0.0231	<104	n/a	n/a	n/a	n/a	104	n/a	U
S13T004306	W	24959-67-9	Bromide	ug/g	101	<0.0580	<59.7	n/a	n/a	n/a	n/a	59.7	n/a	U
S13T004306	W	14797-55-8	Nitrate	ug/g	103	0.104	319	n/a	n/a	n/a	n/a	251	n/a	BJ
S13T004306	W	14265-44-2	Phosphate	ug/g	101	<0.0167	7.02E+04	n/a	n/a	n/a	n/a	79.6	n/a	c
Bulk Density of Sample in 11A Hot Cell														
S13T004296		BULKDENSI	Bulk Density	g/mL	n/a	n/a	1.79	n/a	n/a	n/a	n/a	1.00E-03	n/a	
Carbon 14 by LSC														
S13T004308	W	14762-75-5	Carbon-14	uCi/g	89.4	<5.91E-05	<5.55E-05	n/a	n/a	n/a	n/a	5.55E-05	n/a	U
Cyanide EDTA/Distillation														
S13T004301		57-12-5	Cyanide	ug/g	95.8	<8.12E-03	30.2	n/a	n/a	n/a	n/a	0.720	n/a	
GEA														
S13T004309	Z	10198-40-0	Cobalt-60	uCi/g	97.8	<0.0169	<0.0442	n/a	n/a	n/a	n/a	0.0442	n/a	U
S13T004309	Z	14234-35-6	Antimony-125	uCi/g	101	<0.0490	<0.131	n/a	n/a	n/a	n/a	0.131	n/a	U

NA = Not Analyzed, ND = Not Detected

Q - Qualitative
Y - Comment
E - Outside Calibration Range
I - Indirect Calibration
U - Less Than Detection Limit
c - RPD Outside Range
J - Estimated
B - Blank Contamination
b - MS/MSD Outside Range

C109 CLO
Data Summary Report

Sample Group: 20130402

Riser: 003

Segment Number: 9C-13-Comp C

Segment Portion: Tank Composite-Solid (Total)

Sample# R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
GEA														
S13T004309	Z	10045-97-3	Cesium-137	uCi/g	101	<0.0276	4.24	n/a	n/a	n/a	n/a	0.0507	1.06	
S13T004309	Z	14683-23-9	Europium-152	uCi/g	n/a	<0.0504	<0.107	n/a	n/a	n/a	n/a	0.107	n/a	U
S13T004309	Z	15585-10-1	Europium-154	uCi/g	n/a	<0.0516	<0.119	n/a	n/a	n/a	n/a	0.119	n/a	U
S13T004309	Z	14391-16-3	Europium-155	uCi/g	n/a	<0.0360	<0.0992	n/a	n/a	n/a	n/a	0.0992	n/a	U
ICP-AES														
S13T004307	A	7440-22-4	Silver	ug/g	100	<1.00E-03	1.88	n/a	n/a	n/a	n/a	0.992	n/a	J
S13T004307	A	7429-90-5	Aluminum	ug/g	101	<6.00E-03	1.78E+05	n/a	n/a	n/a	n/a	5.95	n/a	
S13T004307	A	7440-38-2	Arsenic	ug/g	99.5	<5.00E-03	10.4	n/a	n/a	n/a	n/a	4.96	n/a	J
S13T004307	A	7440-42-8	Boron	ug/g	94.6	<1.00E-03	<0.992	n/a	n/a	n/a	n/a	0.992	n/a	U
S13T004307	A	7440-39-3	Barium	ug/g	104	<1.00E-03	7.22	n/a	n/a	n/a	n/a	0.992	n/a	J
S13T004307	A	7440-41-7	Beryllium	ug/g	99.1	<1.00E-03	<0.992	n/a	n/a	n/a	n/a	0.992	n/a	U
S13T004307	A	7440-69-9	Bismuth	ug/g	101	<6.00E-03	122	n/a	n/a	n/a	n/a	5.95	n/a	
S13T004307	A	7440-70-2	Calcium	ug/g	107	0.104	1.16E+03	n/a	n/a	n/a	n/a	79.4	n/a	
S13T004307	A	7440-43-9	Cadmium	ug/g	102	<1.00E-03	<0.992	n/a	n/a	n/a	n/a	0.992	n/a	U
S13T004307	A	7440-45-1	Cerium	ug/g	118	<6.00E-03	7.81	n/a	n/a	n/a	n/a	5.95	n/a	J
S13T004307	A	7440-48-4	Cobalt	ug/g	104	<1.00E-03	<0.992	n/a	n/a	n/a	n/a	0.992	n/a	U
S13T004307	A	7440-47-3	Chromium	ug/g	88.2	<1.00E-03	14.3	n/a	n/a	n/a	n/a	1.04	n/a	
S13T004307	A	7440-50-8	Copper	ug/g	104	<2.00E-03	80.1	n/a	n/a	n/a	n/a	1.98	n/a	
S13T004307	A	7440-53-1	Europium	ug/g	118	<1.00E-03	<0.992	n/a	n/a	n/a	n/a	0.992	n/a	U
S13T004307	A	7439-89-6	Iron	ug/g	99.3	<0.0100	4.67E+03	n/a	n/a	n/a	n/a	9.92	n/a	
S13T004307	A	7440-09-7	Potassium	ug/g	102	<0.0200	<19.8	n/a	n/a	n/a	n/a	19.8	n/a	U
S13T004307	A	7439-91-0	Lanthanum	ug/g	105	<1.00E-03	13.5	n/a	n/a	n/a	n/a	0.992	n/a	
S13T004307	A	7439-93-2	Lithium	ug/g	111	<1.00E-03	1.31	n/a	n/a	n/a	n/a	0.992	n/a	J
S13T004307	A	7439-95-4	Magnesium	ug/g	102	<2.00E-03	88.3	n/a	n/a	n/a	n/a	1.98	n/a	
S13T004307	A	7439-96-5	Manganese	ug/g	101	<1.00E-03	25.5	n/a	n/a	n/a	n/a	0.992	n/a	
S13T004307	A	7439-98-7	Molybdenum	ug/g	101	<1.00E-03	2.42	n/a	n/a	n/a	n/a	0.992	n/a	J
S13T004307	A	7440-23-5	Sodium	ug/g	104	<0.0400	8.30E+04	n/a	n/a	n/a	n/a	39.7	n/a	

NA = Not Analyzed, ND = Not Detected

Q - Qualitative
I - Indirect Calibration
c - RPD Outside Range
B - Blank Contamination
Y - Comment
U - Less Than Detection Limit
J - Estimated
b - MS/MSD Outside Range
E - Outside Calibration Range

C109 CLO
Data Summary Report

Sample Group: 20130402

Riser: 003

Segment Number: 9C-13-Comp C

Segment Portion: Tank Composite-Solid (Total)

Sample# R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
ICP-AES														
S13T004307	A	7440-00-8	Neodymium	ug/g	116	<3.00E-03	15.9	n/a	n/a	n/a	n/a	2.98	n/a	J
S13T004307	A	7440-02-0	Nickel	ug/g	102	<1.00E-03	1.15E+03	n/a	n/a	n/a	n/a	0.992	n/a	
S13T004307	A	7723-14-0	Phosphorus	ug/g	96.9	5.58E-03	1.87E+04	n/a	n/a	n/a	n/a	2.98	n/a	
S13T004307	A	7439-92-1	Lead	ug/g	101	<6.00E-03	404	n/a	n/a	n/a	n/a	5.95	n/a	
S13T004307	A	7440-05-3	Palladium	ug/g	113	<9.00E-03	<8.93	n/a	n/a	n/a	n/a	8.93	n/a	U
S13T004307	A	7440-17-7	Rubidium	ug/g	109	<0.0300	<29.8	n/a	n/a	n/a	n/a	29.8	n/a	U
S13T004307	A	7440-16-6	Rhodium	ug/g	112	<8.00E-03	8.71	n/a	n/a	n/a	n/a	7.94	n/a	J
S13T004307	A	7440-18-8	Ruthenium	ug/g	107	<4.00E-03	<3.97	n/a	n/a	n/a	n/a	3.97	n/a	U
S13T004307	A	7704-34-9	Sulfur	ug/g	95.8	6.01E-03	62.7	n/a	n/a	n/a	n/a	4.96	n/a	
S13T004307	A	7440-36-0	Antimony	ug/g	95.9	<6.00E-03	<5.95	n/a	n/a	n/a	n/a	5.95	n/a	U
S13T004307	A	7782-49-2	Selenium	ug/g	102	<6.00E-03	<5.95	n/a	n/a	n/a	n/a	5.95	n/a	U
S13T004307	A	7440-19-9	Samarium	ug/g	116	0.0309	40.8	n/a	n/a	n/a	n/a	4.96	n/a	J
S13T004307	A	7440-31-5	Tin	ug/g	108	<3.00E-03	<2.98	n/a	n/a	n/a	n/a	2.98	n/a	U
S13T004307	A	7440-24-6	Strontium	ug/g	102	<2.00E-03	29.1	n/a	n/a	n/a	n/a	1.98	n/a	
S13T004307	A	13494-80-9	Tellurium	ug/g	107	<5.00E-03	<4.96	n/a	n/a	n/a	n/a	4.96	n/a	U
S13T004307	A	7440-29-1	Thorium	ug/g	113	<5.00E-03	7.18	n/a	n/a	n/a	n/a	4.96	n/a	J
S13T004307	A	7440-32-6	Titanium	ug/g	96.8	<1.00E-03	3.61	n/a	n/a	n/a	n/a	0.992	n/a	J
S13T004307	A	7440-28-0	Thallium	ug/g	109	<6.00E-03	7.83	n/a	n/a	n/a	n/a	5.95	n/a	J
S13T004307	A	7440-62-2	Vanadium	ug/g	102	<1.00E-03	<0.992	n/a	n/a	n/a	n/a	0.992	n/a	U
S13T004307	A	7440-33-7	Tungsten	ug/g	111	<6.00E-03	<5.95	n/a	n/a	n/a	n/a	5.95	n/a	Ub
S13T004307	A	7440-65-5	Yttrium	ug/g	113	<2.00E-03	2.62	n/a	n/a	n/a	n/a	1.98	n/a	J
S13T004307	A	7440-66-6	Zinc	ug/g	97.7	<4.00E-03	52.6	n/a	n/a	n/a	n/a	3.97	n/a	
S13T004309	Z	7440-22-4	Silver	ug/g	102	<53.4	53.7	n/a	n/a	n/a	n/a	49.5	n/a	J
S13T004309	Z	7429-90-5	Aluminum	ug/g	99.6	674	1.64E+05	n/a	n/a	n/a	n/a	297	n/a	
S13T004309	Z	7440-38-2	Arsenic	ug/g	98.5	<267	<248	n/a	n/a	n/a	n/a	248	n/a	U
S13T004309	Z	7440-39-3	Barium	ug/g	101	<53.4	<49.5	n/a	n/a	n/a	n/a	49.5	n/a	U
S13T004309	Z	7440-41-7	Beryllium	ug/g	100	<53.4	<49.5	n/a	n/a	n/a	n/a	49.5	n/a	U

NA = Not Analyzed, ND = Not Detected

Q - Qualitative
I - Indirect Calibration
c - RPD Outside Range
B - Blank Contamination
Y - Comment
U - Less Than Detection Limit
J - Estimated
b - MS/MSD Outside Range
E - Outside Calibration Range

C109 CLO
Data Summary Report

Sample Group: 20130402

Riser: 003

Segment Number: 9C-13-Comp C

Segment Portion: Tank Composite-Solid (Total)

Sample# R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
ICP-AES														
S13T004309	Z	7440-69-9	Bismuth	ug/g	99.7	<320	406	n/a	n/a	n/a	n/a	297	n/a	J
S13T004309	Z	7440-70-2	Calcium	ug/g	102	<4.27E+03	<3.96E+03	n/a	n/a	n/a	n/a	3.96E+03	n/a	U
S13T004309	Z	7440-43-9	Cadmium	ug/g	101	<53.4	<49.5	n/a	n/a	n/a	n/a	49.5	n/a	UY
S13T004309	Z	7440-45-1	Cerium	ug/g	93.7	<320	386	n/a	n/a	n/a	n/a	297	n/a	J
S13T004309	Z	7440-48-4	Cobalt	ug/g	101	<53.4	<49.5	n/a	n/a	n/a	n/a	49.5	n/a	U
S13T004309	Z	7440-47-3	Chromium	ug/g	101	<53.4	<49.5	n/a	n/a	n/a	n/a	49.5	n/a	U
S13T004309	Z	7440-50-8	Copper	ug/g	101	<107	<99.0	n/a	n/a	n/a	n/a	99.0	n/a	U
S13T004309	Z	7440-53-1	Europium	ug/g	99.8	<53.4	<49.5	n/a	n/a	n/a	n/a	49.5	n/a	U
S13T004309	Z	7439-89-6	Iron	ug/g	102	<534	5.84E+03	n/a	n/a	n/a	n/a	495	n/a	
S13T004309	Z	7439-91-0	Lanthanum	ug/g	101	<53.4	<49.5	n/a	n/a	n/a	n/a	49.5	n/a	U
S13T004309	Z	7439-93-2	Lithium	ug/g	105	<53.4	<49.5	n/a	n/a	n/a	n/a	49.5	n/a	U
S13T004309	Z	7439-95-4	Magnesium	ug/g	102	<107	100	n/a	n/a	n/a	n/a	99.0	n/a	J
S13T004309	Z	7439-96-5	Manganese	ug/g	103	<53.4	<49.5	n/a	n/a	n/a	n/a	49.5	n/a	U
S13T004309	Z	7439-98-7	Molybdenum	ug/g	95.9	<53.4	<49.5	n/a	n/a	n/a	n/a	49.5	n/a	U
S13T004309	Z	7440-23-5	Sodium	ug/g	100	<2.14E+03	6.67E+04	n/a	n/a	n/a	n/a	1.98E+03	n/a	
S13T004309	Z	7440-00-8	Neodymium	ug/g	98.5	<160	<149	n/a	n/a	n/a	n/a	149	n/a	U
S13T004309	Z	7440-02-0	Nickel	ug/g	102	<53.4	1.05E+03	n/a	n/a	n/a	n/a	49.5	n/a	
S13T004309	Z	7440-30-1	Niobium	ug/g	98.1	<160	<149	n/a	n/a	n/a	n/a	149	n/a	U
S13T004309	Z	7723-14-0	Phosphorus	ug/g	97.9	<160	1.25E+04	n/a	n/a	n/a	n/a	149	n/a	c
S13T004309	Z	7439-92-1	Lead	ug/g	102	<320	411	n/a	n/a	n/a	n/a	297	n/a	J
S13T004309	Z	7440-05-3	Palladium	ug/g	102	<481	<446	n/a	n/a	n/a	n/a	446	n/a	U
S13T004309	Z	7440-10-0	Praseodymium	ug/g	97.5	<214	<198	n/a	n/a	n/a	n/a	198	n/a	U
S13T004309	Z	7440-16-6	Rhodium	ug/g	93.2	<427	<396	n/a	n/a	n/a	n/a	396	n/a	U
S13T004309	Z	7440-18-8	Ruthenium	ug/g	102	<214	<198	n/a	n/a	n/a	n/a	198	n/a	U
S13T004309	Z	7704-34-9	Sulfur	ug/g	99.0	<267	<248	n/a	n/a	n/a	n/a	248	n/a	U
S13T004309	Z	7440-36-0	Antimony	ug/g	95.9	<320	<297	n/a	n/a	n/a	n/a	297	n/a	U
S13T004309	Z	7782-49-2	Selenium	ug/g	98.4	<320	<297	n/a	n/a	n/a	n/a	297	n/a	U

NA = Not Analyzed, ND = Not Detected

Q - Qualitative
I - Indirect Calibration
c - RPD Outside Range
B - Blank Contamination
Y - Comment
U - Less Than Detection Limit
J - Estimated
b - MS/MSD Outside Range
E - Outside Calibration Range

30 - Jul - 2013 10:15:43
DSRHardcopyWOLimits 2.7.31
DSR.Jar v. 2.7.31

C109 CLO
Data Summary Report

Sample Group: 20130402

Riser: 003

Segment Number: 9C-13-Comp C

Segment Portion: Tank Composite-Solid (Total)

Sample# R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
ICP-AES														
S13T004309	Z	7440-21-3	Silicon	ug/g	96.0	<267	1.09E+03	n/a	n/a	n/a	n/a	248	n/a	J
S13T004309	Z	7440-19-9	Samarium	ug/g	97.3	<267	<248	n/a	n/a	n/a	n/a	248	n/a	U
S13T004309	Z	7440-31-5	Tin	ug/g	97.8	<160	<149	n/a	n/a	n/a	n/a	149	n/a	U
S13T004309	Z	7440-24-6	Strontium	ug/g	102	<107	<99.0	n/a	n/a	n/a	n/a	99.0	n/a	U
S13T004309	Z	7440-25-7	Tantalum	ug/g	99.8	<267	<248	n/a	n/a	n/a	n/a	248	n/a	U
S13T004309	Z	13494-80-9	Tellurium	ug/g	96.6	<267	<248	n/a	n/a	n/a	n/a	248	n/a	U
S13T004309	Z	7440-29-1	Thorium	ug/g	99.1	<267	<248	n/a	n/a	n/a	n/a	248	n/a	U
S13T004309	Z	7440-32-6	Titanium	ug/g	98.6	<53.4	<49.5	n/a	n/a	n/a	n/a	49.5	n/a	U
S13T004309	Z	7440-28-0	Thallium	ug/g	98.8	<320	<297	n/a	n/a	n/a	n/a	297	n/a	UY
S13T004309	Z	7440-61-1	Uranium	ug/g	95.8	<1.07E+03	2.06E+03	n/a	n/a	n/a	n/a	990	n/a	J
S13T004309	Z	7440-62-2	Vanadium	ug/g	101	<53.4	<49.5	n/a	n/a	n/a	n/a	49.5	n/a	U
S13T004309	Z	7440-33-7	Tungsten	ug/g	98.8	<320	<297	n/a	n/a	n/a	n/a	297	n/a	U
S13T004309	Z	7440-65-5	Yttrium	ug/g	101	<107	<99.0	n/a	n/a	n/a	n/a	99.0	n/a	U
S13T004309	Z	7440-66-6	Zinc	ug/g	101	<214	<198	n/a	n/a	n/a	n/a	198	n/a	U
ICP/MS														
S13T004304	A	SN-117	Tin-117	ug/g	112	<1.00E-03	<0.204	n/a	n/a	n/a	n/a	0.204	n/a	Ub
S13T004304	A	15832-50-5	Tin-126	ug/g	n/a	<2.00E-05	<4.08E-03	n/a	n/a	n/a	n/a	4.08E-03	n/a	IUb
S13T004305	A	14133-76-7	Technetium-99	ug/g	99.4	<6.00E-05	0.0312	n/a	n/a	n/a	n/a	0.0118	n/a	J
S13T004307	A	14269-63-7	Thorium-230	ug/g	n/a	<3.50E-04	<0.0695	n/a	n/a	n/a	n/a	0.0695	n/a	IU
S13T004307	A	14331-85-2	Protactinium-231	ug/g	n/a	<3.50E-04	<0.0695	n/a	n/a	n/a	n/a	0.0695	n/a	IU
S13T004307	A	TH-232	Thorium-232	ug/g	109	<0.0250	<4.96	n/a	n/a	n/a	103	4.96	n/a	U
S13T004307	A	13968-55-3	Uranium-233	ug/g	101	<0.0100	<1.98	n/a	n/a	n/a	124	1.98	n/a	U
S13T004307	A	13966-29-5	Uranium-234	ug/g	n/a	<2.50E-04	<0.0496	n/a	n/a	n/a	n/a	0.0496	n/a	IU
S13T004307	A	15117-96-1	Uranium-235	ug/g	110	<5.00E-04	9.60	n/a	n/a	n/a	112	0.0992	n/a	
S13T004307	A	13982-70-2	Uranium-236	ug/g	n/a	<2.00E-04	0.0575	n/a	n/a	n/a	n/a	0.0397	n/a	IJY
S13T004307	A	13994-20-2	Neptunium-237	ug/g	100	<5.00E-03	<0.992	n/a	n/a	n/a	133	0.992	n/a	Ub
S13T004307	A	U-238	Uranium-238	ug/g	107	0.0656	1.52E+03	n/a	n/a	n/a	99.8	4.96	n/a	

NA = Not Analyzed, ND = Not Detected

Q - Qualitative
I - Indirect Calibration
c - RPD Outside Range
B - Blank Contamination
Y - Comment
U - Less Than Detection Limit
J - Estimated
b - MS/MSD Outside Range
E - Outside Calibration Range

C109 CLO
Data Summary Report

Sample Group: 20130402

Riser: 003

Segment Number: 9C-13-Comp C

Segment Portion: Tank Composite-Solid (Total)

Sample# R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
ICP/MS														
S13T004307	A	13982-10-0	Plutonium-242	ug/g	102	<1.73E-05	<3.43E-03	n/a	n/a	n/a	122	3.43E-03	n/a	U
Iodine-129 for Solids Only														
S13T004301		15046-84-1	Iodine-129	uCi/g	91.2	<1.52E-05	<1.38E-05	n/a	n/a	n/a	n/a	1.38E-05	n/a	U
Mercury by CVAA														
S13T005631	HG	7439-97-6	Mercury	ug/g	99.7	<1.10E-05	0.909	n/a	n/a	n/a	n/a	2.14E-03	n/a	
Nickel-63														
S13T004309	Z	13981-37-8	Nickel-63	uCi/g	98.3	<1.43E-03	0.0796	n/a	n/a	n/a	n/a	1.22E-03	3.595	
PCB (EPA 8082) Dry Weight Analysis by ASE prep														
S13T004303	O	12674-11-2	Aroclor 1016 Dry	ug/kg	n/a	<43.4	<63.1	n/a	n/a	n/a	n/a	63.1	n/a	U
S13T004303	O	11104-28-2	Aroclor 1221 Dry	ug/kg	n/a	<7.17	<10.4	n/a	n/a	n/a	n/a	10.4	n/a	U
S13T004303	O	11141-16-5	Aroclor 1232 Dry	ug/kg	n/a	<12.2	<17.7	n/a	n/a	n/a	n/a	17.7	n/a	U
S13T004303	O	53469-21-9	Aroclor 1242 Dry	ug/kg	n/a	<29.0	<42.2	n/a	n/a	n/a	n/a	42.2	n/a	U
S13T004303	O	12672-29-6	Aroclor 1248 Dry	ug/kg	n/a	<16.4	<23.9	n/a	n/a	n/a	n/a	23.9	n/a	U
S13T004303	O	11097-69-1	Aroclor 1254 Dry	ug/kg	84.7	<10.5	<15.3	n/a	n/a	n/a	n/a	15.3	n/a	U
S13T004303	O	11096-82-5	Aroclor 1260 Dry	ug/kg	n/a	<17.0	<24.7	n/a	n/a	n/a	n/a	24.7	n/a	U
Plutonium-241 by LSC														
S13T004309	Z	14119-32-5	Plutonium-241	uCi/g	84.0	<6.51E-04	0.0490	n/a	n/a	n/a	n/a	4.41E-04	0.73	
Pu238,239 by TRU-SPEC Resin														
S13T004309	Z	PU-239/240	Plutonium-239/240	uCi/g	116	1.01E-04	0.0228	n/a	n/a	n/a	n/a	3.60E-05	1.33	
S13T004309	Z	13981-16-3	Plutonium-238	uCi/g	n/a	<5.02E-05	8.85E-04	n/a	n/a	n/a	n/a	4.16E-05	9.82	
SVOA 222S SOLID														
S13T004302	O	126-73-8	Tributyl phosphate	ug/kg	110	<719	<646	n/a	n/a	n/a	n/a	646	n/a	U
Selenium-79 by LSC														
S13T004310	E	15758-45-9	Selenium-79	uCi/g	n/a	<3.17E-04	<3.44E-04	n/a	n/a	n/a	n/a	3.44E-04	n/a	U
Solids Recovered - Weight														
S13T004287		SLDWT01	Solid Weight	g	n/a	n/a	450	n/a	n/a	n/a	n/a	0.100	n/a	
Sr-89/90 by GPC														
S13T004309	Z	SR-89/90	Strontium-89/90	uCi/g	103	0.0235	161	n/a	n/a	n/a	n/a	0.0186	0.565	

NA = Not Analyzed, ND = Not Detected

Q - Qualitative
I - Indirect Calibration
c - RPD Outside Range
B - Blank Contamination
Y - Comment
U - Less Than Detection Limit
J - Estimated
b - MS/MSD Outside Range
E - Outside Calibration Range

C109 CLO
Data Summary Report

Sample Group: 20130402

Riser: 003

Segment Number: 9C-13-Comp C

Segment Portion: Tank Composite-Solid (Total)

Sample# R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
Technetium - Liq. Scint.														
S13T004310	E	14133-76-7	Technetium-99	uCi/g	98.9	<1.67E-04	<1.77E-04	n/a	n/a	n/a	n/a	1.77E-04	n/a	U
Thorium														
S13T004309	Z	14274-82-9	Thorium-228	uCi/g	n/a	<1.63E-05	<2.00E-05	n/a	n/a	n/a	n/a	2.00E-05	n/a	U
Tritium (H3) by LSC														
S13T004308	W	10028-17-8	Tritium	uCi/g	87.5	<3.92E-04	<3.67E-04	n/a	n/a	n/a	n/a	3.67E-04	n/a	U
VOA Solid Samples from Tanks														
S13T004293		78-93-3	2-Butanone	ug/kg	107	<19.6	<18.7	n/a	n/a	n/a	n/a	18.7	n/a	U
S13T004293		67-64-1	Acetone	ug/kg	107	<22.0	84.1	n/a	n/a	n/a	n/a	20.9	n/a	J
S13T004293		110-54-3	Hexane	ug/kg	102	<2.57	20.2	n/a	n/a	n/a	n/a	2.45	n/a	J
S13T004293		106-42-3	Xylene (m & p)	ug/kg	102	<1.67	<1.59	n/a	n/a	n/a	n/a	1.59	n/a	U
S13T004293		108-10-1	Hexone	ug/kg	116	<17.1	<16.3	n/a	n/a	n/a	n/a	16.3	n/a	U
S13T004293		95-47-6	o-Xylene	ug/kg	107	<0.920	<0.876	n/a	n/a	n/a	n/a	0.876	n/a	U
S13T004293		1330-20-7	Xylenes (total)	ug/kg	104	<2.03	<1.94	n/a	n/a	n/a	n/a	1.94	n/a	U
S13T004293		79-01-6	Trichloroethene	ug/kg	114	<1.21	<1.15	n/a	n/a	n/a	n/a	1.15	n/a	Ub
pH on Solid Samples														
S13T004300		PH	pH	unitless	n/a	n/a	13.4	n/a	n/a	n/a	n/a	0.0100	n/a	E

NA = Not Analyzed, ND = Not Detected

Q - Qualitative
Y - Comment
E - Outside Calibration Range
I - Indirect Calibration
U - Less Than Detection Limit
c - RPD Outside Range
J - Estimated
B - Blank Contamination
b - MS/MSD Outside Range

Attachment 2

TENTATIVELY IDENTIFIED COMPOUNDS

30-Jul-2013 8:5622
DSRTICHardcopy 2.7.32
DSR.Jar v. 2.7.31

C109 CLO
Opportunistic and Ignored Analyte Results

Sample Group: 20130402

Riser: 003

Segment Number: 9C-13-Comp A

Segment Portion: Tank Composite-Solid (Total)

Sample#	R	A#	QC Type	Analyte	CAS No.	Retention Time (Minutes)	Unit	Result	Qual Flags
SVOA 222S SOLID									
S13T004247		O		Chloroform	67-66-3	2.92	ug/kg	4.3E+03	BJNT
S13T004247		O		3-methyl-2-Butanone	563-80-4	3.22	ug/kg	2.8E+03	JNT
S13T004247		O		3-Penten-2-ol	1569-50-2	3.45	ug/kg	2.9E+03	BJNT
S13T004247		O	DUP	Trichloromethane	67-66-3	2.92	ug/kg	4.1E+03	JT
S13T004247		O	DUP	3-methyl-2-Butanone	563-80-4	3.22	ug/kg	2.6E+03	JT
S13T004247		O	DUP	Unknown-1		3.45	ug/kg	2.7E+03	JT
S13T004247		O	DUP	1,2-Benzenedicarboxyli	84-69-5	14.94	ug/kg	2.9E+03	JT
S13T004247		O	BLNK	Trichloromethane	67-66-3	2.92	ug/kg	3.0E+03	JT
S13T004247		O	BLNK	Unknown-1		3.22	ug/kg	2.8E+03	JT
S13T004247		O	BLNK	3-Penten-2-ol	1569-50-2	3.45	ug/kg	2.5E+03	JT
VOA Solid Samples from Tanks									
S13T004239			BLNK	Methane, dibromofluoro	1868-53-7	10.15	ug/kg	210	JT

NA = Not Analyzed, ND = Not Detected

U - Less Than Detection Limit
J - Estimated
Q - Qualitative
a - LCS Outside Range
b - MS/MSD Outside Range
B - Blank Contamination
T - Tentatively Identified Compound
N - Named TIC

C109 CLO

Opportunistic and Ignored Analyte Results

Sample Group: 20130402

Riser: 003

Segment Number: 9C-13-Comp B

Segment Portion: Tank Composite-Solid (Total)

Sample#	R	A#	QC Type	Analyte	CAS No.	Retention Time (Minutes)	Unit	Result	Qual Flags
SVOA 222S SOLID									
S13T004275		O		Chloroform	67-66-3	2.93	ug/kg	3.8E+03	BJNT
S13T004275		O		Unknown-1		3.23	ug/kg	2.5E+03	BJT
S13T004275		O		Unknown-2		3.45	ug/kg	2.3E+03	JT
S13T004275		O	BLNK	Trichloromethane	67-66-3	2.92	ug/kg	3.0E+03	JT
S13T004275		O	BLNK	Unknown-1		3.22	ug/kg	2.8E+03	JT
S13T004275		O	BLNK	3-Penten-2-ol	1569-50-2	3.45	ug/kg	2.5E+03	JT
VOA Solid Samples from Tanks									
S13T004266				1-Hexanol, 2-ethyl-	104-76-7	16.41	ug/kg	97	JNT
S13T004266			BLNK	Methane, dibromofluoro	1868-53-7	10.15	ug/kg	210	JT

NA = Not Analyzed, ND = Not Detected

U - Less Than Detection Limit
J - Estimated
Q - Qualitative
a - LCS Outside Range
b - MS/MSD Outside Range
B - Blank Contamination
T - Tentatively Identified Compound
N - Named TIC

C109 CLO
Opportunistic and Ignored Analyte Results

Sample Group: 20130402

Riser: 003

Segment Number: 9C-13-Comp C

Segment Portion: Tank Composite-Solid (Total)

Sample#	R	A#	QC Type	Analyte	CAS No.	Retention Time (Minutes)	Unit	Result	Qual Flags
SVOA 222S SOLID									
S13T004302		O		Chloroform	67-66-3	2.92	ug/kg	3.5E+03	BJNT
S13T004302		O		Unknown-1		3.22	ug/kg	2.8E+03	BJT
S13T004302		O		3-Penten-2-ol	1569-50-2	3.45	ug/kg	2.8E+03	BJNT
S13T004302		O	BLNK	Trichloromethane	67-66-3	2.92	ug/kg	3.0E+03	JT
S13T004302		O	BLNK	Unknown-1		3.22	ug/kg	2.8E+03	JT
S13T004302		O	BLNK	3-Penten-2-ol	1569-50-2	3.45	ug/kg	2.5E+03	JT
VOA Solid Samples from Tanks									
S13T004293			BLNK	Methane, dibromofluoro	1868-53-7	10.15	ug/kg	210	JT

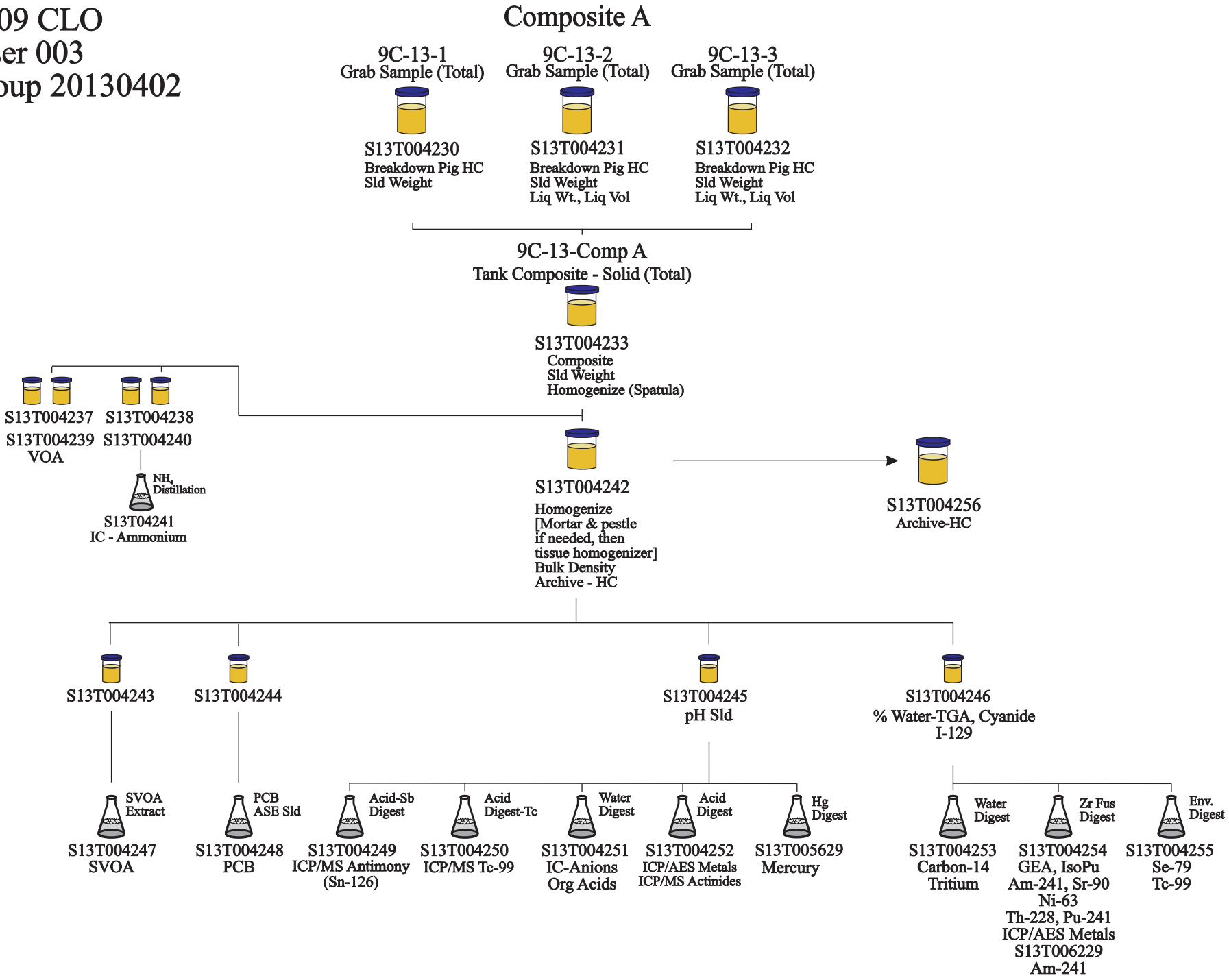
NA = Not Analyzed, ND = Not Detected

U - Less Than Detection Limit
J - Estimated
Q - Qualitative
a - LCS Outside Range
b - MS/MSD Outside Range
B - Blank Contamination
T - Tentatively Identified Compound
N - Named TIC

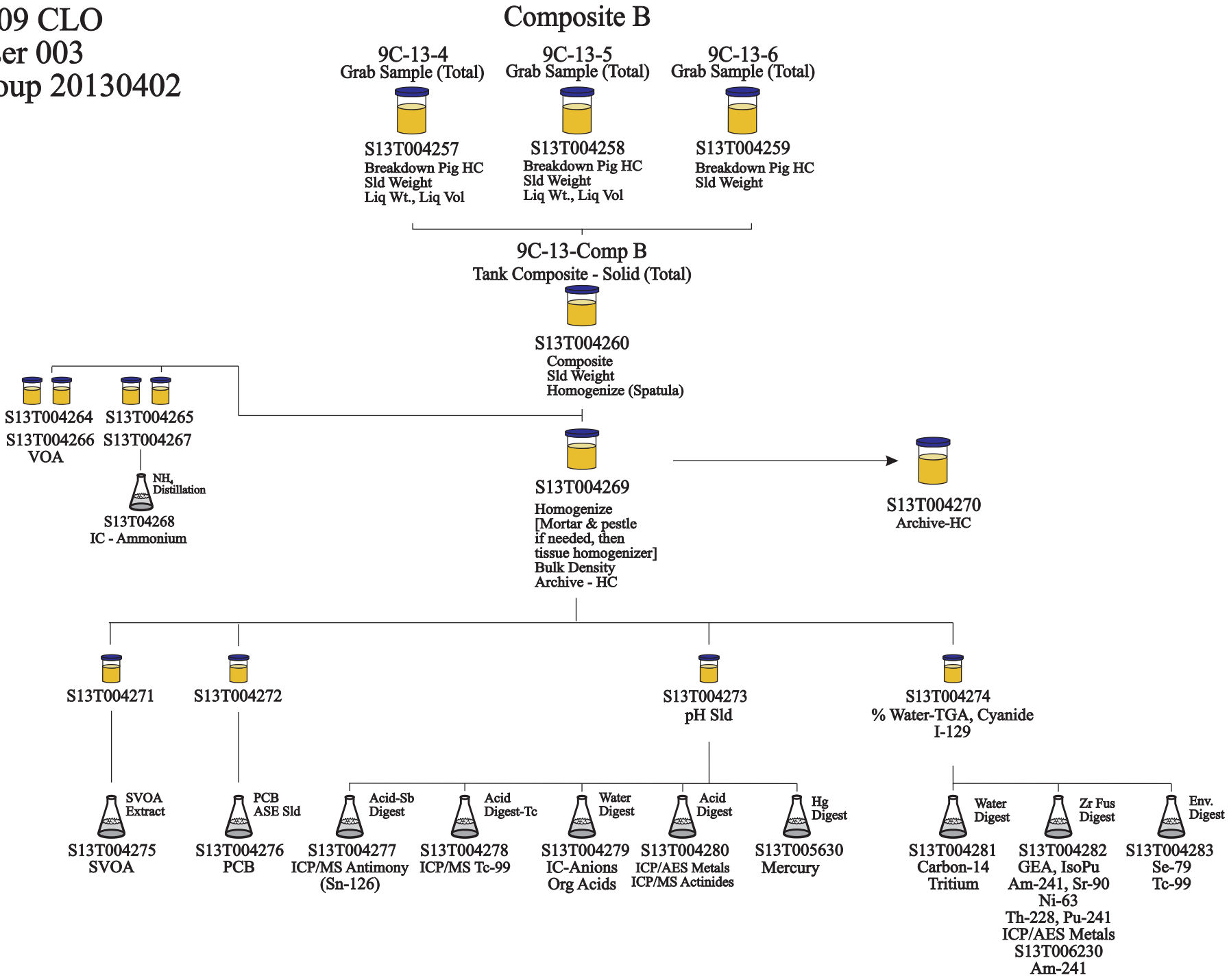
Attachment 3

SAMPLE BREAKDOWN DIAGRAMS

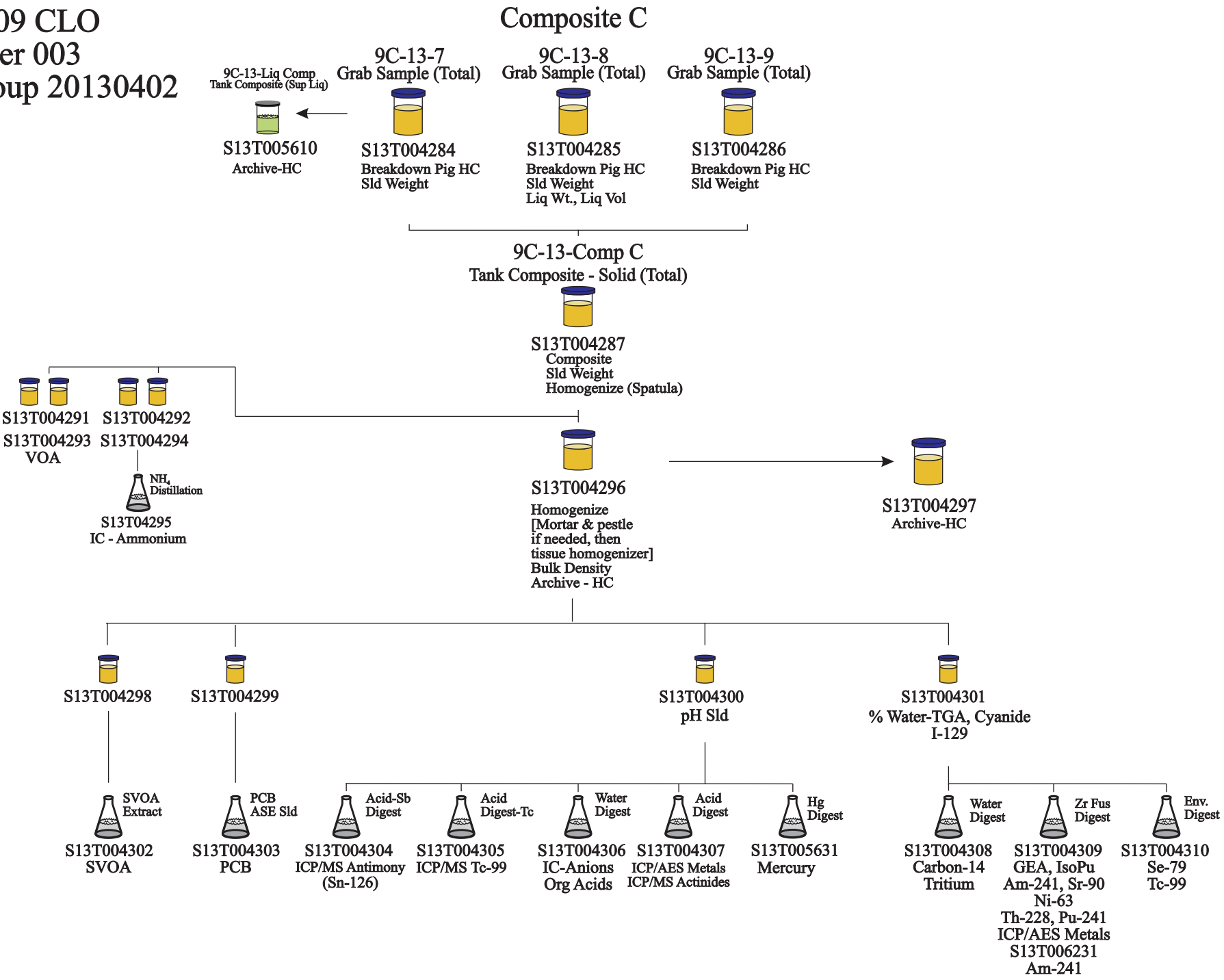
C109 CLO
Riser 003
Group 20130402



C109 CLO
Riser 003
Group 20130402



C109 CLO
Riser 003
Group 20130402



Attachment 4

HOLDING TIME REPORT

Holding Time Report

Sample	Customer Sample Id	Method	Prep Method	Sample Date Time	Received Date	Preparation Date	Analysis Date	Missed Holding Time
S13T004246	9C-13-Comp A	% Water by TGA	N/A	05/08/2013 13:35	05/09/2013 13:30	N/A	05/21/2013 09:11	N/A
S13T004274	9C-13-Comp B	% Water by TGA	N/A	05/07/2013 14:30	05/08/2013 14:10	N/A	05/17/2013 08:40	N/A
S13T004301	9C-13-Comp C	% Water by TGA	N/A	05/07/2013 10:27	05/07/2013 14:00	N/A	05/17/2013 08:40	N/A
S13T004254	9C-13-Comp A	AEA Am-241, Iso-Cm	Fusion - Zr	05/08/2013 13:35	05/09/2013 13:30	05/16/2013 14:52	05/29/2013 11:06	N
S13T004282	9C-13-Comp B	AEA Am-241, Iso-Cm	Fusion - Zr	05/07/2013 14:30	05/08/2013 14:10	05/16/2013 14:52	05/29/2013 11:06	N
S13T004309	9C-13-Comp C	AEA Am-241, Iso-Cm	Fusion - Zr	05/07/2013 10:27	05/07/2013 14:00	05/16/2013 14:52	05/29/2013 11:06	N
S13T006229	9C-13-Comp A	AEA Am-241, Iso-Cm	Fusion - Zr	05/08/2013 13:35	05/09/2013 13:30	06/05/2013 10:30	06/11/2013 08:03	N
S13T006230	9C-13-Comp B	AEA Am-241, Iso-Cm	Fusion - Zr	05/07/2013 14:30	05/08/2013 14:10	06/05/2013 10:30	06/11/2013 08:03	N
S13T006231	9C-13-Comp C	AEA Am-241, Iso-Cm	Fusion - Zr	05/07/2013 10:27	05/07/2013 14:00	06/05/2013 10:30	06/11/2013 08:04	N
S13T004242	9C-13-Comp A	Bulk Density	N/A	05/08/2013 13:35	05/09/2013 13:30	N/A	05/15/2013 00:00	N/A
S13T004269	9C-13-Comp B	Bulk Density	N/A	05/07/2013 14:30	05/08/2013 14:10	N/A	05/15/2013 00:00	N/A
S13T004296	9C-13-Comp C	Bulk Density	N/A	05/07/2013 10:27	05/07/2013 14:00	N/A	05/15/2013 00:00	N/A
S13T004253	9C-13-Comp A	Carbon-14	Water Digest	05/08/2013 13:35	05/09/2013 13:30	05/16/2013 14:46	05/29/2013 09:17	N
S13T004281	9C-13-Comp B	Carbon-14	Water Digest	05/07/2013 14:30	05/08/2013 14:10	05/16/2013 14:46	05/29/2013 09:17	N
S13T004308	9C-13-Comp C	Carbon-14	Water Digest	05/07/2013 10:27	05/07/2013 14:00	05/16/2013 14:46	05/29/2013 09:17	N
S13T004246	9C-13-Comp A	CN - EDTA SW846-9014/SM4500	SW846-9010C, Distillation	05/08/2013 13:35	05/09/2013 13:30	N/A	05/16/2013 15:10	N
S13T004274	9C-13-Comp B	CN - EDTA SW846-9014/SM4500	SW846-9010C, Distillation	05/07/2013 14:30	05/08/2013 14:10	N/A	05/17/2013 10:45	N
S13T004301	9C-13-Comp C	CN - EDTA SW846-9014/SM4500	SW846-9010C, Distillation	05/07/2013 10:27	05/07/2013 14:00	N/A	05/16/2013 15:10	N
S13T004254	9C-13-Comp A	GEA	Fusion - Zr	05/08/2013 13:35	05/09/2013 13:30	05/16/2013 14:52	05/28/2013 16:42	N
S13T004282	9C-13-Comp B	GEA	Fusion - Zr	05/07/2013 14:30	05/08/2013 14:10	05/16/2013 14:52	05/28/2013 19:57	N
S13T004309	9C-13-Comp C	GEA	Fusion - Zr	05/07/2013 10:27	05/07/2013 14:00	05/16/2013 14:52	05/28/2013 19:59	N
S13T005629	9C-13-Comp A	Mercury - SW846 7471A	SW846 7471A	05/08/2013 13:35	05/09/2013 13:30	05/21/2013 09:00	05/21/2013 13:45	N
S13T005630	9C-13-Comp B	Mercury - SW846 7471A	SW846 7471A	05/07/2013 14:30	05/08/2013 14:10	05/21/2013 09:00	05/21/2013 13:53	N
S13T005631	9C-13-Comp C	Mercury - SW846 7471A	SW846 7471A	05/07/2013 10:27	05/15/2013 15:19	05/21/2013 09:00	05/21/2013 13:54	N
S13T004251	9C-13-Comp A	IC - SW846 9056A	Water Digest	05/08/2013 13:35	05/09/2013 13:30	06/03/2013 09:10	06/03/2013 17:34	N
S13T004279	9C-13-Comp B	IC - SW846 9056A	Water Digest	05/07/2013 14:30	05/08/2013 14:10	06/03/2013 09:10	06/03/2013 20:20	N
S13T004306	9C-13-Comp C	IC - SW846 9056A	Water Digest	05/07/2013 10:27	05/07/2013 14:00	06/03/2013 09:10	06/03/2013 20:53	N
S13T004241	9C-13-Comp A	IC Ammonium - EPA 300.7	Distillation	05/08/2013 13:35	05/09/2013 13:30	05/14/2013 15:00	05/16/2013 15:02	N
S13T004268	9C-13-Comp B	IC Ammonium - EPA 300.7	Distillation	05/07/2013 14:30	05/08/2013 14:10	05/14/2013 15:00	05/16/2013 16:08	N
S13T004295	9C-13-Comp C	IC Ammonium - EPA 300.7	Distillation	05/07/2013 10:27	05/07/2013 14:00	05/14/2013 15:00	05/16/2013 16:25	N
S13T004252	9C-13-Comp A	ICP/AES - SW846 6010C	SW846 3050B, Acid Digest	05/08/2013 13:35	05/09/2013 13:30	05/28/2013 09:56	06/03/2013 11:47	N
S13T004252	9C-13-Comp A	ICP/AES - SW846 6010C	SW846 3050B, Acid Digest	05/08/2013 13:35	05/09/2013 13:30	06/11/2013 09:22	06/14/2013 11:05	N
S13T004254	9C-13-Comp A	ICP/AES - SW846 6010C	Fusion - Zr	05/08/2013 13:35	05/09/2013 13:30	05/16/2013 14:52	06/03/2013 12:54	N
S13T004280	9C-13-Comp B	ICP/AES - SW846 6010C	SW846 3050B, Acid Digest	05/07/2013 14:30	05/08/2013 14:10	05/28/2013 09:56	06/03/2013 12:35	N
S13T004280	9C-13-Comp B	ICP/AES - SW846 6010C	SW846 3050B, Acid Digest	05/07/2013 14:30	05/08/2013 14:10	06/11/2013 09:22	06/14/2013 11:48	N
S13T004282	9C-13-Comp B	ICP/AES - SW846 6010C	Fusion - Zr	05/07/2013 14:30	05/08/2013 14:10	05/16/2013 14:52	06/03/2013 13:08	N
S13T004307	9C-13-Comp C	ICP/AES - SW846 6010C	SW846 3050B, Acid Digest	05/07/2013 10:27	05/07/2013 14:00	05/28/2013 09:56	06/03/2013 12:40	N
S13T004307	9C-13-Comp C	ICP/AES - SW846 6010C	SW846 3050B, Acid Digest	05/07/2013 10:27	05/07/2013 14:00	06/11/2013 09:22	06/14/2013 11:53	N
S13T004309	9C-13-Comp C	ICP/AES - SW846 6010C	Fusion - Zr	05/07/2013 10:27	05/07/2013 14:00	05/16/2013 14:52	06/03/2013 13:13	N

Holding Time Report

Sample	Customer Sample Id	Method	Prep Method	Sample Date Time	Received Date	Preparation Date	Analysis Date	Missed Holding Time
S13T004246	9C-13-Comp A	Iodine-129/GEA	Fusion/Separation	05/08/2013 13:35	05/09/2013 13:30	N/A	06/17/2013 10:39	N
S13T004274	9C-13-Comp B	Iodine-129/GEA	Fusion/Separation	05/07/2013 14:30	05/08/2013 14:10	N/A	06/17/2013 10:39	N
S13T004301	9C-13-Comp C	Iodine-129/GEA	Fusion/Separation	05/07/2013 10:27	05/07/2013 14:00	N/A	06/17/2013 10:39	N
S13T004252	9C-13-Comp A	ICP/MS Actinides	SW846 3050B, Acid Digest	05/08/2013 13:35	05/09/2013 13:30	06/11/2013 09:22	06/18/2013 13:52	N
S13T004252	9C-13-Comp A	ICP/MS Actinides	SW846 3050B, Acid Digest	05/08/2013 13:35	05/09/2013 13:30	06/11/2013 09:22	07/03/2013 12:21	N
S13T004280	9C-13-Comp B	ICP/MS Actinides	SW846 3050B, Acid Digest	05/07/2013 14:30	05/08/2013 14:10	06/11/2013 09:22	06/18/2013 14:04	N
S13T004280	9C-13-Comp B	ICP/MS Actinides	SW846 3050B, Acid Digest	05/07/2013 14:30	05/08/2013 14:10	06/11/2013 09:22	07/03/2013 12:30	N
S13T004307	9C-13-Comp C	ICP/MS Actinides	SW846 3050B, Acid Digest	05/07/2013 10:27	05/07/2013 14:00	06/11/2013 09:22	06/18/2013 14:10	N
S13T004307	9C-13-Comp C	ICP/MS Actinides	SW846 3050B, Acid Digest	05/07/2013 10:27	05/07/2013 14:00	06/11/2013 09:22	07/03/2013 12:34	N
S13T004249	9C-13-Comp A	ICP/MS Sn-126	SW846 3050B, Acid Digest	05/08/2013 13:35	05/09/2013 13:30	06/10/2013 09:15	06/19/2013 12:43	N
S13T004277	9C-13-Comp B	ICP/MS Sn-126	SW846 3050B, Acid Digest	05/07/2013 14:30	05/08/2013 14:10	06/10/2013 09:15	06/19/2013 13:03	N
S13T004304	9C-13-Comp C	ICP/MS Sn-126	SW846 3050B, Acid Digest	05/07/2013 10:27	05/07/2013 14:00	06/10/2013 09:15	06/19/2013 13:08	N
S13T004250	9C-13-Comp A	ICP/MS Tc-99	SW846 3050B, Acid Digest	05/08/2013 13:35	05/09/2013 13:30	05/30/2013 09:30	06/13/2013 12:37	N
S13T004278	9C-13-Comp B	ICP/MS Tc-99	SW846 3050B, Acid Digest	05/07/2013 14:30	05/08/2013 14:10	05/30/2013 09:30	06/13/2013 13:02	N
S13T004305	9C-13-Comp C	ICP/MS Tc-99	SW846 3050B, Acid Digest	05/07/2013 10:27	05/07/2013 14:00	05/30/2013 09:30	06/13/2013 13:06	N
S13T004254	9C-13-Comp A	Nickel-63 LSC	Fusion - Zr	05/08/2013 13:35	05/09/2013 13:30	05/16/2013 14:52	06/11/2013 14:51	N
S13T004282	9C-13-Comp B	Nickel-63 LSC	Fusion - Zr	05/07/2013 14:30	05/08/2013 14:10	05/16/2013 14:52	06/11/2013 14:51	N
S13T004309	9C-13-Comp C	Nickel-63 LSC	Fusion - Zr	05/07/2013 10:27	05/07/2013 14:00	05/16/2013 14:52	06/11/2013 14:51	N
S13T004248	9C-13-Comp A	PCB - SW846 8082A	SW846 3520C	05/08/2013 13:35	05/09/2013 13:30	05/20/2013 09:01	05/22/2013 14:28	N
S13T004276	9C-13-Comp B	PCB - SW846 8082A	SW846 3520C	05/07/2013 14:30	05/08/2013 14:10	05/20/2013 09:01	05/22/2013 23:54	N
S13T004303	9C-13-Comp C	PCB - SW846 8082A	SW846 3520C	05/07/2013 10:27	05/07/2013 14:00	05/20/2013 09:01	05/23/2013 01:29	N
S13T004245	9C-13-Comp A	PH - SW846 9040C	N/A	05/08/2013 13:35	05/09/2013 13:30	N/A	05/16/2013 09:45	N
S13T004273	9C-13-Comp B	PH - SW846 9040C	N/A	05/07/2013 14:30	05/08/2013 14:10	N/A	05/16/2013 09:45	N
S13T004300	9C-13-Comp C	PH - SW846 9040C	N/A	05/07/2013 10:27	05/07/2013 14:00	N/A	05/16/2013 09:45	N
S13T004254	9C-13-Comp A	Plutonium-238, 239/240, 242/AEA	Fusion - Zr/Separation	05/08/2013 13:35	05/09/2013 13:30	05/16/2013 14:52	05/21/2013 17:05	N
S13T004282	9C-13-Comp B	Plutonium-238, 239/240, 242/AEA	Fusion - Zr/Separation	05/07/2013 14:30	05/08/2013 14:10	05/16/2013 14:52	05/21/2013 17:05	N
S13T004309	9C-13-Comp C	Plutonium-238, 239/240, 242/AEA	Fusion - Zr/Separation	05/07/2013 10:27	05/07/2013 14:00	05/16/2013 14:52	05/21/2013 17:05	N
S13T004254	9C-13-Comp A	Plutonium -241/LSC	Fusion - Zr/Separation	05/08/2013 13:35	05/09/2013 13:30	05/16/2013 14:52	06/11/2013 10:50	N
S13T004282	9C-13-Comp B	Plutonium -241/LSC	Fusion - Zr/Separation	05/07/2013 14:30	05/08/2013 14:10	05/16/2013 14:52	06/11/2013 10:50	N
S13T004309	9C-13-Comp C	Plutonium -241/LSC	Fusion - Zr/Separation	05/07/2013 10:27	05/07/2013 14:00	05/16/2013 14:52	06/11/2013 10:50	N
S13T004255	9C-13-Comp A	Selenium-79/LSC	Acid Digest/Separation	05/08/2013 13:35	05/09/2013 13:30	05/16/2013 14:53	05/21/2013 13:14	N
S13T004283	9C-13-Comp B	Selenium-79/LSC	Acid Digest/Separation	05/07/2013 14:30	05/08/2013 14:10	05/16/2013 14:53	05/21/2013 13:14	N
S13T004310	9C-13-Comp C	Selenium-79/LSC	Acid Digest/Separation	05/07/2013 10:27	05/07/2013 14:00	05/16/2013 14:53	05/21/2013 13:14	N
S13T004254	9C-13-Comp A	Strontium-89/90/GPC	Fusion - Zr/Separation	05/08/2013 13:35	05/09/2013 13:30	05/16/2013 14:52	06/14/2013 14:00	N
S13T004282	9C-13-Comp B	Strontium-89/90/GPC	Fusion - Zr/Separation	05/07/2013 14:30	05/08/2013 14:10	05/16/2013 14:52	06/14/2013 14:00	N
S13T004309	9C-13-Comp C	Strontium-89/90/GPC	Fusion - Zr/Separation	05/07/2013 10:27	05/07/2013 14:00	05/16/2013 14:52	06/14/2013 14:00	N
S13T004247	9C-13-Comp A	SVOA - SW846 8270D	SW846 3540C Soxhlet	05/08/2013 13:35	05/09/2013 13:30	05/16/2013 15:05	05/29/2013 12:21	N
S13T004275	9C-13-Comp B	SVOA - SW846 8270D	SW846 3540C Soxhlet	05/07/2013 14:30	05/08/2013 14:10	05/16/2013 15:05	05/29/2013 15:59	N

Holding Time Report

Sample	Customer Sample Id	Method	Prep Method	Sample Date Time	Received Date	Preparation Date	Analysis Date	Missed Holding Time
S13T004302	9C-13-Comp C	SVOA - SW846 8270D	SW846 3540C Soxhlet	05/07/2013 10:27	05/07/2013 14:00	05/16/2013 15:05	05/29/2013 16:57	N
S13T004255	9C-13-Comp A	Technetium-99/LSC	Acid Digest/Separation	05/08/2013 13:35	05/09/2013 13:30	05/16/2013 14:53	06/10/2013 14:43	N
S13T004283	9C-13-Comp B	Technetium-99/LSC	Acid Digest/Separation	05/07/2013 14:30	05/08/2013 14:10	05/16/2013 14:53	06/10/2013 14:43	N
S13T004310	9C-13-Comp C	Technetium-99/LSC	Acid Digest/Separation	05/07/2013 10:27	05/07/2013 14:00	05/16/2013 14:53	06/10/2013 14:43	N
S13T004254	9C-13-Comp A	Thorium-228/AEA	Fusion-Zr/Separation	05/08/2013 13:35	05/09/2013 13:30	05/16/2013 14:52	05/23/2013 17:22	N
S13T004282	9C-13-Comp B	Thorium-228/AEA	Fusion-Zr/Separation	05/07/2013 14:30	05/08/2013 14:10	05/16/2013 14:52	05/23/2013 17:22	N
S13T004309	9C-13-Comp C	Thorium-228/AEA	Fusion-Zr/Separation	05/07/2013 10:27	05/07/2013 14:00	05/16/2013 14:52	05/23/2013 17:22	N
S13T004253	9C-13-Comp A	Tritium/LSC	Acid Digest/Separation	05/08/2013 13:35	05/09/2013 13:30	05/16/2013 14:46	05/21/2013 14:40	N
S13T004281	9C-13-Comp B	Tritium/LSC	Acid Digest/Separation	05/07/2013 14:30	05/08/2013 14:10	05/16/2013 14:46	05/21/2013 14:40	N
S13T004308	9C-13-Comp C	Tritium/LSC	Acid Digest/Separation	05/07/2013 10:27	05/07/2013 14:00	05/16/2013 14:46	05/21/2013 14:40	N
S13T004239	9C-13-Comp A	VOA - SW846 8260C	Purge and Trap	05/08/2013 13:35	05/09/2013 13:30	05/15/2013 11:00	05/15/2013 15:13	N
S13T004266	9C-13-Comp B	VOA - SW846 8260C	Purge and Trap	05/07/2013 14:30	05/08/2013 14:10	05/15/2013 11:00	05/15/2013 17:18	N
S13T004293	9C-13-Comp C	VOA - SW846 8260C	Purge and Trap	05/07/2013 10:27	05/07/2013 14:00	05/15/2013 11:00	05/15/2013 17:49	N

Attachment 5

CORRESPONDENCE

Osborn, Julie A

From: Osborn, Julie A
Sent: Monday, May 13, 2013 12:06 PM
To: Purcell, Michael A; Schroeder, Robert W
Cc: Templeton, Andrew M; Ritenour, Gerald P
Subject: C109 CLO Composites

Even with the very large chunks in samples 9C-13-1, -4, and -9, we will stay on track with the TSAP instructions to combine samples for the composites by spatula as outlined in the SBD. The only alteration to the TSAP we will be making is to samples 1, 2, and 3; because of the limited amount of sample 1, combine 109g each (9C-13-1, 2, 3) for Composite A.

Composite B (9C-13-4, 5, 6) and C (9C-13-7, 8, 9) will remain as 150g per sample for a total of 450g per composite.

Please be sure to take good pictures of the composites before creating aliquots for organic analyses.

Thank you,

Julie A. Osborn
Advanced Technologies and Laboratories International, Inc.
Contractor to the Office of River Protection
U.S. Department of Energy

Osborn, Julie A

From: Templeton, Andrew M
Sent: Thursday, June 13, 2013 10:38 AM
To: Osborn, Julie A
Cc: Nguyen, Duc M; Fort, Leslie A
Subject: RE: C109 Anions Spike and RPD Recoveries

Follow Up Flag: Follow up
Flag Status: Flagged

Hi Julie,

Yes I agree that it is appropriate to flag and report the results from the second Fluoride and Phosphate run, and yes please discuss the results in the narrative.

Please let me know if you have any questions.

Thanks!

Andrew M. Templeton
Process Engineer
Tank Waste Inventory and Characterization
Washington River Protection Solutions,
contractor to the United States Department of Energy

Ph. 509-373-5589
Fax 509-373-3833
Cell 438-0701
Andrew_M_Templeton@rl.gov

From: Osborn, Julie A
Sent: Tuesday, June 04, 2013 3:03 PM
To: Templeton, Andrew M
Subject: C109 Anions Spike and RPD Recoveries

Andrew,

As noted below, fluoride (primary) and phosphate (secondary) did not pass the project-specific QC acceptance criteria for duplicates and spikes. Since the samples have been digested and analyzed twice the laboratory believes this to be a Systematic QC failure due to sample inhomogeneity and does not believe a rerun would improve the data quality. We would like to flag and report these results with a discussion in the narrative.

Thank you,

Julie A. Osborn
Advanced Technologies and Laboratories International, Inc.
Contractor to the Office of River Protection

U.S. Department of Energy

From: Black, Amanda M
Sent: Tuesday, June 04, 2013 11:55 AM
To: Osborn, Julie A
Subject: C109 Anions

Julie,

The C109 samples (S13T004251,4279,4306) were digested twice and analyzed twice. Both analyses produced inconsistent results between each run and between the SAM/DUP. Fluoride and Phosphate were the only analytes >EQL. Below is a summary of the results obtained for fluoride and phosphate. Since it appears that sample homogeneity is the problem, if approved by the client, further digestion and analysis will not be performed and samples will be reported from the second run and flagged appropriately. Let me know if the client would like any further digestion/analysis or if you need any more information.

Sample #	Analyte	≈Amount (µg/g)*
S13T004251 SAM (Run 1 05/30/13)	Fluoride	**3927**
S13T004251 DUP (Run 1 05/30/13)	Fluoride	**7439**
S13T004251 SAM (Run 2 06/03/13)	Fluoride	**8471**
S13T004251 DUP (Run 2 06/03/13)	Fluoride	**6019**
S13T004251 SAM (Run 1 05/30/13)	Phosphate	**38214**
S13T004251 DUP (Run 1 05/30/13)	Phosphate	**72155**
S13T004251 SAM (Run 2 06/03/13)	Phosphate	**88913**
S13T004251 DUP (Run 2 06/03/13)	Phosphate	**62741**
S13T004279 (Run 1 05/30/13)	Fluoride	**4486**
S13T004279 (Run 2 06/03/13)	Fluoride	**8139**
S13T004279 (Run 1 05/30/13)	Phosphate	**45814**
S13T004279 (Run 2 06/03/13)	Phosphate	**82532**
S13T004306 (Run 1 05/30/13)	Fluoride	**5615**
S13T004306 (Run 2 06/03/13)	Fluoride	**6655**
S13T004306 (Run 1 05/30/13)	Phosphate	**58494**
S13T004306 (Run 2 06/03/13)	Phosphate	**70211**

Sample #	Analyte	≈% Recovery/ ≈%RPD*
S13T004251 SPK (Run 1 05/30/13)	Fluoride	**20%**
S13T004251 DUP (Run 1 05/30/13)	Fluoride	**61%**
S13T004251 SPK (Run 2 06/03/13)	Fluoride	**-493%**
S13T004251 DUP (Run 2 06/03/13)	Fluoride	**35%**
S13T004251 SPK (Run 1 05/30/13)	Phosphate	**18%**
S13T004251 DUP (Run 1 05/30/13)	Phosphate	**60%**
S13T004251 SPK (Run 2 06/03/13)	Phosphate	**-550%**
S13T004251 DUP (Run 2 06/03/13)	Phosphate	**36%**

*Unofficial numbers, not to be used for reporting purposes. 2nd verification has not been performed on data.

Thanks,

Osborn, Julie A

From: Templeton, Andrew M
Sent: Friday, July 12, 2013 12:57 PM
To: Osborn, Julie A
Cc: Nguyen, Duc M
Subject: RE: Am-241 Systematic RPD Failure

Julie,

After discussing the issue with Lest Fort and Marcel Bergeron of the Closure and Corrective Measures group, I concur with the labs recommendation to not analyze the samples for Americium-241 a third time, due to sample inhomogeneity and the belief that another re-run will not improve the data quality.

Thanks!

Andrew M. Templeton

Process Engineer
Tank Waste Inventory and Characterization
Washington River Protection Solutions,
contractor to the United States Department of Energy

Ph. 509-373-5589
Fax 509-373-3833
Cell 438-0701
Andrew_M_Templeton@rl.gov

From: Osborn, Julie A
Sent: Friday, July 12, 2013 10:29 AM
To: Templeton, Andrew M
Subject: Am-241 Systematic RPD Failure

Andrew,

The C109 samples were digested twice and analyzed twice for ^{241}Am. Both analyses produced inconsistent results between the SAM/DUP. The first attempt RPD failure was at 48.1% (S13T004254, 4282, 4309) and the second (S13T006229, 6230, 6231) was at 59.3%. Below is a summary of the results obtained for Am and Cm. Since the samples have been digested and analyzed twice the laboratory believes this to be a Systematic QC failure due to sample inhomogeneity and does not believe a rerun would improve the data quality. Since the first run had the best QC result and the highest sample result, we would like to flag and report the first set of results with a discussion in the narrative.

SAMPLE_R	ANALYTE	RESULT_UNIT	STANDARD	BLANK	RESULT	DUPLICATE	RPD	SPK_R
S13T004254	Americium-241	uCi/g	102	6.53E-05	0.0213	0.0348	48.1	n/a
S13T004282	Americium-241	uCi/g	102	6.53E-05	0.0354	n/a	n/a	n/a
S13T004309	Americium-241	uCi/g	102	6.53E-05	0.0238	n/a	n/a	n/a
S13T006229	Americium-241	uCi/g	103	8.78E-05	6.08E-03	1.12E-02	59.3	n/a
S13T006230	Americium-241	uCi/g	103	8.78E-05	0.0326	n/a	n/a	n/a
S13T006231	Americium-241	uCi/g	103	8.78E-05	0.0319	n/a	n/a	n/a
S13T004254	Curium-242	uCi/g	n/a	<2.39E-05	7.42E-05	<6.13E-05	n/a	n/a
S13T004282	Curium-242	uCi/g	n/a	<2.39E-05	<6.46E-05	n/a	n/a	n/a

S13T004309	Curium-242	uCi/g	n/a	<2.39E-05	<5.30E-05	n/a	n/a	n/a
S13T006229	Curium-242	uCi/g	n/a	<5.63E-05	6.06E-05	6.09E-05	0.494	n/a
S13T006230	Curium-242	uCi/g	n/a	<5.63E-05	9.36E-05	n/a	n/a	n/a
S13T006231	Curium-242	uCi/g	n/a	<5.63E-05	1.42E-04	n/a	n/a	n/a
S13T004254	Curium-243/244	uCi/g	n/a	<5.16E-04	<7.62E-05	<1.19E-04	n/a	n/a
S13T004282	Curium-243/244	uCi/g	n/a	<5.16E-04	<9.08E-05	n/a	n/a	n/a
S13T004309	Curium-243/244	uCi/g	n/a	<5.16E-04	<7.32E-05	n/a	n/a	n/a
S13T006229	Curium-243/244	uCi/g	n/a	<8.32E-05	<8.06E-05	<1.32E-04	n/a	n/a
S13T006230	Curium-243/244	uCi/g	n/a	<8.32E-05	<1.08E-04	n/a	n/a	n/a
S13T006231	Curium-243/244	uCi/g	n/a	<8.32E-05	1.21E-04	n/a	n/a	n/a

Thank you,

Julie A. Osborn
Advanced Technologies and Laboratories International, Inc.
Contractor to the Office of River Protection
U.S. Department of Energy

Osborn, Julie A

From: Templeton, Andrew M
Sent: Monday, July 22, 2013 3:30 PM
To: Osborn, Julie A
Subject: RE: Acetone RPD Failure

Julie,

I would probably have requested a re-run but since we are way past the holding times and the results are below the target detection limit, please flag the data per laboratory procedures and discuss in the narrative as you suggested.

Thanks!

Andrew M. Templeton

Process Engineer
Tank Waste Inventory and Characterization
Washington River Protection Solutions,
contractor to the United States Department of Energy

Ph. 509-373-5589
Fax 509-373-3833
Cell 438-0701
Andrew_M_Templeton@rl.gov

From: Osborn, Julie A
Sent: Monday, July 15, 2013 10:41 AM
To: Templeton, Andrew M
Subject: Acetone RPD Failure

Andrew,

The RPD for Acetone in the C109 CLO samples was above the acceptance criteria of 30% at 151%. The sample results were just above the LOQ in the sample and well below the LOQ in the duplicate. Since the samples were not homogenous and even included several large chunks in the samples, the laboratory believes this prevented VOC loss. Because the determined concentration for acetone was over 15 times lower than the client requested target detection of 3.21 mg/kg, we would like to flag and report the data as is and include a discussion in the narrative.

SAMPLE_R	Method	ANALYTE	RESULT_UNIT	STANDARD	BLANK	RESULT	DUPLICA
S13T004239	VOA Solid Samples from Tanks	Acetone	mg/kg	107	<22.0	0.200	0.0278
S13T004266	VOA Solid Samples from Tanks	Acetone	mg/kg	107	<22.0	0.095	n/a
S13T004293	VOA Solid Samples from Tanks	Acetone	mg/kg	107	<22.0	0.084	n/a

Thank you,

Julie A. Osborn
Advanced Technologies and Laboratories International, Inc.
Contractor to the Office of River Protection

Osborn, Julie A

From: Osborn, Julie A
Sent: Monday, July 22, 2013 2:53 PM
To: Templeton, Andrew M
Subject: IC, ICP, and TICS Prelimary Results, C109 CLO
Attachments: Preliminary DSR - IC, ICP.xls; Preliminary DSR - TICTIC.xls

Andrew,

The attached spreadsheets contain the preliminary results for C109 Closure samples for IC, ICP, and SVOA/VOA TICs. If you have any questions or need additional information please let me know.

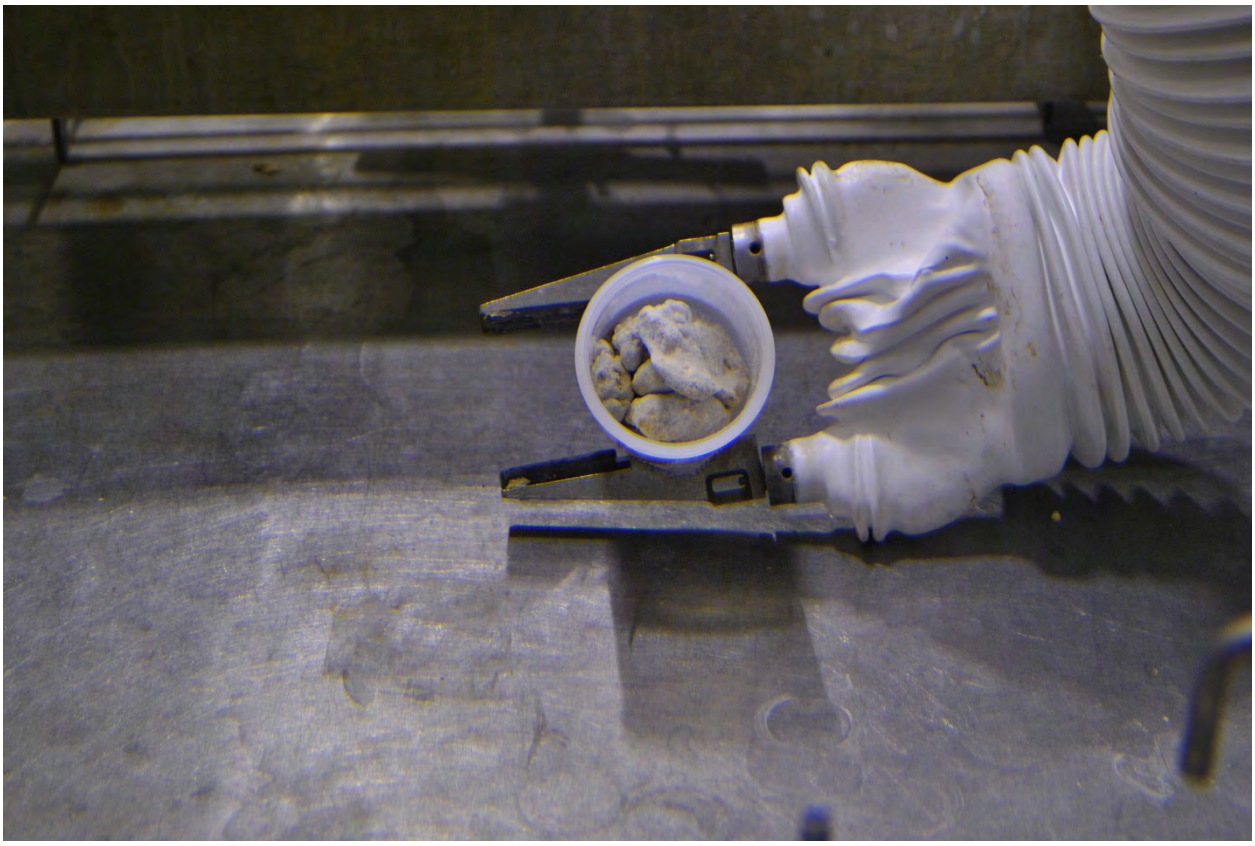
Thanks,

Julie A. Osborn
Advanced Technologies and Laboratories International, Inc.
Contractor to the Office of River Protection
U.S. Department of Energy

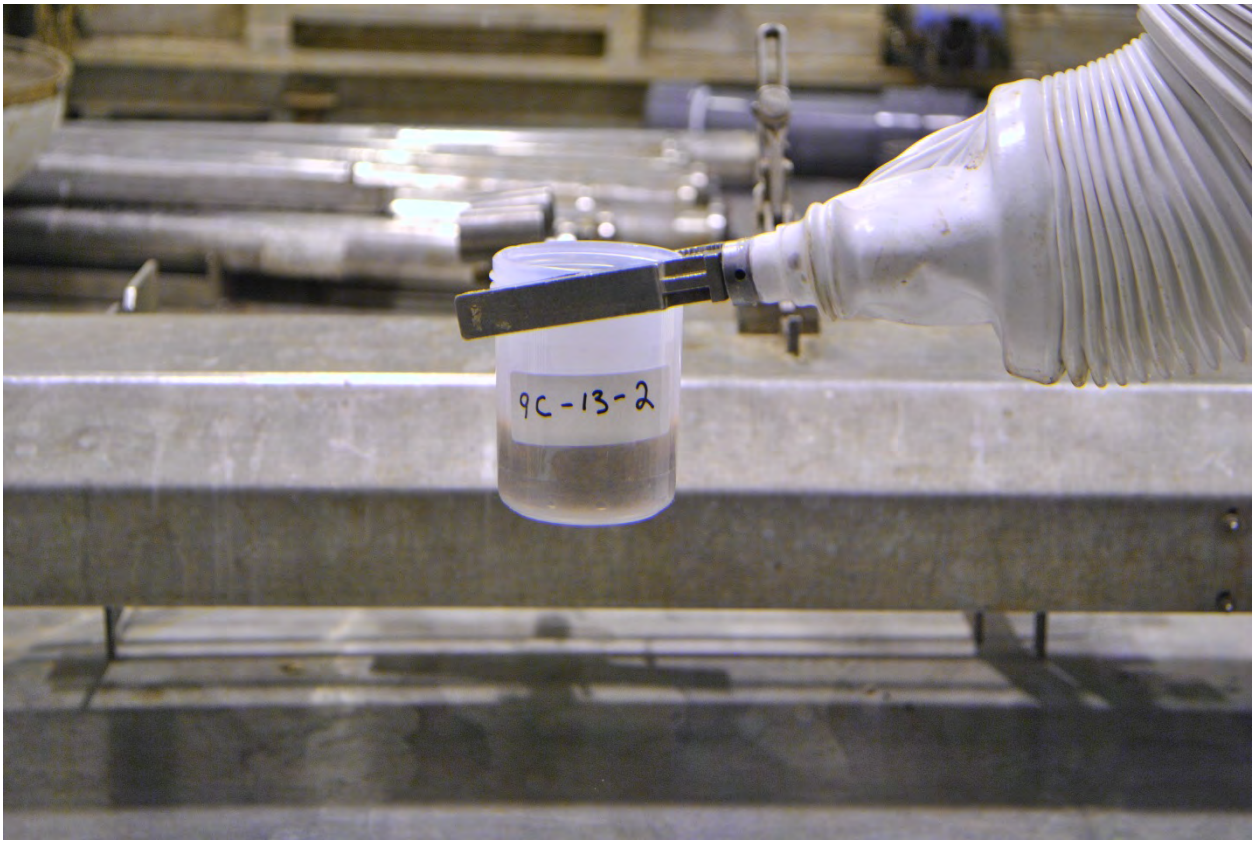
Attachment 6

SAMPLE PHOTOGRAPHS

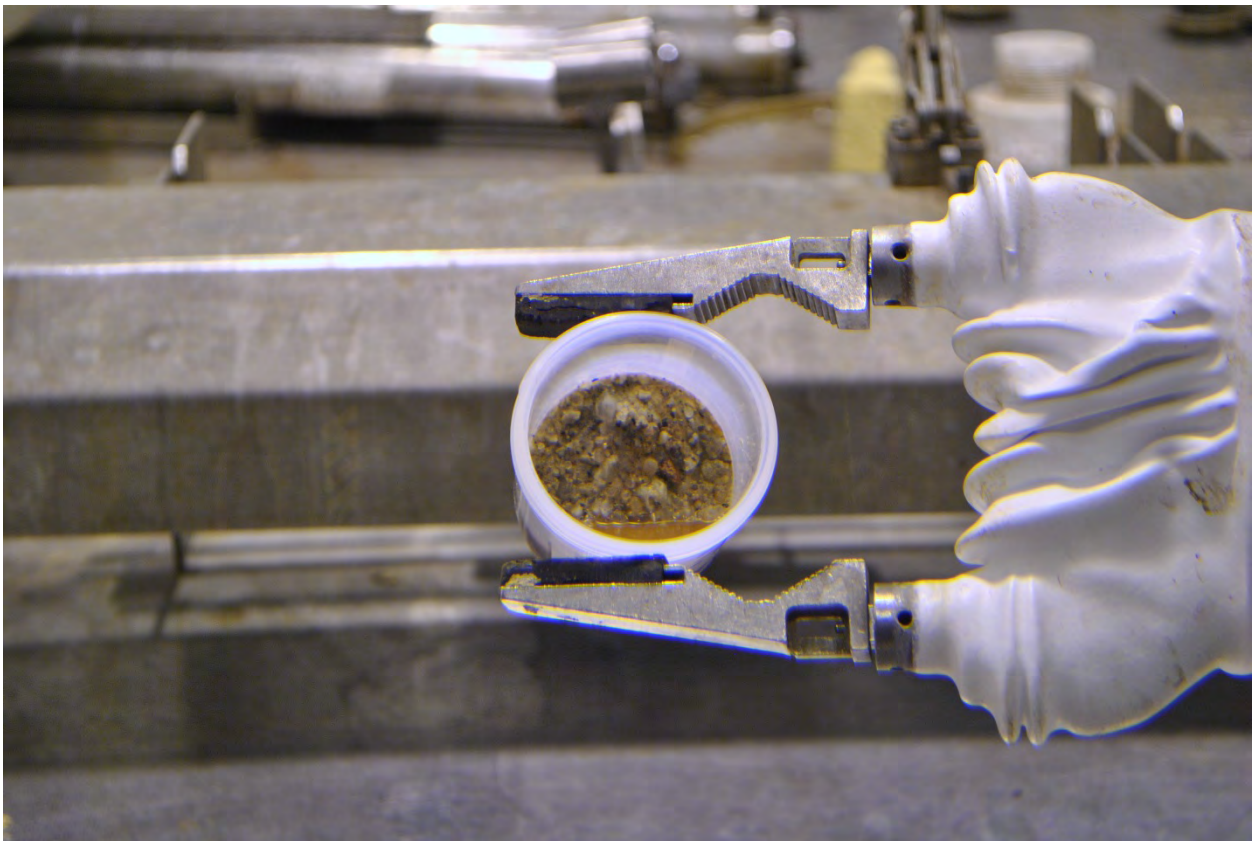
9C-13-1



9C-13-1



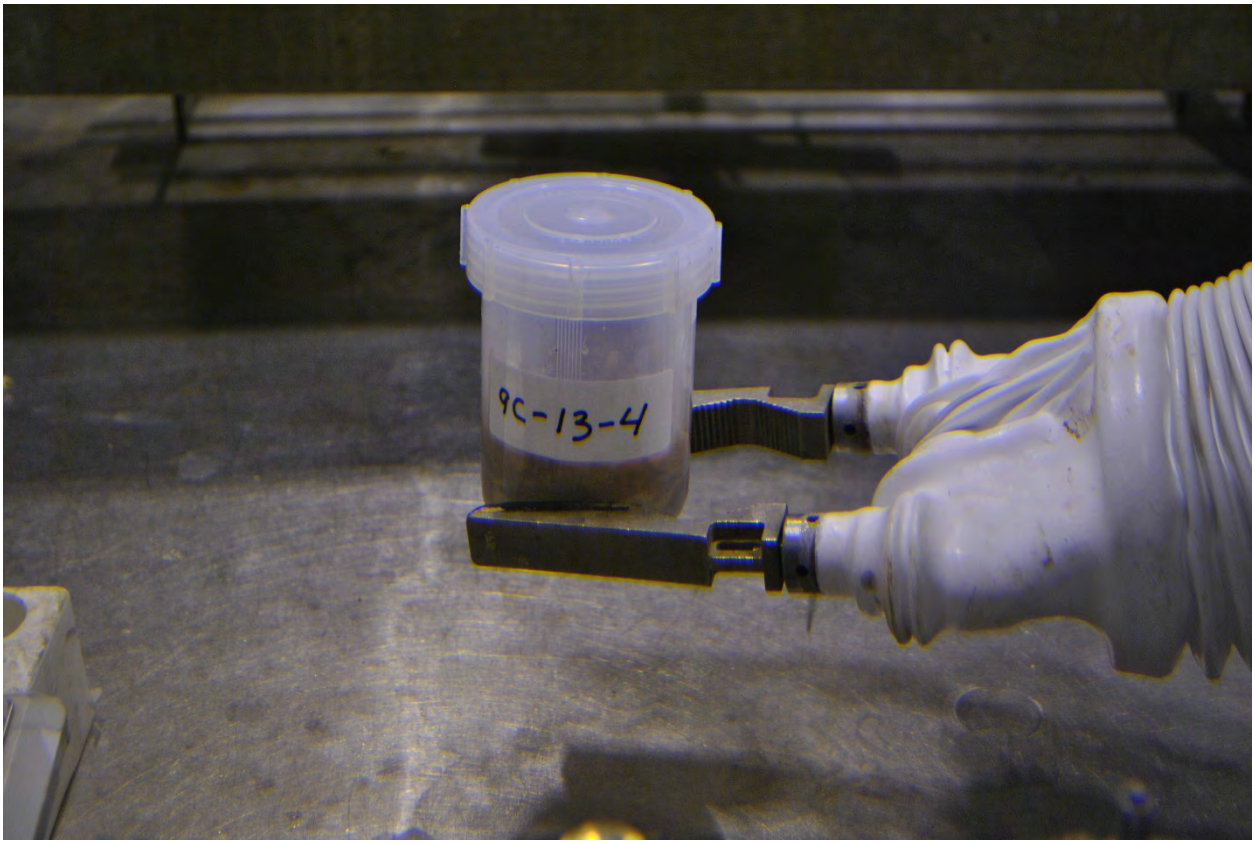
9C-13-2



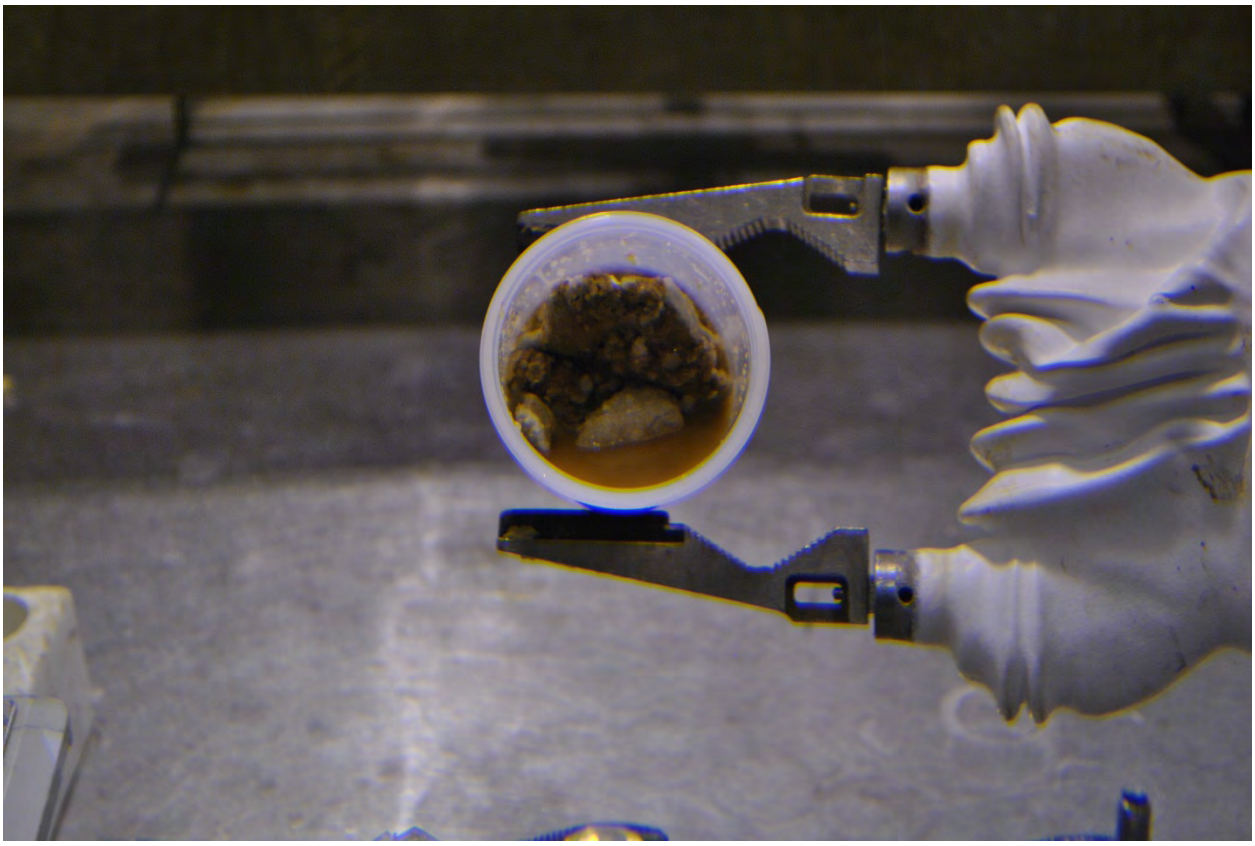
9C-13-2

9C-13-3

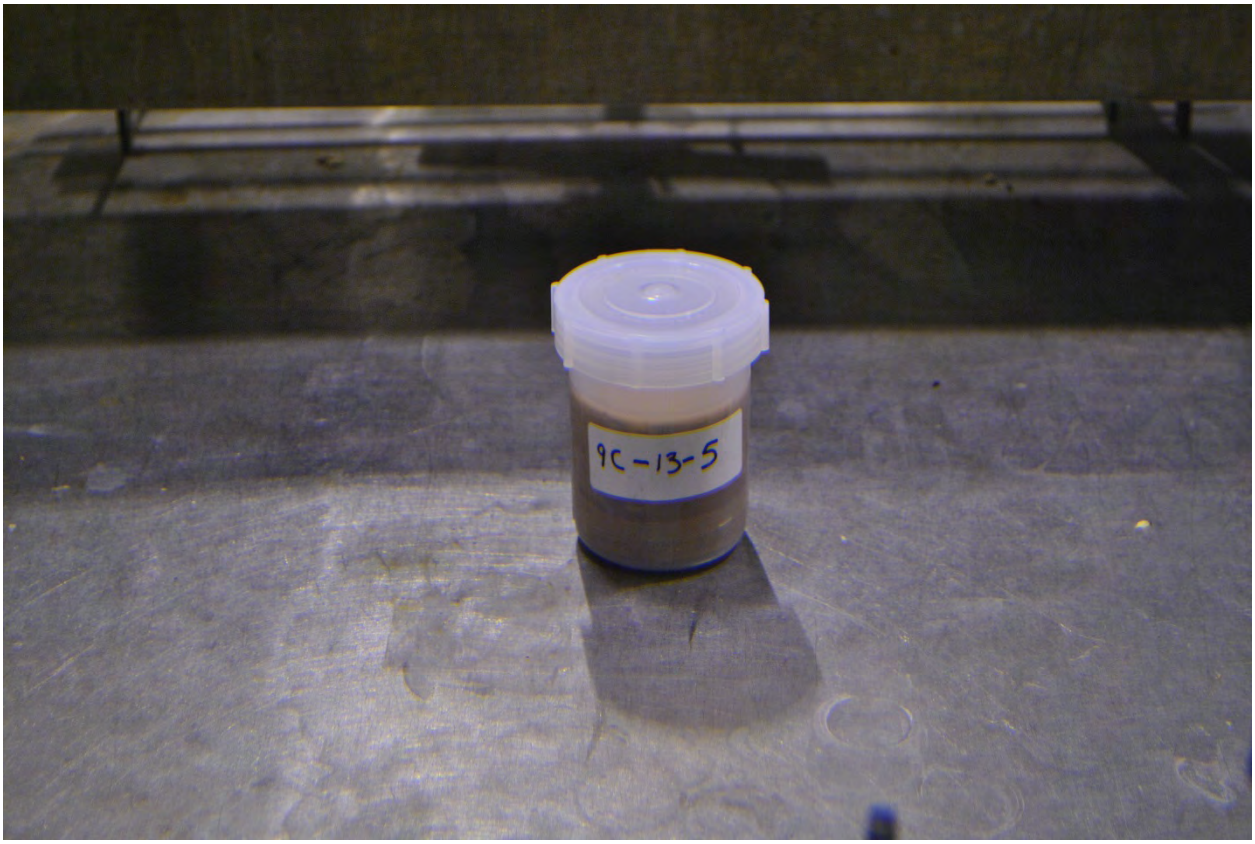
9C-13-3



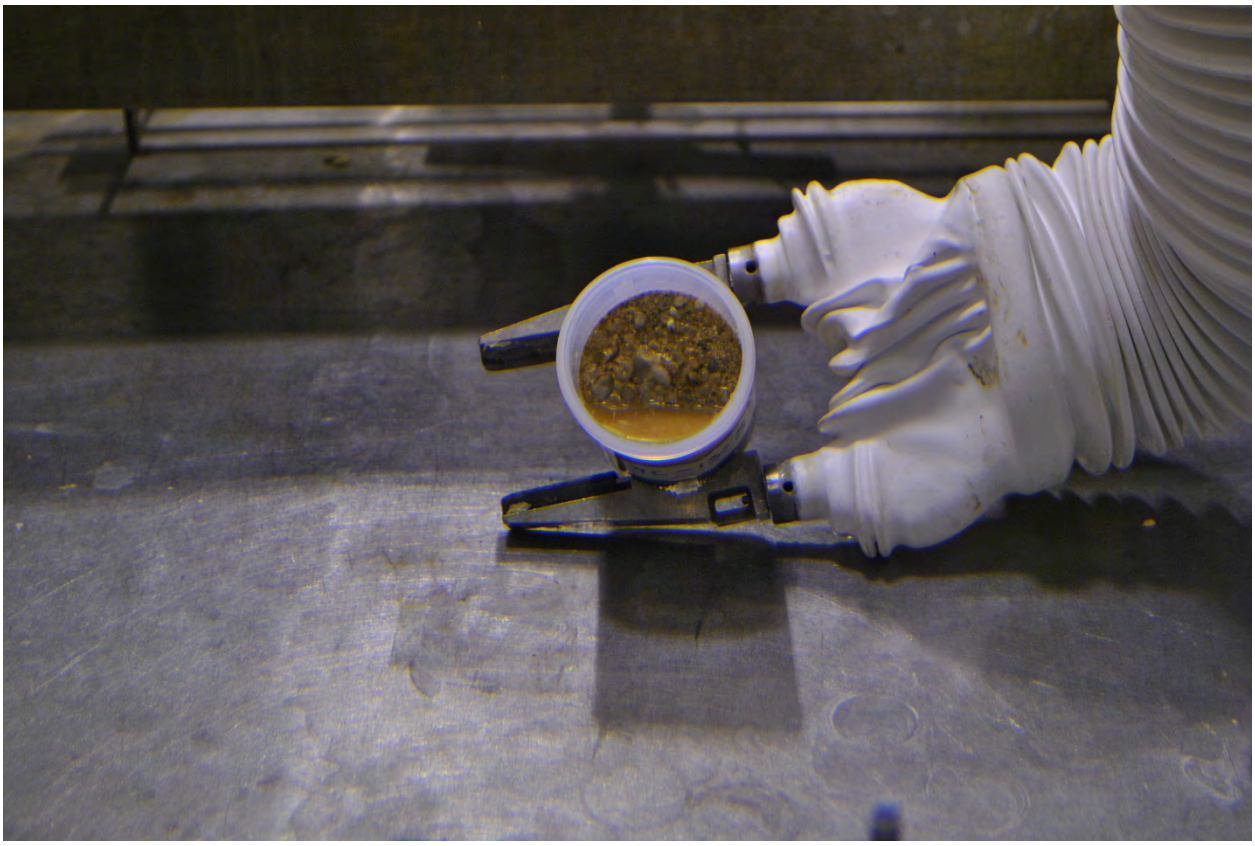
9C-13-4



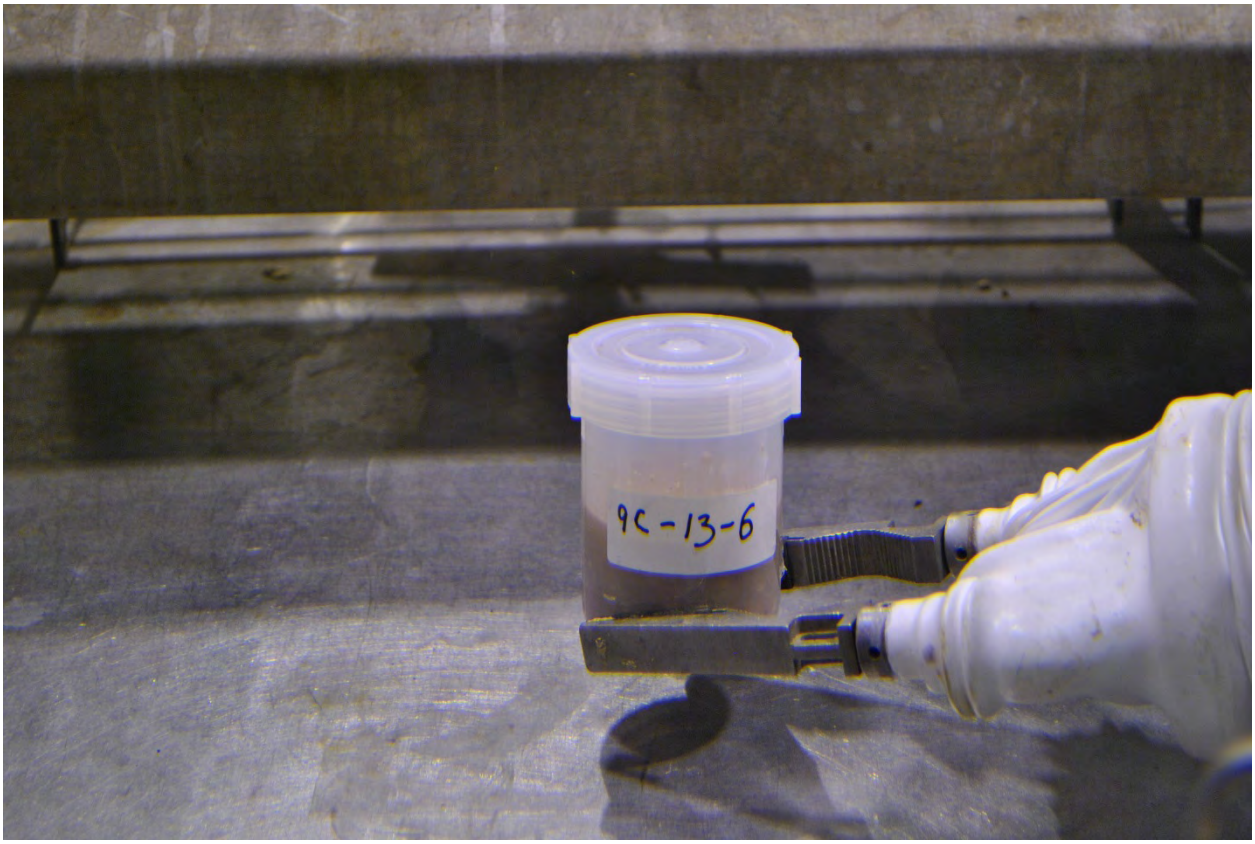
9C-13-4



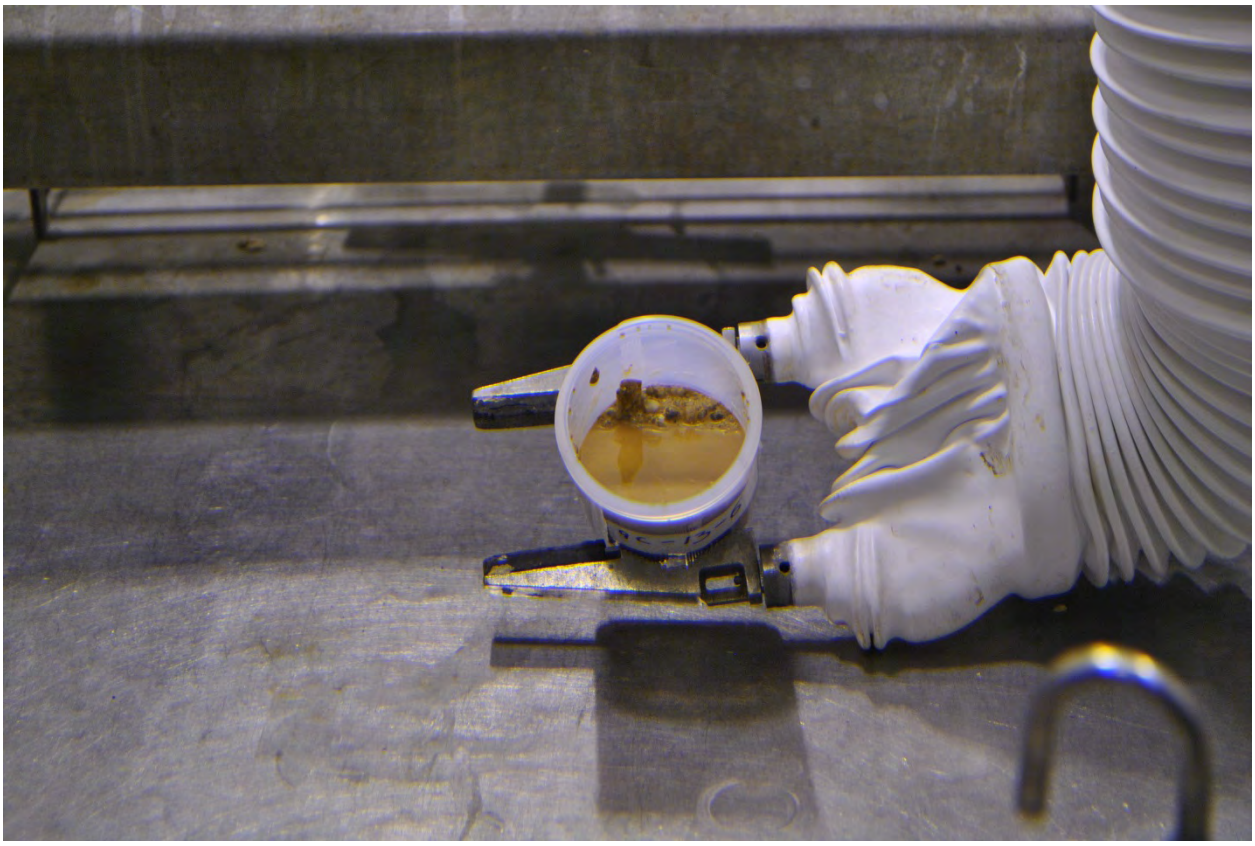
9C-13-5



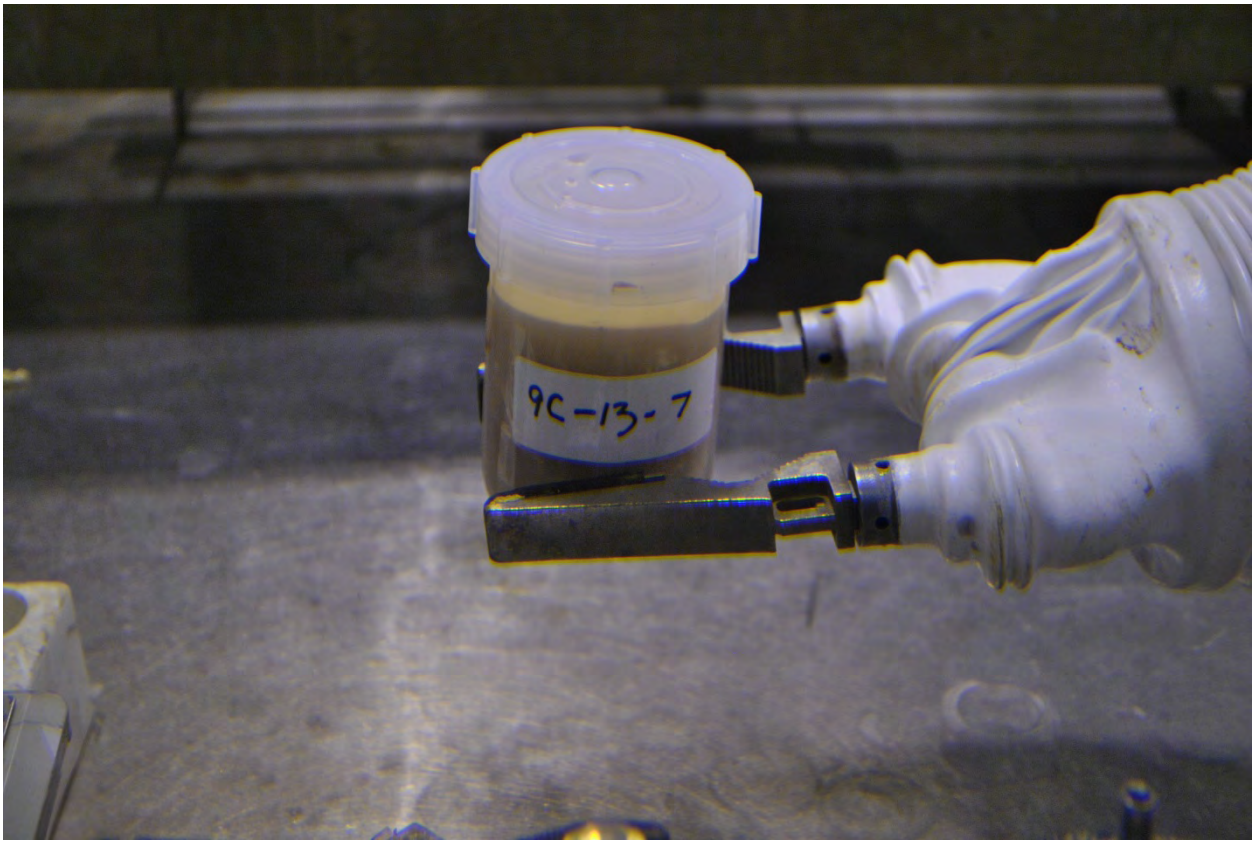
9C-13-5



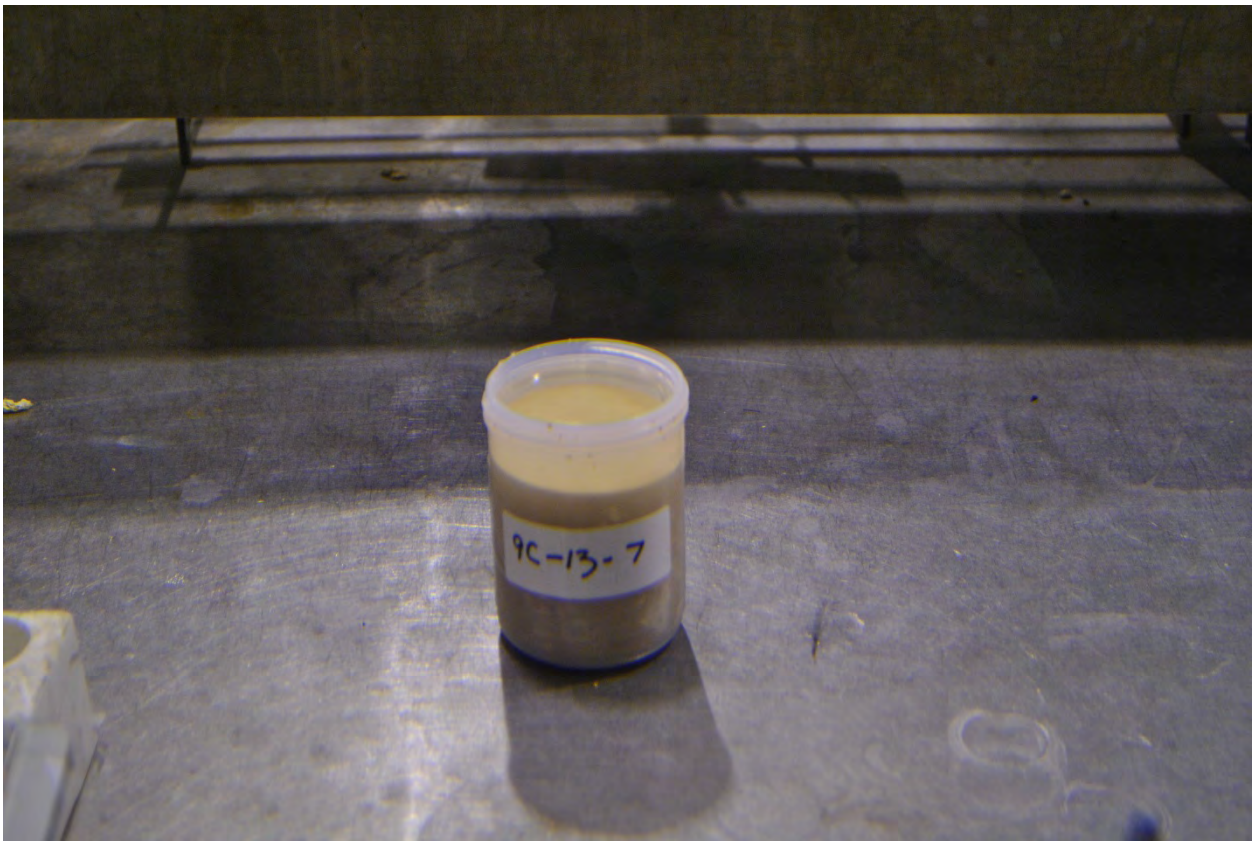
9C-13-6



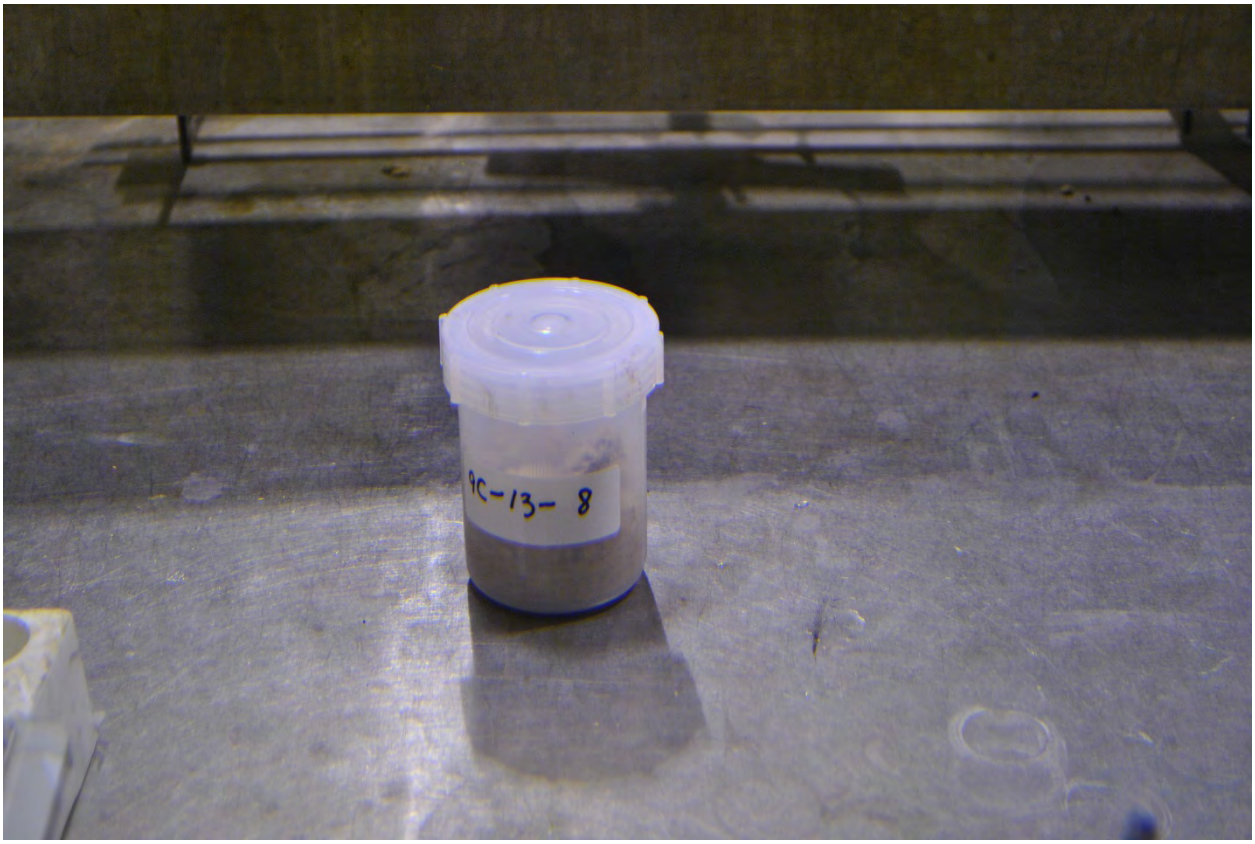
9C-13-6



9C-13-7

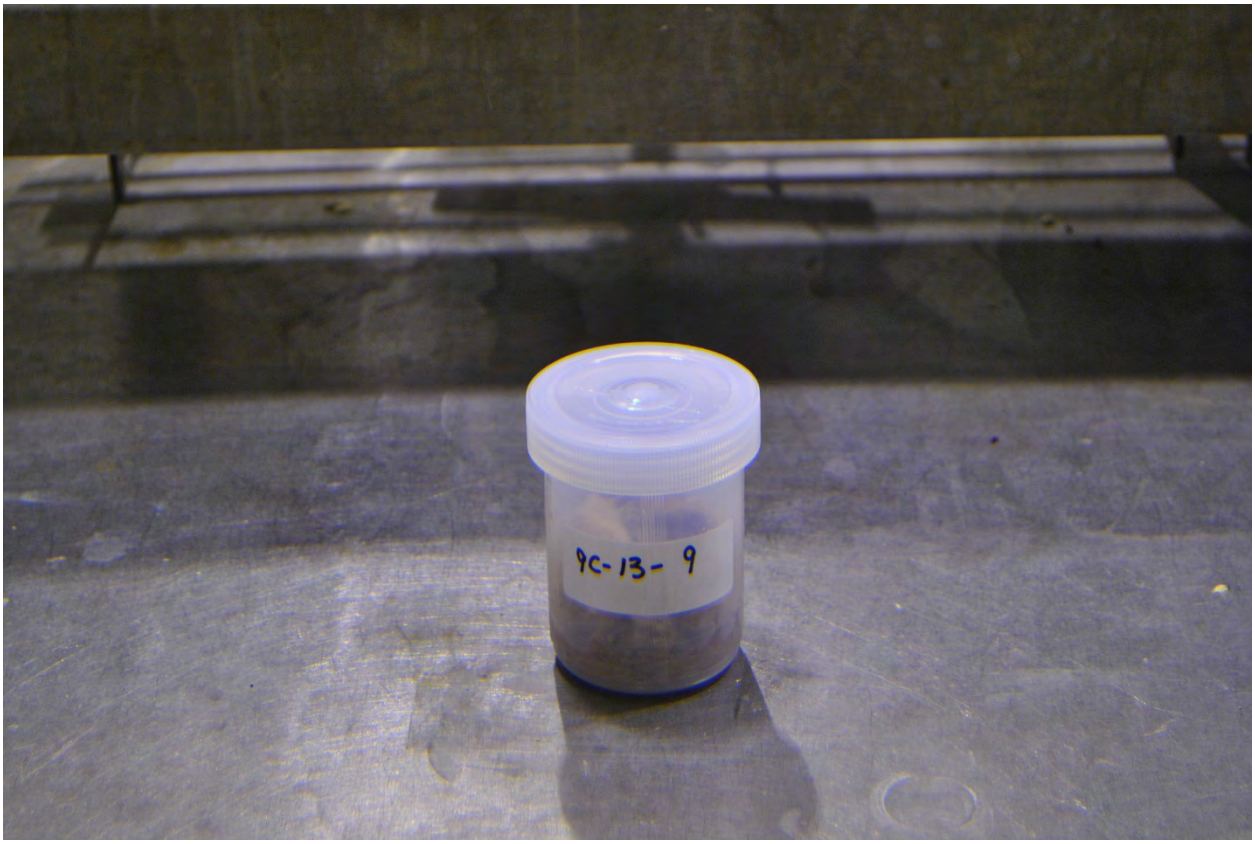


9C-13-7



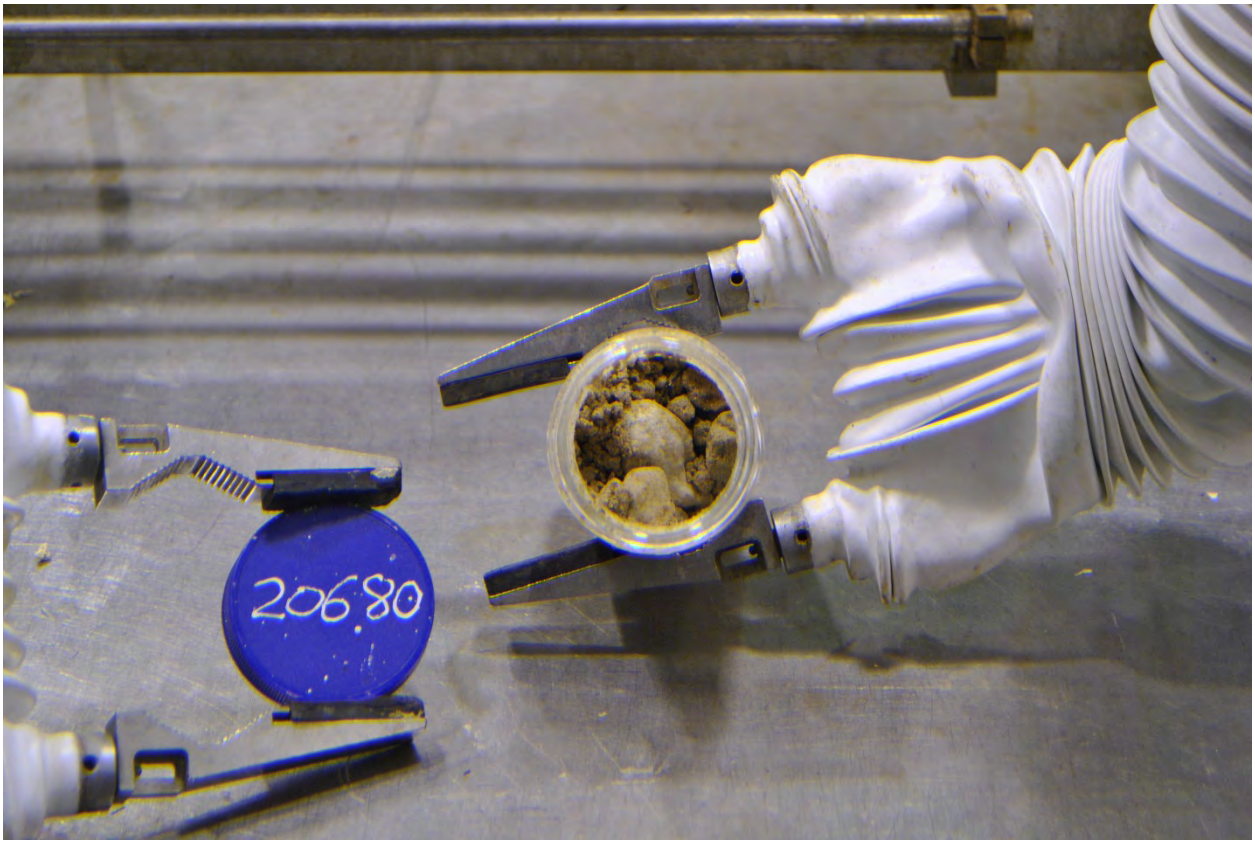
9C-13-8

9C-13-8

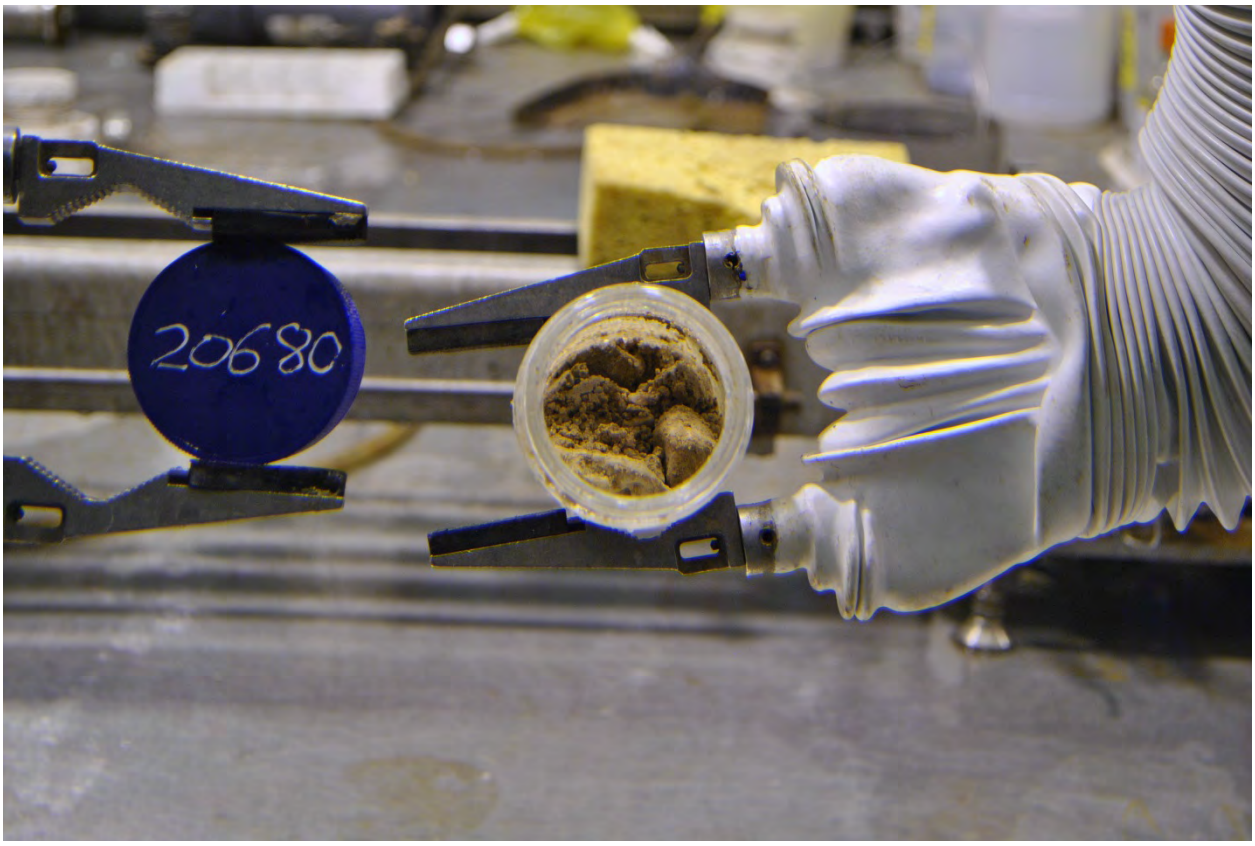


9C-13-9

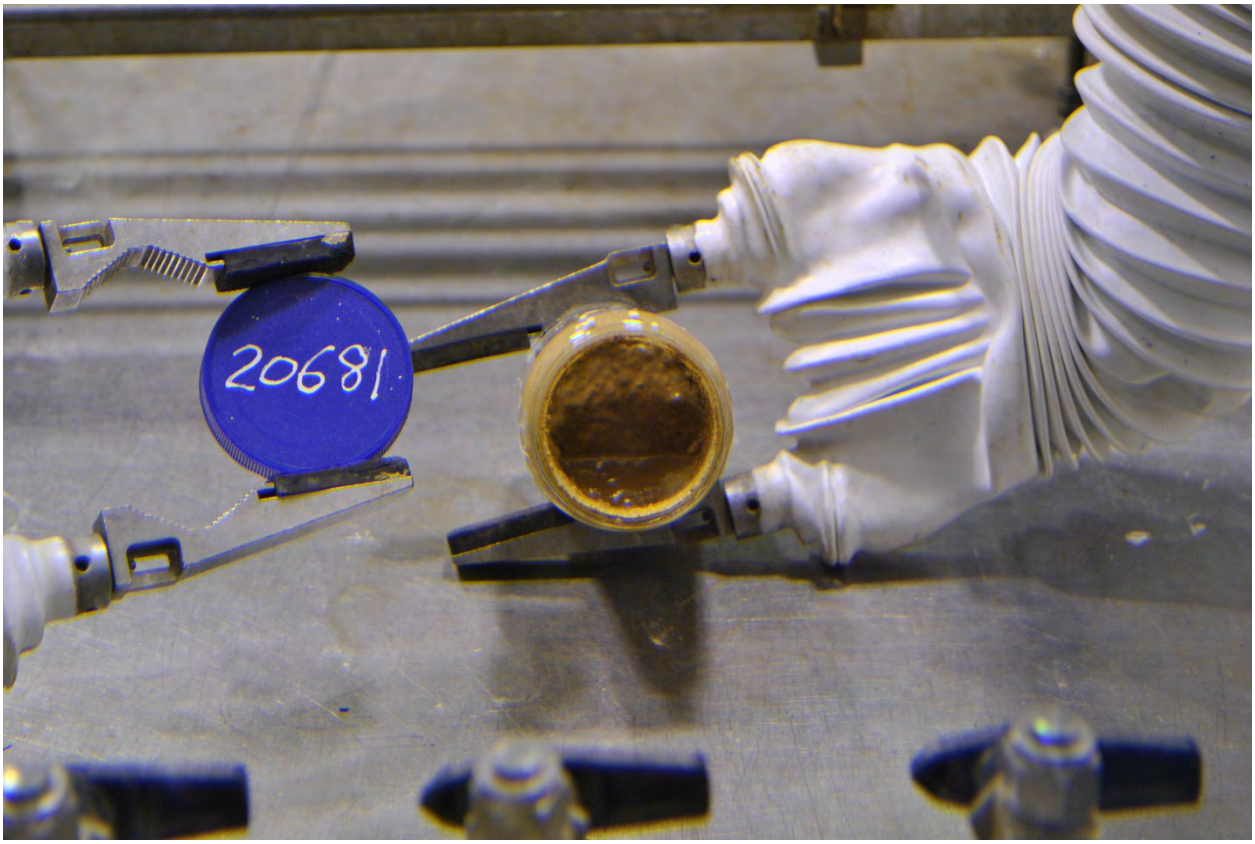
9C-13-9



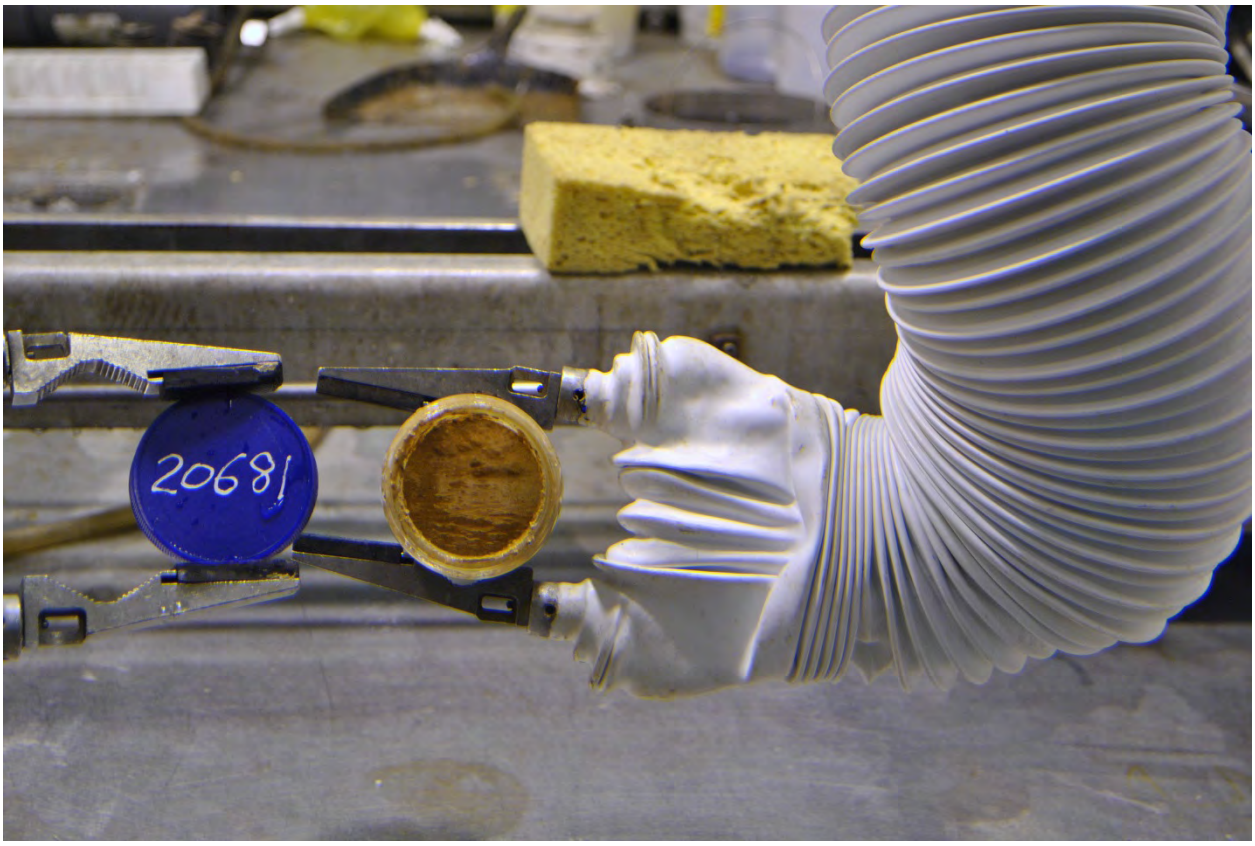
9C-13-Comp A: Before Spatula Homogenization



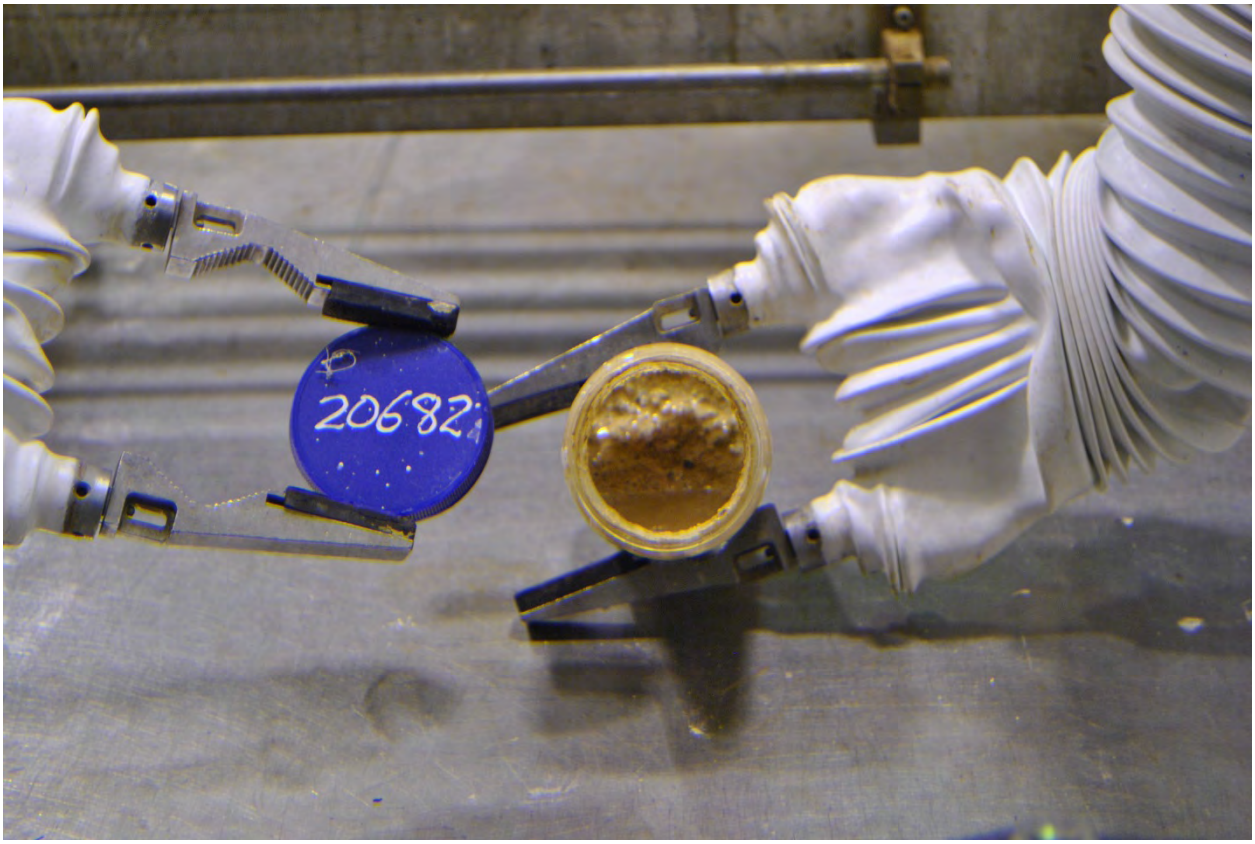
9C-13-Comp A: After Spatula Homogenization



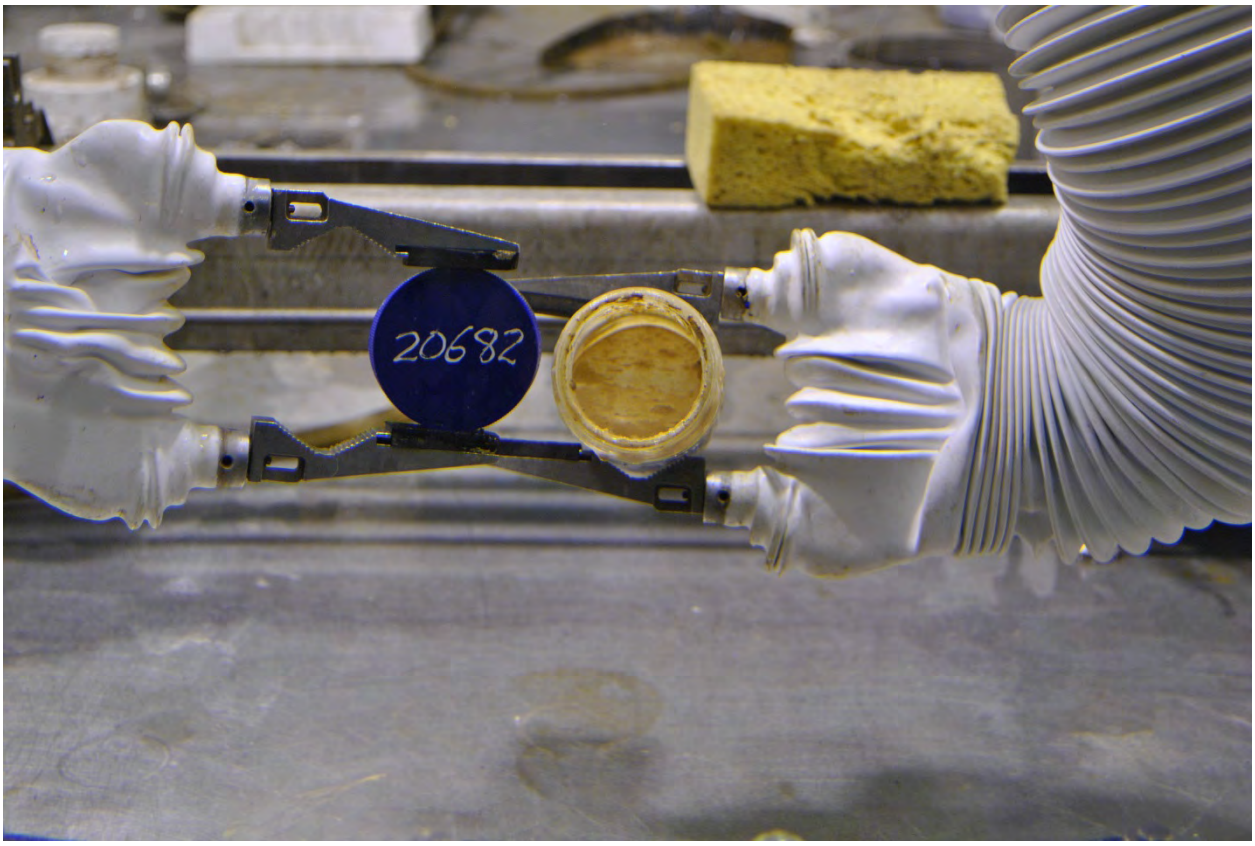
9C-13-Comp B: Before Spatula Homogenization



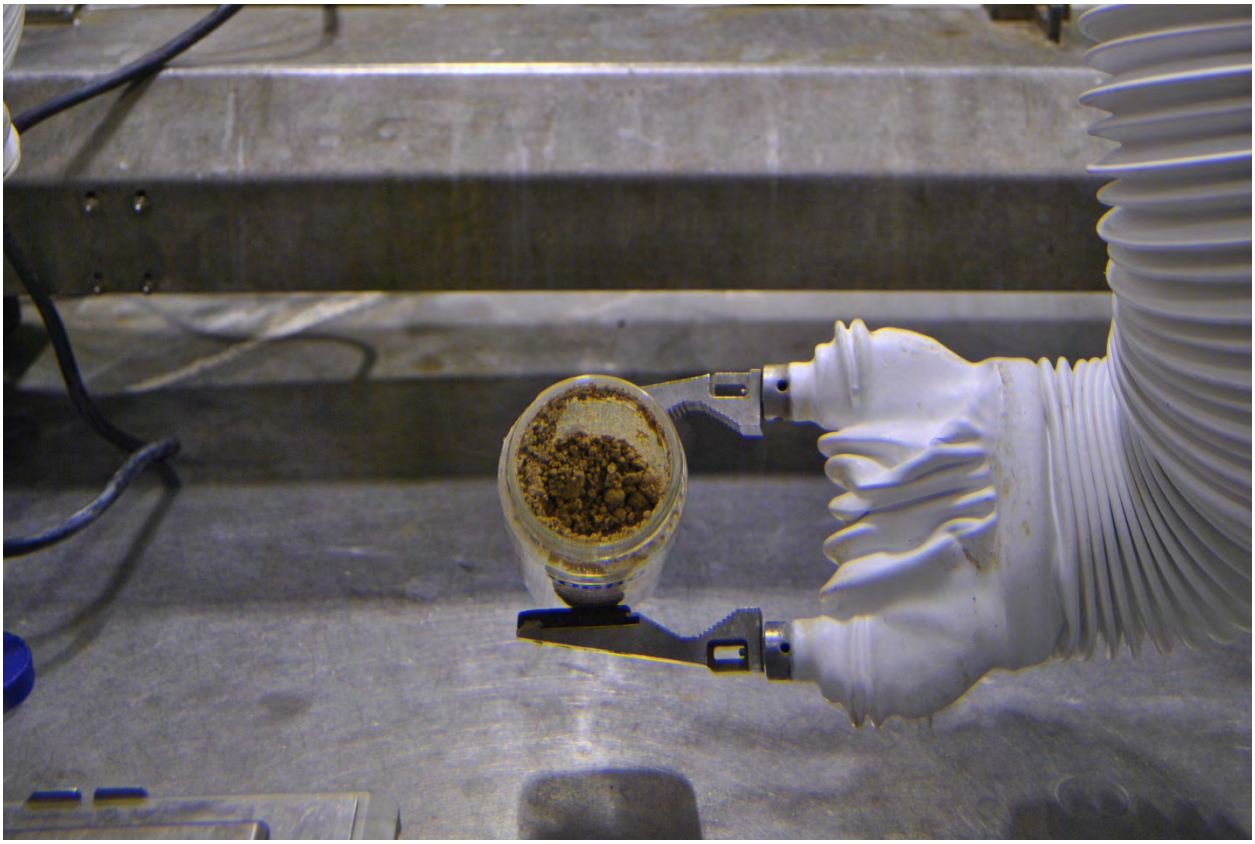
9C-13-Comp B: After Spatula Homogenization



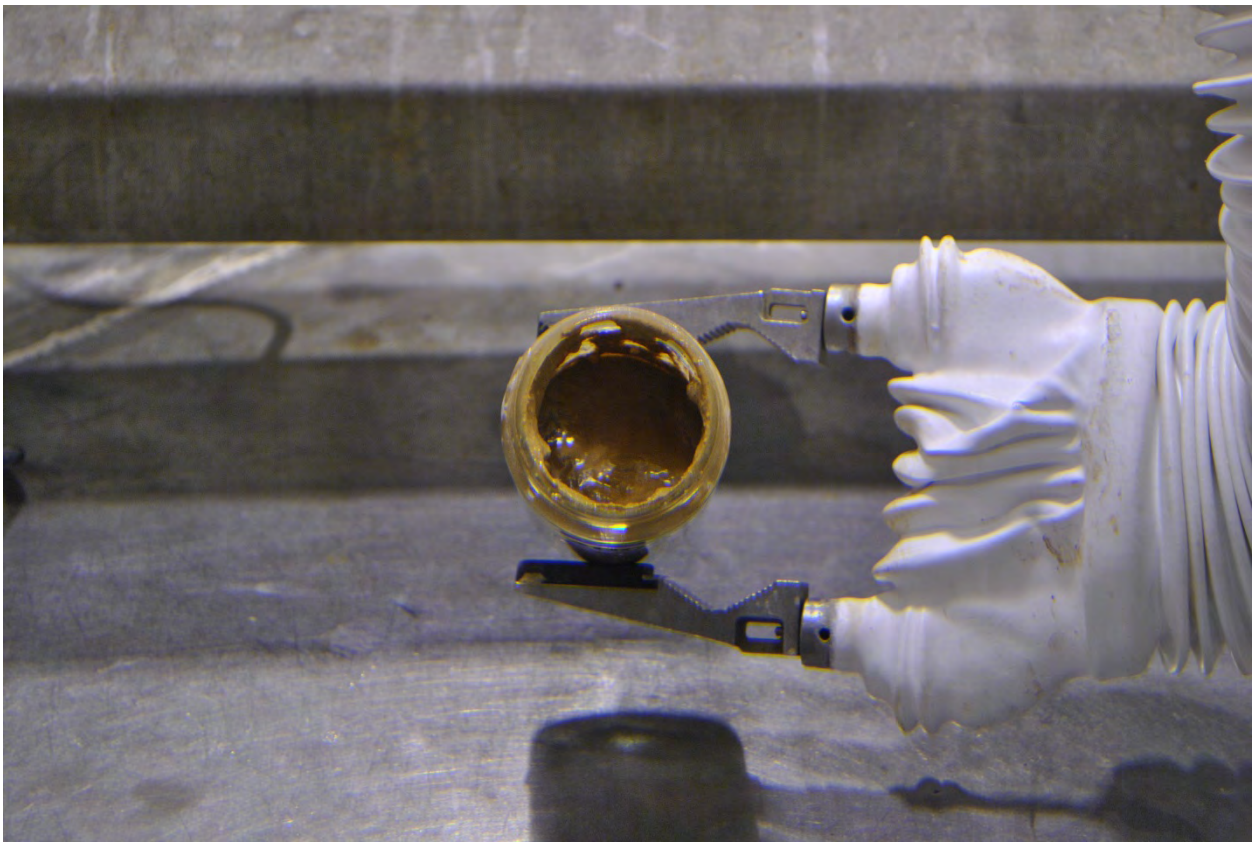
9C-13-Comp C: Before Spatula Homogenization



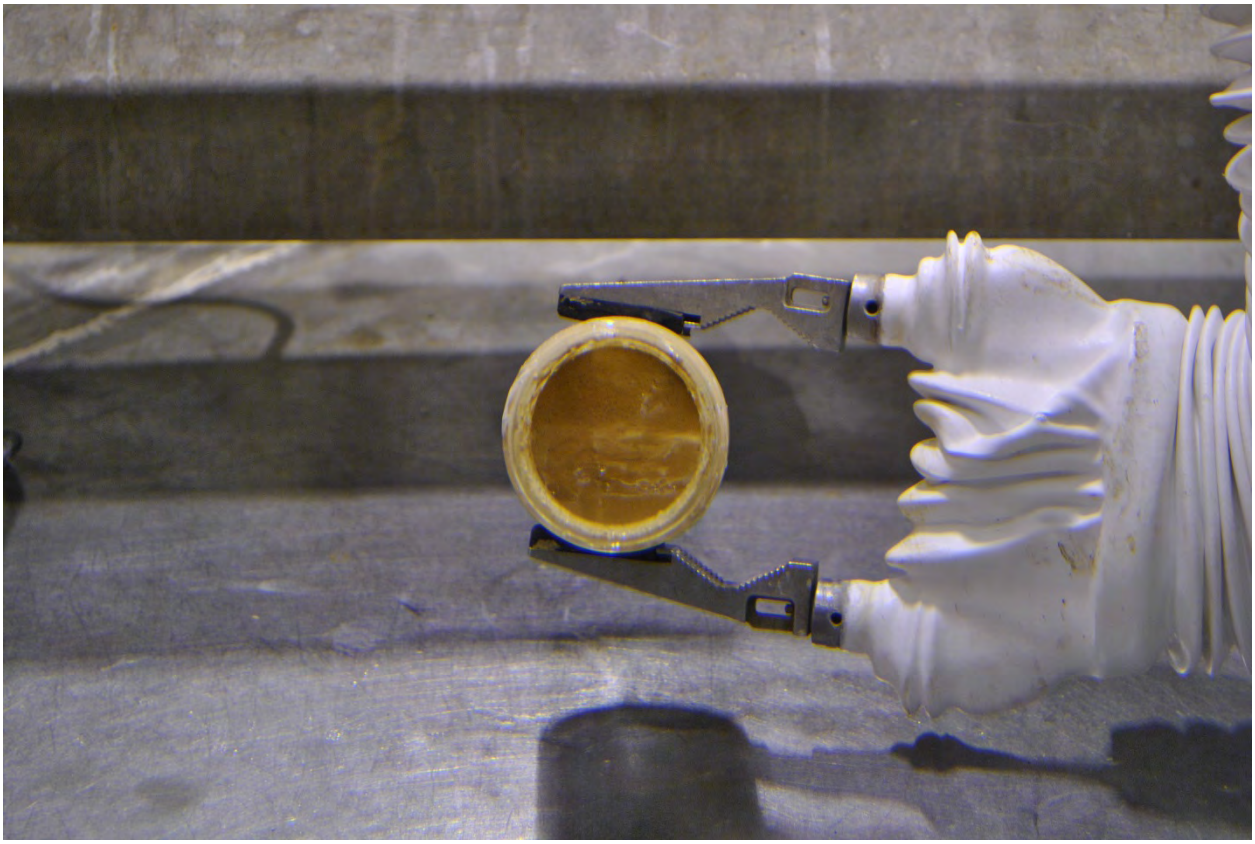
9C-13-Comp C: After Spatula Homogenization



9C-13-Comp A: Tissue Homogenized



9C-13-Comp B: Tissue Homogenized



9C-13-Comp C: Tissue Homogenized

Attachment 7

RECEIPT PAPERWORK

ATL	SAMPLE RECEIPT AND CHAIN OF CUSTODY VERIFICATION CHECKLIST	LO-090-101 Rev 6.6.0

Date Samples Received: 5.7.13 Group #: 20130402

Number of Samples: 1

Sample Custodian: T.M. Gilbert

Sample Custodian to Complete:

Action	Yes	No	N/A	Comments
RSA/COC provided?	✓			
RSR provided?	✓			
Verify GKI is complete			✓	☑ In Project File
Received from an alpha facility?		✓		☐ Contact PM for approval to release
Check that outer custody seal is intact, if present	✓			
Record cooler temperature in centigrade, as appropriate			✓	☐ Check if no cooler and/or no ice
Samples are intact and in good condition	✓			If No, provide comments below
Verify that COC or RSA is accurate and complete, containing the following information:				
• Client name and client sample number	✓			
• Date and time of sampling	✓			
• Sampling location or origin	✓			
• Container type, size, and number	✓			
• Preservatives (if used) are noted on the COC/RSA and sample bottle			✓	
• Analysis request is clear	✓			
• Signature of persons relinquishing and receiving samples	✓			
• Date and/or time of sample custody exchange	✓			
Verify that sample numbers on containers match the COC and/or RSA	✓			
Samples stored properly (e.g., refrigeration)	✓			11 A

Notify the PM immediately if any problems are noted.

Samples acceptable for release? Yes Initials [signature] Date 5.7.13

If No, comment on communication and resolution:

Other Comments:

A-6005-342 (REV 3)

CHAIN-OF-CUSTODY RECORD FOR WTS

(1) Sample Number: 9C-13-7	(2) Supervisor/Sampler: Tom Craft / Tom Craft	(9) Seal Intact Upon Release? ☑ Yes ☐ No
(3) Tank: C-109	(4) Riser: 3	(5) Cask/Pig Serial No.: 114 / HC-011
		(10) Seal Intact Upon Receipt? ☑ Yes ☐ No
(6) Shipment Description:	(7) Sampling Data	(11) Seal Number AND Cask/Pig SERIAL Number consistent with this record? (Block 5 & 6b) ☑ Yes ☐ No

(6) Shipment Description:

A. Work Package Number: TFC-WO-13-1376

B. Cask/Pig Seal Number: 107

C. Date Sample Collected: 5/7/13

D. Time Sample Collected: 1027

(7) Sampling Data

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

N/A

(12) Laboratory Comments:

GRP # 20130402 ✓
SAM # S13T004284 ✓
OMWI ✓
MARS ✓
5.8.13

(8) Field Comments:

Dose Rate 1000 mR/hr uncorrected RO-7 contact D25-7-13

(13) Relinquished By (Sign and PRINT)	(14) Received By (Sign and PRINT)	(15) Date/Time	(16) Receiver Comments
Tom Craft / Tom Craft	Darren Larsen / Darren Larsen	5-7-13 1325	N/A
(17) Relinquished By (Sign and PRINT)	(18) Received By (Sign and PRINT)	(19) Date/Time	(20) Receiver Comments
Darren Larsen / Darren Larsen	Todd McCulloch	5-7-13 1400	N/A
(21) Relinquished By (Sign and PRINT)	(22) Received By (Sign and PRINT)	(23) Date/Time	(24) Receiver Comments
(25) Relinquished By (Sign and PRINT)	(26) Received By (Sign and PRINT)	(27) Date/Time	(28) Receiver Comments

DISTRIBUTION: Original - Laboratory Copy - Sampling Operations

BC-6001-326 (01/04)

ATL	SAMPLE RECEIPT AND CHAIN OF CUSTODY VERIFICATION CHECKLIST	LO-090-101 Rev G.G.0

Date Samples Received: 5-8-13 Group #: 20130402

Number of Samples: 4 (C-109 grabs)

Sample Custodian: [signature]

Sample Custodian to Complete:

Action	Yes	No	N/A	Comments
RSA/COC provided?	✓			
RSR provided?	✓			
Verify GKI is complete		✓		☑ In Project File
Received from an alpha facility?		✓		☐ Contact PM for approval to release
Check that outer custody seal is intact, if present	✓			
Record cooler temperature in centigrade, as appropriate			✓	☐ Check if no cooler and/or no ice
Samples are intact and in good condition	✓			If No, provide comments below
Verify that COC or RSA is accurate and complete, containing the following information:				
• Client name and client sample number	✓			
• Date and time of sampling	✓			
• Sampling location or origin	✓			
• Container type, size, and number	✓			
• Preservatives (if used) are noted on the COC/RSA and sample bottle			✓	
• Analysis request is clear	✓			
• Signature of persons relinquishing and receiving samples	✓			
• Date and/or time of sample custody exchange	✓			
Verify that sample numbers on containers match the COC and/or RSA	✓			
Samples stored properly (e.g., refrigeration)				11 A

Notify the PM immediately if any problems are noted.

Samples acceptable for release? yes Initials RH Date 5.8.13

If No, comment on communication and resolution:

Other Comments:

A-6005-342 (REV 3)

CHAIN-OF-CUSTODY RECORD FOR WTS

(1) Sample Number: 9C-13-2	(2) Supervisor/Sampler: Tom Craft / Tom Cann	(9) Seal Intact Upon Release? ☑ Yes ☐ No
(3) Tank: C-109	(4) Riser: 3	(5) Cask/Pig Serial No.: 108 / HC-022
(10) Seal Intact Upon Receipt? ☑ Yes ☐ No		
(11) Seal Number AND Cask/Pig SERIAL Number consistent with this record? (Block 5 & 6b) ☑ Yes ☐ No		

(6) Shipment Description:

A. Work Package Number: TFC-WO-13-1376

B. Cask/Pig Seal Number: 102

C. Date Sample Collected: 5-8-13

D. Time Sample Collected: 1035 ✓

(7) Sampling Data

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

N/A

(8) Field Comments:

Redish Brown Clay

Uncorrected RD-7 ow 1200mR/hr

(12) Laboratory Comments:

grp # 20170402 ✓
SAM # S13T004231 ✓
omni ✓
MARS ✓
RHSteele 5-8-13

(13) Relinquished By (Sign and PRINT)	(14) Received By (Sign and PRINT)	(15) Date/Time	(16) Receiver Comments
Tom Cann / Tom Craft	Darren LaPierre	5-8-13 1300	N/A
(17) Relinquished By (Sign and PRINT)	(18) Received By (Sign and PRINT)	(19) Date/Time	(20) Receiver Comments
Darren LaPierre	RHSteele RTSteele AH	5-8-13 1410	NA
(21) Relinquished By (Sign and PRINT)	(22) Received By (Sign and PRINT)	(23) Date/Time	(24) Receiver Comments
(25) Relinquished By (Sign and PRINT)	(26) Received By (Sign and PRINT)	(27) Date/Time	(28) Receiver Comments

DISTRIBUTION: Original - Laboratory Copy - Sampling Operations

BC-6001-326 (01/04)

CHAIN-OF-CUSTODY RECORD FOR WTS

(1) Sample Number: 9C-13-3	(2) Supervisor/Sampler: Tom Craft / Tom Craft	(9) Seal Intact Upon Release? ☑ Yes ☐ No
(3) Tank: C-109 / (4) Riser: 3	(5) Cask/Pig Serial No.: 15 / HC-28	(10) Seal Intact Upon Receipt? ☑ Yes ☐ No
(6) Shipment Description:	(7) Sampling Data (Y / N)	(11) Seal Number AND Cask/Pig SERIAL Number consistent with this record? (Block 5 & 6b) ☑ Yes ☐ No

(6) Shipment Description:

A. Work Package Number: TFC-WO-13-1376

B. Cask/Pig Seal Number: 103

C. Date Sample Collected: 5/7/13

D. Time Sample Collected: 1356

(7) Sampling Data (Y / N)

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

N/A

(12) Laboratory Comments:

GRP # 20130402
SAM # 513T004232
OMNI ✓
MARS ✓
RHtech 5.8.13

(8) Field Comments:

Reddish Brown Clay

1700 mR/hr uncorrected RO-7

(13) Relinquished By (Sign and PRINT)	(14) Received By (Sign and PRINT)	(15) Date/Time	(16) Receiver Comments
Tom Craft / Tom Craft	Darren LaPierre / Darren LaPierre	5-8-13 1307	N/A
(17) Relinquished By (Sign and PRINT)	(18) Received By (Sign and PRINT)	(19) Date/Time	(20) Receiver Comments
Darren LaPierre / Darren LaPierre	RHtech RTStech AM	5.8.13 1410	NA
(21) Relinquished By (Sign and PRINT)	(22) Received By (Sign and PRINT)	(23) Date/Time	(24) Receiver Comments
(25) Relinquished By (Sign and PRINT)	(26) Received By (Sign and PRINT)	(27) Date/Time	(28) Receiver Comments

DISTRIBUTION: Original - Laboratory Copy - Sampling Operations

BC-6001-326 (01/04)

CHAIN-OF-CUSTODY RECORD FOR WTS

(1) Sample Number: 9C-13-4	(2) Supervisor/Sampler: Tom Craft / Tom Craft	(9) Seal Intact Upon Release? ☑ Yes ☐ No
(3) Tank: C-109	(4) Riser: 3	(5) Cask/Pig Serial No.: 126 / HC-021
		(10) Seal Intact Upon Receipt? ☑ Yes ☐ No
(6) Shipment Description:	(7) Sampling Data (Y / N)	(11) Seal Number AND Cask/Pig SERIAL Number consistent with this record? (Block 5 & 6b) ☑ Yes ☐ No

(6) Shipment Description:

A. Work Package Number: TFC-WO-13-1376

B. Cask/Pig Seal Number: 104

C. Date Sample Collected: 5/7/13

D. Time Sample Collected: 1430 ✓

(7) Sampling Data (Y / N)

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

N/A

(12) Laboratory Comments:

GRP# 20130402 ✓
SAM# S13T004257 ✓
OMNI ✓
MARS ✓ RHtech
5.8.13

(8) Field Comments:

Redish Brown Clay

Uncorrected Dose Rate 600 mR/hr RO-7 Uncorrected

(13) Relinquished By (Sign and PRINT)	(14) Received By (Sign and PRINT)	(15) Date/Time	(16) Receiver Comments
Tom Craft / Tom Craft	Darren LaPierre	5-8-13 1303	N/A
(17) Relinquished By (Sign and PRINT)	(18) Received By (Sign and PRINT)	(19) Date/Time	(20) Receiver Comments
Darren LaPierre	RHtech RTSteele AH	5.8.13 1410 ✓	NA
(21) Relinquished By (Sign and PRINT)	(22) Received By (Sign and PRINT)	(23) Date/Time	(24) Receiver Comments
(25) Relinquished By (Sign and PRINT)	(26) Received By (Sign and PRINT)	(27) Date/Time	(28) Receiver Comments

DISTRIBUTION: Original - Laboratory Copy - Sampling Operations

BC-6001-326 (01/04)

CHAIN-OF-CUSTODY RECORD FOR WTS

(1) Sample Number: 9C-13-8	(2) Supervisor/Sampler: Tom Craft / Tom Craft	(9) Seal Intact Upon Release? ☑ Yes ☐ No
(3) Tank: C-109	(4) Riser: 3	(5) Cask/Pig Serial No.: 115 / HC-015
(10) Seal Intact Upon Receipt? ☑ Yes ☐ No		

(6) Shipment Description:

A. Work Package Number: TFC-WO-13-1376

B. Cask/Pig Seal Number: 108

C. Date Sample Collected: 5-8-13

D. Time Sample Collected: 1310 ✓

(7) Sampling Data

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

N/A

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

(12) Laboratory Comments:

CRP # 20130402 ✓
SAM # 513T004285 ✓
OMNI ✓
MARS ✓
RTStech
5.8.13

(8) Field Comments:

Reddish Brown

Uncorrected Dose Rate 700 mr/hr

(13) Relinquished By (Sign and PRINT)	(14) Received By (Sign and PRINT)	(15) Date/Time	(16) Receiver Comments
Tom Craft / Tom Craft	Darren LaPierre	5-8-13 1333	N/A
(17) Relinquished By (Sign and PRINT)	(18) Received By (Sign and PRINT)	(19) Date/Time	(20) Receiver Comments
Darren LaPierre	RTStech RTStech ATL	5-8-13 ✓ 1410	N/A
(21) Relinquished By (Sign and PRINT)	(22) Received By (Sign and PRINT)	(23) Date/Time	(24) Receiver Comments
(25) Relinquished By (Sign and PRINT)	(26) Received By (Sign and PRINT)	(27) Date/Time	(28) Receiver Comments

DISTRIBUTION: Original - Laboratory Copy - Sampling Operations

BC-6001-326 (01/04)

ATL	SAMPLE RECEIPT AND CHAIN OF CUSTODY VERIFICATION CHECKLIST	LO-090-101 Rev 6.6.0

Date Samples Received: 5.9.13 (C-109) Group #: 20130402

Number of Samples: 4

Sample Custodian: RHtah

Sample Custodian to Complete:

Action	Yes	No	N/A	Comments
RSA/COC provided?	✓			
RSR provided?	✓			
Verify GKI is complete	✓			☑ In Project File
Received from an alpha facility?		✓		☐ Contact PM for approval to release
Check that outer custody seal is intact, if present	✓			
Record cooler temperature in centigrade, as appropriate			✓	☐ Check if no cooler and/or no ice
Samples are intact and in good condition	✓			If No, provide comments below
Verify that COC or RSA is accurate and complete, containing the following information:				
• Client name and client sample number	✓			
• Date and time of sampling	✓			
• Sampling location or origin	✓			
• Container type, size, and number	✓			
• Preservatives (if used) are noted on the COC/RSA and sample bottle			✓	
• Analysis request is clear	✓			
• Signature of persons relinquishing and receiving samples	✓			
• Date and/or time of sample custody exchange	✓			
Verify that sample numbers on containers match the COC and/or RSA	✓			
Samples stored properly (e.g., refrigeration)	✓			11 A

Notify the PM immediately if any problems are noted.

Samples acceptable for release? yes Initials RA Date 5.9.13

If No, comment on communication and resolution:

Other Comments:

A-6005-342 (REV 3)

CHAIN-OF-CUSTODY RECORD FOR WTS

(1) Sample Number	(2) Supervisor/Sampler	(3) Tank	(4) Riser	(5) Cask/Pig Serial No.
9C-13-1	Tom Craft/Tom Craft	C-109	3	19 / HC-035

(6) Shipment Description:

A. Work Package Number: TFC-WO-13-1326

B. Cask/Pig Seal Number: 101

C. Date Sample Collected: 5-8-13 ✓

D. Time Sample Collected: 1335 ✓

(7) Sampling Data

	Y	N
- Lithium Bromide	☒	☐
Amount: N/A		
Concentration:		
- X-Ray	☐	☐
- Partial Sample	☐	☐
Retrieved Partial Sample Stroke Length:		

(8) Field Comments:

uncorrected Dose Rate @ 800 mR/hr

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

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

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

(12) Laboratory Comments:

GRP # 20130402 ✓

SAM # 513T004230 ✓

Omni ✓

MARS ✓

RHTeed

5.9.13

(13) Relinquished By (Sign and PRINT)	(14) Received By (Sign and PRINT)	(15) Date/Time	(16) Receiver Comments
Tom Craft/Tom Craft	Steve Collins	5/9/13 1:03	N/A
(17) Relinquished By (Sign and PRINT)	(18) Received By (Sign and PRINT)	(19) Date/Time	(20) Receiver Comments
Steve Collins	RHTeed RHTeed ATL	5.9.13 ✓ 1330 ✓	N/A
(21) Relinquished By (Sign and PRINT)	(22) Received By (Sign and PRINT)	(23) Date/Time	(24) Receiver Comments
(25) Relinquished By (Sign and PRINT)	(26) Received By (Sign and PRINT)	(27) Date/Time	(28) Receiver Comments

DISTRIBUTION: Original - Laboratory Copy - Sampling Operations

BC-6001-326 (01/04)

CHAIN-OF-CUSTODY RECORD FOR WTS

(1) Sample Number	(2) Supervisor/Sampler	(3) Tank	(4) Riser	(5) Cask/Pig Serial No.
9C-13-5	Tom Craft / Tom Craft	C-109	3	125 / HC-009

(6) Shipment Description:

A. Work Package Number: TFC-WO-13-1326

B. Cask/Pig Seal Number: 105

C. Date Sample Collected: 5/9/13'

D. Time Sample Collected: 0945'

(7) Sampling Data

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

(8) Field Comments:

Redish Brown

1,200 mR/h, uncorrected RO-7 o/w

(9) Seal Intact Upon Release?	☑ Yes	☐ No
(10) Seal Intact Upon Receipt?	☑ Yes	☐ No
(11) Seal Number AND Cask/Pig SERIAL Number consistent with this record? (Block 5 & 6b)	☑ Yes	☐ No

(12) Laboratory Comments:

GRP# 20130402 ✓

SAM# 513T00 4258'

Omni ✓

MARS ✓

RHSteele 5.9.13

(13) Relinquished By (Sign and PRINT)	(14) Received By (Sign and PRINT)	(15) Date/Time	(16) Receiver Comments
Tom Craft	Steve Collins	5/9/13 1:06	NA
(17) Relinquished By (Sign and PRINT)	(18) Received By (Sign and PRINT)	(19) Date/Time	(20) Receiver Comments
Steve Collins	RHSteele RHSteele 5/9	5-9-13 ' 1330 '	NA
(21) Relinquished By (Sign and PRINT)	(22) Received By (Sign and PRINT)	(23) Date/Time	(24) Receiver Comments
(25) Relinquished By (Sign and PRINT)	(26) Received By (Sign and PRINT)	(27) Date/Time	(28) Receiver Comments

DISTRIBUTION: Original - Laboratory Copy - Sampling Operations

BC-6001-326 (01/04)

CHAIN-OF-CUSTODY RECORD FOR WTS

(1) Sample Number: 9C-13-6	(2) Supervisor/Sampler: Tom Craft	(9) Seal Intact Upon Release? ☑ Yes ☐ No
(3) Tank: C-109 / (4) Riser: 3	(5) Cask/Pig Serial No.: 120 / HC-020	(10) Seal Intact Upon Receipt? ☑ Yes ☐ No
(6) Shipment Description:	(7) Sampling Data (Y / N)	(11) Seal Number AND Cask/Pig SERIAL Number consistent with this record? (Block 5 & 6b) ☑ Yes ☐ No

(6) Shipment Description:

A. Work Package Number: TFC-WO-13-1376

B. Cask/Pig Seal Number: 106

C. Date Sample Collected: 5/9/13

D. Time Sample Collected: 1002

(7) Sampling Data (Y / N)

- Lithium Bromide ☐ ☑
- Amount _____
- Concentration _____
- X-Ray ☐ ☐
- Partial Sample ☐ ☐
- Retrieved Partial Sample Stroke Length _____

N/A

(12) Laboratory Comments:

GRP# 20130402
SAM# S13T004259
Omni ✓
MARS ✓
RHTech
5.9.13

(8) Field Comments:

Redish brown

1000 mR/hr on RO-7 uncorrected

(13) Relinquished By (Sign and PRINT)	(14) Received By (Sign and PRINT)	(15) Date/Time	(16) Receiver Comments
Tom Craft / Tom Craft	[signature] Steve Collins	5/9/13 1:08	NA
(17) Relinquished By (Sign and PRINT)	(18) Received By (Sign and PRINT)	(19) Date/Time	(20) Receiver Comments
[signature] Steve Collins	RHTech RTStech ATL	5.9.13 1330	NA
(21) Relinquished By (Sign and PRINT)	(22) Received By (Sign and PRINT)	(23) Date/Time	(24) Receiver Comments
(25) Relinquished By (Sign and PRINT)	(26) Received By (Sign and PRINT)	(27) Date/Time	(28) Receiver Comments

DISTRIBUTION: Original - Laboratory Copy - Sampling Operations

BC-6001-326 (01/04)

CHAIN-OF-CUSTODY RECORD FOR WTS

(1) Sample Number: 9C-13-9	(2) Supervisor/Sampler: Tom Craft / Tom Craft	(9) Seal Intact Upon Release? ☑ Yes ☐ No
(3) Tank: C-109	(4) Riser: 3	(5) Cask/Pig Serial No.: 130 / HC-050
		(10) Seal Intact Upon Receipt? ☑ Yes ☐ No
(6) Shipment Description:	(7) Sampling Data	(11) Seal Number AND Cask/Pig SERIAL Number consistent with this record? (Block 5 & 6b) ☑ Yes ☐ No

(6) Shipment Description:

A. Work Package Number: TFC-WO-13-1376

B. Cask/Pig Seal Number: 109

C. Date Sample Collected: 5-9-13 ✓

D. Time Sample Collected: 1024 ✓

(7) Sampling Data

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

N/A

(12) Laboratory Comments:

GRP# 20130402 ✓
SAM# S13T004286 ✓
OMNI ✓
MARS ✓
RHTeele 5.9.13

(8) Field Comments:

Redton Boomn

1000 mR/hr a/w uncorrected R0.7

(13) Relinquished By (Sign and PRINT)	(14) Received By (Sign and PRINT)	(15) Date/Time	(16) Receiver Comments
Tom Craft / Tom Craft	Steve Collins	5/9/13 1:05	NA
(17) Relinquished By (Sign and PRINT)	(18) Received By (Sign and PRINT)	(19) Date/Time	(20) Receiver Comments
Steve Collins	RHTeele RHTeele ATL	5.9.17 1330	N/A
(21) Relinquished By (Sign and PRINT)	(22) Received By (Sign and PRINT)	(23) Date/Time	(24) Receiver Comments
(25) Relinquished By (Sign and PRINT)	(26) Received By (Sign and PRINT)	(27) Date/Time	(28) Receiver Comments

DISTRIBUTION: Original - Laboratory Copy - Sampling Operations

BC-6001-326 (01/04)

GENERATOR KNOWLEDGE INFORMATION

1. Chain of Custody Number N/A CACN/COA N/A Customer Identification Number 241-C-109

2. List generator knowledge or description of process that produced sample. Or list description of sample source:
Solid samples taken from single shell tank 241-C-109 after natrophosphate and caustic dissolution. These samples are being taken for closure purposes. The samples could contain some liquid.
MSDS Available? ○ No ○ Yes Hanford MSDS No. _____

3. List all waste codes and constituents associated with the waste or media that was sampled, regardless of CERCLA status.
a) Does the sample contain any of the following listed waste codes?
By checking "unknown" the customer understands that no knowledge is available following a careful search.

	List Federal Waste Code(s):	List Constituent(s):			
P Codes:			○ Yes	◉ No	
U Codes:			○ Yes	◉ No	
K Codes:			○ Yes	◉ No	○ Unknown
F Codes:	F001-F005		◉ Yes	○ No	○ Unknown

b) List applicable characteristic waste codes, flash point, pH, constituents, and concentrations as appropriate.

D001:	☐ FP <100°F	☐ FP ≥100 <140°F	☐ DOT Oxidizer	◉ Yes	○ No	○ Unknown
D002:	☐ pH ≤2	☐ pH ≥12.5	☐ Solid Corrosive (WSC2)	◉ Yes	○ No	○ Unknown
D003:	☒ Cyanide	☒ Sulfide	☐ Water Reactive	☐ Other _____ (i.e., peroxide former, explosive, air reactive)	◉ Yes	○ No	○ Unknown
D004-D043 (Identify applicable waste codes and concentrations):					○ Yes	○ No	○ Unknown

D004 to D011, D018, D019, D022, D028 to D030, D033 to D036, D038 to D041, D043

c) If characteristic, list any known underlying hazardous constituents (UHCs) reasonably expected to be present, and their concentrations that may be present above the LDR treatment standard (40 CFR 268.48):
Not needed per 222-S Environmental since waste will be returned to tank farms via 219-S

d) List any known Land Disposal Restrictions (LDR) subcategories, if applicable (40 CFR 268.40):
Not needed per 222-S Environmental since waste will be returned to tank farms via 219-S

e) List any applicable Washington State dangerous waste codes: (not required if federally regulated)

WT01:	○ Yes	○ No	○ Unknown	WP01:	○ Yes	○ No	○ Unknown
WT02:	○ Yes	○ No	○ Unknown	WP02:	○ Yes	○ No	○ Unknown
W001:	○ Yes	○ No	○ Unknown	WP03:	○ Yes	○ No	○ Unknown
List constituents and concentrations:				F003:*	○ Yes	○ No	○ Unknown

(*State mixture rule for ignitability)

4. Is this material TSCA regulated for PCBs? ◉ Yes ○ No ○ Unknown ○ Analysis Requested
List concentration if applicable: _____
If yes, what is the source of the PCBs? (see TSCA PCB Hanford Site User Guide, DOE/RL-2001-50)

☐ PCB Liquid Waste	☐ PCB Bulk Product Waste	☐ PCB Transformer ≥500 ppm	☐ Unknown
☒ PCB Remediation Waste	☐ PCB R&D Waste	☐ PCB contaminated electrical equipment (capacitor/ballast) <500 ppm	
☐ PCB Spill Material	☐ PCB Item	☐ Other PCB Waste (list) _____	

5. Is this material TRU? ○ Yes ◉ No ○ Unknown

GENERATOR KNOWLEDGE INFORMATION (Continued)

1. Chain of Custody Number N/A CACN/COA N/A Customer Identification Number 241-C-109

6. ACCURACY OF INFORMATION

Based on my inquiry of those individuals immediately responsible for obtaining this information, that to the best of my knowledge, the information entered in this document is true, accurate, and complete.

Print & Sign ANDREW TEMPLETON Date 5-7-13

Attachment 8

RAW DATA

07/01/2013 15:56 FAX 509 373 1438 11A HOT CELLS 222s LAB 002

11A Hot Cell Bulk Density and Archive Worksheet

Project: C109 CLO Charge#: 3A.26 Group#: 20130402

PM/PC: Osborn, Julie 373-3328 Batch#: N/A Date: 5-15-13 Time: 1354

BULK DENSITY		
OmniLIMS #:	S13T004242	
9C-13-Comp A Tissue Homogenized		
Initial Gross:	53.15	g
Tare:	13.41	g
Final Weight:	39.74	g
Volume:	24.0	mL
Bulk Density:	1.66	g/mL

ARCHIVE SAMPLE		
OmniLIMS #:	S13T004242	
9C-13-Comp A Tissue Homogenized		
Initial Gross:	546.2	g
Tare:	302.1	g
Final Weight:	460.0	g
Removed:	86.2	g
Archive:	157.9	g
Transfer Room:	11A(B Bin 174	
Jar Number:	20680	

ARCHIVE SAMPLE		
OmniLIMS #:	S13T004256	
9C-13-Comp A Tissue Homo Special Arch		
Initial Gross:	130.6	g
Tare:	91.9	g
Final Weight:	130.6	g
Removed:	0	g
Archive:	38.7	g
Transfer Room:	11A(B Bin 7	
Jar Number:	20590	

NOTES: **Remove a ~ 40 g sample from the the tissue homogenized composite and using a centrifuge cone, perform a bulk density test. Then archive the original sample and the 40 g sample separately.**

Analyst OmniLIMS Entry Verified / Date 5/16/13

Michael A. Purcell

☑001 11A HOT CELLS 222s LAB 07/09/2013 13:11 FAX 509 373 1438

11A Hot Cell Bulk Density and Archive Worksheet

Project: C109 CLO Charge#: 3A.26 Group#: 20130402

PM/PC: Osborn, Julie 373-3328 Batch#: N/A Date: 7-8-13 Time: 1630

BULK DENSITY		
OmniLIMS #:	S13T004242	
9C-13-Comp A Tissue Homogenized		
Initial Gross:	76.51	g
Tare:	13.30	g
Final Weight: ~~76.51~~ 63.21		g
Volume:	40	mL
Bulk Density:	1.580	g/mL

Jar # 20680

11A1B, Bin 174

C

NOTES: **Remove a ~ 40 g sample from the the tissue homogenized composite and using a clean centrifuge cone, perform a bulk density test. Then return the 40 grams to the archived composite.**

Analyst

N/A
OmniLIMS Entry

7/9/13
Verified / Date

Michael A. Purcell

07/01/2013 15:56 FAX 509 373 1438 11A HOT CELLS 222s LAB 003

11A Hot Cell Bulk Density and Archive Worksheet

Project: C109 CLO Charge#: 3A.26 Group#: 20130402

PM/PC: Osborn, Julie 373-3328 Batch#: N/A Date: 5-15-13 Time: 1354

BULK DENSITY		
OmniLIMS #:	S13T004269	
9C-13-Comp B Tissue Homogenized		
Initial Gross:	53.56	g
Tare:	13.46	g
Final Weight:	40.10	g
Volume:	22.5	mL
Bulk Density:	1.78	g/mL

ARCHIVE SAMPLE		
OmniLIMS #:	S13T004269	
9C-13-Comp B Tissue Homogenized		
Initial Gross:	648.4	g
Tare:	302.7	g
Final Weight:	560.8	g
Removed:	87.6	g
Archive:	258.1	g
Transfer Room:	11A 1B Bin 174	
Jar Number:	~~20820681~~	

ARCHIVE SAMPLE		
OmniLIMS #:	S13T004270	
9C-13-Comp B Tissue Homo Special Arch		
Initial Gross:	128.6	g
Tare:	89.0	g
Final Weight:	128.6	g
Removed:	Ø	g
Archive:	39.6	g
Transfer Room:	11A 1B Bin 7	
Jar Number:	20770	

NOTES: **Remove a ~ 40 g sample from the the tissue homogenized composite and using a centrifuge cone, perform a bulk density test. Then archive the original sample and the 40 g sample separately.**

Analyst OmniLIMS Entry Verified / Date 5/16/13

Michael A. Purcell

07/01/2013 15:57 FAX 509 373 1438 11A HOT CELLS 222s LAB 004

11A Hot Cell Bulk Density and Archive Worksheet

Project: C109 CLO Charge#: 3A.26 Group#: 20130402

PM/PC: Osborn, Julie 373-3328 Batch#: N/A Date: 5-15-13 Time: 13:54

BULK DENSITY		
OmniLIMS #:	S13T004296	
9C-13-Comp C Tissue Homogenized		
Initial Gross:	53.70	g
Tare:	13.40	g
Final Weight:	40.30	g
Volume:	22.5	mL
Bulk Density:	1.79	g/mL

ARCHIVE SAMPLE		
OmniLIMS #:	S13T004296	
9C-13-Comp C Tissue Homogenized		
Initial Gross:	695.1	g
Tare:	301.4	g
Final Weight:	607.9	g
Removed:	87.2	g
Archive:	306.5	g
Transfer Room:	11A, B	
Jar Number:	20682	

ARCHIVE SAMPLE		
OmniLIMS #:	S13T004297	
9C-13-Comp C Tissue Homo Special Arch		
Initial Gross:	125.8	g
Tare:	86	g
Final Weight:	125.8	g
Removed:	Ø	g
Archive:	~~39.6~~ 39.8 5/16/13	g
Transfer Room:	11A, B Bin 71	
Jar Number:	20771	

NOTES: **Remove a ~ 40 g sample from the the tissue homogenized composite and using a centrifuge cone, perform a bulk density test. Then archive the original sample and the 40 g sample separately.**

Analyst OmniLIMS Entry Verified / Date 5/16/13

Michael A. Purcell

PC: Julie Osborn

LABCORE Completed Batch Report for Batch# 00041227

Analyst: McColloch, Todd **Book#:** N/A

Instrument: Sony Camcorder

Method: BREAKDOWN PIG - HC, LA-519-151 Rev/Mod L-0

Specification: C109 CLO

Prep Batch: N/A

Batch Comment: None

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
Sample Sequence 1																	
1	SAMPLE	S13T004230		0 0			Record Appearance	SOLID	N/A	See Note				None			Q
1	SAMPLE	S13T004230		0 0			Color	SOLID	N/A	White				None			Q
1	SAMPLE	S13T004230		0 0			Clarity	SOLID	N/A	Opaque				None			Q
1	SAMPLE	S13T004230		0 0			Dose Rate	SOLID	N/A	5				mRem/hr			Q
1	SAMPLE	S13T004230		0 0			Etched Number	SOLID	N/A	9C-13-1				None			
1	SAMPLE	S13T004230		0 0			Organic Volume Present	SOLID	N/A	0				mL			Q
1	SAMPLE	S13T004230		0 0			Photography	SOLID	N/A	Complete				None			
1	SAMPLE	S13T004230		0 0			Amount of Sample Present	SOLID	N/A	109.7				g			Q
1	SAMPLE	S13T004230		0 0			Seal Number	SOLID	N/A	101				None			
1	SAMPLE	S13T004230		0 0			Volume % Settled Solids	SOLID	N/A	100				%			Q
1	SAMPLE	S13T004230		0 0			Volume of Sample	SOLID	N/A	35				mL			Q
Sample Sequence 2																	
2	SAMPLE	S13T004231		0 0			Record Appearance	SOLID	N/A	See Note				None			Q
2	SAMPLE	S13T004231		0 0			Color	SOLID	N/A	Tan				None			Q
2	SAMPLE	S13T004231		0 0			Clarity	SOLID	N/A	Opaque				None			Q
2	SAMPLE	S13T004231		0 0			Dose Rate	SOLID	N/A	20				mRem/hr			Q
2	SAMPLE	S13T004231		0 0			Etched Number	SOLID	N/A	9C-13-2				None			
2	SAMPLE	S13T004231		0 0			Organic Volume Present	SOLID	N/A	0				mL			Q
2	SAMPLE	S13T004231		0 0			Photography	SOLID	N/A	Complete				None			
2	SAMPLE	S13T004231		0 0			Amount of Sample Present	SOLID	N/A	158.5				g			Q
2	SAMPLE	S13T004231		0 0			Seal Number	SOLID	N/A	102				None			
2	SAMPLE	S13T004231		0 0			Volume % Settled Solids	SOLID	N/A	91.4				%			Q
2	SAMPLE	S13T004231		0 0			Volume of Sample	SOLID	N/A	80				mL			Q
Sample Sequence 3																	
3	SAMPLE	S13T004232		0 0			Record Appearance	SOLID	N/A	See Note				None			Q
3	SAMPLE	S13T004232		0 0			Color	SOLID	N/A	Tan				None			Q
3	SAMPLE	S13T004232		0 0			Clarity	SOLID	N/A	Opaque				None			Q
3	SAMPLE	S13T004232		0 0			Dose Rate	SOLID	N/A	30				mRem/hr			Q

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

* = Rejected Analyte
N, A = Non-reported Analyte

05/16/2013 13:14 FAX 509 373 1438 11A HOT CELLS 222s LAB 001

LABCORE Completed Batch Report for Batch# 00041227

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
3	SAMPLE	S13T004232		0 0			Etched Number	SOLID	N/A	9C-13-3				None			
3	SAMPLE	S13T004232		0 0			Organic Volume Present	SOLID	N/A	0				mL			Q
3	SAMPLE	S13T004232		0 0			Photography	SOLID	N/A	Complete				None			
3	SAMPLE	S13T004232		0 0			Amount of Sample Present	SOLID	N/A	343.8				g			Q
3	SAMPLE	S13T004232		0 0			Seal Number	SOLID	N/A	103				None			
3	SAMPLE	S13T004232		0 0			Volume % Settled Solids	SOLID	N/A	92.9				%			Q
3	SAMPLE	S13T004232		0 0			Volume of Sample	SOLID	N/A	240				mL			Q
ample Sequence 4																	
4	SAMPLE	S13T004257		0 0			Record Appearance	SOLID	N/A	See Note				None			Q
4	SAMPLE	S13T004257		0 0			Color	SOLID	N/A	Brown				None			Q
4	SAMPLE	S13T004257		0 0			Clarity	SOLID	N/A	Opaque				None			Q
4	SAMPLE	S13T004257		0 0			Dose Rate	SOLID	N/A	20				mRem/hr			Q
4	SAMPLE	S13T004257		0 0			Etched Number	SOLID	N/A	9C-13-4				None			
4	SAMPLE	S13T004257		0 0			Organic Volume Present	SOLID	N/A	0				mL			Q
4	SAMPLE	S13T004257		0 0			Photography	SOLID	N/A	Complete				None			
4	SAMPLE	S13T004257		0 0			Amount of Sample Present	SOLID	N/A	168.8				g			Q
4	SAMPLE	S13T004257		0 0			Seal Number	SOLID	N/A	104				None			
4	SAMPLE	S13T004257		0 0			Volume % Settled Solids	SOLID	N/A	94.3				%			Q
4	SAMPLE	S13T004257		0 0			Volume of Sample	SOLID	N/A	70				ml			Q
ample Sequence 5																	
5	SAMPLE	S13T004258		0 0			Record Appearance	SOLID	N/A	See Note				None			Q
5	SAMPLE	S13T004258		0 0			Color	SOLID	N/A	Tan				None			Q
5	SAMPLE	S13T004258		0 0			Clarity	SOLID	N/A	Opaque				None			Q
5	SAMPLE	S13T004258		0 0			Dose Rate	SOLID	N/A	25				mRem/hr			Q
5	SAMPLE	S13T004258		0 0			Etched Number	SOLID	N/A	9C-13-5				None			
5	SAMPLE	S13T004258		0 0			Organic Volume Present	SOLID	N/A	0				mL			Q
5	SAMPLE	S13T004258		0 0			Photography	SOLID	N/A	Complete				None			
5	SAMPLE	S13T004258		0 0			Amount of Sample Present	SOLID	N/A	282.5				g			Q
5	SAMPLE	S13T004258		0 0			Seal Number	SOLID	N/A	105				None			
5	SAMPLE	S13T004258		0 0			Volume % Settled Solids	SOLID	N/A	92.3				%			Q
5	SAMPLE	S13T004258		0 0			Volume of Sample	SOLID	N/A	200				mL			Q
ample Sequence 6																	
6	SAMPLE	S13T004259		0 0			Record Appearance	SOLID	N/A	See Note				None			Q
6	SAMPLE	S13T004259		0 0			Color	SOLID	N/A	Tan				None			Q
6	SAMPLE	S13T004259		0 0			Clarity	SOLID	N/A	Opaque				None			Q
6	SAMPLE	S13T004259		0 0			Dose Rate	SOLID	N/A	30				mRem/hr			Q
6	SAMPLE	S13T004259		0 0			Etched Number	SOLID	N/A	9C-13-6				None			
6	SAMPLE	S13T004259		0 0			Organic Volume Present	SOLID	N/A	0				mL			Q

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

* = Rejected Analyte
N, A = Non-reported Analyte

002 11A HOT CELLS 222s LAB FAX 509 373 1438 05/16/2013 13:15

LABCORE Completed Batch Report for Batch# 00041227

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
6	SAMPLE	S13T004259		0 0			Photography	SOLID	N/A	Complete				None			
6	SAMPLE	S13T004259		0 0			Amount of Sample Present	SOLID	N/A	196.1				g			Q
6	SAMPLE	S13T004259		0 0			Seal Number	SOLID	N/A	106				None			
6	SAMPLE	S13T004259		0 0			Volume % Settled Solids	SOLID	N/A	80				%			Q
6	SAMPLE	S13T004259		0 0			Volume of Sample	SOLID	N/A	120				mL			Q
ample Sequence 7																	
7	SAMPLE	S13T004284		0 0			Record Appearance	SOLID	N/A	See Note				None			Q
7	SAMPLE	S13T004284		0 0			Color	SOLID	N/A	Tan				None			Q
7	SAMPLE	S13T004284		0 0			Clarity	SOLID	N/A	Opaque				None			Q
7	SAMPLE	S13T004284		0 0			Dose Rate	SOLID	N/A	30				mRem/hr			Q
7	SAMPLE	S13T004284		0 0			Etched Number	SOLID	N/A	9C-13-7				None			
7	SAMPLE	S13T004284		0 0			Organic Volume Present	SOLID	N/A	0				mL			Q
7	SAMPLE	S13T004284		0 0			Photography	SOLID	N/A	Complete				None			
7	SAMPLE	S13T004284		0 0			Amount of Sample Present	SOLID	N/A	367.3				g			Q
7	SAMPLE	S13T004284		0 0			Seal Number	SOLID	N/A	107				None			
7	SAMPLE	S13T004284		0 0			Volume % Settled Solids	SOLID	N/A	87.5				%			Q
7	SAMPLE	S13T004284		0 0			Volume of Sample	SOLID	N/A	240				mL			Q
ample Sequence 8																	
8	SAMPLE	S13T004285		0 0			Record Appearance	SOLID	N/A	See Note				None			Q
8	SAMPLE	S13T004285		0 0			Color	SOLID	N/A	Tan				None			Q
8	SAMPLE	S13T004285		0 0			Clarity	SOLID	N/A	Opaque				None			Q
8	SAMPLE	S13T004285		0 0			Dose Rate	SOLID	N/A	20				mRem/hr			Q
8	SAMPLE	S13T004285		0 0			Etched Number	SOLID	N/A	9C13-8				None			
8	SAMPLE	S13T004285		0 0			Organic Volume Present	SOLID	N/A	0				mL			Q
8	SAMPLE	S13T004285		0 0			Photography	SOLID	N/A	Complete				None			
8	SAMPLE	S13T004285		0 0			Amount of Sample Present	SOLID	N/A	192.1				g			Q
8	SAMPLE	S13T004285		0 0			Seal Number	SOLID	N/A	108				None			
8	SAMPLE	S13T004285		0 0			Volume % Settled Solids	SOLID	N/A	100				%			Q
8	SAMPLE	S13T004285		0 0			Volume of Sample	SOLID	N/A	120				mL			Q
ample Sequence 9																	
9	SAMPLE	S13T004286		0 0			Record Appearance	SOLID	N/A	See Note				None			Q
9	SAMPLE	S13T004286		0 0			Color	SOLID	N/A	Lt. Brown/White				None			Q
9	SAMPLE	S13T004286		0 0			Clarity	SOLID	N/A	Opaque				None			Q
9	SAMPLE	S13T004286		0 0			Dose Rate	SOLID	N/A	20				mRem/hr			Q
9	SAMPLE	S13T004286		0 0			Etched Number	SOLID	N/A	9C-13-9				None			
9	SAMPLE	S13T004286		0 0			Organic Volume Present	SOLID	N/A	0				mL			Q
9	SAMPLE	S13T004286		0 0			Photography	SOLID	N/A	Complete				None			

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

* = Rejected Analyte
N, A = Non-reported Analyte

05/16/2013 13:16 FAX 509 373 1438 11A HOT CELLS 222s LAB 003

LABCORE Completed Batch Report for Batch# 00041227

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
9	SAMPLE	S13T004286		0 0			Amount of Sample Present	SOLID	N/A	163.4				g			Q
9	SAMPLE	S13T004286		0 0			Seal Number	SOLID	N/A	109				None			
9	SAMPLE	S13T004286		0 0			Volume % Settled Solids	SOLID	N/A	100				%			Q
9	SAMPLE	S13T004286		0 0			Volume of Sample	SOLID	N/A	160				mL			Q

Comments Section:

Data Flagger Status:
Flagging Completed

Final Page for Batch# 00041227

5/15/13

Reviewer Signature Date

Michael A. Purcell

PC: Julie Osborn 7/1/13

05/16/2013 13:17 FAX 509 373 1438 11A HOT CELLS 222s LAB 004

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041227

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Method	Customer Id	Specification
1	S13T004230	SAMPLE		20130402	BREAKDOWN PIG - I	9C-13-1	C109 CLO
2	S13T004231	SAMPLE		20130402	BREAKDOWN PIG - I	9C-13-2	C109 CLO
3	S13T004232	SAMPLE		20130402	BREAKDOWN PIG - I	9C-13-3	C109 CLO
4	S13T004257	SAMPLE		20130402	BREAKDOWN PIG - I	9C-13-4	C109 CLO
5	S13T004258	SAMPLE		20130402	BREAKDOWN PIG - I	9C-13-5	C109 CLO
6	S13T004259	SAMPLE		20130402	BREAKDOWN PIG - I	9C-13-6	C109 CLO
7	S13T004284	SAMPLE		20130402	BREAKDOWN PIG - I	9C-13-7	C109 CLO
8	S13T004285	SAMPLE		20130402	BREAKDOWN PIG - I	9C-13-8	C109 CLO
9	S13T004286	SAMPLE		20130402	BREAKDOWN PIG - I	9C-13-9	C109 CLO

005 11A HOT CELLS 222s LAB 05/16/2013 13:18 FAX 509 373 1438

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

* = Rejected Analyte
N, A = Non-reported Analyte

05/16/2013 13:18 FAX 509 373 1438 11A HOT CELLS 222s LAB 006

5/13/2013 10:10:34AM
IncompleteBatchLong Version 2.7.29
batchreports 2.7.32

Page: 1

LABCORE Data Entry Template for Batch# 00041227

Analyst: Jackson, David **Standard ID / Book#:** N/A

Instrument: Sony Camcorder

Method: BREAKDOWN PIG - HC, LA-519-151 Rev/Mod L-0

Prep Batch: N/A

Batch Comment: None

CACN: 3A.26

GROUP#	PROJECT	S	TYPE	SAMPLE	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
20130402	C109 CLO	1	SAMPLE	S13T004230	0		Record Appearance	SOLID	N/A	See Note		None
20130402	C109 CLO	1	SAMPLE	S13T004230	0		Color	SOLID	N/A	WHITE		None
20130402	C109 CLO	1	SAMPLE	S13T004230	0		Clarity	SOLID	N/A	OPAQUE		None
20130402	C109 CLO	1	SAMPLE	S13T004230	0		Dose Rate	SOLID	N/A	5	MRH	None
20130402	C109 CLO	1	SAMPLE	S13T004230	0		Etched Number	SOLID	N/A	9C-13-1		None
20130402	C109 CLO	1	SAMPLE	S13T004230	0		Organic Volume Present	SOLID	N/A	0	ML	None
20130402	C109 CLO	1	SAMPLE	S13T004230	0		Photography	SOLID	N/A	COMPLETE		None
20130402	C109 CLO	1	SAMPLE	S13T004230	0		Amount of Sample Present	SOLID	N/A	109.7	G	None
20130402	C109 CLO	1	SAMPLE	S13T004230	0		Seal Number	SOLID	N/A	101		None
20130402	C109 CLO	1	SAMPLE	S13T004230	0		Volume % Settled Solids	SOLID	N/A	100	PCT	None
20130402	C109 CLO	1	SAMPLE	S13T004230	0		Volume of Sample	SOLID	N/A	35	ML	None
20130402	C109 CLO	2	SAMPLE	S13T004231	0		Record Appearance	SOLID	N/A	See Note		None
20130402	C109 CLO	2	SAMPLE	S13T004231	0		Color	SOLID	N/A	TAN		None
20130402	C109 CLO	2	SAMPLE	S13T004231	0		Clarity	SOLID	N/A	OPAQUE		None
20130402	C109 CLO	2	SAMPLE	S13T004231	0		Dose Rate	SOLID	N/A	20	MRH	None
20130402	C109 CLO	2	SAMPLE	S13T004231	0		Etched Number	SOLID	N/A	9C-13-2		None
20130402	C109 CLO	2	SAMPLE	S13T004231	0		Organic Volume Present	SOLID	N/A	0	ML	None
20130402	C109 CLO	2	SAMPLE	S13T004231	0		Photography	SOLID	N/A	COMPLETE		None
20130402	C109 CLO	2	SAMPLE	S13T004231	0		Amount of Sample Present	SOLID	N/A	158.5	G	None
20130402	C109 CLO	2	SAMPLE	S13T004231	0		Seal Number	SOLID	N/A	102		None
20130402	C109 CLO	2	SAMPLE	S13T004231	0		Volume % Settled Solids	SOLID	N/A	91.4	PCT	None
20130402	C109 CLO	2	SAMPLE	S13T004231	0		Volume of Sample	SOLID	N/A	80	ML	None
20130402	C109 CLO	3	SAMPLE	S13T004232	0		Record Appearance	SOLID	N/A	See Note		None
20130402	C109 CLO	3	SAMPLE	S13T004232	0		Color	SOLID	N/A	TAN		None
20130402	C109 CLO	3	SAMPLE	S13T004232	0		Clarity	SOLID	N/A	OPAQUE		None
20130402	C109 CLO	3	SAMPLE	S13T004232	0		Dose Rate	SOLID	N/A	30	MRH	None
20130402	C109 CLO	3	SAMPLE	S13T004232	0		Etched Number	SOLID	N/A	9C-13-3		None
20130402	C109 CLO	3	SAMPLE	S13T004232	0		Organic Volume Present	SOLID	N/A	0	ML	None
20130402	C109 CLO	3	SAMPLE	S13T004232	0		Photography	SOLID	N/A	COMPLETE		None
20130402	C109 CLO	3	SAMPLE	S13T004232	0		Amount of Sample Present	SOLID	N/A	343.8	G	None
20130402	C109 CLO	3	SAMPLE	S13T004232	0		Seal Number	SOLID	N/A	103		None
20130402	C109 CLO	3	SAMPLE	S13T004232	0		Volume % Settled Solids	SOLID	N/A	92.8	PCT	None
20130402	C109 CLO	3	SAMPLE	S13T004232	0		Volume of Sample	SOLID	N/A	240	ML	None
20130402	C109 CLO	4	SAMPLE	S13T004257	0		Record Appearance	SOLID	N/A	See Note		None
20130402	C109 CLO	4	SAMPLE	S13T004257	0		Color	SOLID	N/A	BROWN		None

Data Entry Comments:

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

LABCORE Data Entry Template for Batch# 00041227

GROUP#	PROJECT	S	TYPE	SAMPLE	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
20130402	C109 CLO	4	SAMPLE	S13T004257	0		Clarity	SOLID	N/A	OPAQUE		None
20130402	C109 CLO	4	SAMPLE	S13T004257	0		Dose Rate	SOLID	N/A	20	MRH	None
20130402	C109 CLO	4	SAMPLE	S13T004257	0		Etched Number	SOLID	N/A	9C-13-4		None
20130402	C109 CLO	4	SAMPLE	S13T004257	0		Organic Volume Present	SOLID	N/A	0	ML	None
20130402	C109 CLO	4	SAMPLE	S13T004257	0		Photography	SOLID	N/A	COMPLETE		None
20130402	C109 CLO	4	SAMPLE	S13T004257	0		Amount of Sample Present	SOLID	N/A	168.8	G	None
20130402	C109 CLO	4	SAMPLE	S13T004257	0		Seal Number	SOLID	N/A	104		None
20130402	C109 CLO	4	SAMPLE	S13T004257	0		Volume % Settled Solids	SOLID	N/A	94.3	PCT	None
20130402	C109 CLO	4	SAMPLE	S13T004257	0		Volume of Sample	SOLID	N/A	70	ML	None
20130402	C109 CLO	5	SAMPLE	S13T004258	0		Record Appearance	SOLID	N/A	SEE NOTE		None
20130402	C109 CLO	5	SAMPLE	S13T004258	0		Color	SOLID	N/A	TAN		None
20130402	C109 CLO	5	SAMPLE	S13T004258	0		Clarity	SOLID	N/A	OPAQUE		None
20130402	C109 CLO	5	SAMPLE	S13T004258	0		Dose Rate	SOLID	N/A	25	MRH	None
20130402	C109 CLO	5	SAMPLE	S13T004258	0		Etched Number	SOLID	N/A	9C-13-5		None
20130402	C109 CLO	5	SAMPLE	S13T004258	0		Organic Volume Present	SOLID	N/A	0	ML	None
20130402	C109 CLO	5	SAMPLE	S13T004258	0		Photography	SOLID	N/A	COMPLETE		None
20130402	C109 CLO	5	SAMPLE	S13T004258	0		Amount of Sample Present	SOLID	N/A	282.5	G	None
20130402	C109 CLO	5	SAMPLE	S13T004258	0		Seal Number	SOLID	N/A	105		None
20130402	C109 CLO	5	SAMPLE	S13T004258	0		Volume % Settled Solids	SOLID	N/A	92.3	PCT	None
20130402	C109 CLO	5	SAMPLE	S13T004258	0		Volume of Sample	SOLID	N/A	200	ML	None
20130402	C109 CLO	6	SAMPLE	S13T004259	0		Record Appearance	SOLID	N/A	SEE NOTE		None
20130402	C109 CLO	6	SAMPLE	S13T004259	0		Color	SOLID	N/A	TAN		None
20130402	C109 CLO	6	SAMPLE	S13T004259	0		Clarity	SOLID	N/A	OPAQUE		None
20130402	C109 CLO	6	SAMPLE	S13T004259	0		Dose Rate	SOLID	N/A	30	MRH	None
20130402	C109 CLO	6	SAMPLE	S13T004259	0		Etched Number	SOLID	N/A	9C-13-6		None
20130402	C109 CLO	6	SAMPLE	S13T004259	0		Organic Volume Present	SOLID	N/A	0	ML	None
20130402	C109 CLO	6	SAMPLE	S13T004259	0		Photography	SOLID	N/A	COMPLETE		None
20130402	C109 CLO	6	SAMPLE	S13T004259	0		Amount of Sample Present	SOLID	N/A	196.1	G	None
20130402	C109 CLO	6	SAMPLE	S13T004259	0		Seal Number	SOLID	N/A	106		None
20130402	C109 CLO	6	SAMPLE	S13T004259	0		Volume % Settled Solids	SOLID	N/A	80	PCT	None
20130402	C109 CLO	6	SAMPLE	S13T004259	0		Volume of Sample	SOLID	N/A	120	ML	None
20130402	C109 CLO	7	SAMPLE	S13T004284	0		Record Appearance	SOLID	N/A	SEE NOTE		None
20130402	C109 CLO	7	SAMPLE	S13T004284	0		Color	SOLID	N/A	TAN		None
20130402	C109 CLO	7	SAMPLE	S13T004284	0		Clarity	SOLID	N/A	OPAQUE		None
20130402	C109 CLO	7	SAMPLE	S13T004284	0		Dose Rate	SOLID	N/A	30	MRH	None
20130402	C109 CLO	7	SAMPLE	S13T004284	0		Etched Number	SOLID	N/A	9C-13-7		None
20130402	C109 CLO	7	SAMPLE	S13T004284	0		Organic Volume Present	SOLID	N/A	0	ML	None
20130402	C109 CLO	7	SAMPLE	S13T004284	0		Photography	SOLID	N/A	COMPLETE		None
20130402	C109 CLO	7	SAMPLE	S13T004284	0		Amount of Sample Present	SOLID	N/A	367.3	G	None
20130402	C109 CLO	7	SAMPLE	S13T004284	0		Seal Number	SOLID	N/A	107		None
20130402	C109 CLO	7	SAMPLE	S13T004284	0		Volume % Settled Solids	SOLID	N/A	87.5	PCT	None
20130402	C109 CLO	7	SAMPLE	S13T004284	0		Volume of Sample	SOLID	N/A	240	ML	None
20130402	C109 CLO	8	SAMPLE	S13T004285	0		Record Appearance	SOLID	N/A	SEE NOTE		None

Data Entry Comments:

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

LABCORE Data Entry Template for Batch# 00041227

GROUP#	PROJECT	S	TYPE	SAMPLE	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
20130402	C109 CLO	8	SAMPLE	S13T004285	0		Color	SOLID	N/A	TAN		None
20130402	C109 CLO	8	SAMPLE	S13T004285	0		Clarity	SOLID	N/A	OPAQUE		None
20130402	C109 CLO	8	SAMPLE	S13T004285	0		Dose Rate	SOLID	N/A	20	MRH	None
20130402	C109 CLO	8	SAMPLE	S13T004285	0		Etched Number	SOLID	N/A	9C43-8		None
20130402	C109 CLO	8	SAMPLE	S13T004285	0		Organic Volume Present	SOLID	N/A	0	ML	None
20130402	C109 CLO	8	SAMPLE	S13T004285	0		Photography	SOLID	N/A	COMPLETE		None
20130402	C109 CLO	8	SAMPLE	S13T004285	0		Amount of Sample Present	SOLID	N/A	192.1	G	None
20130402	C109 CLO	8	SAMPLE	S13T004285	0		Seal Number	SOLID	N/A	108		None
20130402	C109 CLO	8	SAMPLE	S13T004285	0		Volume % Settled Solids	SOLID	N/A	100	PCT	None
20130402	C109 CLO	8	SAMPLE	S13T004285	0		Volume of Sample	SOLID	N/A	120	ML	None
20130402	C109 CLO	9	SAMPLE	S13T004286	0		Record Appearance	SOLID	N/A	See Note		None
20130402	C109 CLO	9	SAMPLE	S13T004286	0		Color	SOLID	N/A	LIGHT BROWN/WHITE		None
20130402	C109 CLO	9	SAMPLE	S13T004286	0		Clarity	SOLID	N/A	OPAQUE		None
20130402	C109 CLO	9	SAMPLE	S13T004286	0		Dose Rate	SOLID	N/A	20	MRH	None
20130402	C109 CLO	9	SAMPLE	S13T004286	0		Etched Number	SOLID	N/A	9C43-9		None
20130402	C109 CLO	9	SAMPLE	S13T004286	0		Organic Volume Present	SOLID	N/A	0	ML	None
20130402	C109 CLO	9	SAMPLE	S13T004286	0		Photography	SOLID	N/A	COMPLETE		None
20130402	C109 CLO	9	SAMPLE	S13T004286	0		Amount of Sample Present	SOLID	N/A	163.4	G	None
20130402	C109 CLO	9	SAMPLE	S13T004286	0		Seal Number	SOLID	N/A	109		None
20130402	C109 CLO	9	SAMPLE	S13T004286	0		Volume % Settled Solids	SOLID	N/A	100	PCT	None
20130402	C109 CLO	9	SAMPLE	S13T004286	0		Volume of Sample	SOLID	N/A	160	ML	None

Final Page for Batch# 00041227

RD Hale — Analyst Signature
5/13/13 — Date
RD Hale — Data Entry Signature
5/13/13 — Date

Data Entry Comments:

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

11A Hot Cell Breakdown Pig Worksheet

Project: **C109 CLO** Charge#: 3A.26 Group#: 20130402

PM/PC: Osborn, Julie 373-3328 Batch#: 00041227 Date: 5-9-13 Time: 3:35

OmniLIMS Number: S13T004230

Seal Number: 101 **Etched Number:** 9C-13-1 (A)

Gross Weight (g): 297.7

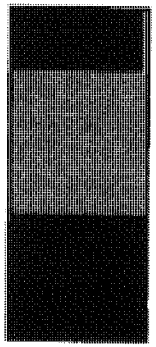
Tare Weight (g): 188.0

Net Weight (g): 109.7 (C)

Color: WHITE

Clarity: OPAQUE

Photography: COMPLETE



Customer ID: 9C-13-1

Dose Rate: S

Sample Height (mm): 35

Solids Height (mm): 35

Volume Percent Settled Solids: 100 (C)

Sample Volume (mL): 35

Organic Volume (mL): 0

Record Appearance: RECEIVED A PARTIALLY FULL 240 mL TEFLON JAR OF 9C-13-1. SOLIDS WERE LARGE WHITE CHUNKS. NO ORGANIC LAYER VISIBLE

Teflon 240 mL Jars = 188 g

Eagle Pitcher Black Lid Jars 125 mL = 131 g

Wheaten White Lid Jars 500 mL = 200 g

I-Chem Blue Lid Jars
125 mL = 122 g
250 mL = 159 g

Spec. Wide Mouth Light Blue Lids
500 mL = 294 g

Amber, Small-Neck Bottles
125 mL = 95 g
250 mL = 174 g

Clear, Small-Neck Bottles
125 mL = 108 g
250 mL = 174 g

TM Colloch
Analyst

RD Hale
OmniLIMS Entry

5/15/13
Verified / Date
Michael A. Purcell
Michael A. Purcell

(C)

05/16/2013 13:19 FAX 509 373 1438 11A HOT CELLS 222s LAB 009

11A Hot Cell Breakdown Pig Worksheet

Project: C109 CLO Charge#: 3A.26 Group#: 20130402

PM/PC: Osborn, Julie 373-3328 Batch#: 00041227 Date: 5-9-13 Time: 1:20

OmniLIMS Number: S13T004231

Seal Number: 102 Etched Number: 9C-13-2 (A) Customer ID: 9C-13-2

Gross Weight (g): 346.5 Dose Rate: 20

Tare Weight (g): 188.0 Sample Height (mm): 35

Net Weight (g): 158.5 C Solids Height (mm): 32

Volume Percent Settled Solids: 91.4 C

Color: TAN

Clarity: OPAQUE Sample Volume (mL): 80

Photography: COMPLETE Organic Volume (mL): 0

Record Appearance: RECEIVED A PARTIALLY FULL 240 ML TEFLON JAR OF 9C-13-2. SOLIDS WERE TAN IN COLOR WITH WHITE CHUNKS AND BLACK SPECKS. THE LIQUID WAS YELLOW IN COLOR. NO ORGANIC LAYER VISIBLE.

Teflon 240 mL Jars = 188 g

Eagle Pitcher Black Lid Jars 125 mL = 131 g

Wheaten White Lid Jars 500 mL = 200 g

I-Chem Blue Lid Jars
125 mL = 122 g
250 mL = 159 g

Spec. Wide Mouth Light Blue Lids
500 mL = 294 g

Amber, Small-Neck Bottles
125 mL = 95 g
250 mL = 174 g

Clear, Small-Neck Bottles
125 mL = 108 g
250 mL = 174 g

Analyst

RD Hale
OmniLIMS Entry

5/15/13
Verified / Date

Michael A. Purcell

C

05/16/2013 13:20 FAX 509 373 1438 11A HOT CELLS 222s LAB 010

11A Hot Cell Breakdown Pig Worksheet

Project: C109 CLO Charge#: 3A.26 Group#: 20130402

PM/PC: Osborn, Julie 373-3328 Batch#: 0004227 Date: 5-9-13 Time: 1:25

OmniLIMS Number: S13T004232

Customer ID: 9C-13-3

Seal Number: 103 **Etched Number:** 9C-13-3 (A)

Dose Rate: 30

Gross Weight (g): 531.8

Sample Height (mm): 70

Tare Weight (g): 188.0

Solids Height (mm): 65

Net Weight (g): 343.8 C

Volume Percent Settled Solids: ~~92.8~~ 92.9 C

5/15/13

Color: TAN WITH DARK SPECKS

Clarity: OPAQUE

Photography: COMPLETE

Sample Volume (mL): 240

Organic Volume (mL): 0

Record Appearance: RECEIVED A FULL 240 mL TEFLON JAR OF 9C-13-3. SOLIDS WERE TAN WITH DARK SPECKS. LIQUID WAS BROWN IN COLOR, NO ORGANIC LAYER VISIBLE.

Teflon 240 mL Jars = 188 g

Eagle Pitcher Black Lid Jars 125 mL = 131 g

Wheaten White Lid Jars 500 mL = 200 g

I-Chem Blue Lid Jars
125 mL = 122 g
250 mL = 159 g

Spec. Wide Mouth Light Blue Lids
500 mL = 294 g

Amber, Small-Neck Bottles
125 mL = 95 g
250 mL = 174 g

Clear, Small-Neck Bottles
125 mL = 108 g
250 mL = 174 g

Analyst

RD Hale
OmniLIMS Entry

5/15/13
Verified / Date

Michael A. Purcell

V

05/16/2013 13:20 FAX 509 373 1438 11A HOT CELLS 222s LAB 011

11A Hot Cell Breakdown Pig Worksheet

Project: C109 CLO Charge#: 3A.26 Group#: 20130402

PM/PC: Osborn, Julie 373-3328 Batch#: 00041227 Date: 5-9-13 Time: 1:30

OmniLIMS Number: S13T004257

Customer ID: 9C-13-4

Seal Number: 104 **Etched Number:** 9C-13-4 (A) **Dose Rate:** 20

Gross Weight (g): 356.8 Sample Height (mm): 35

Tare Weight (g): 188.0 Solids Height (mm): 33

Net Weight (g): 168.8 C **Volume Percent Settled Solids:** 94.3 C

Color: BROWN

Clarity: OPAQUE **Sample Volume (mL):** 70

Photography: COMPLETE **Organic Volume (mL):** 0

Record Appearance: RECEIVED A PARTIALLY FULL 240 mL TEFLON JAR OF 9C-13-4. SOLIDS WERE BROWN IN COLOR WITH CHUNKS OF WHITE SOLIDS. LIQUID WAS BROWN IN COLOR. NO ORGANIC LAYER VISIBLE.

ADD 5-12-13

Teflon 240 mL Jars = 188 g

Eagle Pitcher Black Lid Jars 125 mL = 131 g

Wheaten White Lid Jars 500 mL = 200 g

I-Chem Blue Lid Jars
125 mL = 122 g
250 mL = 159 g

Spec. Wide Mouth Light Blue Lids
500 mL = 294 g

Amber, Small-Neck Bottles
125 mL = 95 g
250 mL = 174 g

Clear, Small-Neck Bottles
125 mL = 108 g
250 mL = 174 g

Analyst

RD Hale
OmniLIMS Entry

5/15/13
Verified / Date

Michael A. Purcell

V

05/16/2013 13:20 FAX 509 373 1438 11A HOT CELLS 222s LAB 012

11A Hot Cell Breakdown Pig Worksheet

Project: C109 CLO Charge#: 3A.26 Group#: 20130402

PM/PC: Osborn, Julie 373-3328 Batch#: 000 41227 Date: 5-9-13 Time: 3:30

OmniLIMS Number: S13T004258

Customer ID: 9C-13-5

Seal Number: 105 Etched Number: 9C-13-5 (A) Dose Rate: 25

Gross Weight (g): 470.5 Sample Height (mm): 65

Tare Weight (g): 188.0 Solids Height (mm): 60

Net Weight (g): 282.5 C Volume Percent Settled Solids: 92.3 C

Color: TAN

Clarity: OPAQUE

Photography: COMPLETE

Sample Volume (mL): 200

Organic Volume (mL): 0

Record Appearance: RECEIVED A PARTIALLY FULL 240 ML TEFLON JAR OF 9C-13-5. SOLIDS WERE TAN WITH SMALL WHITE AND LIGHT BROWN CHUNKS. LIQUID WAS DARK YELLOW/GREEN. NO ORGANIC LAYER VISIBLE.

Teflon 240 mL Jars = 188 g

Eagle Pitcher Black Lid Jars 125 mL = 131 g

Wheaten White Lid Jars 500 mL = 200 g

I-Chem Blue Lid Jars
125 mL = 122 g
250 mL = 159 g

Spec. Wide Mouth Light Blue Lids
500 mL = 294 g

Amber, Small-Neck Bottles
125 mL = 95 g
250 mL = 174 g

Clear, Small-Neck Bottles
125 mL = 108 g
250 mL = 174 g

T McCulloch
Analyst

RD Hale
OmniLIMS Entry

5/15/13
Verified / Date

Michael A. Purcell

05/16/2013 13:21 FAX 509 373 1438 11A HOT CELLS 222s LAB 013

05/16/2013 13:21 FAX 509 373 1438 11A HOT CELLS 222s LAB 014

11A Hot Cell Breakdown Pig Worksheet

Project: **C109 CLO** Charge#: 3A.26 Group#: 20130402

PM/PC: Osborn, Julie 373-3328 Batch#: 00041227 Date: 5-9-13 Time: 3:20

OmniLIMS Number: S13T004259

Customer ID: 9C-13-6

Seal Number: 106

Etched Number: 9C-13-6 (A)

Dose Rate: 30

Gross Weight (g): 384.1

Sample Height (mm): 50

Tare Weight (g): 188.0

Solids Height (mm): 40

Net Weight (g): 196.1 C

Volume Percent Settled Solids: 80 C

Color: TAN

Clarity: OPAQUE

Sample Volume (mL): 120

Photography: COMPLETE

Organic Volume (mL): 0

Record Appearance: RECEIVED A PARTIALLY FULL 240 ML TEFLON JAR OF 9C-13-6. SOLIDS WERE TAN WITH WHITE, LIGHT BROWN AND DARK SPECKS, LIQUID WAS YELLOW/GREEN, NO ORGANIC LAYER VISIBLE.

Teflon 240 mL Jars = 188 g

Eagle Pitcher Black Lid Jars 125 mL = 131 g

Wheaten White Lid Jars 500 mL = 200 g

I-Chem Blue Lid Jars
125 mL = 122 g
250 mL = 159 g

Spec. Wide Mouth Light Blue Lids
500 mL = 294 g

Amber, Small-Neck Bottles
125 mL = 95 g
250 mL = 174 g

Clear, Small-Neck Bottles
125 mL = 108 g
250 mL = 174 g

[signature] Analyst

[signature] OmniLIMS Entry

[signature] 5/15/13 Verified / Date

Michael A. Purcell V

11A Hot Cell Breakdown Pig Worksheet

015
11A HOT CELLS 222s LAB
05/16/2013 13:21 FAX 509 373 1438

Project: **C109 CLO** Charge#: 3A.26 Group#: 20130402

PM/PC: Osborn, Julie 373-3328 Batch#: 000 41227 Date: 5-9-13 Time: 1:35

OmniLIMS Number: S13T004284

Customer ID: 9C-13-7

Seal Number: 107 **Etched Number:** 9C-13-7 (A)

Dose Rate: 30

Gross Weight (g): 555.3

Sample Height (mm): 80

Tare Weight (g): 188.0

Solids Height (mm): 70

Net Weight (g): 367.3 (C)

Volume Percent Settled Solids: 87.5 (C)

Color: TAN

Clarity: OPAQUE

Sample Volume (mL): 240

Photography: COMPLETE

Organic Volume (mL): 0

Record Appearance: RECEIVED A FULL 240 ML TEFLON JAR OF 9C-13-7. SOLIDS WERE TAN IN COLOR. LIQUID CLEAR IN COLOR, NO ORGANIC LAYER VISIBLE.

Teflon 240 mL Jars = 188 g

Eagle Pitcher Black Lid Jars 125 mL = 131 g

Wheaten White Lid Jars 500 mL = 200 g

I-Chem Blue Lid Jars
125 mL = 122 g
250 mL = 159 g

Spec. Wide Mouth Light Blue Lids
500 mL = 294 g

Amber, Small-Neck Bottles
125 mL = 95 g
250 mL = 174 g

Clear, Small-Neck Bottles
125 mL = 108 g
250 mL = 174 g

Analyst

RD Hale
OmniLIMS Entry

5/15/13
Verified / Date

Michael A. Purcell

11A Hot Cell Breakdown Pig Worksheet

Project: **C109 CLO** Charge#: 3A.26 Group#: 20130402

PM/PC: Osborn, Julie 373-3328 Batch#: 00041227 Date: 5-9-13 Time: 1:40

OmniLIMS Number: S13T004285

Seal Number: 108 **Etched Number:** 9C-13-8 (A)

Gross Weight (g): 380.1

Tare Weight (g): 188.0

Net Weight (g): 192.1 C

Color: TAN

Clarity: OPAQUE

Photography: COMPLETE

Customer ID: 9C-13-8

Dose Rate: 20

Sample Height (mm): 50

Solids Height (mm): 50

Volume Percent Settled Solids: 100

C

Sample Volume (mL): 120

Organic Volume (mL): 0

Record Appearance: RECEIVED A PARTIALLY FULL 240 ML TEFLON JAR OF 9C-13-8. SOLID WERE TAN AND WHITE CHUNKS. NO ORGANIC LAYER VISIBLE.

Teflon 240 mL Jars = 188 g

Eagle Pitcher Black Lid Jars 125 mL = 131 g

Wheaten White Lid Jars 500 mL = 200 g

I-Chem Blue Lid Jars
125 mL = 122 g
250 mL = 159 g

Spec. Wide Mouth Light Blue Lids
500 mL = 294 g

Amber, Small-Neck Bottles
125 mL = 95 g
250 mL = 174 g

Clear, Small-Neck Bottles
125 mL = 108 g
250 mL = 174 g

Analyst

RS Hale
OmniLIMS Entry

5/15/13
Verified / Date

Michael A. Person

V

016
11A HOT CELLS 222s LAB
05/16/2013 13:22 FAX 509 373 1438

11A Hot Cell Breakdown Pig Worksheet

Project: C109 CLO Charge#: 3A.26 Group#: 20130402

PM/PC: Osborn, Julie 373-3328 Batch#: 00041227 Date: 5-9-13 Time: 3:25

OmniLIMS Number: S13T004286

Customer ID: 9C-13-9

Seal Number: 109 **Etched Number:** 9C-13-9 (A)

Dose Rate: 20

Gross Weight (g): 351.4

Sample Height (mm): 55

Tare Weight (g): 188.0

Solids Height (mm): 55

Net Weight (g): 163.4 C

Volume Percent Settled Solids: 100 C

Color: LIGHT BROWN AND WHITE

Clarity: OPAQUE

Photography: COMPLETE

Sample Volume (mL): 160

Organic Volume (mL): 0

Record Appearance: RECEIVED A PARTIALLY FULL 240 ML TEFLON JAR OF 9C-13-9. SOLIDS WERE LIGHT BROWN AND WHITE CHUNKS, NO ORGANIC LAYER VISIBLE.

Teflon 240 mL Jars = 188 g

Eagle Pitcher Black Lid Jars 125 mL = 131 g

Wheaten White Lid Jars 500 mL = 200 g

I-Chem Blue Lid Jars
125 mL = 122 g
250 mL = 159 g

Spec. Wide Mouth Light Blue Lids
500 mL = 294 g

Amber, Small-Neck Bottles
125 mL = 95 g
250 mL = 174 g

Clear, Small-Neck Bottles
125 mL = 108 g
250 mL = 174 g

TM Mock
Analyst

RD Hale
OmniLIMS Entry

5/15/13
Verified / Date
Michael A. Fuccelli

05/16/2013 13:22 FAX 509 373 1438 11A HOT CELLS 222s LAB 017

05/17/2013 10:50 FAX 509 373 1438 11A HOT CELLS 222s LAB 001

Hot Cell Liquid Measurement Worksheet

Project: C109 CLO Charge#: 3A.26 Group#: 20130402

PM/PC: Osborn, Julie 373-3328 Batch#: N/A Date: 5/13/13 Time: 0930

Jar Number: 20703 **Jar Weight (g):** 127.5 (A)

Customer ID	Sample #	Liquid Volume (mL)	Liquid Color	Liquid Clarity	Gross Weight (g)	Net Weight (g)
9C-13-1	S13T004230	0	~~COLORLESS~~ 5/13/13	–	127.5	0
9C-13-2 *	S13T004231	5	COLORLESS	CLEAR	133.5	6.0
9C-13-3 *	S13T004232	19	COLORESS	CLEAR	156.8	23.3
9C-13-4 *	S13T004257	10	COLORLESS	CLEAR	170.3	13.5
9C-13-5 *	S13T004258	7	COLORLESS	CLEAR	178.6	8.3
9C-13-6 *	S13T004259	13	COLORLESS	CLEAR	197.7	19.1
9C-13-7 *	S13T004284	55	COLORLESS	CLEAR	265.7	68
9C-13-8	S13T004285	0	–	–	–	0
9C-13-9	S13T004286	0	–	–	–	0
					G. 265.6 T. 127.5	
				RSH	ARCHIVE -1381	CV

* SAMPLE NOTE:

THE LIQUID APPEARED COLORESS AND CLEAR, BUT UPON REMOVAL PICKED UP FINE SOLIDS TURNING IT LIGHT BROWN AND CLOUDY.

RS Hale
OmniLIMS Entry

5/16/13
Verified / Date
Michael A. Purcell

CV

ATL	CYANIDE DATA REVIEW CHECKLIST

Worklist/Project Information: 41364,41365 / C109 CLO (solid)

Analysis Date: 5/16-5/17 2013 Instrument ID: ○ Cary 50 #1 ◉ Cary 50 #2 ○ LA-695-102 Rev _____ (*) ◉ LA-695-103 Rev K-0 (*)

Review Items	Yes	No	N/A
A. Standard dilution, Calibration, Instrument Run QC			
1. Were the cyanide stock standards diluted as specified in the SOP?	◉	○	○
2. Was a calibration done? If a previous calibration was used, was the calibration used done within 90 days of the analysis date?	◉	○	○
3. Was the correlation coefficient of the calibration curve ≥ 0.995?	◉	○	○
4. Were ICV/CCV analyzed at appropriate frequency and were recoveries within control limits of 85-115%?	◉	○	○
5. Was an LLS run and was the recovery within control limits of 75-125%? If a calibration curve is run the lowest calibration point serves as the LLS.	◉	○	○
6. Were ICB/CCB analyzed at appropriate frequency and were results < EQL?	◉	○	○
B. Sample Results			
1. Were all sample concentrations below the concentration of the highest calibration standard?	◉	○	○
2. Are all reported results bracketed by in control QC?	◉	○	○
3. Were sample analyses done within holding time?	◉	○	○
C. Preparation/Matrix QC			
1. Was the method blank results < EQL?	○	○	◉
2. Was an LCS done per prep batch and was recovery within control limits of 85-115%?	○	○	◉
3. Was an MS run at required frequency and was recovery within control limits of 75-125% if spike level was at least 25% of sample result level?	◉	○	○
4. Was an MSD or DUP run at required frequency and was the % RPD <20% if sample result is >EQL (5 times MDL)?	◉	○	○
D. Other			
1. Are all nonconformances documented appropriately?	◉	○	○
2. Is current MDL/EQL data on file?	◉	○	○
3. Were calculations checked for errors?	◉	○	○
4. Were transcriptions and data upload checked for errors?	◉	○	○
5. Were all client/project specific requirements met?	◉	○	○
6. Was the date/time of analysis verified as correct?	◉	○	○

Comments/Samples Affected (give review item letter and number)

C.1. & C.2. ALL standards (including calibration) and samples are run through the same prep method so there is no method blank or LCS; ICV, ICB, CCV, CCB serve as the method validation standards which produced recoveries within the client's requested recovery for LCS.

D.5. Client detection limit requirement of 0.800 ug/g was met.

1st Level Data Reviewer *(sign)*: [signature] Date: 05/22/13 2nd Level Data Reviewer *(sign)*: [signature] Date: 5-28-2013

(*) This form is not used by the subject procedure; rather, it is used to assist in verifying the data produced during the performance of the procedure. A-6005-347 (REV 0)

LABCORE Completed Batch Report for Batch# 00041364

Analyst: Tunnell, Kelsey

Book#: SEE BENCHSHEET

Instrument: CARY 50-2

Method: CN - EDTA, LA-695-103 Rev/Mod K-0

Specification: C109 CLO

Prep Batch: N/A

Batch Comment:

C109 CLO, CN SOL-EDTA, Group #20130402

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
Sample Sequence 1																	
1	ICV	S1305220025		0 0			Cyanide	SOLID	.202	1.9348E-01			8.12E-03	ug/mL	95.784	% Recovery	
Sample Sequence 2																	
2	LLS	S1305220019		0 0			Cyanide	SOLID	.04016	3.8090E-02			8.12E-03	ug/g	94.846	% Recovery	
Sample Sequence 3																	
3	ICB	S1305220018		0 0			Cyanide	SOLID		<8.1200E-03			8.12E-03	ug/mL			
Sample Sequence 4																	
4	SAMPLE	S13T004246		0 0			Cyanide	SOLID	N/A	1.9668E+01			0.7216	ug/g			
Sample Sequence 5																	
5	DUP	S1305220020	S13T004246	0 0			Cyanide	SOLID	1.9668E+01	1.9159E+01			0.7225	ug/g	2.6240	% RPD	
Sample Sequence 6																	
6	SPK	S1305220021	S13T004246	0 0			Cyanide	SOLID	9.0052	2.7971E+01			0.7241	ug/g	92.2	% Recovery	
Sample Sequence 7																	
7	SAMPLE	S13T004301		0 0			Cyanide	SOLID	N/A	3.0227E+01			0.7203	ug/g			
Sample Sequence 8																	
8	CCV	S1305220023		0 0			Cyanide	SOLID	.202	1.8548E-01			8.12E-03	ug/mL	91.823	% Recovery	
Sample Sequence 9																	
9	CCB	S1305220024		0 0			Cyanide	SOLID		<8.1200E-03			8.12E-03	ug/mL			

Comments Section:

Data Flagger Status:
Flagging Completed

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041364

Final Page for Batch# 00041364

05/22/13
Reviewer Signature Date

PC: Julie Axtman 7/2/13

LABCORE Completed Batch Report for Batch# 00041364

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Method	Customer Id	Specification
1	S1305220025	ICV			CN - EDTA		
2	S1305220019	LLS			CN - EDTA		
3	S1305220018	ICB			CN - EDTA		
4	S13T004246	SAMPLE		20130402	CN - EDTA	9C-13-Comp A	C109 CLO
5	S1305220020	DUP	S13T004246		CN - EDTA		
6	S1305220021	SPK	S13T004246		CN - EDTA		
7	S13T004301	SAMPLE		20130402	CN - EDTA	9C-13-Comp C	C109 CLO
8	S1305220023	CCV			CN - EDTA		
9	S1305220024	CCB			CN - EDTA		

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

* = Rejected Analyte
N, A = Non-reported Analyte

5/22/2013 10:05:44AM
IncompleteBatchShort Version 2.7.29
batchreports 2.7.32

LABCORE Data Entry Template for Batch# 00041364

Analyst: Tunnell, Kelsey **Standard ID / Book#:**

Instrument: CARY 50-2

Method: CN - EDTA, LA-695-103 Rev/Mod K-0

Prep Batch: N/A

Batch Comment:

C109 CLO, CN SOL-EDTA, Group #20130402

CACN:3A.26

S	Type	Sample	R	A	Matrix	Group#	Project
1	ICV	S1305220025	0		SOLID		
	Analytes Requested:	Cyanide					
2	LLS	S1305220019	0		SOLID		
	Analytes Requested:	Cyanide					
3	ICB	S1305220018	0		SOLID		
	Analytes Requested:	Cyanide					
4	SAMPLE	S13T004246	0		SOLID	20130402	C109 CLO
	Analytes Requested:	Cyanide					
5	DUP	S1305220020	0		SOLID		
	Analytes Requested:	Cyanide					
6	SPK	S1305220021	0		SOLID		
	Analytes Requested:	Cyanide					
7	SAMPLE	S13T004301	0		SOLID	20130402	C109 CLO
	Analytes Requested:	Cyanide					
8	CCV	S1305220023	0		SOLID		
	Analytes Requested:	Cyanide					
9	CCB	S1305220024	0		SOLID		
	Analytes Requested:	Cyanide					

Final Page for Batch# 00041364

Analyst Signature 05/22/13 **Date**

Data Entry Signature 5/22/13 **Date**

Data Entry Comments:

S = Batch Slot Number, R = Retest Number, A = Aliquot Code.

5/22/2013 4:43:44PM
CompleteBatch Version 2.7.32
batchreports 2.7.32

LABCORE Completed Batch Report for Batch# 00041365

Analyst: Tunnell, Kelsey

Book#: SEE BENCHSHEET

Instrument: CARY 50-2

Method: CN - EDTA, LA-695-103 Rev/Mod K-0

Specification: C109 CLO

Prep Batch: N/A

Batch Comment:

C109 CLO, CN SOL-EDTA, Group #20130402

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
Sample Sequence 1																	
1	ICV	S1305220034		0	0		Cyanide	SOLID	.202	1.9665E-01			8.12E-03	ug/mL	97.351	% Recovery	
Sample Sequence 2																	
2	LLS	S1305220028		0	0		Cyanide	SOLID	.04016	3.7368E-02			8.12E-03	ug/mL	93.048	% Recovery	
Sample Sequence 3																	
3	ICB	S1305220027		0	0		Cyanide	SOLID		<8.1200E-03			8.12E-03	ug/mL			
Sample Sequence 4																	
4	SAMPLE	S13T004274		0	0		Cyanide	SOLID	N/A	3.9542E+01			1.3699	ug/g			
Sample Sequence 5																	
5	CCV	S1305220032		0	0		Cyanide	SOLID	.202	2.0457E-01			8.12E-03	ug/mL	101.27	% Recovery	
Sample Sequence 6																	
6	CCB	S1305220033		0	0		Cyanide	SOLID		<8.1200E-03			8.12E-03	ug/mL			

Comments Section:

Data Flagger Status:
Flagging Completed

Final Page for Batch# 00041365

K A Kelton 05/22/13

Reviewer Signature **Date**

PC: Julie Askom 7/2/13

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041365

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Method	Customer Id	Specification
1	S1305220034	ICV			CN - EDTA		
2	S1305220028	LLS			CN - EDTA		
3	S1305220027	ICB			CN - EDTA		
4	S13T004274	SAMPLE		20130402	CN - EDTA	9C-13-Comp B	C109 CLO
5	S1305220032	CCV			CN - EDTA		
6	S1305220033	CCB			CN - EDTA		

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

* = Rejected Analyte
N, A = Non-reported Analyte

5/22/2013 10:00:19AM
IncompleteBatchShort Version 2.7.29
batchreports 2.7.32

LABCORE Data Entry Template for Batch# 00041365

Analyst: Tunnell, Kelsey **Standard ID / Book#:** SEE BENCH SHEET

Instrument: CARY 50-2

Method: CN - EDTA, LA-695-103 Rev/Mod K-0

Prep Batch: N/A

Batch Comment:

C109 CLO, CN SOL-EDTA, Group #20130402

CACN:3A.26

S	Type	Sample	R	A	Matrix	Group#	Project
1	ICV	S1305220034	0		SOLID		
	Analytes Requested:	Cyanide					
2	LLS	S1305220028	0		SOLID		
	Analytes Requested:	Cyanide					
3	ICB	S1305220027	0		SOLID		
	Analytes Requested:	Cyanide					
4	SAMPLE	S13T004274	0		SOLID	20130402	C109 CLO
	Analytes Requested:	Cyanide					
5	CCV	S1305220032	0		SOLID		
	Analytes Requested:	Cyanide					
6	CCB	S1305220033	0		SOLID		
	Analytes Requested:	Cyanide					

Final Page for Batch# 00041365

Analyst Signature 05/22/13 Date

Data Entry Signature 5/22/13 Date

Data Entry Comments:

S = Batch Slot Number, R = Retest Number, A = Aliquot Code.

C109 CLO
Cyanide (LA-695-103)

Analysis Dates: 5/16/13 & 5/17/13

Sample/QC type	Result (mg/L or ug/mL)	Sample Amount (g)	Result (ug/g)	DL (ug/g)	%RPD	% Recovery
ICV	0.193483					
(icv expected)	0.202					95.8%
LLS	0.03809					
(lls expected)	0.040160					94.9%
ICB	-0.00235					< DL
S13T004246	0.221326	0.4019	19.6678	0.7216		
S13T004246 dup	0.215327	0.4014	19.1586	0.7225		
S13T004246 spk	0.313662	0.4005	27.9706	0.7241		
(spike expected)			9.0052			92.2%
S13T004246 postspk	0.346554	0.4024	30.7578	0.7207		
(postspike expected)			6.23758			124% ①
S13T004274	0.421055	0.4010			*Not used; exceeded calibration	
S13T004301	0.340746	0.4026	30.2273	0.7203		
CCV	0.185483					
(ccv expected)	0.202					91.8%
CCB	-0.002001					< DL
CCV	0.196649					
(ccv expected)	0.202					97.4%
LLS	0.037368					
(lls expected)	0.040160					93.0%
CCB	~~0.007212~~ -0.000251 jpm 5/28/13					< DL
S13T004274	0.234387	0.2117	39.5416	1.3699		
CCV	0.204570					
(ccv expected)	0.202					101%
CCB	0.007212					< DL

First CCB = -0.000251 jpm 5/28/13

Equation to calculate ug/g = $\frac{\text{mg/L found * 25 mL * 5 mL}}{\text{Wt. in grams * 3.5 mL}}$

DL 0.00812 mg/L for Instrument QC

① FOR INFORMATION ONLY; PREPARED AND ANALYZED TO ASSIST IN DETERMINING PRESENCE OF MATRIX EFFECT(S). PREDIG SPIKE WITHIN ACCEPTANCE CRITERIA SO FURTHER INFORMATION ABOUT MATRIX EFFECT WAS NOT REQUIRED. [signature] 05/22/13

Cyanide Traveler: EDTA Method

Procedure: LA-695-103 Rev. K-0 Laboratory Notebook: HNF-N-111-1 page 101

Project: C109 CLO Matrix: SOLID Analyst: KJT

Analytical Date: 05/16/2013 /end time: 1610 CN Data File Name: 130516-C109-EDTA

Instrument ID: Cary 50 #2 Cable OK ✓ Lamp OK ✓ Glass Sleeve OK ✓ Balance #: LE-BAL-087

Cal. Working Std. ID & conc.: CN 130513-1 / 10.04 ug/mL Pyridine book #: 100N17P

LCS Working Std. ID: & conc. CN 130513-2 / 10.10 ug/mL EDTA/en book #: 101N17F

Pipettes: (visual check done) 4023402 - .1mL ✓ 2109034 - 10mL ✓ 5946944 - 1mL ✓

Calibration Curve Information: Time colored: 1055 Time reading begun/ended: 1105 / 1110

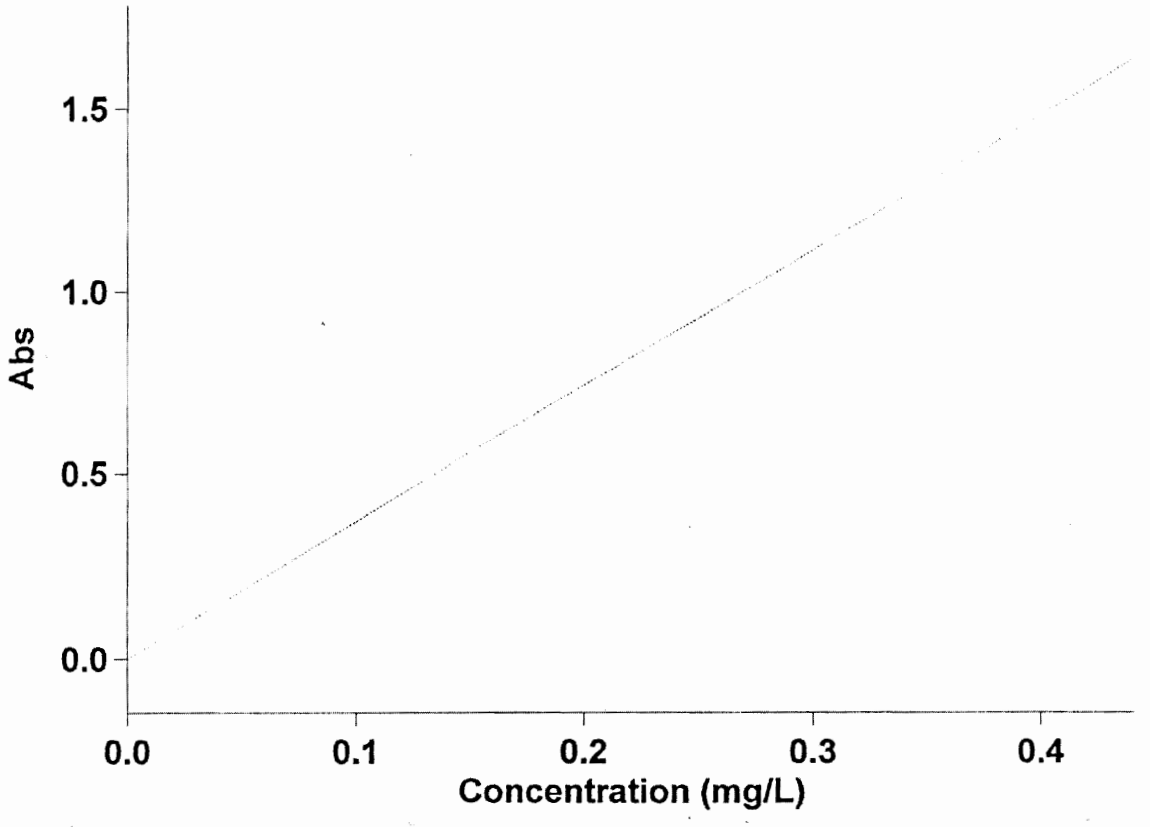
Standard Name	mL Std. used	EDTA/en vol. (mL)	Final Vol. (mL)	Comment
Std. 1 (Cal Blk)	0	3.6	25	0.00000
Std. 2	0.1	3.6	25	0.04016 (130513-1)
Std. 3	0.2	3.6	25	0.08032
Std. 4	0.4	3.6	25	0.16064
Std. 5	0.6	3.6	25	0.24096
Std. 6	0.8	3.6	25	0.32128
Std. 7	1.0	3.6	25	0.40160
ICV (LCS)	0.5	3.6	25	(130513-2)
ICB	0	3.6	25	

Samples: Time colored: 1423 Time reading begun/ended: 1435 / 1440

Sample ID	Wt. Sample or mL Std.	Dissolution Volume	Dissolution used (mL)	Final Vol. (mL)	Comments (include # & vol. of std. used for spike)
Initial CCV *	0.5	na	na	25	
LLS *	0.1	na	na	25	
Initial CCB *	0	na	na	25	
S13T004246 SAM	0.4019 g	5 mL	3.6	25	
S13T004246 DUP	0.4012 g	5 mL	3.6	25	
S13T004246 SPK	0.4005 g	5 mL	3.6	25	.25mL of (130513-2) pre-distillation.
S13T004246 P.SPK.	0.4024 g	5 mL	3.6	25	.25mL of (130513-1) post-distillation.
S13T004274	0.4010 g	5 mL	3.6	25	
S13T004801	0.4026 g	5 mL	3.6	25	
		5 mL		25	
		5 mL		25	
		5 mL		25	
		5 mL		25	
CCV	0.5	na	na	25	(130513-2)
CCB	0	na	na	25	

* These are run only if an existing calibration curve is used.

* Chloramine-T was made with .2501g Chloramine-T + 25.0 mL D-water. KJT.



Concentration Analysis Report

Report time	5/16/2013 11:11:08 AM
Batch name	C:\Varian\Cary Winuv\Cyanide\130516_C109_EDTA.BCN
Application	Concentration 3.00(182)
Operator	KJT

Instrument Settings

Instrument	Cary 50
Instrument version no.	3.00
Wavelength (nm)	580.0
Ordinate Mode	Abs
Ave Time (sec)	0.1000
Replicates	1
Standard/Sample averaging	OFF
Weight and volume corrections	OFF
Fit type	Linear Direct
Min R^2	0.99500
Concentration units	mg/L

Comments:

Calibration

Collection time 5/16/2013 11:12:15 AM

Standard	Concentration mg/L	F	Readings
Std 1	0.000000		-0.0029
Std 2	0.040160		0.1413
Std 3	0.080320		0.3025
Std 4	0.160640		0.5446

Std 5	0.240960	0.8873
Std 6	0.321280	1.2267
Std 7	0.401600	1.4861

Calibration eqn	Abs = 3.70942*Conc
Correlation Coefficient	0.99837
Calibration time	5/16/2013 11:15:13 AM

Analysis

Collection time 5/16/2013 11:15:13 AM

Sample	Concentration mg/L	F	Readings
ICV	0.193483		0.7177 96.8 %
ICB	-0.002350		-0.0087
S13T004246 SAM	0.221326		0.8210
S13T004246 DUP	0.215327		0.7987
S13T004246 SPK	0.313662		1.1635 92.2 %
S13T004246 P.SPK	0.346554		1.2855 123.7 % (over calibration) RST.
S13T004274	0.421055		1.5619
S13T004301	0.340746		1.2640
CCV	0.185483		0.6880 91.8 %
CCB	-0.002001		-0.0074

Results Flags Legend

U = Uncalibrated O = Overrange
N = Not used in calibration R = Repeat reading

LCS: $\frac{.1413}{3.70942} = 0.038092$ mg/L or µg/mL

$\frac{0.038092}{0.040160} * 100 = 94.9\%$

ICV: $\frac{.193483}{.202} * 100 = 95.8\%$

CCV: $\frac{.186483}{.202} * 100 = 91.8\%$

calculations verified ppm 5/28/13

~~SAM/DUP RSD = 0.221326 - 0.215327 = 0.005999~~ ppm 5/16/13

$\frac{0.221326 + 0.215327}{2} = 0.21832265$ = 2.75 %

Cyanide Traveler: EDTA Method

Procedure: LA-695-103 Rev. K-0 Laboratory Notebook: HNF-N-111-1 page 101

Project: C109 CLO Matrix: SOLID @ 5/22/13 @ 5/22/13 Analyst: KJT/KEK

Analytical Date: 05/17/13 /end time: ~~1044~~ ~~1047~~ 1045 CN Data File Name: 130517_C109_EDTA

Instrument ID: Cary 50 #2 Cable OK ✓ Lamp OK ✓ Glass Sleeve OK ✓ Balance #: LE-BAL-087

Cal. Working Std. ID & conc.: CN 130513-1 / 10.04 ug/mL Pyridine book #: 100N17P

LCS Working Std. ID: & conc. CN 130513-2 / 10.10 ug/mL EDTA/en book #: 101N17F

Pipettes: (visual check done) 4623407-1mL ✓ 2109034-10mL ✓ 3946944-1mL ✓

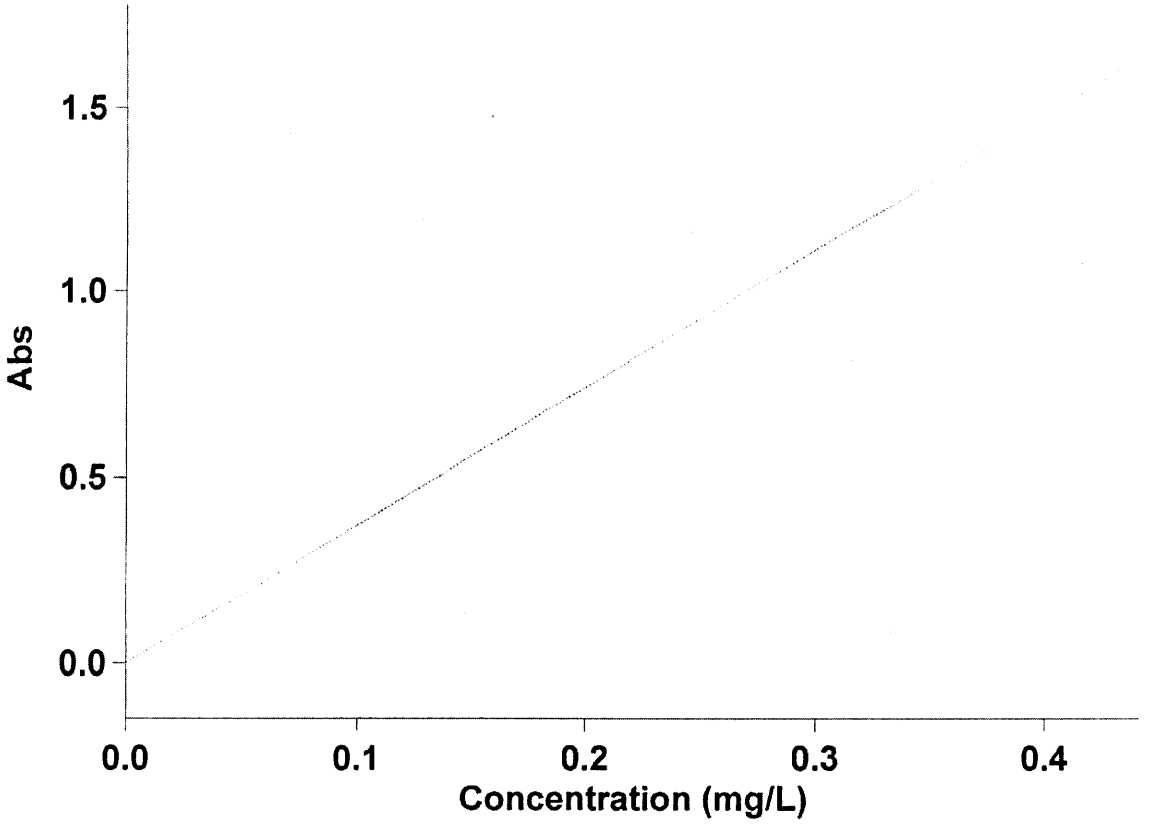
Calibration Curve Information: Time colored: N/A Time reading begun/ended: N/A

Standard Name	mL Std. used	EDTA/en vol. (mL)	Final Vol. (mL)	Comment
Std. 1 (Cal Blk)	0		25	Calibration used from 5/16/13.
Std. 2	0.1		25	
Std. 3	0.2		25	
Std. 4	0.4	KJT 05/17/13	25	
Std. 5	0.6		25	
Std. 6	0.8		25	
Std. 7	1.0		25	
ICV (LCS)	0.5		25	
ICB	0		25	

Samples: Time colored: 1025 Time reading begun/ended: 1033/1040

Sample ID	Wt. Sample or mL Std.	Dissolution Volume	Dissolution used (mL)	Final Vol. (mL)	Comments (include # & vol. of std. used for spike)
Initial CCV *	0.5	na	na	25	
LLS *	0.1	na	na	25	
Initial CCB *	0	na	na	25	
S13T004274	0.2117g	5 mL	3.6	25	
		5 mL		25	
		5 mL		25	
		5 mL		25	
		5 mL		25	
		5 mL	KJT 05/17/13	25	
		5 mL		25	
		5 mL		25	
		5 mL		25	
		5 mL		25	
CCV	0.5	na	na	25	
CCB	0	na	na	25	

* These are run only if an existing calibration curve is used.



Concentration Analysis Report

Report time	5/17/2013 10:41:30 AM
Batch name	C:\Varian\Cary Winuv\Cyanide\130517_C109_EDTA.BCN
Application	Concentration 3.00(182)
Operator	kjt

Instrument Settings

Instrument	Cary 50
Instrument version no.	3.00
Wavelength (nm)	580.0
Ordinate Mode	Abs
Ave Time (sec)	0.1000
Replicates	1
Standard/Sample averaging	OFF
Weight and volume corrections	OFF
Fit type	Linear Direct
Min R^2	0.99500
Concentration units	mg/L

Comments:

Calibration

Collection time 5/16/2013 11:12:15 AM

Standard	Concentration mg/L	F	Readings
Std 1	0.000000		-0.0029
Std 2	0.040160		0.1413
Std 3	0.080320		0.3025
Std 4	0.160640		0.5446

5/17/2013 10:47:14 AM Page 2 of 2

Std 5	0.240960	0.8873
Std 6	0.321280	1.2267
Std 7	0.401600	1.4861

Calibration eqn Abs = 3.70942*Conc
Correlation Coefficient 0.99837
Calibration time 5/16/2013 11:15:13 AM

Analysis

Collection time 5/17/2013 10:41:30 AM

Sample	Concentration mg/L	F	Readings	
CCV	0.196649		0.7295	97.4%
LLS	0.037368		0.1386	93%
CCB	-0.000251		-0.0009	
S13T004274	0.234387		0.8694	
CCV	0.204570		0.7588	101.3%
CCB	0.007212		0.0268	

Results Flags Legend

U = Uncalibrated O = Overrange
N = Not used in calibration R = Repeat reading

CCV = $\frac{.196649}{.202} * 100 = \boxed{97.4\%}$

LLS = $\frac{.1386}{3.70942} = \frac{0.0374}{0.040160} * 100 = \boxed{93.0\%}$

CCV = $\frac{.204570}{.202} * 100 = \boxed{101.3\%}$

[illegible] 5/28/13

Calculations verified [illegible] 5/28/13

ATL	MERCURY DATA REVIEW CHECKLIST

Worklist/Project Information: 41350 / C109CLO — Procedure Used: LA-325- 110 (*)

Run Date: 5/21/13 — Instrument ID: CVAA-4 — Prep Batches Analyzed (Worklist #): 41349 — Prep Method: LA-325-110

Review Items	Yes	No	N/A	Comments/Samples Affected
A. Calibration/Instrument Run QC				
1. Instrument calibrated per procedure and at specified levels?	X			
2. Were any calibration points dropped? If yes, has management approved? (Comment required)		X		
3. Calibration curve correlation coefficient ≥0.995?	X			
4. ICV/CCV analyzed at appropriate frequency and within control limits (Recovery: 80-120%; for IH analysis 90-110%)?	X			
5. ICB/CCB analyzed at required frequency and < EQL (or RL) or <5% of the lowest sample result with client consent. N/A if all samples are ND.	X			
6. LLS run and within control limits (Recovery: 75-125%)? For IH, recovery is mandatory to verify RL.	X			
B. Sample Results				
1. Were samples with concentrations > linear range for any analyte diluted and reanalyzed?			X	
2. Are all reported results bracketed by in-control QC?	X			
3. Are there 10 or fewer samples run between bracketed, in-control QC?	X			
C. Preparation/Matrix QC				
1. LCS/Prep Std prepared per prep batch and within control limits? Recovery: ☒ 80-120% or ☐ Statistical _____	X			
2. LCS Dup (Prep Std Dup) prepared per prep batch, if required, and within control limits? Recovery: ☐ 80-120% or ☐ Statistical _____ RPD: ☐ ≤20% or ☐ Statistical _____			X	
3. IH RLS run (when required) and within mandatory control limits (Recovery: 75-125%)?			X	
4. Method/Media Blank prepared per prep batch and < EQL (or RL) or <5% of the lowest sample result?			X	
5. Duplicate or MS Duplicate run at required frequency and within control limits? % RPD: ☐ ≤20% or ☒ Client-specified ≤30%	X			
6. MS run at required frequency and within control limits? Recovery: ☐ 75-125% or ☒ Client-specified 75-125%	X			
D. Other				
1. Are all problems and nonconformance issues documented appropriately?			X	
2. Are current IDL / MDL / EQL / RL data on file?	X			
3. Calculations/transcriptions checked for errors?	X			
4. Are all raw data complete and verified in OmniLIMS?	X			
5. Is calibration data included?	X			
6. All client/project specific requirements met (e.g., MDL, holding times, etc.)?	X			
7. Date/time of analysis verified as correct?	X			
8. Prep/Breakdown Batch Benchsheet/Worklist properly completed and included, as required?	X			
9. IH Only: Media Blank subtracted from Sample results?			X	

1st Data Reviewer *(Sign)*: [signature] Date: 05/26/13 — 2nd Data Reviewer *(Sign)*: [signature] Date: 5/28/13

(*) This form is not used by the subject procedure, rather, it is used to assist in verifying the data produced during the performance of the procedure.

A-6004-347 (REV 1)

LABCORE Completed Batch Report for Batch# 00041350

Analyst: Hexum, Troy

Book#: 127N11C, 128N11C

Instrument: CVAA4-Hg by FIMS

Method: HG, LA-325-110 Rev/Mod B-0

Specification: C109 CLO

Prep Batch: 00041349

Batch Comment:

Hg SOLIDS FOR C - 109-CLOSURE "INSTR. RUN"

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
Sample Sequence 1																	
1	ICV	S1305210081		0 0	HG		Mercury	LIQUID	.00999	9.9580E-03			1.10E-05	ug/mL	99.68	% Recovery	
Sample Sequence 2																	
2	ICB	S1305210082		0 0	HG		Mercury	LIQUID		<1.1000E-05			1.10E-05	ug/mL			
Sample Sequence 3																	
3	LLS	S1305210083		0 0	HG		Mercury	LIQUID	.001	8.8900E-04			1.10E-05	ug/mL	88.9	% Recovery	
Sample Sequence 4																	
4	SAMPLE	S13T005629		0 0	HG		Mercury	SOLID	N/A	9.4640E-01			2.20E-03	ug/g			
Sample Sequence 5																	
5	DUP	S1305210085	S13T005629	0 0	HG		Mercury	SOLID	9.4640E-01	9.5622E-01			2.19E-03	ug/g	1.0321	% RPD	
Sample Sequence 6																	
6	SPK-PREDIG	S1305210086	S13T005629	0 0	HG		Mercury	SOLID	1.192806	2.2010E+00			2.19E-03	ug/g	105.18	% Recovery	
Sample Sequence 7																	
7	SPKPRE-DUP	S1305210084	S13T005629	0 0	HG		Mercury	SOLID	1.2011976	2.1784E+00			2.20E-03	ug/g	102.56	% Recovery	
															2.5224	% RPD	
Sample Sequence 8																	
8	SAMPLE	S13T005630		0 0	HG		Mercury	SOLID	N/A	2.3121E+00			2.23E-03	ug/g			
Sample Sequence 9																	
10	SAMPLE	S13T005631		0 1	HG		Mercury	SOLID	N/A	9.0867E-01			2.14E-03	ug/g			
Sample Sequence 11																	
11	CCV	S1305210087		0 0	HG		Mercury	LIQUID	.00999	1.0130E-02			1.10E-05	ug/mL	101.4	% Recovery	
Sample Sequence 12																	
12	CCB	S1305210088		0 0	HG		Mercury	LIQUID		<1.1000E-05			1.10E-05	ug/mL			

Comments Section:

Data Flagger Status:
Flagging Completed

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041350

Final Page for Batch# 00041350

K Skelton 05/26/13
Reviewer Signature **Date**

PC: Julie Osborn 7/2/13

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

* = Rejected Analyte
N, A = Non-reported Analyte

5/26/2013 12:50:37PM
CompleteBatch Version 2.7.32
batchreports 2.7.32

LABCORE Completed Batch Report for Batch# 00041350

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Method	Customer Id	Specification
1	S1305210081	ICV			HG		
2	S1305210082	ICB			HG		
3	S1305210083	LLS			HG		
4	S13T005629	SAMPLE		20130402	HG	9C-13-Comp A	C109 CLO
5	S1305210085	DUP	S13T005629		HG		
6	S1305210086	SPK-PREDIG	S13T005629		HG		
7	S1305210084	SPKPRE-DUP	S13T005629		HG		
8	S13T005630	SAMPLE		20130402	HG	9C-13-Comp B	C109 CLO
9	S13T005631	SAMPLE		20130402	HG	9C-13-Comp C	C109 CLO
~~10~~	~~S13T005631~~	~~SAMPLE~~		~~20130402~~	~~HG~~	~~9C-13-Comp C~~	~~C109 CLO~~ JAD 7/31/13
10	S1305210087	CCV			HG		
11	S1305210088	CCB			HG		

JAD 7/31/13

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

* = Rejected Analyte
N, A = Non-reported Analyte

5/21/2013 3:43:29PM
IncompleteBatchShort Version 2.7.29
batchreports 2.7.32

LABCORE Data Entry Template for Batch# 00041350

Analyst: Hexum, Troy **Standard ID / Book#:** 127N11C, 128N11C

Instrument: CVAA4-Hg by FIMS

Method: HG, LA-325-110 Rev/Mod B-0

Prep Batch: 00041349

Batch Comment:

Hg SOLIDS FOR C - 109-CLOSURE "INSTR. RUN"

CACN:3A.26

S	Type	Sample	R	A	Matrix	Group#	Project
1	ICV	S1305210081	0	HG	LIQUID		
	Analytes Requested:	Mercury					
2	ICB	S1305210082	0	HG	LIQUID		
	Analytes Requested:	Mercury					
3	LLS	S1305210083	0	HG	LIQUID		
	Analytes Requested:	Mercury					
4	SAMPLE	S13T005629	0	HG	SOLID	20130402	C109 CLO
	Analytes Requested:	Mercury					
5	DUP	S1305210085	0	HG	SOLID		
	Analytes Requested:	Mercury					
6	SPK-PREDIG	S1305210086	0	HG	SOLID		
	Analytes Requested:	Mercury					
7	SPKPRE-DUP	S1305210084	0	HG	SOLID		
	Analytes Requested:	Mercury					
8	SAMPLE	S13T005630	0	HG	SOLID	20130402	C109 CLO
	Analytes Requested:	Mercury					
9	SAMPLE	S13T005631	0	HG	SOLID	20130402	C109 CLO
	Analytes Requested:	Mercury					
10	CCV	S1305210087	0	HG	LIQUID		
	Analytes Requested:	Mercury					
11	CCB	S1305210088	0	HG	LIQUID		
	Analytes Requested:	Mercury					

Final Page for Batch# 00041350

5/21/13
Analyst Signature **Date**

5/21/13
Data Entry Signature **Date**

05/23/13

Data Entry Comments:
RE UPLOADED BY LEN SHAW 05/23/13

S = Batch Slot Number, R = Retest Number, A = Aliquot Code.

5/21/2013 3:22:53PM
IncompleteBatchShort Version 2.7.29
batchreports 2.7.32

LABCORE Data Entry Template for Batch# 00041349

Analyst: Hexum, Troy

Standard ID / Book#: See Bench Sheet

Instrument: LE-BAL-023

Method: HG PREP, LA-325-110 Rev/Mod B-0

Prep Batch: N/A

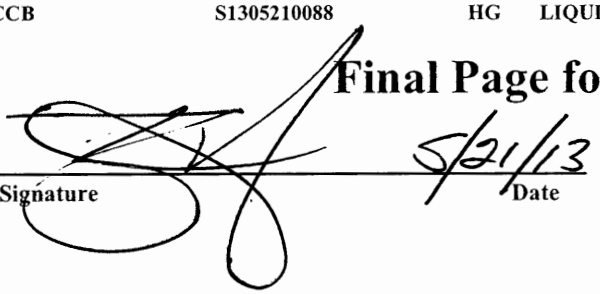
Batch Comment:

Hg SOLIDS FOR C - 109 CLOSURE

CACN:3A.26

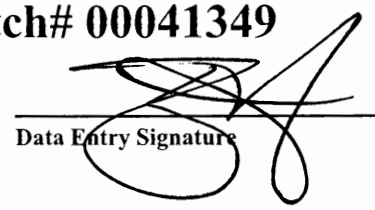
S	Type	Sample	R	A	Matrix	Group#	Project
1	ICV	S1305210081		HG	LIQUID		
2	ICB	S1305210082		HG	LIQUID		
3	LLS	S1305210083		HG	LIQUID		
4	SAMPLE	S13T005629		HG	SOLID	20130402	C109 CLO
5	DUP	S1305210085		HG	SOLID		
6	SPK-PREDIG	S1305210086		HG	SOLID		
7	SPKPRE-DUP	S1305210084		HG	SOLID		
8	SAMPLE	S13T005630		HG	SOLID	20130402	C109 CLO
9	SAMPLE	S13T005631		HG	SOLID	20130402	C109 CLO
10	CCV	S1305210087		HG	LIQUID		
11	CCB	S1305210088		HG	LIQUID		

Final Page for Batch# 00041349



5/21/13

Analyst Signature **Date**



5/21/13

Data Entry Signature **Date**

Data Entry Comments:

S = Batch Slot Number, R = Retest Number, A = Aliquot Code.

ATL	MERCURY PREPARATION AND INSTRUMENTATION BENCH SHEET	○ IH ◉ NON IH

☐ LA-325-108 Rev _____ (IH Preparation) ☒ LA-325- 110 Rev B-0

Project: C 109 CLOSURE Hg SOLIDS

Prep. Batch #: 00041349 Run Batch #: 00041350 Instrument ID: CVAA-4

Prep. Analyst: TJH Run Analyst: TJH Highest Cal Std[b] abs: 0.2708

Prep. Date/Time Start: 05/21/2013 / 0900 Run Date/Time Start: 05/21/2013 / 1340 Instr. Datafile: 130521

Prep. Date/Time End: 05/21/2013 / 1330 Run Date/Time End: 05/21/2013 / 1401 Cal. Corr. Coeff.: .998996

Standard/Chemical	ID or Lot #	Exp. Date	Standard/Chemical	ID or Lot #	Exp. Date
Calibration & LLS[a] (e.g., 0.1 µg/mL)	127N11C	04/01/2014	HNO_3	J08N56	10/04/2015
ICV, CCV, & RLS/RLS Dup[a] (e.g., 0.1 µg/mL)	128N11C	04/01/2014	HCl	J08N66	10/4/2015
*For LCS & LCS Dup[a] (e.g., 1.0 µg/mL)	N/A	N/A	$SnCl_2$	126T004	06/30/2014
H_2SO_4	J38N74	02/17/2016			

Volumetric Verifications - Check box if passed

(Pipette #); Pipette ID; Volume Range or Fixed Volume

(1) 1139899 (Range/Vol: 0.1-1.0mL) ☒ (3) N/A (Range/Vol: N/A) ☐

(2) A0959178F (Range/Vol: 1-10-mL) ☒ (4) N/A (Range/Vol: N/A) ☐

Tube Lot #/Vol. Measured (mL)/Net Weight (g) M1495 / 20mL / 20.0221 ☐ N/A / N/A / N/A ☐

Balance #: / Dates Used: LE-BAL-023 / 05/21/2013 Balance #: / Dates Used: N/A / N/A

Standard/Sample ID	mL or g	DF[c]	Tube Lot #	Final Vol (mL)	Pipette Usage/Verification
ICV	2		N/A	20	(2)
ICB	N/A		N/A	20	
LLS	.2		N/A	20	(1)
S13T005629	.1000		N/A	20	
S13T005629DUP	.1005		N/A	20	
S13T005629PDS	.1005		N/A	20	1.2mL OF 128N11C (2)
S13T005629PDSD	.0998		N/A	20	1.2mL OF 128N11C (2)
S13T005630	.0987		N/A	20	
S13T005631	.1027		N/A	20	
CCV	2		N/A	20	(2)

A-6005-353 (REV 4)

ATL	MERCURY PREPARATION AND INSTRUMENTATION BENCH SHEET (continued)	○ IH ◉ NON IH

☐ LA-325-108 Rev _____ (IH Preparation) ☒ LA-325- 110 Rev B-0

Project: C 109 CLOSURE Hg SOLIDS

Prep. Batch #: 00041349 Run Batch #: 00041350

Prep. Analyst: TJH Run Analyst: TJH

Standard/Sample ID	mL or g	DF(c)	Tube Lot #	Final Vol (mL)	Pipette Usage/Verification
CCB	N/A		N/A	20	

Spike Volume Used: N/A

Comments:

* For IH Vapor Tube, LCS & LCS Dup: 0.3mL of the "LCS1.0" to final volume of 50mL; if there are RLS & RLS Dup: 0.5mL of the "LCS0.1" std to final volume of 50mL.

(a) Calibration, ICV, CCV, LLS, Matrix predigest spike, and Post digest spike: Preparation in procedure for more details.

(b) If the "Instr. abs" for the highest calibration standard (20 µg/L) is <0.13 abs, instrument troubleshooting maintenance is needed (See Appendices in procedure or contact the responsible scientist).

(c) DF: Dilution Factor, may be left blank, blank implies DF = 1.

Sample Information Detail Report
Document Name: 130521

File Description
C - 109 CLOSURE Hg SOLIDS

Parameters Common to All Samples

Batch ID	130521
Analyst Name	TJH
Volume Units	mL
Weight Units	g

Parameters That Vary By Sample

Sample No	A/S Location	Sample ID	Initial Sample Wt.
1	1	ICV	
2	2	ICB	
3	3	LLS	
4	9	S13T005629	.1000
5	10	S13T005629DUP	.1005
6	11	S13T005629PDS	.1005
7	12	S13T005629PDSD	.0998
8	13	S13T005630	.0987
9	14	S13T005631	.1027
10	4	CCV	
11	5	CCB	

Sample No	Sample Prep. Vol.	Aliquot Volume	Diluted To Vol.
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			

Method: TROY Page 1 Date: 5/21/2013 1:33:26 PM

Analysis Begun

Logged In Analyst: inorganic
Technique: AA FIMS-MHS
Spectrometer Model: FIMS-400, S/N B050-9560
Autosampler Model: S10

Sample Information File: C:\data-AA\maintenance\Sample Information\130521.sif
Batch ID: 130521
Results Data Set: 130521
Results Library: C:\data-AA\maintenance\Results\Results.mdb

Method Loaded
Method Name: TROY
Method Last Saved: 4/30/2013 10:03:11 AM
Method Description: Total Hg

Sequence No.: 1
Autosampler Location: 1
Sample ID: Calib Blank 1
Date Collected: 5/21/2013 1:27:05 PM
Analyst:
Data Type: Original

Replicate Data: Calib Blank 1

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1		[0.00]	0.0011	0.0061	0.0011	13:27:59	Yes
2		[0.00]	0.0011	0.0054	0.0011	13:28:34	Yes
Mean:		[0.00]	0.0011				
SD:		0.00	0.0001				
%RSD:		0.00	4.79				

Auto-zero performed.

Sequence No.: 2
Autosampler Location: 2
Sample ID: Calib Std 1
Date Collected: 5/21/2013 1:28:53 PM
Analyst:
Data Type: Original

Replicate Data: Calib Std 1

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1		[1.000000]	0.0148	0.0748	0.0159	13:29:47	Yes
2		[1.000000]	0.0143	0.0729	0.0154	13:30:21	Yes
Mean:		[1.000000]	0.0146				
SD:		0.000000	0.0003				
%RSD:		0.000000	2.30				

Standard number 1 applied. [1.000000]
Correlation Coef.: 1.000000 Slope: 0.01456 Intercept: 0.00000

Sequence No.: 3
Autosampler Location: 3
Sample ID: Calib Std 2
Date Collected: 5/21/2013 1:30:40 PM
Analyst:
Data Type: Original

Replicate Data: Calib Std 2

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1		[5.000000]	0.0711	0.3443	0.0723	13:31:35	Yes
2		[5.000000]	0.0686	0.3370	0.0697	13:32:10	Yes
Mean:		[5.000000]	0.0699				
SD:		0.000000	0.0018				
%RSD:		0.000000	2.54				

Standard number 2 applied. [5.000000]
Correlation Coef.: 0.999963 Slope: 0.01394 Intercept: 0.00028

Sequence No.: 4
Autosampler Location: 4
Sample ID: Calib Std 3
Date Collected: 5/21/2013 1:32:30 PM
Analyst:
Data Type: Original

Method: TROY **Page 2** **Date: 5/21/2013 1:37:57 PM**

Replicate Data: Calib Std 3

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1		[10.00000]	0.1448	0.6860	0.1459	13:33:25	Yes
2		[10.00000]	0.1421	0.6734	0.1432	13:33:59	Yes
Mean:		[10.00000]	0.1434				
SD:		0.000000	0.0019				
%RSD:		0.000000	1.31				

Standard number 3 applied. [10.000000]
Correlation Coef.: 0.999896 Slope: 0.01430 Intercept: -0.00024

Sequence No.: 5 **Autosampler Location: 5**
Sample ID: Calib Std 4 **Date Collected: 5/21/2013 1:34:19 PM**
Analyst: **Data Type: Original**

Replicate Data: Calib Std 4

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1		[15.00000]	0.2182	1.0409	0.2193	13:35:15	Yes
2		[15.00000]	0.2142	1.0223	0.2153	13:35:50	Yes
Mean:		[15.00000]	0.2162				
SD:		0.000000	0.0029				
%RSD:		0.000000	1.34				

Standard number 4 applied. [15.000000]
Correlation Coef.: 0.999943 Slope: 0.01441 Intercept: -0.00051

Sequence No.: 6 **Autosampler Location: 6**
Sample ID: Calib Std 5 **Date Collected: 5/21/2013 1:36:10 PM**
Analyst: **Data Type: Original**

Replicate Data: Calib Std 5

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1		[20.00000]	0.2739	1.3283	0.2750	13:37:04	Yes
2		[20.00000]	0.2678	1.3034	0.2689	13:37:38	Yes
Mean:		[20.00000]	0.2708				
SD:		0.000000	0.0043				
%RSD:		0.000000	1.61				

Standard number 5 applied. [20.000000]
Correlation Coef.: 0.998996 Slope: 0.01380 Intercept: 0.00186

Calibration data for Hg 253.7 **Equation: Linear, Calculated Intercept**

ID	Mean Signal (Abs)	Entered Conc. ug/L	Calculated Conc. ug/L	Standard Deviation	%RSD
Calib Blank 1	0.0000	0	-0.135	0.00	4.8
Calib Std 1	0.0146	1.000000	0.920	0.00	2.3
Calib Std 2	0.0699	5.000000	4.930	0.00	2.5
Calib Std 3	0.1434	10.000000	10.260	0.00	1.3
Calib Std 4	0.2162	15.000000	15.533	0.00	1.3
Calib Std 5	0.2708	20.000000	19.492	0.00	1.6

Correlation Coef.: 0.998996 Slope: 0.01380 Intercept: 0.00186

Analytical Sequence
Method: TROY

Seq.	Loc.	ID	Status
1	1	Calib Blank 1	Applied
2	2	Calib Std 1	Applied
3	3	Calib Std 2	Applied
4	4	Calib Std 3	Applied
5	5	Calib Std 4	Applied
6	6	Calib Std 5	Applied

Analysis Begun

Logged In Analyst: inorganic
Technique: AA FIMS-MHS
Spectrometer Model: FIMS-400, S/N B050-9560
Autosampler Model: S10

Sample Information File: C:\data-AA\maintenance\Sample Information\130521.sif
Batch ID: 130521
Results Data Set: 130521
Results Library: C:\data-AA\maintenance\Results\Results.mdb

Sequence No.: 1
Autosampler Location: 1
Sample ID: ICV
Date Collected: 5/21/2013 1:40:37 PM
Analyst: TJH
Data Type: Original

Replicate Data: ICV

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	10.04	10.04	0.1403	0.6676	0.1415	13:41:30	Yes
2	9.880	9.880	0.1382	0.6595	0.1393	13:42:05	Yes
Mean:	9.958	9.958	0.1393				
SD:	0.110	0.110	0.0015				
%RSD:	1.105	1.105	1.09				

Sequence No.: 2
Autosampler Location: 2
Sample ID: ICB
Date Collected: 5/21/2013 1:42:24 PM
Analyst: TJH
Data Type: Original

Replicate Data: ICB

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	-0.137	-0.137	-0.0000	0.0048	0.0011	13:43:18	Yes
2	-0.141	-0.141	-0.0001	0.0045	0.0010	13:43:53	Yes
Mean:	-0.139	-0.139	-0.0001				
SD:	0.003	0.003	0.0000				
%RSD:	2.188	2.188	75.28				

Sequence No.: 3
Autosampler Location: 3
Sample ID: LLS
Date Collected: 5/21/2013 1:43:54 PM
Analyst: TJH
Data Type: Original

Replicate Data: LLS

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	0.897	0.897	0.0142	0.0724	0.0153	13:44:49	Yes
2	0.882	0.882	0.0140	0.0719	0.0151	13:45:23	Yes
Mean:	0.889	0.889	0.0141				
SD:	0.011	0.011	0.0002				
%RSD:	1.247	1.247	1.08				

Sequence No.: 4
Autosampler Location: 9
Sample ID: S13T005629
Date Collected: 5/21/2013 1:45:43 PM
Analyst: TJH
Data Type: Original

Replicate Data: S13T005629

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	4.772	4.772	0.0677	0.3282	0.0688	13:46:38	Yes
2	4.693	4.693	0.0666	0.3240	0.0677	13:47:12	Yes
Mean:	4.732	4.732	0.0672				
SD:	0.056	0.056	0.0008				
%RSD:	1.185	1.185	1.15				

Method: TROY Page 2 Date: 5/21/2013 1:56:22 PM

Sequence No.: 5
Sample ID: S13T0056295 DUP
Analyst: TJH
Autosampler Location: 10
Date Collected: 5/21/2013 1:47:32 PM
Data Type: Original

Replicate Data: S13T0056295 DUP

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	4.828	4.828	0.0685	0.3331	0.0696	13:48:27	Yes
2	4.783	4.783	0.0679	0.3275	0.0690	13:49:01	Yes
Mean:	4.805	4.805	0.0682				
SD:	0.032	0.032	0.0004				
%RSD:	0.670	0.670	0.65				

Sequence No.: 6
Sample ID: S13T005629PDS
Analyst: TJH
Autosampler Location: 11
Date Collected: 5/21/2013 1:49:21 PM
Data Type: Original

Replicate Data: S13T005629PDS

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	11.10	11.10	0.1550	0.7416	0.1561	13:50:17	Yes
2	11.01	11.01	0.1538	0.7301	0.1549	13:50:51	Yes
Mean:	11.06	11.06	0.1544				
SD:	0.063	0.063	0.0009				
%RSD:	0.567	0.567	0.56				

Sequence No.: 7
Sample ID: S13T005629PDSD
Analyst: TJH
Autosampler Location: 12
Date Collected: 5/21/2013 1:51:11 PM
Data Type: Original

Replicate Data: S13T005629PDSD

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	10.79	10.79	0.1507	0.7287	0.1518	13:52:07	Yes
2	10.96	10.96	0.1531	0.7268	0.1542	13:52:41	Yes
Mean:	10.87	10.87	0.1519				
SD:	0.121	0.121	0.0017				
%RSD:	1.115	1.115	1.10				

Sequence No.: 8
Sample ID: S13T005630
Analyst: TJH
Autosampler Location: 13
Date Collected: 5/21/2013 1:53:02 PM
Data Type: Original

Replicate Data: S13T005630

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	11.41	11.41	0.1593	0.7640	0.1604	13:53:57	Yes
2	11.40	11.40	0.1592	0.7576	0.1603	13:54:31	Yes
Mean:	11.41	11.41	0.1592				
SD:	0.003	0.003	0.0000				
%RSD:	0.026	0.026	0.03				

Sequence No.: 9
Sample ID: S13T005631
Analyst: TJH
Autosampler Location: 14
Date Collected: 5/21/2013 1:54:51 PM
Data Type: Original

Replicate Data: S13T005631

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	-0.200	-0.200	-0.0009	-0.0002	0.0002	13:55:46	Yes
2	-0.211	-0.211	-0.0010	-0.0010	0.0001	13:56:20	Yes
Mean:	-0.205	-0.205	-0.0010				

Sample Vial Not in Holder Stopped & RERAN

SD:	0.008	0.008	0.0001
%RSD:	3.943	3.943	11.51

Sequence No.: 10
Sample ID: CCV
Analyst: TJH
User canceled analysis.

Autosampler Location: 4
Date Collected: 5/21/2013 1:56:22 PM
Data Type: Original

Analysis Begun

Logged In Analyst: inorganic
Spectrometer Model: FIMS-400, S/N B050-9560

Technique: AA FIMS-MHS
Autosampler Model: S10

Sample Information File: C:\data-AA\maintenance\Sample Information\130521.sif
Batch ID: 130521
Results Data Set: 130521
Results Library: C:\data-AA\maintenance\Results\Results.mdb

Sequence No.: 9
Sample ID: S13T005631
Analyst: TJH

Autosampler Location: 14
Date Collected: 5/21/2013 1:57:33 PM
Data Type: Original

Replicate Data: S13T005631

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	4.692	4.692	0.0666	0.3237	0.0677	13:58:27	Yes
2	4.640	4.640	0.0659	0.3194	0.0670	13:59:02	Yes
Mean:	4.666	4.666	0.0663				
SD:	0.037	0.037	0.0005				
%RSD:	0.792	0.792	0.77				

Sequence No.: 10
Sample ID: CCV
Analyst: TJH

Autosampler Location: 4
Date Collected: 5/21/2013 1:59:21 PM
Data Type: Original

Replicate Data: CCV

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	10.18	10.18	0.1423	0.6660	0.1434	14:00:17	Yes
2	10.08	10.08	0.1410	0.6594	0.1421	14:00:51	Yes
Mean:	10.13	10.13	0.1417				
SD:	0.067	0.067	0.0009				
%RSD:	0.658	0.658	0.65				

Sequence No.: 11
Sample ID: CCB
Analyst: TJH

Autosampler Location: 5
Date Collected: 5/21/2013 2:01:11 PM
Data Type: Original

Replicate Data: CCB

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	-0.131	-0.131	0.0001	0.0038	0.0012	14:02:06	Yes
2	-0.135	-0.135	0.0000	0.0046	0.0011	14:02:40	Yes
Mean:	-0.133	-0.133	0.0000				
SD:	0.003	0.003	0.0000				
%RSD:	1.960	1.960	116.56				

Analytical Sequence
Method: TROY

Seq.	Loc.	ID	Status
1	1	ICV	Analyzed
2	2	ICB	Analyzed
3	3	LLS	Analyzed
4	9	S13T005629	Analyzed

Method: TROY **Page 4** **Date: 5/21/2013 2:03:01 PM**

5	10	S13T0056295 DUP	Analyzed
6	11	S13T005629PDS	Analyzed
7	12	S13T005629PDSD	Analyzed
8	13	S13T005630	Analyzed
9	14	S13T005631	Analyzed
10	4	CCV	Analyzed
11	5	CCB	Analyzed

ATL	ION CHROMATOGRAPHY DATA REVIEW CHECKLIST	○ IH ◉ Non IH

○ LA-533-101 Rev _____ (Cat) (*) ○ LA-533-107 Rev _____ (846 Anions) (*)

○ LA-533-115 Rev _____ (IC6 Anions) (*) ○ LA-533-117 Rev _____ (IH Vapor) (*)

◉ LA-533-166 Rev B-1-A (ICS 3000 Anions) (*) ○ LA-503-157 Rev _____ (ICS 3000 IH Vapor) (*)

Worklist/Project Information: 41504 / C109 CLO / 20130402

Run Date(s): 06/03/13 Instrument Id: IC-11

Prep Batches Analyzed (Worklist #): 41430 Prep Method: LA-504-101

Review Items	Yes	No	N/A
A. Calibration/Instrument Run QC			
1. Instrument calibrated per procedure and at specified levels with correlation coefficient ≥ 0.995 linear or ≥ 0.999 quadratic?	◉	○	○
2. ICV/CCV analyzed at appropriate frequency and within control limits (Recovery: 90-110%)?	◉	○	○
3. ICB/CCB analyzed at required frequency and < EQL (or RL) or <5% of the lowest sample result with client consent. N/A if all samples are ND.	◉	○	○
4. LLS run and within control limits (Recovery: ☐ IH: 75-125% ☒ Non IH: 50-150%)? For IH, recovery is mandatory to verify RL.	◉	○	○
B. Sample Results			
1. Were samples with concentrations > calibration range for any analyte diluted and reanalyzed?	○	○	◉
2. Are there 10 or fewer samples run between bracketed, in-control QC?	◉	○	○
3. Were all target analytes properly identified and integrated?	◉	○	○
C. Preparation/Matrix QC			
1. LCS (Prep Std)/LCS Dup (Prep Std Dup), if required, prepared per prep batch and within control limits? Recovery: ☒ 80-120% or ☐ Statistical _____ or ☐ Client Specified _____ RPD: ☐ ≤ 20% or ☐ Statistical _____ or ☐ Client Specified _____	◉	○	○
2. Method/Media Blank prepared per prep batch and < EQL (or RL) or <5% of the lowest sample result?	◉	○	○
3. Sample Duplicate or MS Duplicate run at required frequency and within control limits? %RPD: ☐ ≤20% or ☒ Client-specified ≤30%	○	◉	○
4. MS run at required frequency and within control limit? Recovery: ☒ 75-125% or ☐ Client-specified _____	◉	○	○
D. Other			
1. Are current IDL / MDL / EQL / RL / RLS data on file?	◉	○	○
2. Calculations/transcriptions checked for errors?	◉	○	○
3. Are all raw data complete and verified in OmniLIMS?	◉	○	○
4. All client/project specific requirements met (e.g., MDL, holding times, etc.)?	◉	○	○
5. Date/time of analysis verified as correct?	◉	○	○
6. Prep/Breakdown Batch Benchsheet/Worklist properly completed and included, as required?	◉	○	○

(*) This form is not used by the subject procedure; rather, it is used to assist in verifying the data produced during the performance of the procedure.

ATL	ION CHROMATOGRAPHY DATA REVIEW CHECKLIST (continued)	○ IH ◉ Non IH

○ LA-533-101 Rev _____ (Cat) (*) ○ LA-533-107 Rev _____ (846 Anions) (*)

○ LA-533-115 Rev _____ (IC6 Anions) (*) ○ LA-533-117 Rev _____ (IH Vapor) (*)

◉ LA-533-166 Rev B-1-A (ICS 3000 Anions) (*) ○ LA-503-157 Rev _____ (ICS 3000 IH Vapor) (*)

Worklist/Project Information: 41504 / C109 CLO / 20130402

Run Date(s): 06/03/13 Instrument Id: IC-11

Prep Batches Analyzed (Worklist #): 41430 Prep Method: LA-504-101

Comments/Samples Affected (indicate review item letter and number):

Samples were initially digested on 05/29/13 and analyzed on 05/30/13. Initial digest/ analysis produced inconsistent SAM/DUP results for fluoride and phosphate, which were the only analytes >EQL. The SAM/DUP %RPD for these analytes was significantly outside of the acceptable limits. Subsequently, samples were re-digested & analyzed on 06/03/13. %RPDs from the second digest were lower yet still outside of the acceptable limits indicating that lack of sample homogeneity may be the problem. The project coordinator and the client were notified about the results and ,per client consent, further action to improve results was not taken. Results were reported from the second digest/analysis.

A.3 The sulfate detected in CCB 1&2 was < EQL yet > 5% of the sample result therefore sulfate has been "B" flagged. Since sulfate is below the EQL in the sample, re-analysis was not necessary.

B.3 Manual integration was necessary for the phosphate peak in LLS 1 since the peak was not detected by the software. A comparison chromatogram has been included to compare the integration to that of standard 1. The revised chromatogram has been marked with an "R."

C.2 The chloride,nitrite,sulfate and nitrate detected in the prep blank was < EQL yet > 5% of the sample result therefore these analytes have been "B" flagged. Since all of these analytes are < EQL a re-digest was not necessary.

C.3 The %RPD for fluoride and phosphate was outside of the acceptable limits and have been "c" flagged.

C.4 The SPK-Predig %recovery for fluoride and phosphate was outside of the acceptable limits. Since the the amount of spike was <25% of the sample result,"b" flags were not required.

1st Level Data Reviewer: Amanda Black (Signature) Date: 06/12/13

2nd Level Data Reviewer: Samuel A. Adams (Signature) Date: 06/17/2013

PC: Julie Osborn 7/9/13

(*) This form is not used by the subject procedure; rather, it is used to assist in verifying the data produced during the performance of the procedure.

A-6004-349 (REV 2)

LABCORE Completed Batch Report for Batch# 00041504

Analyst: Tunnell, Kelsey

Book#: 116N29C

Instrument: IC-11

Method: IC - ANIONS/SMALL ORG. ACIDS, LA-533-166 Rev/Mod B-1-A

Specification: C109 CLO

Prep Batch: 00041430

Batch Comment:

C109 CLO water digest for Anions/Small Organic Acids INSTRUMENT BATCH. KJT.

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
Sample Sequence 1																	
1	CCV	S1306040085		0 0			Fluoride	LIQUID	1.0033534	1.0190E+00			1.61E-03	ug/mL	101.56	% Recovery	
1	CCV	S1306040085		0 0			Glycolate	LIQUID	6.216791	6.2870E+00			9.37E-03	ug/mL	101.13	% Recovery	
1	CCV	S1306040085		0 0			Acetate	LIQUID	7.50015	7.6140E+00			6.04E-03	ug/mL	101.52	% Recovery	
1	CCV	S1306040085		0 0			Formate	LIQUID	7.50015	7.7070E+00			4.67E-03	ug/mL	102.76	% Recovery	
1	CCV	S1306040085		0 0			Chloride	LIQUID	1.416695	1.4390E+00			9.98E-03	ug/mL	101.57	% Recovery	
1	CCV	S1306040085		0 0			Nitrite	LIQUID	9.16685	9.2060E+00			0.0192	ug/mL	100.43	% Recovery	
1	CCV	S1306040085		0 0			Sulfate	LIQUID	10.800216	1.1048E+01			0.0187	ug/mL	102.29	% Recovery	
1	CCV	S1306040085		0 0			Oxalate	LIQUID	8.766842	8.6850E+00			0.0231	ug/mL	99.066	% Recovery	
1	CCV	S1306040085		0 0			Bromide	LIQUID	10.516877	1.0915E+01			0.058	ug/mL	103.79	% Recovery	
1	CCV	S1306040085		0 0			Nitrate	LIQUID	9.16685	9.5110E+00			0.0208	ug/mL	103.75	% Recovery	
1	CCV	S1306040085		0 0			Phosphate	LIQUID	9.200184	9.4110E+00			0.0167	ug/mL	102.29	% Recovery	
Sample Sequence 2																	
2	LLS	S1306040087		0 0			Fluoride	LIQUID	.0301	3.2000E-02			1.61E-03	ug/mL	106.31	% Recovery	
2	LLS	S1306040087		0 0			Glycolate	LIQUID	.1865	1.9000E-01			9.37E-03	ug/mL	101.88	% Recovery	
2	LLS	S1306040087		0 0			Acetate	LIQUID	.225	2.2300E-01			6.04E-03	ug/mL	99.111	% Recovery	
2	LLS	S1306040087		0 0			Formate	LIQUID	.225	2.3600E-01			4.67E-03	ug/mL	104.89	% Recovery	
2	LLS	S1306040087		0 0			Chloride	LIQUID	.0425	3.8000E-02			9.98E-03	ug/mL	89.412	% Recovery	
2	LLS	S1306040087		0 0			Nitrite	LIQUID	.275	2.8900E-01			0.0192	ug/mL	105.09	% Recovery	
2	LLS	S1306040087		0 0			Sulfate	LIQUID	.324	3.3900E-01			0.0187	ug/mL	104.63	% Recovery	
2	LLS	S1306040087		0 0			Oxalate	LIQUID	.263	2.7000E-01			0.0231	ug/mL	102.66	% Recovery	
2	LLS	S1306040087		0 0			Bromide	LIQUID	.3155	3.0100E-01			0.058	ug/mL	95.404	% Recovery	
2	LLS	S1306040087		0 0			Nitrate	LIQUID	.275	2.9100E-01			0.0208	ug/mL	105.82	% Recovery	
2	LLS	S1306040087		0 0			Phosphate	LIQUID	.276	2.7100E-01			0.0167	ug/mL	98.188	% Recovery	
Sample Sequence 3																	
3	CCB	S1306040086		0 0			Fluoride	LIQUID		<1.6100E-03			1.61E-03	ug/mL			
3	CCB	S1306040086		0 0			Glycolate	LIQUID		<9.3700E-03			9.37E-03	ug/mL			
3	CCB	S1306040086		0 0			Acetate	LIQUID		<6.0400E-03			6.04E-03	ug/mL			
3	CCB	S1306040086		0 0			Formate	LIQUID		<4.6700E-03			4.67E-03	ug/mL			
3	CCB	S1306040086		0 0			Chloride	LIQUID		<9.9800E-03			9.98E-03	ug/mL			
3	CCB	S1306040086		0 0			Nitrite	LIQUID		<1.9200E-02			0.0192	ug/mL			
3	CCB	S1306040086		0 0			Sulfate	LIQUID		3.9000E-02			0.0187	ug/mL			

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041504

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
3	CCB	S1306040086		0 0			Oxalate	LIQUID		<2.3100E-02			0.0231	ug/mL			
3	CCB	S1306040086		0 0			Bromide	LIQUID		<5.8000E-02			0.058	ug/mL			
3	CCB	S1306040086		0 0			Nitrate	LIQUID		<2.0800E-02			0.0208	ug/mL			
3	CCB	S1306040086		0 0			Phosphate	LIQUID		<1.6700E-02			0.0167	ug/mL			
Sample Sequence 4																	
4	BLNK-PREP	S1305290010		0 0	W		Fluoride	LIQUID		<1.6100E-03			1.61E-03	ug/mL			
4	BLNK-PREP	S1305290010		0 0	W		Glycolate	LIQUID		<9.3700E-03			9.37E-03	ug/mL			
4	BLNK-PREP	S1305290010		0 0	W		Acetate	LIQUID		<6.0400E-03			6.04E-03	ug/mL			
4	BLNK-PREP	S1305290010		0 0	W		Formate	LIQUID		<4.6700E-03			4.67E-03	ug/mL			
4	BLNK-PREP	S1305290010		0 0	W		Chloride	LIQUID		1.4000E-02			9.98E-03	ug/mL			
4	BLNK-PREP	S1305290010		0 0	W		Nitrite	LIQUID		6.5000E-02			0.0192	ug/mL			
4	BLNK-PREP	S1305290010		0 0	W		Sulfate	LIQUID		7.1000E-02			0.0187	ug/mL			
4	BLNK-PREP	S1305290010		0 0	W		Oxalate	LIQUID		<2.3100E-02			0.0231	ug/mL			
4	BLNK-PREP	S1305290010		0 0	W		Bromide	LIQUID		<5.8000E-02			0.058	ug/mL			
4	BLNK-PREP	S1305290010		0 0	W		Nitrate	LIQUID		1.0400E-01			0.0208	ug/mL			
4	BLNK-PREP	S1305290010		0 0	W		Phosphate	LIQUID		<1.6700E-02			0.0167	ug/mL			
Sample Sequence 5																	
5	STD-PREP	S1305290009		0 0	W		Fluoride	LIQUID	.602	6.0700E-01			1.61E-03	ug/mL	100.83	% Recovery	
5	STD-PREP	S1305290009		0 0	W		Glycolate	LIQUID	3.73	3.7640E+00			9.37E-03	ug/mL	100.91	% Recovery	
5	STD-PREP	S1305290009		0 0	W		Acetate	LIQUID	4.5	4.6450E+00			6.04E-03	ug/mL	103.22	% Recovery	
5	STD-PREP	S1305290009		0 0	W		Formate	LIQUID	4.5	4.6490E+00			4.67E-03	ug/mL	103.31	% Recovery	
5	STD-PREP	S1305290009		0 0	W		Chloride	LIQUID	.85	8.6300E-01			9.98E-03	ug/mL	101.53	% Recovery	
5	STD-PREP	S1305290009		0 0	W		Nitrite	LIQUID	5.5	5.4380E+00			0.0192	ug/mL	98.873	% Recovery	
5	STD-PREP	S1305290009		0 0	W		Sulfate	LIQUID	6.48	6.6950E+00			0.0187	ug/mL	103.32	% Recovery	
5	STD-PREP	S1305290009		0 0	W		Oxalate	LIQUID	5.26	5.2850E+00			0.0231	ug/mL	100.48	% Recovery	
5	STD-PREP	S1305290009		0 0	W		Bromide	LIQUID	6.31	6.3710E+00			0.058	ug/mL	100.97	% Recovery	
5	STD-PREP	S1305290009		0 0	W		Nitrate	LIQUID	5.5	5.6510E+00			0.0208	ug/mL	102.75	% Recovery	
5	STD-PREP	S1305290009		0 0	W		Phosphate	LIQUID	5.52	5.5660E+00			0.0167	ug/mL	100.83	% Recovery	
Sample Sequence 6																	
6	SAMPLE	S13T004251		0 0	W		Fluoride	SOLID	N/A	8.4713E+03			20.096	ug/g			c
6	SAMPLE	S13T004251		0 0	W		Glycolate	SOLID	N/A	<6.4309E+01			64.309	ug/g			U
6	SAMPLE	S13T004251		0 0	W		Acetate	SOLID	N/A	<1.1254E+02			112.54	ug/g			U
6	SAMPLE	S13T004251		0 0	W		Formate	SOLID	N/A	<1.6881E+02			168.81	ug/g			U
6	SAMPLE	S13T004251		0 0	W		Chloride	SOLID	N/A	<6.4309E+01			64.309	ug/g			BU
6	SAMPLE	S13T004251		0 0	W		Nitrite	SOLID	N/A	<2.8135E+02			281.35	ug/g			BU
6	SAMPLE	S13T004251		0 0	W		Sulfate	SOLID	N/A	2.5502E+02			184.89	ug/g			BJ
6	SAMPLE	S13T004251		0 0	W		Oxalate	SOLID	N/A	<1.0450E+02			104.5	ug/g			U
6	SAMPLE	S13T004251		0 0	W		Bromide	SOLID	N/A	<6.0289E+01			60.289	ug/g			U
6	SAMPLE	S13T004251		0 0	W		Nitrate	SOLID	N/A	3.5229E+02			253.22	ug/g			BJ
6	SAMPLE	S13T004251		0 0	W		Phosphate	SOLID	N/A	8.5518E+04			80.386	ug/g			c
Sample Sequence 7																	
7	DUP	S1305290011	S13T004251	0 0	W		Fluoride	SOLID	8.4713E+03	6.0194E+03			20.408	ug/g	33.841	% RPD	

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041504

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
7	DUP	S1305290011	S13T004251	0 0	W		Glycolate	SOLID	<6.4309E+01	<6.5306E+01			65.306	ug/g			
7	DUP	S1305290011	S13T004251	0 0	W		Acetate	SOLID	<1.1254E+02	<1.1429E+02			114.29	ug/g			
7	DUP	S1305290011	S13T004251	0 0	W		Formate	SOLID	<1.6881E+02	<1.7143E+02			171.43	ug/g			
7	DUP	S1305290011	S13T004251	0 0	W		Chloride	SOLID	<6.4309E+01	<6.5306E+01			65.306	ug/g			
7	DUP	S1305290011	S13T004251	0 0	W		Nitrite	SOLID	<2.8135E+02	2.8776E+02			285.71	ug/g	2.2526	% RPD	
7	DUP	S1305290011	S13T004251	0 0	W		Sulfate	SOLID	2.5502E+02	2.0939E+02			187.76	ug/g	19.652	% RPD	
7	DUP	S1305290011	S13T004251	0 0	W		Oxalate	SOLID	<1.0450E+02	<1.0612E+02			106.12	ug/g			
7	DUP	S1305290011	S13T004251	0 0	W		Bromide	SOLID	<6.0289E+01	<6.1224E+01			61.224	ug/g			
7	DUP	S1305290011	S13T004251	0 0	W		Nitrate	SOLID	3.5229E+02	<2.5714E+02			257.14	ug/g			
7	DUP	S1305290011	S13T004251	0 0	W		Phosphate	SOLID	8.5518E+04	6.0411E+04			81.633	ug/g	34.410	% RPD	
Sample Sequence 8																	
8	SPK-PREDIG	S1305290013	S13T004251	0 0	W		Fluoride	SOLID	603.93252406774	5.4795E+03			20.064	ug/g	-495.38	% Recovery	
8	SPK-PREDIG	S1305290013	S13T004251	0 0	W		Glycolate	SOLID	3741.9739448051	3.8443E+03			64.205	ug/g	102.73	% Recovery	
8	SPK-PREDIG	S1305290013	S13T004251	0 0	W		Acetate	SOLID	4514.445777915	4.6501E+03			112.36	ug/g	103	% Recovery	
8	SPK-PREDIG	S1305290013	S13T004251	0 0	W		Formate	SOLID	4514.445777915	4.5463E+03			168.54	ug/g	100.71	% Recovery	
8	SPK-PREDIG	S1305290013	S13T004251	0 0	W		Chloride	SOLID	852.7286469395	8.2083E+02			64.205	ug/g	96.259	% Recovery	
8	SPK-PREDIG	S1305290013	S13T004251	0 0	W		Nitrite	SOLID	5517.655950785	5.3758E+03			280.9	ug/g	97.429	% Recovery	
8	SPK-PREDIG	S1305290013	S13T004251	0 0	W		Sulfate	SOLID	6500.8019201976	6.5678E+03			184.59	ug/g	97.108	% Recovery	
8	SPK-PREDIG	S1305290013	S13T004251	0 0	W		Oxalate	SOLID	5276.8855092962	5.2751E+03			104.33	ug/g	99.966	% Recovery	
8	SPK-PREDIG	S1305290013	S13T004251	0 0	W		Bromide	SOLID	6330.2561908097	6.5022E+03			60.193	ug/g	102.72	% Recovery	
8	SPK-PREDIG	S1305290013	S13T004251	0 0	W		Nitrate	SOLID	5517.655950785	5.5630E+03			252.81	ug/g	94.437	% Recovery	
8	SPK-PREDIG	S1305290013	S13T004251	0 0	W		Phosphate	SOLID	5537.7201542424	5.4914E+04			80.257	ug/g	-552.64	% Recovery	
Sample Sequence 10																	
10	SPK-IC	S1306040088	S13T004251	0 0			Fluoride	SOLID	60.2	5.5200E+01			5.00E-03	ug/mL	107.28	% Recovery	
10	SPK-IC	S1306040088	S13T004251	0 0			Glycolate	SOLID	373	8.3449E+01			0.016	ug/mL	110.74	% Recovery	
10	SPK-IC	S1306040088	S13T004251	0 0			Acetate	SOLID	450	1.0007E+02			0.028	ug/mL	110.08	% Recovery	
10	SPK-IC	S1306040088	S13T004251	0 0			Formate	SOLID	450	9.9910E+01			0.042	ug/mL	109.9	% Recovery	
10	SPK-IC	S1306040088	S13T004251	0 0			Chloride	SOLID	85	1.9169E+01			0.016	ug/mL	111.63	% Recovery	
10	SPK-IC	S1306040088	S13T004251	0 0			Nitrite	SOLID	550	1.1814E+02			0.07	ug/mL	106.33	% Recovery	
10	SPK-IC	S1306040088	S13T004251	0 0			Sulfate	SOLID	648	1.4237E+02			0.046	ug/mL	107.78	% Recovery	
10	SPK-IC	S1306040088	S13T004251	0 0			Oxalate	SOLID	526	1.1192E+02			0.026	ug/mL	105.33	% Recovery	
10	SPK-IC	S1306040088	S13T004251	0 0			Bromide	SOLID	631	1.3750E+02			0.015	ug/mL	107.87	% Recovery	
10	SPK-IC	S1306040088	S13T004251	0 0			Nitrate	SOLID	550	1.2147E+02			0.063	ug/mL	107.74	% Recovery	
10	SPK-IC	S1306040088	S13T004251	0 0			Phosphate	SOLID	552	5.4607E+02			0.02	ug/mL	108.08	% Recovery	

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041504

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
Sample Sequence 11																	
11	SAMPLE	S13T004279		0 0	W		Fluoride	SOLID	N/A	8.1395E+03			20.137	ug/g			
11	SAMPLE	S13T004279		0 0	W		Glycolate	SOLID	N/A	<6.4438E+01			64.438	ug/g			C
11	SAMPLE	S13T004279		0 0	W		Acetate	SOLID	N/A	<1.1277E+02			112.77	ug/g			U
11	SAMPLE	S13T004279		0 0	W		Formate	SOLID	N/A	<1.6915E+02			169.15	ug/g			U
11	SAMPLE	S13T004279		0 0	W		Chloride	SOLID	N/A	<6.4438E+01			64.438	ug/g			U
11	SAMPLE	S13T004279		0 0	W		Nitrite	SOLID	N/A	2.9279E+02			281.92	ug/g			BU
11	SAMPLE	S13T004279		0 0	W		Sulfate	SOLID	N/A	2.6118E+02			185.26	ug/g			BJ
11	SAMPLE	S13T004279		0 0	W		Oxalate	SOLID	N/A	<1.0471E+02			104.71	ug/g			BJ
11	SAMPLE	S13T004279		0 0	W		Bromide	SOLID	N/A	<6.0411E+01			60.411	ug/g			U
11	SAMPLE	S13T004279		0 0	W		Nitrate	SOLID	N/A	4.2972E+02			253.73	ug/g			U
11	SAMPLE	S13T004279		0 0	W		Phosphate	SOLID	N/A	8.2532E+04			80.548	ug/g			BJ
Sample Sequence 12																	C
12	SAMPLE	S13T004306		0 0	W		Fluoride	SOLID	N/A	6.6547E+03			19.904	ug/g			
12	SAMPLE	S13T004306		0 0	W		Glycolate	SOLID	N/A	<6.3694E+01			63.694	ug/g			C
12	SAMPLE	S13T004306		0 0	W		Acetate	SOLID	N/A	<1.1146E+02			111.46	ug/g			U
12	SAMPLE	S13T004306		0 0	W		Formate	SOLID	N/A	<1.6720E+02			167.2	ug/g			U
12	SAMPLE	S13T004306		0 0	W		Chloride	SOLID	N/A	<6.3694E+01			63.694	ug/g			U
12	SAMPLE	S13T004306		0 0	W		Nitrite	SOLID	N/A	2.9319E+02			278.66	ug/g			BU
12	SAMPLE	S13T004306		0 0	W		Sulfate	SOLID	N/A	2.4104E+02			183.12	ug/g			BJ
12	SAMPLE	S13T004306		0 0	W		Oxalate	SOLID	N/A	<1.0350E+02			103.5	ug/g			BJ
12	SAMPLE	S13T004306		0 0	W		Bromide	SOLID	N/A	<5.9713E+01			59.713	ug/g			U
12	SAMPLE	S13T004306		0 0	W		Nitrate	SOLID	N/A	3.1927E+02			250.8	ug/g			U
12	SAMPLE	S13T004306		0 0	W		Phosphate	SOLID	N/A	7.0212E+04			79.618	ug/g			BJ
Sample Sequence 13																	C
13	CCV	S1306040089		0 0			Fluoride	LIQUID	1.0033534	1.0140E+00			1.61E-03	ug/mL	101.06	% Recovery	
13	CCV	S1306040089		0 0			Glycolate	LIQUID	6.216791	6.3130E+00			9.37E-03	ug/mL	101.55	% Recovery	
13	CCV	S1306040089		0 0			Acetate	LIQUID	7.50015	7.6100E+00			6.04E-03	ug/mL	101.46	% Recovery	
13	CCV	S1306040089		0 0			Formate	LIQUID	7.50015	7.6980E+00			4.67E-03	ug/mL	102.64	% Recovery	
13	CCV	S1306040089		0 0			Chloride	LIQUID	1.416695	1.4400E+00			9.98E-03	ug/mL	101.65	% Recovery	
13	CCV	S1306040089		0 0			Nitrite	LIQUID	9.16685	9.2710E+00			0.0192	ug/mL	101.14	% Recovery	
13	CCV	S1306040089		0 0			Sulfate	LIQUID	10.800216	1.1053E+01			0.0187	ug/mL	102.34	% Recovery	
13	CCV	S1306040089		0 0			Oxalate	LIQUID	8.766842	8.6690E+00			0.0231	ug/mL	98.884	% Recovery	
13	CCV	S1306040089		0 0			Bromide	LIQUID	10.516877	1.0728E+01			0.058	ug/mL	102.01	% Recovery	
13	CCV	S1306040089		0 0			Nitrate	LIQUID	9.16685	9.4760E+00			0.0208	ug/mL	103.37	% Recovery	
13	CCV	S1306040089		0 0			Phosphate	LIQUID	9.200184	9.5860E+00			0.0167	ug/mL	104.19	% Recovery	
Sample Sequence 14																	
14	LLS	S1306040091		0 0			Fluoride	LIQUID	.0301	3.2000E-02			1.61E-03	ug/mL	106.31	% Recovery	
14	LLS	S1306040091		0 0			Glycolate	LIQUID	.1865	1.9100E-01			9.37E-03	ug/mL	102.41	% Recovery	
14	LLS	S1306040091		0 0			Acetate	LIQUID	.225	2.2300E-01			6.04E-03	ug/mL	99.111	% Recovery	
14	LLS	S1306040091		0 0			Formate	LIQUID	.225	2.2800E-01			4.67E-03	ug/mL	101.33	% Recovery	
14	LLS	S1306040091		0 0			Chloride	LIQUID	.0425	3.6000E-02			9.98E-03	ug/mL	84.706	% Recovery	

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041504

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
14	LLS	S1306040091		0 0			Nitrite	LIQUID	.275	2.7100E-01			0.0192	ug/mL	98.545	% Recovery	
14	LLS	S1306040091		0 0			Sulfate	LIQUID	.324	3.2500E-01			0.0187	ug/mL	100.31	% Recovery	
14	LLS	S1306040091		0 0			Oxalate	LIQUID	.263	2.3500E-01			0.0231	ug/mL	89.354	% Recovery	
14	LLS	S1306040091		0 0			Bromide	LIQUID	.3155	1.9500E-01			0.058	ug/mL	61.807	% Recovery	
14	LLS	S1306040091		0 0			Nitrate	LIQUID	.275	2.4700E-01			0.0208	ug/mL	89.818	% Recovery	
14	LLS	S1306040091		0 0			Phosphate	LIQUID	.276	2.8200E-01			0.0167	ug/mL	102.17	% Recovery	
Sample Sequence 15																	
15	CCB	S1306040090		0 0			Fluoride	LIQUID		<1.6100E-03			1.61E-03	ug/mL			
15	CCB	S1306040090		0 0			Glycolate	LIQUID		<9.3700E-03			9.37E-03	ug/mL			
15	CCB	S1306040090		0 0			Acetate	LIQUID		<6.0400E-03			6.04E-03	ug/mL			
15	CCB	S1306040090		0 0			Formate	LIQUID		<4.6700E-03			4.67E-03	ug/mL			
15	CCB	S1306040090		0 0			Chloride	LIQUID		<9.9800E-03			9.98E-03	ug/mL			
15	CCB	S1306040090		0 0			Nitrite	LIQUID		<1.9200E-02			0.0192	ug/mL			
15	CCB	S1306040090		0 0			Sulfate	LIQUID		4.0000E-02			0.0187	ug/mL			
15	CCB	S1306040090		0 0			Oxalate	LIQUID		<2.3100E-02			0.0231	ug/mL			
15	CCB	S1306040090		0 0			Bromide	LIQUID		<5.8000E-02			0.058	ug/mL			
15	CCB	S1306040090		0 0			Nitrate	LIQUID		<2.0800E-02			0.0208	ug/mL			
15	CCB	S1306040090		0 0			Phosphate	LIQUID		<1.6700E-02			0.0167	ug/mL			

Comments Section:

Data Flagger Status:
Flagging Completed

Final Page for Batch# 00041504

Reviewer Signature 06/10/13 Date

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041504

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Method	Customer Id	Specification
1	S1306040085	CCV			IC - ANIONS/SMALL		
2	S1306040087	LLS			IC - ANIONS/SMALL		
3	S1306040086	CCB			IC - ANIONS/SMALL		
4	S1305290010	BLNK-PREP			IC - ANIONS/SMALL		
5	S1305290009	STD-PREP			IC - ANIONS/SMALL		
6	S13T004251	SAMPLE		20130402	IC - ANIONS/SMALL	9C-13-Comp A	C109 CLO
7	S1305290011	DUP	S13T004251		IC - ANIONS/SMALL		
8	S1305290013	SPK-PREDIG	S13T004251		IC - ANIONS/SMALL		
9	S1305290012	SPK-PREDIG	S13T004251		IC - ANIONS/SMALL		
10	S1306040088	SPK-IC	S13T004251		IC - ANIONS/SMALL		
11	S13T004279	SAMPLE		20130402	IC - ANIONS/SMALL	9C-13-Comp B	C109 CLO
12	S13T004306	SAMPLE		20130402	IC - ANIONS/SMALL	9C-13-Comp C	C109 CLO
13	S1306040089	CCV			IC - ANIONS/SMALL		
14	S1306040091	LLS			IC - ANIONS/SMALL		
15	S1306040090	CCB			IC - ANIONS/SMALL		

LABCORE Data Entry Template for Batch# 00041504

Analyst: Tunnell, Kelsey **Standard ID / Book#:** 116N29C

Instrument: IC-11

Method: IC - ANIONS/SMALL ORG. ACIDS, LA-533-166 Rev/Mod B-1-A

Prep Batch: 00041430

Batch Comment:

C109 CLO water digest for Anions/Small Organic Acids INSTRUMENT BATCH. KJT.

CACN:3A.26

S	Type	Sample	R	A	Matrix	Group#	Project
1	CCV	S1306040085	0		LIQUID		
	Analytes Requested:	Acetate, Bromide, Chloride, Fluoride, Formate, Glycolate, Nitrate, Nitrite, Oxalate, Phosphate, Sulfate					
2	LLS	S1306040087	0		LIQUID		
	Analytes Requested:	Acetate, Bromide, Chloride, Fluoride, Formate, Glycolate, Nitrate, Nitrite, Oxalate, Phosphate, Sulfate					
3	CCB	S1306040086	0		LIQUID		
	Analytes Requested:	Acetate, Bromide, Chloride, Fluoride, Formate, Glycolate, Nitrate, Nitrite, Oxalate, Phosphate, Sulfate					
4	BLNK-PREP	S1305290010	0	W	LIQUID		
	Analytes Requested:	Acetate, Bromide, Chloride, Fluoride, Formate, Glycolate, Nitrate, Nitrite, Oxalate, Phosphate, Sulfate					
5	STD-PREP	S1305290009	0	W	LIQUID		
	Analytes Requested:	Acetate, Bromide, Chloride, Fluoride, Formate, Glycolate, Nitrate, Nitrite, Oxalate, Phosphate, Sulfate					
6	SAMPLE	S13T004251	0	W	SOLID	20130402	C109 CLO
	Analytes Requested:	Acetate, Bromide, Chloride, Fluoride, Formate, Glycolate, Nitrate, Nitrite, Oxalate, Phosphate, Sulfate					
7	DUP	S1305290011	0	W	SOLID		
	Analytes Requested:	Acetate, Bromide, Chloride, Fluoride, Formate, Glycolate, Nitrate, Nitrite, Oxalate, Phosphate, Sulfate					
8	SPK-PREDIG	S1305290013	0	W	SOLID		
	Analytes Requested:	Acetate, Bromide, Chloride, Fluoride, Formate, Glycolate, Nitrate, Nitrite, Oxalate, Phosphate, Sulfate					
9	SPK-PREDIG	S1305290012	0	W	SOLID		
	Analytes Requested:	Acetate, Bromide, Chloride, Fluoride, Formate, Glycolate, Nitrate, Nitrite, Oxalate, Phosphate, Sulfate					
10	SPK-IC	S1306040088	0		SOLID		
	Analytes Requested:	Acetate, Bromide, Chloride, Fluoride, Formate, Glycolate, Nitrate, Nitrite, Oxalate, Phosphate, Sulfate					
11	SAMPLE	S13T004279	0	W	SOLID	20130402	C109 CLO
	Analytes Requested:	Acetate, Bromide, Chloride, Fluoride, Formate, Glycolate, Nitrate, Nitrite, Oxalate, Phosphate, Sulfate					
12	SAMPLE	S13T004306	0	W	SOLID	20130402	C109 CLO
	Analytes Requested:	Acetate, Bromide, Chloride, Fluoride, Formate, Glycolate, Nitrate, Nitrite, Oxalate, Phosphate, Sulfate					
13	CCV	S1306040089	0		LIQUID		
	Analytes Requested:	Acetate, Bromide, Chloride, Fluoride, Formate, Glycolate, Nitrate, Nitrite, Oxalate, Phosphate, Sulfate					
14	LLS	S1306040091	0		LIQUID		
	Analytes Requested:	Acetate, Bromide, Chloride, Fluoride, Formate, Glycolate, Nitrate, Nitrite, Oxalate, Phosphate, Sulfate					
15	CCB	S1306040090	0		LIQUID		
	Analytes Requested:	Acetate, Bromide, Chloride, Fluoride, Formate, Glycolate, Nitrate, Nitrite, Oxalate, Phosphate, Sulfate					

Final Page for Batch# 00041504

Analyst Signature Date Data Entry Signature Date

Data Entry Comments:

S = Batch Slot Number, R = Retest Number, A = Aliquot Code.

ATL	IC INSTRUMENT RUN BENCH SHEET	○ IH	◉ Non IH

◉ LA-533- 166 Rev: B-1-A ○ LA-503- N/A Rev: N/A

Client Name/Project: C109 CLO

Batch #: 41504 Date/Time Start: 06/03/13 /1448

Analyst: KJT Date/Time End: 06/03/13 /2233

Calibration Date: 05/13/13 Log Book/Page Number: HNF-N-577-1 pg. 142

Standard/Reagent	Lot/Book No.	Exp. Date	Standard/Reagent	Lot/Book No.	Exp. Date
CCV	116N29C	06/06/13	SPIKE	116N29C	06/06/13
ICV	N/A	N/A	Eluent: KOH	12102135018	10/2014
LLS	116N29C	06/06/13	-	-	-
-	-	-	-	-	-

(Pipette #); Pipette ID; Volume Range or Fixed Volume; Check box if pipette passes visual verification:

1) 462340Z (Range/Vol: 0.01-.1mL) ☒ 4) 3796852 (Range/Vol: 0.01-0.1mL) ☒

2) 394694A (Range/Vol: 0.1mL-1.0mL) ☒ 5) 1139809 (Range/Vol: 0.1-1.0mL) ☒

3) 363436Z (Range/Vol: 1.0mL-10mL) ☒ 6) N/A (Range/Vol: N/A) ☐

Sample Number	Sample Vol. 1 (mL)	Pip. #	Spike Vol. 1 (mL)	Pip. #	Diluent Vol. 1 (mL)	Pip. #	*Sample Vol. 2 (mL)	Pip. #	Spike Vol. 2 (mL)	Pip. #	Diluent Vol. 2 (mL)	Pip. #	Total Dilution Factor
CCV 1	/	/	0.1	1	5.9	3	/	/	/	/	/	/	60
LLS 1	/	/	0.1	1	5.9	3	0.15	2	/	/	4.85	3	2000
CCB 1	DIRECT	/	/	/	/	/	/	/	/	/	/	/	1
PREP BLANK	DIRECT	/	/	/	/	/	/	/	/	/	/	/	1
PREP STD	DIRECT	/	/	/	/	/	/	/	/	/	/	/	1
S13T004251 SAM	0.25	2	/	/	4.75	3	/	/	/	/	/	/	20
S13T004251 DUP	0.25	2	/	/	4.75	3	/	/	/	/	/	/	20
S13T004251 SPK	0.25	2	/	/	4.75	3	/	/	/	/	/	/	20
S13T004251 SPK2	0.25	2	/	/	4.75	3	/	/	/	/	/	/	20
S13T004251 PSPK	0.5	2	/	/	9.5	3	4.95	3	0.05	1	/	/	20.202
S13T004279	0.25	2	/	/	4.75	3	/	/	/	/	/	/	20
S13T004306	0.25	2	/	/	4.75	3	/	/	/	/	/	/	20
CCV 2	/	/	0.1	1	5.9	3	/	/	/	/	/	/	60
LLS 2	/	/	0.1	1	5.9	3	0.15	2	/	/	4.85	3	2000
CCB 2	DIRECT	/	/	/	/	/	/	/	/	/	/	/	1

*Sample Volume 2 is taken from the first dilution

Comments:

Sequence: 130603_C109
Operator: h8842198

Printed: 6/4/2013 12:53:55 PM

Title:
Datasource: WF21224_local
Location:
Timebase: IC_11
#Samples: 28

Created: 6/3/2013 9:47:21 AM by inorganic
Last Update: 6/4/2013 12:53:25 PM by h8842198

No.	Name	Pos.	Type	Inj. Vol.	Program	Method	Status
1	BLANK	1	Unknown	10.0	Ramp Gradient_32	Anion-sm org	Finished
2	BLANK	1	Unknown	10.0	Ramp Gradient_32	Anion-sm org	Finished
3	CCV 60X 1	2	Unknown	10.0	Ramp Gradient_32	Anion-sm org	Finished
4	LLS 2000X 1	3	Unknown	10.0	Ramp Gradient_32	Anion-sm org	Finished
5	CCB 1	1	Unknown	10.0	Ramp Gradient_32	Anion-sm org	Finished
6	BLANK	1	Unknown	10.0	Ramp Gradient_32	Anion-sm org	Finished
* 7	CCV 60X 1	2	Unknown	10.0	Ramp Gradient_32	Anion-sm org	Finished
8	LLS 2000X 1	3	Unknown	10.0	Ramp Gradient_32	Anion-sm org	Finished
9	CCB 1	1	Unknown	10.0	Ramp Gradient_32	Anion-sm org	Finished
10	PREP BLANK	4	Unknown	10.0	Ramp Gradient_32	Anion-sm org	Finished
11	PREP STD	5	Unknown	10.0	Ramp Gradient_32	Anion-sm org	Finished
12	S13T004251 SAM 20x	6	Unknown	10.0	Ramp Gradient_32	Anion-sm org	Finished
13	S13T004251 DUP 20x	7	Unknown	10.0	Ramp Gradient_32	Anion-sm org	Finished
14	S13T004251 SPK 20x	8	Unknown	10.0	Ramp Gradient_32	Anion-sm org	Finished
15	S13T004251 SPK 2 20x	9	Unknown	10.0	Ramp Gradient_32	Anion-sm org	Finished
16	S13T004251 P.SPK 20.20x	10	Unknown	10.0	Ramp Gradient_32	Anion-sm org	Finished
17	S13T004279 20x	11	Unknown	10.0	Ramp Gradient_32	Anion-sm org	Finished
18	S13T004306 20x	12	Unknown	10.0	Ramp Gradient_32	Anion-sm org	Finished
19	CCV 60X 2	2	Unknown	10.0	Ramp Gradient_32	Anion-sm org	Finished
20	LLS 2000X 2	3	Unknown	10.0	Ramp Gradient_32	Anion-sm org	Finished
21	CCB 2	1	Unknown	10.0	Ramp Gradient_32	Anion-sm org	Finished
22	SHUTDOWN	1	Unknown	10.0	Shutdown	Anion-sm org	Finished
23	std1	4	Standard	10.0	Ramp Gradient_32	Anion-sm org	Finished
24	std2	5	Standard	10.0	Ramp Gradient_32	Anion-sm org	Finished
25	std3	6	Standard	10.0	Ramp Gradient_32	Anion-sm org	Finished
26	std4	7	Standard	10.0	Ramp Gradient_32	Anion-sm org	Finished
27	std5	8	Standard	10.0	Ramp Gradient_32	Anion-sm org	Finished
28	std6	9	Standard	10.0	Ramp Gradient_32	Anion-sm org	Finished

Chromeleon © Dionex Corporation, Version 6.80 SR11d Build 3302 (196279)

Sequence: 130603_C109
Operator: h8842198

Title:
Datasource: WF21224_local
Location:
Timebase: IC_11
#Samples: 28

Created: 6/3/2013 9:47:21 AM by inorganic
Last Update: 6/4/2013 12:53:25 PM by h8842198

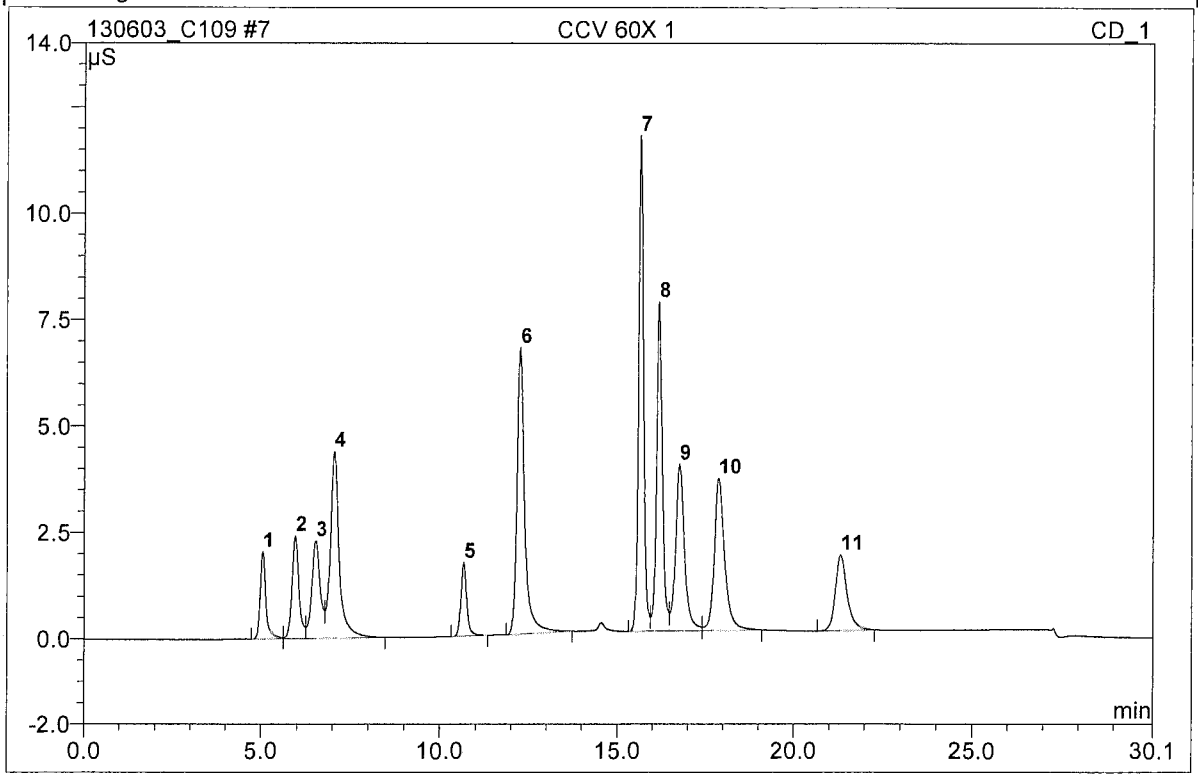
No.	Name	Inj. Date/Time	Comment	Dil. Factor
1	BLANK	6/3/2013 10:47:30 AM		1.0000
2	BLANK	6/3/2013 11:20:40 AM		1.0000
3	CCV 60X 1	6/3/2013 11:53:50 AM		1.0000
4	LLS 2000X 1	6/3/2013 12:27:01 PM		1.0000
5	CCB 1	6/3/2013 1:00:11 PM		1.0000
6	BLANK	6/3/2013 2:15:48 PM		1.0000
7	CCV 60X 1	6/3/2013 2:48:58 PM		1.0000
8	LLS 2000X 1	6/3/2013 3:22:08 PM		1.0000
9	CCB 1	6/3/2013 3:55:18 PM		1.0000
10	PREP BLANK	6/3/2013 4:28:29 PM		1.0000
11	PREP STD	6/3/2013 5:01:40 PM		1.0000
12	S13T004251 SAM 20x	6/3/2013 5:34:50 PM		20.0000
13	S13T004251 DUP 20x	6/3/2013 6:08:01 PM		20.0000
14	S13T004251 SPK 20x	6/3/2013 6:41:11 PM		20.0000
15	S13T004251 SPK 2 20x	6/3/2013 7:14:21 PM		20.0000
16	S13T004251 P.SPK 20.20x	6/3/2013 7:47:33 PM		20.2020
17	S13T004279 20x	6/3/2013 8:20:43 PM		20.0000
18	S13T004306 20x	6/3/2013 8:53:54 PM		20.0000
19	CCV 60X 2	6/3/2013 9:27:04 PM		1.0000
20	LLS 2000X 2	6/3/2013 10:00:14 PM		1.0000
21	CCB 2	6/3/2013 10:33:25 PM		1.0000
22	SHUTDOWN	6/3/2013 11:06:35 PM		1.0000
23	std1	5/13/2013 6:57:17 PM	2000X 116N29A	1.0000
24	std2	5/13/2013 7:30:28 PM	200X 116N29A	1.0000
25	std3	5/13/2013 8:03:39 PM	100X 116N29A	1.0000
26	std4	5/13/2013 8:36:49 PM	60X 116N29A	1.0000
27	std5	5/13/2013 9:10:00 PM	30X 116N29A	1.0000
28	std6	5/13/2013 9:43:10 PM	20X 116N29A	1.0000

* Data included in this report. 06/06/13

Chromeleon © Dionex Corporation, Version 6.80 SR11d Build 3302 (196279)

7 CCV 60X 1

Sample Name:	**CCV 60X 1**	*Injection Volume:*	**10.0**
Vial Number:	**2**	*Channel:*	**CD_1**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Control Program:	**Ramp Gradient_32**	*Sample Amount:*	**1.0000**
Quantif. Method:	**Anion-sm org**	*Run Time (min):*	**30.10**
Recording Time:	**6/3/2013 14:48**		

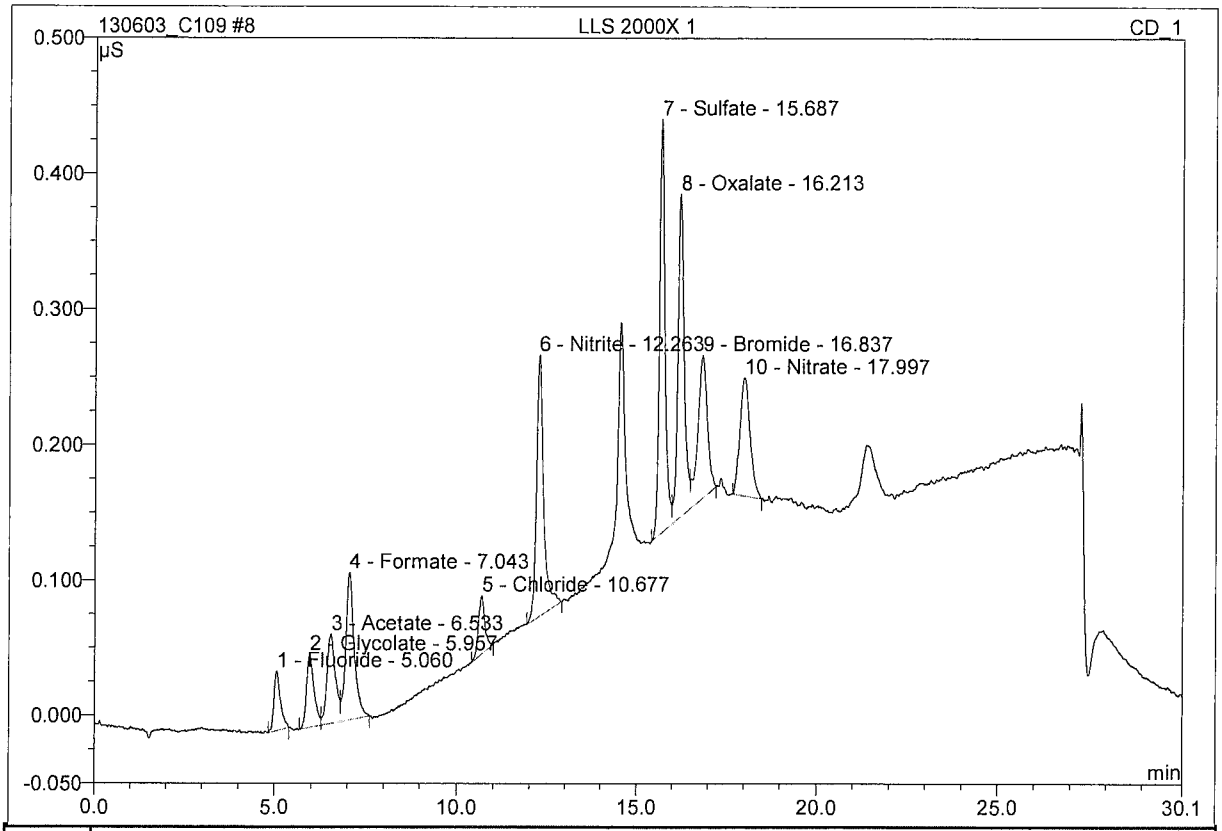


No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount ppm	Type
1	5.05	Fluoride	2.047	0.381	3.37	1.019	BM
2	5.95	Glycolate	2.415	0.540	4.78	6.287	M
3	6.53	Acetate	2.289	0.643	5.69	7.614	M
4	7.05	Formate	4.390	1.266	11.21	7.707	MB
5	10.66	Chloride	1.736	0.328	2.90	1.439	BMB
6	12.24	Nitrite	6.743	1.668	14.76	9.206	BMB
7	15.66	Sulfate	11.661	1.917	16.97	11.048	BM
8	16.19	Oxalate	7.748	1.486	13.15	8.685	M
9	16.76	Bromide	3.919	1.153	10.21	10.915	M
10	17.87	Nitrate	3.577	1.222	10.81	9.511	MB
11	21.32	Phosphate	1.785	0.695	6.15	9.411	BMB
Total:			48.311	11.299	100.00	82.843	

Operator:H4868194 Timebase:IC_11 Sequence:130603_C109

8 LLS 2000X 1

Sample Name:	**LLS 2000X 1**	*Injection Volume:*	**10.0**
Vial Number:	**3**	*Channel:*	**CD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Ramp Gradient_32**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anion-sm org**	*Dilution Factor:*	**1.0000**
Recording Time:	**6/3/2013 15:22**	*Sample Weight:*	**1.0000**
Run Time (min):	**30.10**	*Sample Amount:*	**1.0000**



See "R"

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount ppm	Type
1	5.06	Fluoride	0.044	0.009	3.11	0.032	BMB
2	5.96	Glycolate	0.054	0.013	4.56	0.190	BM
3	6.53	Acetate	0.066	0.018	6.22	0.223	M
4	7.04	Formate	0.109	0.030	10.37	0.236	MB
5	10.68	Chloride	0.043	0.009	3.03	0.038	BMB
6	12.26	Nitrite	0.193	0.045	15.88	0.289	BMB
7	15.69	Sulfate	0.305	0.053	18.67	0.339	BM
8	16.21	Oxalate	0.238	0.048	16.64	0.270	M
9	16.84	Bromide	0.105	0.033	11.51	0.301	MB
10	18.00	Nitrate	0.087	0.029	10.02	0.291	BMB
Total:			1.245	0.286	100.00	2.207	

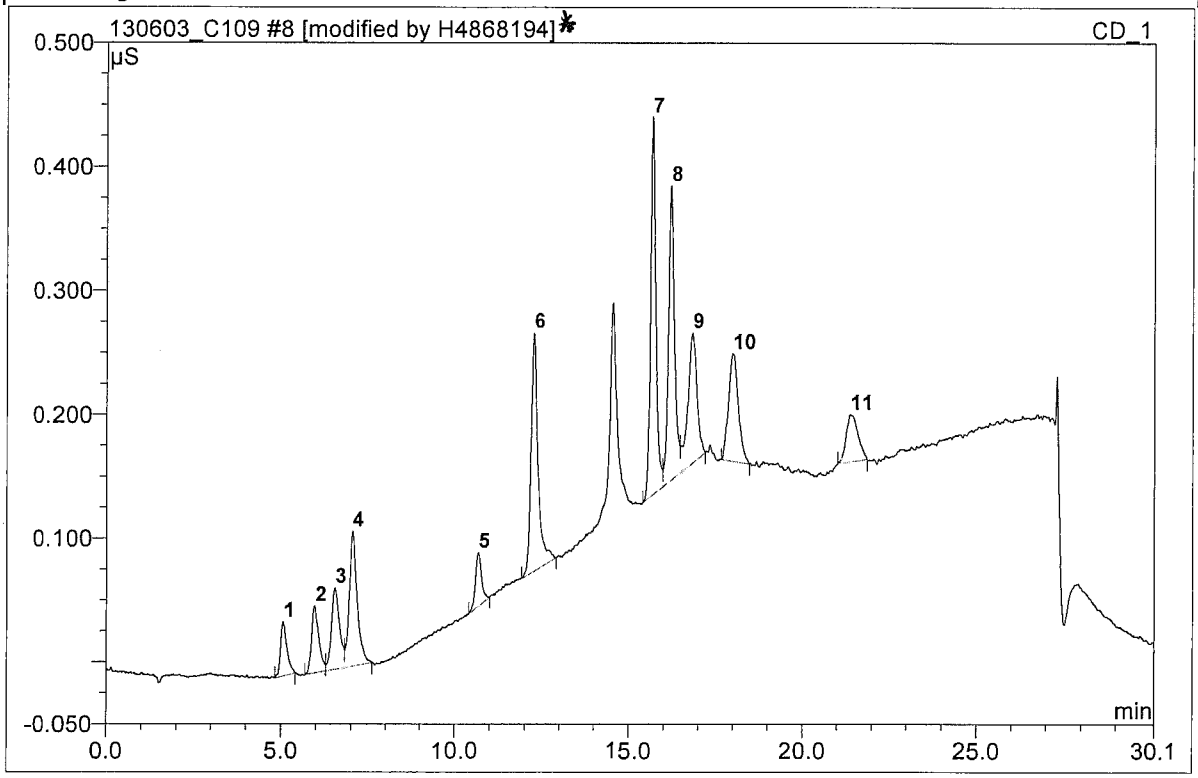
defltdad2/Integration

Chromeleon (c) Dionex 1996-2006
Version 6.80 SR11d Build 3302 (196279)

Operator:H4868194 Timebase:IC_11 Sequence:130603_C109

8 LLS 2000X 1

Sample Name:	**LLS 2000X 1**	*Injection Volume:*	**10.0**
Vial Number:	**3**	*Channel:*	**CD_1**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Control Program:	**Ramp Gradient_32**	*Sample Amount:*	**1.0000**
Quantif. Method:	**Anion-sm org**	*Run Time (min):*	**30.10**
Recording Time:	**6/3/2013 15:22**		



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount ppm	Type
1	5.06	Fluoride	0.044	0.009	2.95	0.032	BMB
2	5.96	Glycolate	0.054	0.013	4.33	0.190	BM
3	6.53	Acetate	0.066	0.018	5.91	0.223	M
4	7.04	Formate	0.109	0.030	9.86	0.236	MB
5	10.68	Chloride	0.043	0.009	2.88	0.038	BMB
6	12.26	Nitrite	0.193	0.045	15.09	0.289	BMB
7	15.69	Sulfate	0.305	0.053	17.74	0.339	BM
8	16.21	Oxalate	0.238	0.048	15.81	0.270	M
9	16.84	Bromide	0.105	0.033	10.93	0.301	MB
10	18.00	Nitrate	0.087	0.029	9.52	0.291	BMB
11	21.37	Phosphate	0.038	0.015	4.98	0.271	BMB*
Total:			1.283	0.301	100.00	2.478	

"R"

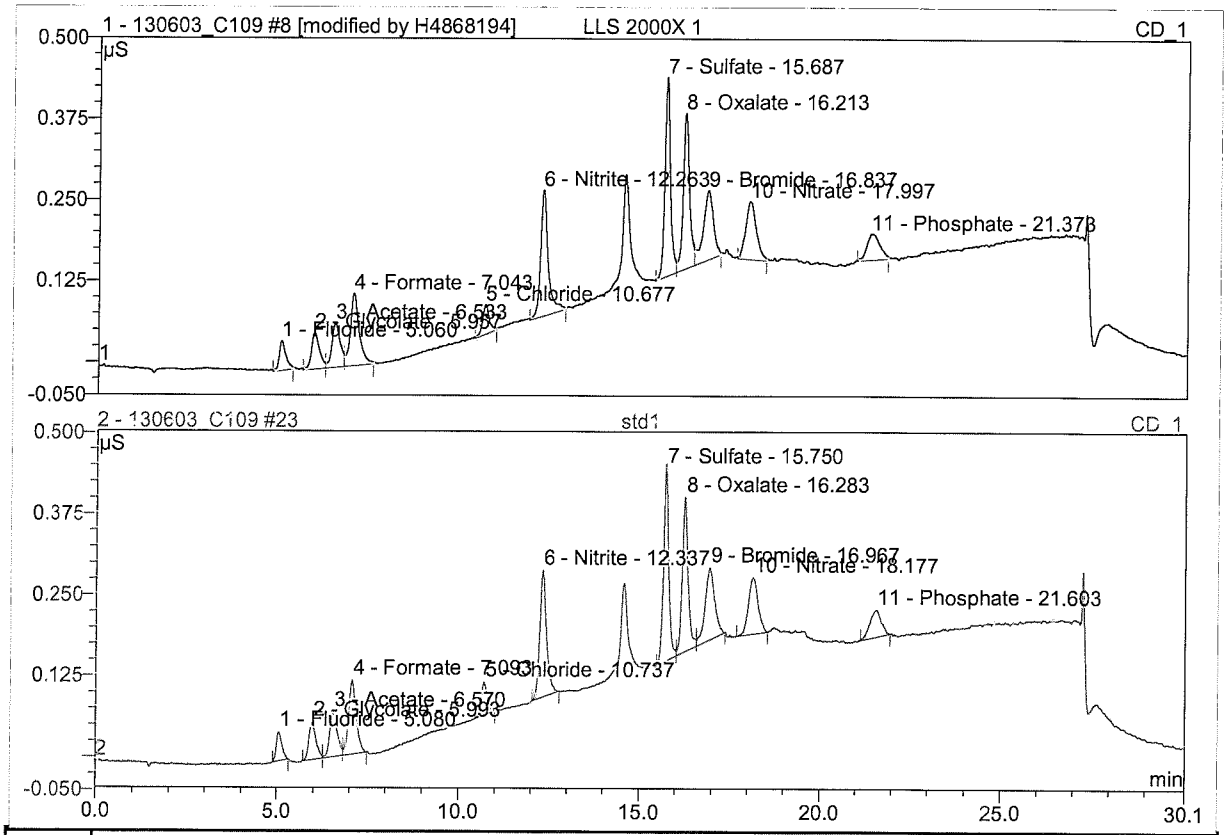
* Manual integration was necessary for phosphate. AB 06/05/13

Chromeleon (c) Dionex 1996-2006
Version 6.80 SR11d Build 3302 (196279)

Operator:H4868194 Timebase:IC_11 Sequence:130603_C109

8 LLS 2000X 1

Sample Name:	**LLS 2000X 1**	*Injection Volume:*	**10.0**
Vial Number:	**3**	*Channel:*	**CD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Ramp Gradient_32**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anion-sm org**	*Dilution Factor:*	**1.0000**
Recording Time:	**6/3/2013 15:22**	*Sample Weight:*	**1.0000**
Run Time (min):	**30.10**	*Sample Amount:*	**1.0000**



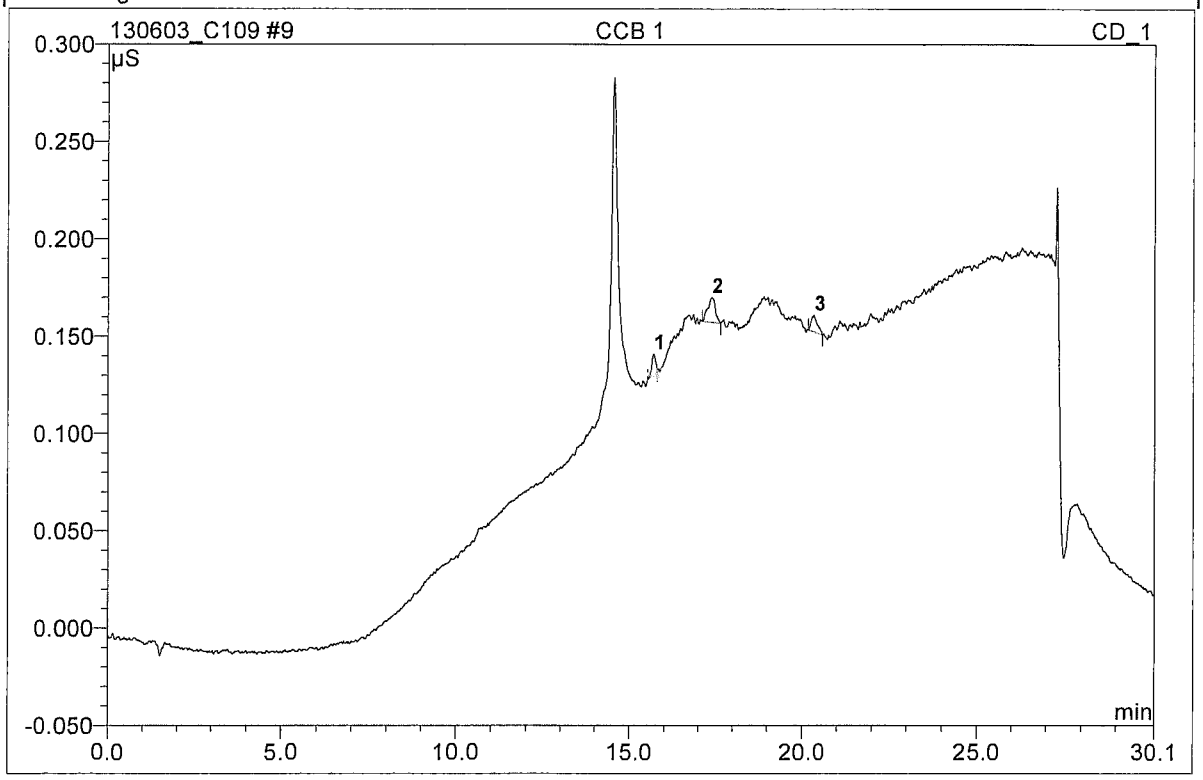
No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount ppm	Type
1	5.06	Fluoride	0.044	0.009	2.95	0.032	BMB
2	5.96	Glycolate	0.054	0.013	4.33	0.190	BM
3	6.53	Acetate	0.066	0.018	5.91	0.223	M
4	7.04	Formate	0.109	0.030	9.86	0.236	MB
5	10.68	Chloride	0.043	0.009	2.88	0.038	BMB
6	12.26	Nitrite	0.193	0.045	15.09	0.289	BMB
7	15.69	Sulfate	0.305	0.053	17.74	0.339	BM
8	16.21	Oxalate	0.238	0.048	15.81	0.270	M
9	16.84	Bromide	0.105	0.033	10.93	0.301	MB
10	18.00	Nitrate	0.087	0.029	9.52	0.291	BMB
11	21.37	Phosphate	0.038	0.015	4.98	0.271	BMB*
Total:			1.283	0.301	100.00	2.478	

defltdad2/Integration

Chromeleon (c) Dionex 1996-2006
Version 6.80 SR11d Build 3302 (196279)

9 CCB 1

Sample Name:	**CCB 1**	*Injection Volume:*	**10.0**
Vial Number:	**1**	*Channel:*	**CD_1**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Control Program:	**Ramp Gradient_32**	*Sample Amount:*	**1.0000**
Quantif. Method:	**Anion-sm org**	*Run Time (min):*	**30.10**
Recording Time:	**6/3/2013 15:55**		

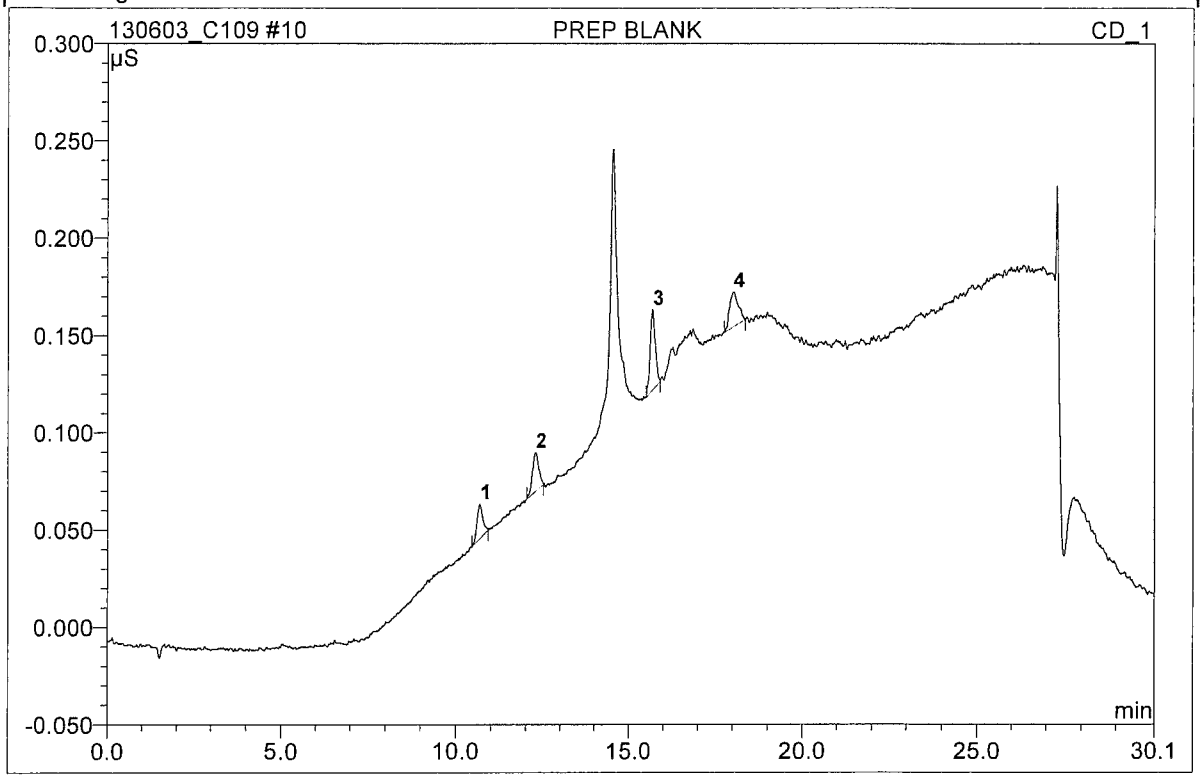


No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount ppm	Type
1	15.69	Sulfate	0.010	0.001	20.92	0.039	BMB
2	17.38	n.a.	0.013	0.003	51.72	n.a.	BMB
3	20.34	n.a.	0.009	0.002	27.37	n.a.	BMB
Total:			0.032	0.006	100.00	0.039	

Operator:H4868194 Timebase:IC_11 Sequence:130603_C109

10 PREP BLANK

Sample Name:	**PREP BLANK**	*Injection Volume:*	**10.0**
Vial Number:	**4**	*Channel:*	**CD_1**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Control Program:	**Ramp Gradient_32**	*Sample Amount:*	**1.0000**
Quantif. Method:	**Anion-sm org**	*Run Time (min):*	**30.10**
Recording Time:	**6/3/2013 16:28**		



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount ppm	Type
1	10.69	Chloride	0.018	0.003	16.85	0.014	BMB
2	12.28	Nitrite	0.020	0.004	21.67	0.065	BMB
3	15.70	Sulfate	0.041	0.007	35.58	0.071	BMB
4	18.03	Nitrate	0.018	0.005	25.90	0.104	BMB
Total:			0.096	0.020	100.00	0.255	

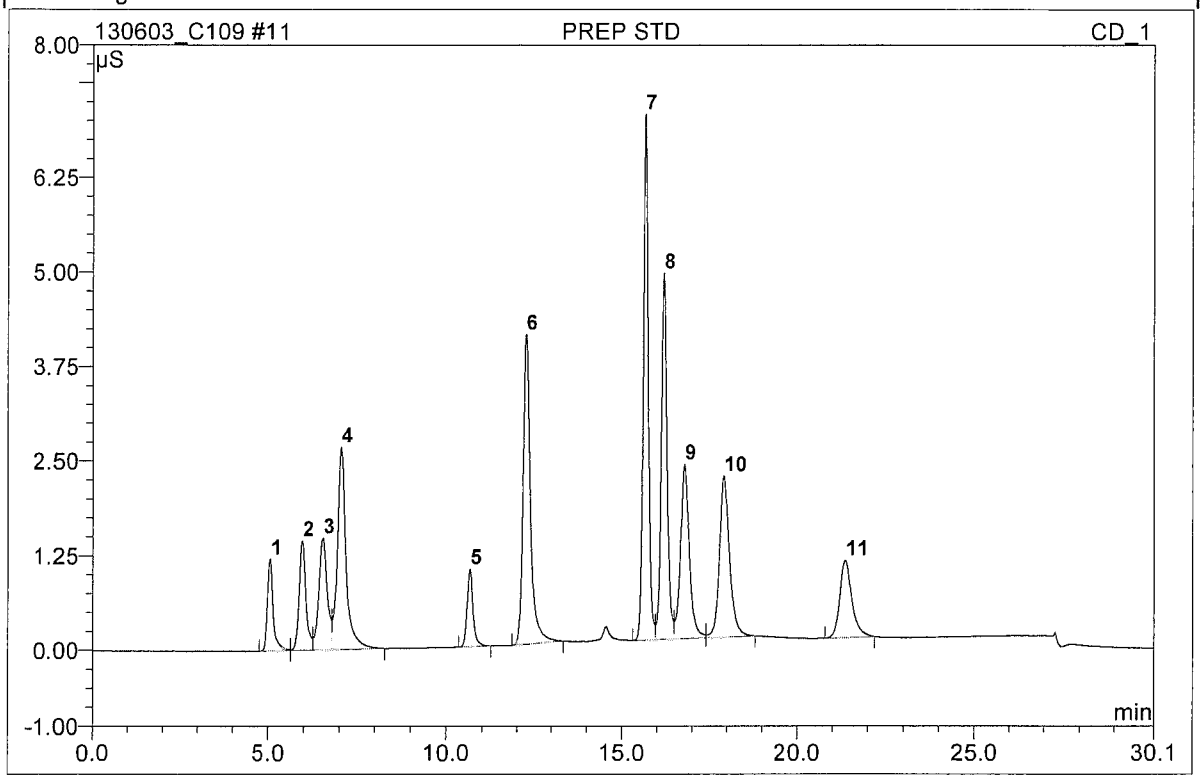
AnionRPT-NoLabels/Integration

Chromeleon (c) Dionex 1996-2006
Version 6.80 SR11d Build 3302 (196279)

Operator:H4868194 Timebase:IC_11 Sequence:130603_C109

11 PREP STD

Sample Name:	**PREP STD**	*Injection Volume:*	**10.0**
Vial Number:	**5**	*Channel:*	**CD_1**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Control Program:	**Ramp Gradient_32**	*Sample Amount:*	**1.0000**
Quantif. Method:	**Anion-sm org**	*Run Time (min):*	**30.10**
Recording Time:	**6/3/2013 17:01**		

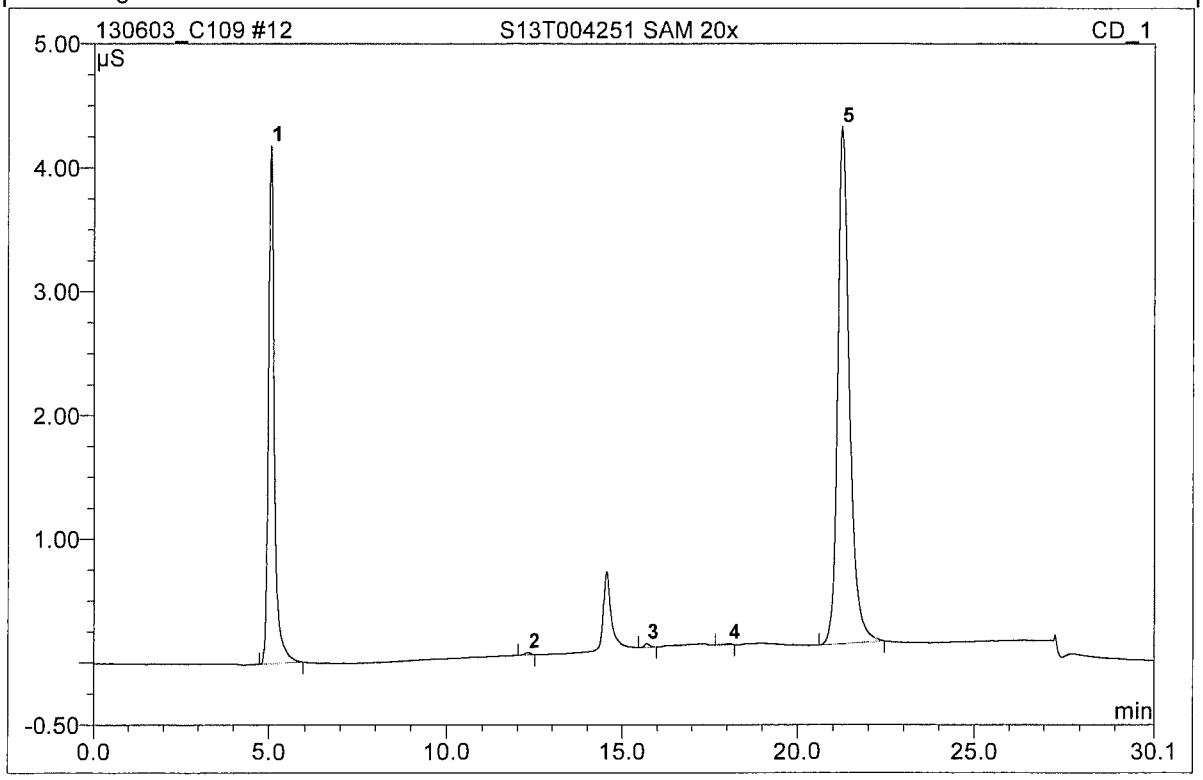


No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount ppm	Type
1	5.06	Fluoride	1.211	0.225	3.32	0.607	BM
2	5.95	Glycolate	1.444	0.323	4.76	3.764	M
3	6.53	Acetate	1.476	0.406	5.98	4.645	M
4	7.05	Formate	2.668	0.767	11.31	4.649	MB
5	10.67	Chloride	1.027	0.196	2.89	0.863	BMB
6	12.25	Nitrite	4.097	0.987	14.56	5.438	BMB
7	15.68	Sulfate	6.956	1.159	17.09	6.695	BM
8	16.20	Oxalate	4.844	0.924	13.63	5.285	M
9	16.79	Bromide	2.302	0.672	9.91	6.371	M
10	17.91	Nitrate	2.129	0.715	10.55	5.651	MB
11	21.36	Phosphate	1.023	0.406	5.99	5.566	BMB
Total:			29.176	6.779	100.00	49.534	

Operator:H4868194 Timebase:IC_11 Sequence:130603_C109

12 S13T004251 SAM 20x

Sample Name:	**S13T004251 SAM 20x**	*Injection Volume:*	**10.0**
Vial Number:	**6**	*Channel:*	**CD_1**
Sample Type:	**unknown**	*Dilution Factor:*	**20.0000**
Control Program:	**Ramp Gradient_32**	*Sample Amount:*	**1.0000**
Quantif. Method:	**Anion-sm org**	*Run Time (min):*	**30.10**
Recording Time:	**6/3/2013 17:34**		

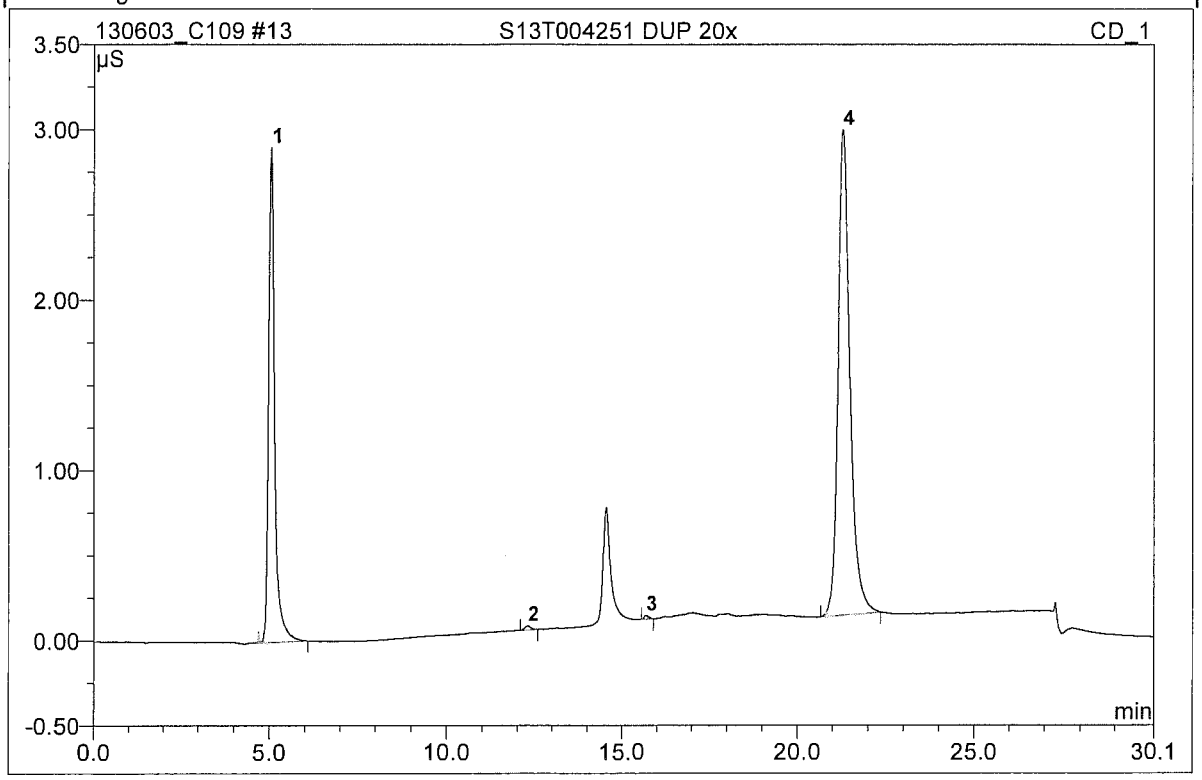


No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount ppm	Type
1	5.06	Fluoride	4.184	0.797	32.89	42.153	BMB
2	12.29	Nitrite	0.019	0.004	0.16	1.269	BMB
3	15.70	Sulfate	0.032	0.006	0.23	1.269	BMB
4	18.05	Nitrate	0.010	0.003	0.12	1.753	BMB
5	21.27	Phosphate	4.176	1.614	66.60	425.537	BMB
Total:			8.420	2.424	100.00	471.982	

Operator:H4868194 Timebase:IC_11 Sequence:130603_C109

13 S13T004251 DUP 20x

Sample Name:	**S13T004251 DUP 20x**	*Injection Volume:*	**10.0**
Vial Number:	**7**	*Channel:*	**CD_1**
Sample Type:	**unknown**	*Dilution Factor:*	**20.0000**
Control Program:	**Ramp Gradient_32**	*Sample Amount:*	**1.0000**
Quantif. Method:	**Anion-sm org**	*Run Time (min):*	**30.10**
Recording Time:	**6/3/2013 18:08**		



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount ppm	Type
1	5.06	Fluoride	2.903	0.555	33.19	29.495	BMB
2	12.28	Nitrite	0.025	0.005	0.31	1.410	BMB
3	15.69	Sulfate	0.023	0.003	0.21	1.026	BMB
4	21.30	Phosphate	2.854	1.108	66.29	296.012	BMB
Total:			5.804	1.671	100.00	327.943	

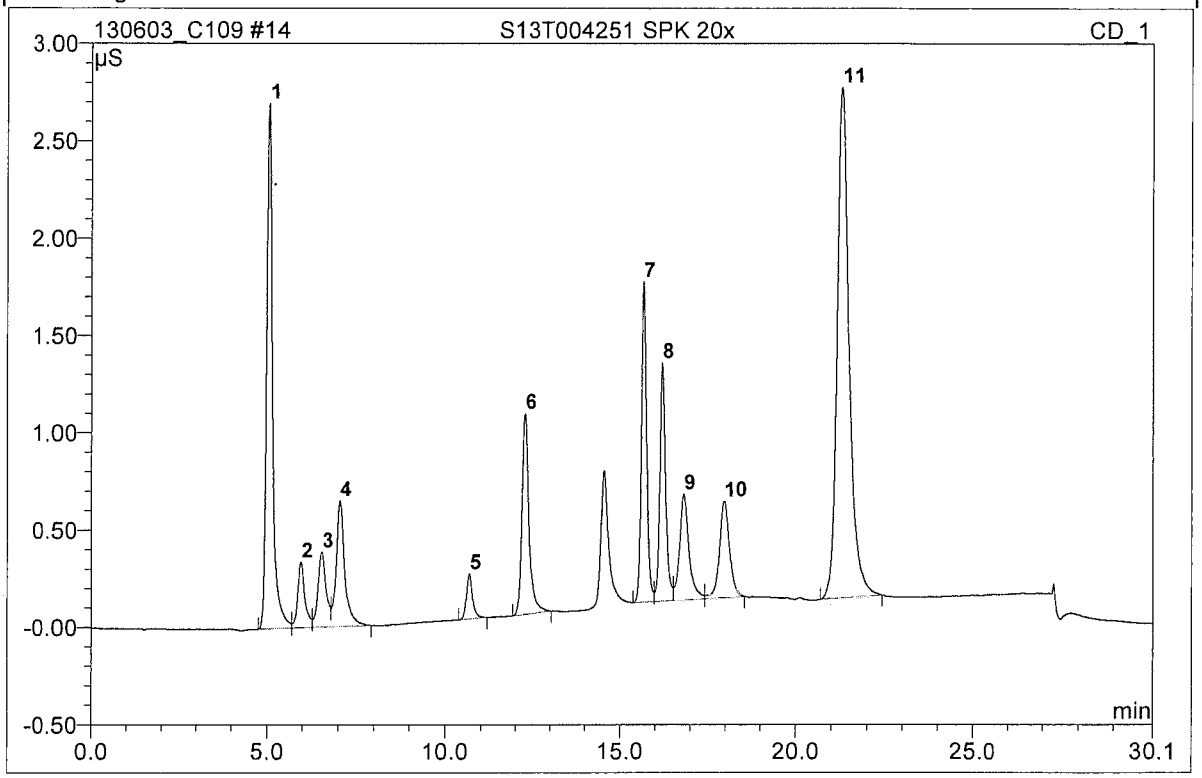
AnionRPT-NoLabels/Integration

Chromeleon (c) Dionex 1996-2006
Version 6.80 SR11d Build 3302 (196279)

Operator:H4868194 Timebase:IC_11 Sequence:130603_C109

14 S13T004251 SPK 20x

Sample Name:	**S13T004251 SPK 20x**	*Injection Volume:*	**10.0**
Vial Number:	**8**	*Channel:*	**CD_1**
Sample Type:	**unknown**	*Dilution Factor:*	**20.0000**
Control Program:	**Ramp Gradient_32**	*Sample Amount:*	**1.0000**
Quantif. Method:	**Anion-sm org**	*Run Time (min):*	**30.10**
Recording Time:	**6/3/2013 18:41**		



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount ppm	Type
1	5.06	Fluoride	2.698	0.513	16.89	27.310	BM
2	5.95	Glycolate	0.338	0.080	2.63	19.160	M
3	6.53	Acetate	0.386	0.103	3.40	23.176	M
4	7.05	Formate	0.645	0.181	5.97	22.659	MB
5	10.68	Chloride	0.232	0.046	1.52	4.091	BMB
6	12.26	Nitrite	1.032	0.239	7.86	26.793	BMB
7	15.69	Sulfate	1.648	0.279	9.19	32.734	BM
8	16.21	Oxalate	1.226	0.235	7.73	26.291	M
9	16.82	Bromide	0.544	0.171	5.64	32.407	M
10	17.97	Nitrate	0.496	0.167	5.51	27.726	MB
11	21.31	Phosphate	2.627	1.022	33.65	273.693	BMB
Total:			11.872	3.036	100.00	516.041	

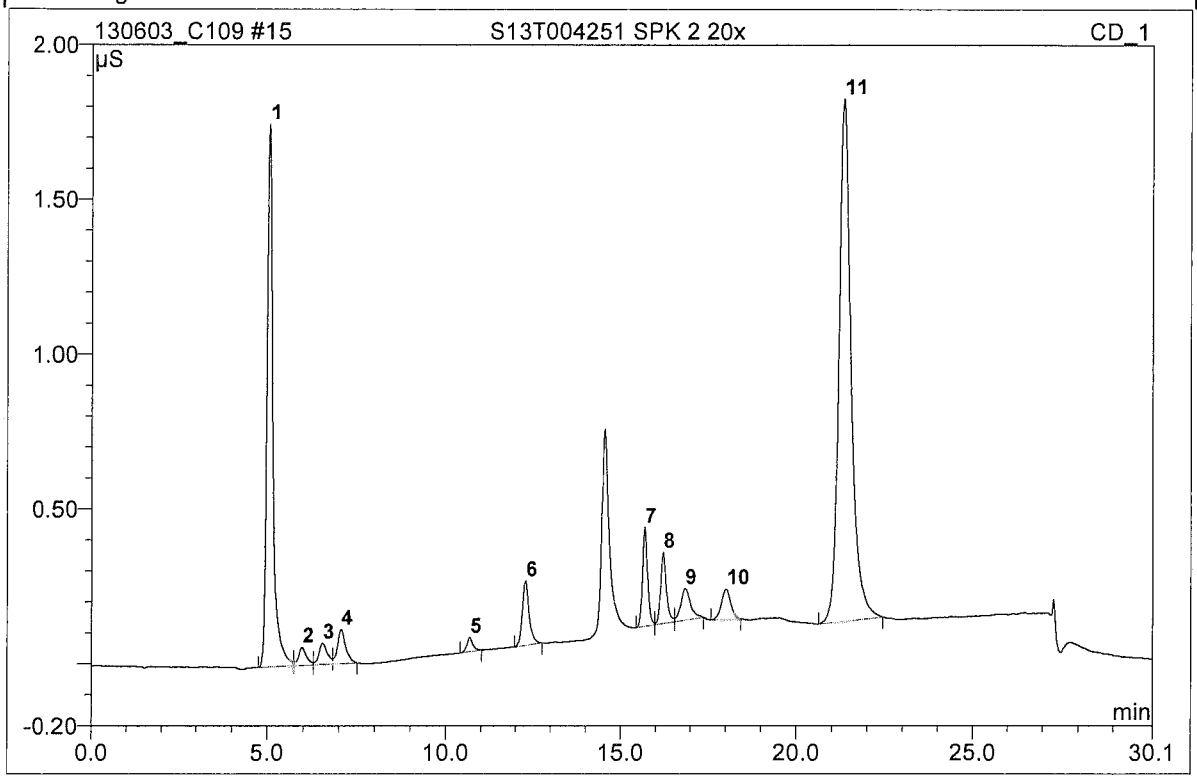
AnionRPT-NoLabels/Integration

Chromeleon (c) Dionex 1996-2006
Version 6.80 SR11d Build 3302 (196279)

Operator:H4868194 Timebase:IC_11 Sequence:130603_C109

15 S13T004251 SPK 2 20x

Sample Name:	**S13T004251 SPK 2 20x**	*Injection Volume:*	**10.0**
Vial Number:	**9**	*Channel:*	**CD_1**
Sample Type:	**unknown**	*Dilution Factor:*	**20.0000**
Control Program:	**Ramp Gradient_32**	*Sample Amount:*	**1.0000**
Quantif. Method:	**Anion-sm org**	*Run Time (min):*	**30.10**
Recording Time:	**6/3/2013 19:14**		



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount ppm	Type
1	5.06	Fluoride	1.753	0.333	25.81	17.864	BM
2	5.96	Glycolate	0.059	0.016	1.23	4.438	M
3	6.53	Acetate	0.069	0.019	1.47	4.725	M
4	7.05	Formate	0.111	0.030	2.35	4.798	MB
5	10.68	Chloride	0.046	0.009	0.73	0.817	BMB
6	12.27	Nitrite	0.208	0.047	3.61	5.911	BMB
7	15.69	Sulfate	0.319	0.054	4.20	6.870	BM
8	16.22	Oxalate	0.230	0.044	3.42	5.034	M
9	16.84	Bromide	0.102	0.034	2.63	6.214	MB
10	18.01	Nitrate	0.098	0.031	2.39	6.173	BMB
11	21.34	Phosphate	1.689	0.674	52.16	182.520	BMB
Total:			4.685	1.292	100.00	245.364	

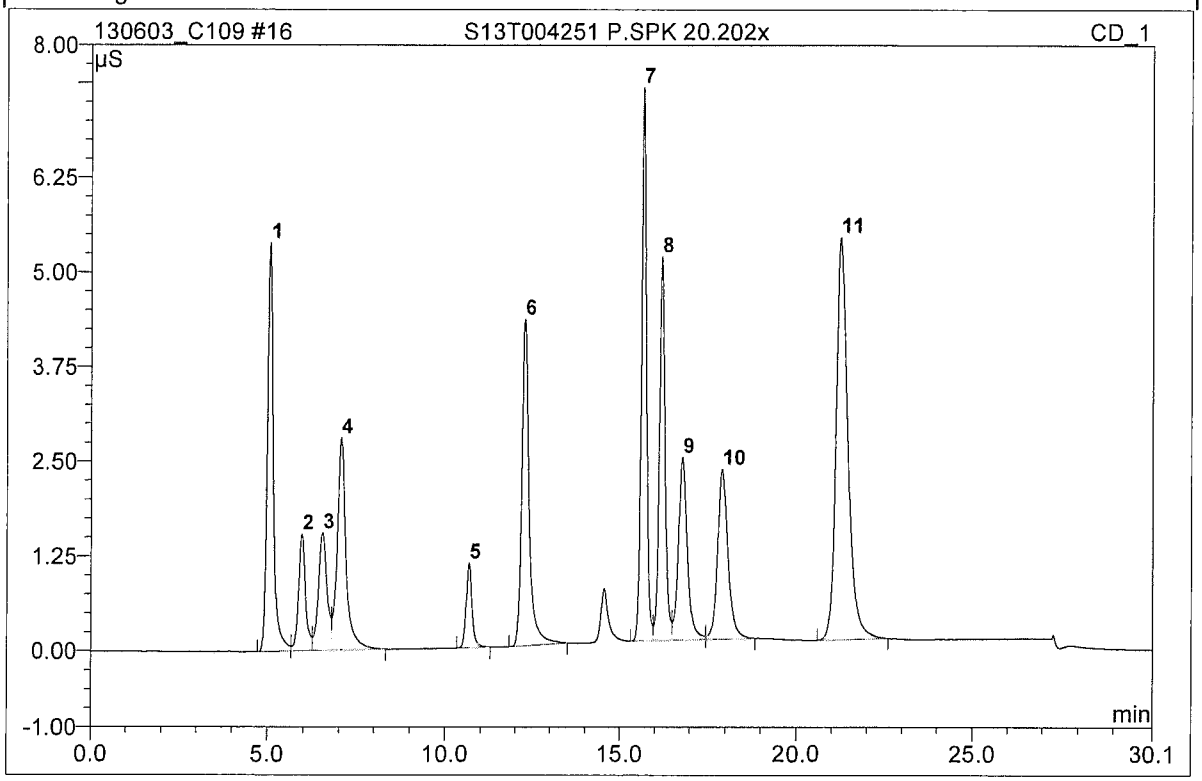
AnionRPT-NoLabels/Integration

Operator:H4868194 Timebase:IC_11 Sequence:130603_C109

6/10/2013 10:07 AM

16 S13T004251 P.SPK 20.202x

Sample Name:	**S13T004251 P.SPK 20.202x**	*Injection Volume:*	**10.0**
Vial Number:	**10**	*Channel:*	**CD_1**
Sample Type:	**unknown**	*Dilution Factor:*	**20.2020**
Control Program:	**Ramp Gradient_32**	*Sample Amount:*	**1.0000**
Quantif. Method:	**Anion-sm org**	*Run Time (min):*	**30.10**
Recording Time:	**6/3/2013 19:47**		



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount ppm	Type
1	5.06	Fluoride	5.390	1.039	10.75	55.200	BM
2	5.95	Glycolate	1.533	0.355	3.67	83.449	M
3	6.53	Acetate	1.548	0.431	4.46	100.074	M
4	7.06	Formate	2.799	0.816	8.45	99.910	MB
5	10.67	Chloride	1.114	0.215	2.23	19.169	BMB
6	12.25	Nitrite	4.311	1.061	10.99	118.139	BMB
7	15.68	Sulfate	7.309	1.220	12.63	142.367	BM
8	16.20	Oxalate	5.068	0.967	10.01	111.925	M
9	16.79	Bromide	2.408	0.718	7.43	137.501	M
10	17.91	Nitrate	2.240	0.762	7.89	121.466	MB
11	21.24	Phosphate	5.316	2.075	21.48	546.066	BMB
Total:			39.038	9.658	100.00	1535.267	

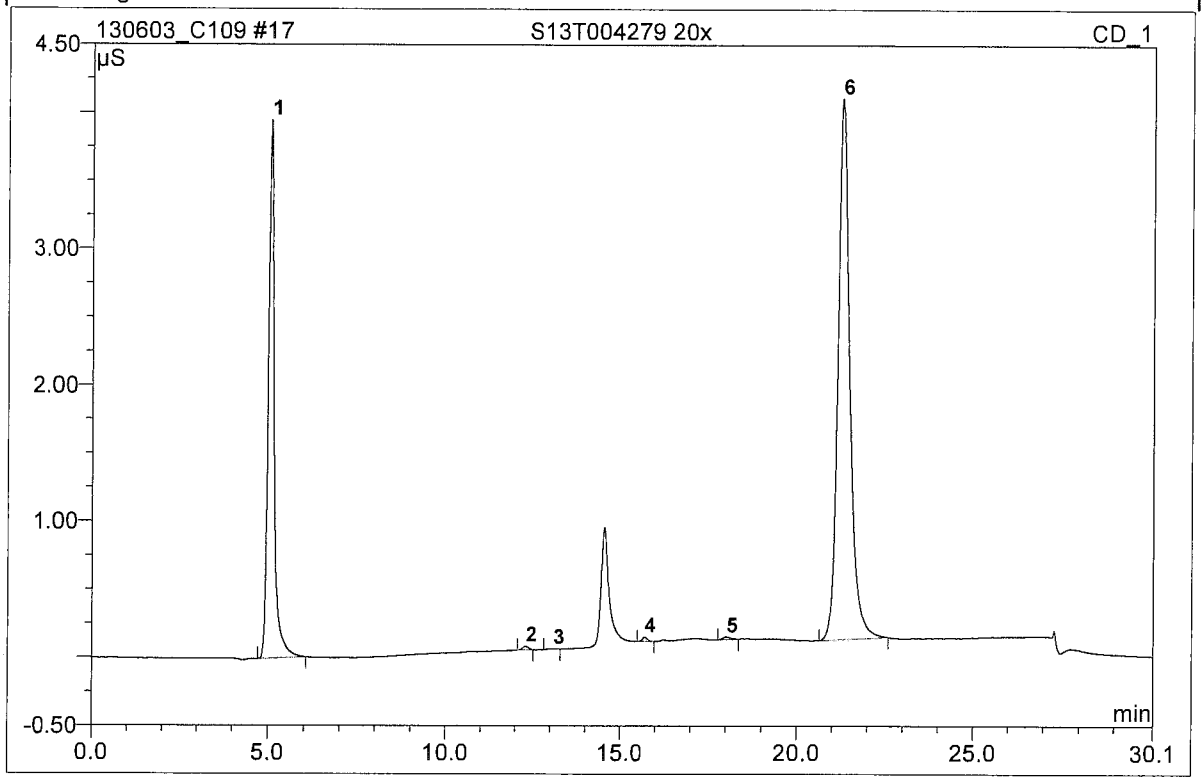
AnionRPT-NoLabels/Integration

Chromeleon (c) Dionex 1996-2006
Version 6.80 SR11d Build 3302 (196279)

Operator:H4868194 Timebase:IC_11 Sequence:130603_C109

17 S13T004279 20x

Sample Name:	**S13T004279 20x**	*Injection Volume:*	**10.0**
Vial Number:	**11**	*Channel:*	**CD_1**
Sample Type:	**unknown**	*Dilution Factor:*	**20.0000**
Control Program:	**Ramp Gradient_32**	*Sample Amount:*	**1.0000**
Quantif. Method:	**Anion-sm org**	*Run Time (min):*	**30.10**
Recording Time:	**6/3/2013 20:20**		



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount ppm	Type
1	5.06	Fluoride	3.955	0.764	32.72	40.421	BMB
2	12.28	Nitrite	0.028	0.006	0.24	1.454	BMB
3	13.09	n.a.	0.007	0.002	0.07	n.a.	BMB
4	15.70	Sulfate	0.033	0.006	0.25	1.297	BMB
5	18.01	Nitrate	0.021	0.005	0.23	2.134	BMB
6	21.28	Phosphate	3.977	1.552	66.49	409.856	BMB
Total:			8.020	2.335	100.00	455.163	

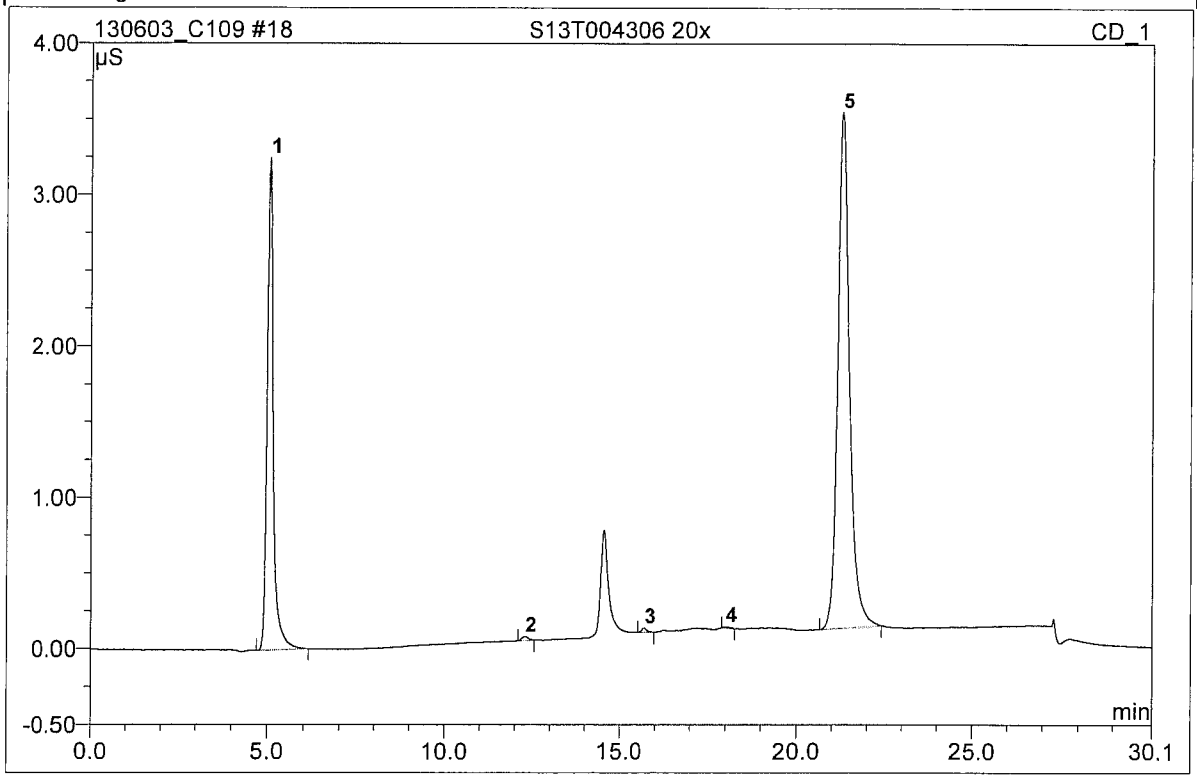
AnionRPT-NoLabels/Integration

Chromeleon (c) Dionex 1996-2006
Version 6.80 SR11d Build 3302 (196279)

Operator:H4868194 Timebase:IC_11 Sequence:130603_C109

18 S13T004306 20x

Sample Name:	**S13T004306 20x**	*Injection Volume:*	**10.0**
Vial Number:	**12**	*Channel:*	**CD_1**
Sample Type:	**unknown**	*Dilution Factor:*	**20.0000**
Control Program:	**Ramp Gradient_32**	*Sample Amount:*	**1.0000**
Quantif. Method:	**Anion-sm org**	*Run Time (min):*	**30.10**
Recording Time:	**6/3/2013 20:53**		



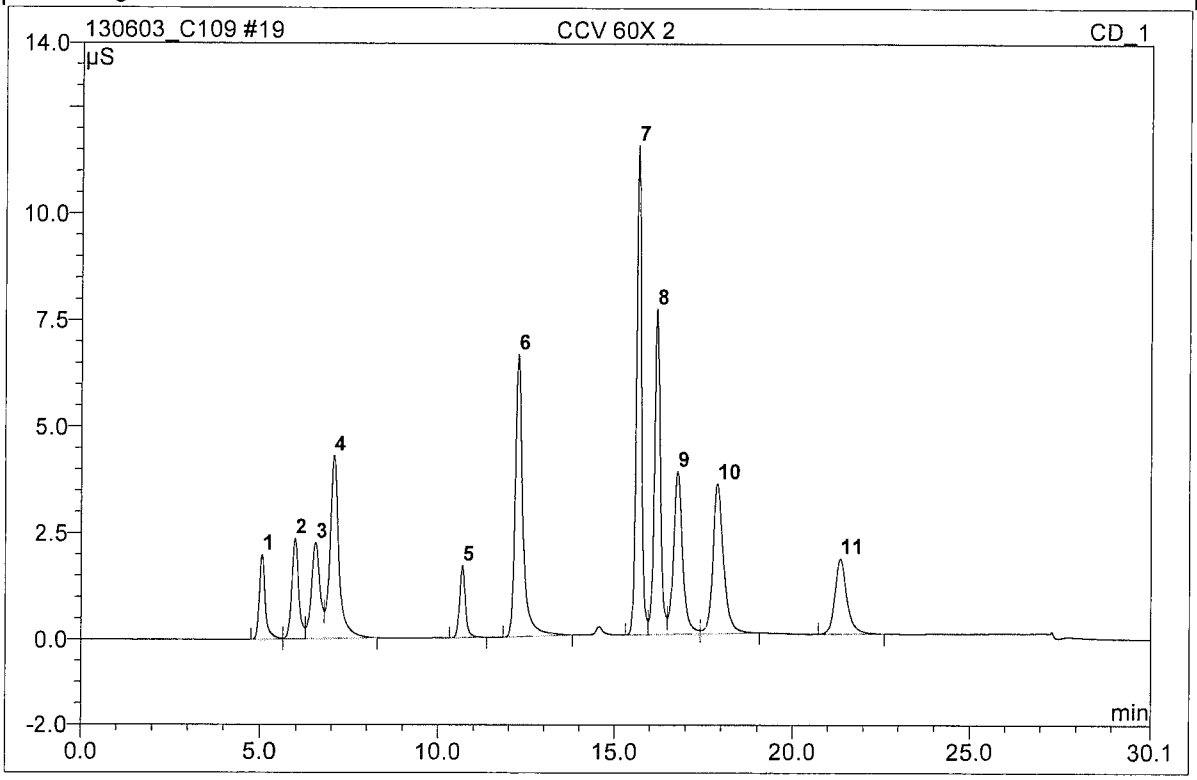
No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount ppm	Type
1	5.06	Fluoride	3.251	0.630	31.96	33.433	BMB
2	12.28	Nitrite	0.028	0.006	0.29	1.473	BMB
3	15.70	Sulfate	0.029	0.005	0.26	1.211	BMB
4	18.01	Nitrate	0.009	0.002	0.10	1.604	BMB
5	21.29	Phosphate	3.412	1.328	67.39	352.743	BMB
Total:			6.729	1.971	100.00	390.465	

AnionRPT-NoLabels/Integration

Chromeleon (c) Dionex 1996-2006
Version 6.80 SR11d Build 3302 (196279)

19 CCV 60X 2

Sample Name:	**CCV 60X 2**	*Injection Volume:*	**10.0**
Vial Number:	**2**	*Channel:*	**CD_1**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Control Program:	**Ramp Gradient_32**	*Sample Amount:*	**1.0000**
Quantif. Method:	**Anion-sm org**	*Run Time (min):*	**30.10**
Recording Time:	**6/3/2013 21:27**		

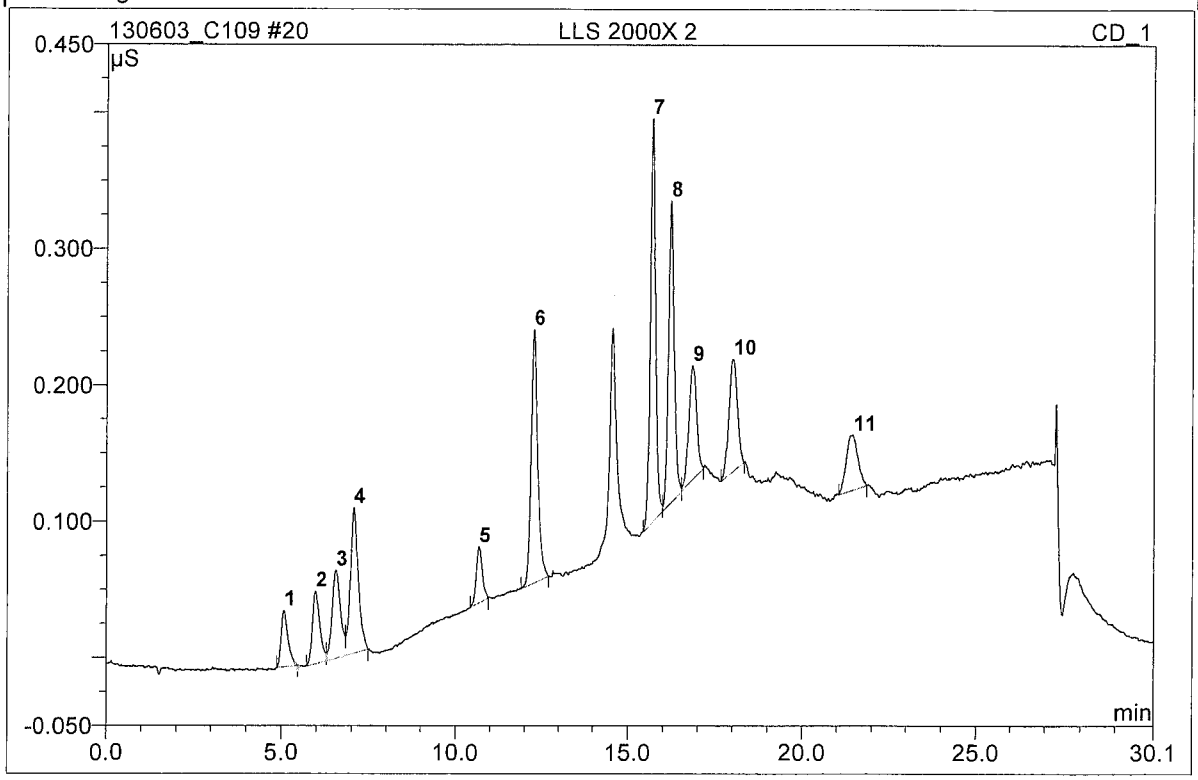


No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount ppm	Type
1	5.06	Fluoride	1.993	0.379	3.36	1.014	BM
2	5.96	Glycolate	2.366	0.542	4.80	6.313	M
3	6.54	Acetate	2.258	0.643	5.69	7.610	M
4	7.06	Formate	4.299	1.265	11.19	7.698	MB
5	10.67	Chloride	1.695	0.328	2.91	1.440	BMB
6	12.25	Nitrite	6.640	1.679	14.87	9.271	BMB
7	15.67	Sulfate	11.500	1.918	16.98	11.053	BM
8	16.20	Oxalate	7.651	1.483	13.13	8.669	M
9	16.77	Bromide	3.824	1.133	10.03	10.728	M
10	17.89	Nitrate	3.513	1.217	10.77	9.476	MB
11	21.34	Phosphate	1.773	0.709	6.27	9.586	BMB
Total:			47.513	11.297	100.00	82.858	

Operator:H4868194 Timebase:IC_11 Sequence:130603_C109

20 LLS 2000X 2

Sample Name:	**LLS 2000X 2**	*Injection Volume:*	**10.0**
Vial Number:	**3**	*Channel:*	**CD_1**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Control Program:	**Ramp Gradient_32**	*Sample Amount:*	**1.0000**
Quantif. Method:	**Anion-sm org**	*Run Time (min):*	**30.10**
Recording Time:	**6/3/2013 22:00**		



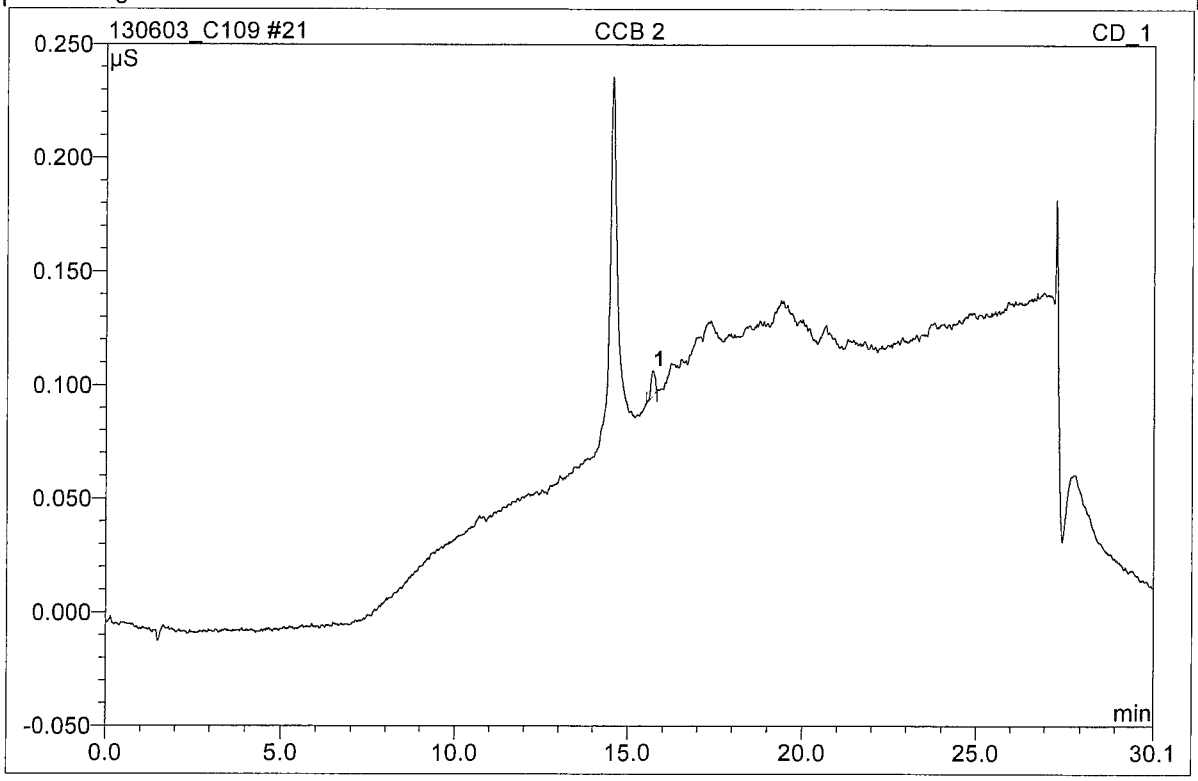
No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount ppm	Type
1	5.07	Fluoride	0.042	0.009	3.26	0.032	BMB
2	5.96	Glycolate	0.053	0.013	4.84	0.191	BM
3	6.54	Acetate	0.065	0.018	6.54	0.223	M
4	7.06	Formate	0.107	0.028	10.47	0.228	MB
5	10.68	Chloride	0.041	0.008	3.02	0.036	BMB
6	12.27	Nitrite	0.186	0.042	15.55	0.271	BMB
7	15.69	Sulfate	0.296	0.051	18.77	0.325	BM
8	16.22	Oxalate	0.221	0.041	15.19	0.235	M
9	16.85	Bromide	0.084	0.022	8.04	0.195	MB
10	18.01	Nitrate	0.082	0.023	8.51	0.247	BMB
11	21.45	Phosphate	0.041	0.016	5.81	0.282	BMB
Total:			1.218	0.272	100.00	2.266	

AnionRPT-NoLabels/Integration

Chromeleon (c) Dionex 1996-2006
Version 6.80 SR11d Build 3302 (196279)

21 CCB 2

Sample Name:	**CCB 2**	*Injection Volume:*	**10.0**
Vial Number:	**1**	*Channel:*	**CD_1**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Control Program:	**Ramp Gradient_32**	*Sample Amount:*	**1.0000**
Quantif. Method:	**Anion-sm org**	*Run Time (min):*	**30.10**
Recording Time:	**6/3/2013 22:33**		



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount ppm	Type
1	15.70	Sulfate	0.011	0.001	100.00	0.040	BMB
Total:			0.011	0.001	100.00	0.040	

Sequence: 130513_QC
Operator: H4868194

Printed: 5/16/2013 3:19:17 PM

Title:
Datasource: WC95579_local
Location: IC-11
Timebase: IC_11
#Samples: 11

Created: 5/13/2013 9:50:04 AM by inorganic
(Modified, not saved)

No.	Name	Pos.	Type	Inj. Vol.	Program	Method	Status	Inj. Date/Time
1	std1	4	Standard	10.0	Ramp Gradient_32	Anion-sm org	Finished	5/13/2013 6:57:17 PM
2	std2	5	Standard	10.0	Ramp Gradient_32	Anion-sm org	Finished	5/13/2013 7:30:28 PM
3	std3	6	Standard	10.0	Ramp Gradient_32	Anion-sm org	Finished	5/13/2013 8:03:39 PM
4	std4	7	Standard	10.0	Ramp Gradient_32	Anion-sm org	Finished	5/13/2013 8:36:49 PM
5	std5	8	Standard	10.0	Ramp Gradient_32	Anion-sm org	Finished	5/13/2013 9:10:00 PM
6	std6	9	Standard	10.0	Ramp Gradient_32	Anion-sm org	Finished	5/13/2013 9:43:10 PM
7	ICV 60x	10	Unknown	10.0	Ramp Gradient_32	Anion-sm org	Finished	5/13/2013 10:16:21 PM
8	LLS x2000	11	Unknown	10.0	Ramp Gradient_32	Anion-sm org	Finished	5/13/2013 10:49:32 PM
9	ICB	12	Unknown	10.0	Ramp Gradient_32	Anion-sm org	Finished	5/13/2013 11:22:43 PM
10	CCV	13	Unknown	10.0	Ramp Gradient_32	Anion-sm org	Finished	5/13/2013 11:55:53 PM
11	SHUTDOWN	1	Unknown	10.0	Shutdown	Anion-sm org	Finished	5/14/2013 12:29:04 AM

Calibration Date: 05/13/13

Calibration verified: [signature] Slack 05/16/13
Calibration Peer Reviewed 5/20/13 Leslie P. Miller

* Revised method detection parameters. [signature] 05/31/13 JPh 5/31/13

Chromeleon © Dionex Corporation, Version 6.80 SR11d Build 3302 (196279)

Sequence:	130513_QC		Page 2 of 2
Operator:	H4868194		Printed: 5/16/2013 3:19:17 PM
Title:			
Datasource:	WC95579_local		
Location:	IC-11		
Timebase:	IC_11	Created:	5/13/2013 9:50:04 AM by inorganic
#Samples:	11		(Modified, not saved)

No.	Name	Comment	Dil. Factor
1	std1	2000X 116N29A	1.0000
2	std2	200X 116N29A	1.0000
3	std3	100X 116N29A	1.0000
4	std4	60X 116N29A	1.0000
5	std5	30X 116N29A	1.0000
6	std6	20X 116N29A	1.0000
7	ICV 60x	117N29A	1.0000
8	LLS x2000	116N29A	1.0000
9	ICB		1.0000
10	CCV		1.0000
11	SHUTDOWN		1.0000

Chromeleon © Dionex Corporation, Version 6.80 SR11d Build 3302 (196279)

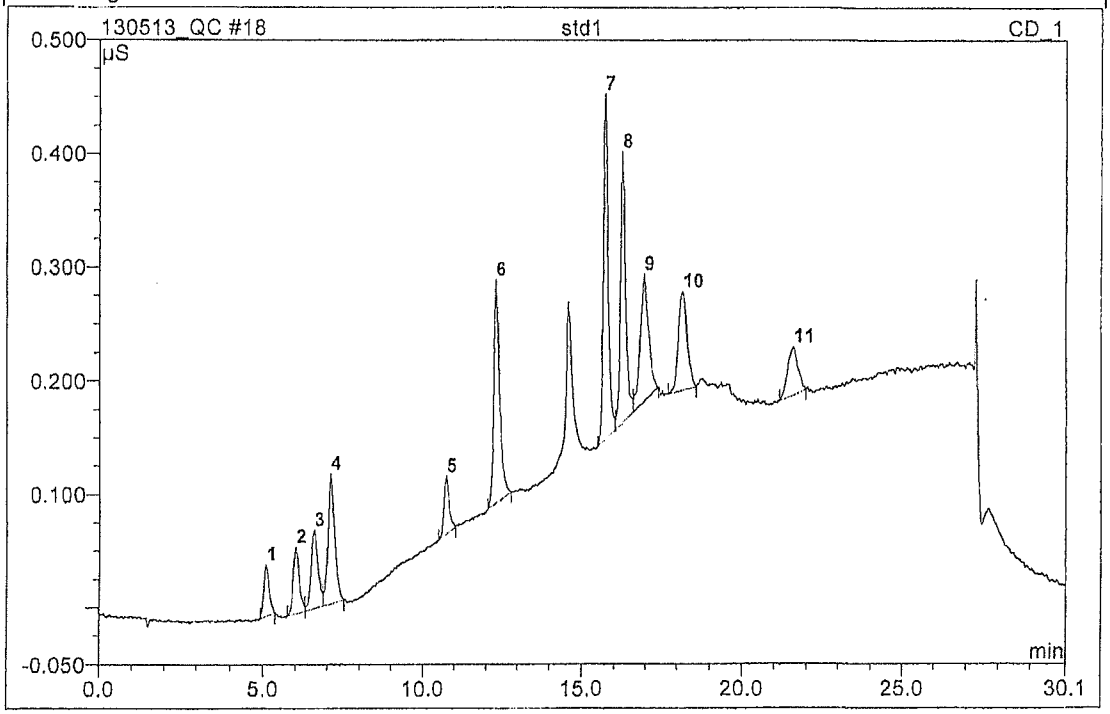
Operator:H4868194 Timebase:IC_11 Sequence:130513_QC

5/16/2013 3:47 PM

18 std1

2000X 116N29A

Sample Name:	**std1**	*Injection Volume:*	**10.0**
Vial Number:	**4**	*Channel:*	**CD_1**
Sample Type:	**standard**	*Dilution Factor:*	**1.0000**
Control Program:	**Ramp Gradient_32**	*Sample Amount:*	**1.0000**
Quantif. Method:	**Anion-sm org**	*Run Time (min):*	**30.10**
Recording Time:	**5/13/2013 18:57**		



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount ppm	Type
1	5.08	Fluoride	0.045	0.008	2.87	0.031	BMB
2	5.99	Glycolate	0.059	0.013	4.44	0.190	BM
3	6.57	Acetate	0.069	0.018	5.96	0.220	M
4	7.09	Formate	0.115	0.028	9.55	0.227	MB
5	10.74	Chloride	0.051	0.010	3.35	0.043	BMB
6	12.34	Nitrite	0.197	0.043	14.59	0.275	BMB
7	15.75	Sulfate	0.304	0.051	17.36	0.326	BM
8	16.28	Oxalate	0.239	0.045	15.38	0.258	M
9	16.97	Bromide	0.112	0.035	11.74	0.317	MB
10	18.18	Nitrate	0.087	0.027	9.33	0.282	BMB
11	21.60	Phosphate	0.043	0.016	5.44	0.285	BMB
Total:			1.320	0.295	100.00	2.453	

AnionRPT-NoLabels/Integration

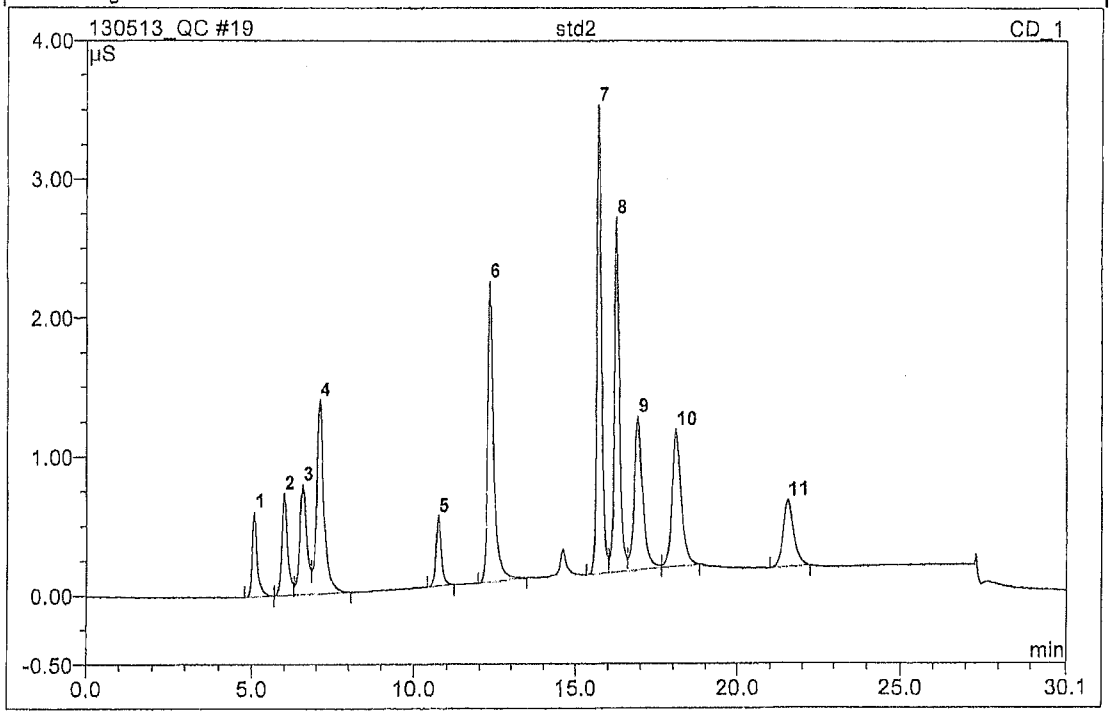
Chromeleon (c) Dionex 1996-2006
Version 6.80 SR11d Build 3302 (196279)

Operator:H4868194 Timebase:IC_11 Sequence:130513_QC

19 std2

200X 116N29A

Sample Name:	**std2**	*Injection Volume:*	**10.0**
Vial Number:	**5**	*Channel:*	**CD_1**
Sample Type:	**standard**	*Dilution Factor:*	**1.0000**
Control Program:	**Ramp Gradient_32**	*Sample Amount:*	**1.0000**
Quantif. Method:	**Anion-sm org**	*Run Time (min):*	**30.10**
Recording Time:	**5/13/2013 19:30**		



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount ppm	Type
1	5.07	Fluoride	0.610	0.108	3.26	0.295	BM
2	5.98	Glycolate	0.733	0.155	4.69	1.819	M
3	6.56	Acetate	0.792	0.205	6.21	2.298	M
4	7.09	Formate	1.395	0.365	11.05	2.227	MB
5	10.73	Chloride	0.504	0.094	2.85	0.417	BMB
6	12.32	Nitrite	2.169	0.496	15.03	2.744	BMB
7	15.74	Sulfate	3.390	0.554	16.78	3.219	BM
8	16.27	Oxalate	2.563	0.475	14.39	2.674	M
9	16.92	Bromide	1.106	0.332	10.05	3.148	M
10	18.09	Nitrate	0.987	0.328	9.95	2.651	MB
11	21.54	Phosphate	0.482	0.189	5.73	2.639	BMB
Total:			14.731	3.300	100.00	24.131	

AnionRPT-NoLabels/Integration

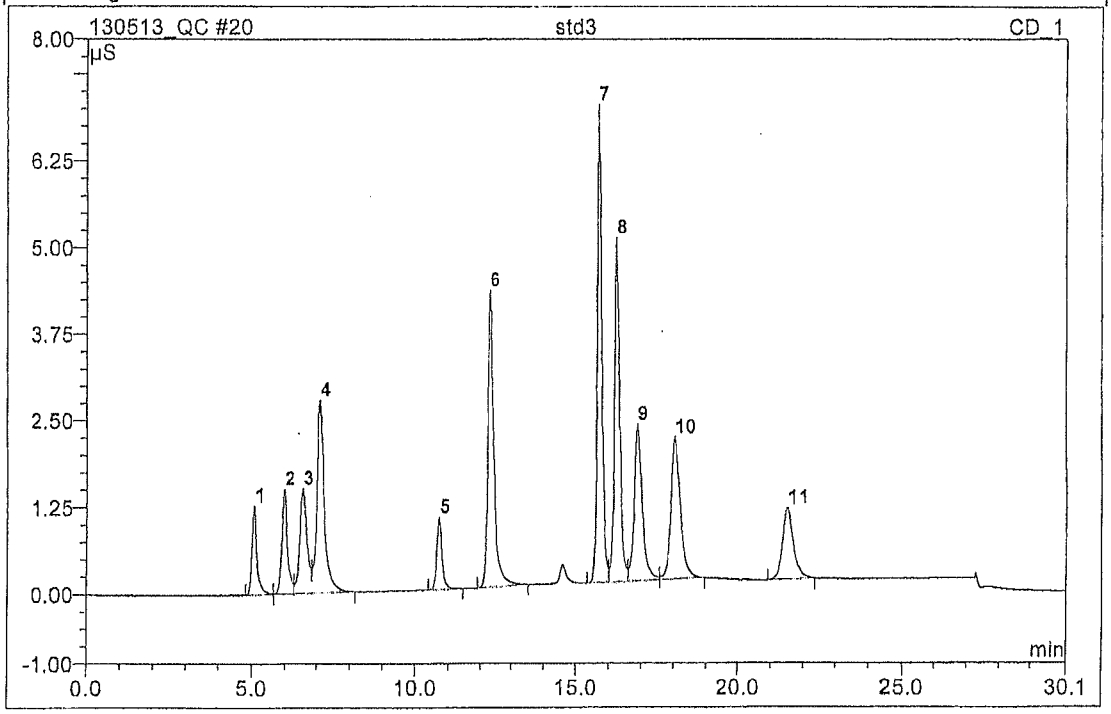
Chromeleon (c) Dionex 1996-2006
Version 6.80 SR11d Build 3302 (196279)

Operator:H4868194 Timebase:IC_11 Sequence:130513_QC

20 std3

100X 116N29A

Sample Name:	**std3**	*Injection Volume:*	**10.0**
Vial Number:	**6**	*Channel:*	**CD_1**
Sample Type:	**standard**	*Dilution Factor:*	**1.0000**
Control Program:	**Ramp Gradient_32**	*Sample Amount:*	**1.0000**
Quantif. Method:	**Anion-sm org**	*Run Time (min):*	**30.10**
Recording Time:	**5/13/2013 20:03**		



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount ppm	Type
1	5.07	Fluoride	1.277	0.222	3.33	0.599	BM
2	5.98	Glycolate	1.504	0.319	4.78	3.714	M
3	6.56	Acetate	1.506	0.399	5.98	4.561	M
4	7.09	Formate	2.781	0.742	11.14	4.499	MB
5	10.73	Chloride	1.039	0.193	2.89	0.851	BMB
6	12.32	Nitrite	4.290	0.996	14.95	5.490	BMB
7	15.74	Sulfate	6.910	1.118	16.78	6.463	BM
8	16.27	Oxalate	4.979	0.924	13.87	5.287	M
9	16.90	Bromide	2.259	0.661	9.92	6.269	M
10	18.05	Nitrate	2.050	0.691	10.37	5.468	MB
11	21.52	Phosphate	1.025	0.398	5.98	5.459	BMB
Total:			29.621	6.664	100.00	48.660	

AnionRPT-NoLabels/Integration

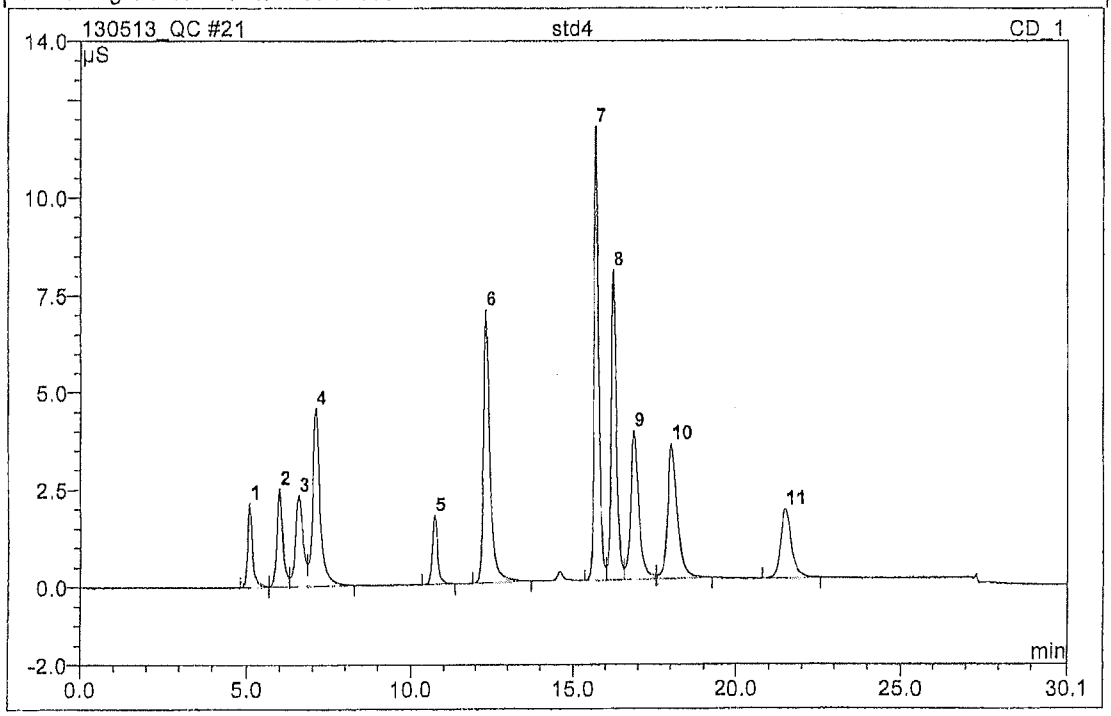
Chromeleon (c) Dionex 1996-2006
Version 6.80 SR11d Build 3302 (196279)

Operator:H4868194 Timebase:IC_11 Sequence:130513_QC

21 std4

60X 116N29A

Sample Name:	**std4**	*Injection Volume:*	**10.0**
Vial Number:	**7**	*Channel:*	**CD_1**
Sample Type:	**standard**	*Dilution Factor:*	**1.0000**
Control Program:	**Ramp Gradient_32**	*Sample Amount:*	**1.0000**
Quantif. Method:	**Anion-sm org**	*Run Time (min):*	**30.10**
Recording Time:	**5/13/2013 20:36**		



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount ppm	Type
1	5.07	Fluoride	2.162	0.378	3.38	1.009	BM
2	5.98	Glycolate	2.509	0.538	4.82	6.264	M
3	6.56	Acetate	2.335	0.632	5.66	7.469	M
4	7.10	Formate	4.562	1.237	11.08	7.524	MB
5	10.72	Chloride	1.769	0.324	2.90	1.422	BMB
6	12.31	Nitrite	7.041	1.665	14.91	9.190	BMB
7	15.73	Sulfate	11.667	1.882	16.86	10.846	BM
8	16.26	Oxalate	7.989	1.495	13.40	8.746	M
9	16.88	Bromide	3.822	1.118	10.02	10.584	M
10	18.02	Nitrate	3.466	1.200	10.75	9.347	MB
11	21.49	Phosphate	1.784	0.695	6.22	9.400	BMB
Total:			49.106	11.163	100.00	81.803	

AnionRPT-NoLabels/Integration

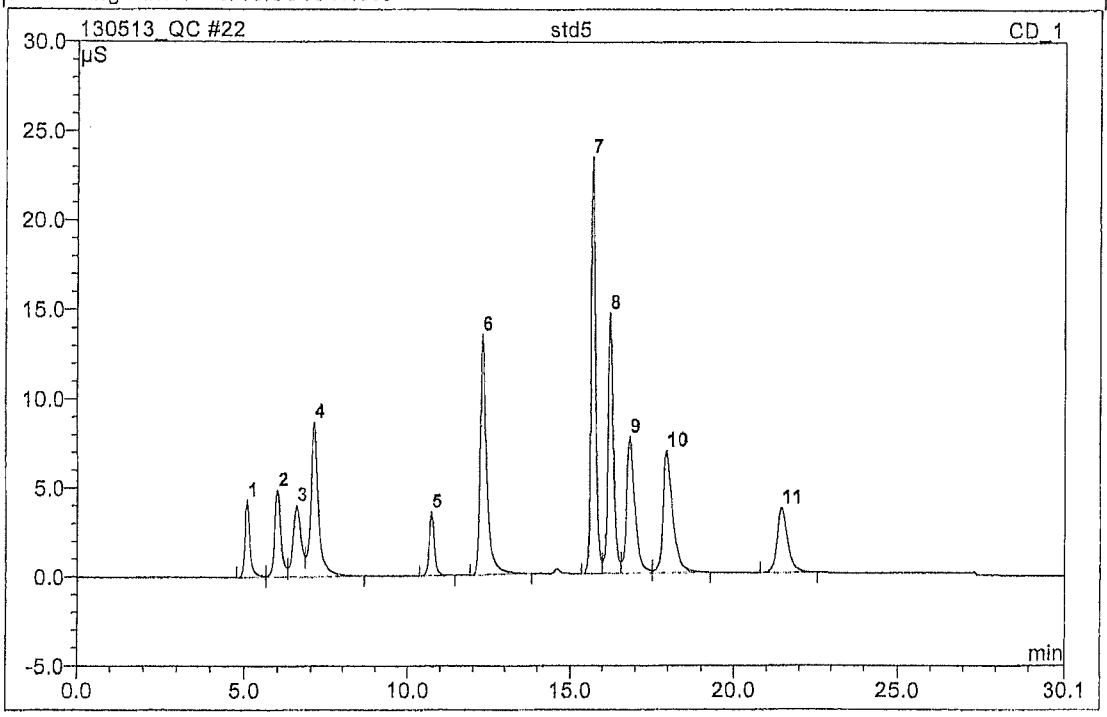
Chromeleon (c) Dionex 1996-2006
Version 6.80 SR11d Build 3302 (196279)

Operator:H4868194 Timebase:IC_11 Sequence:130513_QC

22 std5

30X 116N29A

Sample Name:	**std5**	*Injection Volume:*	**10.0**
Vial Number:	**8**	*Channel:*	**CD_1**
Sample Type:	**standard**	*Dilution Factor:*	**1.0000**
Control Program:	**Ramp Gradient_32**	*Sample Amount:*	**1.0000**
Quantif. Method:	**Anion-sm org**	*Run Time (min):*	**30.10**
Recording Time:	**5/13/2013 21:10**		



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount ppm	Type
1	5.07	Fluoride	4.304	0.762	3.48	2.016	BM
2	5.98	Glycolate	4.863	1.067	4.87	12.494	M
3	6.57	Acetate	4.029	1.136	5.18	14.715	M
4	7.10	Formate	8.699	2.421	11.05	15.013	MB
5	10.72	Chloride	3.598	0.656	3.00	2.840	BMB
6	12.29	Nitrite	13.506	3.285	14.99	18.325	BMB
7	15.71	Sulfate	23.383	3.762	17.17	21.600	BM
8	16.24	Oxalate	14.620	2.785	12.71	17.257	M
9	16.84	Bromide	7.668	2.236	10.20	21.012	M
10	17.95	Nitrate	6.872	2.412	11.01	18.290	MB
11	21.44	Phosphate	3.638	1.391	6.35	18.435	BMB
Total:			95.180	21.912	100.00	161.997	

AnionRPT-NoLabels/Integration

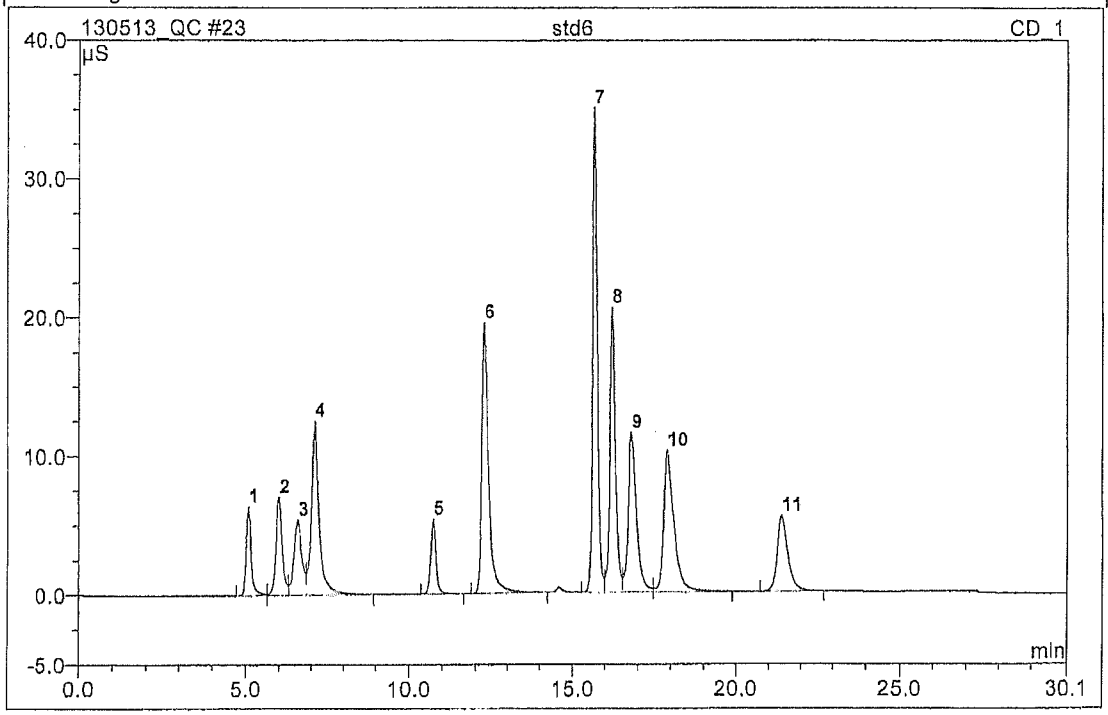
Chromeleon (c) Dionex 1996-2006
Version 6.80 SR11d Build 3302 (196279)

Operator:H4868194 Timebase:IC_11 Sequence:130513_QC

23 std6

20X 116N29A

Sample Name:	**std6**	*Injection Volume:*	**10.0**
Vial Number:	**9**	*Channel:*	**CD_1**
Sample Type:	**standard**	*Dilution Factor:*	**1.0000**
Control Program:	**Ramp Gradient_32**	*Sample Amount:*	**1.0000**
Quantif. Method:	**Anion-sm org**	*Run Time (min):*	**30.10**
Recording Time:	**5/13/2013 21:43**		



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount ppm	Type
1	5.08	Fluoride	6.397	1.144	3.51	3.003	BM
2	5.99	Glycolate	7.058	1.575	4.84	18.601	M
3	6.57	Acetate	5.427	1.565	4.81	22.743	M
4	7.11	Formate	12.547	3.547	10.90	22.485	MB
5	10.72	Chloride	5.440	0.994	3.05	4.244	BMB
6	12.28	Nitrite	19.553	4.869	14.96	27.500	BMB
7	15.70	Sulfate	34.976	5.657	17.38	32.390	BM
8	16.23	Oxalate	20.568	3.989	12.25	26.424	M
9	16.80	Bromide	11.490	3.382	10.39	31.551	M
10	17.89	Nitrate	10.180	3.717	11.42	27.487	MB
11	21.39	Phosphate	5.450	2.116	6.50	27.537	BMB
Total:			139.086	32.555	100.00	243.966	

AnionRPT-NoLabels/Integration

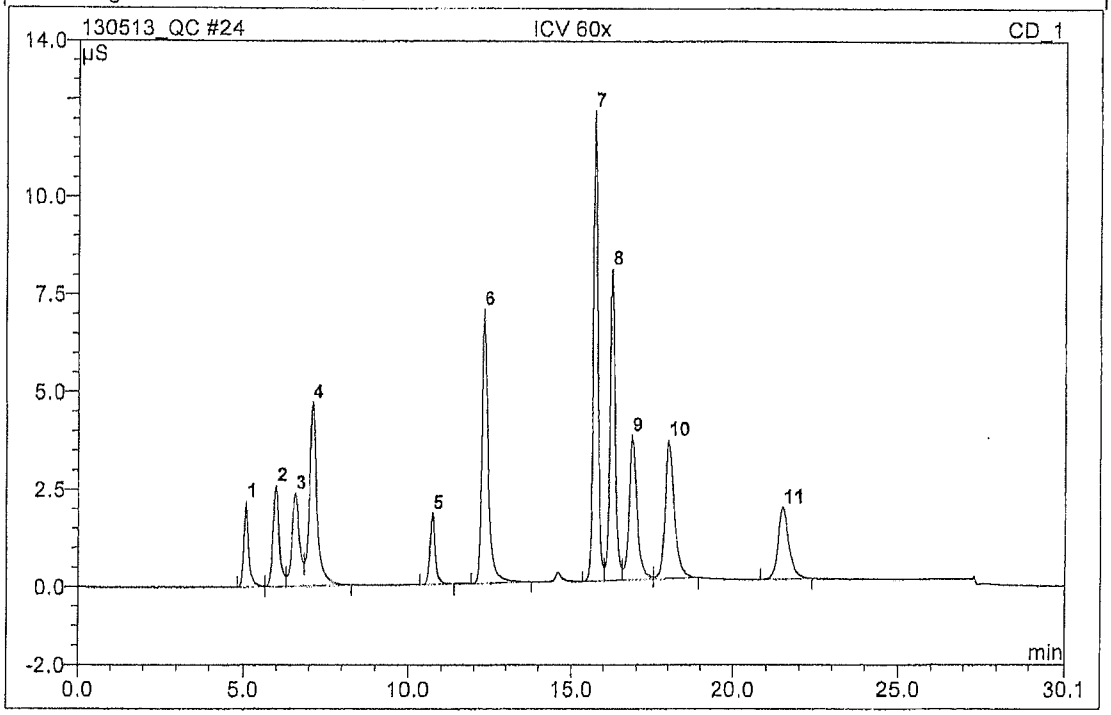
Chromeleon (c) Dionex 1996-2006
Version 6.80 SR11d Build 3302 (196279)

Operator:H4868194 Timebase:IC_11 Sequence:130513_QC

24 ICV 60x

117N29A

Sample Name:	**ICV 60x**	*Injection Volume:*	**10.0**
Vial Number:	**10**	*Channel:*	**CD_1**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Control Program:	**Ramp Gradient_32**	*Sample Amount:*	**1.0000**
Quantif. Method:	**Anion-sm org**	*Run Time (min):*	**30.10**
Recording Time:	**5/13/2013 22:16**		



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount ppm	Type
1	5.07	Fluoride	2.207	0.386	3.42	1.031	BM
2	5.98	Glycolate	2.591	0.556	4.94	6.481	M
3	6.57	Acetate	2.388	0.650	5.77	7.706	M
4	7.10	Formate	4.709	1.277	11.33	7.775	MB
5	10.72	Chloride	1.828	0.335	2.98	1.471	BMB
6	12.31	Nitrite	7.039	1.640	14.55	9.052	BMB
7	15.73	Sulfate	12.071	1.946	17.27	11.215	BM
8	16.26	Oxalate	8.002	1.497	13.28	8.756	M
9	16.88	Bromide	3.707	1.071	9.51	10.142	M
10	18.02	Nitrate	3.566	1.205	10.70	9.387	MB
11	21.50	Phosphate	1.845	0.704	6.25	9.526	BMB
Total:			49.953	11.269	100.00	82.540	

AnionRPT-NoLabels/Integration

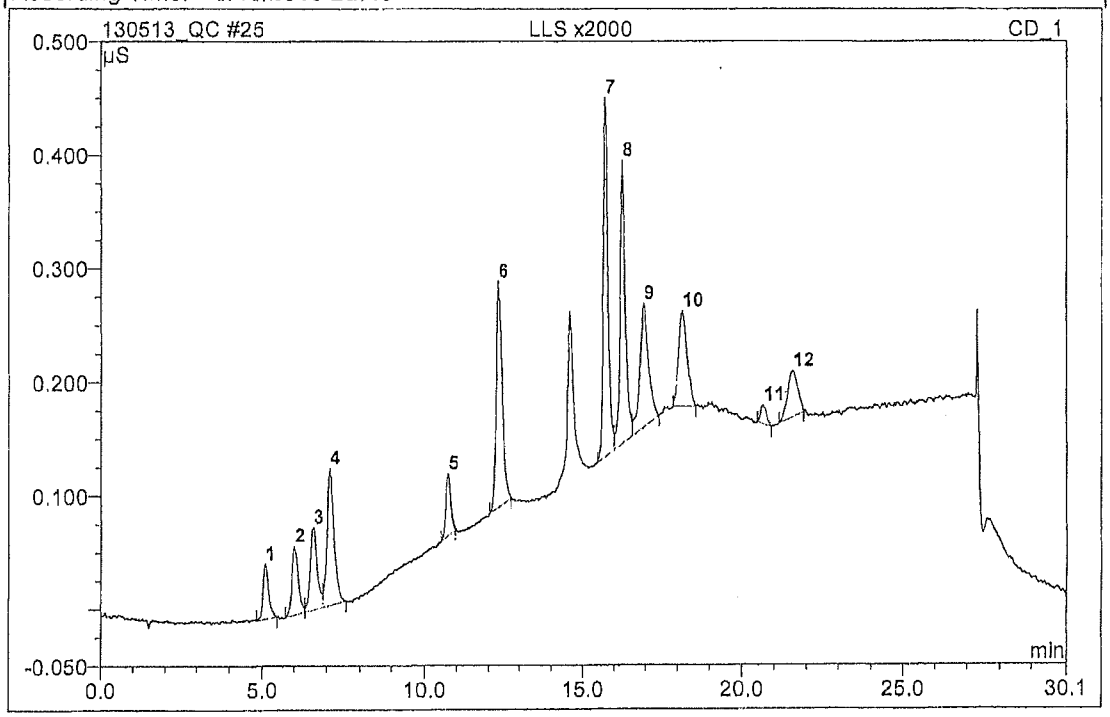
Chromeleon (c) Dionex 1996-2006
Version 6.80 SR11d Build 3302 (196279)

Operator:H4868194 Timebase:IC_11 Sequence:130513_QC

25 LLS x2000

116N29A

Sample Name:	**LLS x2000**	*Injection Volume:*	**10.0**
Vial Number:	**11**	*Channel:*	**CD_1**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Control Program:	**Ramp Gradient_32**	*Sample Amount:*	**1.0000**
Quantif. Method:	**Anion-sm org**	*Run Time (min):*	**30.10**
Recording Time:	**5/13/2013 22:49**		



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount ppm	Type
1	5.08	Fluoride	0.048	0.010	3.24	0.035	BMB
2	5.99	Glycolate	0.061	0.014	4.53	0.200	BM
3	6.57	Acetate	0.073	0.019	6.10	0.233	M
4	7.10	Formate	0.121	0.030	9.73	0.237	MB
5	10.74	Chloride	0.055	0.010	3.19	0.043	BMB
6	12.34	Nitrite	0.199	0.043	13.84	0.273	BMB
7	15.75	Sulfate	0.316	0.054	17.42	0.340	BM
8	16.28	Oxalate	0.250	0.049	15.94	0.278	M
9	16.96	Bromide	0.109	0.035	11.38	0.320	MB
10	18.17	Nitrate	0.085	0.027	8.67	0.275	BMB
11	20.66	n.a.	0.017	0.003	1.08	n.a.	BMB
12	21.57	Phosphate	0.041	0.015	4.90	0.272	BMB
Total:			1.373	0.308	100.00	2.507	

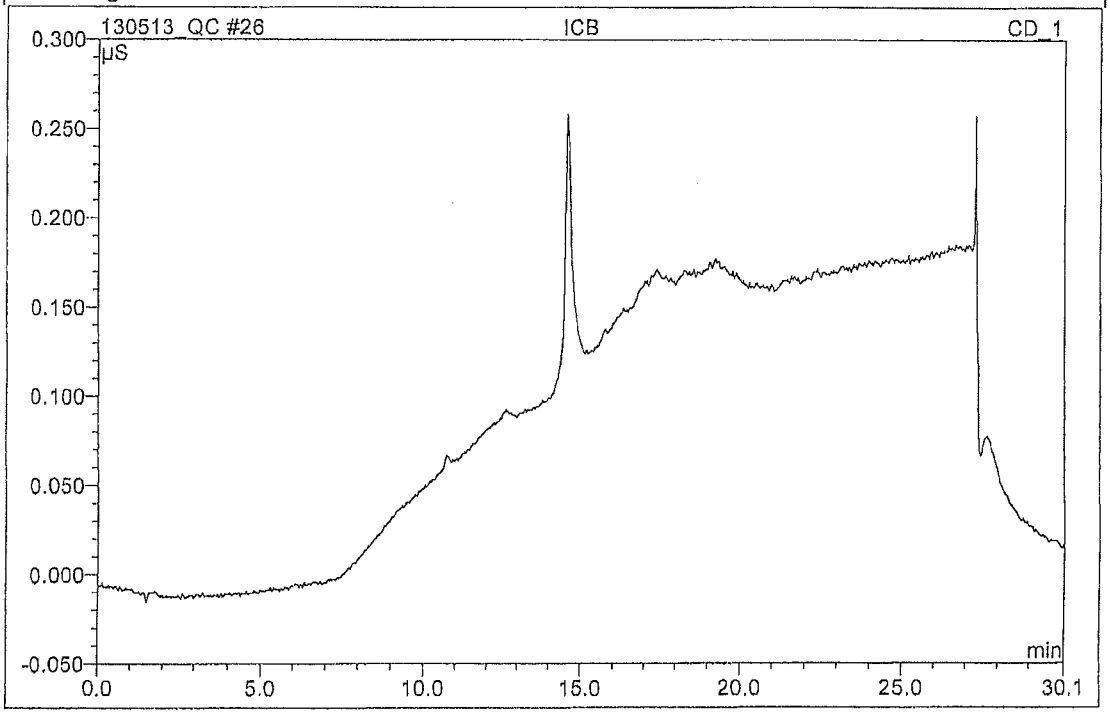
AnionRPT-NoLabels/Integration

Chromeleon (c) Dionex 1996-2006
Version 6.80 SR11d Build 3302 (196279)

Operator:H4868194 Timebase:IC_11 Sequence:130513_QC

26 ICB

Sample Name:	**ICB**	*Injection Volume:*	**10.0**
Vial Number:	**12**	*Channel:*	**CD_1**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Control Program:	**Ramp Gradient_32**	*Sample Amount:*	**1.0000**
Quantif. Method:	**Anion-sm org**	*Run Time (min):*	**30.10**
Recording Time:	**5/13/2013 23:22**		

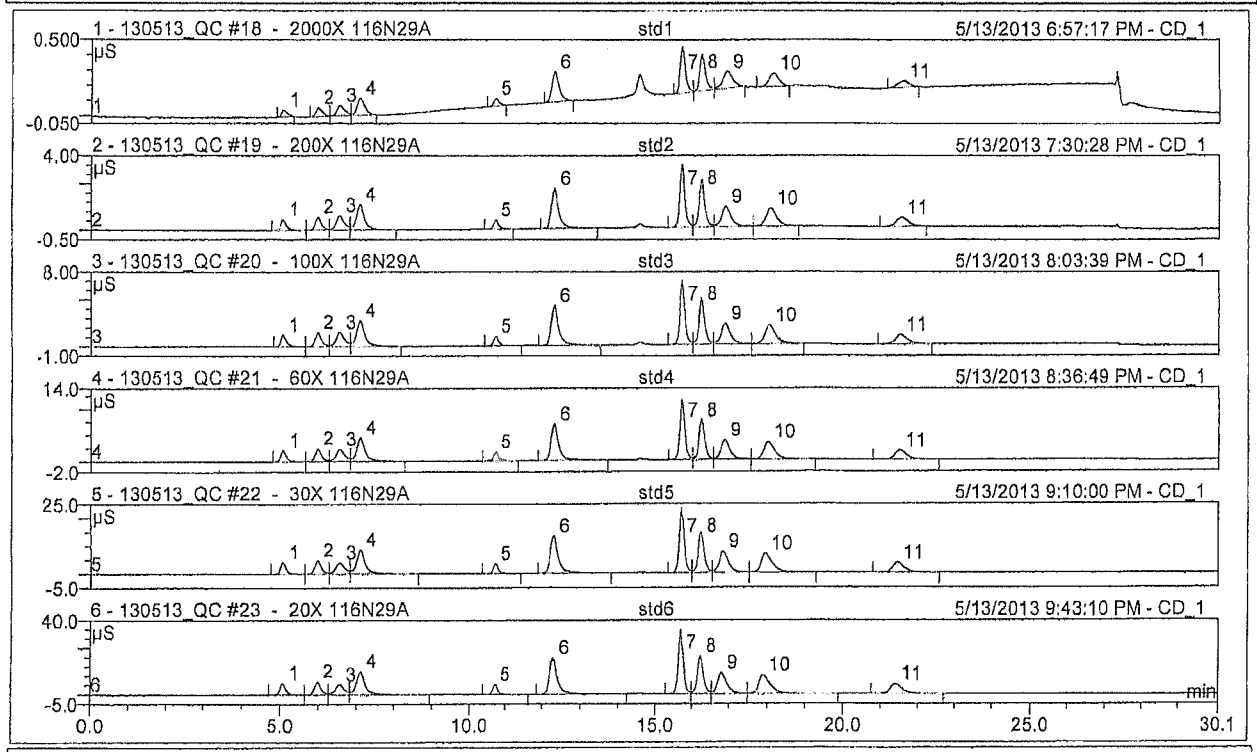


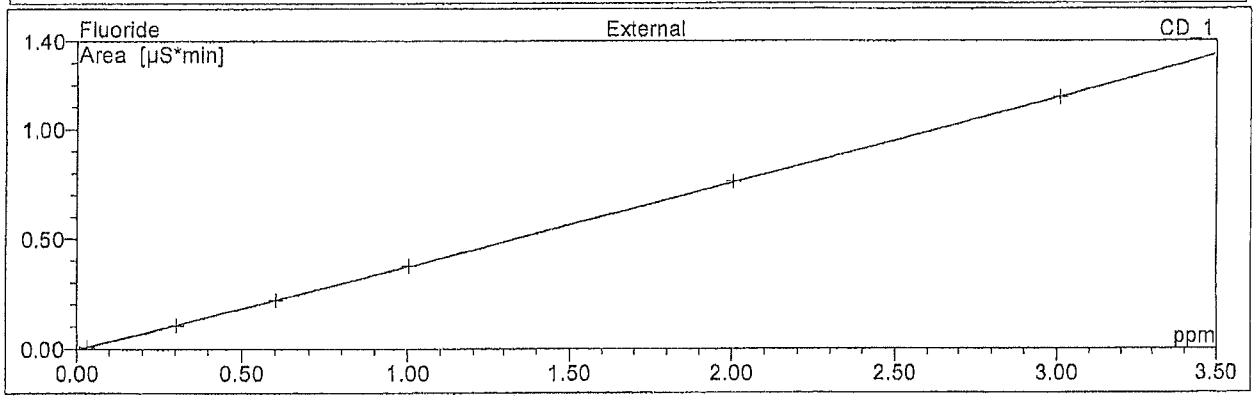
No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount ppm	Type
Total:			0.000	0.000	0.00	0.000	

Calibration: 130513_QC

2000X 116N29A

Sample Name:	**std1**	*Injection Volume:*	**10.0**
Operator:	**H4868194**	*Version:*	**6.80 SR11d Buil**
Sample Type:	**standard**	*Suppressor Current:*	**60**
Control Program:	**Ramp Gradient_32**	*Eluent Concentration:*	**9.00**
Quantif. Method:	**Anion-sm org**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/13/2013 18:57**	*Flow (mL/min):*	**0.50**
Run Time (min):	**30.10**	*Column Temp:*	**n.a.**





Operator:H4868194 Timebase:IC_11 Sequence:130513_QC

No.	Ret.Time min	Peak Name	Cal.Type	Points	Coeff.Det. %	Offset	Slope	Curve
1	5.08	Fluoride	XAQOff	6	99.9961	-0.0030	0.3745	0.0025
2	5.99	Glycolate	XAQOff	6	99.9944	-0.0035	0.0872	-0.0001
3	6.57	Acetate	XAQOff	6	99.9841	-0.0028	0.0928	-0.0010
4	7.09	Formate	XAQOff	6	99.9992	-0.0102	0.1695	-0.0005
5	10.74	Chloride	XAQOff	6	99.9976	0.0002	0.2246	0.0023
6	12.34	Nitrite	XAQOff	6	99.9998	-0.0078	0.1843	-0.0003
7	15.75	Sulfate	XAQOff	6	99.9994	-0.0054	0.1736	0.0000
8	16.28	Oxalate	XAQOff	6	99.9908	-0.0013	0.1811	-0.0011
9	16.97	Bromide	XAQOff	6	99.9989	0.0015	0.1047	0.0001
10	18.18	Nitrate	XAQOff	6	99.9869	-0.0081	0.1260	0.0003
11	21.60	Phosphate	XAQOff	6	99.9810	-0.0048	0.0731	0.0001
Average:					99.9935	-0.0041	0.1628	0.0002

Program Commands: Ramp Gradient_32

```
Sampler.AcquireExclusiveAccess
Flush                Volume = 250
Wait                 FlushState
Column_TC.AcquireExclusiveAccess
Compartment_TC.AcquireExclusiveAccess
Pressure.LowerLimit =      200 [psi]
Pressure.UpperLimit =      3000 [psi]
MaximumFlowRamp =          6.00 [ml/min²]
%A.Equate =              "%A"
%B.Equate =              "%B"
%C.Equate =              "%C"
%D.Equate =              "%D"
CR_TC =                  On
NeedleHeight =           2 [mm]
CutSegmentVolume =       10 [µl]
SyringeSpeed =           4
TrayTemperature =        OFF
CycleTime =              0 [min]
WaitForTemperature =     False
Data_Collection_Rate =   5.0 [Hz]
Temperature_Compensation = 1.7 [%/°C]
CellHeater.Mode          = On
CellHeater.TemperatureSet = 35.00 [°C]
Column_TC.Mode =         On
Column_TC.TemperatureSet = 30.00 [°C]
Compartment_TC.Mode =    On
Compartment_TC.TemperatureSet =      30.00 [°C]
Suppressor1.Type =       ASRS_2mm
CurrentSet =             60 [mA]
Flow =                   0.500 [ml/min]
%B =                     0.0 [%]
%C =                     0.0 [%]
%D =                     0.0 [%]
Pump_1.Curve =           5
Wait Column_TC.TemperatureState
```

AnionRPT-NoLabels/Calibration(Batch)

Chromeleon (c) Dionex 1996-2006
Version 6.80 SR11d Build 3302 (196279)

```
        Wait Compartment_TC.TemperatureState
        ; Suppressor1.Carbonate =    0.0
        ; Suppressor1.Bicarbonate =  0.0
        ; Suppressor1.Hydroxide =    48.0
        ; Suppressor1.Tetraborate =  0.0
        ; Suppressor1.Other eluent =          0.0
        ; Suppressor1.Recommended Current =    60
        Wait                SampleReady
    0.000 CDet1.Autozero
        Concentration =         9.00 [mM]
        EGC_1.Curve =           5
        Load
        Wait                CycleTimeState
        Inject
        Wait                InjectState
        CD_1.AcqOn
        CD_1_Total.AcqOn
        Sampler.ReleaseExclusiveAccess
        Concentration =         9.00 [mM]
        EGC_1.Curve =           5
    5.000 Concentration =       10.00 [mM]
        EGC_1.Curve =           5
   14.000 Concentration =       48.00 [mM]
        EGC_1.Curve =           5
   25.000 Concentration =       48.00 [mM]
        EGC_1.Curve =           5
   25.100 Concentration =       9.00 [mM]
        EGC_1.Curve =           5
   30.000 Concentration =       9.00 [mM]
        EGC_1.Curve =           5
        Compartment_TC.ReleaseExclusiveAccess
        Column_TC.ReleaseExclusiveAccess
   30.100 CD_1.AcqOff
        CD_1_Total.AcqOff
        End
```

Detection Parameters:

Retention Time	Name	Value	Channel
0.000 min	Minimum Area	0.001 "[Signal]"	All Channels
0.000 min	Inhibit Integration	On	All Channels
4.500 min	Inhibit Integration	Off	All Channels
14.500 min	Inhibit Integration	On	All Channels
15.000 min	Inhibit Integration	Off	All Channels
26.000 min	Inhibit Integration	On	All Channels
30.000 min	Inhibit Integration	Off	All Channels

Method File:	Anion-sm org		Page 1 of 1
Operator:	H4868194		Printed: 5/16/2013 3:47:59 PM
Title:			
Datasource:	WC95579_local	Created:	3/7/2011 3:28:40 PM by inorganic
Location:	IC-11\130513_QC.SEQ	Last Update:	5/16/2013 3:40:49 PM by H4868194

Amount Table:

Dimension of Amounts: ppm
Reference volume for amounts: Use inject volume of first standard
Number of Amount Columns: 6
Sample column used for amount column assignment: Sample Name

No.	Peak Name	Ret.Time	Resp.Fact.	Amount std1	Amount std2	Amount std3	Amount std4	Amount std5	Amount std6	Comment
1	*Fluoride*	*5.073 min*	*1.000000*	*0.030100*	*0.301000*	*0.602000*	*1.003300*	*2.006700*	*3.010000*	
2	Glycolate	5.983 min	1.000000	0.186500	1.865000	3.730000	6.216700	12.433300	18.650000	
3	Acetate	6.563 min	1.000000	0.225000	2.250000	4.500000	7.500000	15.000000	22.500000	
4	Formate	7.097 min	1.000000	0.225000	2.250000	4.500000	7.500000	15.000000	22.500000	
5	Chloride	10.723 min	1.000000	0.042500	0.425000	0.850000	1.416700	2.833300	4.250000	
6	Nitrite	12.310 min	1.000000	0.275000	2.750000	5.500000	9.166700	18.333300	27.500000	
7	Sulfate	15.730 min	1.000000	0.324000	3.240000	6.480000	10.800000	21.600000	32.400000	
8	Oxalate	16.257 min	1.000000	0.262500	2.625000	5.250000	8.750000	17.500000	26.250000	
9	Bromide	16.880 min	1.000000	0.315500	3.155000	6.310000	10.516700	21.033300	31.550000	
10	Nitrate	18.017 min	1.000000	0.275000	2.750000	5.500000	9.166700	18.333300	27.500000	
11	Phosphate	21.493 min	1.000000	0.276000	2.760000	5.520000	9.200000	18.400000	27.600000	

Chromeleon © Dionex Corporation, Version 6.80 SR11d Build 3302 (196279)

Anions and Small Organic Acids ICV/LLS Recoveries

Calibration Date: 05/13/13
Instrument: IC-11

ICV *117N29A*	Stock Standard Value (µg/mL)	Expected Value (µg/mL)	Observed Value (µg/mL)	% Recovery
Fluoride	60.1	1.002	1.031	**102.89%**
Glycolate	376	6.267	6.481	**103.41%**
Acetate	450	7.500	7.706	**102.75%**
Formate	448	7.467	7.775	**104.12%**
Chloride	85.1	1.418	1.471	**103.74%**
Nitrite	550	9.167	9.052	**98.75%**
Sulfate	650	10.833	11.215	**103.53%**
Oxalate	525	8.750	8.756	**100.07%**
Bromide	600	10.000	10.142	**101.42%**
Nitrate	549	9.150	9.387	**102.59%**
Phosphate	552	9.200	9.526	**103.54%**

LLS *116N29A*	Stock Standard Value (µg/mL)	Expected Value (µg/mL)	Observed Value (µg/mL)	% Recovery
Fluoride	60.2	0.030	0.035	**116.67%**
Glycolate	373	0.187	0.200	**106.95%**
Acetate	450	0.225	0.233	**103.56%**
Formate	450	0.225	0.237	**105.33%**
Chloride	85	0.043	0.043	**100.00%**
Nitrite	550	0.275	0.273	**99.27%**
Sulfate	648	0.324	0.340	**104.94%**
Oxalate	525	0.263	0.278	**105.70%**
Bromide	631	0.316	0.320	**101.27%**
Nitrate	550	0.275	0.275	**100.00%**
Phosphate	552	0.276	0.272	**98.55%**

Verification: [signature] 05/16/13

Verification: [signature] 05/20/13

ATL	WATER LEACH SAMPLE PREPARATION BENCH SHEET

◉ LA-504-101 Rev N-0 ○ _____ Rev _____

Project: C109 CLO (Group 20130402) re-digest

Batch #: 41430 Analyst: AW/LND

Prep. Date/Time Start: 06-03-13 / 09:10 Prep. Date/Time End: 06-03-13 / 1500

Balance Number: LE-BAL-040 ☒ (Verified)

Standard	Lot/Book #	Exp. Date	Standard	Lot/Book #	Exp. Date
Dionex 8	116N29C	06-06-13	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A

(Pipette #); Pipette ID; Volume Range or Fixed Volume; Check box if pipette passes visual verification:

(1) 512075504 (Range/Vol: 1-10/mL) ☒ (3) N/A (Range/Vol: N/A) ☐

(2) 61030153F (Range/Vol: 1-1000/uL) ☒ (4) N/A (Range/Vol: N/A) ☐

Sample ID	Final Volume (mL)	Sample (Wt./Each) (a)	Spike Added (b)	Dose Rate (mrem/hr)	Date and Time Water Added
Prep Blank	50	50 mL	N/A	<0.5	06-03-13 10:43
Prep Std	50	50 mL	0.50 ml Dionex 8 (2)	<0.5	06-03-13 10:52
S13T004251	50	0.2488g	N/A	92	06-03-13 10:50
S13T004251 Dup	50	~~0.2500g~~ 0.2450g 06-03-13	N/A	207	06-03-13 10:51
S13T004251 Spk	50	0.2492g	2.50 ml Dionex 8 (1)	193	06-03-13 11:03
S13T004251Spk2	50	0.2445g	0.50 ml Dionex 8 (2)	207	06-03-13 11:03
S13T004279	50	0.2483g	N/A	46	06-03-13 11:07
S13T004306	50	0.2512g	N/A	69	06-03-13 11:08

(a) Sample (Wt./Each): For solid samples, record the weight in g (e.g., "0.25g"). For filter media, use "Each" (i.e., "1 each").
(b) Spike Added: Record the volume in mL and record the pipette number used in parentheses for each standard used, indicate the standard used (e.g., "0.5mL (3) Dionex8 + 1.0mL (1) Tc99").

Note: Observation of sample before and after prep. (i.e., sample appearance, digestate color, clarity, approx. % dissolved, and multiple phases).

Comments ***(For acidification, please refer to the procedure)***:

The re-digest is required as the RPDs were outside of acceptance criteria.

Fresh reagent grade water (Q-water) must be used.

Sample size should be approximately 0.25 g.

First spike added is 2.5 mL of Dionex 8 to 47.5 mL DI Water.

Second spike added is 0.5 mL of Dionex 8 to 49.5 mL DI Water.

Parent sample IDs are shown on the SBDs.

Customer requests that we report appearance of samples after digestion and provide an estimate of the percent sample dissolved for each sample.

Digest instructions provided by SD Bolling.

Sam 4251 is a tan colored Coarse-Sand like material. AW 06-03-13
Sam 4279 is a tan/brown colored. Appears to be a "more wet" sample of S13T004251. AW 06-03-13
Sam 4306 is a brown sludge-like material. AW 06-03-13

Page 1 of 1

A-6005-368 (REV 1)

approximately 10-15% of the samples dissolved AW 06-03-13

LABCORE Data Entry Template for Batch# 00041430

Analyst: Casey, Adam **Standard ID / Book#:** 116N 29C

Instrument: LE-BAL-040

Method: WATER DIGEST, LA-504-101 Rev/Mod N-0

Prep Batch: N/A

Batch Comment: N/A

CACN:3A.26

S	Type	Sample	R	A	Matrix	Group#	Project
1	STD-PREP	S1305290009		W	LIQUID		
2	BLNK-PREP	S1305290010		W	LIQUID		
3	SAMPLE	S13T004251		W	SOLID	20130402	C109 CLO
4	DUP	S1305290011		W	SOLID		
5	SPK-PREDIG	S1305290013		W	SOLID		
6	SPK-PREDIG	S1305290012		W	SOLID		
7	SAMPLE	S13T004279		W	SOLID	20130402	C109 CLO
8	SAMPLE	S13T004306		W	SOLID	20130402	C109 CLO

Final Page for Batch# 00041430

Adam Casey 06-13-13
Analyst Signature Date

Data Entry Signature 6/3/13
Data Entry Signature Date

Data Entry Comments:

S = Batch Slot Number, R = Retest Number, A = Aliquot Code.

Sequence: 130530_C109
Operator: H4868194

Printed: 6/5/2013 10:05:26 AM

Title:
Datasource: WC95579_local
Location: IC-11
Timebase: IC_11
#Samples: 24

Created: 5/30/2013 9:28:15 AM by inorganic
(Modified, not saved)

No.	Name	Pos.	Type	Inj. Vol.	Program	Method	Status
* 1	BLANK	1	Unknown	10.0	Ramp Gradient_32	Anion-sm org	Finished
2	BLANK	1	Unknown	10.0	Ramp Gradient_32	Anion-sm org	Finished
3	CCV 60X 1	2	Unknown	10.0	Ramp Gradient_32	Anion-sm org	Finished
4	LLS 2000X 1	3	Unknown	10.0	Ramp Gradient_32	Anion-sm org	Finished
5	CCB 1	1	Unknown	10.0	Ramp Gradient_32	Anion-sm org	Finished
6	PREP BLANK	4	Unknown	10.0	Ramp Gradient_32	Anion-sm org	Finished
7	PREP STD	5	Unknown	10.0	Ramp Gradient_32	Anion-sm org	Finished
8	S13T004251 SAM 20x	6	Unknown	10.0	Ramp Gradient_32	Anion-sm org	Finished
9	S13T004251 DUP 20x	7	Unknown	10.0	Ramp Gradient_32	Anion-sm org	Finished
10	S13T004251 SPK 20x	8	Unknown	10.0	Ramp Gradient_32	Anion-sm org	Finished
11	S13T004251 SPK 2 20x	9	Unknown	10.0	Ramp Gradient_32	Anion-sm org	Finished
12	S13T004251 P.SPK 20.20x	10	Unknown	10.0	Ramp Gradient_32	Anion-sm org	Finished
13	S13T004279 20x	11	Unknown	10.0	Ramp Gradient_32	Anion-sm org	Finished
14	S13T004306 20x	12	Unknown	10.0	Ramp Gradient_32	Anion-sm org	Finished
15	CCV 60X 2	2	Unknown	10.0	Ramp Gradient_32	Anion-sm org	Finished
16	LLS 2000X 2	3	Unknown	10.0	Ramp Gradient_32	Anion-sm org	Finished
17	CCB 2	1	Unknown	10.0	Ramp Gradient_32	Anion-sm org	Finished
18	SHUTDOWN	1	Unknown	10.0	Shutdown	Anion-sm org	Finished
19	std1	4	Standard	10.0	Ramp Gradient_32	Anion-sm org	Finished
20	std2	5	Standard	10.0	Ramp Gradient_32	Anion-sm org	Finished
21	std3	6	Standard	10.0	Ramp Gradient_32	Anion-sm org	Finished
22	std4	7	Standard	10.0	Ramp Gradient_32	Anion-sm org	Finished
23	std5	8	Standard	10.0	Ramp Gradient_32	Anion-sm org	Finished
24	std6	9	Standard	10.0	Ramp Gradient_32	Anion-sm org	Finished

* Data not reported from initial digest/analysis. Data has been included for information only.

AB
06/05/13

Chromeleon © Dionex Corporation, Version 6.80 SR11d Build 3302 (196279)

Sequence: 130530_C109
Operator: H4868194

Title:
Datasource: WC95579_local
Location: IC-11
Timebase: IC_11
#Samples: 24

Created: 5/30/2013 9:28:15 AM by inorganic
(Modified, not saved)

No.	Name	Inj. Date/Time	Comment	Dil. Factor
1	BLANK	5/30/2013 10:29:34 AM		1.0000
2	BLANK	5/30/2013 11:02:44 AM		1.0000
3	CCV 60X 1	5/30/2013 11:35:55 AM	**DATA NOT REPORTED**	1.0000
4	LLS 2000X 1	5/30/2013 12:09:05 PM	**DATA NOT REPORTED**	1.0000
5	CCB 1	5/30/2013 12:42:16 PM	**DATA NOT REPORTED**	1.0000
6	PREP BLANK	5/30/2013 1:15:27 PM	**DATA NOT REPORTED**	1.0000
7	PREP STD	5/30/2013 1:48:37 PM	**DATA NOT REPORTED**	1.0000
8	S13T004251 SAM 20x	5/30/2013 2:21:47 PM	**DATA NOT REPORTED**	20.0000
9	S13T004251 DUP 20x	5/30/2013 2:54:58 PM	**DATA NOT REPORTED**	20.0000
10	S13T004251 SPK 20x	5/30/2013 3:28:09 PM	**DATA NOT REPORTED**	20.0000
11	S13T004251 SPK 2 20x	5/30/2013 4:01:19 PM	**DATA NOT REPORTED**	20.0000
12	S13T004251 P.SPK 20.20x	5/30/2013 4:34:30 PM	**DATA NOT REPORTED**	20.2000
13	S13T004279 20x	5/30/2013 5:07:41 PM	**DATA NOT REPORTED**	20.0000
14	S13T004306 20x	5/30/2013 5:40:51 PM	**DATA NOT REPORTED**	20.0000
15	CCV 60X 2	5/30/2013 6:14:02 PM	**DATA NOT REPORTED**	1.0000
16	LLS 2000X 2	5/30/2013 6:47:12 PM	**DATA NOT REPORTED**	1.0000
17	CCB 2	5/30/2013 7:20:23 PM	**DATA NOT REPORTED**	1.0000
18	SHUTDOWN	5/30/2013 7:53:33 PM	**DATA NOT REPORTED**	1.0000
19	std1	5/13/2013 6:57:17 PM	2000X 116N29A	1.0000
20	std2	5/13/2013 7:30:28 PM	200X 116N29A	1.0000
21	std3	5/13/2013 8:03:39 PM	100X 116N29A	1.0000
22	std4	5/13/2013 8:36:49 PM	60X 116N29A	1.0000
23	std5	5/13/2013 9:10:00 PM	30X 116N29A	1.0000
24	std6	5/13/2013 9:43:10 PM	20X 116N29A	1.0000

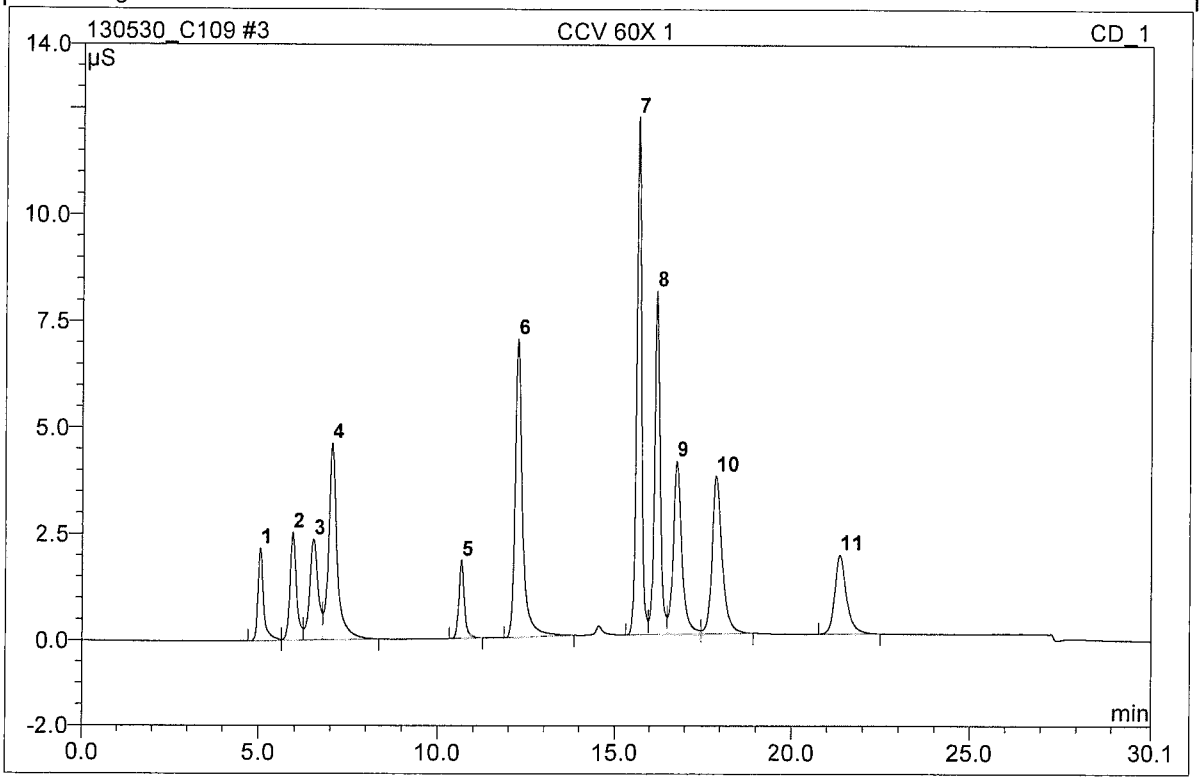
Chromeleon © Dionex Corporation, Version 6.80 SR11d Build 3302 (196279)

Operator:H4868194 Timebase:IC_11 Sequence:130530_C109

3 CCV 60X 1

****DATA NOT REPORTED****

Sample Name:	**CCV 60X 1**	*Injection Volume:*	**10.0**
Vial Number:	**2**	*Channel:*	**CD_1**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Control Program:	**Ramp Gradient_32**	*Sample Amount:*	**1.0000**
Quantif. Method:	**Anion-sm org**	*Run Time (min):*	**30.10**
Recording Time:	**5/30/2013 11:35**		



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount ppm	Type
1	5.04	Fluoride	2.173	0.386	3.36	1.032	BM
2	5.94	Glycolate	2.539	0.547	4.76	6.369	M
3	6.52	Acetate	2.371	0.648	5.64	7.673	M
4	7.05	Formate	4.619	1.287	11.20	7.838	MB
5	10.66	Chloride	1.840	0.334	2.91	1.467	BMB
6	12.24	Nitrite	7.024	1.698	14.78	9.377	BMB
7	15.67	Sulfate	12.166	1.954	17.01	11.261	BM
8	16.19	Oxalate	8.081	1.508	13.13	8.826	M
9	16.77	Bromide	4.076	1.179	10.26	11.152	M
10	17.88	Nitrate	3.713	1.233	10.73	9.592	MB
11	21.35	Phosphate	1.859	0.717	6.24	9.695	BMB
Total:			50.462	11.491	100.00	84.281	

AnionRPT-NoLabels/Integration

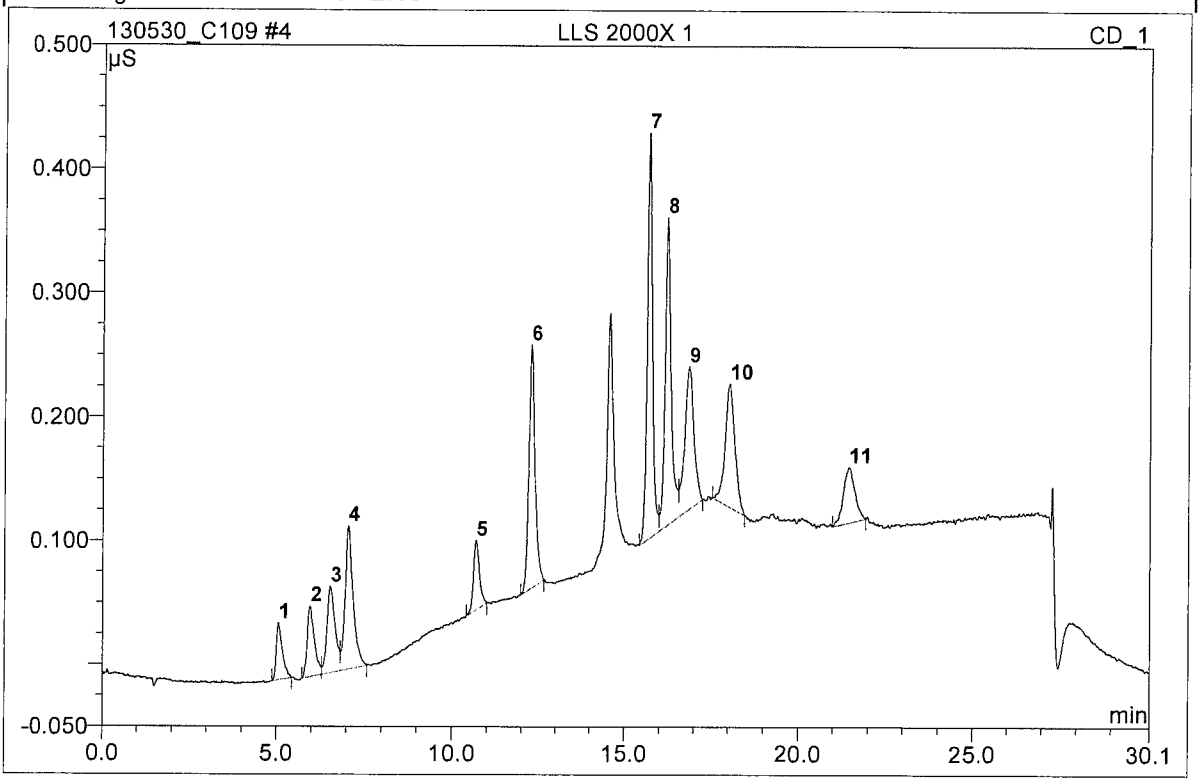
Chromeleon (c) Dionex 1996-2006
Version 6.80 SR11d Build 3302 (196279)

Operator:H4868194 Timebase:IC_11 Sequence:130530_C109

4 LLS 2000X 1

****DATA NOT REPORTED****

Sample Name:	**LLS 2000X 1**	*Injection Volume:*	**10.0**
Vial Number:	**3**	*Channel:*	**CD_1**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Control Program:	**Ramp Gradient_32**	*Sample Amount:*	**1.0000**
Quantif. Method:	**Anion-sm org**	*Run Time (min):*	**30.10**
Recording Time:	**5/30/2013 12:09**		



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount ppm	Type
1	5.06	Fluoride	0.046	0.009	2.93	0.033	BMB
2	5.96	Glycolate	0.057	0.014	4.33	0.197	BM
3	6.53	Acetate	0.070	0.019	5.93	0.233	M
4	7.05	Formate	0.116	0.031	9.80	0.244	MB
5	10.68	Chloride	0.056	0.011	3.43	0.047	BMB
6	12.27	Nitrite	0.197	0.042	13.14	0.268	BMB
7	15.70	Sulfate	0.328	0.056	17.54	0.351	BM
8	16.22	Oxalate	0.249	0.051	16.05	0.288	M
9	16.86	Bromide	0.115	0.036	11.23	0.326	MB
10	18.02	Nitrate	0.100	0.032	10.17	0.319	BMB
11	21.43	Phosphate	0.045	0.017	5.47	0.303	BMB
Total:			1.377	0.317	100.00	2.611	

AnionRPT-NoLabels/Integration

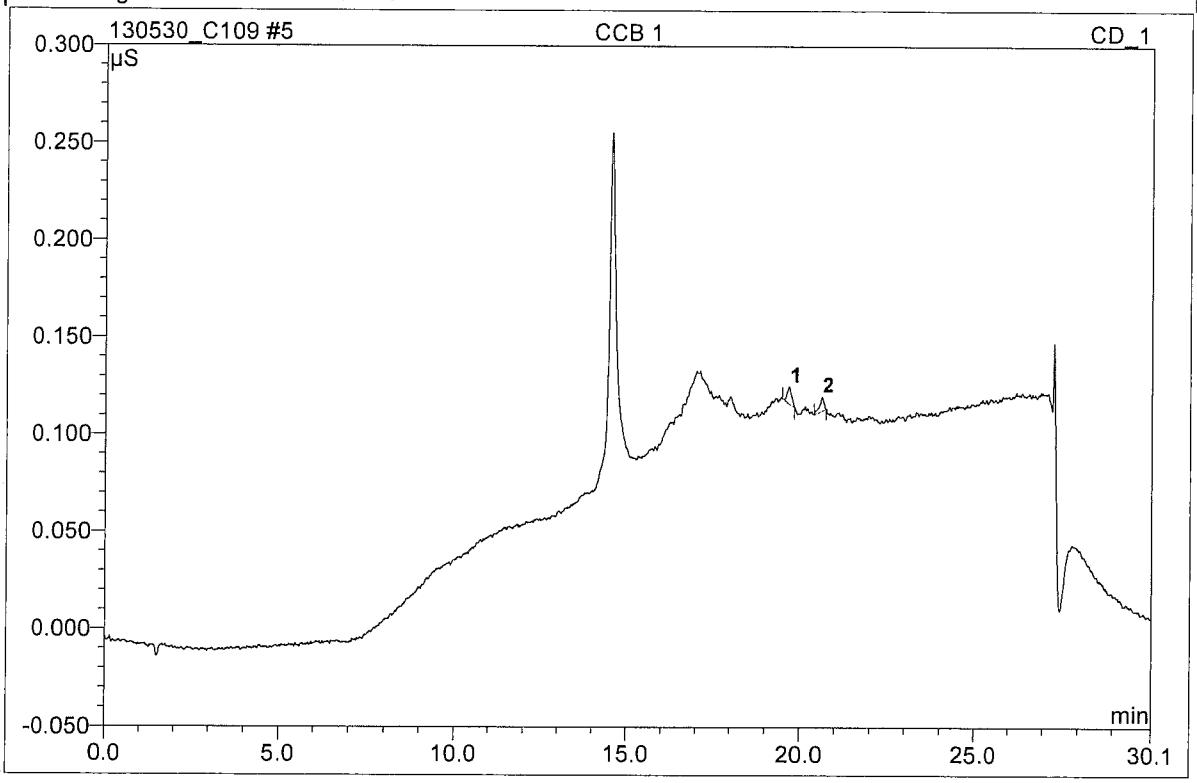
Chromeleon (c) Dionex 1996-2006
Version 6.80 SR11d Build 3302 (196279)

Operator:H4868194 Timebase:IC_11 Sequence:130530_C109

5 CCB 1

****DATA NOT REPORTED****

Sample Name:	**CCB 1**	*Injection Volume:*	**10.0**
Vial Number:	**1**	*Channel:*	**CD_1**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Control Program:	**Ramp Gradient_32**	*Sample Amount:*	**1.0000**
Quantif. Method:	**Anion-sm org**	*Run Time (min):*	**30.10**
Recording Time:	**5/30/2013 12:42**		



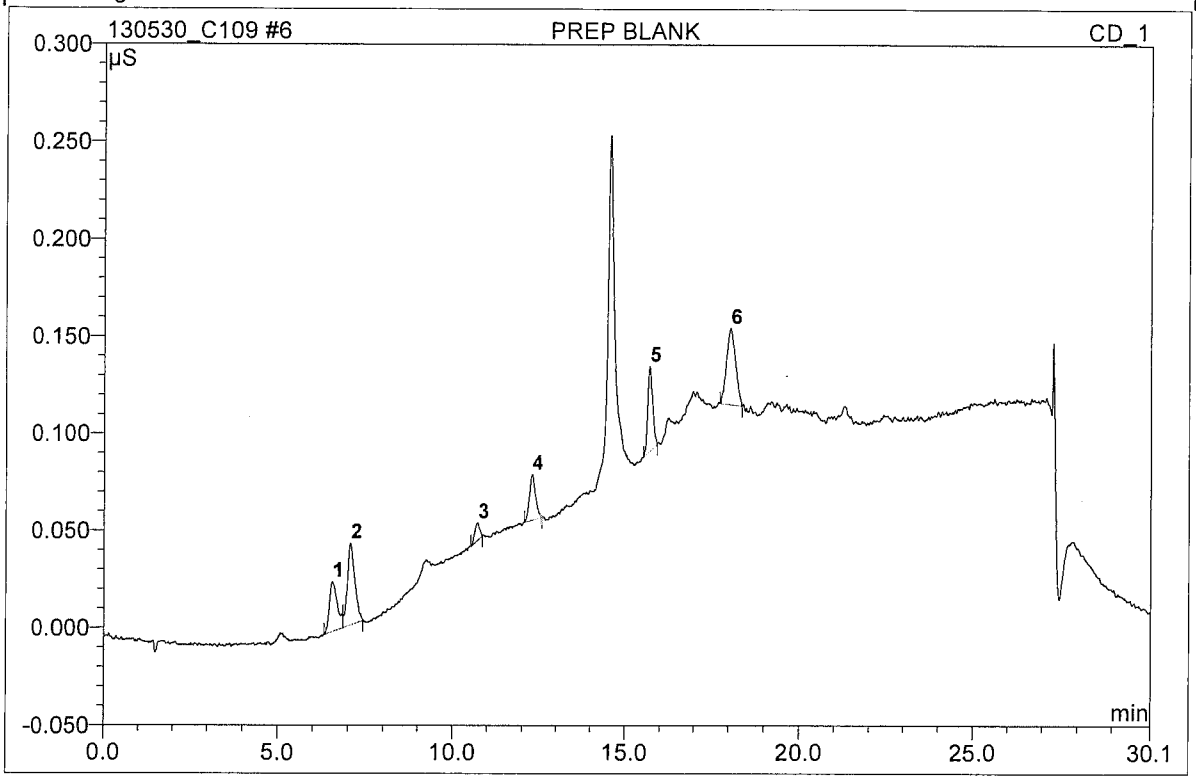
No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount ppm	Type
1	19.69	n.a.	0.009	0.001	54.68	n.a.	BMB
2	20.62	Phosphate	0.007	0.001	45.32	0.080	BMB
Total:			0.016	0.002	100.00	0.080	

Operator:H4868194 Timebase:IC_11 Sequence:130530_C109

6 PREP BLANK

****DATA NOT REPORTED****

Sample Name:	**PREP BLANK**	*Injection Volume:*	**10.0**
Vial Number:	**4**	*Channel:*	**CD_1**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Control Program:	**Ramp Gradient_32**	*Sample Amount:*	**1.0000**
Quantif. Method:	**Anion-sm org**	*Run Time (min):*	**30.10**
Recording Time:	**5/30/2013 13:15**		



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount ppm	Type
1	6.54	Acetate	0.026	0.007	16.06	0.104	BM
2	7.06	Formate	0.042	0.010	24.61	0.122	MB
3	10.71	Chloride	0.009	0.001	3.48	0.006	BMB
4	12.28	Nitrite	0.024	0.005	11.61	0.069	BMB
5	15.71	Sulfate	0.044	0.007	16.96	0.073	BMB
6	18.04	Nitrate	0.039	0.012	27.29	0.156	BMB
Total:			0.183	0.042	100.00	0.529	

AnionRPT-NoLabels/Integration

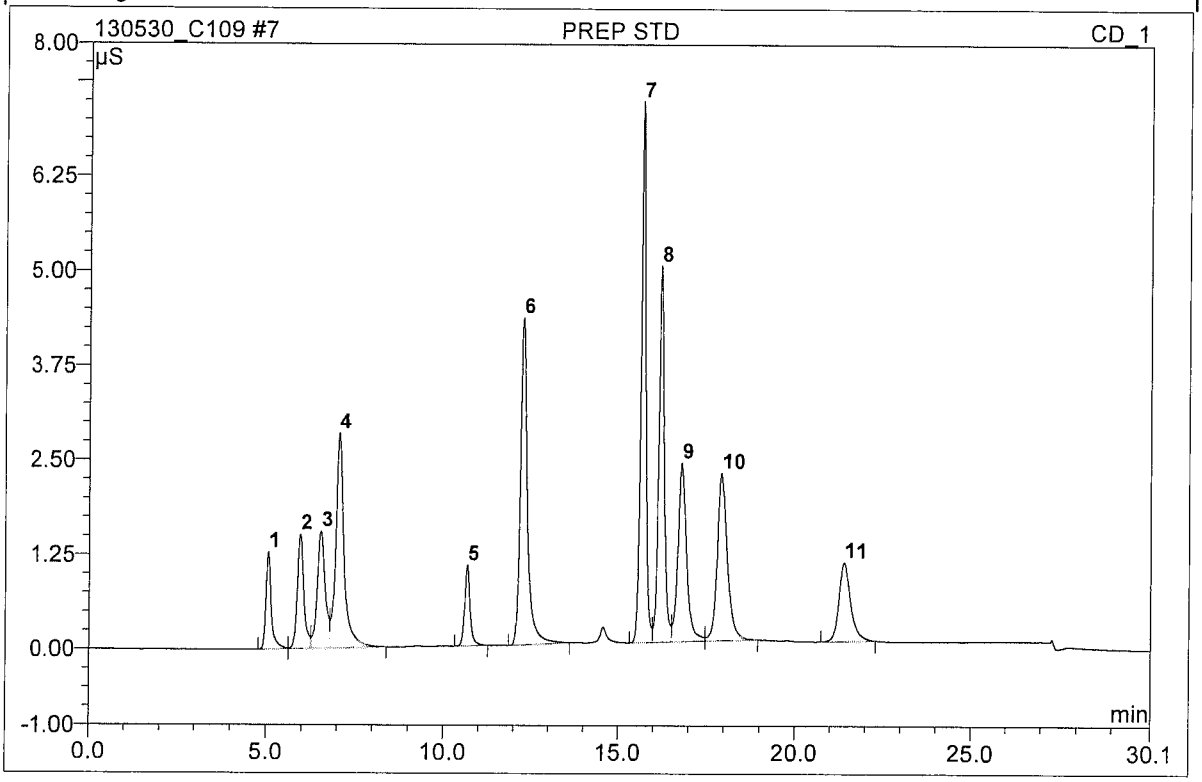
Chromeleon (c) Dionex 1996-2006
Version 6.80 SR11d Build 3302 (196279)

Operator:H4868194 Timebase:IC_11 Sequence:130530_C109

7 PREP STD

****DATA NOT REPORTED****

Sample Name:	**PREP STD**	*Injection Volume:*	**10.0**
Vial Number:	**5**	*Channel:*	**CD_1**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Control Program:	**Ramp Gradient_32**	*Sample Amount:*	**1.0000**
Quantif. Method:	**Anion-sm org**	*Run Time (min):*	**30.10**
Recording Time:	**5/30/2013 13:48**		



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount ppm	Type
1	5.05	Fluoride	1.285	0.225	3.29	0.607	BM
2	5.96	Glycolate	1.515	0.323	4.72	3.764	M
3	6.54	Acetate	1.549	0.413	6.04	4.735	M
4	7.06	Formate	2.844	0.778	11.37	4.719	MB
5	10.68	Chloride	1.071	0.195	2.85	0.860	BMB
6	12.26	Nitrite	4.327	1.013	14.80	5.581	BMB
7	15.69	Sulfate	7.153	1.156	16.89	6.678	BM
8	16.21	Oxalate	4.977	0.920	13.45	5.264	M
9	16.80	Bromide	2.363	0.676	9.88	6.414	M
10	17.93	Nitrate	2.217	0.733	10.70	5.785	MB
11	21.39	Phosphate	1.049	0.412	6.02	5.643	BMB
Total:			30.349	6.844	100.00	50.048	

AnionRPT-NoLabels/Integration

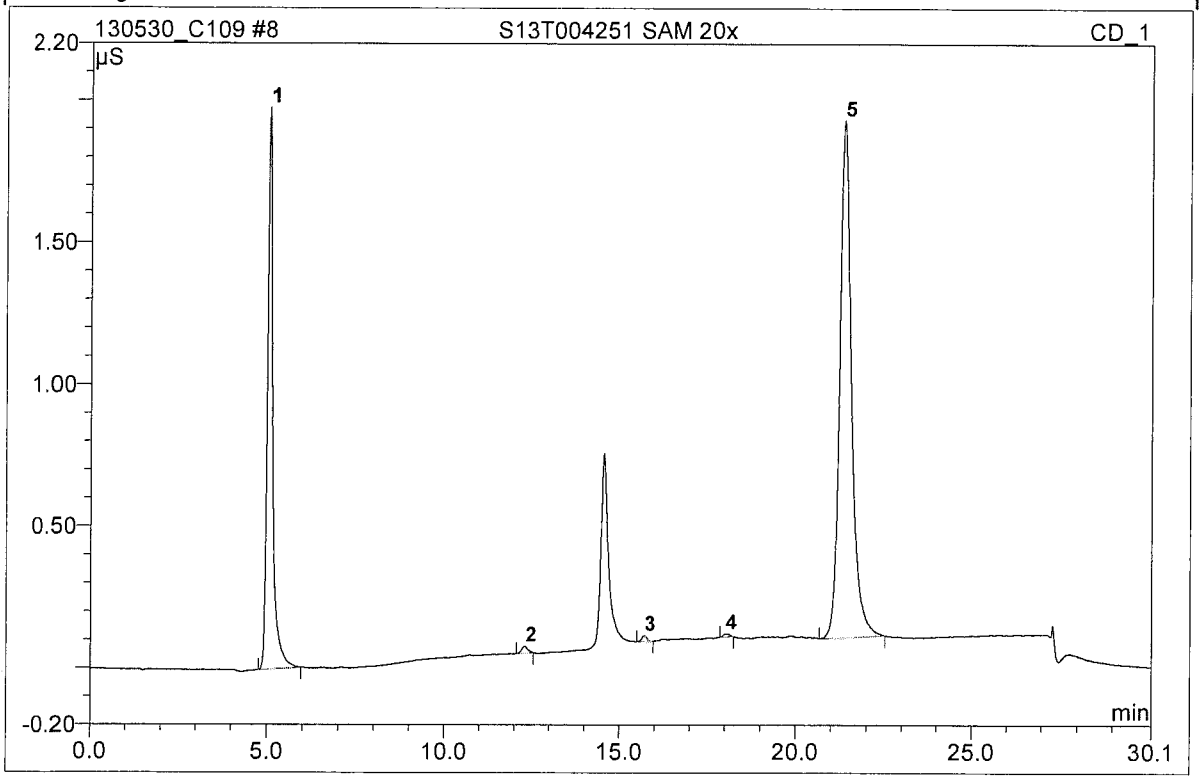
Chromeleon (c) Dionex 1996-2006
Version 6.80 SR11d Build 3302 (196279)

Operator:H4868194 Timebase:IC_11 Sequence:130530_C109

8 S13T004251 SAM 20x

****DATA NOT REPORTED****

Sample Name:	**S13T004251 SAM 20x**	*Injection Volume:*	**10.0**
Vial Number:	**6**	*Channel:*	**CD_1**
Sample Type:	**unknown**	*Dilution Factor:*	**20.0000**
Control Program:	**Ramp Gradient_32**	*Sample Amount:*	**1.0000**
Quantif. Method:	**Anion-sm org**	*Run Time (min):*	**30.10**
Recording Time:	**5/30/2013 14:21**		



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount ppm	Type
1	5.06	Fluoride	1.979	0.351	32.97	18.793	BMB
2	12.29	Nitrite	0.025	0.005	0.48	1.400	BMB
3	15.70	Sulfate	0.022	0.004	0.34	1.046	BMB
4	18.02	Nitrate	0.011	0.002	0.22	1.643	BMB
5	21.36	Phosphate	1.822	0.703	65.99	190.154	BMB
Total:			3.859	1.065	100.00	213.037	

AnionRPT-NoLabels/Integration

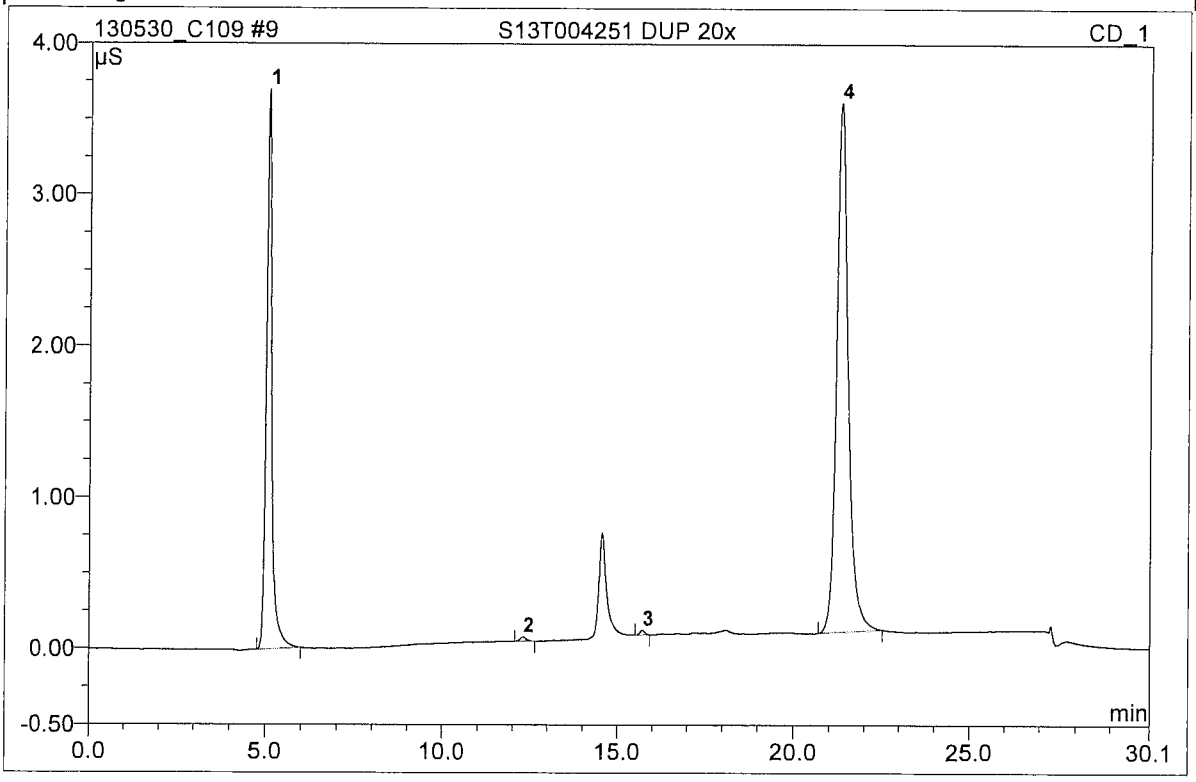
Chromeleon (c) Dionex 1996-2006
Version 6.80 SR11d Build 3302 (196279)

Operator:H4868194 Timebase:IC_11 Sequence:130530_C109

9 S13T004251 DUP 20x

****DATA NOT REPORTED****

Sample Name:	**S13T004251 DUP 20x**	*Injection Volume:*	**10.0**
Vial Number:	**7**	*Channel:*	**CD_1**
Sample Type:	**unknown**	*Dilution Factor:*	**20.0000**
Control Program:	**Ramp Gradient_32**	*Sample Amount:*	**1.0000**
Quantif. Method:	**Anion-sm org**	*Run Time (min):*	**30.10**
Recording Time:	**5/30/2013 14:54**		



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount ppm	Type
1	5.06	Fluoride	3.700	0.662	33.02	35.097	BMB
2	12.28	Nitrite	0.028	0.006	0.30	1.488	BMB
3	15.71	Sulfate	0.031	0.005	0.25	1.202	BMB
4	21.32	Phosphate	3.500	1.331	66.43	353.561	BMB
Total:			7.260	2.004	100.00	391.349	

AnionRPT-NoLabels/Integration

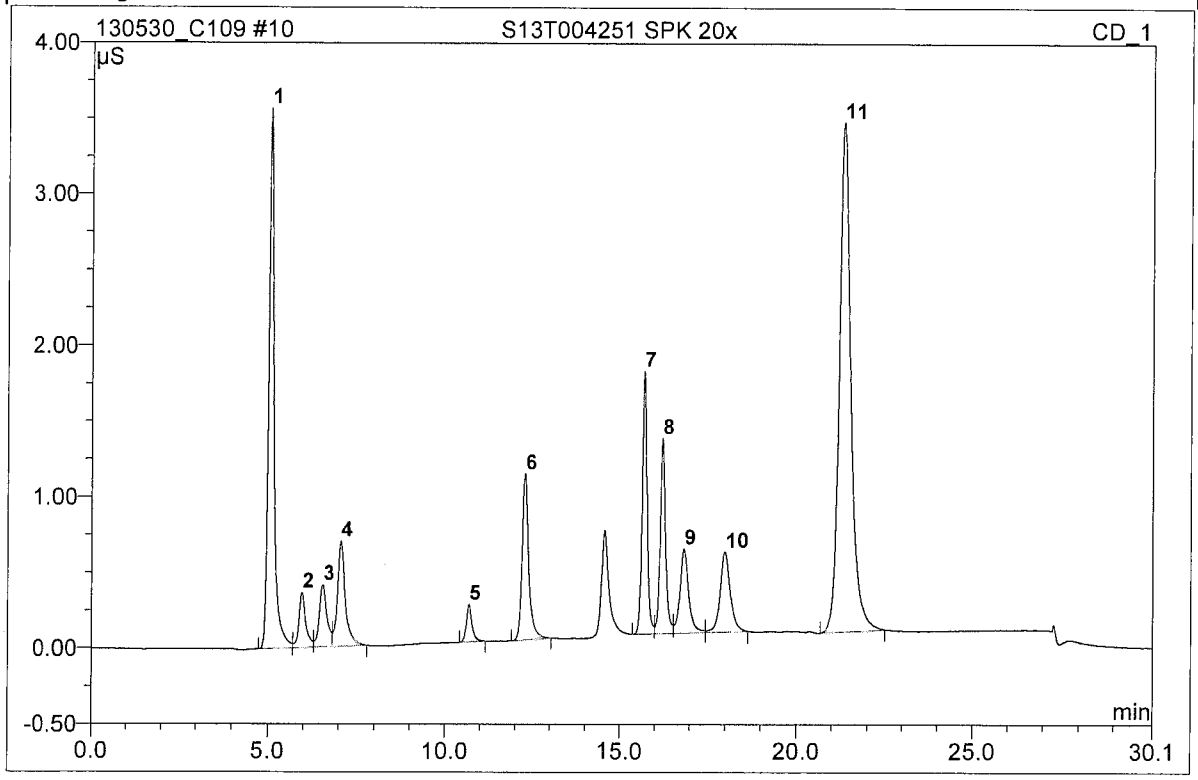
Chromeleon (c) Dionex 1996-2006
Version 6.80 SR11d Build 3302 (196279)

Operator:H4868194 Timebase:IC_11 Sequence:130530_C109

10 S13T004251 SPK 20x

****DATA NOT REPORTED****

Sample Name:	**S13T004251 SPK 20x**	*Injection Volume:*	**10.0**
Vial Number:	**8**	*Channel:*	**CD_1**
Sample Type:	**unknown**	*Dilution Factor:*	**20.0000**
Control Program:	**Ramp Gradient_32**	*Sample Amount:*	**1.0000**
Quantif. Method:	**Anion-sm org**	*Run Time (min):*	**30.10**
Recording Time:	**5/30/2013 15:28**		



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount ppm	Type
1	5.06	Fluoride	3.570	0.638	18.57	33.849	BM
2	5.95	Glycolate	0.364	0.082	2.39	19.617	M
3	6.54	Acetate	0.410	0.105	3.05	23.507	M
4	7.05	Formate	0.694	0.180	5.24	22.509	MB
5	10.68	Chloride	0.247	0.046	1.35	4.114	BMB
6	12.27	Nitrite	1.095	0.240	7.00	26.979	BMB
7	15.70	Sulfate	1.737	0.284	8.28	33.347	BM
8	16.22	Oxalate	1.290	0.237	6.91	26.577	M
9	16.83	Bromide	0.555	0.161	4.68	30.382	M
10	17.99	Nitrate	0.529	0.176	5.13	29.102	MB
11	21.32	Phosphate	3.368	1.285	37.40	341.537	BMB
Total:			13.859	3.434	100.00	591.520	

AnionRPT-NoLabels/Integration

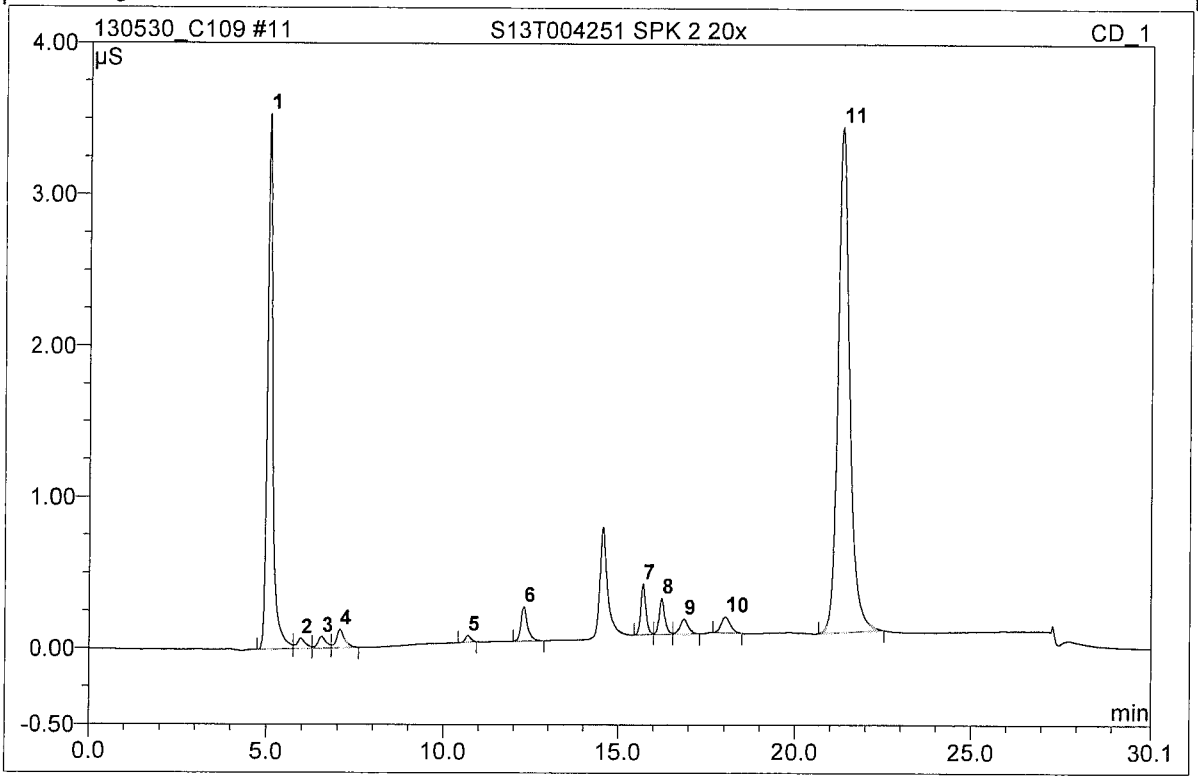
Chromeleon (c) Dionex 1996-2006
Version 6.80 SR11d Build 3302 (196279)

Operator:H4868194 Timebase:IC_11 Sequence:130530_C109

11 S13T004251 SPK 2 20x

****DATA NOT REPORTED****

Sample Name:	**S13T004251 SPK 2 20x**	*Injection Volume:*	**10.0**
Vial Number:	**9**	*Channel:*	**CD_1**
Sample Type:	**unknown**	*Dilution Factor:*	**20.0000**
Control Program:	**Ramp Gradient_32**	*Sample Amount:*	**1.0000**
Quantif. Method:	**Anion-sm org**	*Run Time (min):*	**30.10**
Recording Time:	**5/30/2013 16:01**		



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount ppm	Type
1	5.06	Fluoride	3.538	0.634	28.87	33.654	BM
2	5.96	Glycolate	0.068	0.019	0.85	5.105	M
3	6.54	Acetate	0.076	0.020	0.93	5.033	M
4	7.06	Formate	0.122	0.032	1.46	4.999	MB
5	10.69	Chloride	0.045	0.008	0.38	0.730	BMB
6	12.28	Nitrite	0.229	0.050	2.29	6.315	BMB
7	15.70	Sulfate	0.338	0.056	2.57	7.117	BM
8	16.23	Oxalate	0.240	0.045	2.04	5.101	M
9	16.86	Bromide	0.099	0.028	1.25	4.976	MB
10	18.03	Nitrate	0.105	0.032	1.47	6.387	BMB
11	21.32	Phosphate	3.346	1.272	57.89	338.242	BMB
Total:			8.206	2.197	100.00	417.659	

AnionRPT-NoLabels/Integration

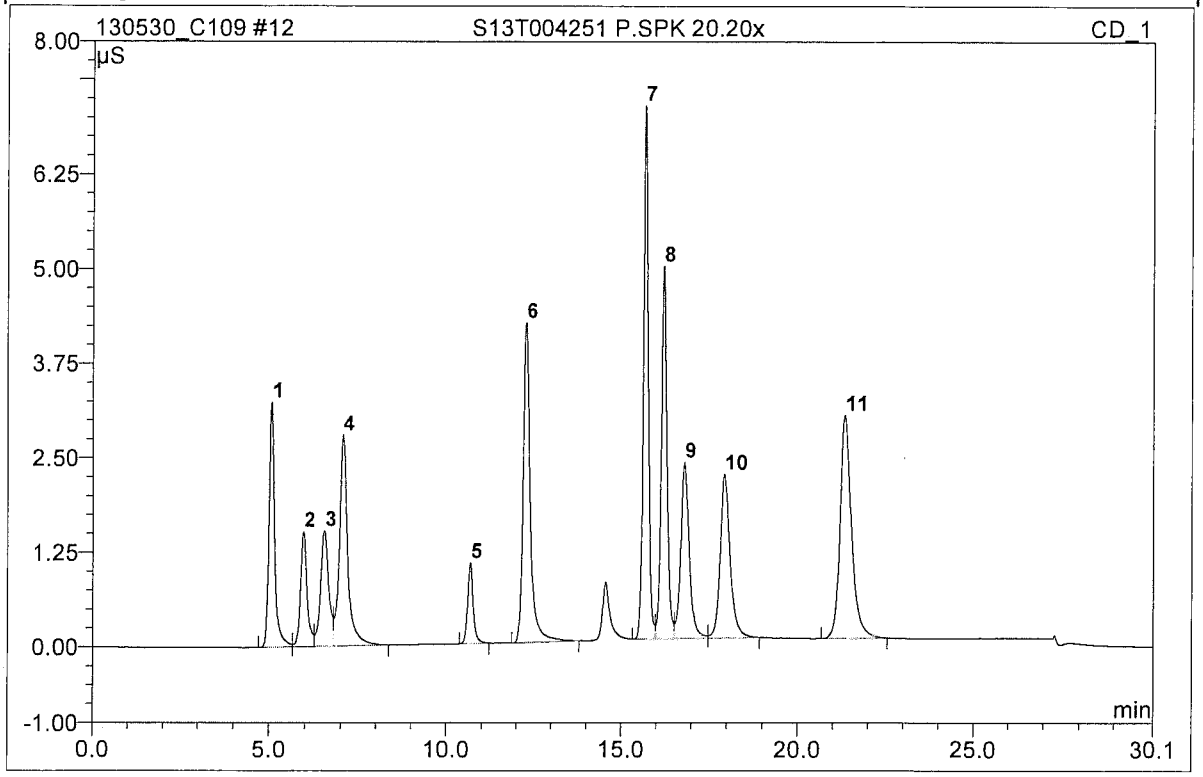
Chromeleon (c) Dionex 1996-2006
Version 6.80 SR11d Build 3302 (196279)

Operator:H4868194 Timebase:IC_11 Sequence:130530_C109

12 S13T004251 P.SPK 20.20x

****DATA NOT REPORTED****

Sample Name:	**S13T004251 P.SPK 20.20x**	*Injection Volume:*	**10.0**
Vial Number:	**10**	*Channel:*	**CD_1**
Sample Type:	**unknown**	*Dilution Factor:*	**20.2000**
Control Program:	**Ramp Gradient_32**	*Sample Amount:*	**1.0000**
Quantif. Method:	**Anion-sm org**	*Run Time (min):*	**30.10**
Recording Time:	**5/30/2013 16:34**		



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount ppm	Type
1	5.06	Fluoride	3.241	0.578	7.40	31.030	BM
2	5.96	Glycolate	1.519	0.328	4.20	77.185	M
3	6.54	Acetate	1.527	0.407	5.21	94.140	M
4	7.06	Formate	2.791	0.765	9.79	93.665	MB
5	10.68	Chloride	1.071	0.194	2.49	17.322	BMB
6	12.26	Nitrite	4.241	1.003	12.83	111.588	BMB
7	15.69	Sulfate	7.052	1.138	14.56	132.862	BM
8	16.21	Oxalate	4.930	0.907	11.61	104.786	M
9	16.80	Bromide	2.332	0.658	8.42	126.164	M
10	17.93	Nitrate	2.165	0.711	9.10	113.490	MB
11	21.33	Phosphate	2.956	1.125	14.40	303.539	BMB
Total:			33.824	7.815	100.00	1205.771	

AnionRPT-NoLabels/Integration

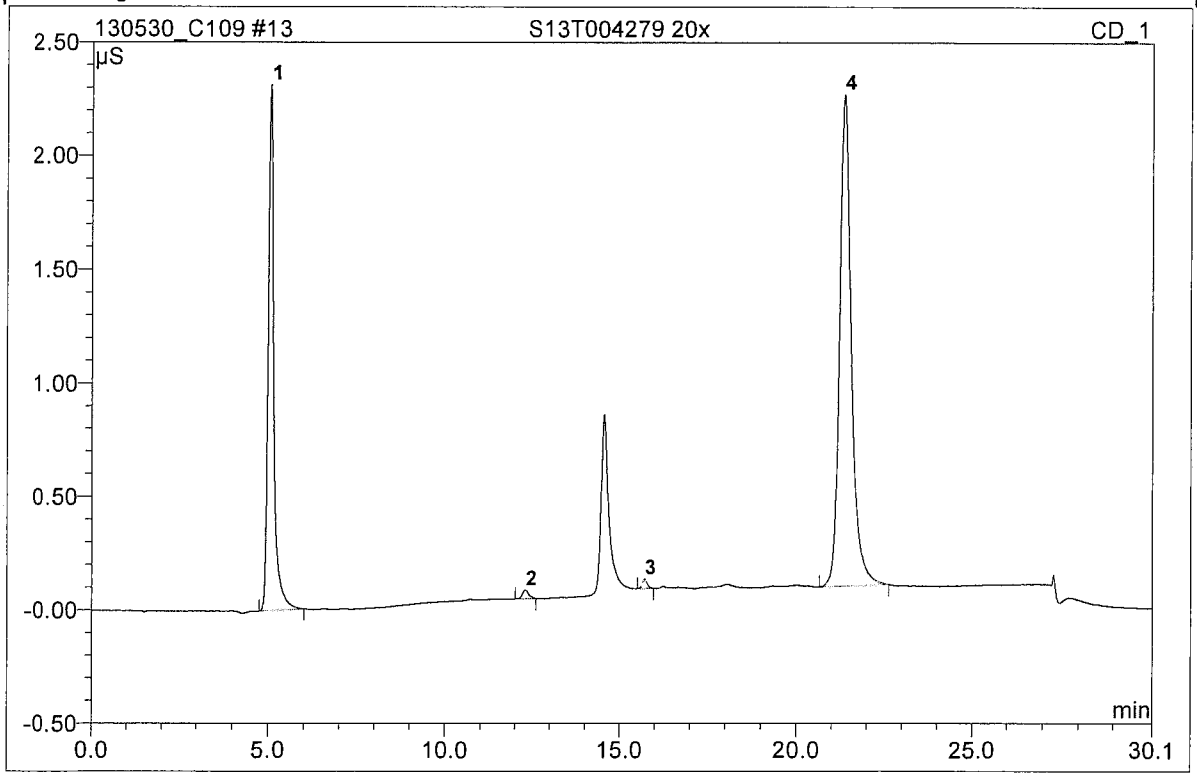
Chromeleon (c) Dionex 1996-2006
Version 6.80 SR11d Build 3302 (196279)

Operator:H4868194 Timebase:IC_11 Sequence:130530_C109

13 S13T004279 20x

****DATA NOT REPORTED****

Sample Name:	**S13T004279 20x**	*Injection Volume:*	**10.0**
Vial Number:	**11**	*Channel:*	**CD_1**
Sample Type:	**unknown**	*Dilution Factor:*	**20.0000**
Control Program:	**Ramp Gradient_32**	*Sample Amount:*	**1.0000**
Quantif. Method:	**Anion-sm org**	*Run Time (min):*	**30.10**
Recording Time:	**5/30/2013 17:07**		



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount ppm	Type
1	5.06	Fluoride	2.317	0.413	32.66	22.035	BMB
2	12.29	Nitrite	0.038	0.008	0.66	1.743	BMB
3	15.71	Sulfate	0.043	0.007	0.57	1.453	BMB
4	21.36	Phosphate	2.167	0.835	66.12	225.041	BMB
Total:			4.565	1.263	100.00	250.272	

AnionRPT-NoLabels/Integration

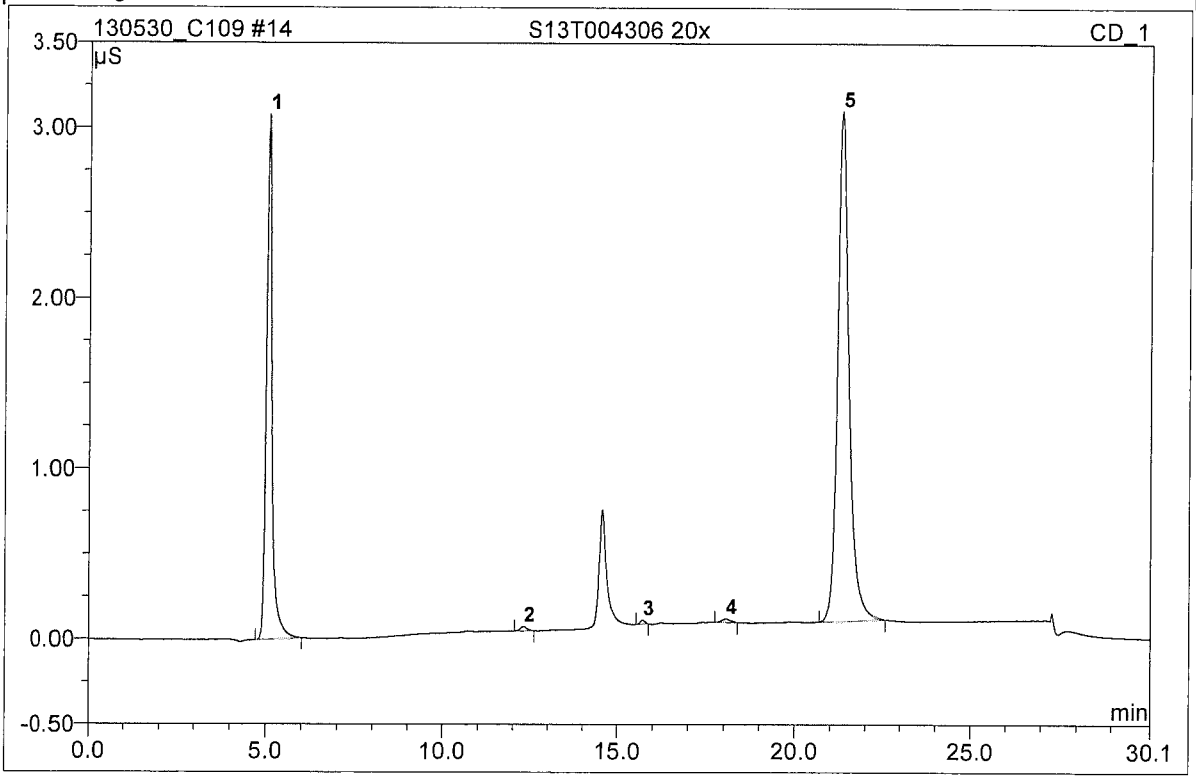
Chromeleon (c) Dionex 1996-2006
Version 6.80 SR11d Build 3302 (196279)

Operator:H4868194 Timebase:IC_11 Sequence:130530_C109

14 S13T004306 20x

****DATA NOT REPORTED****

Sample Name:	**S13T004306 20x**	*Injection Volume:*	**10.0**
Vial Number:	**12**	*Channel:*	**CD_1**
Sample Type:	**unknown**	*Dilution Factor:*	**20.0000**
Control Program:	**Ramp Gradient_32**	*Sample Amount:*	**1.0000**
Quantif. Method:	**Anion-sm org**	*Run Time (min):*	**30.10**
Recording Time:	**5/30/2013 17:40**		



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount ppm	Type
1	5.06	Fluoride	3.082	0.552	32.21	29.332	BMB
2	12.29	Nitrite	0.026	0.006	0.34	1.470	BMB
3	15.71	Sulfate	0.024	0.004	0.21	1.034	BMB
4	18.05	Nitrate	0.022	0.006	0.37	2.297	BMB
5	21.33	Phosphate	2.996	1.145	66.87	305.573	BMB
Total:			6.151	1.712	100.00	339.706	

AnionRPT-NoLabels/Integration

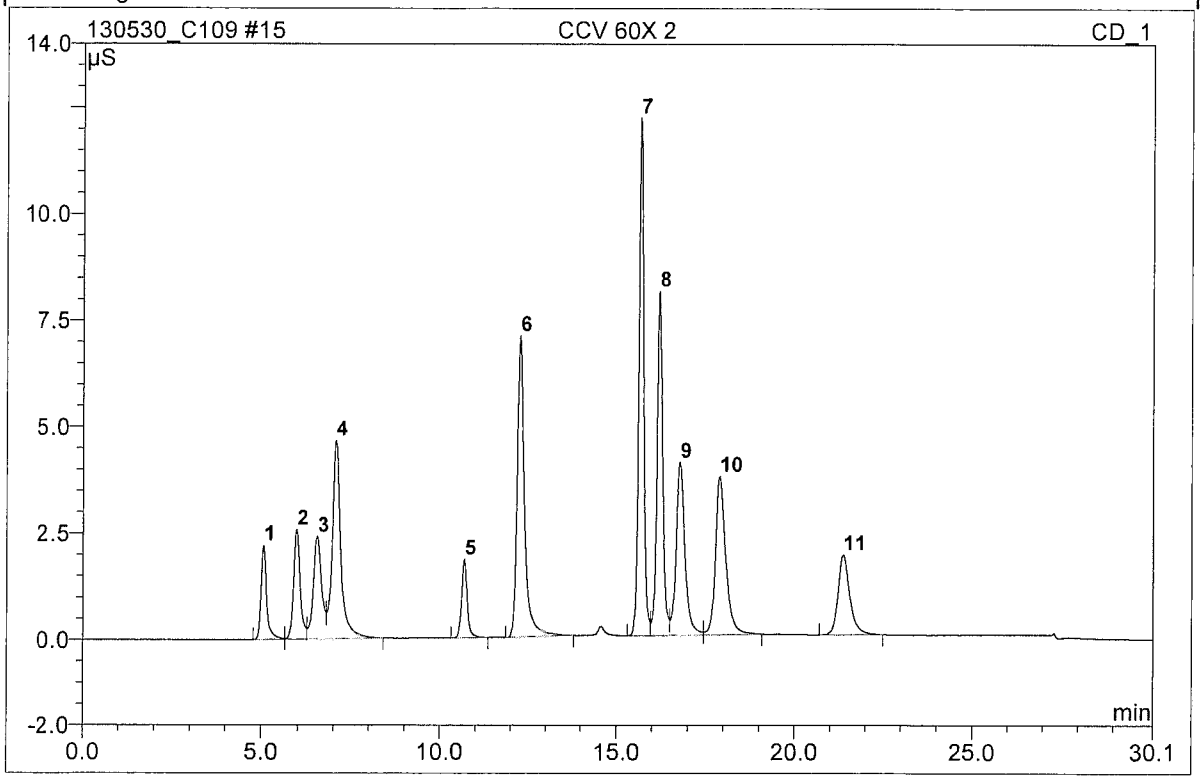
Chromeleon (c) Dionex 1996-2006
Version 6.80 SR11d Build 3302 (196279)

Operator:H4868194 Timebase:IC_11 Sequence:130530_C109

15 CCV 60X 2

****DATA NOT REPORTED****

Sample Name:	**CCV 60X 2**	*Injection Volume:*	**10.0**
Vial Number:	**2**	*Channel:*	**CD_1**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Control Program:	**Ramp Gradient_32**	*Sample Amount:*	**1.0000**
Quantif. Method:	**Anion-sm org**	*Run Time (min):*	**30.10**
Recording Time:	**5/30/2013 18:14**		



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount ppm	Type
1	5.06	Fluoride	2.206	0.390	3.38	1.041	BM
2	5.96	Glycolate	2.570	0.556	4.83	6.476	M
3	6.54	Acetate	2.401	0.658	5.71	7.803	M
4	7.06	Formate	4.654	1.292	11.21	7.867	MB
5	10.68	Chloride	1.841	0.337	2.92	1.476	BMB
6	12.26	Nitrite	7.077	1.705	14.79	9.413	BMB
7	15.68	Sulfate	12.163	1.957	16.99	11.276	BM
8	16.21	Oxalate	8.086	1.507	13.08	8.819	M
9	16.78	Bromide	4.050	1.155	10.02	10.927	M
10	17.90	Nitrate	3.713	1.247	10.82	9.703	MB
11	21.37	Phosphate	1.871	0.720	6.25	9.732	BMB
Total:			50.633	11.522	100.00	84.533	

AnionRPT-NoLabels/Integration

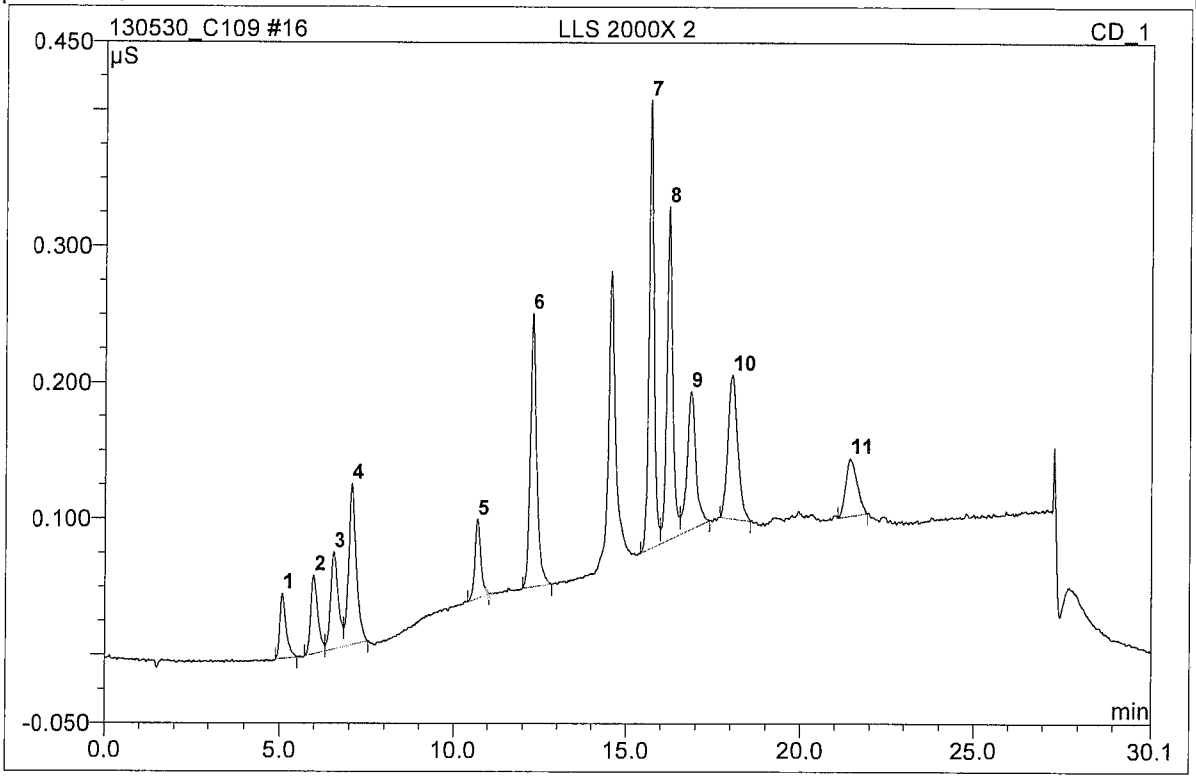
Chromeleon (c) Dionex 1996-2006
Version 6.80 SR11d Build 3302 (196279)

Operator:H4868194 Timebase:IC_11 Sequence:130530_C109

16 LLS 2000X 2

****DATA NOT REPORTED****

Sample Name:	**LLS 2000X 2**	*Injection Volume:*	**10.0**
Vial Number:	**3**	*Channel:*	**CD_1**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Control Program:	**Ramp Gradient_32**	*Sample Amount:*	**1.0000**
Quantif. Method:	**Anion-sm org**	*Run Time (min):*	**30.10**
Recording Time:	**5/30/2013 18:47**		



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount ppm	Type
1	5.07	Fluoride	0.048	0.010	3.13	0.034	BMB
2	5.97	Glycolate	0.058	0.014	4.39	0.196	BM
3	6.54	Acetate	0.071	0.018	5.94	0.229	M
4	7.06	Formate	0.118	0.030	9.71	0.238	MB
5	10.69	Chloride	0.058	0.011	3.69	0.050	BMB
6	12.28	Nitrite	0.201	0.044	14.21	0.281	BMB
7	15.70	Sulfate	0.329	0.055	17.91	0.351	BM
8	16.23	Oxalate	0.245	0.047	15.28	0.269	M
9	16.86	Bromide	0.101	0.030	9.63	0.271	MB
10	18.03	Nitrate	0.106	0.034	10.98	0.334	BMB
11	21.42	Phosphate	0.043	0.016	5.13	0.283	BMB
Total:			1.378	0.310	100.00	2.536	

AnionRPT-NoLabels/Integration

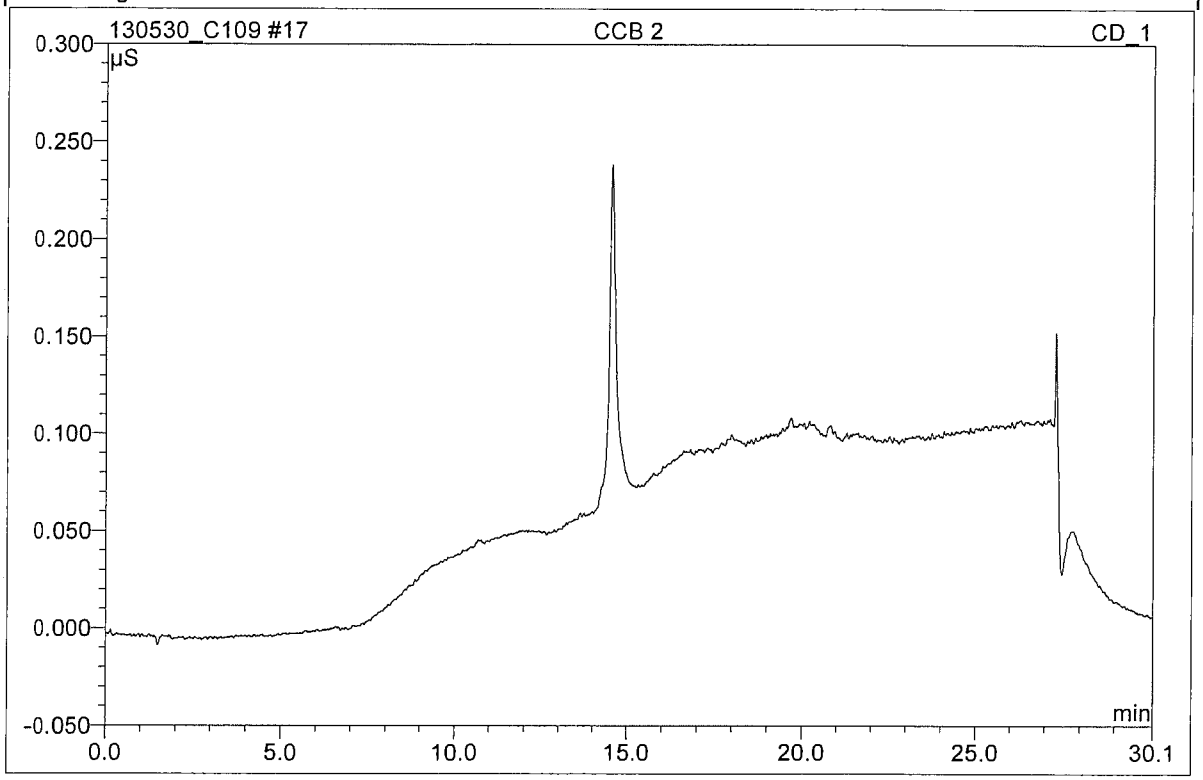
Chromeleon (c) Dionex 1996-2006
Version 6.80 SR11d Build 3302 (196279)

Operator:H4868194 Timebase:IC_11 Sequence:130530_C109

17 CCB 2

****DATA NOT REPORTED****

Sample Name:	**CCB 2**	*Injection Volume:*	**10.0**
Vial Number:	**1**	*Channel:*	**CD_1**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Control Program:	**Ramp Gradient_32**	*Sample Amount:*	**1.0000**
Quantif. Method:	**Anion-sm org**	*Run Time (min):*	**30.10**
Recording Time:	**5/30/2013 19:20**		



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount ppm	Type
Total:			0.000	0.000	0.00	0.000	

LABCORE Data Entry Template for Batch# 00041430

Analyst: Dinh, Liem **Standard ID / Book#:** See Bench Sheet

Instrument: LE-BAL-040

Method: WATER DIGEST, LA-504-101 Rev/Mod N-0

Prep Batch: N/A

Batch Comment:
N/A

CACN:3A.26

S	Type	Sample	R	A	Matrix	Group#	Project
1	STD-PREP	S1305290009		W	LIQUID		
2	BLNK-PREP	S1305290010		W	LIQUID		
3	SAMPLE	S13T004251		W	SOLID	20130402	C109 CLO
4	DUP	S1305290011		W	SOLID		
5	SPK-PREDIG	S1305290013		W	SOLID		
6	SPK-PREDIG	S1305290012		W	SOLID		
7	SAMPLE	S13T004279		W	SOLID	20130402	C109 CLO
8	SAMPLE	S13T004306		W	SOLID	20130402	C109 CLO

Final Page for Batch# 00041430

Adam Cosby 5/29/13
Analyst Signature Date

Data Entry Signature 5/29/13
Data Entry Signature Date

Data Entry Comments:

S = Batch Slot Number, R = Retest Number, A = Aliquot Code.

ATL	WATER LEACH SAMPLE PREPARATION BENCH SHEET

◉ LA-504-101 Rev N-0 ○ N/A Rev N/A

Project: C109 CLO (Group 20130402)

Batch #: 41430 Analyst: AW / LND

Prep. Date/Time Start: 05-29-13 / 08:30 Prep. Date/Time End: 05-29-13 / 15:15

Balance Number: LE-BAL-040 ☒ (Verified)

Standard	Lot/Book #	Exp. Date	Standard	Lot/Book #	Exp. Date
Dionex 8	116 N79C	06-06-13	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A

(Pipette #); Pipette ID; Volume Range or Fixed Volume; Check box if pipette passes visual verification:

(1) 610 30153F (Range/Vol: 1-1000/mL) ☒ (3) N/A (Range/Vol: N/A) ☐

(2) 51207554 (Range/Vol: 1-10/mL) ☒ (4) N/A (Range/Vol: N/A) ☐

Sample ID	Final Volume (mL)	Sample (Wt./Each) (a)	Spike Added (b)	Dose Rate (mrem/hr)	Date and Time Water Added
Prep Blank	50	50mL		<0.5	05-29-13 09:38
Prep Std	50	50mL	0.50 ml Dionex 8 (1)	<0.5	05-29-13 09:38
S13T004251	50	0.2393g		15	05-29-13 09:39
S13T004251 Dup	50	0.2359g		38	05-29-13 09:39
S13T004251 Spk	50	0.2498g	2.50 ml Dionex 8 (2)	75	05-29-13 09:40
S13T004251Spk2	50	0.2612g	0.50 ml Dionex 8 (1)	90	05-29-13 09:40
S13T004279	50	0.2456g		<0.5	05-29-13 09:41
S13T004306	50	0.2612g		15	05-29-13 09:41

(a) Sample (Wt./Each): For solid samples, record the weight in g (e.g., "0.25g"). For filter media, use "Each" (i.e., "1 each").
(b) Spike Added: Record the volume in mL and record the pipette number used in parentheses for each standard used, indicate the standard used (e.g., "0.5mL (3) Dionex8 + 1.0mL (1) Tc99").

Note: Observation of sample before and after prep. (i.e., sample appearance, digestate color, clarity, approx. % dissolved, and multiple phases).

Comments ***(For acidification, please refer to the procedure)***:

Sample size should be approximately 0.25 g.

First spike added is 2.5 mL of Dionex 8 to 47.5 mL DI Water.

Second spike added is 0.5 mL of Dionex 8 to 49.5 mL DI Water.

Parent sample IDs are shown on the SBDs.

Customer requests that we report appearance of samples after digestion and provide an estimate of the percent sample dissolved for each sample.

Digest instructions provided by SD Bolling. Stacey [illegible] 5/16/13

All Samples are a tan / light brown color. Samples 4251 & 4279 are dry where Sample 4306 is sludge-like. AW 05-29-13

Approximately 25% of the Samples dissolved. AW 05-29-13.

Filtrate for San 4251, 4279 & 4306 is Clear & Colorless. AW c 5-29-13

A-6005-368 (REV 1)

ATL	ION CHROMATOGRAPHY DATA REVIEW CHECKLIST	○ IH ◉ Non IH

○ LA-533-101 Rev _____ (Cat) (*) ○ LA-533-107 Rev _____ (846 Anions) (*)

○ LA-533-115 Rev _____ (IC6 Anions) (*) ○ LA-533-117 Rev _____ (IH Vapor) (*)

○ LA-533-166 Rev _____ (ICS 3000 Anions) (*) ◉ LA-503-157 Rev B-0-A (ICS 3000 IH Vapor) (*)

Worklist/Project Information: 41311 / C109 CLO / 20130402

Run Date(s): 05/16/13 Instrument Id: IC-10

Prep Batches Analyzed (Worklist #): 41241 Prep Method: LA-544-112

Review Items	Yes	No	N/A
A. Calibration/Instrument Run QC			
1. Instrument calibrated per procedure and at specified levels with correlation coefficient ≥ 0.995 linear or ≥ 0.999 quadratic?	◉	○	○
2. ICV/CCV analyzed at appropriate frequency and within control limits (Recovery: 90-110%)?	◉	○	○
3. ICB/CCB analyzed at required frequency and < EQL (or RL) or <5% of the lowest sample result with client consent. N/A if all samples are ND.	◉	○	○
4. LLS run and within control limits (Recovery: ☐ IH: 75-125% ☒ Non IH: 50-150%)? For IH, recovery is mandatory to verify RL.	◉	○	○
B. Sample Results			
1. Were samples with concentrations > calibration range for any analyte diluted and reanalyzed?	○	○	◉
2. Are there 10 or fewer samples run between bracketed, in-control QC?	◉	○	○
3. Were all target analytes properly identified and integrated?	◉	○	○
C. Preparation/Matrix QC			
1. LCS (Prep Std)/LCS Dup (Prep Std Dup), if required, prepared per prep batch and within control limits? Recovery: ☒ 80-120% or ☐ Statistical _____ or ☐ Client Specified _____ RPD: ☐ ≤ 20% or ☐ Statistical _____ or ☐ Client Specified _____	◉	○	○
2. Method/Media Blank prepared per prep batch and < EQL (or RL) or <5% of the lowest sample result?	◉	○	○
3. Sample Duplicate or MS Duplicate run at required frequency and within control limits? %RPD: ☐ ≤20% or ☒ Client-specified ≤30%	◉	○	○
4. MS run at required frequency and within control limit? Recovery: ☒ 75-125% or ☐ Client-specified _____	◉	○	○
D. Other			
1. Are current IDL / MDL / EQL / RL / RLS data on file?	◉	○	○
2. Calculations/transcriptions checked for errors?	◉	○	○
3. Are all raw data complete and verified in OmniLIMS?	◉	○	○
4. All client/project specific requirements met (e.g., MDL, holding times, etc.)?	◉	○	○
5. Date/time of analysis verified as correct?	◉	○	○
6. Prep/Breakdown Batch Benchsheet/Worklist properly completed and included, as required?	◉	○	○

(*) This form is not used by the subject procedure; rather, it is used to assist in verifying the data produced during the performance of the procedure.

A-6004-349 (REV 2)

ATL	ION CHROMATOGRAPHY DATA REVIEW CHECKLIST (continued)	○ IH ◉ Non IH

○ LA-533-101 Rev _____ (Cat) (*)
○ LA-533-107 Rev _____ (846 Anions) (*)
○ LA-533-115 Rev _____ (IC6 Anions) (*)
○ LA-533-117 Rev _____ (IH Vapor) (*)
○ LA-533-166 Rev _____ (ICS 3000 Anions) (*)
◉ LA-503-157 Rev B-0-A (ICS 3000 IH Vapor) (*)

Worklist/Project Information: 41311 / C109 CLO / 20130402

Run Date(s): 05/16/13 Instrument Id: IC-10

Prep Batches Analyzed (Worklist #): 41241 Prep Method: LA-544-112

Comments/Samples Affected (indicate review item letter and number):

C.2 The ammonium detected in the prep blank was < EQL yet > 5% of the lowest sample result therefore all samples have been "B" flagged. Since all samples and the prep blank were < EQL sample re-prep was not necessary.

1st Level Data Reviewer: Amanda Black (Signature) Date: 05/20/13

2nd Level Data Reviewer: Samuel A. Adams (Signature) Date: 05/21/2013

(*) This form is not used by the subject procedure; rather, it is used to assist in verifying the data produced during the performance of the procedure.

A-6004-349 (REV 2)

LABCORE Completed Batch Report for Batch# 00041311

Analyst: Stultz, Amber **Book#:** 90N29G

Instrument: IC-10

Method: IC - NH4, LA-503-157 Rev/Mod B-0-A

Specification: C109 CLO

Prep Batch: 00041241

Batch Comment:

IC Ammonia distillation for C 109 Closure. aks

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
Sample Sequence 1																	
1	CCV	S1305170092		0 0			Ammonium	LIQUID	3	3.0680E+00			0.012	ug/mL	102.27	% Recovery	
Sample Sequence 2																	
2	LLS	S1305170094		0 0			Ammonium	LIQUID	.12	1.2000E-01			0.012	ug/mL	100	% Recovery	
Sample Sequence 3																	
3	CCB	S1305170093		0 0			Ammonium	LIQUID		<1.2000E-02			0.012	ug/mL			
Sample Sequence 4																	
4	BLNK-PREP	S1305140052		0 0	S		Ammonium	LIQUID		4.3000E-02			0.012	ug/mL			
Sample Sequence 5																	
5	LCS	S1305140051		0 0	S		Ammonium	LIQUID	6	6.3640E+00			0.012	ug/mL	106.07	% Recovery	
Sample Sequence 6																	
6	SAMPLE	S13T004241		0 0	S		Ammonium	SOLID	N/A	2.7015E+00			0.5403	ug/g			BJ
Sample Sequence 7																	
7	DUP	S1305140053	S13T004241	0 0	S		Ammonium	SOLID	2.7015E+00	2.8073E+00			0.45524	ug/g	3.8417	% RPD	
Sample Sequence 8																	
8	SPK-PREDIG	S1305140054	S13T004241	0 0	S		Ammonium	SOLID	128.0956446	1.3237E+02			0.51238	ug/g	101.22	% Recovery	
Sample Sequence 9																	
9	SPK-IC	S1305170096	S13T004241	0 0			Ammonium	SOLID	303	3.1820E+00			0.012	ug/mL	104.07	% Recovery	
Sample Sequence 10																	
10	SAMPLE	S13T004268		0 0	S		Ammonium	SOLID	N/A	3.6166E+00			0.5425	ug/g			BJ
Sample Sequence 11																	
11	SAMPLE	S13T004295		0 0	S		Ammonium	SOLID	N/A	2.5537E+00			0.48642	ug/g			BJ
Sample Sequence 12																	
12	CCV	S1305170098		0 0			Ammonium	LIQUID	3	3.0890E+00			0.012	ug/mL	102.97	% Recovery	
Sample Sequence 13																	
13	LLS	S1305170100		0 0			Ammonium	LIQUID	.12	1.2000E-01			0.012	ug/mL	100	% Recovery	
Sample Sequence 14																	
14	CCB	S1305170099		0 0			Ammonium	LIQUID		<1.2000E-02			0.012	ug/mL			

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041311

Comments Section:

Data Flagger Status:
Flagging Completed

Final Page for Batch# 00041311

Amanda Black 05/20/13
Reviewer Signature Date

PC: Julie Osborn 7/2/13

LABCORE Completed Batch Report for Batch# 00041311

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Method	Customer Id	Specification
1	S1305170092	CCV			IC - NH4		
2	S1305170094	LLS			IC - NH4		
3	S1305170093	CCB			IC - NH4		
4	S1305140052	BLNK-PREP			IC - NH4		
5	S1305140051	LCS			IC - NH4		
6	S13T004241	SAMPLE		20130402	IC - NH4	9C-13-Comp A	C109 CLO
7	S1305140053	DUP	S13T004241		IC - NH4		
8	S1305140054	SPK-PREDIG	S13T004241		IC - NH4		
9	S1305170096	SPK-IC	S13T004241		IC - NH4		
10	S13T004268	SAMPLE		20130402	IC - NH4	9C-13-Comp B	C109 CLO
11	S13T004295	SAMPLE		20130402	IC - NH4	9C-13-Comp C	C109 CLO
12	S1305170098	CCV			IC - NH4		
13	S1305170100	LLS			IC - NH4		
14	S1305170099	CCB			IC - NH4		

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

* = Rejected Analyte
N, A = Non-reported Analyte

5/20/2013 2:47:01PM
IncompleteBatchShort Version 2.7.29
batchreports 2.7.32

LABCORE Data Entry Template for Batch# 00041311

Analyst: Stultz, Amber **Standard ID / Book#:** 90N29G

Instrument: IC-10

Method: IC - NH4, LA-503-157 Rev/Mod B-0-A

Prep Batch: 00041241

Batch Comment:

IC Ammonia distillation for C 109 Closure. aks

CACN:3A.26

S	Type	Sample	R	A	Matrix	Group#	Project
1	CCV	S1305170092	0		LIQUID		
	Analytes Requested:	Ammonium					
2	LLS	S1305170094	0		LIQUID		
	Analytes Requested:	Ammonium					
3	CCB	S1305170093	0		LIQUID		
	Analytes Requested:	Ammonium					
4	BLNK-PREP	S1305140052	0	S	LIQUID		
	Analytes Requested:	Ammonium					
5	LCS	S1305140051	0	S	LIQUID		
	Analytes Requested:	Ammonium					
6	SAMPLE	S13T004241	0	S	SOLID	20130402	C109 CLO
	Analytes Requested:	Ammonium					
7	DUP	S1305140053	0	S	SOLID		
	Analytes Requested:	Ammonium					
8	SPK-PREDIG	S1305140054	0	S	SOLID		
	Analytes Requested:	Ammonium					
9	SPK-IC	S1305170096	0		SOLID		
	Analytes Requested:	Ammonium					
10	SAMPLE	S13T004268	0	S	SOLID	20130402	C109 CLO
	Analytes Requested:	Ammonium					
11	SAMPLE	S13T004295	0	S	SOLID	20130402	C109 CLO
	Analytes Requested:	Ammonium					
12	CCV	S1305170098	0		LIQUID		
	Analytes Requested:	Ammonium					
13	LLS	S1305170100	0		LIQUID		
	Analytes Requested:	Ammonium					
14	CCB	S1305170099	0		LIQUID		
	Analytes Requested:	Ammonium					

Final Page for Batch# 00041311

Analyst Signature — 5/21/2013 Date

Data Entry Signature — 5/20/2013 Date

Data Entry Comments:

S = Batch Slot Number, R = Retest Number, A = Aliquot Code.

5/20/2013 1:04:23PM
IncompleteBatchShort Version 2.7.29
batchreports 2.7.32

LABCORE Data Entry Template for Batch# 00041241

Analyst: Shaw, Levi **Standard ID / Book#:** See Bench Sheet

Instrument: LE-BAL-087

Method: NH4 DIST, LA-544-112 Rev/Mod G-0

Prep Batch: N/A

Batch Comment: N/A

CACN:3A.26

S	Type	Sample	R	A	Matrix	Group#	Project
1	LCS	S1305140051		S	LIQUID		
2	BLNK-PREP	S1305140052		S	LIQUID		
3	SAMPLE	S13T004241		S	SOLID	20130402	C109 CLO
4	DUP	S1305140053		S	SOLID		
5	SPK-PREDIG	S1305140054		S	SOLID		
6	SAMPLE	S13T004268		S	SOLID	20130402	C109 CLO
7	SAMPLE	S13T004295		S	SOLID	20130402	C109 CLO

Final Page for Batch# 00041241

Analyst Signature 05/22/13 Date

Data Entry Signature 05/22/13 Date

Data Entry Comments:

S = Batch Slot Number, R = Retest Number, A = Aliquot Code.

ATL	IC INSTRUMENT RUN BENCH SHEET	○ IH	◉ Non IH

○ LA-533- N/A Rev: N/A , ◉ LA-503- 157 Rev: B-0-A

Client Name/Project: C 109 Closure

Batch #: 00041311 Date/Time Start: 05/16/2013 /1339

Analyst: AKS Date/Time End: 05/16/2013 /1715

Calibration Date: 05/16/2013 Log Book/Page Number: HNF-N-577 1 PAGE:141/142

Standard/Reagent	Lot/Book No.	Exp. Date	Standard/Reagent	Lot/Book No.	Exp. Date
CCV	90N29G	07/01/2013	SPIKE	N/A	N/A
ICV	N/A	N/A	Eluent: MSA	121021190021	10/2014
LLS	90N29G	07/01/2013	Q WATER	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A

(Pipette #); Pipette ID; Volume Range or Fixed Volume; Check box if pipette passes visual verification:

1) 462340Z (Range/Vol: .01mL-0.1mL) ☒ 4) N/A (Range/Vol: N/A) ☐

2) 394694A (Range/Vol: 0.1mL-1.0mL) ☒ 5) N/A (Range/Vol: N/A) ☐

3) 363436Z (Range/Vol: 1.0mL-10.0mL) ☒ 6) N/A (Range/Vol: N/A) ☐

Sample Number	Sample Vol. 1 (mL)	Pip. #	Spike Vol. 1 (mL)	Pip. #	Diluent Vol. 1 (mL)	Pip. #	*Sample Vol. 2 (mL)	Pip. #	Spike Vol. 2 (mL)	Pip. #	Diluent Vol. 2 (mL)	Pip. #	Total Dilution Factor
CCV 1	/	/	0.05	1	4.95	3	/	/	/	/	/	/	100
LLS 1	/	/	0.05	1	4.95	3	0.2	2	/	/	4.8	3	2500
CCB 1	DIRECT												1
PREP BLANK	DIRECT												1
LCS	DIRECT												1
S13T04241	DIRECT												1
S13T04241 DUP	DIRECT												1
S13T04241 SPK	DIRECT												1
S13T04241 PSPK	DIRECT		0.05	1	5.0	3							1.01
S13T04268	DIRECT												1
S13T04295	DIRECT												1
CCV 2	/	/	0.05	1	4.95	3	/	/	/	/	/	/	100
LLS 2	/	/	0.05	1	4.95	3	0.2	2	/	/	4.8	3	2500
CCB 2	DIRECT												1

*Sample Volume 2 is taken from the first dilution

Comments:

ATL	AMMONIA DISTILLATION BENCH SHEET	LA-544-112 Rev G-0

Project: C109 CLO

Batch #: 0041241 Analyst Name: Levi Shaw

Date/Time Start: 05/14/13 / 1500 Date/Time End: 05/14/13 / 1645

(Pipette #); Pipette Id; Volume Range or Fixed Volume; Check box if pipette passes visual verification:

(1) 141588Z (Range/Vol: 0.01-0.1mL) ☒

(2) 1139659 (Range/Vol: 0.1-1.0mL) ☒

(3) NA (Range/Vol: NA) ☐

(4) NA (Range/Vol: NA) ☐

Standard	ID or Lot #	Exp. Date
LCS Standard	90N29G	07/01/13
Spike Standard	90N29G	07/01/13
H2SO4	130514-1	06/14/13
NaOH	115N22E	11/05/13
Balance Number	LE-BAL 087	

Sample Name / Number	Volume of Standard (mL)	Pipette #	Volume / Weight of Sample	Pipette #	Total Volume (mL)	Dilution Factor (DF)
Prep Blank	0	-	-	-	10	1
Prep Std (LCS)	0.2	2	-	-	10	50
S13T004241	0	-	0.2221	-	10	N/A 45.02
S13T004241 dup	0	-	0.2636	-	10	N/A 37.94
S13T004241 spk	0.1	1	0.2342	-	10	N/A 42.70*
S13T004268	0	-	0.2212	-	10	N/A 45.21
S13T004295	0	-	0.2467	-	10	N/A 40.54

AB 05/20/13

Comments:

* spk dilution factor = 100

AB 05/20/13

A-6005-331 (REV 0)

Sequence: 130516
Operator: H4868194

Printed: 5/20/2013 2:10:23 PM

Title:
Datasource: WC95579_local
Location: IC-10
Timebase: IC_10
#Samples: 26

Created: 5/16/2013 9:21:11 AM by inorganic
(Modified, not saved)

No.	Name	Type	Pos.	Inj. Vol.	Program	Method	Status	Inj. Date/Time	Dil. Factor
1	BLANK	Unknown	8	5.0	ammonium	J&J#1	Finished	5/16/2013 9:25:27 AM	1.0000
2	BLANK	Unknown	8	5.0	ammonium	J&J#1	Finished	5/16/2013 9:42:05 AM	1.0000
3	Std 1	Standard	1	5.0	ammonium	J&J#1	Finished	5/16/2013 9:58:42 AM	1.0000
4	Std 2	Standard	2	5.0	ammonium	J&J#1	Finished	5/16/2013 10:15:19 AM	1.0000
5	Std 3	Standard	3	5.0	ammonium	J&J#1	Finished	5/16/2013 10:31:56 AM	1.0000
6	Std 4	Standard	4	5.0	ammonium	J&J#1	Finished	5/16/2013 10:48:33 AM	1.0000
7	Std 5	Standard	5	5.0	ammonium	J&J#1	Finished	5/16/2013 11:05:10 AM	1.0000
8	ICV 100x	Unknown	6	5.0	ammonium	J&J#1	Finished	5/16/2013 11:21:47 AM	1.0000
9	LLS 2500x	Unknown	7	5.0	ammonium	J&J#1	Finished	5/16/2013 11:38:23 AM	1.0000
10	ICB	Unknown	8	5.0	ammonium	J&J#1	Finished	5/16/2013 11:55:00 AM	1.0000
11	CCV 100X 1	Unknown	9	5.0	ammonium	J&J#1	Finished	5/16/2013 12:11:37 PM	1.0000
* 12	CCV 100X 1	Unknown	2	5.0	ammonium	J&J#1	Finished	5/16/2013 1:39:25 PM	1.0000
13	LLS 2500X 1	Unknown	3	5.0	ammonium	J&J#1	Finished	5/16/2013 1:56:02 PM	1.0000
14	CCB 1	Unknown	1	5.0	ammonium	J&J#1	Finished	5/16/2013 2:12:40 PM	1.0000
15	PREP BLANK	Unknown	4	5.0	ammonium	J&J#1	Finished	5/16/2013 2:29:16 PM	1.0000
16	LCS	Unknown	5	5.0	ammonium	J&J#1	Finished	5/16/2013 2:45:53 PM	1.0000
17	S13T04241 SAM	Unknown	6	5.0	ammonium	J&J#1	Finished	5/16/2013 3:02:29 PM	1.0000
18	S13T04241 DUP	Unknown	7	5.0	ammonium	J&J#1	Finished	5/16/2013 3:19:06 PM	1.0000
19	S13T04241 SPK	Unknown	8	5.0	ammonium	J&J#1	Finished	5/16/2013 3:35:43 PM	1.0000
20	S13T04241 P.SPK	Unknown	9	5.0	ammonium	J&J#1	Finished	5/16/2013 3:52:19 PM	1.0100
21	S13T04268	Unknown	10	5.0	ammonium	J&J#1	Finished	5/16/2013 4:08:56 PM	1.0000
22	S13T04295	Unknown	11	5.0	ammonium	J&J#1	Finished	5/16/2013 4:25:32 PM	1.0000
23	CCV 100X 2	Unknown	2	5.0	ammonium	J&J#1	Finished	5/16/2013 4:42:08 PM	1.0000
24	LLS 2500X 2	Unknown	3	5.0	ammonium	J&J#1	Finished	5/16/2013 4:58:45 PM	1.0000
25	CCB 2	Unknown	1	5.0	ammonium	J&J#1	Finished	5/16/2013 5:15:22 PM	1.0000
26	shutdown	Unknown	1	5.0	Shutdown	J&J#1	Interrupted	5/16/2013 5:31:59 PM	1.0000

Chromeleon © Dionex Corporation, Version 6.80 SR11d Build 3302 (196279)

Sequence: 130516
Operator: H4868194

Printed: 5/20/2013 2:10:23 PM

Title:
Datasource: WC95579_local
Location: IC-10
Timebase: IC_10
#Samples: 26

Created: 5/16/2013 9:21:11 AM by inorganic
(Modified, not saved)

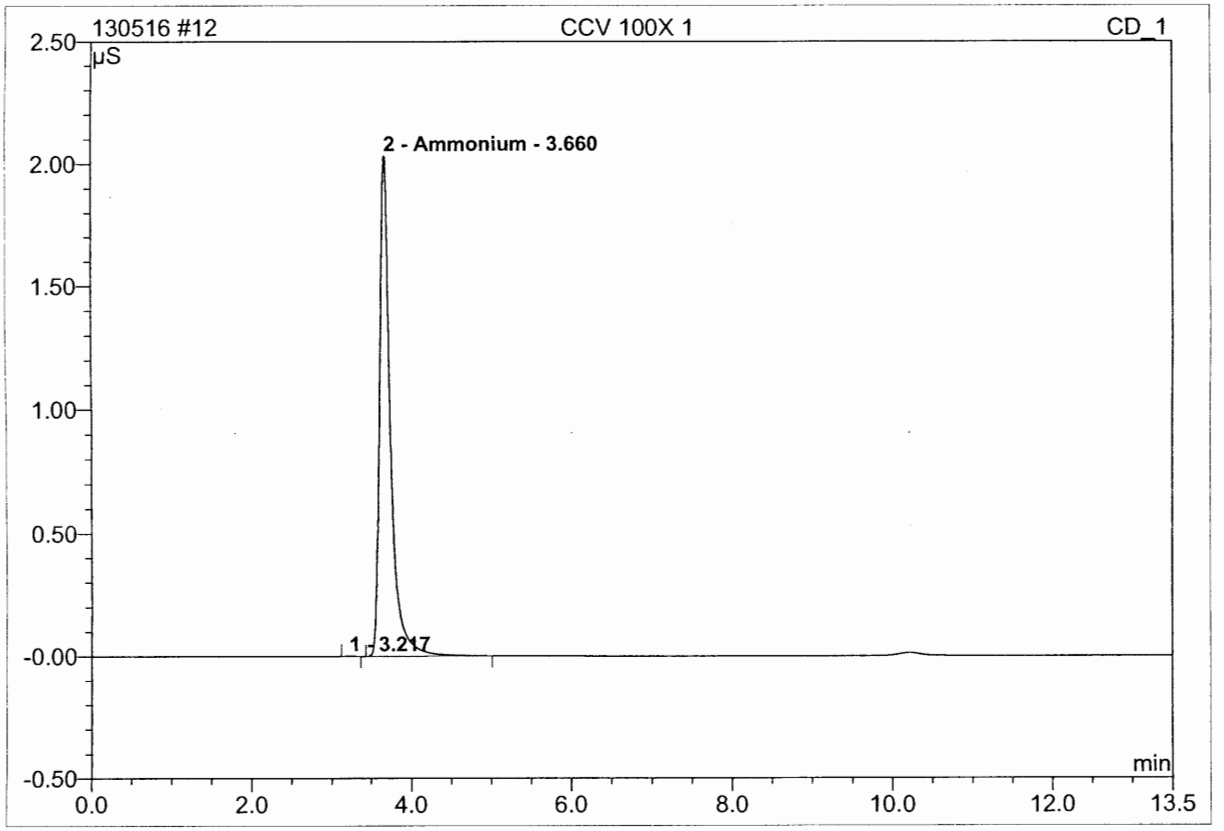
	No.	Name	Comment	Amount [ug/mL] Ammonium CD_1	Area [µS*min] Ammonium CD_1
	1	BLANK		n.a.	n.a.
	2	BLANK		n.a.	n.a.
	3	Std 1	2500x 90N29G	0.117	0.010
	4	Std 2	300x 90N29G	1.039	0.110
	5	Std 3	100x 90N29G	2.966	0.308
	6	Std 4	40x 90N29G	7.466	0.706
	7	Std 5	25x 90N29G	12.037	1.019
	8	ICV 100x	91N29G	3.134	0.324
	9	LLS 2500x	90N29G	0.119	0.010
	10	ICB		n.a.	n.a.
	11	CCV 100X 1		3.106	0.321
*	12	CCV 100X 1		3.068	0.318
	13	LLS 2500X 1		0.120	0.010
	14	CCB 1		n.a.	n.a.
	15	PREP BLANK		0.043	0.001
	16	LCS	90N29G	6.364	0.616
	17	S13T04241 SAM		0.060	0.003
	18	S13T04241 DUP		0.074	0.005
	19	S13T04241 SPK	90N29G	3.100	0.321
	20	S13T04241 P.SPK	90N29G	3.182	0.326
	21	S13T04268		0.080	0.005
	22	S13T04295		0.063	0.004
	23	CCV 100X 2	90N29G	3.089	0.320
	24	LLS 2500X 2	90N29G	0.120	0.010
	25	CCB 2		n.a.	n.a.
	26	shutdown		n.a.	n.a.

*Data included in this report.
AB
05/20/13

Chromeleon © Dionex Corporation, Version 6.80 SR11d Build 3302 (196279)

12 CCV 100X 1

Sample Name:	**CCV 100X 1**	*Injection Volume:*	**5.0**
Vial Number:	**2**	*Channel:*	**CD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**ammonium**	*Bandwidth:*	**n.a.**
Quantif. Method:	**J&J#1**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/16/2013 13:39**	*Sample Weight:*	**1.0000**
Run Time (min):	**13.50**	*Sample Amount:*	**1.0000**



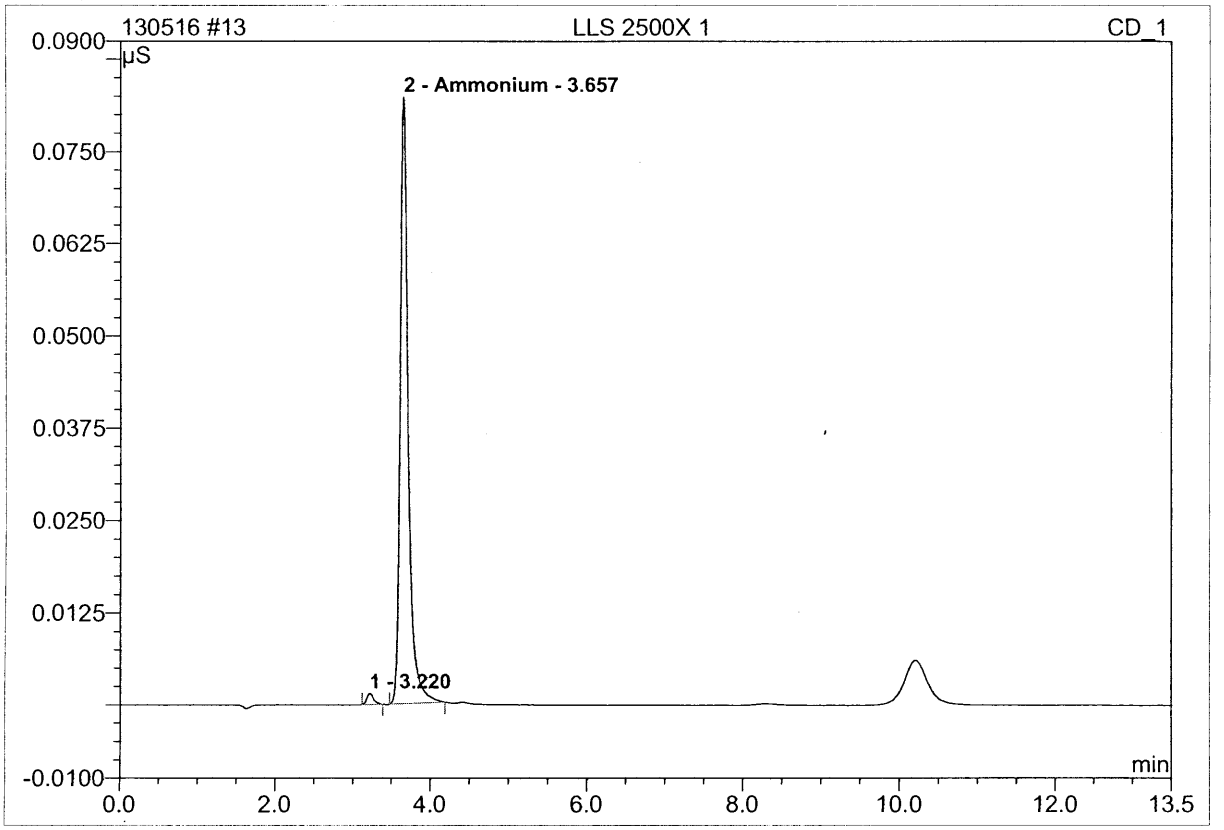
No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount ug/mL	Type
1	3.22	n.a.	0.002	0.000	0.05	n.a.	BMB
2	3.66	Ammonium	2.033	0.318	99.95	3.068	BMB
Total:			2.034	0.318	100.00	3.068	

Operator:h7263205 Timebase:IC_10 Sequence:130516

5/17/2013 1:49 PM

13 LLS 2500X 1

Sample Name:	**LLS 2500X 1**	*Injection Volume:*	**5.0**
Vial Number:	**3**	*Channel:*	**CD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**ammonium**	*Bandwidth:*	**n.a.**
Quantif. Method:	**J&J#1**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/16/2013 13:56**	*Sample Weight:*	**1.0000**
Run Time (min):	**13.50**	*Sample Amount:*	**1.0000**



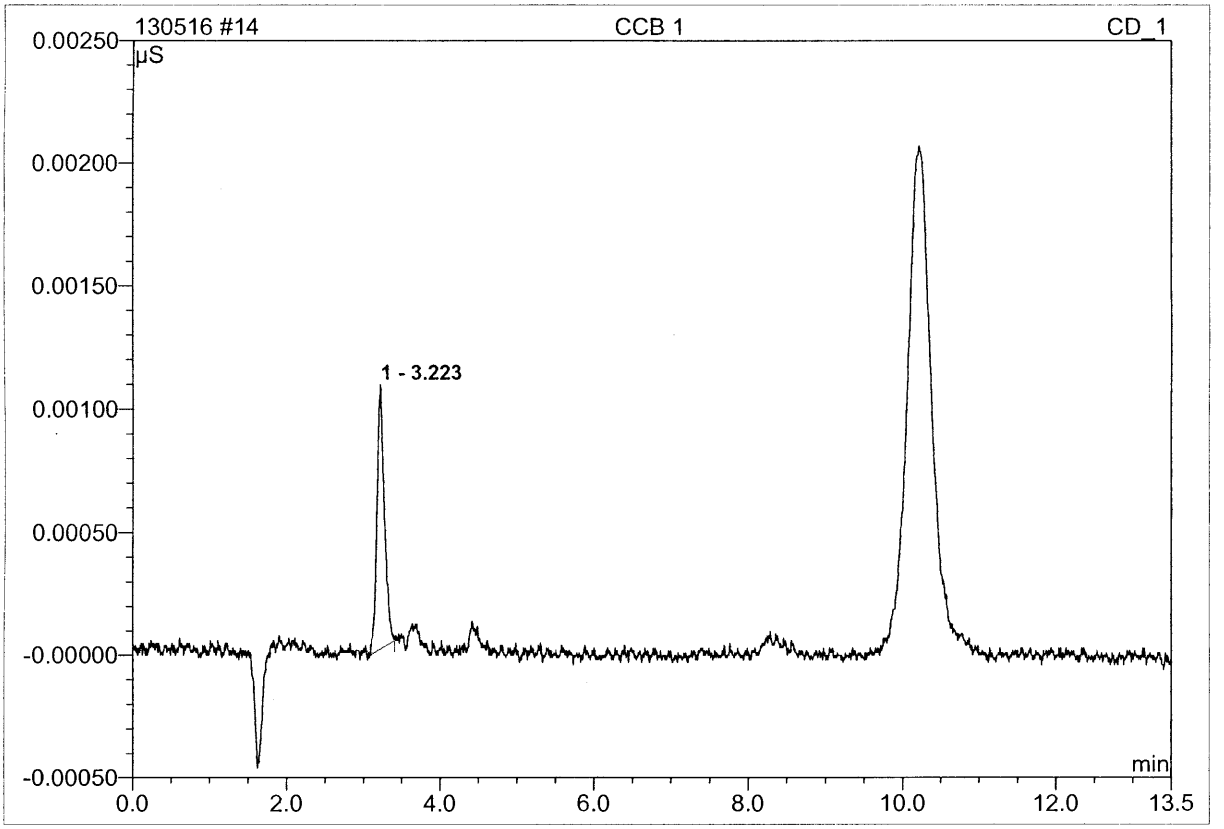
No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount ug/mL	Type
1	3.22	n.a.	0.002	0.000	1.59	n.a.	BMB
2	3.66	Ammonium	0.082	0.010	98.41	0.120	BMB
Total:			0.084	0.010	100.00	0.120	

default/Integration

Chromeleon (c) Dionex 1996-2006
Version 6.80 SR11d Build 3302 (196279)

14 CCB 1

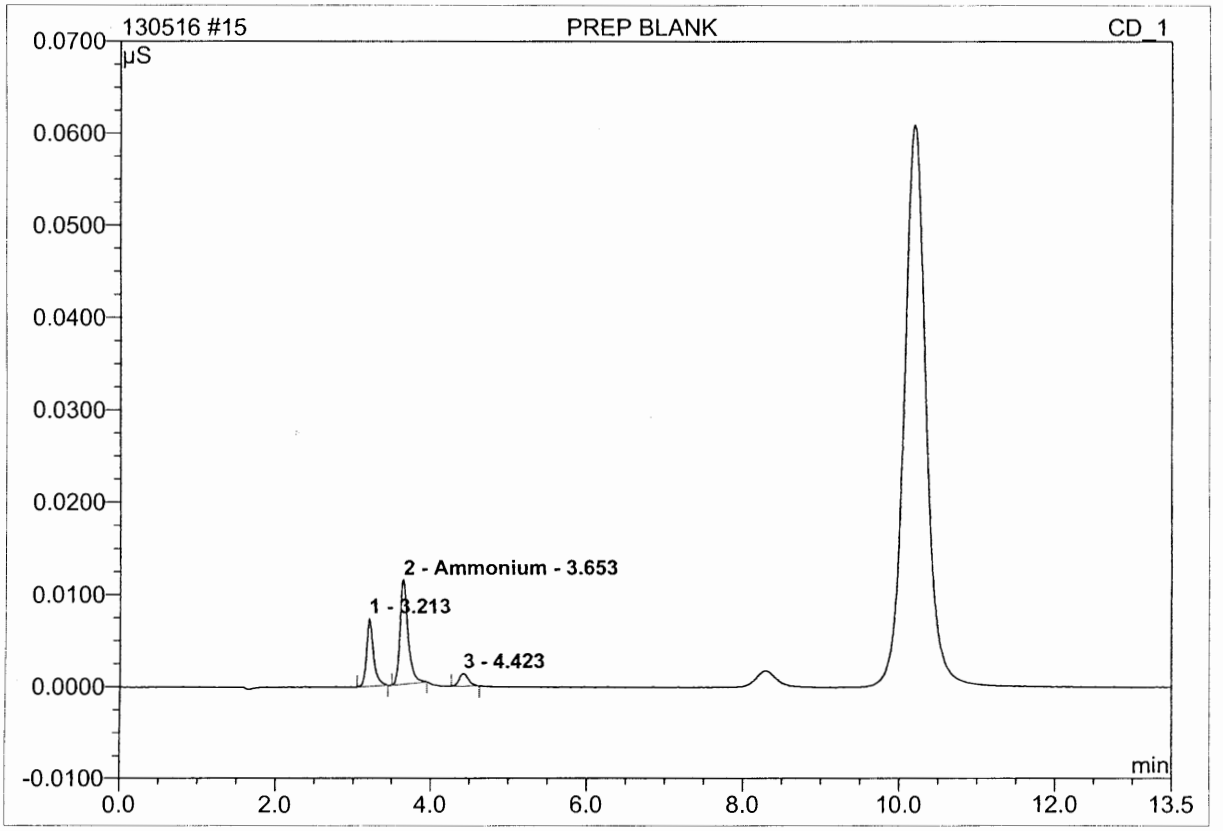
Sample Name:	**CCB 1**	*Injection Volume:*	**5.0**
Vial Number:	**1**	*Channel:*	**CD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**ammonium**	*Bandwidth:*	**n.a.**
Quantif. Method:	**J&J#1**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/16/2013 14:12**	*Sample Weight:*	**1.0000**
Run Time (min):	**13.50**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount ug/mL	Type
1	3.22	n.a.	0.001	0.000	100.00	n.a.	BMB
Total:			0.001	0.000	100.00	0.000	

15 PREP BLANK

Sample Name:	**PREP BLANK**	*Injection Volume:*	**5.0**
Vial Number:	**4**	*Channel:*	**CD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**ammonium**	*Bandwidth:*	**n.a.**
Quantif. Method:	**J&J#1**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/16/2013 14:29**	*Sample Weight:*	**1.0000**
Run Time (min):	**13.50**	*Sample Amount:*	**1.0000**

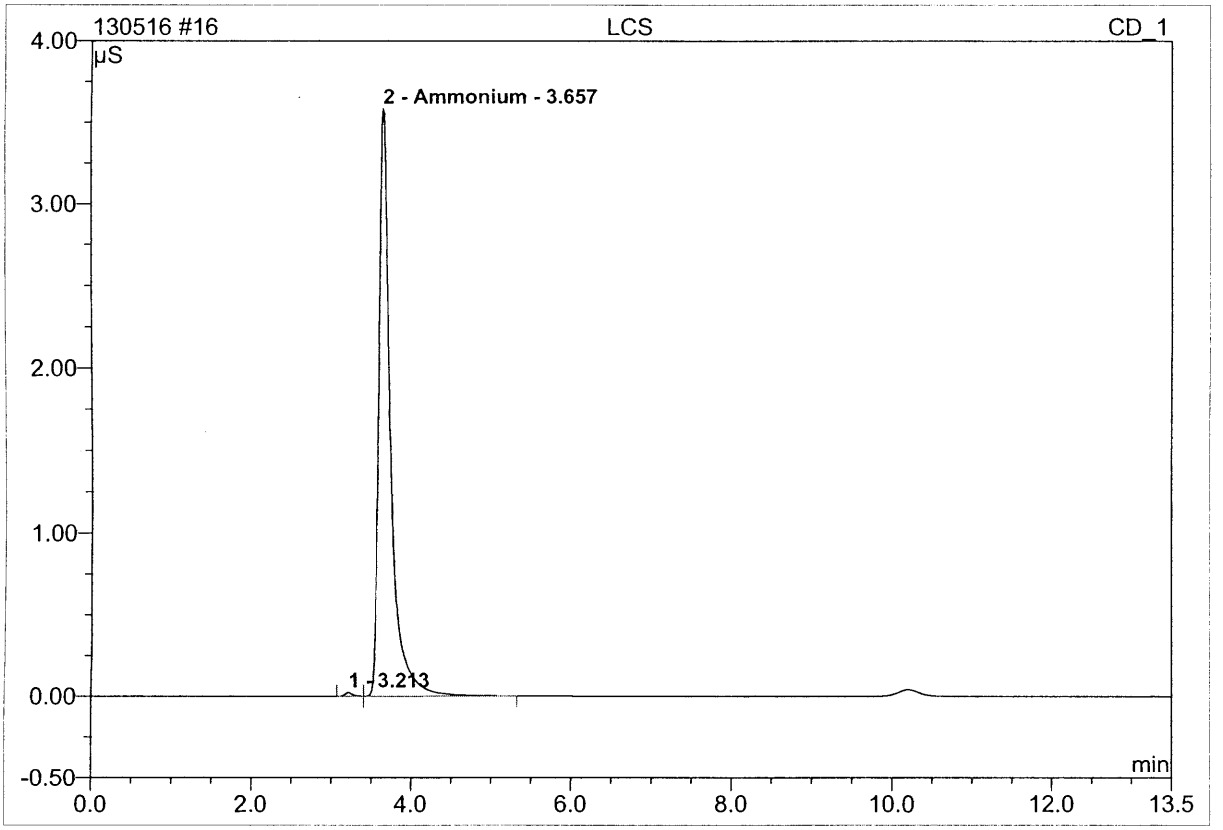


No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount ug/mL	Type
1	3.21	n.a.	0.007	0.001	34.42	n.a.	BMB
2	3.65	Ammonium	0.011	0.001	57.58	0.043	BMB
3	4.42	n.a.	0.001	0.000	8.01	n.a.	BMB
Total:			0.020	0.002	100.00	0.043	

16 LCS

90N29G

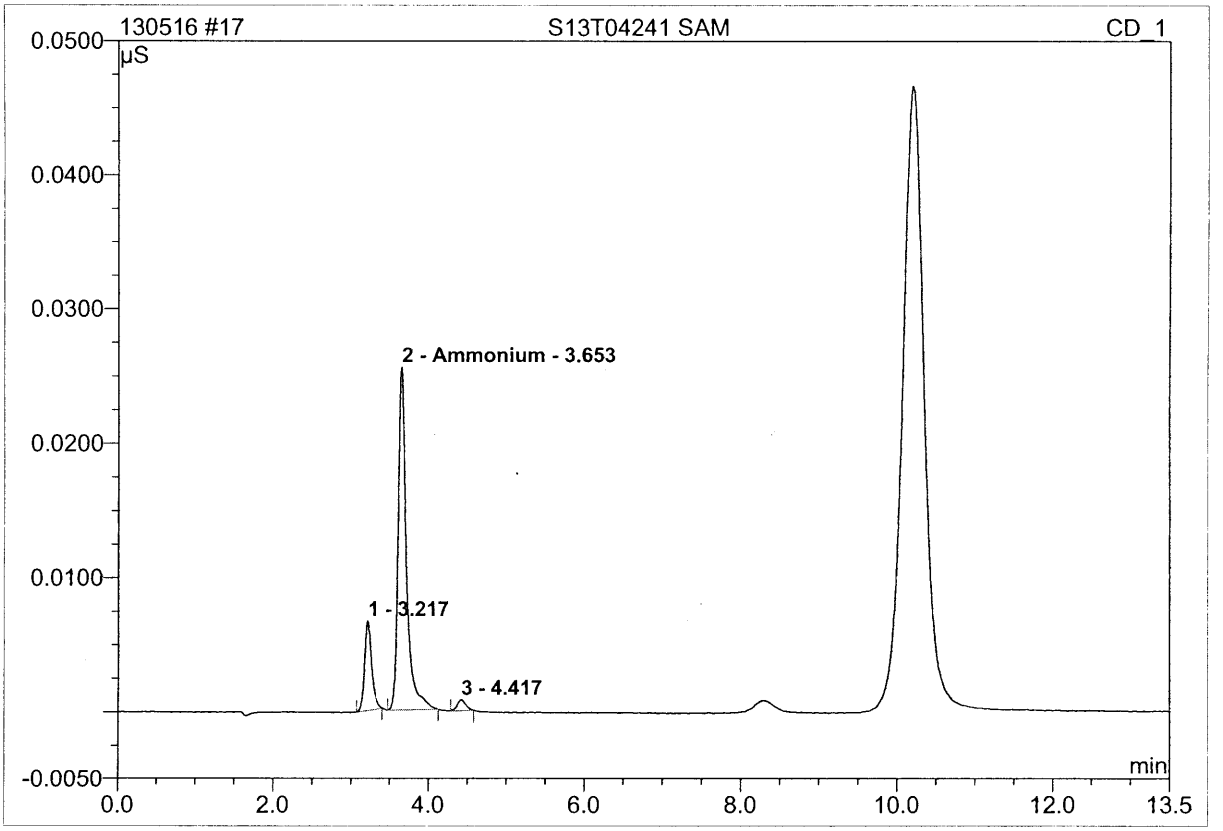
Sample Name:	**LCS**	*Injection Volume:*	**5.0**
Vial Number:	**5**	*Channel:*	**CD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**ammonium**	*Bandwidth:*	**n.a.**
Quantif. Method:	**J&J#1**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/16/2013 14:45**	*Sample Weight:*	**1.0000**
Run Time (min):	**13.50**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount ug/mL	Type
1	3.21	n.a.	0.024	0.002	0.40	n.a.	BM
2	3.66	Ammonium	3.585	0.616	99.60	6.364	MB
Total:			3.609	0.619	100.00	6.364	

17 S13T04241 SAM

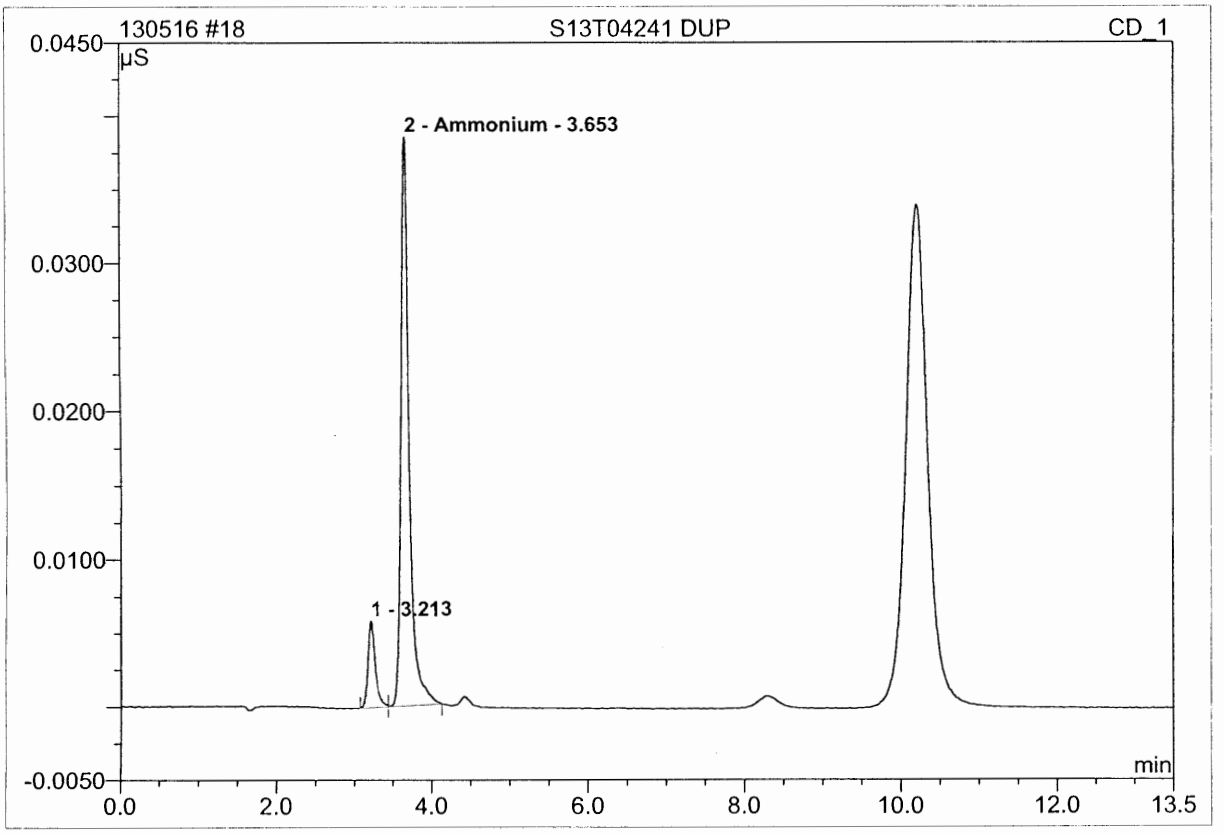
Sample Name:	**S13T04241 SAM**	*Injection Volume:*	**5.0**
Vial Number:	**6**	*Channel:*	**CD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**ammonium**	*Bandwidth:*	**n.a.**
Quantif. Method:	**J&J#1**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/16/2013 15:02**	*Sample Weight:*	**1.0000**
Run Time (min):	**13.50**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount ug/mL	Type
1	3.22	n.a.	0.007	0.001	17.73	n.a.	BMB
2	3.65	Ammonium	0.026	0.003	79.65	0.060	BMB
3	4.42	n.a.	0.001	0.000	2.62	n.a.	BMB
Total:			0.033	0.004	100.00	0.060	

18 S13T04241 DUP

Sample Name:	**S13T04241 DUP**	*Injection Volume:*	**5.0**
Vial Number:	**7**	*Channel:*	**CD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**ammonium**	*Bandwidth:*	**n.a.**
Quantif. Method:	**J&J#1**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/16/2013 15:19**	*Sample Weight:*	**1.0000**
Run Time (min):	**13.50**	*Sample Amount:*	**1.0000**

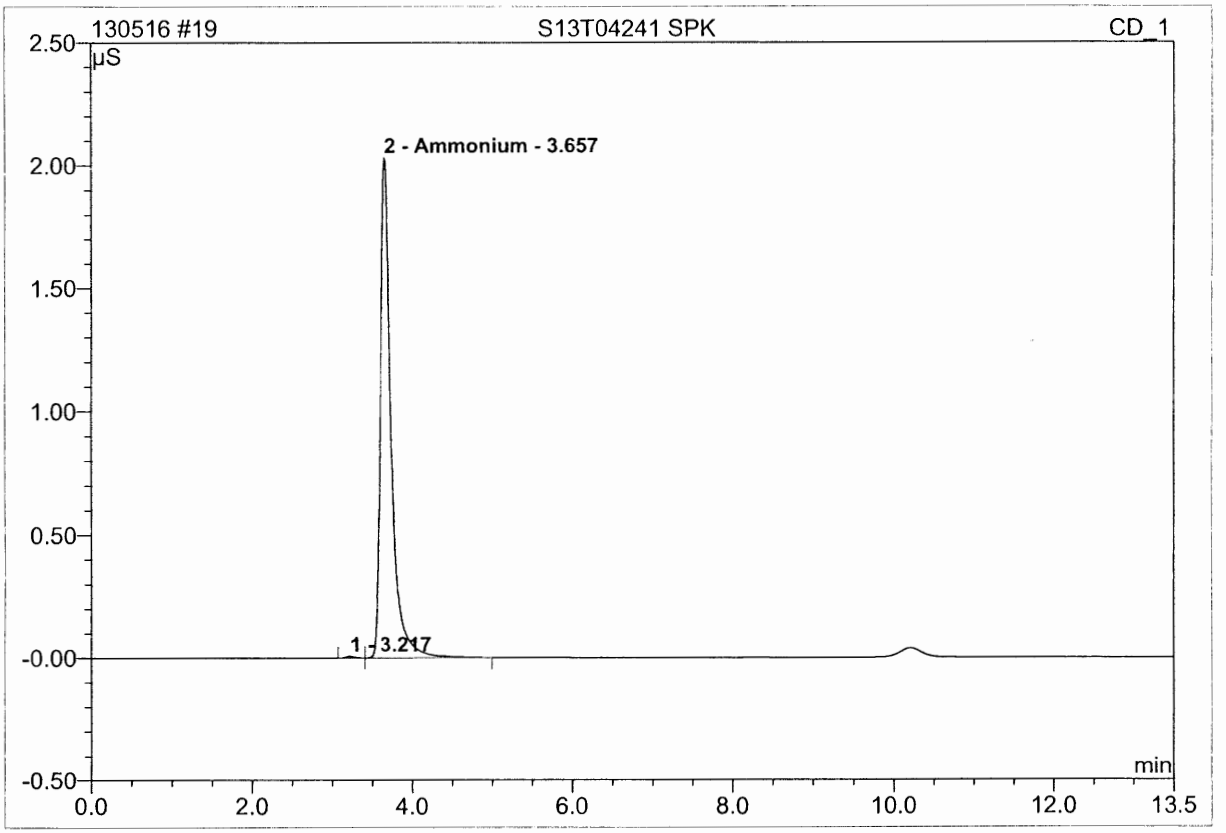


No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount ug/mL	Type
1	3.21	n.a.	0.006	0.001	12.22	n.a.	BM
2	3.65	Ammonium	0.039	0.005	87.78	0.074	MB
Total:			0.044	0.005	100.00	0.074	

19 S13T04241 SPK

90N29G

Sample Name:	**S13T04241 SPK**	*Injection Volume:*	**5.0**
Vial Number:	**8**	*Channel:*	**CD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**ammonium**	*Bandwidth:*	**n.a.**
Quantif. Method:	**J&J#1**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/16/2013 15:35**	*Sample Weight:*	**1.0000**
Run Time (min):	**13.50**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount ug/mL	Type
1	3.22	n.a.	0.007	0.001	0.22	n.a.	BM
2	3.66	Ammonium	2.032	0.321	99.78	3.100	MB
Total:			2.039	0.321	100.00	3.100	

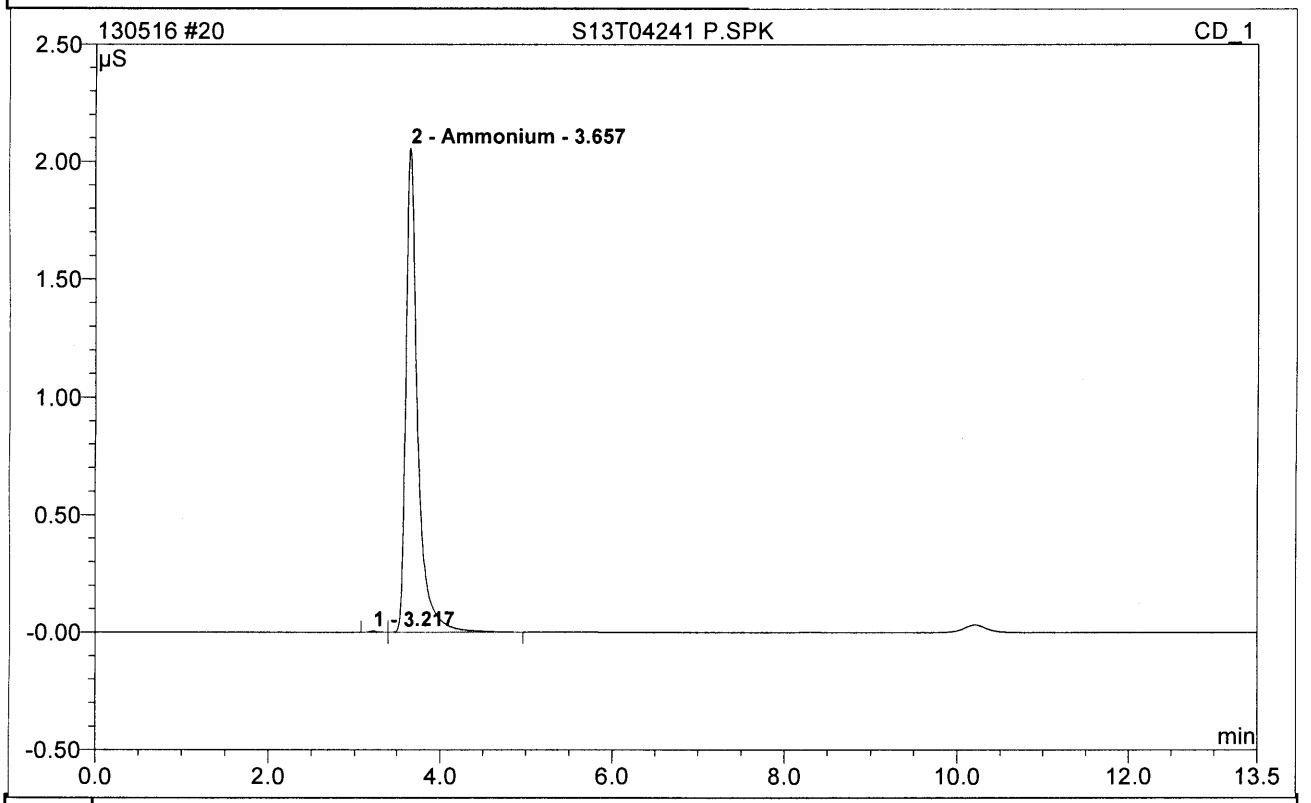
Operator:H4868194 Timebase:IC_10 Sequence:130516

5/20/2013 2:10 PM

20 S13T04241 P.SPK

90N29G

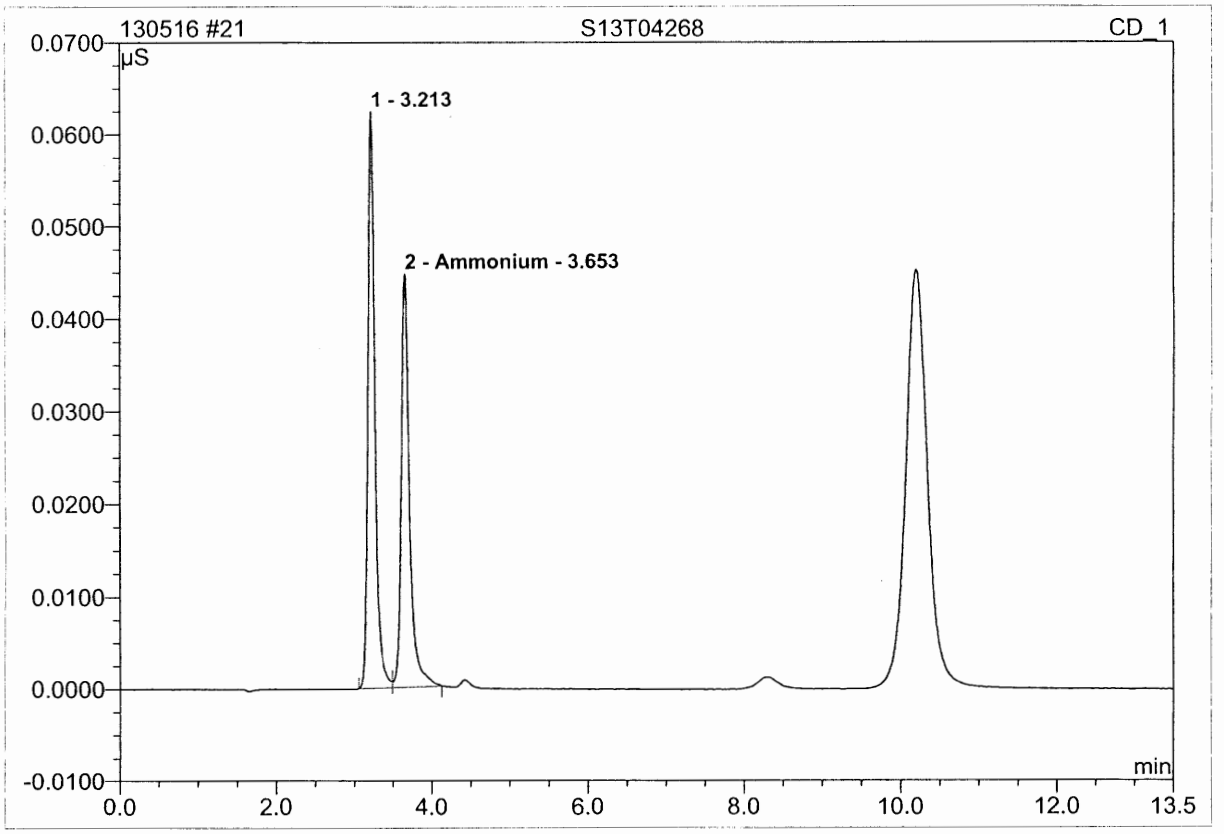
Sample Name:	**S13T04241 P.SPK**	*Injection Volume:*	**5.0**
Vial Number:	**9**	*Channel:*	**CD_1**
Sample Type:	**unknown**	*Bandwidth:*	**n.a.**
Control Program:	**ammonium**	*Dilution Factor:*	**1.0100**
Quantif. Method:	**J&J#1**	*Sample Weight:*	**1.0000**
Recording Time:	**5/16/2013 15:52**	*Sample Amount:*	**1.0000**
Run Time (min):	**13.50**		



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount ug/mL	Type
1	3.22	n.a.	0.006	0.001	0.19	n.a.	BM
2	3.66	Ammonium	2.057	0.326	99.81	3.182	MB
Total:			2.062	0.326	100.00	3.182	

21 S13T04268

Sample Name:	**S13T04268**	*Injection Volume:*	**5.0**
Vial Number:	**10**	*Channel:*	**CD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**ammonium**	*Bandwidth:*	**n.a.**
Quantif. Method:	**J&J#1**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/16/2013 16:08**	*Sample Weight:*	**1.0000**
Run Time (min):	**13.50**	*Sample Amount:*	**1.0000**



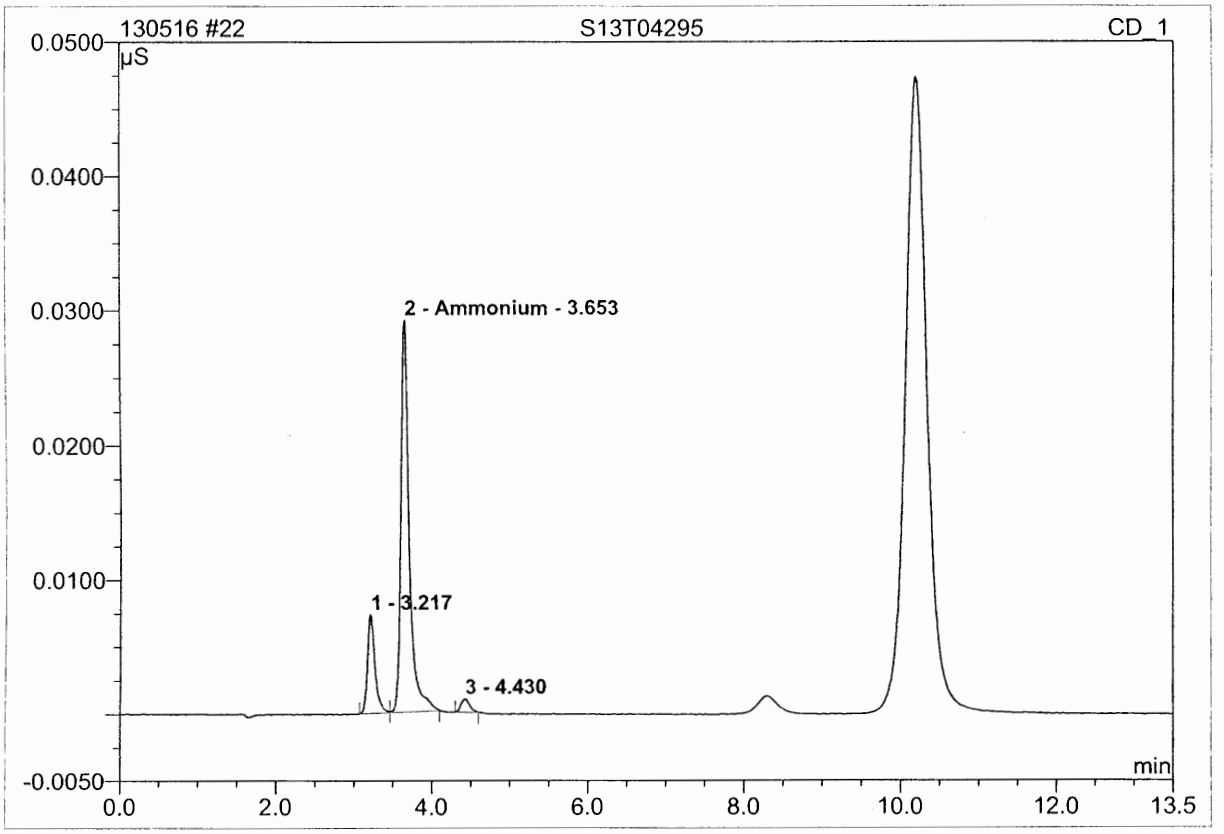
No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount ug/mL	Type
1	3.21	n.a.	0.062	0.007	54.26	n.a.	BM
2	3.65	Ammonium	0.045	0.005	45.74	0.080	MB
Total:			0.107	0.012	100.00	0.080	

Operator:h7263205 Timebase:IC_10 Sequence:130516

5/17/2013 1:49 PM

22 S13T04295

Sample Name:	**S13T04295**	*Injection Volume:*	**5.0**
Vial Number:	**11**	*Channel:*	**CD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**ammonium**	*Bandwidth:*	**n.a.**
Quantif. Method:	**J&J#1**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/16/2013 16:25**	*Sample Weight:*	**1.0000**
Run Time (min):	**13.50**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount ug/mL	Type
1	3.22	n.a.	0.007	0.001	17.93	n.a.	BM
2	3.65	Ammonium	0.029	0.004	79.15	0.063	MB
3	4.43	n.a.	0.001	0.000	2.93	n.a.	BMB
Total:			0.037	0.005	100.00	0.063	

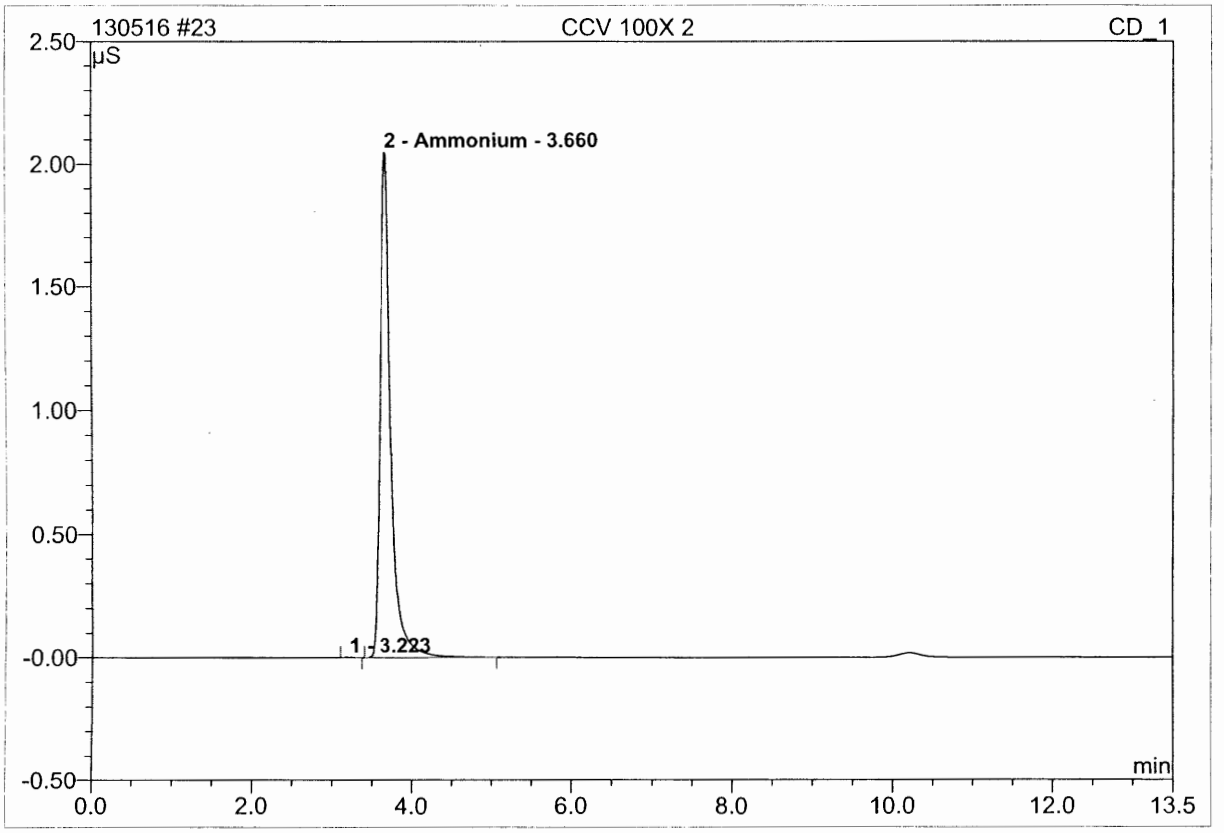
default/Integration

Chromeleon (c) Dionex 1996-2006
Version 6.80 SR11d Build 3302 (196279)

23 CCV 100X 2

90N29G

Sample Name:	**CCV 100X 2**	*Injection Volume:*	**5.0**
Vial Number:	**2**	*Channel:*	**CD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**ammonium**	*Bandwidth:*	**n.a.**
Quantif. Method:	**J&J#1**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/16/2013 16:42**	*Sample Weight:*	**1.0000**
Run Time (min):	**13.50**	*Sample Amount:*	**1.0000**

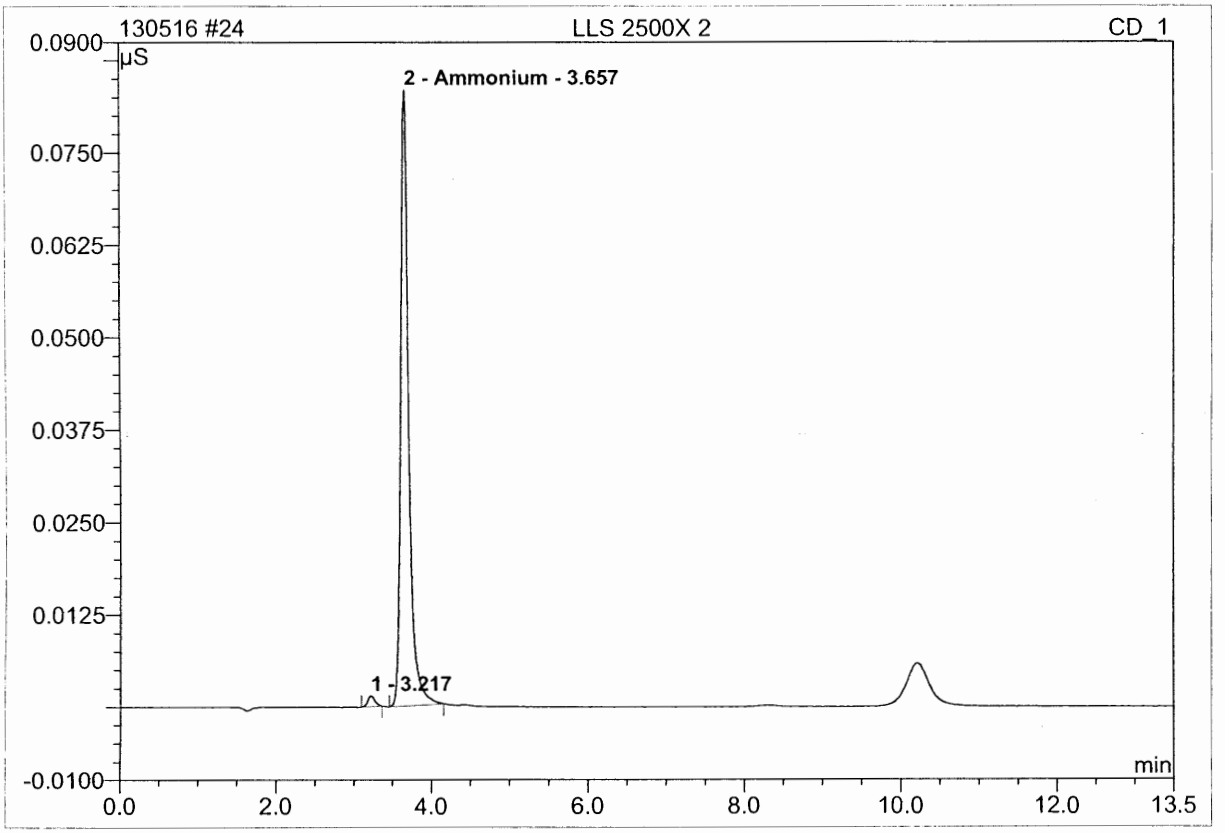


No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount ug/mL	Type
1	3.22	n.a.	0.002	0.000	0.05	n.a.	BMB
2	3.66	Ammonium	2.049	0.320	99.95	3.089	BMB
Total:			2.051	0.320	100.00	3.089	

24 LLS 2500X 2

90N29G

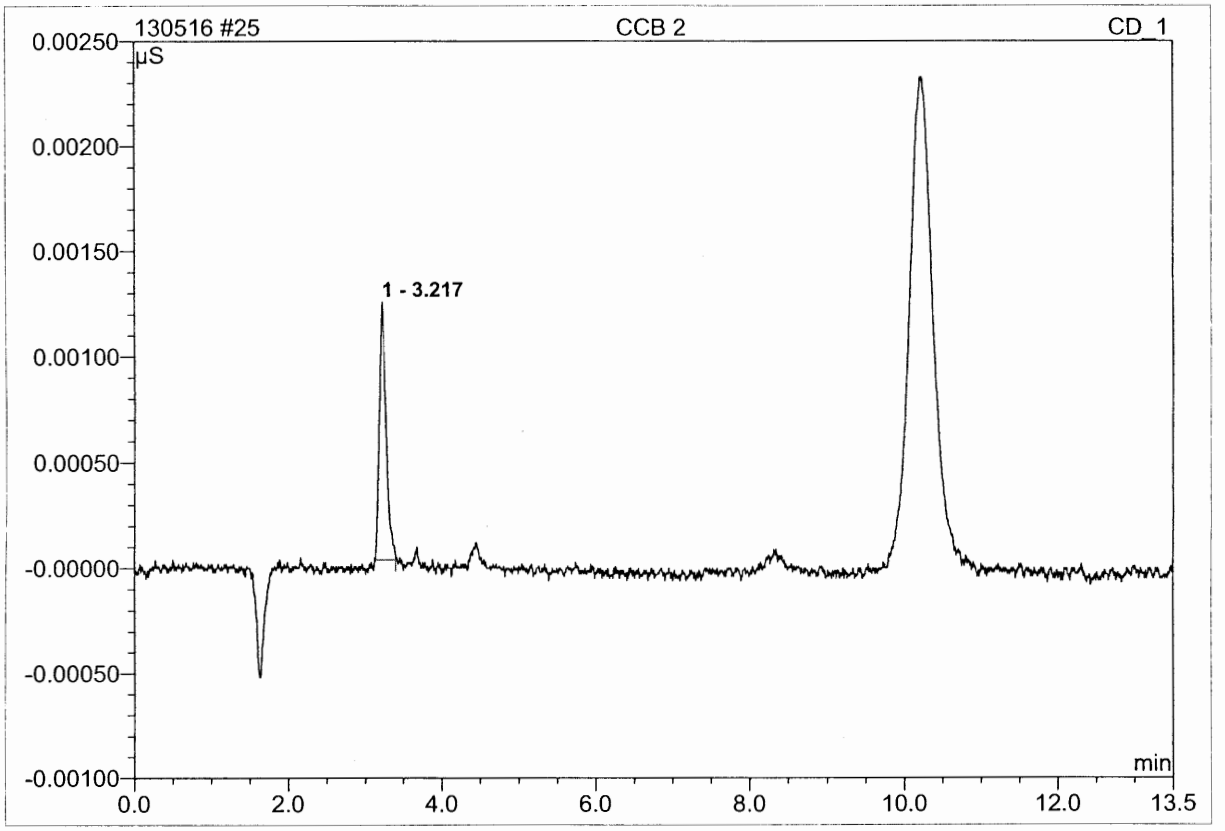
Sample Name:	**LLS 2500X 2**	*Injection Volume:*	**5.0**
Vial Number:	**3**	*Channel:*	**CD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**ammonium**	*Bandwidth:*	**n.a.**
Quantif. Method:	**J&J#1**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/16/2013 16:58**	*Sample Weight:*	**1.0000**
Run Time (min):	**13.50**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount ug/mL	Type
1	3.22	n.a.	0.001	0.000	1.56	n.a.	BMB
2	3.66	Ammonium	0.083	0.010	98.44	0.120	BMB
Total:			0.085	0.010	100.00	0.120	

25 CCB 2

Sample Name:	**CCB 2**	*Injection Volume:*	**5.0**
Vial Number:	**1**	*Channel:*	**CD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**ammonium**	*Bandwidth:*	**n.a.**
Quantif. Method:	**J&J#1**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/16/2013 17:15**	*Sample Weight:*	**1.0000**
Run Time (min):	**13.50**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount ug/mL	Type
1	3.22	n.a.	0.001	0.000	100.00	n.a.	BMB
Total:			0.001	0.000	100.00	0.000	

Sequence: 130516
Operator: H4868194

Printed: 5/16/2013 3:33:02 PM

Title:
Datasource: WC95579_local
Location: IC-10
Timebase: IC_10
#Samples: 11

Created: 5/16/2013 9:21:11 AM by inorganic
(Modified, not saved)

No.	Name	Type	Pos.	Inj. Vol.	Program	Method	Status	Inj. Date/Time	Dil. Factor
1	BLANK	Unknown	8	5.0	ammonium	J&J#1	Finished	5/16/2013 9:25:27 AM	1.0000
2	BLANK	Unknown	8	5.0	ammonium	J&J#1	Finished	5/16/2013 9:42:05 AM	1.0000
3	Std 1	Standard	1	5.0	ammonium	J&J#1	Finished	5/16/2013 9:58:42 AM	1.0000
4	Std 2	Standard	2	5.0	ammonium	J&J#1	Finished	5/16/2013 10:15:19 AM	1.0000
5	Std 3	Standard	3	5.0	ammonium	J&J#1	Finished	5/16/2013 10:31:56 AM	1.0000
6	Std 4	Standard	4	5.0	ammonium	J&J#1	Finished	5/16/2013 10:48:33 AM	1.0000
7	Std 5	Standard	5	5.0	ammonium	J&J#1	Finished	5/16/2013 11:05:10 AM	1.0000
8	ICV 100x	Unknown	6	5.0	ammonium	J&J#1	Finished	5/16/2013 11:21:47 AM	1.0000
9	LLS 2500x	Unknown	7	5.0	ammonium	J&J#1	Finished	5/16/2013 11:38:23 AM	1.0000
10	ICB	Unknown	8	5.0	ammonium	J&J#1	Finished	5/16/2013 11:55:00 AM	1.0000
11	shutdown	Unknown	1	5.0	Shutdown	J&J#1	Single		1.0000

Calibration Date: 05/16/13

Calibration Verified: Amanda Black 05/20/13

Secondary Review: Samuel A. Adams 05/20/2013

Chromeleon © Dionex Corporation, Version 6.80 SR11d Build 3302 (196279)

Sequence:	130516		Page 2 of 2
Operator:	H4868194		Printed: 5/16/2013 3:33:02 PM
Title:			
Datasource:	WC95579_local		
Location:	IC-10		
Timebase:	IC_10	Created:	5/16/2013 9:21:11 AM by inorganic
#Samples:	11		(Modified, not saved)

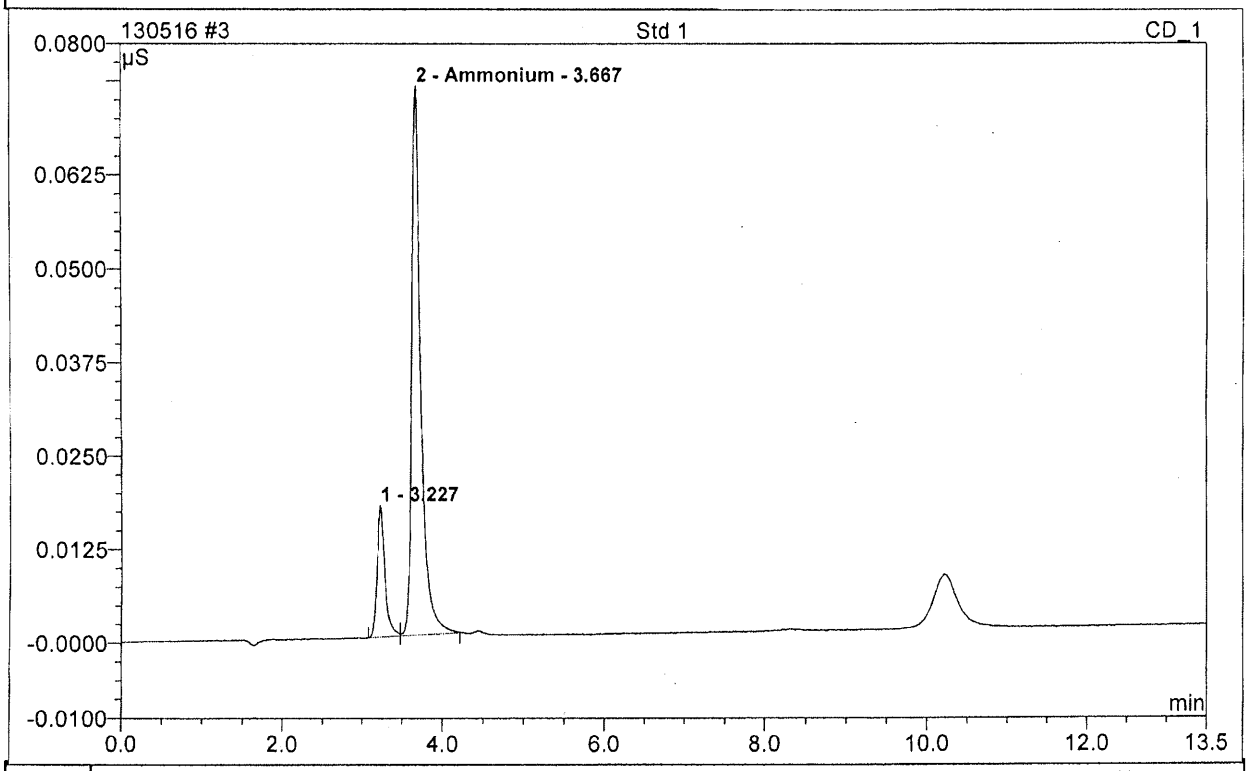
No.	Name	Comment	Amount [ug/mL] Ammonium CD_1	Area [µS*min] Ammonium CD_1
1	BLANK		n.a.	n.a.
2	BLANK		n.a.	n.a.
3	Std 1	2500x 90N29G	0.117	0.010
4	Std 2	300x 90N29G	1.039	0.110
5	Std 3	100x 90N29G	2.966	0.308
6	Std 4	40x 90N29G	7.466	0.706
7	Std 5	25x 90N29G	12.037	1.019
8	ICV 100x	91N29G	3.134	0.324
9	LLS 2500x	90N29G	0.119	0.010
10	ICB		n.a.	n.a.
11	shutdown		n.a.	n.a.

Chromeleon © Dionex Corporation, Version 6.80 SR11d Build 3302 (196279)

Operator:H4868194 Timebase:IC_10 Sequence:130516

3 Std 1
2500x 90N29G

Sample Name:	**Std 1**	*Injection Volume:*	**5.0**
Vial Number:	**1**	*Channel:*	**CD_1**
Sample Type:	**standard**	*Bandwidth:*	**n.a.**
Control Program:	**ammonium**	*Dilution Factor:*	**1.0000**
Quantif. Method:	**J&J#1**	*Sample Weight:*	**1.0000**
Recording Time:	**5/16/2013 9:58**	*Sample Amount:*	**1.0000**
Run Time (min):	**13.50**		



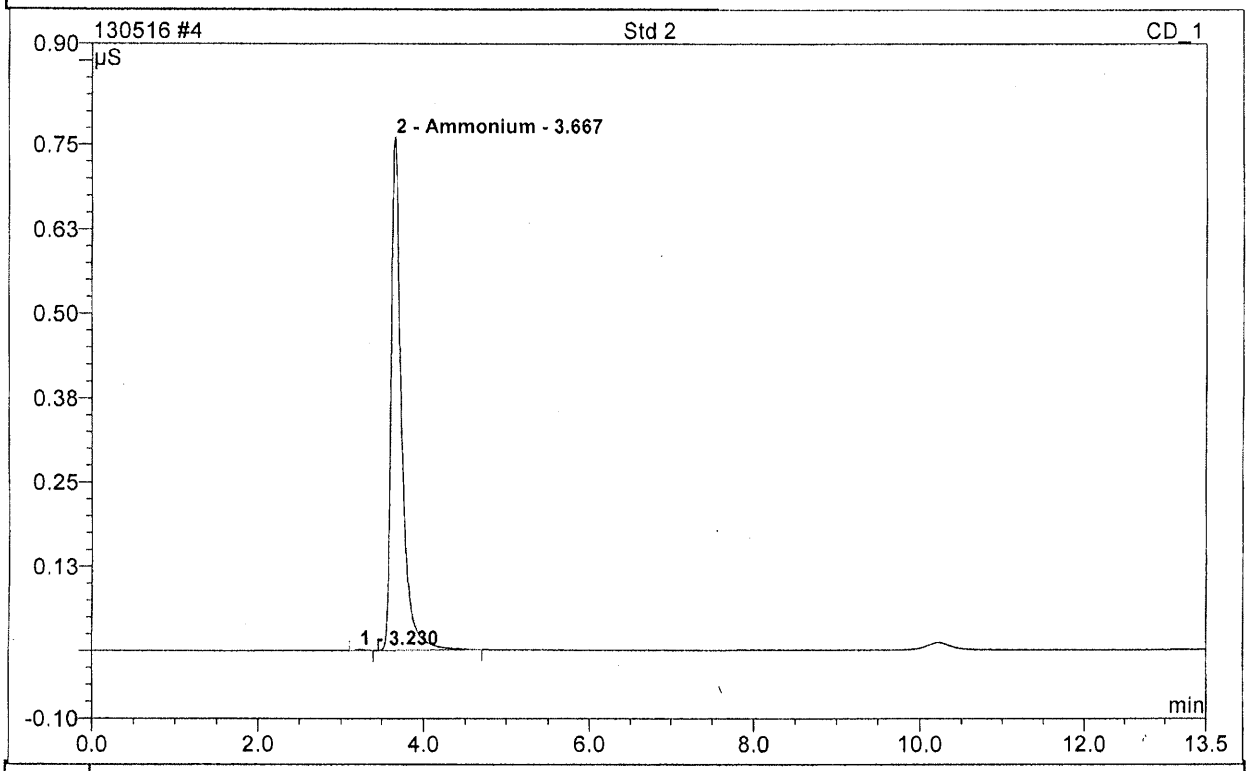
No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount ug/mL	Type
1	3.23	n.a.	0.018	0.002	17.16	n.a.	BM
2	3.67	Ammonium	0.073	0.010	82.84	0.117	MB
Total:			0.091	0.012	100.00	0.117	

Operator:H4868194 Timebase:IC_10 Sequence:130516

5/16/2013 3:32 PM

4 Std 2
300x 90N29G

Sample Name:	**Std 2**	*Injection Volume:*	**5.0**
Vial Number:	**2**	*Channel:*	**CD_1**
Sample Type:	**standard**	*Bandwidth:*	**n.a.**
Control Program:	**ammonium**	*Dilution Factor:*	**1.0000**
Quantif. Method:	**J&J#1**	*Sample Weight:*	**1.0000**
Recording Time:	**5/16/2013 10:15**	*Sample Amount:*	**1.0000**
Run Time (min):	**13.50**		

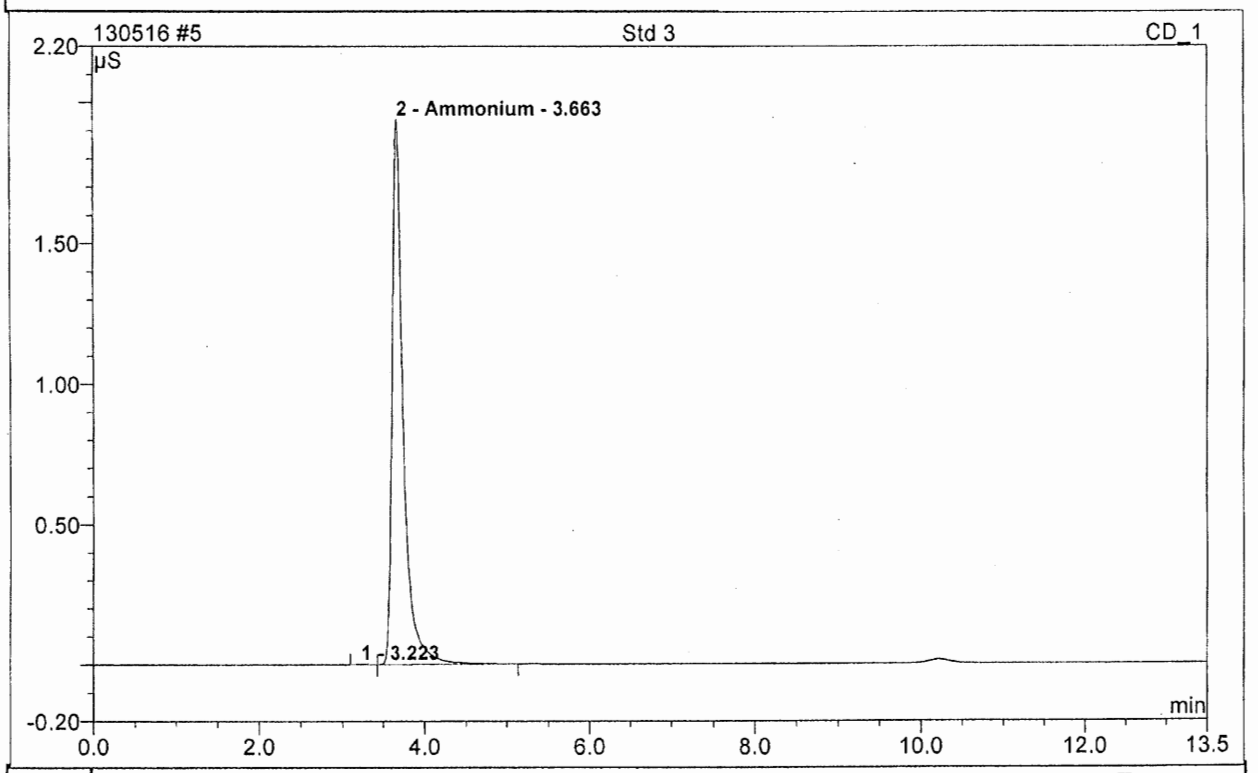


No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount ug/mL	Type
1	3.23	n.a.	0.002	0.000	0.17	n.a.	BMB
2	3.67	Ammonium	0.760	0.110	99.83	1.039	BMB
Total:			0.762	0.110	100.00	1.039	

Chromeleon (c) Dionex 1996-2006
Version 6.80 SR11d Build 3302 (196279)

5 Std 3
100x 90N29G

Sample Name:	**Std 3**	*Injection Volume:*	**5.0**
Vial Number:	**3**	*Channel:*	**CD_1**
Sample Type:	**standard**	*Bandwidth:*	**n.a.**
Control Program:	**ammonium**	*Dilution Factor:*	**1.0000**
Quantif. Method:	**J&J#1**	*Sample Weight:*	**1.0000**
Recording Time:	**5/16/2013 10:31**	*Sample Amount:*	**1.0000**
Run Time (min):	**13.50**		

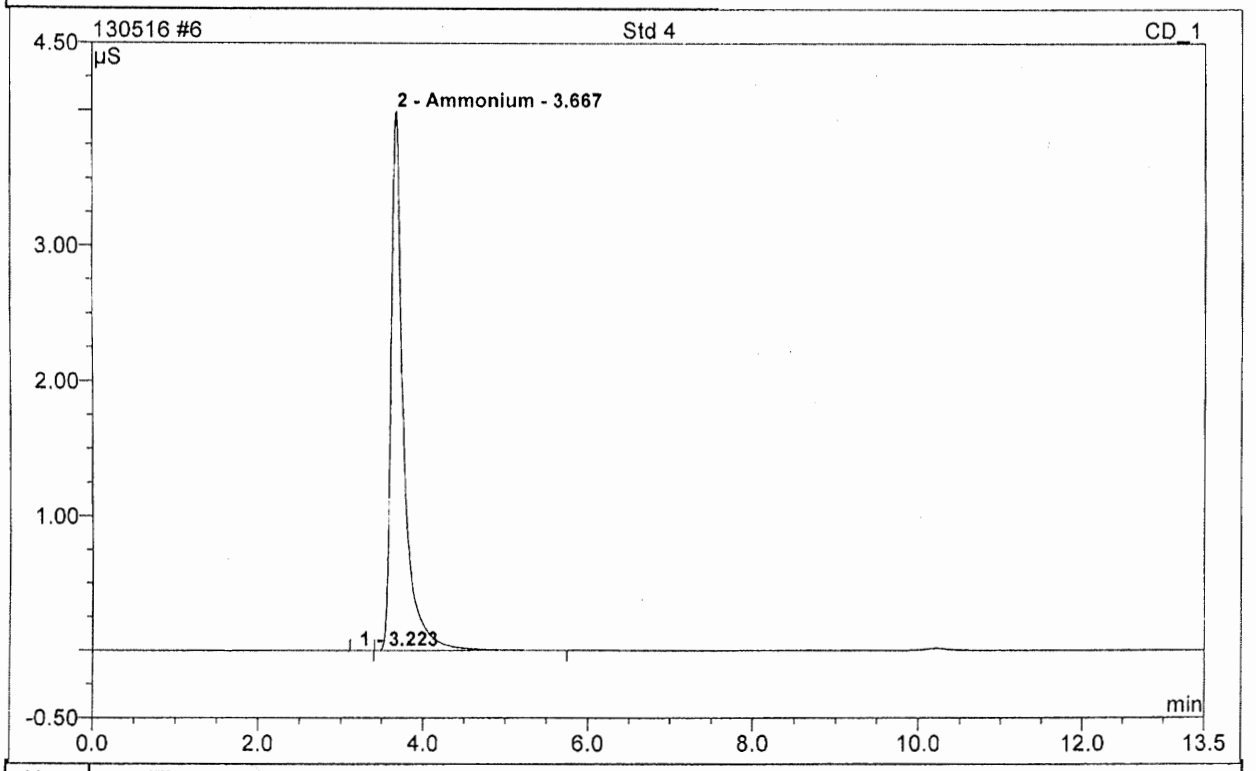


No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount ug/mL	Type
1	3.22	n.a.	0.002	0.000	0.06	n.a.	BMB
2	3.66	Ammonium	1.938	0.308	99.94	2.966	BMB
Total:			1.939	0.308	100.00	2.966	

Operator:H4868194 Timebase:IC_10 Sequence:130516

6 Std 4
40x 90N29G

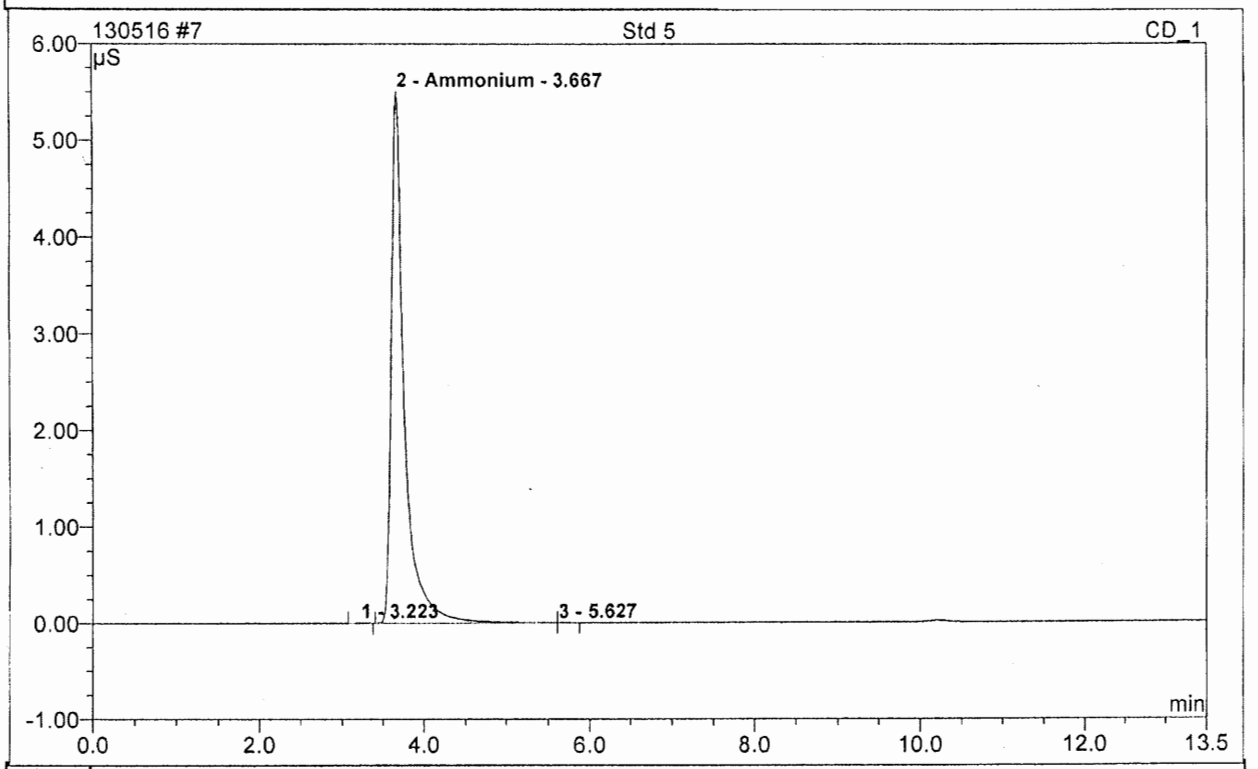
Sample Name:	**Std 4**	*Injection Volume:*	**5.0**
Vial Number:	**4**	*Channel:*	**CD_1**
Sample Type:	**standard**	*Bandwidth:*	**n.a.**
Control Program:	**ammonium**	*Dilution Factor:*	**1.0000**
Quantif. Method:	**J&J#1**	*Sample Weight:*	**1.0000**
Recording Time:	**5/16/2013 10:48**	*Sample Amount:*	**1.0000**
Run Time (min):	**13.50**		



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount ug/mL	Type
1	3.22	n.a.	0.002	0.000	0.04	n.a.	BMB
2	3.67	Ammonium	3.989	0.706	99.96	7.466	BMB
Total:			3.992	0.706	100.00	7.466	

7 Std 5
25x 90N29G

Sample Name:	**Std 5**	*Injection Volume:*	**5.0**
Vial Number:	**5**	*Channel:*	**CD_1**
Sample Type:	**standard**	*Bandwidth:*	**n.a.**
Control Program:	**ammonium**	*Dilution Factor:*	**1.0000**
Quantif. Method:	**J&J#1**	*Sample Weight:*	**1.0000**
Recording Time:	**5/16/2013 11:05**	*Sample Amount:*	**1.0000**
Run Time (min):	**13.50**		



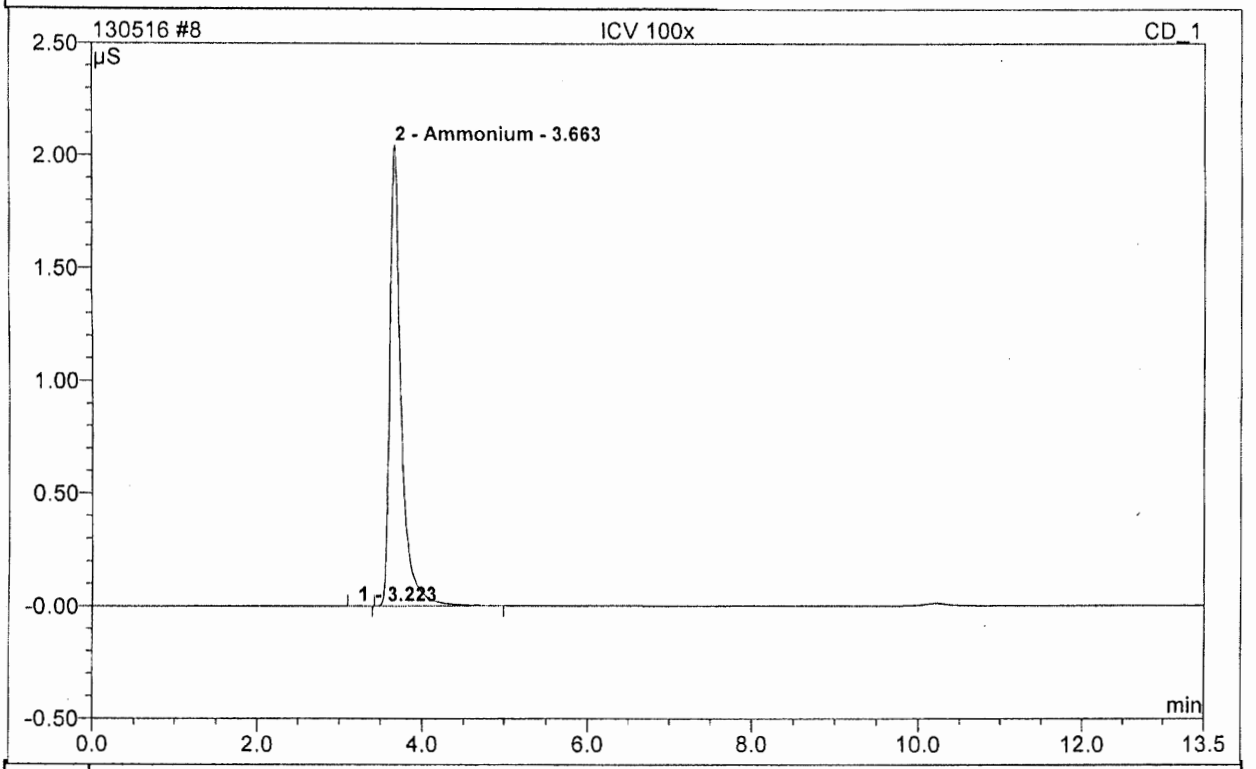
No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount ug/mL	Type
1	3.22	n.a.	0.002	0.000	0.02	n.a.	BMB
2	3.67	Ammonium	5.504	1.019	99.97	12.037	BM
3	5.63	n.a.	0.001	0.000	0.01	n.a.	MB
Total:			5.507	1.019	100.00	12.037	

Operator:H4868194 Timebase:IC_10 Sequence:130516

8 ICV 100x

91N29G

Sample Name:	**ICV 100x**	*Injection Volume:*	**5.0**
Vial Number:	**6**	*Channel:*	**CD_1**
Sample Type:	**unknown**	*Bandwidth:*	**n.a.**
Control Program:	**ammonium**	*Dilution Factor:*	**1.0000**
Quantif. Method:	**J&J#1**	*Sample Weight:*	**1.0000**
Recording Time:	**5/16/2013 11:21**	*Sample Amount:*	**1.0000**
Run Time (min):	**13.50**		



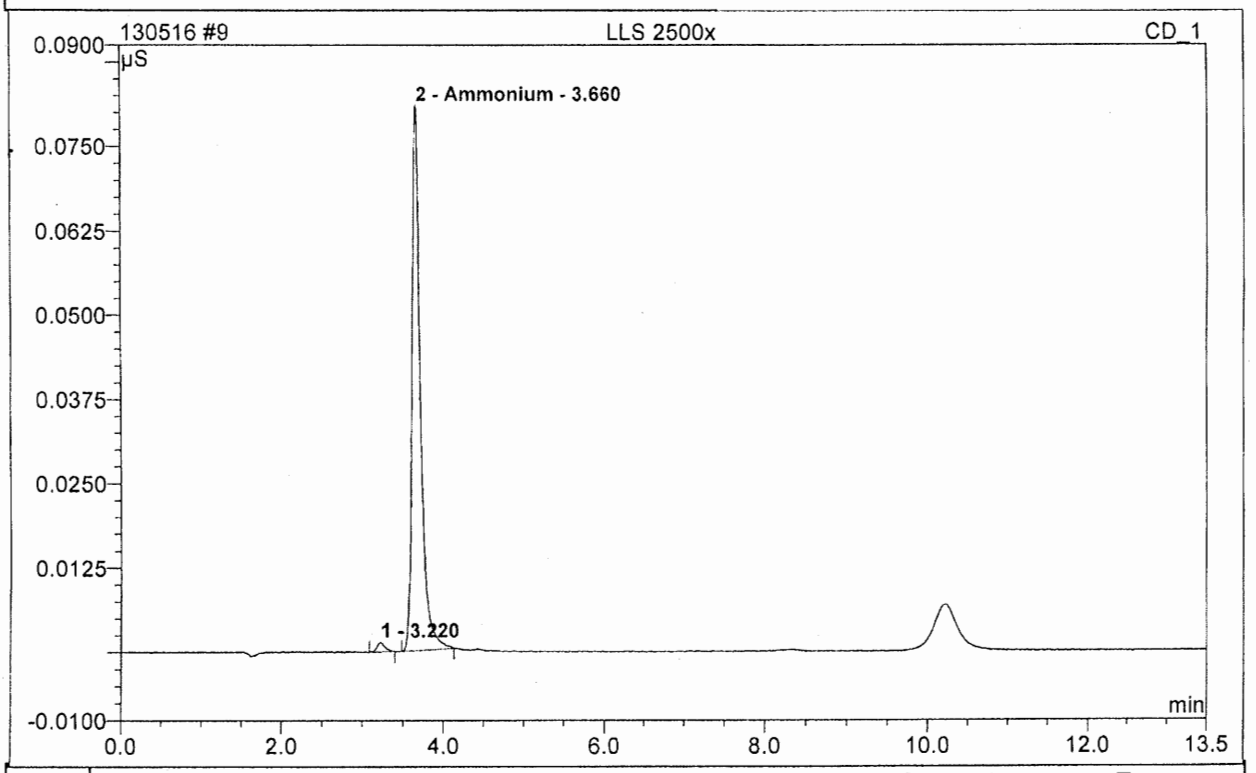
No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount ug/mL	Type
1	3.22	n.a.	0.001	0.000	0.04	n.a.	BMB
2	3.66	Ammonium	2.047	0.324	99.96	3.134	BMB
Total:			2.049	0.324	100.00	3.134	

Chromeleon (c) Dionex 1996-2006
Version 6.80 SR11d Build 3302 (196279)

9 LLS 2500x

90N29G

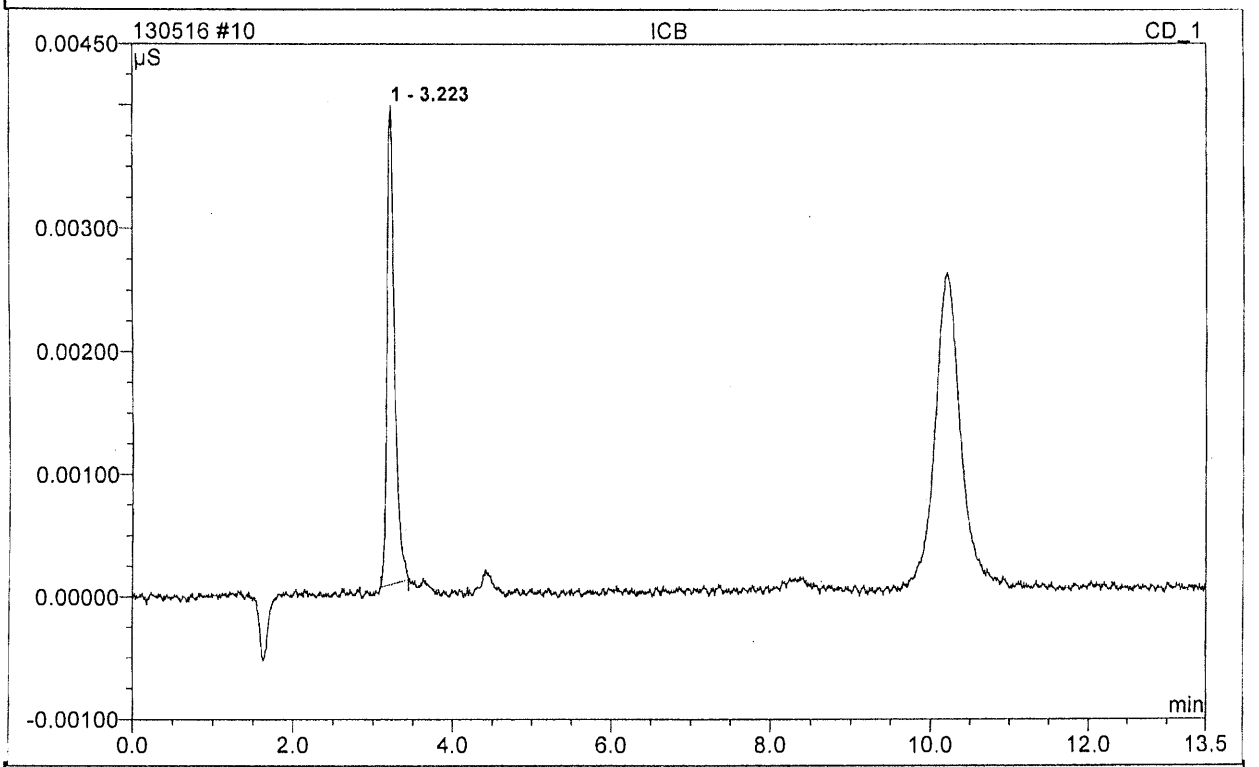
Sample Name:	**LLS 2500x**	*Injection Volume:*	**5.0**
Vial Number:	**7**	*Channel:*	**CD_1**
Sample Type:	**unknown**	*Bandwidth:*	**n.a.**
Control Program:	**ammonium**	*Dilution Factor:*	**1.0000**
Quantif. Method:	**J&J#1**	*Sample Weight:*	**1.0000**
Recording Time:	**5/16/2013 11:38**	*Sample Amount:*	**1.0000**
Run Time (min):	**13.50**		



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount ug/mL	Type
1	3.22	n.a.	0.001	0.000	1.65	n.a.	BMB
2	3.66	Ammonium	0.081	0.010	98.35	0.119	BMB
Total:			0.082	0.010	100.00	0.119	

10 ICB

Sample Name:	**ICB**	*Injection Volume:*	**5.0**
Vial Number:	**8**	*Channel:*	**CD_1**
Sample Type:	**unknown**	*Bandwidth:*	**n.a.**
Control Program:	**ammonium**	*Dilution Factor:*	**1.0000**
Quantif. Method:	**J&J#1**	*Sample Weight:*	**1.0000**
Recording Time:	**5/16/2013 11:55**	*Sample Amount:*	**1.0000**
Run Time (min):	**13.50**		



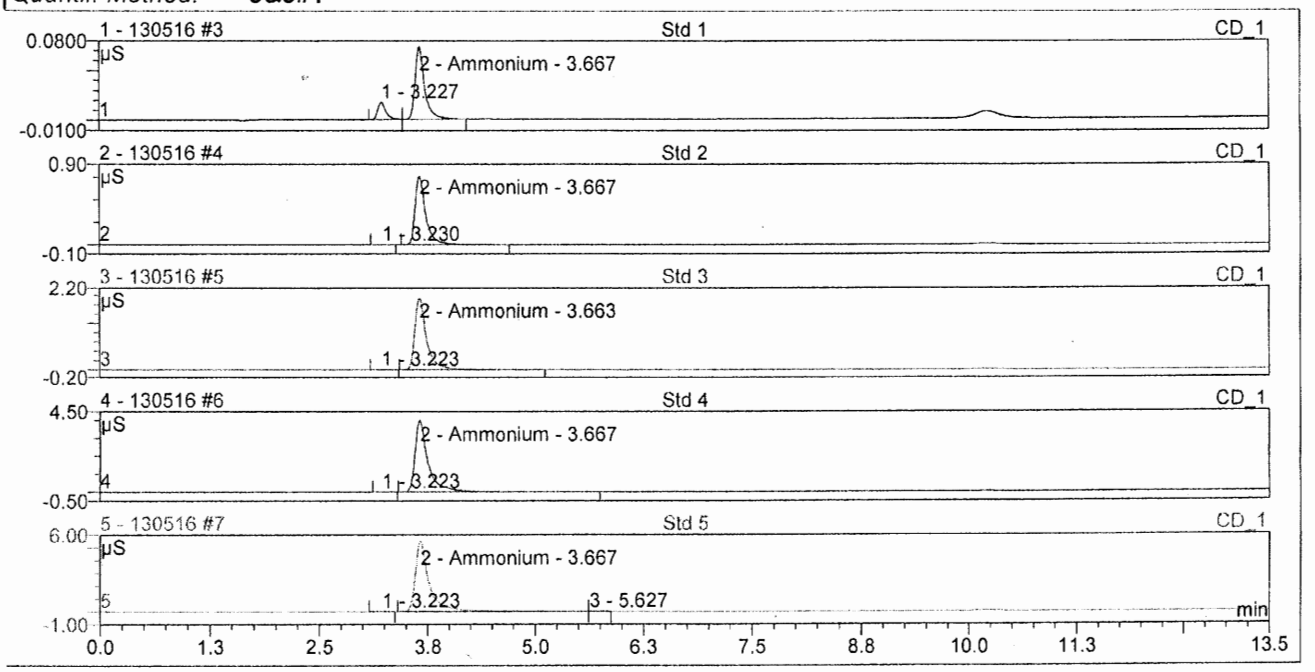
No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount ug/mL	Type
1	3.22	n.a.	0.004	0.000	100.00	n.a.	BMB
Total:			0.004	0.000	100.00	0.000	

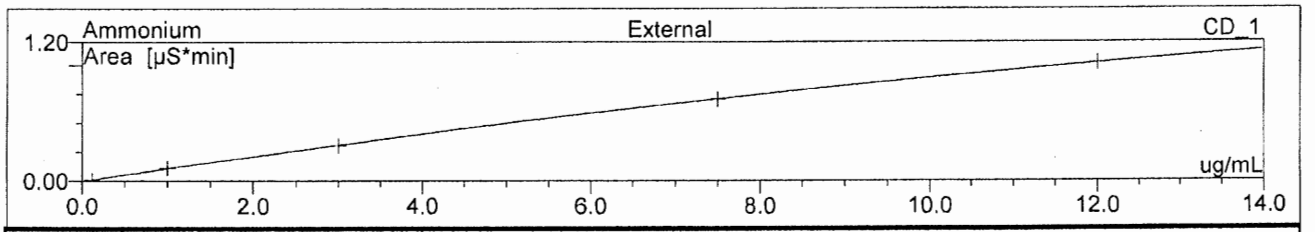
Operator:H4868194 Timebase:IC_10 Sequence:130516

Page 1-6
5/20/2013 11:35 AM

3 130516

Injection Volume: **5.0**
Channel: **CD_1**
Sample Type: **standard**
Control Program: **ammonium**
Quantif. Method: **J&J#1**





No.	Ret.Time min	Peak Name	Cal.Type	Points	Coeff.Det. %	Offset	Slope	Curve
1	3.23	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2	3.67	Ammonium	XAQOff	5	99.9863	-0.0034	0.111	-0.0022
Average:					99.9863	-0.0034	0.111	-0.0022

CalibrationRPTNH4/Calibration(Batch)

Chromeleon (c) Dionex 1996-2006
Version 6.80 SR11d Build 3302 (196279)

```
    Sampler.AcquireExclusiveAccess
    Flush                Volume = 250
    Wait                 FlushState
    Column_TC.AcquireExclusiveAccess
    Compartment_TC.AcquireExclusiveAccess
    Pressure.LowerLimit =      200 [psi]
    Pressure.UpperLimit =      3000 [psi]
    MaximumFlowRamp =          6.00 [ml/min²]
    %A.Equate =              "%A"
    %B.Equate =              "%B"
    %C.Equate =              "%C"
    %D.Equate =              "%D"
    CR_TC =                  On
    NeedleHeight =           2 [mm]
    CutSegmentVolume =       10 [µl]
    SyringeSpeed =           4
    TrayTemperature =        OFF
    CycleTime =              0 [min]
    WaitForTemperature =     False
    Data_Collection_Rate =   5.0 [Hz]
    Temperature_Compensation = 1.7 [%/°C]
    CellHeater.Mode          = On
    CellHeater.TemperatureSet = 35.00 [°C]
    Column_TC.Mode =         On
    Column_TC.TemperatureSet = 40.00 [°C]
    Compartment_TC.Mode =    On
    Compartment_TC.TemperatureSet =      35.00 [°C]
    Suppressor1.Type =       CSRS_2mm
    CurrentSet =             30 [mA]
    ; Suppressor1.H2SO4 =    0.0
    ; Suppressor1.MSA =      20.0
    ; Suppressor1.Other eluent =        0.0
    ; Suppressor1.Recommended Current =  30
    Concentration =          20.00 [mM]
    EGC_1.Curve =            5
    Flow =                   0.500 [ml/min]
    %B =                     0.0 [%]
    %C =                     0.0 [%]
    %D =                     0.0 [%]
    Pump_1.Curve =           5
    Wait                 SampleReady
0.000 CDet1.Autozero
    Load
    Wait                 CycleTimeState
    Inject
    Wait                 InjectState
    CD_1.AcqOn
    CD_1_Total.AcqOn
    Sampler.ReleaseExclusiveAccess
13.500 CD_1.AcqOff
    CD_1_Total.AcqOff
```

Compartment_TC.ReleaseExclusiveAccess
Column_TC.ReleaseExclusiveAccess
End

Retention Time	Name	Value	Channel
0.000 min	Minimum Area	1.0E-4 "[Signal]*min"	All Channels
0.000 min	Inhibit Integration	On	All Channels
0.000 min	Rider Threshold	25.00 %	All Channels
3.000 min	Inhibit Integration	Off	All Channels
7.000 min	Inhibit Integration	On	All Channels

Method File:	J&J#1		Page 1 of 1
Operator:	H4868194		Printed: 5/20/2013 7:25:56 AM
Title:			
Datasource:	WC95579_local	Created:	8/23/2010 3:10:07 PM by US DEPT OF ENERGY
Location:	IC-10\130516.SEQ	Last Update:	5/16/2013 3:30:10 PM by H4868194

Amount Table:

Dimension of Amounts: ug/mL
Reference volume for amounts: Use inject volume of first standard
Number of Amount Columns: 5
Sample column used for amount column assignment: Sample Name

No.	Peak Name	Ret.Time	Resp.Fact.	Amount Std 1	Amount Std 2	Amount Std 3	Amount Std 4	Amount Std 5	Comment
1	*Ammonium*	*3.663 min*	*1.000000*	*0.120000*	*1.000000*	*3.000000*	*7.500000*	*12.000000*	*Autogenerated*

ICV/LLS RECOVERIES FOR IC-10			
Run Date:	5/16/2013		
Standard:	91N29G		
Verification:	Amanda Black 05/20/13		
Verification:	Samuel A. Adams 05/20/2013		
ICV 100X	Found Value (µg/mL)	Expected Value (µg/mL)	% Recovery
NH4	3.134	3.00	104.47

Run Date:	5/16/2013		
Standard:	90N29G		
Verification:	Amanda Black 05/20/13		
Verification:	Samuel A. Adams 05/20/2013		
LLS 2500X	Found Value (µg/mL)	Expected Value (µg/mL)	% Recovery
NH4	0.119	0.12	99.17

ATL	**ICP-AES DATA REVIEW CHECKLIST**	○ IH ◉ NON IH

○ LA-505-170 (JY) Rev _____ (*) ○ LA-505-171 (TJA-JY) (IH) Rev _____ (*)

◉ LA-505-174 (iCAP 6500) Rev A-0 (*)

Worklist/Project Information: Batch 00041494 / C109 CLO / 20130402

Analysis Date(s): 6/3/13 Instrument Id: iCAP 6500

Prep Batches Analyzed (Worklist #): 41404* & 41255* Prep Method: LA505163 HGA & LA 549 141 M-1-A

Review Items	Level 1 Yes	Level 1 No	Level 1 N/A	Level 2
A. Calibration/Instrument Run QC				
1. Instrument calibrated per procedure and at specified levels?	◉	○	○	☐
2. ICV/CCV analyzed at appropriate frequency and within control limits (Recovery: 90-110%)?	◉	○	○	☐
3. ICB/CCB analyzed at required frequency and < EQL (or RL) or <5% of the lowest sample result with client consent. N/A if all samples are ND.	◉	○	○	☐
4. LLS run and within control limits (Recovery: 70-130%)? For IH, recovery is mandatory to verify RL.	◉	○	○	☐
5. ICSA and ICSAB run at required frequency and within control limits (Recovery: 80-120% or < EQL)?	○	◉	○	☐
B. Sample Results				
1. Were samples with concentrations > linear range for any analyte diluted and reanalyzed?	○	○	◉	☐
2. Are all reported results bracketed by in-control QC?	◉	○	○	☐
3. Are there 10 or fewer samples run between bracketed, in-control QC?	◉	○	○	☐
C. Preparation/Matrix QC				
1. LCS/Prep Std prepared per prep batch and within control limits? Recovery: ◉ 80-120% or ○ Statistical _____	○	◉	○	☐
2. LCS Dup (Prep Std Dup) prepared per prep batch, if required, and within control limits? Recovery: ○ 80-120% or ○ Statistical _____ RPD: ○ ≤20% or ○ Statistical _____	○	○	◉	☐
3. IH RLS run (when required) and within mandatory control limits (Recovery: 70-130%)?	○	○	◉	☐
4. Method/Media Blank prepared per prep batch and < EQL (or RL) or <5% of the lowest sample result?	○	◉	○	☐
5. Duplicate or MS Duplicate run at required frequency and within control limits? %RPD: ○ ≤20% or ◉ Client-specified 30%	○	◉	○	☐
6. MS run at required frequency and within control limit? Recovery: ◉ 75-125% or ○ Client-specified _____	○	◉	○	☐
7. PDS analyzed if required and within control limit (Recovery: 80-120%)?	○	◉	○	☐
8. 5x serial dilution analyzed per prep batch and within control limit (% Diff <10%) or the sample result is < 50x MDL?	○	◉	○	☐
D. Other				
1. Are all problems and nonconformance issues documented appropriately?	◉	○	○	☐
2. Are current IDL / MDL / EQL / RL / IEC data on file?	◉	○	○	☐
3. Calculations/transcriptions checked for errors?	◉	○	○	☐
4. Are all raw data complete and verified in OmniLIMS?	◉	○	○	☐
5. Is calibration data included?	◉	○	○	☐
6. All client/project specific requirements met (e.g., MDL, holding times, etc.)?	◉	○	○	☐
7. Date/time of analysis verified as correct?	◉	○	○	☐
8. Prep/Breakdown Batch Benchsheet/Worklist properly completed and included, as required?	◉	○	○	☐
9. IH Only: Media Blank subtracted from Sample results?	○	○	◉	☐

(*) This form is not used by the subject procedure; rather, it is used to assist in verifying the data produced during the performance of the procedure.

A-6004-348 (REV 6)

ATL	ICP-AES DATA REVIEW CHECKLIST (continued)	○ IH ◉ NON IH

○ LA-505-170 (JY) Rev _____ (*) ○ LA-505-171 (TJA-JY) (IH) Rev _____ (*)

◉ LA-505-174 (iCAP 6500) Rev A-0 (*)

Worklist/Project Information: Batch 00041494 / C109 CLO / 20130402

Analysis Date(s): 6/3/13 Instrument Id: iCAP 6500

Prep Batches Analyzed (Worklist #): 41404 & 41255 Prep Method: LA-505-163 HCA & LA-549-141 MIA

Comments/Samples Affected (indicate review item letter and number):

A.5 - ICSA standards failed low for Mg at 79% and 78%. The following analytes were detected >EQL: B (first standard only), Mn, Th, U and V (ending standard only).

Also Cadmium failed low at 79 %, Ti failed low at 77% and Tl failed low at 77% for the first ICSAB. Ta detected >EQL.

On the ending ICSAB, Mg failed low @ 78% and Tl failed low @ 79%. Ta detected >EQL.

ACID DIGESTION

C.1 The following secondary analytes failed low on the LCS: Ce, Nd, Nb, Pr, Rb, Sm, Sn, Ta, Te, Th, W and Y. U was also low at 79%. All acid digested samples were "a" flagged.

C.4 The acid digestion prep blank contained B, Ce, S and Zn. B, Ce and Zn were <EQL. Acid digested samples were "B" flagged for S. DO 7/16/13

C.5 For the acid digestion, the following analytes failed the RPD requirement: Ag, La, Nd and Th. All of these results are <EQL, so no further action is required.

C.6 The following analytes failed the pre-digest spike: Al, Fe, Na, P, Zr, Nb, U and W. The acid digestion samples were "b" flagged for Zr, Nb and W. The other analyte concentrations are >4X the spike concentration.

C.7 Al failed the post-spike, but the sample concentration was >4X the spike concentration.

C.8 The serial dilution for the acid digested samples, failed for the following: Al, B, Ba, Bi, Ca, Cu, Fe, La, Mg, Mn, Na, Ni, P, Pb, S, Si, Sr, Ti, U, Zn and Zr. Al, Fe, Na, Ni, P, Pb, Si and U were "e" flagged. The rest are <50X the MDL.

A re-digestion was performed. These samples were rejected. Stacey O Barnes 6/14/13

FUSION DIGEST Cr was reported from acid digest. SDS 7/24/13

K and Zr not reported from fusion digest.

A.3 The 2nd to the last CCB contained K. This is probably due to carry-over from the KOH fusion digestion.

C.4 Prep blank contained Al, B and Rb. Al sample concentrations were >20X the concentration found in the blank. ~~When B and Rb were found above the detection limit, "B" flags were applied.~~ B & Rb not reported. SDS 7/24/13 SDS 7/24/13

C.5 The P RPD is >30%. P was "c" flagged for the fusion digestion samples.

C.8 Na failed the serial dilution requirement. However, this concentration is <50X the MDL.

(*) This form is not used by the subject procedure; rather, it is used to assist in verifying the data produced during the performance of the procedure.

ATL	ICP-AES DATA REVIEW CHECKLIST (continued)	○ IH ◉ NON IH

○ LA-505-170 (JY) Rev _____ (*) ○ LA-505-171 (TJA-JY) (IH) Rev _____ (*)

◉ LA-505-174 (iCAP 6500) Rev A-0 (*)

Worklist/Project Information: Batch 00041494 / C109 CLO / 20130402

Analysis Date(s): 6/3/13 Instrument Id: iCAP 6500

Prep Batches Analyzed (Worklist #): 41404 & 41255 Prep Method: LA-505-163 HCA & LA-549-141 M-1-A

1st Level Data Reviewer: _____ (Signature) Date: 6/11/13

2nd Level Data Reviewer: Samuel A. Adams (Signature) Date: 6/18/2013

PC: Julie Askom 7/18/13

(*) This form is not used by the subject procedure; rather, it is used to assist in verifying the data produced during the performance of the procedure.

A-6004-348 (REV 6)

7/18/2013 9:23:53AM
CompleteBatch Version 2.7.32
batchreports 2.7.32

LABCORE Completed Batch Report for Batch# 00041494

Analyst: Getz, Andrew

Book#: see benchsheet

Instrument: ICP-ICAP6500

Method: ICP-TOTAL METALS, LA-505-174 Rev/Mod A-0

Specification: C109 CLO

Prep Batch: 00041255, 00041404

Batch Comment: n/a

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
Sample Sequence 1																	
1	ICV	S1306040036		0	0		Silver	LIQUID	1	1.0192E+00			1.00E-03	ug/mL	101.92	% Recovery	
1	ICV	S1306040036		0	0		Aluminum	LIQUID	5	4.9817E+00			6.00E-03	ug/mL	99.634	% Recovery	
1	ICV	S1306040036		0	0		Arsenic	LIQUID	5	4.9244E+00			5.00E-03	ug/mL	98.489	% Recovery	
1	ICV	S1306040036		0	0		Boron	LIQUID	5	4.9428E+00			1.00E-03	ug/mL	98.856	% Recovery	
1	ICV	S1306040036		0	0		Barium	LIQUID	5	5.0672E+00			1.00E-03	ug/mL	101.34	% Recovery	
1	ICV	S1306040036		0	0		Beryllium	LIQUID	5	5.0236E+00			1.00E-03	ug/mL	100.47	% Recovery	
1	ICV	S1306040036		0	0		Bismuth	LIQUID	5	4.9866E+00			6.00E-03	ug/mL	99.732	% Recovery	
1	ICV	S1306040036		0	0		Calcium	LIQUID	5	5.1098E+00			0.08	ug/mL	102.2	% Recovery	
1	ICV	S1306040036		0	0		Cadmium	LIQUID	5	5.0614E+00			1.00E-03	ug/mL	101.23	% Recovery	
2	ICV	S1306040036		0	1		Cerium	LIQUID	5	4.6831E+00			6.00E-03	ug/mL	93.661	% Recovery	
1	ICV	S1306040036		0	0		Cobalt	LIQUID	5	5.0704E+00			1.00E-03	ug/mL	101.41	% Recovery	
1	ICV	S1306040036		0	0		Chromium	LIQUID	5	5.0700E+00			1.00E-03	ug/mL	101.4	% Recovery	
1	ICV	S1306040036		0	0		Copper	LIQUID	5	5.0656E+00			2.00E-03	ug/mL	101.31	% Recovery	
2	ICV	S1306040036		0	1		Europium	LIQUID	5	4.9875E+00			1.00E-03	ug/mL	99.75	% Recovery	
1	ICV	S1306040036		0	0		Iron	LIQUID	5	5.1037E+00			0.01	ug/mL	102.07	% Recovery	
1	ICV	S1306040036		0	0		Potassium	LIQUID	5	5.1092E+00			0.02	ug/mL	102.18	% Recovery	
1	ICV	S1306040036		0	0		Lanthanum	LIQUID	5	5.0616E+00			1.00E-03	ug/mL	101.23	% Recovery	
1	ICV	S1306040036		0	0		Lithium	LIQUID	5	5.2667E+00			1.00E-03	ug/mL	105.33	% Recovery	
1	ICV	S1306040036		0	0		Magnesium	LIQUID	5	5.1159E+00			2.00E-03	ug/mL	102.32	% Recovery	
1	ICV	S1306040036		0	0		Manganese	LIQUID	5	5.1448E+00			1.00E-03	ug/mL	102.9	% Recovery	
1	ICV	S1306040036		0	0		Molybdenum	LIQUID	5	4.7942E+00			1.00E-03	ug/mL	95.884	% Recovery	
1	ICV	S1306040036		0	0		Sodium	LIQUID	5	5.0240E+00			0.04	ug/mL	100.48	% Recovery	
2	ICV	S1306040036		0	1		Neodymium	LIQUID	5	4.9252E+00			3.00E-03	ug/mL	98.504	% Recovery	
1	ICV	S1306040036		0	0		Nickel	LIQUID	5	5.0907E+00			1.00E-03	ug/mL	101.81	% Recovery	
2	ICV	S1306040036		0	1		Niobium	LIQUID	5	4.9065E+00			3.00E-03	ug/mL	98.13	% Recovery	
1	ICV	S1306040036		0	0		Phosphorus	LIQUID	5	4.8970E+00			3.00E-03	ug/mL	97.941	% Recovery	
1	ICV	S1306040036		0	0		Lead	LIQUID	5	5.1059E+00			6.00E-03	ug/mL	102.12	% Recovery	
2	ICV	S1306040036		0	1		Palladium	LIQUID	5	5.0949E+00			9.00E-03	ug/mL	101.9	% Recovery	
2	ICV	S1306040036		0	1		Praseodymium	LIQUID	5	4.8742E+00			4.00E-03	ug/mL	97.484	% Recovery	
2	ICV	S1306040036		0	1		Rubidium	LIQUID	5	4.9425E+00			0.03	ug/mL	98.851	% Recovery	
2	ICV	S1306040036		0	1		Rhodium	LIQUID	5	4.6614E+00			8.00E-03	ug/mL	93.229	% Recovery	

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041494

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
2	ICV	S1306040036		0 1			Ruthenium	LIQUID	5	5.1185E+00			4.00E-03	ug/mL	102.37	% Recovery	
1	ICV	S1306040036		0 0			Sulfur	LIQUID	5	4.9482E+00			5.00E-03	ug/mL	98.963	% Recovery	
1	ICV	S1306040036		0 0			Antimony	LIQUID	5	4.7928E+00			6.00E-03	ug/mL	95.855	% Recovery	
1	ICV	S1306040036		0 0			Selenium	LIQUID	5	4.9210E+00			6.00E-03	ug/mL	98.42	% Recovery	
1	ICV	S1306040036		0 0			Silicon	LIQUID	5	4.8017E+00			5.00E-03	ug/mL	96.035	% Recovery	
2	ICV	S1306040036		0 1			Samarium	LIQUID	5	4.8626E+00			5.00E-03	ug/mL	97.251	% Recovery	
2	ICV	S1306040036		0 1			Tin	LIQUID	5	4.8917E+00			3.00E-03	ug/mL	97.834	% Recovery	
1	ICV	S1306040036		0 0			Strontium	LIQUID	5	5.0999E+00			2.00E-03	ug/mL	102	% Recovery	
2	ICV	S1306040036		0 1			Tantalum	LIQUID	5	4.9905E+00			5.00E-03	ug/mL	99.81	% Recovery	
2	ICV	S1306040036		0 1			Tellurium	LIQUID	5	4.8292E+00			5.00E-03	ug/mL	96.585	% Recovery	
2	ICV	S1306040036		0 1			Thorium	LIQUID	5	4.9563E+00			5.00E-03	ug/mL	99.125	% Recovery	
1	ICV	S1306040036		0 0			Titanium	LIQUID	5	4.9317E+00			1.00E-03	ug/mL	98.633	% Recovery	
2	ICV	S1306040036		0 1			Thallium	LIQUID	5	4.9397E+00			6.00E-03	ug/mL	98.794	% Recovery	
2	ICV	S1306040036		0 1			Uranium	LIQUID	5	4.7897E+00			0.02	ug/mL	95.794	% Recovery	
1	ICV	S1306040036		0 0			Vanadium	LIQUID	5	5.0573E+00			1.00E-03	ug/mL	101.15	% Recovery	
2	ICV	S1306040036		0 1			Tungsten	LIQUID	5	4.9404E+00			6.00E-03	ug/mL	98.808	% Recovery	
2	ICV	S1306040036		0 1			Yttrium	LIQUID	5	5.0253E+00			2.00E-03	ug/mL	100.51	% Recovery	
1	ICV	S1306040036		0 0			Zinc	LIQUID	5	5.0253E+00			4.00E-03	ug/mL	100.51	% Recovery	
1	ICV	S1306040036		0 0			Zirconium	LIQUID	5	4.9221E+00			1.00E-03	ug/mL	98.443	% Recovery	
Sample Sequence 3																	
3	LLS	S1306040038		0 0			Silver	LIQUID	.02	2.0240E-02			1.00E-03	ug/mL	101.2	% Recovery	
3	LLS	S1306040038		0 0			Aluminum	LIQUID	.1	9.8230E-02			6.00E-03	ug/mL	98.23	% Recovery	
3	LLS	S1306040038		0 0			Arsenic	LIQUID	.2	1.9833E-01			5.00E-03	ug/mL	99.167	% Recovery	
3	LLS	S1306040038		0 0			Boron	LIQUID	.1	9.7348E-02			1.00E-03	ug/mL	97.348	% Recovery	
3	LLS	S1306040038		0 0			Barium	LIQUID	.01	1.0187E-02			1.00E-03	ug/mL	101.87	% Recovery	
3	LLS	S1306040038		0 0			Beryllium	LIQUID	.002	2.0577E-03			1.00E-03	ug/mL	102.89	% Recovery	
3	LLS	S1306040038		0 0			Bismuth	LIQUID	.2	2.0796E-01			6.00E-03	ug/mL	103.98	% Recovery	
3	LLS	S1306040038		0 0			Calcium	LIQUID	.2	1.9684E-01			0.08	ug/mL	98.422	% Recovery	
3	LLS	S1306040038		0 0			Cadmium	LIQUID	.01	1.0410E-02			1.00E-03	ug/mL	104.1	% Recovery	
3	LLS	S1306040038		0 0			Cerium	LIQUID	.2	1.8809E-01			6.00E-03	ug/mL	94.044	% Recovery	
3	LLS	S1306040038		0 0			Cobalt	LIQUID	.04	4.1032E-02			1.00E-03	ug/mL	102.58	% Recovery	
3	LLS	S1306040038		0 0			Chromium	LIQUID	.02	2.0530E-02			1.00E-03	ug/mL	102.65	% Recovery	
3	LLS	S1306040038		0 0			Copper	LIQUID	.02	2.0578E-02			2.00E-03	ug/mL	102.89	% Recovery	
4	LLS	S1306040038		0 1			Europium	LIQUID	.1	1.0159E-01			1.00E-03	ug/mL	101.59	% Recovery	
3	LLS	S1306040038		0 0			Iron	LIQUID	.05	4.8435E-02			0.01	ug/mL	96.869	% Recovery	
3	LLS	S1306040038		0 0			Potassium	LIQUID	1	1.0183E+00			0.02	ug/mL	101.83	% Recovery	
3	LLS	S1306040038		0 0			Lanthanum	LIQUID	.01	1.0599E-02			1.00E-03	ug/mL	105.99	% Recovery	
3	LLS	S1306040038		0 0			Lithium	LIQUID	.02	2.1238E-02			1.00E-03	ug/mL	106.19	% Recovery	
3	LLS	S1306040038		0 0			Magnesium	LIQUID	.2	2.0798E-01			2.00E-03	ug/mL	103.99	% Recovery	
3	LLS	S1306040038		0 0			Manganese	LIQUID	.02	2.0915E-02			1.00E-03	ug/mL	104.57	% Recovery	
3	LLS	S1306040038		0 0			Molybdenum	LIQUID	.1	9.6772E-02			1.00E-03	ug/mL	96.772	% Recovery	
5	LLS	S1306040038		0 2			Sodium	LIQUID	1	1.0065E+00			0.04	ug/mL	100.65	% Recovery	

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041494

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
3	LLS	S1306040038		0 0			Neodymium	LIQUID	.1	9.6389E-02			3.00E-03	ug/mL	96.389	% Recovery	
3	LLS	S1306040038		0 0			Nickel	LIQUID	.04	4.2984E-02			1.00E-03	ug/mL	107.46	% Recovery	
4	LLS	S1306040038		0 1			Niobium	LIQUID	.1	9.7096E-02			3.00E-03	ug/mL	97.096	% Recovery	
3	LLS	S1306040038		0 0			Phosphorus	LIQUID	.4	3.8538E-01			3.00E-03	ug/mL	96.346	% Recovery	
3	LLS	S1306040038		0 0			Lead	LIQUID	.2	2.1060E-01			6.00E-03	ug/mL	105.3	% Recovery	
4	LLS	S1306040038		0 1			Palladium	LIQUID	1	1.0046E+00			9.00E-03	ug/mL	100.46	% Recovery	
4	LLS	S1306040038		0 1			Praseodymium	LIQUID	.1	9.3728E-02			4.00E-03	ug/mL	93.728	% Recovery	
4	LLS	S1306040038		0 1			Rubidium	LIQUID	2	2.0194E+00			0.03	ug/mL	100.97	% Recovery	
4	LLS	S1306040038		0 1			Rhodium	LIQUID	.1	1.0583E-01			8.00E-03	ug/mL	105.83	% Recovery	
4	LLS	S1306040038		0 1			Ruthenium	LIQUID	.1	9.8813E-02			4.00E-03	ug/mL	98.813	% Recovery	
3	LLS	S1306040038		0 0			Sulfur	LIQUID	.2	1.9338E-01			5.00E-03	ug/mL	96.69	% Recovery	
3	LLS	S1306040038		0 0			Antimony	LIQUID	.1	9.6180E-02			6.00E-03	ug/mL	96.18	% Recovery	
3	LLS	S1306040038		0 0			Selenium	LIQUID	.2	2.0391E-01			6.00E-03	ug/mL	101.95	% Recovery	
3	LLS	S1306040038		0 0			Silicon	LIQUID	.1	9.5703E-02			5.00E-03	ug/mL	95.703	% Recovery	
3	LLS	S1306040038		0 0			Samarium	LIQUID	.1	9.4829E-02			5.00E-03	ug/mL	94.829	% Recovery	
4	LLS	S1306040038		0 1			Tin	LIQUID	.1	9.7919E-02			3.00E-03	ug/mL	97.919	% Recovery	
3	LLS	S1306040038		0 0			Strontium	LIQUID	.02	2.1490E-02			2.00E-03	ug/mL	107.45	% Recovery	
4	LLS	S1306040038		0 1			Tantalum	LIQUID	1	9.9114E-01			5.00E-03	ug/mL	99.114	% Recovery	
4	LLS	S1306040038		0 1			Tellurium	LIQUID	1	9.7108E-01			5.00E-03	ug/mL	97.108	% Recovery	
4	LLS	S1306040038		0 1			Thorium	LIQUID	.1	9.6266E-02			5.00E-03	ug/mL	96.266	% Recovery	
3	LLS	S1306040038		0 0			Titanium	LIQUID	.02	1.9078E-02			1.00E-03	ug/mL	95.392	% Recovery	
3	LLS	S1306040038		0 0			Thallium	LIQUID	.4	3.8770E-01			6.00E-03	ug/mL	96.926	% Recovery	
3	LLS	S1306040038		0 0			Uranium	LIQUID	.5	4.9258E-01			0.02	ug/mL	98.516	% Recovery	
3	LLS	S1306040038		0 0			Vanadium	LIQUID	.05	4.9268E-02			1.00E-03	ug/mL	98.535	% Recovery	
4	LLS	S1306040038		0 1			Tungsten	LIQUID	1	1.0017E+00			6.00E-03	ug/mL	100.17	% Recovery	
4	LLS	S1306040038		0 1			Yttrium	LIQUID	.1	1.0379E-01			2.00E-03	ug/mL	103.79	% Recovery	
3	LLS	S1306040038		0 0			Zinc	LIQUID	.02	1.9319E-02			4.00E-03	ug/mL	96.594	% Recovery	
3	LLS	S1306040038		0 0			Zirconium	LIQUID	.02	1.9691E-02			1.00E-03	ug/mL	98.454	% Recovery	
Sample Sequence 6																	
6	ICB	S1306040037		0 0			Silver	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
6	ICB	S1306040037		0 0			Aluminum	LIQUID		<6.0000E-03			6.00E-03	ug/mL			
6	ICB	S1306040037		0 0			Arsenic	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
6	ICB	S1306040037		0 0			Boron	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
6	ICB	S1306040037		0 0			Barium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
6	ICB	S1306040037		0 0			Beryllium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
6	ICB	S1306040037		0 0			Bismuth	LIQUID		<6.0000E-03			6.00E-03	ug/mL			
6	ICB	S1306040037		0 0			Calcium	LIQUID		<8.0000E-02			0.08	ug/mL			
6	ICB	S1306040037		0 0			Cadmium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
6	ICB	S1306040037		0 0			Cerium	LIQUID		<6.0000E-03			6.00E-03	ug/mL			
6	ICB	S1306040037		0 0			Cobalt	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
6	ICB	S1306040037		0 0			Chromium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
6	ICB	S1306040037		0 0			Copper	LIQUID		<2.0000E-03			2.00E-03	ug/mL			

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041494

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
6	ICB	S1306040037		0 0			Europium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
6	ICB	S1306040037		0 0			Iron	LIQUID		<1.0000E-02			0.01	ug/mL			
6	ICB	S1306040037		0 0			Potassium	LIQUID		<2.0000E-02			0.02	ug/mL			
6	ICB	S1306040037		0 0			Lanthanum	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
6	ICB	S1306040037		0 0			Lithium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
6	ICB	S1306040037		0 0			Magnesium	LIQUID		<2.0000E-03			2.00E-03	ug/mL			
6	ICB	S1306040037		0 0			Manganese	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
6	ICB	S1306040037		0 0			Molybdenum	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
6	ICB	S1306040037		0 0			Sodium	LIQUID		<4.0000E-02			0.04	ug/mL			
6	ICB	S1306040037		0 0			Neodymium	LIQUID		<3.0000E-03			3.00E-03	ug/mL			
6	ICB	S1306040037		0 0			Nickel	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
6	ICB	S1306040037		0 0			Niobium	LIQUID		<3.0000E-03			3.00E-03	ug/mL			
6	ICB	S1306040037		0 0			Phosphorus	LIQUID		<3.0000E-03			3.00E-03	ug/mL			
6	ICB	S1306040037		0 0			Lead	LIQUID		<6.0000E-03			6.00E-03	ug/mL			
6	ICB	S1306040037		0 0			Palladium	LIQUID		<9.0000E-03			9.00E-03	ug/mL			
6	ICB	S1306040037		0 0			Praseodymium	LIQUID		<4.0000E-03			4.00E-03	ug/mL			
6	ICB	S1306040037		0 0			Rubidium	LIQUID		<3.0000E-02			0.03	ug/mL			
6	ICB	S1306040037		0 0			Rhodium	LIQUID		<8.0000E-03			8.00E-03	ug/mL			
6	ICB	S1306040037		0 0			Ruthenium	LIQUID		<4.0000E-03			4.00E-03	ug/mL			
6	ICB	S1306040037		0 0			Sulfur	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
6	ICB	S1306040037		0 0			Antimony	LIQUID		<6.0000E-03			6.00E-03	ug/mL			
6	ICB	S1306040037		0 0			Selenium	LIQUID		<6.0000E-03			6.00E-03	ug/mL			
6	ICB	S1306040037		0 0			Silicon	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
6	ICB	S1306040037		0 0			Samarium	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
6	ICB	S1306040037		0 0			Tin	LIQUID		<3.0000E-03			3.00E-03	ug/mL			
6	ICB	S1306040037		0 0			Strontium	LIQUID		<2.0000E-03			2.00E-03	ug/mL			
6	ICB	S1306040037		0 0			Tantalum	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
6	ICB	S1306040037		0 0			Tellurium	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
6	ICB	S1306040037		0 0			Thorium	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
6	ICB	S1306040037		0 0			Titanium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
6	ICB	S1306040037		0 0			Thallium	LIQUID		<6.0000E-03			6.00E-03	ug/mL			
6	ICB	S1306040037		0 0			Uranium	LIQUID		<2.0000E-02			0.02	ug/mL			
6	ICB	S1306040037		0 0			Vanadium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
6	ICB	S1306040037		0 0			Tungsten	LIQUID		<6.0000E-03			6.00E-03	ug/mL			
6	ICB	S1306040037		0 0			Yttrium	LIQUID		<2.0000E-03			2.00E-03	ug/mL			
6	ICB	S1306040037		0 0			Zinc	LIQUID		<4.0000E-03			4.00E-03	ug/mL			
6	ICB	S1306040037		0 0			Zirconium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
Sample Sequence 7																	
7	ICSA	S1306040039		0 0			Silver	LIQUID		3.8936E-03			1.00E-03	ug/mL	N/A		
7	ICSA	S1306040039		0 0			Aluminum	LIQUID	200	1.9433E+02			6.00E-03	ug/mL	97.166	% Recovery	
7	ICSA	S1306040039		0 0			Arsenic	LIQUID		<5.0000E-03			5.00E-03	ug/mL	N/A		
7	ICSA	S1306040039		0 0			Boron	LIQUID		6.5362E-02			1.00E-03	ug/mL	N/A		

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041494

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
7	ICSA	S1306040039		0 0			Barium	LIQUID		1.9620E-03			1.00E-03	ug/mL	N/A		
7	ICSA	S1306040039		0 0			Beryllium	LIQUID		1.4677E-03			1.00E-03	ug/mL	N/A		
7	ICSA	S1306040039		0 0			Bismuth	LIQUID		1.9116E-02			6.00E-03	ug/mL	N/A		
7	ICSA	S1306040039		0 0			Calcium	LIQUID	200	1.7390E+02			0.08	ug/mL	86.95	% Recovery	
7	ICSA	S1306040039		0 0			Cadmium	LIQUID		<1.0000E-03			1.00E-03	ug/mL	N/A		
7	ICSA	S1306040039		0 0			Cerium	LIQUID		<6.0000E-03			6.00E-03	ug/mL	N/A		
7	ICSA	S1306040039		0 0			Cobalt	LIQUID		1.9263E-03			1.00E-03	ug/mL	N/A		
7	ICSA	S1306040039		0 0			Chromium	LIQUID		1.0652E-03			1.00E-03	ug/mL	N/A		
7	ICSA	S1306040039		0 0			Copper	LIQUID		<2.0000E-03			2.00E-03	ug/mL	N/A		
7	ICSA	S1306040039		0 0			Europium	LIQUID		<1.0000E-03			1.00E-03	ug/mL	N/A		
7	ICSA	S1306040039		0 0			Iron	LIQUID	200	1.6867E+02			0.01	ug/mL	84.337	% Recovery	
7	ICSA	S1306040039		0 0			Potassium	LIQUID		<2.0000E-02			0.02	ug/mL	N/A		
7	ICSA	S1306040039		0 0			Lanthanum	LIQUID		<1.0000E-03			1.00E-03	ug/mL	N/A		
7	ICSA	S1306040039		0 0			Lithium	LIQUID		5.7594E-03			1.00E-03	ug/mL	N/A		
7	ICSA	S1306040039		0 0			Magnesium	LIQUID	200	1.5717E+02			2.00E-03	ug/mL	78.583	% Recovery	
7	ICSA	S1306040039		0 0			Manganese	LIQUID		1.0044E-02			1.00E-03	ug/mL	N/A		
7	ICSA	S1306040039		0 0			Molybdenum	LIQUID		1.1071E-03			1.00E-03	ug/mL	N/A		
7	ICSA	S1306040039		0 0			Sodium	LIQUID	200	1.9806E+02			0.04	ug/mL	99.029	% Recovery	
7	ICSA	S1306040039		0 0			Neodymium	LIQUID		1.1101E-02			3.00E-03	ug/mL	N/A		
7	ICSA	S1306040039		0 0			Nickel	LIQUID		6.3639E-03			1.00E-03	ug/mL	N/A		
7	ICSA	S1306040039		0 0			Niobium	LIQUID		2.4342E-02			3.00E-03	ug/mL	N/A		
7	ICSA	S1306040039		0 0			Phosphorus	LIQUID		8.5549E-03			3.00E-03	ug/mL	N/A		
7	ICSA	S1306040039		0 0			Lead	LIQUID		<6.0000E-03			6.00E-03	ug/mL	N/A		
7	ICSA	S1306040039		0 0			Palladium	LIQUID		<9.0000E-03			9.00E-03	ug/mL	N/A		
7	ICSA	S1306040039		0 0			Praseodymium	LIQUID		<4.0000E-03			4.00E-03	ug/mL	N/A		
7	ICSA	S1306040039		0 0			Rubidium	LIQUID		<3.0000E-02			0.03	ug/mL	N/A		
7	ICSA	S1306040039		0 0			Rhodium	LIQUID		<8.0000E-03			8.00E-03	ug/mL	N/A		
7	ICSA	S1306040039		0 0			Ruthenium	LIQUID		<4.0000E-03			4.00E-03	ug/mL	N/A		
7	ICSA	S1306040039		0 0			Sulfur	LIQUID		<5.0000E-03			5.00E-03	ug/mL	N/A		
7	ICSA	S1306040039		0 0			Antimony	LIQUID		<6.0000E-03			6.00E-03	ug/mL	N/A		
7	ICSA	S1306040039		0 0			Selenium	LIQUID		<6.0000E-03			6.00E-03	ug/mL	N/A		
7	ICSA	S1306040039		0 0			Silicon	LIQUID		<5.0000E-03			5.00E-03	ug/mL	N/A		
7	ICSA	S1306040039		0 0			Samarium	LIQUID		<5.0000E-03			5.00E-03	ug/mL	N/A		
7	ICSA	S1306040039		0 0			Tin	LIQUID		<3.0000E-03			3.00E-03	ug/mL	N/A		
7	ICSA	S1306040039		0 0			Strontium	LIQUID		1.8687E-02			2.00E-03	ug/mL	N/A		
7	ICSA	S1306040039		0 0			Tantalum	LIQUID		2.9387E-02			5.00E-03	ug/mL	N/A		
7	ICSA	S1306040039		0 0			Tellurium	LIQUID		<5.0000E-03			5.00E-03	ug/mL	N/A		
7	ICSA	S1306040039		0 0			Thorium	LIQUID		1.8107E-01			5.00E-03	ug/mL	N/A		
7	ICSA	S1306040039		0 0			Titanium	LIQUID		<1.0000E-03			1.00E-03	ug/mL	N/A		
7	ICSA	S1306040039		0 0			Thallium	LIQUID		<6.0000E-03			6.00E-03	ug/mL	N/A		
7	ICSA	S1306040039		0 0			Uranium	LIQUID		2.6044E-01			0.02	ug/mL	N/A		
7	ICSA	S1306040039		0 0			Vanadium	LIQUID		5.1631E-03			1.00E-03	ug/mL	N/A		

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041494

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
7	ICSA	S1306040039		0 0			Tungsten	LIQUID		6.8741E-03			6.00E-03	ug/mL	N/A		
7	ICSA	S1306040039		0 0			Yttrium	LIQUID		<2.0000E-03			2.00E-03	ug/mL	N/A		
7	ICSA	S1306040039		0 0			Zinc	LIQUID		<4.0000E-03			4.00E-03	ug/mL	N/A		
7	ICSA	S1306040039		0 0			Zirconium	LIQUID		4.1368E-03			1.00E-03	ug/mL	N/A		
Sample Sequence 8																	
8	ICSAB	S1306040040		0 0			Silver	LIQUID	1	1.0429E+00			1.00E-03	ug/mL	104.29	% Recovery	
8	ICSAB	S1306040040		0 0			Aluminum	LIQUID	200	2.1441E+02			6.00E-03	ug/mL	107.21	% Recovery	
8	ICSAB	S1306040040		0 0			Arsenic	LIQUID	5	4.4844E+00			5.00E-03	ug/mL	89.689	% Recovery	
8	ICSAB	S1306040040		0 0			Boron	LIQUID	1	1.0529E+00			1.00E-03	ug/mL	105.29	% Recovery	
8	ICSAB	S1306040040		0 0			Barium	LIQUID	1	8.6362E-01			1.00E-03	ug/mL	86.362	% Recovery	
8	ICSAB	S1306040040		0 0			Beryllium	LIQUID	.1	1.0053E-01			1.00E-03	ug/mL	100.53	% Recovery	
8	ICSAB	S1306040040		0 0			Bismuth	LIQUID	5	4.4153E+00			6.00E-03	ug/mL	88.306	% Recovery	
8	ICSAB	S1306040040		0 0			Calcium	LIQUID	200	1.6584E+02			0.08	ug/mL	82.918	% Recovery	
8	ICSAB	S1306040040		0 0			Cadmium	LIQUID	.2	1.5876E-01			1.00E-03	ug/mL	79.382	% Recovery	
8	ICSAB	S1306040040		0 0			Cerium	LIQUID		<6.0000E-03			6.00E-03	ug/mL	N/A		
8	ICSAB	S1306040040		0 0			Cobalt	LIQUID	5	4.2336E+00			1.00E-03	ug/mL	84.673	% Recovery	
8	ICSAB	S1306040040		0 0			Chromium	LIQUID	5	4.7250E+00			1.00E-03	ug/mL	94.499	% Recovery	
8	ICSAB	S1306040040		0 0			Copper	LIQUID	5	5.1386E+00			2.00E-03	ug/mL	102.77	% Recovery	
8	ICSAB	S1306040040		0 0			Europium	LIQUID		<1.0000E-03			1.00E-03	ug/mL	N/A		
8	ICSAB	S1306040040		0 0			Iron	LIQUID	200	1.8395E+02			0.01	ug/mL	91.975	% Recovery	
8	ICSAB	S1306040040		0 0			Potassium	LIQUID		<2.0000E-02			0.02	ug/mL	N/A		
8	ICSAB	S1306040040		0 0			Lanthanum	LIQUID		<1.0000E-03			1.00E-03	ug/mL	N/A		
8	ICSAB	S1306040040		0 0			Lithium	LIQUID	1	1.1039E+00			1.00E-03	ug/mL	110.39	% Recovery	
8	ICSAB	S1306040040		0 0			Magnesium	LIQUID	200	1.7132E+02			2.00E-03	ug/mL	85.662	% Recovery	
8	ICSAB	S1306040040		0 0			Manganese	LIQUID	5	4.7718E+00			1.00E-03	ug/mL	95.436	% Recovery	
8	ICSAB	S1306040040		0 0			Molybdenum	LIQUID	5	4.5327E+00			1.00E-03	ug/mL	90.654	% Recovery	
8	ICSAB	S1306040040		0 0			Sodium	LIQUID	200	2.1310E+02			0.04	ug/mL	106.55	% Recovery	
8	ICSAB	S1306040040		0 0			Neodymium	LIQUID		2.0424E-02			3.00E-03	ug/mL	N/A		
8	ICSAB	S1306040040		0 0			Nickel	LIQUID	5	4.1804E+00			1.00E-03	ug/mL	83.607	% Recovery	
8	ICSAB	S1306040040		0 0			Niobium	LIQUID	5	4.1152E+00			3.00E-03	ug/mL	82.303	% Recovery	
8	ICSAB	S1306040040		0 0			Phosphorus	LIQUID	1	8.8767E-01			3.00E-03	ug/mL	88.767	% Recovery	
8	ICSAB	S1306040040		0 0			Lead	LIQUID	1	1.0823E+00			6.00E-03	ug/mL	108.23	% Recovery	
8	ICSAB	S1306040040		0 0			Palladium	LIQUID		5.7885E-02			9.00E-03	ug/mL	N/A		
8	ICSAB	S1306040040		0 0			Praseodymium	LIQUID		<4.0000E-03			4.00E-03	ug/mL	N/A		
8	ICSAB	S1306040040		0 0			Rubidium	LIQUID		<3.0000E-02			0.03	ug/mL	N/A		
8	ICSAB	S1306040040		0 0			Rhodium	LIQUID		<8.0000E-03			8.00E-03	ug/mL	N/A		
8	ICSAB	S1306040040		0 0			Ruthenium	LIQUID		<4.0000E-03			4.00E-03	ug/mL	N/A		
8	ICSAB	S1306040040		0 0			Sulfur	LIQUID		<5.0000E-03			5.00E-03	ug/mL	N/A		
8	ICSAB	S1306040040		0 0			Antimony	LIQUID	5	5.3394E+00			6.00E-03	ug/mL	106.79	% Recovery	
8	ICSAB	S1306040040		0 0			Selenium	LIQUID	5	4.4990E+00			6.00E-03	ug/mL	89.98	% Recovery	
8	ICSAB	S1306040040		0 0			Silicon	LIQUID	5	4.7646E+00			5.00E-03	ug/mL	95.291	% Recovery	
8	ICSAB	S1306040040		0 0			Samarium	LIQUID		<5.0000E-03			5.00E-03	ug/mL	N/A		

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041494

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
8	ICSAB	S1306040040		0 0			Tin	LIQUID	1	8.5276E-01			3.00E-03	ug/mL	85.276	% Recovery	
8	ICSAB	S1306040040		0 0			Strontium	LIQUID	1	8.6062E-01			2.00E-03	ug/mL	86.062	% Recovery	
8	ICSAB	S1306040040		0 0			Tantalum	LIQUID		5.3360E-02			5.00E-03	ug/mL	N/A		
8	ICSAB	S1306040040		0 0			Tellurium	LIQUID	5	4.3187E+00			5.00E-03	ug/mL	86.374	% Recovery	
8	ICSAB	S1306040040		0 0			Thorium	LIQUID		<5.0000E-03			5.00E-03	ug/mL	N/A		
8	ICSAB	S1306040040		0 0			Titanium	LIQUID	50	3.8415E+01			1.00E-03	ug/mL	76.83	% Recovery	
8	ICSAB	S1306040040		0 0			Thallium	LIQUID	5	3.8331E+00			6.00E-03	ug/mL	76.663	% Recovery	
8	ICSAB	S1306040040		0 0			Uranium	LIQUID	5	5.2356E+00			0.02	ug/mL	104.71	% Recovery	
8	ICSAB	S1306040040		0 0			Vanadium	LIQUID	1	9.7081E-01			1.00E-03	ug/mL	97.081	% Recovery	
8	ICSAB	S1306040040		0 0			Tungsten	LIQUID	5	4.0523E+00			6.00E-03	ug/mL	81.046	% Recovery	
8	ICSAB	S1306040040		0 0			Yttrium	LIQUID		<2.0000E-03			2.00E-03	ug/mL	N/A		
8	ICSAB	S1306040040		0 0			Zinc	LIQUID	5	4.4009E+00			4.00E-03	ug/mL	88.018	% Recovery	
8	ICSAB	S1306040040		0 0			Zirconium	LIQUID	5	4.2100E+00			1.00E-03	ug/mL	84.199	% Recovery	
Sample Sequence 9																	
9	BLNK-PREP	S1305280021		0 0	A		Silver	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
9	BLNK-PREP	S1305280021		0 0	A		Aluminum	LIQUID		<6.0000E-03			6.00E-03	ug/mL			
9	BLNK-PREP	S1305280021		0 0	A		Arsenic	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
9	BLNK-PREP	S1305280021		0 0	A		Boron	LIQUID		1.7926E-03			1.00E-03	ug/mL			
9	BLNK-PREP	S1305280021		0 0	A		Barium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
9	BLNK-PREP	S1305280021		0 0	A		Beryllium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
9	BLNK-PREP	S1305280021		0 0	A		Bismuth	LIQUID		<6.0000E-03			6.00E-03	ug/mL			
9	BLNK-PREP	S1305280021		0 0	A		Calcium	LIQUID		<8.0000E-02			0.08	ug/mL			
9	BLNK-PREP	S1305280021		0 0	A		Cadmium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
9	BLNK-PREP	S1305280021		0 0	A		Cerium	LIQUID		1.0055E-02			6.00E-03	ug/mL			
9	BLNK-PREP	S1305280021		0 0	A		Cobalt	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
9	BLNK-PREP	S1305280021		0 0	A		Chromium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
9	BLNK-PREP	S1305280021		0 0	A		Copper	LIQUID		<2.0000E-03			2.00E-03	ug/mL			
9	BLNK-PREP	S1305280021		0 0	A		Europium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
9	BLNK-PREP	S1305280021		0 0	A		Iron	LIQUID		<1.0000E-02			0.01	ug/mL			
9	BLNK-PREP	S1305280021		0 0	A		Potassium	LIQUID		<2.0000E-02			0.02	ug/mL			
9	BLNK-PREP	S1305280021		0 0	A		Lanthanum	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
9	BLNK-PREP	S1305280021		0 0	A		Lithium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
9	BLNK-PREP	S1305280021		0 0	A		Magnesium	LIQUID		<2.0000E-03			2.00E-03	ug/mL			
9	BLNK-PREP	S1305280021		0 0	A		Manganese	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
9	BLNK-PREP	S1305280021		0 0	A		Molybdenum	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
9	BLNK-PREP	S1305280021		0 0	A		Sodium	LIQUID		<4.0000E-02			0.04	ug/mL			
9	BLNK-PREP	S1305280021		0 0	A		Neodymium	LIQUID		<3.0000E-03			3.00E-03	ug/mL			
9	BLNK-PREP	S1305280021		0 0	A		Nickel	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
9	BLNK-PREP	S1305280021		0 0	A		Niobium	LIQUID		<3.0000E-03			3.00E-03	ug/mL			
9	BLNK-PREP	S1305280021		0 0	A		Phosphorus	LIQUID		<3.0000E-03			3.00E-03	ug/mL			
9	BLNK-PREP	S1305280021		0 0	A		Lead	LIQUID		<6.0000E-03			6.00E-03	ug/mL			
9	BLNK-PREP	S1305280021		0 0	A		Palladium	LIQUID		<9.0000E-03			9.00E-03	ug/mL			

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041494

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
9	BLNK-PREP	S1305280021		0 0	A		Praseodymium	LIQUID		<4.0000E-03			4.00E-03	ug/mL			
9	BLNK-PREP	S1305280021		0 0	A		Rubidium	LIQUID		<3.0000E-02			0.03	ug/mL			
9	BLNK-PREP	S1305280021		0 0	A		Rhodium	LIQUID		<8.0000E-03			8.00E-03	ug/mL			
9	BLNK-PREP	S1305280021		0 0	A		Ruthenium	LIQUID		<4.0000E-03			4.00E-03	ug/mL			
9	BLNK-PREP	S1305280021		0 0	A		Sulfur	LIQUID		8.8930E-02			5.00E-03	ug/mL			
9	BLNK-PREP	S1305280021		0 0	A		Antimony	LIQUID		<6.0000E-03			6.00E-03	ug/mL			
9	BLNK-PREP	S1305280021		0 0	A		Selenium	LIQUID		<6.0000E-03			6.00E-03	ug/mL			
9	BLNK-PREP	S1305280021		0 0	A		Silicon	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
9	BLNK-PREP	S1305280021		0 0	A		Samarium	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
9	BLNK-PREP	S1305280021		0 0	A		Tin	LIQUID		<3.0000E-03			3.00E-03	ug/mL			
9	BLNK-PREP	S1305280021		0 0	A		Strontium	LIQUID		<2.0000E-03			2.00E-03	ug/mL			
9	BLNK-PREP	S1305280021		0 0	A		Tantalum	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
9	BLNK-PREP	S1305280021		0 0	A		Tellurium	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
9	BLNK-PREP	S1305280021		0 0	A		Thorium	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
9	BLNK-PREP	S1305280021		0 0	A		Titanium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
9	BLNK-PREP	S1305280021		0 0	A		Thallium	LIQUID		<6.0000E-03			6.00E-03	ug/mL			
9	BLNK-PREP	S1305280021		0 0	A		Uranium	LIQUID		<2.0000E-02			0.02	ug/mL			
9	BLNK-PREP	S1305280021		0 0	A		Vanadium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
9	BLNK-PREP	S1305280021		0 0	A		Tungsten	LIQUID		<6.0000E-03			6.00E-03	ug/mL			
9	BLNK-PREP	S1305280021		0 0	A		Yttrium	LIQUID		<2.0000E-03			2.00E-03	ug/mL			
9	BLNK-PREP	S1305280021		0 0	A		Zinc	LIQUID		4.6822E-03			4.00E-03	ug/mL			
9	BLNK-PREP	S1305280021		0 0	A		Zirconium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
Sample Sequence 10																	
10	STD-PREP	S1305280022		0 0	A		Silver	LIQUID	1	8.5969E-01			1.00E-03	ug/mL	85.969	% Recovery	
10	STD-PREP	S1305280022		0 0	A		Aluminum	LIQUID	5	4.1804E+00			6.00E-03	ug/mL	83.608	% Recovery	
10	STD-PREP	S1305280022		0 0	A		Arsenic	LIQUID	5	4.4231E+00			5.00E-03	ug/mL	88.462	% Recovery	
10	STD-PREP	S1305280022		0 0	A		Boron	LIQUID	5.01	4.5033E+00			1.00E-03	ug/mL	89.885	% Recovery	
10	STD-PREP	S1305280022		0 0	A		Barium	LIQUID	5	4.5375E+00			1.00E-03	ug/mL	90.749	% Recovery	
10	STD-PREP	S1305280022		0 0	A		Beryllium	LIQUID	5	4.3035E+00			1.00E-03	ug/mL	86.07	% Recovery	
10	STD-PREP	S1305280022		0 0	A		Bismuth	LIQUID	5	4.3213E+00			6.00E-03	ug/mL	86.426	% Recovery	
10	STD-PREP	S1305280022		0 0	A		Calcium	LIQUID	5	4.7587E+00			0.08	ug/mL	95.174	% Recovery	
10	STD-PREP	S1305280022		0 0	A		Cadmium	LIQUID	5	4.5617E+00			1.00E-03	ug/mL	91.234	% Recovery	
10	STD-PREP	S1305280022		0 0	A		Cobalt	LIQUID	5	4.5393E+00			1.00E-03	ug/mL	90.786	% Recovery	
10	STD-PREP	S1305280022		0 0	A		Chromium	LIQUID	5	4.4088E+00			1.00E-03	ug/mL	88.176	% Recovery	
10	STD-PREP	S1305280022		0 0	A		Copper	LIQUID	5	4.2230E+00			2.00E-03	ug/mL	84.46	% Recovery	
10	STD-PREP	S1305280022		0 0	A		Iron	LIQUID	5	4.3630E+00			0.01	ug/mL	87.261	% Recovery	
10	STD-PREP	S1305280022		0 0	A		Potassium	LIQUID	5	4.2408E+00			0.02	ug/mL	84.817	% Recovery	
10	STD-PREP	S1305280022		0 0	A		Lanthanum	LIQUID	5	4.3048E+00			1.00E-03	ug/mL	86.096	% Recovery	
10	STD-PREP	S1305280022		0 0	A		Lithium	LIQUID	5.005	4.3697E+00			1.00E-03	ug/mL	87.306	% Recovery	
10	STD-PREP	S1305280022		0 0	A		Magnesium	LIQUID	5	4.3144E+00			2.00E-03	ug/mL	86.289	% Recovery	
10	STD-PREP	S1305280022		0 0	A		Manganese	LIQUID	5	4.4261E+00			1.00E-03	ug/mL	88.522	% Recovery	
10	STD-PREP	S1305280022		0 0	A		Molybdenum	LIQUID	5.01	4.7478E+00			1.00E-03	ug/mL	94.766	% Recovery	

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041494

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
10	STD-PREP	S1305280022		0 0	A		Sodium	LIQUID	5	4.1630E+00			0.04	ug/mL	83.259	% Recovery	
10	STD-PREP	S1305280022		0 0	A		Nickel	LIQUID	5	4.5795E+00			1.00E-03	ug/mL	91.59	% Recovery	
10	STD-PREP	S1305280022		0 0	A		Phosphorus	LIQUID	5.01	4.7141E+00			3.00E-03	ug/mL	94.095	% Recovery	
10	STD-PREP	S1305280022		0 0	A		Lead	LIQUID	5	4.6309E+00			6.00E-03	ug/mL	92.618	% Recovery	
10	STD-PREP	S1305280022		0 0	A		Sulfur	LIQUID	4.99	4.7851E+00			5.00E-03	ug/mL	95.894	% Recovery	
10	STD-PREP	S1305280022		0 0	A		Antimony	LIQUID	5.015	4.5764E+00			6.00E-03	ug/mL	91.254	% Recovery	
10	STD-PREP	S1305280022		0 0	A		Selenium	LIQUID	5	4.4475E+00			6.00E-03	ug/mL	88.951	% Recovery	
10	STD-PREP	S1305280022		0 0	A		Silicon	LIQUID	5.01	4.0863E+00			5.00E-03	ug/mL	81.564	% Recovery	
10	STD-PREP	S1305280022		0 0	A		Strontium	LIQUID	5	4.6431E+00			2.00E-03	ug/mL	92.863	% Recovery	
10	STD-PREP	S1305280022		0 0	A		Titanium	LIQUID	5.005	4.5724E+00			1.00E-03	ug/mL	91.356	% Recovery	
10	STD-PREP	S1305280022		0 0	A		Vanadium	LIQUID	5	4.3525E+00			1.00E-03	ug/mL	87.049	% Recovery	
10	STD-PREP	S1305280022		0 0	A		Zinc	LIQUID	5	4.4002E+00			4.00E-03	ug/mL	88.004	% Recovery	
10	STD-PREP	S1305280022		0 0	A		Zirconium	LIQUID	4.99	4.5445E+00			1.00E-03	ug/mL	91.072	% Recovery	
Sample Sequence 11																	
11	STD-PREP	S1305280026		0 0	A		Cerium	LIQUID	5	3.9474E+00			6.00E-03	ug/mL	78.947	% Recovery	
11	STD-PREP	S1305280026		0 0	A		Europium	LIQUID	5	4.0206E+00			1.00E-03	ug/mL	80.411	% Recovery	
11	STD-PREP	S1305280026		0 0	A		Neodymium	LIQUID	5	3.9439E+00			3.00E-03	ug/mL	78.878	% Recovery	
11	STD-PREP	S1305280026		0 0	A		Niobium	LIQUID	4.99	3.0320E+00			3.00E-03	ug/mL	60.761	% Recovery	
11	STD-PREP	S1305280026		0 0	A		Palladium	LIQUID	4.985	5.0632E+00			9.00E-03	ug/mL	101.57	% Recovery	
11	STD-PREP	S1305280026		0 0	A		Praseodymium	LIQUID	5	3.9692E+00			4.00E-03	ug/mL	79.383	% Recovery	
11	STD-PREP	S1305280026		0 0	A		Rubidium	LIQUID	5	3.8501E+00			0.03	ug/mL	77.002	% Recovery	
11	STD-PREP	S1305280026		0 0	A		Rhodium	LIQUID	4.99	4.9560E+00			8.00E-03	ug/mL	99.318	% Recovery	
11	STD-PREP	S1305280026		0 0	A		Ruthenium	LIQUID	5.015	4.9414E+00			4.00E-03	ug/mL	98.532	% Recovery	
11	STD-PREP	S1305280026		0 0	A		Samarium	LIQUID	5	3.9539E+00			5.00E-03	ug/mL	79.079	% Recovery	
11	STD-PREP	S1305280026		0 0	A		Tin	LIQUID	4.975	2.9710E+00			3.00E-03	ug/mL	59.719	% Recovery	
11	STD-PREP	S1305280026		0 0	A		Tantalum	LIQUID	5.015	3.1255E+00			5.00E-03	ug/mL	62.323	% Recovery	
11	STD-PREP	S1305280026		0 0	A		Tellurium	LIQUID	4.995	2.9447E+00			5.00E-03	ug/mL	58.953	% Recovery	
11	STD-PREP	S1305280026		0 0	A		Thorium	LIQUID	5	3.9641E+00			5.00E-03	ug/mL	79.283	% Recovery	
11	STD-PREP	S1305280026		0 0	A		Thallium	LIQUID	5.025	4.9603E+00			6.00E-03	ug/mL	98.712	% Recovery	
11	STD-PREP	S1305280026		0 0	A		Uranium	LIQUID	5	3.9576E+00			0.02	ug/mL	79.152	% Recovery	
11	STD-PREP	S1305280026		0 0	A		Tungsten	LIQUID	4.995	3.0140E+00			6.00E-03	ug/mL	60.34	% Recovery	
11	STD-PREP	S1305280026		0 0	A		Yttrium	LIQUID	5	3.9402E+00			2.00E-03	ug/mL	78.804	% Recovery	
Sample Sequence 12																	
12	SERDIL	S1306040041	S13T004252	0 0			Chromium	SOLID		9.1893E+00			5.0896	ug/mL	4.4303	% Diff	
Sample Sequence 13																	
13	SAMPLE	S13T004252		0 0	A		Chromium	SOLID	N/A	9.6153E+00			1.0179	ug/g			J
Sample Sequence 14																	
14	DUP	S1305280023	S13T004252	0 0	A		Chromium	SOLID	9.6153E+00	8.7941E+00			0.96674	ug/g	8.9216	% RPD	
Sample Sequence 15																	
15	SPK-PREDIG	S1305280024	S13T004252	0 0	A		Chromium	SOLID	1025	9.0908E+02			1.0267	ug/g	87.753	% Recovery	
Sample Sequence 17																	

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041494

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
17	CCV	S1306040043		0 0			Silver	LIQUID	1	9.8802E-01			1.00E-03	ug/mL	98.802	% Recovery	
17	CCV	S1306040043		0 0			Aluminum	LIQUID	5	4.7591E+00			6.00E-03	ug/mL	95.182	% Recovery	
17	CCV	S1306040043		0 0			Arsenic	LIQUID	5	5.0118E+00			5.00E-03	ug/mL	100.24	% Recovery	
17	CCV	S1306040043		0 0			Boron	LIQUID	5	4.7405E+00			1.00E-03	ug/mL	94.81	% Recovery	
17	CCV	S1306040043		0 0			Barium	LIQUID	5	5.0598E+00			1.00E-03	ug/mL	101.2	% Recovery	
17	CCV	S1306040043		0 0			Beryllium	LIQUID	5	4.9716E+00			1.00E-03	ug/mL	99.433	% Recovery	
17	CCV	S1306040043		0 0			Bismuth	LIQUID	5	4.9247E+00			6.00E-03	ug/mL	98.494	% Recovery	
17	CCV	S1306040043		0 0			Calcium	LIQUID	5	5.2316E+00			0.08	ug/mL	104.63	% Recovery	
17	CCV	S1306040043		0 0			Cadmium	LIQUID	5	5.1673E+00			1.00E-03	ug/mL	103.35	% Recovery	
18	CCV	S1306040043		0 1			Cerium	LIQUID	5	4.6989E+00			6.00E-03	ug/mL	93.979	% Recovery	
17	CCV	S1306040043		0 0			Cobalt	LIQUID	5	5.0744E+00			1.00E-03	ug/mL	101.49	% Recovery	
17	CCV	S1306040043		0 0			Chromium	LIQUID	5	4.9925E+00			1.00E-03	ug/mL	99.85	% Recovery	
17	CCV	S1306040043		0 0			Copper	LIQUID	5	4.8069E+00			2.00E-03	ug/mL	96.137	% Recovery	
18	CCV	S1306040043		0 1			Europium	LIQUID	5	4.7668E+00			1.00E-03	ug/mL	95.336	% Recovery	
17	CCV	S1306040043		0 0			Iron	LIQUID	5	4.9706E+00			0.01	ug/mL	99.413	% Recovery	
17	CCV	S1306040043		0 0			Potassium	LIQUID	5	4.8501E+00			0.02	ug/mL	97.002	% Recovery	
17	CCV	S1306040043		0 0			Lanthanum	LIQUID	5	4.8455E+00			1.00E-03	ug/mL	96.91	% Recovery	
17	CCV	S1306040043		0 0			Lithium	LIQUID	5	4.9193E+00			1.00E-03	ug/mL	98.385	% Recovery	
17	CCV	S1306040043		0 0			Magnesium	LIQUID	5	4.9180E+00			2.00E-03	ug/mL	98.359	% Recovery	
17	CCV	S1306040043		0 0			Manganese	LIQUID	5	5.0015E+00			1.00E-03	ug/mL	100.03	% Recovery	
17	CCV	S1306040043		0 0			Molybdenum	LIQUID	5	4.8792E+00			1.00E-03	ug/mL	97.584	% Recovery	
17	CCV	S1306040043		0 0			Sodium	LIQUID	5	4.7910E+00			0.04	ug/mL	95.819	% Recovery	
18	CCV	S1306040043		0 1			Neodymium	LIQUID	5	4.6877E+00			3.00E-03	ug/mL	93.754	% Recovery	
17	CCV	S1306040043		0 0			Nickel	LIQUID	5	5.1322E+00			1.00E-03	ug/mL	102.64	% Recovery	
18	CCV	S1306040043		0 1			Niobium	LIQUID	5	4.7693E+00			3.00E-03	ug/mL	95.386	% Recovery	
17	CCV	S1306040043		0 0			Phosphorus	LIQUID	5	4.9451E+00			3.00E-03	ug/mL	98.902	% Recovery	
17	CCV	S1306040043		0 0			Lead	LIQUID	5	5.2118E+00			6.00E-03	ug/mL	104.24	% Recovery	
18	CCV	S1306040043		0 1			Palladium	LIQUID	5	4.9266E+00			9.00E-03	ug/mL	98.532	% Recovery	
18	CCV	S1306040043		0 1			Praseodymium	LIQUID	5	4.6603E+00			4.00E-03	ug/mL	93.206	% Recovery	
18	CCV	S1306040043		0 1			Rubidium	LIQUID	5	4.7410E+00			0.03	ug/mL	94.82	% Recovery	
18	CCV	S1306040043		0 1			Rhodium	LIQUID	5	4.6994E+00			8.00E-03	ug/mL	93.989	% Recovery	
18	CCV	S1306040043		0 1			Ruthenium	LIQUID	5	4.9374E+00			4.00E-03	ug/mL	98.748	% Recovery	
17	CCV	S1306040043		0 0			Sulfur	LIQUID	5	4.9798E+00			5.00E-03	ug/mL	99.596	% Recovery	
17	CCV	S1306040043		0 0			Antimony	LIQUID	5	4.8081E+00			6.00E-03	ug/mL	96.163	% Recovery	
17	CCV	S1306040043		0 0			Selenium	LIQUID	5	4.9750E+00			6.00E-03	ug/mL	99.499	% Recovery	
17	CCV	S1306040043		0 0			Silicon	LIQUID	5	4.8794E+00			5.00E-03	ug/mL	97.587	% Recovery	
18	CCV	S1306040043		0 1			Samarium	LIQUID	5	4.6591E+00			5.00E-03	ug/mL	93.182	% Recovery	
18	CCV	S1306040043		0 1			Tin	LIQUID	5	4.9558E+00			3.00E-03	ug/mL	99.117	% Recovery	
17	CCV	S1306040043		0 0			Strontium	LIQUID	5	5.1718E+00			2.00E-03	ug/mL	103.44	% Recovery	
18	CCV	S1306040043		0 1			Tantalum	LIQUID	5	4.8942E+00			5.00E-03	ug/mL	97.885	% Recovery	
18	CCV	S1306040043		0 1			Tellurium	LIQUID	5	4.8148E+00			5.00E-03	ug/mL	96.297	% Recovery	
18	CCV	S1306040043		0 1			Thorium	LIQUID	5	4.8303E+00			5.00E-03	ug/mL	96.606	% Recovery	

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041494

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
17	CCV	S1306040043		0 0			Titanium	LIQUID	5	4.7444E+00			1.00E-03	ug/mL	94.887	% Recovery	
18	CCV	S1306040043		0 1			Thallium	LIQUID	5	4.9648E+00			6.00E-03	ug/mL	99.296	% Recovery	
18	CCV	S1306040043		0 1			Uranium	LIQUID	5	4.6177E+00			0.02	ug/mL	92.354	% Recovery	
17	CCV	S1306040043		0 0			Vanadium	LIQUID	5	4.9010E+00			1.00E-03	ug/mL	98.021	% Recovery	
18	CCV	S1306040043		0 1			Tungsten	LIQUID	5	4.8155E+00			6.00E-03	ug/mL	96.31	% Recovery	
18	CCV	S1306040043		0 1			Yttrium	LIQUID	5	4.8467E+00			2.00E-03	ug/mL	96.934	% Recovery	
17	CCV	S1306040043		0 0			Zinc	LIQUID	5	5.0525E+00			4.00E-03	ug/mL	101.05	% Recovery	
17	CCV	S1306040043		0 0			Zirconium	LIQUID	5	4.7370E+00			1.00E-03	ug/mL	94.74	% Recovery	
Sample Sequence 19																	
19	CCB	S1306040044		0 0			Silver	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
19	CCB	S1306040044		0 0			Aluminum	LIQUID		<6.0000E-03			6.00E-03	ug/mL			
19	CCB	S1306040044		0 0			Arsenic	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
19	CCB	S1306040044		0 0			Boron	LIQUID		2.1840E-03			1.00E-03	ug/mL			
19	CCB	S1306040044		0 0			Barium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
19	CCB	S1306040044		0 0			Beryllium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
19	CCB	S1306040044		0 0			Bismuth	LIQUID		<6.0000E-03			6.00E-03	ug/mL			
19	CCB	S1306040044		0 0			Calcium	LIQUID		<8.0000E-02			0.08	ug/mL			
19	CCB	S1306040044		0 0			Cadmium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
19	CCB	S1306040044		0 0			Cerium	LIQUID		<6.0000E-03			6.00E-03	ug/mL			
19	CCB	S1306040044		0 0			Cobalt	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
19	CCB	S1306040044		0 0			Chromium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
19	CCB	S1306040044		0 0			Copper	LIQUID		<2.0000E-03			2.00E-03	ug/mL			
19	CCB	S1306040044		0 0			Europium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
19	CCB	S1306040044		0 0			Iron	LIQUID		<1.0000E-02			0.01	ug/mL			
19	CCB	S1306040044		0 0			Potassium	LIQUID		<2.0000E-02			0.02	ug/mL			
19	CCB	S1306040044		0 0			Lanthanum	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
19	CCB	S1306040044		0 0			Lithium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
19	CCB	S1306040044		0 0			Magnesium	LIQUID		<2.0000E-03			2.00E-03	ug/mL			
19	CCB	S1306040044		0 0			Manganese	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
19	CCB	S1306040044		0 0			Molybdenum	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
19	CCB	S1306040044		0 0			Sodium	LIQUID		<4.0000E-02			0.04	ug/mL			
19	CCB	S1306040044		0 0			Neodymium	LIQUID		<3.0000E-03			3.00E-03	ug/mL			
19	CCB	S1306040044		0 0			Nickel	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
19	CCB	S1306040044		0 0			Niobium	LIQUID		<3.0000E-03			3.00E-03	ug/mL			
19	CCB	S1306040044		0 0			Phosphorus	LIQUID		<3.0000E-03			3.00E-03	ug/mL			
19	CCB	S1306040044		0 0			Lead	LIQUID		<6.0000E-03			6.00E-03	ug/mL			
19	CCB	S1306040044		0 0			Palladium	LIQUID		<9.0000E-03			9.00E-03	ug/mL			
19	CCB	S1306040044		0 0			Praseodymium	LIQUID		<4.0000E-03			4.00E-03	ug/mL			
19	CCB	S1306040044		0 0			Rubidium	LIQUID		<3.0000E-02			0.03	ug/mL			
19	CCB	S1306040044		0 0			Rhodium	LIQUID		<8.0000E-03			8.00E-03	ug/mL			
19	CCB	S1306040044		0 0			Ruthenium	LIQUID		<4.0000E-03			4.00E-03	ug/mL			
19	CCB	S1306040044		0 0			Sulfur	LIQUID		<5.0000E-03			5.00E-03	ug/mL			

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041494

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
19	CCB	S1306040044		0 0			Antimony	LIQUID		<6.0000E-03			6.00E-03	ug/mL			
19	CCB	S1306040044		0 0			Selenium	LIQUID		<6.0000E-03			6.00E-03	ug/mL			
19	CCB	S1306040044		0 0			Silicon	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
19	CCB	S1306040044		0 0			Samarium	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
19	CCB	S1306040044		0 0			Tin	LIQUID		<3.0000E-03			3.00E-03	ug/mL			
19	CCB	S1306040044		0 0			Strontium	LIQUID		<2.0000E-03			2.00E-03	ug/mL			
19	CCB	S1306040044		0 0			Tantalum	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
19	CCB	S1306040044		0 0			Tellurium	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
19	CCB	S1306040044		0 0			Thorium	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
19	CCB	S1306040044		0 0			Titanium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
19	CCB	S1306040044		0 0			Thallium	LIQUID		<6.0000E-03			6.00E-03	ug/mL			
19	CCB	S1306040044		0 0			Uranium	LIQUID		<2.0000E-02			0.02	ug/mL			
19	CCB	S1306040044		0 0			Vanadium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
19	CCB	S1306040044		0 0			Tungsten	LIQUID		<6.0000E-03			6.00E-03	ug/mL			
19	CCB	S1306040044		0 0			Yttrium	LIQUID		<2.0000E-03			2.00E-03	ug/mL			
19	CCB	S1306040044		0 0			Zinc	LIQUID		<4.0000E-03			4.00E-03	ug/mL			
19	CCB	S1306040044		0 0			Zirconium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
Sample Sequence 20																	
20	SPK-POST	S1306040042	S13T004252	0 0			Chromium	SOLID	50	4.7082E+01			1.00E-03	ug/mL	94.07	% Recovery	
Sample Sequence 21																	
21	SAMPLE	S13T004280		0 0	A		Chromium	SOLID	N/A	1.6516E+01			1.0105	ug/g			
Sample Sequence 22																	
22	SAMPLE	S13T004307		0 0	A		Chromium	SOLID	N/A	1.4288E+01			1.0412	ug/g			
Sample Sequence 23																	
23	BLNK-PREP	S1305160012		0 0	Z		Silver	SOLID		<5.3396E+01			53.396	ug/g			
23	BLNK-PREP	S1305160012		0 0	Z		Aluminum	SOLID		6.7433E+02			320.38	ug/g			
23	BLNK-PREP	S1305160012		0 0	Z		Arsenic	SOLID		<2.6698E+02			266.98	ug/g			
23	BLNK-PREP	S1305160012		0 0	Z		Boron	SOLID		1.7631E+02			53.396	ug/g			
23	BLNK-PREP	S1305160012		0 0	Z		Barium	SOLID		<5.3396E+01			53.396	ug/g			
23	BLNK-PREP	S1305160012		0 0	Z		Beryllium	SOLID		<5.3396E+01			53.396	ug/g			
23	BLNK-PREP	S1305160012		0 0	Z		Bismuth	SOLID		<3.2038E+02			320.38	ug/g			
23	BLNK-PREP	S1305160012		0 0	Z		Calcium	SOLID		<4.2717E+03			4.27E+03	ug/g			
23	BLNK-PREP	S1305160012		0 0	Z		Cadmium	SOLID		<5.3396E+01			53.396	ug/g			
23	BLNK-PREP	S1305160012		0 0	Z		Cerium	SOLID		<3.2038E+02			320.38	ug/g			
23	BLNK-PREP	S1305160012		0 0	Z		Cobalt	SOLID		<5.3396E+01			53.396	ug/g			
23	BLNK-PREP	S1305160012		0 0	Z		Chromium	SOLID		<5.3396E+01			53.396	ug/g			
23	BLNK-PREP	S1305160012		0 0	Z		Copper	SOLID		<1.0679E+02			106.79	ug/g			
23	BLNK-PREP	S1305160012		0 0	Z		Europium	SOLID		<5.3396E+01			53.396	ug/g			
23	BLNK-PREP	S1305160012		0 0	Z		Iron	SOLID		<5.3396E+02			533.96	ug/g			
23	BLNK-PREP	S1305160012		0 0	Z		Lanthanum	SOLID		<5.3396E+01			53.396	ug/g			
23	BLNK-PREP	S1305160012		0 0	Z		Lithium	SOLID		<5.3396E+01			53.396	ug/g			
23	BLNK-PREP	S1305160012		0 0	Z		Magnesium	SOLID		<1.0679E+02			106.79	ug/g			

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041494

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
23	BLNK-PREP	S1305160012		0 0	Z		Manganese	SOLID		<5.3396E+01			53.396	ug/g			
23	BLNK-PREP	S1305160012		0 0	Z		Molybdenum	SOLID		<5.3396E+01			53.396	ug/g			
23	BLNK-PREP	S1305160012		0 0	Z		Sodium	SOLID		<2.1358E+03			2.14E+03	ug/g			
23	BLNK-PREP	S1305160012		0 0	Z		Neodymium	SOLID		<1.6019E+02			160.19	ug/g			
23	BLNK-PREP	S1305160012		0 0	Z		Nickel	SOLID		<5.3396E+01			53.396	ug/g			
23	BLNK-PREP	S1305160012		0 0	Z		Niobium	SOLID		<1.6019E+02			160.19	ug/g			
23	BLNK-PREP	S1305160012		0 0	Z		Phosphorus	SOLID		<1.6019E+02			160.19	ug/g			
23	BLNK-PREP	S1305160012		0 0	Z		Lead	SOLID		<3.2038E+02			320.38	ug/g			
23	BLNK-PREP	S1305160012		0 0	Z		Palladium	SOLID		<4.8056E+02			480.56	ug/g			
23	BLNK-PREP	S1305160012		0 0	Z		Praseodymium	SOLID		<2.1358E+02			213.58	ug/g			
23	BLNK-PREP	S1305160012		0 0	Z		Rubidium	SOLID		2.8373E+03			1.60E+03	ug/g			
23	BLNK-PREP	S1305160012		0 0	Z		Rhodium	SOLID		<4.2717E+02			427.17	ug/g			
23	BLNK-PREP	S1305160012		0 0	Z		Ruthenium	SOLID		<2.1358E+02			213.58	ug/g			
23	BLNK-PREP	S1305160012		0 0	Z		Sulfur	SOLID		<2.6698E+02			266.98	ug/g			
23	BLNK-PREP	S1305160012		0 0	Z		Antimony	SOLID		<3.2038E+02			320.38	ug/g			
23	BLNK-PREP	S1305160012		0 0	Z		Selenium	SOLID		<3.2038E+02			320.38	ug/g			
23	BLNK-PREP	S1305160012		0 0	Z		Silicon	SOLID		<2.6698E+02			266.98	ug/g			
23	BLNK-PREP	S1305160012		0 0	Z		Samarium	SOLID		<2.6698E+02			266.98	ug/g			
23	BLNK-PREP	S1305160012		0 0	Z		Tin	SOLID		<1.6019E+02			160.19	ug/g			
23	BLNK-PREP	S1305160012		0 0	Z		Strontium	SOLID		<1.0679E+02			106.79	ug/g			
23	BLNK-PREP	S1305160012		0 0	Z		Tantalum	SOLID		<2.6698E+02			266.98	ug/g			
23	BLNK-PREP	S1305160012		0 0	Z		Tellurium	SOLID		<2.6698E+02			266.98	ug/g			
23	BLNK-PREP	S1305160012		0 0	Z		Thorium	SOLID		<2.6698E+02			266.98	ug/g			
23	BLNK-PREP	S1305160012		0 0	Z		Titanium	SOLID		<5.3396E+01			53.396	ug/g			
23	BLNK-PREP	S1305160012		0 0	Z		Thallium	SOLID		<3.2038E+02			320.38	ug/g			
23	BLNK-PREP	S1305160012		0 0	Z		Uranium	SOLID		<1.0679E+03			1.07E+03	ug/g			
23	BLNK-PREP	S1305160012		0 0	Z		Vanadium	SOLID		<5.3396E+01			53.396	ug/g			
23	BLNK-PREP	S1305160012		0 0	Z		Tungsten	SOLID		<3.2038E+02			320.38	ug/g			
23	BLNK-PREP	S1305160012		0 0	Z		Yttrium	SOLID		<1.0679E+02			106.79	ug/g			
23	BLNK-PREP	S1305160012		0 0	Z		Zinc	SOLID		<2.1358E+02			213.58	ug/g			
Sample Sequence 24																	
24	SERDIL	S1306040052	S13T004254	0 0			Silver	SOLID		<2.6698E+02			266.98	ug/mL	N/A		
24	SERDIL	S1306040052	S13T004254	0 0			Aluminum	SOLID		2.2637E+05			1.60E+03	ug/mL	2.8502	% Diff	
24	SERDIL	S1306040052	S13T004254	0 0			Arsenic	SOLID		<1.3349E+03			1.33E+03	ug/mL	N/A		
24	SERDIL	S1306040052	S13T004254	0 0			Barium	SOLID		<2.6698E+02			266.98	ug/mL	N/A		
24	SERDIL	S1306040052	S13T004254	0 0			Beryllium	SOLID		<2.6698E+02			266.98	ug/mL	N/A		
24	SERDIL	S1306040052	S13T004254	0 0			Bismuth	SOLID		<1.6019E+03			1.60E+03	ug/mL	N/A		
24	SERDIL	S1306040052	S13T004254	0 0			Calcium	SOLID		<2.1358E+04			2.14E+04	ug/mL	N/A		
24	SERDIL	S1306040052	S13T004254	0 0			Cadmium	SOLID		<2.6698E+02			266.98	ug/mL	N/A		
24	SERDIL	S1306040052	S13T004254	0 0			Cerium	SOLID		<1.6019E+03			1.60E+03	ug/mL	N/A		
24	SERDIL	S1306040052	S13T004254	0 0			Cobalt	SOLID		<2.6698E+02			266.98	ug/mL	N/A		
24	SERDIL	S1306040052	S13T004254	0 0			Chromium	SOLID		<2.6698E+02			266.98	ug/mL	N/A		

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041494

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
24	SERDIL	S1306040052	S13T004254	0 0			Copper	SOLID		<5.3396E+02			533.96	ug/mL	N/A		
24	SERDIL	S1306040052	S13T004254	0 0			Europium	SOLID		<2.6698E+02			266.98	ug/mL	N/A		
24	SERDIL	S1306040052	S13T004254	0 0			Iron	SOLID		3.9703E+03			2.67E+03	ug/mL	3.6025	% Diff	
24	SERDIL	S1306040052	S13T004254	0 0			Lanthanum	SOLID		<2.6698E+02			266.98	ug/mL	N/A		
24	SERDIL	S1306040052	S13T004254	0 0			Lithium	SOLID		<2.6698E+02			266.98	ug/mL	N/A		
24	SERDIL	S1306040052	S13T004254	0 0			Magnesium	SOLID		<5.3396E+02			533.96	ug/mL	N/A		
24	SERDIL	S1306040052	S13T004254	0 0			Manganese	SOLID		<2.6698E+02			266.98	ug/mL	N/A		
24	SERDIL	S1306040052	S13T004254	0 0			Molybdenum	SOLID		<2.6698E+02			266.98	ug/mL	N/A		
24	SERDIL	S1306040052	S13T004254	0 0			Sodium	SOLID		3.4756E+04			1.07E+04	ug/mL	34.674	% Diff	
24	SERDIL	S1306040052	S13T004254	0 0			Neodymium	SOLID		<8.0094E+02			800.94	ug/mL	N/A		
24	SERDIL	S1306040052	S13T004254	0 0			Nickel	SOLID		7.1575E+02			266.98	ug/mL	3.5297	% Diff	
24	SERDIL	S1306040052	S13T004254	0 0			Niobium	SOLID		<8.0094E+02			800.94	ug/mL	N/A		
24	SERDIL	S1306040052	S13T004254	0 0			Phosphorus	SOLID		1.0140E+04			800.94	ug/mL	3.5061	% Diff	
24	SERDIL	S1306040052	S13T004254	0 0			Lead	SOLID		<1.6019E+03			1.60E+03	ug/mL	N/A		
24	SERDIL	S1306040052	S13T004254	0 0			Palladium	SOLID		<2.4028E+03			2.40E+03	ug/mL	N/A		
24	SERDIL	S1306040052	S13T004254	0 0			Praseodymium	SOLID		<1.0679E+03			1.07E+03	ug/mL	N/A		
24	SERDIL	S1306040052	S13T004254	0 0			Rhodium	SOLID		<2.1358E+03			2.14E+03	ug/mL	N/A		
24	SERDIL	S1306040052	S13T004254	0 0			Ruthenium	SOLID		<1.0679E+03			1.07E+03	ug/mL	N/A		
24	SERDIL	S1306040052	S13T004254	0 0			Sulfur	SOLID		<1.3349E+03			1.33E+03	ug/mL	N/A		
24	SERDIL	S1306040052	S13T004254	0 0			Antimony	SOLID		<1.6019E+03			1.60E+03	ug/mL	N/A		
24	SERDIL	S1306040052	S13T004254	0 0			Selenium	SOLID		<1.6019E+03			1.60E+03	ug/mL	N/A		
24	SERDIL	S1306040052	S13T004254	0 0			Silicon	SOLID		<1.3349E+03			1.33E+03	ug/mL	N/A		
24	SERDIL	S1306040052	S13T004254	0 0			Samarium	SOLID		<1.3349E+03			1.33E+03	ug/mL	N/A		
24	SERDIL	S1306040052	S13T004254	0 0			Tin	SOLID		<8.0094E+02			800.94	ug/mL	N/A		
24	SERDIL	S1306040052	S13T004254	0 0			Strontium	SOLID		<5.3396E+02			533.96	ug/mL	N/A		
24	SERDIL	S1306040052	S13T004254	0 0			Tantalum	SOLID		<1.3349E+03			1.33E+03	ug/mL	N/A		
24	SERDIL	S1306040052	S13T004254	0 0			Tellurium	SOLID		<1.3349E+03			1.33E+03	ug/mL	N/A		
24	SERDIL	S1306040052	S13T004254	0 0			Thorium	SOLID		<1.3349E+03			1.33E+03	ug/mL	N/A		
24	SERDIL	S1306040052	S13T004254	0 0			Titanium	SOLID		<2.6698E+02			266.98	ug/mL	N/A		
24	SERDIL	S1306040052	S13T004254	0 0			Thallium	SOLID		<1.6019E+03			1.60E+03	ug/mL	N/A		
24	SERDIL	S1306040052	S13T004254	0 0			Uranium	SOLID		<5.3396E+03			5.34E+03	ug/mL	N/A		
24	SERDIL	S1306040052	S13T004254	0 0			Vanadium	SOLID		<2.6698E+02			266.98	ug/mL	N/A		
24	SERDIL	S1306040052	S13T004254	0 0			Tungsten	SOLID		<1.6019E+03			1.60E+03	ug/mL	N/A		
24	SERDIL	S1306040052	S13T004254	0 0			Yttrium	SOLID		<5.3396E+02			533.96	ug/mL	N/A		
24	SERDIL	S1306040052	S13T004254	0 0			Zinc	SOLID		<1.0679E+03			1.07E+03	ug/mL	N/A		
Sample Sequence 25																	
25	SAMPLE	S13T004254		0 0	Z		Silver	SOLID	N/A	<5.3396E+01			53.396	ug/g			U
25	SAMPLE	S13T004254		0 0	Z		Aluminum	SOLID	N/A	2.2010E+05			320.38	ug/g			
25	SAMPLE	S13T004254		0 0	Z		Arsenic	SOLID	N/A	<2.6698E+02			266.98	ug/g			U
25	SAMPLE	S13T004254		0 0	Z		Barium	SOLID	N/A	<5.3396E+01			53.396	ug/g			U
25	SAMPLE	S13T004254		0 0	Z		Beryllium	SOLID	N/A	<5.3396E+01			53.396	ug/g			U
25	SAMPLE	S13T004254		0 0	Z		Bismuth	SOLID	N/A	<3.2038E+02			320.38	ug/g			U

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041494

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
25	SAMPLE	S13T004254		0 0	Z		Calcium	SOLID	N/A	<4.2717E+03			4.27E+03	ug/g			U
25	SAMPLE	S13T004254		0 0	Z		Cadmium	SOLID	N/A	<5.3396E+01			53.396	ug/g			UY
25	SAMPLE	S13T004254		0 0	Z		Cerium	SOLID	N/A	4.5043E+02			320.38	ug/g			J
25	SAMPLE	S13T004254		0 0	Z		Cobalt	SOLID	N/A	<5.3396E+01			53.396	ug/g			U
25	SAMPLE	S13T004254		0 0	Z		Chromium	SOLID	N/A	<5.3396E+01			53.396	ug/g			U
25	SAMPLE	S13T004254		0 0	Z		Copper	SOLID	N/A	<1.0679E+02			106.79	ug/g			U
25	SAMPLE	S13T004254		0 0	Z		Europium	SOLID	N/A	<5.3396E+01			53.396	ug/g			U
25	SAMPLE	S13T004254		0 0	Z		Iron	SOLID	N/A	4.1187E+03			533.96	ug/g			J
25	SAMPLE	S13T004254		0 0	Z		Lanthanum	SOLID	N/A	<5.3396E+01			53.396	ug/g			U
25	SAMPLE	S13T004254		0 0	Z		Lithium	SOLID	N/A	<5.3396E+01			53.396	ug/g			U
25	SAMPLE	S13T004254		0 0	Z		Magnesium	SOLID	N/A	<1.0679E+02			106.79	ug/g			U
25	SAMPLE	S13T004254		0 0	Z		Manganese	SOLID	N/A	<5.3396E+01			53.396	ug/g			U
25	SAMPLE	S13T004254		0 0	Z		Molybdenum	SOLID	N/A	<5.3396E+01			53.396	ug/g			U
25	SAMPLE	S13T004254		0 0	Z		Sodium	SOLID	N/A	5.3203E+04			2.14E+03	ug/g			
25	SAMPLE	S13T004254		0 0	Z		Neodymium	SOLID	N/A	<1.6019E+02			160.19	ug/g			U
25	SAMPLE	S13T004254		0 0	Z		Nickel	SOLID	N/A	7.4194E+02			53.396	ug/g			
25	SAMPLE	S13T004254		0 0	Z		Niobium	SOLID	N/A	<1.6019E+02			160.19	ug/g			U
25	SAMPLE	S13T004254		0 0	Z		Phosphorus	SOLID	N/A	1.0508E+04			160.19	ug/g			c
25	SAMPLE	S13T004254		0 0	Z		Lead	SOLID	N/A	4.1704E+02			320.38	ug/g			J
25	SAMPLE	S13T004254		0 0	Z		Palladium	SOLID	N/A	<4.8056E+02			480.56	ug/g			U
25	SAMPLE	S13T004254		0 0	Z		Praseodymium	SOLID	N/A	<2.1358E+02			213.58	ug/g			U
25	SAMPLE	S13T004254		0 0	Z		Rhodium	SOLID	N/A	<4.2717E+02			427.17	ug/g			U
25	SAMPLE	S13T004254		0 0	Z		Ruthenium	SOLID	N/A	<2.1358E+02			213.58	ug/g			U
25	SAMPLE	S13T004254		0 0	Z		Sulfur	SOLID	N/A	<2.6698E+02			266.98	ug/g			U
25	SAMPLE	S13T004254		0 0	Z		Antimony	SOLID	N/A	<3.2038E+02			320.38	ug/g			U
25	SAMPLE	S13T004254		0 0	Z		Selenium	SOLID	N/A	<3.2038E+02			320.38	ug/g			U
25	SAMPLE	S13T004254		0 0	Z		Silicon	SOLID	N/A	1.1518E+03			266.98	ug/g			J
25	SAMPLE	S13T004254		0 0	Z		Samarium	SOLID	N/A	<2.6698E+02			266.98	ug/g			U
25	SAMPLE	S13T004254		0 0	Z		Tin	SOLID	N/A	<1.6019E+02			160.19	ug/g			U
25	SAMPLE	S13T004254		0 0	Z		Strontium	SOLID	N/A	<1.0679E+02			106.79	ug/g			U
25	SAMPLE	S13T004254		0 0	Z		Tantalum	SOLID	N/A	<2.6698E+02			266.98	ug/g			U
25	SAMPLE	S13T004254		0 0	Z		Tellurium	SOLID	N/A	<2.6698E+02			266.98	ug/g			U
25	SAMPLE	S13T004254		0 0	Z		Thorium	SOLID	N/A	<2.6698E+02			266.98	ug/g			U
25	SAMPLE	S13T004254		0 0	Z		Titanium	SOLID	N/A	<5.3396E+01			53.396	ug/g			U
25	SAMPLE	S13T004254		0 0	Z		Thallium	SOLID	N/A	<3.2038E+02			320.38	ug/g			UY
25	SAMPLE	S13T004254		0 0	Z		Uranium	SOLID	N/A	2.2331E+03			1.07E+03	ug/g			J
25	SAMPLE	S13T004254		0 0	Z		Vanadium	SOLID	N/A	<5.3396E+01			53.396	ug/g			U
25	SAMPLE	S13T004254		0 0	Z		Tungsten	SOLID	N/A	<3.2038E+02			320.38	ug/g			U
25	SAMPLE	S13T004254		0 0	Z		Yttrium	SOLID	N/A	<1.0679E+02			106.79	ug/g			U
25	SAMPLE	S13T004254		0 0	Z		Zinc	SOLID	N/A	<2.1358E+02			213.58	ug/g			U
Sample Sequence 26																	
26	DUP	S1305160013	S13T004254	0 0	Z		Silver	SOLID	<5.3396E+01	<5.1932E+01			51.932	ug/g			

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041494

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
26	DUP	S1305160013	S13T004254	0 0	Z		Aluminum	SOLID	2.2010E+05	2.0615E+05			311.59	ug/g	6.5453	% RPD	
26	DUP	S1305160013	S13T004254	0 0	Z		Arsenic	SOLID	<2.6698E+02	<2.5966E+02			259.66	ug/g			
26	DUP	S1305160013	S13T004254	0 0	Z		Barium	SOLID	<5.3396E+01	<5.1932E+01			51.932	ug/g			
26	DUP	S1305160013	S13T004254	0 0	Z		Beryllium	SOLID	<5.3396E+01	<5.1932E+01			51.932	ug/g			
26	DUP	S1305160013	S13T004254	0 0	Z		Bismuth	SOLID	<3.2038E+02	3.2841E+02			311.59	ug/g			
26	DUP	S1305160013	S13T004254	0 0	Z		Calcium	SOLID	<4.2717E+03	<4.1545E+03			4.15E+03	ug/g			
26	DUP	S1305160013	S13T004254	0 0	Z		Cadmium	SOLID	<5.3396E+01	<5.1932E+01			51.932	ug/g			
26	DUP	S1305160013	S13T004254	0 0	Z		Cerium	SOLID	4.5043E+02	<3.1159E+02			311.59	ug/g			
26	DUP	S1305160013	S13T004254	0 0	Z		Cobalt	SOLID	<5.3396E+01	<5.1932E+01			51.932	ug/g			
26	DUP	S1305160013	S13T004254	0 0	Z		Chromium	SOLID	<5.3396E+01	<5.1932E+01			51.932	ug/g			
26	DUP	S1305160013	S13T004254	0 0	Z		Copper	SOLID	<1.0679E+02	<1.0386E+02			103.86	ug/g			
26	DUP	S1305160013	S13T004254	0 0	Z		Europium	SOLID	<5.3396E+01	<5.1932E+01			51.932	ug/g			
26	DUP	S1305160013	S13T004254	0 0	Z		Iron	SOLID	4.1187E+03	4.4581E+03			519.32	ug/g	7.9138	% RPD	
26	DUP	S1305160013	S13T004254	0 0	Z		Lanthanum	SOLID	<5.3396E+01	<5.1932E+01			51.932	ug/g			
26	DUP	S1305160013	S13T004254	0 0	Z		Lithium	SOLID	<5.3396E+01	<5.1932E+01			51.932	ug/g			
26	DUP	S1305160013	S13T004254	0 0	Z		Magnesium	SOLID	<1.0679E+02	<1.0386E+02			103.86	ug/g			
26	DUP	S1305160013	S13T004254	0 0	Z		Manganese	SOLID	<5.3396E+01	<5.1932E+01			51.932	ug/g			
26	DUP	S1305160013	S13T004254	0 0	Z		Molybdenum	SOLID	<5.3396E+01	<5.1932E+01			51.932	ug/g			
26	DUP	S1305160013	S13T004254	0 0	Z		Sodium	SOLID	5.3203E+04	6.0028E+04			2.08E+03	ug/g	12.055	% RPD	
26	DUP	S1305160013	S13T004254	0 0	Z		Neodymium	SOLID	<1.6019E+02	<1.5580E+02			155.8	ug/g			
26	DUP	S1305160013	S13T004254	0 0	Z		Nickel	SOLID	7.4194E+02	8.1274E+02			51.932	ug/g	9.1078	% RPD	
26	DUP	S1305160013	S13T004254	0 0	Z		Niobium	SOLID	<1.6019E+02	<1.5580E+02			155.8	ug/g			
26	DUP	S1305160013	S13T004254	0 0	Z		Phosphorus	SOLID	1.0508E+04	1.4409E+04			155.8	ug/g	31.313	% RPD	
26	DUP	S1305160013	S13T004254	0 0	Z		Lead	SOLID	4.1704E+02	3.1934E+02			311.59	ug/g	26.535	% RPD	
26	DUP	S1305160013	S13T004254	0 0	Z		Palladium	SOLID	<4.8056E+02	<4.6739E+02			467.39	ug/g			
26	DUP	S1305160013	S13T004254	0 0	Z		Praseodymium	SOLID	<2.1358E+02	<2.0773E+02			207.73	ug/g			
26	DUP	S1305160013	S13T004254	0 0	Z		Rhodium	SOLID	<4.2717E+02	<4.1545E+02			415.45	ug/g			
26	DUP	S1305160013	S13T004254	0 0	Z		Ruthenium	SOLID	<2.1358E+02	<2.0773E+02			207.73	ug/g			
26	DUP	S1305160013	S13T004254	0 0	Z		Sulfur	SOLID	<2.6698E+02	<2.5966E+02			259.66	ug/g			
26	DUP	S1305160013	S13T004254	0 0	Z		Antimony	SOLID	<3.2038E+02	<3.1159E+02			311.59	ug/g			
26	DUP	S1305160013	S13T004254	0 0	Z		Selenium	SOLID	<3.2038E+02	<3.1159E+02			311.59	ug/g			
26	DUP	S1305160013	S13T004254	0 0	Z		Silicon	SOLID	1.1518E+03	1.4416E+03			259.66	ug/g	22.347	% RPD	
26	DUP	S1305160013	S13T004254	0 0	Z		Samarium	SOLID	<2.6698E+02	<2.5966E+02			259.66	ug/g			
26	DUP	S1305160013	S13T004254	0 0	Z		Tin	SOLID	<1.6019E+02	<1.5580E+02			155.8	ug/g			
26	DUP	S1305160013	S13T004254	0 0	Z		Strontium	SOLID	<1.0679E+02	<1.0386E+02			103.86	ug/g			
26	DUP	S1305160013	S13T004254	0 0	Z		Tantalum	SOLID	<2.6698E+02	<2.5966E+02			259.66	ug/g			
26	DUP	S1305160013	S13T004254	0 0	Z		Tellurium	SOLID	<2.6698E+02	<2.5966E+02			259.66	ug/g			
26	DUP	S1305160013	S13T004254	0 0	Z		Thorium	SOLID	<2.6698E+02	<2.5966E+02			259.66	ug/g			
26	DUP	S1305160013	S13T004254	0 0	Z		Titanium	SOLID	<5.3396E+01	<5.1932E+01			51.932	ug/g			
26	DUP	S1305160013	S13T004254	0 0	Z		Thallium	SOLID	<3.2038E+02	<3.1159E+02			311.59	ug/g			
26	DUP	S1305160013	S13T004254	0 0	Z		Uranium	SOLID	2.2331E+03	2.0006E+03			1.04E+03	ug/g	10.984	% RPD	
26	DUP	S1305160013	S13T004254	0 0	Z		Vanadium	SOLID	<5.3396E+01	<5.1932E+01			51.932	ug/g			

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041494

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
26	DUP	S1305160013	S13T004254	0 0	Z		Tungsten	SOLID	<3.2038E+02	<3.1159E+02			311.59	ug/g			
26	DUP	S1305160013	S13T004254	0 0	Z		Yttrium	SOLID	<1.0679E+02	<1.0386E+02			103.86	ug/g			
26	DUP	S1305160013	S13T004254	0 0	Z		Zinc	SOLID	<2.1358E+02	<2.0773E+02			207.73	ug/g			
Sample Sequence 27																	
27	SPK-POST	S1306040053	S13T004254	0 0			Silver	SOLID	200	1.8744E+02			1.00E-03	ug/mL	93.72	% Recovery	
27	SPK-POST	S1306040053	S13T004254	0 0			Aluminum	SOLID	1000	1.3647E+03			6.00E-03	ug/mL	95.254	% Recovery	
27	SPK-POST	S1306040053	S13T004254	0 0			Arsenic	SOLID	1000	9.6808E+02			5.00E-03	ug/mL	96.808	% Recovery	
27	SPK-POST	S1306040053	S13T004254	0 0			Barium	SOLID	1000	9.5274E+02			1.00E-03	ug/mL	95.274	% Recovery	
27	SPK-POST	S1306040053	S13T004254	0 0			Beryllium	SOLID	1000	9.3833E+02			1.00E-03	ug/mL	93.833	% Recovery	
27	SPK-POST	S1306040053	S13T004254	0 0			Bismuth	SOLID	1000	9.3787E+02			6.00E-03	ug/mL	93.787	% Recovery	
27	SPK-POST	S1306040053	S13T004254	0 0			Calcium	SOLID	1000	9.2702E+02			0.08	ug/mL	92.702	% Recovery	
27	SPK-POST	S1306040053	S13T004254	0 0			Cadmium	SOLID	1000	9.5226E+02			1.00E-03	ug/mL	95.226	% Recovery	
27	SPK-POST	S1306040053	S13T004254	0 0			Cerium	SOLID	1000	9.2087E+02			6.00E-03	ug/mL	92.002	% Recovery	
27	SPK-POST	S1306040053	S13T004254	0 0			Cobalt	SOLID	1000	9.5676E+02			1.00E-03	ug/mL	95.676	% Recovery	
27	SPK-POST	S1306040053	S13T004254	0 0			Chromium	SOLID	1000	9.4616E+02			1.00E-03	ug/mL	94.616	% Recovery	
27	SPK-POST	S1306040053	S13T004254	0 0			Copper	SOLID	1000	9.6067E+02			2.00E-03	ug/mL	96.067	% Recovery	
27	SPK-POST	S1306040053	S13T004254	0 0			Europium	SOLID	1000	9.3193E+02			1.00E-03	ug/mL	93.193	% Recovery	
27	SPK-POST	S1306040053	S13T004254	0 0			Iron	SOLID	1000	9.4723E+02			0.01	ug/mL	93.951	% Recovery	
27	SPK-POST	S1306040053	S13T004254	0 0			Lanthanum	SOLID	1000	9.4144E+02			1.00E-03	ug/mL	94.144	% Recovery	
27	SPK-POST	S1306040053	S13T004254	0 0			Lithium	SOLID	1000	9.5668E+02			1.00E-03	ug/mL	95.668	% Recovery	
27	SPK-POST	S1306040053	S13T004254	0 0			Magnesium	SOLID	1000	9.5162E+02			2.00E-03	ug/mL	95.162	% Recovery	
27	SPK-POST	S1306040053	S13T004254	0 0			Manganese	SOLID	1000	9.4714E+02			1.00E-03	ug/mL	94.714	% Recovery	
27	SPK-POST	S1306040053	S13T004254	0 0			Molybdenum	SOLID	1000	9.3094E+02			1.00E-03	ug/mL	93.094	% Recovery	
27	SPK-POST	S1306040053	S13T004254	0 0			Sodium	SOLID	1000	1.0170E+03			0.04	ug/mL	91.732	% Recovery	
27	SPK-POST	S1306040053	S13T004254	0 0			Neodymium	SOLID	1000	9.2542E+02			3.00E-03	ug/mL	92.542	% Recovery	
27	SPK-POST	S1306040053	S13T004254	0 0			Nickel	SOLID	1000	9.6133E+02			1.00E-03	ug/mL	95.994	% Recovery	
27	SPK-POST	S1306040053	S13T004254	0 0			Niobium	SOLID	1000	9.3360E+02			3.00E-03	ug/mL	93.36	% Recovery	
27	SPK-POST	S1306040053	S13T004254	0 0			Phosphorus	SOLID	1000	9.7284E+02			3.00E-03	ug/mL	95.316	% Recovery	
27	SPK-POST	S1306040053	S13T004254	0 0			Lead	SOLID	1000	1.0108E+03			6.00E-03	ug/mL	101.01	% Recovery	
27	SPK-POST	S1306040053	S13T004254	0 0			Palladium	SOLID	1000	9.3321E+02			9.00E-03	ug/mL	93.321	% Recovery	
27	SPK-POST	S1306040053	S13T004254	0 0			Praseodymium	SOLID	1000	9.0591E+02			4.00E-03	ug/mL	90.591	% Recovery	
27	SPK-POST	S1306040053	S13T004254	0 0			Rhodium	SOLID	1000	9.1076E+02			8.00E-03	ug/mL	91.076	% Recovery	
27	SPK-POST	S1306040053	S13T004254	0 0			Ruthenium	SOLID	1000	8.9990E+02			4.00E-03	ug/mL	89.99	% Recovery	
27	SPK-POST	S1306040053	S13T004254	0 0			Sulfur	SOLID	1000	9.6921E+02			5.00E-03	ug/mL	96.921	% Recovery	
27	SPK-POST	S1306040053	S13T004254	0 0			Antimony	SOLID	1000	1.0668E+03			6.00E-03	ug/mL	106.68	% Recovery	
27	SPK-POST	S1306040053	S13T004254	0 0			Selenium	SOLID	1000	9.6268E+02			6.00E-03	ug/mL	96.268	% Recovery	
27	SPK-POST	S1306040053	S13T004254	0 0			Silicon	SOLID	1000	9.6626E+02			5.00E-03	ug/mL	96.411	% Recovery	
27	SPK-POST	S1306040053	S13T004254	0 0			Samarium	SOLID	1000	9.2682E+02			5.00E-03	ug/mL	92.682	% Recovery	
27	SPK-POST	S1306040053	S13T004254	0 0			Tin	SOLID	1000	9.0467E+02			3.00E-03	ug/mL	90.467	% Recovery	
27	SPK-POST	S1306040053	S13T004254	0 0			Strontium	SOLID	1000	9.5241E+02			2.00E-03	ug/mL	95.241	% Recovery	
27	SPK-POST	S1306040053	S13T004254	0 0			Tantalum	SOLID	1000	9.4939E+02			5.00E-03	ug/mL	94.939	% Recovery	
27	SPK-POST	S1306040053	S13T004254	0 0			Tellurium	SOLID	1000	9.2812E+02			5.00E-03	ug/mL	92.812	% Recovery	

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041494

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
27	SPK-POST	S1306040053	S13T004254	0 0			Thorium	SOLID	1000	9.2650E+02			5.00E-03	ug/mL	92.65	% Recovery	
27	SPK-POST	S1306040053	S13T004254	0 0			Titanium	SOLID	1000	9.2680E+02			1.00E-03	ug/mL	92.68	% Recovery	
27	SPK-POST	S1306040053	S13T004254	0 0			Thallium	SOLID	1000	8.9787E+02			6.00E-03	ug/mL	89.787	% Recovery	
27	SPK-POST	S1306040053	S13T004254	0 0			Uranium	SOLID	1000	9.3403E+02			0.02	ug/mL	92.985	% Recovery	
27	SPK-POST	S1306040053	S13T004254	0 0			Vanadium	SOLID	1000	9.5248E+02			1.00E-03	ug/mL	95.248	% Recovery	
27	SPK-POST	S1306040053	S13T004254	0 0			Tungsten	SOLID	1000	9.2410E+02			6.00E-03	ug/mL	92.41	% Recovery	
27	SPK-POST	S1306040053	S13T004254	0 0			Yttrium	SOLID	1000	9.3562E+02			2.00E-03	ug/mL	93.562	% Recovery	
27	SPK-POST	S1306040053	S13T004254	0 0			Zinc	SOLID	1000	9.5868E+02			4.00E-03	ug/mL	95.868	% Recovery	
Sample Sequence 28																	
28	SAMPLE	S13T004282		0 0	Z		Silver	SOLID	N/A	3.6011E+02			55.878	ug/g			J
28	SAMPLE	S13T004282		0 0	Z		Aluminum	SOLID	N/A	1.1087E+05			335.27	ug/g			
28	SAMPLE	S13T004282		0 0	Z		Arsenic	SOLID	N/A	<2.7939E+02			279.39	ug/g			U
28	SAMPLE	S13T004282		0 0	Z		Barium	SOLID	N/A	<5.5878E+01			55.878	ug/g			U
28	SAMPLE	S13T004282		0 0	Z		Beryllium	SOLID	N/A	<5.5878E+01			55.878	ug/g			U
28	SAMPLE	S13T004282		0 0	Z		Bismuth	SOLID	N/A	<3.3527E+02			335.27	ug/g			U
28	SAMPLE	S13T004282		0 0	Z		Calcium	SOLID	N/A	<4.4703E+03			4.47E+03	ug/g			U
28	SAMPLE	S13T004282		0 0	Z		Cadmium	SOLID	N/A	<5.5878E+01			55.878	ug/g			UY
28	SAMPLE	S13T004282		0 0	Z		Cerium	SOLID	N/A	<3.3527E+02			335.27	ug/g			U
28	SAMPLE	S13T004282		0 0	Z		Cobalt	SOLID	N/A	<5.5878E+01			55.878	ug/g			U
28	SAMPLE	S13T004282		0 0	Z		Chromium	SOLID	N/A	<5.5878E+01			55.878	ug/g			U
28	SAMPLE	S13T004282		0 0	Z		Copper	SOLID	N/A	1.3406E+02			111.76	ug/g			J
28	SAMPLE	S13T004282		0 0	Z		Europium	SOLID	N/A	<5.5878E+01			55.878	ug/g			U
28	SAMPLE	S13T004282		0 0	Z		Iron	SOLID	N/A	6.0710E+03			558.78	ug/g			
28	SAMPLE	S13T004282		0 0	Z		Lanthanum	SOLID	N/A	<5.5878E+01			55.878	ug/g			U
28	SAMPLE	S13T004282		0 0	Z		Lithium	SOLID	N/A	<5.5878E+01			55.878	ug/g			U
28	SAMPLE	S13T004282		0 0	Z		Magnesium	SOLID	N/A	1.4784E+02			111.76	ug/g			J
28	SAMPLE	S13T004282		0 0	Z		Manganese	SOLID	N/A	<5.5878E+01			55.878	ug/g			U
28	SAMPLE	S13T004282		0 0	Z		Molybdenum	SOLID	N/A	<5.5878E+01			55.878	ug/g			U
28	SAMPLE	S13T004282		0 0	Z		Sodium	SOLID	N/A	9.8872E+04			2.24E+03	ug/g			
28	SAMPLE	S13T004282		0 0	Z		Neodymium	SOLID	N/A	<1.6764E+02			167.64	ug/g			U
28	SAMPLE	S13T004282		0 0	Z		Nickel	SOLID	N/A	1.4948E+03			55.878	ug/g			
28	SAMPLE	S13T004282		0 0	Z		Niobium	SOLID	N/A	<1.6764E+02			167.64	ug/g			U
28	SAMPLE	S13T004282		0 0	Z		Phosphorus	SOLID	N/A	2.2304E+04			167.64	ug/g			c
28	SAMPLE	S13T004282		0 0	Z		Lead	SOLID	N/A	5.7922E+02			335.27	ug/g			J
28	SAMPLE	S13T004282		0 0	Z		Palladium	SOLID	N/A	<5.0291E+02			502.91	ug/g			U
28	SAMPLE	S13T004282		0 0	Z		Praseodymium	SOLID	N/A	<2.2351E+02			223.51	ug/g			U
28	SAMPLE	S13T004282		0 0	Z		Rhodium	SOLID	N/A	<4.4703E+02			447.03	ug/g			U
28	SAMPLE	S13T004282		0 0	Z		Ruthenium	SOLID	N/A	<2.2351E+02			223.51	ug/g			U
28	SAMPLE	S13T004282		0 0	Z		Sulfur	SOLID	N/A	<2.7939E+02			279.39	ug/g			U
28	SAMPLE	S13T004282		0 0	Z		Antimony	SOLID	N/A	<3.3527E+02			335.27	ug/g			U
28	SAMPLE	S13T004282		0 0	Z		Selenium	SOLID	N/A	4.1156E+02			335.27	ug/g			J
28	SAMPLE	S13T004282		0 0	Z		Silicon	SOLID	N/A	3.9435E+03			279.39	ug/g			

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041494

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
28	SAMPLE	S13T004282		0 0	Z		Samarium	SOLID	N/A	<2.7939E+02			279.39	ug/g			U
28	SAMPLE	S13T004282		0 0	Z		Tin	SOLID	N/A	<1.6764E+02			167.64	ug/g			U
28	SAMPLE	S13T004282		0 0	Z		Strontium	SOLID	N/A	<1.1176E+02			111.76	ug/g			U
28	SAMPLE	S13T004282		0 0	Z		Tantalum	SOLID	N/A	<2.7939E+02			279.39	ug/g			U
28	SAMPLE	S13T004282		0 0	Z		Tellurium	SOLID	N/A	<2.7939E+02			279.39	ug/g			U
28	SAMPLE	S13T004282		0 0	Z		Thorium	SOLID	N/A	<2.7939E+02			279.39	ug/g			U
28	SAMPLE	S13T004282		0 0	Z		Titanium	SOLID	N/A	<5.5878E+01			55.878	ug/g			U
28	SAMPLE	S13T004282		0 0	Z		Thallium	SOLID	N/A	<3.3527E+02			335.27	ug/g			UY
28	SAMPLE	S13T004282		0 0	Z		Uranium	SOLID	N/A	5.5612E+03			1.12E+03	ug/g			J
28	SAMPLE	S13T004282		0 0	Z		Vanadium	SOLID	N/A	<5.5878E+01			55.878	ug/g			U
28	SAMPLE	S13T004282		0 0	Z		Tungsten	SOLID	N/A	<3.3527E+02			335.27	ug/g			U
28	SAMPLE	S13T004282		0 0	Z		Yttrium	SOLID	N/A	<1.1176E+02			111.76	ug/g			U
28	SAMPLE	S13T004282		0 0	Z		Zinc	SOLID	N/A	<2.2351E+02			223.51	ug/g			U
Sample Sequence 29																	
29	SAMPLE	S13T004309		0 0	Z		Silver	SOLID	N/A	5.3701E+01			49.515	ug/g			J
29	SAMPLE	S13T004309		0 0	Z		Aluminum	SOLID	N/A	1.6382E+05			297.09	ug/g			
29	SAMPLE	S13T004309		0 0	Z		Arsenic	SOLID	N/A	<2.4757E+02			247.57	ug/g			U
29	SAMPLE	S13T004309		0 0	Z		Barium	SOLID	N/A	<4.9515E+01			49.515	ug/g			U
29	SAMPLE	S13T004309		0 0	Z		Beryllium	SOLID	N/A	<4.9515E+01			49.515	ug/g			U
29	SAMPLE	S13T004309		0 0	Z		Bismuth	SOLID	N/A	4.0619E+02			297.09	ug/g			J
29	SAMPLE	S13T004309		0 0	Z		Calcium	SOLID	N/A	<3.9612E+03			3.96E+03	ug/g			U
29	SAMPLE	S13T004309		0 0	Z		Cadmium	SOLID	N/A	<4.9515E+01			49.515	ug/g			UY
29	SAMPLE	S13T004309		0 0	Z		Cerium	SOLID	N/A	3.8575E+02			297.09	ug/g			J
29	SAMPLE	S13T004309		0 0	Z		Cobalt	SOLID	N/A	<4.9515E+01			49.515	ug/g			U
29	SAMPLE	S13T004309		0 0	Z		Chromium	SOLID	N/A	<4.9515E+01			49.515	ug/g			U
29	SAMPLE	S13T004309		0 0	Z		Copper	SOLID	N/A	<9.9030E+01			99.03	ug/g			U
29	SAMPLE	S13T004309		0 0	Z		Europium	SOLID	N/A	<4.9515E+01			49.515	ug/g			U
29	SAMPLE	S13T004309		0 0	Z		Iron	SOLID	N/A	5.8427E+03			495.15	ug/g			
29	SAMPLE	S13T004309		0 0	Z		Lanthanum	SOLID	N/A	<4.9515E+01			49.515	ug/g			U
29	SAMPLE	S13T004309		0 0	Z		Lithium	SOLID	N/A	<4.9515E+01			49.515	ug/g			U
29	SAMPLE	S13T004309		0 0	Z		Magnesium	SOLID	N/A	9.9997E+01			99.03	ug/g			J
29	SAMPLE	S13T004309		0 0	Z		Manganese	SOLID	N/A	<4.9515E+01			49.515	ug/g			U
29	SAMPLE	S13T004309		0 0	Z		Molybdenum	SOLID	N/A	<4.9515E+01			49.515	ug/g			U
29	SAMPLE	S13T004309		0 0	Z		Sodium	SOLID	N/A	6.6664E+04			1.98E+03	ug/g			
29	SAMPLE	S13T004309		0 0	Z		Neodymium	SOLID	N/A	<1.4854E+02			148.54	ug/g			U
29	SAMPLE	S13T004309		0 0	Z		Nickel	SOLID	N/A	1.0487E+03			49.515	ug/g			
29	SAMPLE	S13T004309		0 0	Z		Niobium	SOLID	N/A	<1.4854E+02			148.54	ug/g			U
29	SAMPLE	S13T004309		0 0	Z		Phosphorus	SOLID	N/A	1.2547E+04			148.54	ug/g			c
29	SAMPLE	S13T004309		0 0	Z		Lead	SOLID	N/A	4.1105E+02			297.09	ug/g			J
29	SAMPLE	S13T004309		0 0	Z		Palladium	SOLID	N/A	<4.4563E+02			445.63	ug/g			U
29	SAMPLE	S13T004309		0 0	Z		Praseodymium	SOLID	N/A	<1.9806E+02			198.06	ug/g			U
29	SAMPLE	S13T004309		0 0	Z		Rhodium	SOLID	N/A	<3.9612E+02			396.12	ug/g			U

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041494

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
29	SAMPLE	S13T004309		0 0	Z		Ruthenium	SOLID	N/A	<1.9806E+02			198.06	ug/g			U
29	SAMPLE	S13T004309		0 0	Z		Sulfur	SOLID	N/A	<2.4757E+02			247.57	ug/g			U
29	SAMPLE	S13T004309		0 0	Z		Antimony	SOLID	N/A	<2.9709E+02			297.09	ug/g			U
29	SAMPLE	S13T004309		0 0	Z		Selenium	SOLID	N/A	<2.9709E+02			297.09	ug/g			U
29	SAMPLE	S13T004309		0 0	Z		Silicon	SOLID	N/A	1.0873E+03			247.57	ug/g			J
29	SAMPLE	S13T004309		0 0	Z		Samarium	SOLID	N/A	<2.4757E+02			247.57	ug/g			U
29	SAMPLE	S13T004309		0 0	Z		Tin	SOLID	N/A	<1.4854E+02			148.54	ug/g			U
29	SAMPLE	S13T004309		0 0	Z		Strontium	SOLID	N/A	<9.9030E+01			99.03	ug/g			U
29	SAMPLE	S13T004309		0 0	Z		Tantalum	SOLID	N/A	<2.4757E+02			247.57	ug/g			U
29	SAMPLE	S13T004309		0 0	Z		Tellurium	SOLID	N/A	<2.4757E+02			247.57	ug/g			U
29	SAMPLE	S13T004309		0 0	Z		Thorium	SOLID	N/A	<2.4757E+02			247.57	ug/g			U
29	SAMPLE	S13T004309		0 0	Z		Titanium	SOLID	N/A	<4.9515E+01			49.515	ug/g			U
29	SAMPLE	S13T004309		0 0	Z		Thallium	SOLID	N/A	<2.9709E+02			297.09	ug/g			UY
29	SAMPLE	S13T004309		0 0	Z		Uranium	SOLID	N/A	2.0614E+03			990.3	ug/g			J
29	SAMPLE	S13T004309		0 0	Z		Vanadium	SOLID	N/A	<4.9515E+01			49.515	ug/g			U
29	SAMPLE	S13T004309		0 0	Z		Tungsten	SOLID	N/A	<2.9709E+02			297.09	ug/g			U
29	SAMPLE	S13T004309		0 0	Z		Yttrium	SOLID	N/A	<9.9030E+01			99.03	ug/g			U
29	SAMPLE	S13T004309		0 0	Z		Zinc	SOLID	N/A	<1.9806E+02			198.06	ug/g			U
Sample Sequence 30																	
30	CCV	S1306040047		0 0			Silver	LIQUID	1	9.9681E-01			1.00E-03	ug/mL	99.681	% Recovery	
30	CCV	S1306040047		0 0			Aluminum	LIQUID	5	4.8495E+00			6.00E-03	ug/mL	96.989	% Recovery	
30	CCV	S1306040047		0 0			Arsenic	LIQUID	5	4.9380E+00			5.00E-03	ug/mL	98.76	% Recovery	
30	CCV	S1306040047		0 0			Boron	LIQUID	5	4.8042E+00			1.00E-03	ug/mL	96.083	% Recovery	
30	CCV	S1306040047		0 0			Barium	LIQUID	5	5.0213E+00			1.00E-03	ug/mL	100.43	% Recovery	
30	CCV	S1306040047		0 0			Beryllium	LIQUID	5	4.9919E+00			1.00E-03	ug/mL	99.837	% Recovery	
30	CCV	S1306040047		0 0			Bismuth	LIQUID	5	4.9472E+00			6.00E-03	ug/mL	98.945	% Recovery	
30	CCV	S1306040047		0 0			Calcium	LIQUID	5	5.0226E+00			0.08	ug/mL	100.45	% Recovery	
30	CCV	S1306040047		0 0			Cadmium	LIQUID	5	4.9913E+00			1.00E-03	ug/mL	99.826	% Recovery	
31	CCV	S1306040047		0 1			Cerium	LIQUID	5	4.7636E+00			6.00E-03	ug/mL	95.271	% Recovery	
30	CCV	S1306040047		0 0			Cobalt	LIQUID	5	5.0153E+00			1.00E-03	ug/mL	100.31	% Recovery	
30	CCV	S1306040047		0 0			Chromium	LIQUID	5	4.9704E+00			1.00E-03	ug/mL	99.407	% Recovery	
30	CCV	S1306040047		0 0			Copper	LIQUID	5	4.9405E+00			2.00E-03	ug/mL	98.81	% Recovery	
31	CCV	S1306040047		0 1			Europium	LIQUID	5	4.9287E+00			1.00E-03	ug/mL	98.574	% Recovery	
30	CCV	S1306040047		0 0			Iron	LIQUID	5	4.9824E+00			0.01	ug/mL	99.649	% Recovery	
30	CCV	S1306040047		0 0			Potassium	LIQUID	5	4.9852E+00			0.02	ug/mL	99.705	% Recovery	
30	CCV	S1306040047		0 0			Lanthanum	LIQUID	5	4.9565E+00			1.00E-03	ug/mL	99.13	% Recovery	
30	CCV	S1306040047		0 0			Lithium	LIQUID	5	5.1736E+00			1.00E-03	ug/mL	103.47	% Recovery	
30	CCV	S1306040047		0 0			Magnesium	LIQUID	5	4.9739E+00			2.00E-03	ug/mL	99.478	% Recovery	
30	CCV	S1306040047		0 0			Manganese	LIQUID	5	4.9877E+00			1.00E-03	ug/mL	99.755	% Recovery	
30	CCV	S1306040047		0 0			Molybdenum	LIQUID	5	4.8486E+00			1.00E-03	ug/mL	96.973	% Recovery	
30	CCV	S1306040047		0 0			Sodium	LIQUID	5	4.9784E+00			0.04	ug/mL	99.568	% Recovery	
31	CCV	S1306040047		0 1			Neodymium	LIQUID	5	4.8558E+00			3.00E-03	ug/mL	97.117	% Recovery	

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041494

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
30	CCV	S1306040047		0 0			Nickel	LIQUID	5	5.0253E+00			1.00E-03	ug/mL	100.51	% Recovery	
31	CCV	S1306040047		0 1			Niobium	LIQUID	5	4.7664E+00			3.00E-03	ug/mL	95.328	% Recovery	
30	CCV	S1306040047		0 0			Phosphorus	LIQUID	5	4.8907E+00			3.00E-03	ug/mL	97.814	% Recovery	
30	CCV	S1306040047		0 0			Lead	LIQUID	5	5.0206E+00			6.00E-03	ug/mL	100.41	% Recovery	
31	CCV	S1306040047		0 1			Palladium	LIQUID	5	4.9005E+00			9.00E-03	ug/mL	98.01	% Recovery	
31	CCV	S1306040047		0 1			Praseodymium	LIQUID	5	4.7558E+00			4.00E-03	ug/mL	95.116	% Recovery	
31	CCV	S1306040047		0 1			Rubidium	LIQUID	5	4.8272E+00			0.03	ug/mL	96.544	% Recovery	
31	CCV	S1306040047		0 1			Rhodium	LIQUID	5	4.7790E+00			8.00E-03	ug/mL	95.58	% Recovery	
31	CCV	S1306040047		0 1			Ruthenium	LIQUID	5	4.7450E+00			4.00E-03	ug/mL	94.899	% Recovery	
30	CCV	S1306040047		0 0			Sulfur	LIQUID	5	4.8951E+00			5.00E-03	ug/mL	97.901	% Recovery	
30	CCV	S1306040047		0 0			Antimony	LIQUID	5	4.8360E+00			6.00E-03	ug/mL	96.719	% Recovery	
30	CCV	S1306040047		0 0			Selenium	LIQUID	5	4.9433E+00			6.00E-03	ug/mL	98.866	% Recovery	
30	CCV	S1306040047		0 0			Silicon	LIQUID	5	4.9140E+00			5.00E-03	ug/mL	98.281	% Recovery	
31	CCV	S1306040047		0 1			Samarium	LIQUID	5	4.8400E+00			5.00E-03	ug/mL	96.8	% Recovery	
31	CCV	S1306040047		0 1			Tin	LIQUID	5	4.6876E+00			3.00E-03	ug/mL	93.751	% Recovery	
30	CCV	S1306040047		0 0			Strontium	LIQUID	5	5.0300E+00			2.00E-03	ug/mL	100.6	% Recovery	
31	CCV	S1306040047		0 1			Tantalum	LIQUID	5	4.8975E+00			5.00E-03	ug/mL	97.949	% Recovery	
31	CCV	S1306040047		0 1			Tellurium	LIQUID	5	4.7388E+00			5.00E-03	ug/mL	94.775	% Recovery	
31	CCV	S1306040047		0 1			Thorium	LIQUID	5	4.8388E+00			5.00E-03	ug/mL	96.777	% Recovery	
30	CCV	S1306040047		0 0			Titanium	LIQUID	5	4.8192E+00			1.00E-03	ug/mL	96.384	% Recovery	
31	CCV	S1306040047		0 1			Thallium	LIQUID	5	4.7651E+00			6.00E-03	ug/mL	95.302	% Recovery	
31	CCV	S1306040047		0 1			Uranium	LIQUID	5	4.8381E+00			0.02	ug/mL	96.762	% Recovery	
30	CCV	S1306040047		0 0			Vanadium	LIQUID	5	4.9437E+00			1.00E-03	ug/mL	98.874	% Recovery	
31	CCV	S1306040047		0 1			Tungsten	LIQUID	5	4.7523E+00			6.00E-03	ug/mL	95.045	% Recovery	
31	CCV	S1306040047		0 1			Yttrium	LIQUID	5	4.8181E+00			2.00E-03	ug/mL	96.362	% Recovery	
30	CCV	S1306040047		0 0			Zinc	LIQUID	5	4.9904E+00			4.00E-03	ug/mL	99.807	% Recovery	
30	CCV	S1306040047		0 0			Zirconium	LIQUID	5	4.8279E+00			1.00E-03	ug/mL	96.559	% Recovery	
Sample Sequence 32																	
32	CCB	S1306040048		0 0			Silver	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
32	CCB	S1306040048		0 0			Aluminum	LIQUID		<6.0000E-03			6.00E-03	ug/mL			
32	CCB	S1306040048		0 0			Arsenic	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
32	CCB	S1306040048		0 0			Boron	LIQUID		2.8059E-03			1.00E-03	ug/mL			
32	CCB	S1306040048		0 0			Barium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
32	CCB	S1306040048		0 0			Beryllium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
32	CCB	S1306040048		0 0			Bismuth	LIQUID		<6.0000E-03			6.00E-03	ug/mL			
32	CCB	S1306040048		0 0			Calcium	LIQUID		<8.0000E-02			0.08	ug/mL			
32	CCB	S1306040048		0 0			Cadmium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
32	CCB	S1306040048		0 0			Cerium	LIQUID		<6.0000E-03			6.00E-03	ug/mL			
32	CCB	S1306040048		0 0			Cobalt	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
32	CCB	S1306040048		0 0			Chromium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
32	CCB	S1306040048		0 0			Copper	LIQUID		<2.0000E-03			2.00E-03	ug/mL			
32	CCB	S1306040048		0 0			Europium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041494

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
32	CCB	S1306040048		0 0			Iron	LIQUID		<1.0000E-02			0.01	ug/mL			
32	CCB	S1306040048		0 0			Potassium	LIQUID		2.0225E-02			0.02	ug/mL			
32	CCB	S1306040048		0 0			Lanthanum	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
32	CCB	S1306040048		0 0			Lithium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
32	CCB	S1306040048		0 0			Magnesium	LIQUID		<2.0000E-03			2.00E-03	ug/mL			
32	CCB	S1306040048		0 0			Manganese	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
32	CCB	S1306040048		0 0			Molybdenum	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
32	CCB	S1306040048		0 0			Sodium	LIQUID		<4.0000E-02			0.04	ug/mL			
32	CCB	S1306040048		0 0			Neodymium	LIQUID		<3.0000E-03			3.00E-03	ug/mL			
32	CCB	S1306040048		0 0			Nickel	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
32	CCB	S1306040048		0 0			Niobium	LIQUID		<3.0000E-03			3.00E-03	ug/mL			
32	CCB	S1306040048		0 0			Phosphorus	LIQUID		<3.0000E-03			3.00E-03	ug/mL			
32	CCB	S1306040048		0 0			Lead	LIQUID		<6.0000E-03			6.00E-03	ug/mL			
32	CCB	S1306040048		0 0			Palladium	LIQUID		<9.0000E-03			9.00E-03	ug/mL			
32	CCB	S1306040048		0 0			Praseodymium	LIQUID		<4.0000E-03			4.00E-03	ug/mL			
32	CCB	S1306040048		0 0			Rubidium	LIQUID		<3.0000E-02			0.03	ug/mL			
32	CCB	S1306040048		0 0			Rhodium	LIQUID		<8.0000E-03			8.00E-03	ug/mL			
32	CCB	S1306040048		0 0			Ruthenium	LIQUID		<4.0000E-03			4.00E-03	ug/mL			
32	CCB	S1306040048		0 0			Sulfur	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
32	CCB	S1306040048		0 0			Antimony	LIQUID		<6.0000E-03			6.00E-03	ug/mL			
32	CCB	S1306040048		0 0			Selenium	LIQUID		6.8569E-03			6.00E-03	ug/mL			
32	CCB	S1306040048		0 0			Silicon	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
32	CCB	S1306040048		0 0			Samarium	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
32	CCB	S1306040048		0 0			Tin	LIQUID		<3.0000E-03			3.00E-03	ug/mL			
32	CCB	S1306040048		0 0			Strontium	LIQUID		<2.0000E-03			2.00E-03	ug/mL			
32	CCB	S1306040048		0 0			Tantalum	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
32	CCB	S1306040048		0 0			Tellurium	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
32	CCB	S1306040048		0 0			Thorium	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
32	CCB	S1306040048		0 0			Titanium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
32	CCB	S1306040048		0 0			Thallium	LIQUID		<6.0000E-03			6.00E-03	ug/mL			
32	CCB	S1306040048		0 0			Uranium	LIQUID		<2.0000E-02			0.02	ug/mL			
32	CCB	S1306040048		0 0			Vanadium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
32	CCB	S1306040048		0 0			Tungsten	LIQUID		<6.0000E-03			6.00E-03	ug/mL			
32	CCB	S1306040048		0 0			Yttrium	LIQUID		<2.0000E-03			2.00E-03	ug/mL			
32	CCB	S1306040048		0 0			Zinc	LIQUID		<4.0000E-03			4.00E-03	ug/mL			
32	CCB	S1306040048		0 0			Zirconium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
Sample Sequence 33																	
33	ICSA	S1306040045		0 0			Silver	LIQUID		1.3316E-03			1.00E-03	ug/mL	N/A		
33	ICSA	S1306040045		0 0			Aluminum	LIQUID	200	1.9106E+02			6.00E-03	ug/mL	95.532	% Recovery	
33	ICSA	S1306040045		0 0			Arsenic	LIQUID		6.6666E-03			5.00E-03	ug/mL	N/A		
33	ICSA	S1306040045		0 0			Boron	LIQUID		6.0882E-02			1.00E-03	ug/mL	N/A		
33	ICSA	S1306040045		0 0			Barium	LIQUID		1.6419E-03			1.00E-03	ug/mL	N/A		

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041494

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
33	ICSA	S1306040045		0 0			Beryllium	LIQUID		1.5081E-03			1.00E-03	ug/mL	N/A		
33	ICSA	S1306040045		0 0			Bismuth	LIQUID		1.7884E-02			6.00E-03	ug/mL	N/A		
33	ICSA	S1306040045		0 0			Calcium	LIQUID	200	1.7388E+02			0.08	ug/mL	86.939	% Recovery	
33	ICSA	S1306040045		0 0			Cadmium	LIQUID		<1.0000E-03			1.00E-03	ug/mL	N/A		
33	ICSA	S1306040045		0 0			Cerium	LIQUID		<6.0000E-03			6.00E-03	ug/mL	N/A		
33	ICSA	S1306040045		0 0			Cobalt	LIQUID		1.6712E-03			1.00E-03	ug/mL	N/A		
33	ICSA	S1306040045		0 0			Chromium	LIQUID		<1.0000E-03			1.00E-03	ug/mL	N/A		
33	ICSA	S1306040045		0 0			Copper	LIQUID		<2.0000E-03			2.00E-03	ug/mL	N/A		
33	ICSA	S1306040045		0 0			Europium	LIQUID		<1.0000E-03			1.00E-03	ug/mL	N/A		
33	ICSA	S1306040045		0 0			Iron	LIQUID	200	1.6712E+02			0.01	ug/mL	83.558	% Recovery	
33	ICSA	S1306040045		0 0			Potassium	LIQUID		<2.0000E-02			0.02	ug/mL	N/A		
33	ICSA	S1306040045		0 0			Lanthanum	LIQUID		<1.0000E-03			1.00E-03	ug/mL	N/A		
33	ICSA	S1306040045		0 0			Lithium	LIQUID		5.9598E-03			1.00E-03	ug/mL	N/A		
33	ICSA	S1306040045		0 0			Magnesium	LIQUID	200	1.5585E+02			2.00E-03	ug/mL	77.926	% Recovery	
33	ICSA	S1306040045		0 0			Manganese	LIQUID		9.1937E-03			1.00E-03	ug/mL	N/A		
33	ICSA	S1306040045		0 0			Molybdenum	LIQUID		<1.0000E-03			1.00E-03	ug/mL	N/A		
33	ICSA	S1306040045		0 0			Sodium	LIQUID	200	1.9854E+02			0.04	ug/mL	99.27	% Recovery	
33	ICSA	S1306040045		0 0			Neodymium	LIQUID		1.1634E-02			3.00E-03	ug/mL	N/A		
33	ICSA	S1306040045		0 0			Nickel	LIQUID		6.6333E-03			1.00E-03	ug/mL	N/A		
33	ICSA	S1306040045		0 0			Niobium	LIQUID		2.2748E-02			3.00E-03	ug/mL	N/A		
33	ICSA	S1306040045		0 0			Phosphorus	LIQUID		9.0520E-03			3.00E-03	ug/mL	N/A		
33	ICSA	S1306040045		0 0			Lead	LIQUID		<6.0000E-03			6.00E-03	ug/mL	N/A		
33	ICSA	S1306040045		0 0			Palladium	LIQUID		<9.0000E-03			9.00E-03	ug/mL	N/A		
33	ICSA	S1306040045		0 0			Praseodymium	LIQUID		<4.0000E-03			4.00E-03	ug/mL	N/A		
33	ICSA	S1306040045		0 0			Rubidium	LIQUID		<3.0000E-02			0.03	ug/mL	N/A		
33	ICSA	S1306040045		0 0			Rhodium	LIQUID		<8.0000E-03			8.00E-03	ug/mL	N/A		
33	ICSA	S1306040045		0 0			Ruthenium	LIQUID		<4.0000E-03			4.00E-03	ug/mL	N/A		
33	ICSA	S1306040045		0 0			Sulfur	LIQUID		<5.0000E-03			5.00E-03	ug/mL	N/A		
33	ICSA	S1306040045		0 0			Antimony	LIQUID		<6.0000E-03			6.00E-03	ug/mL	N/A		
33	ICSA	S1306040045		0 0			Selenium	LIQUID		<6.0000E-03			6.00E-03	ug/mL	N/A		
33	ICSA	S1306040045		0 0			Silicon	LIQUID		<5.0000E-03			5.00E-03	ug/mL	N/A		
33	ICSA	S1306040045		0 0			Samarium	LIQUID		<5.0000E-03			5.00E-03	ug/mL	N/A		
33	ICSA	S1306040045		0 0			Tin	LIQUID		<3.0000E-03			3.00E-03	ug/mL	N/A		
33	ICSA	S1306040045		0 0			Strontium	LIQUID		1.7313E-02			2.00E-03	ug/mL	N/A		
33	ICSA	S1306040045		0 0			Tantalum	LIQUID		2.3942E-02			5.00E-03	ug/mL	N/A		
33	ICSA	S1306040045		0 0			Tellurium	LIQUID		<5.0000E-03			5.00E-03	ug/mL	N/A		
33	ICSA	S1306040045		0 0			Thorium	LIQUID		1.8187E-01			5.00E-03	ug/mL	N/A		
33	ICSA	S1306040045		0 0			Titanium	LIQUID		<1.0000E-03			1.00E-03	ug/mL	N/A		
33	ICSA	S1306040045		0 0			Thallium	LIQUID		<6.0000E-03			6.00E-03	ug/mL	N/A		
33	ICSA	S1306040045		0 0			Uranium	LIQUID		2.5450E-01			0.02	ug/mL	N/A		
33	ICSA	S1306040045		0 0			Vanadium	LIQUID		1.3304E-02			1.00E-03	ug/mL	N/A		
33	ICSA	S1306040045		0 0			Tungsten	LIQUID		<6.0000E-03			6.00E-03	ug/mL	N/A		

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041494

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
33	ICSA	S1306040045		0 0			Yttrium	LIQUID		<2.0000E-03			2.00E-03	ug/mL	N/A		
33	ICSA	S1306040045		0 0			Zinc	LIQUID		<4.0000E-03			4.00E-03	ug/mL	N/A		
33	ICSA	S1306040045		0 0			Zirconium	LIQUID		4.5225E-03			1.00E-03	ug/mL	N/A		
Sample Sequence 34																	
35	ICSAB	S1306040046		0 1			Silver	LIQUID	1	9.5853E-01			1.00E-03	ug/mL	95.853	% Recovery	
35	ICSAB	S1306040046		0 1			Aluminum	LIQUID	200	1.8850E+02			6.00E-03	ug/mL	94.25	% Recovery	
35	ICSAB	S1306040046		0 1			Arsenic	LIQUID	5	4.6233E+00			5.00E-03	ug/mL	92.467	% Recovery	
35	ICSAB	S1306040046		0 1			Boron	LIQUID	1	9.6082E-01			1.00E-03	ug/mL	96.082	% Recovery	
35	ICSAB	S1306040046		0 1			Barium	LIQUID	1	8.8833E-01			1.00E-03	ug/mL	88.833	% Recovery	
35	ICSAB	S1306040046		0 1			Beryllium	LIQUID	.1	9.2655E-02			1.00E-03	ug/mL	92.655	% Recovery	
35	ICSAB	S1306040046		0 1			Bismuth	LIQUID	5	4.5812E+00			6.00E-03	ug/mL	91.623	% Recovery	
35	ICSAB	S1306040046		0 1			Calcium	LIQUID	200	1.7051E+02			0.08	ug/mL	85.255	% Recovery	
35	ICSAB	S1306040046		0 1			Cadmium	LIQUID	.2	1.6463E-01			1.00E-03	ug/mL	82.314	% Recovery	
35	ICSAB	S1306040046		0 1			Cerium	LIQUID		<6.0000E-03			6.00E-03	ug/mL	N/A		
35	ICSAB	S1306040046		0 1			Cobalt	LIQUID	5	4.3349E+00			1.00E-03	ug/mL	86.699	% Recovery	
35	ICSAB	S1306040046		0 1			Chromium	LIQUID	5	4.3706E+00			1.00E-03	ug/mL	87.412	% Recovery	
35	ICSAB	S1306040046		0 1			Copper	LIQUID	5	4.7131E+00			2.00E-03	ug/mL	94.262	% Recovery	
35	ICSAB	S1306040046		0 1			Europium	LIQUID		<1.0000E-03			1.00E-03	ug/mL	N/A		
35	ICSAB	S1306040046		0 1			Iron	LIQUID	200	1.6401E+02			0.01	ug/mL	82.006	% Recovery	
35	ICSAB	S1306040046		0 1			Potassium	LIQUID		<2.0000E-02			0.02	ug/mL	N/A		
35	ICSAB	S1306040046		0 1			Lanthanum	LIQUID		<1.0000E-03			1.00E-03	ug/mL	N/A		
35	ICSAB	S1306040046		0 1			Lithium	LIQUID	1	1.0082E+00			1.00E-03	ug/mL	100.82	% Recovery	
35	ICSAB	S1306040046		0 1			Magnesium	LIQUID	200	1.5552E+02			2.00E-03	ug/mL	77.758	% Recovery	
35	ICSAB	S1306040046		0 1			Manganese	LIQUID	5	4.3982E+00			1.00E-03	ug/mL	87.965	% Recovery	
35	ICSAB	S1306040046		0 1			Molybdenum	LIQUID	5	4.3396E+00			1.00E-03	ug/mL	86.791	% Recovery	
35	ICSAB	S1306040046		0 1			Sodium	LIQUID	200	1.9515E+02			0.04	ug/mL	97.576	% Recovery	
35	ICSAB	S1306040046		0 1			Neodymium	LIQUID		9.1407E-03			3.00E-03	ug/mL	N/A		
35	ICSAB	S1306040046		0 1			Nickel	LIQUID	5	4.3013E+00			1.00E-03	ug/mL	86.026	% Recovery	
35	ICSAB	S1306040046		0 1			Niobium	LIQUID	5	4.4906E+00			3.00E-03	ug/mL	89.813	% Recovery	
35	ICSAB	S1306040046		0 1			Phosphorus	LIQUID	1	9.2022E-01			3.00E-03	ug/mL	92.022	% Recovery	
35	ICSAB	S1306040046		0 1			Lead	LIQUID	1	1.1027E+00			6.00E-03	ug/mL	110.27	% Recovery	
35	ICSAB	S1306040046		0 1			Palladium	LIQUID		6.2182E-02			9.00E-03	ug/mL	N/A		
35	ICSAB	S1306040046		0 1			Praseodymium	LIQUID		<4.0000E-03			4.00E-03	ug/mL	N/A		
35	ICSAB	S1306040046		0 1			Rubidium	LIQUID		3.9541E-02			0.03	ug/mL	N/A		
35	ICSAB	S1306040046		0 1			Rhodium	LIQUID		<8.0000E-03			8.00E-03	ug/mL	N/A		
35	ICSAB	S1306040046		0 1			Ruthenium	LIQUID		<4.0000E-03			4.00E-03	ug/mL	N/A		
35	ICSAB	S1306040046		0 1			Sulfur	LIQUID		<5.0000E-03			5.00E-03	ug/mL	N/A		
35	ICSAB	S1306040046		0 1			Antimony	LIQUID	5	5.0850E+00			6.00E-03	ug/mL	101.7	% Recovery	
35	ICSAB	S1306040046		0 1			Selenium	LIQUID	5	4.6158E+00			6.00E-03	ug/mL	92.316	% Recovery	
35	ICSAB	S1306040046		0 1			Silicon	LIQUID	5	4.7486E+00			5.00E-03	ug/mL	94.973	% Recovery	
35	ICSAB	S1306040046		0 1			Samarium	LIQUID		<5.0000E-03			5.00E-03	ug/mL	N/A		
35	ICSAB	S1306040046		0 1			Tin	LIQUID	1	8.2069E-01			3.00E-03	ug/mL	82.069	% Recovery	

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041494

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
35	ICSAB	S1306040046		0 1			Strontium	LIQUID	1	8.8662E-01			2.00E-03	ug/mL	88.662	% Recovery	
35	ICSAB	S1306040046		0 1			Tantalum	LIQUID		5.7117E-02			5.00E-03	ug/mL	N/A		
35	ICSAB	S1306040046		0 1			Tellurium	LIQUID	5	4.4240E+00			5.00E-03	ug/mL	88.479	% Recovery	
35	ICSAB	S1306040046		0 1			Thorium	LIQUID		<5.0000E-03			5.00E-03	ug/mL	N/A		
35	ICSAB	S1306040046		0 1			Titanium	LIQUID	50	4.3797E+01			1.00E-03	ug/mL	87.594	% Recovery	
35	ICSAB	S1306040046		0 1			Thallium	LIQUID	5	3.9533E+00			6.00E-03	ug/mL	79.066	% Recovery	
35	ICSAB	S1306040046		0 1			Uranium	LIQUID	5	4.8217E+00			0.02	ug/mL	96.434	% Recovery	
35	ICSAB	S1306040046		0 1			Vanadium	LIQUID	1	8.9978E-01			1.00E-03	ug/mL	89.978	% Recovery	
35	ICSAB	S1306040046		0 1			Tungsten	LIQUID	5	4.3931E+00			6.00E-03	ug/mL	87.862	% Recovery	
35	ICSAB	S1306040046		0 1			Yttrium	LIQUID		<2.0000E-03			2.00E-03	ug/mL	N/A		
35	ICSAB	S1306040046		0 1			Zinc	LIQUID	5	4.5330E+00			4.00E-03	ug/mL	90.661	% Recovery	
35	ICSAB	S1306040046		0 1			Zirconium	LIQUID	5	4.5865E+00			1.00E-03	ug/mL	91.73	% Recovery	
Sample Sequence 36																	
36	CCV	S1306040050		0 0			Silver	LIQUID	1	9.9222E-01			1.00E-03	ug/mL	99.222	% Recovery	
36	CCV	S1306040050		0 0			Aluminum	LIQUID	5	4.8280E+00			6.00E-03	ug/mL	96.56	% Recovery	
36	CCV	S1306040050		0 0			Arsenic	LIQUID	5	4.9452E+00			5.00E-03	ug/mL	98.904	% Recovery	
36	CCV	S1306040050		0 0			Boron	LIQUID	5	4.7937E+00			1.00E-03	ug/mL	95.874	% Recovery	
36	CCV	S1306040050		0 0			Barium	LIQUID	5	5.0088E+00			1.00E-03	ug/mL	100.18	% Recovery	
36	CCV	S1306040050		0 0			Beryllium	LIQUID	5	4.9872E+00			1.00E-03	ug/mL	99.743	% Recovery	
36	CCV	S1306040050		0 0			Bismuth	LIQUID	5	4.9270E+00			6.00E-03	ug/mL	98.54	% Recovery	
36	CCV	S1306040050		0 0			Calcium	LIQUID	5	5.0577E+00			0.08	ug/mL	101.15	% Recovery	
36	CCV	S1306040050		0 0			Cadmium	LIQUID	5	5.0154E+00			1.00E-03	ug/mL	100.31	% Recovery	
37	CCV	S1306040050		0 1			Cerium	LIQUID	5	4.7010E+00			6.00E-03	ug/mL	94.021	% Recovery	
36	CCV	S1306040050		0 0			Cobalt	LIQUID	5	5.0133E+00			1.00E-03	ug/mL	100.27	% Recovery	
36	CCV	S1306040050		0 0			Chromium	LIQUID	5	4.9723E+00			1.00E-03	ug/mL	99.446	% Recovery	
36	CCV	S1306040050		0 0			Copper	LIQUID	5	4.9158E+00			2.00E-03	ug/mL	98.315	% Recovery	
37	CCV	S1306040050		0 1			Europium	LIQUID	5	4.8163E+00			1.00E-03	ug/mL	96.326	% Recovery	
36	CCV	S1306040050		0 0			Iron	LIQUID	5	4.9672E+00			0.01	ug/mL	99.344	% Recovery	
36	CCV	S1306040050		0 0			Potassium	LIQUID	5	4.9258E+00			0.02	ug/mL	98.517	% Recovery	
36	CCV	S1306040050		0 0			Lanthanum	LIQUID	5	4.9371E+00			1.00E-03	ug/mL	98.743	% Recovery	
36	CCV	S1306040050		0 0			Lithium	LIQUID	5	5.1263E+00			1.00E-03	ug/mL	102.53	% Recovery	
36	CCV	S1306040050		0 0			Magnesium	LIQUID	5	4.9592E+00			2.00E-03	ug/mL	99.183	% Recovery	
36	CCV	S1306040050		0 0			Manganese	LIQUID	5	4.9837E+00			1.00E-03	ug/mL	99.675	% Recovery	
36	CCV	S1306040050		0 0			Molybdenum	LIQUID	5	4.8495E+00			1.00E-03	ug/mL	96.99	% Recovery	
36	CCV	S1306040050		0 0			Sodium	LIQUID	5	4.9268E+00			0.04	ug/mL	98.536	% Recovery	
37	CCV	S1306040050		0 1			Neodymium	LIQUID	5	4.7651E+00			3.00E-03	ug/mL	95.302	% Recovery	
36	CCV	S1306040050		0 0			Nickel	LIQUID	5	5.0242E+00			1.00E-03	ug/mL	100.48	% Recovery	
37	CCV	S1306040050		0 1			Niobium	LIQUID	5	4.6968E+00			3.00E-03	ug/mL	93.936	% Recovery	
36	CCV	S1306040050		0 0			Phosphorus	LIQUID	5	4.8971E+00			3.00E-03	ug/mL	97.941	% Recovery	
36	CCV	S1306040050		0 0			Lead	LIQUID	5	5.0467E+00			6.00E-03	ug/mL	100.93	% Recovery	
37	CCV	S1306040050		0 1			Palladium	LIQUID	5	4.8595E+00			9.00E-03	ug/mL	97.19	% Recovery	
37	CCV	S1306040050		0 1			Praseodymium	LIQUID	5	4.7269E+00			4.00E-03	ug/mL	94.538	% Recovery	

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041494

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
37	CCV	S1306040050		0 1			Rubidium	LIQUID	5	4.7563E+00			0.03	ug/mL	95.126	% Recovery	
37	CCV	S1306040050		0 1			Rhodium	LIQUID	5	4.7008E+00			8.00E-03	ug/mL	94.016	% Recovery	
37	CCV	S1306040050		0 1			Ruthenium	LIQUID	5	4.7572E+00			4.00E-03	ug/mL	95.144	% Recovery	
36	CCV	S1306040050		0 0			Sulfur	LIQUID	5	4.9025E+00			5.00E-03	ug/mL	98.05	% Recovery	
36	CCV	S1306040050		0 0			Antimony	LIQUID	5	4.8110E+00			6.00E-03	ug/mL	96.22	% Recovery	
36	CCV	S1306040050		0 0			Selenium	LIQUID	5	4.9294E+00			6.00E-03	ug/mL	98.588	% Recovery	
36	CCV	S1306040050		0 0			Silicon	LIQUID	5	4.9157E+00			5.00E-03	ug/mL	98.315	% Recovery	
37	CCV	S1306040050		0 1			Samarium	LIQUID	5	4.7314E+00			5.00E-03	ug/mL	94.627	% Recovery	
37	CCV	S1306040050		0 1			Tin	LIQUID	5	4.7262E+00			3.00E-03	ug/mL	94.523	% Recovery	
36	CCV	S1306040050		0 0			Strontium	LIQUID	5	5.0400E+00			2.00E-03	ug/mL	100.8	% Recovery	
37	CCV	S1306040050		0 1			Tantalum	LIQUID	5	4.8351E+00			5.00E-03	ug/mL	96.703	% Recovery	
37	CCV	S1306040050		0 1			Tellurium	LIQUID	5	4.6959E+00			5.00E-03	ug/mL	93.919	% Recovery	
37	CCV	S1306040050		0 1			Thorium	LIQUID	5	4.7897E+00			5.00E-03	ug/mL	95.793	% Recovery	
36	CCV	S1306040050		0 0			Titanium	LIQUID	5	4.7924E+00			1.00E-03	ug/mL	95.848	% Recovery	
37	CCV	S1306040050		0 1			Thallium	LIQUID	5	4.7623E+00			6.00E-03	ug/mL	95.247	% Recovery	
37	CCV	S1306040050		0 1			Uranium	LIQUID	5	4.7176E+00			0.02	ug/mL	94.353	% Recovery	
36	CCV	S1306040050		0 0			Vanadium	LIQUID	5	4.9215E+00			1.00E-03	ug/mL	98.431	% Recovery	
37	CCV	S1306040050		0 1			Tungsten	LIQUID	5	4.7280E+00			6.00E-03	ug/mL	94.56	% Recovery	
37	CCV	S1306040050		0 1			Yttrium	LIQUID	5	4.7706E+00			2.00E-03	ug/mL	95.412	% Recovery	
36	CCV	S1306040050		0 0			Zinc	LIQUID	5	4.9847E+00			4.00E-03	ug/mL	99.695	% Recovery	
36	CCV	S1306040050		0 0			Zirconium	LIQUID	5	4.8100E+00			1.00E-03	ug/mL	96.201	% Recovery	
Sample Sequence 38																	
38	LLS	S1306040051		0 0			Silver	LIQUID	.02	1.7056E-02			1.00E-03	ug/mL	85.278	% Recovery	
38	LLS	S1306040051		0 0			Aluminum	LIQUID	.1	9.8830E-02			6.00E-03	ug/mL	98.83	% Recovery	
38	LLS	S1306040051		0 0			Arsenic	LIQUID	.2	1.9546E-01			5.00E-03	ug/mL	97.73	% Recovery	
38	LLS	S1306040051		0 0			Boron	LIQUID	.1	9.8250E-02			1.00E-03	ug/mL	98.25	% Recovery	
38	LLS	S1306040051		0 0			Barium	LIQUID	.01	1.0423E-02			1.00E-03	ug/mL	104.23	% Recovery	
38	LLS	S1306040051		0 0			Beryllium	LIQUID	.002	1.9779E-03			1.00E-03	ug/mL	98.895	% Recovery	
38	LLS	S1306040051		0 0			Bismuth	LIQUID	.2	2.0133E-01			6.00E-03	ug/mL	100.67	% Recovery	
38	LLS	S1306040051		0 0			Calcium	LIQUID	.2	1.9712E-01			0.08	ug/mL	98.56	% Recovery	
38	LLS	S1306040051		0 0			Cadmium	LIQUID	.01	1.0423E-02			1.00E-03	ug/mL	104.23	% Recovery	
38	LLS	S1306040051		0 0			Cerium	LIQUID	.2	1.9388E-01			6.00E-03	ug/mL	96.938	% Recovery	
38	LLS	S1306040051		0 0			Cobalt	LIQUID	.04	4.1112E-02			1.00E-03	ug/mL	102.78	% Recovery	
38	LLS	S1306040051		0 0			Chromium	LIQUID	.02	1.9898E-02			1.00E-03	ug/mL	99.492	% Recovery	
38	LLS	S1306040051		0 0			Copper	LIQUID	.02	2.0849E-02			2.00E-03	ug/mL	104.25	% Recovery	
39	LLS	S1306040051		0 1			Europium	LIQUID	.1	9.6436E-02			1.00E-03	ug/mL	96.436	% Recovery	
38	LLS	S1306040051		0 0			Iron	LIQUID	.05	4.7689E-02			0.01	ug/mL	95.378	% Recovery	
38	LLS	S1306040051		0 0			Potassium	LIQUID	1	9.9622E-01			0.02	ug/mL	99.622	% Recovery	
38	LLS	S1306040051		0 0			Lanthanum	LIQUID	.01	1.0084E-02			1.00E-03	ug/mL	100.84	% Recovery	
38	LLS	S1306040051		0 0			Lithium	LIQUID	.02	2.0876E-02			1.00E-03	ug/mL	104.38	% Recovery	
38	LLS	S1306040051		0 0			Magnesium	LIQUID	.2	2.0348E-01			2.00E-03	ug/mL	101.74	% Recovery	
38	LLS	S1306040051		0 0			Manganese	LIQUID	.02	2.0346E-02			1.00E-03	ug/mL	101.73	% Recovery	

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041494

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
38	LLS	S1306040051		0 0			Molybdenum	LIQUID	.1	9.7754E-02			1.00E-03	ug/mL	97.754	% Recovery	
40	LLS	S1306040051		0 2			Sodium	LIQUID	1	9.2440E-01			0.04	ug/mL	92.44	% Recovery	
38	LLS	S1306040051		0 0			Neodymium	LIQUID	.1	9.5520E-02			3.00E-03	ug/mL	95.52	% Recovery	
38	LLS	S1306040051		0 0			Nickel	LIQUID	.04	4.2834E-02			1.00E-03	ug/mL	107.09	% Recovery	
39	LLS	S1306040051		0 1			Niobium	LIQUID	.1	9.3083E-02			3.00E-03	ug/mL	93.083	% Recovery	
38	LLS	S1306040051		0 0			Phosphorus	LIQUID	.4	3.8830E-01			3.00E-03	ug/mL	97.075	% Recovery	
38	LLS	S1306040051		0 0			Lead	LIQUID	.2	2.1284E-01			6.00E-03	ug/mL	106.42	% Recovery	
39	LLS	S1306040051		0 1			Palladium	LIQUID	1	9.6316E-01			9.00E-03	ug/mL	96.316	% Recovery	
39	LLS	S1306040051		0 1			Praseodymium	LIQUID	.1	8.9527E-02			4.00E-03	ug/mL	89.527	% Recovery	
39	LLS	S1306040051		0 1			Rubidium	LIQUID	2	1.9601E+00			0.03	ug/mL	98.004	% Recovery	
39	LLS	S1306040051		0 1			Rhodium	LIQUID	.1	1.0011E-01			8.00E-03	ug/mL	100.11	% Recovery	
39	LLS	S1306040051		0 1			Ruthenium	LIQUID	.1	9.8410E-02			4.00E-03	ug/mL	98.41	% Recovery	
38	LLS	S1306040051		0 0			Sulfur	LIQUID	.2	1.9700E-01			5.00E-03	ug/mL	98.5	% Recovery	
38	LLS	S1306040051		0 0			Antimony	LIQUID	.1	9.3195E-02			6.00E-03	ug/mL	93.195	% Recovery	
38	LLS	S1306040051		0 0			Selenium	LIQUID	.2	2.0714E-01			6.00E-03	ug/mL	103.57	% Recovery	
38	LLS	S1306040051		0 0			Silicon	LIQUID	.1	1.0360E-01			5.00E-03	ug/mL	103.6	% Recovery	
38	LLS	S1306040051		0 0			Samarium	LIQUID	.1	8.7094E-02			5.00E-03	ug/mL	87.094	% Recovery	
39	LLS	S1306040051		0 1			Tin	LIQUID	.1	9.6913E-02			3.00E-03	ug/mL	96.913	% Recovery	
38	LLS	S1306040051		0 0			Strontium	LIQUID	.02	2.0946E-02			2.00E-03	ug/mL	104.73	% Recovery	
39	LLS	S1306040051		0 1			Tantalum	LIQUID	1	9.5970E-01			5.00E-03	ug/mL	95.97	% Recovery	
39	LLS	S1306040051		0 1			Tellurium	LIQUID	1	9.6053E-01			5.00E-03	ug/mL	96.053	% Recovery	
39	LLS	S1306040051		0 1			Thorium	LIQUID	.1	9.1846E-02			5.00E-03	ug/mL	91.846	% Recovery	
38	LLS	S1306040051		0 0			Titanium	LIQUID	.02	1.9180E-02			1.00E-03	ug/mL	95.902	% Recovery	
38	LLS	S1306040051		0 0			Thallium	LIQUID	.4	3.8682E-01			6.00E-03	ug/mL	96.704	% Recovery	
38	LLS	S1306040051		0 0			Uranium	LIQUID	.5	4.8094E-01			0.02	ug/mL	96.189	% Recovery	
38	LLS	S1306040051		0 0			Vanadium	LIQUID	.05	4.8771E-02			1.00E-03	ug/mL	97.542	% Recovery	
39	LLS	S1306040051		0 1			Tungsten	LIQUID	1	9.7369E-01			6.00E-03	ug/mL	97.369	% Recovery	
39	LLS	S1306040051		0 1			Yttrium	LIQUID	.1	9.9130E-02			2.00E-03	ug/mL	99.13	% Recovery	
38	LLS	S1306040051		0 0			Zinc	LIQUID	.02	1.9884E-02			4.00E-03	ug/mL	99.42	% Recovery	
38	LLS	S1306040051		0 0			Zirconium	LIQUID	.02	1.9403E-02			1.00E-03	ug/mL	97.015	% Recovery	
Sample Sequence 41																	
41	CCB	S1306040049		0 0			Silver	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
41	CCB	S1306040049		0 0			Aluminum	LIQUID		<6.0000E-03			6.00E-03	ug/mL			
41	CCB	S1306040049		0 0			Arsenic	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
41	CCB	S1306040049		0 0			Boron	LIQUID		1.1493E-03			1.00E-03	ug/mL			
41	CCB	S1306040049		0 0			Barium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
41	CCB	S1306040049		0 0			Beryllium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
41	CCB	S1306040049		0 0			Bismuth	LIQUID		<6.0000E-03			6.00E-03	ug/mL			
41	CCB	S1306040049		0 0			Calcium	LIQUID		<8.0000E-02			0.08	ug/mL			
41	CCB	S1306040049		0 0			Cadmium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
41	CCB	S1306040049		0 0			Cerium	LIQUID		9.5825E-03			6.00E-03	ug/mL			
41	CCB	S1306040049		0 0			Cobalt	LIQUID		<1.0000E-03			1.00E-03	ug/mL			

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041494

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
41	CCB	S1306040049		0 0			Chromium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
41	CCB	S1306040049		0 0			Copper	LIQUID		<2.0000E-03			2.00E-03	ug/mL			
41	CCB	S1306040049		0 0			Europium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
41	CCB	S1306040049		0 0			Iron	LIQUID		<1.0000E-02			0.01	ug/mL			
41	CCB	S1306040049		0 0			Potassium	LIQUID		<2.0000E-02			0.02	ug/mL			
41	CCB	S1306040049		0 0			Lanthanum	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
41	CCB	S1306040049		0 0			Lithium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
41	CCB	S1306040049		0 0			Magnesium	LIQUID		<2.0000E-03			2.00E-03	ug/mL			
41	CCB	S1306040049		0 0			Manganese	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
41	CCB	S1306040049		0 0			Molybdenum	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
41	CCB	S1306040049		0 0			Sodium	LIQUID		<4.0000E-02			0.04	ug/mL			
41	CCB	S1306040049		0 0			Neodymium	LIQUID		<3.0000E-03			3.00E-03	ug/mL			
41	CCB	S1306040049		0 0			Nickel	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
41	CCB	S1306040049		0 0			Niobium	LIQUID		<3.0000E-03			3.00E-03	ug/mL			
41	CCB	S1306040049		0 0			Phosphorus	LIQUID		<3.0000E-03			3.00E-03	ug/mL			
41	CCB	S1306040049		0 0			Lead	LIQUID		<6.0000E-03			6.00E-03	ug/mL			
41	CCB	S1306040049		0 0			Palladium	LIQUID		<9.0000E-03			9.00E-03	ug/mL			
41	CCB	S1306040049		0 0			Praseodymium	LIQUID		<4.0000E-03			4.00E-03	ug/mL			
41	CCB	S1306040049		0 0			Rubidium	LIQUID		<3.0000E-02			0.03	ug/mL			
41	CCB	S1306040049		0 0			Rhodium	LIQUID		<8.0000E-03			8.00E-03	ug/mL			
41	CCB	S1306040049		0 0			Ruthenium	LIQUID		<4.0000E-03			4.00E-03	ug/mL			
41	CCB	S1306040049		0 0			Sulfur	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
41	CCB	S1306040049		0 0			Antimony	LIQUID		<6.0000E-03			6.00E-03	ug/mL			
41	CCB	S1306040049		0 0			Selenium	LIQUID		<6.0000E-03			6.00E-03	ug/mL			
41	CCB	S1306040049		0 0			Silicon	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
41	CCB	S1306040049		0 0			Samarium	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
41	CCB	S1306040049		0 0			Tin	LIQUID		<3.0000E-03			3.00E-03	ug/mL			
41	CCB	S1306040049		0 0			Strontium	LIQUID		<2.0000E-03			2.00E-03	ug/mL			
41	CCB	S1306040049		0 0			Tantalum	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
41	CCB	S1306040049		0 0			Tellurium	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
41	CCB	S1306040049		0 0			Thorium	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
41	CCB	S1306040049		0 0			Titanium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
41	CCB	S1306040049		0 0			Thallium	LIQUID		<6.0000E-03			6.00E-03	ug/mL			
41	CCB	S1306040049		0 0			Uranium	LIQUID		<2.0000E-02			0.02	ug/mL			
41	CCB	S1306040049		0 0			Vanadium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
41	CCB	S1306040049		0 0			Tungsten	LIQUID		<6.0000E-03			6.00E-03	ug/mL			
41	CCB	S1306040049		0 0			Yttrium	LIQUID		<2.0000E-03			2.00E-03	ug/mL			
41	CCB	S1306040049		0 0			Zinc	LIQUID		<4.0000E-03			4.00E-03	ug/mL			
41	CCB	S1306040049		0 0			Zirconium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041494

Comments Section:

Comments for sample: S1305280026, test: ICP-TOTAL METALS

Batch originally contained acid digest and fusion digest samples from prep batches 00041404 and 00041255, respectively. Acid digestion was re-done, so the samples from prep batch 00041404 were rejected. SDB 6/11/13

Comments for sample: S13T004309, test: ICP-TOTAL METALS

Cd and Tl "Y" flagged due to low bais based on ICSAB failure.

Data Flagger Status:
Flagging Completed

Final Page for Batch# 00041494

Stacy D Bell 7/18/13

Reviewer Signature Date

LABCORE Completed Batch Report for Batch# 00041494

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Method	Customer Id	Specification
1	S1306040036	ICV			ICP-TOTAL METALS		
2	S1306040036	ICV			ICP-TOTAL METALS		
3	S1306040038	LLS			ICP-TOTAL METALS		
4	S1306040038	LLS			ICP-TOTAL METALS		
5	S1306040038	LLS			ICP-TOTAL METALS		
6	S1306040037	ICB			ICP-TOTAL METALS		
7	S1306040039	ICSA			ICP-TOTAL METALS		
8	S1306040040	ICSAB			ICP-TOTAL METALS		
9	S1305280021	BLNK-PREP			ICP-TOTAL METALS		
10	S1305280022	STD-PREP			ICP-TOTAL METALS		
11	S1305280026	STD-PREP			ICP-TOTAL METALS		
12	S1306040041	SERDIL	S13T004252		ICP-TOTAL METALS		
13	S13T004252	SAMPLE		20130402	ICP-TOTAL METALS	9C-13-Comp A	C109 CLO
14	S1305280023	DUP	S13T004252		ICP-TOTAL METALS		
15	S1305280024	SPK-PREDIG	S13T004252		ICP-TOTAL METALS		
16	S1305280025	SPK-PREDIG	S13T004252		ICP-TOTAL METALS		
17	S1306040043	CCV			ICP-TOTAL METALS		
18	S1306040043	CCV			ICP-TOTAL METALS		
19	S1306040044	CCB			ICP-TOTAL METALS		
20	S1306040042	SPK-POST	S13T004252		ICP-TOTAL METALS		
21	S13T004280	SAMPLE		20130402	ICP-TOTAL METALS	9C-13-Comp B	C109 CLO
22	S13T004307	SAMPLE		20130402	ICP-TOTAL METALS	9C-13-Comp C	C109 CLO
23	S1305160012	BLNK-PREP			ICP-TOTAL METALS		
24	S1306040052	SERDIL	S13T004254		ICP-TOTAL METALS		
25	S13T004254	SAMPLE		20130402	ICP-TOTAL METALS	9C-13-Comp A	C109 CLO
26	S1305160013	DUP	S13T004254		ICP-TOTAL METALS		
27	S1306040053	SPK-POST	S13T004254		ICP-TOTAL METALS		
28	S13T004282	SAMPLE		20130402	ICP-TOTAL METALS	9C-13-Comp B	C109 CLO
29	S13T004309	SAMPLE		20130402	ICP-TOTAL METALS	9C-13-Comp C	C109 CLO
30	S1306040047	CCV			ICP-TOTAL METALS		
31	S1306040047	CCV			ICP-TOTAL METALS		
32	S1306040048	CCB			ICP-TOTAL METALS		
33	S1306040045	ICSA			ICP-TOTAL METALS		
34	S1306040046	ICSAB			ICP-TOTAL METALS		
35	S1306040046	ICSAB			ICP-TOTAL METALS		

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041494

36	S1306040050	CCV	ICP-TOTAL METALS
37	S1306040050	CCV	ICP-TOTAL METALS
38	S1306040051	LLS	ICP-TOTAL METALS
39	S1306040051	LLS	ICP-TOTAL METALS
40	S1306040051	LLS	ICP-TOTAL METALS
41	S1306040049	CCB	ICP-TOTAL METALS

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

* = Rejected Analyte
N, A = Non-reported Analyte

ATL	ACID DIGESTION BENCH SHEET	○ IH ◉ Non IH

○ LA-505-158 Rev _____ ◉ LA-505-163 Rev H-0-A ○ LA-505-172 Rev _____

Project: C109 CLO (20130402) (Standard Acid Digest)

Batch #: 000 41404 Analyst: AKS / TJH

Prep. Date/Time Start: 5/28/2013 / 0956 Prep. Date/Time End: 5/28/2013 / 1402

Balance Number: LE-BAL-040 Mod Block Temp: 95 °C

Standard	Lot/Book #	Exp. Date	Standard	Lot/Book #	Exp. Date
HCl	0000012753	12/13/2017	HS50	FZ-MEB453009	1/1/2014
HNO_3	00000 34085	4/10/2018	HS51	FZ-MEB438069	9/1/2013
H_2O_2	K41800098	1/31/2016	HS52	BZ-MEB274122	9/1/2013
HS29	CZ-MEB312059	9/1/2013	HS53	CZ-MEB312063	9/1/2013
Inorg Vent. U	FZ-U01102	4/1/2014	Inorg Vent. Th	GZ-TH01093MCA	4/1/2014
68B63 Np237 spk	68B63	11/29/2015	N/A	N/A	N/A

(Pipette #); Pipette ID; Volume Range or Fixed Volume; Check box if pipette passes visual verification:

(1) G1030153F (Range/Vol: 0.1mL - 1mL) ☑ (3) N/A (Range/Vol: N/A) ☐

(2) J120755 04 (Range/Vol: 1mL - 10mL) ☑ (4) N/A (Range/Vol: N/A) ☐

Sample ID	Final Volume (mL)	Sample Qty/Unit (a)	Spike Added (b)	Dose Rate (mrem/hr)
Prep Blank	50	N/A		<0.5
Prep Std 1	50	N/A	2.5ml (2) HS29 + 2.5ml (2) HS50	<0.5
Prep Std 2	50	N/A	2.5ml (2) HS51 + 2.5ml (2) HS52 + 2.5ml (2) HS53	<0.5
Prep Std 3	50	N/A	0.1 mL (1) 10 ppm ~~High Purity~~ Inorg. V. AKS U & 0.1 mL (1) 10 ppm ~~High Purity~~ Inorg. V. AKS Th	<0.5
Prep Std 4	50	N/A	0.35 mL (1) of 68B63 Np237 spike	<0.5
S13T004252	50	0.2456 g		1840
S13T004252 Dup	50	0.2586 g		2070
S13T004252_S1	50	0.2435 g	2.5ml (2) HS29 + 2.5ml (2) HS50	2070
S13T004252_S2	50	0.2546g	2.5ml (2) HS51 + 2.5ml (2) HS52 + 2.5ml (2) HS53	2300
S13T004252_S3	50	0.2642g	1 mL (1) 10 ppm ~~High Purity~~ U & 2 mL (1) 10 ppm ~~High Purity~~ Th Inorg. V. AKS	2300
S13T004252_S4	50	0.2524g	1 mL (1) of 68B63 Np237 spike	1840
S13T004280	50	0.2474g		2070
S13T004307	50	0.2401g		1380

(a) Sample Qty/Unit: For solid samples, record the weight in g (e.g., "0.25g"). For liquid samples, record the volume in mL and record the pipette number used in parentheses (e.g., "2.5mL (1)"). For filter media, use "Each" (i.e., "1 each").

(b) Spike Added: Record the volume in mL and record the pipette number used in parentheses for each standard used, indicate the standard used (e.g., "0.5mL (3) HS50 + 1.0mL (1) HS51").

Note: Observation of sample before and after prep. (i.e., sample appearance, digestate color, clarity, approx. % dissolved, and multiple phases).

Comments:

A-6005-369 (REV 0)

ATL	ACID DIGESTION BENCH SHEET (continued)	○ IH ◉ Non IH

○ LA-505-158 Rev _____ ◉ LA-505-163 Rev _____ ○ LA-505-172 Rev _____

Project: C109 CLO (20130402) (Standard Acid Digest)

Batch #: 0004140 Analyst: AVS 5/28/2013 TJH 6/4/13

Sample size is approximately 0.25 g
Parent Sample: Refer to Sample Breakdown Diagrams
Chemist instructions provided by SD Bolling.

Sample 4252 appeared to be orange/brown, dry, and uniform small granuels.
Sample 4280 appeared to be similar to 4252, but with a higher moisture content.
Sample 4307 was similar to 4252 but with the highest water content. Consistancy was similar to peanut butter.
After digest, samples were uniform in appearence, all were a light/pale yellow, and transparent.

AVS
5/28/2013

6/11/13 Digest Batch 41618 AND 41864 @ 7/22/13

Sample 4252 LightBrownish, dry Granules
Sample 4280 Light Brown Granules w/ a bit more Moisture
Sample 4307 Light Brown very moist Sludge
Samples After Digest where all Light yellow w/ very Little material to filter out 95% ~~Digited~~ Digested TJH 7/22/13

A-6005-369 (REV 0)

ATL	ICP BENCH SHEET	○ IH ◉ Non IH

○ LA-505-170 Rev NA ○ LA-505-171 Rev NA ◉ LA-505-174 Rev A-0

○ NA (Other) Rev NA

Client/Project: C109 CLO

Batch #: 41494 Analyst: Andrew Getz

Date/Time Start: 06/03/13 / 1037 Date/Time End: 06/03/13 / 1412

Instrument ID #: iCAP 6500 Instrument File #: 130603C109CLO

(Pipette #); Pipette ID; Volume Range or Fixed Volume; Check box if pipette passes visual verification:

(1) 210955A	(Range/Vol: 1.0-10.0mL)	☒	(5) 359680	(Range/Vol: 0.1-1.0mL)	☒
(2) 1139979	(Range/Vol: 0.1-1.0mL)	☒	(6) ~~359680~~ 06/11/13 AG 1139969	(Range/Vol: 0.5-2.5mL)	☒
(3) 141322Z	(Range/Vol: 0.01-0.1mL)	☒	(7) NA	(Range/Vol: NA)	☐
(4) 2346763	(Range/Vol: 0.01-0.1mL)	☒	(8) NA	(Range/Vol: NA)	☐

Calibration Standards:

Blank - (B-25-130523-1)

10ppm HS50 - 1.0mL(SL018597) + 9.0mL (B-25-130523-1)

10ppm HS29 - 1.0mL(SL016660) + 9.0mL (B-25-130523-1)

10ppm HS51 - 1.0mL(SL016666) + 9.0mL (B-25-130523-1)

10ppm HS52 - 1.0mL(SL016669) + 9.0mL (B-25-130523-1)

10ppm HS53 - 1.0mL(SL016670) + 9.0mL (B-25-130523-1)

Verification Standards:

ICB/CCB - (B-25-130523-1)

ICV A - 0.5mL(SL016792,SL016788) + 9.0mL (B-25-130523-1)

CCV A - 0.5mL(SL018597,SL016660) + 9.0mL (B-25-130523-1)

ICV B - 0.5mL 06/11/13 AG (SL016787,SL016783,SL016779) + 8.5mL (B-25-130523-1)

CCV B - (SL016666,SL016669, SL016670) + 8.5mL (B-25-130523-1)

LLS A - 0.1mL(SL016509,SL018998) + 9.8mL (B-25-130523-1)

LLS B - 1.0mL(SL017809,SL018846,SL018850) + 7.0mL(B-25-130523-1)

LLS Na 1.0ppm - .01mL(SL019236) + 9.99mL (B-25-130523-1)

ICSA - (SL018962)

ICSAB - 6.5mL(SL017183,SL017184)

Sample Number	Dilution Factor	Dilution
ICV A	1	see above
ICV B	1	see above
LLS A	1	see above
LLS B	1	see above
LLS Na	1	see above
ICB	1	see above
ICSA	1	see above

A-6005-297 (REV 4)

ATL	ICP BENCH SHEET (continued)	○ IH ◉ Non IH

○ LA-505-170 Rev NA ○ LA-505-171 Rev NA ◉ LA-505-174 Rev A-0

○ NA Rev NA

Client/Project: C109 CLO

Batch #: 41494 Analyst: Andrew Getz

Date/Time Start: 06/03/13 / 1037 Date/Time End: 06/03/13 / 1412

Sample Number	Dilution Factor	Dilution
ICSAB	1	see above
Prep Blank	1	2.0(6)-8.0(1)
Prep Std 1	1	.01(4)-9.99(1
Prep Std 2	1	.01(4)-9.99(1
S13T004252_L	25	2.0(6)-8.0(1); 2.0(6)-8.0(1)
S13T004252	5	2.0(6)-8.0(1)
S13T004252_D	5	2.0(6)-8.0(1)
S13T004252_S1	5	2.0(6)-8.0(1)
S13T004252_S2	5	2.0(6)-8.0(1)
CCV A	1	see above
CCV B	1	see above
CCB	1	see above
S13T004252_A	5	2.0(4)-1.0(2)(SL016659,SL018597,SL016666, SL016669,SL016670)-3.0(1)
S13T004280	5	2.0(6)-8.0(1)
S13T004307	5	2.0(6)-8.0(1)
Prep Blank	100	.10(4)-9.90(1)
S13T004254_L	500	.10(4)-9.90(1); 2.0(6)-8.0(1)
S13T004254	100	.10(4)-9.90(1)
S13T004254_D	100	.10(4)-9.90(1)
S13T004254_A	100	.10(4)-9.90(1)
S13T004282	100	.10(4)-9.90(1)
S13T004309	100	.10(4)-9.90(1)
CCV A	1	see above
CCV B	1	see above
CCB	1	see above
ICSA	1	see above
ICSAB	1	see above
ICSAB	1	see above
CCV A	1	see above
CCV B	1	see above
LLS A	1	see above

ATL	ICP BENCH SHEET (continued)	○ IH ◉ Non IH

○ LA-505-170 Rev NA ○ LA-505-171 Rev NA ◉ LA-505-174 Rev A-0

○ NA Rev NA

Client/Project: C109 CLO

Batch #: 41494 Analyst: Andrew Getz

Date/Time Start: 06/03/13 / 1037 Date/Time End: 06/03/13 / 1412

Sample Number	Dilution Factor	Dilution
LLS B	1	see above
LLS Na 1ppm	1	see above
CCB	1	see above

ICP Dilution Key:

Example:

First entry is sample volume in ml (xxx)

Second entry is post spike volume in ml (sss)

Last entry is diluent volume in ml (vvv)

Where (#) is the pipette #

Single dilution: xxx(#)-vvv(#)	1ml(#) - 9ml(#)	DF=10
Post Spike dilution: xxx(#)-sss(#)-sss(#)-vvv(#)	1ml(#) - 0.1ml(#) - 0.1ml(#) - 8.8ml(#)	DF=10
Double dilution: xxx(#)-vvv(#), xxx(#)-vvv(#)	1ml(#) - 9ml(#), 1ml(#) - 9ml(#)	DF=100
Post Spike dilution: xxx(#)-vvv(#), xxx(#)-sss(#)-vvv(#)	1ml(#) - 9ml(#), 1ml(#) - 1ml(#) - 8ml(#)	DF=100
Serial dilution: xxx(#)-vvv(#), xxx(#)-vvv(#)	1 ml(#) - 9ml(#), 2ml(#) - 8ml(#)	DF=50
Triple dilution: xxx(#)-vvv(#), xxx(#)-vvv(#), xxx(#)-vvv(#)	1ml(#) - 9ml(#), 1ml(#) - 9ml(#), 1ml(#) - 9ml(#)	DF=1000

Comments:

Acid Dig @ 5x

Fusions @ 100x

6/4/2013 11:01:59AM
IncompleteBatchShort Version 2.7.29
batchreports 2.7.32

LABCORE Data Entry Template for Batch# 00041494

Analyst: Getz, Andrew **Standard ID / Book#:** See Benchsheet

Instrument: ICP-ICAP6500

Method: ICP-TOTAL METALS, LA-505-174 Rev/Mod A-0

Prep Batch: 00041255, 00041404

Batch Comment: N/A

CACN:3A.26

S	Type	Sample	R	A	Matrix	Group#	Project
1	ICV	S1306040036	0		LIQUID		
	Analytes Requested:	Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Cerium, Chromium, Cobalt, Copper, Europium, Iron, Lanthanum, Lead, Lithium, Magnesium, Manganese, Molybdenum, Neodymium, Nickel, Niobium, Palladium, Phosphorus, Potassium, Praseodymium, Rhodium, Rubidium, Ruthenium, Samarium, Selenium, Silicon, Silver, Sodium, Strontium, Sulfur, Tantalum, Tellurium, Thallium, Thorium, Tin, Titanium, Tungsten, Uranium, Vanadium, Yttrium, Zinc, Zirconium					
3	LLS	S1306040038	0		LIQUID		
	Analytes Requested:	Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Cerium, Chromium, Cobalt, Copper, Europium, Iron, Lanthanum, Lead, Lithium, Magnesium, Manganese, Molybdenum, Neodymium, Nickel, Niobium, Palladium, Phosphorus, Potassium, Praseodymium, Rhodium, Rubidium, Ruthenium, Samarium, Selenium, Silicon, Silver, Sodium, Strontium, Sulfur, Tantalum, Tellurium, Thallium, Thorium, Tin, Titanium, Tungsten, Uranium, Vanadium, Yttrium, Zinc, Zirconium					
6	ICB	S1306040037	0		LIQUID		
	Analytes Requested:	Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Cerium, Chromium, Cobalt, Copper, Europium, Iron, Lanthanum, Lead, Lithium, Magnesium, Manganese, Molybdenum, Neodymium, Nickel, Niobium, Palladium, Phosphorus, Potassium, Praseodymium, Rhodium, Rubidium, Ruthenium, Samarium, Selenium, Silicon, Silver, Sodium, Strontium, Sulfur, Tantalum, Tellurium, Thallium, Thorium, Tin, Titanium, Tungsten, Uranium, Vanadium, Yttrium, Zinc, Zirconium					
7	ICSA	S1306040039	0		LIQUID		
	Analytes Requested:	Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Cerium, Chromium, Cobalt, Copper, Europium, Iron, Lanthanum, Lead, Lithium, Magnesium, Manganese, Molybdenum, Neodymium, Nickel, Niobium, Palladium, Phosphorus, Potassium, Praseodymium, Rhodium, Rubidium, Ruthenium, Samarium, Selenium, Silicon, Silver, Sodium, Strontium, Sulfur, Tantalum, Tellurium, Thallium, Thorium, Tin, Titanium, Tungsten, Uranium, Vanadium, Yttrium, Zinc, Zirconium					
8	ICSAB	S1306040040	0		LIQUID		
	Analytes Requested:	Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Cerium, Chromium, Cobalt, Copper, Europium, Iron, Lanthanum, Lead, Lithium, Magnesium, Manganese, Molybdenum, Neodymium, Nickel, Niobium, Palladium, Phosphorus, Potassium, Praseodymium, Rhodium, Rubidium, Ruthenium, Samarium, Selenium, Silicon, Silver, Sodium, Strontium, Sulfur, Tantalum, Tellurium, Thallium, Thorium, Tin, Titanium, Tungsten, Uranium, Vanadium, Yttrium, Zinc, Zirconium					
9	BLNK-PREP	S1305280021	0	A	LIQUID		
	Analytes Requested:	Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Cerium, Chromium, Cobalt, Copper, Europium, Iron, Lanthanum, Lead, Lithium, Magnesium, Manganese, Molybdenum, Neodymium, Nickel, Niobium, Palladium, Phosphorus, Potassium, Praseodymium, Rhodium, Rubidium, Ruthenium, Samarium, Selenium, Silicon, Silver, Sodium, Strontium, Sulfur, Tantalum, Tellurium, Thallium, Thorium, Tin, Titanium, Tungsten, Uranium, Vanadium, Yttrium, Zinc, Zirconium					
10	STD-PREP	S1305280022	0	A	LIQUID		
	Analytes Requested:	Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Cerium, Chromium, Cobalt, Copper, Europium, Iron, Lanthanum, Lead, Lithium, Magnesium, Manganese, Molybdenum, Neodymium, Nickel, Niobium, Palladium, Phosphorus, Potassium, Praseodymium, Rhodium, Rubidium, Ruthenium, Samarium, Selenium, Silicon, Silver, Sodium, Strontium, Sulfur, Tantalum, Tellurium, Thallium, Thorium, Tin, Titanium, Tungsten, Uranium, Vanadium, Yttrium, Zinc, Zirconium					
11	STD-PREP	S1305280026	0	A	LIQUID		

Data Entry Comments:

S = Batch Slot Number, R = Retest Number, A = Aliquot Code.

LABCORE Data Entry Template for Batch# 00041494

Analytes Requested: Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Cerium, Chromium, Cobalt, Copper, Europium, Iron, Lanthanum, Lead, Lithium, Magnesium, Manganese, Molybdenum, Neodymium, Nickel, Niobium, Palladium, Phosphorus, Potassium, Praseodymium, Rhodium, Rubidium, Ruthenium, Samarium, Selenium, Silicon, Silver, Sodium, Strontium, Sulfur, Tantalum, Tellurium, Thallium, Thorium, Tin, Titanium, Tungsten, Uranium, Vanadium, Yttrium, Zinc, Zirconium

12 SERDIL **S1306040041** **0** **SOLID**

Analytes Requested: Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Cerium, Chromium, Cobalt, Copper, Europium, Iron, Lanthanum, Lead, Lithium, Magnesium, Manganese, Molybdenum, Neodymium, Nickel, Niobium, Palladium, Phosphorus, Potassium, Praseodymium, Rhodium, Rubidium, Ruthenium, Samarium, Selenium, Silicon, Silver, Sodium, Strontium, Sulfur, Tantalum, Tellurium, Thallium, Thorium, Tin, Titanium, Tungsten, Uranium, Vanadium, Yttrium, Zinc, Zirconium

13 SAMPLE **S13T004252** **0** **A** **SOLID** **20130402** **C109 CLO**

Analytes Requested: Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Cerium, Chromium, Cobalt, Copper, Europium, Iron, Lanthanum, Lead, Lithium, Magnesium, Manganese, Molybdenum, Neodymium, Nickel, Niobium, Palladium, Phosphorus, Potassium, Praseodymium, Rhodium, Rubidium, Ruthenium, Samarium, Selenium, Silicon, Silver, Sodium, Strontium, Sulfur, Tantalum, Tellurium, Thallium, Thorium, Tin, Titanium, Tungsten, Uranium, Vanadium, Yttrium, Zinc, Zirconium

14 DUP **S1305280023** **0** **A** **SOLID**

Analytes Requested: Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Cerium, Chromium, Cobalt, Copper, Europium, Iron, Lanthanum, Lead, Lithium, Magnesium, Manganese, Molybdenum, Neodymium, Nickel, Niobium, Palladium, Phosphorus, Potassium, Praseodymium, Rhodium, Rubidium, Ruthenium, Samarium, Selenium, Silicon, Silver, Sodium, Strontium, Sulfur, Tantalum, Tellurium, Thallium, Thorium, Tin, Titanium, Tungsten, Uranium, Vanadium, Yttrium, Zinc, Zirconium

15 SPK-PREDIG **S1305280024** **0** **A** **SOLID**

Analytes Requested: Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Cerium, Chromium, Cobalt, Copper, Europium, Iron, Lanthanum, Lead, Lithium, Magnesium, Manganese, Molybdenum, Neodymium, Nickel, Niobium, Palladium, Phosphorus, Potassium, Praseodymium, Rhodium, Rubidium, Ruthenium, Samarium, Selenium, Silicon, Silver, Sodium, Strontium, Sulfur, Tantalum, Tellurium, Thallium, Thorium, Tin, Titanium, Tungsten, Uranium, Vanadium, Yttrium, Zinc, Zirconium

16 SPK-PREDIG **S1305280025** **0** **A** **SOLID**

Analytes Requested: Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Cerium, Chromium, Cobalt, Copper, Europium, Iron, Lanthanum, Lead, Lithium, Magnesium, Manganese, Molybdenum, Neodymium, Nickel, Niobium, Palladium, Phosphorus, Potassium, Praseodymium, Rhodium, Rubidium, Ruthenium, Samarium, Selenium, Silicon, Silver, Sodium, Strontium, Sulfur, Tantalum, Tellurium, Thallium, Thorium, Tin, Titanium, Tungsten, Uranium, Vanadium, Yttrium, Zinc, Zirconium

17 CCV **S1306040043** **0** **LIQUID**

Analytes Requested: Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Cerium, Chromium, Cobalt, Copper, Europium, Iron, Lanthanum, Lead, Lithium, Magnesium, Manganese, Molybdenum, Neodymium, Nickel, Niobium, Palladium, Phosphorus, Potassium, Praseodymium, Rhodium, Rubidium, Ruthenium, Samarium, Selenium, Silicon, Silver, Sodium, Strontium, Sulfur, Tantalum, Tellurium, Thallium, Thorium, Tin, Titanium, Tungsten, Uranium, Vanadium, Yttrium, Zinc, Zirconium

19 CCB **S1306040044** **0** **LIQUID**

Analytes Requested: Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Cerium, Chromium, Cobalt, Copper, Europium, Iron, Lanthanum, Lead, Lithium, Magnesium, Manganese, Molybdenum, Neodymium, Nickel, Niobium, Palladium, Phosphorus, Potassium, Praseodymium, Rhodium, Rubidium, Ruthenium, Samarium, Selenium, Silicon, Silver, Sodium, Strontium, Sulfur, Tantalum, Tellurium, Thallium, Thorium, Tin, Titanium, Tungsten, Uranium, Vanadium, Yttrium, Zinc, Zirconium

20 SPK-POST **S1306040042** **0** **SOLID**

Analytes Requested: Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Cerium, Chromium, Cobalt, Copper, Europium, Iron, Lanthanum, Lead, Lithium, Magnesium, Manganese, Molybdenum, Neodymium, Nickel, Niobium, Palladium, Phosphorus, Potassium, Praseodymium, Rhodium, Rubidium, Ruthenium, Samarium, Selenium, Silicon, Silver, Sodium, Strontium, Sulfur, Tantalum, Tellurium, Thallium, Thorium, Tin, Titanium, Tungsten, Uranium, Vanadium, Yttrium, Zinc, Zirconium

21 SAMPLE **S13T004280** **0** **A** **SOLID** **20130402** **C109 CLO**

Data Entry Comments:

S = Batch Slot Number, R = Retest Number, A = Aliquot Code.

LABCORE Data Entry Template for Batch# 00041494

Analytes Requested: Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Cerium, Chromium, Cobalt, Copper, Europium, Iron, Lanthanum, Lead, Lithium, Magnesium, Manganese, Molybdenum, Neodymium, Nickel, Niobium, Palladium, Phosphorus, Potassium, Praseodymium, Rhodium, Rubidium, Ruthenium, Samarium, Selenium, Silicon, Silver, Sodium, Strontium, Sulfur, Tantalum, Tellurium, Thallium, Thorium, Tin, Titanium, Tungsten, Uranium, Vanadium, Yttrium, Zinc, Zirconium

22 SAMPLE **S13T004307 0 A SOLID 20130402 C109 CLO**

Analytes Requested: Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Cerium, Chromium, Cobalt, Copper, Europium, Iron, Lanthanum, Lead, Lithium, Magnesium, Manganese, Molybdenum, Neodymium, Nickel, Niobium, Palladium, Phosphorus, Potassium, Praseodymium, Rhodium, Rubidium, Ruthenium, Samarium, Selenium, Silicon, Silver, Sodium, Strontium, Sulfur, Tantalum, Tellurium, Thallium, Thorium, Tin, Titanium, Tungsten, Uranium, Vanadium, Yttrium, Zinc, Zirconium

23 BLNK-PREP **S1305160012 0 Z SOLID**

Analytes Requested: Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Cerium, Chromium, Cobalt, Copper, Europium, Iron, Lanthanum, Lead, Lithium, Magnesium, Manganese, Molybdenum, Neodymium, Nickel, Niobium, Palladium, Phosphorus, Potassium, Praseodymium, Rhodium, Rubidium, Ruthenium, Samarium, Selenium, Silicon, Silver, Sodium, Strontium, Sulfur, Tantalum, Tellurium, Thallium, Thorium, Tin, Titanium, Tungsten, Uranium, Vanadium, Yttrium, Zinc, Zirconium

24 SERDIL **S1306040052 0 SOLID**

Analytes Requested: Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Cerium, Chromium, Cobalt, Copper, Europium, Iron, Lanthanum, Lead, Lithium, Magnesium, Manganese, Molybdenum, Neodymium, Nickel, Niobium, Palladium, Phosphorus, Potassium, Praseodymium, Rhodium, Rubidium, Ruthenium, Samarium, Selenium, Silicon, Silver, Sodium, Strontium, Sulfur, Tantalum, Tellurium, Thallium, Thorium, Tin, Titanium, Tungsten, Uranium, Vanadium, Yttrium, Zinc, Zirconium

25 SAMPLE **S13T004254 0 Z SOLID 20130402 C109 CLO**

Analytes Requested: Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Cerium, Chromium, Cobalt, Copper, Europium, Iron, Lanthanum, Lead, Lithium, Magnesium, Manganese, Molybdenum, Neodymium, Nickel, Niobium, Palladium, Phosphorus, Potassium, Praseodymium, Rhodium, Rubidium, Ruthenium, Samarium, Selenium, Silicon, Silver, Sodium, Strontium, Sulfur, Tantalum, Tellurium, Thallium, Thorium, Tin, Titanium, Tungsten, Uranium, Vanadium, Yttrium, Zinc, Zirconium

26 DUP **S1305160013 0 Z SOLID**

Analytes Requested: Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Cerium, Chromium, Cobalt, Copper, Europium, Iron, Lanthanum, Lead, Lithium, Magnesium, Manganese, Molybdenum, Neodymium, Nickel, Niobium, Palladium, Phosphorus, Potassium, Praseodymium, Rhodium, Rubidium, Ruthenium, Samarium, Selenium, Silicon, Silver, Sodium, Strontium, Sulfur, Tantalum, Tellurium, Thallium, Thorium, Tin, Titanium, Tungsten, Uranium, Vanadium, Yttrium, Zinc, Zirconium

27 SPK-POST **S1306040053 0 SOLID**

Analytes Requested: Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Cerium, Chromium, Cobalt, Copper, Europium, Iron, Lanthanum, Lead, Lithium, Magnesium, Manganese, Molybdenum, Neodymium, Nickel, Niobium, Palladium, Phosphorus, Potassium, Praseodymium, Rhodium, Rubidium, Ruthenium, Samarium, Selenium, Silicon, Silver, Sodium, Strontium, Sulfur, Tantalum, Tellurium, Thallium, Thorium, Tin, Titanium, Tungsten, Uranium, Vanadium, Yttrium, Zinc, Zirconium

28 SAMPLE **S13T004282 0 Z SOLID 20130402 C109 CLO**

Analytes Requested: Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Cerium, Chromium, Cobalt, Copper, Europium, Iron, Lanthanum, Lead, Lithium, Magnesium, Manganese, Molybdenum, Neodymium, Nickel, Niobium, Palladium, Phosphorus, Potassium, Praseodymium, Rhodium, Rubidium, Ruthenium, Samarium, Selenium, Silicon, Silver, Sodium, Strontium, Sulfur, Tantalum, Tellurium, Thallium, Thorium, Tin, Titanium, Tungsten, Uranium, Vanadium, Yttrium, Zinc, Zirconium

29 SAMPLE **S13T004309 0 Z SOLID 20130402 C109 CLO**

Analytes Requested: Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Cerium, Chromium, Cobalt, Copper, Europium, Iron, Lanthanum, Lead, Lithium, Magnesium, Manganese, Molybdenum, Neodymium, Nickel, Niobium, Palladium, Phosphorus, Potassium, Praseodymium, Rhodium, Rubidium, Ruthenium, Samarium, Selenium, Silicon, Silver, Sodium, Strontium, Sulfur, Tantalum, Tellurium, Thallium, Thorium, Tin, Titanium, Tungsten, Uranium, Vanadium, Yttrium, Zinc, Zirconium

30 CCV **S1306040047 0 LIQUID**

Data Entry Comments:

S = Batch Slot Number, R = Retest Number, A = Aliquot Code.

LABCORE Data Entry Template for Batch# 00041494

Analytes Requested: Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Cerium, Chromium, Cobalt, Copper, Europium, Iron, Lanthanum, Lead, Lithium, Magnesium, Manganese, Molybdenum, Neodymium, Nickel, Niobium, Palladium, Phosphorus, Potassium, Praseodymium, Rhodium, Rubidium, Ruthenium, Samarium, Selenium, Silicon, Silver, Sodium, Strontium, Sulfur, Tantalum, Tellurium, Thallium, Thorium, Tin, Titanium, Tungsten, Uranium, Vanadium, Yttrium, Zinc, Zirconium

32 CCB **S1306040048** **0** **LIQUID**

Analytes Requested: Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Cerium, Chromium, Cobalt, Copper, Europium, Iron, Lanthanum, Lead, Lithium, Magnesium, Manganese, Molybdenum, Neodymium, Nickel, Niobium, Palladium, Phosphorus, Potassium, Praseodymium, Rhodium, Rubidium, Ruthenium, Samarium, Selenium, Silicon, Silver, Sodium, Strontium, Sulfur, Tantalum, Tellurium, Thallium, Thorium, Tin, Titanium, Tungsten, Uranium, Vanadium, Yttrium, Zinc, Zirconium

33 ICSA **S1306040045** **0** **LIQUID**

Analytes Requested: Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Cerium, Chromium, Cobalt, Copper, Europium, Iron, Lanthanum, Lead, Lithium, Magnesium, Manganese, Molybdenum, Neodymium, Nickel, Niobium, Palladium, Phosphorus, Potassium, Praseodymium, Rhodium, Rubidium, Ruthenium, Samarium, Selenium, Silicon, Silver, Sodium, Strontium, Sulfur, Tantalum, Tellurium, Thallium, Thorium, Tin, Titanium, Tungsten, Uranium, Vanadium, Yttrium, Zinc, Zirconium

34 ICSAB **S1306040046** **0** **LIQUID**

Analytes Requested: Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Cerium, Chromium, Cobalt, Copper, Europium, Iron, Lanthanum, Lead, Lithium, Magnesium, Manganese, Molybdenum, Neodymium, Nickel, Niobium, Palladium, Phosphorus, Potassium, Praseodymium, Rhodium, Rubidium, Ruthenium, Samarium, Selenium, Silicon, Silver, Sodium, Strontium, Sulfur, Tantalum, Tellurium, Thallium, Thorium, Tin, Titanium, Tungsten, Uranium, Vanadium, Yttrium, Zinc, Zirconium

36 CCV **S1306040050** **0** **LIQUID**

Analytes Requested: Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Cerium, Chromium, Cobalt, Copper, Europium, Iron, Lanthanum, Lead, Lithium, Magnesium, Manganese, Molybdenum, Neodymium, Nickel, Niobium, Palladium, Phosphorus, Potassium, Praseodymium, Rhodium, Rubidium, Ruthenium, Samarium, Selenium, Silicon, Silver, Sodium, Strontium, Sulfur, Tantalum, Tellurium, Thallium, Thorium, Tin, Titanium, Tungsten, Uranium, Vanadium, Yttrium, Zinc, Zirconium

38 LLS **S1306040051** **0** **LIQUID**

Analytes Requested: Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Cerium, Chromium, Cobalt, Copper, Europium, Iron, Lanthanum, Lead, Lithium, Magnesium, Manganese, Molybdenum, Neodymium, Nickel, Niobium, Palladium, Phosphorus, Potassium, Praseodymium, Rhodium, Rubidium, Ruthenium, Samarium, Selenium, Silicon, Silver, Sodium, Strontium, Sulfur, Tantalum, Tellurium, Thallium, Thorium, Tin, Titanium, Tungsten, Uranium, Vanadium, Yttrium, Zinc, Zirconium

41 CCB **S1306040049** **0** **LIQUID**

Analytes Requested: Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Cerium, Chromium, Cobalt, Copper, Europium, Iron, Lanthanum, Lead, Lithium, Magnesium, Manganese, Molybdenum, Neodymium, Nickel, Niobium, Palladium, Phosphorus, Potassium, Praseodymium, Rhodium, Rubidium, Ruthenium, Samarium, Selenium, Silicon, Silver, Sodium, Strontium, Sulfur, Tantalum, Tellurium, Thallium, Thorium, Tin, Titanium, Tungsten, Uranium, Vanadium, Yttrium, Zinc, Zirconium

Final Page for Batch# 00041494

Analyst Signature 06/04/13 **Date**

Data Entry Signature 06/04/13 **Date**

Data Entry Comments:

S = Batch Slot Number, R = Retest Number, A = Aliquot Code.

Flexible Report By Sample

Author:

Published: 6/3/2013 2:26:35 PM

Method Name: iCAP 6500 130308 (1)

Sample Name	Acquisition Date	Sample type	Correction Factor
Blank	6/3/2013 10:07:53 AM	Standard	1.00

Autosampler Locations (rack/row/col)	Analyst Name	Method Name
3/1/2	awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Ag3280	Al3961	As1890	B_2497	Ba2335
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.000824179	-0.00390461	0.00367941	-0.00317353	-0.000171573
Std Dev:	0.000961742	0.0021496	0.00309338	0.000285827	0.000265613
%RSD:	116.691	55.0528	84.0726	9.00657	154.81
Repeat: 1	0.00122614	-0.00628111	0.000115126	-0.00350324	-2.41789e-005
Repeat: 2	0.00151973	-0.00209592	0.00525936	-0.00299569	-1.23399e-005
Repeat: 3	-0.000273334	-0.00333679	0.00566374	-0.00302167	-0.000478199
Element/Wavelength	Be2348	Bi2230	Ca1840	Cd2265	Ce5353
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-4.47692e-005	-0.00352832	-0.00139939	0.000130584	-0.106443
Std Dev:	3.98087e-005	0.0011877	0.00190268	6.80106e-005	0.00733304
%RSD:	88.9198	33.662	135.966	52.0818	6.88914
Repeat: 1	-5.66136e-005	-0.00483434	-7.98769e-005	8.92888e-005	-0.111725
Repeat: 2	-7.73115e-005	-0.00323778	-0.00358045	9.33833e-005	-0.109535
Repeat: 3	-3.82544e-007	-0.00251285	-0.000537833	0.000209081	-0.0980709
Element/Wavelength	Co2286	Cr2677	Cu3273	Eu3819	Fe2599
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.000634129	0.000623774	-0.00167862	-6.39759e-005	0.00126447
Std Dev:	0.000453823	0.000157784	0.000511402	6.75118e-005	0.000466321
%RSD:	71.5663	25.2951	30.4656	105.527	36.8788
Repeat: 1	0.000806347	0.000444012	-0.00118915	-8.75725e-005	0.000764871
Repeat: 2	0.000976636	0.000687961	-0.00163727	-0.000116522	0.00168821
Repeat: 3	0.000119405	0.000739348	-0.00220945	1.21672e-005	0.00134032
Element/Wavelength	K_7664	La3794	Li6707	Mg2852	Mn2605
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.00619614	0.000832734	-0.000325989	-0.000169242	0.000202866
Std Dev:	0.00460053	0.00046634	0.000194885	9.65475e-005	8.74472e-005
%RSD:	74.2483	56.0011	59.7826	57.0471	43.106
Repeat: 1	-0.00411338	0.00115263	-0.000102238	-0.000163391	0.000290773
Repeat: 2	-0.0114697	0.00104791	-0.000458644	-0.000268582	0.000115886
Repeat: 3	-0.00300534	0.000297656	-0.000417083	-7.5753e-005	0.000201938
Element/Wavelength	Mo2020	Na8183	Nb3194	Nd4012	Ni2216
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.000587637	-0.0894542	i 0.000858131	0.00945371	-0.00075735
Std Dev:	0.000466378	0.0293565	0.000917308	0.00266651	9.23864e-005
%RSD:	79.365	32.8174	106.896	28.2059	12.1986
Repeat: 1	-0.000340924	-0.0556191	0.00180682	0.0115847	-0.000678727
Repeat: 2	-0.000296437	-0.108159	-2.41919e-005	0.00646354	-0.00073422
Repeat: 3	-0.00112555	-0.104584	0.000791765	0.0103129	-0.000859104

Element/Wavelength	P_1774	Pb2203	Pd3242	Pr4143	Rb7800
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00101914	-0.00157198	-0.00732308	0.0301553	0.00570405
Std Dev:	0.00164926	0.0049772	0.00477594	0.00375111	0.00238704
%RSD:	161.829	316.62	65.2176	12.4393	41.8482
Repeat: 1	-0.000784603	0.00224838	-0.00532961	0.0328315	0.00333168
Repeat: 2	0.00245011	0.000236189	-0.00386682	0.0258677	0.00810549
Repeat: 3	0.00139192	-0.00720051	-0.0127728	0.0317665	0.00567498
Element/Wavelength	Rh3434	Ru2402	S_1807	Sb2175	Se1960
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.000160283	0.000741981	-0.00377914	0.00230272	-0.00398664
Std Dev:	0.000560366	0.00101484	0.00315416	0.00320791	0.00577578
%RSD:	349.61	136.774	83.4622	139.31	144.879
Repeat: 1	-2.31168e-005	0.000591681	-0.00119975	0.00530307	-0.00727073
Repeat: 2	0.000789369	-0.000189323	-0.00729567	-0.00107871	-0.00737159
Repeat: 3	-0.000285402	0.00182358	-0.00284202	0.0026838	0.00268241
Element/Wavelength	Si2124	Sm3592	Sn1899	Sr2165	Ta2685
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-7.38284e-005	0.073837	0.00130227	-0.000814354	-0.000132463
Std Dev:	0.00101206	0.00226801	0.00177917	0.000387561	0.00257065
%RSD:	1370.83	3.07165	136.621	47.5912	1940.66
Repeat: 1	-0.00123153	0.0752996	-7.09085e-005	-0.000581323	-0.00180186
Repeat: 2	0.000366929	0.074987	0.00331221	-0.000599999	-0.00142334
Repeat: 3	0.000643114	0.0712244	0.000665519	-0.00126174	0.00282782
Element/Wavelength	Te2142	Th2832	Ti3372	Tl1908	U_3859
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00500811	0.00301564	-0.000228079	-0.000102169	-0.00922824
Std Dev:	0.00240815	0.00235593	0.000280505	0.00160622	0.0130285
%RSD:	48.085	78.1235	122.986	1572.12	141.181
Repeat: 1	0.00610226	0.00561026	-0.000478234	0.000316246	0.000453719
Repeat: 2	0.00224714	0.00101027	7.51828e-005	-0.00187618	-0.00409744
Repeat: 3	0.00667492	0.0024264	-0.000281187	0.00125343	-0.024041
Element/Wavelength	V_3093	W_2397	Y_3195	Zn2138	Zr3438
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.000106492	0.00458537	i -9.02733e-006	-0.000134142	-0.00199555
Std Dev:	4.38228e-005	0.0029233	0.000577849	0.000134154	7.5562e-005
%RSD:	41.1512	63.7528	6401.11	100.01	3.78653
Repeat: 1	0.000153699	0.00382848	-0.00060822	1.17373e-005	-0.0020247
Repeat: 2	6.71063e-005	0.00781269	0.000544805	-0.000161949	-0.00205219
Repeat: 3	9.86713e-005	0.00211496	3.63329e-005	-0.000252213	-0.00190975

Sample Name	Acquisition Date	Sample type	Correction Factor
Cal. Std. 1 - HS 50	6/3/2013 10:12:41 AM	Standard	1.00
Autosampler Locations (rack/row/col)		**Analyst Name**	**Method Name**
3/2/3		awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Ag3280	Al3961	As1890	Ba2335	Be2348
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	z *****	z *****	z *****	z *****	z *****
Std Dev:	----	----	----	----	----
%RSD:	----	----	----	----	----
Repeat: 1	z ----	z ----	z ----	z ----	z ----
Repeat: 2	z ----	z ----	z ----	z ----	z ----
Repeat: 3	z ----	z ----	z ----	z ----	z ----

Element/Wavelength	Bi2230	Ca1840	Cd2265	Co2286	Cr2677
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	z *****	z *****	z *****	z *****	z *****
Std Dev:	----	----	----	----	----
%RSD:	----	----	----	----	----
Repeat: 1	z ----	z ----	z ----	z ----	z ----
Repeat: 2	z ----	z ----	z ----	z ----	z ----
Repeat: 3	z ----	z ----	z ----	z ----	z ----

Element/Wavelength	Cu3273	Fe2599	K_7664	La3794	Li6707
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	z *****	z *****	z *****	z *****	z *****
Std Dev:	----	----	----	----	----
%RSD:	----	----	----	----	----
Repeat: 1	z ----	z ----	z ----	z ----	z ----
Repeat: 2	z ----	z ----	z ----	z ----	z ----
Repeat: 3	z ----	z ----	z ----	z ----	z ----

Element/Wavelength	Mg2852	Mn2605	Na8183	Ni2216	Pb2203
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	z *****	z *****	z *****	0	0
Std Dev:	----	----	----	0	0
%RSD:	----	----	----	0	0
Repeat: 1	z ----	z ----	z ----	0	0
Repeat: 2	z ----	z ----	z ----	0	0
Repeat: 3	z ----	z ----	z ----	0	0

Element/Wavelength	Se1960	Sr2165	V_3093	Zn2138
Units:	ppm	ppm	ppm	ppm
Avg. of Repeats:	0	0	0	0
Std Dev:	0	0	0	0
%RSD:	0	0	0	0
Repeat: 1	0	0	0	0
Repeat: 2	0	0	0	0
Repeat: 3	0	0	0	0

Sample Name	Acquisition Date	Sample type	Correction Factor
Cal. Std. 2 - HS 29	6/3/2013 10:17:16 AM	Standard	1.00
Autosampler Locations (rack/row/col)		**Analyst Name**	**Method Name**
3/2/1		awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	B_2497	Mo2020	P_1774	S_1807	Sb2175
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	z *****	0	0	0	0
Std Dev:	----	0	0	0	0
%RSD:	----	0	0	0	0
Repeat: 1	z ----	0	0	0	0
Repeat: 2	z ----	0	0	0	0
Repeat: 3	z ----	0	0	0	0

Element/Wavelength	Si2124	Ti3372	Zr3438
Units:	ppm	ppm	ppm
Avg. of Repeats:	0	0	0
Std Dev:	0	0	0
%RSD:	0	0	0
Repeat: 1	0	0	0
Repeat: 2	0	0	0
Repeat: 3	0	0	0

Sample Name	Acquisition Date	Sample type	Correction Factor
Cal. Std. 3 - HS 51	6/3/2013 10:21:53 AM	Standard	1.00
Autosampler Locations (rack/row/col)		**Analyst Name**	**Method Name**
3/2/5		awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Ce5353	Eu3819	Nd4012	Pr4143	Rb7800
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0	0	0	0	0
Std Dev:	0	0	0	0	0
%RSD:	0	0	0	0	0
Repeat: 1	0	0	0	0	0
Repeat: 2	0	0	0	0	0
Repeat: 3	0	0	0	0	0

Element/Wavelength	Sm3592	Th2832	U_3859	Y_3195
Units:	ppm	ppm	ppm	ppm
Avg. of Repeats:	0	0	0	i 0
Std Dev:	0	0	0	0
%RSD:	0	0	0	0
Repeat: 1	0	0	0	0
Repeat: 2	0	0	0	0
Repeat: 3	0	0	0	0

Sample Name	Acquisition Date	Sample type	Correction Factor
Cal. Std. 4 - HS 52	6/3/2013 10:26:45 AM	Standard	1.00
Autosampler Locations (rack/row/col)		**Analyst Name**	**Method Name**
3/2/7		awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Pd3242	Rh3434	Ru2402	Tl1908
Units:	ppm	ppm	ppm	ppm
Avg. of Repeats:	0	0	0	0
Std Dev:	0	0	0	0
%RSD:	0	0	0	0
Repeat: 1	0	0	0	0
Repeat: 2	0	0	0	0
Repeat: 3	0	0	0	0

Sample Name	Acquisition Date	Sample type	Correction Factor
Cal. Std. 5 - HS 53	6/3/2013 10:31:31 AM	Standard	1.00
Autosampler Locations (rack/row/col)		**Analyst Name**	**Method Name**
3/2/9		awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Nb3194	Sn1899	Ta2685	Te2142	W_2397
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	i 0	0	0	0	0
Std Dev:	0	0	0	0	0
%RSD:	0	0	0	0	0
Repeat: 1	0	0	0	0	0
Repeat: 2	0	0	0	0	0
Repeat: 3	0	0	0	0	0

Sample Name	Acquisition Date	Sample type	Correction Factor
ICV A	6/3/2013 10:37:42 AM	QC	1.00
Autosampler Locations (rack/row/col)		**Analyst Name**	**Method Name**
1/1/1		awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Ag3280	Al3961	As1890	B_2497	Ba2335
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	1.01916	4.9817	4.92443	4.94279	5.06716
Std Dev:	0.0226007	0.128667	0.0129537	0.115375	0.0141945
%RSD:	2.21758	2.58279	0.263049	2.33422	0.280128
Repeat: 1	1.04408	5.12145	4.90947	5.07137	5.06025
Repeat: 2	1.01339	4.95551	4.93194	4.9087	5.08348
Repeat: 3	0.999998	4.86815	4.93187	4.84831	5.05774
Element/Wavelength	**Be2348**	**Bi2230**	**Ca1840**	**Cd2265**	**Ce5353**
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	5.02365	4.98658	5.10975	5.0614	0.0385004
Std Dev:	0.116979	0.00829508	0.0230532	0.0273233	0.0101514
%RSD:	2.32857	0.166348	0.451161	0.539836	26.3671
Repeat: 1	5.15073	4.97757	5.09042	5.03774	0.0345553
Repeat: 2	4.99973	4.98826	5.13526	5.0913	0.0500322
Repeat: 3	4.92047	4.9939	5.10355	5.05515	0.0309137

Element/Wavelength	Co2286	Cr2677	Cu3273	Eu3819	Fe2599
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	5.07036	5.06997	5.06557	1.34278e-005	5.10367
Std Dev:	0.0201151	0.118418	0.121775	6.71498e-005	0.121339
%RSD:	0.39672	2.33567	2.40397	500.079	2.37749
Repeat: 1	5.05524	5.19816	5.19855	6.423e-005	5.23666
Repeat: 2	5.09319	5.04707	5.03866	3.87559e-005	5.07537
Repeat: 3	5.06266	4.96467	4.9595	-6.27024e-005	4.99898
Element/Wavelength	K_7664	La3794	Li6707	Mg2852	Mn2605
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	5.10918	5.0616	5.26669	5.11586	5.14478
Std Dev:	0.110225	0.119968	0.112937	0.118172	0.123179
%RSD:	2.15739	2.37016	2.14436	2.30991	2.39425
Repeat: 1	5.2207	5.19394	5.38752	5.24517	5.27893
Repeat: 2	5.10655	5.03089	5.24877	5.08893	5.11865
Repeat: 3	5.0003	4.95997	5.16378	5.01348	5.03677
Element/Wavelength	Mo2020	Na8183	Nb3194	Nd4012	Ni2216
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.79422	5.02405	i 0.00106278	-0.00648709	5.09068
Std Dev:	0.0156734	0.0861362	0.000219093	0.000973016	0.0144877
%RSD:	0.326923	1.71448	20.6151	14.9993	0.284592
Repeat: 1	4.78168	5.07682	0.000966651	-0.00540618	5.07926
Repeat: 2	4.81179	5.07068	0.0013135	-0.00729305	5.10698
Repeat: 3	4.7892	4.92465	0.000908178	-0.00676203	5.0858
Element/Wavelength	P_1774	Pb2203	Pd3242	Pr4143	Rb7800
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.89705	5.10591	0.0133174	-0.0417833	0.0288695
Std Dev:	0.0245999	0.0290366	0.00415864	0.00275451	0.0302786
%RSD:	0.50234	0.568686	31.227	6.59237	104.881
Repeat: 1	4.90564	5.08174	0.0177939	-0.0387753	0.0418021
Repeat: 2	4.9162	5.13812	0.0125843	-0.0441825	-0.00572783
Repeat: 3	4.86931	5.09786	0.00957412	-0.0423922	0.0505342
Element/Wavelength	Rh3434	Ru2402	S_1807	Sb2175	Se1960
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.00352192	-0.00119728	4.94816	4.79277	4.92099
Std Dev:	0.00366952	0.00276179	0.0262096	0.019541	0.0170534
%RSD:	104.191	230.672	0.529685	0.407718	0.346543
Repeat: 1	-0.00251785	0.000693462	4.93197	4.78816	4.92326
Repeat: 2	-0.00045896	8.13777e-005	4.9784	4.81421	4.9368
Repeat: 3	-0.00758896	-0.00436668	4.93411	4.77595	4.90292
Element/Wavelength	Si2124	Sm3592	Sn1899	Sr2165	Ta2685
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.80173	-0.0129994	0.000163531	5.09986	-0.0184621
Std Dev:	0.012265	0.00174123	0.000795237	0.0190508	0.0020223
%RSD:	0.25543	13.3947	486.293	0.373555	10.9538
Repeat: 1	4.80579	-0.0141265	-0.00072606	5.09	-0.017404
Repeat: 2	4.81144	-0.0138778	0.000411161	5.12183	-0.020794
Repeat: 3	4.78795	-0.010994	0.000805491	5.08777	-0.0171884

Element/Wavelength	Te2142	Th2832	Ti3372	Tl1908	U_3859
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00936061	-0.0395106	4.93166	0.014778	0.0268305
Std Dev:	0.00231354	0.00149564	0.123631	0.00287588	0.0123113
%RSD:	24.7157	3.78541	2.50689	19.4606	45.8857
Repeat: 1	0.00688359	-0.0384629	5.06685	0.0155498	0.0162574
Repeat: 2	0.0114656	-0.0412234	4.90377	0.0171892	0.0238874
Repeat: 3	0.00973267	-0.0388454	4.82435	0.011595	0.0403466
Element/Wavelength	V_3093	W_2397	Y_3195	Zn2138	Zr3438
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	5.05729	0.00133833	i -0.000575416	5.02533	4.92213
Std Dev:	0.125981	0.00269894	0.000401565	0.0138877	0.113446
%RSD:	2.49108	201.664	69.7868	0.276354	2.30482
Repeat: 1	5.19483	0.000963328	-0.000868663	5.01342	5.04841
Repeat: 2	5.02958	0.00420516	-0.000117732	5.04059	4.88914
Repeat: 3	4.94748	-0.00115349	-0.000739853	5.02199	4.82883

Sample Name	Acquisition Date	Sample type	Correction Factor
ICV B	6/3/2013 10:42:01 AM	QC	1.00
Autosampler Locations (rack/row/col)		**Analyst Name**	**Method Name**
1/2/1		awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Ag3280	Al3961	As1890	B_2497	Ba2335
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00286555	0.0418851	-0.00127713	0.00447153	0.00539482
Std Dev:	0.000604982	0.000936838	0.00177824	0.000258576	0.000254974
%RSD:	21.1123	2.23669	139.237	5.78272	4.72628
Repeat: 1	0.0034327	0.0408378	-0.00082104	0.00421543	0.00549403
Repeat: 2	0.00293518	0.0421742	0.000228645	0.00473252	0.00558528
Repeat: 3	0.00222876	0.0426434	-0.00323899	0.00446663	0.00510515
Element/Wavelength	Be2348	Bi2230	Ca1840	Cd2265	Ce5353
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.000106817	-0.0652062	-0.148039	-7.45e-005	4.68307
Std Dev:	3.74324e-005	0.00484233	0.000607543	0.000236903	0.0241158
%RSD:	35.0434	7.42618	0.410392	317.991	0.514957
Repeat: 1	6.61031e-005	-0.0610866	-0.148263	0.00016906	4.70281
Repeat: 2	0.000114606	-0.0639919	-0.147352	-0.000304132	4.6902
Repeat: 3	0.000139742	-0.0705402	-0.148504	-8.84281e-005	4.65619
Element/Wavelength	Co2286	Cr2677	Cu3273	Eu3819	Fe2599
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.00179132	0.00103756	0.0336106	4.98752	-0.045409
Std Dev:	0.000249098	0.000436749	0.00114664	0.0428751	0.000237196
%RSD:	13.9058	42.0937	3.41154	0.859648	0.522354
Repeat: 1	-0.00183959	0.000630187	0.034313	5.01843	-0.0453898
Repeat: 2	-0.00201275	0.000983796	0.0342314	5.00555	-0.0456552
Repeat: 3	-0.00152162	0.00149871	0.0322874	4.93857	-0.045182

Element/Wavelength	K_7664	La3794	Li6707	Mg2852	Mn2605
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.011731	-0.00436856	0.00788105	0.000497504	-0.000898403
Std Dev:	0.0177741	0.00046262	0.000154313	6.81167e-005	0.000107058
%RSD:	151.514	10.5898	1.95803	13.6917	11.9165
Repeat: 1	0.0133766	-0.00438486	0.00771934	0.000550703	-0.000959494
Repeat: 2	-0.00680865	-0.00389801	0.00802672	0.000420732	-0.000774786
Repeat: 3	0.0286251	-0.00482282	0.00789709	0.000521078	-0.000960928
Element/Wavelength	Mo2020	Na8183	Nb3194	Nd4012	Ni2216
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00111716	-0.344575	i 4.9065	4.92521	0.00954394
Std Dev:	0.00089661	0.0214825	0.0308837	0.0462993	0.000567866
%RSD:	80.2582	6.23448	0.629444	0.940047	5.95002
Repeat: 1	0.00164876	-0.369147	4.92432	4.95856	0.00907195
Repeat: 2	8.19669e-005	-0.335235	4.92434	4.94472	0.00938574
Repeat: 3	0.00162075	-0.329344	4.87084	4.87235	0.0101741
Element/Wavelength	P_1774	Pb2203	Pd3242	Pr4143	Rb7800
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.00608796	0.300347	5.09493	4.87422	4.94253
Std Dev:	0.00198528	0.00149336	0.0344446	0.0336242	0.0427752
%RSD:	32.6098	0.497211	0.676057	0.689838	0.865452
Repeat: 1	-0.00638584	0.302051	5.12057	4.90342	4.96666
Repeat: 2	-0.00790747	0.299721	5.10844	4.88176	4.96779
Repeat: 3	-0.00397058	0.299268	5.05577	4.83746	4.89314
Element/Wavelength	Rh3434	Ru2402	S_1807	Sb2175	Se1960
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.66143	5.11851	0.0100408	0.650384	0.00289784
Std Dev:	0.035292	0.0339742	0.00134389	0.000656493	0.00505816
%RSD:	0.757106	0.663751	13.3844	0.100939	174.549
Repeat: 1	4.68409	5.13487	0.0111534	0.650747	0.00857934
Repeat: 2	4.67943	5.1412	0.0104212	0.650778	-0.00111568
Repeat: 3	4.62077	5.07945	0.00854765	0.649626	0.00122986
Element/Wavelength	Si2124	Sm3592	Sn1899	Sr2165	Ta2685
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.0697203	4.86255	4.8917	-0.0054512	4.9905
Std Dev:	0.00260922	0.0407231	0.00778647	0.000608101	0.0285767
%RSD:	3.74241	0.837484	0.159177	11.1553	0.572622
Repeat: 1	0.066945	4.89582	4.8852	-0.00614225	5.01205
Repeat: 2	0.0700926	4.87469	4.88956	-0.00499784	5.00135
Repeat: 3	0.0721234	4.81713	4.90033	-0.00521352	4.95808
Element/Wavelength	Te2142	Th2832	Ti3372	Tl1908	U_3859
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.82924	4.95627	-0.00347747	4.93971	4.78968
Std Dev:	0.00789411	0.0339963	0.00017916	0.0102193	0.054645
%RSD:	0.163465	0.685926	5.15202	0.20688	1.14089
Repeat: 1	4.83534	4.97004	-0.00362971	4.92962	4.83529
Repeat: 2	4.82032	4.98122	-0.00352266	4.93946	4.80463
Repeat: 3	4.83204	4.91755	-0.00328004	4.95005	4.72911

Element/Wavelength	V_3093	W_2397	Y_3195	Zn2138	Zr3438
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00379961	4.94038	i 5.02534	-0.00636785	0.00260059
Std Dev:	0.000257676	0.0403414	0.028802	0.000215068	0.00023125
%RSD:	6.78165	0.816565	0.573136	3.37741	8.89219
Repeat: 1	0.00350826	4.95347	5.04401	-0.00611966	0.00285277
Repeat: 2	0.00399757	4.97255	5.03984	-0.00649955	0.00239846
Repeat: 3	0.00389299	4.89512	4.99217	-0.00648433	0.00255055

Sample Name	Acquisition Date	Sample type	Correction Factor
LLS A	6/3/2013 10:46:38 AM	QC	1.00

Autosampler Locations (rack/row/col)	Analyst Name	Method Name
1/3/1	awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Ag3280	Al3961	As1890	B_2497	Ba2335
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.0202395	0.0982298	0.198334	0.0973477	0.0101872
Std Dev:	0.00122218	0.00167969	0.00267665	0.000128574	8.34298e-005
%RSD:	6.03859	1.70996	1.34957	0.132077	0.818966
Repeat: 1	0.0191502	0.0976944	0.200792	0.0974029	0.0102746
Repeat: 2	0.0200072	0.0968831	0.195482	0.0974395	0.0101083
Repeat: 3	0.0215612	0.100112	0.198727	0.0972008	0.0101787
Element/Wavelength	Be2348	Bi2230	Ca1840	Cd2265	Ce5353
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00205774	0.207959	0.196845	0.0104098	0.188088
Std Dev:	2.69937e-005	0.00259788	0.00196206	0.000164212	0.0131745
%RSD:	1.31181	1.24923	0.996755	1.57748	7.00447
Repeat: 1	0.0020889	0.206944	0.195738	0.0104247	0.203099
Repeat: 2	0.00204309	0.210911	0.195685	0.0102387	0.178447
Repeat: 3	0.00204124	0.206022	0.19911	0.0105661	0.182717
Element/Wavelength	Co2286	Cr2677	Cu3273	Eu3819	Fe2599
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.0410317	0.0205299	0.020578	-4.63697e-005	0.0484347
Std Dev:	0.000400556	0.000395176	0.00091371	0.0001205	0.000324882
%RSD:	0.976211	1.92488	4.44023	259.869	0.670764
Repeat: 1	0.0414025	0.0202729	0.0195843	4.21144e-005	0.0487022
Repeat: 2	0.0406069	0.0203318	0.0213819	2.38427e-006	0.0485287
Repeat: 3	0.0410857	0.0209849	0.0207679	-0.000183608	0.0480732
Element/Wavelength	K_7664	La3794	Li6707	Mg2852	Mn2605
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	1.01826	0.0105994	0.021238	0.207976	0.0209146
Std Dev:	0.00820216	0.000361894	0.00033916	0.000732124	0.000253532
%RSD:	0.805504	3.41428	1.59695	0.352023	1.21222
Repeat: 1	1.01137	0.0102204	0.0215927	0.207277	0.0206329
Repeat: 2	1.0161	0.0106365	0.0212044	0.208737	0.0211243
Repeat: 3	1.02733	0.0109413	0.0209168	0.207914	0.0209867

Element/Wavelength	Mo2020	Na8183	Nb3194	Nd4012	Ni2216
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.0967721	0.0844965	i -0.00182172	0.0963889	0.0429844
Std Dev:	0.000743234	0.0380196	0.00130807	0.00145865	0.000213652
%RSD:	0.768025	44.9955	71.8043	1.5133	0.497044
Repeat: 1	0.0959149	0.0416503	-0.00331898	0.0948853	0.0427965
Repeat: 2	0.0972356	0.0976343	-0.00124542	0.097798	0.04294
Repeat: 3	0.097166	0.114205	-0.000900751	0.0964834	0.0432168
Element/Wavelength	P_1774	Pb2203	Pd3242	Pr4143	Rb7800
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.385382	0.210598	0.000735429	-0.0064427	0.0208194
Std Dev:	0.00244857	0.00320138	0.00192114	0.00489005	0.0388122
%RSD:	0.635362	1.52014	261.228	75.9007	186.423
Repeat: 1	0.385568	0.213412	-2.39992e-005	-0.00349275	-0.0232715
Repeat: 2	0.382846	0.211268	-0.000689918	-0.0120873	0.0498206
Repeat: 3	0.387733	0.207115	0.00292021	-0.00374802	0.0359091
Element/Wavelength	Rh3434	Ru2402	S_1807	Sb2175	Se1960
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00335096	-0.000501062	0.193381	0.0961805	0.203908
Std Dev:	0.00243001	0.000523434	0.00336526	0.0012737	0.00349626
%RSD:	72.5169	104.465	1.74023	1.32429	1.71463
Repeat: 1	0.00612622	-0.000266044	0.194647	0.0953995	0.201022
Repeat: 2	0.001605	-0.00110081	0.195929	0.0954917	0.207796
Repeat: 3	0.00232165	-0.000136329	0.189566	0.0976503	0.202906
Element/Wavelength	Si2124	Sm3592	Sn1899	Sr2165	Ta2685
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.095703	0.0948286	-2.66438e-005	0.0214896	0.00314738
Std Dev:	0.00240956	0.00508842	0.000914695	0.000679572	0.00142498
%RSD:	2.51774	5.36591	3433.05	3.16233	45.275
Repeat: 1	0.0970027	0.0893605	0.00102714	0.0215652	0.0047927
Repeat: 2	0.0971837	0.0994246	-0.000615368	0.0207754	0.0023093
Repeat: 3	0.0929227	0.0957009	-0.000491703	0.0221282	0.00234013
Element/Wavelength	Te2142	Th2832	Ti3372	Tl1908	U_3859
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.00278376	0.000207985	0.0190785	0.387702	0.492581
Std Dev:	0.00144377	0.000418496	9.30469e-005	0.0051553	0.00943969
%RSD:	51.8641	201.215	0.487705	1.32971	1.91637
Repeat: 1	-0.00147499	0.000691218	0.0189715	0.392073	0.494741
Repeat: 2	-0.00433246	-3.54233e-005	0.0191242	0.382017	0.500753
Repeat: 3	-0.00254382	-3.18402e-005	0.0191399	0.389016	0.482248
Element/Wavelength	V_3093	W_2397	Y_3195	Zn2138	Zr3438
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.0492677	-0.000842249	i -0.000684192	0.0193189	0.0196909
Std Dev:	0.000466013	0.00124979	0.000179208	3.68463e-005	0.00016647
%RSD:	0.945878	148.388	26.1926	0.190727	0.845412
Repeat: 1	0.0487444	-0.00220977	-0.000571421	0.0192999	0.0195509
Repeat: 2	0.0496377	-0.000557728	-0.000590319	0.0192954	0.0196469
Repeat: 3	0.0494212	0.000240755	-0.000890836	0.0193614	0.019875

Sample Name	Acquisition Date	Sample type	Correction Factor
LLS B	6/3/2013 10:51:23 AM	QC	1.00
Autosampler Locations (rack/row/col)		**Analyst Name**	**Method Name**
1/4/1		awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Ag3280	Al3961	As1890	B_2497	Ba2335
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00076316	0.00498471	-0.0034012	0.00399695	0.000249852
Std Dev:	0.000554945	0.00137115	0.00402507	0.000401648	0.000267184
%RSD:	72.7168	27.5071	118.343	10.0489	106.937
Repeat: 1	0.00083709	0.00340817	0.0011033	0.00361093	0.000439495
Repeat: 2	0.000174955	0.00564677	-0.00466181	0.00396734	-5.57154e-005
Repeat: 3	0.00127743	0.0058992	-0.00664509	0.00441258	0.000365776
Element/Wavelength	**Be2348**	**Bi2230**	**Ca1840**	**Cd2265**	**Ce5353**
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	9.76169e-005	-0.00137633	0.00499259	0.000172547	0.00523498
Std Dev:	3.36979e-005	0.000767825	0.00095369	2.52282e-005	0.00620406
%RSD:	34.5206	55.7881	19.1021	14.621	118.512
Repeat: 1	7.12988e-005	-0.000513308	0.00461052	0.000200387	0.00519084
Repeat: 2	8.59551e-005	-0.00198378	0.00607807	0.000151199	0.011461
Repeat: 3	0.000135597	-0.00163189	0.00428917	0.000166056	-0.000946898
Element/Wavelength	**Co2286**	**Cr2677**	**Cu3273**	**Eu3819**	**Fe2599**
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.000582141	4.98561e-005	-6.31457e-005	0.101589	0.000661401
Std Dev:	0.000487666	0.000261681	0.00111575	0.000454976	0.000275055
%RSD:	83.7711	524.872	1766.95	0.447858	41.5868
Repeat: 1	-0.0010046	0.000282794	0.00119213	0.10202	0.00034565
Repeat: 2	-4.84766e-005	-0.000233291	-0.000942022	0.101634	0.000789585
Repeat: 3	-0.000693347	0.000100066	-0.000439543	0.101114	0.000848967
Element/Wavelength	**K_7664**	**La3794**	**Li6707**	**Mg2852**	**Mn2605**
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00471055	2.69e-005	-4.968e-006	0.00048344	0.0001162
Std Dev:	0.00584998	0.000139616	0.000326111	0.000178715	0.000117909
%RSD:	124.189	519.02	6564.23	36.9674	101.471
Repeat: 1	0.00436376	0.000164402	0.000232537	0.000588502	1.14685e-005
Repeat: 2	0.0107262	-0.000114739	0.000129345	0.000584729	9.32261e-005
Repeat: 3	-0.000958331	3.10374e-005	-0.000376785	0.000277089	0.000243905
Element/Wavelength	**Mo2020**	**Na8183**	**Nb3194**	**Nd4012**	**Ni2216**
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.000124803	-0.0760009	i 0.0970958	0.000481846	0.0012285
Std Dev:	0.00029187	0.0472404	0.00219902	0.0025735	0.000908495
%RSD:	233.864	62.1576	2.2648	534.092	73.9516
Repeat: 1	-0.000296512	-0.0473535	0.097325	-0.00209238	0.00096089
Repeat: 2	0.000212199	-0.0501233	0.0991712	0.0004833	0.000483868
Repeat: 3	-0.000290096	-0.130526	0.0947911	0.00305462	0.00224074
Element/Wavelength	**P_1774**	**Pb2203**	**Pd3242**	**Pr4143**	**Rb7800**
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.000254207	0.00721455	1.00457	0.0937283	2.01938
Std Dev:	0.00145694	0.000412887	0.00622807	0.00459657	0.0114025
%RSD:	573.13	5.72298	0.619971	4.90414	0.564655
Repeat: 1	-0.000549239	0.00700984	1.01127	0.0951678	2.00689
Repeat: 2	0.00193598	0.00694401	1.00351	0.0974329	2.02202
Repeat: 3	-0.000624118	0.00768979	0.998947	0.0885843	2.02924

Element/Wavelength	Rh3434	Ru2402	S_1807	Sb2175	Se1960
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.105827	0.0988134	0.000200595	0.0175355	-0.000255086
Std Dev:	0.00167157	0.000851956	0.00195644	0.00207469	0.00134662
%RSD:	1.57954	0.862187	975.317	11.8313	527.907
Repeat: 1	0.107693	0.0995642	-0.00158213	0.0153208	-0.000445964
Repeat: 2	0.105322	0.0978875	-0.000109742	0.0178519	-0.00149608
Repeat: 3	0.104466	0.0989886	0.00229366	0.0194339	0.00117679
Element/Wavelength	Si2124	Sm3592	Sn1899	Sr2165	Ta2685
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.0242125	-0.000872485	0.0979192	0.0010742	0.991139
Std Dev:	0.00144478	0.00406797	0.000356838	0.000484467	0.00352168
%RSD:	5.96708	466.251	0.36442	45.1001	0.355317
Repeat: 1	0.0252397	0.00199863	0.0983307	0.000751087	0.989615
Repeat: 2	0.0248375	0.000911576	0.0977316	0.00163124	0.988636
Repeat: 3	0.0225605	-0.00552766	0.0976954	0.00084028	0.995166
Element/Wavelength	Te2142	Th2832	Ti3372	Tl1908	U_3859
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.971079	0.0962663	0.000223824	0.000330021	0.0169629
Std Dev:	0.00562048	0.00171118	0.000132326	0.00347334	0.00645511
%RSD:	0.578787	1.77755	59.1204	1052.46	38.0542
Repeat: 1	0.976582	0.0981897	0.000114651	0.00176275	0.0190808
Repeat: 2	0.965348	0.0956966	0.000185831	0.00285781	0.0220931
Repeat: 3	0.971307	0.0949127	0.00037099	-0.0036305	0.00971495
Element/Wavelength	V_3093	W_2397	Y_3195	Zn2138	Zr3438
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	5.12191e-005	1.00169	i 0.103788	0.00146748	0.000344155
Std Dev:	2.94134e-005	0.00415147	9.92489e-005	4.87319e-005	0.000114229
%RSD:	57.4265	0.414445	0.0956265	3.32079	33.1911
Repeat: 1	5.03024e-005	0.998003	0.103863	0.00145117	0.000213218
Repeat: 2	2.22749e-005	1.00619	0.103675	0.00142899	0.00039584
Repeat: 3	8.10802e-005	1.00089	0.103826	0.00152227	0.000423406

Sample Name	Acquisition Date	Sample type	Correction Factor
LLS Na	6/3/2013 10:56:09 AM	QC	1.00
Autosampler Locations (rack/row/col)		**Analyst Name**	**Method Name**
1/5/1		awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Ag3280	Al3961	As1890	B_2497	Ba2335
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.000903619	-8.1825e-005	-0.00114167	0.00108525	3.17037e-005
Std Dev:	0.000390164	0.00101859	0.000744666	0.000107686	0.000175041
%RSD:	43.178	1244.84	65.2258	9.9227	552.115
Repeat: 1	-0.000859943	0.000935454	-0.00136552	0.00112086	-8.16962e-005
Repeat: 2	-0.00131378	-7.92076e-005	-0.000310762	0.00117061	0.000233299
Repeat: 3	-0.000537131	-0.00110172	-0.00174874	0.000964262	-5.64918e-005
Element/Wavelength	Be2348	Bi2230	Ca1840	Cd2265	Ce5353
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	3.50807e-005	0.00357957	-0.00141837	-8.03343e-005	-0.00111471
Std Dev:	3.31808e-005	0.00479847	0.000905824	0.000278005	0.00627233
%RSD:	94.5842	134.051	63.8637	346.061	562.69
Repeat: 1	6.08512e-005	0.00125772	-0.00232417	-0.00023563	0.00553979
Repeat: 2	4.67489e-005	0.00038366	-0.000512517	-0.000245995	-0.00691793
Repeat: 3	-2.3581e-006	0.00909734	-0.00141843	0.000240623	-0.00196598

Element/Wavelength	Co2286	Cr2677	Cu3273	Eu3819	Fe2599
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.000318966	-0.000301045	0.000149072	-2.71292e-005	-0.000246309
Std Dev:	0.000237779	0.000250503	0.000489103	5.90207e-005	0.00030582
%RSD:	74.547	83.211	328.098	217.554	124.161
Repeat: 1	0.000241648	-8.66508e-005	0.000416322	-1.46682e-005	9.74793e-005
Repeat: 2	0.000585782	-0.000240082	0.000446324	-9.13854e-005	-0.000348321
Repeat: 3	0.000129468	-0.000576403	-0.000415429	2.46661e-005	-0.000488084
Element/Wavelength	K_7664	La3794	Li6707	Mg2852	Mn2605
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00106061	0.000318377	2.43567e-005	-0.000237802	7.31589e-005
Std Dev:	0.00130515	0.000465309	0.000283768	0.000173163	0.000102552
%RSD:	123.057	146.15	1165.05	72.8182	140.178
Repeat: 1	0.0019071	0.000851324	-0.000282554	-0.000101138	4.03284e-005
Repeat: 2	-0.000442457	-7.15257e-006	7.84192e-005	-0.000179731	0.000188107
Repeat: 3	0.00171718	0.000110958	0.000277205	-0.000432536	-8.95829e-006
Element/Wavelength	Mo2020	Na8183	Nb3194	Nd4012	Ni2216
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.000485121	1.00652	i 0.00074645	-0.00139486	-6.16667e-005
Std Dev:	0.000252359	0.0429901	0.00161857	0.0010815	0.000169529
%RSD:	52.0198	4.27118	216.835	77.5346	274.912
Repeat: 1	0.000661379	1.04988	-0.00106495	-0.00187473	-0.000253276
Repeat: 2	0.000597952	0.963914	0.00205074	-0.00215338	6.88462e-005
Repeat: 3	0.000196032	1.00575	0.00125356	-0.000156458	-5.70709e-007
Element/Wavelength	P_1774	Pb2203	Pd3242	Pr4143	Rb7800
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.00156311	0.00121417	0.00508166	-0.00421503	-0.00408136
Std Dev:	0.00216938	0.00212016	0.00110892	0.00201358	0.0288063
%RSD:	138.787	174.618	21.8221	47.7714	705.8
Repeat: 1	-0.00153905	0.00183011	0.00505901	-0.00500182	0.015281
Repeat: 2	0.000594148	-0.00114576	0.00398424	-0.00571642	0.00966024
Repeat: 3	-0.00374442	0.00295816	0.00620174	-0.00192685	-0.0371853
Element/Wavelength	Rh3434	Ru2402	S_1807	Sb2175	Se1960
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00226577	6.02962e-005	-0.000816417	-0.00220848	0.000661063
Std Dev:	0.00261316	0.000842022	0.000802956	0.00350233	0.00198287
%RSD:	115.332	1396.48	98.3512	158.586	299.952
Repeat: 1	0.00508182	-0.000857388	0.00010676	-0.00558705	0.00277243
Repeat: 2	-8.08836e-005	0.000240942	-0.00135247	-0.0024441	-0.00116168
Repeat: 3	0.00179638	0.000797335	-0.00120354	0.00140571	0.000372446
Element/Wavelength	Si2124	Sm3592	Sn1899	Sr2165	Ta2685
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.00239892	0.000210339	-0.000289079	0.000770766	-0.000558097
Std Dev:	0.00199066	0.00304684	0.000472329	0.000425359	0.000383484
%RSD:	82.9814	1448.54	163.391	55.1865	68.7127
Repeat: 1	-0.00355151	0.00326315	0.000140038	0.000808058	-0.000594757
Repeat: 2	-0.000100309	-0.00283049	-0.000212109	0.000327989	-0.000921935
Repeat: 3	-0.00354494	0.000198356	-0.000795165	0.00117625	-0.0001576
Element/Wavelength	Te2142	Th2832	Ti3372	Tl1908	U_3859
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.00129078	-0.00535245	5.24944e-006	-0.00260098	0.00745201
Std Dev:	0.00320967	0.00155553	0.000100186	0.00276688	0.00687062
%RSD:	248.662	29.0621	1908.51	106.378	92.1981
Repeat: 1	-0.00465139	-0.00362796	0.000111588	-0.00579352	0.0150764
Repeat: 2	0.00174293	-0.00664975	-8.46851e-006	-0.00111145	0.00174051
Repeat: 3	-0.000963879	-0.00577964	-8.73709e-005	-0.000897986	0.00553917

Element/Wavelength	V_3093	W_2397	Y_3195	Zn2138	Zr3438
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-8.23942e-005	-0.002124	i -0.000732677	-0.000326225	0.000239703
Std Dev:	0.000109579	0.00326163	0.000586749	0.00024581	0.000366947
%RSD:	132.994	153.56	80.0828	75.3497	153.084
Repeat: 1	1.82944e-005	-0.00572734	-0.000269473	-0.000320652	0.000500835
Repeat: 2	-6.6376e-005	-0.00127112	-0.00139248	-0.000574775	-0.00017984
Repeat: 3	-0.000199101	0.000626451	-0.000536079	-8.32495e-005	0.000398113

Sample Name	Acquisition Date	Sample type	Correction Factor
ICB	6/3/2013 11:00:57 AM	QC	1.00
Autosampler Locations (rack/row/col)		**Analyst Name**	**Method Name**
1/6/1		awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Ag3280	Al3961	As1890	B_2497	Ba2335
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.87214e-005	0.000294678	-0.000317778	0.000601339	-7.7108e-005
Std Dev:	0.000835308	0.00117491	0.000625529	0.000102387	0.000311193
%RSD:	1714.46	398.709	196.845	17.0266	403.581
Repeat: 1	-0.000736999	0.000263612	0.000400346	0.000507812	-0.000138065
Repeat: 2	-4.29008e-005	0.00148481	-0.00060968	0.00058547	0.000260053
Repeat: 3	0.000926064	-0.000864389	-0.000744001	0.000710734	-0.000353312
Element/Wavelength	Be2348	Bi2230	Ca1840	Cd2265	Ce5353
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-1.24654e-005	0.00149118	-0.000612518	-0.000252386	0.00330095
Std Dev:	5.90581e-005	0.000377465	0.00146191	0.000161725	0.00484859
%RSD:	473.776	25.3132	238.672	64.0782	146.885
Repeat: 1	-9.40331e-006	0.00157868	0.00033598	-0.00042602	-0.00157386
Repeat: 2	-7.2995e-005	0.00107765	0.00012255	-0.000225098	0.00335382
Repeat: 3	4.50021e-005	0.00181721	-0.00229608	-0.000106042	0.0081229
Element/Wavelength	Co2286	Cr2677	Cu3273	Eu3819	Fe2599
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.000429768	-0.000700534	8.43024e-005	-3.94494e-005	-0.000734926
Std Dev:	0.00039701	0.000292521	0.000956431	8.18551e-006	0.000381687
%RSD:	92.3778	41.7568	1134.52	20.7494	51.9355
Repeat: 1	-0.000887605	-0.00101937	-0.000161545	-3.00357e-005	-0.000321748
Repeat: 2	-0.000221012	-0.000637687	-0.000725206	-4.48908e-005	-0.00107436
Repeat: 3	-0.000180688	-0.000444545	0.00113966	-4.34217e-005	-0.00080867
Element/Wavelength	K_7664	La3794	Li6707	Mg2852	Mn2605
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00990491	-0.000297003	1.93591e-005	-0.000203815	1.36547e-005
Std Dev:	0.00734561	0.000373385	0.000266765	0.000229771	0.000141582
%RSD:	74.1613	125.718	1377.98	112.735	1036.87
Repeat: 1	0.00374487	-0.000420451	-0.000222321	4.43885e-006	-0.000146984
Repeat: 2	0.0180345	0.000122474	-2.52002e-005	-0.000165577	6.76686e-005
Repeat: 3	0.00793535	-0.000593031	0.000305598	-0.000450306	0.00012028
Element/Wavelength	Mo2020	Na8183	Nb3194	Nd4012	Ni2216
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.000378856	-0.0827042	i -7.39765e-005	-0.000342796	0.000199761
Std Dev:	0.000344062	0.00645808	0.00163368	0.0011118	0.000372919
%RSD:	90.8163	7.80865	2208.38	324.331	186.683
Repeat: 1	-0.000358562	-0.0754549	0.00157935	-0.00118144	-0.000219704
Repeat: 2	-4.53893e-005	-0.0878429	-0.00168728	0.000918307	0.000493785
Repeat: 3	-0.000732616	-0.0848147	-0.000113999	-0.000765251	0.000325202

Element/Wavelength	P_1774	Pb2203	Pd3242	Pr4143	Rb7800
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.00105672	0.00338238	0.00153027	-0.0052192	0.00341435
Std Dev:	0.000770232	0.00140134	0.0032751	0.00411188	0.0151418
%RSD:	72.8886	41.4305	214.022	78.7838	443.476
Repeat: 1	-0.000235544	0.00468269	-0.00222053	-0.00136008	-0.0103616
Repeat: 2	-0.00176312	0.00356628	0.00298738	-0.00954417	0.0196266
Repeat: 3	-0.00117151	0.00189818	0.00382394	-0.00475336	0.000978105
Element/Wavelength	Rh3434	Ru2402	S_1807	Sb2175	Se1960
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00174577	-0.00120716	-0.00260789	-0.000108637	0.00588101
Std Dev:	0.000143892	0.000585722	0.000971451	0.00664294	0.00604608
%RSD:	8.24233	48.5206	37.2504	6114.78	102.807
Repeat: 1	0.00168438	-0.00067662	-0.00154258	0.00735883	0.00575098
Repeat: 2	0.00164275	-0.00110916	-0.00344477	-0.005361	0.011991
Repeat: 3	0.00191017	-0.0018357	-0.00283632	-0.00232374	-9.90077e-005
Element/Wavelength	Si2124	Sm3592	Sn1899	Sr2165	Ta2685
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.00244493	0.000503677	-0.000501112	0.000519975	0.0020191
Std Dev:	0.00229345	0.0025901	0.0014167	0.000444109	0.00070199
%RSD:	93.8042	514.239	282.71	85.4098	34.7674
Repeat: 1	0.000187489	-0.000693022	0.00010568	0.000924141	0.00208871
Repeat: 2	-0.00351078	0.00347575	0.000511121	0.000591242	0.0026837
Repeat: 3	-0.00401149	-0.0012717	-0.00212014	4.45413e-005	0.00128491
Element/Wavelength	Te2142	Th2832	Ti3372	Tl1908	U_3859
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.000486654	-0.000626558	-0.000244271	0.00268532	0.00965763
Std Dev:	0.00410694	0.000247895	0.00019866	0.00261237	0.0088508
%RSD:	843.914	39.5645	81.3279	97.2834	91.6457
Repeat: 1	0.00239065	-0.00064353	-0.000359982	-9.12972e-005	0.00233344
Repeat: 2	0.00329605	-0.000865531	-1.48808e-005	0.00305271	0.0194925
Repeat: 3	-0.00422674	-0.000370613	-0.000357951	0.00509454	0.0071469
Element/Wavelength	V_3093	W_2397	Y_3195	Zn2138	Zr3438
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.83085e-006	-0.000626416	i 0.000103476	-0.000340142	0.00041719
Std Dev:	0.000130033	0.00311463	0.00153973	0.000123332	0.000338146
%RSD:	2691.73	497.214	1488.01	36.2589	81.0532
Repeat: 1	-0.000117098	5.11806e-005	0.00158583	-0.000198891	2.83753e-005
Repeat: 2	-1.00913e-005	-0.00402406	-0.00148785	-0.000395059	0.000642582
Repeat: 3	0.000141681	0.00209363	0.000212444	-0.000426476	0.000580614

Sample Name	Acquisition Date	Sample type	Correction Factor
ICSA	6/3/2013 11:05:46 AM	QC	1.00
Autosampler Locations (rack/row/col)		**Analyst Name**	**Method Name**
1/7/1		awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Ag3280	Al3961	As1890	B_2497	Ba2335
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00389359	194.333	0.00150169	0.0653619	0.00196198
Std Dev:	0.000419742	2.40036	0.00164404	0.00120868	0.000144268
%RSD:	10.7803	1.23518	109.48	1.84921	7.3532
Repeat: 1	0.00404234	195.003	0.000171879	0.0657152	0.00187277
Repeat: 2	0.00421871	191.669	0.000993308	0.0663546	0.00212842
Repeat: 3	0.00341974	196.327	0.00333987	0.064016	0.00188474

Element/Wavelength	Be2348	Bi2230	Ca1840	Cd2265	Ce5353
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00146774	0.0191159	173.9	-0.00396424	-0.730371
Std Dev:	6.08729e-005	0.00525539	0.929604	0.000269392	0.00268356
%RSD:	4.14738	27.4923	0.534562	6.79554	0.367424
Repeat: 1	0.00152659	0.0160021	174.633	-0.00406903	-0.733221
Repeat: 2	0.00147161	0.0161619	174.213	-0.0036582	-0.727892
Repeat: 3	0.00140503	0.0251836	172.854	-0.00416549	-0.730002
Element/Wavelength	Co2286	Cr2677	Cu3273	Eu3819	Fe2599
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.0019263	0.00106517	-0.00746164	-0.000344881	168.674
Std Dev:	0.000374437	0.000178306	0.00105207	4.82046e-005	0.418123
%RSD:	19.4381	16.7397	14.0997	13.9772	0.247889
Repeat: 1	0.00179372	0.00123939	-0.00774448	-0.000394708	168.782
Repeat: 2	0.00234899	0.000883038	-0.00834339	-0.000298482	169.027
Repeat: 3	0.0016362	0.00107308	-0.00629707	-0.000341454	168.212
Element/Wavelength	K_7664	La3794	Li6707	Mg2852	Mn2605
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.16223	-0.00750348	0.00575936	157.166	0.0100435
Std Dev:	0.0090594	2.11831e-005	0.000124672	2.48143	0.000860797
%RSD:	5.58428	0.282311	2.16468	1.57887	8.57068
Repeat: 1	-0.169285	-0.00748611	0.00572709	159.948	0.00909033
Repeat: 2	-0.152014	-0.00752708	0.005897	156.368	0.0107642
Repeat: 3	-0.165392	-0.00749724	0.00565401	155.181	0.010276
Element/Wavelength	Mo2020	Na8183	Nb3194	Nd4012	Ni2216
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.0011071	198.058	i 0.0243416	0.0111007	0.0063639
Std Dev:	0.000395512	1.2715	0.00151496	0.000322785	0.000440521
%RSD:	35.7249	0.641982	6.22374	2.9078	6.92218
Repeat: 1	0.00131397	199.466	0.023328	0.0113298	0.00667173
Repeat: 2	0.00065106	197.713	0.0236138	0.0112407	0.00656069
Repeat: 3	0.00135628	196.995	0.0260831	0.0107315	0.00585929
Element/Wavelength	P_1774	Pb2203	Pd3242	Pr4143	Rb7800
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.0085549	0.00152339	-0.00765344	-0.0374739	-0.0217309
Std Dev:	0.00225675	0.00218814	0.000923687	0.00540061	0.00371733
%RSD:	26.3796	143.637	12.0689	14.4117	17.1062
Repeat: 1	0.00635285	0.00134579	-0.00704363	-0.0363153	-0.020917
Repeat: 2	0.0108626	-0.000570544	-0.00871617	-0.0433597	-0.0257877
Repeat: 3	0.00844923	0.00379491	-0.00720052	-0.0327465	-0.0184879
Element/Wavelength	Rh3434	Ru2402	S_1807	Sb2175	Se1960
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00358516	-0.0327962	-0.0250174	-0.0408101	0.00386918
Std Dev:	0.00476726	0.00270201	0.00503793	0.00461149	0.00537133
%RSD:	132.972	8.23878	20.1377	11.2999	138.823
Repeat: 1	0.000974925	-0.0345141	-0.0192572	-0.0357882	0.00954232
Repeat: 2	0.00908751	-0.0341928	-0.0286017	-0.0448545	-0.00113829
Repeat: 3	0.000693054	-0.0296817	-0.0271934	-0.0417876	0.00320352
Element/Wavelength	Si2124	Sm3592	Sn1899	Sr2165	Ta2685
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.00861135	-0.0219816	-0.0011748	0.0186868	0.0293868
Std Dev:	0.00199091	0.00423105	0.000644798	0.00046499	0.00562985
%RSD:	23.1197	19.2481	54.886	2.48833	19.1577
Repeat: 1	-0.0101444	-0.024919	-0.00180487	0.0185382	0.0325514
Repeat: 2	-0.00932846	-0.0238938	-0.0012033	0.019208	0.0327223
Repeat: 3	-0.00636122	-0.017132	-0.000516218	0.0183143	0.0228868

Element/Wavelength	Te2142	Th2832	Ti3372	Tl1908	U_3859
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.0127042	0.181071	0.000998642	-0.00147713	0.260443
Std Dev:	0.00320061	0.00314713	0.000249326	0.004462	0.0269942
%RSD:	25.1934	1.73806	24.9665	302.072	10.3647
Repeat: 1	-0.0163475	0.184493	0.00102353	-0.00617829	0.291034
Repeat: 2	-0.0114193	0.178302	0.00123459	0.00269933	0.23997
Repeat: 3	-0.0103456	0.180417	0.000737807	-0.000952445	0.250324
Element/Wavelength	V_3093	W_2397	Y_3195	Zn2138	Zr3438
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00516309	0.00687412	i -0.00107174	0.00353197	0.0041368
Std Dev:	0.00402813	0.00512968	0.000295815	0.000217247	0.000446931
%RSD:	78.0178	74.6231	27.6014	6.15088	10.8038
Repeat: 1	0.000685121	0.00170681	-0.000888893	0.00356626	0.0045296
Repeat: 2	0.00631273	0.0119653	-0.000913302	0.00329961	0.00423027
Repeat: 3	0.00849141	0.00695022	-0.00141303	0.00373003	0.00365052

Sample Name	Acquisition Date	Sample type	Correction Factor
ICSAB	6/3/2013 11:10:57 AM	QC	1.00
Autosampler Locations (rack/row/col)		**Analyst Name**	**Method Name**
1/8/1		awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Ag3280	Al3961	As1890	B_2497	Ba2335
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	1.04287	214.414	4.48445	1.05288	0.863623
Std Dev:	0.067604	16.8754	0.0218738	0.0715342	0.00294466
%RSD:	6.4825	7.87047	0.48777	6.79415	0.340965
Repeat: 1	1.11081	233.061	4.50093	1.12532	0.866958
Repeat: 2	1.04219	209.988	4.49279	1.05104	0.862531
Repeat: 3	0.97561	200.192	4.45963	0.982284	0.861381
Element/Wavelength	Be2348	Bi2230	Ca1840	Cd2265	Ce5353
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.100527	4.41532	165.837	0.158764	-0.71221
Std Dev:	0.00699429	0.0158436	1.04784	0.00023463	0.0666573
%RSD:	6.95763	0.358832	0.631848	0.147785	9.35921
Repeat: 1	0.107422	4.43342	166.616	0.158903	-0.782296
Repeat: 2	0.10072	4.40857	166.249	0.158895	-0.704721
Repeat: 3	0.0934378	4.40397	164.646	0.158493	-0.649614
Element/Wavelength	Co2286	Cr2677	Cu3273	Eu3819	Fe2599
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.23363	4.72496	5.13857	-0.000661418	183.95
Std Dev:	0.0265406	0.313034	0.354494	0.000126822	9.65503
%RSD:	0.626899	6.6251	6.89868	19.1743	5.24873
Repeat: 1	4.25872	5.0309	5.49131	-0.000792558	193.674
Repeat: 2	4.23634	4.73871	5.14207	-0.00065229	183.81
Repeat: 3	4.20584	4.40528	4.78234	-0.000539407	174.365
Element/Wavelength	K_7664	La3794	Li6707	Mg2852	Mn2605
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.162121	-0.00680184	1.10389	171.325	4.77178
Std Dev:	0.00969314	0.000142297	0.0755841	9.03152	0.322012
%RSD:	5.97896	2.09203	6.84704	5.27156	6.74825
Repeat: 1	-0.172339	-0.00664463	1.18079	180.261	5.08542
Repeat: 2	-0.160968	-0.00683908	1.1012	171.515	4.78792
Repeat: 3	-0.153056	-0.00692182	1.02969	162.2	4.44201

Element/Wavelength	Mo2020	Na8183	Nb3194	Nd4012	Ni2216
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.53271	213.096	i 4.11517	0.0204237	4.18036
Std Dev:	0.0272168	14.6825	0.361081	0.00209072	0.024123
%RSD:	0.600454	6.8901	8.77439	10.2367	0.577055
Repeat: 1	4.50175	227.805	3.75306	0.0208806	4.20396
Repeat: 2	4.54353	213.042	4.11724	0.0181424	4.18138
Repeat: 3	4.55285	198.44	4.47521	0.0222482	4.15575
Element/Wavelength	P_1774	Pb2203	Pd3242	Pr4143	Rb7800
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.887673	1.08232	0.0578847	-0.0921503	0.028724
Std Dev:	0.00226828	0.00543854	0.0108832	0.00453575	0.00405191
%RSD:	0.255532	0.502491	18.8015	4.92212	14.1064
Repeat: 1	0.890003	1.07606	0.0527983	-0.0896934	0.0330217
Repeat: 2	0.887543	1.0859	0.050476	-0.0973844	0.0281766
Repeat: 3	0.885472	1.08499	0.0703798	-0.089373	0.0249735
Element/Wavelength	Rh3434	Ru2402	S_1807	Sb2175	Se1960
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.000192922	-0.0370126	-0.0329177	5.33944	4.49898
Std Dev:	0.00194965	0.00690546	0.00642295	0.0155743	0.0188342
%RSD:	1010.59	18.6571	19.5122	0.291684	0.418633
Repeat: 1	-0.00187341	-0.0446194	-0.040275	5.32148	4.52066
Repeat: 2	-0.000650016	-0.03528	-0.028429	5.34929	4.48662
Repeat: 3	0.00194466	-0.0311384	-0.030049	5.34754	4.48966
Element/Wavelength	Si2124	Sm3592	Sn1899	Sr2165	Ta2685
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.76455	-0.0294648	0.852757	0.860625	0.0533599
Std Dev:	0.0425974	0.00288155	0.00438847	0.00725892	0.00373928
%RSD:	0.894049	9.77961	0.514621	0.843447	7.00766
Repeat: 1	4.72081	-0.0277021	0.847743	0.86816	0.0537899
Repeat: 2	4.76693	-0.0279023	0.855896	0.860037	0.0568656
Repeat: 3	4.8059	-0.0327902	0.854633	0.853678	0.0494242
Element/Wavelength	Te2142	Th2832	Ti3372	Tl1908	U_3859
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.31871	-0.16059	38.4148	3.83314	5.23563
Std Dev:	0.0185659	0.0451177	3.14256	0.0190871	0.432466
%RSD:	0.429894	28.0949	8.18061	0.49795	8.26005
Repeat: 1	4.34015	-0.109307	35.1039	3.84297	5.67265
Repeat: 2	4.30798	-0.178289	38.7839	3.8453	5.22637
Repeat: 3	4.30801	-0.194175	41.3565	3.81114	4.80787
Element/Wavelength	V_3093	W_2397	Y_3195	Zn2138	Zr3438
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.970806	4.0523	i -0.00404522	4.40088	4.20995
Std Dev:	0.073838	0.356172	0.00103115	0.0186528	0.379425
%RSD:	7.60584	8.78937	25.4905	0.423843	9.01257
Repeat: 1	1.04334	3.69462	-0.00318235	4.41954	3.83109
Repeat: 2	0.973348	4.05535	-0.00518719	4.40086	4.20884
Repeat: 3	0.89573	4.40694	-0.00376612	4.38223	4.58994

Sample Name	Acquisition Date	Sample type	Correction Factor
Prep Blank	6/3/2013 11:28:32 AM	Unknown	1.00
Autosampler Locations (rack/row/col)		**Analyst Name**	**Method Name**
1/1/3		awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Ag3280	Al3961	As1890	B_2497	Ba2335
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.000967717	9.98757e-005	8.55476e-006	0.00179259	0.000146055
Std Dev:	0.000507968	0.000996189	0.000978515	5.9631e-005	0.000306912
%RSD:	52.4914	997.429	11438.2	3.32652	210.135
Repeat: 1	0.00111537	-0.00104136	-0.00112009	0.00183208	0.000253627
Repeat: 2	0.0013855	0.000795306	0.000526831	0.001724	0.0003847
Repeat: 3	0.000402281	0.000545681	0.000618918	0.0018217	-0.000200163
Element/Wavelength	Be2348	Bi2230	Ca1840	Cd2265	Ce5353
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-1.04259e-005	-4.06218e-005	0.040872	4.99582e-005	0.0100551
Std Dev:	4.45605e-005	0.00126048	0.0010237	0.000232382	0.00552437
%RSD:	427.403	3102.96	2.50465	465.152	54.9411
Repeat: 1	2.1679e-005	-0.000879138	0.041849	0.000276143	0.00394309
Repeat: 2	-6.13007e-005	0.00140892	0.0398072	-0.000188161	0.0115295
Repeat: 3	8.34404e-006	-0.000651643	0.0409599	6.18925e-005	0.0146926
Element/Wavelength	Co2286	Cr2677	Cu3273	Eu3819	Fe2599
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.000252708	0.000706697	0.00104486	-7.6902e-005	0.00147487
Std Dev:	0.000106688	0.000150027	0.00113691	2.01017e-005	0.000367326
%RSD:	42.2177	21.2293	108.809	26.1394	24.9056
Repeat: 1	-0.000324401	0.000538924	0.00204057	-0.000100058	0.00128089
Repeat: 2	-0.000130102	0.000827962	0.00128794	-6.67174e-005	0.00189852
Repeat: 3	-0.000303623	0.000753206	-0.000193924	-6.39308e-005	0.0012452
Element/Wavelength	K_7664	La3794	Li6707	Mg2852	Mn2605
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00218724	0.000151943	0.000773981	0.00176452	9.27078e-005
Std Dev:	0.00897302	0.00049658	0.00047229	6.53909e-005	8.09031e-005
%RSD:	410.243	326.82	61.0209	3.70587	87.2668
Repeat: 1	-0.00811345	0.000494832	0.000556107	0.00183931	9.2228e-005
Repeat: 2	0.00636975	0.000378509	0.000449955	0.00173613	0.00017385
Repeat: 3	0.00830544	-0.000417512	0.00131588	0.00171813	1.20457e-005
Element/Wavelength	Mo2020	Na8183	Nb3194	Nd4012	Ni2216
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-5.67773e-005	-0.127555	i -0.00238082	-0.00141581	0.00016272
Std Dev:	0.000368186	0.0427198	0.0026026	0.00121231	0.000281079
%RSD:	648.474	33.4913	109.316	85.6271	172.738
Repeat: 1	-0.000481753	-0.163324	8.07637e-005	-1.61243e-005	-0.000151155
Repeat: 2	0.000166095	-0.0802528	-0.00510459	-0.00209632	0.000248121
Repeat: 3	0.000145326	-0.139088	-0.00211862	-0.00213497	0.000391194
Element/Wavelength	P_1774	Pb2203	Pd3242	Pr4143	Rb7800
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.000409819	0.00168345	0.00258738	-0.00480763	0.027456
Std Dev:	0.00289038	0.00149024	0.00420398	0.000931951	0.0176448
%RSD:	705.282	88.5227	162.48	19.3848	64.2655
Repeat: 1	-0.0026397	0.00327079	0.00126047	-0.00458926	0.0206636
Repeat: 2	0.00076	0.00146518	0.00729471	-0.00582938	0.0474876
Repeat: 3	0.00310916	0.000314389	-0.000793041	-0.00400426	0.0142169

Element/Wavelength	Rh3434	Ru2402	S_1807	Sb2175	Se1960
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00547189	-0.00100466	0.0889302	-0.00100403	0.00346596
Std Dev:	0.0043023	0.00277526	0.00968709	0.00262884	0.0028279
%RSD:	78.6254	276.24	10.8929	261.829	81.5905
Repeat: 1	0.00565149	-0.00280229	0.097922	0.000801155	0.000848125
Repeat: 2	0.00108261	-0.00240334	0.0901962	-0.00402009	0.0064652
Repeat: 3	0.00968158	0.00219165	0.0786724	0.000206854	0.00308456
Element/Wavelength	Si2124	Sm3592	Sn1899	Sr2165	Ta2685
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00374986	-0.0055766	0.000524412	0.000341279	0.00116727
Std Dev:	0.00540652	0.0017964	0.000377662	0.000824	0.00199645
%RSD:	144.179	32.2132	72.0163	241.444	171.036
Repeat: 1	0.00934242	-0.00350243	0.000954635	0.00128804	0.00119369
Repeat: 2	-0.00144911	-0.00659353	0.000247576	-0.000214019	-0.000842262
Repeat: 3	0.00335628	-0.00663385	0.000371025	-5.01813e-005	0.00315038
Element/Wavelength	Te2142	Th2832	Ti3372	Tl1908	U_3859
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.000815554	-0.00217476	9.37204e-005	0.00193375	0.00564787
Std Dev:	0.00211696	0.00232031	0.000167495	0.00569678	0.00829362
%RSD:	259.574	106.693	178.717	294.597	146.845
Repeat: 1	0.000125615	5.46252e-006	0.000287126	-0.00413797	0.00160991
Repeat: 2	-0.0032399	-0.0046135	-3.17185e-006	0.00277782	0.000146533
Repeat: 3	0.000667622	-0.00191624	-2.79316e-006	0.00716141	0.0151872
Element/Wavelength	V_3093	W_2397	Y_3195	Zn2138	Zr3438
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	9.45124e-006	0.00184926	i -0.000882445	0.00468221	0.00011142
Std Dev:	0.000116839	0.000647942	0.00063387	0.000102773	0.000161587
%RSD:	1236.23	35.0379	71.8311	2.19497	145.025
Repeat: 1	-3.74964e-005	0.00229263	-0.00037541	0.00475718	-7.40962e-005
Repeat: 2	0.000142462	0.00214949	-0.000678822	0.00472439	0.000186912
Repeat: 3	-7.66118e-005	0.00110566	-0.0015931	0.00456506	0.000221444

Sample Name	Acquisition Date	Sample type	Correction Factor
Prep Std 1	6/3/2013 11:33:20 AM	Unknown	1.00
Autosampler Locations (rack/row/col)		**Analyst Name**	**Method Name**
1/2/3		awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Ag3280	Al3961	As1890	B_2497	Ba2335
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.859693	4.18042	4.42312	4.50326	4.53746
Std Dev:	0.00602185	0.0204904	0.00168147	0.0293356	0.00661611
%RSD:	0.700465	0.490152	0.0380154	0.651431	0.145811
Repeat: 1	0.853315	4.164	4.42411	4.47397	4.5318
Repeat: 2	0.860484	4.17388	4.42118	4.50318	4.54473
Repeat: 3	0.865281	4.20338	4.42407	4.53264	4.53584
Element/Wavelength	Be2348	Bi2230	Ca1840	Cd2265	Ce5353
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.30352	4.32132	4.75872	4.5617	0.03772
Std Dev:	0.0408706	0.016286	0.0255186	0.0143547	0.00116745
%RSD:	0.949702	0.376876	0.53625	0.314679	3.09503
Repeat: 1	4.26217	4.32491	4.73029	4.54531	0.0377342
Repeat: 2	4.3045	4.33551	4.77966	4.57205	0.0365454
Repeat: 3	4.34389	4.30354	4.7662	4.56774	0.0388802

Element/Wavelength	Co2286	Cr2677	Cu3273	Eu3819	Fe2599
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.53929	4.40882	4.223	-0.000211523	4.36304
Std Dev:	0.0130696	0.0535981	0.00829945	9.89133e-005	0.044115
%RSD:	0.287922	1.2157	0.19653	46.7625	1.0111
Repeat: 1	4.52447	4.35161	4.21499	-0.000315346	4.3169
Repeat: 2	4.54918	4.41696	4.22243	-0.000118388	4.36743
Repeat: 3	4.54422	4.45788	4.23156	-0.000200833	4.4048
Element/Wavelength	K_7664	La3794	Li6707	Mg2852	Mn2605
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.24085	4.30481	4.36968	4.31445	4.42611
Std Dev:	0.0217306	0.0184471	0.0121704	0.0291267	0.0450605
%RSD:	0.512411	0.428524	0.278519	0.675097	1.01806
Repeat: 1	4.21845	4.28526	4.38258	4.2846	4.38049
Repeat: 2	4.24224	4.30726	4.36806	4.31595	4.42725
Repeat: 3	4.26185	4.3219	4.3584	4.34279	4.47059
Element/Wavelength	Mo2020	Na8183	Nb3194	Nd4012	Ni2216
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.74776	4.16295	i -0.000245999	-0.00560618	4.57952
Std Dev:	0.0113409	0.0199911	0.0018556	0.000706793	0.0143612
%RSD:	0.238869	0.480215	754.312	12.6074	0.313597
Repeat: 1	4.73663	4.14012	0.00073072	-0.00566646	4.5634
Repeat: 2	4.7593	4.17728	0.000917235	-0.0062809	4.58421
Repeat: 3	4.74736	4.17146	-0.00238595	-0.00487118	4.59095
Element/Wavelength	P_1774	Pb2203	Pd3242	Pr4143	Rb7800
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.71414	4.63091	0.0209102	-0.0375369	0.0351556
Std Dev:	0.0164668	0.0191456	0.00231618	0.00303058	0.0250187
%RSD:	0.349306	0.413431	11.0768	8.0736	71.1656
Repeat: 1	4.69528	4.60942	0.0234979	-0.0341043	0.0234038
Repeat: 2	4.72568	4.63715	0.019031	-0.0398425	0.0638866
Repeat: 3	4.72145	4.64616	0.0202018	-0.038664	0.0181764
Element/Wavelength	Rh3434	Ru2402	S_1807	Sb2175	Se1960
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.00175683	-0.00260638	4.78512	4.5764	4.44753
Std Dev:	0.00328697	0.00206273	0.00261164	0.0161999	0.0149042
%RSD:	187.097	79.1416	0.0545783	0.353987	0.335112
Repeat: 1	-0.003637	-0.00484451	4.78228	4.55887	4.43247
Repeat: 2	0.00203858	-0.000781665	4.78741	4.59082	4.46228
Repeat: 3	-0.00367207	-0.00219297	4.78567	4.57952	4.44785
Element/Wavelength	Si2124	Sm3592	Sn1899	Sr2165	Ta2685
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.08634	-0.0159665	-7.13808e-005	4.64313	-0.014664
Std Dev:	0.0195826	0.003532	0.000444656	0.0097957	0.00510657
%RSD:	0.479221	22.1213	622.934	0.210972	34.8238
Repeat: 1	4.06374	-0.0138985	-0.000580437	4.63195	-0.0124912
Repeat: 2	4.09706	-0.0139563	0.000125137	4.65022	-0.0110031
Repeat: 3	4.09823	-0.0200448	0.000241158	4.64722	-0.0204976
Element/Wavelength	Te2142	Th2832	Ti3372	Tl1908	U_3859
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.0121208	-0.0386557	4.57236	0.0100419	0.0238391
Std Dev:	0.00070906	0.00316809	0.0242228	0.00611957	0.0073719
%RSD:	5.84996	8.19566	0.529764	60.9404	30.9235
Repeat: 1	0.0115597	-0.0360327	4.5479	0.00450407	0.0321532
Repeat: 2	0.0118848	-0.0377588	4.57285	0.0090097	0.0212637
Repeat: 3	0.0129177	-0.0421755	4.59634	0.0166119	0.0181005

Element/Wavelength	V_3093	W_2397	Y_3195	Zn2138	Zr3438
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.35246	-0.00553121	i -0.000623667	4.40021	4.54448
Std Dev:	0.0318092	0.00391112	0.000300632	0.012078	0.0242157
%RSD:	0.730834	70.7099	48.204	0.274487	0.532859
Repeat: 1	4.32171	-0.00233896	-0.000435545	4.38692	4.51758
Repeat: 2	4.35043	-0.00989392	-0.000970389	4.4105	4.55133
Repeat: 3	4.38523	-0.00436076	-0.000465067	4.40323	4.56453

Sample Name	Acquisition Date	Sample type	Correction Factor
Prep Std 2	6/3/2013 11:37:39 AM	Unknown	1.00

Autosampler Locations (rack/row/col)	Analyst Name	Method Name
1/3/3	awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Ag3280	Al3961	As1890	B_2497	Ba2335
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00505529	0.0155232	-0.00380474	0.00533171	0.00329714
Std Dev:	0.000824944	0.00357057	0.00241705	0.000549794	0.000292053
%RSD:	16.3184	23.0014	63.5273	10.3118	8.85776
Repeat: 1	0.00553158	0.0117819	-0.00325302	0.00594163	0.0030635
Repeat: 2	0.00410273	0.0158937	-0.00644995	0.00487421	0.00320336
Repeat: 3	0.00553157	0.0188941	-0.00171125	0.00517927	0.00362457
Element/Wavelength	Be2348	Bi2230	Ca1840	Cd2265	Ce5353
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	7.2521e-006	-0.046666	-0.123163	-0.000604806	3.94735
Std Dev:	1.33197e-005	0.00314745	0.000532741	0.000104831	0.0193355
%RSD:	183.666	6.74463	0.43255	17.333	0.489836
Repeat: 1	2.23176e-005	-0.0456513	-0.123592	-0.000576503	3.93135
Repeat: 2	2.39999e-006	-0.0441511	-0.12333	-0.000720882	3.94186
Repeat: 3	-2.96133e-006	-0.0501957	-0.122567	-0.000517032	3.96883
Element/Wavelength	Co2286	Cr2677	Cu3273	Eu3819	Fe2599
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.000637948	0.00182032	0.0226503	4.02055	-0.0448483
Std Dev:	0.000319049	0.000361375	0.00154293	0.0119464	0.000458657
%RSD:	50.0118	19.8523	6.81195	0.297134	1.02268
Repeat: 1	-0.00033638	0.00154479	0.0215809	4.01186	-0.0453153
Repeat: 2	-0.000971994	0.00168669	0.021951	4.01562	-0.0448311
Repeat: 3	-0.00060547	0.00222948	0.0244191	4.03417	-0.0443985
Element/Wavelength	K_7664	La3794	Li6707	Mg2852	Mn2605
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.0209818	-0.00382559	0.00728103	0.00206201	-0.000808481
Std Dev:	0.00859086	0.000154982	0.000395711	6.77273e-005	0.000114973
%RSD:	40.9444	4.0512	5.43482	3.28453	14.2208
Repeat: 1	0.0112811	-0.00399359	0.00708231	0.00207675	-0.000830357
Repeat: 2	0.0240361	-0.00368818	0.00773672	0.00198813	-0.000684141
Repeat: 3	0.0276282	-0.00379501	0.00702407	0.00212115	-0.000910943
Element/Wavelength	Mo2020	Na8183	Nb3194	Nd4012	Ni2216
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00109311	-0.272074	i 3.03199	3.94389	0.00691184
Std Dev:	0.000371918	0.0436622	0.0257503	0.0174216	0.000145333
%RSD:	34.0238	16.0479	0.84929	0.441737	2.10266
Repeat: 1	0.00109705	-0.233347	3.00447	3.93319	0.00698876
Repeat: 2	0.00146304	-0.319394	3.03599	3.93449	0.00674422
Repeat: 3	0.000719239	-0.263482	3.0555	3.96399	0.00700256

Element/Wavelength	P_1774	Pb2203	Pd3242	Pr4143	Rb7800
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.00235741	0.191437	5.06319	3.96916	3.85009
Std Dev:	0.00310989	0.00133021	0.0314389	0.0112361	0.017649
%RSD:	131.92	0.694857	0.620931	0.283085	0.458405
Repeat: 1	-0.00579937	0.192624	5.02725	3.97718	3.83046
Repeat: 2	0.000250202	0.189999	5.07671	3.95632	3.85516
Repeat: 3	-0.00152306	0.191686	5.0856	3.97399	3.86465
Element/Wavelength	Rh3434	Ru2402	S_1807	Sb2175	Se1960
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.95597	4.94139	0.0588367	0.405552	0.00437359
Std Dev:	0.025117	0.0798335	0.00400013	0.00763327	0.00661489
%RSD:	0.506804	1.61561	6.79871	1.88219	151.246
Repeat: 1	4.92943	4.85427	0.0633431	0.402908	0.00771371
Repeat: 2	4.9591	4.95887	0.0574611	0.399593	-0.00324538
Repeat: 3	4.97937	5.01104	0.0557058	0.414156	0.00865244
Element/Wavelength	Si2124	Sm3592	Sn1899	Sr2165	Ta2685
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.371234	3.95393	2.97103	-0.00447236	3.12552
Std Dev:	0.0155542	0.0123497	0.0181489	0.000317364	0.0273746
%RSD:	4.18987	0.31234	0.610864	7.09611	0.875841
Repeat: 1	0.353574	3.94365	2.95013	-0.0042183	3.09635
Repeat: 2	0.37723	3.95051	2.98289	-0.0048281	3.12956
Repeat: 3	0.382897	3.96763	2.98006	-0.00437068	3.15065
Element/Wavelength	Te2142	Th2832	Ti3372	Tl1908	U_3859
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	2.94472	3.96413	-0.00339717	4.96026	3.95758
Std Dev:	0.00158518	0.0315525	0.000155899	0.0172653	0.0253573
%RSD:	0.0538312	0.795949	4.58908	0.348072	0.640727
Repeat: 1	2.94555	3.93232	-0.00327825	4.94059	3.97382
Repeat: 2	2.94571	3.96465	-0.0033396	4.96727	3.92836
Repeat: 3	2.94289	3.99542	-0.00357367	4.97291	3.97056
Element/Wavelength	V_3093	W_2397	Y_3195	Zn2138	Zr3438
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00300803	3.014	i 3.94021	-0.00485133	0.00152499
Std Dev:	0.000139269	0.0412701	0.0411232	0.000324429	1.94193e-005
%RSD:	4.62991	1.36928	1.04368	6.68743	1.2734
Repeat: 1	0.00300009	2.97882	3.89643	-0.00490126	0.00153668
Repeat: 2	0.0031511	3.00376	3.94617	-0.0051479	0.00150257
Repeat: 3	0.0028729	3.05943	3.97803	-0.00450483	0.00153572

Sample Name	Acquisition Date	Sample type	Correction Factor
S13T004252_L	6/3/2013 11:42:16 AM	Unknown	25.00
Autosampler Locations (rack/row/col)		**Analyst Name**	**Method Name**
1/4/3		awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Ag3280	Al3961	As1890	B_2497	Ba2335
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.0107242	916.688	0.0338955	0.0548141	0.0515224
Std Dev:	0.0145857	10.0442	0.0823718	0.00643343	0.00912269
%RSD:	136.007	1.0957	243.017	11.7368	17.7062
Repeat: 1	0.0242495	924.927	0.0196543	0.0522866	0.0409925
Repeat: 2	0.012653	919.637	0.122459	0.0621275	0.0565357
Repeat: 3	-0.00472991	905.499	-0.0404272	0.0500283	0.0570391

Element/Wavelength	Be2348	Bi2230	Ca1840	Cd2265	Ce5353
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.000925699	0.87608	4.40504	0.00043889	-0.130597
Std Dev:	0.00109016	0.0822116	0.211577	0.0017894	0.150296
%RSD:	117.766	9.38404	4.80306	407.71	115.084
Repeat: 1	0.00208965	0.966082	4.60998	-0.00162722	-0.182599
Repeat: 2	0.000758867	0.85722	4.41775	0.0014907	-0.247985
Repeat: 3	-7.14244e-005	0.804936	4.1874	0.00145319	0.0387945
Element/Wavelength	Co2286	Cr2677	Cu3273	Eu3819	Fe2599
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.0158865	0.0451379	0.205013	0.000158125	30.3905
Std Dev:	0.00380946	0.0128926	0.00704085	0.000162353	0.369091
%RSD:	23.9792	28.5626	3.43434	102.674	1.2145
Repeat: 1	-0.0137962	0.0464532	0.213085	4.32458e-005	30.7492
Repeat: 2	-0.0135797	0.0573224	0.20182	0.000343863	30.4105
Repeat: 3	-0.0202835	0.0316381	0.200135	8.72644e-005	30.0118
Element/Wavelength	K_7664	La3794	Li6707	Mg2852	Mn2605
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.25532	0.0388816	0.00800639	0.430707	0.161036
Std Dev:	0.246047	0.00412759	0.005646	0.00687067	0.00723958
%RSD:	96.3679	10.6158	70.5186	1.59521	4.49564
Repeat: 1	0.538711	0.040893	0.00311343	0.438123	0.169385
Repeat: 2	0.0961349	0.041618	0.00672173	0.429438	0.157216
Repeat: 3	0.131114	0.0341339	0.014184	0.424558	0.156506
Element/Wavelength	Mo2020	Na8183	Nb3194	Nd4012	Ni2216
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00755134	378.411	i 0.0136446	0.0389946	3.04806
Std Dev:	0.0252113	5.2467	0.0412392	0.0180593	0.130538
%RSD:	333.866	1.38651	302.238	46.3124	4.28267
Repeat: 1	0.0300198	382.956	0.0384533	0.0385177	3.16528
Repeat: 2	0.0123479	379.609	-0.0339602	0.0572877	3.0715
Repeat: 3	-0.0197137	372.669	0.0364408	0.0211784	2.90738

Element/Wavelength	P_1774	Pb2203	Pd3242	Pr4143	Rb7800
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	90.6464	2.35284	0.0051971	-0.0708253	0.284984
Std Dev:	3.67259	0.0992626	0.0846292	0.0796381	0.60029
%RSD:	4.05156	4.21883	1628.39	112.443	210.64
Repeat: 1	93.9393	2.38894	0.102891	0.0195557	-0.31679
Repeat: 2	91.3142	2.42901	-0.0456706	-0.101329	0.287962
Repeat: 3	86.6858	2.24059	-0.0416286	-0.130702	0.88378
Element/Wavelength	Rh3434	Ru2402	S_1807	Sb2175	Se1960
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.0552069	-0.0207546	0.53774	-0.153233	0.033706
Std Dev:	0.0535719	0.0579743	0.0349066	0.117208	0.159349
%RSD:	97.0385	279.332	6.49136	76.4899	472.761
Repeat: 1	0.0596383	0.0126052	0.530834	-0.122217	0.0939399
Repeat: 2	0.106425	0.0128284	0.506803	-0.28283	-0.14698
Repeat: 3	-0.000443102	-0.0876974	0.575584	-0.0546531	0.154158
Element/Wavelength	Si2124	Sm3592	Sn1899	Sr2165	Ta2685
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	3.68414	-0.0665843	-0.0262319	0.143604	0.0938089
Std Dev:	0.189465	0.0280653	0.0249259	0.0173045	0.130315
%RSD:	5.14272	42.15	95.0214	12.0502	138.915
Repeat: 1	3.90254	-0.0815103	0.000862259	0.137484	-0.0544339
Repeat: 2	3.58602	-0.0342101	-0.0313688	0.163137	0.190291
Repeat: 3	3.56386	-0.0840326	-0.0481891	0.130191	0.14557

Element/Wavelength	Te2142	Th2832	Ti3372	Tl1908	U_3859
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.00340706	0.0651616	0.0262325	0.0575447	11.5674
Std Dev:	0.0635878	0.00723486	0.00942742	0.119255	0.0936571
%RSD:	1866.35	11.1029	35.9379	207.239	0.809662
Repeat: 1	0.0496151	0.0656706	0.032298	-0.0507247	11.6743
Repeat: 2	0.0140694	0.0721286	0.0310282	0.0379899	11.4999
Repeat: 3	-0.0739056	0.0576857	0.0153714	0.185369	11.528
Element/Wavelength	V_3093	W_2397	Y_3195	Zn2138	Zr3438
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.0285229	-0.0701289	i -0.0103814	0.318947	0.0570052
Std Dev:	0.00552094	0.0570975	0.0164539	0.015146	0.00355852
%RSD:	19.3562	81.4179	158.495	4.74876	6.24245
Repeat: 1	-0.0262642	-0.0625431	-0.000105249	0.33179	0.0557082
Repeat: 2	-0.0244894	-0.0172035	-0.00167986	0.322807	0.0542772
Repeat: 3	-0.034815	-0.13064	-0.029359	0.302245	0.0610303

Sample Name	Acquisition Date	Sample type	Correction Factor
S13T004252	6/3/2013 11:47:02 AM	Unknown	5.00
Autosampler Locations (rack/row/col)		**Analyst Name**	**Method Name**
1/5/3		awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Ag3280	Al3961	As1890	B_2497	Ba2335
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.0087764	765.432	0.0256438	0.0171895	0.0398985
Std Dev:	0.00287047	8.11245	0.0128482	0.00139977	0.000620189
%RSD:	32.7067	1.05985	50.1026	8.14316	1.55442
Repeat: 1	0.00678214	769.359	0.0122381	0.0155751	0.0405856
Repeat: 2	0.0120663	756.103	0.0378504	0.0179287	0.03938
Repeat: 3	0.00748076	770.833	0.0268429	0.0180648	0.03973
Element/Wavelength	Be2348	Bi2230	Ca1840	Cd2265	Ce5353
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.000352997	0.742625	3.88892	0.00241564	-0.055971
Std Dev:	0.000147571	0.00981627	0.00461356	0.000595966	0.0212694
%RSD:	41.8053	1.32183	0.118633	24.6711	38.0007
Repeat: 1	0.000513448	0.740041	3.88395	0.00285472	-0.0441051
Repeat: 2	0.000223084	0.753475	3.88974	0.00265499	-0.0432818
Repeat: 3	0.000322459	0.734359	3.89306	0.00173721	-0.0805262
Element/Wavelength	Co2286	Cr2677	Cu3273	Eu3819	Fe2599
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	7.69347e-005	0.0472304	0.175398	-0.000104777	24.9603
Std Dev:	0.000820238	0.00243759	0.00378097	0.000496093	0.0707068
%RSD:	1066.15	5.16107	2.15566	473.476	0.283277
Repeat: 1	-0.000691486	0.046694	0.171493	0.000432133	24.9412
Repeat: 2	0.000940664	0.0498915	0.179041	-0.000200304	25.0386
Repeat: 3	-1.83745e-005	0.0451057	0.175659	-0.000546159	24.9012
Element/Wavelength	K_7664	La3794	Li6707	Mg2852	Mn2605
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.0743052	0.0272813	0.00563423	0.362201	0.132
Std Dev:	0.0312149	0.00168357	0.000532388	0.00140244	0.000640678
%RSD:	42.009	6.17116	9.44916	0.387199	0.485363
Repeat: 1	0.101633	0.0292184	0.00512454	0.361301	0.132675
Repeat: 2	0.0809951	0.026455	0.00559142	0.361486	0.131925
Repeat: 3	0.0402878	0.0261705	0.00618673	0.363817	0.1314

Element/Wavelength	Mo2020	Na8183	Nb3194	Nd4012	Ni2216
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00382289	320.46	i 0.000948686	0.028839	2.66342
Std Dev:	0.00200715	1.57998	0.00581826	0.00583786	0.00508555
%RSD:	52.5035	0.493037	613.297	20.2429	0.190941
Repeat: 1	0.00472655	322.257	-0.00052943	0.0309258	2.66179
Repeat: 2	0.00152276	319.83	-0.00398795	0.0222445	2.66912
Repeat: 3	0.00521935	319.292	0.00736344	0.0333467	2.65934
Element/Wavelength	P_1774	Pb2203	Pd3242	Pr4143	Rb7800
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	80.397	2.0707	0.0237936	0.0149038	-0.0569542
Std Dev:	0.12321	0.0170381	0.0449391	0.0276364	0.0840143
%RSD:	0.153252	0.822814	188.87	185.432	147.512
Repeat: 1	80.3887	2.07837	0.0551735	-0.00399594	-0.148052
Repeat: 2	80.5241	2.05118	0.0438948	0.0466219	-0.0402884
Repeat: 3	80.2781	2.08257	-0.0276874	0.00208557	0.0174782
Element/Wavelength	Rh3434	Ru2402	S_1807	Sb2175	Se1960
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.012442	-0.0081154	0.395183	-0.0904878	0.00285511
Std Dev:	0.0174485	0.00639817	0.00817568	0.0156041	0.0212894
%RSD:	140.239	78.8398	2.06883	17.2445	745.661
Repeat: 1	0.0305649	-0.0128123	0.394779	-0.108028	-0.0204883
Repeat: 2	0.0110041	-0.000828245	0.387217	-0.0852873	0.0212017
Repeat: 3	-0.00424311	-0.0107056	0.403553	-0.078148	0.0078519
Element/Wavelength	Si2124	Sm3592	Sn1899	Sr2165	Ta2685
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	3.33143	-0.000284632	-0.00410531	0.121825	0.0485198
Std Dev:	0.0152958	0.00394409	0.00155788	0.000925667	0.0181802
%RSD:	0.459138	1385.68	37.9479	0.759831	37.4696
Repeat: 1	3.34003	0.00425908	-0.00505033	0.122162	0.0694827
Repeat: 2	3.34048	-0.00282459	-0.00495841	0.120779	0.0370704
Repeat: 3	3.31377	-0.00228838	-0.00230721	0.122536	0.0390064
Element/Wavelength	Te2142	Th2832	Ti3372	Tl1908	U_3859
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.0243835	0.0432644	0.0227385	0.0233653	9.7082
Std Dev:	0.00737395	0.00952531	0.000362301	0.0122349	0.0493109
%RSD:	30.2415	22.0165	1.59334	52.3638	0.507931
Repeat: 1	0.023231	0.0495096	0.0226253	0.0273082	9.75836
Repeat: 2	0.0176537	0.0323009	0.0231439	0.0331426	9.65979
Repeat: 3	0.0322659	0.0479828	0.0224463	0.00964504	9.70644
Element/Wavelength	V_3093	W_2397	Y_3195	Zn2138	Zr3438
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.0285296	-0.00543983	i 0.0092644	0.278964	0.044826
Std Dev:	0.00198881	0.00250401	0.00332648	0.000945284	0.00118758
%RSD:	6.97105	46.031	35.9061	0.338855	2.64932
Repeat: 1	-0.0308079	-0.00305649	0.0108156	0.279969	0.0453274
Repeat: 2	-0.0271405	-0.00804918	0.00544564	0.278093	0.0456806
Repeat: 3	-0.0276405	-0.00521383	0.0115319	0.27883	0.0434699

Sample Name	Acquisition Date	Sample type	Correction Factor
S13T004252_D	6/3/2013 12:02:35 PM	Unknown	5.00
Autosampler Locations (rack/row/col)		**Analyst Name**	**Method Name**
1/6/3		awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Ag3280	Al3961	As1890	B_2497	Ba2335
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.0196446	775.8	0.0323578	0.0142509	0.0388628
Std Dev:	0.00188743	4.19812	0.00997229	0.00260426	0.00177678
%RSD:	9.60787	0.541134	30.8188	18.2743	4.57193
Repeat: 1	0.0200109	771.118	0.0370546	0.0115257	0.0371554
Repeat: 2	0.0176009	777.052	0.0391144	0.0145128	0.0407017
Repeat: 3	0.021322	779.229	0.0209043	0.0167144	0.0387313
Element/Wavelength	**Be2348**	**Bi2230**	**Ca1840**	**Cd2265**	**Ce5353**
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.000299312	0.640905	3.74459	0.00184706	-0.0129355
Std Dev:	0.000107048	0.0440617	0.0206023	0.000265489	0.0302586
%RSD:	35.7648	6.87491	0.550189	14.3736	233.918
Repeat: 1	0.000320422	0.632789	3.73359	0.00194414	0.0198181
Repeat: 2	0.000394232	0.688461	3.76836	0.00205034	-0.0398472
Repeat: 3	0.000183281	0.601466	3.73183	0.00154669	-0.0187775
Element/Wavelength	**Co2286**	**Cr2677**	**Cu3273**	**Eu3819**	**Fe2599**
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.000222411	0.0454833	0.154883	-3.51747e-005	21.4563
Std Dev:	0.000813072	0.000908898	0.00109779	0.000662499	0.046378
%RSD:	365.572	1.99831	0.708789	1883.45	0.216151
Repeat: 1	0.000859709	0.0452339	0.155022	-5.4421e-005	21.5094
Repeat: 2	0.000500817	0.0447251	0.155904	0.000636737	21.424
Repeat: 3	-0.000693293	0.0464908	0.153722	-0.00068784	21.4355
Element/Wavelength	**K_7664**	**La3794**	**Li6707**	**Mg2852**	**Mn2605**
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.0873118	0.0478673	0.00500484	0.34642	0.124728
Std Dev:	0.0327486	0.00211552	0.000807934	0.00282595	0.000989426
%RSD:	37.5076	4.41956	16.1431	0.81576	0.793267
Repeat: 1	0.0513178	0.0492217	0.0058578	0.349092	0.124852
Repeat: 2	0.0952695	0.0489505	0.00490562	0.343462	0.123682
Repeat: 3	0.115348	0.0454295	0.00425109	0.346706	0.12565
Element/Wavelength	**Mo2020**	**Na8183**	**Nb3194**	**Nd4012**	**Ni2216**
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00112354	376.05	i -0.00185883	0.0511081	3.04138
Std Dev:	0.00396461	2.2978	0.00702796	0.00580624	0.0167133
%RSD:	352.866	0.611035	378.084	11.3607	0.549532
Repeat: 1	-0.0034429	378.555	0.00604568	0.0452582	3.02909
Repeat: 2	0.00368743	374.04	-0.00422013	0.0511965	3.06041
Repeat: 3	0.00312611	375.556	-0.00740205	0.0568697	3.03464
Element/Wavelength	**P_1774**	**Pb2203**	**Pd3242**	**Pr4143**	**Rb7800**
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	106.363	1.91814	0.0084997	0.00617398	0.0144059
Std Dev:	0.314347	0.00427378	0.0153778	0.0279741	0.0387378
%RSD:	0.295542	0.222808	180.922	453.097	268.902
Repeat: 1	106.096	1.92307	0.00110883	-0.00711858	-0.00521502
Repeat: 2	106.71	1.91549	0.0261776	-0.0126755	-0.0105957
Repeat: 3	106.283	1.91586	-0.00178733	0.038316	0.0590285

Element/Wavelength	Rh3434	Ru2402	S_1807	Sb2175	Se1960
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.012425	-0.0166531	0.412255	-0.0980588	0.00450695
Std Dev:	0.0102818	0.00514195	0.00979876	0.0306167	0.0220806
%RSD:	82.7513	30.8768	2.37687	31.2228	489.924
Repeat: 1	0.023614	-0.0224047	0.409011	-0.133402	-0.00329177
Repeat: 2	0.0102684	-0.0125009	0.423264	-0.0811052	0.0294286
Repeat: 3	0.00339251	-0.0150537	0.404489	-0.0796691	-0.012616
Element/Wavelength	Si2124	Sm3592	Sn1899	Sr2165	Ta2685
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	3.05436	-0.0235996	-0.00258688	0.120609	0.0447181
Std Dev:	0.0187421	0.00479812	0.00889434	0.00332105	0.0194506
%RSD:	0.613618	20.3314	343.825	2.75357	43.4959
Repeat: 1	3.03407	-0.0181955	-0.0117722	0.122213	0.054871
Repeat: 2	3.05801	-0.0273594	-0.00197315	0.122824	0.0222919
Repeat: 3	3.07101	-0.0252439	0.0059847	0.116791	0.0569914
Element/Wavelength	Te2142	Th2832	Ti3372	Tl1908	U_3859
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.000713302	0.0291394	0.0172813	0.0103064	9.00884
Std Dev:	0.0247175	0.00517986	0.000493628	0.00829011	0.0937859
%RSD:	3465.22	17.7761	2.85642	80.4366	1.04104
Repeat: 1	0.00443292	0.0311072	0.0177328	0.0175836	9.07363
Repeat: 2	0.021026	0.0330469	0.0173568	0.00128194	8.90129
Repeat: 3	-0.0275988	0.023264	0.0167543	0.0120536	9.0516
Element/Wavelength	V_3093	W_2397	Y_3195	Zn2138	Zr3438
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.0273141	-0.00124698	i 0.00381969	0.240952	0.0532649
Std Dev:	0.000499891	0.00284279	0.00386991	0.00242337	0.000750999
%RSD:	1.83015	227.974	101.315	1.00575	1.40993
Repeat: 1	-0.0278776	0.00144774	0.000558256	0.2415	0.0536879
Repeat: 2	-0.0269239	-0.00421771	0.00280495	0.243054	0.0523979
Repeat: 3	-0.0271408	-0.000970975	0.00809587	0.238301	0.0537091

Sample Name	Acquisition Date	Sample type	Correction Factor
S13T004252_S1	6/3/2013 12:07:28 PM	Unknown	5.00
Autosampler Locations (rack/row/col)		**Analyst Name**	**Method Name**
1/7/3		awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Ag3280	Al3961	As1890	B_2497	Ba2335
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.871805	950.885	4.4276	4.49033	4.49888
Std Dev:	0.00292871	13.8479	0.0257742	0.0108364	0.0122936
%RSD:	0.335937	1.45631	0.582127	0.241328	0.273258
Repeat: 1	0.869882	942.378	4.45705	4.487	4.51118
Repeat: 2	0.870358	943.414	4.40915	4.50244	4.4866
Repeat: 3	0.875176	966.864	4.4166	4.48154	4.49887
Element/Wavelength	Be2348	Bi2230	Ca1840	Cd2265	Ce5353
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.44105	4.90812	8.12303	4.4528	0.0122477
Std Dev:	0.00904046	0.0126959	0.0263485	0.0134388	0.0064128
%RSD:	0.203566	0.258671	0.324368	0.301805	52.3592
Repeat: 1	4.43802	4.8945	8.13798	4.46457	0.00484587
Repeat: 2	4.45122	4.91962	8.13851	4.45567	0.0157651
Repeat: 3	4.43392	4.91024	8.09261	4.43815	0.0161321

Element/Wavelength	Co2286	Cr2677	Cu3273	Eu3819	Fe2599
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.44673	4.42723	4.44285	-0.000364142	25.7359
Std Dev:	0.0111529	0.0056639	0.00620449	0.00031108	0.0394086
%RSD:	0.250811	0.127933	0.139651	85.4282	0.153127
Repeat: 1	4.45928	4.42525	4.4482	-0.000717493	25.7252
Repeat: 2	4.44293	4.43362	4.44432	-0.000243391	25.7796
Repeat: 3	4.43796	4.42283	4.43605	-0.000131541	25.703
Element/Wavelength	K_7664	La3794	Li6707	Mg2852	Mn2605
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.36303	4.36611	4.4311	4.6859	4.48566
Std Dev:	0.0231916	0.00094848	0.0153372	0.00408361	0.0112323
%RSD:	0.531547	0.0217237	0.346126	0.0871468	0.250404
Repeat: 1	4.33661	4.36507	4.41737	4.68199	4.48068
Repeat: 2	4.37246	4.36694	4.42827	4.69014	4.49853
Repeat: 3	4.38002	4.36631	4.44765	4.68557	4.47779
Element/Wavelength	Mo2020	Na8183	Nb3194	Nd4012	Ni2216
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.56212	328.912	i -0.00525184	0.0217918	7.21027
Std Dev:	0.0137975	0.0826077	0.00459629	0.00241292	0.0226935
%RSD:	0.302436	0.0251154	87.5177	11.0726	0.314739
Repeat: 1	4.57769	329.008	-0.00986623	0.0245732	7.2339
Repeat: 2	4.55725	328.868	-0.00521541	0.0202606	7.20827
Repeat: 3	4.55142	328.861	-0.000673871	0.0205414	7.18865
Element/Wavelength	P_1774	Pb2203	Pd3242	Pr4143	Rb7800
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	87.4496	6.35581	0.0297514	-0.0103631	0.114473
Std Dev:	0.259699	0.0260751	0.00241724	0.00301854	0.0409861
%RSD:	0.29697	0.410256	8.1248	29.1278	35.804
Repeat: 1	87.7481	6.37071	0.0324516	-0.0133842	0.073154
Repeat: 2	87.3252	6.37102	0.0277892	-0.00734711	0.115148
Repeat: 3	87.2755	6.3257	0.0290134	-0.010358	0.155118
Element/Wavelength	Rh3434	Ru2402	S_1807	Sb2175	Se1960
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.0039781	-0.0205499	4.95457	4.36378	4.4141
Std Dev:	0.0155273	0.0140531	0.00287544	0.0168971	0.0130452
%RSD:	390.319	68.3853	0.0580361	0.387212	0.295535
Repeat: 1	0.00547398	-0.0334974	4.95292	4.37239	4.42143
Repeat: 2	0.0187033	-0.00560495	4.95789	4.34431	4.39903
Repeat: 3	-0.012243	-0.0225473	4.9529	4.37463	4.42182
Element/Wavelength	Si2124	Sm3592	Sn1899	Sr2165	Ta2685
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	7.80919	-0.0308278	-0.00105475	4.62202	0.0242177
Std Dev:	0.0231066	0.0134357	0.00655189	0.0164328	0.00262472
%RSD:	0.295889	43.583	621.18	0.355534	10.838
Repeat: 1	7.83303	-0.0159996	0.000557053	4.63629	0.0250095
Repeat: 2	7.80765	-0.0421928	-0.00826212	4.62572	0.0263553
Repeat: 3	7.7869	-0.0342909	0.00454082	4.60405	0.0212882
Element/Wavelength	Te2142	Th2832	Ti3372	Tl1908	U_3859
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.0265297	-0.00535166	4.43601	0.0604413	8.74007
Std Dev:	0.0126417	0.00337107	0.00971236	0.0237444	0.0227913
%RSD:	47.651	62.9911	0.218944	39.2851	0.260768
Repeat: 1	0.0245234	-0.00229423	4.42858	0.0520074	8.76623
Repeat: 2	0.0400545	-0.00896681	4.447	0.0872513	8.72944
Repeat: 3	0.0150112	-0.00479394	4.43245	0.0420652	8.72454

Element/Wavelength	V_3093	W_2397	Y_3195	Zn2138	Zr3438
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.27307	-0.009796	i 0.0049733	4.68998	0.613504
Std Dev:	0.0115139	0.018631	0.00128223	0.0125366	0.00227605
%RSD:	0.269453	190.19	25.7823	0.267307	0.370992
Repeat: 1	4.26829	-0.0117049	0.00573745	4.7044	0.615564
Repeat: 2	4.2862	-0.0273991	0.00349297	4.68388	0.613889
Repeat: 3	4.26471	0.00971593	0.0056895	4.68166	0.61106

Sample Name	Acquisition Date	Sample type	Correction Factor
S13T004252_S2	6/3/2013 12:12:04 PM	Unknown	5.00

Autosampler Locations (rack/row/col)	Analyst Name	Method Name
1/8/3	awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Ag3280	Al3961	As1890	B_2497	Ba2335
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.0119041	932.681	0.0573772	0.0161315	0.0406896
Std Dev:	0.00874668	7.74181	0.00676794	0.00165927	0.00143909
%RSD:	73.4764	0.83006	11.7955	10.2859	3.53676
Repeat: 1	0.0122706	932.348	0.0496588	0.0144973	0.0423188
Repeat: 2	0.00297987	940.584	0.0622973	0.0160824	0.0401581
Repeat: 3	0.0204617	925.111	0.0601754	0.0178148	0.0395918
Element/Wavelength	Be2348	Bi2230	Ca1840	Cd2265	Ce5353
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.000322085	0.58059	3.49635	0.00326577	4.45797
Std Dev:	0.000405155	0.0209358	0.0311293	0.00108069	0.023881
%RSD:	125.791	3.60595	0.890337	33.0914	0.535692
Repeat: 1	0.000680052	0.598125	3.47047	0.00417093	4.45613
Repeat: 2	-0.000117754	0.557411	3.53089	0.00355711	4.43507
Repeat: 3	0.000403956	0.586235	3.48769	0.00206928	4.48273
Element/Wavelength	Co2286	Cr2677	Cu3273	Eu3819	Fe2599
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.000923341	0.0745968	0.178057	4.64207	21.1122
Std Dev:	0.00120816	0.00215163	0.00411575	0.0138168	0.0168984
%RSD:	130.847	2.88435	2.31148	0.297643	0.0800412
Repeat: 1	-0.000466539	0.0743008	0.179218	4.64351	21.0934
Repeat: 2	0.00172237	0.076881	0.181468	4.65511	21.1169
Repeat: 3	0.0015142	0.0726084	0.173486	4.62759	21.1261
Element/Wavelength	K_7664	La3794	Li6707	Mg2852	Mn2605
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.131297	0.0230331	0.0122176	0.389366	0.119223
Std Dev:	0.00850097	0.00192671	0.00188625	0.000840042	0.000647831
%RSD:	6.47459	8.36494	15.4387	0.215746	0.543375
Repeat: 1	0.135934	0.0238195	0.013466	0.388502	0.119059
Repeat: 2	0.121486	0.0244422	0.0100478	0.39018	0.119938
Repeat: 3	0.136472	0.0208376	0.0131392	0.389416	0.118674
Element/Wavelength	Mo2020	Na8183	Nb3194	Nd4012	Ni2216
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00890064	416.314	i 0.724429	4.57502	2.66428
Std Dev:	0.00869826	1.0004	0.00668542	0.00810244	0.0158316
%RSD:	97.7263	0.2403	0.922855	0.177102	0.594215
Repeat: 1	0.00665332	415.776	0.728829	4.5706	2.64731
Repeat: 2	0.018502	417.468	0.727721	4.58437	2.67865
Repeat: 3	0.00154657	415.697	0.716735	4.57008	2.66688

Element/Wavelength	P_1774	Pb2203	Pd3242	Pr4143	Rb7800
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	122.789	1.92312	4.68441	4.54009	4.51243
Std Dev:	0.502155	0.00977769	0.0412694	0.0191695	0.0650103
%RSD:	0.408957	0.508429	0.880993	0.422227	1.44069
Repeat: 1	122.209	1.9121	4.6605	4.54906	4.43787
Repeat: 2	123.077	1.93077	4.73207	4.55312	4.54214
Repeat: 3	123.08	1.92648	4.66067	4.51808	4.55728
Element/Wavelength	Rh3434	Ru2402	S_1807	Sb2175	Se1960
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.5024	4.59909	0.443565	-0.0226726	-0.00390608
Std Dev:	0.0196323	0.0134927	0.00327063	0.0319942	0.0192333
%RSD:	0.436042	0.293376	0.737352	141.114	492.394
Repeat: 1	4.51753	4.6118	0.439944	-0.0531934	0.017893
Repeat: 2	4.50944	4.60054	0.446306	-0.0254397	-0.0184828
Repeat: 3	4.48021	4.58494	0.444445	0.0106152	-0.0111284
Element/Wavelength	Si2124	Sm3592	Sn1899	Sr2165	Ta2685
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	3.20355	4.60719	3.97763	0.109568	0.0721269
Std Dev:	0.016089	0.0146886	0.0338658	0.00862311	0.0148818
%RSD:	0.502225	0.318818	0.851406	7.87009	20.6328
Repeat: 1	3.18658	4.60178	3.94335	0.105103	0.0590444
Repeat: 2	3.21858	4.62382	4.01107	0.119508	0.069019
Repeat: 3	3.20549	4.59599	3.97849	0.104094	0.0883173
Element/Wavelength	Te2142	Th2832	Ti3372	Tl1908	U_3859
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.05747	4.69947	0.0178449	4.54885	12.6043
Std Dev:	0.0146231	0.0252525	0.00084664	0.0319843	0.0473581
%RSD:	0.360398	0.537348	4.74445	0.70313	0.37573
Repeat: 1	4.04085	4.70885	0.016926	4.51257	12.6092
Repeat: 2	4.06325	4.67087	0.0185933	4.57299	12.649
Repeat: 3	4.06833	4.7187	0.0180154	4.56097	12.5547
Element/Wavelength	V_3093	W_2397	Y_3195	Zn2138	Zr3438
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.029127	3.02133	i 4.74288	0.261457	0.0395611
Std Dev:	0.00159934	0.0275158	0.00835035	0.000679663	0.000479591
%RSD:	5.49091	0.910717	0.176061	0.259953	1.21228
Repeat: 1	-0.029837	3.00718	4.74773	0.260876	0.0394935
Repeat: 2	-0.0302484	3.05304	4.74767	0.262204	0.0391189
Repeat: 3	-0.0272956	3.00377	4.73324	0.261289	0.0400709

Sample Name	Acquisition Date	Sample type	Correction Factor
CCV A	6/3/2013 12:16:53 PM	QC	1.00

Autosampler Locations (rack/row/col)	Analyst Name	Method Name
1/9/1	awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Ag3280	Al3961	As1890	B_2497	Ba2335
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.98802	4.75909	5.01183	4.74049	5.05985
Std Dev:	0.00246818	0.015442	0.00694961	0.0226238	0.00936984
%RSD:	0.249811	0.324475	0.138664	0.477247	0.18518
Repeat: 1	0.990406	4.77656	5.00504	4.7659	5.06716
Repeat: 2	0.988177	4.75343	5.01893	4.72255	5.06311
Repeat: 3	0.985477	4.74727	5.01154	4.733	5.04929

Element/Wavelength	Be2348	Bi2230	Ca1840	Cd2265	Ce5353
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.97163	4.9247	5.23161	5.16729	0.0380968
Std Dev:	0.0151127	0.011979	0.0159005	0.0127229	0.00598869
%RSD:	0.303979	0.243244	0.303932	0.24622	15.7197
Repeat: 1	4.98908	4.93187	5.21429	5.1629	0.041341
Repeat: 2	4.96327	4.93135	5.24556	5.18162	0.0311859
Repeat: 3	4.96255	4.91087	5.23498	5.15734	0.0417634
Element/Wavelength	Co2286	Cr2677	Cu3273	Eu3819	Fe2599
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	5.07437	4.99251	4.80687	-0.000273945	4.97063
Std Dev:	0.0102301	0.0116882	0.0220016	9.92786e-005	0.0126961
%RSD:	0.201604	0.234115	0.457712	36.2403	0.255423
Repeat: 1	5.07793	5.00553	4.8321	-0.000377195	4.98522
Repeat: 2	5.08235	4.9829	4.79683	-0.000179183	4.96211
Repeat: 3	5.06284	4.98912	4.79167	-0.000265457	4.96456
Element/Wavelength	K_7664	La3794	Li6707	Mg2852	Mn2605
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.85011	4.8455	4.91926	4.91795	5.00151
Std Dev:	0.0165025	0.0244978	0.0301038	0.0146146	0.0130272
%RSD:	0.340251	0.505578	0.611958	0.297169	0.260465
Repeat: 1	4.86859	4.87372	4.95402	4.93475	5.01527
Repeat: 2	4.8449	4.8331	4.90223	4.90819	4.99988
Repeat: 3	4.83685	4.82969	4.90153	4.91091	4.98937
Element/Wavelength	Mo2020	Na8183	Nb3194	Nd4012	Ni2216
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.87918	4.79096	i 0.000577898	-0.00821101	5.13224
Std Dev:	0.00725794	0.0421006	0.00104723	0.00134796	0.0139597
%RSD:	0.148753	0.878752	181.214	16.4165	0.271999
Repeat: 1	4.88589	4.81697	0.00156304	-0.00814826	5.13144
Repeat: 2	4.88017	4.74239	0.000692622	-0.00689553	5.14659
Repeat: 3	4.87148	4.81352	-0.000521972	-0.00958926	5.1187
Element/Wavelength	P_1774	Pb2203	Pd3242	Pr4143	Rb7800
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.9451	5.21175	0.0145241	-0.0361134	0.0513753
Std Dev:	0.00854243	0.019046	0.00574353	0.00212138	0.0135174
%RSD:	0.172745	0.365443	39.5449	5.87423	26.311
Repeat: 1	4.95366	5.19943	0.0131477	-0.0346642	0.0663446
Repeat: 2	4.94507	5.23368	0.00959378	-0.0385483	0.040062
Repeat: 3	4.93657	5.20213	0.0208307	-0.0351276	0.0477194
Element/Wavelength	Rh3434	Ru2402	S_1807	Sb2175	Se1960
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.00108609	-0.0016957	4.97978	4.80813	4.97497
Std Dev:	0.00382587	0.00079885	0.0171838	0.00123339	0.0076567
%RSD:	352.262	47.1105	0.345072	0.0256522	0.153904
Repeat: 1	-0.000798999	-0.00214237	4.98278	4.80829	4.97974
Repeat: 2	-0.00504742	-0.0021713	4.99526	4.80682	4.97904
Repeat: 3	0.00258815	-0.000773414	4.96129	4.80927	4.96614
Element/Wavelength	Si2124	Sm3592	Sn1899	Sr2165	Ta2685
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.87935	-0.0172887	-0.000601523	5.17183	-0.0142262
Std Dev:	0.0172922	0.00049982	0.000848178	0.0107266	0.00309414
%RSD:	0.354396	2.89102	141.005	0.207404	21.7496
Repeat: 1	4.89723	-0.0167193	0.000341898	5.17148	-0.0168374
Repeat: 2	4.87809	-0.0176547	-0.00130099	5.18273	-0.0150323
Repeat: 3	4.86272	-0.0174922	-0.000845475	5.16129	-0.0108087

Element/Wavelength	Te2142	Th2832	Ti3372	Tl1908	U_3859
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00872332	-0.0386996	4.74435	0.0160408	0.022105
Std Dev:	0.00196665	0.000769474	0.0196969	0.00255106	0.00766591
%RSD:	22.5448	1.98833	0.415166	15.9035	34.6795
Repeat: 1	0.0104286	-0.0379185	4.767	0.0189053	0.0309049
Repeat: 2	0.00657192	-0.0394569	4.73477	0.0152034	0.0185342
Repeat: 3	0.00916946	-0.0387233	4.73127	0.0140137	0.0168759
Element/Wavelength	V_3093	W_2397	Y_3195	Zn2138	Zr3438
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.90104	-0.00218555	i -0.000736766	5.05249	4.737
Std Dev:	0.0155291	0.00745836	0.000569623	0.00640072	0.0229247
%RSD:	0.316853	341.258	77.3139	0.126684	0.483949
Repeat: 1	4.91894	0.00550259	-0.00104624	5.05301	4.76346
Repeat: 2	4.89305	-0.0026686	-0.00108466	5.05862	4.72424
Repeat: 3	4.89114	-0.00939065	-7.93966e-005	5.04585	4.72329

Sample Name	Acquisition Date	Sample type	Correction Factor
CCV B	6/3/2013 12:21:14 PM	QC	1.00

Autosampler Locations (rack/row/col)	Analyst Name	Method Name
1/10/1	awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Ag3280	Al3961	As1890	B_2497	Ba2335
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00141827	0.03316	0.000258291	0.00448616	0.00448452
Std Dev:	0.000863377	0.00367655	0.000362372	0.000357344	0.00032942
%RSD:	60.8753	11.0873	140.296	7.96547	7.34572
Repeat: 1	0.00112271	0.0333389	-3.23117e-005	0.00488768	0.00450424
Repeat: 2	0.00239061	0.0293972	0.000142869	0.00436778	0.00480363
Repeat: 3	0.00074149	0.0367438	0.000664315	0.00420303	0.00414568
Element/Wavelength	Be2348	Bi2230	Ca1840	Cd2265	Ce5353
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.000153646	-0.0672982	-0.165151	-0.000437985	4.69894
Std Dev:	7.15011e-005	0.0021499	0.000518782	0.000185031	0.0117351
%RSD:	46.5362	3.19458	0.314125	42.246	0.249739
Repeat: 1	0.000174715	-0.0675797	-0.164553	-0.000228167	4.71169
Repeat: 2	7.39782e-005	-0.0692935	-0.165475	-0.000507979	4.69654
Repeat: 3	0.000212246	-0.0650214	-0.165426	-0.000577808	4.68859
Element/Wavelength	Co2286	Cr2677	Cu3273	Eu3819	Fe2599
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.00176834	0.00117921	0.0295042	4.76679	-0.0464591
Std Dev:	0.000618252	0.000294717	0.00413057	0.00664094	0.00043551
%RSD:	34.9624	24.9927	13.9999	0.139317	0.937405
Repeat: 1	-0.0023798	0.00102554	0.0342327	4.77043	-0.0462212
Repeat: 2	-0.0017817	0.00151901	0.0265994	4.77081	-0.0461943
Repeat: 3	-0.00114351	0.000993093	0.0276804	4.75913	-0.0469617
Element/Wavelength	K_7664	La3794	Li6707	Mg2852	Mn2605
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.0100162	-0.00387313	0.0076915	0.000134866	-0.000937502
Std Dev:	0.00515704	0.000443366	0.000410979	0.000107796	0.000136264
%RSD:	51.4871	11.4472	5.34328	79.9281	14.5348
Repeat: 1	0.0136578	-0.00412031	0.00816426	4.06409e-005	-0.000790694
Repeat: 2	0.0122757	-0.0041378	0.00749091	0.000252415	-0.00105993
Repeat: 3	0.00411504	-0.00336127	0.00741934	0.000111544	-0.000961881

Element/Wavelength	Mo2020	Na8183	Nb3194	Nd4012	Ni2216
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.0021255	-0.344176	i 4.76929	4.68772	0.00964259
Std Dev:	0.00025166	0.0249262	0.00735297	0.00653226	0.00038502
%RSD:	11.84	7.24227	0.154173	0.139348	3.99291
Repeat: 1	0.00222758	-0.346691	4.77284	4.68808	0.00987455
Repeat: 2	0.00231007	-0.318088	4.77421	4.69407	0.00985507
Repeat: 3	0.00183883	-0.367749	4.76084	4.68102	0.00919815
Element/Wavelength	P_1774	Pb2203	Pd3242	Pr4143	Rb7800
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.00416009	0.304825	4.92661	4.6603	4.74099
Std Dev:	0.00256615	0.00108491	0.0100243	0.0282872	0.0205465
%RSD:	61.685	0.355913	0.203473	0.606982	0.433379
Repeat: 1	-0.00539305	0.30585	4.93525	4.68549	4.76209
Repeat: 2	-0.00121016	0.303689	4.92896	4.6657	4.73984
Repeat: 3	-0.00587707	0.304934	4.91562	4.6297	4.72104
Element/Wavelength	Rh3434	Ru2402	S_1807	Sb2175	Se1960
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.69944	4.93741	0.0145259	0.660629	0.00641558
Std Dev:	0.00900442	0.00685255	0.00219576	0.000440726	0.00330072
%RSD:	0.191606	0.138788	15.1162	0.066713	51.4484
Repeat: 1	4.70494	4.94368	0.0165691	0.660342	0.0036255
Repeat: 2	4.70433	4.9301	0.0148043	0.661137	0.005562
Repeat: 3	4.68905	4.93845	0.0122042	0.66041	0.0100592
Element/Wavelength	Si2124	Sm3592	Sn1899	Sr2165	Ta2685
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.0979691	4.6591	4.95583	-0.00599188	4.89425
Std Dev:	0.00857997	0.00897179	0.0161382	0.000385994	0.00306837
%RSD:	8.75783	0.192565	0.325641	6.44196	0.0626935
Repeat: 1	0.0901757	4.65699	4.93819	-0.00601845	4.89142
Repeat: 2	0.0965685	4.66893	4.95947	-0.0063639	4.89751
Repeat: 3	0.107163	4.65137	4.96984	-0.00559328	4.89381
Element/Wavelength	Te2142	Th2832	Ti3372	Tl1908	U_3859
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.81485	4.83031	-0.00354735	4.96482	4.6177
Std Dev:	0.00491906	0.00390336	0.000282601	0.0316751	0.0120975
%RSD:	0.102164	0.0808097	7.96655	0.63799	0.261981
Repeat: 1	4.8186	4.82581	-0.00376085	4.92825	4.60978
Repeat: 2	4.80928	4.83257	-0.00322687	4.9833	4.63163
Repeat: 3	4.81668	4.83256	-0.00365432	4.98292	4.6117
Element/Wavelength	V_3093	W_2397	Y_3195	Zn2138	Zr3438
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00348105	4.8155	i 4.84672	-0.0104153	0.00127349
Std Dev:	0.000366815	0.00587196	0.00513878	0.000251017	0.000248544
%RSD:	10.5375	0.121939	0.106026	2.41009	19.5167
Repeat: 1	0.00381442	4.81839	4.84952	-0.010424	0.00127167
Repeat: 2	0.00308809	4.81937	4.84985	-0.0106618	0.00152295
Repeat: 3	0.00354064	4.80875	4.84079	-0.01016	0.00102587

Sample Name	Acquisition Date	Sample type	Correction Factor
CCB	6/3/2013 12:25:53 PM	QC	1.00
Autosampler Locations (rack/row/col)		**Analyst Name**	**Method Name**
1/11/1		awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Ag3280	Al3961	As1890	B_2497	Ba2335
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.000163459	-0.000650315	-0.00240505	0.00218395	-0.000243387
Std Dev:	0.00102132	0.00150439	0.00178088	0.000311708	0.000206088
%RSD:	624.818	231.332	74.0476	14.2727	84.6751
Repeat: 1	-0.00101478	0.000559095	-0.00310819	0.00252918	-5.04339e-005
Repeat: 2	0.000796305	-0.00017512	-0.00372701	0.00192316	-0.000219244
Repeat: 3	0.000708851	-0.00233492	-0.000379939	0.00209952	-0.000460484
Element/Wavelength	**Be2348**	**Bi2230**	**Ca1840**	**Cd2265**	**Ce5353**
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	3.37116e-005	0.000497766	-0.000473231	-0.000149759	0.00460168
Std Dev:	2.02143e-005	0.00163712	0.000775789	0.000316199	0.00397115
%RSD:	59.9626	328.893	163.935	211.138	86.2978
Repeat: 1	1.71143e-005	0.000578911	0.000274553	0.000203371	0.00348423
Repeat: 2	2.7797e-005	-0.00117841	-0.00127428	-0.000245975	0.00901184
Repeat: 3	5.62235e-005	0.0020928	-0.000419967	-0.000406674	0.00130898
Element/Wavelength	**Co2286**	**Cr2677**	**Cu3273**	**Eu3819**	**Fe2599**
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.000116416	-0.00068029	-0.000481356	6.44897e-005	-0.000270285
Std Dev:	0.000349996	0.000524621	0.00110703	3.47099e-005	0.000477961
%RSD:	300.641	77.1173	229.982	53.8225	176.836
Repeat: 1	0.000199709	-0.000134625	-0.000365175	3.56366e-005	0.000173935
Repeat: 2	-5.64296e-005	-0.000725276	-0.0016419	5.48246e-005	-0.000208762
Repeat: 3	-0.000492529	-0.00118097	0.000563003	0.000103008	-0.000776029
Element/Wavelength	**K_7664**	**La3794**	**Li6707**	**Mg2852**	**Mn2605**
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.000699101	0.000185807	-6.14922e-005	-0.000188374	-0.000190338
Std Dev:	0.0126384	0.00051079	0.000141533	0.000108234	0.000106852
%RSD:	1807.81	274.904	230.164	57.4567	56.1382
Repeat: 1	0.00769108	-0.000348694	4.55295e-005	-0.000312822	-0.000130721
Repeat: 2	0.00829651	0.000237099	-8.03889e-006	-0.000116198	-0.000126595
Repeat: 3	-0.0138903	0.000669016	-0.000221967	-0.000136103	-0.000313697
Element/Wavelength	**Mo2020**	**Na8183**	**Nb3194**	**Nd4012**	**Ni2216**
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-4.76745e-005	-0.0868777	i -0.00089396	-0.00145843	-5.91054e-005
Std Dev:	9.9896e-005	0.0375178	0.00100078	0.000535305	0.000383153
%RSD:	209.538	43.1846	111.949	36.7041	648.254
Repeat: 1	-2.18188e-005	-0.0905402	-0.00203554	-0.0013972	-0.000491808
Repeat: 2	3.67519e-005	-0.12243	-0.000478568	-0.00202172	7.73582e-005
Repeat: 3	-0.000157956	-0.047663	-0.000167768	-0.000956378	0.000237134
Element/Wavelength	**P_1774**	**Pb2203**	**Pd3242**	**Pr4143**	**Rb7800**
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	5.68751e-005	0.00175448	0.00562754	-0.00494507	0.00808089
Std Dev:	0.00113445	0.00305454	0.00294799	0.000630057	0.0123877
%RSD:	1994.64	174.099	52.3852	12.7411	153.296
Repeat: 1	0.00103142	0.00521417	0.00477739	-0.00427743	0.0199322
Repeat: 2	0.000327682	-0.000569628	0.00319804	-0.00502855	-0.00478125
Repeat: 3	-0.00118847	0.000618902	0.00890719	-0.00552922	0.00909168

Element/Wavelength	Rh3434	Ru2402	S_1807	Sb2175	Se1960
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.00131793	-0.0012149	0.00054595	-0.000826163	0.00358486
Std Dev:	0.00523875	0.000415585	0.00266297	0.00524149	0.00592558
%RSD:	397.497	34.2073	487.767	634.438	165.294
Repeat: 1	0.00167121	-0.00145289	0.00255456	-0.00392447	0.009063
Repeat: 2	0.00174196	-0.00145679	-0.00247467	0.00522561	-0.00270456
Repeat: 3	-0.00736698	-0.00073503	0.00155796	-0.00377963	0.00439614
Element/Wavelength	Si2124	Sm3592	Sn1899	Sr2165	Ta2685
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.00152197	-0.00718714	-1.14911e-005	-0.000122365	-6.43075e-005
Std Dev:	0.00249859	0.00100382	0.000267484	0.00107352	0.000497151
%RSD:	164.168	13.9668	2327.75	877.314	773.083
Repeat: 1	-0.00331152	-0.00606203	-0.000299324	-0.00125395	0.000457844
Repeat: 2	0.00133268	-0.00750838	3.54116e-005	5.14476e-006	-0.000118798
Repeat: 3	-0.00258707	-0.00799102	0.000229439	0.00088171	-0.000531968
Element/Wavelength	Te2142	Th2832	Ti3372	Tl1908	U_3859
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.0028551	-0.00144315	-0.000157774	0.0015148	-0.00070565
Std Dev:	0.00485069	0.00399422	0.00019129	0.00210757	0.0100349
%RSD:	169.895	276.77	121.243	139.132	1422.08
Repeat: 1	-0.00118904	0.00295921	-0.000170768	-0.000905321	-0.0122425
Repeat: 2	0.000942998	-0.00483522	-0.000342235	0.00250327	0.00412675
Repeat: 3	-0.00831927	-0.00245346	3.9682e-005	0.00294645	0.00599878
Element/Wavelength	V_3093	W_2397	Y_3195	Zn2138	Zr3438
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-9.8181e-005	0.00172621	i 0.000326712	-0.000266752	-0.000157745
Std Dev:	0.000388726	0.00191835	0.000157942	9.00311e-005	0.000507454
%RSD:	395.928	111.131	48.343	33.7508	321.693
Repeat: 1	-0.000504651	0.00372265	0.000311463	-0.000338174	-0.00067819
Repeat: 2	-5.98521e-005	0.00155912	0.000176947	-0.000296461	-0.000130679
Repeat: 3	0.00026996	-0.000103126	0.000491725	-0.000165621	0.000335635

Sample Name	Acquisition Date	Sample type	Correction Factor
S13T004252_A	6/3/2013 12:30:44 PM	Unknown	5.00
Autosampler Locations (rack/row/col)		**Analyst Name**	**Method Name**
1/9/3		awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Ag3280	Al3961	As1890	B_2497	Ba2335
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	9.5465	793.026	47.9063	47.0091	47.5034
Std Dev:	0.0448652	18.3152	0.139284	0.133017	0.16297
%RSD:	0.469965	2.30953	0.290742	0.28296	0.34307
Repeat: 1	9.50586	777.419	47.9801	46.904	47.6197
Repeat: 2	9.539	788.47	47.9932	46.9647	47.5734
Repeat: 3	9.59464	813.189	47.7457	47.1587	47.3171
Element/Wavelength	Be2348	Bi2230	Ca1840	Cd2265	Ce5353
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	46.5434	47.5879	49.3937	46.6586	46.9179
Std Dev:	0.149382	0.141529	0.201785	0.199838	0.217717
%RSD:	0.320953	0.297406	0.408524	0.428299	0.464037
Repeat: 1	46.4329	47.6938	49.6266	46.8765	46.6825
Repeat: 2	46.484	47.6428	49.2824	46.6154	46.9591
Repeat: 3	46.7134	47.4271	49.2721	46.4839	47.1121

Element/Wavelength	Co2286	Cr2677	Cu3273	Eu3819	Fe2599
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	47.1895	47.0822	48.6412	47.4312	70.9692
Std Dev:	0.155504	0.159596	0.185489	0.572659	0.248438
%RSD:	0.329532	0.338974	0.381341	1.20735	0.350064
Repeat: 1	47.318	46.9404	48.466	46.969	70.7842
Repeat: 2	47.2339	47.051	48.6221	48.0718	70.8719
Repeat: 3	47.0166	47.255	48.8355	47.2528	71.2516
Element/Wavelength	K_7664	La3794	Li6707	Mg2852	Mn2605
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	48.7418	47.8282	50.0938	48.4366	47.4214
Std Dev:	0.216496	0.16908	0.735176	0.164675	0.142496
%RSD:	0.444169	0.353515	1.4676	0.33998	0.300489
Repeat: 1	48.5226	47.6914	50.4731	48.2992	47.2967
Repeat: 2	48.7472	47.7758	49.2464	48.3914	47.3908
Repeat: 3	48.9555	48.0172	50.5618	48.6191	47.5767
Element/Wavelength	Mo2020	Na8183	Nb3194	Nd4012	Ni2216
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	46.2865	365.823	i 46.7215	47.3697	49.5007
Std Dev:	0.103859	1.34491	0.193693	0.198642	0.196061
%RSD:	0.224382	0.367638	0.414569	0.419344	0.396077
Repeat: 1	46.39	364.825	46.5676	47.219	49.6826
Repeat: 2	46.2873	365.292	46.658	47.2952	49.5264
Repeat: 3	46.1823	367.352	46.939	47.5948	49.293
Element/Wavelength	P_1774	Pb2203	Pd3242	Pr4143	Rb7800
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	125.424	51.4106	47.1413	46.6639	47.0726
Std Dev:	0.241667	0.244426	0.154665	0.234813	0.249189
%RSD:	0.192679	0.475439	0.328087	0.503201	0.52937
Repeat: 1	125.696	51.6368	46.9708	46.4782	46.7849
Repeat: 2	125.343	51.4437	47.1806	46.5857	47.2142
Repeat: 3	125.234	51.1513	47.2726	46.9278	47.2188
Element/Wavelength	Rh3434	Ru2402	S_1807	Sb2175	Se1960
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	46.2934	44.6728	48.1667	53.0369	48.0307
Std Dev:	0.230777	0.0662194	0.242838	0.0945	0.202394
%RSD:	0.498509	0.148232	0.504162	0.178178	0.421385
Repeat: 1	46.1151	44.6039	48.4262	53.0842	48.258
Repeat: 2	46.211	44.6786	48.129	53.0985	47.9641
Repeat: 3	46.5541	44.736	47.9449	52.9281	47.87
Element/Wavelength	Si2124	Sm3592	Sn1899	Sr2165	Ta2685
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	51.537	47.3305	44.2585	47.178	47.8708
Std Dev:	0.0812808	0.181193	0.225635	0.184484	0.265886
%RSD:	0.157714	0.382825	0.509813	0.391038	0.555423
Repeat: 1	51.5076	47.1507	44.5013	47.3458	47.6148
Repeat: 2	51.6289	47.3278	44.2189	47.2077	47.852
Repeat: 3	51.4745	47.513	44.0553	46.9805	48.1456
Element/Wavelength	Te2142	Th2832	Ti3372	Tl1908	U_3859
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	46.2074	46.9371	46.4649	44.5204	56.8197
Std Dev:	0.0312449	0.170311	0.165936	0.0683314	0.358397
%RSD:	0.0676188	0.362849	0.357121	0.153483	0.630763
Repeat: 1	46.1766	46.7877	46.3091	44.581	56.47
Repeat: 2	46.2391	46.901	46.4463	44.5339	56.8027
Repeat: 3	46.2065	47.1225	46.6394	44.4463	57.1862

Element/Wavelength	V_3093	W_2397	Y_3195	Zn2138	Zr3438
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	47.5243	46.304	i 47.4676	47.4599	47.1331
Std Dev:	0.168668	0.170683	0.160962	0.129186	0.220699
%RSD:	0.354908	0.368615	0.339099	0.272201	0.468247
Repeat: 1	47.3739	46.1215	47.3337	47.5776	46.9856
Repeat: 2	47.4923	46.3309	47.4229	47.4805	47.0268
Repeat: 3	47.7067	46.4597	47.6462	47.3217	47.3868

Sample Name	Acquisition Date	Sample type	Correction Factor
S13T004280	6/3/2013 12:35:21 PM	Unknown	5.00
Autosampler Locations (rack/row/col)		**Analyst Name**	**Method Name**
1/10/3		awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Ag3280	Al3961	As1890	B_2497	Ba2335
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.0165138	562.905	0.0171909	0.0511818	0.085994
Std Dev:	0.00290343	12.064	0.00621414	0.00594698	0.0023602
%RSD:	17.5818	2.14317	36.1478	11.6193	2.74461
Repeat: 1	0.0131683	549.384	0.0233093	0.0574431	0.0873661
Repeat: 2	0.0179985	572.568	0.0173781	0.0504932	0.0873472
Repeat: 3	0.0183747	566.763	0.0108853	0.0456091	0.0832687
Element/Wavelength	Be2348	Bi2230	Ca1840	Cd2265	Ce5353
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.000404013	1.04852	9.2745	0.00127788	-0.0842449
Std Dev:	0.000123379	0.0280127	0.0226804	0.00164916	0.00987647
%RSD:	30.5385	2.67164	0.244546	129.055	11.7235
Repeat: 1	0.000265876	1.0643	9.29874	0.000805417	-0.0914003
Repeat: 2	0.000442894	1.01618	9.2538	0.00311171	-0.0883578
Repeat: 3	0.000503268	1.06508	9.27096	-8.34883e-005	-0.0729766
Element/Wavelength	Co2286	Cr2677	Cu3273	Eu3819	Fe2599
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00262632	0.0817229	0.275251	-0.000276112	35.4456
Std Dev:	0.00260769	0.0020118	0.00596731	0.000952229	0.0388919
%RSD:	99.2905	2.46173	2.16795	344.871	0.109723
Repeat: 1	-0.000372226	0.0802912	0.271188	0.000778713	35.4234
Repeat: 2	0.00436343	0.0808544	0.272464	-0.000534732	35.4905
Repeat: 3	0.00388776	0.084023	0.282102	-0.00107232	35.4228
Element/Wavelength	K_7664	La3794	Li6707	Mg2852	Mn2605
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.121273	0.0416151	0.00807328	0.640366	0.20117
Std Dev:	0.0502331	0.00158138	0.00119413	0.00210032	0.000730565
%RSD:	41.4214	3.80002	14.7911	0.327988	0.363158
Repeat: 1	0.176876	0.0414867	0.00770929	0.638799	0.202006
Repeat: 2	0.107774	0.0432568	0.00940704	0.642752	0.200851
Repeat: 3	0.0791689	0.0401019	0.0071035	0.639547	0.200653
Element/Wavelength	Mo2020	Na8183	Nb3194	Nd4012	Ni2216
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.0110565	487.407	i -0.00763466	0.0456435	7.47989
Std Dev:	0.00141455	0.402635	0.00267989	0.00801472	0.0151778
%RSD:	12.7939	0.0826076	35.1017	17.5594	0.202915
Repeat: 1	0.00942821	487.621	-0.0105486	0.0506769	7.49389
Repeat: 2	0.0119825	487.658	-0.00527565	0.0364012	7.46376
Repeat: 3	0.0117587	486.942	-0.00707976	0.0498525	7.482

Element/Wavelength	P_1774	Pb2203	Pd3242	Pr4143	Rb7800
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	106.846	2.45125	0.0387415	0.0235609	0.0506243
Std Dev:	0.197798	0.0246938	0.0121921	0.00254867	0.059167
%RSD:	0.185125	1.0074	31.4702	10.8174	116.875
Repeat: 1	107.012	2.47975	0.0327337	0.0264889	-0.0156355
Repeat: 2	106.627	2.4377	0.0307193	0.022353	0.0693331
Repeat: 3	106.899	2.43629	0.0527716	0.0218407	0.0981752
Element/Wavelength	Rh3434	Ru2402	S_1807	Sb2175	Se1960
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.0287183	-0.0123011	0.447641	-0.0574123	0.0125912
Std Dev:	0.0141644	0.00932691	0.0132944	0.0218043	0.0178353
%RSD:	49.3219	75.8219	2.96988	37.9785	141.65
Repeat: 1	0.0436778	-0.00442561	0.433295	-0.0592576	0.0238017
Repeat: 2	0.026965	-0.0226007	0.459545	-0.034744	-0.00797546
Repeat: 3	0.0155122	-0.00987687	0.450083	-0.0782353	0.0219473
Element/Wavelength	Si2124	Sm3592	Sn1899	Sr2165	Ta2685
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.18263	-0.0133131	0.00108773	0.271536	0.103765
Std Dev:	0.0340047	0.0143162	0.00511917	0.00258027	0.00834042
%RSD:	0.812998	107.534	470.627	0.950251	8.03781
Repeat: 1	4.22084	-0.025216	0.00500156	0.272808	0.103572
Repeat: 2	4.17135	-0.0172963	0.00296714	0.273234	0.1122
Repeat: 3	4.1557	0.00257281	-0.0047055	0.268567	0.0955227
Element/Wavelength	Te2142	Th2832	Ti3372	Tl1908	U_3859
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.0185916	0.0652541	0.0314453	0.0207562	23.0859
Std Dev:	0.0191874	0.00706493	0.000893313	0.012425	0.0305362
%RSD:	103.205	10.8268	2.84085	59.8615	0.132272
Repeat: 1	0.0332804	0.0589032	0.0322275	0.0226407	23.1176
Repeat: 2	-0.00311718	0.0639952	0.0304718	0.0321312	23.0566
Repeat: 3	0.0256117	0.0728638	0.0316366	0.00749662	23.0834
Element/Wavelength	V_3093	W_2397	Y_3195	Zn2138	Zr3438
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00883139	0.00367223	i 0.00993958	0.249273	0.066897
Std Dev:	0.00231662	0.0240533	0.00047367	0.00157141	0.000243906
%RSD:	26.2316	655.006	4.76549	0.630397	0.364599
Repeat: 1	0.0107239	0.0282999	0.00940191	0.250457	0.0670394
Repeat: 2	0.00624791	0.00247908	0.0101215	0.247491	0.0670363
Repeat: 3	0.00952238	-0.0197623	0.0102953	0.249873	0.0666154

Sample Name	Acquisition Date	Sample type	Correction Factor
S13T004307	6/3/2013 12:40:13 PM	Unknown	5.00
Autosampler Locations (rack/row/col)		**Analyst Name**	**Method Name**
1/11/3		awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Ag3280	Al3961	As1890	B_2497	Ba2335
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00488353	682.812	0.0357857	0.0223256	0.0336508
Std Dev:	0.00312407	5.17381	0.0143003	0.00102792	0.00123792
%RSD:	63.9716	0.75772	39.9611	4.60424	3.67872
Repeat: 1	0.00821031	683.291	0.0513045	0.0229297	0.0332818
Repeat: 2	0.00442813	687.73	0.0231401	0.0229084	0.0326393
Repeat: 3	0.00201215	677.415	0.0329124	0.0211387	0.0350312

Element/Wavelength	Be2348	Bi2230	Ca1840	Cd2265	Ce5353
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.000302319	0.461672	5.02864	0.00342033	-0.00180465
Std Dev:	0.000111786	0.0160423	0.0240051	0.000594192	0.0264426
%RSD:	36.9762	3.47483	0.477368	17.3724	1465.25
Repeat: 1	0.00038867	0.451206	5.00515	0.00319124	-0.00844054
Repeat: 2	0.000342232	0.453667	5.05313	0.00297478	0.0273239
Repeat: 3	0.000176054	0.480141	5.02764	0.00409496	-0.0242973
Element/Wavelength	Co2286	Cr2677	Cu3273	Eu3819	Fe2599
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00153692	0.0686087	0.327796	-0.00033805	14.1343
Std Dev:	0.00155196	0.00338695	0.00326002	0.000435235	0.0391985
%RSD:	100.979	4.93661	0.994528	128.749	0.277329
Repeat: 1	0.00126109	0.0662169	0.324295	-0.000369294	14.1425
Repeat: 2	0.000141362	0.0671249	0.328348	0.000111965	14.0917
Repeat: 3	0.0032083	0.0724843	0.330745	-0.000756821	14.1688
Element/Wavelength	K_7664	La3794	Li6707	Mg2852	Mn2605
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.120947	0.0406059	0.00473138	0.405938	0.109321
Std Dev:	0.0219904	0.00110035	0.000376155	0.000775326	0.0013061
%RSD:	18.1818	2.70983	7.95023	0.190996	1.19474
Repeat: 1	0.121452	0.0416097	0.00473413	0.405227	0.108166
Repeat: 2	0.142681	0.0407786	0.00510615	0.405823	0.110738
Repeat: 3	0.0987091	0.0394295	0.00435385	0.406765	0.10906
Element/Wavelength	Mo2020	Na8183	Nb3194	Nd4012	Ni2216
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00705845	378.691	i -0.00602458	0.0403472	4.69137
Std Dev:	0.00302965	1.85754	0.0103158	0.00698714	0.0232207
%RSD:	42.9223	0.490516	171.228	17.3175	0.494967
Repeat: 1	0.00474782	377.537	0.00381843	0.046466	4.66718
Repeat: 2	0.0104885	377.701	-0.0167557	0.0418421	4.71348
Repeat: 3	0.00593901	380.833	-0.00513647	0.0327336	4.69345
Element/Wavelength	P_1774	Pb2203	Pd3242	Pr4143	Rb7800
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	94.8997	1.59555	0.0115578	0.0139484	0.105726
Std Dev:	0.324879	0.0145453	0.0230913	0.0191524	0.0438335
%RSD:	0.342339	0.911616	199.79	137.309	41.4594
Repeat: 1	94.5622	1.60942	0.0380548	0.0358115	0.152301
Repeat: 2	95.2103	1.59682	-0.00426777	0.000132458	0.0652785
Repeat: 3	94.9267	1.58042	0.000886337	0.00590138	0.0995999
Element/Wavelength	Rh3434	Ru2402	S_1807	Sb2175	Se1960
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.0119631	0.000747343	0.324224	-0.09902	0.0197463
Std Dev:	0.0173767	0.00880168	0.00544993	0.019915	0.0177152
%RSD:	145.253	1177.73	1.68091	20.1121	89.7141
Repeat: 1	-0.00628038	0.00799433	0.320694	-0.0788045	0.0173994
Repeat: 2	0.0138506	0.00329479	0.330501	-0.11862	0.0385179
Repeat: 3	0.028319	-0.00904709	0.321478	-0.0996353	0.00332151
Element/Wavelength	Si2124	Sm3592	Sn1899	Sr2165	Ta2685
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	1.94135	0.00449781	-0.000659292	0.128779	0.0246691
Std Dev:	0.0254643	0.00758115	0.00329681	0.00265986	0.0139097
%RSD:	1.31168	168.552	500.054	2.06545	56.3853
Repeat: 1	1.91282	0.00785878	-0.000194148	0.126654	0.0286377
Repeat: 2	1.96179	-0.00418279	-0.00416397	0.12792	0.0361632
Repeat: 3	1.94944	0.00981745	0.00238025	0.131762	0.00920633

Element/Wavelength	Te2142	Th2832	Ti3372	Tl1908	U_3859
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.0104348	0.0104098	0.0281385	0.013599	7.29485
Std Dev:	0.0144664	0.0223266	0.000442223	0.0224055	0.038817
%RSD:	138.637	214.476	1.5716	164.759	0.532115
Repeat: 1	-0.0177925	0.0258494	0.0281007	0.0387971	7.27009
Repeat: 2	0.00623161	-0.0151899	0.0285984	0.00607933	7.27488
Repeat: 3	-0.0197434	0.0205699	0.0277163	-0.00407947	7.33959
Element/Wavelength	V_3093	W_2397	Y_3195	Zn2138	Zr3438
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.0216452	-0.00851167	i 0.00446687	0.223069	0.0389705
Std Dev:	0.00325171	0.0101404	0.0075754	0.00141635	0.00090613
%RSD:	15.0228	119.135	169.591	0.63494	2.32517
Repeat: 1	-0.021173	0.00135834	0.0123275	0.223894	0.0383499
Repeat: 2	-0.0251071	-0.0189023	0.00385983	0.22388	0.0385514
Repeat: 3	-0.0186553	-0.00799102	-0.00278675	0.221434	0.0400103

Sample Name	Acquisition Date	Sample type	Correction Factor
Prep Blank	6/3/2013 12:45:05 PM	Unknown	100.00
Autosampler Locations (rack/row/col)		**Analyst Name**	**Method Name**
1/1/4		awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Ag3280	Al3961	As1890	B_2497	Ba2335
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.0165593	1.26289	-0.0998964	0.33019	-0.00428388
Std Dev:	0.0466002	0.0463052	0.228023	0.0139527	0.0544286
%RSD:	281.414	3.6666	228.259	4.22566	1270.55
Repeat: 1	0.05156	1.26634	-0.317496	0.339325	0.0246327
Repeat: 2	-0.0363359	1.21496	-0.11948	0.31413	-0.0670676
Repeat: 3	0.0344538	1.30738	0.137286	0.337116	0.0295832
Element/Wavelength	Be2348	Bi2230	Ca1840	Cd2265	Ce5353
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00168841	-0.105511	3.55899	-0.0185585	-0.136188
Std Dev:	0.00712352	0.136503	0.144743	0.00784257	0.327866
%RSD:	421.908	129.373	4.06696	42.2586	240.746
Repeat: 1	-0.00495981	-0.137505	3.72526	-0.0121076	-0.500601
Repeat: 2	0.00920721	-0.223176	3.46115	-0.0162798	-0.0428531
Repeat: 3	0.000817831	0.0441469	3.49055	-0.0272881	0.134891
Element/Wavelength	Co2286	Cr2677	Cu3273	Eu3819	Fe2599
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.00452111	-0.0414899	0.0743392	0.0024649	0.0933294
Std Dev:	0.0201067	0.0154309	0.0740252	0.0165193	0.0368146
%RSD:	444.73	37.1918	99.5776	670.18	39.4459
Repeat: 1	0.018581	-0.0592673	-0.00113357	-0.00790701	0.0795546
Repeat: 2	-0.0180722	-0.0315599	0.146827	0.0215146	0.135045
Repeat: 3	-0.0140722	-0.0336425	0.0773247	-0.00621292	0.0653886
Element/Wavelength	K_7664	La3794	Li6707	Mg2852	Mn2605
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	11485.5	0.061527	-0.00470124	0.03577	-0.00765833
Std Dev:	6.3617	0.0306461	0.0144384	0.0107585	0.0135085
%RSD:	0.055389	49.8092	307.118	30.077	176.389
Repeat: 1	11481.1	0.0531635	0.00911148	0.0464345	-0.0171486
Repeat: 2	11492.8	0.0359309	-0.0196929	0.0249199	-0.0136337
Repeat: 3	11482.7	0.0954867	-0.00352225	0.0359555	0.00780733

Element/Wavelength	Mo2020	Na8183	Nb3194	Nd4012	Ni2216
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.0183971	-5.83775	i -0.0703246	-0.0926939	0.0243697
Std Dev:	0.0714798	3.10446	0.055052	0.0937481	0.028842
%RSD:	388.539	53.1791	78.2828	101.137	118.352
Repeat: 1	-0.0222441	-9.24918	-0.0608429	-0.016213	0.0500671
Repeat: 2	-0.0234963	-3.17846	-0.129502	-0.0645889	0.0298676
Repeat: 3	0.100932	-5.08561	-0.0206293	-0.19728	-0.00682549
Element/Wavelength	P_1774	Pb2203	Pd3242	Pr4143	Rb7800
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.130278	-0.258778	0.29885	-0.109779	5.31362
Std Dev:	0.201077	0.209664	0.473826	0.674815	4.36267
%RSD:	154.344	81.0207	158.55	614.703	82.1036
Repeat: 1	0.0291594	-0.384279	0.520574	0.0329533	9.03996
Repeat: 2	0.361843	-0.375321	0.621162	0.482252	0.514684
Repeat: 3	-0.000168379	-0.0167346	-0.245187	-0.844543	6.38622
Element/Wavelength	Rh3434	Ru2402	S_1807	Sb2175	Se1960
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.238454	-0.0958144	-0.283697	0.28132	0.185665
Std Dev:	0.295476	0.103096	0.138356	0.261799	0.219224
%RSD:	123.913	107.6	48.769	93.0611	118.075
Repeat: 1	0.218824	-0.189933	-0.440334	0.503454	0.392098
Repeat: 2	0.543255	0.014373	-0.178156	-0.00731724	-0.0444298
Repeat: 3	-0.0467172	-0.111884	-0.232601	0.347822	0.209327
Element/Wavelength	Si2124	Sm3592	Sn1899	Sr2165	Ta2685
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.00186882	-0.336939	-0.0604266	0.0454941	-0.194884
Std Dev:	0.27515	0.176691	0.0336712	0.0644468	0.402387
%RSD:	14723.2	52.4399	55.7225	141.66	206.475
Repeat: 1	-0.247705	-0.531609	-0.098643	0.119269	-0.362628
Repeat: 2	0.295351	-0.186714	-0.0475132	0.000160388	-0.486261
Repeat: 3	-0.0532528	-0.292494	-0.0351235	0.0170528	0.264236
Element/Wavelength	Te2142	Th2832	Ti3372	Tl1908	U_3859
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.208396	-0.168144	-0.0102408	0.268973	1.11739
Std Dev:	0.351461	0.122071	0.0185444	0.0356182	0.228215
%RSD:	168.651	72.5992	181.083	13.2423	20.4238
Repeat: 1	-0.197306	-0.222456	-0.0242561	0.296097	0.932114
Repeat: 2	0.420166	-0.253635	-0.0172537	0.228636	1.37232
Repeat: 3	0.402328	-0.0283427	0.0107873	0.282186	1.04775
Element/Wavelength	V_3093	W_2397	Y_3195	Zn2138	Zr3438
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-2.53741e-005	-0.25861	i -0.108686	0.142185	4.914
Std Dev:	0.0119759	0.156369	0.0485501	0.00619889	0.0589392
%RSD:	47197.4	60.4654	44.6699	4.35972	1.19941
Repeat: 1	0.0121024	-0.103853	-0.159332	0.135804	4.85081
Repeat: 2	-0.0118435	-0.416543	-0.0625453	0.142568	4.92371
Repeat: 3	-0.000334954	-0.255432	-0.104182	0.148184	4.96748

Sample Name	Acquisition Date	Sample type	Correction Factor
S13T004254_L	6/3/2013 12:49:53 PM	Unknown	500.00
Autosampler Locations (rack/row/col)		**Analyst Name**	**Method Name**
1/2/4		awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Ag3280	Al3961	As1890	B_2497	Ba2335
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.0548769	423.952	0.00828641	0.387416	0.134249
Std Dev:	0.140989	1.66564	0.418503	0.0422687	0.168166
%RSD:	256.919	0.392885	5050.47	10.9104	125.264
Repeat: 1	-0.124152	423.26	0.113918	0.339454	0.133936
Repeat: 2	0.107349	425.852	0.363853	0.419234	0.302572
Repeat: 3	-0.147827	422.744	-0.452912	0.40356	-0.03376
Element/Wavelength	Be2348	Bi2230	Ca1840	Cd2265	Ce5353
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00578706	0.930092	2.12235	0.0350502	-0.114278
Std Dev:	0.00434304	1.87438	0.0695174	0.0687789	4.36698
%RSD:	75.0474	201.526	3.2755	196.23	3821.38
Repeat: 1	0.00776719	0.600761	2.14616	-0.0396207	-1.2479
Repeat: 2	0.00878715	-0.757792	2.17683	0.0489609	-3.80266
Repeat: 3	0.000806847	2.94731	2.04405	0.0958105	4.70773
Element/Wavelength	Co2286	Cr2677	Cu3273	Eu3819	Fe2599
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.202966	-0.0980011	0.582468	-0.0374624	7.43562
Std Dev:	0.11027	0.131901	0.25958	0.0384886	0.23974
%RSD:	54.3293	134.591	44.5656	102.739	3.22421
Repeat: 1	-0.149509	0.0459453	0.746163	-0.0387881	7.70427
Repeat: 2	-0.329776	-0.213072	0.718071	0.00167189	7.24344
Repeat: 3	-0.129613	-0.126877	0.283169	-0.075271	7.35915
Element/Wavelength	K_7664	La3794	Li6707	Mg2852	Mn2605
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	12444.2	0.0888662	-0.0384512	0.157662	0.0191341
Std Dev:	22.0605	0.0351524	0.168153	0.149994	0.090372
%RSD:	0.177275	39.5565	437.316	95.1368	472.308
Repeat: 1	12439.2	0.0898121	-0.229206	0.0483382	-0.033761
Repeat: 2	12468.3	0.123536	0.0255429	0.0959854	0.123483
Repeat: 3	12425.1	0.0532504	0.0883099	0.328662	-0.03232
Element/Wavelength	Mo2020	Na8183	Nb3194	Nd4012	Ni2216
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.0070507	65.0903	i -0.370774	-0.573944	1.34046
Std Dev:	0.330319	16.7384	0.381429	0.602142	0.141668
%RSD:	4684.91	25.7157	102.874	104.913	10.5687
Repeat: 1	-0.221617	79.7731	0.0204757	0.0407554	1.18973
Repeat: 2	-0.172865	68.634	-0.741558	-0.599898	1.36077
Repeat: 3	0.373329	46.8638	-0.391238	-1.16269	1.47087
Element/Wavelength	P_1774	Pb2203	Pd3242	Pr4143	Rb7800
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	18.9894	1.2742	0.0944473	-1.89488	10.2024
Std Dev:	0.498748	0.896964	2.97572	2.23322	3.98489
%RSD:	2.62645	70.3942	3150.67	117.855	39.0585
Repeat: 1	18.5121	1.48869	3.50126	-4.36721	14.4074
Repeat: 2	19.5072	0.289436	-1.99639	-0.0239377	9.7177
Repeat: 3	18.949	2.04447	-1.22153	-1.29349	6.48198

Element/Wavelength	Rh3434	Ru2402	S_1807	Sb2175	Se1960
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.273181	0.518725	-0.222949	1.24171	0.798261
Std Dev:	1.79753	0.978371	0.613648	1.60095	2.37723
%RSD:	658	188.611	275.242	128.932	297.801
Repeat: 1	1.77947	-0.465565	-0.72854	-0.105565	-1.804
Repeat: 2	-1.03288	1.49107	0.459785	3.01156	2.85595
Repeat: 3	-1.56614	0.530671	-0.40009	0.819124	1.34283

Element/Wavelength	Si2124	Sm3592	Sn1899	Sr2165	Ta2685
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.369351	-2.01991	-0.816019	0.2096	-0.452112
Std Dev:	2.82151	0.729807	0.397505	0.412087	0.232572
%RSD:	763.909	36.1307	48.7128	196.606	51.4412
Repeat: 1	2.40055	-2.85426	-0.839501	-0.262538	-0.457506
Repeat: 2	1.55979	-1.50022	-0.407293	0.394385	-0.68194
Repeat: 3	-2.85228	-1.70525	-1.20126	0.496952	-0.21689
Element/Wavelength	Te2142	Th2832	Ti3372	Tl1908	U_3859
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-1.73705	-1.73125	0.0390407	-0.124282	9.177
Std Dev:	1.49017	1.39367	0.08192	1.60524	3.61991
%RSD:	85.7873	80.5008	209.832	1291.61	39.4454
Repeat: 1	-0.813023	-0.397785	-0.00463761	-1.97423	5.52076
Repeat: 2	-3.45614	-3.17819	-0.011784	0.700307	9.25078
Repeat: 3	-0.941992	-1.61778	0.133544	0.901072	12.7594
Element/Wavelength	V_3093	W_2397	Y_3195	Zn2138	Zr3438
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.0727421	-1.60416	i 0.0199346	0.447901	0.318251
Std Dev:	0.0561799	2.05447	0.159059	0.0671094	0.122792
%RSD:	77.2317	128.072	797.904	14.9831	38.5834
Repeat: 1	-0.0760346	-1.4207	-0.000269185	0.460184	0.2055
Repeat: 2	-0.0149883	-3.7442	0.18813	0.375499	0.449079
Repeat: 3	-0.127203	0.352433	-0.128057	0.508021	0.300173

Sample Name	Acquisition Date	Sample type	Correction Factor
S13T004254	6/3/2013 12:54:41 PM	Unknown	100.00
Autosampler Locations (rack/row/col)		**Analyst Name**	**Method Name**
1/3/4		awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Ag3280	Al3961	As1890	B_2497	Ba2335
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00493802	412.201	-0.0705827	0.0960105	0.00665564
Std Dev:	0.0632187	0.654739	0.100882	0.0331856	0.0332057
%RSD:	1280.24	0.15884	142.928	34.5645	498.912
Repeat: 1	0.0260937	412.324	-0.182908	0.133945	0.0218038
Repeat: 2	-0.0661455	411.493	0.0123105	0.0723534	-0.0314229
Repeat: 3	0.0548659	412.785	-0.0411509	0.0817328	0.029586
Element/Wavelength	Be2348	Bi2230	Ca1840	Cd2265	Ce5353
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00213369	0.0613781	2.25073	0.00471884	0.843556
Std Dev:	0.00384472	0.541074	0.0359049	0.00528602	0.621273
%RSD:	180.191	881.542	1.59525	112.02	73.6493
Repeat: 1	0.00602185	0.632425	2.27837	0.0101222	0.365847
Repeat: 2	-0.00166606	-0.00462401	2.21015	0.00447582	0.618918
Repeat: 3	0.00204529	-0.443667	2.26367	-0.000441477	1.5459

Element/Wavelength	Co2286	Cr2677	Cu3273	Eu3819	Fe2599
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.0344743	0.0293901	0.0301973	0.000787449	7.71358
Std Dev:	0.0186804	0.0191032	0.113932	0.00610293	0.0742463
%RSD:	54.1866	64.9989	377.292	775.026	0.962539
Repeat: 1	-0.0384786	0.0225448	0.0764991	0.00128357	7.78584
Repeat: 2	-0.0508278	0.0509728	-0.0995961	0.00662718	7.6375
Repeat: 3	-0.0141164	0.0146526	0.113689	-0.0055484	7.71741
Element/Wavelength	K_7664	La3794	Li6707	Mg2852	Mn2605
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	11930.6	0.0216848	-0.0244739	0.162176	0.0412646
Std Dev:	34.8846	0.070761	0.0276548	0.0205053	0.00923781
%RSD:	0.292395	326.316	112.997	12.6439	22.3868
Repeat: 1	11969.2	0.0614047	0.00692052	0.163017	0.0315877
Repeat: 2	11901.3	0.0636623	-0.045229	0.182248	0.0499895
Repeat: 3	11921.4	-0.0600126	-0.0351132	0.141263	0.0422167
Element/Wavelength	Mo2020	Na8183	Nb3194	Nd4012	Ni2216
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.0211168	99.6381	i -0.102167	-0.147649	1.3895
Std Dev:	0.0308717	2.06178	0.108763	0.258864	0.0459184
%RSD:	146.195	2.06927	106.457	175.324	3.30467
Repeat: 1	0.0518992	97.8709	-0.224046	0.145325	1.44163
Repeat: 2	0.0212948	99.1401	-0.0149874	-0.345472	1.35504
Repeat: 3	-0.00984352	101.903	-0.067466	-0.2428	1.37183
Element/Wavelength	P_1774	Pb2203	Pd3242	Pr4143	Rb7800
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	19.6793	0.78103	-0.0757567	-0.292578	2.63816
Std Dev:	0.142721	0.253905	0.0444327	0.304725	1.75067
%RSD:	0.725233	32.5089	58.6518	104.152	66.3596
Repeat: 1	19.7669	0.510844	-0.0699001	-0.607792	4.41598
Repeat: 2	19.7564	0.817547	-0.0345428	0.000446196	0.915964
Repeat: 3	19.5146	1.0147	-0.122827	-0.270388	2.58253
Element/Wavelength	Rh3434	Ru2402	S_1807	Sb2175	Se1960
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.217799	-0.0303564	0.336242	-0.0972473	0.525887
Std Dev:	0.367566	0.0744318	0.262149	0.188245	0.546707
%RSD:	168.764	245.193	77.9644	193.574	103.959
Repeat: 1	-0.173557	-0.0350444	0.204324	0.10774	-0.0346747
Repeat: 2	0.555726	0.0463085	0.638147	-0.262363	1.0576
Repeat: 3	0.271227	-0.102333	0.166256	-0.137118	0.554739
Element/Wavelength	Si2124	Sm3592	Sn1899	Sr2165	Ta2685
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	2.15707	-0.385765	-0.0130643	0.0799556	-0.221375
Std Dev:	0.132119	0.230193	0.0784924	0.10468	0.0511793
%RSD:	6.12494	59.6719	600.814	130.923	23.1188
Repeat: 1	2.2448	-0.396827	-1.10219e-005	0.0186205	-0.262073
Repeat: 2	2.22129	-0.610227	-0.0972651	0.0204208	-0.163917
Repeat: 3	2.00511	-0.15024	0.0580831	0.200825	-0.238135
Element/Wavelength	Te2142	Th2832	Ti3372	Tl1908	U_3859
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.280843	-0.208645	0.0362845	0.0311399	4.18216
Std Dev:	0.0876497	0.286345	0.0276416	0.158775	1.03826
%RSD:	31.2095	137.24	76.1803	509.875	24.826
Repeat: 1	-0.311044	-0.169028	0.00446401	-0.0277842	4.63854
Repeat: 2	-0.182087	-0.512736	0.0543517	0.210953	2.99388
Repeat: 3	-0.3494	0.0558282	0.0500378	-0.0897489	4.91406

Element/Wavelength	V_3093	W_2397	Y_3195	Zn2138	Zr3438
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.00437797	0.252307	i -0.0674572	0.186614	0.281641
Std Dev:	0.0344211	0.607901	0.0165536	0.00367942	0.019491
%RSD:	786.234	240.937	24.5395	1.97167	6.92049
Repeat: 1	0.0341326	0.860299	-0.0749497	0.183884	0.26027
Repeat: 2	-0.0151176	0.252126	-0.0789399	0.18516	0.298438
Repeat: 3	-0.0321489	-0.355503	-0.048482	0.190798	0.286216

Sample Name	Acquisition Date	Sample type	Correction Factor
S13T004254D	6/3/2013 12:59:29 PM	Unknown	100.00
Autosampler Locations (rack/row/col)		**Analyst Name**	**Method Name**
1/4/4		awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Ag3280	Al3961	As1890	B_2497	Ba2335
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.021518	396.963	0.303186	0.0537894	-0.00698795
Std Dev:	0.035284	1.382	0.0313784	0.0207294	0.0235286
%RSD:	163.974	0.348143	10.3496	38.5382	336.702
Repeat: 1	-0.0445027	395.626	0.305896	0.0775747	0.0198247
Repeat: 2	-0.0391589	396.877	0.270541	0.0442214	-0.0165988
Repeat: 3	0.0191074	398.386	0.333122	0.039572	-0.0241897
Element/Wavelength	Be2348	Bi2230	Ca1840	Cd2265	Ce5353
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00245957	0.632378	2.15142	0.0175887	0.073751
Std Dev:	0.00171291	0.0265835	0.0466713	0.0117551	0.875875
%RSD:	69.6426	4.20373	2.16932	66.8334	1187.61
Repeat: 1	0.00354098	0.662073	2.18994	0.0133275	0.235246
Repeat: 2	0.00335308	0.610797	2.09952	0.00855847	-0.871633
Repeat: 3	0.000484652	0.624265	2.1648	0.0308802	0.85764
Element/Wavelength	Co2286	Cr2677	Cu3273	Eu3819	Fe2599
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.0779722	-0.0102131	0.0900743	-0.004877	8.58447
Std Dev:	0.0382131	0.0228816	0.114815	0.00720608	0.0470877
%RSD:	49.0086	224.041	127.468	147.757	0.548522
Repeat: 1	-0.0962025	0.0121165	0.163328	-0.00094666	8.5301
Repeat: 2	-0.103656	-0.0336093	0.149145	-0.0131937	8.61196
Repeat: 3	-0.0340579	-0.00914651	-0.0422501	-0.000490635	8.61134
Element/Wavelength	K_7664	La3794	Li6707	Mg2852	Mn2605
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	11639.8	-0.00222709	-0.00110106	0.159979	0.0282738
Std Dev:	17.5852	0.0127626	0.0301329	0.013623	0.0045387
%RSD:	0.151079	573.061	2736.71	8.51547	16.0527
Repeat: 1	11621.8	0.0116492	-0.0088633	0.162124	0.0269045
Repeat: 2	11640.7	-0.013463	-0.0265934	0.172403	0.0333395
Repeat: 3	11656.9	-0.00486742	0.0321535	0.145411	0.0245774
Element/Wavelength	Mo2020	Na8183	Nb3194	Nd4012	Ni2216
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.0263305	115.59	i -0.216791	0.0643496	1.56501
Std Dev:	0.0132896	3.39714	0.0847888	0.0166747	0.0235433
%RSD:	50.4723	2.93895	39.1108	25.9127	1.50435
Repeat: 1	-0.0300703	115.63	-0.311582	0.0779763	1.53794
Repeat: 2	-0.0115717	112.174	-0.190614	0.0693167	1.58073
Repeat: 3	-0.0373495	118.967	-0.148178	0.0457557	1.57636

Element/Wavelength	P_1774	Pb2203	Pd3242	Pr4143	Rb7800
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	27.7462	0.614925	0.318383	-0.349332	4.19755
Std Dev:	0.119188	0.0717512	0.331007	0.581898	0.536501
%RSD:	0.429565	11.6683	103.965	166.575	12.7813
Repeat: 1	27.7006	0.634676	0.482458	-0.213954	4.62861
Repeat: 2	27.6566	0.535367	-0.0626107	0.152944	3.5967
Repeat: 3	27.8815	0.674732	0.535303	-0.986986	4.36736
Element/Wavelength	Rh3434	Ru2402	S_1807	Sb2175	Se1960
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.151544	-0.306368	-0.0673705	-0.213143	0.304396
Std Dev:	0.362201	0.0877772	0.144734	0.199794	0.676659
%RSD:	239.008	28.6509	214.832	93.7374	222.295
Repeat: 1	0.155345	-0.211675	0.0584585	-0.316854	0.416073
Repeat: 2	-0.212543	-0.385015	-0.225538	-0.339754	0.91827
Repeat: 3	0.511828	-0.322414	-0.0350322	0.017181	-0.421153
Element/Wavelength	Si2124	Sm3592	Sn1899	Sr2165	Ta2685
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	2.77589	-0.802106	-0.098501	0.11204	0.00149501
Std Dev:	0.283935	0.333995	0.0796959	0.083441	0.470808
%RSD:	10.2286	41.6397	80.9086	74.4743	31491.9
Repeat: 1	3.04157	-1.17167	-0.118572	0.184024	-0.518353
Repeat: 2	2.80944	-0.712812	-0.166243	0.020585	0.123655
Repeat: 3	2.47668	-0.521834	-0.0106882	0.131511	0.399183
Element/Wavelength	Te2142	Th2832	Ti3372	Tl1908	U_3859
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.00201837	-0.428988	0.0269127	0.350648	3.85232
Std Dev:	0.302376	0.0479093	0.00400254	0.259109	0.417548
%RSD:	14981.2	11.168	14.8723	73.8944	10.8389
Repeat: 1	-0.087798	-0.423525	0.0296415	0.178766	3.53839
Repeat: 2	-0.252237	-0.479395	0.0287787	0.224504	4.32619
Repeat: 3	0.33398	-0.384045	0.0223179	0.648674	3.69236
Element/Wavelength	V_3093	W_2397	Y_3195	Zn2138	Zr3438
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.00354358	-0.194365	i 0.0149385	0.118146	0.228555
Std Dev:	0.0247182	0.329868	0.0372998	0.0131275	0.0351003
%RSD:	697.549	169.716	249.689	11.1112	15.3575
Repeat: 1	0.0199572	-0.338956	0.0237172	0.113226	0.268694
Repeat: 2	-0.00126635	-0.427245	-0.0259676	0.133023	0.203619
Repeat: 3	-0.0293216	0.183108	0.0470659	0.10819	0.213353

Sample Name	Acquisition Date	Sample type	Correction Factor
S13T004254_A	6/3/2013 1:04:18 PM	Unknown	100.00
Autosampler Locations (rack/row/col)		**Analyst Name**	**Method Name**
1/5/4		awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Ag3280	Al3961	As1890	B_2497	Ba2335
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	187.441	1364.74	968.085	931.516	952.735
Std Dev:	0.277698	0.740174	3.86384	1.70403	3.21336
%RSD:	0.148153	0.0542354	0.399122	0.182931	0.337277
Repeat: 1	187.76	1364.22	963.678	933.025	949.374
Repeat: 2	187.303	1364.42	969.687	931.856	955.778
Repeat: 3	187.259	1365.59	970.89	929.668	953.053

Element/Wavelength	Be2348	Bi2230	Ca1840	Cd2265	Ce5353
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	938.33	937.873	927.017	952.261	920.866
Std Dev:	1.67811	2.33174	3.66344	3.42029	0.643672
%RSD:	0.17884	0.24862	0.395186	0.359175	0.0698985
Repeat: 1	939.802	935.26	923.965	949.374	921.125
Repeat: 2	938.686	939.742	931.08	956.039	921.339
Repeat: 3	936.503	938.616	926.007	951.37	920.133
Element/Wavelength	Co2286	Cr2677	Cu3273	Eu3819	Fe2599
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	956.759	946.164	960.674	931.928	947.226
Std Dev:	3.56766	1.14224	1.01651	7.95053	1.35876
%RSD:	0.37289	0.120723	0.105812	0.853127	0.143446
Repeat: 1	953.225	946.783	961.558	925.99	948.235
Repeat: 2	960.359	946.863	960.9	940.961	947.762
Repeat: 3	956.693	944.846	959.563	928.834	945.681
Element/Wavelength	K_7664	La3794	Li6707	Mg2852	Mn2605
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	12930.1	941.439	956.675	951.617	947.143
Std Dev:	10.9901	0.876156	21.812	1.02908	1.246
%RSD:	0.0849961	0.0930657	2.27998	0.10814	0.131553
Repeat: 1	12919	942.45	964.375	952.535	948.007
Repeat: 2	12930.3	940.938	932.057	951.812	947.708
Repeat: 3	12941	940.928	973.592	950.504	945.715
Element/Wavelength	Mo2020	Na8183	Nb3194	Nd4012	Ni2216
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	930.945	1016.96	i 933.599	925.421	961.328
Std Dev:	3.46718	6.86982	1.47786	0.809213	3.48527
%RSD:	0.372437	0.675525	0.158297	0.0874427	0.362547
Repeat: 1	927.882	1014.62	934.338	926.347	958.089
Repeat: 2	934.709	1024.69	934.562	924.846	965.016
Repeat: 3	930.243	1011.56	931.898	925.072	960.877
Element/Wavelength	P_1774	Pb2203	Pd3242	Pr4143	Rb7800
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	972.842	1010.84	933.206	905.912	925.073
Std Dev:	3.26152	3.86201	0.670477	1.04924	3.37874
%RSD:	0.335256	0.382059	0.0718466	0.115821	0.36524
Repeat: 1	971.519	1009.48	933.805	907.118	928.761
Repeat: 2	976.557	1015.2	933.333	905.207	924.33
Repeat: 3	970.45	1007.84	932.482	905.412	922.127
Element/Wavelength	Rh3434	Ru2402	S_1807	Sb2175	Se1960
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	910.756	899.898	969.214	1066.76	962.684
Std Dev:	0.87205	1.57928	3.94413	4.00571	4.90624
%RSD:	0.0957501	0.175495	0.406942	0.375501	0.509642
Repeat: 1	911.376	901.176	966.246	1064.54	957.518
Repeat: 2	909.759	900.386	973.689	1071.39	967.28
Repeat: 3	911.134	898.132	967.705	1064.37	963.254
Element/Wavelength	Si2124	Sm3592	Sn1899	Sr2165	Ta2685
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	966.263	926.824	904.672	952.406	949.388
Std Dev:	4.38714	1.26427	4.29157	2.79393	1.96617
%RSD:	0.454031	0.136409	0.474379	0.293355	0.207099
Repeat: 1	961.197	928.264	901.887	949.988	950.801
Repeat: 2	968.782	926.311	909.615	955.465	950.221
Repeat: 3	968.809	925.897	902.516	951.766	947.142

Element/Wavelength	Te2142	Th2832	Ti3372	Tl1908	U_3859
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	928.121	926.503	926.797	897.873	934.034
Std Dev:	4.74551	0.346547	0.658779	2.16476	2.58654
%RSD:	0.511303	0.0374037	0.0710812	0.241098	0.276921
Repeat: 1	922.994	926.885	927.428	895.466	936.972
Repeat: 2	932.36	926.415	926.85	898.493	932.098
Repeat: 3	929.007	926.209	926.113	899.66	933.032
Element/Wavelength	V_3093	W_2397	Y_3195	Zn2138	Zr3438
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	952.478	924.102	i 935.618	958.685	927.241
Std Dev:	0.865596	2.39074	0.685872	3.09733	1.44606
%RSD:	0.0908783	0.258709	0.0733068	0.323082	0.155953
Repeat: 1	953.002	926.674	935.253	955.282	928.907
Repeat: 2	952.953	921.948	936.409	961.34	926.495
Repeat: 3	951.479	923.683	935.192	959.431	926.32

Sample Name	Acquisition Date	Sample type	Correction Factor
S13T004282	6/3/2013 1:08:46 PM	Unknown	100.00
Autosampler Locations (rack/row/col)		**Analyst Name**	**Method Name**
1/6/4		awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Ag3280	Al3961	As1890	B_2497	Ba2335
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.644461	198.419	-0.00759096	0.711951	0.0591235
Std Dev:	0.16661	1.4978	0.101902	0.102041	0.0325045
%RSD:	25.8526	0.754866	1342.41	14.3325	54.9773
Repeat: 1	0.814266	199.844	0.0389193	0.787641	0.0689757
Repeat: 2	0.637878	198.556	-0.12445	0.752307	0.0855621
Repeat: 3	0.48124	196.857	0.0627575	0.595904	0.0228327
Element/Wavelength	Be2348	Bi2230	Ca1840	Cd2265	Ce5353
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00784219	-0.105601	3.54873	0.00781252	0.00650509
Std Dev:	0.00574369	0.209986	0.0815518	0.0136486	0.534463
%RSD:	73.2408	198.848	2.29805	174.702	8216.08
Repeat: 1	0.0143991	-0.347712	3.46667	-0.00742129	-0.610538
Repeat: 2	0.00370052	0.00400201	3.54977	0.0189269	0.324746
Repeat: 3	0.00542696	0.0269061	3.62976	0.0119319	0.305307
Element/Wavelength	Co2286	Cr2677	Cu3273	Eu3819	Fe2599
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.0255454	-0.0152072	0.239905	0.00881997	10.8647
Std Dev:	0.00436894	0.0216375	0.0401868	0.00358162	0.0747146
%RSD:	17.1027	142.284	16.7511	40.6081	0.687681
Repeat: 1	-0.0302389	-0.0144266	0.214848	0.0124263	10.9496
Repeat: 2	-0.0215967	-0.0372244	0.286258	0.00526359	10.8091
Repeat: 3	-0.0248006	0.00602939	0.218609	0.00877003	10.8355
Element/Wavelength	K_7664	La3794	Li6707	Mg2852	Mn2605
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	11618.9	0.019087	-0.0150548	0.264571	0.0623828
Std Dev:	139.497	0.0261362	0.0349001	0.017088	0.0228642
%RSD:	1.2006	136.932	231.821	6.45875	36.6515
Repeat: 1	11757.2	0.042123	-0.0212038	0.284144	0.0886513
Repeat: 2	11621.4	0.0244542	-0.0464717	0.252622	0.0515399
Repeat: 3	11478.2	-0.00931616	0.0225111	0.256947	0.0469573

Element/Wavelength	Mo2020	Na8183	Nb3194	Nd4012	Ni2216
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.0744121	176.941	i -0.130105	-0.0190932	2.67506
Std Dev:	0.0555015	3.5717	0.115212	0.0998732	0.0108347
%RSD:	74.5866	2.01858	88.5525	523.083	0.405026
Repeat: 1	0.0156124	180.927	-0.136422	0.0328234	2.68359
Repeat: 2	0.0817358	175.865	-0.242029	-0.134232	2.66286
Repeat: 3	0.125888	174.032	-0.0118653	0.0441291	2.67871
Element/Wavelength	P_1774	Pb2203	Pd3242	Pr4143	Rb7800
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	39.9147	1.03658	0.288005	0.243885	4.66754
Std Dev:	0.0372754	0.300409	0.419068	0.323998	1.38638
%RSD:	0.0933877	28.9806	145.507	132.848	29.7025
Repeat: 1	39.9573	1.22947	-0.109499	0.611403	5.20965
Repeat: 2	39.8883	1.18982	0.725735	0.120728	5.70094
Repeat: 3	39.8985	0.690458	0.247779	-0.000475669	3.09202
Element/Wavelength	Rh3434	Ru2402	S_1807	Sb2175	Se1960
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.490861	0.107585	0.200486	-0.265584	0.736525
Std Dev:	0.083106	0.335159	0.215686	0.500185	0.392744
%RSD:	16.9307	311.529	107.582	188.334	53.324
Repeat: 1	0.4914	-0.277413	0.0956353	-0.557019	1.0473
Repeat: 2	0.407487	0.265973	0.0572696	0.311972	0.867172
Repeat: 3	0.573696	0.334196	0.448552	-0.551704	0.295107
Element/Wavelength	Si2124	Sm3592	Sn1899	Sr2165	Ta2685
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	7.05726	-1.08816	0.030923	0.105856	-0.138033
Std Dev:	1.73054	0.194418	0.225232	0.0594988	0.332281
%RSD:	24.5215	17.8666	728.364	56.2075	240.726
Repeat: 1	9.00764	-0.921491	0.278873	0.125458	0.138818
Repeat: 2	6.45863	-1.30174	-0.161022	0.15308	-0.506514
Repeat: 3	5.7055	-1.04125	-0.0250818	0.0390287	-0.046403
Element/Wavelength	Te2142	Th2832	Ti3372	Tl1908	U_3859
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.0791536	0.0309038	0.0335727	0.293624	9.95241
Std Dev:	0.23656	0.12043	0.0156027	0.406504	0.644542
%RSD:	298.862	389.694	46.4743	138.444	6.47624
Repeat: 1	-0.3523	0.127911	0.017087	0.174503	10.5764
Repeat: 2	0.0594322	0.0686883	0.0481092	-0.0400111	9.2891
Repeat: 3	0.0554065	-0.103888	0.035522	0.746381	9.99176
Element/Wavelength	V_3093	W_2397	Y_3195	Zn2138	Zr3438
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.00565133	-0.383389	i 0.0044526	0.0781907	0.368654
Std Dev:	0.0104891	0.301274	0.0728154	0.0190782	0.0244955
%RSD:	185.603	78.5817	1635.35	24.3995	6.64458
Repeat: 1	-0.0176836	-0.0586549	0.0767477	0.0634183	0.366794
Repeat: 2	0.00156397	-0.437698	-0.0688721	0.09973	0.345142
Repeat: 3	-0.000834334	-0.653814	0.0054822	0.0714239	0.394027

Sample Name	Acquisition Date	Sample type	Correction Factor
S13T004309	6/3/2013 1:13:34 PM	Unknown	100.00
Autosampler Locations (rack/row/col)		**Analyst Name**	**Method Name**
1/7/4		awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Ag3280	Al3961	As1890	B_2497	Ba2335
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.108455	330.847	-0.017991	0.399091	0.02024
Std Dev:	0.102886	6.59983	0.0860951	0.0286334	0.0261661
%RSD:	94.8654	1.99482	478.545	7.17465	129.279
Repeat: 1	0.17025	325.662	0.056351	0.430416	0.019933
Repeat: 2	0.165429	328.604	0.00199843	0.39259	0.0465583
Repeat: 3	-0.0103152	338.277	-0.112322	0.374267	-0.00577131
Element/Wavelength	**Be2348**	**Bi2230**	**Ca1840**	**Cd2265**	**Ce5353**
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00398969	0.820334	2.40151	-0.0133021	0.779063
Std Dev:	0.00361045	0.262244	0.106446	0.019427	0.964426
%RSD:	90.4946	31.968	4.43244	146.045	123.793
Repeat: 1	0.000117221	1.11445	2.51352	-0.0125511	0.548591
Repeat: 2	0.00458863	0.735676	2.30167	-0.0330938	1.83784
Repeat: 3	0.00726322	0.610875	2.38935	0.0057385	-0.0492481
Element/Wavelength	**Co2286**	**Cr2677**	**Cu3273**	**Eu3819**	**Fe2599**
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.0266753	-0.0217014	0.105115	0.00088079	11.7999
Std Dev:	0.0457954	0.0887022	0.0441617	0.00780709	0.0658803
%RSD:	171.677	408.74	42.0128	886.373	0.558315
Repeat: 1	-0.00186891	0.0430118	0.143465	0.00918175	11.7339
Repeat: 2	0.00136527	-0.122813	0.0568329	-0.00631454	11.8
Repeat: 3	-0.0795223	0.014697	0.115047	-0.000224844	11.8657
Element/Wavelength	**K_7664**	**La3794**	**Li6707**	**Mg2852**	**Mn2605**
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	11412.1	-0.00366697	0.00249608	0.201953	0.0540463
Std Dev:	240.657	0.0557281	0.00987272	0.0115648	0.00926622
%RSD:	2.10878	1519.73	395.529	5.72649	17.145
Repeat: 1	11226.7	-0.0467738	-0.00142938	0.212318	0.0636195
Repeat: 2	11325.6	0.0592624	0.0137278	0.189479	0.0533984
Repeat: 3	11684.1	-0.0234895	-0.00481016	0.204061	0.0451211
Element/Wavelength	**Mo2020**	**Na8183**	**Nb3194**	**Nd4012**	**Ni2216**
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.0356245	134.634	i -0.0824364	0.18777	2.11802
Std Dev:	0.0443854	2.01638	0.194822	0.160312	0.080412
%RSD:	124.593	1.49767	236.33	85.3768	3.79657
Repeat: 1	0.0222182	132.988	-0.274483	0.352787	2.11823
Repeat: 2	-0.000512477	134.031	-0.0878737	0.0326181	2.19833
Repeat: 3	0.0851677	136.884	0.115047	0.177905	2.0375
Element/Wavelength	**P_1774**	**Pb2203**	**Pd3242**	**Pr4143**	**Rb7800**
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	25.339	0.830152	0.549461	-0.211274	4.09089
Std Dev:	0.223225	0.361539	0.400193	0.355637	0.673209
%RSD:	0.880953	43.5509	72.8337	168.33	16.4563
Repeat: 1	25.5298	1.23717	0.0910189	-0.400689	4.81792
Repeat: 2	25.0935	0.707032	0.828955	-0.432111	3.48909
Repeat: 3	25.3937	0.546254	0.72841	0.19898	3.96564

Element/Wavelength	Rh3434	Ru2402	S_1807	Sb2175	Se1960
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.163572	0.117884	0.170898	-0.100449	0.0353649
Std Dev:	0.447212	0.153301	0.136044	0.239363	0.139682
%RSD:	273.404	130.045	79.6054	238.292	394.974
Repeat: 1	-0.325035	0.278729	0.137625	-0.115359	0.175612
Repeat: 2	0.552602	-0.026554	0.0545765	0.14602	0.0342279
Repeat: 3	0.263148	0.101476	0.320491	-0.332009	-0.103745
Element/Wavelength	Si2124	Sm3592	Sn1899	Sr2165	Ta2685
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	2.19597	-1.21399	-0.0481031	0.0638936	-0.0207062
Std Dev:	0.0425947	0.646981	0.130565	0.0801919	0.266457
%RSD:	1.93968	53.2936	271.428	125.508	1286.84
Repeat: 1	2.24428	-1.68532	-0.19651	0.146413	0.266828
Repeat: 2	2.17977	-1.4803	0.0490976	0.0590153	-0.0696466
Repeat: 3	2.16384	-0.47636	0.00310306	-0.0137477	-0.259301
Element/Wavelength	Te2142	Th2832	Ti3372	Tl1908	U_3859
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.123135	-0.218684	0.0369727	0.0907486	4.16322
Std Dev:	0.335441	0.231264	0.0103114	0.168349	1.36076
%RSD:	272.416	105.753	27.8892	185.511	32.6852
Repeat: 1	0.0915275	-0.396317	0.0254414	-0.101055	5.6013
Repeat: 2	0.0487472	0.0428117	0.0401701	0.159265	2.8959
Repeat: 3	-0.509681	-0.302545	0.0453067	0.214036	3.99246
Element/Wavelength	V_3093	W_2397	Y_3195	Zn2138	Zr3438
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.00845972	-0.699852	i -0.0343509	0.111975	0.468216
Std Dev:	0.00694445	0.180647	0.077742	0.00332344	0.0364872
%RSD:	82.0883	25.8121	226.317	2.96802	7.79283
Repeat: 1	-0.0137114	-0.867491	-0.0421801	0.109187	0.435032
Repeat: 2	-0.0110818	-0.508533	0.0470094	0.111084	0.462325
Repeat: 3	-0.000586	-0.723531	-0.107882	0.115653	0.50729

Sample Name	Acquisition Date	Sample type	Correction Factor
CCV A	6/3/2013 1:18:21 PM	QC	1.00
Autosampler Locations (rack/row/col)		**Analyst Name**	**Method Name**
1/1/2		awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Ag3280	Al3961	As1890	B_2497	Ba2335
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.99681	4.84947	4.93798	4.80415	5.02133
Std Dev:	0.00339577	0.0165158	0.00927293	0.0235755	0.00526155
%RSD:	0.340664	0.340568	0.187788	0.490732	0.104784
Repeat: 1	0.999888	4.86758	4.92862	4.8295	5.01714
Repeat: 2	0.997375	4.84557	4.94716	4.80005	5.01961
Repeat: 3	0.993168	4.83525	4.93815	4.78289	5.02723
Element/Wavelength	Be2348	Bi2230	Ca1840	Cd2265	Ce5353
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.99186	4.94724	5.0226	4.99128	0.0338317
Std Dev:	0.0212176	0.0115046	0.00830719	0.00837068	0.00126926
%RSD:	0.425044	0.232546	0.165396	0.167706	3.7517
Repeat: 1	5.0157	4.93415	5.01354	4.98198	0.0344494
Repeat: 2	4.98485	4.95574	5.02441	4.99822	0.0323718
Repeat: 3	4.97504	4.95183	5.02985	4.99363	0.0346738

Element/Wavelength	Co2286	Cr2677	Cu3273	Eu3819	Fe2599
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	5.01529	4.97037	4.9405	-0.000303203	4.98245
Std Dev:	0.00619095	0.018884	0.0167347	9.11168e-005	0.0208687
%RSD:	0.123442	0.379931	0.338725	30.0514	0.418843
Repeat: 1	5.00894	4.99217	4.95873	-0.000242453	5.00655
Repeat: 2	5.01562	4.95988	4.93694	-0.000259185	4.97035
Repeat: 3	5.02131	4.95906	4.92584	-0.000407971	4.97046
Element/Wavelength	K_7664	La3794	Li6707	Mg2852	Mn2605
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.98524	4.95648	5.1736	4.97392	4.98773
Std Dev:	0.0114891	0.0250537	0.00883574	0.0170457	0.0254568
%RSD:	0.230462	0.505474	0.170785	0.342701	0.510389
Repeat: 1	4.99845	4.98532	5.18296	4.99307	5.01691
Repeat: 2	4.97758	4.94408	5.17244	4.96827	4.97626
Repeat: 3	4.97969	4.94004	5.1654	4.96041	4.97003
Element/Wavelength	Mo2020	Na8183	Nb3194	Nd4012	Ni2216
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.84865	4.97841	i 0.00126923	-0.00698883	5.02532
Std Dev:	0.0110583	0.0208432	0.000301494	0.000205769	0.00762834
%RSD:	0.228069	0.418672	23.7541	2.94425	0.151798
Repeat: 1	4.83705	4.999	0.00101702	-0.00707505	5.01693
Repeat: 2	4.85907	4.97891	0.00160316	-0.00713746	5.0272
Repeat: 3	4.84983	4.95733	0.00118751	-0.00675397	5.03183
Element/Wavelength	P_1774	Pb2203	Pd3242	Pr4143	Rb7800
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.89069	5.02061	0.0139483	-0.0349789	0.0435852
Std Dev:	0.0173373	0.0114022	0.00407245	0.00202122	0.0183097
%RSD:	0.354497	0.227107	29.1968	5.7784	42.009
Repeat: 1	4.87885	5.00809	0.0120392	-0.0373052	0.0643004
Repeat: 2	4.91059	5.02336	0.0186245	-0.0339795	0.0368893
Repeat: 3	4.88262	5.03039	0.011181	-0.0336521	0.029566
Element/Wavelength	Rh3434	Ru2402	S_1807	Sb2175	Se1960
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.00201937	0.000620274	4.89506	4.83595	4.9433
Std Dev:	0.00209958	0.00257083	0.0159796	0.00690103	0.0147497
%RSD:	103.972	414.467	0.326444	0.142703	0.298377
Repeat: 1	-0.00411158	-0.00139967	4.88083	4.83156	4.93459
Repeat: 2	8.7512e-005	0.00351414	4.89201	4.8439	4.96033
Repeat: 3	-0.00203404	-0.000253642	4.91235	4.83238	4.93498
Element/Wavelength	Si2124	Sm3592	Sn1899	Sr2165	Ta2685
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.91405	-0.00894787	-0.00176458	5.03003	-0.0189474
Std Dev:	0.00103126	0.00107522	0.00200844	0.00294063	0.00397146
%RSD:	0.020986	12.0165	113.82	0.0584614	20.9604
Repeat: 1	4.91524	-0.00860582	-0.00313056	5.03263	-0.0144256
Repeat: 2	4.91337	-0.0101525	0.000541502	5.02684	-0.020547
Repeat: 3	4.91355	-0.00808529	-0.00270467	5.03062	-0.0218696

Element/Wavelength	Te2142	Th2832	Ti3372	Tl1908	U_3859
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00711805	-0.0373937	4.81918	0.0224669	0.0296481
Std Dev:	0.00128442	0.00292584	0.0241576	0.00453104	0.0114641
%RSD:	18.0446	7.82441	0.50128	20.1677	38.6673
Repeat: 1	0.00625148	-0.039564	4.84647	0.0276664	0.0170286
Repeat: 2	0.0085937	-0.0340663	4.81056	0.0193629	0.0394202
Repeat: 3	0.00650895	-0.0385509	4.80052	0.0203714	0.0324954

Element/Wavelength	V_3093	W_2397	Y_3195	Zn2138	Zr3438
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.94371	-0.00471126	i -0.000902306	4.99035	4.82793
Std Dev:	0.0236893	0.00601891	0.00103884	0.00660117	0.0241594
%RSD:	0.47918	127.756	115.131	0.132279	0.500409
Repeat: 1	4.97004	-0.00169611	-0.00147686	4.98368	4.85546
Repeat: 2	4.93696	-0.000795837	0.000296892	4.99049	4.81025
Repeat: 3	4.92413	-0.0116418	-0.00152695	4.99688	4.81809

Sample Name	Acquisition Date	Sample type	Correction Factor
CCV B	6/3/2013 1:22:39 PM	QC	1.00
Autosampler Locations (rack/row/col)		**Analyst Name**	**Method Name**
1/2/2		awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Ag3280	Al3961	As1890	B_2497	Ba2335
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00345989	0.0382364	0.00051449	0.00449468	0.00448776
Std Dev:	0.00152216	0.00249778	0.00329833	0.000651693	9.16032e-005
%RSD:	43.9945	6.53246	641.087	14.4992	2.04118
Repeat: 1	0.00493183	0.0411202	0.00298164	0.00513535	0.00441313
Repeat: 2	0.00189204	0.0368335	0.00179366	0.00451619	0.00458999
Repeat: 3	0.00355579	0.0367555	-0.00323182	0.0038325	0.00446016
Element/Wavelength	Be2348	Bi2230	Ca1840	Cd2265	Ce5353
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	7.65353e-005	-0.0574822	-0.160584	-0.000482321	4.76355
Std Dev:	3.78986e-005	0.00283667	0.00137586	0.000148355	0.0206617
%RSD:	49.5178	4.93487	0.856786	30.7586	0.433746
Repeat: 1	0.000119452	-0.0602399	-0.16208	-0.000581002	4.73986
Repeat: 2	6.24859e-005	-0.0545726	-0.159373	-0.000311713	4.77783
Repeat: 3	4.76676e-005	-0.0576341	-0.1603	-0.000554247	4.77297
Element/Wavelength	Co2286	Cr2677	Cu3273	Eu3819	Fe2599
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.00164383	0.00121244	0.0353507	4.92871	-0.0439216
Std Dev:	0.000222843	0.000113706	0.00106554	0.0235915	0.000313725
%RSD:	13.5563	9.37829	3.0142	0.478653	0.714283
Repeat: 1	-0.00187203	0.00128351	0.0353704	4.90147	-0.0442795
Repeat: 2	-0.00163272	0.00127251	0.0364062	4.94222	-0.043694
Repeat: 3	-0.00142675	0.00108129	0.0342754	4.94245	-0.0437914
Element/Wavelength	K_7664	La3794	Li6707	Mg2852	Mn2605
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.0247462	-0.00589234	0.00829673	0.000315979	-0.000902828
Std Dev:	0.00855958	0.000167875	0.000318856	0.000340237	0.000168175
%RSD:	34.5894	2.84903	3.84315	107.677	18.6275
Repeat: 1	0.0342017	-0.00608225	0.00847509	0.000706054	-0.00109327
Repeat: 2	0.0225109	-0.00583101	0.00848649	0.000161468	-0.000840485
Repeat: 3	0.0175261	-0.00576375	0.00792861	8.04145e-005	-0.000774728
Element/Wavelength	Mo2020	Na8183	Nb3194	Nd4012	Ni2216
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.000879846	-0.313205	i 4.76642	4.85583	0.00956883
Std Dev:	0.000637398	0.0359088	0.0151013	0.0247945	0.000453643
%RSD:	72.4442	11.4649	0.316827	0.510613	4.74084
Repeat: 1	0.0011302	-0.273009	4.749	4.82878	0.00985263
Repeat: 2	0.00135406	-0.342116	4.77441	4.87748	0.00980823
Repeat: 3	0.000155279	-0.32449	4.77584	4.86122	0.00904564

Element/Wavelength	P_1774	Pb2203	Pd3242	Pr4143	Rb7800
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.00360789	0.285105	4.90048	4.75582	4.82719
Std Dev:	0.000312025	0.00458489	0.0101335	0.0448705	0.0262287
%RSD:	8.64839	1.60814	0.206786	0.943486	0.543353
Repeat: 1	-0.00328243	0.289885	4.88927	4.70577	4.7972
Repeat: 2	-0.00363677	0.284688	4.90318	4.79245	4.83854
Repeat: 3	-0.00390447	0.280743	4.909	4.76923	4.84584
Element/Wavelength	Rh3434	Ru2402	S_1807	Sb2175	Se1960
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.77898	4.74495	0.0154787	0.618707	0.00274257
Std Dev:	0.0306907	0.0258593	0.00262808	0.00241972	0.00359503
%RSD:	0.642203	0.544986	16.9787	0.391094	131.083
Repeat: 1	4.74484	4.7151	0.0169438	0.6215	-0.00019165
Repeat: 2	4.78778	4.76062	0.0124446	0.617258	0.00166664
Repeat: 3	4.8043	4.75913	0.0170476	0.617362	0.00675271
Element/Wavelength	Si2124	Sm3592	Sn1899	Sr2165	Ta2685
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.194628	4.84001	4.68757	-0.0056211	4.89747
Std Dev:	0.0109574	0.0155321	0.0352311	0.00157736	0.0142517
%RSD:	5.6299	0.32091	0.751585	28.0614	0.291002
Repeat: 1	0.181991	4.82214	4.72647	-0.00743161	4.8822
Repeat: 2	0.20041	4.85023	4.65781	-0.00454381	4.89977
Repeat: 3	0.201484	4.84767	4.67844	-0.00488787	4.91043
Element/Wavelength	Te2142	Th2832	Ti3372	Tl1908	U_3859
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.73875	4.83885	-0.00390461	4.76508	4.8381
Std Dev:	0.0105875	0.0136	7.77713e-005	0.0330754	0.0137164
%RSD:	0.223425	0.281059	1.99178	0.694119	0.283507
Repeat: 1	4.75081	4.82534	-0.00385563	4.79716	4.82309
Repeat: 2	4.73099	4.83866	-0.00386392	4.73109	4.84998
Repeat: 3	4.73445	4.85254	-0.00399429	4.767	4.84123
Element/Wavelength	V_3093	W_2397	Y_3195	Zn2138	Zr3438
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00398812	4.75227	i 4.81811	-0.00880009	0.00165
Std Dev:	0.000101282	0.00683278	0.0200623	0.000323757	0.000404561
%RSD:	2.5396	0.143779	0.416394	3.67902	24.5188
Repeat: 1	0.00392798	4.74595	4.79504	-0.00914489	0.00170242
Repeat: 2	0.00393133	4.75132	4.83144	-0.00875281	0.0020258
Repeat: 3	0.00410506	4.75952	4.82785	-0.00850258	0.00122179

Sample Name	Acquisition Date	Sample type	Correction Factor
CCB	6/3/2013 1:27:17 PM	QC	1.00
Autosampler Locations (rack/row/col)		**Analyst Name**	**Method Name**
1/6/2		awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Ag3280	Al3961	As1890	B_2497	Ba2335
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.000416076	-0.000750632	-0.000754226	0.00280587	-2.93848e-006
Std Dev:	0.000519116	0.00147673	0.000836241	0.000606168	0.000166904
%RSD:	124.765	196.732	110.874	21.6035	5679.94
Repeat: 1	0.000146526	-0.000890353	-0.000273245	0.00316783	-0.000153722
Repeat: 2	-0.000876515	-0.00215254	-0.000269602	0.00210607	0.000176401
Repeat: 3	-0.000518238	0.000790996	-0.00171983	0.00314373	-3.14944e-005

Element/Wavelength	Be2348	Bi2230	Ca1840	Cd2265	Ce5353
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-2.9181e-005	0.00150535	-0.000616087	-3.07059e-005	-0.00494528
Std Dev:	1.96926e-005	0.00301214	0.000938918	0.000224192	0.00915182
%RSD:	67.4844	200.095	152.4	730.127	185.062
Repeat: 1	-3.87149e-005	-0.00197137	-0.00135569	-1.82761e-005	0.00562234
Repeat: 2	-6.53588e-006	0.00332894	0.000440232	0.000187013	-0.0102249
Repeat: 3	-4.22921e-005	0.00315848	-0.000932798	-0.000260855	-0.0102332
Element/Wavelength	Co2286	Cr2677	Cu3273	Eu3819	Fe2599
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-6.43664e-005	-7.17428e-005	-0.000118142	3.2034e-006	-0.000387992
Std Dev:	0.000195787	9.90554e-005	0.00110093	0.000149994	0.000293652
%RSD:	304.177	138.07	931.872	4682.33	75.685
Repeat: 1	-7.26385e-005	4.24283e-005	0.000583619	0.000154181	-0.000504999
Repeat: 2	-0.000255887	-0.000122854	0.000448966	-0.000145787	-5.3874e-005
Repeat: 3	0.000135426	-0.000134802	-0.00138701	1.21589e-006	-0.000605104
Element/Wavelength	K_7664	La3794	Li6707	Mg2852	Mn2605
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.0202254	3.69526e-005	-0.000178856	-0.00042649	-0.00010994
Std Dev:	0.00899961	0.000300312	0.000291739	0.000128446	2.59721e-005
%RSD:	44.4965	812.695	163.114	30.117	23.6238
Repeat: 1	0.0306056	0.000379786	-7.89974e-006	-0.000345792	-0.000134332
Repeat: 2	0.0146082	-0.00017959	-1.29534e-005	-0.000574609	-0.000112855
Repeat: 3	0.0154625	-8.93375e-005	-0.000515715	-0.00035907	-8.26339e-005
Element/Wavelength	Mo2020	Na8183	Nb3194	Nd4012	Ni2216
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.000329114	-0.0950546	i 0.000162411	-0.000326766	-0.000569813
Std Dev:	0.000436032	0.0548723	0.00171855	0.00114645	0.000270007
%RSD:	132.486	57.7272	1058.14	350.847	47.3852
Repeat: 1	-0.000165015	-0.119122	-0.00028943	-0.00162544	-0.00077829
Repeat: 2	0.000659852	-0.13378	-0.00128507	0.00010025	-0.000666339
Repeat: 3	0.000492506	-0.0322612	0.00206174	0.000544894	-0.000264809
Element/Wavelength	P_1774	Pb2203	Pd3242	Pr4143	Rb7800
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.000640736	0.000235778	0.00119535	0.00111416	-0.00559563
Std Dev:	0.000635846	0.00161974	0.00248747	0.0036666	0.0102769
%RSD:	99.2368	686.976	208.096	329.091	183.659
Repeat: 1	-0.00088278	-0.00150406	-0.000915796	-0.000980338	0.00139637
Repeat: 2	8.05868e-005	0.00170006	0.00393757	0.0053479	-0.000788097
Repeat: 3	-0.00112001	0.000511329	0.000564265	-0.00102509	-0.0173952
Element/Wavelength	Rh3434	Ru2402	S_1807	Sb2175	Se1960
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00319045	-0.000509999	0.0011043	-0.00102886	0.00685694
Std Dev:	0.00483023	0.000486203	0.00269302	0.00566142	0.00262276
%RSD:	151.397	95.3341	243.868	550.26	38.2497
Repeat: 1	0.00873007	-0.000452554	-0.000721554	-0.00645942	0.00669157
Repeat: 2	0.000982319	-0.00102237	0.00419715	0.00483816	0.00955846
Repeat: 3	-0.000141056	-5.50704e-005	-0.000162703	-0.00146533	0.00432077
Element/Wavelength	Si2124	Sm3592	Sn1899	Sr2165	Ta2685
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00359199	-0.00069239	5.85067e-005	-2.80268e-006	0.00102022
Std Dev:	0.00419003	0.0020404	0.00153922	0.000399835	0.000924852
%RSD:	116.649	294.69	2630.85	14266.2	90.6522
Repeat: 1	0.00637907	-0.00281466	-0.00143192	0.000383001	0.00148133
Repeat: 2	0.00562343	-0.000517393	0.00164228	2.39181e-005	-4.45318e-005
Repeat: 3	-0.00122652	0.00125488	-3.48476e-005	-0.000415328	0.00162386

Element/Wavelength	Te2142	Th2832	Ti3372	Tl1908	U_3859
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.00149713	-0.00300942	-0.000136155	0.000939376	0.0104234
Std Dev:	0.00179624	0.00165541	0.000172187	0.00383048	0.00759584
%RSD:	119.98	55.0078	126.464	407.768	72.8729
Repeat: 1	-0.00182786	-0.00442536	-0.000328094	-0.00303853	0.00286878
Repeat: 2	-0.00310502	-0.00341353	-8.51067e-005	0.00125358	0.0180598
Repeat: 3	0.000441502	-0.00118936	4.7359e-006	0.00460307	0.0103417
Element/Wavelength	V_3093	W_2397	Y_3195	Zn2138	Zr3438
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	7.14565e-005	-0.000643838	i -0.000296091	0.000405051	0.000221024
Std Dev:	0.000230866	0.00367585	0.00082425	0.000148949	9.14234e-005
%RSD:	323.086	570.928	278.377	36.7729	41.3635
Repeat: 1	-9.25533e-005	-0.00365732	-0.000540113	0.000384173	0.000125623
Repeat: 2	-2.85402e-005	-0.00172575	0.000622618	0.000563338	0.000307868
Repeat: 3	0.000335463	0.00345155	-0.000970779	0.000267643	0.000229582

Sample Name	Acquisition Date	Sample type	Correction Factor
ICSA	6/3/2013 1:32:06 PM	QC	1.00
Autosampler Locations (rack/row/col)		**Analyst Name**	**Method Name**
1/7/1		awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Ag3280	Al3961	As1890	B_2497	Ba2335
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00133158	191.065	0.00666664	0.0608821	0.00164186
Std Dev:	0.00254524	1.44252	0.00112173	0.00246119	0.000737172
%RSD:	191.144	0.75499	16.826	4.04255	44.8985
Repeat: 1	0.00121728	189.412	0.00795689	0.0584204	0.00147729
Repeat: 2	-0.00115458	192.072	0.00592294	0.0608832	0.00100089
Repeat: 3	0.00393205	191.709	0.00612008	0.0633428	0.00244741
Element/Wavelength	Be2348	Bi2230	Ca1840	Cd2265	Ce5353
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00150814	0.0178835	173.878	-0.00383501	-0.733378
Std Dev:	4.71501e-005	0.00319047	0.780888	0.000274568	0.0141606
%RSD:	3.12637	17.8404	0.449101	7.15951	1.93088
Repeat: 1	0.00151785	0.0187144	174.107	-0.00375415	-0.722254
Repeat: 2	0.00154969	0.0205763	174.519	-0.00360995	-0.728562
Repeat: 3	0.0014569	0.0143597	173.008	-0.00414093	-0.749319
Element/Wavelength	Co2286	Cr2677	Cu3273	Eu3819	Fe2599
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00167117	0.000763397	-0.00737134	-0.000279362	167.117
Std Dev:	0.000405182	0.000554977	0.000544028	1.97459e-005	1.61313
%RSD:	24.2454	72.6983	7.38032	7.06819	0.965274
Repeat: 1	0.00167229	0.000929776	-0.00689399	-0.000286272	166.725
Repeat: 2	0.00207579	0.000144262	-0.00796367	-0.00025709	165.736
Repeat: 3	0.00126543	0.00121615	-0.00725638	-0.000294725	168.89
Element/Wavelength	K_7664	La3794	Li6707	Mg2852	Mn2605
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.146739	-0.00740968	0.00595979	155.853	0.00919367
Std Dev:	0.0137339	0.000247605	0.000160175	0.929527	0.00103057
%RSD:	9.35936	3.34164	2.68759	0.596414	11.2096
Repeat: 1	-0.153244	-0.00729248	0.00614126	156.804	0.00856675
Repeat: 2	-0.130962	-0.00724244	0.00589998	155.808	0.00863118
Repeat: 3	-0.156012	-0.00769413	0.00583813	154.947	0.0103831

Element/Wavelength	Mo2020	Na8183	Nb3194	Nd4012	Ni2216
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.000374425	198.539	i 0.0227485	0.0116342	0.00663328
Std Dev:	0.000908528	0.259486	0.00118601	0.00143927	0.000350345
%RSD:	242.646	0.130698	5.21356	12.371	5.28163
Repeat: 1	-0.000610017	198.488	0.0213919	0.0101198	0.00688626
Repeat: 2	0.000552673	198.82	0.0235891	0.0129843	0.00678017
Repeat: 3	0.00118062	198.309	0.0232645	0.0117985	0.0062334
Element/Wavelength	P_1774	Pb2203	Pd3242	Pr4143	Rb7800
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00905196	0.00104611	-0.00888422	-0.044201	-0.00369044
Std Dev:	0.0025685	0.00651572	0.00373899	0.00656575	0.00288249
%RSD:	28.3751	622.85	42.0857	14.8543	78.107
Repeat: 1	0.00853001	0.00679301	-0.00890834	-0.0495269	-0.00449309
Repeat: 2	0.0118413	-0.00603263	-0.00513323	-0.0368653	-0.00608655
Repeat: 3	0.00678452	0.00237797	-0.0126111	-0.0462109	-0.000491693
Element/Wavelength	Rh3434	Ru2402	S_1807	Sb2175	Se1960
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00187409	-0.0249966	-0.0287093	-0.047915	0.00102779
Std Dev:	0.00311338	0.00109881	0.00348971	0.00829364	0.0048483
%RSD:	166.127	4.39581	12.1553	17.3091	471.719
Repeat: 1	0.0010534	-0.0261932	-0.0327317	-0.0419296	-0.000283742
Repeat: 2	-0.000746732	-0.024033	-0.026907	-0.0444335	-0.00302981
Repeat: 3	0.00531561	-0.0247637	-0.0264893	-0.057382	0.00639693
Element/Wavelength	Si2124	Sm3592	Sn1899	Sr2165	Ta2685
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.00803302	-0.0237199	-0.00245272	0.0173134	0.0239417
Std Dev:	0.00392711	0.00292621	0.00121707	0.000962313	0.00157479
%RSD:	48.8871	12.3365	49.621	5.5582	6.57759
Repeat: 1	-0.0125396	-0.0260173	-0.00222877	0.0171244	0.0232371
Repeat: 2	-0.0053436	-0.0204255	-0.00376622	0.0183562	0.0228422
Repeat: 3	-0.00621586	-0.0247169	-0.00136319	0.0164596	0.0257458
Element/Wavelength	Te2142	Th2832	Ti3372	Tl1908	U_3859
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.0119517	0.181872	0.000906465	-0.00330593	0.254496
Std Dev:	0.00710647	0.00529685	0.000320931	0.00335014	0.0189117
%RSD:	59.46	2.9124	35.4046	101.337	7.43102
Repeat: 1	-0.0145878	0.184302	0.00124426	-0.00642303	0.242163
Repeat: 2	-0.0173634	0.185519	0.000605593	-0.00373138	0.27627
Repeat: 3	-0.00390382	0.175797	0.000869542	0.000236607	0.245057
Element/Wavelength	V_3093	W_2397	Y_3195	Zn2138	Zr3438
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.0133036	-0.00181296	i -0.001403	0.00352158	0.00452247
Std Dev:	0.00112232	0.0094264	0.000515023	0.000160994	0.000292425
%RSD:	8.43625	519.945	36.7086	4.57166	6.46604
Repeat: 1	0.0122136	-0.00553943	-0.00102527	0.00369266	0.00420387
Repeat: 2	0.0132415	-0.00880649	-0.00119407	0.00349903	0.00477863
Repeat: 3	0.0144557	0.00890703	-0.00198966	0.00337305	0.00458492

Sample Name	Acquisition Date	Sample type	Correction Factor
ICSAB	6/3/2013 1:37:17 PM	QC	1.00
Autosampler Locations (rack/row/col)		**Analyst Name**	**Method Name**
1/8/1		awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Ag3280	Al3961	As1890	B_2497	Ba2335
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.926168	185.055	4.44729	0.934192	0.854841
Std Dev:	0.00390594	4.80818	0.00253446	0.00662678	0.00180956
%RSD:	0.421731	2.59825	0.0569888	0.709359	0.211684
Repeat: 1	0.930254	190.57	4.44992	0.941842	0.855775
Repeat: 2	0.925781	181.742	4.44708	0.930526	0.855994
Repeat: 3	0.922471	182.852	4.44487	0.930208	0.852756
Element/Wavelength	Be2348	Bi2230	Ca1840	Cd2265	Ce5353
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.0892288	4.40155	163.892	0.157477	-0.629192
Std Dev:	0.00067138	0.0158037	0.0353175	0.000328311	0.0148618
%RSD:	0.752425	0.359047	0.0215493	0.208482	2.36205
Repeat: 1	0.0899805	4.38805	163.905	0.157482	-0.645594
Repeat: 2	0.089017	4.41894	163.852	0.157802	-0.625359
Repeat: 3	0.0886889	4.39766	163.919	0.157146	-0.616622
Element/Wavelength	Co2286	Cr2677	Cu3273	Eu3819	Fe2599
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.17122	4.22535	4.56059	-0.000718408	160.145
Std Dev:	0.00350822	0.0165518	0.0513185	0.000186	2.44363
%RSD:	0.0841053	0.391726	1.12526	25.8906	1.52589
Repeat: 1	4.16814	4.24209	4.61975	-0.000703194	162.967
Repeat: 2	4.17504	4.22496	4.52808	-0.000540482	158.756
Repeat: 3	4.17047	4.20899	4.53395	-0.000911547	158.713
Element/Wavelength	K_7664	La3794	Li6707	Mg2852	Mn2605
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.136916	-0.00617332	0.982715	153.121	4.25932
Std Dev:	0.00301809	0.000264316	0.0110246	1.75681	0.0190635
%RSD:	2.20433	4.28159	1.12185	1.14734	0.447571
Repeat: 1	-0.135517	-0.00637878	0.995208	155.144	4.27895
Repeat: 2	-0.14038	-0.00626604	0.978586	152.229	4.25811
Repeat: 3	-0.134852	-0.00587514	0.974351	151.988	4.24088
Element/Wavelength	Mo2020	Na8183	Nb3194	Nd4012	Ni2216
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.57374	188.594	i 4.70939	0.0128236	4.13728
Std Dev:	0.00965367	1.20453	0.0293952	0.00352373	0.0043373
%RSD:	0.211067	0.63869	0.624183	27.4785	0.104835
Repeat: 1	4.56556	189.852	4.67571	0.0146844	4.14033
Repeat: 2	4.58439	188.478	4.72259	0.00875953	4.1392
Repeat: 3	4.57127	187.451	4.72987	0.0150268	4.13232
Element/Wavelength	P_1774	Pb2203	Pd3242	Pr4143	Rb7800
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.884358	1.07989	0.0713578	-0.0960312	0.0191634
Std Dev:	0.00313669	0.00399387	0.00178286	0.00303915	0.0343407
%RSD:	0.354685	0.369841	2.49848	3.16475	179.2
Repeat: 1	0.881018	1.07755	0.0701024	-0.0925238	-0.0200679
Repeat: 2	0.887241	1.07761	0.0733985	-0.0978853	0.0437756
Repeat: 3	0.884815	1.0845	0.0705726	-0.0976845	0.0337824

Element/Wavelength	Rh3434	Ru2402	S_1807	Sb2175	Se1960
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00200629	-0.0305123	-0.0251229	5.35059	4.44543
Std Dev:	0.00183206	0.00102856	0.00229786	0.00945432	0.00285591
%RSD:	91.3159	3.37095	9.14646	0.176697	0.0642436
Repeat: 1	-8.62698e-005	-0.0315429	-0.0238198	5.35297	4.44804
Repeat: 2	0.00278359	-0.0294858	-0.0237728	5.35862	4.44238
Repeat: 3	0.00332153	-0.0305084	-0.0277761	5.34017	4.44587
Element/Wavelength	Si2124	Sm3592	Sn1899	Sr2165	Ta2685
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.93388	-0.0332017	0.863338	0.853129	0.0571453
Std Dev:	0.0292545	0.00109942	0.00340595	0.00303345	0.00418252
%RSD:	0.592931	3.31132	0.394509	0.355567	7.31909
Repeat: 1	4.90028	-0.0342902	0.863576	0.854532	0.0618611
Repeat: 2	4.95376	-0.0332233	0.859819	0.855206	0.0556899
Repeat: 3	4.94759	-0.0320917	0.866618	0.849648	0.053885
Element/Wavelength	Te2142	Th2832	Ti3372	Tl1908	U_3859
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.25645	-0.263835	45.5508	3.82496	4.67569
Std Dev:	0.0145535	0.00884178	0.534171	0.00902293	0.05985
%RSD:	0.341915	3.35125	1.17269	0.235896	1.28003
Repeat: 1	4.26001	-0.26396	45.1411	3.83459	4.74051
Repeat: 2	4.26889	-0.272614	46.155	3.82361	4.66401
Repeat: 3	4.24045	-0.254932	45.3564	3.81669	4.62253
Element/Wavelength	V_3093	W_2397	Y_3195	Zn2138	Zr3438
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.867465	4.60888	i -0.00712238	4.3579	4.78921
Std Dev:	0.0050388	0.0413894	0.0026459	0.00461966	0.0365573
%RSD:	0.580865	0.898035	37.1491	0.106007	0.763325
Repeat: 1	0.871514	4.56115	-0.00727884	4.35833	4.74711
Repeat: 2	0.869059	4.63068	-0.00968658	4.36229	4.80768
Repeat: 3	0.861822	4.63482	-0.00440172	4.35308	4.81285

Sample Name	Acquisition Date	Sample type	Correction Factor
ICSAB	6/3/2013 1:43:28 PM	QC	1.00
Autosampler Locations (rack/row/col)		**Analyst Name**	**Method Name**
1/12/1		awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Ag3280	Al3961	As1890	B_2497	Ba2335
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.958528	188.5	4.62333	0.960819	0.88833
Std Dev:	0.00242594	1.94713	0.00368027	0.00548103	0.000499862
%RSD:	0.25309	1.03296	0.079602	0.570453	0.0562699
Repeat: 1	0.955774	186.517	4.62753	0.955138	0.888348
Repeat: 2	0.959463	188.573	4.62183	0.961246	0.888821
Repeat: 3	0.960348	190.409	4.62064	0.966075	0.887822
Element/Wavelength	Be2348	Bi2230	Ca1840	Cd2265	Ce5353
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.0926549	4.58116	170.51	0.164627	-0.634724
Std Dev:	3.0675e-005	0.00648667	0.32313	0.000244168	0.011594
%RSD:	0.0331067	0.141595	0.189508	0.148316	1.82662
Repeat: 1	0.0926282	4.58858	170.178	0.164455	-0.621796
Repeat: 2	0.0926884	4.57656	170.824	0.164906	-0.638177
Repeat: 3	0.092648	4.57834	170.529	0.164519	-0.644199

Element/Wavelength	Co2286	Cr2677	Cu3273	Eu3819	Fe2599
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.33493	4.37059	4.7131	-0.000633752	164.013
Std Dev:	0.00782341	0.0074739	0.0185101	0.000100352	0.85553
%RSD:	0.180474	0.171004	0.392738	15.8346	0.521623
Repeat: 1	4.33403	4.36207	4.69261	-0.000527771	163.034
Repeat: 2	4.34316	4.37603	4.72861	-0.000646166	164.616
Repeat: 3	4.32759	4.37368	4.71809	-0.000727319	164.389
Element/Wavelength	K_7664	La3794	Li6707	Mg2852	Mn2605
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.156632	-0.006212	1.00818	155.517	4.39824
Std Dev:	0.0129228	0.000286024	0.00494238	1.51803	0.0062859
%RSD:	8.25047	4.60438	0.490227	0.976118	0.142919
Repeat: 1	-0.171373	-0.00652564	1.00264	154.847	4.39169
Repeat: 2	-0.147256	-0.00614481	1.01214	154.448	4.40423
Repeat: 3	-0.151266	-0.00596555	1.00977	157.254	4.39879
Element/Wavelength	Mo2020	Na8183	Nb3194	Nd4012	Ni2216
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.33957	195.152	i 4.49065	0.00914074	4.30131
Std Dev:	0.00732413	0.577147	0.00930814	0.00181242	0.00791976
%RSD:	0.168775	0.295742	0.207278	19.828	0.184125
Repeat: 1	4.34533	194.488	4.48232	0.00797832	4.29396
Repeat: 2	4.34206	195.536	4.5007	0.0112291	4.3097
Repeat: 3	4.33133	195.432	4.48893	0.00821481	4.30026
Element/Wavelength	P_1774	Pb2203	Pd3242	Pr4143	Rb7800
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.920222	1.10269	0.0621823	-0.0972154	0.0395414
Std Dev:	0.00124687	0.00548953	0.00957998	0.00284622	0.0155621
%RSD:	0.135496	0.49783	15.4063	2.92775	39.3565
Repeat: 1	0.919114	1.09943	0.0512464	-0.100282	0.0366316
Repeat: 2	0.921572	1.10903	0.0690927	-0.0967062	0.056353
Repeat: 3	0.919981	1.09962	0.0662078	-0.0946581	0.0256396
Element/Wavelength	Rh3434	Ru2402	S_1807	Sb2175	Se1960
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00380143	-0.0314034	-0.0336142	5.08498	4.61578
Std Dev:	0.00296521	0.00180556	0.00791973	0.0196343	0.0120161
%RSD:	78.0024	5.74958	23.5607	0.386124	0.260327
Repeat: 1	0.000455161	-0.0293442	-0.0372329	5.10507	4.62055
Repeat: 2	0.00484662	-0.0327156	-0.0245315	5.08403	4.62468
Repeat: 3	0.00610251	-0.0321504	-0.0390781	5.06583	4.60211
Element/Wavelength	Si2124	Sm3592	Sn1899	Sr2165	Ta2685
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.74865	-0.0287063	0.820694	0.886616	0.057117
Std Dev:	0.0142556	0.000726225	0.0033387	0.00237313	0.00445456
%RSD:	0.300203	2.52985	0.406814	0.267661	7.79901
Repeat: 1	4.73247	-0.0287798	0.817767	0.884487	0.0545558
Repeat: 2	4.75412	-0.0279461	0.819985	0.886188	0.0545346
Repeat: 3	4.75936	-0.0293929	0.82433	0.889175	0.0622607
Element/Wavelength	Te2142	Th2832	Ti3372	Tl1908	U_3859
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.42397	-0.246966	43.797	3.95328	4.82171
Std Dev:	0.00400676	0.00441004	0.272845	0.00866087	0.0132512
%RSD:	0.0905693	1.78569	0.622976	0.21908	0.274822
Repeat: 1	4.42486	-0.243242	43.8831	3.94331	4.80865
Repeat: 2	4.42746	-0.245819	43.4915	3.95894	4.82135
Repeat: 3	4.41959	-0.251836	44.0164	3.95759	4.83514

Element/Wavelength	V_3093	W_2397	Y_3195	Zn2138	Zr3438
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.899779	4.3931	i -0.00858084	4.53304	4.5865
Std Dev:	0.00311301	0.0064847	0.00308423	0.0054707	0.0132116
%RSD:	0.345975	0.147611	35.9433	0.120685	0.288055
Repeat: 1	0.89862	4.38602	-0.0095545	4.53812	4.57129
Repeat: 2	0.903306	4.39452	-0.00512727	4.53375	4.59513
Repeat: 3	0.897413	4.39875	-0.0110607	4.52725	4.59308

Sample Name	Acquisition Date	Sample type	Correction Factor
CCV A	6/3/2013 1:49:26 PM	QC	1.00

Autosampler Locations (rack/row/col)	Analyst Name	Method Name
1/1/2	awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Ag3280	Al3961	As1890	B_2497	Ba2335
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.992225	4.82801	4.94521	4.79372	5.00883
Std Dev:	0.00454827	0.0106918	0.00714034	0.00844207	0.00189364
%RSD:	0.458391	0.221455	0.144389	0.176107	0.0378061
Repeat: 1	0.987015	4.8174	4.9406	4.78445	5.00777
Repeat: 2	0.995404	4.82783	4.9416	4.80096	5.0077
Repeat: 3	0.994257	4.83878	4.95344	4.79576	5.01102
Element/Wavelength	Be2348	Bi2230	Ca1840	Cd2265	Ce5353
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.98716	4.92702	5.05767	5.01543	0.0398625
Std Dev:	0.0103311	0.00257707	0.0148522	0.0121046	0.00537916
%RSD:	0.207155	0.0523048	0.293657	0.241348	13.4943
Repeat: 1	4.97594	4.92462	5.0419	5.00342	0.0353034
Repeat: 2	4.99628	4.9267	5.05974	5.01523	0.0384888
Repeat: 3	4.98926	4.92974	5.07138	5.02763	0.0457953
Element/Wavelength	Co2286	Cr2677	Cu3273	Eu3819	Fe2599
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	5.01331	4.97228	4.91576	-0.000247667	4.96721
Std Dev:	0.00511282	0.0125792	0.00723151	0.000159094	0.0161461
%RSD:	0.101985	0.252986	0.147109	64.2371	0.325053
Repeat: 1	5.01204	4.96085	4.90772	-0.00042592	4.94865
Repeat: 2	5.00896	4.98576	4.91782	-0.000120068	4.97798
Repeat: 3	5.01894	4.97023	4.92174	-0.000197012	4.97501
Element/Wavelength	K_7664	La3794	Li6707	Mg2852	Mn2605
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.92583	4.93713	5.12631	4.95915	4.98374
Std Dev:	0.0115031	0.00860275	0.0269379	0.0089225	0.00982255
%RSD:	0.233526	0.174246	0.525483	0.17992	0.197092
Repeat: 1	4.92313	4.9272	5.11022	4.94885	4.97991
Repeat: 2	4.91592	4.94217	5.1113	4.96428	4.99491
Repeat: 3	4.93845	4.94202	5.15741	4.96433	4.97642
Element/Wavelength	Mo2020	Na8183	Nb3194	Nd4012	Ni2216
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.84949	4.92682	i 0.00158369	-0.00781268	5.02418
Std Dev:	0.00511564	0.0739785	0.000797574	0.00073175	0.00889747
%RSD:	0.105488	1.50155	50.3618	9.36618	0.177093
Repeat: 1	4.84721	4.88795	0.00197585	-0.00768171	5.01519
Repeat: 2	4.85535	4.88037	0.000665955	-0.00860107	5.02438
Repeat: 3	4.84591	5.01213	0.00210926	-0.00715526	5.03298

Element/Wavelength	P_1774	Pb2203	Pd3242	Pr4143	Rb7800
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.89706	5.04671	0.0167445	-0.0402432	0.0314378
Std Dev:	0.0059031	0.0145888	0.0059596	0.00237645	0.0129457
%RSD:	0.120544	0.289076	35.5915	5.90522	41.1789
Repeat: 1	4.8957	5.0308	0.016231	-0.0415275	0.0377583
Repeat: 2	4.89196	5.04987	0.0110582	-0.0417012	0.0165459
Repeat: 3	4.90353	5.05946	0.0229442	-0.037501	0.0400091
Element/Wavelength	Rh3434	Ru2402	S_1807	Sb2175	Se1960
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.00404903	-0.000657215	4.90251	4.81099	4.92941
Std Dev:	0.00163129	0.000208668	0.0101158	0.0091441	0.0134776
%RSD:	40.2884	31.7503	0.206338	0.190067	0.273413
Repeat: 1	-0.00578337	-0.000417649	4.89835	4.80744	4.92867
Repeat: 2	-0.00381837	-0.000799319	4.91404	4.82138	4.91631
Repeat: 3	-0.00254534	-0.000754678	4.89514	4.80416	4.94323
Element/Wavelength	Si2124	Sm3592	Sn1899	Sr2165	Ta2685
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.91573	-0.00904521	-0.00140343	5.03999	-0.019032
Std Dev:	0.00841941	0.000619216	0.00154033	0.0109074	0.00208378
%RSD:	0.171275	6.84579	109.755	0.216417	10.9489
Repeat: 1	4.91288	-0.00860392	0.000371941	5.03184	-0.0210536
Repeat: 2	4.9091	-0.00877863	-0.0023842	5.03575	-0.0191512
Repeat: 3	4.9252	-0.00975306	-0.00219804	5.05238	-0.0168912
Element/Wavelength	Te2142	Th2832	Ti3372	Tl1908	U_3859
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00580864	-0.0355228	4.79238	0.0159496	0.0254935
Std Dev:	0.0028884	0.000658642	0.00853863	0.00349564	0.003725
%RSD:	49.7259	1.85414	0.178171	21.9168	14.6115
Repeat: 1	0.00440169	-0.0353063	4.78481	0.0140496	0.0275684
Repeat: 2	0.0038933	-0.0362625	4.80164	0.0199837	0.0277191
Repeat: 3	0.00913094	-0.0349997	4.79068	0.0138153	0.0211932

Element/Wavelength	V_3093	W_2397	Y_3195	Zn2138	Zr3438
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.92153	-0.000829723	i -0.00105236	4.98473	4.81003
Std Dev:	0.00997482	0.00353354	0.00017732	0.00480512	0.0124226
%RSD:	0.202677	425.87	16.8498	0.0963968	0.258264
Repeat: 1	4.91403	0.0020281	-0.00122414	4.97978	4.79569
Repeat: 2	4.93285	-0.00478064	-0.000869979	4.98502	4.81729
Repeat: 3	4.91771	0.000263375	-0.00106296	4.98938	4.81711

Sample Name	Acquisition Date	Sample type	Correction Factor
CCV B	6/3/2013 1:53:45 PM	QC	1.00
Autosampler Locations (rack/row/col)		**Analyst Name**	**Method Name**
1/2/2		awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Ag3280	Al3961	As1890	B_2497	Ba2335
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00285841	0.0383132	-0.000525828	0.00626629	0.00476571
Std Dev:	0.0013715	0.00267277	0.00196373	0.000726227	0.000390588
%RSD:	47.9813	6.97611	373.454	11.5894	8.1958
Repeat: 1	0.00336641	0.0393726	-0.00276792	0.00710267	0.00470519
Repeat: 2	0.00390345	0.0352731	0.000301955	0.00579557	0.00440891
Repeat: 3	0.00130539	0.0402938	0.000888479	0.00590062	0.00518302

Element/Wavelength	Be2348	Bi2230	Ca1840	Cd2265	Ce5353
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	9.9501e-005	-0.058196	-0.159882	-0.000320209	4.70105
Std Dev:	2.27049e-005	0.00165684	0.000396883	0.000129677	0.0113704
%RSD:	22.8188	2.847	0.248234	40.4977	0.241869
Repeat: 1	8.90704e-005	-0.0594335	-0.159777	-0.000214972	4.71326
Repeat: 2	8.38856e-005	-0.0588408	-0.160321	-0.000280578	4.69911
Repeat: 3	0.000125547	-0.0563137	-0.159548	-0.000465078	4.69077
Element/Wavelength	Co2286	Cr2677	Cu3273	Eu3819	Fe2599
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.00135717	0.000911286	0.0312461	4.81629	-0.043489
Std Dev:	0.000514416	0.000645814	0.000982476	0.0200267	0.00063415
%RSD:	37.9034	70.8684	3.14432	0.415812	1.45819
Repeat: 1	-0.00167432	0.00162626	0.0302607	4.83922	-0.0442068
Repeat: 2	-0.00163356	0.000370267	0.0312519	4.80225	-0.0430048
Repeat: 3	-0.000763645	0.000737331	0.0322256	4.8074	-0.0432553
Element/Wavelength	K_7664	La3794	Li6707	Mg2852	Mn2605
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.012799	-0.0055308	0.00818819	2.23923e-005	-0.000980401
Std Dev:	0.00215878	0.000665938	0.000403221	0.000198687	0.000163293
%RSD:	16.8668	12.0405	4.92441	887.299	16.6558
Repeat: 1	0.0152904	-0.00604803	0.00863293	0.000241032	-0.000995908
Repeat: 2	0.0116227	-0.00576496	0.00808518	-0.000147128	-0.000809907
Repeat: 3	0.0114838	-0.00477941	0.00784647	-2.67271e-005	-0.00113539
Element/Wavelength	Mo2020	Na8183	Nb3194	Nd4012	Ni2216
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00120423	-0.315042	i 4.69678	4.76508	0.00979885
Std Dev:	0.000853462	0.0474674	0.00737835	0.0306831	0.000634921
%RSD:	70.8718	15.067	0.157094	0.643915	6.47955
Repeat: 1	0.0016823	-0.27344	4.70505	4.80036	0.00992023
Repeat: 2	0.000218885	-0.304938	4.69088	4.74464	0.0103643
Repeat: 3	0.00171152	-0.366748	4.69441	4.75024	0.009112
Element/Wavelength	P_1774	Pb2203	Pd3242	Pr4143	Rb7800
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.0033989	0.287141	4.85952	4.72689	4.75631
Std Dev:	0.000852731	0.00327658	0.00312287	0.0454756	0.0172591
%RSD:	25.0884	1.14111	0.0642629	0.962064	0.362867
Repeat: 1	-0.00358065	0.287979	4.85842	4.77567	4.77501
Repeat: 2	-0.00414611	0.283526	4.85709	4.68566	4.74099
Repeat: 3	-0.00246995	0.289917	4.86304	4.71933	4.75293
Element/Wavelength	Rh3434	Ru2402	S_1807	Sb2175	Se1960
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.70082	4.7572	0.0118706	0.628702	0.00348712
Std Dev:	0.0144036	0.0119901	0.00100015	0.00288481	0.0017716
%RSD:	0.306405	0.252041	8.42544	0.458851	50.8041
Repeat: 1	4.7173	4.74546	0.0108328	0.631959	0.00543862
Repeat: 2	4.69065	4.75673	0.0119509	0.627682	0.00198005
Repeat: 3	4.69452	4.76942	0.0128282	0.626466	0.00304269
Element/Wavelength	Si2124	Sm3592	Sn1899	Sr2165	Ta2685
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.190312	4.73136	4.72616	-0.00543195	4.83514
Std Dev:	0.00899269	0.0225635	0.020558	0.000127408	0.0224128
%RSD:	4.72524	0.476892	0.434983	2.34552	0.463541
Repeat: 1	0.182596	4.75738	4.73147	-0.00536999	4.84733
Repeat: 2	0.188152	4.71708	4.70347	-0.00557849	4.80927
Repeat: 3	0.200188	4.71963	4.74355	-0.00534738	4.84881

Element/Wavelength	Te2142	Th2832	Ti3372	Tl1908	U_3859
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.69594	4.78967	-0.00340051	4.76233	4.71764
Std Dev:	0.00737558	0.00800418	0.000148035	0.0012051	0.0425463
%RSD:	0.157063	0.167114	4.35331	0.0253048	0.901856
Repeat: 1	4.69085	4.79853	-0.00357108	4.76337	4.76634
Repeat: 2	4.69258	4.78296	-0.00332489	4.76101	4.68764
Repeat: 3	4.7044	4.78751	-0.00330556	4.76262	4.69896
Element/Wavelength	V_3093	W_2397	Y_3195	Zn2138	Zr3438
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00364263	4.72802	i 4.77062	-0.00899696	0.00204074
Std Dev:	0.000450437	0.016929	0.00925872	0.000251132	0.000190494
%RSD:	12.3657	0.358056	0.194078	2.7913	9.33454
Repeat: 1	0.00411565	4.72207	4.77642	-0.00902518	0.00210653
Repeat: 2	0.00321882	4.74712	4.75994	-0.00923279	0.00182607
Repeat: 3	0.0035934	4.71488	4.77551	-0.00873291	0.00218962

Sample Name	Acquisition Date	Sample type	Correction Factor
LLS A	6/3/2013 1:58:22 PM	QC	1.00
Autosampler Locations (rack/row/col)		**Analyst Name**	**Method Name**
1/3/2		awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Ag3280	Al3961	As1890	B_2497	Ba2335
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.0170556	0.0988298	0.195459	0.0982496	0.0104234
Std Dev:	0.00339021	0.00109703	0.0037897	0.000192414	0.000263412
%RSD:	19.8774	1.11002	1.93887	0.195842	2.52713
Repeat: 1	0.0131874	0.0997194	0.191315	0.0984696	0.0105625
Repeat: 2	0.0195104	0.0991659	0.196312	0.0981664	0.0101195
Repeat: 3	0.018469	0.097604	0.198749	0.0981128	0.010588
Element/Wavelength	Be2348	Bi2230	Ca1840	Cd2265	Ce5353
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.0019779	0.201333	0.19712	0.0104228	0.193875
Std Dev:	3.10819e-005	0.00299067	0.00195844	0.000208925	0.00512232
%RSD:	1.57146	1.48543	0.993531	2.00451	2.64207
Repeat: 1	0.00194339	0.202168	0.198239	0.0103236	0.199514
Repeat: 2	0.00198661	0.203818	0.198262	0.0102819	0.189509
Repeat: 3	0.0020037	0.198014	0.194858	0.0106628	0.192603
Element/Wavelength	Co2286	Cr2677	Cu3273	Eu3819	Fe2599
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.0411117	0.0198985	0.0208493	-2.95584e-005	0.0476891
Std Dev:	5.09401e-005	0.000226476	0.000760898	8.18152e-005	0.00024531
%RSD:	0.123907	1.13816	3.64952	276.791	0.514393
Repeat: 1	0.0410537	0.0200184	0.0209712	1.32038e-006	0.0475138
Repeat: 2	0.0411492	0.0196372	0.0215419	-0.000122319	0.0475841
Repeat: 3	0.0411321	0.0200397	0.0200348	3.23236e-005	0.0479694
Element/Wavelength	K_7664	La3794	Li6707	Mg2852	Mn2605
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.996216	0.0100841	0.0208759	0.203479	0.0203464
Std Dev:	0.00804399	0.000449637	0.000140815	0.000212954	8.49962e-005
%RSD:	0.807455	4.45889	0.674533	0.104656	0.417747
Repeat: 1	1.00238	0.0101427	0.0208307	0.203666	0.0202842
Repeat: 2	0.999148	0.0105015	0.0210338	0.203524	0.0204432
Repeat: 3	0.987117	0.009608	0.0207633	0.203248	0.0203116

Element/Wavelength	Mo2020	Na8183	Nb3194	Nd4012	Ni2216
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.0977538	0.0736921	i -0.000127219	0.0955198	0.0428344
Std Dev:	0.00113191	0.00445575	0.00068583	0.00115631	0.000448186
%RSD:	1.15792	6.04643	539.092	1.21054	1.04632
Repeat: 1	0.0990253	0.0759226	-9.27186e-005	0.0958603	0.0424871
Repeat: 2	0.0973802	0.0765922	0.000540709	0.0942314	0.0433404
Repeat: 3	0.096856	0.0685616	-0.000829648	0.0964675	0.0426758
Element/Wavelength	P_1774	Pb2203	Pd3242	Pr4143	Rb7800
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.388299	0.212835	0.00250584	-0.00780105	0.0164245
Std Dev:	0.00146364	0.00174591	0.00232707	0.00298134	0.00380704
%RSD:	0.376936	0.820312	92.8659	38.2172	23.179
Repeat: 1	0.387271	0.213715	0.00307096	-0.00716823	0.0150801
Repeat: 2	0.389975	0.210824	-5.17473e-005	-0.011048	0.0207213
Repeat: 3	0.38765	0.213966	0.0044983	-0.00518693	0.013472
Element/Wavelength	Rh3434	Ru2402	S_1807	Sb2175	Se1960
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00205999	0.000521353	0.197	0.0931946	0.207135
Std Dev:	0.0034178	0.000842993	0.00235356	0.00608327	0.000722009
%RSD:	165.913	161.693	1.1947	6.52749	0.34857
Repeat: 1	-0.00177752	-0.000408787	0.19933	0.0957946	0.207922
Repeat: 2	0.00318098	0.00123495	0.194623	0.0862434	0.206978
Repeat: 3	0.00477653	0.00073789	0.197046	0.0975458	0.206503
Element/Wavelength	Si2124	Sm3592	Sn1899	Sr2165	Ta2685
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.103596	0.0870937	-0.000974737	0.0209462	0.00177738
Std Dev:	0.00461343	0.000545029	0.000744647	0.000416737	0.00357808
%RSD:	4.45329	0.625797	76.3947	1.98956	201.313
Repeat: 1	0.108381	0.0864743	-0.0017988	0.0206603	-0.000366543
Repeat: 2	0.103231	0.0873068	-0.00035012	0.0214244	0.00590799
Repeat: 3	0.0991758	0.0874999	-0.000775294	0.020754	-0.000209322
Element/Wavelength	Te2142	Th2832	Ti3372	Tl1908	U_3859
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.000421763	-0.00256831	0.0191804	0.386815	0.480945
Std Dev:	0.00398463	0.00167519	0.000265139	0.00301256	0.00242188
%RSD:	944.756	65.2254	1.38235	0.778812	0.503566
Repeat: 1	-0.00161028	-0.000935565	0.0194235	0.385336	0.479294
Repeat: 2	0.00501275	-0.00428295	0.0188977	0.390281	0.479817
Repeat: 3	-0.00213718	-0.00248643	0.01922	0.384828	0.483726
Element/Wavelength	V_3093	W_2397	Y_3195	Zn2138	Zr3438
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.048771	-0.00265298	i -7.47177e-005	0.019884	0.019403
Std Dev:	0.000238369	0.00454578	0.000454885	0.000136085	0.000193231
%RSD:	0.48875	171.346	608.805	0.684392	0.995881
Repeat: 1	0.0485012	-0.00131536	0.000442532	0.0199414	0.0195955
Repeat: 2	0.0488587	0.00107391	-0.000254221	0.0197287	0.0194045
Repeat: 3	0.0489531	-0.00771749	-0.000412464	0.0199821	0.019209

Sample Name	Acquisition Date	Sample type	Correction Factor
LLS B	6/3/2013 2:03:08 PM	QC	1.00
Autosampler Locations (rack/row/col)		**Analyst Name**	**Method Name**
1/4/2		awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Ag3280	Al3961	As1890	B_2497	Ba2335
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.000385839	0.00551041	0.00120851	0.00512203	0.000331356
Std Dev:	7.57805e-005	0.000398493	0.00145486	0.00024137	0.00029987
%RSD:	19.6404	7.23164	120.384	4.71239	90.4979
Repeat: 1	0.000469117	0.00545024	0.000455029	0.00540061	-8.0048e-006
Repeat: 2	0.000367466	0.00514542	0.00288556	0.00497533	0.000560601
Repeat: 3	0.000320935	0.00593556	0.000284941	0.00499015	0.000441472
Element/Wavelength	**Be2348**	**Bi2230**	**Ca1840**	**Cd2265**	**Ce5353**
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	9.4415e-005	-0.00392089	0.00443491	0.000236541	0.0106676
Std Dev:	6.15259e-005	0.004085	0.00208516	0.000280666	0.00630122
%RSD:	65.1654	104.185	47.017	118.654	59.0689
Repeat: 1	0.000164986	-0.00851164	0.00290583	1.28335e-005	0.0118648
Repeat: 2	6.62197e-005	-0.000686897	0.00358875	0.000145319	0.00385362
Repeat: 3	5.20395e-005	-0.00256415	0.00681014	0.000551469	0.0162843
Element/Wavelength	**Co2286**	**Cr2677**	**Cu3273**	**Eu3819**	**Fe2599**
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	2.70682e-005	-0.000454605	-0.00086419	0.0964363	0.00092663
Std Dev:	0.00023562	0.000474988	0.00120668	0.00267445	0.000105665
%RSD:	870.467	104.484	139.632	2.77328	11.4031
Repeat: 1	0.000276376	-0.000744071	-0.00201047	0.0933875	0.000939856
Repeat: 2	-0.000191931	9.35762e-005	-0.000977062	0.097535	0.000814975
Repeat: 3	-3.23954e-006	-0.00071332	0.000394962	0.0983864	0.00102506
Element/Wavelength	**K_7664**	**La3794**	**Li6707**	**Mg2852**	**Mn2605**
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00106043	0.00011518	-4.7076e-005	0.000384724	8.2834e-005
Std Dev:	0.00314266	0.000523682	0.000150723	0.000231708	5.48678e-005
%RSD:	296.359	454.663	320.169	60.227	66.2382
Repeat: 1	0.000284	0.000642204	8.45405e-005	0.000374889	0.000133183
Repeat: 2	-0.00162125	0.000108431	-1.42683e-005	0.000621193	9.09642e-005
Repeat: 3	0.00451853	-0.000405095	-0.0002115	0.00015809	2.43548e-005
Element/Wavelength	**Mo2020**	**Na8183**	**Nb3194**	**Nd4012**	**Ni2216**
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.000104635	-0.122979	i 0.093083	0.000547696	0.000842809
Std Dev:	0.000510993	0.0334995	0.000781682	0.000457518	0.000219087
%RSD:	488.357	27.2401	0.839769	83.5351	25.9948
Repeat: 1	0.000590653	-0.150392	0.0922062	0.000530582	0.00103248
Repeat: 2	-0.000428122	-0.0856373	0.0937069	9.89745e-005	0.000603
Repeat: 3	0.000151374	-0.132907	0.0933359	0.00101353	0.000892944
Element/Wavelength	**P_1774**	**Pb2203**	**Pd3242**	**Pr4143**	**Rb7800**
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.000404928	0.00737828	0.963155	0.0895274	1.96009
Std Dev:	0.000860816	0.0018407	0.0179227	0.00520635	0.0419376
%RSD:	212.585	24.9475	1.86084	5.81537	2.13958
Repeat: 1	0.000382363	0.00950111	0.942488	0.0843805	1.91171
Repeat: 2	-0.00132406	0.00622532	0.974434	0.0947913	1.98615
Repeat: 3	-0.00027309	0.00640841	0.972542	0.0894104	1.9824

Element/Wavelength	Rh3434	Ru2402	S_1807	Sb2175	Se1960
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.100106	0.09841	-0.00146383	0.0134024	0.00438045
Std Dev:	0.0033257	0.00119241	0.00122731	0.00198822	0.00230142
%RSD:	3.32216	1.21168	83.8428	14.8348	52.5385
Repeat: 1	0.0967044	0.0970365	-0.00166458	0.0113051	0.00697376
Repeat: 2	0.10335	0.0990133	-0.000148515	0.0136423	0.00358635
Repeat: 3	0.100265	0.0991802	-0.00257839	0.0152598	0.00258122
Element/Wavelength	Si2124	Sm3592	Sn1899	Sr2165	Ta2685
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.029639	-0.0109049	0.0969131	0.000378395	0.959705
Std Dev:	0.000935273	0.006516	0.00285724	0.000537138	0.006176
%RSD:	3.15555	59.7531	2.94825	141.952	0.643531
Repeat: 1	0.0288444	-0.0174822	0.0965923	-0.000122486	0.952686
Repeat: 2	0.0294028	-0.0107804	0.0942298	0.000312046	0.964305
Repeat: 3	0.0306697	-0.00445198	0.0999172	0.000945625	0.962125
Element/Wavelength	Te2142	Th2832	Ti3372	Tl1908	U_3859
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.960534	0.0918459	-9.69186e-005	0.00371051	0.00930316
Std Dev:	0.00584752	0.00280152	0.000213747	0.00182308	0.00423358
%RSD:	0.608779	3.05023	220.543	49.1329	45.5069
Repeat: 1	0.965542	0.0893401	-0.000207808	0.00444836	0.0106417
Repeat: 2	0.954108	0.0948706	-0.000232433	0.00163416	0.00456212
Repeat: 3	0.961951	0.0913271	0.000149485	0.00504901	0.0127057
Element/Wavelength	V_3093	W_2397	Y_3195	Zn2138	Zr3438
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-2.65782e-005	0.97369	i 0.0991299	0.00176025	-7.05955e-005
Std Dev:	0.000228269	0.0131601	0.00121829	0.000315965	3.38321e-005
%RSD:	858.858	1.35157	1.22898	17.9501	47.9239
Repeat: 1	0.000206262	0.958927	0.0977323	0.00139547	-3.15702e-005
Repeat: 2	-0.000249984	0.984191	0.099967	0.0019364	-8.85664e-005
Repeat: 3	-3.60127e-005	0.977952	0.0996906	0.00194886	-9.165e-005

Sample Name	Acquisition Date	Sample type	Correction Factor
LLS Na	6/3/2013 2:07:53 PM	QC	1.00
Autosampler Locations (rack/row/col)		**Analyst Name**	**Method Name**
1/5/2		awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Ag3280	Al3961	As1890	B_2497	Ba2335
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	3.90542e-005	-0.00066999	-0.00211473	0.0013591	-0.000106188
Std Dev:	0.000619959	0.000298072	0.00237215	0.00024793	0.000275296
%RSD:	1587.43	44.489	112.172	18.2422	259.253
Repeat: 1	0.000400415	-0.000688993	0.000624082	0.00152568	0.000176766
Repeat: 2	-0.000676802	-0.000362872	-0.00351945	0.00147746	-0.000122204
Repeat: 3	0.00039355	-0.000958107	-0.00344883	0.00107417	-0.000373128
Element/Wavelength	Be2348	Bi2230	Ca1840	Cd2265	Ce5353
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-1.0436e-006	0.000427503	-0.000748311	-0.000209273	0.00941109
Std Dev:	1.70816e-005	0.00528512	0.000551471	0.000137387	0.00758567
%RSD:	1636.8	1236.28	73.6954	65.6499	80.6035
Repeat: 1	7.10392e-006	0.00104281	-0.00030325	-0.000222201	0.00388174
Repeat: 2	-2.06735e-005	0.00537804	-0.000576431	-6.58782e-005	0.00629255
Repeat: 3	1.04388e-005	-0.00513834	-0.00136525	-0.000339739	0.018059

Element/Wavelength	Co2286	Cr2677	Cu3273	Eu3819	Fe2599
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.000242947	-0.000137025	4.055e-005	6.26064e-005	-0.000517612
Std Dev:	0.000313648	0.000437726	0.00121588	0.000198278	0.000381656
%RSD:	129.101	319.451	2998.46	316.706	73.734
Repeat: 1	-7.19942e-005	0.000102242	0.00065619	0.000186574	-0.000212446
Repeat: 2	-5.19159e-005	-0.000642233	-0.00136002	-0.000166076	-0.000945544
Repeat: 3	-0.00060493	0.000128916	0.000825479	0.000167321	-0.000394847
Element/Wavelength	K_7664	La3794	Li6707	Mg2852	Mn2605
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00808713	0.000219436	-0.000208325	-0.000384818	-0.000104553
Std Dev:	0.0105505	0.000256369	0.000280664	0.000122202	0.00016065
%RSD:	130.461	116.831	134.724	31.7558	153.653
Repeat: 1	0.020039	0.000171773	-0.000242882	-0.000243827	-0.000250857
Repeat: 2	6.72275e-005	0.000496291	8.80181e-005	-0.000460259	-0.000130167
Repeat: 3	0.00415512	-9.75729e-006	-0.00047011	-0.000450368	6.73645e-005
Element/Wavelength	Mo2020	Na8183	Nb3194	Nd4012	Ni2216
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.000193917	0.924395	i -0.000249973	-0.00230017	0.000365187
Std Dev:	0.000230515	0.0363937	0.000601401	0.00142787	0.000249756
%RSD:	118.874	3.93703	240.587	62.0767	68.3914
Repeat: 1	-1.35585e-005	0.955128	-0.000739928	-0.00387386	0.000379181
Repeat: 2	0.00044206	0.93385	0.000421198	-0.00108738	0.000108727
Repeat: 3	0.000153249	0.884207	-0.000431188	-0.00193926	0.000607652
Element/Wavelength	P_1774	Pb2203	Pd3242	Pr4143	Rb7800
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.00217753	0.000392125	0.000832978	-0.00635276	-0.000603229
Std Dev:	0.00138162	0.00173278	0.00474643	0.00307672	0.00751368
%RSD:	63.4489	441.894	569.814	48.4312	1245.58
Repeat: 1	-0.00208964	-0.00159699	0.00422284	-0.00973973	0.00177706
Repeat: 2	-0.000841959	0.00157397	0.00286769	-0.00373055	0.00543201
Repeat: 3	-0.003601	0.0011994	-0.00459159	-0.00558801	-0.00901875
Element/Wavelength	Rh3434	Ru2402	S_1807	Sb2175	Se1960
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00253045	-0.000999606	-0.00405206	0.00250746	-0.000636309
Std Dev:	0.00302826	0.000572498	0.00122995	0.00237247	0.00122154
%RSD:	119.673	57.2723	30.3536	94.6166	191.972
Repeat: 1	0.00387701	-0.000949712	-0.00496776	0.000855368	-0.00152137
Repeat: 2	-0.000937543	-0.000453689	-0.00265406	0.001441	0.000757352
Repeat: 3	0.00465188	-0.00159542	-0.00453438	0.00522601	-0.00114491
Element/Wavelength	Si2124	Sm3592	Sn1899	Sr2165	Ta2685
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.00125669	-0.0026566	0.000246953	0.000714302	-0.00109268
Std Dev:	0.00157073	0.000984456	0.000901039	0.0007793	0.000637717
%RSD:	124.99	37.057	364.862	109.099	58.3625
Repeat: 1	0.000520899	-0.00310372	0.000917383	-0.000181756	-0.00112721
Repeat: 2	-0.00183351	-0.00152793	-0.000777293	0.00109079	-0.000438404
Repeat: 3	-0.00245745	-0.00333814	0.00060077	0.00123388	-0.00171243
Element/Wavelength	Te2142	Th2832	Ti3372	Tl1908	U_3859
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-8.70593e-005	-0.00202591	-2.98157e-005	0.00109308	0.0117565
Std Dev:	0.00352972	0.00201797	5.77482e-005	0.00488591	0.00525335
%RSD:	4054.38	99.6079	193.684	446.985	44.6848
Repeat: 1	0.00367204	-0.00413604	2.13239e-005	0.00129335	0.0136434
Repeat: 2	-0.00333071	-0.000114864	-9.24451e-005	0.00587578	0.0158057
Repeat: 3	-0.000602509	-0.00182683	-1.83259e-005	-0.00388988	0.00582025

Element/Wavelength	V_3093	W_2397	Y_3195	Zn2138	Zr3438
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.000115986	-0.000890639	i -0.000216964	0.000534686	0.000262381
Std Dev:	0.000155678	0.00265695	6.42029e-005	0.000222677	0.000509365
%RSD:	134.221	298.319	29.5915	41.6462	194.132
Repeat: 1	6.10045e-005	-0.00377353	-0.000248615	0.000364343	0.00081813
Repeat: 2	0.000291694	-0.00035807	-0.000259196	0.000786658	-0.000182257
Repeat: 3	-4.73995e-006	0.00145969	-0.000143081	0.000453057	0.000151271

Sample Name	Acquisition Date	Sample type	Correction Factor
CCB	6/3/2013 2:12:42 PM	QC	1.00
Autosampler Locations (rack/row/col)		**Analyst Name**	**Method Name**
1/6/2		awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Ag3280	Al3961	As1890	B_2497	Ba2335
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.000455708	-9.49881e-006	-0.000831997	0.00114932	0.000295217
Std Dev:	0.000115625	0.00148656	0.00221094	0.000234185	6.70739e-005
%RSD:	25.3725	15649.9	265.739	20.376	22.7202
Repeat: 1	0.000561071	0.000348726	-0.00225818	0.00140443	0.000322451
Repeat: 2	0.000474041	-0.00164244	0.00171488	0.00109941	0.00021881
Repeat: 3	0.000332012	0.00126521	-0.00195269	0.000944109	0.00034439

Element/Wavelength	Be2348	Bi2230	Ca1840	Cd2265	Ce5353
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	1.85531e-005	0.00107183	-0.0013654	0.000107639	0.00958251
Std Dev:	4.71567e-005	0.00375364	0.000824733	0.000189751	0.00936128
%RSD:	254.172	350.209	60.4021	176.285	97.6914
Repeat: 1	-8.08902e-006	0.00494532	-0.0014722	0.000282268	0.019615
Repeat: 2	-9.25258e-006	-0.00254921	-0.00213154	-9.42795e-005	0.00805117
Repeat: 3	7.30008e-005	0.000819377	-0.000492477	0.000134928	0.0010813

Element/Wavelength	Co2286	Cr2677	Cu3273	Eu3819	Fe2599
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.000184148	-0.000444586	-0.000222016	-1.8004e-005	-7.80915e-005
Std Dev:	0.000440922	0.000370487	0.000719863	7.84104e-005	0.000233027
%RSD:	239.438	83.333	324.24	435.516	298.403
Repeat: 1	0.000670524	-0.000179357	0.000581699	2.99233e-005	-0.000307829
Repeat: 2	-0.00018939	-0.00028651	-0.000807542	2.45561e-005	0.000158091
Repeat: 3	7.13106e-005	-0.00086789	-0.000440204	-0.000108491	-8.45361e-005

Element/Wavelength	K_7664	La3794	Li6707	Mg2852	Mn2605
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.000983431	0.000330234	5.86714e-005	-0.000103066	1.87572e-005
Std Dev:	0.00948058	0.00021265	0.000258749	0.000106459	0.000198989
%RSD:	964.031	64.3937	441.013	103.292	1060.86
Repeat: 1	-0.00419083	0.0005754	4.58927e-005	1.42638e-005	0.000216623
Repeat: 2	-0.00478417	0.000195813	0.000323573	-0.00012997	2.09842e-005
Repeat: 3	0.0119253	0.000219489	-0.000193451	-0.000193492	-0.000181336

Element/Wavelength	Mo2020	Na8183	Nb3194	Nd4012	Ni2216
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-8.04523e-005	-0.049665	i 0.000737298	-0.00110878	-0.00010267
Std Dev:	0.000742697	0.0413686	0.00151012	0.00047211	0.000413451
%RSD:	923.151	83.2953	204.818	42.5791	402.7
Repeat: 1	-0.000215701	-0.0970952	-0.00082121	-0.000993726	-0.000575814
Repeat: 2	-0.000746231	-0.0210354	0.000839234	-0.000704838	0.000189058
Repeat: 3	0.000720574	-0.0308645	0.00219387	-0.00162779	7.87466e-005

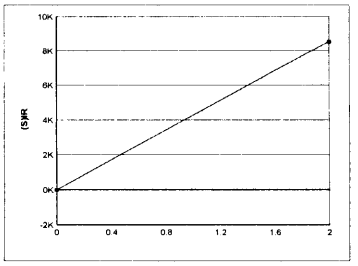
Element/Wavelength	P_1774	Pb2203	Pd3242	Pr4143	Rb7800
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.00015541	0.000639334	-0.00094506	-0.00136873	0.0257943
Std Dev:	0.00080997	0.00182796	0.00213123	5.5448e-005	0.00165222
%RSD:	521.184	285.916	225.513	4.05107	6.40535
Repeat: 1	-0.00109068	-0.00135563	-0.00166283	-0.00141199	0.026802
Repeat: 2	0.000313126	0.00103971	0.00145239	-0.00130622	0.0266935
Repeat: 3	0.000311327	0.00223392	-0.00262475	-0.00138797	0.0238875
Element/Wavelength	Rh3434	Ru2402	S_1807	Sb2175	Se1960
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.000761453	0.00110882	0.00078971	-0.00180581	0.00211154
Std Dev:	0.00262674	0.00137058	0.00186054	0.00321302	0.00251755
%RSD:	344.964	123.607	235.598	177.926	119.228
Repeat: 1	-0.000402735	0.00254003	0.00227741	-0.00364269	-0.000594033
Repeat: 2	-0.001082	0.00097819	0.00138812	0.0019042	0.00438517
Repeat: 3	0.00376909	-0.000191771	-0.0012964	-0.00367895	0.00254348
Element/Wavelength	Si2124	Sm3592	Sn1899	Sr2165	Ta2685
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.000103629	-0.00536235	-0.000170851	0.00042226	-0.000943997
Std Dev:	0.00216491	0.00758069	0.00096498	0.000141231	0.00183711
%RSD:	2089.11	141.369	564.809	33.4466	194.609
Repeat: 1	-0.00204422	-0.0129441	0.000829943	0.000277948	-0.00197555
Repeat: 2	0.00228521	-0.00536026	-0.000246988	0.000428637	0.00117705
Repeat: 3	6.9898e-005	0.00221729	-0.00109551	0.000560194	-0.00203349
Element/Wavelength	Te2142	Th2832	Ti3372	Tl1908	U_3859
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.000408855	-2.06137e-005	4.99523e-005	-5.24443e-005	0.0090265
Std Dev:	0.00122671	0.00102819	0.000154072	0.00457407	0.00511395
%RSD:	300.034	4987.91	308.439	8721.78	56.6549
Repeat: 1	0.00044755	0.000734963	-8.7936e-005	0.00438943	0.00566438
Repeat: 2	0.000140048	0.000394697	0.000216254	0.000201379	0.00650345
Repeat: 3	-0.00181416	-0.0011915	2.15392e-005	-0.00474814	0.0149117
Element/Wavelength	V_3093	W_2397	Y_3195	Zn2138	Zr3438
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-4.03004e-009	-0.000156546	i -0.000634705	0.000536774	0.000151792
Std Dev:	8.91457e-005	0.000782126	0.00027953	0.000179468	0.00021042
%RSD:	2.21203e+006	499.615	44.0409	33.4346	138.624
Repeat: 1	2.44e-005	-0.000935587	-0.000808078	0.00064904	0.000127356
Repeat: 2	-9.88103e-005	0.000628628	-0.000312236	0.000631493	-4.53428e-005
Repeat: 3	7.43982e-005	-0.000162677	-0.000783801	0.00032979	0.000373363

Flexible Report By Sample

Author:

Published: 6/3/2013 2:22:44 PM

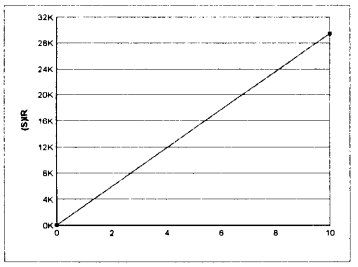
Method Name: iCAP 6500 130308 (1)



Element Name:	Ag
Element Wavelength:	Ag 328.068 nm
Concentration Units:	ppm
Date of Calibration:	6/3/2013 10:17:13 AM
Date of Fit:	6/3/2013 10:17:13 AM
Type of Fit:	Linear
Correlation:	1.00
A0 (Offset):	-12.7
A1 (Gain):	4,279
A2 (Curvature):	0.000
n (Exponent):	1.00

Reslope		QC Normalize	
Slope:	1.00	**Slope factor:**	1.00
Y Int:	0.000	**Offset:**	0.000

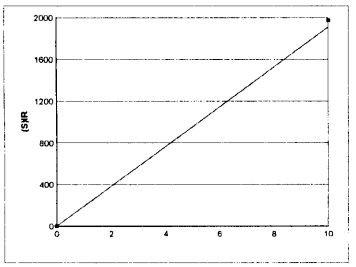
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.000	0.000	0.000	0.000	-12.7	4.18	1
Cal. Std. 1 - HS 50	2.00	2.00	0.0000000000	0.0000000000	8,514	25.5	1



Element Name:	Al
Element Wavelength:	Al 396.152 nm
Concentration Units:	ppm
Date of Calibration:	6/3/2013 10:17:13 AM
Date of Fit:	6/3/2013 10:17:13 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	46.11
A1 (Gain):	2,944
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope		QC Normalize	
Slope:	1.000	**Slope factor:**	1.000
Y Int:	0.0000	**Offset:**	0.0000

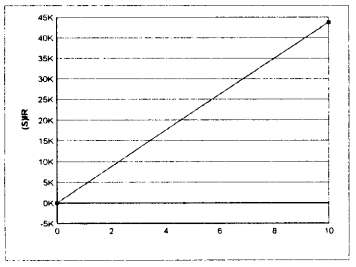
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	46.11	5.821	1
Cal. Std. 1 - HS 50	10.00	10.00	0.0000	0.0000	29,483	114.2	1



Element Name:	As
Element Wavelength:	As 189.042 nm
Concentration Units:	ppm
Date of Calibration:	6/3/2013 10:17:13 AM
Date of Fit:	6/3/2013 10:17:13 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	1.787
A1 (Gain):	191.0
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope		QC Normalize	
Slope:	1.000	**Slope factor:**	1.000
Y Int:	0.0000	**Offset:**	0.0000

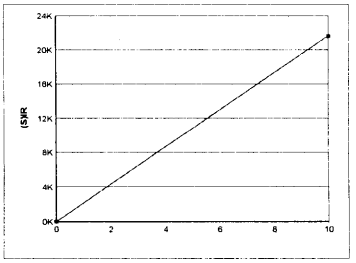
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	1.787	0.6297	1
Cal. Std. 1 - HS 50	10.00	10.000	0.0000000000	0.0000000000	1,973	4.118	1



Element Name:	B
Element Wavelength:	B 249.773 nm
Concentration Units:	ppm
Date of Calibration:	6/3/2013 10:21:50 AM
Date of Fit:	6/3/2013 10:21:50 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	-1.371
A1 (Gain):	4,375
A2 (Curvature):	0.0000
n (Exponent):	1.000

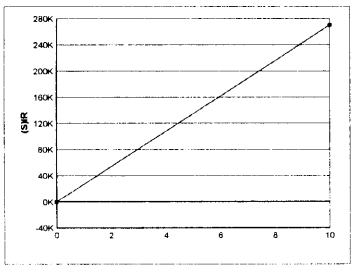
Reslope		QC Normalize	
Slope:	1.000	**Slope factor:**	1.000
Y Int:	0.0000	**Offset:**	0.0000

Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	-1.371	1.236	1
Cal. Std. 2 - HS 29	10.00	10.00	0.0000	0.0000	43,746	138.4	1



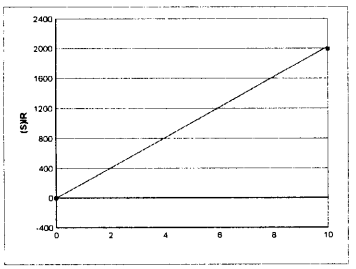
Element Name:	Ba
Element Wavelength:	Ba 233.527 nm
Concentration Units:	ppm
Date of Calibration:	6/3/2013 10:17:13 AM
Date of Fit:	6/3/2013 10:17:13 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	2.518
A1 (Gain):	2.164
A2 (Curvature):	0.0000
n (Exponent):	1.000
Reslope	**QC Normalize**
Slope: 1.000	**Slope factor:** 1.000
Y Int: 0.0000	**Offset:** 0.0000

Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	2.518	0.6162	1
Cal. Std. 1 - HS 50	10.00	10.00	0.0000	0.0000	21,596	54.53	1



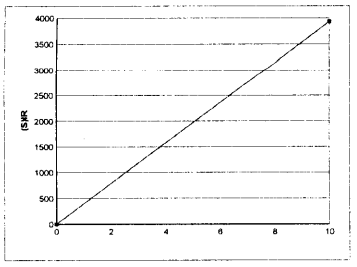
Element Name:	Be
Element Wavelength:	Be 234.861 nm
Concentration Units:	ppm
Date of Calibration:	6/3/2013 10:17:13 AM
Date of Fit:	6/3/2013 10:17:13 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	-0.7828
A1 (Gain):	27,004
A2 (Curvature):	0.0000
n (Exponent):	1.000
Reslope	**QC Normalize**
Slope: 1.000	**Slope factor:** 1.000
Y Int: 0.0000	**Offset:** 0.0000

Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	-0.7828	1.088	1
Cal. Std. 1 - HS 50	10.00	10.00	0.0000	0.0000	270,017	1,197	1



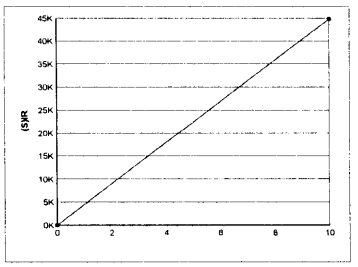
Element Name:	Bi
Element Wavelength:	Bi 223.061 nm
Concentration Units:	ppm
Date of Calibration:	6/3/2013 10:17:13 AM
Date of Fit:	6/3/2013 10:17:13 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	-2.191
A1 (Gain):	202.4
A2 (Curvature):	0.0000
n (Exponent):	1.000
Reslope	**QC Normalize**
Slope: 1.000	**Slope factor:** 1.000
Y Int: 0.0000	**Offset:** 0.0000

Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	-2.191	0.2582	1
Cal. Std. 1 - HS 50	10.00	10.00	0.0000	0.0000	1,991	3.256	1



Element Name:	Ca
Element Wavelength:	Ca 184.006 nm
Concentration Units:	ppm
Date of Calibration:	6/3/2013 10:17:13 AM
Date of Fit:	6/3/2013 10:17:13 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	1.353
A1 (Gain):	393.0
A2 (Curvature):	0.0000
n (Exponent):	1.000
Reslope	**QC Normalize**
Slope: 1.000	**Slope factor:** 1.000
Y Int: 0.0000	**Offset:** 0.0000

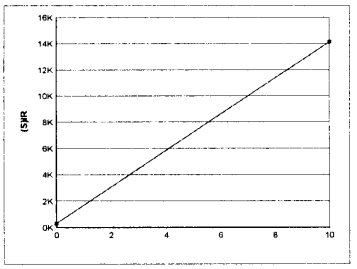
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	1.353	0.8576	1
Cal. Std. 1 - HS 50	10.00	10.00	0.0000000000	0.0000000000	3,931	22.15	1



Element Name:	Cd
Element Wavelength:	Cd 226.502 nm
Concentration Units:	ppm
Date of Calibration:	6/3/2013 10:17:13 AM
Date of Fit:	6/3/2013 10:17:13 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	0.8422
A1 (Gain):	4,480
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope		QC Normalize	
Slope:	1.000	**Slope factor:**	1.000
Y Int:	0.0000	**Offset:**	0.0000

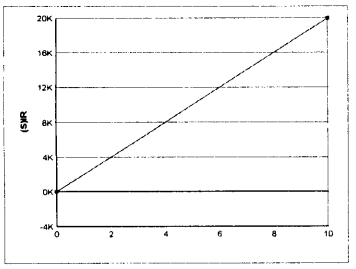
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	0.8422	0.3215	1
Cal. Std. 1 - HS 50	10.00	10.000	0.0000000000	0.0000000000	44,806	211.6	1



Element Name:	Ce
Element Wavelength:	Ce 535.353 nm
Concentration Units:	ppm
Date of Calibration:	6/3/2013 10:26:41 AM
Date of Fit:	6/3/2013 10:26:41 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	302.4
A1 (Gain):	1,384
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope		QC Normalize	
Slope:	1.000	**Slope factor:**	1.000
Y Int:	0.0000	**Offset:**	0.0000

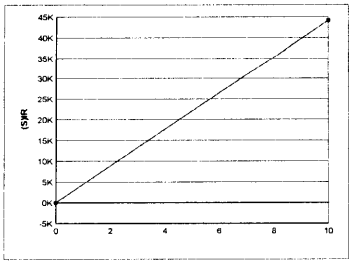
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	302.4	12.68	1
Cal. Std. 3 - HS 51	10.00	10.00	0.0000	0.0000	14,140	16.72	1



Element Name:	Co
Element Wavelength:	Co 228.616 nm
Concentration Units:	ppm
Date of Calibration:	6/3/2013 10:17:13 AM
Date of Fit:	6/3/2013 10:17:13 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	-0.8044
A1 (Gain):	1,998
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope		QC Normalize	
Slope:	1.000	**Slope factor:**	1.000
Y Int:	0.0000	**Offset:**	0.0000

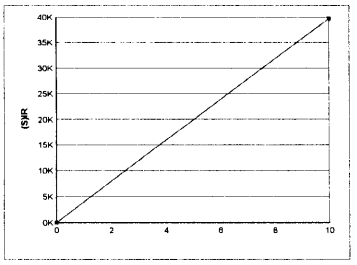
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	-0.8044	0.9537	1
Cal. Std. 1 - HS 50	10.00	10.00	0.0000	0.0000	19,989	60.98	1



Element Name:	Cr
Element Wavelength:	Cr 267.716 nm
Concentration Units:	ppm
Date of Calibration:	6/3/2013 10:17:13 AM
Date of Fit:	6/3/2013 10:17:13 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	-6.968
A1 (Gain):	4,413
A2 (Curvature):	0.0000
n (Exponent):	1.000

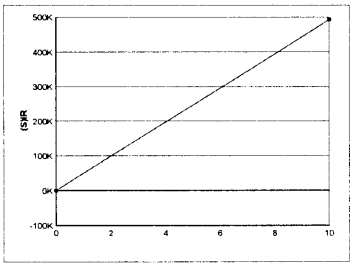
Reslope		QC Normalize	
Slope:	1.000	**Slope factor:**	1.000
Y Int:	0.0000	**Offset:**	0.0000

Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	-6.968	0.6755	1
Cal. Std. 1 - HS 50	10.00	10.000	0.0000000000	0.0000000000	44,131	208.0	1



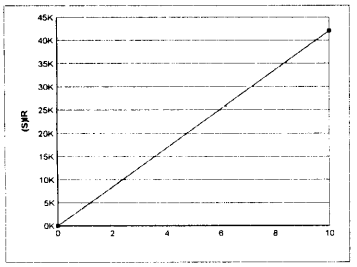
Element Name:	Cu
Element Wavelength:	Cu 327.396 nm
Concentration Units:	ppm
Date of Calibration:	6/3/2013 10:17:13 AM
Date of Fit:	6/3/2013 10:17:13 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	1.432
A1 (Gain):	3.969
A2 (Curvature):	0.0000
n (Exponent):	1.000
Reslope	**QC Normalize**
Slope: 1.000	**Slope factor:** 1.000
Y Int: 0.0000	**Offset:** 0.0000

Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	1.432	1.975	1
Cal. Std. 1 - HS 50	10.00	10.00	0.0000000000	0.0000000000	39.700	172.9	1



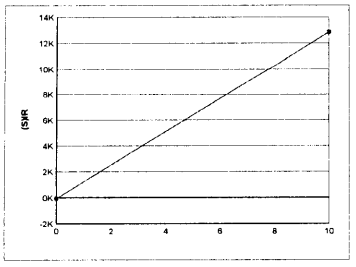
Element Name:	Eu
Element Wavelength:	Eu 381.967 nm
Concentration Units:	ppm
Date of Calibration:	6/3/2013 10:26:41 AM
Date of Fit:	6/3/2013 10:26:41 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	-15.54
A1 (Gain):	49,264
A2 (Curvature):	0.0000
n (Exponent):	1.000
Reslope	**QC Normalize**
Slope: 1.000	**Slope factor:** 1.000
Y Int: 0.0000	**Offset:** 0.0000

Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	-15.54	3.379	1
Cal. Std. 3 - HS 51	10.00	10.00	0.0000000000	0.0000000000	493.582	1.430	1



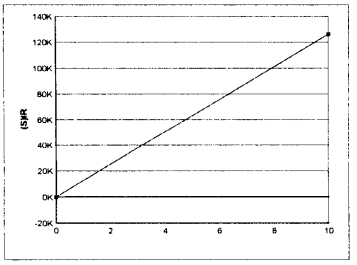
Element Name:	Fe
Element Wavelength:	Fe 259.940 nm
Concentration Units:	ppm
Date of Calibration:	6/3/2013 10:17:13 AM
Date of Fit:	6/3/2013 10:17:13 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	5.586
A1 (Gain):	4,206
A2 (Curvature):	0.0000
n (Exponent):	1.000
Reslope	**QC Normalize**
Slope: 1.000	**Slope factor:** 1.000
Y Int: 0.0000	**Offset:** 0.0000

Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	5.586	1.961	1
Cal. Std. 1 - HS 50	10.00	10.000	0.0000000000	0.0000000000	42.081	184.9	1



Element Name:	K
Element Wavelength:	K 766.490 nm
Concentration Units:	ppm
Date of Calibration:	6/3/2013 10:17:13 AM
Date of Fit:	6/3/2013 10:17:13 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	-60.07
A1 (Gain):	1,291
A2 (Curvature):	0.0000
n (Exponent):	1.000
Reslope	**QC Normalize**
Slope: 1.000	**Slope factor:** 1.000
Y Int: 0.0000	**Offset:** 0.0000

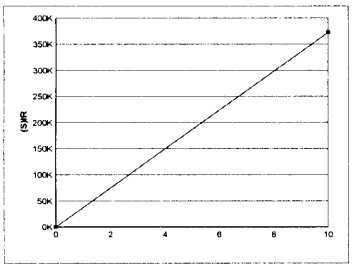
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	-60.07	6.067	1
Cal. Std. 1 - HS 50	10.00	10.00	0.0000000000	0.0000000000	12.848	64.48	1



Element Name:	La
Element Wavelength:	La 379.478 nm
Concentration Units:	ppm
Date of Calibration:	6/3/2013 10:17:13 AM
Date of Fit:	6/3/2013 10:17:13 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	-13.24
A1 (Gain):	12,637
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope		QC Normalize	
Slope:	1.000	**Slope factor:**	1.000
Y Int:	0.0000	**Offset:**	0.0000

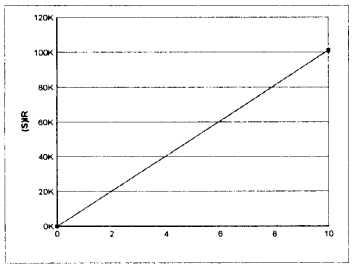
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	-13.24	5.216	1
Cal. Std. 1 - HS 50	10.00	10.00	0.0000	0.0000	126,052	494.6	1



Element Name:	Li
Element Wavelength:	Li 670.784 nm
Concentration Units:	ppm
Date of Calibration:	6/3/2013 10:17:13 AM
Date of Fit:	6/3/2013 10:17:13 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	57.67
A1 (Gain):	37,265
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope		QC Normalize	
Slope:	1.000	**Slope factor:**	1.000
Y Int:	0.0000	**Offset:**	0.0000

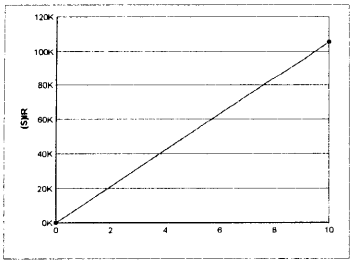
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	57.67	7.109	1
Cal. Std. 1 - HS 50	10.00	10.00	0.0000	0.0000	372,703	16,479	1



Element Name:	Mg
Element Wavelength:	Mg 285.213 nm
Concentration Units:	ppm
Date of Calibration:	6/3/2013 10:17:13 AM
Date of Fit:	6/3/2013 10:17:13 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	9.511
A1 (Gain):	10,120
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope		QC Normalize	
Slope:	1.000	**Slope factor:**	1.000
Y Int:	0.0000	**Offset:**	0.0000

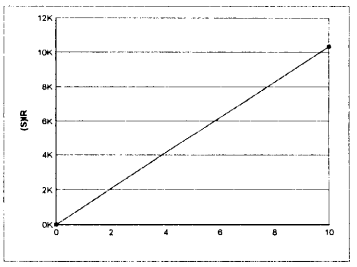
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	9.511	0.9679	1
Cal. Std. 1 - HS 50	10.00	10.00	0.0000000000	0.0000000000	101,069	371.7	1



Element Name:	Mn
Element Wavelength:	Mn 260.569 nm
Concentration Units:	ppm
Date of Calibration:	6/3/2013 10:17:13 AM
Date of Fit:	6/3/2013 10:17:13 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	3.268
A1 (Gain):	10,556
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope		QC Normalize	
Slope:	1.000	**Slope factor:**	1.000
Y Int:	0.0000	**Offset:**	0.0000

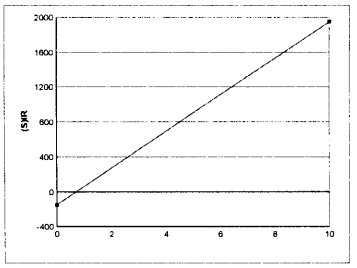
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	3.268	0.9539	1
Cal. Std. 1 - HS 50	10.00	10.00	0.0000	0.0000	105,608	445.4	1



Element Name:	Mo
Element Wavelength:	Mo 202.030 nm
Concentration Units:	ppm
Date of Calibration:	6/3/2013 10:21:50 AM
Date of Fit:	6/3/2013 10:21:50 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	0.9444
A1 (Gain):	1.033
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope		QC Normalize	
Slope:	1.000	**Slope factor:**	1.000
Y Int:	0.0000	**Offset:**	0.0000

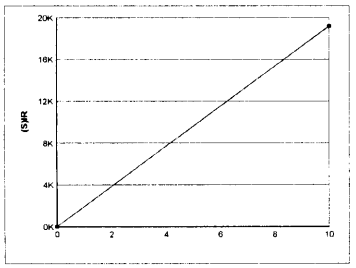
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	0.9444	0.4777	1
Cal. Std. 2 - HS 29	10.00	10.00	0.0000000000	0.0000000000	10,335	30.51	1



Element Name:	Na
Element Wavelength:	Na 818.326 nm
Concentration Units:	ppm
Date of Calibration:	6/3/2013 10:17:13 AM
Date of Fit:	6/3/2013 10:17:13 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	-147.7
A1 (Gain):	209.8
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope		QC Normalize	
Slope:	1.000	**Slope factor:**	1.000
Y Int:	0.0000	**Offset:**	0.0000

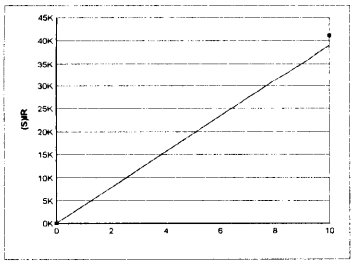
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	-147.7	5.636	1
Cal. Std. 1 - HS 50	10.00	10.00	0.0000000000	0.0000000000	1,950	13.93	1



Element Name:	Nb
Element Wavelength:	Nb 319.498 nm
Concentration Units:	ppm
Date of Calibration:	6/3/2013 10:36:09 AM
Date of Fit:	6/3/2013 10:36:09 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	17.67
A1 (Gain):	1.916
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope		QC Normalize	
Slope:	1.000	**Slope factor:**	1.000
Y Int:	0.0000	**Offset:**	0.0000

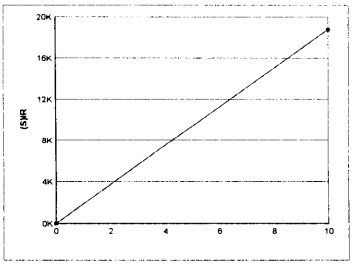
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	17.67	1.718	1
Cal. Std. 5 - HS 53	10.00	10.00	0.0000000000	0.0000000000	19,179	52.64	1



Element Name:	Nd
Element Wavelength:	Nd 401.225 nm
Concentration Units:	ppm
Date of Calibration:	6/3/2013 10:26:41 AM
Date of Fit:	6/3/2013 10:26:41 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	32.22
A1 (Gain):	3.897
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope		QC Normalize	
Slope:	1.000	**Slope factor:**	1.000
Y Int:	0.0000	**Offset:**	0.0000

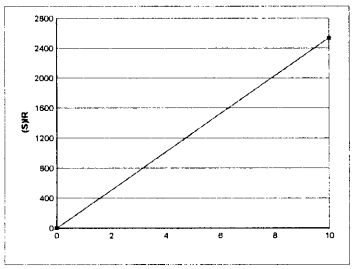
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	32.22	9.724	1
Cal. Std. 3 - HS 51	10.00	10.000	0.0000000000	0.0000000000	41,138	150.8	1



Element Name:	Ni
Element Wavelength:	Ni 221.647 nm
Concentration Units:	ppm
Date of Calibration:	6/3/2013 10:17:13 AM
Date of Fit:	6/3/2013 10:17:13 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	1.393
A1 (Gain):	1.877
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope		QC Normalize	
Slope:	1.000	**Slope factor:**	1.000
Y Int:	0.0000	**Offset:**	0.0000

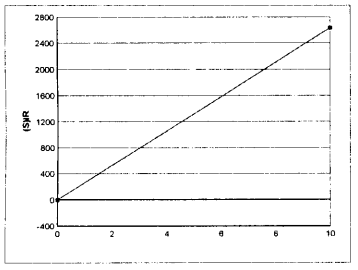
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	1.393	0.2243	1
Cal. Std. 1 - HS 50	10.00	10.000	0.0000000000	0.0000000000	18.766	72.97	1



Element Name:	P
Element Wavelength:	P 177.495 nm
Concentration Units:	ppm
Date of Calibration:	6/3/2013 10:21:50 AM
Date of Fit:	6/3/2013 10:21:50 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	0.4333
A1 (Gain):	253.7
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope		QC Normalize	
Slope:	1.000	**Slope factor:**	1.000
Y Int:	0.0000	**Offset:**	0.0000

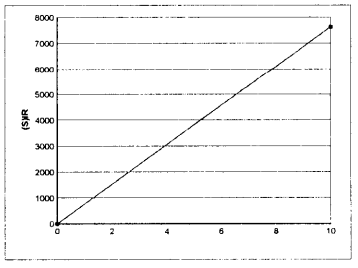
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	0.4333	0.4386	1
Cal. Std. 2 - HS 29	10.00	10.00	0.0000	0.0000	2.537	11.59	1



Element Name:	Pb
Element Wavelength:	Pb 220.353 nm
Concentration Units:	ppm
Date of Calibration:	6/3/2013 10:17:13 AM
Date of Fit:	6/3/2013 10:17:13 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	-1.298
A1 (Gain):	263.5
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope		QC Normalize	
Slope:	1.000	**Slope factor:**	1.000
Y Int:	0.0000	**Offset:**	0.0000

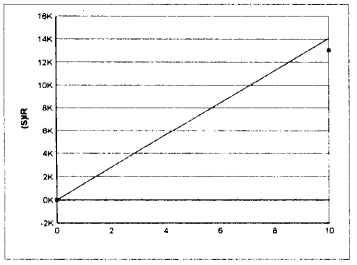
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	-1.298	1.412	1
Cal. Std. 1 - HS 50	10.00	10.000	0.0000000000	0.0000000000	2.638	13.97	1



Element Name:	Pd
Element Wavelength:	Pd 324.270 nm
Concentration Units:	ppm
Date of Calibration:	6/3/2013 10:31:27 AM
Date of Fit:	6/3/2013 10:31:27 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	1.260
A1 (Gain):	762.7
A2 (Curvature):	0.0000
n (Exponent):	1.000

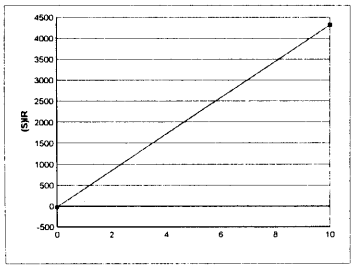
Reslope		QC Normalize	
Slope:	1.000	**Slope factor:**	1.000
Y Int:	0.0000	**Offset:**	0.0000

Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	1.260	3.684	1
Cal. Std. 4 - HS 52	10.00	10.00	0.0000	0.0000	7.628	10.80	1



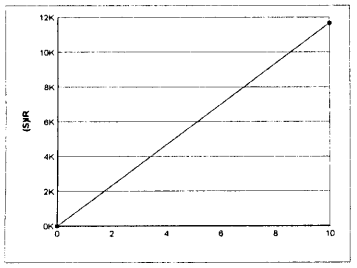
Element Name:	Pr
Element Wavelength:	Pr 414.311 nm
Concentration Units:	ppm
Date of Calibration:	6/3/2013 10:26:41 AM
Date of Fit:	6/3/2013 10:26:41 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	-9.484
A1 (Gain):	1.408
A2 (Curvature):	0.0000
n (Exponent):	1.000
Reslope	**QC Normalize**
Slope: 1.000	**Slope factor:** 1.000
Y Int: 0.0000	**Offset:** 0.0000

Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	-9.484	3.719	1
Cal. Std. 3 - HS 51	10.00	10.000	0.0000000000	0.0000000000	13,019	37.02	1



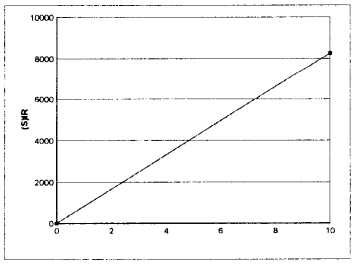
Element Name:	Rb
Element Wavelength:	Rb 780.023 nm
Concentration Units:	ppm
Date of Calibration:	6/3/2013 10:26:41 AM
Date of Fit:	6/3/2013 10:26:41 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	-19.51
A1 (Gain):	433.6
A2 (Curvature):	0.0000
n (Exponent):	1.000
Reslope	**QC Normalize**
Slope: 1.000	**Slope factor:** 1.000
Y Int: 0.0000	**Offset:** 0.0000

Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	-19.51	0.9818	1
Cal. Std. 3 - HS 51	10.00	10.00	0.0000	0.0000	4,317	9.308	1



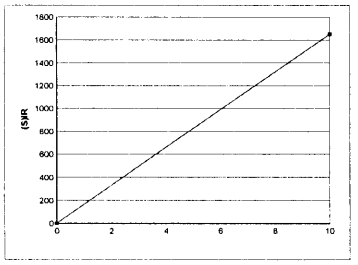
Element Name:	Rh
Element Wavelength:	Rh 343.489 nm
Concentration Units:	ppm
Date of Calibration:	6/3/2013 10:31:27 AM
Date of Fit:	6/3/2013 10:31:27 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	1.077
A1 (Gain):	1.166
A2 (Curvature):	0.0000
n (Exponent):	1.000
Reslope	**QC Normalize**
Slope: 1.000	**Slope factor:** 1.000
Y Int: 0.0000	**Offset:** 0.0000

Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	1.077	0.5754	1
Cal. Std. 4 - HS 52	10.00	10.00	0.0000	0.0000	11.665	8.470	1



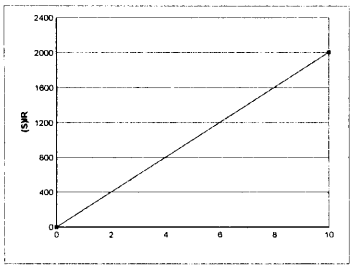
Element Name:	Ru
Element Wavelength:	Ru 240.272 nm
Concentration Units:	ppm
Date of Calibration:	6/3/2013 10:31:27 AM
Date of Fit:	6/3/2013 10:31:27 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	3.776
A1 (Gain):	827.3
A2 (Curvature):	0.0000
n (Exponent):	1.000
Reslope	**QC Normalize**
Slope: 1.000	**Slope factor:** 1.000
Y Int: 0.0000	**Offset:** 0.0000

Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	3.776	0.8819	1
Cal. Std. 4 - HS 52	10.00	10.00	0.0000	0.0000	8,277	5.330	1



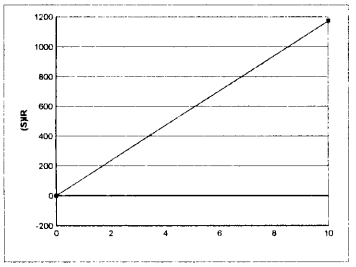
Element Name:	S
Element Wavelength:	S 180.731 nm
Concentration Units:	ppm
Date of Calibration:	6/3/2013 10:21:50 AM
Date of Fit:	6/3/2013 10:21:50 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	1.489
A1 (Gain):	165.1
A2 (Curvature):	0.0000
n (Exponent):	1.000
Reslope	**QC Normalize**
Slope: 1.000	**Slope factor:** 1.000
Y Int: 0.0000	**Offset:** 0.0000

Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	1.489	0.5520	1
Cal. Std. 2 - HS 29	10.00	10.00	0.0000	0.0000	1,653	7.316	1



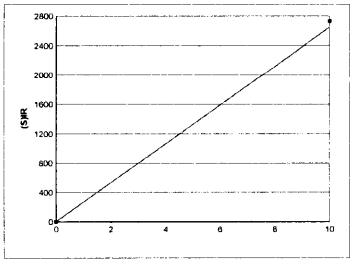
Element Name:	Sb
Element Wavelength:	Sb 217.581 nm
Concentration Units:	ppm
Date of Calibration:	6/3/2013 10:21:50 AM
Date of Fit:	6/3/2013 10:21:50 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	0.2244
A1 (Gain):	200.5
A2 (Curvature):	0.0000
n (Exponent):	1.000
Reslope	**QC Normalize**
Slope: 1.000	**Slope factor:** 1.000
Y Int: 0.0000	**Offset:** 0.0000

Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	0.2244	0.6500	1
Cal. Std. 2 - HS 29	10.00	10.00	0.0000	0.0000	2,005	5.632	1



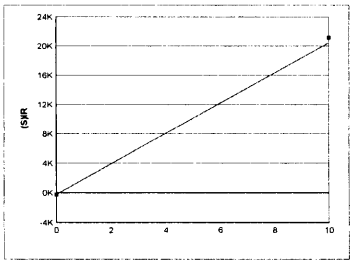
Element Name:	Se
Element Wavelength:	Se 196.090 nm
Concentration Units:	ppm
Date of Calibration:	6/3/2013 10:17:13 AM
Date of Fit:	6/3/2013 10:17:13 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	-0.4044
A1 (Gain):	117.3
A2 (Curvature):	0.0000
n (Exponent):	1.000
Reslope	**QC Normalize**
Slope: 1.000	**Slope factor:** 1.000
Y Int: 0.0000	**Offset:** 0.0000

Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	-0.4044	0.7236	1
Cal. Std. 1 - HS 50	10.00	10.00	0.0000	0.0000	1,173	3.406	1



Element Name:	Si
Element Wavelength:	Si 212.412 nm
Concentration Units:	ppm
Date of Calibration:	6/3/2013 10:21:50 AM
Date of Fit:	6/3/2013 10:21:50 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	1.253
A1 (Gain):	265.1
A2 (Curvature):	0.0000
n (Exponent):	1.000
Reslope	**QC Normalize**
Slope: 1.000	**Slope factor:** 1.000
Y Int: 0.0000	**Offset:** 0.0000

Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	1.253	0.2718	1
Cal. Std. 2 - HS 29	10.00	10.00	0.0000000000	0.0000000000	2,732	4.575	1

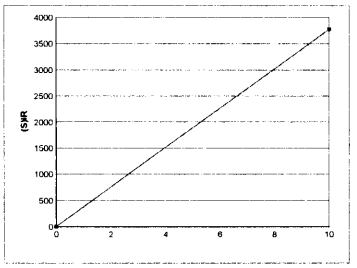


Element Name:	Sm
Element Wavelength:	Sm 359.260 nm
Concentration Units:	ppm
Date of Calibration:	6/3/2013 10:26:41 AM
Date of Fit:	6/3/2013 10:26:41 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	-247.4
A1 (Gain):	2,070
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope **QC Normalize**

Slope:	1.000	**Slope factor:**	1.000
Y Int:	0.0000	**Offset:**	0.0000

Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	-247.4	4.217	1
Cal. Std. 3 - HS 51	10.00	10.00	0.0000	0.0000	21,131	81.36	1

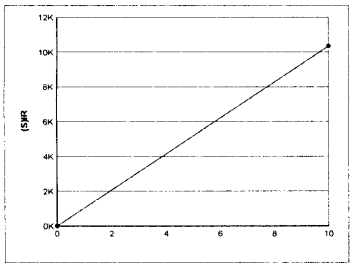


Element Name:	Sn
Element Wavelength:	Sn 189.989 nm
Concentration Units:	ppm
Date of Calibration:	6/3/2013 10:36:09 AM
Date of Fit:	6/3/2013 10:36:09 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	1.193
A1 (Gain):	377.4
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope **QC Normalize**

Slope:	1.000	**Slope factor:**	1.000
Y Int:	0.0000	**Offset:**	0.0000

Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	1.193	0.7082	1
Cal. Std. 5 - HS 53	10.00	10.00	0.0000000000	0.0000000000	3.774	16.83	1

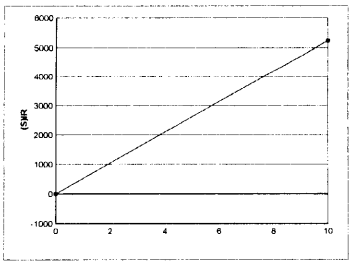


Element Name:	Sr
Element Wavelength:	Sr 216.596 nm
Concentration Units:	ppm
Date of Calibration:	6/3/2013 10:17:13 AM
Date of Fit:	6/3/2013 10:17:13 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	0.002222
A1 (Gain):	1,036
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope **QC Normalize**

Slope:	1.000	**Slope factor:**	1.000
Y Int:	0.0000	**Offset:**	0.0000

Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	0.002222	0.4467	1
Cal. Std. 1 - HS 50	10.00	10.00	0.0000000000	0.0000000000	10.347	44.21	1

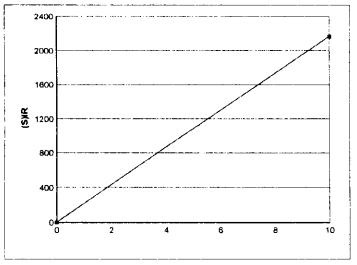


Element Name:	Ta
Element Wavelength:	Ta 268.517 nm
Concentration Units:	ppm
Date of Calibration:	6/3/2013 10:36:09 AM
Date of Fit:	6/3/2013 10:36:09 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	-2.998
A1 (Gain):	523.7
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope **QC Normalize**

Slope:	1.000	**Slope factor:**	1.000
Y Int:	0.0000	**Offset:**	0.0000

Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	-2.998	1.388	1
Cal. Std. 5 - HS 53	10.00	10.00	0.0000	0.0000	5.234	5.461	1

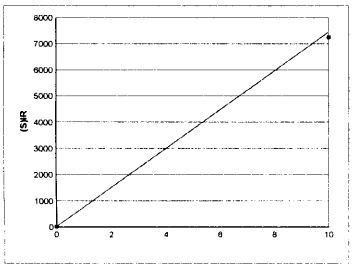


Element Name:	Te
Element Wavelength:	Te 214.281 nm
Concentration Units:	ppm
Date of Calibration:	6/3/2013 10:36:09 AM
Date of Fit:	6/3/2013 10:36:09 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	1.027
A1 (Gain):	216.8
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope **QC Normalize**

Slope:	1.000	**Slope factor:**	1.000
Y Int:	0.0000	**Offset:**	0.0000

Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	1.027	0.5460	1
Cal. Std. 5 - HS 53	10.00	10.00	0.0000	0.0000	2,164	3.153	1

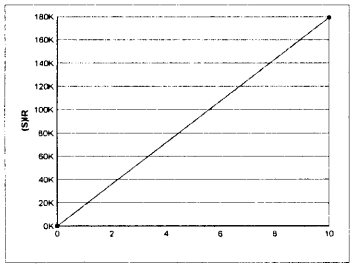


Element Name:	Th
Element Wavelength:	Th 283.231 nm
Concentration Units:	ppm
Date of Calibration:	6/3/2013 10:26:41 AM
Date of Fit:	6/3/2013 10:26:41 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	14.09
A1 (Gain):	743.3
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope **QC Normalize**

Slope:	1.000	**Slope factor:**	1.000
Y Int:	0.0000	**Offset:**	0.0000

Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	14.09	1.632	1
Cal. Std. 3 - HS 51	10.00	10.00	0.0000	0.0000	7,250	28.44	1

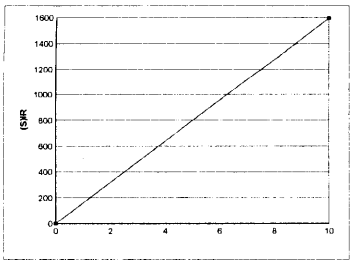


Element Name:	Ti
Element Wavelength:	Ti 337.280 nm
Concentration Units:	ppm
Date of Calibration:	6/3/2013 10:21:50 AM
Date of Fit:	6/3/2013 10:21:50 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	22.67
A1 (Gain):	17,935
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope **QC Normalize**

Slope:	1.000	**Slope factor:**	1.000
Y Int:	0.0000	**Offset:**	0.0000

Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	22.67	5.060	1
Cal. Std. 2 - HS 29	10.00	10.00	0.0000000000	0.0000000000	179,372	554.3	1

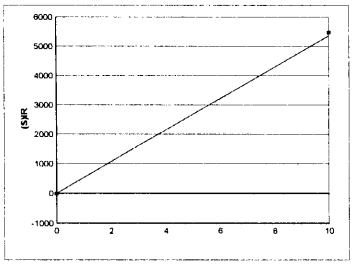


Element Name:	Tl
Element Wavelength:	Tl 190.856 nm
Concentration Units:	ppm
Date of Calibration:	6/3/2013 10:31:27 AM
Date of Fit:	6/3/2013 10:31:27 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	0.1333
A1 (Gain):	159.6
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope **QC Normalize**

Slope:	1.000	**Slope factor:**	1.000
Y Int:	0.0000	**Offset:**	0.0000

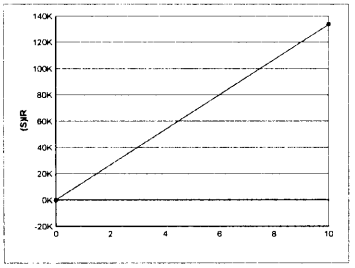
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	0.1333	0.2691	1
Cal. Std. 4 - HS 52	10.00	10.00	0.0000	0.0000	1,596	2.901	1



Element Name:	U
Element Wavelength:	U 385.958 nm
Concentration Units:	ppm
Date of Calibration:	6/3/2013 10:26:41 AM
Date of Fit:	6/3/2013 10:26:41 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	-8.208
A1 (Gain):	535.9
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope		QC Normalize	
Slope:	1.000	**Slope factor:**	1.000
Y Int:	0.0000	**Offset:**	0.0000

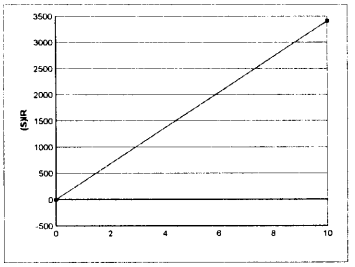
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	-8.208	6.211	1
Cal. Std. 3 - HS 51	10.00	10.000	0.0000000000	0.0000000000	5,473	32.01	1



Element Name:	V
Element Wavelength:	V 309.311 nm
Concentration Units:	ppm
Date of Calibration:	6/3/2013 10:17:13 AM
Date of Fit:	6/3/2013 10:17:13 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	-1.849
A1 (Gain):	13,332
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope		QC Normalize	
Slope:	1.000	**Slope factor:**	1.000
Y Int:	0.0000	**Offset:**	0.0000

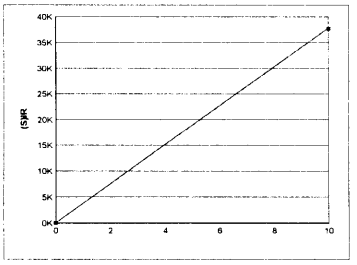
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	-1.849	0.7468	1
Cal. Std. 1 - HS 50	10.00	10.000	0.0000000000	0.0000000000	133,647	628.9	1



Element Name:	W
Element Wavelength:	W 239.709 nm
Concentration Units:	ppm
Date of Calibration:	6/3/2013 10:36:09 AM
Date of Fit:	6/3/2013 10:36:09 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	-1.799
A1 (Gain):	341.3
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope		QC Normalize	
Slope:	1.000	**Slope factor:**	1.000
Y Int:	0.0000	**Offset:**	0.0000

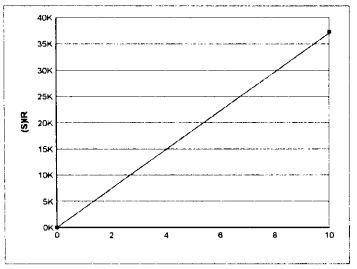
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	-1.799	0.9820	1
Cal. Std. 5 - HS 53	10.00	10.00	0.0000	0.0000	3,411	2.574	1



Element Name:	Y
Element Wavelength:	Y 319.562 nm
Concentration Units:	ppm
Date of Calibration:	6/3/2013 10:26:41 AM
Date of Fit:	6/3/2013 10:26:41 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	22.22
A1 (Gain):	3,784
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope		**QC Normalize**	
Slope:	1.000	**Slope factor:**	1.000
Y Int:	0.0000	**Offset:**	0.0000

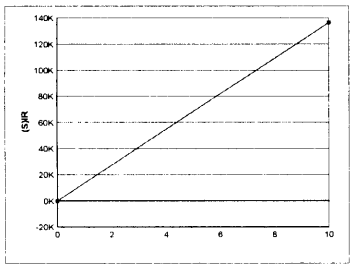
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	22.22	2.230	1
Cal. Std. 3 - HS 51	10.00	10.00	0.0000	0.0000	37,675	77.53	1



Element Name:	Zn
Element Wavelength:	Zn 213.856 nm
Concentration Units:	ppm
Date of Calibration:	6/3/2013 10:17:13 AM
Date of Fit:	6/3/2013 10:17:13 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	1.882
A1 (Gain):	3,706
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope		**QC Normalize**	
Slope:	1.000	**Slope factor:**	1.000
Y Int:	0.0000	**Offset:**	0.0000

Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	1.882	0.5405	1
Cal. Std. 1 - HS 50	10.00	10.00	0.0000	0.0000	37,285	75.95	1



Element Name:	Zr
Element Wavelength:	Zr 343.823 nm
Concentration Units:	ppm
Date of Calibration:	6/3/2013 10:21:50 AM
Date of Fit:	6/3/2013 10:21:50 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	-27.15
A1 (Gain):	13,644
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope		**QC Normalize**	
Slope:	1.000	**Slope factor:**	1.000
Y Int:	0.0000	**Offset:**	0.0000

Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	-27.15	1.112	1
Cal. Std. 2 - HS 29	10.00	10.00	0.0000000000	0.0000000000	136,411	318.7	1

5/16/2013 4:13:47PM
CompleteBatch Version 2.7.32
batchreports 2.7.32

LABCORE Completed Batch Report for Batch# 00041255

Analyst: Hurson, Aleta **Book#:** NA

Instrument: LE-BAL-091

Method: FUSION - ZR, LA-549-141 Rev/Mod M-1-A

Specification: C109 CLO

Prep Batch: N/A

Batch Comment:

C109 CLO for Fusion. gll

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
1	BLNK-PREP	S1305160012			Z		Dose Rate(1)	SOLID		<0.5				mRem/hr			
1	BLNK-PREP	S1305160012			Z		Digest Factor(1)	SOLID		0.001873				g / mL			
2	SAMPLE	S13T004254			Z		Dose Rate(1)	SOLID		200				mRem/hr			
2	SAMPLE	S13T004254			Z		Digest Factor(1)	SOLID		0.001873				g / mL			
3	DUP	S1305160013	S13T004254		Z		Dose Rate(1)	SOLID		200				mRem/hr			
3	DUP	S1305160013	S13T004254		Z		Digest Factor(1)	SOLID		0.001926				g / mL			
4	SAMPLE	S13T004282			Z		Dose Rate(1)	SOLID		180				mRem/hr			
4	SAMPLE	S13T004282			Z		Digest Factor(1)	SOLID		0.001790				g / mL			
5	SAMPLE	S13T004309			Z		Dose Rate(1)	SOLID		180				mRem/hr			
5	SAMPLE	S13T004309			Z		Digest Factor(1)	SOLID		0.002020				g / mL			

Comments Section:

Data Flagger Status:
Flagger Not Run

Final Page for Batch# 00041255

Reviewer Signature 16 May 13 Date

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041255

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Method	Customer Id	Specification
1	S1305160012	BLNK-PREP			FUSION - ZR		
2	S13T004254	SAMPLE		20130402	FUSION - ZR	9C-13-Comp A	C109 CLO
3	S1305160013	DUP	S13T004254		FUSION - ZR		
4	S13T004282	SAMPLE		20130402	FUSION - ZR	9C-13-Comp B	C109 CLO
5	S13T004309	SAMPLE		20130402	FUSION - ZR	9C-13-Comp C	C109 CLO

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Data Entry Template for Batch# 00041255

Analyst: H0076677 **Standard ID / Book#:** NA

Instrument: NA

Method: FUSION - ZR. LA-549-141 Rev/Mod M-1-A

Prep Batch: N/A

Batch Comment:

C109 CLO for Fusion. gll

CACN:3A.26

S	Type	Sample	R	A	Matrix	Group#	Project
1	BLNK-PREP	S1305160012		Z	SOLID		
2	SAMPLE	S13T004254		Z	SOLID	20130402	C109 CLO
3	DUP	S1305160013		Z	SOLID		
4	SAMPLE	S13T004282		Z	SOLID	20130402	C109 CLO
5	SAMPLE	S13T004309		Z	SOLID	20130402	C109 CLO

Final Page for Batch# 00041255

Alicia Hansen 5/16/13
Analyst Signature Date

5/16/13 ACH
Alicia Hansen 5/16/13
Data Entry Signature Date
5/16/13

Data Entry Comments:

S = Batch Slot Number, R = Retest Number, A = Aliquot Code.

ATL	DIGESTION BATCH LIST DATA COLLECTION FORM

○ LA-544-101 Rev _____ ○ LA-544-113 Rev _____ ○ _____ Rev _____ (Other)

○ LA-549-133 Rev _____ ◉ LA-549-141 Rev M-1-A

Batch #: 41255 Analyst: AKH Date: 5/16/2013

(Pipette #); Pipette ID; Volume Range or Fixed Volume; Check box if pipette passes visual verification:

(1) N/A (Range/Vol: N/A) ☐

(2) N/A (Range/Vol: N/A) ☐

(3) N/A (Range/Vol: N/A) ☐

Balance ID; Date of balance verification:

LE-BAL-091 (Verification Date: 5/16/2013)

○ Spike / ○ Carrier / ○ Tracer # N/A Vol N/A Pip # N/A

○ Spike / ○ Carrier / ○ Tracer # N/A Vol N/A Pip # N/A

○ Spike / ○ Carrier / ○ Tracer # N/A Vol N/A Pip # N/A

Special Instructions:

Use ZR Crucibles. gll

Sample Type	Digest Sample #	Parent Sample #	Sample Weight (g)	Final Volume (mL)	Dose Rate (mRem/hr)
Blank Prep	S1305160012	N/A	0.4682	250	<0.5
Sample	S13T004254	S13T004246	0.4682	250	200
Duplicate	S1305160013	S13T004246	0.4814	250	200
Sample	S13T004282	S13T004274	0.4474	250	180
Sample	S13T004309	S13T004301	0.5049	250	180

Comments:

C109 CLO Fusion-ZR. gll Digest Appearance: clear liquid. colorless. no solids.

A-6005-290 (REV 2)

5/28/2013 2:23:28PM
IncompleteBatchShort Version 2.7.29
batchreports 2.7.32

LABCORE Data Entry Template for Batch# 00041404

Analyst: Stultz, Amber **Standard ID / Book#:** See Bench Sheet
Instrument: LE-BAL-040
Method: ACID DIGEST, SOLID, LA-505-163 Rev/Mod H-0-A
Prep Batch: N/A
Batch Comment:
Acid digest for C109 CLO. aks
CACN:3A.26

S	Type	Sample	R	A	Matrix	Group#	Project
1	BLNK-PREP	S1305280021		A	LIQUID		
2	STD-PREP	S1305280022		A	LIQUID		
3	STD-PREP	S1305280026		A	LIQUID		
4	STD-PREP	S1305280028		A	LIQUID		
5	STD-PREP	S1305280030		A	LIQUID		
6	SAMPLE	S13T004252		A	SOLID	20130402	C109 CLO
7	DUP	S1305280023		A	SOLID		
8	SPK-PREDIG	S1305280024		A	SOLID		
9	SPK-PREDIG	S1305280025		A	SOLID		
10	SPK-PREDIG	S1305280027		A	SOLID		
11	SPK-PREDIG	S1305280029		A	SOLID		
12	SAMPLE	S13T004280		A	SOLID	20130402	C109 CLO
13	SAMPLE	S13T004307		A	SOLID	20130402	C109 CLO

Final Page for Batch# 00041404

Amber Stultz 5/28/2013
Analyst Signature Date

Amber Stultz 5/28/2013
Data Entry Signature Date

Data Entry Comments:

S = Batch Slot Number, R = Retest Number, A = Aliquot Code.

ATL	**ICP-AES DATA REVIEW CHECKLIST**	○ IH ◉ NON IH

○ LA-505-170 (JY) Rev _____ (*) ○ LA-505-171 (TJA-JY) (IH) Rev _____ (*)

◉ LA-505-174 (iCAP 6500) Rev A-0 (*)

Worklist/Project Information: Batch 00041718 / C109 CLO / 20130402

Analysis Date(s): 6/14/13 Instrument Id: iCAP 6500

Prep Batches Analyzed (Worklist #): 00041618 Prep Method: LA-505-163 H-0-A

Review Items	Level 1 Yes	Level 1 No	Level 1 N/A	Level 2
A. Calibration/Instrument Run QC				
1. Instrument calibrated per procedure and at specified levels?	◉	○	○	☐
2. ICV/CCV analyzed at appropriate frequency and within control limits (Recovery: 90-110%)?	○	◉	○	☐
3. ICB/CCB analyzed at required frequency and < EQL (or RL) or <5% of the lowest sample result with client consent. N/A if all samples are ND.	◉	○	○	☐
4. LLS run and within control limits (Recovery: 70-130%)? For IH, recovery is mandatory to verify RL.	○	◉	○	☐
5. ICSA and ICSAB run at required frequency and within control limits (Recovery: 80-120% or < EQL)?	○	◉	○	☐
B. Sample Results				
1. Were samples with concentrations > linear range for any analyte diluted and reanalyzed?	○	○	◉	☐
2. Are all reported results bracketed by in-control QC?	○	◉	○	☐
3. Are there 10 or fewer samples run between bracketed, in-control QC?	◉	○	○	☐
C. Preparation/Matrix QC				
1. LCS/Prep Std prepared per prep batch and within control limits? Recovery: ◉ 80-120% or ○ Statistical _____	○	◉	○	☐
2. LCS Dup (Prep Std Dup) prepared per prep batch, if required, and within control limits? Recovery: ○ 80-120% or ○ Statistical _____ RPD: ○ ≤20% or ○ Statistical _____	○	○	◉	☐
3. IH RLS run (when required) and within mandatory control limits (Recovery: 70-130%)?	○	○	◉	☐
4. Method/Media Blank prepared per prep batch and < EQL (or RL) or <5% of the lowest sample result?	○	◉	○	☐
5. Duplicate or MS Duplicate run at required frequency and within control limits? %RPD: ○ ≤20% or ◉ Client-specified ≤30%	○	◉	○	☐
6. MS run at required frequency and within control limit? Recovery: ◉ 75-125% or ○ Client-specified _____	○	◉	○	☐
7. PDS analyzed if required and within control limit (Recovery: 80-120%)?	○	◉	○	☐
8. 5x serial dilution analyzed per prep batch and within control limit (% Diff <10%) or the sample result is < 50x MDL?	◉	○	○	☐
D. Other				
1. Are all problems and nonconformance issues documented appropriately?	◉	○	○	☐
2. Are current IDL / MDL / EQL / RL / IEC data on file?	◉	○	○	☐
3. Calculations/transcriptions checked for errors?	◉	○	○	☐
4. Are all raw data complete and verified in OmniLIMS?	◉	○	○	☐
5. Is calibration data included?	◉	○	○	☐
6. All client/project specific requirements met (e.g., MDL, holding times, etc.)?	◉	○	○	☐
7. Date/time of analysis verified as correct?	◉	○	○	☐
8. Prep/Breakdown Batch Benchsheet/Worklist properly completed and included, as required?	◉	○	○	☐
9. IH Only: Media Blank subtracted from Sample results?	○	○	◉	☐

(*) This form is not used by the subject procedure; rather, it is used to assist in verifying the data produced during the performance of the procedure.

ATL	ICP-AES DATA REVIEW CHECKLIST (continued)	○ IH ◉ NON IH

○ LA-505-170 (JY) Rev _____ (*) ○ LA-505-171 (TJA-JY) (IH) Rev _____ (*)

◉ LA-505-174 (iCAP 6500) Rev A-0 (*)

Worklist/Project Information: Batch 00041718 / C109 CLO / 20130402

Analysis Date(s): 6/14/13 Instrument Id: iCAP 6500

Prep Batches Analyzed (Worklist #): 00041618 Prep Method: LA-505-163 H-0-A

Comments/Samples Affected (indicate review item letter and number):

A.2 Li failed high on the first CCV. Li is a secondary analyte.

A.4 Ending LLS high for Sm at 139%. Sm is a secondary analyte.

✓ A.5 ICSA standards contained the following >EQL: Ag (first standard only), B, Mn, Sr, Th and U.
ICSAB standards contained the following >EQL: Nd (first standard only) and Ta.

C.1 LCS failed low for Si at ~~37%~~ 29% SMS 6-19-13. This digestion is not designed for Si. LCS failed high for Pr at 121%. Both analytes "a" flagged.

~~C.4 Prep blank contained Si >EQL. Si results "B" flagged.~~ SMS 7/24/13 SMS 7/24/13

C.5 The following analytes did not meet RPD acceptance criteria: ~~Cr~~, La, Nd, Pr, Si and Th. ~~Samples "a" flagged for Cr and Si~~. All others <EQL. SMS 7/24/13

C.6 The following analytes failed the pre-digestion spike: Al, Fe, Na, P, Zr, Nb, Ta, U and W. Al, Fe, Na, P ~~and U~~ sample concentrations were >4X the spike concentration. Nb, Ta, W and Zr were "b" flagged for all samples. SMS 6-19-13 SMS 6-19-13

C.7 Al failed the post-spike. However, the Al sample concentration is >4X the spike concentration.

C.8 The serial dilution requirements failed for Ba, Bi, ~~Cr~~, Cu, S, ~~Si~~, Sm, Sr and Zr. All are <50X the MDL. No further action required. SMS 7/24/13

1st Level Data Reviewer: Stacey D Bell (Signature) Date: 6/18/13

2nd Level Data Reviewer: Samuel A. Adam (Signature) Date: 6/20/2013

PC: Julie Axelson 7/16/13

Cr, Si & U not reported. Stacey D Bell 7/24/13

Nb, Pr, Ta, and Zr not reported. Julie Axelson 7/30/13

(*) This form is not used by the subject procedure; rather, it is used to assist in verifying the data produced during the performance of the procedure.

7/18/2013 12:38:17PM
CompleteBatch Version 2.7.32
batchreports 2.7.32

LABCORE Completed Batch Report for Batch# 00041718

Analyst: Getz, Andrew

Book#: See benchsheet

Instrument: ICP-ICAP6500

Method: ICP-TOTAL METALS, LA-505-174 Rev/Mod A-0

Specification: C109 CLO

Prep Batch: 00041618

Batch Comment: N/a

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
Sample Sequence 1																	
1	ICV	S1306170011		0	0		Silver	LIQUID	1	1.0614E+00			1.00E-03	ug/mL	106.14	% Recovery	
1	ICV	S1306170011		0	0		Aluminum	LIQUID	5	5.2294E+00			6.00E-03	ug/mL	104.59	% Recovery	
1	ICV	S1306170011		0	0		Arsenic	LIQUID	5	4.9633E+00			5.00E-03	ug/mL	99.265	% Recovery	
1	ICV	S1306170011		0	0		Boron	LIQUID	5	5.1485E+00			1.00E-03	ug/mL	102.97	% Recovery	
1	ICV	S1306170011		0	0		Barium	LIQUID	5	5.1109E+00			1.00E-03	ug/mL	102.22	% Recovery	
1	ICV	S1306170011		0	0		Beryllium	LIQUID	5	5.2183E+00			1.00E-03	ug/mL	104.37	% Recovery	
1	ICV	S1306170011		0	0		Bismuth	LIQUID	5	5.1149E+00			6.00E-03	ug/mL	102.3	% Recovery	
1	ICV	S1306170011		0	0		Calcium	LIQUID	5	5.2476E+00			0.08	ug/mL	104.95	% Recovery	
1	ICV	S1306170011		0	0		Cadmium	LIQUID	5	5.1969E+00			1.00E-03	ug/mL	103.94	% Recovery	
2	ICV	S1306170011		0	1		Cerium	LIQUID	5	5.1276E+00			6.00E-03	ug/mL	102.55	% Recovery	
1	ICV	S1306170011		0	0		Cobalt	LIQUID	5	5.1455E+00			1.00E-03	ug/mL	102.91	% Recovery	
1	ICV	S1306170011		0	0		Chromium	LIQUID	5	5.2602E+00			1.00E-03	ug/mL	105.2	% Recovery	
1	ICV	S1306170011		0	0		Copper	LIQUID	5	5.3336E+00			2.00E-03	ug/mL	106.67	% Recovery	
2	ICV	S1306170011		0	1		Europium	LIQUID	5	5.3199E+00			1.00E-03	ug/mL	106.4	% Recovery	
1	ICV	S1306170011		0	0		Iron	LIQUID	5	5.2474E+00			0.01	ug/mL	104.95	% Recovery	
1	ICV	S1306170011		0	0		Potassium	LIQUID	5	5.2765E+00			0.02	ug/mL	105.53	% Recovery	
1	ICV	S1306170011		0	0		Lanthanum	LIQUID	5	5.3100E+00			1.00E-03	ug/mL	106.2	% Recovery	
1	ICV	S1306170011		0	0		Lithium	LIQUID	5	5.4158E+00			1.00E-03	ug/mL	108.32	% Recovery	
1	ICV	S1306170011		0	0		Magnesium	LIQUID	5	5.3225E+00			2.00E-03	ug/mL	106.45	% Recovery	
1	ICV	S1306170011		0	0		Manganese	LIQUID	5	5.3419E+00			1.00E-03	ug/mL	106.84	% Recovery	
1	ICV	S1306170011		0	0		Molybdenum	LIQUID	5	4.9350E+00			1.00E-03	ug/mL	98.699	% Recovery	
1	ICV	S1306170011		0	0		Sodium	LIQUID	5	5.2579E+00			0.04	ug/mL	105.16	% Recovery	
2	ICV	S1306170011		0	1		Neodymium	LIQUID	5	5.1889E+00			3.00E-03	ug/mL	103.78	% Recovery	
1	ICV	S1306170011		0	0		Nickel	LIQUID	5	5.1037E+00			1.00E-03	ug/mL	102.07	% Recovery	
2	ICV	S1306170011		0	1		Niobium	LIQUID	5	4.9873E+00			3.00E-03	ug/mL	99.747	% Recovery	
1	ICV	S1306170011		0	0		Phosphorus	LIQUID	5	4.9779E+00			3.00E-03	ug/mL	99.558	% Recovery	
1	ICV	S1306170011		0	0		Lead	LIQUID	5	5.1030E+00			6.00E-03	ug/mL	102.06	% Recovery	
2	ICV	S1306170011		0	1		Palladium	LIQUID	5	5.3344E+00			9.00E-03	ug/mL	106.69	% Recovery	
2	ICV	S1306170011		0	1		Praseodymium	LIQUID	5	5.4059E+00			4.00E-03	ug/mL	108.12	% Recovery	
2	ICV	S1306170011		0	1		Rubidium	LIQUID	5	5.1477E+00			0.03	ug/mL	102.95	% Recovery	
2	ICV	S1306170011		0	1		Rhodium	LIQUID	5	4.9125E+00			8.00E-03	ug/mL	98.249	% Recovery	

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041718

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
2	ICV	S1306170011		0 1			Ruthenium	LIQUID	5	5.2195E+00			4.00E-03	ug/mL	104.39	% Recovery	
1	ICV	S1306170011		0 0			Sulfur	LIQUID	5	4.9731E+00			5.00E-03	ug/mL	99.461	% Recovery	
1	ICV	S1306170011		0 0			Antimony	LIQUID	5	4.8680E+00			6.00E-03	ug/mL	97.36	% Recovery	
1	ICV	S1306170011		0 0			Selenium	LIQUID	5	5.0054E+00			6.00E-03	ug/mL	100.11	% Recovery	
1	ICV	S1306170011		0 0			Silicon	LIQUID	5	4.8776E+00			5.00E-03	ug/mL	97.552	% Recovery	
2	ICV	S1306170011		0 1			Samarium	LIQUID	5	5.1577E+00			5.00E-03	ug/mL	103.15	% Recovery	
2	ICV	S1306170011		0 1			Tin	LIQUID	5	4.9190E+00			3.00E-03	ug/mL	98.379	% Recovery	
1	ICV	S1306170011		0 0			Strontium	LIQUID	5	5.1095E+00			2.00E-03	ug/mL	102.19	% Recovery	
2	ICV	S1306170011		0 1			Tantalum	LIQUID	5	5.2170E+00			5.00E-03	ug/mL	104.34	% Recovery	
2	ICV	S1306170011		0 1			Tellurium	LIQUID	5	5.0246E+00			5.00E-03	ug/mL	100.49	% Recovery	
2	ICV	S1306170011		0 1			Thorium	LIQUID	5	5.1650E+00			5.00E-03	ug/mL	103.3	% Recovery	
1	ICV	S1306170011		0 0			Titanium	LIQUID	5	5.0942E+00			1.00E-03	ug/mL	101.88	% Recovery	
2	ICV	S1306170011		0 1			Thallium	LIQUID	5	4.8942E+00			6.00E-03	ug/mL	97.883	% Recovery	
2	ICV	S1306170011		0 1			Uranium	LIQUID	5	5.0890E+00			0.02	ug/mL	101.78	% Recovery	
1	ICV	S1306170011		0 0			Vanadium	LIQUID	5	5.2343E+00			1.00E-03	ug/mL	104.69	% Recovery	
2	ICV	S1306170011		0 1			Tungsten	LIQUID	5	5.1381E+00			6.00E-03	ug/mL	102.76	% Recovery	
2	ICV	S1306170011		0 1			Yttrium	LIQUID	5	5.2813E+00			2.00E-03	ug/mL	105.63	% Recovery	
1	ICV	S1306170011		0 0			Zinc	LIQUID	5	5.0712E+00			4.00E-03	ug/mL	101.42	% Recovery	
1	ICV	S1306170011		0 0			Zirconium	LIQUID	5	5.0996E+00			1.00E-03	ug/mL	101.99	% Recovery	
Sample Sequence 3																	
3	LLS	S1306170013		0 0			Silver	LIQUID	.02	2.0643E-02			1.00E-03	ug/mL	103.21	% Recovery	
3	LLS	S1306170013		0 0			Aluminum	LIQUID	.1	1.0074E-01			6.00E-03	ug/mL	100.74	% Recovery	
3	LLS	S1306170013		0 0			Arsenic	LIQUID	.2	1.9850E-01			5.00E-03	ug/mL	99.252	% Recovery	
3	LLS	S1306170013		0 0			Boron	LIQUID	.1	8.7278E-02			1.00E-03	ug/mL	87.278	% Recovery	
3	LLS	S1306170013		0 0			Barium	LIQUID	.01	9.8334E-03			1.00E-03	ug/mL	98.334	% Recovery	
3	LLS	S1306170013		0 0			Beryllium	LIQUID	.002	1.9512E-03			1.00E-03	ug/mL	97.559	% Recovery	
3	LLS	S1306170013		0 0			Bismuth	LIQUID	.2	2.0037E-01			6.00E-03	ug/mL	100.18	% Recovery	
3	LLS	S1306170013		0 0			Calcium	LIQUID	.2	1.9167E-01			0.08	ug/mL	95.834	% Recovery	
3	LLS	S1306170013		0 0			Cadmium	LIQUID	.01	1.0224E-02			1.00E-03	ug/mL	102.24	% Recovery	
3	LLS	S1306170013		0 0			Cerium	LIQUID	.2	2.1609E-01			6.00E-03	ug/mL	108.04	% Recovery	
3	LLS	S1306170013		0 0			Cobalt	LIQUID	.04	4.1385E-02			1.00E-03	ug/mL	103.46	% Recovery	
3	LLS	S1306170013		0 0			Chromium	LIQUID	.02	2.0323E-02			1.00E-03	ug/mL	101.62	% Recovery	
3	LLS	S1306170013		0 0			Copper	LIQUID	.02	2.1606E-02			2.00E-03	ug/mL	108.03	% Recovery	
4	LLS	S1306170013		0 1			Europium	LIQUID	.1	1.0063E-01			1.00E-03	ug/mL	100.63	% Recovery	
3	LLS	S1306170013		0 0			Iron	LIQUID	.05	4.7568E-02			0.01	ug/mL	95.137	% Recovery	
3	LLS	S1306170013		0 0			Potassium	LIQUID	1	9.9574E-01			0.02	ug/mL	99.574	% Recovery	
3	LLS	S1306170013		0 0			Lanthanum	LIQUID	.01	9.9200E-03			1.00E-03	ug/mL	99.2	% Recovery	
3	LLS	S1306170013		0 0			Lithium	LIQUID	.02	2.0904E-02			1.00E-03	ug/mL	104.52	% Recovery	
3	LLS	S1306170013		0 0			Magnesium	LIQUID	.2	2.0470E-01			2.00E-03	ug/mL	102.35	% Recovery	
3	LLS	S1306170013		0 0			Manganese	LIQUID	.02	2.0766E-02			1.00E-03	ug/mL	103.83	% Recovery	
3	LLS	S1306170013		0 0			Molybdenum	LIQUID	.1	9.9350E-02			1.00E-03	ug/mL	99.35	% Recovery	
5	LLS	S1306170013		0 2			Sodium	LIQUID	1	9.5480E-01			0.04	ug/mL	95.48	% Recovery	

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041718

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
3	LLS	S1306170013		0 0			Neodymium	LIQUID	.1	9.7661E-02			3.00E-03	ug/mL	97.661	% Recovery	
3	LLS	S1306170013		0 0			Nickel	LIQUID	.04	4.1804E-02			1.00E-03	ug/mL	104.51	% Recovery	
4	LLS	S1306170013		0 1			Niobium	LIQUID	.1	9.5468E-02			3.00E-03	ug/mL	95.468	% Recovery	
3	LLS	S1306170013		0 0			Phosphorus	LIQUID	.4	3.9591E-01			3.00E-03	ug/mL	98.978	% Recovery	
3	LLS	S1306170013		0 0			Lead	LIQUID	.2	1.9998E-01			6.00E-03	ug/mL	99.991	% Recovery	
4	LLS	S1306170013		0 1			Palladium	LIQUID	1	9.9470E-01			9.00E-03	ug/mL	99.47	% Recovery	
4	LLS	S1306170013		0 1			Praseodymium	LIQUID	.1	1.0705E-01			4.00E-03	ug/mL	107.05	% Recovery	
4	LLS	S1306170013		0 1			Rubidium	LIQUID	2	2.0035E+00			0.03	ug/mL	100.17	% Recovery	
4	LLS	S1306170013		0 1			Rhodium	LIQUID	.1	1.0406E-01			8.00E-03	ug/mL	104.06	% Recovery	
4	LLS	S1306170013		0 1			Ruthenium	LIQUID	.1	9.9564E-02			4.00E-03	ug/mL	99.564	% Recovery	
3	LLS	S1306170013		0 0			Sulfur	LIQUID	.2	1.9762E-01			5.00E-03	ug/mL	98.811	% Recovery	
3	LLS	S1306170013		0 0			Antimony	LIQUID	.1	1.0064E-01			6.00E-03	ug/mL	100.64	% Recovery	
3	LLS	S1306170013		0 0			Selenium	LIQUID	.2	1.9359E-01			6.00E-03	ug/mL	96.794	% Recovery	
3	LLS	S1306170013		0 0			Silicon	LIQUID	.1	1.0215E-01			5.00E-03	ug/mL	102.15	% Recovery	
3	LLS	S1306170013		0 0			Samarium	LIQUID	.1	1.1130E-01			5.00E-03	ug/mL	111.3	% Recovery	
4	LLS	S1306170013		0 1			Tin	LIQUID	.1	1.0005E-01			3.00E-03	ug/mL	100.05	% Recovery	
3	LLS	S1306170013		0 0			Strontium	LIQUID	.02	2.1449E-02			2.00E-03	ug/mL	107.24	% Recovery	
4	LLS	S1306170013		0 1			Tantalum	LIQUID	1	9.8306E-01			5.00E-03	ug/mL	98.306	% Recovery	
4	LLS	S1306170013		0 1			Tellurium	LIQUID	1	9.9876E-01			5.00E-03	ug/mL	99.876	% Recovery	
4	LLS	S1306170013		0 1			Thorium	LIQUID	.1	9.5393E-02			5.00E-03	ug/mL	95.393	% Recovery	
3	LLS	S1306170013		0 0			Titanium	LIQUID	.02	1.9708E-02			1.00E-03	ug/mL	98.538	% Recovery	
3	LLS	S1306170013		0 0			Thallium	LIQUID	.4	3.8108E-01			6.00E-03	ug/mL	95.27	% Recovery	
3	LLS	S1306170013		0 0			Uranium	LIQUID	.5	5.0237E-01			0.02	ug/mL	100.47	% Recovery	
3	LLS	S1306170013		0 0			Vanadium	LIQUID	.05	5.1014E-02			1.00E-03	ug/mL	102.03	% Recovery	
4	LLS	S1306170013		0 1			Tungsten	LIQUID	1	9.9624E-01			6.00E-03	ug/mL	99.624	% Recovery	
4	LLS	S1306170013		0 1			Yttrium	LIQUID	.1	1.0228E-01			2.00E-03	ug/mL	102.28	% Recovery	
3	LLS	S1306170013		0 0			Zinc	LIQUID	.02	1.9158E-02			4.00E-03	ug/mL	95.789	% Recovery	
3	LLS	S1306170013		0 0			Zirconium	LIQUID	.02	2.0046E-02			1.00E-03	ug/mL	100.23	% Recovery	
Sample Sequence 6																	
6	ICB	S1306170012		0 0			Silver	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
6	ICB	S1306170012		0 0			Aluminum	LIQUID		<6.0000E-03			6.00E-03	ug/mL			
6	ICB	S1306170012		0 0			Arsenic	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
6	ICB	S1306170012		0 0			Boron	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
6	ICB	S1306170012		0 0			Barium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
6	ICB	S1306170012		0 0			Beryllium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
6	ICB	S1306170012		0 0			Bismuth	LIQUID		<6.0000E-03			6.00E-03	ug/mL			
6	ICB	S1306170012		0 0			Calcium	LIQUID		<8.0000E-02			0.08	ug/mL			
6	ICB	S1306170012		0 0			Cadmium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
6	ICB	S1306170012		0 0			Cerium	LIQUID		1.1256E-02			6.00E-03	ug/mL			
6	ICB	S1306170012		0 0			Cobalt	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
6	ICB	S1306170012		0 0			Chromium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
6	ICB	S1306170012		0 0			Copper	LIQUID		<2.0000E-03			2.00E-03	ug/mL			

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041718

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
6	ICB	S1306170012		0 0			Europium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
6	ICB	S1306170012		0 0			Iron	LIQUID		<1.0000E-02			0.01	ug/mL			
6	ICB	S1306170012		0 0			Potassium	LIQUID		<2.0000E-02			0.02	ug/mL			
6	ICB	S1306170012		0 0			Lanthanum	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
6	ICB	S1306170012		0 0			Lithium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
6	ICB	S1306170012		0 0			Magnesium	LIQUID		<2.0000E-03			2.00E-03	ug/mL			
6	ICB	S1306170012		0 0			Manganese	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
6	ICB	S1306170012		0 0			Molybdenum	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
6	ICB	S1306170012		0 0			Sodium	LIQUID		<4.0000E-02			0.04	ug/mL			
6	ICB	S1306170012		0 0			Neodymium	LIQUID		<3.0000E-03			3.00E-03	ug/mL			
6	ICB	S1306170012		0 0			Nickel	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
6	ICB	S1306170012		0 0			Niobium	LIQUID		<3.0000E-03			3.00E-03	ug/mL			
6	ICB	S1306170012		0 0			Phosphorus	LIQUID		<3.0000E-03			3.00E-03	ug/mL			
6	ICB	S1306170012		0 0			Lead	LIQUID		<6.0000E-03			6.00E-03	ug/mL			
6	ICB	S1306170012		0 0			Palladium	LIQUID		<9.0000E-03			9.00E-03	ug/mL			
6	ICB	S1306170012		0 0			Praseodymium	LIQUID		5.1506E-03			4.00E-03	ug/mL			
6	ICB	S1306170012		0 0			Rubidium	LIQUID		<3.0000E-02			0.03	ug/mL			
6	ICB	S1306170012		0 0			Rhodium	LIQUID		<8.0000E-03			8.00E-03	ug/mL			
6	ICB	S1306170012		0 0			Ruthenium	LIQUID		<4.0000E-03			4.00E-03	ug/mL			
6	ICB	S1306170012		0 0			Sulfur	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
6	ICB	S1306170012		0 0			Antimony	LIQUID		6.3885E-03			6.00E-03	ug/mL			
6	ICB	S1306170012		0 0			Selenium	LIQUID		<6.0000E-03			6.00E-03	ug/mL			
6	ICB	S1306170012		0 0			Silicon	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
6	ICB	S1306170012		0 0			Samarium	LIQUID		2.3063E-02			5.00E-03	ug/mL			
6	ICB	S1306170012		0 0			Tin	LIQUID		<3.0000E-03			3.00E-03	ug/mL			
6	ICB	S1306170012		0 0			Strontium	LIQUID		<2.0000E-03			2.00E-03	ug/mL			
6	ICB	S1306170012		0 0			Tantalum	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
6	ICB	S1306170012		0 0			Tellurium	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
6	ICB	S1306170012		0 0			Thorium	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
6	ICB	S1306170012		0 0			Titanium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
6	ICB	S1306170012		0 0			Thallium	LIQUID		<6.0000E-03			6.00E-03	ug/mL			
6	ICB	S1306170012		0 0			Uranium	LIQUID		<2.0000E-02			0.02	ug/mL			
6	ICB	S1306170012		0 0			Vanadium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
6	ICB	S1306170012		0 0			Tungsten	LIQUID		<6.0000E-03			6.00E-03	ug/mL			
6	ICB	S1306170012		0 0			Yttrium	LIQUID		<2.0000E-03			2.00E-03	ug/mL			
6	ICB	S1306170012		0 0			Zinc	LIQUID		<4.0000E-03			4.00E-03	ug/mL			
6	ICB	S1306170012		0 0			Zirconium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
Sample Sequence 7																	
7	ICSA	S1306170014		0 0			Silver	LIQUID		1.4054E-02			1.00E-03	ug/mL	N/A		
7	ICSA	S1306170014		0 0			Aluminum	LIQUID	200	2.0384E+02			6.00E-03	ug/mL	101.92	% Recovery	
7	ICSA	S1306170014		0 0			Arsenic	LIQUID		<5.0000E-03			5.00E-03	ug/mL	N/A		
7	ICSA	S1306170014		0 0			Boron	LIQUID		9.6225E-02			1.00E-03	ug/mL	N/A		

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041718

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
7	ICSA	S1306170014		0 0			Barium	LIQUID		3.6228E-03			1.00E-03	ug/mL	N/A		
7	ICSA	S1306170014		0 0			Beryllium	LIQUID		1.2338E-03			1.00E-03	ug/mL	N/A		
7	ICSA	S1306170014		0 0			Bismuth	LIQUID		1.7119E-02			6.00E-03	ug/mL	N/A		
7	ICSA	S1306170014		0 0			Calcium	LIQUID	200	1.8658E+02			0.08	ug/mL	93.288	% Recovery	
7	ICSA	S1306170014		0 0			Cadmium	LIQUID		<1.0000E-03			1.00E-03	ug/mL	N/A		
7	ICSA	S1306170014		0 0			Cerium	LIQUID		<6.0000E-03			6.00E-03	ug/mL	N/A		
7	ICSA	S1306170014		0 0			Cobalt	LIQUID		2.7158E-03			1.00E-03	ug/mL	N/A		
7	ICSA	S1306170014		0 0			Chromium	LIQUID		<1.0000E-03			1.00E-03	ug/mL	N/A		
7	ICSA	S1306170014		0 0			Copper	LIQUID		<2.0000E-03			2.00E-03	ug/mL	N/A		
7	ICSA	S1306170014		0 0			Europium	LIQUID		<1.0000E-03			1.00E-03	ug/mL	N/A		
7	ICSA	S1306170014		0 0			Iron	LIQUID	200	1.7561E+02			0.01	ug/mL	87.806	% Recovery	
7	ICSA	S1306170014		0 0			Potassium	LIQUID		<2.0000E-02			0.02	ug/mL	N/A		
7	ICSA	S1306170014		0 0			Lanthanum	LIQUID		<1.0000E-03			1.00E-03	ug/mL	N/A		
7	ICSA	S1306170014		0 0			Lithium	LIQUID		6.3463E-03			1.00E-03	ug/mL	N/A		
7	ICSA	S1306170014		0 0			Magnesium	LIQUID	200	1.8667E+02			2.00E-03	ug/mL	93.334	% Recovery	
7	ICSA	S1306170014		0 0			Manganese	LIQUID		1.9218E-02			1.00E-03	ug/mL	N/A		
7	ICSA	S1306170014		0 0			Molybdenum	LIQUID		<1.0000E-03			1.00E-03	ug/mL	N/A		
7	ICSA	S1306170014		0 0			Sodium	LIQUID	200	2.0451E+02			0.04	ug/mL	102.25	% Recovery	
7	ICSA	S1306170014		0 0			Neodymium	LIQUID		2.2871E-02			3.00E-03	ug/mL	N/A		
7	ICSA	S1306170014		0 0			Nickel	LIQUID		6.0152E-03			1.00E-03	ug/mL	N/A		
7	ICSA	S1306170014		0 0			Niobium	LIQUID		2.9964E-02			3.00E-03	ug/mL	N/A		
7	ICSA	S1306170014		0 0			Phosphorus	LIQUID		2.0031E-02			3.00E-03	ug/mL	N/A		
7	ICSA	S1306170014		0 0			Lead	LIQUID		<6.0000E-03			6.00E-03	ug/mL	N/A		
7	ICSA	S1306170014		0 0			Palladium	LIQUID		<9.0000E-03			9.00E-03	ug/mL	N/A		
7	ICSA	S1306170014		0 0			Praseodymium	LIQUID		<4.0000E-03			4.00E-03	ug/mL	N/A		
7	ICSA	S1306170014		0 0			Rubidium	LIQUID		<3.0000E-02			0.03	ug/mL	N/A		
7	ICSA	S1306170014		0 0			Rhodium	LIQUID		<8.0000E-03			8.00E-03	ug/mL	N/A		
7	ICSA	S1306170014		0 0			Ruthenium	LIQUID		<4.0000E-03			4.00E-03	ug/mL	N/A		
7	ICSA	S1306170014		0 0			Sulfur	LIQUID		<5.0000E-03			5.00E-03	ug/mL	N/A		
7	ICSA	S1306170014		0 0			Antimony	LIQUID		<6.0000E-03			6.00E-03	ug/mL	N/A		
7	ICSA	S1306170014		0 0			Selenium	LIQUID		<6.0000E-03			6.00E-03	ug/mL	N/A		
7	ICSA	S1306170014		0 0			Silicon	LIQUID		<5.0000E-03			5.00E-03	ug/mL	N/A		
7	ICSA	S1306170014		0 0			Samarium	LIQUID		<5.0000E-03			5.00E-03	ug/mL	N/A		
7	ICSA	S1306170014		0 0			Tin	LIQUID		<3.0000E-03			3.00E-03	ug/mL	N/A		
7	ICSA	S1306170014		0 0			Strontium	LIQUID		2.1837E-02			2.00E-03	ug/mL	N/A		
7	ICSA	S1306170014		0 0			Tantalum	LIQUID		2.6182E-02			5.00E-03	ug/mL	N/A		
7	ICSA	S1306170014		0 0			Tellurium	LIQUID		<5.0000E-03			5.00E-03	ug/mL	N/A		
7	ICSA	S1306170014		0 0			Thorium	LIQUID		2.4408E-01			5.00E-03	ug/mL	N/A		
7	ICSA	S1306170014		0 0			Titanium	LIQUID		<1.0000E-03			1.00E-03	ug/mL	N/A		
7	ICSA	S1306170014		0 0			Thallium	LIQUID		<6.0000E-03			6.00E-03	ug/mL	N/A		
7	ICSA	S1306170014		0 0			Uranium	LIQUID		8.0487E-01			0.02	ug/mL	N/A		
7	ICSA	S1306170014		0 0			Vanadium	LIQUID		<1.0000E-03			1.00E-03	ug/mL	N/A		

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041718

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
7	ICSA	S1306170014		0 0			Tungsten	LIQUID		7.5311E-03			6.00E-03	ug/mL	N/A		
7	ICSA	S1306170014		0 0			Yttrium	LIQUID		<2.0000E-03			2.00E-03	ug/mL	N/A		
7	ICSA	S1306170014		0 0			Zinc	LIQUID		<4.0000E-03			4.00E-03	ug/mL	N/A		
7	ICSA	S1306170014		0 0			Zirconium	LIQUID		5.0112E-03			1.00E-03	ug/mL	N/A		
Sample Sequence 8																	
8	ICSAB	S1306170015		0 0			Silver	LIQUID	1	9.9835E-01			1.00E-03	ug/mL	99.835	% Recovery	
8	ICSAB	S1306170015		0 0			Aluminum	LIQUID	200	1.9869E+02			6.00E-03	ug/mL	99.347	% Recovery	
8	ICSAB	S1306170015		0 0			Arsenic	LIQUID	5	4.7549E+00			5.00E-03	ug/mL	95.098	% Recovery	
8	ICSAB	S1306170015		0 0			Boron	LIQUID	1	1.0225E+00			1.00E-03	ug/mL	102.25	% Recovery	
8	ICSAB	S1306170015		0 0			Barium	LIQUID	1	9.1502E-01			1.00E-03	ug/mL	91.502	% Recovery	
8	ICSAB	S1306170015		0 0			Beryllium	LIQUID	.1	9.4147E-02			1.00E-03	ug/mL	94.147	% Recovery	
8	ICSAB	S1306170015		0 0			Bismuth	LIQUID	5	4.7880E+00			6.00E-03	ug/mL	95.761	% Recovery	
8	ICSAB	S1306170015		0 0			Calcium	LIQUID	200	1.8205E+02			0.08	ug/mL	91.024	% Recovery	
8	ICSAB	S1306170015		0 0			Cadmium	LIQUID	.2	1.7411E-01			1.00E-03	ug/mL	87.054	% Recovery	
8	ICSAB	S1306170015		0 0			Cerium	LIQUID		<6.0000E-03			6.00E-03	ug/mL	N/A		
8	ICSAB	S1306170015		0 0			Cobalt	LIQUID	5	4.4407E+00			1.00E-03	ug/mL	88.814	% Recovery	
8	ICSAB	S1306170015		0 0			Chromium	LIQUID	5	4.5500E+00			1.00E-03	ug/mL	91.001	% Recovery	
8	ICSAB	S1306170015		0 0			Copper	LIQUID	5	4.8885E+00			2.00E-03	ug/mL	97.77	% Recovery	
8	ICSAB	S1306170015		0 0			Europium	LIQUID		<1.0000E-03			1.00E-03	ug/mL	N/A		
8	ICSAB	S1306170015		0 0			Iron	LIQUID	200	1.7065E+02			0.01	ug/mL	85.324	% Recovery	
8	ICSAB	S1306170015		0 0			Potassium	LIQUID		<2.0000E-02			0.02	ug/mL	N/A		
8	ICSAB	S1306170015		0 0			Lanthanum	LIQUID		<1.0000E-03			1.00E-03	ug/mL	N/A		
8	ICSAB	S1306170015		0 0			Lithium	LIQUID	1	1.0115E+00			1.00E-03	ug/mL	101.15	% Recovery	
8	ICSAB	S1306170015		0 0			Magnesium	LIQUID	200	1.8336E+02			2.00E-03	ug/mL	91.68	% Recovery	
8	ICSAB	S1306170015		0 0			Manganese	LIQUID	5	4.5884E+00			1.00E-03	ug/mL	91.769	% Recovery	
8	ICSAB	S1306170015		0 0			Molybdenum	LIQUID	5	4.5247E+00			1.00E-03	ug/mL	90.494	% Recovery	
8	ICSAB	S1306170015		0 0			Sodium	LIQUID	200	2.0367E+02			0.04	ug/mL	101.84	% Recovery	
8	ICSAB	S1306170015		0 0			Neodymium	LIQUID		3.1252E-02			3.00E-03	ug/mL	N/A		
8	ICSAB	S1306170015		0 0			Nickel	LIQUID	5	4.3316E+00			1.00E-03	ug/mL	86.633	% Recovery	
8	ICSAB	S1306170015		0 0			Niobium	LIQUID	5	4.4738E+00			3.00E-03	ug/mL	89.476	% Recovery	
8	ICSAB	S1306170015		0 0			Phosphorus	LIQUID	1	9.5742E-01			3.00E-03	ug/mL	95.742	% Recovery	
8	ICSAB	S1306170015		0 0			Lead	LIQUID	1	1.1623E+00			6.00E-03	ug/mL	116.23	% Recovery	
8	ICSAB	S1306170015		0 0			Palladium	LIQUID		4.5302E-02			9.00E-03	ug/mL	N/A		
8	ICSAB	S1306170015		0 0			Praseodymium	LIQUID		<4.0000E-03			4.00E-03	ug/mL	N/A		
8	ICSAB	S1306170015		0 0			Rubidium	LIQUID		4.1649E-02			0.03	ug/mL	N/A		
8	ICSAB	S1306170015		0 0			Rhodium	LIQUID		<8.0000E-03			8.00E-03	ug/mL	N/A		
8	ICSAB	S1306170015		0 0			Ruthenium	LIQUID		<4.0000E-03			4.00E-03	ug/mL	N/A		
8	ICSAB	S1306170015		0 0			Sulfur	LIQUID		<5.0000E-03			5.00E-03	ug/mL	N/A		
8	ICSAB	S1306170015		0 0			Antimony	LIQUID	5	5.2222E+00			6.00E-03	ug/mL	104.44	% Recovery	
8	ICSAB	S1306170015		0 0			Selenium	LIQUID	5	4.7807E+00			6.00E-03	ug/mL	95.615	% Recovery	
8	ICSAB	S1306170015		0 0			Silicon	LIQUID	5	4.9108E+00			5.00E-03	ug/mL	98.216	% Recovery	
8	ICSAB	S1306170015		0 0			Samarium	LIQUID		<5.0000E-03			5.00E-03	ug/mL	N/A		

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041718

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
8	ICSAB	S1306170015		0 0			Tin	LIQUID	1	8.7482E-01			3.00E-03	ug/mL	87.482	% Recovery	
8	ICSAB	S1306170015		0 0			Strontium	LIQUID	1	9.0762E-01			2.00E-03	ug/mL	90.762	% Recovery	
8	ICSAB	S1306170015		0 0			Tantalum	LIQUID		5.1652E-02			5.00E-03	ug/mL	N/A		
8	ICSAB	S1306170015		0 0			Tellurium	LIQUID	5	4.6437E+00			5.00E-03	ug/mL	92.874	% Recovery	
8	ICSAB	S1306170015		0 0			Thorium	LIQUID		<5.0000E-03			5.00E-03	ug/mL	N/A		
8	ICSAB	S1306170015		0 0			Titanium	LIQUID	50	4.4181E+01			1.00E-03	ug/mL	88.362	% Recovery	
8	ICSAB	S1306170015		0 0			Thallium	LIQUID	5	4.0705E+00			6.00E-03	ug/mL	81.409	% Recovery	
8	ICSAB	S1306170015		0 0			Uranium	LIQUID	5	5.3317E+00			0.02	ug/mL	106.63	% Recovery	
8	ICSAB	S1306170015		0 0			Vanadium	LIQUID	1	9.0017E-01			1.00E-03	ug/mL	90.017	% Recovery	
8	ICSAB	S1306170015		0 0			Tungsten	LIQUID	5	4.5423E+00			6.00E-03	ug/mL	90.845	% Recovery	
8	ICSAB	S1306170015		0 0			Yttrium	LIQUID		<2.0000E-03			2.00E-03	ug/mL	N/A		
8	ICSAB	S1306170015		0 0			Zinc	LIQUID	5	4.6059E+00			4.00E-03	ug/mL	92.118	% Recovery	
8	ICSAB	S1306170015		0 0			Zirconium	LIQUID	5	4.6079E+00			1.00E-03	ug/mL	92.158	% Recovery	
Sample Sequence 9																	
9	BLNK-PREP	S1306110078		0 0	A		Silver	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
9	BLNK-PREP	S1306110078		0 0	A		Aluminum	LIQUID		<6.0000E-03			6.00E-03	ug/mL			
9	BLNK-PREP	S1306110078		0 0	A		Arsenic	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
9	BLNK-PREP	S1306110078		0 0	A		Boron	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
9	BLNK-PREP	S1306110078		0 0	A		Barium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
9	BLNK-PREP	S1306110078		0 0	A		Beryllium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
9	BLNK-PREP	S1306110078		0 0	A		Bismuth	LIQUID		<6.0000E-03			6.00E-03	ug/mL			
9	BLNK-PREP	S1306110078		0 0	A		Calcium	LIQUID		1.0436E-01			0.08	ug/mL			
9	BLNK-PREP	S1306110078		0 0	A		Cadmium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
9	BLNK-PREP	S1306110078		0 0	A		Cerium	LIQUID		<6.0000E-03			6.00E-03	ug/mL			
9	BLNK-PREP	S1306110078		0 0	A		Cobalt	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
9	BLNK-PREP	S1306110078		0 0	A		Chromium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
9	BLNK-PREP	S1306110078		0 0	A		Copper	LIQUID		<2.0000E-03			2.00E-03	ug/mL			
9	BLNK-PREP	S1306110078		0 0	A		Europium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
9	BLNK-PREP	S1306110078		0 0	A		Iron	LIQUID		<1.0000E-02			0.01	ug/mL			
9	BLNK-PREP	S1306110078		0 0	A		Potassium	LIQUID		<2.0000E-02			0.02	ug/mL			
9	BLNK-PREP	S1306110078		0 0	A		Lanthanum	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
9	BLNK-PREP	S1306110078		0 0	A		Lithium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
9	BLNK-PREP	S1306110078		0 0	A		Magnesium	LIQUID		<2.0000E-03			2.00E-03	ug/mL			
9	BLNK-PREP	S1306110078		0 0	A		Manganese	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
9	BLNK-PREP	S1306110078		0 0	A		Molybdenum	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
9	BLNK-PREP	S1306110078		0 0	A		Sodium	LIQUID		<4.0000E-02			0.04	ug/mL			
9	BLNK-PREP	S1306110078		0 0	A		Neodymium	LIQUID		<3.0000E-03			3.00E-03	ug/mL			
9	BLNK-PREP	S1306110078		0 0	A		Nickel	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
9	BLNK-PREP	S1306110078		0 0	A		Niobium	LIQUID		<3.0000E-03			3.00E-03	ug/mL			
9	BLNK-PREP	S1306110078		0 0	A		Phosphorus	LIQUID		5.5827E-03			3.00E-03	ug/mL			
9	BLNK-PREP	S1306110078		0 0	A		Lead	LIQUID		<6.0000E-03			6.00E-03	ug/mL			
9	BLNK-PREP	S1306110078		0 0	A		Palladium	LIQUID		<9.0000E-03			9.00E-03	ug/mL			

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041718

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
9	BLNK-PREP	S1306110078		0 0	A		Praseodymium	LIQUID		<4.0000E-03			4.00E-03	ug/mL			
9	BLNK-PREP	S1306110078		0 0	A		Rubidium	LIQUID		<3.0000E-02			0.03	ug/mL			
9	BLNK-PREP	S1306110078		0 0	A		Rhodium	LIQUID		<8.0000E-03			8.00E-03	ug/mL			
9	BLNK-PREP	S1306110078		0 0	A		Ruthenium	LIQUID		<4.0000E-03			4.00E-03	ug/mL			
9	BLNK-PREP	S1306110078		0 0	A		Sulfur	LIQUID		6.0125E-03			5.00E-03	ug/mL			
9	BLNK-PREP	S1306110078		0 0	A		Antimony	LIQUID		<6.0000E-03			6.00E-03	ug/mL			
9	BLNK-PREP	S1306110078		0 0	A		Selenium	LIQUID		<6.0000E-03			6.00E-03	ug/mL			
9	BLNK-PREP	S1306110078		0 0	A		Silicon	LIQUID		1.4533E-01			5.00E-03	ug/mL			
9	BLNK-PREP	S1306110078		0 0	A		Samarium	LIQUID		3.0892E-02			5.00E-03	ug/mL			
9	BLNK-PREP	S1306110078		0 0	A		Tin	LIQUID		<3.0000E-03			3.00E-03	ug/mL			
9	BLNK-PREP	S1306110078		0 0	A		Strontium	LIQUID		<2.0000E-03			2.00E-03	ug/mL			
9	BLNK-PREP	S1306110078		0 0	A		Tantalum	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
9	BLNK-PREP	S1306110078		0 0	A		Tellurium	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
9	BLNK-PREP	S1306110078		0 0	A		Thorium	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
9	BLNK-PREP	S1306110078		0 0	A		Titanium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
9	BLNK-PREP	S1306110078		0 0	A		Thallium	LIQUID		<6.0000E-03			6.00E-03	ug/mL			
9	BLNK-PREP	S1306110078		0 0	A		Uranium	LIQUID		<2.0000E-02			0.02	ug/mL			
9	BLNK-PREP	S1306110078		0 0	A		Vanadium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
9	BLNK-PREP	S1306110078		0 0	A		Tungsten	LIQUID		<6.0000E-03			6.00E-03	ug/mL			
9	BLNK-PREP	S1306110078		0 0	A		Yttrium	LIQUID		<2.0000E-03			2.00E-03	ug/mL			
9	BLNK-PREP	S1306110078		0 0	A		Zinc	LIQUID		<4.0000E-03			4.00E-03	ug/mL			
9	BLNK-PREP	S1306110078		0 0	A		Zirconium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
Sample Sequence 10																	
10	STD-PREP	S1306110079		0 0	A		Silver	LIQUID	1	1.0005E+00			1.00E-03	ug/mL	100.05	% Recovery	
10	STD-PREP	S1306110079		0 0	A		Aluminum	LIQUID	5	5.0306E+00			6.00E-03	ug/mL	100.61	% Recovery	
10	STD-PREP	S1306110079		0 0	A		Arsenic	LIQUID	5	4.9773E+00			5.00E-03	ug/mL	99.546	% Recovery	
10	STD-PREP	S1306110079		0 0	A		Boron	LIQUID	5	4.7295E+00			1.00E-03	ug/mL	94.59	% Recovery	
10	STD-PREP	S1306110079		0 0	A		Barium	LIQUID	5	5.1763E+00			1.00E-03	ug/mL	103.53	% Recovery	
10	STD-PREP	S1306110079		0 0	A		Beryllium	LIQUID	5	4.9565E+00			1.00E-03	ug/mL	99.131	% Recovery	
10	STD-PREP	S1306110079		0 0	A		Bismuth	LIQUID	5	5.0613E+00			6.00E-03	ug/mL	101.23	% Recovery	
10	STD-PREP	S1306110079		0 0	A		Calcium	LIQUID	5	5.3740E+00			0.08	ug/mL	107.48	% Recovery	
10	STD-PREP	S1306110079		0 0	A		Cadmium	LIQUID	5	5.1040E+00			1.00E-03	ug/mL	102.08	% Recovery	
10	STD-PREP	S1306110079		0 0	A		Cobalt	LIQUID	5	5.1967E+00			1.00E-03	ug/mL	103.93	% Recovery	
10	STD-PREP	S1306110079		0 0	A		Chromium	LIQUID	5	5.0705E+00			1.00E-03	ug/mL	101.41	% Recovery	
10	STD-PREP	S1306110079		0 0	A		Copper	LIQUID	5	5.2198E+00			2.00E-03	ug/mL	104.4	% Recovery	
10	STD-PREP	S1306110079		0 0	A		Iron	LIQUID	5	4.9633E+00			0.01	ug/mL	99.267	% Recovery	
10	STD-PREP	S1306110079		0 0	A		Potassium	LIQUID	5	5.0848E+00			0.02	ug/mL	101.7	% Recovery	
10	STD-PREP	S1306110079		0 0	A		Lanthanum	LIQUID	5	5.2541E+00			1.00E-03	ug/mL	105.08	% Recovery	
10	STD-PREP	S1306110079		0 0	A		Lithium	LIQUID	5	5.5687E+00			1.00E-03	ug/mL	111.37	% Recovery	
10	STD-PREP	S1306110079		0 0	A		Magnesium	LIQUID	5	5.0869E+00			2.00E-03	ug/mL	101.74	% Recovery	
10	STD-PREP	S1306110079		0 0	A		Manganese	LIQUID	5	5.0742E+00			1.00E-03	ug/mL	101.48	% Recovery	
10	STD-PREP	S1306110079		0 0	A		Molybdenum	LIQUID	5	5.0441E+00			1.00E-03	ug/mL	100.88	% Recovery	

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041718

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
10	STD-PREP	S1306110079		0 0	A		Sodium	LIQUID	5	5.1951E+00			0.04	ug/mL	103.9	% Recovery	
10	STD-PREP	S1306110079		0 0	A		Nickel	LIQUID	5	5.0784E+00			1.00E-03	ug/mL	101.57	% Recovery	
10	STD-PREP	S1306110079		0 0	A		Phosphorus	LIQUID	5	4.8457E+00			3.00E-03	ug/mL	96.915	% Recovery	
10	STD-PREP	S1306110079		0 0	A		Lead	LIQUID	5	5.0280E+00			6.00E-03	ug/mL	100.56	% Recovery	
10	STD-PREP	S1306110079		0 0	A		Sulfur	LIQUID	5	4.7914E+00			5.00E-03	ug/mL	95.828	% Recovery	
10	STD-PREP	S1306110079		0 0	A		Antimony	LIQUID	5	4.7962E+00			6.00E-03	ug/mL	95.925	% Recovery	
10	STD-PREP	S1306110079		0 0	A		Selenium	LIQUID	5	5.1050E+00			6.00E-03	ug/mL	102.1	% Recovery	
10	STD-PREP	S1306110079		0 0	A		Silicon	LIQUID	5	1.3693E+00			5.00E-03	ug/mL	27.386	% Recovery	
10	STD-PREP	S1306110079		0 0	A		Strontium	LIQUID	5	5.1040E+00			2.00E-03	ug/mL	102.08	% Recovery	
10	STD-PREP	S1306110079		0 0	A		Titanium	LIQUID	5	4.8385E+00			1.00E-03	ug/mL	96.771	% Recovery	
10	STD-PREP	S1306110079		0 0	A		Vanadium	LIQUID	5	5.0826E+00			1.00E-03	ug/mL	101.65	% Recovery	
10	STD-PREP	S1306110079		0 0	A		Zinc	LIQUID	5	4.8874E+00			4.00E-03	ug/mL	97.748	% Recovery	
10	STD-PREP	S1306110079		0 0	A		Zirconium	LIQUID	5	4.9049E+00			1.00E-03	ug/mL	98.098	% Recovery	
Sample Sequence 11																	
11	STD-PREP	S1306110083		0 0	A		Cerium	LIQUID	5	5.8857E+00			6.00E-03	ug/mL	117.71	% Recovery	
11	STD-PREP	S1306110083		0 0	A		Europium	LIQUID	5	5.8779E+00			1.00E-03	ug/mL	117.56	% Recovery	
11	STD-PREP	S1306110083		0 0	A		Neodymium	LIQUID	5	5.8011E+00			3.00E-03	ug/mL	116.02	% Recovery	
11	STD-PREP	S1306110083		0 0	A		Niobium	LIQUID	5	5.5321E+00			3.00E-03	ug/mL	110.64	% Recovery	
11	STD-PREP	S1306110083		0 0	A		Palladium	LIQUID	5	5.6376E+00			9.00E-03	ug/mL	112.75	% Recovery	
11	STD-PREP	S1306110083		0 0	A		Praseodymium	LIQUID	5	6.0286E+00			4.00E-03	ug/mL	120.57	% Recovery	
11	STD-PREP	S1306110083		0 0	A		Rubidium	LIQUID	5	5.4658E+00			0.03	ug/mL	109.32	% Recovery	
11	STD-PREP	S1306110083		0 0	A		Rhodium	LIQUID	5	5.6101E+00			8.00E-03	ug/mL	112.2	% Recovery	
11	STD-PREP	S1306110083		0 0	A		Ruthenium	LIQUID	5	5.3285E+00			4.00E-03	ug/mL	106.57	% Recovery	
11	STD-PREP	S1306110083		0 0	A		Samarium	LIQUID	5	5.7885E+00			5.00E-03	ug/mL	115.77	% Recovery	
11	STD-PREP	S1306110083		0 0	A		Tin	LIQUID	5	5.3901E+00			3.00E-03	ug/mL	107.8	% Recovery	
11	STD-PREP	S1306110083		0 0	A		Tantalum	LIQUID	5	5.6232E+00			5.00E-03	ug/mL	112.46	% Recovery	
11	STD-PREP	S1306110083		0 0	A		Tellurium	LIQUID	5	5.3286E+00			5.00E-03	ug/mL	106.57	% Recovery	
11	STD-PREP	S1306110083		0 0	A		Thorium	LIQUID	5	5.6329E+00			5.00E-03	ug/mL	112.66	% Recovery	
11	STD-PREP	S1306110083		0 0	A		Thallium	LIQUID	5	5.4321E+00			6.00E-03	ug/mL	108.64	% Recovery	
11	STD-PREP	S1306110083		0 0	A		Uranium	LIQUID	5	5.7890E+00			0.02	ug/mL	115.78	% Recovery	
11	STD-PREP	S1306110083		0 0	A		Tungsten	LIQUID	5	5.5477E+00			6.00E-03	ug/mL	110.95	% Recovery	
11	STD-PREP	S1306110083		0 0	A		Yttrium	LIQUID	5	5.6281E+00			2.00E-03	ug/mL	112.56	% Recovery	
Sample Sequence 12																	
12	SERDIL	S1306170016	S13T004252	0 0			Silver	SOLID		<4.9682E+00			4.9682	ug/mL	N/A		
12	SERDIL	S1306170016	S13T004252	0 0			Aluminum	SOLID		1.9841E+05			29.809	ug/mL	2.6644	% Diff	
12	SERDIL	S1306170016	S13T004252	0 0			Arsenic	SOLID		<2.4841E+01			24.841	ug/mL	N/A		
12	SERDIL	S1306170016	S13T004252	0 0			Boron	SOLID		<4.9682E+00			4.9682	ug/mL	N/A		
12	SERDIL	S1306170016	S13T004252	0 0			Barium	SOLID		6.3784E+00			4.9682	ug/mL	15.239	% Diff	
12	SERDIL	S1306170016	S13T004252	0 0			Beryllium	SOLID		<4.9682E+00			4.9682	ug/mL	N/A		
12	SERDIL	S1306170016	S13T004252	0 0			Bismuth	SOLID		1.4892E+02			29.809	ug/mL	11.009	% Diff	
12	SERDIL	S1306170016	S13T004252	0 0			Calcium	SOLID		7.5069E+02			397.46	ug/mL	1.866	% Diff	
12	SERDIL	S1306170016	S13T004252	0 0			Cadmium	SOLID		<4.9682E+00			4.9682	ug/mL	N/A		

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041718

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
12	SERDIL	S1306170016	S13T004252	0 0			Cerium	SOLID		9.2742E+01			29.809	ug/mL	N/A		
12	SERDIL	S1306170016	S13T004252	0 0			Cobalt	SOLID		<4.9682E+00			4.9682	ug/mL	N/A		
12	SERDIL	S1306170016	S13T004252	0 0			Copper	SOLID		2.7686E+01			9.9364	ug/mL	18.822	% Diff	
12	SERDIL	S1306170016	S13T004252	0 0			Europium	SOLID		<4.9682E+00			4.9682	ug/mL	N/A		
12	SERDIL	S1306170016	S13T004252	0 0			Iron	SOLID		5.5420E+03			49.682	ug/mL	3.444	% Diff	
12	SERDIL	S1306170016	S13T004252	0 0			Potassium	SOLID		<9.9364E+01			99.364	ug/mL	N/A		
12	SERDIL	S1306170016	S13T004252	0 0			Lanthanum	SOLID		5.5502E+00			4.9682	ug/mL	3.4639	% Diff	
12	SERDIL	S1306170016	S13T004252	0 0			Lithium	SOLID		<4.9682E+00			4.9682	ug/mL	N/A		
12	SERDIL	S1306170016	S13T004252	0 0			Magnesium	SOLID		7.1136E+01			9.9364	ug/mL	1.3638	% Diff	
12	SERDIL	S1306170016	S13T004252	0 0			Manganese	SOLID		2.9936E+01			4.9682	ug/mL	8.2253	% Diff	
12	SERDIL	S1306170016	S13T004252	0 0			Molybdenum	SOLID		<4.9682E+00			4.9682	ug/mL	N/A		
12	SERDIL	S1306170016	S13T004252	0 0			Sodium	SOLID		7.3605E+04			198.73	ug/mL	3.5418	% Diff	
12	SERDIL	S1306170016	S13T004252	0 0			Neodymium	SOLID		<1.4905E+01			14.905	ug/mL	N/A		
12	SERDIL	S1306170016	S13T004252	0 0			Nickel	SOLID		5.8458E+02			4.9682	ug/mL	3.5991	% Diff	
12	SERDIL	S1306170016	S13T004252	0 0			Niobium	SOLID		<1.4905E+01			14.905	ug/mL	N/A		
12	SERDIL	S1306170016	S13T004252	0 0			Phosphorus	SOLID		1.8329E+04			14.905	ug/mL	1.5924	% Diff	
12	SERDIL	S1306170016	S13T004252	0 0			Lead	SOLID		3.8076E+02			29.809	ug/mL	1.0527	% Diff	
12	SERDIL	S1306170016	S13T004252	0 0			Palladium	SOLID		<4.4714E+01			44.714	ug/mL	N/A		
12	SERDIL	S1306170016	S13T004252	0 0			Praseodymium	SOLID		<1.9873E+01			19.873	ug/mL	N/A		
12	SERDIL	S1306170016	S13T004252	0 0			Rubidium	SOLID		<1.4905E+02			149.05	ug/mL	N/A		
12	SERDIL	S1306170016	S13T004252	0 0			Rhodium	SOLID		<3.9746E+01			39.746	ug/mL	N/A		
12	SERDIL	S1306170016	S13T004252	0 0			Ruthenium	SOLID		<1.9873E+01			19.873	ug/mL	N/A		
12	SERDIL	S1306170016	S13T004252	0 0			Sulfur	SOLID		7.2410E+01			24.841	ug/mL	13.244	% Diff	
12	SERDIL	S1306170016	S13T004252	0 0			Antimony	SOLID		<2.9809E+01			29.809	ug/mL	N/A		
12	SERDIL	S1306170016	S13T004252	0 0			Selenium	SOLID		<2.9809E+01			29.809	ug/mL	N/A		
12	SERDIL	S1306170016	S13T004252	0 0			Samarium	SOLID		1.4148E+02			24.841	ug/mL	385.29	% Diff	
12	SERDIL	S1306170016	S13T004252	0 0			Tin	SOLID		<1.4905E+01			14.905	ug/mL	N/A		
12	SERDIL	S1306170016	S13T004252	0 0			Strontium	SOLID		3.0356E+01			9.9364	ug/mL	23.908	% Diff	
12	SERDIL	S1306170016	S13T004252	0 0			Tantalum	SOLID		<2.4841E+01			24.841	ug/mL	N/A		
12	SERDIL	S1306170016	S13T004252	0 0			Tellurium	SOLID		<2.4841E+01			24.841	ug/mL	N/A		
12	SERDIL	S1306170016	S13T004252	0 0			Thorium	SOLID		<2.4841E+01			24.841	ug/mL	N/A		
12	SERDIL	S1306170016	S13T004252	0 0			Titanium	SOLID		<4.9682E+00			4.9682	ug/mL	N/A		
12	SERDIL	S1306170016	S13T004252	0 0			Thallium	SOLID		<2.9809E+01			29.809	ug/mL	N/A		
12	SERDIL	S1306170016	S13T004252	0 0			Vanadium	SOLID		<4.9682E+00			4.9682	ug/mL	N/A		
12	SERDIL	S1306170016	S13T004252	0 0			Tungsten	SOLID		<2.9809E+01			29.809	ug/mL	N/A		
12	SERDIL	S1306170016	S13T004252	0 0			Yttrium	SOLID		<9.9364E+00			9.9364	ug/mL	N/A		
12	SERDIL	S1306170016	S13T004252	0 0			Zinc	SOLID		5.3150E+01			19.873	ug/mL	1.0749	% Diff	
12	SERDIL	S1306170016	S13T004252	0 0			Zirconium	SOLID		1.2104E+01			4.9682	ug/mL	33.773	% Diff	
Sample Sequence 13																	
13	SAMPLE	S13T004252		0 1	A		Silver	SOLID	N/A	2.1777E+00			0.99364	ug/g			J
13	SAMPLE	S13T004252		0 1	A		Aluminum	SOLID	N/A	1.9326E+05			5.9618	ug/g			
13	SAMPLE	S13T004252		0 1	A		Arsenic	SOLID	N/A	7.5339E+00			4.9682	ug/g			J

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041718

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
13	SAMPLE	S13T004252		0 1	A		Boron	SOLID	N/A	<9.9364E-01			0.99364	ug/g			U
13	SAMPLE	S13T004252		0 1	A		Barium	SOLID	N/A	7.5251E+00			0.99364	ug/g			J
13	SAMPLE	S13T004252		0 1	A		Beryllium	SOLID	N/A	<9.9364E-01			0.99364	ug/g			U
13	SAMPLE	S13T004252		0 1	A		Bismuth	SOLID	N/A	1.3415E+02			5.9618	ug/g			
13	SAMPLE	S13T004252		0 1	A		Calcium	SOLID	N/A	7.3694E+02			79.491	ug/g			J
13	SAMPLE	S13T004252		0 1	A		Cadmium	SOLID	N/A	<9.9364E-01			0.99364	ug/g			U
13	SAMPLE	S13T004252		0 1	A		Cerium	SOLID	N/A	<5.9618E+00			5.9618	ug/g			U
13	SAMPLE	S13T004252		0 1	A		Cobalt	SOLID	N/A	<9.9364E-01			0.99364	ug/g			U
13	SAMPLE	S13T004252		0 1	A		Copper	SOLID	N/A	3.4106E+01			1.9873	ug/g			
13	SAMPLE	S13T004252		0 1	A		Europium	SOLID	N/A	<9.9364E-01			0.99364	ug/g			U
13	SAMPLE	S13T004252		0 1	A		Iron	SOLID	N/A	5.3575E+03			9.9364	ug/g			
13	SAMPLE	S13T004252		0 1	A		Potassium	SOLID	N/A	<1.9873E+01			19.873	ug/g			U
13	SAMPLE	S13T004252		0 1	A		Lanthanum	SOLID	N/A	5.3644E+00			0.99364	ug/g			J
13	SAMPLE	S13T004252		0 1	A		Lithium	SOLID	N/A	1.3454E+00			0.99364	ug/g			J
13	SAMPLE	S13T004252		0 1	A		Magnesium	SOLID	N/A	7.0179E+01			1.9873	ug/g			
13	SAMPLE	S13T004252		0 1	A		Manganese	SOLID	N/A	2.7661E+01			0.99364	ug/g			
13	SAMPLE	S13T004252		0 1	A		Molybdenum	SOLID	N/A	<9.9364E-01			0.99364	ug/g			U
13	SAMPLE	S13T004252		0 1	A		Sodium	SOLID	N/A	7.1087E+04			39.746	ug/g			
13	SAMPLE	S13T004252		0 1	A		Neodymium	SOLID	N/A	6.9650E+00			2.9809	ug/g			J
13	SAMPLE	S13T004252		0 1	A		Nickel	SOLID	N/A	5.6427E+02			0.99364	ug/g			
13	SAMPLE	S13T004252		0 1	A		Niobium	SOLID	N/A	<2.9809E+00			2.9809	ug/g			Ub
13	SAMPLE	S13T004252		0 1	A		Phosphorus	SOLID	N/A	1.8042E+04			2.9809	ug/g			
13	SAMPLE	S13T004252		0 1	A		Lead	SOLID	N/A	3.8481E+02			5.9618	ug/g			
13	SAMPLE	S13T004252		0 1	A		Palladium	SOLID	N/A	<8.9428E+00			8.9428	ug/g			U
13	SAMPLE	S13T004252		0 1	A		Praseodymium	SOLID	N/A	4.4987E+00			3.9746	ug/g			Ja
13	SAMPLE	S13T004252		0 1	A		Rubidium	SOLID	N/A	<2.9809E+01			29.809	ug/g			U
13	SAMPLE	S13T004252		0 1	A		Rhodium	SOLID	N/A	<7.9491E+00			7.9491	ug/g			U
13	SAMPLE	S13T004252		0 1	A		Ruthenium	SOLID	N/A	<3.9746E+00			3.9746	ug/g			U
13	SAMPLE	S13T004252		0 1	A		Sulfur	SOLID	N/A	6.3942E+01			4.9682	ug/g			
13	SAMPLE	S13T004252		0 1	A		Antimony	SOLID	N/A	<5.9618E+00			5.9618	ug/g			U
13	SAMPLE	S13T004252		0 1	A		Selenium	SOLID	N/A	<5.9618E+00			5.9618	ug/g			U
13	SAMPLE	S13T004252		0 1	A		Samarium	SOLID	N/A	2.9153E+01			4.9682	ug/g			J
13	SAMPLE	S13T004252		0 1	A		Tin	SOLID	N/A	<2.9809E+00			2.9809	ug/g			U
13	SAMPLE	S13T004252		0 1	A		Strontium	SOLID	N/A	2.4499E+01			1.9873	ug/g			
13	SAMPLE	S13T004252		0 1	A		Tantalum	SOLID	N/A	7.4920E+00			4.9682	ug/g			Jb
13	SAMPLE	S13T004252		0 1	A		Tellurium	SOLID	N/A	<4.9682E+00			4.9682	ug/g			U
13	SAMPLE	S13T004252		0 1	A		Thorium	SOLID	N/A	6.5473E+00			4.9682	ug/g			J
13	SAMPLE	S13T004252		0 1	A		Titanium	SOLID	N/A	3.7215E+00			0.99364	ug/g			J
13	SAMPLE	S13T004252		0 1	A		Thallium	SOLID	N/A	6.8693E+00			5.9618	ug/g			J
13	SAMPLE	S13T004252		0 1	A		Vanadium	SOLID	N/A	<9.9364E-01			0.99364	ug/g			U
13	SAMPLE	S13T004252		0 1	A		Tungsten	SOLID	N/A	<5.9618E+00			5.9618	ug/g			Ub
13	SAMPLE	S13T004252		0 1	A		Yttrium	SOLID	N/A	<1.9873E+00			1.9873	ug/g			U

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041718

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
13	SAMPLE	S13T004252		0 1	A		Zinc	SOLID	N/A	5.2585E+01			3.9746	ug/g			
13	SAMPLE	S13T004252		0 1	A		Zirconium	SOLID	N/A	9.0485E+00			0.99364	ug/g			Jb
Sample Sequence 14																	
14	DUP	S1306110080	S13T004252	0 0	A		Silver	SOLID	2.1777E+00	2.2748E+00			0.98853	ug/g	4.3630	% RPD	
14	DUP	S1306110080	S13T004252	0 0	A		Aluminum	SOLID	1.9326E+05	2.0422E+05			5.9312	ug/g	5.5162	% RPD	
14	DUP	S1306110080	S13T004252	0 0	A		Arsenic	SOLID	7.5339E+00	7.3619E+00			4.9427	ug/g	2.3096	% RPD	
14	DUP	S1306110080	S13T004252	0 0	A		Boron	SOLID	<9.9364E-01	<9.8853E-01			0.98853	ug/g			
14	DUP	S1306110080	S13T004252	0 0	A		Barium	SOLID	7.5251E+00	9.2429E+00			0.98853	ug/g	20.489	% RPD	
14	DUP	S1306110080	S13T004252	0 0	A		Beryllium	SOLID	<9.9364E-01	<9.8853E-01			0.98853	ug/g			
14	DUP	S1306110080	S13T004252	0 0	A		Bismuth	SOLID	1.3415E+02	1.6006E+02			5.9312	ug/g	17.615	% RPD	
14	DUP	S1306110080	S13T004252	0 0	A		Calcium	SOLID	7.3694E+02	8.3627E+02			79.083	ug/g	12.627	% RPD	
14	DUP	S1306110080	S13T004252	0 0	A		Cadmium	SOLID	<9.9364E-01	<9.8853E-01			0.98853	ug/g			
14	DUP	S1306110080	S13T004252	0 0	A		Cerium	SOLID	<5.9618E+00	<5.9312E+00			5.9312	ug/g			
14	DUP	S1306110080	S13T004252	0 0	A		Cobalt	SOLID	<9.9364E-01	<9.8853E-01			0.98853	ug/g			
14	DUP	S1306110080	S13T004252	0 0	A		Copper	SOLID	3.4106E+01	3.8019E+01			1.9771	ug/g	10.851	% RPD	
14	DUP	S1306110080	S13T004252	0 0	A		Europium	SOLID	<9.9364E-01	<9.8853E-01			0.98853	ug/g			
14	DUP	S1306110080	S13T004252	0 0	A		Iron	SOLID	5.3575E+03	6.1307E+03			9.8853	ug/g	13.461	% RPD	
14	DUP	S1306110080	S13T004252	0 0	A		Potassium	SOLID	<1.9873E+01	<1.9771E+01			19.771	ug/g			
14	DUP	S1306110080	S13T004252	0 0	A		Lanthanum	SOLID	5.3644E+00	8.6453E+00			0.98853	ug/g	46.837	% RPD	
14	DUP	S1306110080	S13T004252	0 0	A		Lithium	SOLID	1.3454E+00	1.2764E+00			0.98853	ug/g	5.2650	% RPD	
14	DUP	S1306110080	S13T004252	0 0	A		Magnesium	SOLID	7.0179E+01	7.9469E+01			1.9771	ug/g	12.416	% RPD	
14	DUP	S1306110080	S13T004252	0 0	A		Manganese	SOLID	2.7661E+01	3.4188E+01			0.98853	ug/g	21.107	% RPD	
14	DUP	S1306110080	S13T004252	0 0	A		Molybdenum	SOLID	<9.9364E-01	<9.8853E-01			0.98853	ug/g			
14	DUP	S1306110080	S13T004252	0 0	A		Sodium	SOLID	7.1087E+04	7.1127E+04			39.541	ug/g	0.055596	% RPD	
14	DUP	S1306110080	S13T004252	0 0	A		Neodymium	SOLID	6.9650E+00	1.0017E+01			2.9656	ug/g	35.940	% RPD	
14	DUP	S1306110080	S13T004252	0 0	A		Nickel	SOLID	5.6427E+02	6.3942E+02			0.98853	ug/g	12.486	% RPD	
14	DUP	S1306110080	S13T004252	0 0	A		Niobium	SOLID	<2.9809E+00	<2.9656E+00			2.9656	ug/g			
14	DUP	S1306110080	S13T004252	0 0	A		Phosphorus	SOLID	1.8042E+04	1.7116E+04			2.9656	ug/g	5.2649	% RPD	
14	DUP	S1306110080	S13T004252	0 0	A		Lead	SOLID	3.8481E+02	4.4648E+02			5.9312	ug/g	14.837	% RPD	
14	DUP	S1306110080	S13T004252	0 0	A		Palladium	SOLID	<8.9428E+00	<8.8968E+00			8.8968	ug/g			
14	DUP	S1306110080	S13T004252	0 0	A		Praseodymium	SOLID	4.4987E+00	1.0024E+01			3.9541	ug/g	76.091	% RPD	
14	DUP	S1306110080	S13T004252	0 0	A		Rubidium	SOLID	<2.9809E+01	<2.9656E+01			29.656	ug/g			
14	DUP	S1306110080	S13T004252	0 0	A		Rhodium	SOLID	<7.9491E+00	<7.9083E+00			7.9083	ug/g			
14	DUP	S1306110080	S13T004252	0 0	A		Ruthenium	SOLID	<3.9746E+00	<3.9541E+00			3.9541	ug/g			
14	DUP	S1306110080	S13T004252	0 0	A		Sulfur	SOLID	6.3942E+01	6.7116E+01			4.9427	ug/g	4.8434	% RPD	
14	DUP	S1306110080	S13T004252	0 0	A		Antimony	SOLID	<5.9618E+00	<5.9312E+00			5.9312	ug/g			
14	DUP	S1306110080	S13T004252	0 0	A		Selenium	SOLID	<5.9618E+00	<5.9312E+00			5.9312	ug/g			
14	DUP	S1306110080	S13T004252	0 0	A		Samarium	SOLID	2.9153E+01	2.9169E+01			4.9427	ug/g	0.055002	% RPD	
14	DUP	S1306110080	S13T004252	0 0	A		Tin	SOLID	<2.9809E+00	<2.9656E+00			2.9656	ug/g			
14	DUP	S1306110080	S13T004252	0 0	A		Strontium	SOLID	2.4499E+01	2.7381E+01			1.9771	ug/g	11.111	% RPD	
14	DUP	S1306110080	S13T004252	0 0	A		Tantalum	SOLID	7.4920E+00	9.9744E+00			4.9427	ug/g	28.425	% RPD	
14	DUP	S1306110080	S13T004252	0 0	A		Tellurium	SOLID	<4.9682E+00	<4.9427E+00			4.9427	ug/g			

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041718

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
14	DUP	S1306110080	S13T004252	0 0	A		Thorium	SOLID	6.5473E+00	9.7360E+00			4.9427	ug/g	39.165	% RPD	
14	DUP	S1306110080	S13T004252	0 0	A		Titanium	SOLID	3.7215E+00	3.4674E+00			0.98853	ug/g	7.0681	% RPD	
14	DUP	S1306110080	S13T004252	0 0	A		Thallium	SOLID	6.8693E+00	<5.9312E+00			5.9312	ug/g			
14	DUP	S1306110080	S13T004252	0 0	A		Vanadium	SOLID	<9.9364E-01	<9.8853E-01			0.98853	ug/g			
14	DUP	S1306110080	S13T004252	0 0	A		Tungsten	SOLID	<5.9618E+00	<5.9312E+00			5.9312	ug/g			
14	DUP	S1306110080	S13T004252	0 0	A		Yttrium	SOLID	<1.9873E+00	2.6290E+00			1.9771	ug/g			
14	DUP	S1306110080	S13T004252	0 0	A		Zinc	SOLID	5.2585E+01	5.8946E+01			3.9541	ug/g	11.407	% RPD	
14	DUP	S1306110080	S13T004252	0 0	A		Zirconium	SOLID	9.0485E+00	1.1154E+01			0.98853	ug/g	20.841	% RPD	
Sample Sequence 15																	
15	SPK-PREDIG	S1306110081	S13T004252	0 0	A		Silver	SOLID	198.1	1.9584E+02			0.99049	ug/g	97.76	% Recovery	
15	SPK-PREDIG	S1306110081	S13T004252	0 0	A		Aluminum	SOLID	990.5	1.8514E+05			5.9429	ug/g	-820.26	% Recovery	
15	SPK-PREDIG	S1306110081	S13T004252	0 0	A		Arsenic	SOLID	990.5	9.5994E+02			4.9525	ug/g	96.154	% Recovery	
15	SPK-PREDIG	S1306110081	S13T004252	0 0	A		Boron	SOLID	990.5	1.1148E+03			0.99049	ug/g	112.55	% Recovery	
15	SPK-PREDIG	S1306110081	S13T004252	0 0	A		Barium	SOLID	990.5	9.7763E+02			0.99049	ug/g	97.941	% Recovery	
15	SPK-PREDIG	S1306110081	S13T004252	0 0	A		Beryllium	SOLID	990.5	9.9045E+02			0.99049	ug/g	99.995	% Recovery	
15	SPK-PREDIG	S1306110081	S13T004252	0 0	A		Bismuth	SOLID	990.5	1.0945E+03			5.9429	ug/g	96.96	% Recovery	
15	SPK-PREDIG	S1306110081	S13T004252	0 0	A		Calcium	SOLID	990.5	1.6612E+03			79.239	ug/g	93.316	% Recovery	
15	SPK-PREDIG	S1306110081	S13T004252	0 0	A		Cadmium	SOLID	990.5	9.7635E+02			0.99049	ug/g	98.572	% Recovery	
15	SPK-PREDIG	S1306110081	S13T004252	0 0	A		Cobalt	SOLID	990.5	9.7348E+02			0.99049	ug/g	98.281	% Recovery	
15	SPK-PREDIG	S1306110081	S13T004252	0 0	A		Copper	SOLID	990.5	1.0274E+03			1.981	ug/g	100.28	% Recovery	
15	SPK-PREDIG	S1306110081	S13T004252	0 0	A		Iron	SOLID	990.5	5.1321E+03			9.9049	ug/g	-22.754	% Recovery	
15	SPK-PREDIG	S1306110081	S13T004252	0 0	A		Potassium	SOLID	990.5	9.8410E+02			19.81	ug/g	99.354	% Recovery	
15	SPK-PREDIG	S1306110081	S13T004252	0 0	A		Lanthanum	SOLID	990.5	9.8626E+02			0.99049	ug/g	99.03	% Recovery	
15	SPK-PREDIG	S1306110081	S13T004252	0 0	A		Lithium	SOLID	990.5	1.0232E+03			0.99049	ug/g	103.16	% Recovery	
15	SPK-PREDIG	S1306110081	S13T004252	0 0	A		Magnesium	SOLID	990.5	1.0642E+03			1.981	ug/g	100.35	% Recovery	
15	SPK-PREDIG	S1306110081	S13T004252	0 0	A		Manganese	SOLID	990.5	9.9680E+02			0.99049	ug/g	97.844	% Recovery	
15	SPK-PREDIG	S1306110081	S13T004252	0 0	A		Molybdenum	SOLID	990.5	1.1365E+03			0.99049	ug/g	114.74	% Recovery	
15	SPK-PREDIG	S1306110081	S13T004252	0 0	A		Sodium	SOLID	990.5	1.0505E+05			39.62	ug/g	3428.9	% Recovery	
15	SPK-PREDIG	S1306110081	S13T004252	0 0	A		Nickel	SOLID	990.5	1.4441E+03			0.99049	ug/g	88.827	% Recovery	
15	SPK-PREDIG	S1306110081	S13T004252	0 0	A		Phosphorus	SOLID	990.5	3.0690E+04			2.9715	ug/g	1276.9	% Recovery	
15	SPK-PREDIG	S1306110081	S13T004252	0 0	A		Lead	SOLID	990.5	1.3064E+03			5.9429	ug/g	93.046	% Recovery	
15	SPK-PREDIG	S1306110081	S13T004252	0 0	A		Sulfur	SOLID	990.5	1.1900E+03			4.9525	ug/g	113.69	% Recovery	
15	SPK-PREDIG	S1306110081	S13T004252	0 0	A		Antimony	SOLID	990.5	1.0605E+03			5.9429	ug/g	107.07	% Recovery	
15	SPK-PREDIG	S1306110081	S13T004252	0 0	A		Selenium	SOLID	990.5	9.7021E+02			5.9429	ug/g	97.952	% Recovery	
15	SPK-PREDIG	S1306110081	S13T004252	0 0	A		Strontium	SOLID	990.5	9.7132E+02			1.981	ug/g	95.59	% Recovery	
15	SPK-PREDIG	S1306110081	S13T004252	0 0	A		Titanium	SOLID	990.5	1.0887E+03			0.99049	ug/g	109.54	% Recovery	
15	SPK-PREDIG	S1306110081	S13T004252	0 0	A		Vanadium	SOLID	990.5	9.5325E+02			0.99049	ug/g	96.239	% Recovery	
15	SPK-PREDIG	S1306110081	S13T004252	0 0	A		Zinc	SOLID	990.5	1.0107E+03			3.962	ug/g	96.728	% Recovery	
15	SPK-PREDIG	S1306110081	S13T004252	0 0	A		Zirconium	SOLID	990.5	8.4785E+01			0.99049	ug/g	7.6463	% Recovery	
Sample Sequence 16																	
16	SPK-PREDIG	S1306110082	S13T004252	0 0	A		Cerium	SOLID	1007.5	1.1457E+03			6.0435	ug/g	113.72	% Recovery	
16	SPK-PREDIG	S1306110082	S13T004252	0 0	A		Europium	SOLID	1007.5	1.1314E+03			1.0073	ug/g	112.3	% Recovery	

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041718

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
16	SPK-PREDIG	S1306110082	S13T004252	0 0	A		Neodymium	SOLID	1007.5	1.1280E+03			3.0218	ug/g	111.27	% Recovery	
16	SPK-PREDIG	S1306110082	S13T004252	0 0	A		Niobium	SOLID	1007.5	2.1758E+02			3.0218	ug/g	21.596	% Recovery	
16	SPK-PREDIG	S1306110082	S13T004252	0 0	A		Palladium	SOLID	1007.5	1.0876E+03			9.0653	ug/g	107.95	% Recovery	
16	SPK-PREDIG	S1306110082	S13T004252	0 0	A		Praseodymium	SOLID	1007.5	1.1594E+03			4.029	ug/g	114.63	% Recovery	
16	SPK-PREDIG	S1306110082	S13T004252	0 0	A		Rubidium	SOLID	1007.5	1.1476E+03			30.218	ug/g	113.9	% Recovery	
16	SPK-PREDIG	S1306110082	S13T004252	0 0	A		Rhodium	SOLID	1007.5	1.0758E+03			8.058	ug/g	106.78	% Recovery	
16	SPK-PREDIG	S1306110082	S13T004252	0 0	A		Ruthenium	SOLID	1007.5	1.0330E+03			4.029	ug/g	102.54	% Recovery	
16	SPK-PREDIG	S1306110082	S13T004252	0 0	A		Samarium	SOLID	1007.5	1.1513E+03			5.0363	ug/g	111.38	% Recovery	
16	SPK-PREDIG	S1306110082	S13T004252	0 0	A		Tin	SOLID	1007.5	1.0771E+03			3.0218	ug/g	106.91	% Recovery	
16	SPK-PREDIG	S1306110082	S13T004252	0 0	A		Tantalum	SOLID	1007.5	1.0954E+01			5.0363	ug/g	.34366	% Recovery	
16	SPK-PREDIG	S1306110082	S13T004252	0 0	A		Tellurium	SOLID	1007.5	1.1002E+03			5.0363	ug/g	109.2	% Recovery	
16	SPK-PREDIG	S1306110082	S13T004252	0 0	A		Thorium	SOLID	1007.5	1.0965E+03			5.0363	ug/g	108.18	% Recovery	
16	SPK-PREDIG	S1306110082	S13T004252	0 0	A		Thallium	SOLID	1007.5	1.0330E+03			6.0435	ug/g	101.85	% Recovery	
16	SPK-PREDIG	S1306110082	S13T004252	0 0	A		Tungsten	SOLID	1007.5	7.3870E+02			6.0435	ug/g	73.32	% Recovery	
16	SPK-PREDIG	S1306110082	S13T004252	0 0	A		Yttrium	SOLID	1007.5	1.0995E+03			2.0145	ug/g	109.13	% Recovery	
Sample Sequence 17																	
17	CCV	S1306170018		0 0			Silver	LIQUID	1	1.0596E+00			1.00E-03	ug/mL	105.96	% Recovery	
17	CCV	S1306170018		0 0			Aluminum	LIQUID	5	5.2247E+00			6.00E-03	ug/mL	104.49	% Recovery	
17	CCV	S1306170018		0 0			Arsenic	LIQUID	5	4.9859E+00			5.00E-03	ug/mL	99.718	% Recovery	
17	CCV	S1306170018		0 0			Boron	LIQUID	5	5.0895E+00			1.00E-03	ug/mL	101.79	% Recovery	
17	CCV	S1306170018		0 0			Barium	LIQUID	5	5.0581E+00			1.00E-03	ug/mL	101.16	% Recovery	
17	CCV	S1306170018		0 0			Beryllium	LIQUID	5	5.3145E+00			1.00E-03	ug/mL	106.29	% Recovery	
17	CCV	S1306170018		0 0			Bismuth	LIQUID	5	5.1197E+00			6.00E-03	ug/mL	102.39	% Recovery	
17	CCV	S1306170018		0 0			Calcium	LIQUID	5	5.1528E+00			0.08	ug/mL	103.06	% Recovery	
17	CCV	S1306170018		0 0			Cadmium	LIQUID	5	5.1170E+00			1.00E-03	ug/mL	102.34	% Recovery	
18	CCV	S1306170018		0 1			Cerium	LIQUID	5	5.1293E+00			6.00E-03	ug/mL	102.59	% Recovery	
17	CCV	S1306170018		0 0			Cobalt	LIQUID	5	5.0883E+00			1.00E-03	ug/mL	101.77	% Recovery	
17	CCV	S1306170018		0 0			Chromium	LIQUID	5	5.2436E+00			1.00E-03	ug/mL	104.87	% Recovery	
17	CCV	S1306170018		0 0			Copper	LIQUID	5	5.3771E+00			2.00E-03	ug/mL	107.54	% Recovery	
18	CCV	S1306170018		0 1			Europium	LIQUID	5	5.1645E+00			1.00E-03	ug/mL	103.29	% Recovery	
17	CCV	S1306170018		0 0			Iron	LIQUID	5	5.1273E+00			0.01	ug/mL	102.55	% Recovery	
17	CCV	S1306170018		0 0			Potassium	LIQUID	5	5.3016E+00			0.02	ug/mL	106.03	% Recovery	
17	CCV	S1306170018		0 0			Lanthanum	LIQUID	5	5.3354E+00			1.00E-03	ug/mL	106.71	% Recovery	
17	CCV	S1306170018		0 0			Lithium	LIQUID	5	5.5917E+00			1.00E-03	ug/mL	111.83	% Recovery	
17	CCV	S1306170018		0 0			Magnesium	LIQUID	5	5.3408E+00			2.00E-03	ug/mL	106.82	% Recovery	
17	CCV	S1306170018		0 0			Manganese	LIQUID	5	5.2542E+00			1.00E-03	ug/mL	105.08	% Recovery	
17	CCV	S1306170018		0 0			Molybdenum	LIQUID	5	5.0080E+00			1.00E-03	ug/mL	100.16	% Recovery	
17	CCV	S1306170018		0 0			Sodium	LIQUID	5	5.3611E+00			0.04	ug/mL	107.22	% Recovery	
18	CCV	S1306170018		0 1			Neodymium	LIQUID	5	5.1043E+00			3.00E-03	ug/mL	102.09	% Recovery	
17	CCV	S1306170018		0 0			Nickel	LIQUID	5	5.0024E+00			1.00E-03	ug/mL	100.05	% Recovery	
18	CCV	S1306170018		0 1			Niobium	LIQUID	5	4.9388E+00			3.00E-03	ug/mL	98.776	% Recovery	
17	CCV	S1306170018		0 0			Phosphorus	LIQUID	5	4.9647E+00			3.00E-03	ug/mL	99.293	% Recovery	

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041718

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
17	CCV	S1306170018		0 0			Lead	LIQUID	5	5.0229E+00			6.00E-03	ug/mL	100.46	% Recovery	
18	CCV	S1306170018		0 1			Palladium	LIQUID	5	5.1590E+00			9.00E-03	ug/mL	103.18	% Recovery	
18	CCV	S1306170018		0 1			Praseodymium	LIQUID	5	5.1944E+00			4.00E-03	ug/mL	103.89	% Recovery	
18	CCV	S1306170018		0 1			Rubidium	LIQUID	5	5.0313E+00			0.03	ug/mL	100.63	% Recovery	
18	CCV	S1306170018		0 1			Rhodium	LIQUID	5	5.0365E+00			8.00E-03	ug/mL	100.73	% Recovery	
18	CCV	S1306170018		0 1			Ruthenium	LIQUID	5	4.9186E+00			4.00E-03	ug/mL	98.371	% Recovery	
17	CCV	S1306170018		0 0			Sulfur	LIQUID	5	4.9647E+00			5.00E-03	ug/mL	99.294	% Recovery	
17	CCV	S1306170018		0 0			Antimony	LIQUID	5	4.9458E+00			6.00E-03	ug/mL	98.916	% Recovery	
17	CCV	S1306170018		0 0			Selenium	LIQUID	5	5.0595E+00			6.00E-03	ug/mL	101.19	% Recovery	
17	CCV	S1306170018		0 0			Silicon	LIQUID	5	4.9744E+00			5.00E-03	ug/mL	99.488	% Recovery	
18	CCV	S1306170018		0 1			Samarium	LIQUID	5	5.0868E+00			5.00E-03	ug/mL	101.74	% Recovery	
18	CCV	S1306170018		0 1			Tin	LIQUID	5	4.8819E+00			3.00E-03	ug/mL	97.638	% Recovery	
17	CCV	S1306170018		0 0			Strontium	LIQUID	5	4.9934E+00			2.00E-03	ug/mL	99.869	% Recovery	
18	CCV	S1306170018		0 1			Tantalum	LIQUID	5	5.0199E+00			5.00E-03	ug/mL	100.4	% Recovery	
18	CCV	S1306170018		0 1			Tellurium	LIQUID	5	4.9229E+00			5.00E-03	ug/mL	98.459	% Recovery	
18	CCV	S1306170018		0 1			Thorium	LIQUID	5	5.0123E+00			5.00E-03	ug/mL	100.25	% Recovery	
17	CCV	S1306170018		0 0			Titanium	LIQUID	5	5.0185E+00			1.00E-03	ug/mL	100.37	% Recovery	
18	CCV	S1306170018		0 1			Thallium	LIQUID	5	4.8696E+00			6.00E-03	ug/mL	97.392	% Recovery	
18	CCV	S1306170018		0 1			Uranium	LIQUID	5	5.0479E+00			0.02	ug/mL	100.96	% Recovery	
17	CCV	S1306170018		0 0			Vanadium	LIQUID	5	5.1861E+00			1.00E-03	ug/mL	103.72	% Recovery	
18	CCV	S1306170018		0 1			Tungsten	LIQUID	5	4.9961E+00			6.00E-03	ug/mL	99.923	% Recovery	
18	CCV	S1306170018		0 1			Yttrium	LIQUID	5	5.0105E+00			2.00E-03	ug/mL	100.21	% Recovery	
17	CCV	S1306170018		0 0			Zinc	LIQUID	5	5.0361E+00			4.00E-03	ug/mL	100.72	% Recovery	
17	CCV	S1306170018		0 0			Zirconium	LIQUID	5	5.1081E+00			1.00E-03	ug/mL	102.16	% Recovery	
Sample Sequence 19																	
19	CCB	S1306170019		0 0			Silver	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
19	CCB	S1306170019		0 0			Aluminum	LIQUID		<6.0000E-03			6.00E-03	ug/mL			
19	CCB	S1306170019		0 0			Arsenic	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
19	CCB	S1306170019		0 0			Boron	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
19	CCB	S1306170019		0 0			Barium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
19	CCB	S1306170019		0 0			Beryllium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
19	CCB	S1306170019		0 0			Bismuth	LIQUID		<6.0000E-03			6.00E-03	ug/mL			
19	CCB	S1306170019		0 0			Calcium	LIQUID		<8.0000E-02			0.08	ug/mL			
19	CCB	S1306170019		0 0			Cadmium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
19	CCB	S1306170019		0 0			Cerium	LIQUID		1.4404E-02			6.00E-03	ug/mL			
19	CCB	S1306170019		0 0			Cobalt	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
19	CCB	S1306170019		0 0			Chromium	LIQUID		1.0874E-03			1.00E-03	ug/mL			
19	CCB	S1306170019		0 0			Copper	LIQUID		<2.0000E-03			2.00E-03	ug/mL			
19	CCB	S1306170019		0 0			Europium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
19	CCB	S1306170019		0 0			Iron	LIQUID		<1.0000E-02			0.01	ug/mL			
19	CCB	S1306170019		0 0			Potassium	LIQUID		<2.0000E-02			0.02	ug/mL			
19	CCB	S1306170019		0 0			Lanthanum	LIQUID		<1.0000E-03			1.00E-03	ug/mL			

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041718

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
19	CCB	S1306170019		0 0			Lithium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
19	CCB	S1306170019		0 0			Magnesium	LIQUID		<2.0000E-03			2.00E-03	ug/mL			
19	CCB	S1306170019		0 0			Manganese	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
19	CCB	S1306170019		0 0			Molybdenum	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
19	CCB	S1306170019		0 0			Sodium	LIQUID		<4.0000E-02			0.04	ug/mL			
19	CCB	S1306170019		0 0			Neodymium	LIQUID		<3.0000E-03			3.00E-03	ug/mL			
19	CCB	S1306170019		0 0			Nickel	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
19	CCB	S1306170019		0 0			Niobium	LIQUID		<3.0000E-03			3.00E-03	ug/mL			
19	CCB	S1306170019		0 0			Phosphorus	LIQUID		<3.0000E-03			3.00E-03	ug/mL			
19	CCB	S1306170019		0 0			Lead	LIQUID		<6.0000E-03			6.00E-03	ug/mL			
19	CCB	S1306170019		0 0			Palladium	LIQUID		<9.0000E-03			9.00E-03	ug/mL			
19	CCB	S1306170019		0 0			Praseodymium	LIQUID		<4.0000E-03			4.00E-03	ug/mL			
19	CCB	S1306170019		0 0			Rubidium	LIQUID		<3.0000E-02			0.03	ug/mL			
19	CCB	S1306170019		0 0			Rhodium	LIQUID		<8.0000E-03			8.00E-03	ug/mL			
19	CCB	S1306170019		0 0			Ruthenium	LIQUID		<4.0000E-03			4.00E-03	ug/mL			
19	CCB	S1306170019		0 0			Sulfur	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
19	CCB	S1306170019		0 0			Antimony	LIQUID		6.1970E-03			6.00E-03	ug/mL			
19	CCB	S1306170019		0 0			Selenium	LIQUID		7.7963E-03			6.00E-03	ug/mL			
19	CCB	S1306170019		0 0			Silicon	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
19	CCB	S1306170019		0 0			Samarium	LIQUID		3.6639E-02			5.00E-03	ug/mL			
19	CCB	S1306170019		0 0			Tin	LIQUID		<3.0000E-03			3.00E-03	ug/mL			
19	CCB	S1306170019		0 0			Strontium	LIQUID		<2.0000E-03			2.00E-03	ug/mL			
19	CCB	S1306170019		0 0			Tantalum	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
19	CCB	S1306170019		0 0			Tellurium	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
19	CCB	S1306170019		0 0			Thorium	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
19	CCB	S1306170019		0 0			Titanium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
19	CCB	S1306170019		0 0			Thallium	LIQUID		<6.0000E-03			6.00E-03	ug/mL			
19	CCB	S1306170019		0 0			Uranium	LIQUID		<2.0000E-02			0.02	ug/mL			
19	CCB	S1306170019		0 0			Vanadium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
19	CCB	S1306170019		0 0			Tungsten	LIQUID		<6.0000E-03			6.00E-03	ug/mL			
19	CCB	S1306170019		0 0			Yttrium	LIQUID		<2.0000E-03			2.00E-03	ug/mL			
19	CCB	S1306170019		0 0			Zinc	LIQUID		<4.0000E-03			4.00E-03	ug/mL			
19	CCB	S1306170019		0 0			Zirconium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
Sample Sequence 20																	
20	SPK-POST	S1306170017	S13T004252	0 0			Silver	SOLID	10	9.8724E+00			1.00E-03	ug/mL	98.614	% Recovery	
20	SPK-POST	S1306170017	S13T004252	0 0			Aluminum	SOLID	50	9.8680E+02			6.00E-03	ug/mL	28.628	% Recovery	
20	SPK-POST	S1306170017	S13T004252	0 0			Arsenic	SOLID	50	4.9176E+01			5.00E-03	ug/mL	98.275	% Recovery	
20	SPK-POST	S1306170017	S13T004252	0 0			Boron	SOLID	50	4.8993E+01			1.00E-03	ug/mL	97.986	% Recovery	
20	SPK-POST	S1306170017	S13T004252	0 0			Barium	SOLID	50	4.8464E+01			1.00E-03	ug/mL	96.852	% Recovery	
20	SPK-POST	S1306170017	S13T004252	0 0			Beryllium	SOLID	50	4.8894E+01			1.00E-03	ug/mL	97.789	% Recovery	
20	SPK-POST	S1306170017	S13T004252	0 0			Bismuth	SOLID	50	4.9923E+01			6.00E-03	ug/mL	98.496	% Recovery	
20	SPK-POST	S1306170017	S13T004252	0 0			Calcium	SOLID	50	5.0663E+01			0.08	ug/mL	93.909	% Recovery	

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041718

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
20	SPK-POST	S1306170017	S13T004252	0 0			Cadmium	SOLID	50	4.7793E+01			1.00E-03	ug/mL	95.586	% Recovery	
20	SPK-POST	S1306170017	S13T004252	0 0			Cerium	SOLID	50	5.0222E+01			6.00E-03	ug/mL	100.44	% Recovery	
20	SPK-POST	S1306170017	S13T004252	0 0			Cobalt	SOLID	50	4.8430E+01			1.00E-03	ug/mL	96.86	% Recovery	
20	SPK-POST	S1306170017	S13T004252	0 0			Copper	SOLID	50	5.2427E+01			2.00E-03	ug/mL	104.51	% Recovery	
20	SPK-POST	S1306170017	S13T004252	0 0			Europium	SOLID	50	5.0070E+01			1.00E-03	ug/mL	100.14	% Recovery	
20	SPK-POST	S1306170017	S13T004252	0 0			Iron	SOLID	50	7.1851E+01			0.01	ug/mL	89.783	% Recovery	
20	SPK-POST	S1306170017	S13T004252	0 0			Potassium	SOLID	50	5.1993E+01			0.02	ug/mL	103.99	% Recovery	
20	SPK-POST	S1306170017	S13T004252	0 0			Lanthanum	SOLID	50	5.1046E+01			1.00E-03	ug/mL	102.04	% Recovery	
20	SPK-POST	S1306170017	S13T004252	0 0			Lithium	SOLID	50	5.3107E+01			1.00E-03	ug/mL	106.2	% Recovery	
20	SPK-POST	S1306170017	S13T004252	0 0			Magnesium	SOLID	50	5.2067E+01			2.00E-03	ug/mL	103.43	% Recovery	
20	SPK-POST	S1306170017	S13T004252	0 0			Manganese	SOLID	50	4.8911E+01			1.00E-03	ug/mL	97.543	% Recovery	
20	SPK-POST	S1306170017	S13T004252	0 0			Molybdenum	SOLID	50	4.8322E+01			1.00E-03	ug/mL	96.645	% Recovery	
20	SPK-POST	S1306170017	S13T004252	0 0			Sodium	SOLID	50	4.1334E+02			0.04	ug/mL	111.25	% Recovery	
20	SPK-POST	S1306170017	S13T004252	0 0			Neodymium	SOLID	50	5.1246E+01			3.00E-03	ug/mL	102.42	% Recovery	
20	SPK-POST	S1306170017	S13T004252	0 0			Nickel	SOLID	50	4.9633E+01			1.00E-03	ug/mL	93.588	% Recovery	
20	SPK-POST	S1306170017	S13T004252	0 0			Niobium	SOLID	50	4.7578E+01			3.00E-03	ug/mL	95.156	% Recovery	
20	SPK-POST	S1306170017	S13T004252	0 0			Phosphorus	SOLID	50	1.3662E+02			3.00E-03	ug/mL	91.658	% Recovery	
20	SPK-POST	S1306170017	S13T004252	0 0			Lead	SOLID	50	5.2374E+01			6.00E-03	ug/mL	100.88	% Recovery	
20	SPK-POST	S1306170017	S13T004252	0 0			Palladium	SOLID	50	4.8610E+01			9.00E-03	ug/mL	97.221	% Recovery	
20	SPK-POST	S1306170017	S13T004252	0 0			Praseodymium	SOLID	50	5.1084E+01			4.00E-03	ug/mL	102.12	% Recovery	
20	SPK-POST	S1306170017	S13T004252	0 0			Rubidium	SOLID	50	5.1060E+01			0.03	ug/mL	102.12	% Recovery	
20	SPK-POST	S1306170017	S13T004252	0 0			Rhodium	SOLID	50	4.9374E+01			8.00E-03	ug/mL	98.747	% Recovery	
20	SPK-POST	S1306170017	S13T004252	0 0			Ruthenium	SOLID	50	4.4963E+01			4.00E-03	ug/mL	89.926	% Recovery	
20	SPK-POST	S1306170017	S13T004252	0 0			Sulfur	SOLID	50	4.9852E+01			5.00E-03	ug/mL	99.06	% Recovery	
20	SPK-POST	S1306170017	S13T004252	0 0			Antimony	SOLID	50	5.4817E+01			6.00E-03	ug/mL	109.63	% Recovery	
20	SPK-POST	S1306170017	S13T004252	0 0			Selenium	SOLID	50	4.9646E+01			6.00E-03	ug/mL	99.293	% Recovery	
20	SPK-POST	S1306170017	S13T004252	0 0			Samarium	SOLID	50	5.0224E+01			5.00E-03	ug/mL	100.15	% Recovery	
20	SPK-POST	S1306170017	S13T004252	0 0			Tin	SOLID	50	4.5886E+01			3.00E-03	ug/mL	91.772	% Recovery	
20	SPK-POST	S1306170017	S13T004252	0 0			Strontium	SOLID	50	4.7191E+01			2.00E-03	ug/mL	94.135	% Recovery	
20	SPK-POST	S1306170017	S13T004252	0 0			Tantalum	SOLID	50	4.7971E+01			5.00E-03	ug/mL	95.866	% Recovery	
20	SPK-POST	S1306170017	S13T004252	0 0			Tellurium	SOLID	50	4.7535E+01			5.00E-03	ug/mL	95.069	% Recovery	
20	SPK-POST	S1306170017	S13T004252	0 0			Thorium	SOLID	50	4.7628E+01			5.00E-03	ug/mL	95.19	% Recovery	
20	SPK-POST	S1306170017	S13T004252	0 0			Titanium	SOLID	50	4.7687E+01			1.00E-03	ug/mL	95.336	% Recovery	
20	SPK-POST	S1306170017	S13T004252	0 0			Thallium	SOLID	50	4.5287E+01			6.00E-03	ug/mL	90.505	% Recovery	
20	SPK-POST	S1306170017	S13T004252	0 0			Vanadium	SOLID	50	4.8786E+01			1.00E-03	ug/mL	97.573	% Recovery	
20	SPK-POST	S1306170017	S13T004252	0 0			Tungsten	SOLID	50	4.8213E+01			6.00E-03	ug/mL	96.426	% Recovery	
20	SPK-POST	S1306170017	S13T004252	0 0			Yttrium	SOLID	50	4.8145E+01			2.00E-03	ug/mL	96.29	% Recovery	
20	SPK-POST	S1306170017	S13T004252	0 0			Zinc	SOLID	50	4.8269E+01			4.00E-03	ug/mL	96.008	% Recovery	
20	SPK-POST	S1306170017	S13T004252	0 0			Zirconium	SOLID	50	4.9546E+01			1.00E-03	ug/mL	99.002	% Recovery	
Sample Sequence 21																	
21	SAMPLE	S13T004280		0 1	A		Silver	SOLID	N/A	1.4821E+01			0.98155	ug/g			
21	SAMPLE	S13T004280		0 1	A		Aluminum	SOLID	N/A	1.0981E+05			5.8893	ug/g			

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041718

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
21	SAMPLE	S13T004280		0 1	A		Arsenic	SOLID	N/A	5.2919E+00			4.9077	ug/g			J
21	SAMPLE	S13T004280		0 1	A		Boron	SOLID	N/A	<9.8155E-01			0.98155	ug/g			U
21	SAMPLE	S13T004280		0 1	A		Barium	SOLID	N/A	1.4041E+01			0.98155	ug/g			
21	SAMPLE	S13T004280		0 1	A		Beryllium	SOLID	N/A	<9.8155E-01			0.98155	ug/g			U
21	SAMPLE	S13T004280		0 1	A		Bismuth	SOLID	N/A	1.7968E+02			5.8893	ug/g			
21	SAMPLE	S13T004280		0 1	A		Calcium	SOLID	N/A	1.5959E+03			78.524	ug/g			
21	SAMPLE	S13T004280		0 1	A		Cadmium	SOLID	N/A	<9.8155E-01			0.98155	ug/g			U
21	SAMPLE	S13T004280		0 1	A		Cerium	SOLID	N/A	<5.8893E+00			5.8893	ug/g			U
21	SAMPLE	S13T004280		0 1	A		Cobalt	SOLID	N/A	<9.8155E-01			0.98155	ug/g			U
21	SAMPLE	S13T004280		0 1	A		Copper	SOLID	N/A	4.8976E+01			1.9631	ug/g			
21	SAMPLE	S13T004280		0 1	A		Europium	SOLID	N/A	<9.8155E-01			0.98155	ug/g			U
21	SAMPLE	S13T004280		0 1	A		Iron	SOLID	N/A	1.0664E+04			9.8155	ug/g			
21	SAMPLE	S13T004280		0 1	A		Potassium	SOLID	N/A	<1.9631E+01			19.631	ug/g			U
21	SAMPLE	S13T004280		0 1	A		Lanthanum	SOLID	N/A	7.3406E+00			0.98155	ug/g			J
21	SAMPLE	S13T004280		0 1	A		Lithium	SOLID	N/A	1.8791E+00			0.98155	ug/g			J
21	SAMPLE	S13T004280		0 1	A		Magnesium	SOLID	N/A	1.2964E+02			1.9631	ug/g			
21	SAMPLE	S13T004280		0 1	A		Manganese	SOLID	N/A	7.1479E+01			0.98155	ug/g			
21	SAMPLE	S13T004280		0 1	A		Molybdenum	SOLID	N/A	2.2415E+00			0.98155	ug/g			J
21	SAMPLE	S13T004280		0 1	A		Sodium	SOLID	N/A	1.4129E+05			39.262	ug/g			
21	SAMPLE	S13T004280		0 1	A		Neodymium	SOLID	N/A	1.0702E+01			2.9446	ug/g			J
21	SAMPLE	S13T004280		0 1	A		Nickel	SOLID	N/A	1.2690E+03			0.98155	ug/g			
21	SAMPLE	S13T004280		0 1	A		Niobium	SOLID	N/A	<2.9446E+00			2.9446	ug/g			Ub
21	SAMPLE	S13T004280		0 1	A		Phosphorus	SOLID	N/A	3.6416E+04			2.9446	ug/g			
21	SAMPLE	S13T004280		0 1	A		Lead	SOLID	N/A	3.9610E+02			5.8893	ug/g			
21	SAMPLE	S13T004280		0 1	A		Palladium	SOLID	N/A	<8.8339E+00			8.8339	ug/g			U
21	SAMPLE	S13T004280		0 1	A		Praseodymium	SOLID	N/A	1.2839E+01			3.9262	ug/g			Ja
21	SAMPLE	S13T004280		0 1	A		Rubidium	SOLID	N/A	<2.9446E+01			29.446	ug/g			U
21	SAMPLE	S13T004280		0 1	A		Rhodium	SOLID	N/A	1.0538E+01			7.8524	ug/g			J
21	SAMPLE	S13T004280		0 1	A		Ruthenium	SOLID	N/A	<3.9262E+00			3.9262	ug/g			U
21	SAMPLE	S13T004280		0 1	A		Sulfur	SOLID	N/A	8.7925E+01			4.9077	ug/g			
21	SAMPLE	S13T004280		0 1	A		Antimony	SOLID	N/A	<5.8893E+00			5.8893	ug/g			U
21	SAMPLE	S13T004280		0 1	A		Selenium	SOLID	N/A	<5.8893E+00			5.8893	ug/g			U
21	SAMPLE	S13T004280		0 1	A		Samarium	SOLID	N/A	3.5498E+01			4.9077	ug/g			J
21	SAMPLE	S13T004280		0 1	A		Tin	SOLID	N/A	<2.9446E+00			2.9446	ug/g			U
21	SAMPLE	S13T004280		0 1	A		Strontium	SOLID	N/A	5.6450E+01			1.9631	ug/g			
21	SAMPLE	S13T004280		0 1	A		Tantalum	SOLID	N/A	1.6882E+01			4.9077	ug/g			Jb
21	SAMPLE	S13T004280		0 1	A		Tellurium	SOLID	N/A	<4.9077E+00			4.9077	ug/g			U
21	SAMPLE	S13T004280		0 1	A		Thorium	SOLID	N/A	1.8478E+01			4.9077	ug/g			J
21	SAMPLE	S13T004280		0 1	A		Titanium	SOLID	N/A	6.2706E+00			0.98155	ug/g			J
21	SAMPLE	S13T004280		0 1	A		Thallium	SOLID	N/A	<5.8893E+00			5.8893	ug/g			U
21	SAMPLE	S13T004280		0 1	A		Vanadium	SOLID	N/A	<9.8155E-01			0.98155	ug/g			U
21	SAMPLE	S13T004280		0 1	A		Tungsten	SOLID	N/A	7.5080E+00			5.8893	ug/g			Jb

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041718

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
21	SAMPLE	S13T004280		0 1	A		Yttrium	SOLID	N/A	<1.9631E+00			1.9631	ug/g			U
21	SAMPLE	S13T004280		0 1	A		Zinc	SOLID	N/A	4.8025E+01			3.9262	ug/g			
21	SAMPLE	S13T004280		0 1	A		Zirconium	SOLID	N/A	1.2262E+01			0.98155	ug/g			b
Sample Sequence 22																	
22	SAMPLE	S13T004307		0 1	A		Silver	SOLID	N/A	1.8834E+00			0.99246	ug/g			J
22	SAMPLE	S13T004307		0 1	A		Aluminum	SOLID	N/A	1.7782E+05			5.9547	ug/g			
22	SAMPLE	S13T004307		0 1	A		Arsenic	SOLID	N/A	1.0434E+01			4.9623	ug/g			J
22	SAMPLE	S13T004307		0 1	A		Boron	SOLID	N/A	<9.9246E-01			0.99246	ug/g			U
22	SAMPLE	S13T004307		0 1	A		Barium	SOLID	N/A	7.2226E+00			0.99246	ug/g			J
22	SAMPLE	S13T004307		0 1	A		Beryllium	SOLID	N/A	<9.9246E-01			0.99246	ug/g			U
22	SAMPLE	S13T004307		0 1	A		Bismuth	SOLID	N/A	1.2206E+02			5.9547	ug/g			
22	SAMPLE	S13T004307		0 1	A		Calcium	SOLID	N/A	1.1626E+03			79.397	ug/g			
22	SAMPLE	S13T004307		0 1	A		Cadmium	SOLID	N/A	<9.9246E-01			0.99246	ug/g			U
22	SAMPLE	S13T004307		0 1	A		Cerium	SOLID	N/A	7.8130E+00			5.9547	ug/g			J
22	SAMPLE	S13T004307		0 1	A		Cobalt	SOLID	N/A	<9.9246E-01			0.99246	ug/g			U
22	SAMPLE	S13T004307		0 1	A		Copper	SOLID	N/A	8.0115E+01			1.9849	ug/g			
22	SAMPLE	S13T004307		0 1	A		Europium	SOLID	N/A	<9.9246E-01			0.99246	ug/g			U
22	SAMPLE	S13T004307		0 1	A		Iron	SOLID	N/A	4.6704E+03			9.9246	ug/g			
22	SAMPLE	S13T004307		0 1	A		Potassium	SOLID	N/A	<1.9849E+01			19.849	ug/g			U
22	SAMPLE	S13T004307		0 1	A		Lanthanum	SOLID	N/A	1.3486E+01			0.99246	ug/g			
22	SAMPLE	S13T004307		0 1	A		Lithium	SOLID	N/A	1.3115E+00			0.99246	ug/g			J
22	SAMPLE	S13T004307		0 1	A		Magnesium	SOLID	N/A	8.8338E+01			1.9849	ug/g			
22	SAMPLE	S13T004307		0 1	A		Manganese	SOLID	N/A	2.5499E+01			0.99246	ug/g			
22	SAMPLE	S13T004307		0 1	A		Molybdenum	SOLID	N/A	2.4194E+00			0.99246	ug/g			J
22	SAMPLE	S13T004307		0 1	A		Sodium	SOLID	N/A	8.3008E+04			39.698	ug/g			
22	SAMPLE	S13T004307		0 1	A		Neodymium	SOLID	N/A	1.5910E+01			2.9774	ug/g			J
22	SAMPLE	S13T004307		0 1	A		Nickel	SOLID	N/A	1.1495E+03			0.99246	ug/g			
22	SAMPLE	S13T004307		0 1	A		Niobium	SOLID	N/A	<2.9774E+00			2.9774	ug/g			Ub
22	SAMPLE	S13T004307		0 1	A		Phosphorus	SOLID	N/A	1.8717E+04			2.9774	ug/g			
22	SAMPLE	S13T004307		0 1	A		Lead	SOLID	N/A	4.0361E+02			5.9547	ug/g			
22	SAMPLE	S13T004307		0 1	A		Palladium	SOLID	N/A	<8.9321E+00			8.9321	ug/g			U
22	SAMPLE	S13T004307		0 1	A		Praseodymium	SOLID	N/A	1.2672E+01			3.9698	ug/g			Ja
22	SAMPLE	S13T004307		0 1	A		Rubidium	SOLID	N/A	<2.9774E+01			29.774	ug/g			U
22	SAMPLE	S13T004307		0 1	A		Rhodium	SOLID	N/A	8.7105E+00			7.9397	ug/g			J
22	SAMPLE	S13T004307		0 1	A		Ruthenium	SOLID	N/A	<3.9698E+00			3.9698	ug/g			U
22	SAMPLE	S13T004307		0 1	A		Sulfur	SOLID	N/A	6.2672E+01			4.9623	ug/g			
22	SAMPLE	S13T004307		0 1	A		Antimony	SOLID	N/A	<5.9547E+00			5.9547	ug/g			U
22	SAMPLE	S13T004307		0 1	A		Selenium	SOLID	N/A	<5.9547E+00			5.9547	ug/g			U
22	SAMPLE	S13T004307		0 1	A		Samarium	SOLID	N/A	4.0809E+01			4.9623	ug/g			J
22	SAMPLE	S13T004307		0 1	A		Tin	SOLID	N/A	<2.9774E+00			2.9774	ug/g			U
22	SAMPLE	S13T004307		0 1	A		Strontium	SOLID	N/A	2.9144E+01			1.9849	ug/g			
22	SAMPLE	S13T004307		0 1	A		Tantalum	SOLID	N/A	<4.9623E+00			4.9623	ug/g			Ub

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041718

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
22	SAMPLE	S13T004307		0 1	A		Tellurium	SOLID	N/A	<4.9623E+00			4.9623	ug/g			U
22	SAMPLE	S13T004307		0 1	A		Thorium	SOLID	N/A	7.1820E+00			4.9623	ug/g			J
22	SAMPLE	S13T004307		0 1	A		Titanium	SOLID	N/A	3.6145E+00			0.99246	ug/g			J
22	SAMPLE	S13T004307		0 1	A		Thallium	SOLID	N/A	7.8334E+00			5.9547	ug/g			J
22	SAMPLE	S13T004307		0 1	A		Vanadium	SOLID	N/A	<9.9246E-01			0.99246	ug/g			U
22	SAMPLE	S13T004307		0 1	A		Tungsten	SOLID	N/A	<5.9547E+00			5.9547	ug/g			Ub
22	SAMPLE	S13T004307		0 1	A		Yttrium	SOLID	N/A	2.6150E+00			1.9849	ug/g			J
22	SAMPLE	S13T004307		0 1	A		Zinc	SOLID	N/A	5.2649E+01			3.9698	ug/g			
22	SAMPLE	S13T004307		0 1	A		Zirconium	SOLID	N/A	1.1227E+01			0.99246	ug/g			b
Sample Sequence 23																	
23	ICSA	S1306170020		0 0			Silver	LIQUID		8.8483E-03			1.00E-03	ug/mL	N/A		
23	ICSA	S1306170020		0 0			Aluminum	LIQUID	200	2.0682E+02			6.00E-03	ug/mL	103.41	% Recovery	
23	ICSA	S1306170020		0 0			Arsenic	LIQUID		<5.0000E-03			5.00E-03	ug/mL	N/A		
23	ICSA	S1306170020		0 0			Boron	LIQUID		8.1180E-02			1.00E-03	ug/mL	N/A		
23	ICSA	S1306170020		0 0			Barium	LIQUID		3.3115E-03			1.00E-03	ug/mL	N/A		
23	ICSA	S1306170020		0 0			Beryllium	LIQUID		1.2257E-03			1.00E-03	ug/mL	N/A		
23	ICSA	S1306170020		0 0			Bismuth	LIQUID		1.6214E-02			6.00E-03	ug/mL	N/A		
23	ICSA	S1306170020		0 0			Calcium	LIQUID	200	1.8443E+02			0.08	ug/mL	92.214	% Recovery	
23	ICSA	S1306170020		0 0			Cadmium	LIQUID		<1.0000E-03			1.00E-03	ug/mL	N/A		
23	ICSA	S1306170020		0 0			Cerium	LIQUID		<6.0000E-03			6.00E-03	ug/mL	N/A		
23	ICSA	S1306170020		0 0			Cobalt	LIQUID		2.5744E-03			1.00E-03	ug/mL	N/A		
23	ICSA	S1306170020		0 0			Chromium	LIQUID		1.8365E-03			1.00E-03	ug/mL	N/A		
23	ICSA	S1306170020		0 0			Copper	LIQUID		<2.0000E-03			2.00E-03	ug/mL	N/A		
23	ICSA	S1306170020		0 0			Europium	LIQUID		<1.0000E-03			1.00E-03	ug/mL	N/A		
23	ICSA	S1306170020		0 0			Iron	LIQUID	200	1.7362E+02			0.01	ug/mL	86.81	% Recovery	
23	ICSA	S1306170020		0 0			Potassium	LIQUID		<2.0000E-02			0.02	ug/mL	N/A		
23	ICSA	S1306170020		0 0			Lanthanum	LIQUID		<1.0000E-03			1.00E-03	ug/mL	N/A		
23	ICSA	S1306170020		0 0			Lithium	LIQUID		6.1943E-03			1.00E-03	ug/mL	N/A		
23	ICSA	S1306170020		0 0			Magnesium	LIQUID	200	1.8897E+02			2.00E-03	ug/mL	94.484	% Recovery	
23	ICSA	S1306170020		0 0			Manganese	LIQUID		1.7815E-02			1.00E-03	ug/mL	N/A		
23	ICSA	S1306170020		0 0			Molybdenum	LIQUID		1.0609E-03			1.00E-03	ug/mL	N/A		
23	ICSA	S1306170020		0 0			Sodium	LIQUID	200	2.1469E+02			0.04	ug/mL	107.34	% Recovery	
23	ICSA	S1306170020		0 0			Neodymium	LIQUID		2.2435E-02			3.00E-03	ug/mL	N/A		
23	ICSA	S1306170020		0 0			Nickel	LIQUID		6.2693E-03			1.00E-03	ug/mL	N/A		
23	ICSA	S1306170020		0 0			Niobium	LIQUID		2.8364E-02			3.00E-03	ug/mL	N/A		
23	ICSA	S1306170020		0 0			Phosphorus	LIQUID		1.6330E-02			3.00E-03	ug/mL	N/A		
23	ICSA	S1306170020		0 0			Lead	LIQUID		<6.0000E-03			6.00E-03	ug/mL	N/A		
23	ICSA	S1306170020		0 0			Palladium	LIQUID		<9.0000E-03			9.00E-03	ug/mL	N/A		
23	ICSA	S1306170020		0 0			Praseodymium	LIQUID		<4.0000E-03			4.00E-03	ug/mL	N/A		
23	ICSA	S1306170020		0 0			Rubidium	LIQUID		<3.0000E-02			0.03	ug/mL	N/A		
23	ICSA	S1306170020		0 0			Rhodium	LIQUID		9.8526E-03			8.00E-03	ug/mL	N/A		
23	ICSA	S1306170020		0 0			Ruthenium	LIQUID		<4.0000E-03			4.00E-03	ug/mL	N/A		

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041718

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
23	ICSA	S1306170020		0 0			Sulfur	LIQUID		<5.0000E-03			5.00E-03	ug/mL	N/A		
23	ICSA	S1306170020		0 0			Antimony	LIQUID		<6.0000E-03			6.00E-03	ug/mL	N/A		
23	ICSA	S1306170020		0 0			Selenium	LIQUID		<6.0000E-03			6.00E-03	ug/mL	N/A		
23	ICSA	S1306170020		0 0			Silicon	LIQUID		<5.0000E-03			5.00E-03	ug/mL	N/A		
23	ICSA	S1306170020		0 0			Samarium	LIQUID		1.0486E-02			5.00E-03	ug/mL	N/A		
23	ICSA	S1306170020		0 0			Tin	LIQUID		<3.0000E-03			3.00E-03	ug/mL	N/A		
23	ICSA	S1306170020		0 0			Strontium	LIQUID		2.1837E-02			2.00E-03	ug/mL	N/A		
23	ICSA	S1306170020		0 0			Tantalum	LIQUID		2.2665E-02			5.00E-03	ug/mL	N/A		
23	ICSA	S1306170020		0 0			Tellurium	LIQUID		<5.0000E-03			5.00E-03	ug/mL	N/A		
23	ICSA	S1306170020		0 0			Thorium	LIQUID		2.4048E-01			5.00E-03	ug/mL	N/A		
23	ICSA	S1306170020		0 0			Titanium	LIQUID		<1.0000E-03			1.00E-03	ug/mL	N/A		
23	ICSA	S1306170020		0 0			Thallium	LIQUID		<6.0000E-03			6.00E-03	ug/mL	N/A		
23	ICSA	S1306170020		0 0			Uranium	LIQUID		6.2364E-01			0.02	ug/mL	N/A		
23	ICSA	S1306170020		0 0			Vanadium	LIQUID		<1.0000E-03			1.00E-03	ug/mL	N/A		
23	ICSA	S1306170020		0 0			Tungsten	LIQUID		9.2087E-03			6.00E-03	ug/mL	N/A		
23	ICSA	S1306170020		0 0			Yttrium	LIQUID		<2.0000E-03			2.00E-03	ug/mL	N/A		
23	ICSA	S1306170020		0 0			Zinc	LIQUID		<4.0000E-03			4.00E-03	ug/mL	N/A		
23	ICSA	S1306170020		0 0			Zirconium	LIQUID		4.4591E-03			1.00E-03	ug/mL	N/A		
Sample Sequence 24																	
24	ICSAB	S1306170021		0 0			Silver	LIQUID	1	1.0140E+00			1.00E-03	ug/mL	101.4	% Recovery	
24	ICSAB	S1306170021		0 0			Aluminum	LIQUID	200	2.0281E+02			6.00E-03	ug/mL	101.4	% Recovery	
24	ICSAB	S1306170021		0 0			Arsenic	LIQUID	5	4.7498E+00			5.00E-03	ug/mL	94.996	% Recovery	
24	ICSAB	S1306170021		0 0			Boron	LIQUID	1	1.0270E+00			1.00E-03	ug/mL	102.7	% Recovery	
24	ICSAB	S1306170021		0 0			Barium	LIQUID	1	9.0944E-01			1.00E-03	ug/mL	90.944	% Recovery	
24	ICSAB	S1306170021		0 0			Beryllium	LIQUID	.1	9.5482E-02			1.00E-03	ug/mL	95.482	% Recovery	
24	ICSAB	S1306170021		0 0			Bismuth	LIQUID	5	4.7886E+00			6.00E-03	ug/mL	95.773	% Recovery	
24	ICSAB	S1306170021		0 0			Calcium	LIQUID	200	1.7987E+02			0.08	ug/mL	89.934	% Recovery	
24	ICSAB	S1306170021		0 0			Cadmium	LIQUID	.2	1.7274E-01			1.00E-03	ug/mL	86.372	% Recovery	
24	ICSAB	S1306170021		0 0			Cerium	LIQUID		<6.0000E-03			6.00E-03	ug/mL	N/A		
24	ICSAB	S1306170021		0 0			Cobalt	LIQUID	5	4.4320E+00			1.00E-03	ug/mL	88.64	% Recovery	
24	ICSAB	S1306170021		0 0			Chromium	LIQUID	5	4.5638E+00			1.00E-03	ug/mL	91.276	% Recovery	
24	ICSAB	S1306170021		0 0			Copper	LIQUID	5	5.0384E+00			2.00E-03	ug/mL	100.77	% Recovery	
24	ICSAB	S1306170021		0 0			Europium	LIQUID		<1.0000E-03			1.00E-03	ug/mL	N/A		
24	ICSAB	S1306170021		0 0			Iron	LIQUID	200	1.6866E+02			0.01	ug/mL	84.33	% Recovery	
24	ICSAB	S1306170021		0 0			Potassium	LIQUID		<2.0000E-02			0.02	ug/mL	N/A		
24	ICSAB	S1306170021		0 0			Lanthanum	LIQUID		<1.0000E-03			1.00E-03	ug/mL	N/A		
24	ICSAB	S1306170021		0 0			Lithium	LIQUID	1	1.0656E+00			1.00E-03	ug/mL	106.56	% Recovery	
24	ICSAB	S1306170021		0 0			Magnesium	LIQUID	200	1.8640E+02			2.00E-03	ug/mL	93.202	% Recovery	
24	ICSAB	S1306170021		0 0			Manganese	LIQUID	5	4.5817E+00			1.00E-03	ug/mL	91.635	% Recovery	
24	ICSAB	S1306170021		0 0			Molybdenum	LIQUID	5	4.5212E+00			1.00E-03	ug/mL	90.423	% Recovery	
24	ICSAB	S1306170021		0 0			Sodium	LIQUID	200	2.1130E+02			0.04	ug/mL	105.65	% Recovery	
24	ICSAB	S1306170021		0 0			Neodymium	LIQUID		2.9422E-02			3.00E-03	ug/mL	N/A		

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041718

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
24	ICSAB	S1306170021		0 0			Nickel	LIQUID	5	4.3062E+00			1.00E-03	ug/mL	86.124	% Recovery	
24	ICSAB	S1306170021		0 0			Niobium	LIQUID	5	4.4849E+00			3.00E-03	ug/mL	89.698	% Recovery	
24	ICSAB	S1306170021		0 0			Phosphorus	LIQUID	1	9.5248E-01			3.00E-03	ug/mL	95.248	% Recovery	
24	ICSAB	S1306170021		0 0			Lead	LIQUID	1	1.1538E+00			6.00E-03	ug/mL	115.38	% Recovery	
24	ICSAB	S1306170021		0 0			Palladium	LIQUID		5.1008E-02			9.00E-03	ug/mL	N/A		
24	ICSAB	S1306170021		0 0			Praseodymium	LIQUID		<4.0000E-03			4.00E-03	ug/mL	N/A		
24	ICSAB	S1306170021		0 0			Rubidium	LIQUID		5.5606E-02			0.03	ug/mL	N/A		
24	ICSAB	S1306170021		0 0			Rhodium	LIQUID		<8.0000E-03			8.00E-03	ug/mL	N/A		
24	ICSAB	S1306170021		0 0			Ruthenium	LIQUID		<4.0000E-03			4.00E-03	ug/mL	N/A		
24	ICSAB	S1306170021		0 0			Sulfur	LIQUID		<5.0000E-03			5.00E-03	ug/mL	N/A		
24	ICSAB	S1306170021		0 0			Antimony	LIQUID	5	5.2037E+00			6.00E-03	ug/mL	104.07	% Recovery	
24	ICSAB	S1306170021		0 0			Selenium	LIQUID	5	4.7734E+00			6.00E-03	ug/mL	95.467	% Recovery	
24	ICSAB	S1306170021		0 0			Silicon	LIQUID	5	4.9420E+00			5.00E-03	ug/mL	98.839	% Recovery	
24	ICSAB	S1306170021		0 0			Samarium	LIQUID		<5.0000E-03			5.00E-03	ug/mL	N/A		
24	ICSAB	S1306170021		0 0			Tin	LIQUID	1	8.6393E-01			3.00E-03	ug/mL	86.393	% Recovery	
24	ICSAB	S1306170021		0 0			Strontium	LIQUID	1	8.9754E-01			2.00E-03	ug/mL	89.754	% Recovery	
24	ICSAB	S1306170021		0 0			Tantalum	LIQUID		5.0176E-02			5.00E-03	ug/mL	N/A		
24	ICSAB	S1306170021		0 0			Tellurium	LIQUID	5	4.6572E+00			5.00E-03	ug/mL	93.143	% Recovery	
24	ICSAB	S1306170021		0 0			Thorium	LIQUID		<5.0000E-03			5.00E-03	ug/mL	N/A		
24	ICSAB	S1306170021		0 0			Titanium	LIQUID	50	4.4810E+01			1.00E-03	ug/mL	89.619	% Recovery	
24	ICSAB	S1306170021		0 0			Thallium	LIQUID	5	4.0328E+00			6.00E-03	ug/mL	80.656	% Recovery	
24	ICSAB	S1306170021		0 0			Uranium	LIQUID	5	5.4588E+00			0.02	ug/mL	109.18	% Recovery	
24	ICSAB	S1306170021		0 0			Vanadium	LIQUID	1	8.9871E-01			1.00E-03	ug/mL	89.871	% Recovery	
24	ICSAB	S1306170021		0 0			Tungsten	LIQUID	5	4.6026E+00			6.00E-03	ug/mL	92.052	% Recovery	
24	ICSAB	S1306170021		0 0			Yttrium	LIQUID		<2.0000E-03			2.00E-03	ug/mL	N/A		
24	ICSAB	S1306170021		0 0			Zinc	LIQUID	5	4.5868E+00			4.00E-03	ug/mL	91.735	% Recovery	
24	ICSAB	S1306170021		0 0			Zirconium	LIQUID	5	4.7112E+00			1.00E-03	ug/mL	94.225	% Recovery	
Sample Sequence 25																	
25	CCV	S1306170022		0 0			Silver	LIQUID	1	1.0362E+00			1.00E-03	ug/mL	103.62	% Recovery	
25	CCV	S1306170022		0 0			Aluminum	LIQUID	5	5.0285E+00			6.00E-03	ug/mL	100.57	% Recovery	
25	CCV	S1306170022		0 0			Arsenic	LIQUID	5	4.9330E+00			5.00E-03	ug/mL	98.659	% Recovery	
25	CCV	S1306170022		0 0			Boron	LIQUID	5	4.9532E+00			1.00E-03	ug/mL	99.064	% Recovery	
25	CCV	S1306170022		0 0			Barium	LIQUID	5	5.0080E+00			1.00E-03	ug/mL	100.16	% Recovery	
25	CCV	S1306170022		0 0			Beryllium	LIQUID	5	5.1748E+00			1.00E-03	ug/mL	103.5	% Recovery	
25	CCV	S1306170022		0 0			Bismuth	LIQUID	5	5.0491E+00			6.00E-03	ug/mL	100.98	% Recovery	
25	CCV	S1306170022		0 0			Calcium	LIQUID	5	5.0861E+00			0.08	ug/mL	101.72	% Recovery	
25	CCV	S1306170022		0 0			Cadmium	LIQUID	5	5.0526E+00			1.00E-03	ug/mL	101.05	% Recovery	
26	CCV	S1306170022		0 1			Cerium	LIQUID	5	5.0386E+00			6.00E-03	ug/mL	100.77	% Recovery	
25	CCV	S1306170022		0 0			Cobalt	LIQUID	5	5.0541E+00			1.00E-03	ug/mL	101.08	% Recovery	
25	CCV	S1306170022		0 0			Chromium	LIQUID	5	5.1087E+00			1.00E-03	ug/mL	102.17	% Recovery	
25	CCV	S1306170022		0 0			Copper	LIQUID	5	5.2614E+00			2.00E-03	ug/mL	105.23	% Recovery	
26	CCV	S1306170022		0 1			Europium	LIQUID	5	5.1537E+00			1.00E-03	ug/mL	103.07	% Recovery	

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041718

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
25	CCV	S1306170022		0 0			Iron	LIQUID	5	4.9143E+00			0.01	ug/mL	98.286	% Recovery	
25	CCV	S1306170022		0 0			Potassium	LIQUID	5	5.2118E+00			0.02	ug/mL	104.24	% Recovery	
25	CCV	S1306170022		0 0			Lanthanum	LIQUID	5	5.2011E+00			1.00E-03	ug/mL	104.02	% Recovery	
25	CCV	S1306170022		0 0			Lithium	LIQUID	5	5.5155E+00			1.00E-03	ug/mL	110.31	% Recovery	
25	CCV	S1306170022		0 0			Magnesium	LIQUID	5	5.1989E+00			2.00E-03	ug/mL	103.98	% Recovery	
25	CCV	S1306170022		0 0			Manganese	LIQUID	5	5.0884E+00			1.00E-03	ug/mL	101.77	% Recovery	
25	CCV	S1306170022		0 0			Molybdenum	LIQUID	5	4.9580E+00			1.00E-03	ug/mL	99.161	% Recovery	
25	CCV	S1306170022		0 0			Sodium	LIQUID	5	5.3592E+00			0.04	ug/mL	107.18	% Recovery	
26	CCV	S1306170022		0 1			Neodymium	LIQUID	5	5.1333E+00			3.00E-03	ug/mL	102.67	% Recovery	
25	CCV	S1306170022		0 0			Nickel	LIQUID	5	4.9554E+00			1.00E-03	ug/mL	99.108	% Recovery	
26	CCV	S1306170022		0 1			Niobium	LIQUID	5	4.8768E+00			3.00E-03	ug/mL	97.537	% Recovery	
25	CCV	S1306170022		0 0			Phosphorus	LIQUID	5	4.9274E+00			3.00E-03	ug/mL	98.548	% Recovery	
25	CCV	S1306170022		0 0			Lead	LIQUID	5	4.9968E+00			6.00E-03	ug/mL	99.936	% Recovery	
26	CCV	S1306170022		0 1			Palladium	LIQUID	5	5.0782E+00			9.00E-03	ug/mL	101.56	% Recovery	
26	CCV	S1306170022		0 1			Praseodymium	LIQUID	5	5.0573E+00			4.00E-03	ug/mL	101.15	% Recovery	
26	CCV	S1306170022		0 1			Rubidium	LIQUID	5	5.0794E+00			0.03	ug/mL	101.59	% Recovery	
26	CCV	S1306170022		0 1			Rhodium	LIQUID	5	4.9975E+00			8.00E-03	ug/mL	99.949	% Recovery	
26	CCV	S1306170022		0 1			Ruthenium	LIQUID	5	4.8781E+00			4.00E-03	ug/mL	97.562	% Recovery	
25	CCV	S1306170022		0 0			Sulfur	LIQUID	5	4.9297E+00			5.00E-03	ug/mL	98.594	% Recovery	
25	CCV	S1306170022		0 0			Antimony	LIQUID	5	4.8938E+00			6.00E-03	ug/mL	97.876	% Recovery	
25	CCV	S1306170022		0 0			Selenium	LIQUID	5	5.0043E+00			6.00E-03	ug/mL	100.09	% Recovery	
25	CCV	S1306170022		0 0			Silicon	LIQUID	5	4.9935E+00			5.00E-03	ug/mL	99.87	% Recovery	
26	CCV	S1306170022		0 1			Samarium	LIQUID	5	5.0945E+00			5.00E-03	ug/mL	101.89	% Recovery	
26	CCV	S1306170022		0 1			Tin	LIQUID	5	4.7898E+00			3.00E-03	ug/mL	95.795	% Recovery	
25	CCV	S1306170022		0 0			Strontium	LIQUID	5	4.9477E+00			2.00E-03	ug/mL	98.955	% Recovery	
26	CCV	S1306170022		0 1			Tantalum	LIQUID	5	4.9700E+00			5.00E-03	ug/mL	99.4	% Recovery	
26	CCV	S1306170022		0 1			Tellurium	LIQUID	5	4.8290E+00			5.00E-03	ug/mL	96.58	% Recovery	
26	CCV	S1306170022		0 1			Thorium	LIQUID	5	4.9814E+00			5.00E-03	ug/mL	99.628	% Recovery	
25	CCV	S1306170022		0 0			Titanium	LIQUID	5	4.8620E+00			1.00E-03	ug/mL	97.24	% Recovery	
26	CCV	S1306170022		0 1			Thallium	LIQUID	5	4.7555E+00			6.00E-03	ug/mL	95.109	% Recovery	
26	CCV	S1306170022		0 1			Uranium	LIQUID	5	5.0658E+00			0.02	ug/mL	101.32	% Recovery	
25	CCV	S1306170022		0 0			Vanadium	LIQUID	5	5.0086E+00			1.00E-03	ug/mL	100.17	% Recovery	
26	CCV	S1306170022		0 1			Tungsten	LIQUID	5	4.9804E+00			6.00E-03	ug/mL	99.609	% Recovery	
26	CCV	S1306170022		0 1			Yttrium	LIQUID	5	4.9668E+00			2.00E-03	ug/mL	99.335	% Recovery	
25	CCV	S1306170022		0 0			Zinc	LIQUID	5	4.9838E+00			4.00E-03	ug/mL	99.675	% Recovery	
25	CCV	S1306170022		0 0			Zirconium	LIQUID	5	5.0353E+00			1.00E-03	ug/mL	100.71	% Recovery	
Sample Sequence 27																	
27	LLS	S1306170024		0 0			Silver	LIQUID	.02	1.9174E-02			1.00E-03	ug/mL	95.871	% Recovery	
27	LLS	S1306170024		0 0			Aluminum	LIQUID	.1	1.0005E-01			6.00E-03	ug/mL	100.05	% Recovery	
27	LLS	S1306170024		0 0			Arsenic	LIQUID	.2	1.9542E-01			5.00E-03	ug/mL	97.71	% Recovery	
27	LLS	S1306170024		0 0			Boron	LIQUID	.1	7.9189E-02			1.00E-03	ug/mL	79.189	% Recovery	
27	LLS	S1306170024		0 0			Barium	LIQUID	.01	9.6665E-03			1.00E-03	ug/mL	96.665	% Recovery	

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041718

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
27	LLS	S1306170024		0 0			Beryllium	LIQUID	.002	2.0240E-03			1.00E-03	ug/mL	101.2	% Recovery	
27	LLS	S1306170024		0 0			Bismuth	LIQUID	.2	2.0275E-01			6.00E-03	ug/mL	101.37	% Recovery	
27	LLS	S1306170024		0 0			Calcium	LIQUID	.2	1.8938E-01			0.08	ug/mL	94.691	% Recovery	
27	LLS	S1306170024		0 0			Cadmium	LIQUID	.01	1.0321E-02			1.00E-03	ug/mL	103.21	% Recovery	
27	LLS	S1306170024		0 0			Cerium	LIQUID	.2	2.1624E-01			6.00E-03	ug/mL	108.12	% Recovery	
27	LLS	S1306170024		0 0			Cobalt	LIQUID	.04	4.1173E-02			1.00E-03	ug/mL	102.93	% Recovery	
27	LLS	S1306170024		0 0			Chromium	LIQUID	.02	2.1119E-02			1.00E-03	ug/mL	105.6	% Recovery	
27	LLS	S1306170024		0 0			Copper	LIQUID	.02	2.1686E-02			2.00E-03	ug/mL	108.43	% Recovery	
28	LLS	S1306170024		0 1			Europium	LIQUID	.1	1.0350E-01			1.00E-03	ug/mL	103.5	% Recovery	
27	LLS	S1306170024		0 0			Iron	LIQUID	.05	4.6543E-02			0.01	ug/mL	93.087	% Recovery	
27	LLS	S1306170024		0 0			Potassium	LIQUID	1	1.0537E+00			0.02	ug/mL	105.37	% Recovery	
27	LLS	S1306170024		0 0			Lanthanum	LIQUID	.01	1.0677E-02			1.00E-03	ug/mL	106.77	% Recovery	
27	LLS	S1306170024		0 0			Lithium	LIQUID	.02	2.3156E-02			1.00E-03	ug/mL	115.78	% Recovery	
27	LLS	S1306170024		0 0			Magnesium	LIQUID	.2	2.1090E-01			2.00E-03	ug/mL	105.45	% Recovery	
27	LLS	S1306170024		0 0			Manganese	LIQUID	.02	2.0600E-02			1.00E-03	ug/mL	103	% Recovery	
27	LLS	S1306170024		0 0			Molybdenum	LIQUID	.1	9.8930E-02			1.00E-03	ug/mL	98.93	% Recovery	
29	LLS	S1306170024		0 2			Sodium	LIQUID	1	1.0727E+00			0.04	ug/mL	107.27	% Recovery	
27	LLS	S1306170024		0 0			Neodymium	LIQUID	.1	1.0267E-01			3.00E-03	ug/mL	102.67	% Recovery	
27	LLS	S1306170024		0 0			Nickel	LIQUID	.04	4.0539E-02			1.00E-03	ug/mL	101.35	% Recovery	
28	LLS	S1306170024		0 1			Niobium	LIQUID	.1	9.4296E-02			3.00E-03	ug/mL	94.296	% Recovery	
27	LLS	S1306170024		0 0			Phosphorus	LIQUID	.4	3.9660E-01			3.00E-03	ug/mL	99.149	% Recovery	
27	LLS	S1306170024		0 0			Lead	LIQUID	.2	2.0017E-01			6.00E-03	ug/mL	100.08	% Recovery	
28	LLS	S1306170024		0 1			Palladium	LIQUID	1	9.9533E-01			9.00E-03	ug/mL	99.533	% Recovery	
28	LLS	S1306170024		0 1			Praseodymium	LIQUID	.1	1.0311E-01			4.00E-03	ug/mL	103.11	% Recovery	
28	LLS	S1306170024		0 1			Rubidium	LIQUID	2	2.0734E+00			0.03	ug/mL	103.67	% Recovery	
28	LLS	S1306170024		0 1			Rhodium	LIQUID	.1	1.0432E-01			8.00E-03	ug/mL	104.32	% Recovery	
28	LLS	S1306170024		0 1			Ruthenium	LIQUID	.1	9.7995E-02			4.00E-03	ug/mL	97.995	% Recovery	
27	LLS	S1306170024		0 0			Sulfur	LIQUID	.2	1.9673E-01			5.00E-03	ug/mL	98.366	% Recovery	
27	LLS	S1306170024		0 0			Antimony	LIQUID	.1	9.9650E-02			6.00E-03	ug/mL	99.65	% Recovery	
27	LLS	S1306170024		0 0			Selenium	LIQUID	.2	2.0385E-01			6.00E-03	ug/mL	101.93	% Recovery	
27	LLS	S1306170024		0 0			Silicon	LIQUID	.1	1.2338E-01			5.00E-03	ug/mL	123.38	% Recovery	
27	LLS	S1306170024		0 0			Samarium	LIQUID	.1	1.3949E-01			5.00E-03	ug/mL	139.49	% Recovery	
28	LLS	S1306170024		0 1			Tin	LIQUID	.1	9.5636E-02			3.00E-03	ug/mL	95.636	% Recovery	
27	LLS	S1306170024		0 0			Strontium	LIQUID	.02	2.1071E-02			2.00E-03	ug/mL	105.36	% Recovery	
28	LLS	S1306170024		0 1			Tantalum	LIQUID	1	9.8467E-01			5.00E-03	ug/mL	98.467	% Recovery	
28	LLS	S1306170024		0 1			Tellurium	LIQUID	1	1.0084E+00			5.00E-03	ug/mL	100.84	% Recovery	
28	LLS	S1306170024		0 1			Thorium	LIQUID	.1	9.7904E-02			5.00E-03	ug/mL	97.904	% Recovery	
27	LLS	S1306170024		0 0			Titanium	LIQUID	.02	1.9403E-02			1.00E-03	ug/mL	97.013	% Recovery	
27	LLS	S1306170024		0 0			Thallium	LIQUID	.4	3.7828E-01			6.00E-03	ug/mL	94.57	% Recovery	
27	LLS	S1306170024		0 0			Uranium	LIQUID	.5	5.2829E-01			0.02	ug/mL	105.66	% Recovery	
27	LLS	S1306170024		0 0			Vanadium	LIQUID	.05	5.0889E-02			1.00E-03	ug/mL	101.78	% Recovery	
28	LLS	S1306170024		0 1			Tungsten	LIQUID	1	1.0027E+00			6.00E-03	ug/mL	100.27	% Recovery	

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041718

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
28	LLS	S1306170024		0 1			Yttrium	LIQUID	.1	1.0249E-01			2.00E-03	ug/mL	102.49	% Recovery	
27	LLS	S1306170024		0 0			Zinc	LIQUID	.02	1.9159E-02			4.00E-03	ug/mL	95.793	% Recovery	
27	LLS	S1306170024		0 0			Zirconium	LIQUID	.02	2.0912E-02			1.00E-03	ug/mL	104.56	% Recovery	
Sample Sequence 30																	
30	CCB	S1306170023		0 0			Silver	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
30	CCB	S1306170023		0 0			Aluminum	LIQUID		<6.0000E-03			6.00E-03	ug/mL			
30	CCB	S1306170023		0 0			Arsenic	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
30	CCB	S1306170023		0 0			Boron	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
30	CCB	S1306170023		0 0			Barium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
30	CCB	S1306170023		0 0			Beryllium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
30	CCB	S1306170023		0 0			Bismuth	LIQUID		<6.0000E-03			6.00E-03	ug/mL			
30	CCB	S1306170023		0 0			Calcium	LIQUID		<8.0000E-02			0.08	ug/mL			
30	CCB	S1306170023		0 0			Cadmium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
30	CCB	S1306170023		0 0			Cerium	LIQUID		8.1714E-03			6.00E-03	ug/mL			
30	CCB	S1306170023		0 0			Cobalt	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
30	CCB	S1306170023		0 0			Chromium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
30	CCB	S1306170023		0 0			Copper	LIQUID		<2.0000E-03			2.00E-03	ug/mL			
30	CCB	S1306170023		0 0			Europium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
30	CCB	S1306170023		0 0			Iron	LIQUID		<1.0000E-02			0.01	ug/mL			
30	CCB	S1306170023		0 0			Potassium	LIQUID		<2.0000E-02			0.02	ug/mL			
30	CCB	S1306170023		0 0			Lanthanum	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
30	CCB	S1306170023		0 0			Lithium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
30	CCB	S1306170023		0 0			Magnesium	LIQUID		<2.0000E-03			2.00E-03	ug/mL			
30	CCB	S1306170023		0 0			Manganese	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
30	CCB	S1306170023		0 0			Molybdenum	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
30	CCB	S1306170023		0 0			Sodium	LIQUID		<4.0000E-02			0.04	ug/mL			
30	CCB	S1306170023		0 0			Neodymium	LIQUID		<3.0000E-03			3.00E-03	ug/mL			
30	CCB	S1306170023		0 0			Nickel	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
30	CCB	S1306170023		0 0			Niobium	LIQUID		<3.0000E-03			3.00E-03	ug/mL			
30	CCB	S1306170023		0 0			Phosphorus	LIQUID		<3.0000E-03			3.00E-03	ug/mL			
30	CCB	S1306170023		0 0			Lead	LIQUID		<6.0000E-03			6.00E-03	ug/mL			
30	CCB	S1306170023		0 0			Palladium	LIQUID		<9.0000E-03			9.00E-03	ug/mL			
30	CCB	S1306170023		0 0			Praseodymium	LIQUID		9.7888E-03			4.00E-03	ug/mL			
30	CCB	S1306170023		0 0			Rubidium	LIQUID		<3.0000E-02			0.03	ug/mL			
30	CCB	S1306170023		0 0			Rhodium	LIQUID		<8.0000E-03			8.00E-03	ug/mL			
30	CCB	S1306170023		0 0			Ruthenium	LIQUID		<4.0000E-03			4.00E-03	ug/mL			
30	CCB	S1306170023		0 0			Sulfur	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
30	CCB	S1306170023		0 0			Antimony	LIQUID		<6.0000E-03			6.00E-03	ug/mL			
30	CCB	S1306170023		0 0			Selenium	LIQUID		<6.0000E-03			6.00E-03	ug/mL			
30	CCB	S1306170023		0 0			Silicon	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
30	CCB	S1306170023		0 0			Samarium	LIQUID		3.1945E-02			5.00E-03	ug/mL			
30	CCB	S1306170023		0 0			Tin	LIQUID		<3.0000E-03			3.00E-03	ug/mL			

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041718

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
30	CCB	S1306170023		0 0			Strontium	LIQUID		<2.0000E-03			2.00E-03	ug/mL			
30	CCB	S1306170023		0 0			Tantalum	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
30	CCB	S1306170023		0 0			Tellurium	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
30	CCB	S1306170023		0 0			Thorium	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
30	CCB	S1306170023		0 0			Titanium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
30	CCB	S1306170023		0 0			Thallium	LIQUID		<6.0000E-03			6.00E-03	ug/mL			
30	CCB	S1306170023		0 0			Uranium	LIQUID		<2.0000E-02			0.02	ug/mL			
30	CCB	S1306170023		0 0			Vanadium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
30	CCB	S1306170023		0 0			Tungsten	LIQUID		<6.0000E-03			6.00E-03	ug/mL			
30	CCB	S1306170023		0 0			Yttrium	LIQUID		<2.0000E-03			2.00E-03	ug/mL			
30	CCB	S1306170023		0 0			Zinc	LIQUID		<4.0000E-03			4.00E-03	ug/mL			
30	CCB	S1306170023		0 0			Zirconium	LIQUID		<1.0000E-03			1.00E-03	ug/mL			

Comments Section:

Data Flagger Status:
Flagging Completed

Final Page for Batch# 00041718

Reviewer Signature — Date: 7/18/13

LABCORE Completed Batch Report for Batch# 00041718

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Method	Customer Id	Specification
1	S1306170011	ICV			ICP-TOTAL METALS		
2	S1306170011	ICV			ICP-TOTAL METALS		
3	S1306170013	LLS			ICP-TOTAL METALS		
4	S1306170013	LLS			ICP-TOTAL METALS		
5	S1306170013	LLS			ICP-TOTAL METALS		
6	S1306170012	ICB			ICP-TOTAL METALS		
7	S1306170014	ICSA			ICP-TOTAL METALS		
8	S1306170015	ICSAB			ICP-TOTAL METALS		
9	S1306110078	BLNK-PREP			ICP-TOTAL METALS		
10	S1306110079	STD-PREP			ICP-TOTAL METALS		
11	S1306110083	STD-PREP			ICP-TOTAL METALS		
12	S1306170016	SERDIL	S13T004252		ICP-TOTAL METALS		
13	S13T004252	SAMPLE		20130402	ICP-TOTAL METALS	9C-13-Comp A	C109 CLO
14	S1306110080	DUP	S13T004252		ICP-TOTAL METALS		
15	S1306110081	SPK-PREDIG	S13T004252		ICP-TOTAL METALS		
16	S1306110082	SPK-PREDIG	S13T004252		ICP-TOTAL METALS		
17	S1306170018	CCV			ICP-TOTAL METALS		
18	S1306170018	CCV			ICP-TOTAL METALS		
19	S1306170019	CCB			ICP-TOTAL METALS		
20	S1306170017	SPK-POST	S13T004252		ICP-TOTAL METALS		
21	S13T004280	SAMPLE		20130402	ICP-TOTAL METALS	9C-13-Comp B	C109 CLO
22	S13T004307	SAMPLE		20130402	ICP-TOTAL METALS	9C-13-Comp C	C109 CLO
23	S1306170020	ICSA			ICP-TOTAL METALS		
24	S1306170021	ICSAB			ICP-TOTAL METALS		
25	S1306170022	CCV			ICP-TOTAL METALS		
26	S1306170022	CCV			ICP-TOTAL METALS		
27	S1306170024	LLS			ICP-TOTAL METALS		
28	S1306170024	LLS			ICP-TOTAL METALS		
29	S1306170024	LLS			ICP-TOTAL METALS		
30	S1306170023	CCB			ICP-TOTAL METALS		

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

* = Rejected Analyte
N, A = Non-reported Analyte

6/17/2013 10:41:29AM
IncompleteBatchShort Version 2.7.29
batchreports 2.7.32

LABCORE Data Entry Template for Batch# 00041718

Analyst: Getz, Andrew **Standard ID / Book#:** See Benchsheet

Instrument: ICP-ICAP6500

Method: ICP-TOTAL METALS, LA-505-174 Rev/Mod A-0

Prep Batch: 00041618

Batch Comment: N/A

CACN:3A.26

S	Type	Sample	R	A	Matrix	Group#	Project
1	ICV	S1306170011	0		LIQUID		
	Analytes Requested:	Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Cerium, Chromium, Cobalt, Copper, Europium, Iron, Lanthanum, Lead, Lithium, Magnesium, Manganese, Molybdenum, Neodymium, Nickel, Niobium, Palladium, Phosphorus, Potassium, Praseodymium, Rhodium, Rubidium, Ruthenium, Samarium, Selenium, Silicon, Silver, Sodium, Strontium, Sulfur, Tantalum, Tellurium, Thallium, Thorium, Tin, Titanium, Tungsten, Uranium, Vanadium, Yttrium, Zinc, Zirconium					
3	LLS	S1306170013	0		LIQUID		
	Analytes Requested:	Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Cerium, Chromium, Cobalt, Copper, Europium, Iron, Lanthanum, Lead, Lithium, Magnesium, Manganese, Molybdenum, Neodymium, Nickel, Niobium, Palladium, Phosphorus, Potassium, Praseodymium, Rhodium, Rubidium, Ruthenium, Samarium, Selenium, Silicon, Silver, Sodium, Strontium, Sulfur, Tantalum, Tellurium, Thallium, Thorium, Tin, Titanium, Tungsten, Uranium, Vanadium, Yttrium, Zinc, Zirconium					
6	ICB	S1306170012	0		LIQUID		
	Analytes Requested:	Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Cerium, Chromium, Cobalt, Copper, Europium, Iron, Lanthanum, Lead, Lithium, Magnesium, Manganese, Molybdenum, Neodymium, Nickel, Niobium, Palladium, Phosphorus, Potassium, Praseodymium, Rhodium, Rubidium, Ruthenium, Samarium, Selenium, Silicon, Silver, Sodium, Strontium, Sulfur, Tantalum, Tellurium, Thallium, Thorium, Tin, Titanium, Tungsten, Uranium, Vanadium, Yttrium, Zinc, Zirconium					
7	ICSA	S1306170014	0		LIQUID		
	Analytes Requested:	Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Cerium, Chromium, Cobalt, Copper, Europium, Iron, Lanthanum, Lead, Lithium, Magnesium, Manganese, Molybdenum, Neodymium, Nickel, Niobium, Palladium, Phosphorus, Potassium, Praseodymium, Rhodium, Rubidium, Ruthenium, Samarium, Selenium, Silicon, Silver, Sodium, Strontium, Sulfur, Tantalum, Tellurium, Thallium, Thorium, Tin, Titanium, Tungsten, Uranium, Vanadium, Yttrium, Zinc, Zirconium					
8	ICSAB	S1306170015	0		LIQUID		
	Analytes Requested:	Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Cerium, Chromium, Cobalt, Copper, Europium, Iron, Lanthanum, Lead, Lithium, Magnesium, Manganese, Molybdenum, Neodymium, Nickel, Niobium, Palladium, Phosphorus, Potassium, Praseodymium, Rhodium, Rubidium, Ruthenium, Samarium, Selenium, Silicon, Silver, Sodium, Strontium, Sulfur, Tantalum, Tellurium, Thallium, Thorium, Tin, Titanium, Tungsten, Uranium, Vanadium, Yttrium, Zinc, Zirconium					
9	BLNK-PREP	S1306110078	0	A	LIQUID		
	Analytes Requested:	Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Cerium, Chromium, Cobalt, Copper, Europium, Iron, Lanthanum, Lead, Lithium, Magnesium, Manganese, Molybdenum, Neodymium, Nickel, Niobium, Palladium, Phosphorus, Potassium, Praseodymium, Rhodium, Rubidium, Ruthenium, Samarium, Selenium, Silicon, Silver, Sodium, Strontium, Sulfur, Tantalum, Tellurium, Thallium, Thorium, Tin, Titanium, Tungsten, Uranium, Vanadium, Yttrium, Zinc, Zirconium					
10	STD-PREP	S1306110079	0	A	LIQUID		
	Analytes Requested:	Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Cerium, Chromium, Cobalt, Copper, Europium, Iron, Lanthanum, Lead, Lithium, Magnesium, Manganese, Molybdenum, Neodymium, Nickel, Niobium, Palladium, Phosphorus, Potassium, Praseodymium, Rhodium, Rubidium, Ruthenium, Samarium, Selenium, Silicon, Silver, Sodium, Strontium, Sulfur, Tantalum, Tellurium, Thallium, Thorium, Tin, Titanium, Tungsten, Uranium, Vanadium, Yttrium, Zinc, Zirconium					
11	STD-PREP	S1306110083	0	A	LIQUID		

Data Entry Comments:

S = Batch Slot Number, R = Retest Number, A = Aliquot Code.

LABCORE Data Entry Template for Batch# 00041718

Analytes Requested: Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Cerium, Chromium, Cobalt, Copper, Europium, Iron, Lanthanum, Lead, Lithium, Magnesium, Manganese, Molybdenum, Neodymium, Nickel, Niobium, Palladium, Phosphorus, Potassium, Praseodymium, Rhodium, Rubidium, Ruthenium, Samarium, Selenium, Silicon, Silver, Sodium, Strontium, Sulfur, Tantalum, Tellurium, Thallium, Thorium, Tin, Titanium, Tungsten, Uranium, Vanadium, Yttrium, Zinc, Zirconium

12 SERDIL **S1306170016** **0** **SOLID**

Analytes Requested: Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Cerium, Chromium, Cobalt, Copper, Europium, Iron, Lanthanum, Lead, Lithium, Magnesium, Manganese, Molybdenum, Neodymium, Nickel, Niobium, Palladium, Phosphorus, Potassium, Praseodymium, Rhodium, Rubidium, Ruthenium, Samarium, Selenium, Silicon, Silver, Sodium, Strontium, Sulfur, Tantalum, Tellurium, Thallium, Thorium, Tin, Titanium, Tungsten, Uranium, Vanadium, Yttrium, Zinc, Zirconium

13 SAMPLE **S13T004252** **1** **A** **SOLID** **20130402** **C109 CLO**

Analytes Requested: Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Cerium, Chromium, Cobalt, Copper, Europium, Iron, Lanthanum, Lead, Lithium, Magnesium, Manganese, Molybdenum, Neodymium, Nickel, Niobium, Palladium, Phosphorus, Potassium, Praseodymium, Rhodium, Rubidium, Ruthenium, Samarium, Selenium, Silicon, Silver, Sodium, Strontium, Sulfur, Tantalum, Tellurium, Thallium, Thorium, Tin, Titanium, Tungsten, Uranium, Vanadium, Yttrium, Zinc, Zirconium

14 DUP **S1306110080** **0** **A** **SOLID**

Analytes Requested: Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Cerium, Chromium, Cobalt, Copper, Europium, Iron, Lanthanum, Lead, Lithium, Magnesium, Manganese, Molybdenum, Neodymium, Nickel, Niobium, Palladium, Phosphorus, Potassium, Praseodymium, Rhodium, Rubidium, Ruthenium, Samarium, Selenium, Silicon, Silver, Sodium, Strontium, Sulfur, Tantalum, Tellurium, Thallium, Thorium, Tin, Titanium, Tungsten, Uranium, Vanadium, Yttrium, Zinc, Zirconium

15 SPK-PREDIG **S1306110081** **0** **A** **SOLID**

Analytes Requested: Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Cerium, Chromium, Cobalt, Copper, Europium, Iron, Lanthanum, Lead, Lithium, Magnesium, Manganese, Molybdenum, Neodymium, Nickel, Niobium, Palladium, Phosphorus, Potassium, Praseodymium, Rhodium, Rubidium, Ruthenium, Samarium, Selenium, Silicon, Silver, Sodium, Strontium, Sulfur, Tantalum, Tellurium, Thallium, Thorium, Tin, Titanium, Tungsten, Uranium, Vanadium, Yttrium, Zinc, Zirconium

16 SPK-PREDIG **S1306110082** **0** **A** **SOLID**

Analytes Requested: Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Cerium, Chromium, Cobalt, Copper, Europium, Iron, Lanthanum, Lead, Lithium, Magnesium, Manganese, Molybdenum, Neodymium, Nickel, Niobium, Palladium, Phosphorus, Potassium, Praseodymium, Rhodium, Rubidium, Ruthenium, Samarium, Selenium, Silicon, Silver, Sodium, Strontium, Sulfur, Tantalum, Tellurium, Thallium, Thorium, Tin, Titanium, Tungsten, Uranium, Vanadium, Yttrium, Zinc, Zirconium

17 CCV **S1306170018** **0** **LIQUID**

Analytes Requested: Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Cerium, Chromium, Cobalt, Copper, Europium, Iron, Lanthanum, Lead, Lithium, Magnesium, Manganese, Molybdenum, Neodymium, Nickel, Niobium, Palladium, Phosphorus, Potassium, Praseodymium, Rhodium, Rubidium, Ruthenium, Samarium, Selenium, Silicon, Silver, Sodium, Strontium, Sulfur, Tantalum, Tellurium, Thallium, Thorium, Tin, Titanium, Tungsten, Uranium, Vanadium, Yttrium, Zinc, Zirconium

19 CCB **S1306170019** **0** **LIQUID**

Analytes Requested: Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Cerium, Chromium, Cobalt, Copper, Europium, Iron, Lanthanum, Lead, Lithium, Magnesium, Manganese, Molybdenum, Neodymium, Nickel, Niobium, Palladium, Phosphorus, Potassium, Praseodymium, Rhodium, Rubidium, Ruthenium, Samarium, Selenium, Silicon, Silver, Sodium, Strontium, Sulfur, Tantalum, Tellurium, Thallium, Thorium, Tin, Titanium, Tungsten, Uranium, Vanadium, Yttrium, Zinc, Zirconium

20 SPK-POST **S1306170017** **0** **SOLID**

Analytes Requested: Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Cerium, Chromium, Cobalt, Copper, Europium, Iron, Lanthanum, Lead, Lithium, Magnesium, Manganese, Molybdenum, Neodymium, Nickel, Niobium, Palladium, Phosphorus, Potassium, Praseodymium, Rhodium, Rubidium, Ruthenium, Samarium, Selenium, Silicon, Silver, Sodium, Strontium, Sulfur, Tantalum, Tellurium, Thallium, Thorium, Tin, Titanium, Tungsten, Uranium, Vanadium, Yttrium, Zinc, Zirconium

21 SAMPLE **S13T004280** **1** **A** **SOLID** **20130402** **C109 CLO**

Data Entry Comments:

S = Batch Slot Number, R = Retest Number, A = Aliquot Code.

LABCORE Data Entry Template for Batch# 00041718

Analytes Requested: Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Cerium, Chromium, Cobalt, Copper, Europium, Iron, Lanthanum, Lead, Lithium, Magnesium, Manganese, Molybdenum, Neodymium, Nickel, Niobium, Palladium, Phosphorus, Potassium, Praseodymium, Rhodium, Rubidium, Ruthenium, Samarium, Selenium, Silicon, Silver, Sodium, Strontium, Sulfur, Tantalum, Tellurium, Thallium, Thorium, Tin, Titanium, Tungsten, Uranium, Vanadium, Yttrium, Zinc, Zirconium

22 SAMPLE **S13T004307 1 A SOLID 20130402 C109 CLO**

Analytes Requested: Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Cerium, Chromium, Cobalt, Copper, Europium, Iron, Lanthanum, Lead, Lithium, Magnesium, Manganese, Molybdenum, Neodymium, Nickel, Niobium, Palladium, Phosphorus, Potassium, Praseodymium, Rhodium, Rubidium, Ruthenium, Samarium, Selenium, Silicon, Silver, Sodium, Strontium, Sulfur, Tantalum, Tellurium, Thallium, Thorium, Tin, Titanium, Tungsten, Uranium, Vanadium, Yttrium, Zinc, Zirconium

23 ICSA **S1306170020 0 LIQUID**

Analytes Requested: Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Cerium, Chromium, Cobalt, Copper, Europium, Iron, Lanthanum, Lead, Lithium, Magnesium, Manganese, Molybdenum, Neodymium, Nickel, Niobium, Palladium, Phosphorus, Potassium, Praseodymium, Rhodium, Rubidium, Ruthenium, Samarium, Selenium, Silicon, Silver, Sodium, Strontium, Sulfur, Tantalum, Tellurium, Thallium, Thorium, Tin, Titanium, Tungsten, Uranium, Vanadium, Yttrium, Zinc, Zirconium

24 ICSAB **S1306170021 0 LIQUID**

Analytes Requested: Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Cerium, Chromium, Cobalt, Copper, Europium, Iron, Lanthanum, Lead, Lithium, Magnesium, Manganese, Molybdenum, Neodymium, Nickel, Niobium, Palladium, Phosphorus, Potassium, Praseodymium, Rhodium, Rubidium, Ruthenium, Samarium, Selenium, Silicon, Silver, Sodium, Strontium, Sulfur, Tantalum, Tellurium, Thallium, Thorium, Tin, Titanium, Tungsten, Uranium, Vanadium, Yttrium, Zinc, Zirconium

25 CCV **S1306170022 0 LIQUID**

Analytes Requested: Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Cerium, Chromium, Cobalt, Copper, Europium, Iron, Lanthanum, Lead, Lithium, Magnesium, Manganese, Molybdenum, Neodymium, Nickel, Niobium, Palladium, Phosphorus, Potassium, Praseodymium, Rhodium, Rubidium, Ruthenium, Samarium, Selenium, Silicon, Silver, Sodium, Strontium, Sulfur, Tantalum, Tellurium, Thallium, Thorium, Tin, Titanium, Tungsten, Uranium, Vanadium, Yttrium, Zinc, Zirconium

27 LLS **S1306170024 0 LIQUID**

Analytes Requested: Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Cerium, Chromium, Cobalt, Copper, Europium, Iron, Lanthanum, Lead, Lithium, Magnesium, Manganese, Molybdenum, Neodymium, Nickel, Niobium, Palladium, Phosphorus, Potassium, Praseodymium, Rhodium, Rubidium, Ruthenium, Samarium, Selenium, Silicon, Silver, Sodium, Strontium, Sulfur, Tantalum, Tellurium, Thallium, Thorium, Tin, Titanium, Tungsten, Uranium, Vanadium, Yttrium, Zinc, Zirconium

30 CCB **S1306170023 0 LIQUID**

Analytes Requested: Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Cerium, Chromium, Cobalt, Copper, Europium, Iron, Lanthanum, Lead, Lithium, Magnesium, Manganese, Molybdenum, Neodymium, Nickel, Niobium, Palladium, Phosphorus, Potassium, Praseodymium, Rhodium, Rubidium, Ruthenium, Samarium, Selenium, Silicon, Silver, Sodium, Strontium, Sulfur, Tantalum, Tellurium, Thallium, Thorium, Tin, Titanium, Tungsten, Uranium, Vanadium, Yttrium, Zinc, Zirconium

Final Page for Batch# 00041718

Analyst Signature 06/17/13 **Date**

Data Entry Signature 06/17/13 **Date**

Data Entry Comments:

S = Batch Slot Number, R = Retest Number, A = Aliquot Code.

ATL	ICP BENCH SHEET	○ IH ◉ Non IH

○ LA-505-170 Rev NA ○ LA-505-171 Rev NA ◉ LA-505-174 Rev A-0

○ NA (Other) Rev NA

Client/Project: C109 CLO Acid Re-digest

Batch #: 41718 Analyst: Andrew Getz

Date/Time Start: 06/14/13 / 0937 Date/Time End: 06/14/13 / 1231

Instrument ID #: iCAP 6500 Instrument File #: 130614C109CLO

(Pipette #); Pipette ID; Volume Range or Fixed Volume; Check box if pipette passes visual verification:

(1) 210955A	(Range/Vol: 1.0-10.0mL) ☒	(5) 1139969	(Range/Vol: 0.1-1.0mL) ☒
(2) 1139979	(Range/Vol: 0.1-1.0mL) ☒	(6) 359680	(Range/Vol: 0.5-2.5mL) ☒
(3) 141322Z	(Range/Vol: 0.01-0.1mL) ☒	(7) NA	(Range/Vol: NA) ☐
(4) 2346763	(Range/Vol: 0.01-0.1mL) ☒	(8) NA	(Range/Vol: NA) ☐

Calibration Standards:

Blank - (B-25-130612-1)

10ppm HS50 - 1.0mL(SL018597) + 9.0mL (B-25-130612-1)

10ppm HS29 - 1.0mL(SL016660) + 9.0mL (B-25-130612-1)

10ppm HS51 - 1.0mL(SL016666) + 9.0mL (B-25-130612-1)

10ppm HS52 - 1.0mL(SL016669) + 9.0mL (B-25-130612-1)

10ppm HS53 - 1.0mL(SL016671) + 9.0mL (B-25-130612-1)

Verification Standards:

ICB/CCB - (B-25-130612-1)

ICV A - 0.5mL(SL016792,SL016790) + 9.0mL (B-25-130612-1)

CCV A - 0.5mL(SL018597,SL016660) + 9.0mL (B-25-130612-1)

ICV B - 0.5(SL016787,SL016782,SL016779) + 8.5mL(B-25-130612-1)

CCV B - 0.5(SL016666,SL016669, SL016671) + 8.5mL(B-25-130612-1)

LLS A - 0.1mL(SL016509,SL018998) + 9.8mL (B-25-130612-1)

LLS B - 1.0mL(SL017809,SL018846,SL018850) + 7.0mL(B-25-130612-1)

LLS Na 1.0ppm - .01mL(SL019235) + 9.99mL (B-25-130612-1)

ICSA - (SL017177)

ICSAB - 6.5mL(SL017183,SL017184)

Sample Number	Dilution Factor	Dilution
ICV A	1	see above
ICV B	1	see above
LLS A	1	see above
LLS B	1	see above
LLS Na	1	see above
ICB	1	see above
ICSA	1	see above

ATL	ICP BENCH SHEET (continued)	○ IH ◉ Non IH

○ LA-505-170 Rev NA ○ LA-505-171 Rev NA ◉ LA-505-174 Rev A-0

○ NA Rev NA

Client/Project: C109 CLO Acid Re-digest

Batch #: 41718 Analyst: Andrew Getz

Date/Time Start: 06/14/13 / 0937 Date/Time End: 06/14/13 / 1231

Sample Number	Dilution Factor	Dilution
ICSAB	1	see above
Prep Blank	1	2.0(6)-8.0(1) direct
Prep Std 1	1	.01(4)-9.99(1 SDB 6/18/13 direct
Prep Std 2	1	.01(4)-9.99(1 direct
S13T004252_L	25	2.0(6)-8.0(1); 2.0(6)-8.0(1)
S13T004252	5	2.0(6)-8.0(1)
S13T004252_D	5	2.0(6)-8.0(1)
S13T004252_S1	5	2.0(6)-8.0(1)
S13T004252_S2	5	2.0(6)-8.0(1)
CCV A	1	see above
CCV B	1	see above
CCB	1	see above
S13T004252_A	5	2.0(4)-1.0(2)(SL016659,SL018597,SL016666, SL016669,SL016671)-3.0(1)
S13T004280	5	2.0(6)-8.0(1)
S13T004307	5	2.0(6)-8.0(1)
ICSA	1	see above
ICSAB	1	see above
CCV A	1	see above
CCV B	1	see above
LLS A	1	see above
LLS B	1	see above
LLS Na 1ppm	1	see above
CCB	1	see above

ICP Dilution Key:

Example:

First entry is sample volume in ml (xxx)

Second entry is post spike volume in ml (sss)

Last entry is diluent volume in ml (vvv)

Where (#) is the pipette #

Single dilution: xxx(#)-vvv(#)	1ml(#) - 9ml(#)	DF=10
Post Spike dilution: xxx(#)-sss(#)-sss(#)-vvv(#)	1ml(#) - 0.1ml(#) - 0.1ml(#) - 8.8ml(#)	DF=10
Double dilution: xxx(#)-vvv(#), xxx(#)-vvv(#)	1ml(#) - 9ml(#), 1ml(#) - 9ml(#)	DF=100
Post Spike dilution: xxx(#)-vvv(#), xxx(#)-sss(#)-vvv(#)	1ml(#) - 9ml(#), 1ml(#) - 1ml(#) - 8ml(#)	DF=100
Serial dilution: xxx(#)-vvv(#), xxx(#)-vvv(#)	1 ml(#) - 9ml(#), 2ml(#) - 8ml(#)	DF=50
Triple dilution: xxx(#)-vvv(#), xxx(#)-vvv(#), xxx(#)-vvv(#)	1ml(#) - 9ml(#), 1ml(#) - 9ml(#), 1ml(#) - 9ml(#)	DF=1000

Comments:

ATL	ICP BENCH SHEET (continued)	○ IH ◉ Non IH

○ LA-505-170 Rev NA ○ LA-505-171 Rev NA ◉ LA-505-174 Rev A-0

○ NA Rev NA

Client/Project: C109 CLO Acid Re-digest

Batch #: 41718 Analyst: Andrew Getz

Date/Time Start: 06/14/13 / 0937 Date/Time End: 06/14/13 / 1231

06/11/2013 15:03 15093721142 222S/8C PAGE 01/02

ATL	ACID DIGESTION BENCH SHEET	○ IH ◉ Non IH

○ LA-505-158 Rev _____ ◉ LA-505-163 Rev H-0-A ○ LA-505-172 Rev _____ ○ _____ Rev _____

Project: C109 CLO re-digest (20130402) (Standard Acid Digest)

Batch #: 00041618 6/11/13 Analyst: TJH 6/11/13

Prep. Date/Time Start: 6/11/13 TJH 6/20/13 / 0922 Prep. Date/Time End: 6/11/13 TJH 6/20/13 / 1350

☒ Verified Thermometer Calibration ☒ Verified Thermometer 95±5 °C

Balance Number: LE-BAL-040 Mod Block Temp: 96.5 °C

Standard	Lot/Book # or Barcode #	Exp. Date	Standard	Lot/Book # or Barcode #	Exp. Date
HCl	SL018577	12-13-17	HS50	SL018597	1-1-14
HNO_3	SL017975	4-10-18	HS51	SL016666	9-1-13
H_2O_2	SL014265	1-31-16	HS52	SL016669	9-1-13
HS29	SL016660	9-1-13	HS53	SL016671	9-1-13
Inorg Vent. U	SL017742	4-1-14	Inorg Vent. Th	SL017753	4-1-14
68B63 Np237 spk	68B63	11-29-15	N/A	N/A	N/A

(Pipette #); Pipette ID; Volume Range or Fixed Volume; Check box if pipette passes visual TJH 6/20/13

(1) 1255553 (Range/Vol: .010-.100 mL) ☑ (3) G1030153F (Range/Vol: .100-1 mL) ☑

(2) J1207550k (Range/Vol: 1-10 mL) ☑ (4) N/A (Range/Vol: N/A) ☐

Sample ID	Final Volume (mL)	Sample Qty/Unit (a)	Spike Added (b)	Dose Rate (mrem/hr)
Prep Blank	50			<0.5
Prep Std 1	50		2.5ml (2) HS29 + 2.5ml (2) HS50	<0.5
Prep Std 2	50		2.5ml (2) HS51 + 2.5ml (2) HS52 + 2.5ml (2) HS53	<0.5
Prep Std 3	50		0.1 mL (1) 10 ppm U & 0.1 mL (1) 10 ppm Th	<0.5
Prep Std 4	50		0.35 mL (3) of 68B63 Np237 spike	<0.5
S13T004252	50	.2516		1550
S13T004252 Dup	50	.2529		1550
S13T004252_S1	50	.2524	2.5ml (2) HS29 + 2.5ml (2) HS50	1650
S13T004252_S2	50	.2482	2.5ml (2) HS51 + 2.5ml (2) HS52 + 2.5ml ( ) HS53	1800
S13T004252_S3	50	.2501	0.1 mL (1) 10 ppm U & 0.1 mL (1) 10 ppm Th	1850
S13T004252_S4	50	.2485	0.35 mL (3) of 68B63 Np237 spike	1800
S13T004280	50	.2547		1850
S13T004307	50	.2519		2200

(a) Sample Qty/Unit: For solid samples, record the weight in g (e.g., "0.25g"). For liquid samples, record the volume in mL and record the pipette number used in parentheses (e.g., "2.5mL (1)"). For filter media, use "Each" (i.e., "1 each").

(b) Spike Added: Record the volume in mL and record the pipette number used in parentheses for each standard used, indicate the standard used (e.g., "0.5mL (3) HS50 + 1.0mL (1) HS51").

Note: Observation of sample before and after prep. (i.e., sample appearance, digestate color, clarity, approx. % dissolved, and multiple phases).

Comments:

A-6005-389 (REV 1)

Page 1 of 2

ATL	ACID DIGESTION BENCH SHEET (continued)	○ IH ○ Non IH

○ LA-505-158 Rev _____ ○ LA-505-163 Rev _____ ○ LA-505-172 Rev _____ ○ _____ Rev _____

Project: C109 CLO re-digest (20130402) (Standard Acid Digest)

Batch #: 00041618 Analyst: TJH

1000 ppm standards from Inorganic Ventures must be diluted to 10 ppm for U and Th. These 10 ppm standards are used for the prep standard and spike.

Sample size is approximately 0.25 g

Parent Sample: Refer to Sample Breakdown Diagrams

Customer requests that we report appearance of samples after digestion and provide an estimate of the percent sample digested for each sample.

Chemist instructions provided by SD Bolling. 6/10/13

ATL	ACID DIGESTION BENCH SHEET (continued)	○ IH ◉ Non IH

○ LA-505-158 Rev _____ ◉ LA-505-163 Rev _____ ○ LA-505-172 Rev _____

Project: C109 CLO (20130402) (Standard Acid Digest)

Batch #: 0004140 Analyst: AVS 5/28/2013 TJH 5/29/13

Sample size is approximately 0.25 g
Parent Sample: Refer to Sample Breakdown Diagrams
Chemist instructions provided by SD Bolling.

Sample 4252 appeared to be orange/brown, dry, and uniform small granuels.
Sample 4280 appeared to be similar to 4252, but with a higher moisture content.
Sample 4307 was similar to 4252 but with the highest water content. Consistancy was similar to peanut butter.
After digest, samples were uniform in appearence, all were a light/pale yellow, and transparent.

AVS
5/28/2013

6/11/13 Digest Batch 41618 AND 4864 @ 7/22/13

Sample 4252 LightBrownish, dry Granules
Sample 4280 Light Brown Granules w/ a bit more Moisture
Sample 4307 Light Brown very moist Sludge
Samples After Digest where all Light yellow w/ very Little material to filter out 95% ~~Digested~~ Digested TJH 7/22/13

A-6005-369 (REV 0)

6/11/2013 3:15:10PM
IncompleteBatchShort Version 2.7.29
batchreports 2.7.32

LABCORE Data Entry Template for Batch# 00041618

Analyst: Hexum, Troy **Standard ID / Book#:** See Bench Sheet
Instrument: LE-BAL-040
Method: ACID DIGEST, SOLID, LA-505-163 Rev/Mod H-0-A
Prep Batch: N/A
Batch Comment:
ACID DIGEST C 109 CLO
CACN:3A.26

S	Type	Sample	R	A	Matrix	Group#	Project
1	BLNK-PREP	S1306110078		A	LIQUID		
2	STD-PREP	S1306110079		A	LIQUID		
3	STD-PREP	S1306110083		A	LIQUID		
4	STD-PREP	S1306110085		A	LIQUID		
5	STD-PREP	S1306110087		A	LIQUID		
6	SAMPLE	S13T004252		A	SOLID	20130402	C109 CLO
7	DUP	S1306110080		A	SOLID		
8	SPK-PREDIG	S1306110081		A	SOLID		
9	SPK-PREDIG	S1306110082		A	SOLID		
10	SPK-PREDIG	S1306110084		A	SOLID		
11	SPK-PREDIG	S1306110086		A	SOLID		
12	SAMPLE	S13T004280		A	SOLID	20130402	C109 CLO
13	SAMPLE	S13T004307		A	SOLID	20130402	C109 CLO

Final Page for Batch# 00041618

Analyst Signature 6/11/13 Date

Data Entry Signature 6/11/13 Date

Data Entry Comments:

S = Batch Slot Number, R = Retest Number, A = Aliquot Code.

Flexible Report By Sample

Author:

Published: 6/14/2013 1:38:35 PM

Method Name: iCAP 6500 130308 (1)

Sample Name	Acquisition Date	Sample type	Correction Factor
Blank	6/14/2013 9:37:58 AM	Standard	1.00

Autosampler Locations	Analyst Name	Method Name
3/1/2	awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Ag3280	Al3961	As1890	B_2497	Ba2335
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.000216471	0.000420144	0.000753282	-0.00129902	0.000406796
Std Dev:	0.000706192	0.00302897	0.000556838	0.00011694	0.000257037
%RSD:	326.229	720.937	73.9216	9.00218	63.1858
Repeat: 1	0.000488019	0.00178868	0.00100125	-0.00140104	0.000352067
Repeat: 2	-0.000585188	0.00252335	0.00114306	-0.00132461	0.00068679
Repeat: 3	0.000746583	-0.0030516	0.000115535	-0.0011714	0.000181531
Element/Wavelength	Be2348	Bi2230	Ca1840	Cd2265	Ce5353
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-6.04728e-006	0.000497901	-0.00385244	0.000282492	-0.0249478
Std Dev:	4.91449e-005	0.0014657	0.00114559	9.77314e-005	0.00566443
%RSD:	812.678	294.377	29.7367	34.5962	22.7052
Repeat: 1	-6.20202e-005	0.0019034	-0.00266048	0.000305406	-0.0296099
Repeat: 2	3.0032e-005	-0.00102138	-0.00395163	0.00036673	-0.0186438
Repeat: 3	1.38464e-005	0.000611685	-0.00494522	0.000175339	-0.0265897
Element/Wavelength	Co2286	Cr2677	Cu3273	Eu3819	Fe2599
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.000295972	-0.000280164	-0.00102506	-5.21006e-005	-0.00284822
Std Dev:	0.00087477	0.000600558	0.000123756	8.20593e-005	0.000381473
%RSD:	295.559	214.359	12.0731	157.502	13.3934
Repeat: 1	-0.00115194	0.000409952	-0.00116745	-0.000128686	-0.00322014
Repeat: 2	0.000596463	-0.00068417	-0.000964294	3.45114e-005	-0.00245786
Repeat: 3	-0.000332442	-0.000566273	-0.000943429	-6.21274e-005	-0.00286667
Element/Wavelength	K_7664	La3794	Li6707	Mg2852	Mn2605
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00748776	0.000206623	-2.90147e-005	-0.000237338	0.000189724
Std Dev:	0.0112824	0.000364916	0.000239489	0.000259516	0.000136608
%RSD:	150.678	176.61	825.405	109.344	72.0033
Repeat: 1	0.019971	0.000253485	-2.85852e-005	5.90565e-005	8.48253e-005
Repeat: 2	-0.00198175	0.000545843	-0.000268718	-0.000347309	0.000344197
Repeat: 3	0.00447403	-0.00017946	0.000210259	-0.000423761	0.00014015
Element/Wavelength	Mo2020	Na8183	Nb3194	Nd4012	Ni2216
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.000774563	0.0514143	i 0.000411065	0.00142503	-0.000355734
Std Dev:	0.000843957	0.0343251	0.00238191	0.000902165	0.000284933
%RSD:	108.959	66.7617	579.448	63.3084	80.097
Repeat: 1	0.000475213	0.0121784	0.00079416	0.00131508	-0.000157905
Repeat: 2	0.00172739	0.0758922	-0.00213917	0.00237713	-0.00068232
Repeat: 3	0.000121084	0.0661723	0.00257821	0.000582881	-0.000226978

Element/Wavelength	P_1774	Pb2203	Pd3242	Pr4143	Rb7800
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.00042586	0.00488741	0.00360926	-0.0149276	0.0010759
Std Dev:	0.00172278	0.00421922	0.00779856	0.00495323	0.0133136
%RSD:	404.541	86.3284	216.071	33.1818	1237.44
Repeat: 1	-0.00208427	0.000183996	0.00577789	-0.0188985	0.0129148
Repeat: 2	-0.000548079	0.00833924	0.010094	-0.016507	-0.0133367
Repeat: 3	0.00135477	0.00613901	-0.0050441	-0.00937722	0.00364958
Element/Wavelength	Rh3434	Ru2402	S_1807	Sb2175	Se1960
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.00539678	0.00121453	-9.98581e-005	-0.000160724	0.00241506
Std Dev:	0.00419499	0.00203667	0.00385197	0.00458567	0.0089391
%RSD:	77.7314	167.691	3857.45	2853.14	370.141
Repeat: 1	-0.0030022	0.00336861	-0.00435283	-0.00541443	0.0120211
Repeat: 2	-0.0029475	-0.000679801	0.000898843	0.00189402	-0.00565914
Repeat: 3	-0.0102406	0.00095479	0.00315441	0.00303824	0.000883219
Element/Wavelength	Si2124	Sm3592	Sn1899	Sr2165	Ta2685
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.00251223	-0.0327078	0.0021235	-0.00152996	0.00205006
Std Dev:	0.00412338	0.00298281	0.00197886	0.000422362	0.00156157
%RSD:	164.132	9.11955	93.1885	27.6061	76.1719
Repeat: 1	-0.00617035	-0.0360865	0.00415577	-0.00104386	0.00173019
Repeat: 2	-0.00332247	-0.0304393	0.00201195	-0.00173882	0.000673191
Repeat: 3	0.00195613	-0.0315976	0.000202777	-0.0018072	0.0037468
Element/Wavelength	Te2142	Th2832	Ti3372	Tl1908	U_3859
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00221847	0.00607418	7.35305e-005	-0.000382514	0.00172774
Std Dev:	0.00265137	0.0035102	0.000229259	0.00326496	0.00690446
%RSD:	119.513	57.7889	311.787	853.553	399.624
Repeat: 1	0.000994953	0.00966324	0.000332637	0.00095153	0.00266311
Repeat: 2	0.00526066	0.00591073	-9.03917e-006	-0.00410326	0.00811683
Repeat: 3	0.000399797	0.00264855	-0.000103006	0.00200419	-0.00559672
Element/Wavelength	V_3093	W_2397	Y_3195	Zn2138	Zr3438
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.000327726	-0.0042103	i -0.00141237	-0.00080895	-0.000369999
Std Dev:	0.000266192	0.00496506	0.000584226	0.000185584	0.000151004
%RSD:	81.224	117.926	41.365	22.9414	40.8119
Repeat: 1	-0.000633392	-0.00469455	-0.00196063	-0.000828338	-0.000502894
Repeat: 2	-0.000146885	0.000979139	-0.000797828	-0.000984079	-0.000205795
Repeat: 3	-0.000202901	-0.00891549	-0.00147865	-0.000614433	-0.000401309

Sample Name	Acquisition Date	Sample type	Correction Factor
Cal. Std. 1 - HS 50	6/14/2013 9:42:50 AM	Standard	1.00
Autosampler Locations		**Analyst Name**	**Method Name**
3/2/3		awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Ag3280	Al3961	As1890	Ba2335	Be2348
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	z *****	z *****	z *****	z *****	z *****
Std Dev:	----	----	----	----	----
%RSD:	----	----	----	----	----
Repeat: 1	z ----	z ----	z ----	z ----	z ----
Repeat: 2	z ----	z ----	z ----	z ----	z ----
Repeat: 3	z ----	z ----	z ----	z ----	z ----

Element/Wavelength	Bi2230	Ca1840	Cd2265	Co2286	Cr2677
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	z *****	z *****	z *****	z *****	z *****
Std Dev:	----	----	----	----	----
%RSD:	----	----	----	----	----
Repeat: 1	z ----	z ----	z ----	z ----	z ----
Repeat: 2	z ----	z ----	z ----	z ----	z ----
Repeat: 3	z ----	z ----	z ----	z ----	z ----

Element/Wavelength	Cu3273	Fe2599	K_7664	La3794	Li6707
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	z *****	z *****	z *****	z *****	z *****
Std Dev:	----	----	----	----	----
%RSD:	----	----	----	----	----
Repeat: 1	z ----	z ----	z ----	z ----	z ----
Repeat: 2	z ----	z ----	z ----	z ----	z ----
Repeat: 3	z ----	z ----	z ----	z ----	z ----

Element/Wavelength	Mg2852	Mn2605	Na8183	Ni2216	Pb2203
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	z *****	z *****	z *****	0	0
Std Dev:	----	----	----	0	0
%RSD:	----	----	----	0	0
Repeat: 1	z ----	z ----	z ----	0	0
Repeat: 2	z ----	z ----	z ----	0	0
Repeat: 3	z ----	z ----	z ----	0	0

Element/Wavelength	Se1960	Sr2165	V_3093	Zn2138
Units:	ppm	ppm	ppm	ppm
Avg. of Repeats:	0	0	0	0
Std Dev:	0	0	0	0
%RSD:	0	0	0	0
Repeat: 1	0	0	0	0
Repeat: 2	0	0	0	0
Repeat: 3	0	0	0	0

Sample Name	Acquisition Date	Sample type	Correction Factor
Cal. Std. 2 - HS 29	6/14/2013 9:47:23 AM	Standard	1.00
Autosampler Locations		**Analyst Name**	**Method Name**
3/2/1		awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	B_2497	Mo2020	P_1774	S_1807	Sb2175
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	z *****	0	0	0	0
Std Dev:	----	0	0	0	0
%RSD:	----	0	0	0	0
Repeat: 1	z ----	0	0	0	0
Repeat: 2	z ----	0	0	0	0
Repeat: 3	z ----	0	0	0	0

Element/Wavelength	Si2124	Ti3372	Zr3438
Units:	ppm	ppm	ppm
Avg. of Repeats:	0	0	0
Std Dev:	0	0	0
%RSD:	0	0	0
Repeat: 1	0	0	0
Repeat: 2	0	0	0
Repeat: 3	0	0	0

Sample Name	Acquisition Date	Sample type	Correction Factor
Cal. Std. 3 - HS 51	6/14/2013 9:52:03 AM	Standard	1.00
Autosampler Locations		**Analyst Name**	**Method Name**
3/2/5		awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Ce5353	Eu3819	Nd4012	Pr4143	Rb7800
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0	0	0	0	0
Std Dev:	0	0	0	0	0
%RSD:	0	0	0	0	0
Repeat: 1	0	0	0	0	0
Repeat: 2	0	0	0	0	0
Repeat: 3	0	0	0	0	0

Element/Wavelength	Sm3592	Th2832	U_3859	Y_3195
Units:	ppm	ppm	ppm	ppm
Avg. of Repeats:	0	0	0	i 0
Std Dev:	0	0	0	0
%RSD:	0	0	0	0
Repeat: 1	0	0	0	0
Repeat: 2	0	0	0	0
Repeat: 3	0	0	0	0

Sample Name	Acquisition Date	Sample type	Correction Factor
Cal. Std. 4 - HS 52	6/14/2013 9:56:55 AM	Standard	1.00

Autosampler Locations	Analyst Name	Method Name
3/2/7	awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Pd3242	Rh3434	Ru2402	Tl1908
Units:	ppm	ppm	ppm	ppm
Avg. of Repeats:	0	0	0	0
Std Dev:	0	0	0	0
%RSD:	0	0	0	0
Repeat: 1	0	0	0	0
Repeat: 2	0	0	0	0
Repeat: 3	0	0	0	0

Sample Name	Acquisition Date	Sample type	Correction Factor
Cal. Std. 5 - HS 53	6/14/2013 10:01:41 AM	Standard	1.00

Autosampler Locations	Analyst Name	Method Name
3/2/9	awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Nb3194	Sn1899	Ta2685	Te2142	W_2397
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	i 0	0	0	0	0
Std Dev:	0	0	0	0	0
%RSD:	0	0	0	0	0
Repeat: 1	0	0	0	0	0
Repeat: 2	0	0	0	0	0
Repeat: 3	0	0	0	0	0

Sample Name	Acquisition Date	Sample type	Correction Factor
ICV A	6/14/2013 10:07:54 AM	QC	1.00

Autosampler Locations	Analyst Name	Method Name
1/1/1	awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Ag3280	Al3961	As1890	B_2497	Ba2335
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	1.06144	5.2294	4.96326	5.14851	5.11093
Std Dev:	0.0205448	0.129822	0.0436401	0.119874	0.0352432
%RSD:	1.93556	2.48255	0.879262	2.32832	0.689564
Repeat: 1	1.07661	5.34265	4.97701	5.24097	5.1246
Repeat: 2	1.06964	5.25783	4.99838	5.1915	5.1373
Repeat: 3	1.03806	5.08772	4.91441	5.01307	5.07091

Element/Wavelength	Be2348	Bi2230	Ca1840	Cd2265	Ce5353
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	5.21829	5.11486	5.24756	5.19689	0.0416781
Std Dev:	0.11879	0.0288133	0.0363916	0.0361651	0.00730273
%RSD:	2.27642	0.563326	0.693495	0.695899	17.5218
Repeat: 1	5.31168	5.12944	5.26158	5.21405	0.0497462
Repeat: 2	5.2586	5.13346	5.27487	5.22128	0.0397672
Repeat: 3	5.08459	5.08167	5.20625	5.15534	0.0355207
Element/Wavelength	Co2286	Cr2677	Cu3273	Eu3819	Fe2599
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	5.14552	5.2602	5.33357	-0.000211962	5.24739
Std Dev:	0.0309955	0.112016	0.125449	0.000113687	0.11754
%RSD:	0.602379	2.12949	2.35207	53.6353	2.23996
Repeat: 1	5.15255	5.34645	5.43607	-0.000265811	5.34666
Repeat: 2	5.1724	5.30055	5.37097	-0.000288719	5.2779
Repeat: 3	5.11161	5.1336	5.19367	-8.13561e-005	5.1176
Element/Wavelength	K_7664	La3794	Li6707	Mg2852	Mn2605
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	5.27646	5.31005	5.41576	5.32253	5.34192
Std Dev:	0.131447	0.121626	0.151478	0.127342	0.116267
%RSD:	2.4912	2.29048	2.79699	2.3925	2.1765
Repeat: 1	5.39511	5.40884	5.55318	5.42773	5.43299
Repeat: 2	5.29911	5.34711	5.44075	5.3589	5.38182
Repeat: 3	5.13516	5.17421	5.25333	5.18096	5.21096
Element/Wavelength	Mo2020	Na8183	Nb3194	Nd4012	Ni2216
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.93497	5.25791	i 0.00389696	-0.00465314	5.10369
Std Dev:	0.0368347	0.127757	0.00254876	0.00220538	0.0315379
%RSD:	0.746402	2.4298	65.4039	47.3955	0.617943
Repeat: 1	4.95154	5.35908	0.00664188	-0.00467401	5.11653
Repeat: 2	4.9606	5.3003	0.00344388	-0.00684801	5.12677
Repeat: 3	4.89276	5.11434	0.00160512	-0.0024374	5.06775
Element/Wavelength	P_1774	Pb2203	Pd3242	Pr4143	Rb7800
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.97788	5.10298	0.00417758	-0.00747518	0.0292891
Std Dev:	0.0420978	0.0394083	0.00750964	0.00279646	0.0207028
%RSD:	0.845698	0.77226	179.76	37.41	70.6842
Repeat: 1	5.01029	5.11145	-0.000211741	-0.00522867	0.0111452
Repeat: 2	4.99305	5.13746	-0.000104248	-0.0106072	0.0248813
Repeat: 3	4.9303	5.06002	0.0128487	-0.00658967	0.0518409
Element/Wavelength	Rh3434	Ru2402	S_1807	Sb2175	Se1960
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.000119897	-0.000480523	4.97307	4.86799	5.00539
Std Dev:	0.00778177	0.00120862	0.0242733	0.0231943	0.0327634
%RSD:	6490.38	251.522	0.488096	0.476465	0.654562
Repeat: 1	-0.00765636	0.000311901	4.9916	4.8768	5.0104
Repeat: 2	0.00790717	0.000118161	4.98202	4.88548	5.03536
Repeat: 3	0.000108878	-0.00187163	4.94559	4.84168	4.97041

Element/Wavelength	Si2124	Sm3592	Sn1899	Sr2165	Ta2685
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.87758	0.0102265	-4.46027e-005	5.10953	-0.038414
Std Dev:	0.0270002	0.00238552	0.00172326	0.0253923	0.00203525
%RSD:	0.553556	23.3269	3863.57	0.496959	5.29819
Repeat: 1	4.90241	0.00760434	-0.00160934	5.12217	-0.040753
Repeat: 2	4.8815	0.0122683	0.00180234	5.12613	-0.0370466
Repeat: 3	4.84883	0.0108068	-0.000326807	5.0803	-0.0374424
Element/Wavelength	Te2142	Th2832	Ti3372	Tl1908	U_3859
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00137979	-0.0450964	5.09417	0.0267502	0.0488452
Std Dev:	0.00487271	0.00800852	0.119222	0.0023914	0.00324832
%RSD:	353.15	17.7587	2.34036	8.93975	6.65023
Repeat: 1	-0.00421938	-0.0543439	5.18905	0.0249267	0.0454239
Repeat: 2	0.00369948	-0.0404709	5.13312	0.0294578	0.0492244
Repeat: 3	0.00465927	-0.0404745	4.96035	0.0258662	0.0518873
Element/Wavelength	V_3093	W_2397	Y_3195	Zn2138	Zr3438
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	5.23431	0.00636221	i -0.000105601	5.0712	5.09965
Std Dev:	0.11579	0.00153367	0.000593401	0.0301351	0.118686
%RSD:	2.21214	24.1059	561.928	0.59424	2.32733
Repeat: 1	5.32714	0.00515691	-8.04631e-005	5.0838	5.19461
Repeat: 2	5.27121	0.0080885	-0.000711172	5.09299	5.13774
Repeat: 3	5.10456	0.00584121	0.000474832	5.03681	4.96659

Sample Name	Acquisition Date	Sample type	Correction Factor
ICV B	6/14/2013 10:12:16 AM	QC	1.00
Autosampler Locations		**Analyst Name**	**Method Name**
1/2/1		awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Ag3280	Al3961	As1890	B_2497	Ba2335
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.0027651	-0.0283052	0.00971093	-0.00868723	0.00587434
Std Dev:	0.000528228	0.00296837	0.0015436	0.00045887	0.000403149
%RSD:	19.1034	10.487	15.8955	5.28213	6.86288
Repeat: 1	0.00313331	-0.0250549	0.0113546	-0.00821924	0.0062159
Repeat: 2	0.00300212	-0.0308727	0.00829201	-0.00870604	0.00597749
Repeat: 3	0.00215988	-0.0289879	0.0094862	-0.0091364	0.00542964
Element/Wavelength	Be2348	Bi2230	Ca1840	Cd2265	Ce5353
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.000195144	-0.0495472	-0.170184	-4.58287e-006	5.12755
Std Dev:	3.24595e-005	0.00298105	0.00242012	0.000615758	0.0617619
%RSD:	16.6336	6.01659	1.42207	13436.1	1.20451
Repeat: 1	-0.000226538	-0.0480733	-0.172058	0.000495884	5.10994
Repeat: 2	-0.000197178	-0.0475902	-0.171042	-0.000692203	5.1962
Repeat: 3	-0.000161715	-0.0529781	-0.167452	0.000182571	5.0765

Element/Wavelength	Co2286	Cr2677	Cu3273	Eu3819	Fe2599
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.000960106	0.00232986	0.0183044	5.31989	-0.0454289
Std Dev:	8.94429e-005	0.000981349	0.00144484	0.0670004	0.00135083
%RSD:	9.31593	42.1206	7.89342	1.25943	2.9735
Repeat: 1	-0.000865239	0.00119939	0.0169479	5.30597	-0.0468369
Repeat: 2	-0.0010429	0.00296277	0.0198238	5.39276	-0.0453061
Repeat: 3	-0.000972183	0.00282742	0.0181415	5.26094	-0.0441437
Element/Wavelength	K_7664	La3794	Li6707	Mg2852	Mn2605
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00878676	-0.00450686	0.0072515	-0.000197761	-0.00112742
Std Dev:	0.0121627	0.000769124	0.000155068	0.000118116	0.000119288
%RSD:	138.421	17.0656	2.13842	59.7265	10.5806
Repeat: 1	-0.000998839	-0.00371194	0.00709225	-0.000314525	-0.00125483
Repeat: 2	0.0224038	-0.00456137	0.00726024	-0.00020042	-0.00101839
Repeat: 3	0.0049553	-0.00524728	0.00740201	-7.83382e-005	-0.00110903
Element/Wavelength	Mo2020	Na8183	Nb3194	Nd4012	Ni2216
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.000176704	-0.279058	i 4.98733	5.18894	0.0081694
Std Dev:	0.000578608	0.120938	0.0711332	0.0677683	0.000576165
%RSD:	327.446	43.3382	1.42628	1.30602	7.05272
Repeat: 1	0.000122692	-0.141348	5.02774	5.17854	0.00757436
Repeat: 2	0.00019086	-0.367992	5.02905	5.2613	0.0082092
Repeat: 3	-0.000843662	-0.327832	4.90519	5.12697	0.00872463
Element/Wavelength	P_1774	Pb2203	Pd3242	Pr4143	Rb7800
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.00141807	0.323838	5.33444	5.40588	5.14772
Std Dev:	0.00187993	0.00686062	0.0779141	0.0669821	0.0457577
%RSD:	132.57	2.11854	1.46059	1.23906	0.888892
Repeat: 1	0.000694544	0.330997	5.36121	5.37495	5.10886
Repeat: 2	-0.00204217	0.323195	5.39543	5.48274	5.19815
Repeat: 3	-0.00290658	0.317321	5.24667	5.35996	5.13616
Element/Wavelength	Rh3434	Ru2402	S_1807	Sb2175	Se1960
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.91247	5.2195	0.00486037	0.606228	-0.00140379
Std Dev:	0.0579478	0.106895	0.00333849	0.00854208	0.00522856
%RSD:	1.17961	2.04799	68.6879	1.40905	372.46
Repeat: 1	4.89248	5.31864	0.00263558	0.615285	-0.00107147
Repeat: 2	4.97776	5.2336	0.00324638	0.605083	-0.00679058
Repeat: 3	4.86716	5.10625	0.00869916	0.598317	0.00365068
Element/Wavelength	Si2124	Sm3592	Sn1899	Sr2165	Ta2685
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.0924764	5.1577	4.91895	-0.00456897	5.21695
Std Dev:	0.00346453	0.059991	0.0546205	0.00145688	0.0774603
%RSD:	3.74639	1.16313	1.11041	31.8864	1.48478
Repeat: 1	0.0894918	5.13869	4.98186	-0.00370365	5.27139
Repeat: 2	0.0916618	5.2249	4.88356	-0.00375226	5.25119
Repeat: 3	0.0962757	5.10952	4.89144	-0.00625099	5.12827

Element/Wavelength	Te2142	Th2832	Ti3372	Tl1908	U_3859
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	5.02465	5.16504	-0.00434337	4.89415	5.08904
Std Dev:	0.0838893	0.075973	0.000384268	0.0683231	0.0583455
%RSD:	1.66955	1.47091	8.84725	1.39602	1.14649
Repeat: 1	5.1144	5.20935	-0.00470399	4.96744	5.05851
Repeat: 2	5.01134	5.20846	-0.00438695	4.8828	5.15632
Repeat: 3	4.94822	5.07732	-0.00393917	4.83222	5.0523
Element/Wavelength	V_3093	W_2397	Y_3195	Zn2138	Zr3438
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00401429	5.13808	i 5.28133	-0.00726554	0.00296738
Std Dev:	0.000314459	0.101632	0.0774852	0.00045814	0.000205366
%RSD:	7.83349	1.97802	1.46715	6.30565	6.92079
Repeat: 1	0.00437661	5.22585	5.33629	-0.0074332	0.00319442
Repeat: 2	0.00385377	5.16167	5.315	-0.00674719	0.00279456
Repeat: 3	0.00381248	5.02673	5.19271	-0.00761623	0.00291317

Sample Name	Acquisition Date	Sample type	Correction Factor
LLS A	6/14/2013 10:16:55 AM	QC	1.00

Autosampler Locations	Analyst Name	Method Name
1/3/1	awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Ag3280	Al3961	As1890	B_2497	Ba2335
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.0206427	0.100738	0.198504	0.0872781	0.00983335
Std Dev:	0.000704236	0.00277807	0.00219111	0.000523775	0.000151103
%RSD:	3.41156	2.75772	1.10382	0.600122	1.53664
Repeat: 1	0.0198331	0.0995029	0.200877	0.0877792	0.00978752
Repeat: 2	0.0211139	0.103919	0.196558	0.0867343	0.0100021
Repeat: 3	0.0209809	0.0987909	0.198077	0.0873208	0.00971047
Element/Wavelength	Be2348	Bi2230	Ca1840	Cd2265	Ce5353
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00195118	0.200367	0.191669	0.0102243	0.21609
Std Dev:	6.23483e-005	0.0074219	0.000799864	0.000330734	0.0115114
%RSD:	3.19542	3.70415	0.417315	3.23479	5.32714
Repeat: 1	0.00194096	0.192041	0.19245	0.0103951	0.226172
Repeat: 2	0.00189457	0.206287	0.191706	0.00984304	0.203547
Repeat: 3	0.002018	0.202774	0.190851	0.0104346	0.21855
Element/Wavelength	Co2286	Cr2677	Cu3273	Eu3819	Fe2599
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.041385	0.020323	0.0216062	8.20925e-005	0.0475683
Std Dev:	0.000483441	0.000295666	7.56286e-005	0.000218706	0.000391863
%RSD:	1.16815	1.45483	0.350031	266.415	0.823791
Repeat: 1	0.0417872	0.0200125	0.021678	0.000329658	0.0476987
Repeat: 2	0.0408487	0.0203553	0.0215273	1.50585e-006	0.0478783
Repeat: 3	0.0415192	0.0206012	0.0216134	-8.48865e-005	0.0471278

Element/Wavelength	K_7664	La3794	Li6707	Mg2852	Mn2605
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.995735	0.00992005	0.0209044	0.204699	0.020766
Std Dev:	0.00985059	0.000318108	0.00023668	0.000980163	0.000358468
%RSD:	0.989278	3.20671	1.1322	0.478832	1.72623
Repeat: 1	0.984855	0.00955275	0.0207174	0.204603	0.0203698
Repeat: 2	1.00405	0.0101008	0.0208254	0.205723	0.0208602
Repeat: 3	0.998303	0.0101066	0.0211705	0.20377	0.021068
Element/Wavelength	Mo2020	Na8183	Nb3194	Nd4012	Ni2216
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.0993497	0.0867958	i -0.000574139	0.0976609	0.0418035
Std Dev:	0.000923122	0.0557859	0.000570738	0.00159042	0.000482962
%RSD:	0.929165	64.2726	99.4076	1.62851	1.15531
Repeat: 1	0.0987609	0.0226184	-0.001233	0.0981648	0.0412634
Repeat: 2	0.0988745	0.123682	-0.000257595	0.0989384	0.042194
Repeat: 3	0.100414	0.114087	-0.00023182	0.0958796	0.041953
Element/Wavelength	P_1774	Pb2203	Pd3242	Pr4143	Rb7800
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.395911	0.199982	-0.000132753	0.0034473	-0.000529036
Std Dev:	0.00366402	0.00467628	0.00211962	0.0013237	0.021656
%RSD:	0.925466	2.33835	1596.66	38.3982	4093.49
Repeat: 1	0.398812	0.197584	0.00229951	0.00483599	0.00603634
Repeat: 2	0.397128	0.205371	-0.00158522	0.00330597	0.0170846
Repeat: 3	0.391794	0.196991	-0.00111254	0.00219993	-0.024708
Element/Wavelength	Rh3434	Ru2402	S_1807	Sb2175	Se1960
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00292302	-0.00167471	0.197622	0.100637	0.193588
Std Dev:	0.00153353	0.00045921	0.00254139	0.00345621	0.01197
%RSD:	52.4638	27.4202	1.28598	3.43434	6.18324
Repeat: 1	0.0028439	-0.00220026	0.197592	0.102759	0.180211
Repeat: 2	0.00449458	-0.001473	0.195096	0.102503	0.20329
Repeat: 3	0.00143059	-0.00135088	0.200179	0.0966486	0.197262
Element/Wavelength	Si2124	Sm3592	Sn1899	Sr2165	Ta2685
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.102149	0.1113	-0.00143979	0.0214487	0.000578508
Std Dev:	0.00151417	0.00473525	0.00101247	0.00118621	0.000568486
%RSD:	1.48232	4.25451	70.3207	5.53047	98.2676
Repeat: 1	0.101186	0.108088	-0.00076692	0.0218872	0.000576276
Repeat: 2	0.103894	0.116738	-0.0026042	0.0201057	1.11414e-005
Repeat: 3	0.101366	0.109073	-0.000948259	0.0223533	0.00114811
Element/Wavelength	Te2142	Th2832	Ti3372	Tl1908	U_3859
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.0016776	-0.00298961	0.0197075	0.381079	0.502366
Std Dev:	0.00510998	0.000893682	0.000162905	0.00353094	0.0105869
%RSD:	304.6	29.893	0.826615	0.926564	2.1074
Repeat: 1	-0.00639684	-0.00325016	0.0198533	0.384388	0.513506
Repeat: 2	-0.00238532	-0.0019946	0.0197377	0.381487	0.501156
Repeat: 3	0.00374935	-0.00372406	0.0195317	0.377361	0.492436

Element/Wavelength	V_3093	W_2397	Y_3195	Zn2138	Zr3438
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.0510142	0.00351734	i 0.000455885	0.0191578	0.0200461
Std Dev:	0.00044449	0.005588	0.000473607	0.000162168	0.000442829
%RSD:	0.871306	158.87	103.887	0.846483	2.20905
Repeat: 1	0.0507311	0.00822401	0.00100261	0.0193264	0.0197773
Repeat: 2	0.0515265	-0.00265845	0.000171477	0.0191441	0.0205572
Repeat: 3	0.050785	0.00498647	0.000193566	0.0190029	0.0198039

Sample Name	Acquisition Date	Sample type	Correction Factor
LLS B	6/14/2013 10:21:42 AM	QC	1.00

Autosampler Locations	Analyst Name	Method Name
1/4/1	awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Ag3280	Al3961	As1890	B_2497	Ba2335
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.000363781	0.00519515	0.00241438	-0.0104762	-0.000249233
Std Dev:	0.000151409	0.0017551	0.000920847	0.000396662	0.000373464
%RSD:	41.6208	33.7834	38.1401	3.78633	149.845
Repeat: 1	-0.000215801	0.00576906	0.00150738	-0.0100182	-0.000327079
Repeat: 2	-0.000357143	0.00322494	0.00238728	-0.0107116	-0.000577639
Repeat: 3	-0.0005184	0.00659145	0.00334848	-0.0106987	0.000157018
Element/Wavelength	Be2348	Bi2230	Ca1840	Cd2265	Ce5353
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-1.41869e-005	-0.00248062	0.00659256	0.000114136	0.00908507
Std Dev:	3.62603e-005	0.00109129	0.00184275	0.000261621	0.000875552
%RSD:	255.59	43.9927	27.9519	229.218	9.63727
Repeat: 1	2.72499e-005	-0.00347842	0.00487485	-0.000166822	0.010083
Repeat: 2	-4.01068e-005	-0.00131523	0.00636385	0.000350752	0.00844597
Repeat: 3	-2.97037e-005	-0.0026482	0.00853899	0.000158478	0.00872619
Element/Wavelength	Co2286	Cr2677	Cu3273	Eu3819	Fe2599
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	3.67282e-005	0.000645441	-0.00223324	0.100632	0.000771978
Std Dev:	0.000704662	0.00101103	0.00106546	0.000263619	7.09279e-005
%RSD:	1918.59	156.642	47.7091	0.261963	9.18781
Repeat: 1	0.00084836	0.00180445	-0.00231526	0.100937	0.000830818
Repeat: 2	-0.00041898	0.000187181	-0.00112914	0.100478	0.000693221
Repeat: 3	-0.000319196	-5.5309e-005	-0.00325532	0.100482	0.000791897
Element/Wavelength	K_7664	La3794	Li6707	Mg2852	Mn2605
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.00320243	9.0096e-005	0.00019198	0.000567838	-4.38869e-005
Std Dev:	0.00463172	4.13244e-005	4.43275e-005	0.000167012	9.71884e-005
%RSD:	144.631	45.8671	23.0896	29.4119	221.452
Repeat: 1	0.00125818	5.55864e-005	0.000209793	0.00067948	-0.000135034
Repeat: 2	-0.00287734	0.000135891	0.00022463	0.000375837	-5.5012e-005
Repeat: 3	-0.00798812	7.88109e-005	0.000141517	0.000648196	5.83854e-005

Element/Wavelength	Mo2020	Na8183	Nb3194	Nd4012	Ni2216
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.000173286	-0.077294	i 0.0954676	0.000186427	0.000810652
Std Dev:	0.000557703	0.051685	0.000208455	0.00234634	0.000209653
%RSD:	321.84	66.868	0.218351	1258.59	25.8623
Repeat: 1	0.000454922	-0.110119	0.0954419	-0.00240056	0.000996938
Repeat: 2	-0.000364717	-0.104047	0.0956878	0.00078283	0.000851403
Repeat: 3	-0.000610063	-0.0177164	0.0952732	0.00217701	0.000583616
Element/Wavelength	P_1774	Pb2203	Pd3242	Pr4143	Rb7800
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.0022098	-0.000426522	0.994704	0.107047	2.00349
Std Dev:	0.00263838	0.00392187	0.00343497	0.00275961	0.0243476
%RSD:	119.394	919.502	0.345326	2.57794	1.21526
Repeat: 1	0.00137949	-0.00322628	0.995572	0.106862	2.01084
Repeat: 2	0.00516346	0.00405591	0.997622	0.109894	2.02332
Repeat: 3	8.64532e-005	-0.0021092	0.990919	0.104384	1.97632
Element/Wavelength	Rh3434	Ru2402	S_1807	Sb2175	Se1960
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.104057	0.0995635	0.0019312	0.0182126	0.000356436
Std Dev:	0.00320202	0.00241852	0.00187186	0.00443789	0.0105983
%RSD:	3.07717	2.42913	96.9275	24.3671	2973.41
Repeat: 1	0.101166	0.102258	-0.000102432	0.0134145	-0.0101507
Repeat: 2	0.107499	0.0988526	0.00358215	0.0221701	0.0110436
Repeat: 3	0.103508	0.0975801	0.00231388	0.0190532	0.000176452
Element/Wavelength	Si2124	Sm3592	Sn1899	Sr2165	Ta2685
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.0358823	0.0145924	0.100046	0.00195733	0.983055
Std Dev:	0.00227905	0.00287854	0.000304543	0.00067654	0.00902679
%RSD:	6.35146	19.7263	0.304403	34.5644	0.918239
Repeat: 1	0.0335057	0.0134128	0.100107	0.00180168	0.980909
Repeat: 2	0.0360919	0.0178733	0.100316	0.00269813	0.992962
Repeat: 3	0.0380494	0.012491	0.0997158	0.00137218	0.975295
Element/Wavelength	Te2142	Th2832	Ti3372	Tl1908	U_3859
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.998755	0.0953934	-3.69773e-006	-0.000177866	0.00203003
Std Dev:	0.00215304	0.00478035	0.000185996	0.00212937	0.0104971
%RSD:	0.215573	5.01119	5030	1197.18	517.093
Repeat: 1	0.99648	0.0986655	-0.000210903	-0.00209169	0.0136588
Repeat: 2	0.999024	0.0899075	0.000148833	-0.000557819	-0.000823214
Repeat: 3	1.00076	0.0976074	5.09764e-005	0.00211591	-0.00674553
Element/Wavelength	V_3093	W_2397	Y_3195	Zn2138	Zr3438
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.000120688	0.996241	i 0.102285	0.00113713	0.000613533
Std Dev:	1.97635e-005	0.00547596	0.00104922	0.0001662	0.000104694
%RSD:	16.3757	0.549662	1.02578	14.6157	17.0641
Repeat: 1	0.000141939	1.00011	0.102468	0.00129271	0.000721188
Repeat: 2	0.00010286	0.989975	0.103231	0.00115665	0.000607336
Repeat: 3	0.000117264	0.998635	0.101157	0.000962032	0.000512075

Sample Name	Acquisition Date	Sample type	Correction Factor
Na LLS	6/14/2013 10:27:28 AM	QC	1.00
Autosampler Locations		**Analyst Name**	**Method Name**
1/3/2		awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Ag3280	Al3961	As1890	B_2497	Ba2335
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.000595081	8.63792e-005	7.97972e-005	-0.0151788	-0.000550779
Std Dev:	0.000890737	0.00285796	0.00476746	0.000264705	0.000257546
%RSD:	149.683	3308.62	5974.48	1.74392	46.7604
Repeat: 1	0.000648387	-0.00175335	-0.0032149	-0.0152748	-0.000281288
Repeat: 2	-0.000321111	0.0033789	0.0055465	-0.0148795	-0.000576616
Repeat: 3	0.00145797	-0.00136641	-0.0020922	-0.015382	-0.000794434
Element/Wavelength	Be2348	Bi2230	Ca1840	Cd2265	Ce5353
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-3.77488e-005	-0.00130193	-0.0023915	-0.0002267	0.011678
Std Dev:	4.04918e-005	0.00580242	0.00190946	0.000230916	0.004486
%RSD:	107.266	445.68	79.8437	101.86	38.4141
Repeat: 1	-2.97125e-005	0.00419549	-0.00434487	-7.06569e-005	0.010692
Repeat: 2	-1.87776e-006	-0.000733722	-0.00230043	-0.000117478	0.007767
Repeat: 3	-8.16561e-005	-0.00736755	-0.000529205	-0.000491965	0.016575
Element/Wavelength	Co2286	Cr2677	Cu3273	Eu3819	Fe2599
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.000426101	-0.000325937	-0.000135318	0.00011233	-0.000100009
Std Dev:	0.000583464	0.00039322	0.000958624	5.47523e-005	0.000598083
%RSD:	136.931	120.643	708.426	48.7424	598.026
Repeat: 1	0.000142866	-0.000120761	-0.00100847	0.000108868	0.000419051
Repeat: 2	-0.000398116	-7.77412e-005	-0.000287943	0.000168731	3.49661e-005
Repeat: 3	-0.00102305	-0.000779308	0.000890463	5.93903e-005	-0.000754046
Element/Wavelength	K_7664	La3794	Li6707	Mg2852	Mn2605
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.00388199	0.000174664	-3.15584e-005	-0.00017927	2.72149e-005
Std Dev:	0.00956614	0.000286998	7.02256e-005	0.000219027	0.000298476
%RSD:	246.424	164.315	222.526	122.177	1096.74
Repeat: 1	0.0020951	0.000416819	2.13573e-005	-0.000121981	-0.000237299
Repeat: 2	-0.0149152	0.000249516	-4.80349e-006	5.41915e-006	0.000350815
Repeat: 3	0.00117414	-0.000142344	-0.000111229	-0.000421248	-3.18717e-005
Element/Wavelength	Mo2020	Na8183	Nb3194	Nd4012	Ni2216
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	9.22619e-005	0.954805	i -0.000647723	0.00279334	0.000119076
Std Dev:	0.000474184	0.0535891	0.001247	0.00253442	0.000343921
%RSD:	513.954	5.61257	192.52	90.7306	288.826
Repeat: 1	0.000199644	0.895929	-0.00201433	0.00331468	-0.000173813
Repeat: 2	0.000503546	1.00074	-0.000357234	0.00502655	3.32615e-005
Repeat: 3	-0.000426404	0.967748	0.00042839	3.87989e-005	0.000497778

Element/Wavelength	P_1774	Pb2203	Pd3242	Pr4143	Rb7800
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.0018532	-0.014003	0.00147066	0.00547554	-0.00229383
Std Dev:	0.00196548	0.00645517	0.00448857	0.00268373	0.040301
%RSD:	106.059	46.0985	305.208	49.013	1756.93
Repeat: 1	0.0040963	-0.0195139	-0.00247822	0.00260226	-0.0472067
Repeat: 2	0.0010308	-0.015594	0.000537868	0.00791746	0.00961282
Repeat: 3	0.000432507	-0.00690108	0.00635233	0.00590691	0.0307124
Element/Wavelength	Rh3434	Ru2402	S_1807	Sb2175	Se1960
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.0039692	-0.00228302	-0.00252333	-0.00197908	0.000262685
Std Dev:	0.00486911	0.000123576	0.0045041	0.00178957	0.00143525
%RSD:	122.672	5.41283	178.498	90.4244	546.377
Repeat: 1	0.00279803	-0.00240571	-0.00635555	-0.00287031	-0.00134985
Repeat: 2	0.00931709	-0.00228479	0.00243786	8.11083e-005	0.000737673
Repeat: 3	-0.000207503	-0.00215857	-0.0036523	-0.00314804	0.00140023
Element/Wavelength	Si2124	Sm3592	Sn1899	Sr2165	Ta2685
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.00106045	0.0203347	-0.00222527	0.00142217	-0.00270324
Std Dev:	0.00344462	0.00351974	0.00116614	0.0014311	0.00456441
%RSD:	324.828	17.309	52.4043	100.628	168.85
Repeat: 1	0.00238308	0.0164896	-0.00272626	0.00285974	-0.00685494
Repeat: 2	-0.00450617	0.0233974	-0.0030572	0.00140912	0.00218444
Repeat: 3	-0.00105825	0.0211171	-0.000892356	-2.36616e-006	-0.00343923
Element/Wavelength	Te2142	Th2832	Ti3372	Tl1908	U_3859
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.00207924	-0.000680145	-0.000300692	-0.000731676	0.00419402
Std Dev:	0.00235818	0.00235044	0.000291738	0.00530163	0.00722662
%RSD:	113.415	345.579	97.0219	724.587	172.308
Repeat: 1	-0.00336188	0.00203013	-0.000248037	-0.0062399	-0.00321561
Repeat: 2	0.000642255	-0.00191131	-3.88689e-005	0.00433585	0.00457513
Repeat: 3	-0.00351809	-0.00215926	-0.000615172	-0.000290972	0.0112225
Element/Wavelength	V_3093	W_2397	Y_3195	Zn2138	Zr3438
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00023418	0.00528864	i -9.25506e-005	-0.00039886	0.000477362
Std Dev:	0.000342965	0.00211581	0.000866556	0.000150909	0.000239685
%RSD:	146.453	40.0066	936.304	37.8352	50.2103
Repeat: 1	0.00062636	0.00759185	-0.000260585	-0.000500196	0.000747766
Repeat: 2	-9.5636e-006	0.00484278	0.000845716	-0.000225424	0.000393247
Repeat: 3	8.57438e-005	0.0034313	-0.000862783	-0.00047096	0.000291072

Sample Name	Acquisition Date	Sample type	Correction Factor
ICB	6/14/2013 10:32:18 AM	QC	1.00
Autosampler Locations		**Analyst Name**	**Method Name**
1/5/1		awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Ag3280	Al3961	As1890	B_2497	Ba2335
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.000249912	-0.00140967	0.00252882	-0.0151959	-0.000588044
Std Dev:	0.00029962	0.000892886	0.00147881	0.0011053	0.000589784
%RSD:	119.891	63.3403	58.4783	7.27367	100.296
Repeat: 1	-0.00057316	-0.00244006	0.00288305	-0.0139424	-0.00118637
Repeat: 2	1.85077e-005	-0.000925432	0.000905061	-0.0156145	-0.000570562
Repeat: 3	-0.000195082	-0.000863504	0.00379834	-0.0160308	-7.19585e-006
Element/Wavelength	Be2348	Bi2230	Ca1840	Cd2265	Ce5353
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-6.18258e-005	-0.0032131	-0.00358495	-0.000221817	0.011256
Std Dev:	2.31418e-005	0.00406175	0.00079764	0.000179847	0.00640931
%RSD:	37.4306	126.412	22.2497	81.079	56.9414
Repeat: 1	-8.31624e-005	-0.00107154	-0.00303342	-3.12523e-005	0.0186525
Repeat: 2	-3.72253e-005	-0.00789747	-0.00449953	-0.000245624	0.00777654
Repeat: 3	-6.50896e-005	-0.00067028	-0.00322189	-0.000388575	0.00733887
Element/Wavelength	Co2286	Cr2677	Cu3273	Eu3819	Fe2599
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.000479224	0.000529086	-0.000564757	6.93241e-006	4.39914e-005
Std Dev:	0.000331311	0.000353959	0.000863118	2.37842e-005	0.000192722
%RSD:	69.135	66.9002	152.83	343.087	438.089
Repeat: 1	-0.000623261	0.000634147	-0.00118284	3.29042e-005	0.000219527
Repeat: 2	-0.000714136	0.000818621	0.000421376	1.67883e-006	-0.000162234
Repeat: 3	-0.000100273	0.00013449	-0.000932812	-1.37858e-005	7.46812e-005
Element/Wavelength	K_7664	La3794	Li6707	Mg2852	Mn2605
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	9.63585e-005	0.000199722	0.000126362	0.000152536	0.000116115
Std Dev:	0.00992951	0.000259361	0.000148841	0.000398463	7.39714e-005
%RSD:	10304.8	129.861	117.79	261.226	63.7055
Repeat: 1	-0.00919812	5.82162e-005	-4.54962e-005	-6.85075e-005	0.000157312
Repeat: 2	-0.00107058	4.18923e-005	0.000213812	0.000612526	0.000160315
Repeat: 3	0.0105578	0.000499058	0.000210769	-8.64102e-005	3.07174e-005
Element/Wavelength	Mo2020	Na8183	Nb3194	Nd4012	Ni2216
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.000576498	-0.105955	i -0.000561025	0.000209034	-0.000415
Std Dev:	0.000595824	0.0799521	0.000896045	0.000931118	0.000685547
%RSD:	103.352	75.4585	159.716	445.439	165.192
Repeat: 1	-0.00109573	-0.175214	0.000209807	-0.000393983	-0.00106971
Repeat: 2	7.40207e-005	-0.124191	-0.00154415	-0.000260339	-0.000472999
Repeat: 3	-0.000707785	-0.0184602	-0.000348728	0.00128142	0.000297704
Element/Wavelength	P_1774	Pb2203	Pd3242	Pr4143	Rb7800
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00223515	-0.00583074	2.872e-005	0.00515056	0.0014713
Std Dev:	0.00312609	0.00509912	0.000679332	0.00240698	0.0643859
%RSD:	139.861	87.4524	2365.36	46.7325	4376.11
Repeat: 1	0.000532689	-0.00116107	0.000729819	0.0027393	-0.0717313
Repeat: 2	0.00584294	-0.0112715	-1.71371e-005	0.00515912	0.0268222
Repeat: 3	0.000329804	-0.00505966	-0.000626522	0.00755325	0.049323

Element/Wavelength	Rh3434	Ru2402	S_1807	Sb2175	Se1960
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00195062	-3.84301e-005	0.00297555	0.00638851	0.00365091
Std Dev:	0.00488595	0.00166397	0.001961	0.00365536	0.00270836
%RSD:	250.481	4329.86	65.9037	57.2177	74.1832
Repeat: 1	0.00544651	-0.00193702	0.00471314	0.0100361	0.00582937
Repeat: 2	0.00403761	0.000655295	0.00336417	0.00640395	0.000618499
Repeat: 3	-0.00363224	0.00116644	0.000849342	0.00272545	0.00450486
Element/Wavelength	Si2124	Sm3592	Sn1899	Sr2165	Ta2685
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00285056	0.0230634	-0.00403967	0.00130985	0.00158514
Std Dev:	0.00199452	0.00366145	0.00185054	0.000804627	0.00444912
%RSD:	69.9692	15.8756	45.8092	61.4289	280.676
Repeat: 1	0.00223264	0.0225496	-0.00206491	0.00190817	0.00624103
Repeat: 2	0.00508091	0.0269546	-0.00432013	0.00162626	0.00113781
Repeat: 3	0.00123814	0.0196859	-0.00573398	0.000395114	-0.00262341
Element/Wavelength	Te2142	Th2832	Ti3372	Tl1908	U_3859
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00484854	0.000470017	2.78359e-005	-0.00129772	0.0114782
Std Dev:	0.00540902	0.000617941	0.000127429	0.00418446	0.010394
%RSD:	111.56	131.472	457.787	322.448	90.554
Repeat: 1	-0.000356007	0.00116529	0.000151294	0.00180763	0.0165853
Repeat: 2	0.0104411	0.000261299	3.54377e-005	-0.00605621	0.0183307
Repeat: 3	0.00446049	-1.65379e-005	-0.000103224	0.000355429	-0.000481337
Element/Wavelength	V_3093	W_2397	Y_3195	Zn2138	Zr3438
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.000160451	0.00327788	i 0.00104573	-0.000430501	6.10967e-006
Std Dev:	0.000285045	0.00166486	0.000457852	7.89736e-005	0.000222804
%RSD:	177.652	50.7906	43.7831	18.3446	3646.75
Repeat: 1	0.000272975	0.00141721	0.000567591	-0.000483657	6.21056e-005
Repeat: 2	-0.000163681	0.00378968	0.00148016	-0.000339754	-0.000239351
Repeat: 3	0.00037206	0.00462675	0.00108943	-0.000468093	0.000195574

Sample Name	Acquisition Date	Sample type	Correction Factor
ICSA	6/14/2013 10:37:07 AM	QC	1.00
Autosampler Locations		**Analyst Name**	**Method Name**
1/6/1		awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Ag3280	Al3961	As1890	B_2497	Ba2335
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.0140537	203.844	0.00364957	0.0962247	0.0036228
Std Dev:	0.000667621	2.37415	0.000870933	0.00191324	0.00034705
%RSD:	4.7505	1.16469	23.864	1.9883	9.5796
Repeat: 1	0.0146129	205.76	0.00339142	0.097829	0.00322578
Repeat: 2	0.0133145	201.188	0.0046204	0.096738	0.00377417
Repeat: 3	0.0142337	204.584	0.0029369	0.0941072	0.00386847

Element/Wavelength	Be2348	Bi2230	Ca1840	Cd2265	Ce5353
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00123385	0.0171189	186.575	-0.00148232	-0.981117
Std Dev:	7.15617e-005	0.00254552	0.369528	0.000501176	0.023385
%RSD:	5.79985	14.8696	0.198059	33.8101	2.3835
Repeat: 1	0.00125782	0.0189876	186.823	-0.000903818	-0.954523
Repeat: 2	0.00115339	0.0181493	186.15	-0.00175832	-0.990362
Repeat: 3	0.00129036	0.0142197	186.751	-0.00178484	-0.998465
Element/Wavelength	Co2286	Cr2677	Cu3273	Eu3819	Fe2599
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00271577	0.000911649	-0.0119114	-0.000133068	175.613
Std Dev:	0.000482012	0.000300302	0.000262952	0.000186805	0.601159
%RSD:	17.7486	32.9405	2.20757	140.383	0.34232
Repeat: 1	0.00310385	0.000664629	-0.0122063	-0.000250475	176.222
Repeat: 2	0.00217622	0.000824406	-0.0117015	-0.000231073	175.02
Repeat: 3	0.00286725	0.00124591	-0.0118264	8.23442e-005	175.597
Element/Wavelength	K_7664	La3794	Li6707	Mg2852	Mn2605
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.184059	-0.00529804	0.00634631	186.667	0.0192177
Std Dev:	0.0184525	0.000701561	0.000342259	0.482535	9.4578e-005
%RSD:	10.0253	13.2419	5.39304	0.2585	0.49214
Repeat: 1	-0.164116	-0.00452086	0.00656031	186.692	0.0191087
Repeat: 2	-0.200527	-0.00588457	0.00595157	187.137	0.0192782
Repeat: 3	-0.187534	-0.0054887	0.00652705	186.173	0.0192662
Element/Wavelength	Mo2020	Na8183	Nb3194	Nd4012	Ni2216
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.000730259	204.508	i 0.0299642	0.0228711	0.0060152
Std Dev:	0.00156711	1.75804	0.00208257	0.00101314	0.000658117
%RSD:	214.597	0.859642	6.95019	4.42977	10.9409
Repeat: 1	-0.000228646	202.48	0.0280227	0.0218234	0.00670711
Repeat: 2	0.0025387	205.597	0.0321638	0.0238457	0.0053971
Repeat: 3	-0.000119278	205.447	0.0297061	0.0229443	0.00594139
Element/Wavelength	P_1774	Pb2203	Pd3242	Pr4143	Rb7800
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.020031	-0.0103558	-0.0222673	-0.016155	0.0091324
Std Dev:	0.00170228	0.00656316	0.00509796	0.00286929	0.0154764
%RSD:	8.49821	63.3769	22.8943	17.7611	169.467
Repeat: 1	0.0186008	-0.0177766	-0.0279922	-0.0179432	0.00954211
Repeat: 2	0.0219139	-0.00797705	-0.0182181	-0.0176763	-0.00654476
Repeat: 3	0.0195785	-0.00531365	-0.0205917	-0.0128454	0.0243999
Element/Wavelength	Rh3434	Ru2402	S_1807	Sb2175	Se1960
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00399824	-0.0630192	-0.0816864	-0.0357867	-0.00590032
Std Dev:	0.00485468	0.00485596	0.00665348	0.00997001	0.011089
%RSD:	121.42	7.70553	8.14515	27.8595	187.938
Repeat: 1	-0.0015965	-0.0668429	-0.0841336	-0.0259763	0.00228146
Repeat: 2	0.00649223	-0.0646591	-0.0867698	-0.0354748	-0.0185211
Repeat: 3	0.00709899	-0.0575556	-0.0741559	-0.045909	-0.00146134

Element/Wavelength	Si2124	Sm3592	Sn1899	Sr2165	Ta2685
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.00759999	-0.00446195	-7.64546e-006	0.021837	0.0261817
Std Dev:	0.00339429	0.00354958	0.00228137	0.00105746	0.00740579
%RSD:	44.6618	79.5523	29839.5	4.84254	28.2861
Repeat: 1	-0.0100373	-0.0081822	-0.00242855	0.0213253	0.0347324
Repeat: 2	-0.00903949	-0.00409157	0.00210228	0.023053	0.0220057
Repeat: 3	-0.00372317	-0.00111208	0.000303336	0.0211327	0.021807
Element/Wavelength	Te2142	Th2832	Ti3372	Tl1908	U_3859
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.0130517	0.244075	0.000698832	0.000267128	0.804873
Std Dev:	0.00555432	0.00658429	0.000173094	0.00344769	0.0254867
%RSD:	42.5561	2.69766	24.7691	1290.65	3.16655
Repeat: 1	-0.00818818	0.240861	0.000578691	-0.00170198	0.775741
Repeat: 2	-0.0191043	0.251649	0.000897237	0.0042481	0.815826
Repeat: 3	-0.0118628	0.239714	0.00062057	-0.00174474	0.823053
Element/Wavelength	V_3093	W_2397	Y_3195	Zn2138	Zr3438
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.0257254	0.00753108	i -0.00043298	0.00355012	0.00501118
Std Dev:	0.00365954	0.00842879	0.000939134	0.000236247	0.000404491
%RSD:	14.2254	111.92	216.9	6.65464	8.07177
Repeat: 1	-0.0298897	0.0066668	-0.0014614	0.00327849	0.00503195
Repeat: 2	-0.0242649	-0.000432272	0.000379122	0.00370778	0.00540489
Repeat: 3	-0.0230217	0.0163587	-0.000216666	0.00366407	0.00459671

Sample Name	Acquisition Date	Sample type	Correction Factor
ICSAB	6/14/2013 10:42:19 AM	QC	1.00
Autosampler Locations		**Analyst Name**	**Method Name**
1/7/1		awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Ag3280	Al3961	As1890	B_2497	Ba2335
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.99835	198.694	4.75488	1.0225	0.915019
Std Dev:	0.00713121	3.4955	0.0234366	0.00858515	0.00170743
%RSD:	0.714299	1.75924	0.492896	0.839623	0.1866
Repeat: 1	0.991107	194.658	4.78186	1.01668	0.916799
Repeat: 2	0.998578	200.67	4.73956	1.01846	0.914863
Repeat: 3	1.00536	200.754	4.74321	1.03236	0.913395
Element/Wavelength	Be2348	Bi2230	Ca1840	Cd2265	Ce5353
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.0941466	4.78804	182.049	0.174107	-0.867415
Std Dev:	0.000405988	0.00642136	0.595988	0.000796783	0.0240381
%RSD:	0.431229	0.134113	0.327379	0.457639	2.77124
Repeat: 1	0.0939997	4.78685	182.707	0.174839	-0.841258
Repeat: 2	0.0938346	4.79497	181.892	0.173258	-0.872448
Repeat: 3	0.0946056	4.78229	181.547	0.174225	-0.888537

Element/Wavelength	Co2286	Cr2677	Cu3273	Eu3819	Fe2599
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.44072	4.55004	4.88848	-0.000510334	170.649
Std Dev:	0.00622067	0.0152991	0.0377205	3.9854e-005	0.307701
%RSD:	0.140082	0.336241	0.771621	7.80939	0.180312
Repeat: 1	4.4461	4.5493	4.85075	-0.000554004	170.847
Repeat: 2	4.44216	4.53513	4.88848	-0.00050107	170.295
Repeat: 3	4.43391	4.5657	4.92619	-0.000475928	170.806
Element/Wavelength	K_7664	La3794	Li6707	Mg2852	Mn2605
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.172838	-0.00344272	1.01152	183.361	4.58843
Std Dev:	0.00156081	0.000185443	0.0141326	3.23804	0.0187955
%RSD:	0.90305	5.38651	1.39716	1.76594	0.409628
Repeat: 1	-0.173503	-0.00361961	0.996785	179.666	4.5808
Repeat: 2	-0.171055	-0.00324977	1.01282	185.705	4.57465
Repeat: 3	-0.173956	-0.00345879	1.02496	184.711	4.60984
Element/Wavelength	Mo2020	Na8183	Nb3194	Nd4012	Ni2216
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.52468	203.67	i 4.47382	0.0312518	4.33164
Std Dev:	0.0020685	1.6076	0.0229878	0.00295804	0.0107394
%RSD:	0.0457159	0.789316	0.513829	9.46519	0.247929
Repeat: 1	4.52702	202.096	4.45988	0.0280963	4.34399
Repeat: 2	4.52396	203.605	4.46122	0.0316972	4.3264
Repeat: 3	4.52307	205.309	4.50035	0.0339618	4.32453
Element/Wavelength	P_1774	Pb2203	Pd3242	Pr4143	Rb7800
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.957416	1.1623	0.0453018	-0.086591	0.0416488
Std Dev:	0.00415164	0.00389335	0.00428557	0.00756768	0.03487
%RSD:	0.43363	0.33497	9.46004	8.73958	83.7237
Repeat: 1	0.954377	1.16669	0.0485264	-0.0949133	0.0280779
Repeat: 2	0.962146	1.16094	0.0404387	-0.0801225	0.081264
Repeat: 3	0.955725	1.15927	0.0469402	-0.0847371	0.0156047
Element/Wavelength	Rh3434	Ru2402	S_1807	Sb2175	Se1960
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00517604	-0.0628176	-0.0711449	5.22217	4.78074
Std Dev:	0.00451757	0.000675982	0.00949808	0.0116031	0.00595811
%RSD:	87.2785	1.0761	13.3503	0.222189	0.124627
Repeat: 1	0.00281693	-0.0635767	-0.0602103	5.22762	4.77756
Repeat: 2	0.0103848	-0.0622806	-0.0773459	5.20885	4.78762
Repeat: 3	0.00232639	-0.0625956	-0.0758786	5.23005	4.77705
Element/Wavelength	Si2124	Sm3592	Sn1899	Sr2165	Ta2685
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.9108	-0.00947067	0.874824	0.907617	0.0516525
Std Dev:	0.0226788	0.00255752	0.0055117	0.0032911	0.00255878
%RSD:	0.461814	27.0047	0.630035	0.362609	4.95383
Repeat: 1	4.88476	-0.0123709	0.881146	0.907924	0.0500398
Repeat: 2	4.92619	-0.00753843	0.872299	0.910743	0.0503148
Repeat: 3	4.92145	-0.00850268	0.871028	0.904183	0.0546028

Element/Wavelength	Te2142	Th2832	Ti3372	Tl1908	U_3859
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.64369	-0.29777	44.1809	4.07046	5.33167
Std Dev:	0.0135707	0.0141171	0.416093	0.0107274	0.0849282
%RSD:	0.292239	4.74094	0.941795	0.263542	1.5929
Repeat: 1	4.65936	-0.30765	44.3486	4.08285	5.26026
Repeat: 2	4.63615	-0.281601	43.7071	4.064	5.30917
Repeat: 3	4.63557	-0.304059	44.4869	4.06454	5.42559

Element/Wavelength	V_3093	W_2397	Y_3195	Zn2138	Zr3438
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.900174	4.54227	i 0.000420641	4.60588	4.6079
Std Dev:	0.00923604	0.024762	0.00417112	0.00812055	0.0219317
%RSD:	1.02603	0.545146	991.61	0.176308	0.475958
Repeat: 1	0.904169	4.53971	-0.00436394	4.6152	4.59797
Repeat: 2	0.889613	4.51888	0.00329154	4.60214	4.59268
Repeat: 3	0.90674	4.56821	0.00233432	4.60031	4.63304

Sample Name	Acquisition Date	Sample type	Correction Factor
PREP BLANK	6/14/2013 10:47:16 AM	Unknown	1.00
Autosampler Locations		**Analyst Name**	**Method Name**
1/1/3		awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Ag3280	Al3961	As1890	B_2497	Ba2335
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.000373687	0.00121112	0.000651921	-0.00652997	-0.000595841
Std Dev:	0.000673708	0.000317425	0.00199297	0.00298526	7.12062e-005
%RSD:	180.287	26.2092	305.707	45.7162	11.9506
Repeat: 1	0.00077168	0.00103062	0.00286846	-0.00935955	-0.000518964
Repeat: 2	0.000753555	0.00157764	-0.000992231	-0.00682014	-0.000609023
Repeat: 3	-0.000404173	0.0010251	7.95404e-005	-0.00341022	-0.000659535

Element/Wavelength	Be2348	Bi2230	Ca1840	Cd2265	Ce5353
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-6.67273e-005	-0.00231781	0.104359	-3.22282e-005	-0.00031408
Std Dev:	2.82105e-005	0.00261141	0.000445775	0.000156995	0.0151431
%RSD:	42.2772	112.667	0.427154	487.133	4821.43
Repeat: 1	-8.68953e-005	-0.00375763	0.103856	-0.000134875	-0.0126402
Repeat: 2	-7.87966e-005	0.000696576	0.104518	0.000148498	-0.00489187
Repeat: 3	-3.449e-005	-0.00389238	0.104704	-0.000110307	0.0165898

Element/Wavelength	Co2286	Cr2677	Cu3273	Eu3819	Fe2599
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	6.23606e-005	0.000831495	0.0002418	7.08842e-005	0.00176429
Std Dev:	0.000359588	0.000354356	0.000583809	0.00015371	0.000438007
%RSD:	576.627	42.6167	241.443	216.847	24.8262
Repeat: 1	0.000259382	0.000438986	0.000704163	-0.000102247	0.00130316
Repeat: 2	-0.000352679	0.00112785	-0.000414232	0.000191304	0.00181494
Repeat: 3	0.000280379	0.000927647	0.000435469	0.000123595	0.00217477

Element/Wavelength	K_7664	La3794	Li6707	Mg2852	Mn2605
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.00508573	0.000409661	-0.000423664	0.00133398	0.000140244
Std Dev:	0.00647713	0.000656993	0.000261167	0.000116113	0.00015324
%RSD:	127.359	160.375	61.6449	8.70427	109.266
Repeat: 1	-0.00065203	0.00083441	-0.000571333	0.00146104	0.000309342
Repeat: 2	-0.0125189	0.00074165	-0.000122116	0.00130751	1.05631e-005
Repeat: 3	-0.00208625	-0.000347077	-0.000577544	0.00123338	0.000100829
Element/Wavelength	Mo2020	Na8183	Nb3194	Nd4012	Ni2216
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.000596384	-0.0552252	i -0.000678291	0.00209286	0.00011293
Std Dev:	0.000642509	0.0408867	0.000737435	0.00135445	0.000410247
%RSD:	107.734	74.0364	108.72	64.7176	363.274
Repeat: 1	-0.00104725	-0.0081473	-0.00130161	0.00271734	0.000580541
Repeat: 2	0.000139303	-0.081843	0.000135778	0.00302241	-0.000186508
Repeat: 3	-0.000881207	-0.0756852	-0.000869043	0.000538827	-5.52421e-005
Element/Wavelength	P_1774	Pb2203	Pd3242	Pr4143	Rb7800
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00558267	-0.00432196	-0.000344483	0.0039037	0.00552707
Std Dev:	0.00155861	0.00450944	0.00604935	0.00512647	0.012272
%RSD:	27.9187	104.338	1756.07	131.323	222.035
Repeat: 1	0.00410497	-0.00652344	0.00661885	-0.000791254	0.0164718
Repeat: 2	0.00543183	-0.0073078	-0.003348	0.00937347	-0.00774034
Repeat: 3	0.00721122	0.000865356	-0.00430429	0.00312887	0.00784972
Element/Wavelength	Rh3434	Ru2402	S_1807	Sb2175	Se1960
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.0055763	-0.00163468	0.00601248	0.000893039	0.00378828
Std Dev:	0.0100778	0.00085523	0.00555943	0.00883818	0.00282411
%RSD:	180.726	52.318	92.4649	989.674	74.5485
Repeat: 1	0.00195213	-0.00172255	0.0107346	0.00888741	0.00212244
Repeat: 2	0.016965	-0.000738904	0.0074175	0.00238958	0.00704902
Repeat: 3	-0.00218822	-0.00244258	-0.000114672	-0.00859787	0.00219338
Element/Wavelength	Si2124	Sm3592	Sn1899	Sr2165	Ta2685
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.145326	0.0308924	0.00240721	0.00106735	-0.000852247
Std Dev:	0.0355163	0.00342667	0.000175901	0.000746945	0.000226969
%RSD:	24.439	11.0923	7.30727	69.9816	26.6318
Repeat: 1	0.178243	0.0348197	0.00247744	0.00128651	-0.000925296
Repeat: 2	0.150053	0.0293465	0.00253715	0.00168019	-0.0010337
Repeat: 3	0.107684	0.0285111	0.00220704	0.000235334	-0.000597749
Element/Wavelength	Te2142	Th2832	Ti3372	Tl1908	U_3859
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.0016047	-7.45944e-005	0.000331628	-0.0024017	0.00734545
Std Dev:	0.0043718	0.00274739	3.88252e-005	0.00248595	0.012211
%RSD:	272.438	3683.11	11.7074	103.508	166.239
Repeat: 1	-0.00281145	0.00233105	0.000310927	-0.00128146	0.00345925
Repeat: 2	0.00324373	-0.00306845	0.000376417	-0.000672995	0.0210266
Repeat: 3	-0.00524637	0.000513616	0.00030754	-0.00525065	-0.00244946

Element/Wavelength	V_3093	W_2397	Y_3195	Zn2138	Zr3438
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00021554	0.00577765	i 0.000114307	0.00211671	0.00038189
Std Dev:	0.000206714	0.00260183	0.000519379	0.000153338	0.000387427
%RSD:	95.9052	45.0326	454.373	7.24419	101.45
Repeat: 1	0.000105288	0.00773158	0.000685875	0.00200392	0.000824854
Repeat: 2	8.73243e-005	0.00282429	-0.000328755	0.0022913	0.000214599
Repeat: 3	0.000454007	0.00677709	-1.41996e-005	0.00205489	0.000106216

Sample Name	Acquisition Date	Sample type	Correction Factor
PREP STD 1	6/14/2013 10:52:05 AM	Unknown	1.00

Autosampler Locations	Analyst Name	Method Name
1/2/3	awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Ag3280	Al3961	As1890	B_2497	Ba2335
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	1.00053	5.03055	4.97728	4.72949	5.17631
Std Dev:	0.0111837	0.0329785	0.0167542	0.0433729	0.0236171
%RSD:	1.11778	0.655565	0.336614	0.917073	0.456253
Repeat: 1	0.98813	4.99248	4.95993	4.68121	5.15208
Repeat: 2	1.00359	5.04884	4.99337	4.74212	5.19926
Repeat: 3	1.00986	5.05034	4.97853	4.76515	5.17759
Element/Wavelength	Be2348	Bi2230	Ca1840	Cd2265	Ce5353
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.95654	5.06128	5.37403	5.10404	0.0285131
Std Dev:	0.0676489	0.0336138	0.0242292	0.0288527	0.0126974
%RSD:	1.36484	0.664136	0.450857	0.565292	44.5317
Repeat: 1	4.88098	5.02839	5.34959	5.07282	0.0161596
Repeat: 2	4.97719	5.09557	5.39805	5.12972	0.0415285
Repeat: 3	5.01147	5.05988	5.37445	5.10959	0.0278514
Element/Wavelength	Co2286	Cr2677	Cu3273	Eu3819	Fe2599
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	5.19666	5.07054	5.21982	-0.000167727	4.96333
Std Dev:	0.0217355	0.0930731	0.0149947	0.000164712	0.0826116
%RSD:	0.418259	1.83556	0.287265	98.2024	1.66444
Repeat: 1	5.17506	4.96621	5.20269	-1.38125e-006	4.86976
Repeat: 2	5.21853	5.1004	5.23054	-0.000330755	4.99402
Repeat: 3	5.19638	5.14503	5.22624	-0.000171045	5.0262
Element/Wavelength	K_7664	La3794	Li6707	Mg2852	Mn2605
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	5.08485	5.2541	5.56873	5.08693	5.07419
Std Dev:	0.0129135	0.0478482	0.0614231	0.0434032	0.0887395
%RSD:	0.253961	0.910682	1.103	0.853231	1.74884
Repeat: 1	5.0783	5.20022	5.63189	5.03715	4.97498
Repeat: 2	5.09972	5.27047	5.56511	5.10676	5.1016
Repeat: 3	5.07652	5.29162	5.5092	5.11688	5.14599

Element/Wavelength	Mo2020	Na8183	Nb3194	Nd4012	Ni2216
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	5.04408	5.19514	i 0.00261151	-0.00478737	5.07837
Std Dev:	0.0214254	0.0467288	0.000321507	0.0013214	0.0199504
%RSD:	0.424763	0.899471	12.3112	27.6017	0.392849
Repeat: 1	5.02063	5.14811	0.00225337	-0.00443102	5.05861
Repeat: 2	5.06263	5.19577	0.00270588	-0.00625039	5.0985
Repeat: 3	5.04899	5.24156	0.00287527	-0.00368069	5.07801
Element/Wavelength	P_1774	Pb2203	Pd3242	Pr4143	Rb7800
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.84574	5.02798	0.0122796	0.000849009	0.0403229
Std Dev:	0.0108927	0.0162447	0.00388044	0.0064616	0.019379
%RSD:	0.224789	0.323085	31.6006	761.075	48.0595
Repeat: 1	4.83439	5.00978	0.0167427	0.00756012	0.0569662
Repeat: 2	4.84674	5.041	0.0103922	0.000317089	0.0190477
Repeat: 3	4.85611	5.03317	0.00970399	-0.00533018	0.0449548
Element/Wavelength	Rh3434	Ru2402	S_1807	Sb2175	Se1960
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00217006	-0.00419955	4.79142	4.79624	5.10496
Std Dev:	0.00312598	0.00172886	0.023165	0.0206915	0.0168964
%RSD:	144.051	41.1677	0.483469	0.431411	0.33098
Repeat: 1	0.00535087	-0.00457827	4.76604	4.77248	5.08788
Repeat: 2	0.00205735	-0.00570765	4.81141	4.81031	5.12167
Repeat: 3	-0.00089805	-0.00231273	4.79682	4.80593	5.10532

Element/Wavelength	Si2124	Sm3592	Sn1899	Sr2165	Ta2685
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	1.36929	0.0291092	0.00407675	5.10398	-0.0461542
Std Dev:	0.006856	0.0024474	0.00098325	0.0223565	0.00689869
%RSD:	0.500697	8.40767	24.1184	0.43802	14.947
Repeat: 1	1.36148	0.0316042	0.00359498	5.08086	-0.051333
Repeat: 2	1.37206	0.0267124	0.00342731	5.12549	-0.038323
Repeat: 3	1.37433	0.0290109	0.00520798	5.10559	-0.0488067
Element/Wavelength	Te2142	Th2832	Ti3372	Tl1908	U_3859
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00229749	-0.0381834	4.83853	0.0254968	0.0635865
Std Dev:	0.00527671	0.00408151	0.054571	0.00373098	0.00215437
%RSD:	229.673	10.6893	1.12784	14.6331	3.3881
Repeat: 1	0.00294048	-0.0339062	4.77646	0.023938	0.063099
Repeat: 2	0.00722325	-0.0386079	4.86021	0.0297544	0.0617176
Repeat: 3	-0.00327125	-0.042036	4.87894	0.022798	0.0659428
Element/Wavelength	V_3093	W_2397	Y_3195	Zn2138	Zr3438
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	5.08265	0.00196052	i 0.000309555	4.8874	4.9049
Std Dev:	0.0718498	0.00739065	0.000627374	0.0242761	0.0567119
%RSD:	1.41363	376.975	202.67	0.496707	1.15623
Repeat: 1	5.00116	0.00125518	-0.000275849	4.86111	4.84071
Repeat: 2	5.10988	-0.00505218	0.000232697	4.90897	4.92582
Repeat: 3	5.1369	0.00967854	0.000971818	4.89212	4.94819

Sample Name	Acquisition Date	Sample type	Correction Factor
PREP STD 2	6/14/2013 10:56:30 AM	Unknown	1.00
Autosampler Locations		**Analyst Name**	**Method Name**
1/3/3		awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Ag3280	Al3961	As1890	B_2497	Ba2335
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00206193	-0.0273225	0.0151638	-0.00955706	0.00558163
Std Dev:	0.000429892	0.00320056	0.00457809	0.00021206	0.000386475
%RSD:	20.849	11.714	30.191	2.21889	6.92405
Repeat: 1	0.00156615	-0.0291306	0.0167667	-0.00973462	0.00578408
Repeat: 2	0.00228853	-0.0236271	0.0187249	-0.00961431	0.00582483
Repeat: 3	0.00233112	-0.0292098	0.00999976	-0.00932225	0.00513599
Element/Wavelength	**Be2348**	**Bi2230**	**Ca1840**	**Cd2265**	**Ce5353**
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.000374933	-0.0696107	-0.0954222	-0.000773357	5.88571
Std Dev:	6.51613e-005	0.0088443	0.00293715	0.000263868	0.0696718
%RSD:	17.3794	12.7054	3.07805	34.1198	1.18374
Repeat: 1	-0.000313095	-0.0781096	-0.0925506	-0.00105925	5.80538
Repeat: 2	-0.000442974	-0.0604574	-0.0952953	-0.000721648	5.92212
Repeat: 3	-0.000368731	-0.070265	-0.0984208	-0.000539171	5.92963
Element/Wavelength	**Co2286**	**Cr2677**	**Cu3273**	**Eu3819**	**Fe2599**
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.00213624	0.00302689	0.0226361	5.87788	-0.0469289
Std Dev:	0.000535104	0.000384507	0.00194287	0.0581548	0.000366433
%RSD:	25.0489	12.703	8.58306	0.989384	0.780826
Repeat: 1	-0.0015229	0.00325042	0.0245622	5.81074	-0.0467895
Repeat: 2	-0.00237815	0.00258291	0.0206769	5.91083	-0.0466527
Repeat: 3	-0.00250768	0.00324735	0.0226693	5.91208	-0.0473446
Element/Wavelength	**K_7664**	**La3794**	**Li6707**	**Mg2852**	**Mn2605**
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00505686	-0.00723848	0.00816379	0.00128211	-0.00137342
Std Dev:	0.00939372	0.000802304	0.000378224	0.00026644	0.000186751
%RSD:	185.762	11.0839	4.63295	20.7813	13.5975
Repeat: 1	-0.00577263	-0.00810053	0.00773399	0.00123181	-0.00137266
Repeat: 2	0.00993902	-0.0071013	0.00831155	0.00157012	-0.00118705
Repeat: 3	0.0110042	-0.00651361	0.00844584	0.00104441	-0.00156055
Element/Wavelength	**Mo2020**	**Na8183**	**Nb3194**	**Nd4012**	**Ni2216**
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.000411317	-0.322266	i 5.53212	5.80114	0.00942531
Std Dev:	0.000104331	0.0521672	0.0793315	0.0566162	8.22362e-005
%RSD:	25.3651	16.1876	1.43402	0.975948	0.872505
Repeat: 1	0.000496897	-0.333642	5.44514	5.73599	0.00942572
Repeat: 2	0.000295097	-0.367806	5.55072	5.82905	0.00950734
Repeat: 3	0.000441957	-0.265349	5.60049	5.83839	0.00934286

Element/Wavelength	P_1774	Pb2203	Pd3242	Pr4143	Rb7800
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.000565922	0.380844	5.63757	6.0286	5.46584
Std Dev:	0.00216834	0.00410049	0.0596767	0.0468276	0.0353511
%RSD:	383.153	1.07669	1.05855	0.776758	0.646764
Repeat: 1	-0.000377787	0.376991	5.57197	5.98121	5.43121
Repeat: 2	-0.000970651	0.380387	5.65212	6.02973	5.50187
Repeat: 3	0.0030462	0.385153	5.68863	6.07485	5.46444
Element/Wavelength	Rh3434	Ru2402	S_1807	Sb2175	Se1960
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	5.61008	5.32853	0.0167308	0.702339	-0.000762191
Std Dev:	0.0410735	0.0931882	0.00118041	0.000656974	0.00807474
%RSD:	0.732137	1.74885	7.05531	0.0935409	1059.41
Repeat: 1	5.56441	5.22878	0.0164436	0.703097	0.00522622
Repeat: 2	5.62184	5.34346	0.0180283	0.70193	-0.00994555
Repeat: 3	5.644	5.41335	0.0157205	0.70199	0.00243276
Element/Wavelength	Si2124	Sm3592	Sn1899	Sr2165	Ta2685
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	1.1038	5.78852	5.39014	-0.0053021	5.62315
Std Dev:	0.0938977	0.0510088	0.0165068	0.000505516	0.0671922
%RSD:	8.50677	0.881207	0.30624	9.53425	1.19492
Repeat: 1	1.00782	5.72987	5.37512	-0.00535471	5.54957
Repeat: 2	1.10811	5.81315	5.38748	-0.00477234	5.63863
Repeat: 3	1.19547	5.82254	5.40781	-0.00577926	5.68125
Element/Wavelength	Te2142	Th2832	Ti3372	Tl1908	U_3859
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	5.32859	5.6329	-0.00471975	5.43208	5.78898
Std Dev:	0.0187941	0.0937639	0.000204802	0.0280957	0.0467924
%RSD:	0.352703	1.66458	4.33926	0.517219	0.808302
Repeat: 1	5.31044	5.52512	-0.00478472	5.40573	5.74094
Repeat: 2	5.32737	5.67779	-0.00449035	5.42886	5.83442
Repeat: 3	5.34796	5.69577	-0.00488419	5.46165	5.79157
Element/Wavelength	V_3093	W_2397	Y_3195	Zn2138	Zr3438
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00405959	5.54766	i 5.62811	-0.0072831	0.00234014
Std Dev:	3.22896e-005	0.0750395	0.0846689	0.000260193	0.00024477
%RSD:	0.79539	1.35263	1.50439	3.57256	10.4597
Repeat: 1	0.00409528	5.46382	5.53443	-0.00752285	0.00261061
Repeat: 2	0.00405109	5.57065	5.65073	-0.00700641	0.00227593
Repeat: 3	0.0040324	5.60853	5.69917	-0.00732003	0.00213387

Sample Name	Acquisition Date	Sample type	Correction Factor
S13T004252_L	6/14/2013 11:01:08 AM	Unknown	25.00
Autosampler Locations		**Analyst Name**	**Method Name**
1/4/3		awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Ag3280	Al3961	As1890	B_2497	Ba2335
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.0173633	998.395	0.0888664	-0.363359	0.0320959
Std Dev:	0.00706674	3.39114	0.0547822	0.022666	0.00647103
%RSD:	40.6993	0.339659	61.6456	6.23791	20.1615
Repeat: 1	0.0092059	1002.11	0.0851859	-0.34886	0.037574
Repeat: 2	0.0212644	997.62	0.145396	-0.351738	0.0249561
Repeat: 3	0.0216195	995.458	0.0360173	-0.389479	0.0337577
Element/Wavelength	Be2348	Bi2230	Ca1840	Cd2265	Ce5353
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00104245	0.74936	3.77748	-0.00124312	0.466677
Std Dev:	0.00156159	0.0713894	0.015112	0.0113535	0.303287
%RSD:	149.801	9.52673	0.400054	913.308	64.9886
Repeat: 1	0.00131191	0.787344	3.76062	0.0112723	0.694917
Repeat: 2	0.00245177	0.793726	3.78982	-0.00412078	0.122529
Repeat: 3	-0.000636343	0.667009	3.782	-0.0108809	0.582586
Element/Wavelength	Co2286	Cr2677	Cu3273	Eu3819	Fe2599
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.00155875	0.0938497	0.139318	0.00153563	27.8874
Std Dev:	0.00987509	0.00651133	0.0228174	0.00380298	0.156744
%RSD:	633.527	6.93803	16.378	247.65	0.562058
Repeat: 1	0.00769416	0.100063	0.162655	0.00417482	28.0342
Repeat: 2	-0.0119563	0.0944089	0.138241	0.00325555	27.9058
Repeat: 3	-0.000414142	0.0870768	0.117058	-0.00282349	27.7223
Element/Wavelength	K_7664	La3794	Li6707	Mg2852	Mn2605
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.119792	0.0279287	0.0120807	0.357957	0.150639
Std Dev:	0.265364	0.0243487	0.00324945	0.00873247	0.00080264
%RSD:	221.521	87.1814	26.8978	2.43953	0.532823
Repeat: 1	-0.181685	0.049535	0.00833251	0.356531	0.15088
Repeat: 2	0.223077	0.0327055	0.0141037	0.350025	0.149744
Repeat: 3	0.317985	0.00154568	0.0138059	0.367315	0.151294
Element/Wavelength	Mo2020	Na8183	Nb3194	Nd4012	Ni2216
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.0160232	370.379	i -0.00470755	-0.0103311	2.9416
Std Dev:	0.00951888	0.89437	0.0535999	0.0167901	0.0134409
%RSD:	59.4068	0.241474	1138.59	162.52	0.456924
Repeat: 1	-0.00662367	370.801	-0.0663807	0.00902225	2.92728
Repeat: 2	-0.0157888	370.983	0.0216266	-0.0190114	2.94358
Repeat: 3	-0.0256571	369.351	0.0306314	-0.0210041	2.95394
Element/Wavelength	P_1774	Pb2203	Pd3242	Pr4143	Rb7800
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	92.233	1.91598	0.124376	0.0946806	0.271403
Std Dev:	0.402275	0.155136	0.205887	0.0733429	0.189584
%RSD:	0.43615	8.09695	165.536	77.4635	69.8534
Repeat: 1	92.4749	2.06191	0.237649	0.0895145	0.434416
Repeat: 2	91.7687	1.75304	0.248755	0.17047	0.0633571
Repeat: 3	92.4555	1.933	-0.113276	0.0240574	0.316437

Element/Wavelength	Rh3434	Ru2402	S_1807	Sb2175	Se1960
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.134907	-0.0153311	0.364368	-0.0199456	-0.0517286
Std Dev:	0.124138	0.0341525	0.0850405	0.0879816	0.119624
%RSD:	92.0173	222.767	23.3392	441.109	231.253
Repeat: 1	0.267581	-0.052034	0.462322	0.0720117	-0.017505
Repeat: 2	0.0215767	0.0155129	0.309418	-0.0285254	0.0470539
Repeat: 3	0.115563	-0.00947214	0.321364	-0.103323	-0.184735
Element/Wavelength	Si2124	Sm3592	Sn1899	Sr2165	Ta2685
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	1.1375	0.711905	-0.0484043	0.152752	0.0382998
Std Dev:	0.176628	0.0355952	0.0490094	0.0251346	0.0756125
%RSD:	15.5277	4.99999	101.25	16.4545	197.423
Repeat: 1	1.30096	0.671596	-0.086216	0.169047	0.115711
Repeat: 2	1.16139	0.725104	-0.0659625	0.123805	0.0345636
Repeat: 3	0.950141	0.739016	0.00696563	0.165403	-0.0353754
Element/Wavelength	Te2142	Th2832	Ti3372	Tl1908	U_3859
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00782631	0.0922733	0.0160005	0.116748	9.48936
Std Dev:	0.0612097	0.0650561	0.00644773	0.153273	0.250557
%RSD:	782.102	70.5037	40.297	131.285	2.6404
Repeat: 1	0.0706762	0.12195	0.0130891	0.267382	9.31585
Repeat: 2	0.00440217	0.0176707	0.0233906	-0.0390341	9.77662
Repeat: 3	-0.0515995	0.137199	0.011522	0.121897	9.37562
Element/Wavelength	V_3093	W_2397	Y_3195	Zn2138	Zr3438
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.0715696	-0.0246428	i 0.0237039	0.267452	0.0609098
Std Dev:	0.00501864	0.168472	0.0258324	0.00446537	0.00226586
%RSD:	7.01226	683.657	108.98	1.6696	3.72002
Repeat: 1	-0.0657746	0.169456	0.00659637	0.269391	0.058829
Repeat: 2	-0.0744359	-0.132962	0.011096	0.262344	0.0605765
Repeat: 3	-0.0744982	-0.110423	0.0534192	0.270619	0.0633238

Sample Name	Acquisition Date	Sample type	Correction Factor
S13T004252	6/14/2013 11:05:57 AM	Unknown	5.00
Autosampler Locations		**Analyst Name**	**Method Name**
1/5/3		awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Ag3280	Al3961	As1890	B_2497	Ba2335
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.0109582	972.485	0.0379105	-0.0636105	0.0378664
Std Dev:	0.00381361	8.14753	0.0185175	0.00203791	0.000687179
%RSD:	34.8016	0.837805	48.8453	3.20374	1.81475
Repeat: 1	0.00682313	967.205	0.0217484	-0.0629738	0.0377406
Repeat: 2	0.0143371	968.382	0.0581154	-0.061967	0.0372508
Repeat: 3	0.0117143	981.868	0.0338678	-0.0658908	0.0386078

Element/Wavelength	Be2348	Bi2230	Ca1840	Cd2265	Ce5353
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-3.35811e-005	0.675048	3.70829	0.00303693	-0.0863956
Std Dev:	6.27268e-005	0.0146193	0.0138378	0.00213103	0.0691032
%RSD:	186.792	2.16567	0.373159	70.1707	79.9847
Repeat: 1	-3.4811e-006	0.683015	3.70947	0.00098752	-0.0116704
Repeat: 2	8.42276e-006	0.683954	3.6939	0.00524115	-0.147994
Repeat: 3	-0.000105685	0.658176	3.7215	0.00288213	-0.0995224
Element/Wavelength	Co2286	Cr2677	Cu3273	Eu3819	Fe2599
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00295514	0.0792699	0.171622	0.000494751	26.9591
Std Dev:	0.000643386	0.000218801	0.00492326	0.000673292	0.0292725
%RSD:	21.7718	0.276021	2.86866	136.087	0.108581
Repeat: 1	0.0033913	0.0794511	0.168085	-0.000206086	26.9557
Repeat: 2	0.00221622	0.0793317	0.177245	0.000553721	26.9317
Repeat: 3	0.00325789	0.0790268	0.169538	0.00113662	26.99
Element/Wavelength	K_7664	La3794	Li6707	Mg2852	Mn2605
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.0319565	0.0269935	0.00677029	0.353139	0.13919
Std Dev:	0.0330667	0.000847833	0.00136943	0.00151469	0.00104136
%RSD:	103.474	3.14087	20.2271	0.428923	0.748158
Repeat: 1	-0.0026968	0.0265729	0.00541038	0.35265	0.140001
Repeat: 2	0.0631673	0.0264383	0.00814905	0.351929	0.139554
Repeat: 3	0.0353991	0.0279694	0.00675143	0.354838	0.138016
Element/Wavelength	Mo2020	Na8183	Nb3194	Nd4012	Ni2216
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00308976	357.712	i 4.36847e-005	0.0350479	2.83941
Std Dev:	0.00838838	0.635199	0.00221332	0.0165215	0.0100633
%RSD:	271.49	0.177573	5066.57	47.1399	0.354414
Repeat: 1	-0.00511796	358.445	0.00248568	0.0236751	2.85097
Repeat: 2	0.0116478	357.364	-0.000524424	0.0539991	2.83461
Repeat: 3	0.00273943	357.327	-0.0018302	0.0274694	2.83264
Element/Wavelength	P_1774	Pb2203	Pd3242	Pr4143	Rb7800
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	90.7861	1.93637	-0.01631	0.0226375	0.0337507
Std Dev:	0.173647	0.0217185	0.0229553	0.00712896	0.0868569
%RSD:	0.191271	1.12161	140.743	31.4919	257.348
Repeat: 1	90.9603	1.94718	-0.0112374	0.0144409	0.134035
Repeat: 2	90.7849	1.91137	0.00368461	0.0260765	-0.0152199
Repeat: 3	90.613	1.95057	-0.0413774	0.027395	-0.0175632
Element/Wavelength	Rh3434	Ru2402	S_1807	Sb2175	Se1960
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.02614	-0.0132907	0.321756	-0.0970534	0.0163366
Std Dev:	0.0156955	0.011812	0.00485412	0.0282593	0.0330509
%RSD:	60.0438	88.8739	1.50863	29.1173	202.312
Repeat: 1	0.00975399	-0.00897385	0.322116	-0.122956	-0.0206044
Repeat: 2	0.0410391	-0.0266539	0.316732	-0.0669156	0.0265076
Repeat: 3	0.0276269	-0.00424441	0.32642	-0.101288	0.0431065

Element/Wavelength	Si2124	Sm3592	Sn1899	Sr2165	Ta2685
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.846586	0.146697	-0.00211556	0.123281	0.0376996
Std Dev:	0.0226385	0.0140878	0.00539359	0.0037747	0.0107993
%RSD:	2.67409	9.60333	254.949	3.06185	28.6456
Repeat: 1	0.867874	0.130557	0.00410262	0.120647	0.0268179
Repeat: 2	0.849082	0.153007	-0.00492214	0.127606	0.0484145
Repeat: 3	0.822803	0.156527	-0.00552715	0.121591	0.0378663
Element/Wavelength	Te2142	Th2832	Ti3372	Tl1908	U_3859
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00191522	0.0329462	0.0187268	0.0345663	9.17111
Std Dev:	0.00560524	0.00697751	0.000995249	0.0163675	0.0502513
%RSD:	292.668	21.1785	5.31457	47.351	0.54793
Repeat: 1	-0.0043173	0.0379646	0.0188979	0.0506141	9.12453
Repeat: 2	0.00654326	0.0358958	0.0176571	0.0178968	9.16444
Repeat: 3	0.00351969	0.0249783	0.0196254	0.0351882	9.22437
Element/Wavelength	V_3093	W_2397	Y_3195	Zn2138	Zr3438
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.0667592	0.0222678	i 0.00411578	0.264609	0.0455322
Std Dev:	0.00332216	0.0228894	0.00646207	0.00132892	0.00304978
%RSD:	4.97633	102.792	157.007	0.50222	6.69806
Repeat: 1	-0.0629723	0.0262704	0.00641125	0.263364	0.043317
Repeat: 2	-0.0681218	0.0428918	0.00911674	0.264454	0.0490106
Repeat: 3	-0.0691833	-0.00235898	-0.00318065	0.266008	0.0442691

Sample Name	Acquisition Date	Sample type	Correction Factor
S13T004252_D	6/14/2013 11:10:51 AM	Unknown	5.00
Autosampler Locations		**Analyst Name**	**Method Name**
1/6/3		awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Ag3280	Al3961	As1890	B_2497	Ba2335
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.0115061	1032.96	0.0372364	-0.0632985	0.0467507
Std Dev:	0.00208377	8.56477	0.0155086	0.00410316	0.00154849
%RSD:	18.1101	0.829151	41.6491	6.48224	3.31223
Repeat: 1	0.0100272	1040.58	0.0406125	-0.0623347	0.0479936
Repeat: 2	0.0138893	1034.6	0.0203178	-0.059763	0.0472426
Repeat: 3	0.0106019	1023.69	0.0507788	-0.0677978	0.0450161
Element/Wavelength	Be2348	Bi2230	Ca1840	Cd2265	Ce5353
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.000159477	0.809601	4.22984	0.00285442	-0.0326892
Std Dev:	0.00010808	0.0032722	0.0110064	0.000810936	0.057268
%RSD:	67.7716	0.404175	0.260209	28.4098	175.19
Repeat: 1	0.000280319	0.811586	4.22399	0.00354198	0.0135273
Repeat: 2	7.20507e-005	0.811393	4.22299	0.00196013	-0.0967566
Repeat: 3	0.000126062	0.805825	4.24254	0.00306116	-0.0148383

Element/Wavelength	Co2286	Cr2677	Cu3273	Eu3819	Fe2599
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00223844	0.0585271	0.192301	0.000669724	31.009
Std Dev:	0.00185301	0.00211675	0.00306463	0.000575871	0.175568
%RSD:	82.7812	3.6167	1.59366	85.9864	0.566186
Repeat: 1	0.000107812	0.0606724	0.191623	0.0011422	31.0832
Repeat: 2	0.00313358	0.0584687	0.195648	2.82688e-005	31.1352
Repeat: 3	0.00347391	0.0564402	0.189632	0.000838698	30.8085
Element/Wavelength	K_7664	La3794	Li6707	Mg2852	Mn2605
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.0671371	0.0437277	0.00645594	0.401953	0.172924
Std Dev:	0.0200292	0.00159962	0.00223186	0.00261363	0.000929074
%RSD:	29.8332	3.65814	34.5707	0.650232	0.537272
Repeat: 1	0.0603156	0.0421783	0.00388026	0.404914	0.173119
Repeat: 2	0.0514097	0.0453732	0.00781866	0.40098	0.171913
Repeat: 3	0.089686	0.0436316	0.0076689	0.399966	0.17374
Element/Wavelength	Mo2020	Na8183	Nb3194	Nd4012	Ni2216
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00406733	359.758	i -0.00995641	0.0506641	3.23418
Std Dev:	0.00532078	1.489	0.00607412	0.0164916	0.0103021
%RSD:	130.818	0.41389	61.0071	32.5507	0.318538
Repeat: 1	0.00547497	361.446	-0.00372245	0.0409147	3.23767
Repeat: 2	0.00854276	359.197	-0.0102898	0.0697051	3.24228
Repeat: 3	-0.00181574	358.631	-0.015857	0.0413726	3.22258
Element/Wavelength	P_1774	Pb2203	Pd3242	Pr4143	Rb7800
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	86.5751	2.25829	0.0209063	0.0507011	0.0287711
Std Dev:	0.318859	0.0304087	0.0169893	0.0318244	0.199612
%RSD:	0.368304	1.34654	81.2637	62.7687	693.794
Repeat: 1	86.9269	2.27025	0.0199527	0.0793479	0.256979
Repeat: 2	86.3051	2.2809	0.00441397	0.0164449	-0.113369
Repeat: 3	86.4932	2.22372	0.0383523	0.0563105	-0.0572958
Element/Wavelength	Rh3434	Ru2402	S_1807	Sb2175	Se1960
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.0273732	-0.0212067	0.339472	-0.104637	0.0180637
Std Dev:	0.0135922	0.0031188	0.0260524	0.0320366	0.0175294
%RSD:	49.6552	14.7067	7.67441	30.617	97.0421
Repeat: 1	0.0161519	-0.0179944	0.330426	-0.125534	0.0382683
Repeat: 2	0.042487	-0.0214029	0.368841	-0.0677528	0.0069071
Repeat: 3	0.0234806	-0.0242227	0.319148	-0.120623	0.00901575
Element/Wavelength	Si2124	Sm3592	Sn1899	Sr2165	Ta2685
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	1.2366	0.147537	-0.00418082	0.138494	0.0504506
Std Dev:	0.00681837	0.012668	0.0121845	0.0048304	0.0113066
%RSD:	0.551382	8.58637	291.438	3.48782	22.4112
Repeat: 1	1.2289	0.133542	-0.00448176	0.135867	0.0575528
Repeat: 2	1.24189	0.158221	-0.0162121	0.135546	0.0374123
Repeat: 3	1.23899	0.150846	0.00815136	0.144068	0.0563869

Element/Wavelength	Te2142	Th2832	Ti3372	Tl1908	U_3859
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.0286716	0.0492447	0.0175383	-0.00226296	10.6276
Std Dev:	0.0187155	0.0213431	0.000402805	0.0252592	0.0292677
%RSD:	65.2753	43.3408	2.29671	1116.2	0.275394
Repeat: 1	-0.00744744	0.039271	0.0179482	-0.0202233	10.649
Repeat: 2	-0.0357594	0.0737487	0.0171429	-0.013185	10.5942
Repeat: 3	-0.0428079	0.0347143	0.0175239	0.0266194	10.6395
Element/Wavelength	V_3093	W_2397	Y_3195	Zn2138	Zr3438
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.0701938	0.0120993	i 0.0132973	0.29815	0.056415
Std Dev:	0.00333767	0.00403208	0.00565111	0.00363635	0.00211803
%RSD:	4.75493	33.3249	42.4982	1.21964	3.75438
Repeat: 1	-0.0739023	0.0138357	0.0188414	0.302123	0.0576722
Repeat: 2	-0.067431	0.0149723	0.0135054	0.294988	0.0576032
Repeat: 3	-0.0692483	0.00748994	0.00754496	0.297338	0.0539696

Sample Name	Acquisition Date	Sample type	Correction Factor
S13T004252_S1	6/14/2013 11:15:45 AM	Unknown	5.00

Autosampler Locations	Analyst Name	Method Name
1/7/3	awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Ag3280	Al3961	As1890	B_2497	Ba2335
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.988597	934.563	4.84576	5.62754	4.9351
Std Dev:	0.00469407	9.7574	0.0276599	0.0115435	0.0113325
%RSD:	0.474822	1.04406	0.570805	0.205125	0.229631
Repeat: 1	0.990606	923.304	4.85776	5.62698	4.94807
Repeat: 2	0.991953	939.831	4.81413	5.63935	4.93012
Repeat: 3	0.983233	940.554	4.8654	5.61629	4.92711
Element/Wavelength	Be2348	Bi2230	Ca1840	Cd2265	Ce5353
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.99979	5.52525	8.38591	4.92863	0.023646
Std Dev:	0.00844839	0.0279132	0.0241283	0.0223985	0.016827
%RSD:	0.168975	0.505193	0.287724	0.454456	71.1621
Repeat: 1	4.99707	5.52558	8.41349	4.95275	0.00421589
Repeat: 2	5.00927	5.49716	8.3755	4.90848	0.0333764
Repeat: 3	4.99304	5.55299	8.36873	4.92466	0.0333457
Element/Wavelength	Co2286	Cr2677	Cu3273	Eu3819	Fe2599
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.91411	5.01698	5.18632	0.000425982	25.9069
Std Dev:	0.0133305	0.0117712	0.0217901	0.000172594	0.0457216
%RSD:	0.27127	0.234626	0.420145	40.5168	0.176484
Repeat: 1	4.92617	5.00403	5.18285	0.000247586	25.863
Repeat: 2	4.8998	5.02703	5.20964	0.000438238	25.9542
Repeat: 3	4.91635	5.0199	5.16648	0.000592122	25.9035

Element/Wavelength	K_7664	La3794	Li6707	Mg2852	Mn2605
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.96776	4.97864	5.16488	5.37194	5.03187
Std Dev:	0.0545176	0.0128409	0.0329974	0.0216849	0.0112478
%RSD:	1.09743	0.257921	0.63888	0.403671	0.223531
Repeat: 1	4.99084	4.96907	5.19297	5.37546	5.01961
Repeat: 2	5.00694	4.99323	5.17313	5.39164	5.04172
Repeat: 3	4.9055	4.97361	5.12854	5.34871	5.03427
Element/Wavelength	Mo2020	Na8183	Nb3194	Nd4012	Ni2216
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	5.73692	530.292	i -0.00289802	0.0326776	7.28982
Std Dev:	0.0284922	1.46379	0.0147464	0.000456597	0.0185527
%RSD:	0.496647	0.276035	508.844	1.39728	0.254502
Repeat: 1	5.76725	530.74	0.0119221	0.0331014	7.3096
Repeat: 2	5.71072	531.48	-0.0175696	0.0321941	7.27281
Repeat: 3	5.73278	528.657	-0.00304649	0.0327372	7.28706
Element/Wavelength	P_1774	Pb2203	Pd3242	Pr4143	Rb7800
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	154.923	6.59486	-0.0100134	0.0339784	0.0905378
Std Dev:	0.439593	0.0143578	0.0197008	0.0159683	0.199187
%RSD:	0.283749	0.217713	196.745	46.9955	220.005
Repeat: 1	155.166	6.60626	-0.0325341	0.0185672	0.0376639
Repeat: 2	154.416	6.57874	-0.00153381	0.0329172	-0.0768778
Repeat: 3	155.187	6.59959	0.0040278	0.0504509	0.310827
Element/Wavelength	Rh3434	Ru2402	S_1807	Sb2175	Se1960
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.0261185	-0.0212047	6.00711	5.35353	4.89762
Std Dev:	0.015843	0.0162138	0.024838	0.0377395	0.0102893
%RSD:	60.658	76.463	0.413476	0.704946	0.210087
Repeat: 1	0.0140042	-0.037061	6.01452	5.31707	4.88714
Repeat: 2	0.0203042	-0.0218975	5.97941	5.3511	4.89802
Repeat: 3	0.0440472	-0.00465568	6.0274	5.39243	4.9077
Element/Wavelength	Si2124	Sm3592	Sn1899	Sr2165	Ta2685
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	6.51775	0.159367	-0.00832467	4.90322	0.0124909
Std Dev:	0.035831	0.00845717	0.00720829	0.0255434	0.018135
%RSD:	0.549745	5.30672	86.5895	0.520952	145.186
Repeat: 1	6.52015	0.158466	-0.0127883	4.93202	0.0325794
Repeat: 2	6.48078	0.168239	-0.012177	4.88331	-0.00267371
Repeat: 3	6.55232	0.151396	-8.73431e-006	4.89434	0.00756706
Element/Wavelength	Te2142	Th2832	Ti3372	Tl1908	U_3859
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.00863536	-0.0262055	5.49561	0.051938	8.9918
Std Dev:	0.0166399	0.0413822	0.0131299	0.0251228	0.0691128
%RSD:	192.695	157.914	0.238916	48.3708	0.76862
Repeat: 1	-0.00978059	-0.05838	5.49301	0.0802796	9.03886
Repeat: 2	-0.0246731	-0.0407138	5.50985	0.0431266	9.02408
Repeat: 3	0.0085476	0.0204773	5.48398	0.0324078	8.91245

Element/Wavelength	V_3093	W_2397	Y_3195	Zn2138	Zr3438
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.81201	-0.00571394	i 0.00812786	5.10189	0.427996
Std Dev:	0.00707125	0.0185938	0.00112727	0.0104555	0.00271246
%RSD:	0.14695	325.411	13.8693	0.204934	0.633759
Repeat: 1	4.80828	0.00635136	0.00793354	5.11059	0.426238
Repeat: 2	4.82016	-0.0271268	0.00711038	5.09029	0.42663
Repeat: 3	4.80758	0.00363359	0.00933966	5.10479	0.43112

Sample Name	Acquisition Date	Sample type	Correction Factor
S13T004252_S2	6/14/2013 11:20:26 AM	Unknown	5.00

Autosampler Locations	Analyst Name	Method Name
1/8/3	awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Ag3280	Al3961	As1890	B_2497	Ba2335
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00970897	1344.93	0.0812523	-0.0768311	0.0234722
Std Dev:	0.00156605	4.1042	0.00401876	0.00358923	0.00179708
%RSD:	16.1299	0.305162	4.94602	4.67159	7.65619
Repeat: 1	0.0112406	1349.64	0.0779703	-0.0742544	0.0216349
Repeat: 2	0.00977569	1342.14	0.0857344	-0.0753082	0.0235558
Repeat: 3	0.00811063	1343	0.0800523	-0.0809307	0.0252261
Element/Wavelength	Be2348	Bi2230	Ca1840	Cd2265	Ce5353
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-7.40979e-005	0.378164	2.01265	0.00367166	5.68743
Std Dev:	0.000234069	0.0261486	0.0104889	0.000536877	0.0524232
%RSD:	315.892	6.91461	0.521151	14.6222	0.921739
Repeat: 1	0.000180108	0.363775	2.00187	0.00379048	5.73055
Repeat: 2	-0.000121683	0.408347	2.02282	0.00308532	5.70266
Repeat: 3	-0.000280718	0.36237	2.01325	0.00413917	5.62907
Element/Wavelength	Co2286	Cr2677	Cu3273	Eu3819	Fe2599
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.00222116	0.0353307	0.177508	5.61627	14.4039
Std Dev:	0.00291432	0.00232391	0.00517329	0.0152525	0.0369016
%RSD:	131.208	6.57761	2.91439	0.271578	0.256191
Repeat: 1	-0.0032393	0.0378123	0.178309	5.63309	14.4079
Repeat: 2	-0.00448982	0.034974	0.171981	5.61238	14.4387
Repeat: 3	0.00106565	0.0332057	0.182235	5.60333	14.3652
Element/Wavelength	K_7664	La3794	Li6707	Mg2852	Mn2605
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.0721462	0.0179046	0.0113151	0.316971	0.0721775
Std Dev:	0.0274597	0.00186957	0.000283911	0.00281877	0.000748873
%RSD:	38.0612	10.4419	2.50913	0.889282	1.03754
Repeat: 1	0.0949992	0.0189006	0.0116345	0.319393	0.0730246
Repeat: 2	0.0416844	0.0157479	0.0110915	0.313877	0.0716035
Repeat: 3	0.0797551	0.0190652	0.0112194	0.317643	0.0719045

Element/Wavelength	Mo2020	Na8183	Nb3194	Nd4012	Ni2216
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00312728	206.963	i 1.08009	5.59959	3.0025
Std Dev:	0.00206622	0.433905	0.0189432	0.00979682	0.00523595
%RSD:	66.0709	0.209653	1.75386	0.174956	0.174386
Repeat: 1	0.00541348	207.408	1.10193	5.60878	3.00744
Repeat: 2	0.00139322	206.939	1.06814	5.60072	2.99701
Repeat: 3	0.00257514	206.541	1.07019	5.58928	3.00304
Element/Wavelength	P_1774	Pb2203	Pd3242	Pr4143	Rb7800
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	46.6498	1.70654	5.39902	5.75518	5.69651
Std Dev:	0.122544	0.0136453	0.0201922	0.0642943	0.0763877
%RSD:	0.262689	0.79959	0.373997	1.11715	1.34096
Repeat: 1	46.5302	1.72034	5.39874	5.82586	5.78009
Repeat: 2	46.6441	1.70621	5.41935	5.73954	5.67913
Repeat: 3	46.7751	1.69306	5.37897	5.70016	5.63031
Element/Wavelength	Rh3434	Ru2402	S_1807	Sb2175	Se1960
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	5.34041	5.12803	0.20063	0.0236993	-0.0464809
Std Dev:	0.0214441	0.0265127	0.00858803	0.0272079	0.0375101
%RSD:	0.401545	0.517015	4.28053	114.805	80.6999
Repeat: 1	5.32359	5.11131	0.21041	-0.00757855	-0.0861464
Repeat: 2	5.33307	5.1586	0.194317	0.0367803	-0.0115819
Repeat: 3	5.36456	5.11419	0.197163	0.0418961	-0.0417145
Element/Wavelength	Si2124	Sm3592	Sn1899	Sr2165	Ta2685
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	2.07989	5.71529	5.34697	0.0757579	0.0543777
Std Dev:	0.0228801	0.0179183	0.0172768	0.00586987	0.0175615
%RSD:	1.10006	0.313515	0.323113	7.7482	32.2954
Repeat: 1	2.08404	5.73302	5.34337	0.0711063	0.0460586
Repeat: 2	2.10041	5.71567	5.36576	0.0738143	0.0745529
Repeat: 3	2.05522	5.69719	5.33178	0.082353	0.0425217

Element/Wavelength	Te2142	Th2832	Ti3372	Tl1908	U_3859
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	5.46136	5.4428	0.00282271	5.12806	11.6145
Std Dev:	0.021136	0.010978	0.000757369	0.0177019	0.10415
%RSD:	0.387009	0.201698	26.8313	0.345196	0.896724
Repeat: 1	5.45354	5.43013	0.00225861	5.11377	11.7122
Repeat: 2	5.4853	5.44903	0.00252601	5.12255	11.6265
Repeat: 3	5.44525	5.44925	0.00368351	5.14786	11.5049
Element/Wavelength	V_3093	W_2397	Y_3195	Zn2138	Zr3438
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.104577	3.66692	i 5.45801	0.227773	0.036503
Std Dev:	0.00123625	0.0430126	0.013995	0.00108954	0.0018047
%RSD:	1.18214	1.17299	0.256412	0.478344	4.94397
Repeat: 1	-0.105708	3.71633	5.45317	0.228367	0.0357086
Repeat: 2	-0.103257	3.6379	5.47378	0.226516	0.0352318
Repeat: 3	-0.104767	3.64652	5.44707	0.228437	0.0385686

Sample Name	Acquisition Date	Sample type	Correction Factor
CCV A	6/14/2013 11:25:16 AM	QC	1.00
Autosampler Locations		**Analyst Name**	**Method Name**
1/8/1		awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Ag3280	Al3961	As1890	B_2497	Ba2335
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	1.05964	5.22468	4.98591	5.08953	5.05807
Std Dev:	0.0164858	0.0869998	0.0281197	0.0661731	0.0221489
%RSD:	1.55579	1.66517	0.563983	1.30018	0.437892
Repeat: 1	1.07855	5.31994	5.00923	5.16413	5.08354
Repeat: 2	1.0521	5.20468	4.99383	5.06656	5.04735
Repeat: 3	1.04827	5.14943	4.95468	5.03791	5.04332
Element/Wavelength	Be2348	Bi2230	Ca1840	Cd2265	Ce5353
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	5.31454	5.11972	5.15285	5.11702	0.0443042
Std Dev:	0.0807969	0.0163436	0.0285354	0.0229753	0.00625959
%RSD:	1.5203	0.319229	0.553779	0.448997	14.1287
Repeat: 1	5.40678	5.1379	5.18465	5.14327	0.0482347
Repeat: 2	5.28055	5.11502	5.1444	5.10724	0.0370857
Repeat: 3	5.2563	5.10625	5.12949	5.10056	0.047592
Element/Wavelength	Co2286	Cr2677	Cu3273	Eu3819	Fe2599
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	5.08826	5.24359	5.37707	-0.000117046	5.12728
Std Dev:	0.0216942	0.089211	0.0827607	9.23211e-005	0.0815427
%RSD:	0.426358	1.70134	1.53914	78.8757	1.59037
Repeat: 1	5.11312	5.34569	5.46961	-2.23182e-005	5.21967
Repeat: 2	5.07847	5.20434	5.35146	-0.000122065	5.09684
Repeat: 3	5.07318	5.18073	5.31015	-0.000206756	5.06535
Element/Wavelength	K_7664	La3794	Li6707	Mg2852	Mn2605
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	5.30162	5.33536	5.59169	5.34078	5.25418
Std Dev:	0.092316	0.082406	0.107515	0.0917161	0.083624
%RSD:	1.74128	1.54452	1.92276	1.71728	1.59157
Repeat: 1	5.40072	5.42729	5.7061	5.4444	5.34942
Repeat: 2	5.2861	5.31068	5.5762	5.30788	5.22031
Repeat: 3	5.21805	5.26812	5.49275	5.27004	5.1928
Element/Wavelength	Mo2020	Na8183	Nb3194	Nd4012	Ni2216
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	5.00802	5.36108	i 0.00505937	-0.00634254	5.00239
Std Dev:	0.0200197	0.131786	0.000819632	0.00124846	0.0270417
%RSD:	0.399752	2.45819	16.2003	19.6839	0.540576
Repeat: 1	5.03053	5.51233	0.00480423	-0.00754058	5.03275
Repeat: 2	5.00132	5.27097	0.00439765	-0.00643792	4.99353
Repeat: 3	4.9922	5.29994	0.00597623	-0.00504912	4.98089

Element/Wavelength	P_1774	Pb2203	Pd3242	Pr4143	Rb7800
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.96467	5.02294	0.00929575	-0.00707354	0.0354312
Std Dev:	0.00400245	0.0217297	0.00392742	0.00560494	0.0139706
%RSD:	0.0806186	0.43261	42.2496	79.238	39.4301
Repeat: 1	4.96629	5.04701	0.00682692	-0.00563642	0.0243702
Repeat: 2	4.96011	5.01703	0.00723573	-0.0023271	0.0307923
Repeat: 3	4.9676	5.00478	0.0138246	-0.0132571	0.0511311
Element/Wavelength	Rh3434	Ru2402	S_1807	Sb2175	Se1960
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.00132135	-0.00524293	4.9647	4.94579	5.05949
Std Dev:	0.00256667	0.00169376	0.0122199	0.0208533	0.0158045
%RSD:	194.247	32.3055	0.246137	0.421637	0.312373
Repeat: 1	0.000834971	-0.00489673	4.97742	4.96611	5.07745
Repeat: 2	-0.000638675	-0.00708304	4.96362	4.92444	5.05335
Repeat: 3	-0.00416033	-0.00374902	4.95305	4.9468	5.04768
Element/Wavelength	Si2124	Sm3592	Sn1899	Sr2165	Ta2685
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.97441	0.0242047	-0.0012457	4.99343	-0.0416228
Std Dev:	0.0172128	0.00292288	0.00123238	0.0303151	0.00162372
%RSD:	0.346027	12.0757	98.9307	0.607101	3.90104
Repeat: 1	4.99407	0.0208569	3.45898e-005	5.02821	-0.042615
Repeat: 2	4.96706	0.0262491	-0.0024238	4.97949	-0.039749
Repeat: 3	4.96209	0.0255081	-0.00134788	4.9726	-0.0425045
Element/Wavelength	Te2142	Th2832	Ti3372	Tl1908	U_3859
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00534561	-0.0464694	5.01854	0.032804	0.0561256
Std Dev:	0.0070031	0.00230127	0.0741564	0.00308468	0.0152572
%RSD:	131.007	4.95222	1.47765	9.40337	27.184
Repeat: 1	0.0018823	-0.0439141	5.10206	0.0342608	0.0538281
Repeat: 2	0.000748955	-0.0471156	4.99316	0.0348906	0.0421475
Repeat: 3	0.0134056	-0.0483785	4.96041	0.0292608	0.0724013
Element/Wavelength	V_3093	W_2397	Y_3195	Zn2138	Zr3438
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	5.18607	0.00378266	i 0.000736779	5.03612	5.10814
Std Dev:	0.0826522	0.00487489	0.000169396	0.0209322	0.0697269
%RSD:	1.59374	128.875	22.9914	0.415642	1.36502
Repeat: 1	5.27919	0.00891305	0.000591685	5.05929	5.1867
Repeat: 2	5.15759	0.00322341	0.00092293	5.03049	5.08413
Repeat: 3	5.12141	-0.000788493	0.000695723	5.01858	5.05359

Sample Name	Acquisition Date	Sample type	Correction Factor
CCV B	6/14/2013 11:29:40 AM	QC	1.00
Autosampler Locations		**Analyst Name**	**Method Name**
1/9/1		awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Ag3280	Al3961	As1890	B_2497	Ba2335
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00334023	-0.0160445	0.0124994	-0.0202478	0.00445482
Std Dev:	0.000695516	0.00536012	0.00296894	0.00042092	0.000540359
%RSD:	20.8224	33.4078	23.7526	2.07885	12.1297
Repeat: 1	0.00407083	-0.0105734	0.0121092	-0.0199319	0.00388098
Repeat: 2	0.00268612	-0.0212863	0.00974484	-0.0207256	0.00452957
Repeat: 3	0.00326373	-0.0162739	0.0156441	-0.0200858	0.00495392
Element/Wavelength	Be2348	Bi2230	Ca1840	Cd2265	Ce5353
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.000277233	-0.0527196	-0.165507	-0.000693843	5.12929
Std Dev:	5.92787e-005	0.0039267	0.00210941	0.000436325	0.0101392
%RSD:	21.3823	7.44827	1.27451	62.8852	0.197672
Repeat: 1	-0.000210108	-0.0572508	-0.163321	-0.000214038	5.14086
Repeat: 2	-0.0003224	-0.0505958	-0.167531	-0.000800631	5.12507
Repeat: 3	-0.00029919	-0.0503123	-0.165669	-0.00106686	5.12194
Element/Wavelength	Co2286	Cr2677	Cu3273	Eu3819	Fe2599
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.00120455	0.00287142	0.0179216	5.16446	-0.0454651
Std Dev:	4.46974e-005	0.00125872	0.00334073	0.00644226	0.000568944
%RSD:	3.71073	43.836	18.6408	0.124742	1.25139
Repeat: 1	-0.00118298	0.00376851	0.0195286	5.16306	-0.0460624
Repeat: 2	-0.00125594	0.00143253	0.020155	5.17149	-0.0454031
Repeat: 3	-0.00117473	0.00341323	0.014081	5.15883	-0.0449296
Element/Wavelength	K_7664	La3794	Li6707	Mg2852	Mn2605
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00096113	-0.0054175	0.00719912	-0.00043723	-0.00133806
Std Dev:	0.0102605	0.000622909	0.000300321	0.000381475	0.000182687
%RSD:	1067.55	11.4981	4.17164	87.2481	13.6532
Repeat: 1	0.0124807	-0.00590137	0.00732612	-9.84238e-005	-0.00126792
Repeat: 2	-0.00719711	-0.00563645	0.00685616	-0.000362849	-0.00120083
Repeat: 3	-0.00240023	-0.00471468	0.00741507	-0.000850418	-0.00154542
Element/Wavelength	Mo2020	Na8183	Nb3194	Nd4012	Ni2216
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.000554797	-0.31607	i 4.93878	5.10426	0.00878819
Std Dev:	0.000982222	0.0466567	0.00392488	0.00579618	0.000917525
%RSD:	177.042	14.7615	0.0794707	0.113556	10.4404
Repeat: 1	-0.000558926	-0.262361	4.93524	5.10578	0.00778147
Repeat: 2	0.00129734	-0.339279	4.943	5.09786	0.00957745
Repeat: 3	0.00092598	-0.346572	4.9381	5.10915	0.00900566
Element/Wavelength	P_1774	Pb2203	Pd3242	Pr4143	Rb7800
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00159187	0.339086	5.15901	5.19445	5.03127
Std Dev:	0.00115019	0.00323653	0.00913278	0.00402732	0.0276359
%RSD:	72.2536	0.954485	0.177026	0.0775313	0.549283
Repeat: 1	0.000390892	0.342687	5.1534	5.18981	5.02279
Repeat: 2	0.00268344	0.336419	5.16955	5.19712	5.06215
Repeat: 3	0.00170128	0.338152	5.15408	5.19641	5.00886

Element/Wavelength	Rh3434	Ru2402	S_1807	Sb2175	Se1960
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	5.0365	4.91855	0.00812348	0.621302	0.00303826
Std Dev:	0.00916875	0.0135121	0.00313666	0.00250591	0.00131466
%RSD:	0.182046	0.274718	38.6122	0.403332	43.2703
Repeat: 1	5.02669	4.92018	0.00937027	0.618905	0.00169905
Repeat: 2	5.03798	4.9043	0.00455513	0.623904	0.00432692
Repeat: 3	5.04485	4.93117	0.010445	0.621098	0.00308882
Element/Wavelength	Si2124	Sm3592	Sn1899	Sr2165	Ta2685
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.223506	5.0868	4.88192	-0.00472977	5.01988
Std Dev:	0.012961	0.00358378	0.00925913	0.00182425	0.00654608
%RSD:	5.79897	0.0704526	0.189662	38.5696	0.130403
Repeat: 1	0.209002	5.08377	4.87219	-0.00357034	5.02152
Repeat: 2	0.227565	5.09076	4.89062	-0.00378643	5.02545
Repeat: 3	0.233952	5.08589	4.88296	-0.00683253	5.01267
Element/Wavelength	Te2142	Th2832	Ti3372	Tl1908	U_3859
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.92294	5.01234	-0.00426943	4.86959	5.0479
Std Dev:	0.0114594	0.0121075	0.000162823	0.0230479	0.014236
%RSD:	0.232775	0.241553	3.81368	0.473301	0.282017
Repeat: 1	4.91177	5.00634	-0.0041048	4.87996	5.06298
Repeat: 2	4.93467	5.0044	-0.00443038	4.88564	5.04602
Repeat: 3	4.92239	5.02627	-0.00427311	4.84318	5.0347
Element/Wavelength	V_3093	W_2397	Y_3195	Zn2138	Zr3438
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00355768	4.99614	i 5.01049	-0.00871698	0.00261529
Std Dev:	0.000711256	0.0142125	0.00165492	0.000141221	2.96031e-005
%RSD:	19.9921	0.28447	0.0330291	1.62007	1.13192
Repeat: 1	0.00412499	5.00883	5.00864	-0.00861747	0.00264755
Repeat: 2	0.00378832	4.98078	5.01183	-0.00887861	0.00260897
Repeat: 3	0.00275972	4.99881	5.01101	-0.00865485	0.00258936

Sample Name	Acquisition Date	Sample type	Correction Factor
Li CCV	6/14/2013 11:34:20 AM	QC	1.00
Autosampler Locations		**Analyst Name**	**Method Name**
1/8/2		awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Ag3280	Al3961	As1890	B_2497	Ba2335
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	1.03433	5.18955	4.99407	-0.0224536	5.04149
Std Dev:	0.0126579	0.0835643	0.00907981	0.000152813	0.00830246
%RSD:	1.22377	1.61024	0.181812	0.680573	0.164683
Repeat: 1	1.01975	5.09325	4.99032	-0.0224452	5.04424
Repeat: 2	1.0408	5.24307	4.98746	-0.0223051	5.03216
Repeat: 3	1.04245	5.23231	5.00442	-0.0226104	5.04807

Element/Wavelength	Be2348	Bi2230	Ca1840	Cd2265	Ce5353
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	5.20642	5.14445	5.08873	5.07772	0.0429138
Std Dev:	0.0398367	0.00300146	0.00216441	0.00864025	0.00570311
%RSD:	0.765145	0.0583437	0.0425333	0.17016	13.2897
Repeat: 1	5.16049	5.14617	5.08858	5.08136	0.0485383
Repeat: 2	5.22715	5.14099	5.08664	5.06785	0.0371352
Repeat: 3	5.23162	5.1462	5.09096	5.08394	0.043068
Element/Wavelength	Co2286	Cr2677	Cu3273	Eu3819	Fe2599
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	5.09867	5.08469	5.29046	-0.000235809	4.93226
Std Dev:	0.00709864	0.0212587	0.0869982	8.31757e-005	0.0167268
%RSD:	0.139225	0.418093	1.64444	35.2725	0.339131
Repeat: 1	5.09726	5.06076	5.19004	-0.000331729	4.91301
Repeat: 2	5.09238	5.09189	5.33833	-0.000183647	4.94328
Repeat: 3	5.10637	5.10141	5.34301	-0.00019205	4.94048
Element/Wavelength	K_7664	La3794	Li6707	Mg2852	Mn2605
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	5.25583	5.21797	5.55708	5.21462	5.0704
Std Dev:	0.129457	0.0639078	0.180696	0.0696131	0.0189176
%RSD:	2.46311	1.22476	3.25163	1.33496	0.373098
Repeat: 1	5.10881	5.14419	5.34854	5.13437	5.04856
Repeat: 2	5.30598	5.2564	5.65551	5.25075	5.08137
Repeat: 3	5.35272	5.25331	5.66718	5.25874	5.08128
Element/Wavelength	Mo2020	Na8183	Nb3194	Nd4012	Ni2216
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.00125609	5.36456	i 0.000342408	-0.00223207	5.00115
Std Dev:	0.000603692	0.207235	0.000996756	0.00318462	0.00681059
%RSD:	48.0612	3.86303	291.102	142.675	0.136181
Repeat: 1	-0.00195142	5.12559	0.000747485	-0.00521668	4.99391
Repeat: 2	-0.000951181	5.49482	-0.000793114	-0.00260011	5.00209
Repeat: 3	-0.000865663	5.47326	0.00107285	0.00112057	5.00744
Element/Wavelength	P_1774	Pb2203	Pd3242	Pr4143	Rb7800
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.00149714	5.01191	0.0039478	-9.76704e-005	0.0330661
Std Dev:	0.00277256	0.00934175	0.00228467	0.00342029	0.0102795
%RSD:	185.191	0.186391	57.8719	3501.87	31.0877
Repeat: 1	-0.00146644	5.00281	0.00283515	0.00225091	0.0376744
Repeat: 2	-0.00428492	5.02147	0.0024326	0.00147786	0.0212888
Repeat: 3	0.00125994	5.01146	0.00657565	-0.00402178	0.0402351
Element/Wavelength	Rh3434	Ru2402	S_1807	Sb2175	Se1960
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00274544	0.00136141	-0.00378445	0.00547494	5.07969
Std Dev:	0.0012305	0.00082998	0.00123842	0.000785751	0.0125367
%RSD:	44.8197	60.9645	32.7238	14.3518	0.246801
Repeat: 1	0.00415626	0.0011779	-0.00236232	0.00635282	5.09316
Repeat: 2	0.00218611	0.0022678	-0.00462524	0.00523447	5.06836
Repeat: 3	0.00189397	0.000638554	-0.0043658	0.00483752	5.07755

Element/Wavelength	Si2124	Sm3592	Sn1899	Sr2165	Ta2685
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.0113675	0.0324461	-0.00202551	4.94815	-0.0370137
Std Dev:	0.00255471	0.00338389	0.00145812	0.00525018	0.00505593
%RSD:	22.4738	10.4293	71.9881	0.106104	13.6596
Repeat: 1	0.0112855	0.0291748	-0.000352674	4.94416	-0.035867
Repeat: 2	0.0139623	0.0359324	-0.00302729	4.94619	-0.0326296
Repeat: 3	0.00885482	0.032231	-0.00269656	4.95409	-0.0425445
Element/Wavelength	Te2142	Th2832	Ti3372	Tl1908	U_3859
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.00238612	0.00751187	-0.000136232	0.0274643	0.0620991
Std Dev:	0.00878581	0.00151353	0.000211047	0.00712974	0.00638234
%RSD:	368.206	20.1486	154.917	25.96	10.2777
Repeat: 1	0.00619712	0.00617272	-0.000338319	0.0214885	0.0653969
Repeat: 2	-0.00199408	0.00720893	8.27585e-005	0.0255482	0.0661578
Repeat: 3	-0.0113614	0.00915397	-0.000153136	0.0353564	0.0547425
Element/Wavelength	V_3093	W_2397	Y_3195	Zn2138	Zr3438
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	5.02122	0.00697134	i 0.000349968	5.03703	0.00110149
Std Dev:	0.0345902	0.00591516	0.000256956	0.00436198	0.000223275
%RSD:	0.688881	84.8497	73.4228	0.0865982	20.2703
Repeat: 1	4.98142	0.000315048	6.38319e-005	5.03403	0.00123234
Repeat: 2	5.04408	0.0116259	0.000561015	5.03502	0.00122844
Repeat: 3	5.03814	0.00897305	0.000425056	5.04203	0.000843681

Sample Name	Acquisition Date	Sample type	Correction Factor
CCB	6/14/2013 11:38:53 AM	QC	1.00
Autosampler Locations		**Analyst Name**	**Method Name**
1/10/1		awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Ag3280	Al3961	As1890	B_2497	Ba2335
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.000863202	-0.00193711	-0.00221307	-0.0227651	-0.000409538
Std Dev:	0.000764584	0.00106474	0.000668454	1.72162e-005	0.00068997
%RSD:	88.5753	54.9654	30.2048	0.0756253	168.475
Repeat: 1	0.00169402	-0.00284822	-0.00200624	-0.0227847	-6.19899e-005
Repeat: 2	0.000706427	-0.00219645	-0.00167249	-0.0227521	-0.00120417
Repeat: 3	0.000189157	-0.000766654	-0.0029605	-0.0227587	3.75462e-005
Element/Wavelength	Be2348	Bi2230	Ca1840	Cd2265	Ce5353
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	7.00155e-005	0.000174308	-0.00133495	1.89269e-005	0.0144042
Std Dev:	1.72022e-005	0.00247137	0.00207139	8.89317e-005	0.00789961
%RSD:	24.5692	1417.82	155.166	469.868	54.8423
Repeat: 1	8.78212e-005	-0.00181298	0.0006297	0.000104393	0.0208282
Repeat: 2	5.3488e-005	-0.000605656	-0.0034987	-7.3106e-005	0.00558392
Repeat: 3	6.87371e-005	0.00294157	-0.00113584	2.54936e-005	0.0168006

Element/Wavelength	Co2286	Cr2677	Cu3273	Eu3819	Fe2599
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.000106912	0.00108744	-0.00092708	2.43665e-005	-0.000111283
Std Dev:	0.000335667	0.000598208	0.000834965	0.000102565	0.000404618
%RSD:	313.966	55.0109	90.0639	420.927	363.593
Repeat: 1	0.000263786	0.000553361	-0.000219631	-1.45134e-005	-0.000541295
Repeat: 2	-0.000194234	0.000975096	-0.000713529	-5.30743e-005	-5.44968e-005
Repeat: 3	-0.000390288	0.00173385	-0.00184808	0.000140687	0.000261942
Element/Wavelength	K_7664	La3794	Li6707	Mg2852	Mn2605
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.000373113	-0.000556507	5.07065e-005	0.000321392	-5.71884e-005
Std Dev:	0.00790988	0.000287686	0.000271882	0.000291409	0.000245272
%RSD:	2119.97	51.695	536.187	90.6708	428.884
Repeat: 1	0.00504125	-0.000757171	0.000312114	0.000372514	-0.000325489
Repeat: 2	-0.00875968	-0.000685443	-0.00023056	0.000583857	-1.58465e-006
Repeat: 3	0.00483777	-0.000226907	7.05661e-005	7.80474e-006	0.000155508
Element/Wavelength	Mo2020	Na8183	Nb3194	Nd4012	Ni2216
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.000508725	-0.0326915	i -0.00118392	0.000365939	-0.000103103
Std Dev:	0.000520396	0.029068	0.00131373	0.000832858	0.000263954
%RSD:	102.294	88.9161	110.965	227.595	256.011
Repeat: 1	-0.000138614	-0.0392076	-0.00261826	-0.000188399	2.44917e-005
Repeat: 2	-0.00110375	-0.0579484	-3.9105e-005	-3.74695e-005	-0.000406611
Repeat: 3	-0.000283811	-0.00091844	-0.000894385	0.00132368	7.28116e-005
Element/Wavelength	P_1774	Pb2203	Pd3242	Pr4143	Rb7800
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00285398	-0.00778792	-0.000108126	0.000625557	0.00727192
Std Dev:	0.00357164	0.00671073	0.00354147	0.00159592	0.00476272
%RSD:	125.146	86.1685	3275.32	255.12	65.4947
Repeat: 1	0.00520813	-0.0130235	-0.00402258	0.00193521	0.00219131
Repeat: 2	-0.00125568	-0.000222851	0.00287369	0.00109348	0.007989
Repeat: 3	0.00460949	-0.0101174	0.000824516	-0.00115202	0.0116354
Element/Wavelength	Rh3434	Ru2402	S_1807	Sb2175	Se1960
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00594315	-0.000245748	-0.000515639	0.006197	0.00779632
Std Dev:	0.00184225	0.00325757	0.00210459	0.00172847	0.00119816
%RSD:	30.9979	1325.58	408.152	27.892	15.3683
Repeat: 1	0.00396057	-0.00365282	-0.00198761	0.00428292	0.00903082
Repeat: 2	0.00760222	7.73435e-005	0.00189495	0.00764374	0.00771997
Repeat: 3	0.00626667	0.00283824	-0.00145425	0.00666434	0.00663815
Element/Wavelength	Si2124	Sm3592	Sn1899	Sr2165	Ta2685
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00118947	0.0366392	-0.00150477	0.000687544	-0.00181899
Std Dev:	0.00198133	0.00489356	0.00212212	0.00109892	0.000937201
%RSD:	166.572	13.3561	141.026	159.832	51.5231
Repeat: 1	0.00272409	0.0331551	8.56047e-006	0.000194929	-0.00164613
Repeat: 2	0.00189163	0.0345286	-0.0039305	0.00194658	-0.000980256
Repeat: 3	-0.00104731	0.0422339	-0.00059238	-7.88759e-005	-0.00283059

Element/Wavelength	Te2142	Th2832	Ti3372	Tl1908	U_3859
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.000839995	-0.00069957	-0.000227178	0.000102922	-0.00340895
Std Dev:	0.00409834	0.0037393	0.000247925	0.00355345	0.0167766
%RSD:	487.9	534.514	109.132	3452.58	492.133
Repeat: 1	0.00315529	0.000488412	-0.000124664	-0.000396457	-0.00323524
Repeat: 2	0.00325669	0.00230142	-4.69516e-005	-0.00317443	-0.0202717
Repeat: 3	-0.003892	-0.00488854	-0.000509919	0.00387965	0.0132801
Element/Wavelength	V_3093	W_2397	Y_3195	Zn2138	Zr3438
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	9.2108e-005	-0.00234748	i 0.000752728	-0.000375553	0.000489405
Std Dev:	0.000223421	0.00302188	0.000551804	0.000100965	4.37704e-005
%RSD:	242.564	128.729	73.3072	26.8843	8.94359
Repeat: 1	-0.000104375	-0.00583527	0.000971222	-0.000343891	0.000444717
Repeat: 2	0.000335135	-0.00069434	0.000125135	-0.000488555	0.000491303
Repeat: 3	4.55636e-005	-0.000512822	0.00116183	-0.000294214	0.000532196

Sample Name	Acquisition Date	Sample type	Correction Factor
S13T004252_A	6/14/2013 11:43:44 AM	Unknown	5.00
Autosampler Locations		**Analyst Name**	**Method Name**
1/9/3		awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Ag3280	Al3961	As1890	B_2497	Ba2335
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	9.87238	986.799	49.1755	48.9928	48.4641
Std Dev:	0.00908942	21.8333	0.162216	0.0317008	0.120921
%RSD:	0.0920691	2.21254	0.329872	0.064705	0.249506
Repeat: 1	9.88037	961.841	49.2857	48.9806	48.4552
Repeat: 2	9.86249	996.193	49.2515	48.969	48.5892
Repeat: 3	9.87428	1002.36	48.9892	49.0288	48.3479
Element/Wavelength	Be2348	Bi2230	Ca1840	Cd2265	Ce5353
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	48.8943	49.9231	50.6626	47.7931	50.2219
Std Dev:	0.0396795	0.134532	0.108026	0.109869	0.173634
%RSD:	0.0811536	0.269479	0.213226	0.229884	0.345734
Repeat: 1	48.8647	49.9138	50.6377	47.7117	50.0269
Repeat: 2	48.8788	50.062	50.7809	47.9181	50.3598
Repeat: 3	48.9394	49.7934	50.5692	47.7495	50.2791
Element/Wavelength	Co2286	Cr2677	Cu3273	Eu3819	Fe2599
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	48.4299	48.5808	52.4274	50.0699	71.8506
Std Dev:	0.109355	0.0918507	0.105783	1.36758	0.121407
%RSD:	0.2258	0.189068	0.201771	2.73133	0.168972
Repeat: 1	48.3954	48.5666	52.3178	48.4929	71.848
Repeat: 2	48.5524	48.4969	52.4354	50.7879	71.7305
Repeat: 3	48.342	48.679	52.5289	50.929	71.9733

Element/Wavelength	K_7664	La3794	Li6707	Mg2852	Mn2605
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	51.9928	51.0465	53.107	52.0667	48.9108
Std Dev:	0.055859	0.101604	4.15058	0.0550283	0.0515765
%RSD:	0.107436	0.199042	7.8155	0.105688	0.10545
Repeat: 1	51.9969	50.9648	48.3577	52.0066	48.9168
Repeat: 2	52.0465	51.0143	56.0388	52.0789	48.8565
Repeat: 3	51.935	51.1603	54.9245	52.1146	48.9591
Element/Wavelength	Mo2020	Na8183	Nb3194	Nd4012	Ni2216
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	48.3225	413.337	i 47.578	51.2461	49.6333
Std Dev:	0.0776358	0.482611	0.0874001	0.0955023	0.0994701
%RSD:	0.160662	0.11676	0.183699	0.18636	0.20041
Repeat: 1	48.2636	412.786	47.5148	51.146	49.6181
Repeat: 2	48.4105	413.536	47.5415	51.2562	49.7395
Repeat: 3	48.2935	413.688	47.6777	51.3362	49.5423
Element/Wavelength	P_1774	Pb2203	Pd3242	Pr4143	Rb7800
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	136.615	52.3739	48.6104	51.0835	51.0603
Std Dev:	0.278359	0.0712597	0.110466	0.254362	0.207854
%RSD:	0.203754	0.136059	0.227247	0.497934	0.407075
Repeat: 1	136.59	52.3725	48.4889	50.8714	50.882
Repeat: 2	136.905	52.4459	48.6376	51.3655	51.0103
Repeat: 3	136.35	52.3034	48.7048	51.0136	51.2886
Element/Wavelength	Rh3434	Ru2402	S_1807	Sb2175	Se1960
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	49.3737	44.9628	49.8517	54.8172	49.6464
Std Dev:	0.087245	0.112496	0.0937932	0.273626	0.202123
%RSD:	0.176704	0.250199	0.188145	0.499161	0.407124
Repeat: 1	49.2871	44.9705	49.9435	54.7337	49.5401
Repeat: 2	49.3723	44.8467	49.8554	55.1228	49.8795
Repeat: 3	49.4616	45.0713	49.756	54.595	49.5196
Element/Wavelength	Si2124	Sm3592	Sn1899	Sr2165	Ta2685
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	51.4786	50.2235	45.8858	47.1908	47.9708
Std Dev:	0.145241	0.0918861	0.087103	0.0952759	0.136278
%RSD:	0.28214	0.182954	0.189826	0.201895	0.284085
Repeat: 1	51.3474	50.1227	45.8798	47.1177	47.8157
Repeat: 2	51.6347	50.3026	45.9757	47.2986	48.0713
Repeat: 3	51.4536	50.2453	45.8018	47.1562	48.0254
Element/Wavelength	Te2142	Th2832	Ti3372	Tl1908	U_3859
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	47.5347	47.6277	47.6866	45.2869	59.8592
Std Dev:	0.198752	0.0754904	0.0782921	0.0657045	0.0250625
%RSD:	0.418119	0.158501	0.164181	0.145085	0.0418691
Repeat: 1	47.5094	47.5412	47.6315	45.249	59.8422
Repeat: 2	47.7449	47.6801	47.6521	45.3627	59.8473
Repeat: 3	47.3498	47.6619	47.7762	45.2489	59.8879

Element/Wavelength	V_3093	W_2397	Y_3195	Zn2138	Zr3438
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	48.7864	48.213	i 48.1448	48.2687	49.5463
Std Dev:	0.0961605	0.0716607	0.127187	0.12399	0.128594
%RSD:	0.197105	0.148634	0.264176	0.256873	0.259543
Repeat: 1	48.7361	48.1379	48.0002	48.2301	49.4318
Repeat: 2	48.7257	48.2204	48.1948	48.4074	49.5217
Repeat: 3	48.8972	48.2807	48.2394	48.1687	49.6854

Sample Name	Acquisition Date	Sample type	Correction Factor
S13T004280	6/14/2013 11:48:19 AM	Unknown	5.00

Autosampler Locations	Analyst Name	Method Name
1/10/3	awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Ag3280	Al3961	As1890	B_2497	Ba2335
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.0754969	559.351	0.0269569	-0.0438333	0.0715246
Std Dev:	0.0324978	1.38984	0.00393167	0.00468394	0.00224843
%RSD:	43.0452	0.248474	14.585	10.6858	3.14358
Repeat: 1	0.111352	558.176	0.0314411	-0.0396365	0.0719529
Repeat: 2	0.0671579	560.885	0.0241006	-0.042977	0.0735281
Repeat: 3	0.0479813	558.991	0.025329	-0.0488863	0.0690928
Element/Wavelength	Be2348	Bi2230	Ca1840	Cd2265	Ce5353
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.000107502	0.915294	8.12959	0.00185021	-0.192415
Std Dev:	5.415e-005	0.0391911	0.0207397	0.000701487	0.0221454
%RSD:	50.3711	4.28181	0.255113	37.914	11.5092
Repeat: 1	0.000165855	0.942748	8.10693	0.00265467	-0.208328
Repeat: 2	5.88722e-005	0.932721	8.14763	0.0015299	-0.167123
Repeat: 3	9.77795e-005	0.870411	8.13422	0.00136605	-0.201792
Element/Wavelength	Co2286	Cr2677	Cu3273	Eu3819	Fe2599
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00268971	0.0848559	0.249486	-0.000208336	54.3218
Std Dev:	0.00204673	0.000568434	0.00331167	0.000692802	0.0977174
%RSD:	76.0948	0.669882	1.3274	332.54	0.179886
Repeat: 1	0.000337964	0.0851424	0.253269	0.000299759	54.366
Repeat: 2	0.00366292	0.0842012	0.247112	-0.000997505	54.3896
Repeat: 3	0.00406825	0.085224	0.248077	7.27365e-005	54.2098
Element/Wavelength	K_7664	La3794	Li6707	Mg2852	Mn2605
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.0867367	0.037393	0.00957214	0.660368	0.364114
Std Dev:	0.0429556	0.0024149	0.00192533	0.000711945	0.00185132
%RSD:	49.5242	6.45816	20.1139	0.10781	0.508444
Repeat: 1	0.0821157	0.0349376	0.0115798	0.660113	0.365802
Repeat: 2	0.0462784	0.0374762	0.00939519	0.661173	0.362134
Repeat: 3	0.131816	0.0397652	0.00774139	0.659819	0.364407

Element/Wavelength	Mo2020	Na8183	Nb3194	Nd4012	Ni2216
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.0114184	719.709	i -0.00216703	0.0545165	6.46423
Std Dev:	0.00288818	1.21635	0.00797905	0.00568749	0.00866441
%RSD:	25.294	0.169006	368.202	10.4326	0.134036
Repeat: 1	0.0146572	718.544	-0.0108492	0.0592401	6.4558
Repeat: 2	0.00911041	720.971	0.00484439	0.0561059	6.47311
Repeat: 3	0.0104877	719.613	-0.000496334	0.0482033	6.46376
Element/Wavelength	P_1774	Pb2203	Pd3242	Pr4143	Rb7800
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	185.503	2.01773	-0.00696805	0.0654022	0.00743193
Std Dev:	0.382112	0.0141445	0.0224882	0.0125766	0.0582372
%RSD:	0.205987	0.701007	322.733	19.2296	783.608
Repeat: 1	185.573	2.02719	-0.0326818	0.0510739	0.0604965
Repeat: 2	185.846	2.00147	0.0090225	0.0705179	0.0166723
Repeat: 3	185.091	2.02454	0.0027552	0.0746147	-0.054873
Element/Wavelength	Rh3434	Ru2402	S_1807	Sb2175	Se1960
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.0536785	-0.0195282	0.447888	-0.02685	-0.0365006
Std Dev:	0.0197334	0.00629784	0.0366389	0.0302616	0.0333336
%RSD:	36.7622	32.25	8.18037	112.706	91.3234
Repeat: 1	0.058286	-0.0122576	0.445676	-0.0421662	-0.00185448
Repeat: 2	0.032049	-0.0232947	0.412406	-0.0463917	-0.0683447
Repeat: 3	0.0707006	-0.0230322	0.485583	0.00800782	-0.0393026
Element/Wavelength	Si2124	Sm3592	Sn1899	Sr2165	Ta2685
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	2.10953	0.180825	0.000386672	0.287558	0.0859957
Std Dev:	0.0557893	0.0174616	0.0165441	0.00141006	0.017538
%RSD:	2.64463	9.65666	4278.58	0.490357	20.3941
Repeat: 1	2.17092	0.160738	-0.00793606	0.289014	0.0973794
Repeat: 2	2.09575	0.189354	-0.0103434	0.28746	0.0948088
Repeat: 3	2.06192	0.192383	0.0194395	0.286199	0.065799
Element/Wavelength	Te2142	Th2832	Ti3372	Tl1908	U_3859
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.0158987	0.0941289	0.0319426	0.0196413	20.213
Std Dev:	0.0592047	0.015177	0.00163577	0.0238206	0.0683255
%RSD:	372.387	16.1236	5.12096	121.278	0.338028
Repeat: 1	-0.025857	0.107329	0.0337326	0.0397202	20.2124
Repeat: 2	-0.0694927	0.0975121	0.0315699	0.0258822	20.2816
Repeat: 3	0.0476536	0.0775459	0.0305254	-0.00667856	20.145

Element/Wavelength	V_3093	W_2397	Y_3195	Zn2138	Zr3438
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.0186613	0.0382458	i 0.00832293	0.24464	0.0624638
Std Dev:	0.000591389	0.0105225	0.0056356	0.000642512	0.00149434
%RSD:	3.16906	27.5128	67.7117	0.262635	2.39234
Repeat: 1	-0.0186575	0.0302327	0.00828187	0.243915	0.0625736
Repeat: 2	-0.0180719	0.0501622	0.0139789	0.245137	0.0609175
Repeat: 3	-0.0192547	0.0343426	0.00270798	0.24487	0.0639001

Sample Name	Acquisition Date	Sample type	Correction Factor
S13T004307	6/14/2013 11:53:03 AM	Unknown	5.00
Autosampler Locations		**Analyst Name**	**Method Name**
1/11/3		awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Ag3280	Al3961	As1890	B_2497	Ba2335
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00948861	895.86	0.0525662	-0.0779761	0.0363876
Std Dev:	0.00287384	9.13259	0.0132553	0.00176043	0.00231249
%RSD:	30.2872	1.01942	25.2164	2.25765	6.35517
Repeat: 1	0.0127183	885.324	0.0491578	-0.0760851	0.0384279
Repeat: 2	0.00721369	900.739	0.0671928	-0.0782756	0.0368592
Repeat: 3	0.00853383	901.516	0.0413479	-0.0795675	0.0338756
Element/Wavelength	Be2348	Bi2230	Ca1840	Cd2265	Ce5353
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.000158348	0.614962	5.85701	0.00249917	0.0393617
Std Dev:	8.65087e-005	0.023708	0.0246666	0.000771171	0.0197952
%RSD:	54.6319	3.85519	0.421148	30.8571	50.2904
Repeat: 1	0.000219293	0.594644	5.88545	0.00193092	0.0550206
Repeat: 2	0.000196419	0.64101	5.84148	0.00218955	0.0171119
Repeat: 3	5.93336e-005	0.609233	5.84409	0.00337703	0.0459525
Element/Wavelength	Co2286	Cr2677	Cu3273	Eu3819	Fe2599
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.0013064	0.0826761	0.403619	0.000726385	23.5294
Std Dev:	0.00331611	0.00215074	0.00517586	0.000661589	0.116919
%RSD:	253.835	2.6014	1.28236	91.0796	0.496908
Repeat: 1	0.00443379	0.0805966	0.397976	0.000208348	23.4043
Repeat: 2	-0.0021707	0.0825401	0.404736	0.000499165	23.5479
Repeat: 3	0.00165611	0.0848916	0.408145	0.00147164	23.6359
Element/Wavelength	K_7664	La3794	Li6707	Mg2852	Mn2605
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.0201435	0.0679402	0.00660713	0.445048	0.128462
Std Dev:	0.0706086	0.002038	0.00137396	0.00159346	0.000682649
%RSD:	350.529	2.9997	20.7952	0.358041	0.531401
Repeat: 1	0.0403599	0.066621	0.00518429	0.443999	0.129037
Repeat: 2	-0.0583684	0.066912	0.00792635	0.446882	0.128641
Repeat: 3	0.0784388	0.0702874	0.00671074	0.444264	0.127708
Element/Wavelength	Mo2020	Na8183	Nb3194	Nd4012	Ni2216
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.0121891	418.196	i -0.00353982	0.0801553	5.7911
Std Dev:	0.00662306	1.96083	0.0113078	0.00564148	0.023207
%RSD:	54.3358	0.468878	319.446	7.03819	0.400735
Repeat: 1	0.00626929	416.162	-0.0143598	0.0778127	5.79874
Repeat: 2	0.0193421	420.074	-0.00445925	0.0865907	5.80953
Repeat: 3	0.010956	418.352	0.00819963	0.0760625	5.76504

Element/Wavelength	P_1774	Pb2203	Pd3242	Pr4143	Rb7800
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	94.2954	2.0334	-0.0142393	0.0638401	0.0264946
Std Dev:	0.191483	0.0322841	0.023845	0.00526092	0.0631
%RSD:	0.203067	1.58769	167.459	8.24078	238.162
Repeat: 1	94.4553	2.03248	-0.0286926	0.059228	0.0344823
Repeat: 2	94.3478	2.06613	0.0132829	0.0627222	0.0852204
Repeat: 3	94.0832	2.00159	-0.0273082	0.0695701	-0.0402189
Element/Wavelength	Rh3434	Ru2402	S_1807	Sb2175	Se1960
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.0438833	-0.0120278	0.315741	-0.03043	-0.0215637
Std Dev:	0.0157609	0.00433702	0.00827509	0.0189611	0.00746512
%RSD:	35.9155	36.0584	2.62085	62.3104	34.619
Repeat: 1	0.0576453	-0.00704174	0.314345	-0.0130022	-0.0154724
Repeat: 2	0.0473156	-0.0149262	0.324625	-0.0506211	-0.0193272
Repeat: 3	0.0266891	-0.0141154	0.308253	-0.0276667	-0.0298914
Element/Wavelength	Si2124	Sm3592	Sn1899	Sr2165	Ta2685
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	1.70131	0.205594	-0.0212735	0.146829	0.0213153
Std Dev:	0.0159121	0.0075057	0.0081212	0.00360965	0.00550658
%RSD:	0.935286	3.65075	38.1752	2.4584	25.8339
Repeat: 1	1.70551	0.206893	-0.0166595	0.149005	0.0274037
Repeat: 2	1.71469	0.212365	-0.0306507	0.142663	0.019859
Repeat: 3	1.68371	0.197523	-0.0165104	0.14882	0.0166833
Element/Wavelength	Te2142	Th2832	Ti3372	Tl1908	U_3859
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.057436	0.0361829	0.0182098	0.0394649	9.26958
Std Dev:	0.0231683	0.0128902	0.00150217	0.0173705	0.0748522
%RSD:	40.3375	35.625	8.24925	44.015	0.807504
Repeat: 1	-0.0343436	0.0382547	0.0199358	0.033162	9.27956
Repeat: 2	-0.057285	0.0479117	0.0171979	0.0261258	9.33895
Repeat: 3	-0.0806794	0.0223823	0.0174956	0.059107	9.19024
Element/Wavelength	V_3093	W_2397	Y_3195	Zn2138	Zr3438
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.0623378	0.014796	i 0.0131746	0.265248	0.0565611
Std Dev:	0.00222923	0.0129287	0.0056184	0.00120978	0.00165325
%RSD:	3.57606	87.3802	42.6457	0.456094	2.92295
Repeat: 1	-0.0599512	0.0257483	0.0128216	0.266626	0.0583985
Repeat: 2	-0.0643663	0.000534152	0.0189612	0.264361	0.0560908
Repeat: 3	-0.0626958	0.0181055	0.00774104	0.264758	0.0551939

Sample Name	Acquisition Date	Sample type	Correction Factor
ICSA	6/14/2013 11:57:58 AM	QC	1.00
Autosampler Locations		**Analyst Name**	**Method Name**
1/6/1		awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Ag3280	Al3961	As1890	B_2497	Ba2335
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.0088483	206.823	0.00258284	0.0811803	0.00331152
Std Dev:	0.00135754	1.01482	0.00246207	0.00192629	0.000443361
%RSD:	15.3424	0.490674	95.324	2.37286	13.3884
Repeat: 1	0.0102059	207.535	0.00151352	0.0823631	0.0033732
Repeat: 2	0.00884813	207.273	0.00539877	0.0822202	0.00372081
Repeat: 3	0.00749084	205.661	0.000836233	0.0789575	0.00284055
Element/Wavelength	Be2348	Bi2230	Ca1840	Cd2265	Ce5353
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00122572	0.0162139	184.427	-0.00117609	-0.950656
Std Dev:	6.77675e-005	0.0077465	0.123363	0.000191132	0.0105373
%RSD:	5.52881	47.7769	0.0668902	16.2516	1.10842
Repeat: 1	0.00119656	0.0179158	184.569	-0.000983634	-0.938769
Repeat: 2	0.00117741	0.0229679	184.36	-0.00136587	-0.958849
Repeat: 3	0.00130318	0.00775795	184.352	-0.00117875	-0.954351
Element/Wavelength	Co2286	Cr2677	Cu3273	Eu3819	Fe2599
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00257439	0.00183648	-0.0111174	-0.000291944	173.619
Std Dev:	0.000227881	0.000513533	0.00103447	0.000120569	0.893491
%RSD:	8.85188	27.963	9.30502	41.2986	0.514627
Repeat: 1	0.0026414	0.00138617	-0.0108431	-0.000235408	173.734
Repeat: 2	0.00232051	0.00239575	-0.0102477	-0.000430393	174.45
Repeat: 3	0.00276125	0.00172751	-0.0122613	-0.000210033	172.674
Element/Wavelength	K_7664	La3794	Li6707	Mg2852	Mn2605
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.179349	-0.00673441	0.00619426	188.969	0.0178152
Std Dev:	0.0120495	0.000554999	0.000228737	0.644629	0.000477549
%RSD:	6.71847	8.24124	3.69272	0.341129	2.68057
Repeat: 1	-0.169831	-0.00734353	0.00597561	189.263	0.0172723
Repeat: 2	-0.175319	-0.00625736	0.00617528	188.23	0.0181702
Repeat: 3	-0.192897	-0.00660233	0.0064319	189.414	0.0180031
Element/Wavelength	Mo2020	Na8183	Nb3194	Nd4012	Ni2216
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00106087	214.689	i 0.0283641	0.0224349	0.00626934
Std Dev:	0.000504396	0.949813	0.000557405	0.00289138	0.00112034
%RSD:	47.5453	0.442414	1.96518	12.8879	17.8702
Repeat: 1	0.00156136	215.466	0.0277268	0.0216401	0.00714604
Repeat: 2	0.000552659	214.97	0.0287607	0.0256406	0.00500715
Repeat: 3	0.0010686	213.63	0.0286048	0.0200241	0.00665484
Element/Wavelength	P_1774	Pb2203	Pd3242	Pr4143	Rb7800
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.0163298	-0.0118754	-0.0201636	-0.0139576	-0.0110379
Std Dev:	0.00436965	0.00693153	0.00746876	0.00235928	0.0169575
%RSD:	26.7588	58.3689	37.0408	16.9032	153.63
Repeat: 1	0.0163057	-0.0132424	-0.0129417	-0.0146124	-0.0170983
Repeat: 2	0.0119722	-0.00436217	-0.0196923	-0.0113401	0.00811716
Repeat: 3	0.0207114	-0.0180215	-0.0278569	-0.0159203	-0.0241326

Element/Wavelength	Rh3434	Ru2402	S_1807	Sb2175	Se1960
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00985262	-0.0532089	-0.0749268	-0.0318775	-0.0143397
Std Dev:	0.00500706	0.00327128	0.00472198	0.005779	0.00362304
%RSD:	50.8196	6.148	6.30213	18.1288	25.2657
Repeat: 1	0.0153983	-0.0569765	-0.0703095	-0.033568	-0.0159581
Repeat: 2	0.00566386	-0.0510903	-0.0797469	-0.0366227	-0.0101896
Repeat: 3	0.00849571	-0.0515599	-0.0747241	-0.0254418	-0.0168715
Element/Wavelength	Si2124	Sm3592	Sn1899	Sr2165	Ta2685
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.00856237	0.0104856	-0.000776279	0.0218374	0.0226646
Std Dev:	0.00245481	0.000736575	0.00197951	0.000544594	0.00462054
%RSD:	28.6698	7.02466	254.999	2.49385	20.3866
Repeat: 1	-0.00922738	0.00964386	0.000454858	0.0212501	0.0174923
Repeat: 2	-0.0106162	0.0110122	-0.00305968	0.0219365	0.0241173
Repeat: 3	-0.00584357	0.0108006	0.000275987	0.0223257	0.0263843
Element/Wavelength	Te2142	Th2832	Ti3372	Tl1908	U_3859
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.0150732	0.240479	0.0007777	0.00177379	0.623635
Std Dev:	0.0029951	0.00185058	0.000188705	0.00785486	0.00767106
%RSD:	19.8703	0.769542	24.2644	442.829	1.23006
Repeat: 1	-0.0168625	0.242613	0.000689591	0.00832276	0.616652
Repeat: 2	-0.0116155	0.239497	0.000994344	-0.00693503	0.622406
Repeat: 3	-0.0167417	0.239325	0.000649165	0.00393364	0.631846
Element/Wavelength	V_3093	W_2397	Y_3195	Zn2138	Zr3438
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.024174	0.00920868	i -0.000603514	0.00342817	0.00445906
Std Dev:	0.00194926	0.00134002	0.00122579	8.46497e-005	5.00161e-005
%RSD:	8.06346	14.5517	203.109	2.46924	1.12168
Repeat: 1	-0.0242271	0.00888849	0.000379395	0.00352472	0.00445968
Repeat: 2	-0.0221987	0.0106798	-0.000212938	0.00336669	0.00440873
Repeat: 3	-0.0260961	0.00805777	-0.001977	0.00339309	0.00450876

Sample Name	Acquisition Date	Sample type	Correction Factor
ICSAB	6/14/2013 12:03:10 PM	QC	1.00
Autosampler Locations		**Analyst Name**	**Method Name**
1/7/1		awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Ag3280	Al3961	As1890	B_2497	Ba2335
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	1.01395	202.81	4.74982	1.02697	0.909436
Std Dev:	0.00459041	1.85774	0.0151925	0.00237103	0.00346509
%RSD:	0.452725	0.915997	0.319854	0.230876	0.381015
Repeat: 1	1.01591	204.881	4.74592	1.02934	0.90924
Repeat: 2	1.01724	202.262	4.76659	1.0246	0.912995
Repeat: 3	1.00871	201.289	4.73696	1.02699	0.906074

Element/Wavelength	Be2348	Bi2230	Ca1840	Cd2265	Ce5353
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.0954819	4.78863	179.869	0.172744	-0.858484
Std Dev:	0.000187753	0.0334872	0.979203	0.00125893	0.0110987
%RSD:	0.196637	0.699305	0.544397	0.728787	1.29283
Repeat: 1	0.095558	4.77167	179.978	0.172248	-0.866665
Repeat: 2	0.0956197	4.82721	180.79	0.174175	-0.845851
Repeat: 3	0.0952681	4.76702	178.84	0.171808	-0.862937
Element/Wavelength	Co2286	Cr2677	Cu3273	Eu3819	Fe2599
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.43198	4.56378	5.0384	-0.000417933	168.659
Std Dev:	0.0198438	0.00452718	0.00917878	4.07958e-005	0.402754
%RSD:	0.44774	0.0991981	0.182176	9.76133	0.238798
Repeat: 1	4.43214	4.56459	5.0481	-0.000371658	169.07
Repeat: 2	4.45175	4.56784	5.03726	-0.000448705	168.642
Repeat: 3	4.41206	4.5589	5.02985	-0.000433436	168.265
Element/Wavelength	K_7664	La3794	Li6707	Mg2852	Mn2605
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.178752	-0.00474963	1.06565	186.404	4.58173
Std Dev:	0.00529482	0.000403015	0.00463004	1.33794	0.00160069
%RSD:	2.96211	8.48518	0.434481	0.717761	0.0349364
Repeat: 1	-0.182009	-0.00432735	1.07097	186.595	4.58306
Repeat: 2	-0.172642	-0.00479142	1.06257	184.981	4.58217
Repeat: 3	-0.181603	-0.00513012	1.0634	187.636	4.57995
Element/Wavelength	Mo2020	Na8183	Nb3194	Nd4012	Ni2216
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.52116	211.305	i 4.48488	0.0294217	4.3062
Std Dev:	0.0254671	0.519533	0.011097	0.00429791	0.0132079
%RSD:	0.563288	0.245869	0.247431	14.608	0.306719
Repeat: 1	4.52554	211.898	4.496	0.0336491	4.30812
Repeat: 2	4.54415	211.09	4.48485	0.0250566	4.31834
Repeat: 3	4.49378	210.928	4.47381	0.0295594	4.29214
Element/Wavelength	P_1774	Pb2203	Pd3242	Pr4143	Rb7800
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.952476	1.1538	0.0510082	-0.0848286	0.0556056
Std Dev:	0.00794075	0.00633241	0.0023745	0.00106603	0.0275768
%RSD:	0.833695	0.548832	4.65513	1.25668	49.5936
Repeat: 1	0.943479	1.14773	0.0536766	-0.084568	0.0267392
Repeat: 2	0.958508	1.1533	0.0502202	-0.0860007	0.0583971
Repeat: 3	0.95544	1.16036	0.049128	-0.083917	0.0816805
Element/Wavelength	Rh3434	Ru2402	S_1807	Sb2175	Se1960
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00459473	-0.0543554	-0.0745452	5.20371	4.77337
Std Dev:	0.000810623	0.00251934	0.00150154	0.00961342	0.027337
%RSD:	17.6424	4.63494	2.01427	0.184742	0.572698
Repeat: 1	0.00420392	-0.0546253	-0.0731262	5.20307	4.76227
Repeat: 2	0.00405355	-0.0567288	-0.0743918	5.21362	4.80451
Repeat: 3	0.00552672	-0.0517119	-0.0761175	5.19443	4.75332

Element/Wavelength	Si2124	Sm3592	Sn1899	Sr2165	Ta2685
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.94196	0.000849774	0.863934	0.897538	0.0501756
Std Dev:	0.0270782	0.00149414	0.00651701	0.00360878	0.00170754
%RSD:	0.547925	175.828	0.754341	0.402075	3.40313
Repeat: 1	4.91129	0.00257493	0.858562	0.898669	0.0519061
Repeat: 2	4.96256	-3.11959e-005	0.871184	0.900447	0.0501286
Repeat: 3	4.95204	5.5905e-006	0.862055	0.8935	0.048492
Element/Wavelength	Te2142	Th2832	Ti3372	Tl1908	U_3859
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.65715	-0.304084	44.8095	4.03281	5.45884
Std Dev:	0.00965715	0.00808213	0.206738	0.0126893	0.0376934
%RSD:	0.207362	2.65786	0.461369	0.314652	0.690502
Repeat: 1	4.65747	-0.295313	44.5803	4.03178	5.49714
Repeat: 2	4.66665	-0.31123	44.9819	4.04599	5.45761
Repeat: 3	4.64734	-0.30571	44.8663	4.02067	5.42178
Element/Wavelength	V_3093	W_2397	Y_3195	Zn2138	Zr3438
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.898706	4.60261	i -0.00300936	4.58676	4.71123
Std Dev:	0.00524503	0.0172339	0.00302378	0.0136487	0.00673229
%RSD:	0.58362	0.374438	100.479	0.297566	0.142899
Repeat: 1	0.900345	4.6135	-0.000371848	4.58234	4.71489
Repeat: 2	0.902936	4.61158	-0.00234673	4.60207	4.71534
Repeat: 3	0.892837	4.58274	-0.0063095	4.57587	4.70346

Sample Name	Acquisition Date	Sample type	Correction Factor
CCV A	6/14/2013 12:08:09 PM	QC	1.00
Autosampler Locations		**Analyst Name**	**Method Name**
1/11/1		awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Ag3280	Al3961	As1890	B_2497	Ba2335
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	1.0362	5.02849	4.93296	4.95321	5.00803
Std Dev:	0.00662141	0.043238	0.0151591	0.0327341	0.0135572
%RSD:	0.639006	0.859862	0.307302	0.660866	0.27071
Repeat: 1	1.04377	5.07549	4.94957	4.99075	5.00691
Repeat: 2	1.03337	5.01957	4.92944	4.93827	5.02212
Repeat: 3	1.03148	4.9904	4.91988	4.93061	4.99507
Element/Wavelength	Be2348	Bi2230	Ca1840	Cd2265	Ce5353
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	5.17477	5.04911	5.08608	5.05261	0.0472669
Std Dev:	0.0332654	0.0228841	0.0135474	0.010688	0.0141846
%RSD:	0.642839	0.453231	0.266362	0.211535	30.0096
Repeat: 1	5.21212	5.06855	5.08176	5.06056	0.0627727
Repeat: 2	5.16385	5.0549	5.10126	5.05681	0.0440833
Repeat: 3	5.14833	5.02389	5.07522	5.04046	0.0349446

Element/Wavelength	Co2286	Cr2677	Cu3273	Eu3819	Fe2599
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	5.05413	5.10872	5.26139	-0.000206062	4.91431
Std Dev:	0.00657357	0.0294547	0.0461002	7.64929e-005	0.0329839
%RSD:	0.130063	0.576557	0.876199	37.1213	0.671182
Repeat: 1	5.05816	5.14105	5.31261	-0.000140326	4.95171
Repeat: 2	5.05768	5.10169	5.24831	-0.00018784	4.90182
Repeat: 3	5.04654	5.08342	5.22324	-0.000290021	4.88939
Element/Wavelength	K_7664	La3794	Li6707	Mg2852	Mn2605
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	5.21177	5.20113	5.51552	5.19892	5.08839
Std Dev:	0.0724975	0.0428427	0.0738743	0.0448284	0.0330668
%RSD:	1.39103	0.823721	1.33939	0.862263	0.649848
Repeat: 1	5.29052	5.24832	5.59174	5.24923	5.12538
Repeat: 2	5.197	5.19039	5.51059	5.18435	5.07806
Repeat: 3	5.1478	5.16467	5.44424	5.1632	5.06172
Element/Wavelength	Mo2020	Na8183	Nb3194	Nd4012	Ni2216
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.95804	5.35918	i 0.00345443	-0.00518381	4.95539
Std Dev:	0.020709	0.0297185	0.00058153	0.000864465	0.0108352
%RSD:	0.417684	0.554535	16.8344	16.6763	0.218654
Repeat: 1	4.97421	5.37904	0.00371438	-0.00503926	4.94926
Repeat: 2	4.96521	5.37349	0.00386063	-0.00611144	4.9679
Repeat: 3	4.9347	5.32502	0.00278826	-0.00440073	4.94901
Element/Wavelength	P_1774	Pb2203	Pd3242	Pr4143	Rb7800
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.92742	4.99678	0.0115972	-0.00522688	0.0278117
Std Dev:	0.0197131	0.0144065	0.00238135	0.00355704	0.0164859
%RSD:	0.400068	0.288316	20.5339	68.0528	59.2769
Repeat: 1	4.92606	4.99937	0.0124042	-0.00932706	0.0401221
Repeat: 2	4.94778	5.00972	0.0134702	-0.00338635	0.0342312
Repeat: 3	4.90843	4.98126	0.00891717	-0.00296723	0.00908169
Element/Wavelength	Rh3434	Ru2402	S_1807	Sb2175	Se1960
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00217018	-0.00313855	4.92971	4.89378	5.00429
Std Dev:	0.000770688	0.00130384	0.0236122	0.01216	0.0290946
%RSD:	35.5126	41.5427	0.478977	0.248479	0.581393
Repeat: 1	0.0022056	-0.00355802	4.95523	4.90513	5.02259
Repeat: 2	0.0013824	-0.00167661	4.92527	4.89527	5.01953
Repeat: 3	0.00292255	-0.00418104	4.90863	4.88095	4.97074
Element/Wavelength	Si2124	Sm3592	Sn1899	Sr2165	Ta2685
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.99352	0.0311244	-0.000258352	4.94773	-0.0410116
Std Dev:	0.0192747	0.00315761	0.00210123	0.0034246	0.0049473
%RSD:	0.385995	10.1451	813.32	0.0692154	12.0632
Repeat: 1	5.00847	0.0333296	-0.00123306	4.94685	-0.0404743
Repeat: 2	5.00031	0.0325365	0.00215322	4.94484	-0.0363549
Repeat: 3	4.97177	0.0275072	-0.00169521	4.95151	-0.0462056

Element/Wavelength	Te2142	Th2832	Ti3372	Tl1908	U_3859
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00304498	-0.0391943	4.86198	0.0184168	0.0559954
Std Dev:	0.00233929	0.00325543	0.0320132	0.00392268	0.00640855
%RSD:	76.8245	8.30589	0.658439	21.2995	11.4448
Repeat: 1	0.00564335	-0.042933	4.89768	0.0208914	0.0506998
Repeat: 2	0.00110655	-0.0376627	4.85245	0.0138939	0.0541669
Repeat: 3	0.00238504	-0.0369871	4.83581	0.0204649	0.0631194
Element/Wavelength	V_3093	W_2397	Y_3195	Zn2138	Zr3438
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	5.0086	0.000362873	i -0.000223983	4.98376	5.03528
Std Dev:	0.0365521	0.00219576	0.000704589	0.00943056	0.0352475
%RSD:	0.729787	605.105	314.572	0.189226	0.700011
Repeat: 1	5.04975	0.00264288	-0.000351677	4.98691	5.07471
Repeat: 2	4.99615	-0.00173763	-0.000855992	4.99121	5.02431
Repeat: 3	4.9799	0.000183377	0.00053572	4.97316	5.00682

Sample Name	Acquisition Date	Sample type	Correction Factor
CCV B	6/14/2013 12:12:34 PM	QC	1.00
Autosampler Locations		**Analyst Name**	**Method Name**
1/12/1		awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Ag3280	Al3961	As1890	B_2497	Ba2335
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00357612	0.00269706	0.00986789	-0.021228	0.00501708
Std Dev:	0.00166168	0.00155732	0.00258719	0.00148837	0.000298792
%RSD:	46.466	57.7415	26.2183	7.01139	5.95551
Repeat: 1	0.00503349	0.00100739	0.0085724	-0.0195223	0.00501127
Repeat: 2	0.00392829	0.00300898	0.0128469	-0.0218983	0.00472123
Repeat: 3	0.00176659	0.00407482	0.00818435	-0.0222633	0.00531873
Element/Wavelength	Be2348	Bi2230	Ca1840	Cd2265	Ce5353
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.000241605	-0.0583208	-0.161684	-0.000196937	5.03856
Std Dev:	8.96633e-005	0.00178662	0.00206314	0.000313793	0.0417974
%RSD:	37.1115	3.06344	1.27603	159.337	0.82955
Repeat: 1	-0.000345088	-0.0574789	-0.164031	-0.000381747	5.08675
Repeat: 2	-0.000192687	-0.0571106	-0.160866	-0.000374438	5.01682
Repeat: 3	-0.000187041	-0.0603728	-0.160156	0.000165375	5.01212
Element/Wavelength	Co2286	Cr2677	Cu3273	Eu3819	Fe2599
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.00172043	0.00307589	0.0202649	5.15373	-0.0443264
Std Dev:	0.00016985	0.000379725	0.00126172	0.0495578	0.000329178
%RSD:	9.87252	12.3452	6.22613	0.961592	0.742623
Repeat: 1	-0.00191606	0.00272266	0.0203077	5.2093	-0.0445202
Repeat: 2	-0.00163473	0.00347747	0.0215048	5.13775	-0.0439464
Repeat: 3	-0.00161051	0.00302754	0.0189824	5.11413	-0.0445127

Element/Wavelength	K_7664	La3794	Li6707	Mg2852	Mn2605
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00192153	-0.00581449	0.00731364	-0.000438327	-0.00103538
Std Dev:	0.00490974	0.00026716	0.000226414	0.000426664	0.000206866
%RSD:	255.512	4.59473	3.09578	97.3391	19.9797
Repeat: 1	0.00346679	-0.00611922	0.00705713	-0.000887458	-0.00094834
Repeat: 2	-0.00357494	-0.0057037	0.00748566	-0.000389129	-0.000886262
Repeat: 3	0.00587275	-0.00562055	0.00739812	-3.83953e-005	-0.00127155
Element/Wavelength	Mo2020	Na8183	Nb3194	Nd4012	Ni2216
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.000330242	-0.303191	i 4.87684	5.13333	0.00820239
Std Dev:	0.000377839	0.0077349	0.0501103	0.0552933	0.000411334
%RSD:	114.413	2.55117	1.02751	1.07714	5.01481
Repeat: 1	0.000757386	-0.299763	4.93432	5.19325	0.00773393
Repeat: 2	0.000193636	-0.297762	4.85389	5.12246	0.00836877
Repeat: 3	3.97052e-005	-0.312047	4.84232	5.08428	0.00850448
Element/Wavelength	P_1774	Pb2203	Pd3242	Pr4143	Rb7800
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00191337	0.328698	5.07815	5.05732	5.07942
Std Dev:	0.00295154	0.0022902	0.0533497	0.0644193	0.0411283
%RSD:	154.258	0.696749	1.05057	1.27379	0.809705
Repeat: 1	0.00172122	0.326107	5.13966	5.13154	5.12606
Repeat: 2	0.00495629	0.329537	5.05028	5.02449	5.06389
Repeat: 3	-0.000937393	0.33045	5.04451	5.01592	5.04833
Element/Wavelength	Rh3434	Ru2402	S_1807	Sb2175	Se1960
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.99747	4.87808	0.00803185	0.605243	0.000396205
Std Dev:	0.0507097	0.0595984	0.00228382	0.0133999	0.00195323
%RSD:	1.01471	1.22176	28.4345	2.21397	492.983
Repeat: 1	5.05265	4.94688	0.00838161	0.606382	0.00225823
Repeat: 2	4.98686	4.84474	0.00559334	0.591311	-0.00163696
Repeat: 3	4.95291	4.8426	0.0101206	0.618038	0.000567345
Element/Wavelength	Si2124	Sm3592	Sn1899	Sr2165	Ta2685
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.292559	5.09448	4.78976	-0.00487489	4.96999
Std Dev:	0.00857593	0.0471256	0.0147259	0.00195367	0.0505078
%RSD:	2.93135	0.925032	0.307446	40.0761	1.01626
Repeat: 1	0.283289	5.14866	4.80657	-0.00379854	5.02778
Repeat: 2	0.294176	5.07178	4.77916	-0.00713001	4.9479
Repeat: 3	0.300211	5.06301	4.78354	-0.00369612	4.9343
Element/Wavelength	Te2142	Th2832	Ti3372	Tl1908	U_3859
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	4.82899	4.9814	-0.00413775	4.75547	5.06578
Std Dev:	0.0270337	0.0599235	0.000176869	0.0105925	0.0585712
%RSD:	0.559821	1.20294	4.27453	0.222744	1.15621
Repeat: 1	4.80844	5.04979	-0.00428837	4.76769	5.12588
Repeat: 2	4.8189	4.95634	-0.00394299	4.74984	5.06258
Repeat: 3	4.85961	4.93808	-0.00418189	4.74888	5.00887

Element/Wavelength	V_3093	W_2397	Y_3195	Zn2138	Zr3438
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00333681	4.98045	i 4.96676	-0.008072	0.00223446
Std Dev:	8.99353e-005	0.0573582	0.0511398	0.000377418	0.00037406
%RSD:	2.69525	1.15167	1.02964	4.67564	16.7405
Repeat: 1	0.00340071	5.04544	5.02542	-0.00788592	0.00251218
Repeat: 2	0.00337576	4.959	4.94324	-0.00850632	0.00180911
Repeat: 3	0.00323397	4.9369	4.9316	-0.00782375	0.00238208

Sample Name	Acquisition Date	Sample type	Correction Factor
LLS A	6/14/2013 12:17:14 PM	QC	1.00

Autosampler Locations	Analyst Name	Method Name
1/1/2	awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Ag3280	Al3961	As1890	B_2497	Ba2335
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.0191742	0.100053	0.19542	0.079189	0.00966649
Std Dev:	0.00351842	0.000125353	0.00350306	0.000244677	0.000337868
%RSD:	18.3498	0.125287	1.79258	0.308978	3.49525
Repeat: 1	0.01537	0.100112	0.196542	0.0794592	0.00927698
Repeat: 2	0.0198411	0.0999086	0.191494	0.0789823	0.00988041
Repeat: 3	0.0223114	0.100137	0.198225	0.0791254	0.00984207
Element/Wavelength	Be2348	Bi2230	Ca1840	Cd2265	Ce5353
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00202395	0.202747	0.189382	0.0103213	0.216243
Std Dev:	5.7728e-005	0.00254466	0.00239368	0.000275079	0.00265656
%RSD:	2.85225	1.25509	1.26394	2.66516	1.2285
Repeat: 1	0.00208028	0.204587	0.190562	0.0100059	0.213778
Repeat: 2	0.00196492	0.199843	0.190956	0.0105111	0.219056
Repeat: 3	0.00202664	0.20381	0.186627	0.010447	0.215895
Element/Wavelength	Co2286	Cr2677	Cu3273	Eu3819	Fe2599
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.041173	0.0211193	0.0216863	6.18081e-005	0.0465434
Std Dev:	0.000128001	0.000740366	0.000887715	6.33414e-005	0.000168332
%RSD:	0.310885	3.50564	4.09344	102.481	0.361666
Repeat: 1	0.041078	0.0219335	0.0213659	3.31983e-005	0.0467118
Repeat: 2	0.0411225	0.0209378	0.0210032	1.78187e-005	0.0463752
Repeat: 3	0.0413186	0.0204865	0.0226897	0.000134407	0.0465432
Element/Wavelength	K_7664	La3794	Li6707	Mg2852	Mn2605
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	1.05374	0.010677	0.0231559	0.210905	0.0205997
Std Dev:	0.00753729	0.000763929	0.00033147	0.000988453	0.000367694
%RSD:	0.715292	7.1549	1.43147	0.468673	1.78495
Repeat: 1	1.06154	0.0115591	0.0235208	0.212032	0.0209885
Repeat: 2	1.0465	0.0102305	0.0228735	0.210493	0.0205529
Repeat: 3	1.05317	0.0102414	0.0230734	0.210189	0.0202576

Element/Wavelength	Mo2020	Na8183	Nb3194	Nd4012	Ni2216
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.0989295	0.215053	i -0.000975861	0.102669	0.0405388
Std Dev:	0.000882958	0.0398718	0.00187938	0.00082913	0.000227354
%RSD:	0.892513	18.5405	192.586	0.807577	0.560829
Repeat: 1	0.0979902	0.169737	0.00119305	0.102904	0.0403921
Repeat: 2	0.0990556	0.244752	-0.00212296	0.101748	0.0408007
Repeat: 3	0.0997426	0.23067	-0.00199767	0.103355	0.0404236
Element/Wavelength	P_1774	Pb2203	Pd3242	Pr4143	Rb7800
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.396595	0.20017	-0.00145216	0.00538368	0.00852804
Std Dev:	0.00765035	0.00328789	0.00443714	0.00499605	0.0104742
%RSD:	1.92901	1.64255	305.555	92.7999	122.82
Repeat: 1	0.401042	0.196661	-0.00323159	0.0008173	0.00660566
Repeat: 2	0.387761	0.20318	-0.00472339	0.01072	-0.00085177
Repeat: 3	0.400982	0.20067	0.0035985	0.00461374	0.0198302
Element/Wavelength	Rh3434	Ru2402	S_1807	Sb2175	Se1960
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00400984	-0.00126279	0.196731	0.0996505	0.203853
Std Dev:	0.00455654	0.000783037	0.00595376	0.00683801	0.0103417
%RSD:	113.634	62.0084	3.02635	6.86199	5.07308
Repeat: 1	-0.0012516	-0.00137492	0.19894	0.0955142	0.215436
Repeat: 2	0.00663751	-0.00198372	0.201264	0.095894	0.195545
Repeat: 3	0.0066436	-0.000429735	0.189988	0.107543	0.20058
Element/Wavelength	Si2124	Sm3592	Sn1899	Sr2165	Ta2685
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.123384	0.139488	-0.0025247	0.0210713	-0.00295539
Std Dev:	0.0079812	0.00128602	0.00285876	0.000287898	0.00647912
%RSD:	6.46858	0.921957	113.232	1.3663	219.231
Repeat: 1	0.132555	0.140971	-0.00311675	0.0207523	0.00290968
Repeat: 2	0.118006	0.138811	-0.00504108	0.0211496	-0.00186552
Repeat: 3	0.119592	0.138682	0.000583733	0.021312	-0.00991033
Element/Wavelength	Te2142	Th2832	Ti3372	Tl1908	U_3859
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.00330381	-0.00438293	0.0194026	0.378278	0.528288
Std Dev:	0.00202251	0.00288219	7.68069e-005	0.00369581	0.0225319
%RSD:	61.2176	65.7594	0.395858	0.977009	4.26508
Repeat: 1	-0.00335831	-0.00159994	0.0193179	0.377757	0.5495
Repeat: 2	-0.00529851	-0.00735501	0.0194222	0.382207	0.530728
Repeat: 3	-0.00125459	-0.00419385	0.0194678	0.374871	0.504635
Element/Wavelength	V_3093	W_2397	Y_3195	Zn2138	Zr3438
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.0508893	-0.00367884	i 0.000826855	0.0191586	0.0209116
Std Dev:	0.000311444	0.00296653	0.000552112	3.59325e-005	0.000120181
%RSD:	0.612002	80.6377	66.7726	0.187553	0.574711
Repeat: 1	0.0512383	-0.00679421	0.000529062	0.0191172	0.0207741
Repeat: 2	0.0506397	-0.0033545	0.00146393	0.019177	0.0209638
Repeat: 3	0.0507899	-0.000887803	0.000487574	0.0191817	0.0209968

Sample Name	Acquisition Date	Sample type	Correction Factor
LLS B	6/14/2013 12:22:01 PM	QC	1.00
Autosampler Locations		**Analyst Name**	**Method Name**
1/2/2		awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Ag3280	Al3961	As1890	B_2497	Ba2335
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00103215	0.00544254	0.00335609	-0.0204824	-0.000335247
Std Dev:	0.000342933	0.00122755	0.00394297	0.000464133	0.00045521
%RSD:	33.2253	22.5546	117.487	2.26601	135.783
Repeat: 1	0.00123252	0.00544082	0.00487313	-0.020321	-0.000830545
Repeat: 2	0.00122775	0.00667095	-0.00112008	-0.0210057	6.48021e-005
Repeat: 3	0.000636169	0.00421586	0.00631522	-0.0201206	-0.000239998
Element/Wavelength	Be2348	Bi2230	Ca1840	Cd2265	Ce5353
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-2.26239e-005	0.00416168	0.00451595	-0.000129842	0.0180377
Std Dev:	3.7179e-005	0.00518813	0.00143886	0.0001267	0.00217859
%RSD:	164.335	124.664	31.8618	97.5802	12.078
Repeat: 1	1.87805e-005	0.00584186	0.00617611	-0.000174213	0.0196338
Repeat: 2	-5.31514e-005	-0.00165832	0.00374246	1.30759e-005	0.0189236
Repeat: 3	-3.35008e-005	0.00830149	0.00362927	-0.000228388	0.0155557
Element/Wavelength	Co2286	Cr2677	Cu3273	Eu3819	Fe2599
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.000339994	0.00115163	-0.00154289	0.103504	0.000680501
Std Dev:	0.000297296	0.000781756	0.00080958	0.00064781	0.000592226
%RSD:	87.4415	67.8828	52.4718	0.625877	87.028
Repeat: 1	0.000575529	0.00204662	-0.00219577	0.104243	0.000926479
Repeat: 2	0.000438507	0.000806042	-0.000637023	0.103033	0.0011101
Repeat: 3	5.94621e-006	0.000602217	-0.00179587	0.103237	4.92413e-006
Element/Wavelength	K_7664	La3794	Li6707	Mg2852	Mn2605
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.00806764	-0.000220769	1.18063e-006	0.00109114	0.000262933
Std Dev:	0.00478084	0.000648842	4.64597e-005	0.00031514	0.000111244
%RSD:	59.2595	293.9	3935.16	28.8818	42.309
Repeat: 1	-0.00406965	0.00049663	2.80046e-005	0.00143256	0.000135092
Repeat: 2	-0.00676989	-0.000392387	2.80037e-005	0.00102943	0.000337706
Repeat: 3	-0.0133634	-0.00076655	-5.24664e-005	0.000811409	0.000316002
Element/Wavelength	Mo2020	Na8183	Nb3194	Nd4012	Ni2216
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.000160151	-0.021937	i 0.0942965	0.000382492	0.000461862
Std Dev:	0.000342293	0.0458715	5.68844e-005	0.00197107	0.000183185
%RSD:	213.731	209.106	0.0603251	515.324	39.6624
Repeat: 1	1.93665e-005	0.0249804	0.0943433	-0.00157712	0.000255985
Repeat: 2	-0.00055486	-0.0241057	0.0942332	0.00236483	0.000522753
Repeat: 3	5.50395e-005	-0.0666857	0.0943129	0.00035976	0.000606847

Element/Wavelength	P_1774	Pb2203	Pd3242	Pr4143	Rb7800
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00393539	0.00214797	0.995331	0.103109	2.07338
Std Dev:	0.00169464	0.000593089	0.00620378	0.0029285	0.005057
%RSD:	43.0615	27.6115	0.623288	2.84021	0.243902
Repeat: 1	0.00566119	0.00157474	0.996976	0.106011	2.0705
Repeat: 2	0.00227374	0.00211008	1.00055	0.100155	2.07041
Repeat: 3	0.00387125	0.0027591	0.98847	0.10316	2.07922
Element/Wavelength	Rh3434	Ru2402	S_1807	Sb2175	Se1960
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.104316	0.097995	-0.000718923	0.0137318	0.00444774
Std Dev:	0.00113844	0.000821234	0.00402011	0.00659499	0.00453589
%RSD:	1.09134	0.838036	559.185	48.0271	101.982
Repeat: 1	0.103212	0.0974533	0.00327058	0.00936865	-6.70215e-005
Repeat: 2	0.104249	0.0989399	-0.000658406	0.0105082	0.00440578
Repeat: 3	0.105486	0.0975918	-0.00476895	0.0213186	0.00900447
Element/Wavelength	Si2124	Sm3592	Sn1899	Sr2165	Ta2685
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.038244	0.0330253	0.0956359	0.00246767	0.984672
Std Dev:	0.00413232	0.00291739	0.00411597	0.000475724	0.00177203
%RSD:	10.8051	8.83378	4.30379	19.2783	0.179961
Repeat: 1	0.0360875	0.0318736	0.0909951	0.00254998	0.985517
Repeat: 2	0.0356362	0.0363428	0.0988442	0.00289687	0.985864
Repeat: 3	0.0430085	0.0308596	0.0970686	0.00195616	0.982636
Element/Wavelength	Te2142	Th2832	Ti3372	Tl1908	U_3859
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	1.00838	0.0979043	-0.000194937	0.00207182	0.00822084
Std Dev:	0.00714925	0.00184672	0.000212121	0.000552982	0.00290566
%RSD:	0.708984	1.88625	108.816	26.6907	35.345
Repeat: 1	1.00849	0.0975413	-0.000326603	0.00217378	0.00704465
Repeat: 2	1.00118	0.0999056	-0.000307971	0.00256672	0.00608767
Repeat: 3	1.01548	0.0962661	4.97636e-005	0.00147495	0.0115302
Element/Wavelength	V_3093	W_2397	Y_3195	Zn2138	Zr3438
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.000242962	1.00272	i 0.102493	0.00107193	0.000457045
Std Dev:	2.71076e-005	0.00671026	0.00119648	0.000237112	0.000257108
%RSD:	11.1571	0.669207	1.16737	22.1202	56.2544
Repeat: 1	0.00021175	1.00827	0.102055	0.00130469	0.000329679
Repeat: 2	0.000256526	1.00462	0.103847	0.000830694	0.000752973
Repeat: 3	0.000260611	0.995261	0.101578	0.00108039	0.000288483

Sample Name	Acquisition Date	Sample type	Correction Factor
Na LLS	6/14/2013 12:26:48 PM	QC	1.00
Autosampler Locations		**Analyst Name**	**Method Name**
1/4/2		awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Ag3280	Al3961	As1890	B_2497	Ba2335
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.000881112	-0.00140529	-0.00300559	-0.0240239	-0.00013241
Std Dev:	0.00144934	0.000886553	0.00204281	0.000493261	0.000517741
%RSD:	164.489	63.0868	67.9669	2.0532	391.014
Repeat: 1	0.00211333	-0.000392145	-0.00399675	-0.0238752	-0.00070018
Repeat: 2	-0.000715711	-0.00203886	-0.000656294	-0.0245745	0.000313598
Repeat: 3	0.00124572	-0.00178487	-0.00436373	-0.0236222	-1.06484e-005
Element/Wavelength	Be2348	Bi2230	Ca1840	Cd2265	Ce5353
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-2.35432e-005	-0.00339537	-0.00303169	-0.000101851	0.0248879
Std Dev:	5.42997e-005	0.00584066	0.000279422	0.00012135	0.00289579
%RSD:	230.639	172.019	9.2167	119.144	11.6353
Repeat: 1	-1.03031e-005	-0.00141778	-0.00325686	-0.000240745	0.0279717
Repeat: 2	-8.32385e-005	-0.00996808	-0.00311923	-4.84394e-005	0.0222264
Repeat: 3	2.29121e-005	0.00119976	-0.00271898	-1.63686e-005	0.0244657
Element/Wavelength	Co2286	Cr2677	Cu3273	Eu3819	Fe2599
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	8.64712e-006	0.00106117	-0.000180917	6.73448e-005	3.48649e-005
Std Dev:	0.000264903	0.000282737	0.000336011	0.000103512	0.000459273
%RSD:	3063.49	26.6439	185.727	153.705	1317.29
Repeat: 1	-3.0706e-006	0.00104854	-0.000555875	-2.96409e-005	0.000558042
Repeat: 2	0.000279215	0.00135001	9.2922e-005	5.53392e-005	-0.000151583
Repeat: 3	-0.000250203	0.00078496	-7.97968e-005	0.000176336	-0.000301864
Element/Wavelength	K_7664	La3794	Li6707	Mg2852	Mn2605
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00263469	0.000204657	-2.46171e-005	8.69233e-005	-0.000179582
Std Dev:	0.00825531	0.000446386	0.000206288	0.000265468	0.000113312
%RSD:	313.331	218.115	837.986	305.405	63.0974
Repeat: 1	0.00852137	0.000419165	0.000179132	-0.000177895	-0.000268256
Repeat: 2	0.00618446	-0.000308492	-0.000233353	0.000353037	-0.000218565
Repeat: 3	-0.00680176	0.000503297	-1.96311e-005	8.56281e-005	-5.19252e-005
Element/Wavelength	Mo2020	Na8183	Nb3194	Nd4012	Ni2216
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.000520944	1.07268	i -0.00189667	-0.00244601	6.90881e-005
Std Dev:	0.000186239	0.0101555	0.00135647	0.00156845	0.000527184
%RSD:	35.7503	0.946739	71.5187	64.1226	763.061
Repeat: 1	-0.000544313	1.07707	-0.000455122	-0.000795399	0.000671949
Repeat: 2	-0.000324123	1.06107	-0.00208689	-0.00391679	-0.000305431
Repeat: 3	-0.000694395	1.07991	-0.00314798	-0.00262585	-0.000159254
Element/Wavelength	P_1774	Pb2203	Pd3242	Pr4143	Rb7800
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00331797	-0.00309995	-0.00399713	0.00167853	0.026374
Std Dev:	0.00183801	0.00435173	0.00443631	0.00337126	0.00659744
%RSD:	55.3956	140.381	110.987	200.846	25.0149
Repeat: 1	0.00540363	-0.0055629	0.000643672	0.00472286	0.0232774
Repeat: 2	0.00193482	-0.00566161	-0.00443922	0.0022574	0.0218945
Repeat: 3	0.00261548	0.00192467	-0.00819584	-0.00194469	0.0339501

Element/Wavelength	Rh3434	Ru2402	S_1807	Sb2175	Se1960
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00889701	-0.0011674	0.000307765	0.00139313	-0.0012218
Std Dev:	0.00375411	0.00141415	0.00629023	0.00343757	0.00860483
%RSD:	42.1952	121.136	2043.84	246.752	704.277
Repeat: 1	0.00615198	-9.68092e-005	0.00591255	-0.00233179	0.000124499
Repeat: 2	0.013175	-0.00277049	0.00150622	0.00444328	0.00663053
Repeat: 3	0.00736402	-0.000634903	-0.00649548	0.0020679	-0.0104204
Element/Wavelength	Si2124	Sm3592	Sn1899	Sr2165	Ta2685
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00204495	0.0338289	-0.00175543	0.00157491	-0.00477338
Std Dev:	0.00106028	0.00361233	0.000386043	0.000752619	0.0051153
%RSD:	51.8489	10.6783	21.9913	47.7881	107.163
Repeat: 1	0.000912321	0.0340467	-0.00131502	0.00157613	0.000767703
Repeat: 2	0.00220869	0.0301125	-0.0020353	0.00232692	-0.00931553
Repeat: 3	0.00301384	0.0373274	-0.00191597	0.00082168	-0.0057723
Element/Wavelength	Te2142	Th2832	Ti3372	Tl1908	U_3859
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00159745	0.000424308	-0.000214484	-0.00187559	0.0108925
Std Dev:	0.0038042	0.00294995	0.000131172	0.00360695	0.00619594
%RSD:	238.142	695.238	61.1572	192.31	56.8826
Repeat: 1	0.00218446	-0.00176752	-0.000107487	-0.00323044	0.00636509
Repeat: 2	0.00507403	-0.000737898	-0.000175139	-0.00460895	0.0179538
Repeat: 3	-0.00246614	0.00377835	-0.000360825	0.00221261	0.00835865
Element/Wavelength	V_3093	W_2397	Y_3195	Zn2138	Zr3438
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.000209088	-0.00168966	i 0.000228713	-0.000521287	0.000716271
Std Dev:	0.000472925	0.00458006	0.000965083	0.000240146	0.000251689
%RSD:	226.185	271.065	421.962	46.068	35.1388
Repeat: 1	8.23715e-005	-0.00561552	-0.000429148	-0.00045459	0.000848545
Repeat: 2	0.000732463	0.0033421	-0.000221329	-0.000787731	0.000874244
Repeat: 3	-0.00018757	-0.00279555	0.00133662	-0.000321539	0.000426024

Sample Name	Acquisition Date	Sample type	Correction Factor
CCB	6/14/2013 12:31:38 PM	QC	1.00
Autosampler Locations		**Analyst Name**	**Method Name**
1/10/1		awg	iCAP 6500 130308 (1)

Concentration

Element/Wavelength	Ag3280	Al3961	As1890	B_2497	Ba2335
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.000792254	-0.000413463	-0.00555616	-0.0245238	-0.000849814
Std Dev:	0.000892466	0.00278148	0.00448774	0.000686256	0.000715384
%RSD:	112.649	672.727	80.7705	2.79832	84.1813
Repeat: 1	0.000229307	-0.00361256	-0.0103687	-0.0238656	-0.000137774
Repeat: 2	0.000326189	0.000939176	-0.00148572	-0.0244709	-0.000843171
Repeat: 3	0.00182127	0.00143299	-0.00481408	-0.025235	-0.0015685

Element/Wavelength	Be2348	Bi2230	Ca1840	Cd2265	Ce5353
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	1.1494e-005	0.00339985	-0.00304398	3.77942e-005	0.00817141
Std Dev:	6.09092e-005	0.0102665	0.00197683	0.000338735	0.00468348
%RSD:	529.923	301.968	64.9424	896.26	57.3154
Repeat: 1	6.33888e-006	-0.00697486	-0.00232684	0.000200418	0.00778004
Repeat: 2	7.48169e-005	0.0135545	-0.0015258	-0.000351586	0.00369589
Repeat: 3	-4.66739e-005	0.00361988	-0.00527928	0.000264551	0.0130383
Element/Wavelength	Co2286	Cr2677	Cu3273	Eu3819	Fe2599
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.000167303	0.000966619	-0.000179581	9.42479e-005	0.000152455
Std Dev:	0.000414418	0.000319443	0.000808638	0.000105535	0.000119485
%RSD:	247.704	33.0474	450.291	111.976	78.3737
Repeat: 1	3.3723e-005	0.00105443	-0.000447438	8.59713e-005	0.000236636
Repeat: 2	0.000108259	0.00123297	-0.000820304	0.000203677	1.56979e-005
Repeat: 3	-0.000643893	0.000612453	0.000728998	-6.90503e-006	0.000205032
Element/Wavelength	K_7664	La3794	Li6707	Mg2852	Mn2605
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	-0.00976589	2.84901e-005	3.55119e-005	-9.66301e-005	0.000126904
Std Dev:	0.0116288	0.000252734	0.000409246	0.000134301	0.000199426
%RSD:	119.076	887.093	1152.42	138.985	157.147
Repeat: 1	0.00275268	0.00030702	0.000467748	-0.000117708	0.000153186
Repeat: 2	-0.0118187	-3.53433e-005	-1.51939e-005	-0.000219146	-8.43601e-005
Repeat: 3	-0.0202316	-0.000186207	-0.000346018	4.69634e-005	0.000311885
Element/Wavelength	Mo2020	Na8183	Nb3194	Nd4012	Ni2216
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.000329076	-0.0149357	i 0.000654119	-0.000287092	4.75625e-005
Std Dev:	0.000598761	0.023343	0.00112075	0.00278345	0.000213585
%RSD:	181.952	156.29	171.337	969.532	449.063
Repeat: 1	-0.000202447	-0.00120384	-0.000608184	-0.00146865	-0.000129477
Repeat: 2	0.000977757	-0.00171495	0.00153229	0.00289223	-1.2617e-005
Repeat: 3	0.000211919	-0.0418882	0.00103825	-0.00228485	0.000284781
Element/Wavelength	P_1774	Pb2203	Pd3242	Pr4143	Rb7800
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.0025476	-0.00306489	-0.00400596	0.00978877	0.000290834
Std Dev:	0.00439265	0.00363292	0.00685068	0.00054327	0.0313133
%RSD:	172.423	118.533	171.012	5.54994	10766.7
Repeat: 1	0.0072835	-0.00622816	-0.00875744	0.0103999	0.0331192
Repeat: 2	0.00175248	-0.00386933	0.00384695	0.00936046	-0.00299889
Repeat: 3	-0.00139319	0.000902825	-0.00710738	0.009606	-0.0292478
Element/Wavelength	Rh3434	Ru2402	S_1807	Sb2175	Se1960
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00318461	-0.00135654	-0.00186598	0.00272065	-0.00670245
Std Dev:	0.00324278	0.000819732	0.00270776	0.00439903	0.00396172
%RSD:	101.826	60.4283	145.112	161.69	59.1085
Repeat: 1	0.00559695	-0.00190424	-0.00302898	0.00481942	-0.00245124
Repeat: 2	0.00445857	-0.00175124	-0.00379795	0.00567724	-0.0102911
Repeat: 3	-0.000501693	-0.000414121	0.00122899	-0.00233471	-0.00736498

Element/Wavelength	Si2124	Sm3592	Sn1899	Sr2165	Ta2685
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00217769	0.0319454	0.00011934	0.000296143	-0.0031481
Std Dev:	0.00142121	0.000532985	0.00213684	0.00102434	0.00619966
%RSD:	65.262	1.66843	1790.54	345.892	196.933
Repeat: 1	0.000697644	0.0320511	-0.000532233	-0.000885719	-0.00904601
Repeat: 2	0.00230378	0.0313675	0.00250612	0.000927872	0.00331465
Repeat: 3	0.00353165	0.0324176	-0.00161586	0.000846277	-0.00371295
Element/Wavelength	Te2142	Th2832	Ti3372	Tl1908	U_3859
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00209233	0.00196657	-0.000167935	-0.00168704	0.0106524
Std Dev:	0.00408493	0.00218749	0.000307552	0.00475843	0.00646236
%RSD:	195.234	111.233	183.138	282.058	60.6657
Repeat: 1	0.00529737	0.00435789	0.000178001	-0.0032372	0.00686034
Repeat: 2	-0.00250726	6.64302e-005	-0.00027137	-0.00547709	0.00698273
Repeat: 3	0.00348688	0.0014754	-0.000410435	0.00365317	0.0181142
Element/Wavelength	V_3093	W_2397	Y_3195	Zn2138	Zr3438
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.000324985	-0.00297175	i 0.00160263	-0.000428013	0.000427642
Std Dev:	0.000416246	0.00343262	0.000434812	0.000253476	0.000354359
%RSD:	128.082	115.509	27.1311	59.2216	82.8635
Repeat: 1	-3.11631e-005	-0.00516877	0.00134105	-0.000217143	0.000126692
Repeat: 2	0.000782576	0.00098381	0.00210456	-0.000357662	0.000338029
Repeat: 3	0.000223542	-0.00473028	0.00136229	-0.000709233	0.000818204

Sample Name	Acquisition Date	Sample type	Correction Factor
MDL 3 .005ppm	6/14/2013 12:36:29 PM	Unknown	1.00
Autosampler Locations		**Analyst Name**	**Method Name**
1/1/4		awg	iCAP 6500 130308 (1)

Concentration

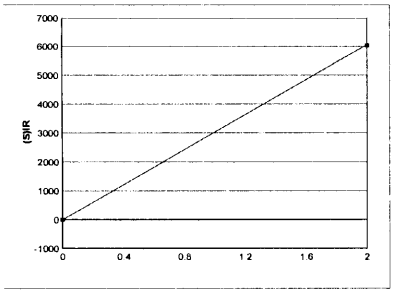
Element/Wavelength	Ag3280	Al3961	As1890	B_2497	Ba2335
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00163198	0.00729025	0.0035083	-0.0159897	0.00530245
Std Dev:	0.000921517	0.00249231	0.00127889	0.00104167	0.000233651
%RSD:	56.466	34.1869	36.4533	6.51461	4.40647
Repeat: 1	0.000922549	0.00446081	0.0031791	-0.0171371	0.00509516
Repeat: 2	0.00267352	0.00824963	0.00491961	-0.0157286	0.00555565
Repeat: 3	0.00129988	0.0091603	0.00242619	-0.0151035	0.00525654
Element/Wavelength	Be2348	Bi2230	Ca1840	Cd2265	Ce5353
Units:	ppm	ppm	ppm	ppm	ppm
Avg. of Repeats:	0.00478708	0.00755953	0.286086	0.00500341	0.00925041
Std Dev:	4.8796e-005	0.00771665	0.00238184	0.000321335	0.00487091
%RSD:	1.01933	102.078	0.832562	6.42232	52.6562
Repeat: 1	0.00473712	0.00113343	0.284708	0.0051226	0.00882573
Repeat: 2	0.0047895	0.0161182	0.284714	0.00524812	0.00460574
Repeat: 3	0.00483462	0.00542697	0.288837	0.00463951	0.0143198

Flexible Report By Sample

Author:

Published: 6/14/2013 1:35:53 PM

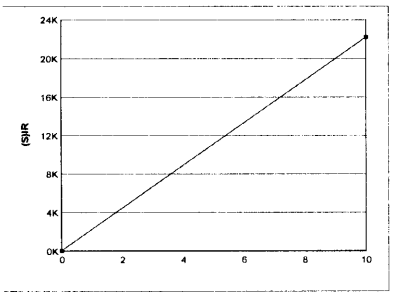
Method Name: iCAP 6500 130308 (1)



Element Name:	Ag
Element Wavelength:	Ag 328.068 nm
Concentration Units:	ppm
Date of Calibration:	6/14/2013 9:47:20 AM
Date of Fit:	6/14/2013 9:47:20 AM
Type of Fit:	Linear
Correlation:	1.00
A0 (Offset):	-11.9
A1 (Gain):	3,037
A2 (Curvature):	0.000
n (Exponent):	1.00

Reslope		QC Normalize	
Slope:	1.00	Slope factor:	1.00
Y Int:	0.000	Offset:	0.000

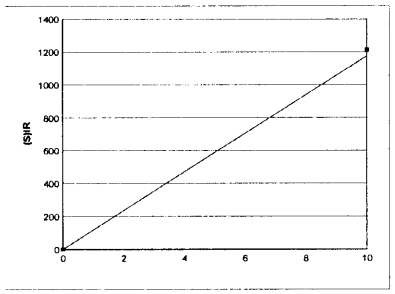
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.000	0.000	0.000	0.000	-11.9	2.21	1
Cal. Std. 1 - HS 50	2.00	2.00	0.000	0.000	6,041	26.3	1



Element Name:	Al
Element Wavelength:	Al 396.152 nm
Concentration Units:	ppm
Date of Calibration:	6/14/2013 9:47:20 AM
Date of Fit:	6/14/2013 9:47:20 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	37.11
A1 (Gain):	2,217
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope		QC Normalize	
Slope:	1.000	Slope factor:	1.000
Y Int:	0.0000	Offset:	0.0000

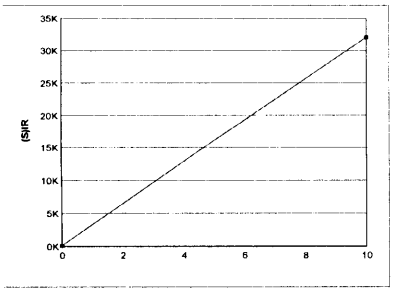
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	37.11	6.460	1
Cal. Std. 1 - HS 50	10.00	10.00	0.0000000000	0.0000000000	22,207	151.9	1



Element Name:	As
Element Wavelength:	As 189.042 nm
Concentration Units:	ppm
Date of Calibration:	6/14/2013 9:47:20 AM
Date of Fit:	6/14/2013 9:47:20 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	1.193
A1 (Gain):	117.4
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope		QC Normalize	
Slope:	1.000	Slope factor:	1.000
Y Int:	0.0000	Offset:	0.0000

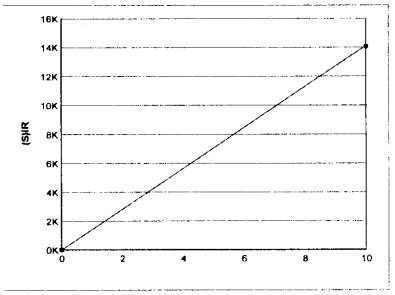
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	1.193	0.08192	1
Cal. Std. 1 - HS 50	10.00	10.00	0.0000000000	0.0000000000	1,212	3.257	1



Element Name:	B
Element Wavelength:	B 249.773 nm
Concentration Units:	ppm
Date of Calibration:	6/14/2013 9:51:59 AM
Date of Fit:	6/14/2013 9:51:59 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	98.10
A1 (Gain):	3,195
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope		QC Normalize	
Slope:	1.000	Slope factor:	1.000
Y Int:	0.0000	Offset:	0.0000

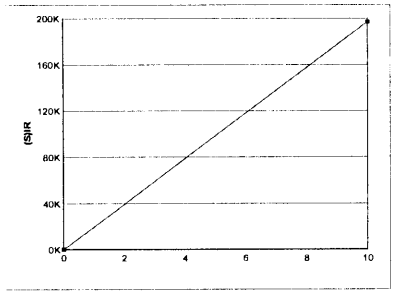
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	98.10	0.3915	1
Cal. Std. 2 - HS 29	10.00	10.00	0.0000	0.0000	32,048	212.4	1



Element Name:	Ba
Element Wavelength:	Ba 233.527 nm
Concentration Units:	ppm
Date of Calibration:	6/14/2013 9:47:20 AM
Date of Fit:	6/14/2013 9:47:20 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	2.538
A1 (Gain):	1,411
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope		QC Normalize	
Slope:	1.000	Slope factor:	1.000
Y Int:	0.0000	Offset:	0.0000

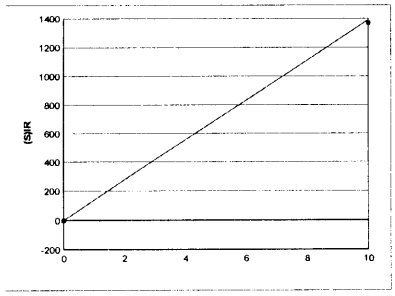
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	2.538	0.3630	1
Cal. Std. 1 - HS 50	10.00	10.00	0.0000000000	0.0000000000	14,081	23.15	1



Element Name:	Be
Element Wavelength:	Be 234.861 nm
Concentration Units:	ppm
Date of Calibration:	6/14/2013 9:47:20 AM
Date of Fit:	6/14/2013 9:47:20 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	0.2277
A1 (Gain):	19,701
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope		QC Normalize	
Slope:	1.000	Slope factor:	1.000
Y Int:	0.0000	Offset:	0.0000

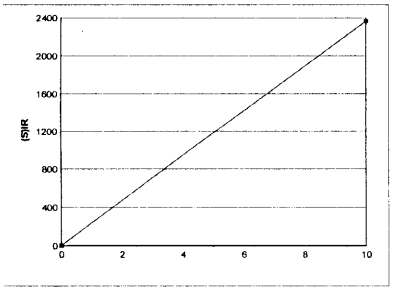
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	0.2277	1.002	1
Cal. Std. 1 - HS 50	10.00	10.00	0.0000000000	0.0000000000	196,995	797.0	1



Element Name:	Bi
Element Wavelength:	Bi 223.061 nm
Concentration Units:	ppm
Date of Calibration:	6/14/2013 9:47:20 AM
Date of Fit:	6/14/2013 9:47:20 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	-1.807
A1 (Gain):	139.0
A2 (Curvature):	0.0000
n (Exponent):	1.000

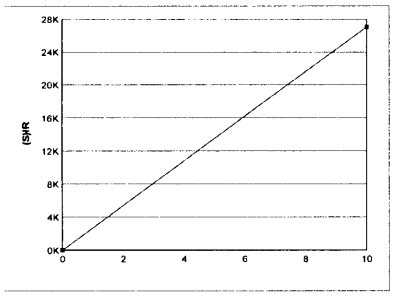
Reslope		QC Normalize	
Slope:	1.000	Slope factor:	1.000
Y Int:	0.0000	Offset:	0.0000

Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	-1.807	0.2107	1
Cal. Std. 1 - HS 50	10.00	10.000	0.0000000000	0.0000000000	1,367	5.033	1



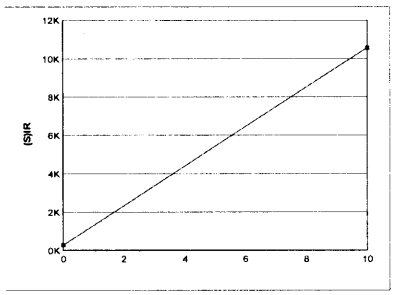
Element Name:	Ca
Element Wavelength:	Ca 184.006 nm
Concentration Units:	ppm
Date of Calibration:	6/14/2013 9:47:20 AM
Date of Fit:	6/14/2013 9:47:20 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	1.333
A1 (Gain):	236.3
A2 (Curvature):	0.0000
n (Exponent):	1.000
Reslope	**QC Normalize**
Slope: 1.000	**Slope factor:** 1.000
Y Int: 0.0000	**Offset:** 0.0000

Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	1.333	0.2689	1
Cal. Std. 1 - HS 50	10.00	10.00	0.0000	0.0000	2,364	9.439	1



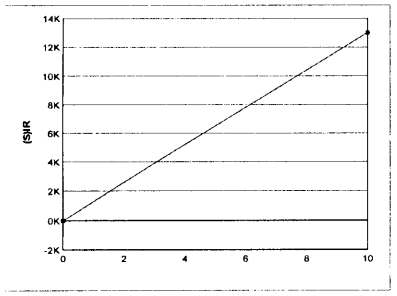
Element Name:	Cd
Element Wavelength:	Cd 226.502 nm
Concentration Units:	ppm
Date of Calibration:	6/14/2013 9:47:20 AM
Date of Fit:	6/14/2013 9:47:20 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	0.5244
A1 (Gain):	2,705
A2 (Curvature):	0.0000
n (Exponent):	1.000
Reslope	**QC Normalize**
Slope: 1.000	**Slope factor:** 1.000
Y Int: 0.0000	**Offset:** 0.0000

Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	0.5244	0.2655	1
Cal. Std. 1 - HS 50	10.00	10.00	0.0000	0.0000	27,053	61.94	1



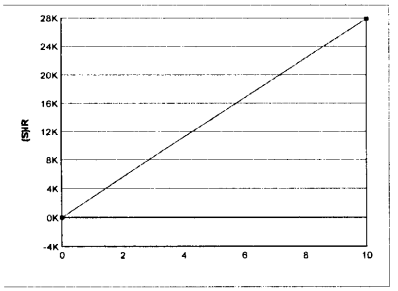
Element Name:	Ce
Element Wavelength:	Ce 535.353 nm
Concentration Units:	ppm
Date of Calibration:	6/14/2013 9:56:51 AM
Date of Fit:	6/14/2013 9:56:51 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	272.6
A1 (Gain):	1,029
A2 (Curvature):	0.0000
n (Exponent):	1.000
Reslope	**QC Normalize**
Slope: 1.000	**Slope factor:** 1.000
Y Int: 0.0000	**Offset:** 0.0000

Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	272.6	6.103	1
Cal. Std. 3 - HS 51	10.00	10.00	0.0000	0.0000	10,562	48.81	1



Element Name:	Co
Element Wavelength:	Co 228.616 nm
Concentration Units:	ppm
Date of Calibration:	6/14/2013 9:47:20 AM
Date of Fit:	6/14/2013 9:47:20 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	-1.002
A1 (Gain):	1,301
A2 (Curvature):	0.0000
n (Exponent):	1.000
Reslope	**QC Normalize**
Slope: 1.000	**Slope factor:** 1.000
Y Int: 0.0000	**Offset:** 0.0000

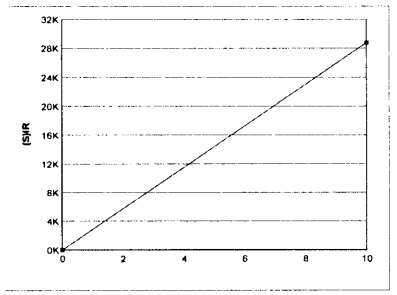
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	-1.002	1.141	1
Cal. Std. 1 - HS 50	10.00	10.00	0.0000000000	0.0000000000	13,014	15.88	1



Element Name:	Cr
Element Wavelength:	Cr 267.716 nm
Concentration Units:	ppm
Date of Calibration:	6/14/2013 9:47:20 AM
Date of Fit:	6/14/2013 9:47:20 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	-8.685
A1 (Gain):	2,793
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope		QC Normalize	
Slope:	1.000	**Slope factor:**	1.000
Y Int:	0.0000	**Offset:**	0.0000

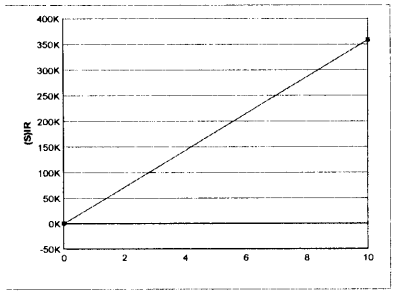
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	-8.685	1.699	1
Cal. Std. 1 - HS 50	10.00	10.00	0.0000	0.0000	27,929	90.80	1



Element Name:	Cu
Element Wavelength:	Cu 327.396 nm
Concentration Units:	ppm
Date of Calibration:	6/14/2013 9:47:20 AM
Date of Fit:	6/14/2013 9:47:20 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	4.637
A1 (Gain):	2,875
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope		QC Normalize	
Slope:	1.000	**Slope factor:**	1.000
Y Int:	0.0000	**Offset:**	0.0000

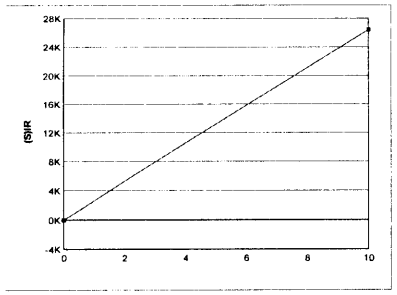
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	4.637	0.09159	1
Cal. Std. 1 - HS 50	10.00	10.000	0.0000000000	0.0000000000	28,765	221.9	1



Element Name:	Eu
Element Wavelength:	Eu 381.967 nm
Concentration Units:	ppm
Date of Calibration:	6/14/2013 9:56:51 AM
Date of Fit:	6/14/2013 9:56:51 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	-16.77
A1 (Gain):	35,841
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope		QC Normalize	
Slope:	1.000	**Slope factor:**	1.000
Y Int:	0.0000	**Offset:**	0.0000

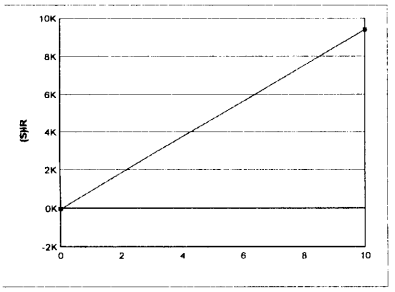
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	-16.77	3.096	1
Cal. Std. 3 - HS 51	10.00	10.00	0.0000000000	0.0000000000	359,088	4,798	1



Element Name:	Fe
Element Wavelength:	Fe 259.940 nm
Concentration Units:	ppm
Date of Calibration:	6/14/2013 9:47:20 AM
Date of Fit:	6/14/2013 9:47:20 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	-1.882
A1 (Gain):	2,640
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope		QC Normalize	
Slope:	1.000	**Slope factor:**	1.000
Y Int:	0.0000	**Offset:**	0.0000

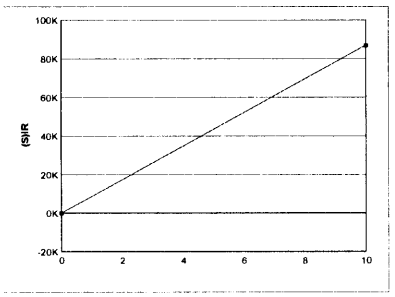
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	-1.882	0.9747	1
Cal. Std. 1 - HS 50	10.00	10.00	0.0000000000	0.0000000000	26,403	102.8	1



Element Name:	K
Element Wavelength:	K 766.490 nm
Concentration Units:	ppm
Date of Calibration:	6/14/2013 9:47:20 AM
Date of Fit:	6/14/2013 9:47:20 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	-48.55
A1 (Gain):	945.4
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope		QC Normalize	
Slope:	1.000	**Slope factor:**	1.000
Y Int:	0.0000	**Offset:**	0.0000

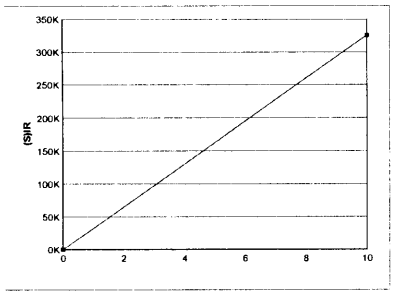
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	-48.55	11.15	1
Cal. Std. 1 - HS 50	10.00	10.000	0.0000000000	0.0000000000	9,406	84.83	1



Element Name:	La
Element Wavelength:	La 379.478 nm
Concentration Units:	ppm
Date of Calibration:	6/14/2013 9:47:20 AM
Date of Fit:	6/14/2013 9:47:20 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	-7.440
A1 (Gain):	8,683
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope		QC Normalize	
Slope:	1.000	**Slope factor:**	1.000
Y Int:	0.0000	**Offset:**	0.0000

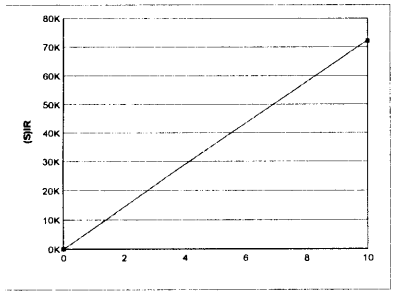
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	-7.440	3.509	1
Cal. Std. 1 - HS 50	10.00	10.00	0.0000	0.0000	86,615	439.4	1



Element Name:	Li
Element Wavelength:	Li 670.784 nm
Concentration Units:	ppm
Date of Calibration:	6/14/2013 9:47:20 AM
Date of Fit:	6/14/2013 9:47:20 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	40.72
A1 (Gain):	32,567
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope		QC Normalize	
Slope:	1.000	**Slope factor:**	1.000
Y Int:	0.0000	**Offset:**	0.0000

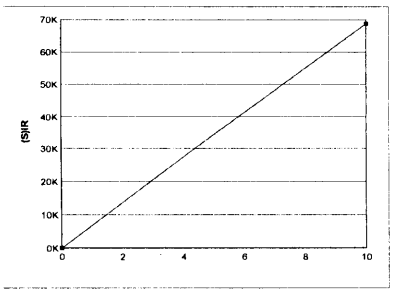
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	40.72	8.436	1
Cal. Std. 1 - HS 50	10.00	10.000	0.0000000000	0.0000000000	325,706	3,186	1



Element Name:	Mg
Element Wavelength:	Mg 285.213 nm
Concentration Units:	ppm
Date of Calibration:	6/14/2013 9:47:20 AM
Date of Fit:	6/14/2013 9:47:20 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	5.309
A1 (Gain):	7,227
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope		QC Normalize	
Slope:	1.000	**Slope factor:**	1.000
Y Int:	0.0000	**Offset:**	0.0000

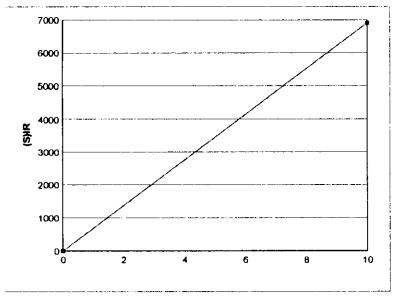
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	5.309	1.976	1
Cal. Std. 1 - HS 50	10.00	10.000	0.0000000000	0.0000000000	72,176	414.2	1



Element Name:	Mn
Element Wavelength:	Mn 260.569 nm
Concentration Units:	ppm
Date of Calibration:	6/14/2013 9:47:20 AM
Date of Fit:	6/14/2013 9:47:20 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	1.710
A1 (Gain):	6,873
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope		QC Normalize	
Slope:	1.000	**Slope factor:**	1.000
Y Int:	0.0000	**Offset:**	0.0000

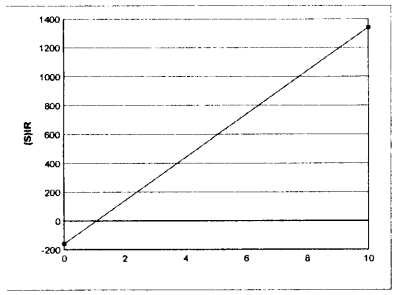
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	1.710	0.9533	1
Cal. Std. 1 - HS 50	10.00	10.00	0.0000	0.0000	68,756	200.0	1



Element Name:	Mo
Element Wavelength:	Mo 202.030 nm
Concentration Units:	ppm
Date of Calibration:	6/14/2013 9:51:59 AM
Date of Fit:	6/14/2013 9:51:59 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	0.9489
A1 (Gain):	690.5
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope		QC Normalize	
Slope:	1.000	**Slope factor:**	1.000
Y Int:	0.0000	**Offset:**	0.0000

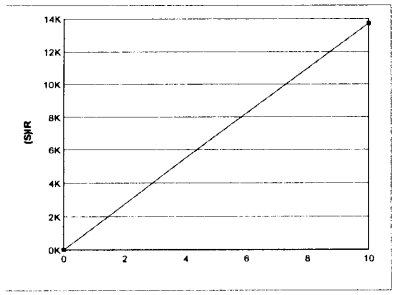
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	0.9489	0.5885	1
Cal. Std. 2 - HS 29	10.00	10.00	0.0000	0.0000	6,905	18.70	1



Element Name:	Na
Element Wavelength:	Na 818.326 nm
Concentration Units:	ppm
Date of Calibration:	6/14/2013 9:47:20 AM
Date of Fit:	6/14/2013 9:47:20 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	-158.2
A1 (Gain):	149.8
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope		QC Normalize	
Slope:	1.000	**Slope factor:**	1.000
Y Int:	0.0000	**Offset:**	0.0000

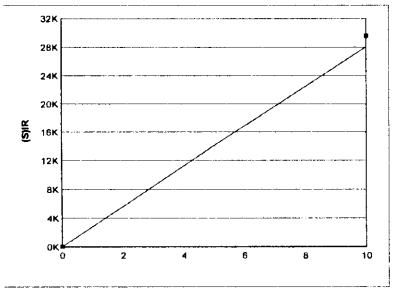
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	-158.2	5.551	1
Cal. Std. 1 - HS 50	10.00	10.000	0.0000000000	0.0000000000	1,340	19.13	1



Element Name:	Nb
Element Wavelength:	Nb 319.498 nm
Concentration Units:	ppm
Date of Calibration:	6/14/2013 10:06:21 AM
Date of Fit:	6/14/2013 10:06:21 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	13.65
A1 (Gain):	1,371
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope		QC Normalize	
Slope:	1.000	**Slope factor:**	1.000
Y Int:	0.0000	**Offset:**	0.0000

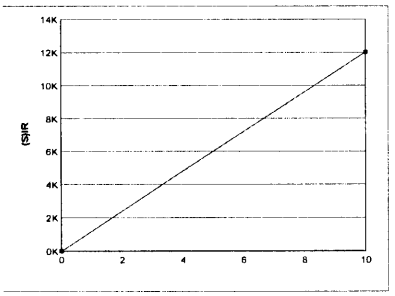
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	13.65	3.158	1
Cal. Std. 5 - HS 53	10.00	10.00	0.0000000000	0.0000000000	13,724	14.10	1



Element Name:	Nd
Element Wavelength:	Nd 401.225 nm
Concentration Units:	ppm
Date of Calibration:	6/14/2013 9:56:51 AM
Date of Fit:	6/14/2013 9:56:51 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	24.63
A1 (Gain):	2,802
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope		QC Normalize	
Slope:	1.000	**Slope factor:**	1.000
Y Int:	0.0000	**Offset:**	0.0000

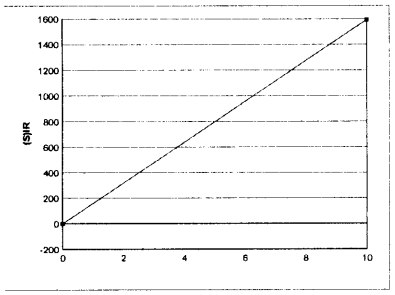
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	24.63	3.520	1
Cal. Std. 3 - HS 51	10.00	10.00	0.0000000000	0.0000000000	29,576	80.65	1



Element Name:	Ni
Element Wavelength:	Ni 221.647 nm
Concentration Units:	ppm
Date of Calibration:	6/14/2013 9:47:20 AM
Date of Fit:	6/14/2013 9:47:20 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	1.209
A1 (Gain):	1,202
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope		QC Normalize	
Slope:	1.000	**Slope factor:**	1.000
Y Int:	0.0000	**Offset:**	0.0000

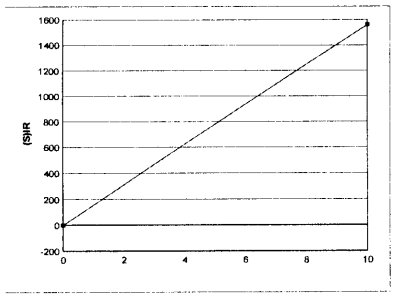
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	1.209	0.3291	1
Cal. Std. 1 - HS 50	10.00	10.000	0.0000000000	0.0000000000	12,014	34.45	1



Element Name:	P
Element Wavelength:	P 177.495 nm
Concentration Units:	ppm
Date of Calibration:	6/14/2013 9:51:59 AM
Date of Fit:	6/14/2013 9:51:59 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	-0.2222
A1 (Gain):	159.4
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope		QC Normalize	
Slope:	1.000	**Slope factor:**	1.000
Y Int:	0.0000	**Offset:**	0.0000

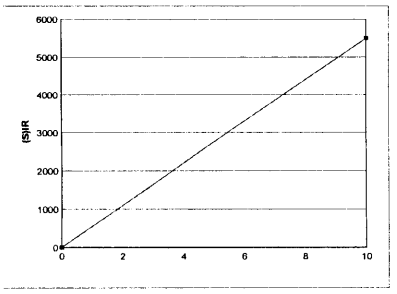
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	-0.2222	0.2804	1
Cal. Std. 2 - HS 29	10.00	10.00	0.0000	0.0000	1,594	5.180	1



Element Name:	Pb
Element Wavelength:	Pb 220.353 nm
Concentration Units:	ppm
Date of Calibration:	6/14/2013 9:47:20 AM
Date of Fit:	6/14/2013 9:47:20 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	-0.2207
A1 (Gain):	156.1
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope		QC Normalize	
Slope:	1.000	**Slope factor:**	1.000
Y Int:	0.0000	**Offset:**	0.0000

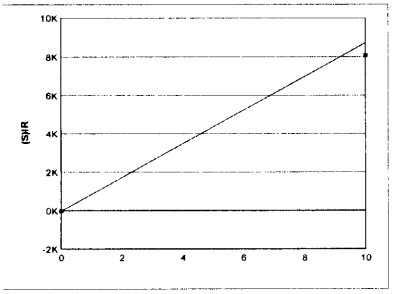
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	-0.2207	0.6553	1
Cal. Std. 1 - HS 50	10.00	10.00	0.0000	0.0000	1,563	3.089	1



Element Name:	Pd
Element Wavelength:	Pd 324.270 nm
Concentration Units:	ppm
Date of Calibration:	6/14/2013 10:01:37 AM
Date of Fit:	6/14/2013 10:01:37 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	3.327
A1 (Gain):	549.5
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope		QC Normalize	
Slope:	1.000	**Slope factor:**	1.000
Y Int:	0.0000	**Offset:**	0.0000

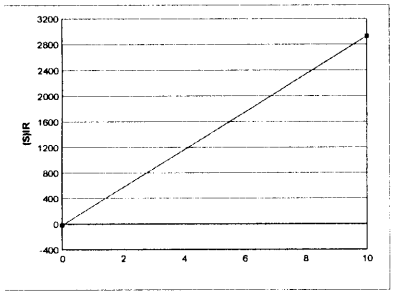
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	3.327	4.411	1
Cal. Std. 4 - HS 52	10.00	10.00	0.0000000000	0.0000000000	5,498	21.00	1



Element Name:	Pr
Element Wavelength:	Pr 414.311 nm
Concentration Units:	ppm
Date of Calibration:	6/14/2013 9:56:51 AM
Date of Fit:	6/14/2013 9:56:51 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	-30.00
A1 (Gain):	875.9
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope		QC Normalize	
Slope:	1.000	**Slope factor:**	1.000
Y Int:	0.0000	**Offset:**	0.0000

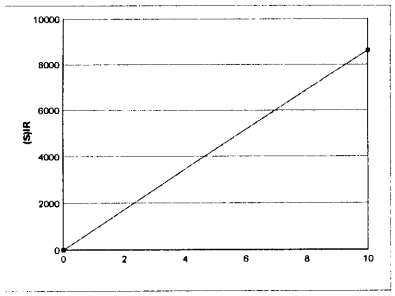
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	-30.00	5.843	1
Cal. Std. 3 - HS 51	10.00	10.00	0.0000	0.0000	8,076	37.39	1



Element Name:	Rb
Element Wavelength:	Rb 780.023 nm
Concentration Units:	ppm
Date of Calibration:	6/14/2013 9:56:51 AM
Date of Fit:	6/14/2013 9:56:51 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	-19.05
A1 (Gain):	294.7
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope		QC Normalize	
Slope:	1.000	**Slope factor:**	1.000
Y Int:	0.0000	**Offset:**	0.0000

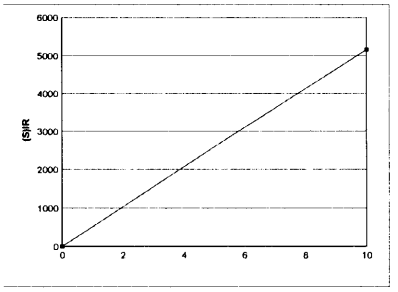
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	-19.05	4.125	1
Cal. Std. 3 - HS 51	10.00	10.000	0.0000000000	0.0000000000	2,927	2.302	1



Element Name:	Rh
Element Wavelength:	Rh 343.489 nm
Concentration Units:	ppm
Date of Calibration:	6/14/2013 10:01:37 AM
Date of Fit:	6/14/2013 10:01:37 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	0.6003
A1 (Gain):	861.2
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope		QC Normalize	
Slope:	1.000	**Slope factor:**	1.000
Y Int:	0.0000	**Offset:**	0.0000

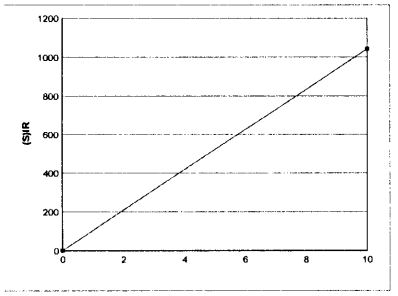
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	0.6003	3.765	1
Cal. Std. 4 - HS 52	10.00	10.00	0.0000	0.0000	8,613	71.40	1



Element Name:	Ru
Element Wavelength:	Ru 240.272 nm
Concentration Units:	ppm
Date of Calibration:	6/14/2013 10:01:37 AM
Date of Fit:	6/14/2013 10:01:37 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	2.854
A1 (Gain):	515.7
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope		QC Normalize	
Slope:	1.000	**Slope factor:**	1.000
Y Int:	0.0000	**Offset:**	0.0000

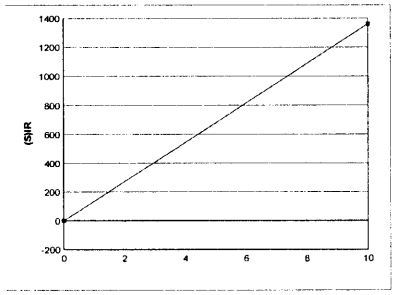
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	2.854	1.055	1
Cal. Std. 4 - HS 52	10.00	10.00	0.0000000000	0.0000000000	5,160	15.23	1



Element Name:	S
Element Wavelength:	S 180.731 nm
Concentration Units:	ppm
Date of Calibration:	6/14/2013 9:51:59 AM
Date of Fit:	6/14/2013 9:51:59 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	1.056
A1 (Gain):	104.0
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope		QC Normalize	
Slope:	1.000	**Slope factor:**	1.000
Y Int:	0.0000	**Offset:**	0.0000

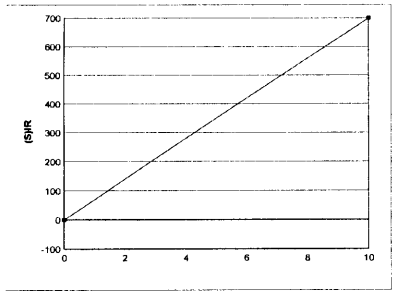
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	1.056	0.4068	1
Cal. Std. 2 - HS 29	10.00	10.000	0.0000000000	0.0000000000	1,041	6.254	1



Element Name:	Sb
Element Wavelength:	Sb 217.581 nm
Concentration Units:	ppm
Date of Calibration:	6/14/2013 9:51:59 AM
Date of Fit:	6/14/2013 9:51:59 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	-0.2467
A1 (Gain):	136.1
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope		QC Normalize	
Slope:	1.000	**Slope factor:**	1.000
Y Int:	0.0000	**Offset:**	0.0000

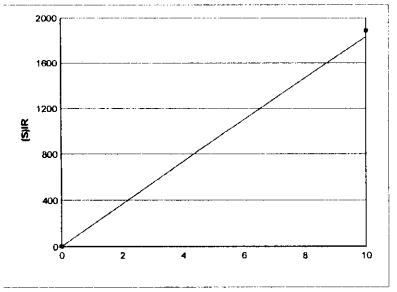
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	-0.2467	0.6340	1
Cal. Std. 2 - HS 29	10.00	10.00	0.0000	0.0000	1,361	7.550	1



Element Name:	Se
Element Wavelength:	Se 196.090 nm
Concentration Units:	ppm
Date of Calibration:	6/14/2013 9:47:20 AM
Date of Fit:	6/14/2013 9:47:20 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	-0.02815
A1 (Gain):	69.97
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope		QC Normalize	
Slope:	1.000	**Slope factor:**	1.000
Y Int:	0.0000	**Offset:**	0.0000

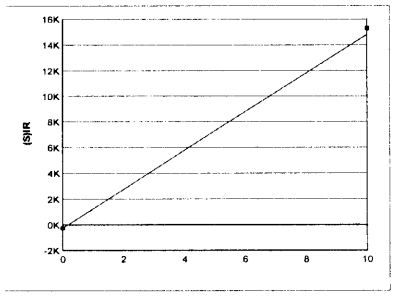
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	-0.02815	0.6250	1
Cal. Std. 1 - HS 50	10.00	10.00	0.0000000000	0.0000000000	699.8	2.748	1



Element Name:	Si
Element Wavelength:	Si 212.412 nm
Concentration Units:	ppm
Date of Calibration:	6/14/2013 9:51:59 AM
Date of Fit:	6/14/2013 9:51:59 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	2.222
A1 (Gain):	183.2
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope		QC Normalize	
Slope:	1.000	**Slope factor:**	1.000
Y Int:	0.0000	**Offset:**	0.0000

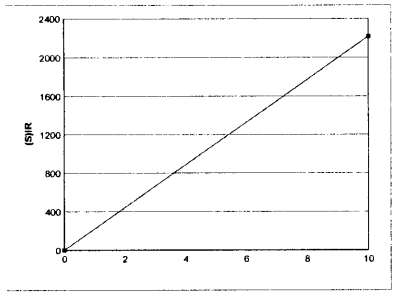
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	2.222	0.7611	1
Cal. Std. 2 - HS 29	10.00	10.000	0.0000000000	0.0000000000	1,890	6.113	1



Element Name:	Sm
Element Wavelength:	Sm 359.260 nm
Concentration Units:	ppm
Date of Calibration:	6/14/2013 9:56:51 AM
Date of Fit:	6/14/2013 9:56:51 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	-267.2
A1 (Gain):	1,506
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope		QC Normalize	
Slope:	1.000	**Slope factor:**	1.000
Y Int:	0.0000	**Offset:**	0.0000

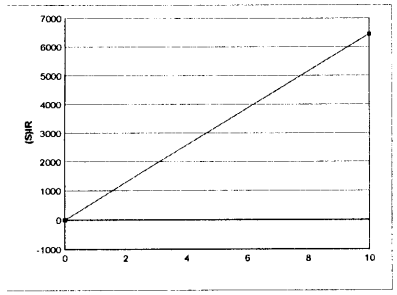
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	-267.2	4.777	1
Cal. Std. 3 - HS 51	10.00	10.00	0.0000	0.0000	15,293	30.21	1



Element Name:	Sn
Element Wavelength:	Sn 189.989 nm
Concentration Units:	ppm
Date of Calibration:	6/14/2013 10:06:21 AM
Date of Fit:	6/14/2013 10:06:21 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	1.311
A1 (Gain):	221.7
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope		QC Normalize	
Slope:	1.000	**Slope factor:**	1.000
Y Int:	0.0000	**Offset:**	0.0000

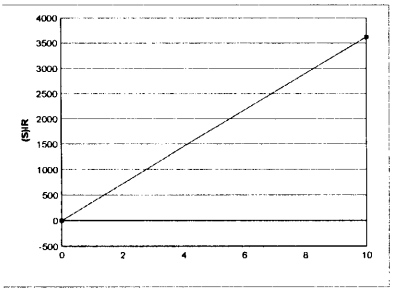
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	1.311	0.4305	1
Cal. Std. 5 - HS 53	10.00	10.00	0.0000000000	0.0000000000	2,217	8.699	1



Element Name:	Sr
Element Wavelength:	Sr 216.596 nm
Concentration Units:	ppm
Date of Calibration:	6/14/2013 9:47:20 AM
Date of Fit:	6/14/2013 9:47:20 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	-0.5956
A1 (Gain):	644.8
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope		QC Normalize	
Slope:	1.000	**Slope factor:**	1.000
Y Int:	0.0000	**Offset:**	0.0000

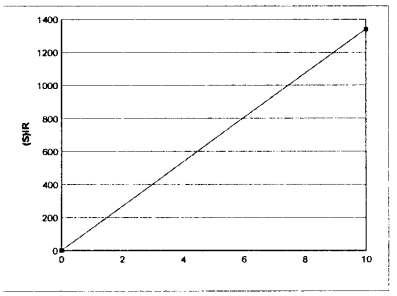
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	-0.5956	0.2680	1
Cal. Std. 1 - HS 50	10.00	10.00	0.0000	0.0000	6,442	24.56	1



Element Name:	Ta
Element Wavelength:	Ta 268.517 nm
Concentration Units:	ppm
Date of Calibration:	6/14/2013 10:06:21 AM
Date of Fit:	6/14/2013 10:06:21 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	-1.727
A1 (Gain):	362.0
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope		QC Normalize	
Slope:	1.000	**Slope factor:**	1.000
Y Int:	0.0000	**Offset:**	0.0000

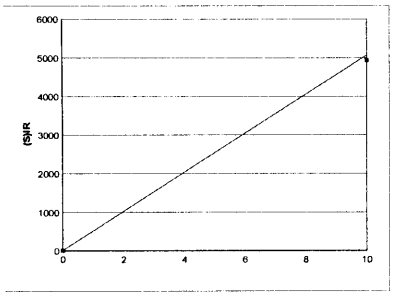
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	-1.727	0.5766	1
Cal. Std. 5 - HS 53	10.00	10.00	0.0000000000	0.0000000000	3,618	4.237	1



Element Name:	Te
Element Wavelength:	Te 214.281 nm
Concentration Units:	ppm
Date of Calibration:	6/14/2013 10:06:21 AM
Date of Fit:	6/14/2013 10:06:21 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	0.3156
A1 (Gain):	134.2
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope		QC Normalize	
Slope:	1.000	**Slope factor:**	1.000
Y Int:	0.0000	**Offset:**	0.0000

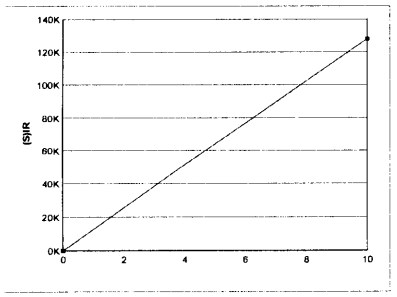
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	0.3156	0.3579	1
Cal. Std. 5 - HS 53	10.00	10.00	0.0000	0.0000	1,339	4.032	1



Element Name:	Th
Element Wavelength:	Th 283.231 nm
Concentration Units:	ppm
Date of Calibration:	6/14/2013 9:56:51 AM
Date of Fit:	6/14/2013 9:56:51 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	9.274
A1 (Gain):	506.2
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope		QC Normalize	
Slope:	1.000	**Slope factor:**	1.000
Y Int:	0.0000	**Offset:**	0.0000

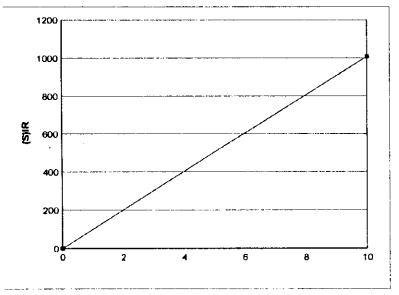
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	9.274	1.757	1
Cal. Std. 3 - HS 51	10.00	10.00	0.0000000000	0.0000000000	4,937	16.10	1



Element Name:	Ti
Element Wavelength:	Ti 337.280 nm
Concentration Units:	ppm
Date of Calibration:	6/14/2013 9:51:59 AM
Date of Fit:	6/14/2013 9:51:59 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	23.20
A1 (Gain):	12,800
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope		QC Normalize	
Slope:	1.000	**Slope factor:**	1.000
Y Int:	0.0000	**Offset:**	0.0000

Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	23.20	2.993	1
Cal. Std. 2 - HS 29	10.00	10.00	0.0000	0.0000	128,026	715.7	1

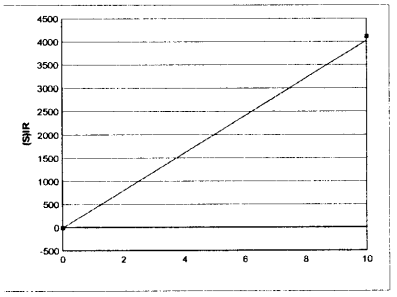


Element Name:	Tl
Element Wavelength:	Tl 190.856 nm
Concentration Units:	ppm
Date of Calibration:	6/14/2013 10:01:37 AM
Date of Fit:	6/14/2013 10:01:37 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	0.1311
A1 (Gain):	100.7
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope — **Slope:** 1.000 — **Y Int:** 0.0000

QC Normalize — **Slope factor:** 1.000 — **Offset:** 0.0000

Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	0.1311	0.3253	1
Cal. Std. 4 - HS 52	10.00	10.00	0.0000000000	0.0000000000	1,007	5.948	1

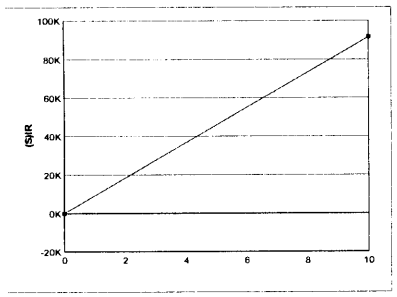


Element Name:	U
Element Wavelength:	U 385.958 nm
Concentration Units:	ppm
Date of Calibration:	6/14/2013 9:56:51 AM
Date of Fit:	6/14/2013 9:56:51 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	-10.89
A1 (Gain):	402.9
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope — **Slope:** 1.000 — **Y Int:** 0.0000

QC Normalize — **Slope factor:** 1.000 — **Offset:** 0.0000

Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	-10.89	3.053	1
Cal. Std. 3 - HS 51	10.00	10.00	0.0000	0.0000	4,110	16.43	1

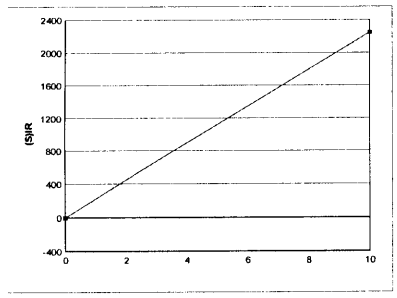


Element Name:	V
Element Wavelength:	V 309.311 nm
Concentration Units:	ppm
Date of Calibration:	6/14/2013 9:47:20 AM
Date of Fit:	6/14/2013 9:47:20 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	-3.276
A1 (Gain):	9,151
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope — **Slope:** 1.000 — **Y Int:** 0.0000

QC Normalize — **Slope factor:** 1.000 — **Offset:** 0.0000

Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	-3.276	2.362	1
Cal. Std. 1 - HS 50	10.00	10.00	0.0000	0.0000	91,732	337.5	1

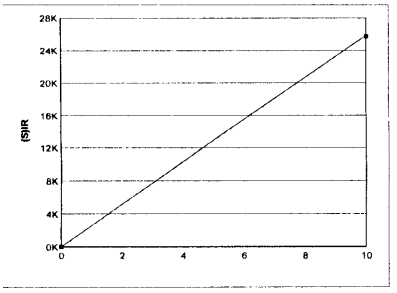


Element Name:	W
Element Wavelength:	W 239.709 nm
Concentration Units:	ppm
Date of Calibration:	6/14/2013 10:06:21 AM
Date of Fit:	6/14/2013 10:06:21 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	-2.204
A1 (Gain):	224.6
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope — **Slope:** 1.000 — **Y Int:** 0.0000

QC Normalize — **Slope factor:** 1.000 — **Offset:** 0.0000

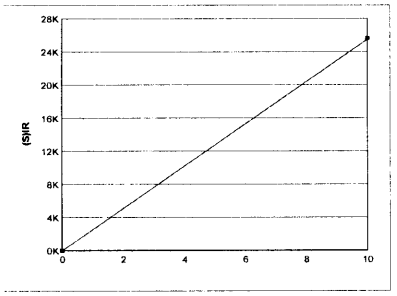
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	-2.204	1.136	1
Cal. Std. 5 - HS 53	10.00	10.00	0.0000	0.0000	2,244	2.001	1



Element Name:	Y
Element Wavelength:	Y 319.562 nm
Concentration Units:	ppm
Date of Calibration:	6/14/2013 9:56:51 AM
Date of Fit:	6/14/2013 9:56:51 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	15.41
A1 (Gain):	2.586
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope		QC Normalize	
Slope:	1.000	**Slope factor:**	1.000
Y Int:	0.0000	**Offset:**	0.0000

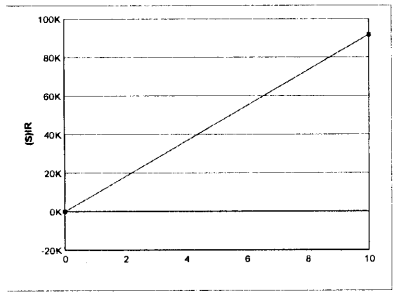
Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	15.41	1.555	1
Cal. Std. 3 - HS 51	10.00	10.00	0.0000	0.0000	25,751	88.97	1



Element Name:	Zn
Element Wavelength:	Zn 213.856 nm
Concentration Units:	ppm
Date of Calibration:	6/14/2013 9:47:20 AM
Date of Fit:	6/14/2013 9:47:20 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	1.907
A1 (Gain):	2.549
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope		QC Normalize	
Slope:	1.000	**Slope factor:**	1.000
Y Int:	0.0000	**Offset:**	0.0000

Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	1.907	0.4879	1
Cal. Std. 1 - HS 50	10.00	10.00	0.0000	0.0000	25,641	43.09	1



Element Name:	Zr
Element Wavelength:	Zr 343.823 nm
Concentration Units:	ppm
Date of Calibration:	6/14/2013 9:51:59 AM
Date of Fit:	6/14/2013 9:51:59 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	-22.63
A1 (Gain):	9,177
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope		QC Normalize	
Slope:	1.000	**Slope factor:**	1.000
Y Int:	0.0000	**Offset:**	0.0000

Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	-22.63	1.418	1
Cal. Std. 2 - HS 29	10.00	10.00	0.0000000000	0.0000000000	91,746	530.6	1

ATL	ICP-MS DATA REVIEW CHECKLIST	○ IH ◉ NON IH

◉ LA-506-102 Rev G-1 (*) ○ LA-506-103 Rev _____ (*) ○ _____ Rev _____ (*)

Worklist/Project Information: 41872 / C109 CLO (Actinides)

Analysis Date(s): 6/18/13 & 06/28/13

Instrument Id: PQ EXCELL Prep Batches Run: 41864* and 41618*

Review Items	Level 1 Yes	Level 1 No	Level 1 N/A	Level 2
A. Calibration				
1. Were the applicable instrument tune, mass calibration and stability check within acceptance criteria?	◉	○	○	☑
2. Was the instrument calibrated per SOP?	◉	○	○	☑
3. Were ICV/CCV analyzed at appropriate frequency and were recoveries within control limits of 90 - 110%? If not in control, was the CCV reanalyzed to show return to control?	◉	○	○	☑
4. Were ICB/CCB analyzed at appropriate frequency and were results < EQL (or, with client consent, <5% of lowest sample result)?	◉	○	○	☑
5. Was an LLS run at required frequency and were recoveries within control limits of 75 - 125% for IH or 70 - 130% for non-IH work?	◉	○	○	☑
B. Sample Results				
1. Were samples with concentrations above the linear range for any analyte diluted and reanalyzed?	◉	○	○	☑
2. Were sample analyses done within holding time?	◉	○	○	☑
C. Preparation/Matrix QC				
1. Was a method blank done per prep batch and were results < EQL or less than 5% of lowest sample result?	◉	○	○	☑
2. Was an LCS (and LCS dup, if required) done per prep batch and were recoveries within control limits of 80 - 120%, and % RPD <20%?	◉	○	○	☑
3. Was an MS run as required and was recovery within control limits of 75 - 125% for all analytes for which the spike level was at least 25% of the sample result?	○	○	◉	☑
4. Was an MSD or DUP run at required frequency and was the % RPD within control limits of <20% (or, with client consent, <30%) for all analytes > EQL?	◉	○	○	☑
5. Was a serial dilution done per analytical batch, if required, and was the % difference within control limits of <10% for all analytes > 100 times the DL?	◉	○	○	☑
6. Was a post digest spike analyzed if required and was the recovery within control limits of 80 - 120%?	○	◉	○	☑
D. Other				
1. Are internal standard responses acceptable? (Suggested Limits: 70 - 120% of the calibration blank)	◉	○	○	☑
2. Were the appropriate flags added to data?	◉	○	○	☑
3. Is current IDL/MDL/EQL data on file?	◉	○	○	☑
4. Were calculations checked for errors?	◉	○	○	☑
5. Were transcriptions and data upload checked for errors?	◉	○	○	☑
6. Were all client/project specific requirements met?	◉	○	○	☑
7. Was the date/time of analysis verified as correct?	◉	○	○	☑
8. Were ICS values below the detection limits?	○	◉	○	☑

Comments/Samples Affected (indicate review item letter and number):

See next page

(*) This form is not used by the subject procedure; rather, it is used to assist in verifying the data produced during the performance of the procedure.

A-6005-346 (REV 2)

ATL	ICP-MS DATA REVIEW CHECKLIST (continued)	○ IH ◉ NON IH

◉ LA-506-102 Rev G-1 (*) ○ LA-506-103 Rev _____ (*) ○ _____ Rev _____ (*)

Worklist/Project Information: 41872 / C109 CLO (Actinides)

Analysis Date(s): 6/18/13 & 06/28/13

Instrument Id: PQ EXCELL Prep Batches Run: 41864

A.2. Direct Calibrations were performed for Th232, U233, U235, Np237, U238, Pu242. Isotopic substitution calibrations were performed as follows:
U234 calibrated using U235 response + U234 baseline response
U236 calibrated using U235 response + U236 baseline response
Th230 calibrated using Th232 response + Th230 baseline response
Pa231 calibrated using Th232 response + Pa231 baseline response

"I" flags were added to sample results for U234, U236 and Th230 to denote quantitation by indirect calibration method.

A.3. Recovery for Np237 ending CCV was 110.1% rounded to 3 significant figures to 110% was deemed to be within acceptance criteria.

C.1. U238 response found at 3X MDL, < EQL and < 5% of the sample results which is within acceptance criteria; no B-flags were added to data.

C.3. Pre-digest spike was not analyzed; sample dilution analyzed would have diluted spike response (sample not spiked at > 25% of the sample result).

C.6. Post spike > 120% for U233 and Np237 but samples were < DL so the possible positive bias did not affect the reported results. Pu242 was also > 120% but all samples were < DL except for S13T004280 which was believed to be a false positive result; reported sample results were not believed to be affected. Results are within customer matrix spike requirement of 75-125% recovery so "b" flag was not added to data. "b" flag added to Np237. JDo 7/30/13

D.8. Th232 was found at ~1.1X DL; samples were analyzed at a large enough dilution that ICS elements would not be at a high enough concentration to cause interferent issues.

Y-flags:
- Sample S13T004280 for Pu242 is believed to be a false positive result (at < EQL and > DL) because the response of the ICB was 78% of the response of the sample at mass 242.

- All Samples: responses for mass 236 are >DL but <EQL and ~4X-7X response of ICB; these results are J-flagged but may be false positives based on baseline signal for this mass.

1st Level Data Reviewer: _____ (Signature) Date: 07/10/13

2nd Level Data Reviewer: J. S. Lachut (Signature) Date: 7/11/13

(*) This form is not used by the subject procedure; rather, it is used to assist in verifying the data produced during the performance of the procedure.

A-6005-346 (REV 2)

7/10/2013 11:18:31AM
CompleteBatch Version 2.7.32
batchreports 2.7.32

LABCORE Completed Batch Report for Batch# 00041872

Analyst: Shaw, Levi

Book#: SEE BENCHSHEET

Instrument: ICP/MS PQ-EXCELL

Method: MS ACTINIDES, LA-506-102 Rev/Mod G-1

Specification: C109 CLO

Prep Batch: 00041864

Batch Comment:

Results based on merging of analyses on 6/18/13 & 7/3/13 kak 7/10/13

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
Sample Sequence 1																	
1	ICV	S1306240042		0 0			Thorium-232	LIQUID	.001	1.0510E-03			5.00E-07	ug/mL	105.1	% Recovery	
2	ICV	S1306240042		0 1			Uranium-233	LIQUID	.001016	1.0290E-03			2.00E-07	ug/mL	101.28	% Recovery	
1	ICV	S1306240042		0 0			Uranium-235	LIQUID	.000002102	2.1260E-06			1.00E-08	ug/mL	101.14	% Recovery	
2	ICV	S1306240042		0 1			Neptunium-237	LIQUID	.001	1.0860E-03			1.00E-07	ug/mL	108.6	% Recovery	
1	ICV	S1306240042		0 0			Uranium-238	LIQUID	.000998998	1.0400E-03			5.00E-07	ug/mL	104.1	% Recovery	
3	ICV	S1306240042		0 2			Plutonium-242	LIQUID	.0001	1.0190E-04			1.73E-07	ug/mL	101.9	% Recovery	
Sample Sequence 4																	
5	LLS	S1306240044		0 1			Thorium-232	LIQUID	.000005	5.8040E-06			5.00E-07	ug/mL	116.08	% Recovery	
6	LLS	S1306240044		0 2			Uranium-233	LIQUID	.0000047925	4.6700E-06			2.00E-07	ug/mL	97.444	% Recovery	
4	LLS	S1306240044		0 0			Uranium-235	LIQUID	.00000018	1.8900E-07			1.00E-08	ug/mL	105	% Recovery	
6	LLS	S1306240044		0 2			Neptunium-237	LIQUID	.000005	5.0030E-06			1.00E-07	ug/mL	100.06	% Recovery	
5	LLS	S1306240044		0 1			Uranium-238	LIQUID	.000004964	5.1800E-06			5.00E-07	ug/mL	104.35	% Recovery	
7	LLS	S1306240044		0 3			Plutonium-242	LIQUID	.000005	4.5460E-06			1.73E-07	ug/mL	90.92	% Recovery	
Sample Sequence 8																	
9	ICB	S1306240043		0 1			Thorium-230	LIQUID		<7.0000E-09			7.00E-09	ug/mL			
9	ICB	S1306240043		0 1			Protactinium-231	LIQUID		<7.0000E-09			7.00E-09	ug/mL			
9	ICB	S1306240043		0 1			Thorium-232	LIQUID		<5.0000E-07			5.00E-07	ug/mL			
9	ICB	S1306240043		0 1			Uranium-233	LIQUID		<2.0000E-07			2.00E-07	ug/mL			
9	ICB	S1306240043		0 1			Uranium-234	LIQUID		<5.0000E-09			5.00E-09	ug/mL			
9	ICB	S1306240043		0 1			Uranium-235	LIQUID		<1.0000E-08			1.00E-08	ug/mL			
9	ICB	S1306240043		0 1			Uranium-236	LIQUID		<4.0000E-09			4.00E-09	ug/mL			
9	ICB	S1306240043		0 1			Neptunium-237	LIQUID		<1.0000E-07			1.00E-07	ug/mL			
9	ICB	S1306240043		0 1			Uranium-238	LIQUID		<5.0000E-07			5.00E-07	ug/mL			
10	ICB	S1306240043		0 2			Plutonium-242	LIQUID		<1.7300E-07			1.73E-07	ug/mL			
Sample Sequence 11																	
11	BLNK-PREP	S1305280021		0 2	A		Thorium-230	LIQUID		<3.5000E-04			3.50E-04	ug/mL			
11	BLNK-PREP	S1305280021		0 2	A		Protactinium-231	LIQUID		<3.5000E-04			3.50E-04	ug/mL			
11	BLNK-PREP	S1305280021		0 2	A		Thorium-232	LIQUID		<2.5000E-02			0.025	ug/mL			
11	BLNK-PREP	S1305280021		0 2	A		Uranium-233	LIQUID		<1.0000E-02			0.01	ug/mL			
11	BLNK-PREP	S1305280021		0 2	A		Uranium-234	LIQUID		<2.5000E-04			2.50E-04	ug/mL			
11	BLNK-PREP	S1305280021		0 2	A		Uranium-235	LIQUID		<5.0000E-04			5.00E-04	ug/mL			

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041872

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
11	BLNK-PREP	S1305280021		0 2	A		Uranium-236	LIQUID		<2.0000E-04			2.00E-04	ug/mL			
11	BLNK-PREP	S1305280021		0 2	A		Neptunium-237	LIQUID		<5.0000E-03			5.00E-03	ug/mL			
11	BLNK-PREP	S1305280021		0 2	A		Uranium-238	LIQUID		6.5640E-02			0.025	ug/mL			
12	BLNK-PREP	S1305280021		0 3	A		Plutonium-242	LIQUID		<1.7300E-05			1.73E-05	ug/mL			
Sample Sequence 13																	
13	SERDIL	S1306240045	S13T004252	0 0			Thorium-230	SOLID		<3.4777E-01			0.34777	ug/g	N/A		
13	SERDIL	S1306240045	S13T004252	0 0			Protactinium-231	SOLID		<3.4777E-01			0.34777	ug/g	N/A		
13	SERDIL	S1306240045	S13T004252	0 0			Thorium-232	SOLID		<2.4841E+01			24.841	ug/g	N/A		
13	SERDIL	S1306240045	S13T004252	0 0			Uranium-233	SOLID		<9.9364E+00			9.9364	ug/g	N/A		
13	SERDIL	S1306240045	S13T004252	0 0			Uranium-234	SOLID		<2.4841E-01			0.24841	ug/g	N/A		
13	SERDIL	S1306240045	S13T004252	0 0			Uranium-235	SOLID		1.1904E+01			0.49682	ug/g	3.9362	% Diff	
13	SERDIL	S1306240045	S13T004252	0 0			Uranium-236	SOLID		<1.9873E-01			0.19873	ug/g	N/A		
13	SERDIL	S1306240045	S13T004252	0 0			Neptunium-237	SOLID		<4.9682E+00			4.9682	ug/g	N/A		
13	SERDIL	S1306240045	S13T004252	0 0			Uranium-238	SOLID		1.6999E+03			24.841	ug/g	3.5337	% Diff	
14	SERDIL	S1306240045	S13T004252	0 1			Plutonium-242	SOLID		<1.7190E-02			0.01719	ug/g	N/A		
Sample Sequence 15																	
15	SAMPLE	S13T004252		0 2	A		Thorium-230	SOLID	N/A	<6.9555E-02			0.069555	ug/g			UI
15	SAMPLE	S13T004252		0 2	A		Protactinium-231	SOLID	N/A	<6.9555E-02			0.069555	ug/g			UI
15	SAMPLE	S13T004252		0 2	A		Thorium-232	SOLID	N/A	6.5560E+00			4.9682	ug/g			J
15	SAMPLE	S13T004252		0 2	A		Uranium-233	SOLID	N/A	<1.9873E+00			1.9873	ug/g			U
15	SAMPLE	S13T004252		0 2	A		Uranium-234	SOLID	N/A	<4.9682E-02			0.049682	ug/g			UI
15	SAMPLE	S13T004252		0 2	A		Uranium-235	SOLID	N/A	1.1453E+01			0.099364	ug/g			
15	SAMPLE	S13T004252		0 2	A		Uranium-236	SOLID	N/A	1.1284E-01			0.039746	ug/g			JYI
15	SAMPLE	S13T004252		0 2	A		Neptunium-237	SOLID	N/A	<9.9364E-01			0.99364	ug/g			Ub
15	SAMPLE	S13T004252		0 2	A		Uranium-238	SOLID	N/A	1.6419E+03			4.9682	ug/g			
16	SAMPLE	S13T004252		0 3	A		Plutonium-242	SOLID	N/A	<3.4380E-03			3.44E-03	ug/g			U
Sample Sequence 17																	
17	DUP	S1305280023	S13T004252	0 1	A		Thorium-230	SOLID	<6.9555E-02	<6.9197E-02			0.069197	ug/g			
17	DUP	S1305280023	S13T004252	0 1	A		Protactinium-231	SOLID	<6.9555E-02	<6.9197E-02			0.069197	ug/g			
17	DUP	S1305280023	S13T004252	0 1	A		Thorium-232	SOLID	6.5560E+00	6.9672E+00			4.9427	ug/g	6.0808	% RPD	
17	DUP	S1305280023	S13T004252	0 1	A		Uranium-233	SOLID	<1.9873E+00	<1.9771E+00			1.9771	ug/g			
17	DUP	S1305280023	S13T004252	0 1	A		Uranium-234	SOLID	<4.9682E-02	<4.9427E-02			0.049427	ug/g			
17	DUP	S1305280023	S13T004252	0 1	A		Uranium-235	SOLID	1.1453E+01	1.2005E+01			0.098853	ug/g	4.7089	% RPD	
17	DUP	S1305280023	S13T004252	0 1	A		Uranium-236	SOLID	1.1284E-01	<3.9541E-02			0.039541	ug/g			
17	DUP	S1305280023	S13T004252	0 1	A		Neptunium-237	SOLID	<9.9364E-01	<9.8853E-01			0.98853	ug/g			
17	DUP	S1305280023	S13T004252	0 1	A		Uranium-238	SOLID	1.6419E+03	1.8254E+03			4.9427	ug/g	10.585	% RPD	
18	DUP	S1305280023	S13T004252	0 2	A		Plutonium-242	SOLID	<3.4380E-03	<3.4203E-03			3.42E-03	ug/g			
Sample Sequence 19																	
19	SAMPLE	S13T004280		0 2	A		Thorium-230	SOLID	N/A	<6.8708E-02			0.068708	ug/g			UI
19	SAMPLE	S13T004280		0 2	A		Protactinium-231	SOLID	N/A	<6.8708E-02			0.068708	ug/g			UI
19	SAMPLE	S13T004280		0 2	A		Thorium-232	SOLID	N/A	8.7083E+00			4.9077	ug/g			J
19	SAMPLE	S13T004280		0 2	A		Uranium-233	SOLID	N/A	<1.9631E+00			1.9631	ug/g			U

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041872

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
19	SAMPLE	S13T004280		0 2	A		Uranium-234	SOLID	N/A	1.1955E-01			0.049077	ug/g			JI
19	SAMPLE	S13T004280		0 2	A		Uranium-235	SOLID	N/A	2.0770E+01			0.098155	ug/g			
19	SAMPLE	S13T004280		0 2	A		Uranium-236	SOLID	N/A	2.1221E-01			0.039262	ug/g			JYI
19	SAMPLE	S13T004280		0 2	A		Neptunium-237	SOLID	N/A	<9.8155E-01			0.98155	ug/g			Ub
19	SAMPLE	S13T004280		0 2	A		Uranium-238	SOLID	N/A	3.1822E+03			4.9077	ug/g			
20	SAMPLE	S13T004280		0 3	A		Plutonium-242	SOLID	N/A	9.0852E-03			3.40E-03	ug/g			JY
Sample Sequence 21																	
21	SAMPLE	S13T004307		0 2	A		Thorium-230	SOLID	N/A	<6.9472E-02			0.069472	ug/g			UI
21	SAMPLE	S13T004307		0 2	A		Protactinium-231	SOLID	N/A	<6.9472E-02			0.069472	ug/g			UI
21	SAMPLE	S13T004307		0 2	A		Thorium-232	SOLID	N/A	<4.9623E+00			4.9623	ug/g			U
21	SAMPLE	S13T004307		0 2	A		Uranium-233	SOLID	N/A	<1.9849E+00			1.9849	ug/g			U
21	SAMPLE	S13T004307		0 2	A		Uranium-234	SOLID	N/A	<4.9623E-02			0.049623	ug/g			UI
21	SAMPLE	S13T004307		0 2	A		Uranium-235	SOLID	N/A	9.5951E+00			0.099246	ug/g			
21	SAMPLE	S13T004307		0 2	A		Uranium-236	SOLID	N/A	5.7543E-02			0.039698	ug/g			JYI
21	SAMPLE	S13T004307		0 2	A		Neptunium-237	SOLID	N/A	<9.9246E-01			0.99246	ug/g			Ub
21	SAMPLE	S13T004307		0 2	A		Uranium-238	SOLID	N/A	1.5244E+03			4.9623	ug/g			
22	SAMPLE	S13T004307		0 3	A		Plutonium-242	SOLID	N/A	<3.4339E-03			3.43E-03	ug/g			U
Sample Sequence 23																	
23	SPK-POST	S1306240047	S13T004307	0 0			Thorium-232	SOLID	50	5.1450E+01			5.00E-07	ug/mL	102.9	% Recovery	
23	SPK-POST	S1306240047	S13T004307	0 0			Uranium-233	SOLID	47.925	5.9490E+01			2.00E-07	ug/mL	124.13	% Recovery	
23	SPK-POST	S1306240047	S13T004307	0 0			Uranium-235	SOLID	.36	4.5270E-01			1.00E-08	ug/mL	112.32	% Recovery	
23	SPK-POST	S1306240047	S13T004307	0 0			Neptunium-237	SOLID	50	6.6590E+01			1.00E-07	ug/mL	133.18	% Recovery	
23	SPK-POST	S1306240047	S13T004307	0 0			Uranium-238	SOLID	49.64	5.7240E+01			5.00E-07	ug/mL	99.839	% Recovery	
24	SPK-POST	S1306240047	S13T004307	0 1			Plutonium-242	SOLID	.01	1.2170E-02			1.73E-07	ug/mL	121.7	% Recovery	
Sample Sequence 25																	
25	STD-PREP	S1305280028		0 1	A		Thorium-232	LIQUID	.02	2.1860E-02			1.00E-05	ug/mL	109.3	% Recovery	
25	STD-PREP	S1305280028		0 1	A		Uranium-235	LIQUID	.00004204	4.6140E-05			2.00E-07	ug/mL	109.75	% Recovery	
25	STD-PREP	S1305280028		0 1	A		Uranium-238	LIQUID	.01997996	2.1460E-02			1.00E-05	ug/mL	107.41	% Recovery	
Sample Sequence 26																	
26	STD-PREP	S1305280030		0 1	A		Neptunium-237	LIQUID	.01379	1.3850E-02			2.00E-06	ug/mL	100.44	% Recovery	
Sample Sequence 27																	
27	CCV	S1306240050		0 0			Thorium-232	LIQUID	.001	1.0610E-03			5.00E-07	ug/mL	106.1	% Recovery	
28	CCV	S1306240050		0 1			Uranium-233	LIQUID	.001016	1.0590E-03			2.00E-07	ug/mL	104.23	% Recovery	
27	CCV	S1306240050		0 0			Uranium-235	LIQUID	.000002102	2.1580E-06			1.00E-08	ug/mL	102.66	% Recovery	
28	CCV	S1306240050		0 1			Neptunium-237	LIQUID	.001	1.1010E-03			1.00E-07	ug/mL	110.1	% Recovery	
27	CCV	S1306240050		0 0			Uranium-238	LIQUID	.000998998	1.0610E-03			5.00E-07	ug/mL	106.21	% Recovery	
29	CCV	S1306240050		0 2			Plutonium-242	LIQUID	.0001	1.1000E-04			1.73E-07	ug/mL	110	% Recovery	
Sample Sequence 30																	
30	LLS	S1306240052		0 0			Thorium-232	LIQUID	.000025	2.7170E-05			5.00E-07	ug/mL	108.68	% Recovery	
32	LLS	S1306240052		0 2			Uranium-233	LIQUID	.0000047925	5.1110E-06			2.00E-07	ug/mL	106.65	% Recovery	
30	LLS	S1306240052		0 0			Uranium-235	LIQUID	.00000018	1.7970E-07			1.00E-08	ug/mL	99.833	% Recovery	

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041872

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
32	LLS	S1306240052		0 2			Neptunium-237	LIQUID	.000005	5.2330E-06			1.00E-07	ug/mL	104.66	% Recovery	
31	LLS	S1306240052		0 1			Uranium-238	LIQUID	.000004964	5.2500E-06			5.00E-07	ug/mL	105.76	% Recovery	
33	LLS	S1306240052		0 3			Plutonium-242	LIQUID	.000005	4.8510E-06			1.73E-07	ug/mL	97.02	% Recovery	
Sample Sequence 34																	
34	CCB	S1306240051		0 0			Thorium-229	LIQUID		<9.0000E-09			9.00E-09	ug/mL			
34	CCB	S1306240051		0 0			Thorium-230	LIQUID		<7.0000E-09			7.00E-09	ug/mL			
34	CCB	S1306240051		0 0			Protactinium-231	LIQUID		<7.0000E-09			7.00E-09	ug/mL			
34	CCB	S1306240051		0 0			Thorium-232	LIQUID		<5.0000E-07			5.00E-07	ug/mL			
34	CCB	S1306240051		0 0			Uranium-233	LIQUID		<2.0000E-07			2.00E-07	ug/mL			
34	CCB	S1306240051		0 0			Uranium-234	LIQUID		<5.0000E-09			5.00E-09	ug/mL			
34	CCB	S1306240051		0 0			Uranium-235	LIQUID		<1.0000E-08			1.00E-08	ug/mL			
34	CCB	S1306240051		0 0			Uranium-236	LIQUID		<4.0000E-09			4.00E-09	ug/mL			
34	CCB	S1306240051		0 0			Neptunium-237	LIQUID		<1.0000E-07			1.00E-07	ug/mL			
34	CCB	S1306240051		0 0			Uranium-238	LIQUID		<5.0000E-07			5.00E-07	ug/mL			
35	CCB	S1306240051		0 1			Plutonium-242	LIQUID		<1.7300E-07			1.73E-07	ug/mL			

Comments Section:

Comments for sample: S13T004252, test: MS ACTINIDES, constituent: Uranium-236

Response at mass 236 for this result was ~ 4X the response of the instrument blank; suspect false positive result. kak 07/10/13

Comments for sample: S13T004280, test: MS ACTINIDES, constituent: Uranium-236

Response at mass 236 for this result was ~ 7X the response of the instrument blank; suspect false positive result. kak 07/10/13

Comments for sample: S13T004280, test: MS ACTINIDES, constituent: Plutonium-242

Response at mass 242 was ~1.3 X the instrument blank response; suspect false positive value kak 07/10/13

Comments for sample: S13T004307, test: MS ACTINIDES, constituent: Uranium-236

Response at mass 236 for this result was ~ 4X the response of the instrument blank; suspect false positive result. kak 07/10/13

Data Flagger Status:
Flagging Completed

Final Page for Batch# 00041872

kak 07/10/13

Reviewer Signature Date

PC: Julie Askew 7/16/13

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041872

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Method	Customer Id	Specification
1	S1306240042	ICV			MS ACTINIDES		
2	S1306240042	ICV			MS ACTINIDES		
3	S1306240042	ICV			MS ACTINIDES		
4	S1306240044	LLS			MS ACTINIDES		
5	S1306240044	LLS			MS ACTINIDES		
6	S1306240044	LLS			MS ACTINIDES		
7	S1306240044	LLS			MS ACTINIDES		
8	S1306240043	ICB			MS ACTINIDES		
9	S1306240043	ICB			MS ACTINIDES		
10	S1306240043	ICB			MS ACTINIDES		
11	S1305280021	BLNK-PREP			MS ACTINIDES		
12	S1305280021	BLNK-PREP			MS ACTINIDES		
13	S1306240045	SERDIL	S13T004252		MS ACTINIDES		
14	S1306240045	SERDIL	S13T004252		MS ACTINIDES		
15	S13T004252	SAMPLE		20130402	MS ACTINIDES	9C-13-Comp A	C109 CLO
16	S13T004252	SAMPLE		20130402	MS ACTINIDES	9C-13-Comp A	C109 CLO
17	S1305280023	DUP	S13T004252		MS ACTINIDES		
18	S1305280023	DUP	S13T004252		MS ACTINIDES		
19	S13T004280	SAMPLE		20130402	MS ACTINIDES	9C-13-Comp B	C109 CLO
20	S13T004280	SAMPLE		20130402	MS ACTINIDES	9C-13-Comp B	C109 CLO
21	S13T004307	SAMPLE		20130402	MS ACTINIDES	9C-13-Comp C	C109 CLO
22	S13T004307	SAMPLE		20130402	MS ACTINIDES	9C-13-Comp C	C109 CLO
23	S1306240047	SPK-POST	S13T004307		MS ACTINIDES		
24	S1306240047	SPK-POST	S13T004307		MS ACTINIDES		
25	S1305280028	STD-PREP			MS ACTINIDES		
26	S1305280030	STD-PREP			MS ACTINIDES		
27	S1306240050	CCV			MS ACTINIDES		
28	S1306240050	CCV			MS ACTINIDES		
29	S1306240050	CCV			MS ACTINIDES		
30	S1306240052	LLS			MS ACTINIDES		
31	S1306240052	LLS			MS ACTINIDES		
32	S1306240052	LLS			MS ACTINIDES		
33	S1306240052	LLS			MS ACTINIDES		
34	S1306240051	CCB			MS ACTINIDES		
35	S1306240051	CCB			MS ACTINIDES		

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

* = Rejected Analyte
N, A = Non-reported Analyte

ATL	ACID DIGESTION BENCH SHEET	○ IH ◉ Non IH

○ LA-505-158 Rev _____ ◉ LA-505-163 Rev H-0-A ○ LA-505-172 Rev _____ ○ _____ Rev _____

Project: C109 CLO re-digest (20130402) (Standard Acid Digest)

Batch #: 00041618 6 TJH 6/24/13 #41864 Analyst: TJH 6/24/13

Prep. Date/Time Start: 6/11/13 / 0922 Prep. Date/Time End: 6/11/13 / 1350

☒ Verified Thermometer Calibration ☒ Verified Thermometer 95±5 °C

Balance Number: LE-BAL-040 Mod Block Temp: 96.5 °C

Standard	Lot/Book # or Barcode #	Exp. Date	Standard	Lot/Book # or Barcode #	Exp. Date
HCl	SL018577	12-13-17	HS50	SL018597	1-1-14
HNO_3	SL017975	4-10-18	HS51	SL016666	9-1-13
H_2O_2	SL014265	1-31-16	HS52	SL016669	9-1-13
HS29	SL016660	9-1-13	HS53	SL016671	9-1-13
Inorg Vent. U	SL017742	4-1-14	Inorg Vent. Th	SL017753	4-1-14
68B63 Np237 spk	68B63	11-29-15	N/A	N/A	N/A

(Pipette #); Pipette ID; Volume Range or Fixed Volume; Check box if pipette passes visual verification:

(1) 1255553 (Range/Vol: .010–.100 µL ☑) (3) G103015F3 (Range/Vol: .100–1 mL ☑)

(2) J1207550L (Range/Vol: 1–10mL ☑) (4) N/A (Range/Vol: N/A ☐)

Sample ID	Final Volume (mL)	Sample Qty/Unit (a)	Spike Added (b)	Dose Rate (mrem/hr)
Prep Blank	50			<0.5
Prep Std 1	50		2.5ml (2) HS29 + 2.5ml (2) HS50	<0.5
Prep Std 2	50		2.5ml (2) HS51 + 2.5ml (2) HS52 + 2.5ml (2) HS53	<0.5
Prep Std 3	50		0.1 mL (/) 10 ppm U & 0.1 mL (/) 10 ppm Th	<0.5
Prep Std 4	50		0.35 mL (3) of 68B63 Np237 spike	<0.5
S13T004252	50	.2516		1550
S13T004252 Dup	50	.2529		1550
S13T004252_S1	50	.2524	2.5ml (2) HS29 + 2.5ml (2) HS50	1650
S13T004252_S2	50	.2482	2.5ml (2) HS51 + 2.5ml (2) HS52 + 2.5ml ( ) HS53	1800
S13T004252_S3	50	.2501	0.1 mL (/) 10 ppm U & 0.1 mL (/) 10 ppm Th	1850
S13T004252_S4	50	.2485	0.35 mL (3) of 68B63 Np237 spike	1800
S13T004280	50	.2547		1850
S13T004307	50	.2519		2200

(a) Sample Qty/Unit: For solid samples, record the weight in g (e.g., "0.25g"). For liquid samples, record the volume in mL and record the pipette number used in parentheses (e.g., "2.5mL (1)"). For filter media, use "Each" (i.e., "1 each").

(b) Spike Added: Record the volume in mL and record the pipette number used in parentheses for each standard used, indicate the standard used (e.g., "0.5mL (3) HS50 + 1.0mL (1) HS51").

Note: Observation of sample before and after prep. (i.e., sample appearance, digestate color, clarity, approx. % dissolved, and multiple phases).

Comments:

A-5005-389 (REV 1)

ATL	ACID DIGESTION BENCH SHEET (continued)	○ IH ○ Non IH

○ LA-505-158 Rev _____ ○ LA-505-163 Rev _____ ○ LA-505-172 Rev _____ ○ _____ Rev _____

Project: C109 CLO re-digest (20130402) (Standard Acid Digest)

Batch #: 00041618 Analyst: TJH

1000 ppm standards from Inorganic Ventures must be diluted to 10 ppm for U and Th. These 10 ppm standards are used for the prep standard and spike.

Sample size is approximately 0.25 g

Parent Sample: Refer to Sample Breakdown Diagrams

Customer requests that we report appearance of samples after digestion and provide an estimate of the percent sample digested for each sample.

Chemist instructions provided by SD Bolling. 6/10/13

ATL	ACID DIGESTION BENCH SHEET (continued)	○ IH ◉ Non IH

○ LA-505-158 Rev _____ ◉ LA-505-163 Rev _____ ○ LA-505-172 Rev _____

Project: C109 CLO (20130402) (Standard Acid Digest)

Batch #: 00041404 Analyst: AVS 5/28/2013 TDH 6/4/13

Sample size is approximately 0.25 g
Parent Sample: Refer to Sample Breakdown Diagrams
Chemist instructions provided by SD Bolling.

Sample 4252 appeared to be orange/brown, dry, and uniform small granuels.
Sample 4280 appeared to be similar to 4252, but with a higher moisture content.
Sample 4307 was similar to 4252 but with the highest water content. Consistency was similar to peanut butter.
After digest, samples were uniform in appearence, all were a light/pale yellow, and transparent.

AVS
5/28/2013

6/11/13 Digest Batch 41618 AND 41864 @ 7/22/13

Sample 4252 Light Brownish, dry Granules
Sample 4280 Light Brown Granules w/ a bit more Moisture
Sample 4307 Light Brown very moist Sludge
Samples After Digest where All Light yellow w/ very Little material to filter out 95% ~~Digested~~ Digested TDH 7/22/13

A-6005-369 (REV 0)

LABCORE Data Entry Template for Batch# 00041872

Analyst: Shaw, Levi **Standard ID / Book#:** SEE BENCHSHEETS

Instrument: ICP/MS PQ-EXCELL

Method: MS ACTINIDES, LA-506-102 Rev/Mod G-1

Prep Batch: 00041864

Batch Comment: NONE

CACN:3A.26

S	Type	Sample	R	A	Matrix	Group#	Project
1	ICV	S1306240042	0		LIQUID		
	Analytes Requested:	Americium-241, Americium-243, Neptunium-237, Plutonium-239, Plutonium-240, Plutonium-242, Plutonium-244, Protactinium-231, Thorium-229, Thorium-230, Thorium-232, Uranium-233, Uranium-234, Uranium-235, Uranium-236, Uranium-238					
4	LLS	S1306240044	0		LIQUID		
	Analytes Requested:	Americium-241, Neptunium-237, Plutonium-239, Plutonium-242, Thorium-232, Uranium-233, Uranium-235, Uranium-238					
8	ICB	S1306240043	0		LIQUID		
	Analytes Requested:	Americium-241, Americium-243, Neptunium-237, Plutonium-239, Plutonium-240, Plutonium-242, Plutonium-244, Protactinium-231, Thorium-229, Thorium-230, Thorium-232, Uranium-233, Uranium-234, Uranium-235, Uranium-236, Uranium-238					
11	BLNK-PREP	S1305280021	2	A	LIQUID		
	Analytes Requested:	Americium-241, Americium-243, Neptunium-237, Plutonium-239, Plutonium-240, Plutonium-242, Plutonium-244, Protactinium-231, Thorium-229, Thorium-230, Thorium-232, Uranium-233, Uranium-234, Uranium-235, Uranium-236, Uranium-238					
13	SERDIL	S1306240045	0		SOLID		
	Analytes Requested:	Americium-241, Americium-243, Neptunium-237, Plutonium-239, Plutonium-240, Plutonium-242, Plutonium-244, Protactinium-231, Thorium-229, Thorium-230, Thorium-232, Uranium-233, Uranium-234, Uranium-235, Uranium-236, Uranium-238					
15	SAMPLE	S13T004252	2	A	SOLID	20130402	C109 CLO
	Analytes Requested:	Americium-241, Americium-243, Neptunium-237, Plutonium-239, Plutonium-240, Plutonium-242, Plutonium-244, Protactinium-231, Thorium-229, Thorium-230, Thorium-232, Uranium-233, Uranium-234, Uranium-235, Uranium-236, Uranium-238					
17	DUP	S1305280023	1	A	SOLID		
	Analytes Requested:	Neptunium-237, Plutonium-242, Protactinium-231, Thorium-230, Thorium-232, Uranium-233, Uranium-234, Uranium-235, Uranium-236, Uranium-238					
19	SAMPLE	S13T004280	2	A	SOLID	20130402	C109 CLO
	Analytes Requested:	Americium-241, Americium-243, Neptunium-237, Plutonium-239, Plutonium-240, Plutonium-242, Plutonium-244, Protactinium-231, Thorium-229, Thorium-230, Thorium-232, Uranium-233, Uranium-234, Uranium-235, Uranium-236, Uranium-238					
21	SAMPLE	S13T004307	2	A	SOLID	20130402	C109 CLO
	Analytes Requested:	Americium-241, Americium-243, Neptunium-237, Plutonium-239, Plutonium-240, Plutonium-242, Plutonium-244, Protactinium-231, Thorium-229, Thorium-230, Thorium-232, Uranium-233, Uranium-234, Uranium-235, Uranium-236, Uranium-238					
23	SPK-POST	S1306240047	0		SOLID		
	Analytes Requested:	Americium-241, Neptunium-237, Plutonium-239, Plutonium-242, Protactinium-231, Thorium-230, Thorium-232, Uranium-233, Uranium-234, Uranium-235, Uranium-236, Uranium-238					
25	STD-PREP	S1305280028	1	A	LIQUID		
	Analytes Requested:	Americium-241, Americium-243, Neptunium-237, Plutonium-239, Plutonium-240, Plutonium-242, Plutonium-244, Protactinium-231, Thorium-229, Thorium-230, Thorium-232, Uranium-233, Uranium-234, Uranium-235, Uranium-236, Uranium-238					

Data Entry Comments:

S = Batch Slot Number, R = Retest Number, A = Aliquot Code.

LABCORE Data Entry Template for Batch# 00041872

26	**STD-PREP**	**S1305280030**	**1**	**A**	**LIQUID**
Analytes Requested:	Americium-241, Americium-243, Neptunium-237, Plutonium-239, Plutonium-240, Plutonium-242, Plutonium-244, Protactinium-231, Thorium-229, Thorium-230, Thorium-232, Uranium-233, Uranium-234, Uranium-235, Uranium-236, Uranium-238				
27	**CCV**	**S1306240050**	**0**		**LIQUID**
Analytes Requested:	Americium-241, Americium-243, Neptunium-237, Plutonium-239, Plutonium-240, Plutonium-242, Plutonium-244, Protactinium-231, Thorium-229, Thorium-230, Thorium-232, Uranium-233, Uranium-234, Uranium-235, Uranium-236, Uranium-238				
30	**LLS**	**S1306240052**	**0**		**LIQUID**
Analytes Requested:	Americium-241, Neptunium-237, Plutonium-239, Plutonium-242, Thorium-232, Uranium-233, Uranium-235, Uranium-238				
34	**CCB**	**S1306240051**	**0**		**LIQUID**
Analytes Requested:	Americium-241, Americium-243, Neptunium-237, Plutonium-239, Plutonium-240, Plutonium-242, Plutonium-244, Protactinium-231, Thorium-229, Thorium-230, Thorium-232, Uranium-233, Uranium-234, Uranium-235, Uranium-236, Uranium-238				

Final Page for Batch# 00041872

07/01/13
Analyst Signature **Date**

07/01/13
Data Entry Signature **Date**

Data Entry Comments:

S = Batch Slot Number, R = Retest Number, A = Aliquot Code.

File Edit View Tools Window Help

7.2 x 10-7 mbar 1.9 mbar 2.56 bar 1248 W 4.2 W 1700 V 2750 V BTCNPESLQM

Back Forward On Off Queue

Setup Instrument Parameters Calibration Method QC Setup Sample List Results Reports

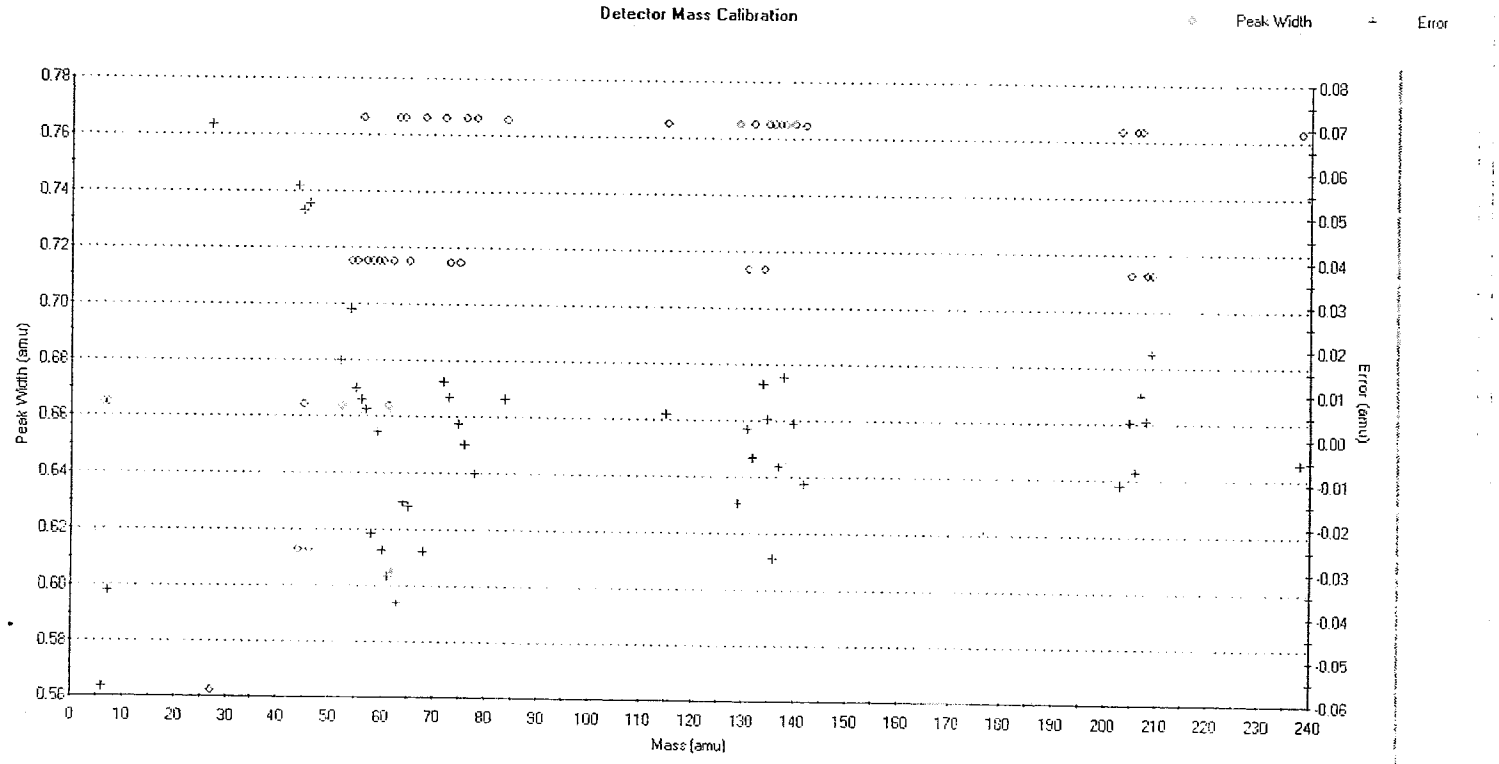
Configuration Editor Timings Detector Plateau Mass Calibration Detector Cross Calibration Gas AutoTune

PlasmaLab

Templates

Date/Time	Coeff 0	Coeff 1	Coeff 2	Notes
6/17/2013 10:4	0.87943	0.0039355	-1.8005e-010	New Mass Calib
6/18/2013 12:0	0.88095	0.0039353	-1.645e-010	New Mass Calib

Mass	Mass DAC	Peak Width (AMU)	Error (AMU)	Include
6.015	1290	0.665	-0.058	☑
7.016	1550	0.665	-0.036	☑
26.982	8652	0.562	0.070	☑
43.956	10965	0.613	0.056	☑



FORWARD POWER SET AT 1400 W.

06/18/13

Expansion Press.: 1.9 mbar
Analytical Press.: 7.2X10-7 mbar
Nebulizer Press.: 2.56 bar
Nebulizer Flow.: 0.94 L/min
Foward Power: 1248 W
Reflected Power: 4.2 W
PeltierTemp: 4.0 °c
Tune Soln Book #: 130605-3

Ready

NUM

6/24/2013 3:35:25PM
IncompleteBatchShort Version 2.7.29
batchreports 2.7.32

LABCORE Data Entry Template for Batch# 00041864

Analyst: Hexum, Troy **Standard ID / Book#:** SEE BENCHSHEET

Instrument: LE-BAL-040

Method: ACID DIGEST, SOLID, LA-505-163 Rev/Mod H-0-A

Prep Batch: N/A

Batch Comment: NONE

CACN:3A.26

S	Type	Sample	R	A	Matrix	Group#	Project
1	BLNK-PREP	S1305280021		A	LIQUID		
2	STD-PREP	S1305280028		A	LIQUID		
3	STD-PREP	S1305280030		A	LIQUID		
4	SAMPLE	S13T004252		A	SOLID	20130402	C109 CLO
5	DUP	S1305280023		A	SOLID		
6	SAMPLE	S13T004280		A	SOLID	20130402	C109 CLO
7	SAMPLE	S13T004307		A	SOLID	20130402	C109 CLO

Final Page for Batch# 00041864

7/6/13
Analyst Signature **Date**

06/24/13
Data Entry Signature **Date**

Data Entry Comments:

S = Batch Slot Number, R = Retest Number, A = Aliquot Code.

6/11/2013 3:15:10PM
IncompleteBatchShort Version 2.7.29
batchreports 2.7.32

LABCORE Data Entry Template for Batch# 00041618

Analyst: Hexum, Troy **Standard ID / Book#:** See Bench Sheet

Instrument: LE-BAL-040

Method: ACID DIGEST, SOLID, LA-505-163 Rev/Mod H-0-A

Prep Batch: N/A

Batch Comment:

ACID DIGEST C 109 CLO

CACN:3A.26

S	Type	Sample	R	A	Matrix	Group#	Project
1	BLNK-PREP	S1306110078		A	LIQUID		
2	STD-PREP	S1306110079		A	LIQUID		
3	STD-PREP	S1306110083		A	LIQUID		
4	STD-PREP	S1306110085		A	LIQUID		
5	STD-PREP	S1306110087		A	LIQUID		
6	SAMPLE	S13T004252		A	SOLID	20130402	C109 CLO
7	DUP	S1306110080		A	SOLID		
8	SPK-PREDIG	S1306110081		A	SOLID		
9	SPK-PREDIG	S1306110082		A	SOLID		
10	SPK-PREDIG	S1306110084		A	SOLID		
11	SPK-PREDIG	S1306110086		A	SOLID		
12	SAMPLE	S13T004280		A	SOLID	20130402	C109 CLO
13	SAMPLE	S13T004307		A	SOLID	20130402	C109 CLO

Final Page for Batch# 00041618

Analyst Signature 6/11/13 Date

Data Entry Signature 6/11/13 Date

Data Entry Comments:

S = Batch Slot Number, R = Retest Number, A = Aliquot Code.

15:47:31 6/18/13 Page 1 of 1
stab130618.vge

Excluded In Calib | Excluded In Results | Multi Element | Internal Standard | Standard Addition

Uncorrected ICPS Per Mass

S-Calibration Has Edited Standard
F-Interference Correction Failed
E-Calibration Edited
T-Tripped
I-Invalid Calibration
P-Pulse Counting
V-Valley Integration Failed
M-Result Over Max

Run	Label	TimeStamp	5Bkg	7Li	9Be	59Co	140Ce++	101Bkg
1	1ppb tune (non sopt) 1	6/18/2013 12:06:03 F	(P)1.000	(P)95526.824	(P)4248.882	(P)61770.508	(P)3113.589	(P)27.000
2	1ppb tune (non sopt) 1	6/18/2013 12:07:45 F	(P)1.500	(P)93163.543	(P)4180.362	(P)59286.014	(P)2980.061	(P)27.250
3	1ppb tune (non sopt) 1	6/18/2013 12:09:27 F	(P)2.250	(P)91988.465	(P)4116.843	(P)58300.973	(P)2884.041	(P)28.500
4	1ppb tune (non sopt) 1	6/18/2013 12:11:09 F	(P)1.750	(P)91497.829	(P)4141.350	(P)58003.014	(P)2798.024	(P)28.500
5	1ppb tune (non sopt) 1	6/18/2013 12:12:51 F	(P)1.500	(P)91340.578	(P)4240.629	(P)57578.050	(P)2786.522	(P)25.750
6	1ppb tune (non sopt) 1	6/18/2013 12:14:33 F	(P)1.500	(P)91692.321	(P)4243.380	(P)57903.361	(P)2768.768	(P)23.500
7	1ppb tune (non sopt) 1	6/18/2013 12:16:15 F	(P)1.250	(P)92320.849	(P)4251.883	(P)57560.730	(P)2749.265	(P)27.250
8	1ppb tune (non sopt) 1	6/18/2013 12:17:57 F	(P)2.250	(P)92486.163	(P)4259.135	(P)57560.479	(P)2721.259	(P)24.250
9	1ppb tune (non sopt) 1	6/18/2013 12:19:39 F	(P)1.750	(P)93276.275	(P)4188.614	(P)56693.021	(P)2664.749	(P)27.000
10	1ppb tune (non sopt) 1	6/18/2013 12:21:21 F	(P)1.500	(P)93977.599	(P)4336.658	(P)56646.587	(P)2670.750	(P)22.250
	Mean of 1ppb tune (n	6/18/2013 12:05:23 F	(P)1.625	(P)92727.045	(P)4220.774	(P)58130.274	(P)2813.703	(P)26.125
	SD of 1ppb tune (non s		(P)0.395	(P)1298.173	(P)64.413	(P)1487.163	(P)141.766	(P)2.132
	%RSD of 1ppb tune (		(P)24.325	(P)1.400	(P)1.526	(P)2.558	(P)5.038	(P)8.161

Run	Label	TimeStamp	115In	140Ce	156Ce O	209Bi	220Bkg	238U
1	1ppb tune (non sopt) 1	6/18/2013 12:06:03 F	(P)123440.02	(P)131729.05	(P)3469.171	(P)156433.33	(P)1.000	(P)202629.43
2	1ppb tune (non sopt) 1	6/18/2013 12:07:45 F	(P)118182.08	(P)126180.55	(P)3444.165	(P)152652.26	(P)1.500	(P)195438.28
3	1ppb tune (non sopt) 1	6/18/2013 12:09:27 F	(P)117556.20	(P)123586.52	(P)3189.606	(P)149924.60	(P)0.750	(P)190873.43
4	1ppb tune (non sopt) 1	6/18/2013 12:11:09 F	(P)117261.54	(P)122612.18	(P)3069.580	(P)148761.29	(P)1.000	(P)189208.00
5	1ppb tune (non sopt) 1	6/18/2013 12:12:51 F	(P)116921.52	(P)121687.83	(P)2953.055	(P)147748.10	(P)1.500	(P)188943.02
6	1ppb tune (non sopt) 1	6/18/2013 12:14:33 F	(P)117432.19	(P)122838.36	(P)3010.067	(P)149157.38	(P)0.500	(P)188831.56
7	1ppb tune (non sopt) 1	6/18/2013 12:16:15 F	(P)117925.22	(P)121666.15	(P)2972.059	(P)148815.85	(P)1.000	(P)188414.11
8	1ppb tune (non sopt) 1	6/18/2013 12:17:57 F	(P)117857.16	(P)120885.06	(P)2914.547	(P)149677.78	(P)0.750	(P)189610.02
9	1ppb tune (non sopt) 1	6/18/2013 12:19:39 F	(P)116587.56	(P)120108.80	(P)2899.794	(P)148275.27	(P)0.750	(P)188353.06
10	1ppb tune (non sopt) 1	6/18/2013 12:21:21 F	(P)117623.25	(P)121704.47	(P)2828.530	(P)148458.16	(P)0.500	(P)189093.49
	Mean of 1ppb tune (n	6/18/2013 12:05:23 F	(P)118078.67	(P)123299.90	(P)3075.058	(P)149990.40	(P)0.925	(P)191139.44
	SD of 1ppb tune (non s		(P)1942.386	(P)3398.444	(P)224.027	(P)2637.350	(P)0.355	(P)4548.115
	%RSD of 1ppb tune (		(P)1.645	(P)2.756	(P)7.285	(P)1.758	(P)38.328	(P)2.379

RATIO OF DOUBLE CHARGED $^{140}Ce^{++}/^{140}Ce$
MEAN = 2.3% (WITHIN ACCEPTANCE CRITERIA)

RATIO OF OXIDES $^{156}CeO/^{140}Ce$
MEAN = 2.5% (WITHIN ACCEPTANCE CRITERIA)

(HW) 6/30/13.

Survey Run Setup

Sweeps - 20

Dwell Time - 300

Channels Per Mass - 10

Acquisition Duration - 15 Secs

Main Run Setup

Main Run - Peak Jumping

Sweeps - 100

Dwell Time - 10,000

Channels Per Mass - 1

Acquisition Duration - 16.00

Channel Spacing - 0.02

Main Scan Regions

Symbol	Dwell Time	Symbol	Dwell Time	Symbol	Dwell Time
115In	10,000	193Ir	10,000	229Th	10,000
230Th	10,000	231Pa	10,000	232Th	10,000
233U	10,000	234U	10,000	235U	10,000
236U	10,000	237Np	10,000	238U	30,000

Instrument Setup - Sample Configuration

Sample	Configuration	Date
All Samples	Inorganic	11:58:25 6/18/13

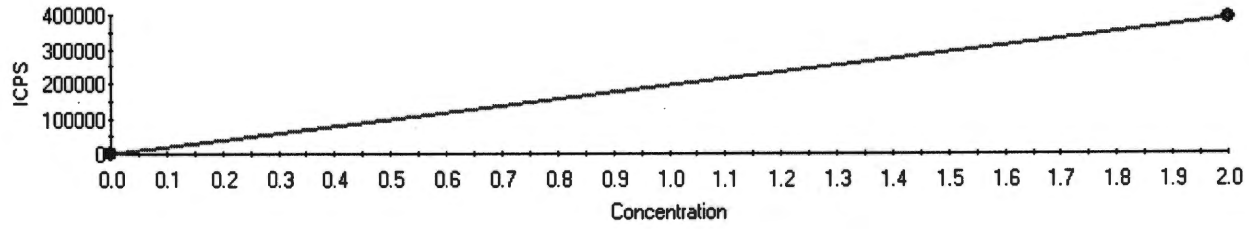
Instrument Setup - Configurations

Configuration Name - Inorganic
Description - PQExcell CCT Sim Default
Date - 11:58:25 6/18/13
Maximum Uptake Time - 90
Maximum Washout Time - 90
S-Option Pump Running - No
Plasma Screen Forward - No
Makeup Gas On - No
Use CCT - No
Use Accessory Gas - No

Setting	Value
Extraction	-680.00
Lens1	7.00
Lens2	-38.00
Lens3	-130.00
Pole Bias	-1.00
Sampling Depth	380.00
Horizontal	-13.00
Vertical	67.00
Cool	13.00
Auxiliary	0.92
Nebuliser	0.94
Forward power	1,400.00
HT1 Voltage	1,900.00
HT2 Voltage	2,600.00
D1	-33.00
Focus	27.00

15:45:46 6/18/13 Page 1 of 4
Act130618.vge

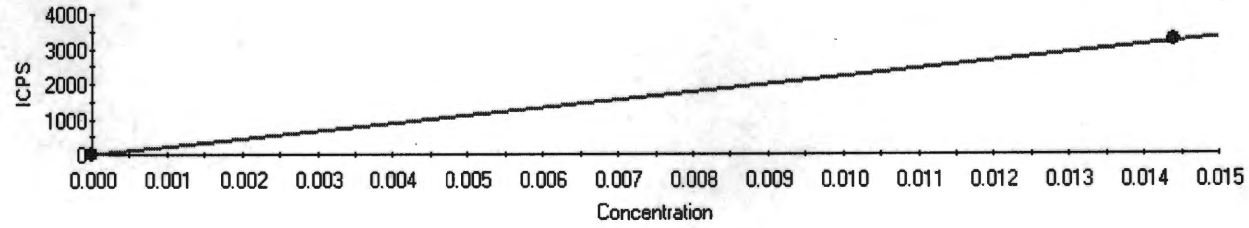
Fully Quant Calibration 232Th FQ Block 1



Intercept CPS=27.582190 Intercept Conc=0.000142
Sensitivity=194641.741461 Correlation Coeff=1.000000

Label	Defined	Measured	Error	Mean CPS	%Error
Cal Blank	0.00	0.00	0.00	27.58	
U/Th Nat Cal 2ppb	2.00	2.00	0.00	389,311.07	0.00

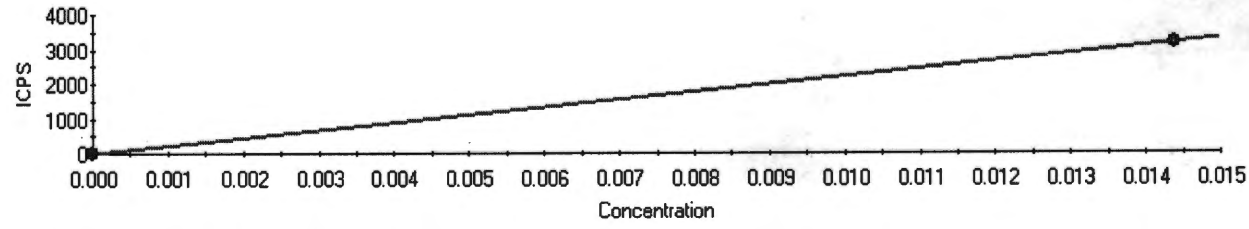
Fully Quant Calibration 234U FQ Block 1



Intercept CPS=2.006170 Intercept Conc=0.000009
Sensitivity=222919.593037 Correlation Coeff=1.000000

Label	Defined	Measured	Error	Mean CPS	%Error
Cal Blank	0.00	0.00	0.00	2.01	
U/Th Nat Cal 2ppb	0.01	0.01	0.00	3,212.05	0.00

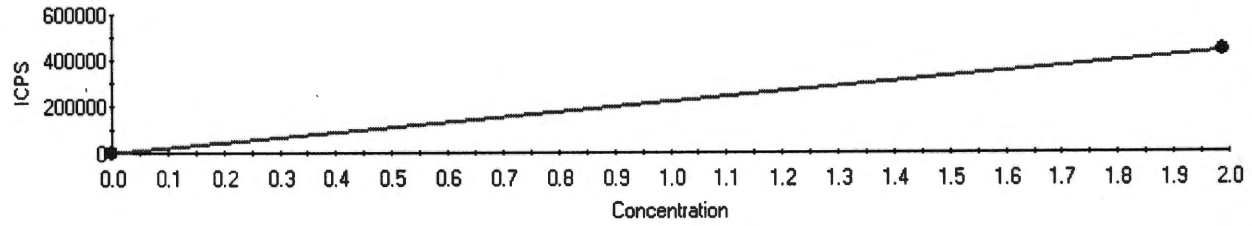
Fully Quant Calibration 235U FQ Block 1



Intercept CPS=1.404852 Intercept Conc=0.000006
Sensitivity=221157.590826 Correlation Coeff=1.000000

Label	Defined	Measured	Error	Mean CPS	%Error
Cal Blank	0.00	0.00	0.00	1.40	
U/Th Nat Cal 2ppb	0.01	0.01	0.00	3,186.07	0.00

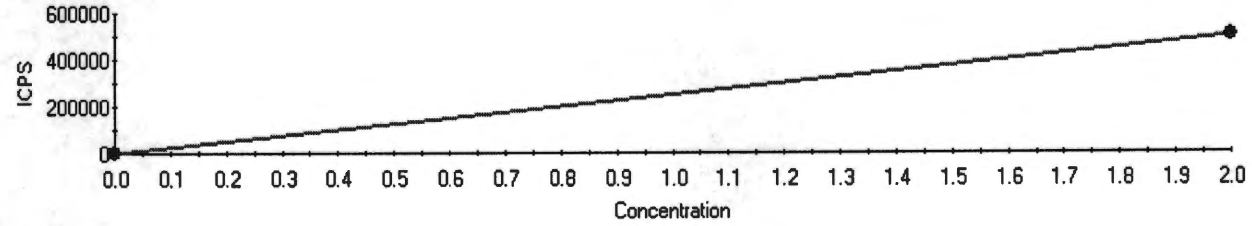
Fully Quant Calibration 238U FQ Block 1



Intercept CPS=317.496787 Intercept Conc=0.001446
Sensitivity=219541.405972 Correlation Coeff=1.000000

Label	Defined	Measured	Error	Mean CPS	%Error
Cal Blank	0.00	0.00	0.00	317.50	
U/Th Nat Cal 2ppb	1.99	1.99	0.00	436,326.73	0.00

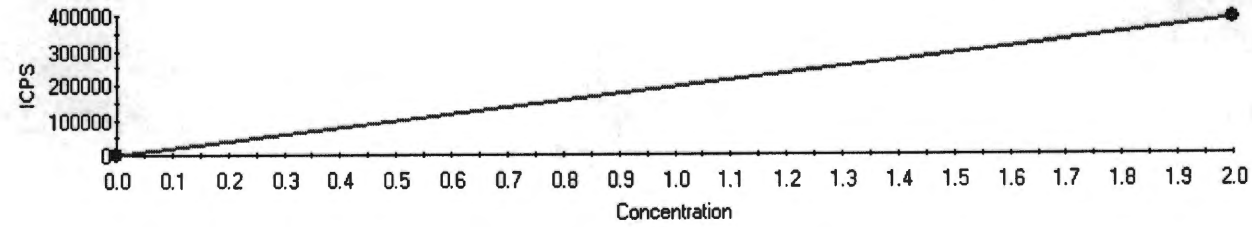
Fully Quant Calibration 237Np FQ Block 1



Intercept CPS=1.195321 Intercept Conc=0.000005
Sensitivity=249688.539669 Correlation Coeff=1.000000

Label	Defined	Measured	Error	Mean CPS	%Error
Cal Blank	0.00	0.00	0.00	1.20	
U233/Np Cal 2ppb	2.00	2.00	0.00	499,378.27	0.00

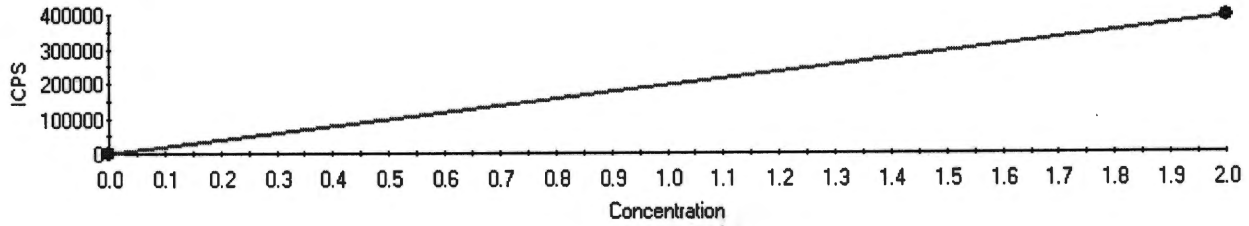
Fully Quant Calibration 229Th FQ Block 1



Intercept CPS=28.183651 Intercept Conc=0.000145
Sensitivity=194642.259738 Correlation Coeff=1.000000

Label	Defined	Measured	Error	Mean CPS	%Error
Cal Blank	0.00	0.00	0.00	28.18	
U/Th Nat Cal 2ppb	2.00	2.00	0.00	389,312.70	0.00

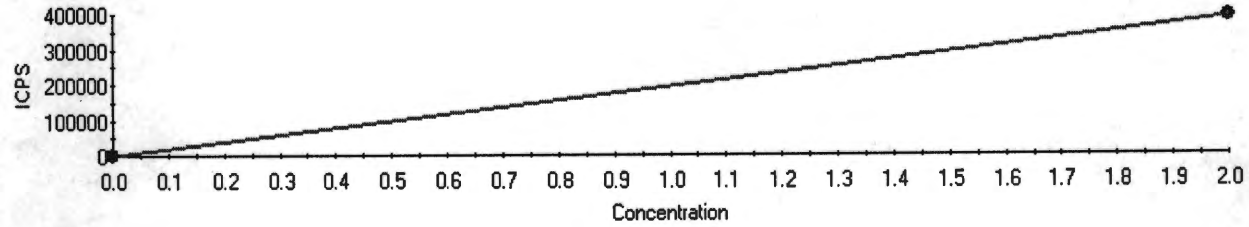
Fully Quant Calibration 230Th FQ Block 1



Intercept CPS=28.181301 Intercept Conc=0.000145
Sensitivity=194642.054737 Correlation Coeff=1.000000

Label	Defined	Measured	Error	Mean CPS	%Error
Cal Blank	0.00	0.00	0.00	28.18	
U/Th Nat Cal 2ppb	2.00	2.00	0.00	389,312.29	0.00

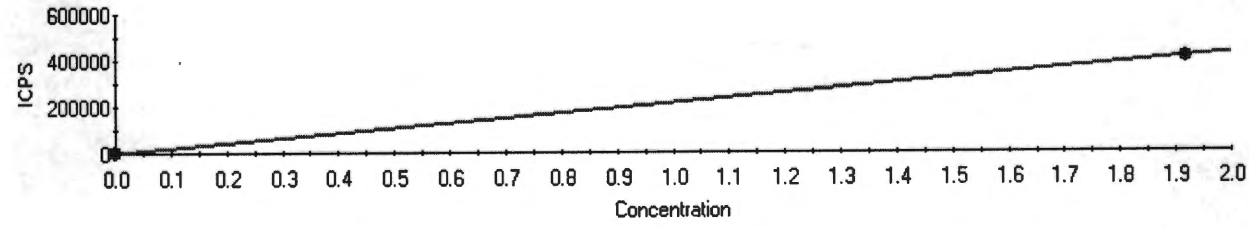
Fully Quant Calibration 231Pa FQ Block 1



Intercept CPS=28.978879 Intercept Conc=0.000149
Sensitivity=194642.064790 Correlation Coeff=1.000000

Label	Defined	Measured	Error	Mean CPS	%Error
Cal Blank	0.00	0.00	0.00	28.98	
U/Th Nat Cal 2ppb	2.00	2.00	0.00	389,313.11	0.00

Fully Quant Calibration 233U FQ Block 1

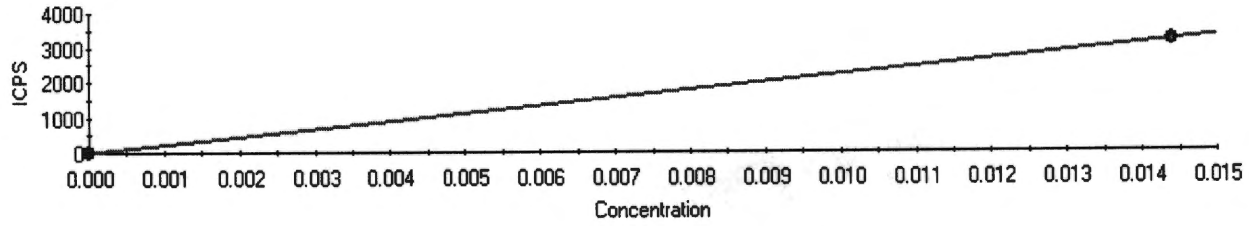


Intercept CPS=1.208213 Intercept Conc=0.000006
Sensitivity=213804.414357 Correlation Coeff=1.000000

Label	Defined	Measured	Error	Mean CPS	%Error
Cal Blank	0.00	0.00	0.00	1.21	
U233/Np Cal 2ppb	1.92	1.92	0.00	409,864.27	0.00

15:45:47 6/18/13 Page 4 of 4
Act130618.vge

Fully Quant Calibration 236U FQ Block 1



Intercept CPS=2.410307 Intercept Conc=0.000011
Sensitivity=221158.797764 Correlation Coeff=1.000000

Label	Defined	Measured	Error	Mean CPS	%Error
Cal Blank	0.00	0.00	0.00	2.41	
U/Th Nat Cal 2ppb	0.01	0.01	0.00	3,187.10	0.00

Fully Quantitative Concentrations

ID	Label	229Th	230Th	231Pa	232Th	233U	234U	235U
		ppt	ppt	ppt	ppt	ppt	ppt	ppt
4	U/Th Nat Cal 2ppb	2000	2000	2000	2000		14.40	14.40
5	U233/Np Cal 2ppb					1917		

ID	Label	236U	237Np	238U
		ppt	ppt	ppt
4	U/Th Nat Cal 2ppb	14.40		1986
5	U233/Np Cal 2ppb		2000	

ATL	ICP-MS BENCH SHEET - PQ EXCELL	○ IH ◉ Non IH

LA-506-102 Rev G-1 Instrument ID# PQ EXCELL

Client/Project: C109 CLO

Batch #: 00041798 / 141872 Analyst: Levi Shaw

Date/Time Start: 06/18/13 / 1226 Date/Time End: 06/18/13 / 1504

Instrument File #: Act130618.vge Standard Book # & page HNF-N-667 1 pg 125

Pump Tubing OK ☒ Chiller Water OK ☒ Wash Station OK ☒ 5 °C. Peltier Temp

(Pipette #); Pipette ID; Volume Range or Fixed Volume; Check box if pipette passes visual verification:

(1) 210897A	(Range/Vol: 1.0-10.0mL) ☒	(4) 1140229	(Range/Vol: 0.1-1.0mL) ☒
(2) 141655Z	(Range/Vol: 0.01-0.1mL) ☒	(5) 439095	(Range/Vol: 0.5-5.0mL) ☒
(3) 2230539	(Range/Vol: 0.01-0.1mL) ☒	(6) NA	(Range/Vol: NA) ☐

Calibration Standards:

Blank - 0.03mL(120816-1) + 10.0mL(130613-1)

U/Th Cal - 0.1mL(SL019467, SL019463) + 9.8mL (130613-1);0.2mL + 0.03mL(120816-1) + 9.8mL (13061301)

U233/Np Cal - 0.1mL(146B64, 118B64) + 0.03mL (120816-1) + 9.8mL(13061301)

Verification Standards:

ICB/CCB - 0.03mL(120816-1) + 10.0mL(130613-1)

U/Th ICV/CCV - 0.1mL(SL017742, SL017753) + 9.8mL(130613-1);0.1mL + 9.9mL(130613-1);0.1mL + 0.03mL(120816-1) + 9.9mL(13061301)

U233/Np ICV/CCV - 0.1mL(69B63) + 0.5mL (119B64) + 0.03mL(120816-1) + 9.4mL(13061301)

U/Th LLS 25ppt- 0.1mL(SL019467, SL019463) + 9.8mL(130613-1);0.2mL + 9.8mL(13061301); 0.125mL + 0.03mL(120816-1) + 9.875mL (13061301)

U/Th LLS 5ppt - 0.1mL(SL019467, SL019463) + 9.8mL(130613-1);0.2mL + 9.8mL (13061301);0.025mL + 0.03mL(120816-1) + 9.975mL(13061301)

U233/Np LLS 5ppt - 0.1mL(146B64, 118B64) + 9.8mL(13061301);0.025mL + 0.03mL(120816-1) + 9.975mL(13061301)

ICS ATL 2 50x - 0.2mL(SL018961) + 0.03mL (120816-1) + 9.8mL(13061301)

Post Spike:

1ppb from cal stds

Sample Number	Dilution Factor	Dilution
U/Th ICV	1	see above
U233/Np ICV	1	see above
U/Th LLS 25ppt	1	see above
U/Th LLS 5ppt	1	see above
U233/Np LLS	1	see above
ICB	1	see above
ICB	1	see above

ATL	ICP-MS BENCH SHEET - PQ EXCELL (continued)	○ IH ◉ Non IH

LA-506-102 Rev G-1 Instrument ID# PQ EXCELL

Client/Project: C109 CLO

Batch #: 00041798 Analyst: Levi Shaw

Sample Number	Dilution Factor	Dilution
ICS	1	see above
Prep Blank	50,000	0.1(3)-9.9(1);0.02(3)-0.03(2)-9.98(1)
S13T004252_L	250,000	0.1(3)-9.9(1);0.02(3)-9.98(1);2.0(5)-0.03(2)-8.0(1)
S13T004252	50,000	0.1(3)-9.9(1);0.02(3)-0.03(2)-9.98(1)
S13T004252_D	50,000	0.1(3)-9.9(1);0.02(3)-0.03(2)-9.98(1)
S13T004280	50,000	0.1(3)-9.9(1);0.02(3)-0.03(2)-9.98(1)
S13T004307	50,000	0.1(3)-9.9(1);0.02(3)-0.03(2)-9.98(1)
S13T004252_A	50,000	0.1(3)-9.9(1);0.02(3)-0.03(2)-[U/Th]0.1(2)-[U233] 0.05(3)-[Np]0.05(3)-9.78(1)
Prep Std 3	20	0.5(4)-0.03(2)-9.5(1)
Prep Std 4	20	0.5(4)-0.03(2)-9.5(1)
U/Th CCV	1	see above
U233/Np CCV	1	see above
U/Th LLS 25ppt	1	see above
U/Th LLS 5ppt	1	see above
U233/Np LLS	1	see above
CCB	1	see above
CCB	1	see above

Dilution Key:

(www) indicates the sample volume in mL

(xxx) indicates the internal standard in mL

(yyy) indicates the post spike volume in mL

(zzz) indicates the diluents volume in mL

Examples (Where (#) is the pipette #):

Single dilution: www(#)-xxx(#)-zzz(#)	0.25(#) - 0.03(#) - 9.75(#)	DF=40
Single dilution with Post Spike: www(#)-xxx(#)-yyy(#)-zzz(#)	0.25(#) - 0.03(#) - 0.025(#) - 9.725(#)	DF=40
Double dilution: www(#)-zzz(#); www(#)-xxx(#)-zzz(#)	0.10(#) - 9.9(#); 0.25(#) - 0.03(#) - 9.75(#)	DF=4000
Double dilution with Post Spike: www(#)-zzz(#); www(#)-xxx(#)-yyy(#)-zzz(#)	0.10(#) - 9.9(#); 0.25(#) - 0.03(#) - 0.025(#) - 9.725(#)	DF=4000

Comments:

-Np and U233 failed the Post spike high, the sample results were all <DL for these analytes.

-I did not run the pre-digest spikes because at a 50,000x dilution the spike would have been diluted to low to be accurately quantitated. LS 06/18/13

TJA Solutions

15:36:19 6/18/13
Plasmalab Report

Multi Element | Semi Quant | Internal Standard | Standard Addition
QC Pass | QC Failure | Acquired | Skipped | Aborted | Unaquired

		Label	Type	Rack	Row	Column	Height (	Survey	Main	Dilution	Internal	
1	TR	rinse	Unknown	1	5	1	144	0	3	1	193Ir[Default	
2	TR	rinse	Unknown	1	5	1	144	0	3	1	193Ir[Default	
3	TR	Cal Blank	Blank	1	1	1	144	0	5	1	193Ir[Default	
4	TR	U/Th Nat Cal 2p	Fully Quant Stan	1	1	2	144	0	5	1	193Ir[Default	
5	TR	U233/Np Cal 2p	Fully Quant Stan	1	1	3	144	0	5	1	193Ir[Default	
6	TR	U/Th ICV 1ppb	Unknown	1	1	4	144	0	5	1	193Ir[Default	
7	TR	U233/Np ICV 1	Unknown	1	1	5	144	0	5	1	193Ir[Default	
8	TR	U/Th LLS 25ppt	Unknown	1	1	6	144	0	5	1	193Ir[Default	
9	TR	U/Th LLS 5ppt	Unknown	1	1	7	144	0	5	1	193Ir[Default	
10	TR	U233/Np LLS 5	Unknown	1	1	8	144	0	5	1	193Ir[Default	
11	TR	ICB	Unknown	1	1	9	144	0	5	1	193Ir[Default	
12	TR	ICB	Unknown	1	1	9	144	0	5	1	193Ir[Default	
13	TR	ICS ATL 2 50x	Unknown	1	1	10	144	1	5	1	193Ir[Default	
14	TR	Prep Blank	Unknown	1	2	1	144	1	5	50000	193Ir[Default	
15	TR	S13T004252 L	Unknown	1	2	2	144	1	5	250000	193Ir[Default	
16	TR	S13T004252	Unknown	1	2	3	144	1	5	50000	193Ir[Default	
17	TR	S13T004252 D	Unknown	1	2	4	144	1	5	50000	193Ir[Default	
18	TR	S13T004280	Unknown	1	2	5	144	1	5	50000	193Ir[Default	
19	TR	S13T004307	Unknown	1	2	6	144	1	5	50000	193Ir[Default	
20	TR	S13T004252 A	Unknown	1	2	7	144	1	5	50000	193Ir[Default	
21	TR	Prep Std 3	Unknown	1	2	8	144	1	5	20	193Ir[Default	
22	TR	Prep Std 4	Unknown	1	2	9	144	1	5	20	193Ir[Default	
23	TR	U/Th CCV	Unknown	1	1	4	144	0	5	1	193Ir[Default	
24	TR	U233/Np CCV	Unknown	1	1	5	144	0	5	1	193Ir[Default	
25	TR	U/Th LLS 25ppt	Unknown	1	1	6	144	0	5	1	193Ir[Default	
26	TR	U/Th LLS 5ppt	Unknown	1	1	7	144	0	5	1	193Ir[Default	
27	TR	U233/Np LLS 5	Unknown	1	1	8	144	0	5	1	193Ir[Default	
28	TR	CCB	Unknown	1	1	11	144	0	5	1	193Ir[Default	

TJA Solutions

15:36:19 6/18/13
Plasmalab Report

Multi Element | Internal Standard | Standard Addition
QC Pass | Acquired | Unaquired

		Label	Type	Rack	Row	Column	Height (	Survey	Main	Dilution	Internal
1	TR	rinse	Unknown	1	5	1	144	0	3	1	193Ir[Default
2	TR	rinse	Unknown	1	5	1	144	0	3	1	193Ir[Default
3	TR	Cal Blank	Blank	1	1	1	144	0	5	1	193Ir[Default
4	TR	U/Th Nat Cal 2p	Fully Quant Stan	1	1	2	144	0	5	1	193Ir[Default
5	TR	U233/Np Cal 2p	Fully Quant Stan	1	1	3	144	0	5	1	193Ir[Default
6	TR	U/Th ICV 1ppb	Unknown	1	1	4	144	0	5	1	193Ir[Default
7	TR	U233/Np ICV 1	Unknown	1	1	5	144	0	5	1	193Ir[Default
8	TR	U/Th LLS 25ppt	Unknown	1	1	6	144	0	5	1	193Ir[Default
9	TR	U/Th LLS 5ppt	Unknown	1	1	7	144	0	5	1	193Ir[Default
10	TR	U233/Np LLS 5	Unknown	1	1	8	144	0	5	1	193Ir[Default
11	TR	ICB	Unknown	1	1	9	144	0	5	1	193Ir[Default
12	TR	ICB	Unknown	1	1	9	144	0	5	1	193Ir[Default
13	TR	ICS ATL 2 50x	Unknown	1	1	10	144	1	5	1	193Ir[Default
14	TR	Prep Blank	Unknown	1	2	1	144	1	5	50000	193Ir[Default
15	TR	S13T004252 L	Unknown	1	2	2	144	1	5	250000	193Ir[Default
16	TR	S13T004252	Unknown	1	2	3	144	1	5	50000	193Ir[Default
17	TR	S13T004252 D	Unknown	1	2	4	144	1	5	50000	193Ir[Default
18	TR	S13T004280	Unknown	1	2	5	144	1	5	50000	193Ir[Default
19	TR	S13T004307	Unknown	1	2	6	144	1	5	50000	193Ir[Default
20	TR	S13T004252 A	Unknown	1	2	7	144	1	5	50000	193Ir[Default
21	TR	Prep Std 3	Unknown	1	2	8	144	1	5	20	193Ir[Default
22	TR	Prep Std 4	Unknown	1	2	9	144	1	5	20	193Ir[Default
23	TR	U/Th CCV	Unknown	1	1	4	144	0	5	1	193Ir[Default
24	TR	U233/Np CCV	Unknown	1	1	5	144	0	5	1	193Ir[Default
25	TR	U/Th LLS 25ppt	Unknown	1	1	6	144	0	5	1	193Ir[Default
26	TR	U/Th LLS 5ppt	Unknown	1	1	7	144	0	5	1	193Ir[Default
27	TR	U233/Np LLS 5	Unknown	1	1	8	144	0	5	1	193Ir[Default
28	TR	CCB	Unknown	1	1	11	144	0	5	1	193Ir[Default

Multi Element Internal Standard

Dilution Corrected Concentration Per Analyte

S-Calibration Has Edited Standard
F-Interference Correction Failed
E-Calibration Edited
T-Tripped
I-Invalid Calibration
P-Pulse Counting
V-Valley Integration Failed
M-Result Over Max

Run	Label	TimeStamp	193Ir	229Th	230Th	231Pa	232Th	233U
			ppb	ppt	ppt	ppt	ppt	ppt
1	rinse	6/18/2013 12:26:43 F	(P)0.000	(P)0.0000	(P)0.0000	(P)0.0000	(P)0.0000	(P)0.0000
2	rinse	6/18/2013 12:27:11 F	(P)0.000	(P)0.0000	(P)0.0000	(P)0.0000	(P)0.0000	(P)0.0000
3	rinse	6/18/2013 12:27:39 F	(P)0.000	(P)0.0000	(P)0.0000	(P)0.0000	(P)0.0000	(P)0.0000
	Mean of rinse	6/18/2013 12:26:43 F	(P)0.000	(P)0.0000	(P)0.0000	(P)0.0000	(P)0.0000	(P)0.0000
	SD of rinse		(P)n/a	(P)0.0000	(P)0.0000	(P)0.0000	(P)0.0000	(P)0.0000
	%RSD of rinse		(P)n/a	(P)0.0000	(P)0.0000	(P)0.0000	(P)0.0000	(P)0.0000
1	rinse	6/18/2013 12:31:34 F	(P)0.000	(P)0.0000	(P)0.0000	(P)0.0000	(P)0.0000	(P)0.0000
2	rinse	6/18/2013 12:32:01 F	(P)0.000	(P)0.0000	(P)0.0000	(P)0.0000	(P)0.0000	(P)0.0000
3	rinse	6/18/2013 12:32:29 F	(P)0.000	(P)0.0000	(P)0.0000	(P)0.0000	(P)0.0000	(P)0.0000
	Mean of rinse	6/18/2013 12:31:34 F	(P)0.000	(P)0.0000	(P)0.0000	(P)0.0000	(P)0.0000	(P)0.0000
	SD of rinse		(P)n/a	(P)0.0000	(P)0.0000	(P)0.0000	(P)0.0000	(P)0.0000
	%RSD of rinse		(P)n/a	(P)0.0000	(P)0.0000	(P)0.0000	(P)0.0000	(P)0.0000
1	Cal Blank	6/18/2013 12:36:25 F	(P)1.001	(P)0.0044	(P)0.0044	(P)0.0055	(P)0.0023	(P)0.0084
2	Cal Blank	6/18/2013 12:36:52 F	(P)1.012	(P)-0.0096	(P)-0.0148	(P)-0.0189	(P)-0.0117	(P)0.0086
3	Cal Blank	6/18/2013 12:37:20 F	(P)1.001	(P)-0.0368	(P)-0.0317	(P)-0.0306	(P)-0.0338	(P)-0.0057
4	Cal Blank	6/18/2013 12:37:47 F	(P)0.992	(P)0.0133	(P)0.0133	(P)0.0143	(P)0.0163	(P)-0.0057
5	Cal Blank	6/18/2013 12:38:15 F	(P)0.994	(P)0.0288	(P)0.0288	(P)0.0298	(P)0.0268	(P)-0.0057
	Mean of Cal Blank	6/18/2013 12:36:25 F	(P)1.001	(P)0.0000	(P)-0.0000	(P)-0.0000	(P)-0.0000	(P)-0.0000
	SD of Cal Blank		(P)n/a	(P)0.0249	(P)0.0237	(P)0.0246	(P)0.0238	(P)0.0077
	%RSD of Cal Blank		(P)n/a	(P)0.0000	(P)0.0000	(P)0.0000	(P)0.0000	(P)0.0000
1	U/Th Nat Cal 2ppb	6/18/2013 12:42:10 F	(P)1.027	(P)1982.0000	(P)1982.0000	(P)1982.0000	(P)1982.0000	(P)0.1289
2	U/Th Nat Cal 2ppb	6/18/2013 12:42:38 F	(P)1.020	(P)1995.0000	(P)1995.0000	(P)1995.0000	(P)1995.0000	(P)0.1518
3	U/Th Nat Cal 2ppb	6/18/2013 12:43:05 F	(P)1.025	(P)1992.0000	(P)1992.0000	(P)1992.0000	(P)1992.0000	(P)0.1094
4	U/Th Nat Cal 2ppb	6/18/2013 12:43:33 F	(P)1.022	(PM)2009.000	(PM)2009.000	(PM)2009.000	(PM)2009.000	(P)0.0948
5	U/Th Nat Cal 2ppb	6/18/2013 12:44:01 F	(P)1.019	(PM)2022.000	(PM)2022.000	(PM)2022.000	(PM)2022.000	(P)0.0896
	Mean of U/Th Nat Cal 2	6/18/2013 12:42:10 F	(P)1.027	(PM)2000.000	(PM)2000.000	(PM)2000.000	(PM)2000.000	(P)0.1149
	SD of U/Th Nat Cal 2		(P)n/a	(PM)15.7400	(PM)15.7500	(PM)15.7400	(PM)15.7400	(P)0.0257
	%RSD of U/Th Nat C		(P)n/a	(PM)0.7871	(PM)0.7874	(PM)0.7872	(PM)0.7871	(P)22.3200
1	U233/Np Cal 2ppb	6/18/2013 12:47:56 F	(P)1.021	(P)18.5200	(P)18.3100	(P)18.3100	(P)18.3100	(PM)1927.000
2	U233/Np Cal 2ppb	6/18/2013 12:48:23 F	(P)1.019	(P)17.7800	(P)17.5600	(P)17.5700	(P)17.5700	(PM)1919.000
3	U233/Np Cal 2ppb	6/18/2013 12:48:51 F	(P)1.006	(P)16.5800	(P)16.3800	(P)16.3700	(P)16.3700	(P)1903.0000
4	U233/Np Cal 2ppb	6/18/2013 12:49:19 F	(P)1.016	(P)16.1500	(P)15.9800	(P)15.9700	(P)15.9800	(PM)1929.000
5	U233/Np Cal 2ppb	6/18/2013 12:49:46 F	(P)1.008	(P)15.6200	(P)15.4200	(P)15.4200	(P)15.4300	(P)1908.0000
	Mean of U233/Np Cal 2	6/18/2013 12:47:56 F	(P)1.021	(P)16.9300	(P)16.7300	(P)16.7300	(P)16.7300	(PM)1917.000
	SD of U233/Np Cal 2		(P)n/a	(P)1.1900	(P)1.1810	(P)1.1850	(P)1.1820	(PM)11.3200
	%RSD of U233/Np C		(P)n/a	(P)7.0310	(P)7.0600	(P)7.0820	(P)7.0670	(PM)0.5904
1	U/Th ICV 1ppb	6/18/2013 12:53:42 F	(P)1.029	(P)-0.1448	(P)-0.1342	(P)-0.1436	(P)1037.0000	(P)0.1868
2	U/Th ICV 1ppb	6/18/2013 12:54:09 F	(P)1.023	(P)-0.1395	(P)-0.1395	(P)-0.1436	(P)1049.0000	(P)0.1618
3	U/Th ICV 1ppb	6/18/2013 12:54:37 F	(P)1.012	(P)-0.1396	(P)-0.1344	(P)-0.1437	(P)1051.0000	(P)0.1648
4	U/Th ICV 1ppb	6/18/2013 12:55:05 F	(P)1.010	(P)-0.1448	(P)-0.1396	(P)-0.1437	(P)1054.0000	(P)0.1692
5	U/Th ICV 1ppb	6/18/2013 12:55:32 F	(P)1.019	(P)-0.1396	(P)-0.1238	(P)-0.1436	(P)1065.0000	(P)0.3756
	Mean of U/Th ICV 1p	6/18/2013 12:53:42 F	(P)1.029	(P)-0.1417	(P)-0.1343	(P)-0.1436	(P)1051.0000	(P)0.2116
	SD of U/Th ICV 1ppb		(P)n/a	(P)0.0029	(P)0.0064	(P)0.0000	(P)10.0800	(P)0.0922

Included In Calib: Multi Element Internal Standard

Dilution Corrected Concentration Per Analyte

S-Calibration Has Edited Standard F-Interference Correction Failed E-Calibration Edited T-Tripped I-Invalid Calibration P-Pulse Counting V-Valley Integration Failed M-Result Over Max

Run	Label	TimeStamp	234U ppt	235U ppt	236U ppt	237Np ppt	238U ppt
1	rinse	6/18/2013 12:26:43 F	(P)0.0000	(P)0.0000	(P)0.0000	(P)0.0000	(P)0.0000
2	rinse	6/18/2013 12:27:11 F	(P)0.0000	(P)0.0000	(P)0.0000	(P)0.0000	(P)0.0000
3	rinse	6/18/2013 12:27:39 F	(P)0.0000	(P)0.0000	(P)0.0000	(P)0.0000	(P)0.0000
	Mean of rinse	6/18/2013 12:26:43 F	(P)0.0000	(P)0.0000	(P)0.0000	(P)0.0000	(P)0.0000
	SD of rinse		(P)0.0000	(P)0.0000	(P)0.0000	(P)0.0000	(P)0.0000
	%RSD of rinse		(P)0.0000	(P)0.0000	(P)0.0000	(P)0.0000	(P)0.0000
1	rinse	6/18/2013 12:31:34 F	(P)0.0000	(P)0.0000	(P)0.0000	(P)0.0000	(P)0.0000
2	rinse	6/18/2013 12:32:01 F	(P)0.0000	(P)0.0000	(P)0.0000	(P)0.0000	(P)0.0000
3	rinse	6/18/2013 12:32:29 F	(P)0.0000	(P)0.0000	(P)0.0000	(P)0.0000	(P)0.0000
	Mean of rinse	6/18/2013 12:31:34 F	(P)0.0000	(P)0.0000	(P)0.0000	(P)0.0000	(P)0.0000
	SD of rinse		(P)0.0000	(P)0.0000	(P)0.0000	(P)0.0000	(P)0.0000
	%RSD of rinse		(P)0.0000	(P)0.0000	(P)0.0000	(P)0.0000	(P)0.0000
1	Cal Blank	6/18/2013 12:36:25 F	(P)-0.0090	(P)-0.0064	(P)-0.0064	(P)-0.0048	(P)-0.0155
2	Cal Blank	6/18/2013 12:36:52 F	(P)0.0092	(P)0.0074	(P)0.0120	(P)-0.0007	(P)0.0248
3	Cal Blank	6/18/2013 12:37:20 F	(P)0.0045	(P)0.0027	(P)0.0072	(P)-0.0048	(P)0.0305
4	Cal Blank	6/18/2013 12:37:47 F	(P)-0.0045	(P)-0.0019	(P)-0.0064	(P)0.0071	(P)-0.0374
5	Cal Blank	6/18/2013 12:38:15 F	(P)-0.0001	(P)-0.0019	(P)-0.0064	(P)0.0032	(P)-0.0024
	Mean of Cal Blank	6/18/2013 12:36:25 F	(P)0.0000	(P)0.0000	(P)0.0000	(P)0.0000	(P)0.0000
	SD of Cal Blank		(P)0.0072	(P)0.0052	(P)0.0089	(P)0.0052	(P)0.0283
	%RSD of Cal Blank		(P)0.0000	(P)0.0000	(P)0.0000	(P)0.0000	(P)0.0000
1	U/Th Nat Cal 2ppb	6/18/2013 12:42:10 F	(PM)14.5400	(PM)14.5300	(PM)14.5300	(P)0.0076	(P)1973.0000
2	U/Th Nat Cal 2ppb	6/18/2013 12:42:38 F	(P)14.3100	(P)14.2900	(P)14.2900	(P)0.0197	(P)1986.0000
3	U/Th Nat Cal 2ppb	6/18/2013 12:43:05 F	(P)13.9400	(P)13.9600	(P)13.9700	(P)0.0075	(PM)1987.000
4	U/Th Nat Cal 2ppb	6/18/2013 12:43:33 F	(PM)14.6300	(PM)14.6200	(PM)14.6200	(P)0.0034	(PM)1988.000
5	U/Th Nat Cal 2ppb	6/18/2013 12:44:01 F	(PM)14.5900	(PM)14.5900	(PM)14.5900	(P)0.0115	(PM)1996.000
	Mean of U/Th Nat Cal 2	6/18/2013 12:42:10 F	(PM)14.4000	(PM)14.4000	(PM)14.4000	(P)0.0099	(PM)1986.000
	SD of U/Th Nat Cal 2		(PM)0.2876	(PM)0.2775	(PM)0.2724	(P)0.0062	(PM)8.1870
	%RSD of U/Th Nat C		(PM)1.9970	(PM)1.9270	(PM)1.8910	(P)62.0700	(PM)0.4122
1	U233/Np Cal 2ppb	6/18/2013 12:47:56 F	(P)5.3350	(P)1.6180	(P)1.9090	(PM)2011.000	(P)11.0000
2	U233/Np Cal 2ppb	6/18/2013 12:48:23 F	(P)5.3520	(P)1.5880	(P)1.9240	(PM)2014.000	(P)11.1300
3	U233/Np Cal 2ppb	6/18/2013 12:48:51 F	(P)5.3530	(P)1.6450	(P)1.9410	(P)1976.0000	(P)10.6000
4	U233/Np Cal 2ppb	6/18/2013 12:49:19 F	(P)5.1590	(P)1.5780	(P)1.8490	(P)1999.0000	(P)11.1200
5	U233/Np Cal 2ppb	6/18/2013 12:49:46 F	(P)5.2540	(P)1.6020	(P)1.9350	(PM)2000.000	(P)10.8500
	Mean of U233/Np Cal 2	6/18/2013 12:47:56 F	(P)5.2900	(P)1.6060	(P)1.9120	(PM)2000.000	(P)10.9400
	SD of U233/Np Cal 2		(P)0.0841	(P)0.0264	(P)0.0368	(PM)15.0400	(P)0.2205
	%RSD of U233/Np C		(P)1.5900	(P)1.6430	(P)1.9270	(PM)0.7522	(P)2.0160
1	U/Th ICV 1ppb	6/18/2013 12:53:42 F	(P)0.0048	(P)2.0870	(P)0.0031	(P)0.1229	(P)1041.0000
2	U/Th ICV 1ppb	6/18/2013 12:54:09 F	(P)0.0094	(P)2.1030	(P)0.0215	(P)0.2411	(P)1039.0000
3	U/Th ICV 1ppb	6/18/2013 12:54:37 F	(P)0.0092	(P)2.1310	(P)0.0303	(P)0.2101	(P)1042.0000
4	U/Th ICV 1ppb	6/18/2013 12:55:05 F	(P)0.0091	(P)2.2970	(P)0.0211	(P)0.1895	(P)1034.0000
5	U/Th ICV 1ppb	6/18/2013 12:55:32 F	(P)0.0139	(P)2.0120	(P)0.0121	(P)0.3747	(P)1043.0000
	Mean of U/Th ICV 1p	6/18/2013 12:53:42 F	(P)0.0093	(P)2.1260	(P)0.0176	(P)0.2276	(P)1040.0000
	SD of U/Th ICV 1ppb		(P)0.0032	(P)0.1052	(P)0.0104	(P)0.0929	(P)3.5680

Multi Element | Internal Standard

Dilution Corrected Concentration Per Analyte

S-Calibration Has Edited Standard
F-Interference Correction Failed
E-Calibration Edited
T-Tripped
I-Invalid Calibration
P-Pulse Counting
V-Valley Integration Failed
M-Result Over Max

Run	Label	TimeStamp	193Ir	229Th	230Th	231Pa	232Th	233U
			ppb	ppt	ppt	ppt	ppt	ppt
	%RSD of U/Th ICV 1		(P)n/a	(P)2.0220	(P)4.7770	(P)0.0270	(P)0.9591	(P)43.5500
1	U233/Np ICV 1ppb	6/18/2013 12:59:27 F	(P)1.012	(P)0.0060	(P)-0.1344	(P)-0.1333	(P)8.7280	(P)1034.0000
2	U233/Np ICV 1ppb	6/18/2013 12:59:55 F	(P)1.007	(P)-0.0310	(P)-0.1293	(P)-0.1230	(P)7.5270	(P)1033.0000
3	U233/Np ICV 1ppb	6/18/2013 1:00:23 P	(P)0.996	(P)-0.0424	(P)-0.1448	(P)-0.1438	(P)6.8190	(P)1024.0000
4	U233/Np ICV 1ppb	6/18/2013 1:00:50 P	(P)1.002	(P)0.0097	(P)-0.1396	(P)-0.1386	(P)6.4460	(P)1021.0000
5	U233/Np ICV 1ppb	6/18/2013 1:01:18 P	(P)1.006	(P)-0.0207	(P)-0.1293	(P)-0.1437	(P)5.9910	(P)1035.0000
	Mean of U233/Np ICV	6/18/2013 12:59:27 F	(P)1.012	(P)-0.0157	(P)-0.1355	(P)-0.1365	(P)7.1020	(P)1029.0000
	SD of U233/Np ICV 1		(P)n/a	(P)0.0229	(P)0.0067	(P)0.0087	(P)1.0690	(P)6.3970
	%RSD of U233/Np I		(P)n/a	(P)145.6000	(P)4.9820	(P)6.3600	(P)15.0500	(P)0.6214
1	U/Th LLS 25ppt	6/18/2013 1:05:14 P	(P)1.014	(P)-0.1396	(P)-0.1396	(P)-0.1489	(P)25.4300	(P)0.0845
2	U/Th LLS 25ppt	6/18/2013 1:05:42 P	(P)1.006	(P)-0.1396	(P)-0.1396	(P)-0.1489	(P)26.7100	(P)0.2013
3	U/Th LLS 25ppt	6/18/2013 1:06:09 P	(P)1.012	(P)-0.1292	(P)-0.1396	(P)-0.1281	(P)25.5600	(P)0.1363
4	U/Th LLS 25ppt	6/18/2013 1:06:37 P	(P)1.000	(P)-0.1448	(P)-0.1345	(P)-0.1489	(P)25.9500	(P)0.1020
5	U/Th LLS 25ppt	6/18/2013 1:07:04 P	(P)1.012	(P)-0.1240	(P)-0.1240	(P)-0.1489	(P)26.8100	(P)0.1221
	Mean of U/Th LLS 25	6/18/2013 1:05:14 P	(P)1.014	(P)-0.1354	(P)-0.1355	(P)-0.1447	(P)26.0900	(P)0.1292
	SD of U/Th LLS 25ppt		(P)n/a	(P)0.0085	(P)0.0068	(P)0.0093	(P)0.6383	(P)0.0448
	%RSD of U/Th LLS 2		(P)n/a	(P)6.3090	(P)5.0030	(P)6.4260	(P)2.4460	(P)34.7000
1	U/Th LLS 5ppt	6/18/2013 1:11:01 P	(P)1.018	(P)-0.1396	(P)-0.1448	(P)-0.1437	(P)5.7430	(P)0.0325
2	U/Th LLS 5ppt	6/18/2013 1:11:28 P	(P)1.017	(P)-0.1396	(P)-0.1291	(P)-0.1384	(P)5.5900	(P)0.0229
3	U/Th LLS 5ppt	6/18/2013 1:11:56 P	(P)1.019	(P)-0.1448	(P)-0.1448	(P)-0.1436	(P)5.6650	(P)0.0468
4	U/Th LLS 5ppt	6/18/2013 1:12:23 P	(P)1.015	(P)-0.1344	(P)-0.1396	(P)-0.1437	(P)6.1610	(P)0.0371
5	U/Th LLS 5ppt	6/18/2013 1:12:51 P	(P)1.012	(P)-0.1292	(P)-0.1448	(P)-0.1281	(P)5.8630	(P)0.0227
	Mean of U/Th LLS 5p	6/18/2013 1:11:01 P	(P)1.018	(P)-0.1375	(P)-0.1406	(P)-0.1395	(P)5.8040	(P)0.0324
	SD of U/Th LLS 5ppt		(P)n/a	(P)0.0059	(P)0.0068	(P)0.0068	(P)0.2232	(P)0.0102
	%RSD of U/Th LLS 5		(P)n/a	(P)4.3100	(P)4.8450	(P)4.8500	(P)3.8450	(P)31.3500
1	U233/Np LLS 5ppt	6/18/2013 1:16:48 P	(P)1.009	(P)-0.1396	(P)-0.1448	(P)-0.1437	(P)0.6672	(P)4.6580
2	U233/Np LLS 5ppt	6/18/2013 1:17:15 P	(P)1.002	(P)-0.1396	(P)-0.1448	(P)-0.1437	(P)0.5944	(P)4.6570
3	U233/Np LLS 5ppt	6/18/2013 1:17:43 P	(P)1.001	(P)-0.1397	(P)-0.1345	(P)-0.1386	(P)0.5986	(P)4.7120
4	U233/Np LLS 5ppt	6/18/2013 1:18:10 P	(P)0.996	(P)-0.1397	(P)-0.1345	(P)-0.1438	(P)0.6057	(P)4.8930
5	U233/Np LLS 5ppt	6/18/2013 1:18:38 P	(P)0.992	(P)-0.1346	(P)-0.1397	(P)-0.1438	(P)0.4750	(P)4.4300
	Mean of U233/Np LLS	6/18/2013 1:16:48 P	(P)1.009	(P)-0.1386	(P)-0.1397	(P)-0.1427	(P)0.5882	(P)4.6700
	SD of U233/Np LLS 5		(P)n/a	(P)0.0023	(P)0.0051	(P)0.0023	(P)0.0698	(P)0.1651
	%RSD of U233/Np L		(P)n/a	(P)1.6280	(P)3.6730	(P)1.6120	(P)11.8700	(P)3.5340
1	ICB	6/18/2013 1:22:35 P	(P)1.007	(P)-0.1448	(P)-0.1448	(P)-0.1489	(P)0.3965	(P)-0.0009
2	ICB	6/18/2013 1:23:02 P	(P)1.004	(P)-0.1448	(P)-0.1448	(P)-0.1437	(P)0.2970	(P)-0.0010
3	ICB	6/18/2013 1:23:30 P	(P)0.997	(P)-0.1345	(P)-0.1448	(P)-0.1489	(P)0.4117	(P)-0.0010
4	ICB	6/18/2013 1:23:58 P	(P)1.003	(P)-0.1345	(P)-0.1448	(P)-0.1489	(P)0.3065	(P)-0.0057
5	ICB	6/18/2013 1:24:25 P	(P)1.008	(P)-0.1396	(P)-0.1396	(P)-0.1437	(P)0.2209	(P)-0.0057
	Mean of ICB	6/18/2013 1:22:35 P	(P)1.007	(P)-0.1397	(P)-0.1437	(P)-0.1468	(P)0.3265	(P)-0.0028
	SD of ICB		(P)n/a	(P)0.0051	(P)0.0023	(P)0.0028	(P)0.0784	(P)0.0026
	%RSD of ICB		(P)n/a	(P)3.6790	(P)1.6120	(P)1.9290	(P)24.0100	(P)90.6000
1	ICB	6/18/2013 1:28:22 P	(P)1.006	(P)-0.1448	(P)-0.1448	(P)-0.1489	(P)0.2613	(P)0.0038

Multi Element Internal Standard

Dilution Corrected Concentration Per Analyte

S-Calibration Has Edited Standard E-Calibration Edited I-Invalid Calibration V-Valley Integration Failed
F-Interference Correction Failed T-Tripped P-Pulse Counting M-Result Over Max

Run	Label	TimeStamp	234U	235U	236U	237Np	238U
			ppt	ppt	ppt	ppt	ppt
	%RSD of U/Th ICV 1		(P)34.3900	(P)4.9470	(P)58.8500	(P)40.8300	(P)0.3432
1	U233/Np ICV 1ppb	6/18/2013 12:59:27 F	(P)1.8840	(P)1.2840	(P)0.3277	(P)1090.0000	(P)4.0490
2	U233/Np ICV 1ppb	6/18/2013 12:59:55 F	(P)1.9610	(P)1.3600	(P)0.3079	(P)1090.0000	(P)4.2640
3	U233/Np ICV 1ppb	6/18/2013 1:00:23 P	(P)1.9980	(P)1.2320	(P)0.3540	(P)1080.0000	(P)4.2380
4	U233/Np ICV 1ppb	6/18/2013 1:00:50 P	(P)1.9290	(P)1.2850	(P)0.3472	(P)1079.0000	(P)4.1580
5	U233/Np ICV 1ppb	6/18/2013 1:01:18 P	(P)2.1630	(P)1.3630	(P)0.3395	(P)1090.0000	(P)4.2260
	Mean of U233/Np ICV	6/18/2013 12:59:27 F	(P)1.9870	(P)1.3050	(P)0.3352	(P)1086.0000	(P)4.1870
	SD of U233/Np ICV 1		(P)0.1068	(P)0.0560	(P)0.0182	(P)5.5780	(P)0.0863
	%RSD of U233/Np I		(P)5.3770	(P)4.2870	(P)5.4150	(P)0.5137	(P)2.0620
1	U/Th LLS 25ppt	6/18/2013 1:05:14 P	(P)0.0092	(P)0.1908	(P)-0.0109	(P)0.0968	(P)26.6900
2	U/Th LLS 25ppt	6/18/2013 1:05:42 P	(P)-0.0090	(P)0.1892	(P)-0.0109	(P)0.1362	(P)26.3000
3	U/Th LLS 25ppt	6/18/2013 1:06:09 P	(P)0.0001	(P)0.2133	(P)-0.0109	(P)0.1816	(P)26.7700
4	U/Th LLS 25ppt	6/18/2013 1:06:37 P	(P)-0.0045	(P)0.1519	(P)-0.0109	(P)0.0954	(P)26.7400
5	U/Th LLS 25ppt	6/18/2013 1:07:04 P	(P)-0.0045	(P)0.1995	(P)-0.0109	(P)0.1087	(P)27.0200
	Mean of U/Th LLS 25	6/18/2013 1:05:14 P	(P)-0.0017	(P)0.1890	(P)-0.0109	(P)0.1237	(P)26.7000
	SD of U/Th LLS 25ppt		(P)0.0069	(P)0.0228	(P)0.0000	(P)0.0363	(P)0.2569
	%RSD of U/Th LLS 2		(P)397.0000	(P)12.0600	(P)0.0000	(P)29.3300	(P)0.9621
1	U/Th LLS 5ppt	6/18/2013 1:11:01 P	(P)0.0001	(P)0.0167	(P)-0.0063	(P)0.0197	(P)5.1400
2	U/Th LLS 5ppt	6/18/2013 1:11:28 P	(P)-0.0044	(P)0.0396	(P)-0.0109	(P)0.0563	(P)5.2820
3	U/Th LLS 5ppt	6/18/2013 1:11:56 P	(P)-0.0090	(P)0.0489	(P)-0.0109	(P)0.0442	(P)5.1910
4	U/Th LLS 5ppt	6/18/2013 1:12:23 P	(P)-0.0044	(P)0.0258	(P)-0.0063	(P)0.0237	(P)5.2500
5	U/Th LLS 5ppt	6/18/2013 1:12:51 P	(P)-0.0090	(P)0.0440	(P)-0.0109	(P)0.0479	(P)5.0390
	Mean of U/Th LLS 5p	6/18/2013 1:11:01 P	(P)-0.0053	(P)0.0350	(P)-0.0091	(P)0.0384	(P)5.1800
	SD of U/Th LLS 5ppt		(P)0.0038	(P)0.0134	(P)0.0025	(P)0.0159	(P)0.0962
	%RSD of U/Th LLS 5		(P)71.4200	(P)38.2600	(P)27.8000	(P)41.4700	(P)1.8570
1	U233/Np LLS 5ppt	6/18/2013 1:16:48 P	(P)-0.0045	(P)-0.0064	(P)-0.0018	(P)5.0240	(P)0.0295
2	U233/Np LLS 5ppt	6/18/2013 1:17:15 P	(P)-0.0000	(P)-0.0018	(P)0.0027	(P)5.0760	(P)0.0264
3	U233/Np LLS 5ppt	6/18/2013 1:17:43 P	(P)0.0179	(P)0.0072	(P)-0.0018	(P)5.0730	(P)0.0351
4	U233/Np LLS 5ppt	6/18/2013 1:18:10 P	(P)-0.0045	(P)0.0117	(P)-0.0109	(P)5.0280	(P)-0.0362
5	U233/Np LLS 5ppt	6/18/2013 1:18:38 P	(P)-0.0001	(P)0.0026	(P)-0.0019	(P)4.8150	(P)-0.0499
	Mean of U233/Np LLS	6/18/2013 1:16:48 P	(P)0.0018	(P)0.0027	(P)-0.0028	(P)5.0030	(P)0.0010
	SD of U233/Np LLS 5		(P)0.0093	(P)0.0071	(P)0.0050	(P)0.1078	(P)0.0406
	%RSD of U233/Np L		(P)527.6000	(P)267.3000	(P)180.4000	(P)2.1560	(P)4132.0000
1	ICB	6/18/2013 1:22:35 P	(P)-0.0090	(P)0.0073	(P)-0.0063	(P)-0.0008	(P)-0.1080
2	ICB	6/18/2013 1:23:02 P	(P)-0.0090	(P)0.0027	(P)-0.0064	(P)-0.0008	(P)-0.0400
3	ICB	6/18/2013 1:23:30 P	(P)0.0044	(P)-0.0018	(P)-0.0064	(P)-0.0048	(P)-0.1045
4	ICB	6/18/2013 1:23:58 P	(P)-0.0000	(P)-0.0064	(P)-0.0018	(P)0.0032	(P)-0.0865
5	ICB	6/18/2013 1:24:25 P	(P)-0.0045	(P)-0.0018	(P)-0.0109	(P)0.0073	(P)0.0557
	Mean of ICB	6/18/2013 1:22:35 P	(P)-0.0036	(P)0.0000	(P)-0.0064	(P)0.0009	(P)-0.0567
	SD of ICB		(P)0.0058	(P)0.0052	(P)0.0032	(P)0.0046	(P)0.0684
	%RSD of ICB		(P)161.7000	(P)46900.000	(P)50.3800	(P)538.9000	(P)120.8000
1	ICB	6/18/2013 1:28:22 P	(P)0.0000	(P)-0.0018	(P)-0.0109	(P)-0.0008	(P)-0.0690

15:39:50 6/18/13
Act130618.vge

Extended ICAL — Multi Element — Internal Standard

Dilution Corrected Concentration Per Analyte

S-Calibration Has Edited Standard
F-Interference Correction Failed
E-Calibration Edited
T-Tripped
I-Invalid Calibration
P-Pulse Counting
V-Valley Integration Failed
M-Result Over Max

Run	Label	TimeStamp	193Ir	229Th	230Th	231Pa	232Th	233U
			ppb	ppt	ppt	ppt	ppt	ppt
2	ICB	6/18/2013 1:28:50 P	(P)1.009	(P)-0.1396	(P)-0.1448	(P)-0.1489	(P)0.2522	(P)0.0038
3	ICB	6/18/2013 1:29:18 P	(P)1.004	(P)-0.1448	(P)-0.1242	(P)-0.1386	(P)0.2914	(P)-0.0057
4	ICB	6/18/2013 1:29:45 P	(P)1.004	(P)-0.1448	(P)-0.1448	(P)-0.1386	(P)0.3121	(P)0.0037
5	ICB	6/18/2013 1:30:13 P	(P)1.007	(P)-0.1396	(P)-0.1396	(P)-0.1437	(P)0.3185	(P)0.0038
	Mean of ICB	6/18/2013 1:28:22 P	(P)1.006	(P)-0.1427	(P)-0.1396	(P)-0.1437	(P)0.2871	(P)0.0019
	SD of ICB		(P)n/a	(P)0.0028	(P)0.0089	(P)0.0052	(P)0.0297	(P)0.0042
	%RSD of ICB		(P)n/a	(P)1.9870	(P)6.3960	(P)3.5880	(P)10.3300	(P)224.0000
1	ICS ATL 2 50x	6/18/2013 1:34:30 P	(P)0.989	(P)-0.1397	(P)-0.1448	(P)-0.1438	(P)0.5035	(P)0.0036
2	ICS ATL 2 50x	6/18/2013 1:34:58 P	(P)0.992	(P)-0.1448	(P)-0.1448	(P)-0.1438	(P)0.7506	(P)-0.0010
3	ICS ATL 2 50x	6/18/2013 1:35:25 P	(P)0.981	(P)-0.1398	(P)-0.1347	(P)-0.1489	(P)0.4986	(P)-0.0057
4	ICS ATL 2 50x	6/18/2013 1:35:53 P	(P)0.968	(P)-0.1448	(P)-0.1448	(P)-0.1439	(P)0.5447	(P)0.0125
5	ICS ATL 2 50x	6/18/2013 1:36:21 P	(P)0.957	(P)-0.1448	(P)-0.1448	(P)-0.1341	(P)0.5321	(P)0.0033
	Mean of ICS ATL 2 5	6/18/2013 1:34:09 P	(P)0.989	(P)-0.1428	(P)-0.1428	(P)-0.1429	(P)0.5659	(P)0.0025
	SD of ICS ATL 2 50x		(P)n/a	(P)0.0028	(P)0.0045	(P)0.0054	(P)0.1051	(P)0.0067
	%RSD of ICS ATL 2 5		(P)n/a	(P)1.9410	(P)3.1580	(P)3.7580	(P)18.5700	(P)263.9000
1	Prep Blank	6/18/2013 1:40:37 P	(P)1.043	(P)-6704.0000	(P)-7239.0000	(P)-7176.0000	(P)8993.0000	(P)-282.6000
2	Prep Blank	6/18/2013 1:41:04 P	(P)1.040	(P)-6705.0000	(P)-6972.0000	(P)-7444.0000	(P)11620.000	(P)-282.6000
3	Prep Blank	6/18/2013 1:41:32 P	(P)1.020	(P)-7240.0000	(P)-6977.0000	(P)-7444.0000	(P)12310.000	(P)-282.6000
4	Prep Blank	6/18/2013 1:41:59 P	(P)1.025	(P)-6186.0000	(P)-6449.0000	(P)-6917.0000	(P)9506.0000	(P)-282.6000
5	Prep Blank	6/18/2013 1:42:27 P	(P)1.022	(P)-6977.0000	(P)-6977.0000	(P)-6394.0000	(P)14450.000	(P)-43.4500
	Mean of Prep Blank	6/18/2013 1:40:16 P	(P)1.043	(P)-6763.0000	(P)-6923.0000	(P)-7075.0000	(P)11380.000	(P)-234.7000
	SD of Prep Blank		(P)n/a	(P)391.3000	(P)288.4000	(P)439.3000	(P)2211.0000	(P)106.9000
	%RSD of Prep Blank		(P)n/a	(P)5.7860	(P)4.1660	(P)6.2090	(P)19.4400	(P)45.5500
1	S13T004252_L	6/18/2013 1:46:42 P	(P)1.045	(P)-36200.000	(P)-36200.000	(P)-35880.000	(P)61260.000	(P)4700.0000
2	S13T004252_L	6/18/2013 1:47:09 P	(P)1.031	(P)-33550.000	(P)-34870.000	(P)-37220.000	(P)86390.000	(P)7025.0000
3	S13T004252_L	6/18/2013 1:47:37 P	(P)1.045	(P)-36200.000	(P)-33510.000	(P)-34540.000	(P)81320.000	(P)9582.0000
4	S13T004252_L	6/18/2013 1:48:04 P	(P)1.039	(P)-32200.000	(P)-33530.000	(P)-35890.000	(P)114000.00	(P)9522.0000
5	S13T004252_L	6/18/2013 1:48:32 P	(P)1.026	(P)-34880.000	(P)-34880.000	(P)-34590.000	(P)69990.000	(P)10580.000
	Mean of S13T004252_	6/18/2013 1:46:21 P	(P)1.045	(P)-34610.000	(P)-34600.000	(P)-35620.000	(P)82600.000	(P)8282.0000
	SD of S13T004252_L		(P)n/a	(P)1738.0000	(P)1122.0000	(P)1112.0000	(P)20120.000	(P)2395.0000
	%RSD of S13T004252		(P)n/a	(P)5.0210	(P)3.2420	(P)3.1210	(P)24.3600	(P)28.9100
1	S13T004252	6/18/2013 1:52:47 P	(P)1.030	(P)-6182.0000	(P)-6975.0000	(P)-6915.0000	(P)30210.000	(P)10070.000
2	S13T004252	6/18/2013 1:53:15 P	(P)1.027	(P)-6184.0000	(P)-6975.0000	(P)-7180.0000	(P)34870.000	(P)9567.0000
3	S13T004252	6/18/2013 1:53:42 P	(P)1.033	(P)-6975.0000	(P)-7239.0000	(P)-7444.0000	(P)29790.000	(P)9379.0000
4	S13T004252	6/18/2013 1:54:10 P	(P)1.026	(P)-7240.0000	(P)-7239.0000	(P)-7181.0000	(P)34560.000	(P)5956.0000
5	S13T004252	6/18/2013 1:54:38 P	(P)1.017	(P)-6979.0000	(P)-7239.0000	(P)-7444.0000	(P)35500.000	(P)8042.0000
	Mean of S13T004252	6/18/2013 1:52:26 P	(P)1.030	(P)-6712.0000	(P)-7134.0000	(P)-7233.0000	(P)32990.000	(P)8603.0000
	SD of S13T004252		(P)n/a	(P)494.5000	(P)144.7000	(P)221.2000	(P)2750.0000	(P)1659.0000
	%RSD of S13T00425		(P)n/a	(P)7.3670	(P)2.0280	(P)3.0580	(P)8.3380	(P)19.2800
1	S13T004252_D	6/18/2013 1:58:53 P	(P)1.028	(P)-6976.0000	(P)-7239.0000	(P)-7180.0000	(P)37020.000	(P)198.3000
2	S13T004252_D	6/18/2013 1:59:21 P	(P)1.028	(P)-6712.0000	(P)-6975.0000	(P)-7180.0000	(P)37000.000	(P)-282.6000
3	S13T004252_D	6/18/2013 1:59:48 P	(P)1.016	(P)-7240.0000	(P)-7239.0000	(P)-7183.0000	(P)32580.000	(P)430.2000
4	S13T004252_D	6/18/2013 2:00:16 P	(P)1.027	(P)-6976.0000	(P)-7239.0000	(P)-7444.0000	(P)36180.000	(P)-42.3600

15:39:50 6/18/13
Act130618.vge

Excluded In Calib | Multi Element | Internal Standard | Surrogate Outlier

Dilution Corrected Concentration Per Analyte

S-Calibration Has Edited Standard
F-Interference Correction Failed
E-Calibration Edited
T-Tripped
I-Invalid Calibration
P-Pulse Counting
V-Valley Integration Failed
M-Result Over Max

Run	Label	TimeStamp	234U	235U	236U	237Np	238U
			ppt	ppt	ppt	ppt	ppt
2	ICB	6/18/2013 1:28:50 P	(P)-0.0045	(P)-0.0018	(P)-0.0063	(P)0.0033	(P)-0.0691
3	ICB	6/18/2013 1:29:18 P	(P)0.0000	(P)-0.0064	(P)-0.0064	(P)0.0033	(P)-0.0976
4	ICB	6/18/2013 1:29:45 P	(P)-0.0090	(P)-0.0064	(P)-0.0064	(P)-0.0048	(P)-0.0455
5	ICB	6/18/2013 1:30:13 P	(P)-0.0045	(P)-0.0064	(P)-0.0109	(P)-0.0008	(P)-0.1854
	Mean of ICB	6/18/2013 1:28:22 P	(P)-0.0036	(P)-0.0045	(P)-0.0082	(P)0.0000	(P)-0.0933
	SD of ICB		(P)0.0038	(P)0.0025	(P)0.0025	(P)0.0034	(P)0.0547
	%RSD of ICB		(P)105.1000	(P)55.0600	(P)30.4700	(P)6963.0000	(P)58.5800
1	ICS ATL 2 50x	6/18/2013 1:34:30 P	(P)-0.0046	(P)-0.0064	(P)-0.0109	(P)0.0111	(P)0.2578
2	ICS ATL 2 50x	6/18/2013 1:34:58 P	(P)-0.0090	(P)-0.0019	(P)-0.0109	(P)-0.0008	(P)0.2175
3	ICS ATL 2 50x	6/18/2013 1:35:25 P	(P)0.0042	(P)-0.0019	(P)-0.0065	(P)0.0031	(P)0.2031
4	ICS ATL 2 50x	6/18/2013 1:35:53 P	(P)-0.0090	(P)0.0068	(P)-0.0109	(P)0.0030	(P)0.2280
5	ICS ATL 2 50x	6/18/2013 1:36:21 P	(P)0.0039	(P)0.0023	(P)-0.0109	(P)0.0067	(P)0.1062
	Mean of ICS ATL 2 5	6/18/2013 1:34:09 P	(P)-0.0029	(P)-0.0002	(P)-0.0100	(P)0.0046	(P)0.2025
	SD of ICS ATL 2 50x		(P)0.0066	(P)0.0050	(P)0.0020	(P)0.0045	(P)0.0575
	%RSD of ICS ATL 2 5		(P)227.7000	(P)2370.0000	(P)19.8200	(P)97.4900	(P)28.3700
1	Prep Blank	6/18/2013 1:40:37 P	(P)-450.0000	(P)-81.7700	(P)-309.1000	(P)-30.4700	(P)66600.000
2	Prep Blank	6/18/2013 1:41:04 P	(P)-450.0000	(P)623.0000	(P)-544.9000	(P)177.2000	(P)67300.000
3	Prep Blank	6/18/2013 1:41:32 P	(P)-221.1000	(P)-86.9600	(P)-314.3000	(P)-239.4000	(P)64390.000
4	Prep Blank	6/18/2013 1:41:59 P	(P)-450.0000	(P)145.9000	(P)150.4000	(P)-34.0700	(P)65680.000
5	Prep Blank	6/18/2013 1:42:27 P	(P)-450.0000	(P)375.8000	(P)-313.8000	(P)-239.4000	(P)64220.000
	Mean of Prep Blank	6/18/2013 1:40:16 P	(P)-404.2000	(P)195.2000	(P)-266.3000	(P)-73.2100	(P)65640.000
	SD of Prep Blank		(P)102.3000	(P)305.9000	(P)253.8000	(P)174.1000	(P)1345.0000
	%RSD of Prep Blank		(P)25.3200	(P)156.7000	(P)95.2900	(P)237.8000	(P)2.0490
1	S13T004252_L	6/18/2013 1:46:42 P	(P)-1077.0000	(P)68140.000	(P)-1543.0000	(P)2990.0000	(P)8584000.0
2	S13T004252_L	6/18/2013 1:47:09 P	(P)3531.0000	(P)49690.000	(P)-393.9000	(P)867.6000	(P)8490000.0
3	S13T004252_L	6/18/2013 1:47:37 P	(P)-2250.0000	(P)75180.000	(P)-2725.0000	(P)-150.8000	(P)8658000.0
4	S13T004252_L	6/18/2013 1:48:04 P	(P)-2250.0000	(P)50090.000	(P)-1550.0000	(P)-156.5000	(P)8643000.0
5	S13T004252_L	6/18/2013 1:48:32 P	(P)51.2500	(P)56400.000	(P)-2725.0000	(P)1885.0000	(P)8397000.0
	Mean of S13T004252_	6/18/2013 1:46:21 P	(P)-399.0000	(P)59900.000	(P)-1787.0000	(P)1087.0000	(P)8554000.0
	SD of S13T004252_L		(P)2396.0000	(P)11340.000	(P)976.6000	(P)1359.0000	(P)110100.00
	%RSD of S13T004252		(P)600.4000	(P)18.9200	(P)54.6400	(P)125.0000	(P)1.2870
1	S13T004252	6/18/2013 1:52:47 P	(P)-219.0000	(P)56480.000	(P)-79.3600	(P)791.6000	(P)8216000.0
2	S13T004252	6/18/2013 1:53:15 P	(P)-219.6000	(P)54960.000	(P)616.2000	(P)1406.0000	(P)8238000.0
3	S13T004252	6/18/2013 1:53:42 P	(P)245.0000	(P)53850.000	(P)622.6000	(P)1002.0000	(P)8317000.0
4	S13T004252	6/18/2013 1:54:10 P	(P)470.5000	(P)56510.000	(P)614.9000	(P)582.5000	(P)8276000.0
5	S13T004252	6/18/2013 1:54:38 P	(P)6.2680	(P)66370.000	(P)1065.0000	(P)779.0000	(P)8264000.0
	Mean of S13T004252	6/18/2013 1:52:26 P	(P)56.6300	(P)57630.000	(P)567.8000	(P)912.2000	(P)8262000.0
	SD of S13T004252		(P)300.7000	(P)5007.0000	(P)410.3000	(P)313.5000	(P)38610.000
	%RSD of S13T00425		(P)530.9000	(P)8.6880	(P)72.2500	(P)34.3700	(P)0.4673
1	S13T004252_D	6/18/2013 1:58:53 P	(P)11.2100	(P)65690.000	(P)152.4000	(P)1819.0000	(P)9195000.0
2	S13T004252_D	6/18/2013 1:59:21 P	(P)-219.5000	(P)65430.000	(P)616.7000	(P)-33.5900	(P)9285000.0
3	S13T004252_D	6/18/2013 1:59:48 P	(P)-222.1000	(P)53200.000	(P)-315.2000	(P)1185.0000	(P)9172000.0
4	S13T004252_D	6/18/2013 2:00:16 P	(P)10.7600	(P)59360.000	(P)151.7000	(P)1817.0000	(P)9299000.0

15:39:50 6/18/13
Act130618.vge

Excluded In Calib | Multi Element | Internal Standard | Standard Abandoned

Dilution Corrected Concentration Per Analyte

S-Calibration Has Edited Standard E-Calibration Edited I-Invalid Calibration V-Valley Integration Failed
F-Interference Correction Failed T-Tripped P-Pulse Counting M-Result Over Max

Run	Label	TimeStamp	193Ir	229Th	230Th	231Pa	232Th	233U
			ppb	ppt	ppt	ppt	ppt	ppt
5	S13T004252_D	6/18/2013 2:00:43 P	(P)1.017	(P)-6979.0000	(P)-6978.0000	(P)-7444.0000	(P)33400.000	(P)193.0000
	Mean of S13T004252_	6/18/2013 1:58:32 P	(P)1.028	(P)-6976.0000	(P)-7134.0000	(P)-7286.0000	(P)35240.000	(P)99.3200
	SD of S13T004252_D		(P)n/a	(P)186.7000	(P)143.8000	(P)144.1000	(P)2097.0000	(P)271.1000
	%RSD of S13T004252		(P)n/a	(P)2.6760	(P)2.0160	(P)1.9770	(P)5.9530	(P)273.0000
1	S13T004280	6/18/2013 2:04:59 P	(P)1.034	(P)-6443.0000	(P)-7239.0000	(P)-7179.0000	(P)38860.000	(P)1410.0000
2	S13T004280	6/18/2013 2:05:26 P	(P)1.025	(P)-6977.0000	(P)-7239.0000	(P)-7444.0000	(P)45030.000	(P)915.4000
3	S13T004280	6/18/2013 2:05:54 P	(P)1.032	(P)-6975.0000	(P)-6974.0000	(P)-7444.0000	(P)48300.000	(P)1406.0000
4	S13T004280	6/18/2013 2:06:22 P	(P)1.026	(P)-6713.0000	(P)-6976.0000	(P)-7444.0000	(P)40880.000	(P)1157.0000
5	S13T004280	6/18/2013 2:06:49 P	(P)1.020	(P)-6978.0000	(P)-7239.0000	(P)-6920.0000	(P)48720.000	(P)433.0000
	Mean of S13T004280	6/18/2013 2:04:38 P	(P)1.034	(P)-6817.0000	(P)-7134.0000	(P)-7286.0000	(P)44360.000	(P)1064.0000
	SD of S13T004280		(P)n/a	(P)238.2000	(P)144.7000	(P)234.8000	(P)4398.0000	(P)407.9000
	%RSD of S13T00428		(P)n/a	(P)3.4940	(P)2.0290	(P)3.2220	(P)9.9150	(P)38.3200
1	S13T004307	6/18/2013 2:11:05 P	(P)1.044	(P)-7240.0000	(P)-6971.0000	(P)-7444.0000	(P)23750.000	(P)205.7000
2	S13T004307	6/18/2013 2:11:33 P	(P)1.024	(P)-6977.0000	(P)-6450.0000	(P)-6918.0000	(P)19480.000	(P)675.1000
3	S13T004307	6/18/2013 2:12:00 P	(P)1.023	(P)-7240.0000	(P)-7239.0000	(P)-7181.0000	(P)20240.000	(P)-43.3400
4	S13T004307	6/18/2013 2:12:28 P	(P)1.023	(P)-6714.0000	(P)-7239.0000	(P)-7444.0000	(P)22340.000	(P)195.7000
5	S13T004307	6/18/2013 2:12:55 P	(P)1.014	(P)-6979.0000	(P)-6458.0000	(P)-7444.0000	(P)23130.000	(P)902.9000
	Mean of S13T004307	6/18/2013 2:10:44 P	(P)1.044	(P)-7030.0000	(P)-6872.0000	(P)-7286.0000	(P)21790.000	(P)387.2000
	SD of S13T004307		(P)n/a	(P)219.7000	(P)396.5000	(P)235.2000	(P)1850.0000	(P)388.5000
	%RSD of S13T00430		(P)n/a	(P)3.1250	(P)5.7700	(P)3.2280	(P)8.4920	(P)100.3000
1	S13T004252_A	6/18/2013 2:17:11 P	(P)0.992	(P)-1376.0000	(P)-7239.0000	(P)-6934.0000	(P)50870000.	(P)65670000.
2	S13T004252_A	6/18/2013 2:17:39 P	(P)0.996	(P)180.4000	(P)-7239.0000	(P)-7188.0000	(P)51640000.	(P)62440000.
3	S13T004252_A	6/18/2013 2:18:07 P	(P)0.995	(P)-1874.0000	(P)-6473.0000	(P)-6933.0000	(P)51540000.	(P)58930000.
4	S13T004252_A	6/18/2013 2:18:34 P	(P)1.005	(P)-1044.0000	(P)-6723.0000	(P)-7186.0000	(P)51840000.	(P)56440000.
5	S13T004252_A	6/18/2013 2:19:02 P	(P)1.004	(P)-2337.0000	(P)-6207.0000	(P)-6928.0000	(P)51380000.	(P)53950000.
	Mean of S13T004252_	6/18/2013 2:16:50 P	(P)0.992	(P)-1290.0000	(P)-6776.0000	(P)-7034.0000	(P)51450000.	(P)59490000.
	SD of S13T004252_A		(P)n/a	(P)957.7000	(P)460.3000	(P)139.8000	(P)365000.00	(P)4670000.0
	%RSD of S13T004252		(P)n/a	(P)74.2300	(P)6.7930	(P)1.9880	(P)0.7095	(P)7.8510
1	Prep Std 3	6/18/2013 2:23:18 P	(P)1.066	(P)-2.8960	(P)-2.8960	(P)-2.8680	(P)21770.000	(P)1.5820
2	Prep Std 3	6/18/2013 2:23:46 P	(P)1.045	(P)-2.7890	(P)-2.7880	(P)-2.6560	(P)21720.000	(P)1.0600
3	Prep Std 3	6/18/2013 2:24:14 P	(P)1.054	(P)-2.6790	(P)-2.6790	(P)-2.9780	(P)21800.000	(P)2.2530
4	Prep Std 3	6/18/2013 2:24:41 P	(P)1.051	(P)-2.7880	(P)-2.7880	(P)-2.6540	(P)21950.000	(P)0.9679
5	Prep Std 3	6/18/2013 2:25:09 P	(P)1.058	(P)-2.6780	(P)-2.7870	(P)-2.8690	(P)22050.000	(P)0.9761
	Mean of Prep Std 3	6/18/2013 2:22:57 P	(P)1.066	(P)-2.7660	(P)-2.7880	(P)-2.8050	(P)21860.000	(P)1.3680
	SD of Prep Std 3		(P)n/a	(P)0.0909	(P)0.0766	(P)0.1441	(P)138.8000	(P)0.5563
	%RSD of Prep Std 3		(P)n/a	(P)3.2860	(P)2.7470	(P)5.1370	(P)0.6350	(P)40.6700
1	Prep Std 4	6/18/2013 2:29:26 P	(P)1.080	(P)-2.6740	(P)-2.7850	(P)-2.9780	(P)134.9000	(P)0.5939
2	Prep Std 4	6/18/2013 2:29:53 P	(P)1.087	(P)-2.5610	(P)-2.8960	(P)-2.9780	(P)105.6000	(P)0.0904
3	Prep Std 4	6/18/2013 2:30:21 P	(P)1.065	(P)-2.7870	(P)-2.8960	(P)-2.9780	(P)97.9300	(P)-0.1130
4	Prep Std 4	6/18/2013 2:30:49 P	(P)1.076	(P)-2.8960	(P)-2.6750	(P)-2.9780	(P)81.2700	(P)0.1888
5	Prep Std 4	6/18/2013 2:31:16 P	(P)1.063	(P)-2.6780	(P)-2.8960	(P)-2.9780	(P)75.8000	(P)0.0858
	Mean of Prep Std 4	6/18/2013 2:29:05 P	(P)1.080	(P)-2.7190	(P)-2.8290	(P)-2.9780	(P)99.1000	(P)0.1692
	SD of Prep Std 4		(P)n/a	(P)0.1271	(P)0.0989	(P)0.0000	(P)23.3900	(P)0.2615

Excluded In Calib | Multi Element | Internal Standard | Standard Addition

Dilution Corrected Concentration Per Analyte

S-Calibration Has Edited Standard
F-Interference Correction Failed
E-Calibration Edited
T-Tripped
I-Invalid Calibration
P-Pulse Counting
V-Valley Integration Failed
M-Result Over Max

Run	Label	TimeStamp	234U	235U	236U	237Np	238U
			ppt	ppt	ppt	ppt	ppt
5	S13T004252_D	6/18/2013 2:00:43 P	(P)234.2000	(P)59910.000	(P)374.5000	(P)575.0000	(P)9213000.0
	Mean of S13T004252_	6/18/2013 1:58:32 P	(P)-37.0900	(P)60720.000	(P)196.0000	(P)1073.0000	(P)9233000.0
	SD of S13T004252_D		(P)190.9000	(P)5147.0000	(P)344.3000	(P)805.6000	(P)56180.000
	%RSD of S13T004252		(P)514.5000	(P)8.4780	(P)175.6000	(P)75.1100	(P)0.6085
1	S13T004280	6/18/2013 2:04:59 P	(P)941.3000	(P)102800.00	(P)1792.0000	(P)1624.0000	(P)16050000.
2	S13T004280	6/18/2013 2:05:26 P	(P)699.0000	(P)108300.00	(P)1308.0000	(P)1607.0000	(P)16090000.
3	S13T004280	6/18/2013 2:05:54 P	(P)244.2000	(P)98340.000	(P)621.2000	(P)2240.0000	(P)16380000.
4	S13T004280	6/18/2013 2:06:22 P	(P)-219.9000	(P)113800.00	(P)382.9000	(P)1815.0000	(P)16290000.
5	S13T004280	6/18/2013 2:06:49 P	(P)1380.0000	(P)106000.00	(P)1300.0000	(P)781.9000	(P)16240000.
	Mean of S13T004280	6/18/2013 2:04:38 P	(P)609.0000	(P)105800.00	(P)1081.0000	(P)1613.0000	(P)16210000.
	SD of S13T004280		(P)619.2000	(P)5819.0000	(P)571.0000	(P)530.2000	(P)140000.00
	%RSD of S13T00428		(P)101.7000	(P)5.4980	(P)52.8300	(P)32.8600	(P)0.8634
1	S13T004307	6/18/2013 2:11:05 P	(P)252.5000	(P)45000.000	(P)399.1000	(P)1642.0000	(P)7751000.0
2	S13T004307	6/18/2013 2:11:33 P	(P)238.9000	(P)50600.000	(P)380.9000	(P)170.6000	(P)7591000.0
3	S13T004307	6/18/2013 2:12:00 P	(P)-450.0000	(P)41080.000	(P)380.1000	(P)170.3000	(P)7673000.0
4	S13T004307	6/18/2013 2:12:28 P	(P)238.1000	(P)54250.000	(P)-82.5400	(P)1194.0000	(P)7708000.0
5	S13T004307	6/18/2013 2:12:55 P	(P)232.2000	(P)50800.000	(P)371.9000	(P)369.7000	(P)7679000.0
	Mean of S13T004307	6/18/2013 2:10:44 P	(P)102.3000	(P)48340.000	(P)289.9000	(P)709.3000	(P)7680000.0
	SD of S13T004307		(P)308.8000	(P)5243.0000	(P)208.4000	(P)671.0000	(P)58710.000
	%RSD of S13T00430		(P)301.8000	(P)10.8500	(P)71.9000	(P)94.5900	(P)0.7644
1	S13T004252_A	6/18/2013 2:17:11 P	(P)120200.00	(P)463000.00	(P)9327.0000	(P)72290000.	(P)56830000.
2	S13T004252_A	6/18/2013 2:17:39 P	(P)124200.00	(P)448100.00	(P)10940.000	(P)69860000.	(P)56820000.
3	S13T004252_A	6/18/2013 2:18:07 P	(P)121800.00	(P)442700.00	(P)7775.0000	(P)66430000.	(P)57340000.
4	S13T004252_A	6/18/2013 2:18:34 P	(P)105300.00	(P)460800.00	(P)7862.0000	(P)63820000.	(P)57540000.
5	S13T004252_A	6/18/2013 2:19:02 P	(P)105000.00	(P)448900.00	(P)9901.0000	(P)60540000.	(P)57660000.
	Mean of S13T004252_	6/18/2013 2:16:50 P	(P)115300.00	(P)452700.00	(P)9161.0000	(P)66590000.	(P)57240000.
	SD of S13T004252_A		(P)9388.0000	(P)8772.0000	(P)1355.0000	(P)4678000.0	(P)395200.00
	%RSD of S13T004252		(P)8.1430	(P)1.9380	(P)14.7900	(P)7.0250	(P)0.6904
1	Prep Std 3	6/18/2013 2:23:18 P	(P)0.6808	(P)48.5600	(P)0.2641	(P)8.6140	(P)21590.000
2	Prep Std 3	6/18/2013 2:23:46 P	(P)-0.0863	(P)43.9900	(P)1.0100	(P)7.7700	(P)21330.000
3	Prep Std 3	6/18/2013 2:24:14 P	(P)-0.0854	(P)45.6200	(P)0.4491	(P)5.8980	(P)21380.000
4	Prep Std 3	6/18/2013 2:24:41 P	(P)-0.0857	(P)48.7000	(P)0.5420	(P)4.7850	(P)21420.000
5	Prep Std 3	6/18/2013 2:25:09 P	(P)0.0099	(P)43.8100	(P)0.6435	(P)5.8390	(P)21570.000
	Mean of Prep Std 3	6/18/2013 2:22:57 P	(P)0.0867	(P)46.1400	(P)0.5818	(P)6.5810	(P)21460.000
	SD of Prep Std 3		(P)0.3347	(P)2.3860	(P)0.2772	(P)1.5650	(P)115.8000
	%RSD of Prep Std 3		(P)386.2000	(P)5.1710	(P)47.6500	(P)23.7700	(P)0.5398
1	Prep Std 4	6/18/2013 2:29:26 P	(P)-0.1800	(P)0.4587	(P)-0.1203	(P)14010.000	(P)47.5600
2	Prep Std 4	6/18/2013 2:29:53 P	(P)-0.1800	(P)-0.0287	(P)0.0771	(P)14000.000	(P)50.0300
3	Prep Std 4	6/18/2013 2:30:21 P	(P)-0.1800	(P)0.1618	(P)-0.1217	(P)13710.000	(P)44.7000
4	Prep Std 4	6/18/2013 2:30:49 P	(P)-0.1800	(P)0.2620	(P)-0.1207	(P)13800.000	(P)48.4500
5	Prep Std 4	6/18/2013 2:31:16 P	(P)-0.1800	(P)0.1613	(P)-0.0257	(P)13740.000	(P)46.0200
	Mean of Prep Std 4	6/18/2013 2:29:05 P	(P)-0.1800	(P)0.2030	(P)-0.0623	(P)13850.000	(P)47.3500
	SD of Prep Std 4		(P)0.0000	(P)0.1775	(P)0.0881	(P)141.4000	(P)2.0760

Excluded in Calib | Multi Element | Internal Standard | Standard Addition

Dilution Corrected Concentration Per Analyte

S-Calibration Has Edited Standard
F-Interference Correction Failed
E-Calibration Edited
T-Tripped
I-Invalid Calibration
P-Pulse Counting
V-Valley Integration Failed
M-Result Over Max

Run	Label	TimeStamp	193Ir	229Th	230Th	231Pa	232Th	233U
			ppb	ppt	ppt	ppt	ppt	ppt
	%RSD of Prep Std 4		(P)n/a	(P)4.6760	(P)3.4950	(P)0.0000	(P)23.6000	(P)154.6000
1	U/Th CCV	6/18/2013 2:35:13 P	(P)0.984	(P)-0.1296	(P)-0.1397	(P)-0.1438	(P)1044.0000	(P)0.2061
2	U/Th CCV	6/18/2013 2:35:40 P	(P)0.980	(P)-0.1347	(P)-0.1397	(P)-0.1388	(P)1058.0000	(P)0.2236
3	U/Th CCV	6/18/2013 2:36:08 P	(P)0.978	(P)-0.1347	(P)-0.1448	(P)-0.1489	(P)1062.0000	(P)0.1774
4	U/Th CCV	6/18/2013 2:36:36 P	(P)0.980	(P)-0.1347	(P)-0.1246	(P)-0.1438	(P)1066.0000	(P)0.2053
5	U/Th CCV	6/18/2013 2:37:03 P	(P)0.977	(P)-0.1448	(P)-0.1297	(P)-0.1388	(P)1073.0000	(P)0.2777
	Mean of U/Th CCV	6/18/2013 2:35:13 P	(P)0.984	(P)-0.1357	(P)-0.1357	(P)-0.1428	(P)1061.0000	(P)0.2180
	SD of U/Th CCV		(P)n/a	(P)0.0055	(P)0.0083	(P)0.0042	(P)10.7700	(P)0.0372
	%RSD of U/Th CCV		(P)n/a	(P)4.0770	(P)6.0890	(P)2.9440	(P)1.0150	(P)17.0800
1	U233/Np CCV	6/18/2013 2:40:59 P	(P)0.961	(P)-0.0560	(P)-0.1349	(P)-0.1439	(P)11.4400	(P)1059.0000
2	U233/Np CCV	6/18/2013 2:41:26 P	(P)0.965	(P)-0.0407	(P)-0.1398	(P)-0.1489	(P)9.3610	(P)1064.0000
3	U233/Np CCV	6/18/2013 2:41:54 P	(P)0.976	(P)-0.0646	(P)-0.1247	(P)-0.1439	(P)8.6110	(P)1068.0000
4	U233/Np CCV	6/18/2013 2:42:22 P	(P)0.968	(P)-0.0254	(P)-0.1448	(P)-0.1489	(P)6.9510	(P)1060.0000
5	U233/Np CCV	6/18/2013 2:42:49 P	(P)0.954	(P)-0.0419	(P)-0.1350	(P)-0.1489	(P)5.8700	(P)1043.0000
	Mean of U233/Np CC	6/18/2013 2:40:59 P	(P)0.961	(P)-0.0457	(P)-0.1358	(P)-0.1469	(P)8.4460	(P)1059.0000
	SD of U233/Np CCV		(P)n/a	(P)0.0151	(P)0.0074	(P)0.0027	(P)2.1620	(P)9.4510
	%RSD of U233/Np C		(P)n/a	(P)33.0400	(P)5.4690	(P)1.8550	(P)25.6000	(P)0.8924
1	U/Th LLS 25ppt	6/18/2013 2:46:45 P	(P)0.962	(P)-0.1349	(P)-0.1349	(P)-0.1489	(P)27.6400	(P)0.5881
2	U/Th LLS 25ppt	6/18/2013 2:47:12 P	(P)0.965	(P)-0.1299	(P)-0.1398	(P)-0.1489	(P)27.0300	(P)0.4229
3	U/Th LLS 25ppt	6/18/2013 2:47:40 P	(P)0.958	(P)-0.1350	(P)-0.1399	(P)-0.1489	(P)27.2000	(P)0.4426
4	U/Th LLS 25ppt	6/18/2013 2:48:08 P	(P)0.962	(P)-0.1399	(P)-0.1398	(P)-0.1390	(P)26.5200	(P)0.3185
5	U/Th LLS 25ppt	6/18/2013 2:48:35 P	(P)0.959	(P)-0.1399	(P)-0.1399	(P)-0.1440	(P)27.4700	(P)0.2545
	Mean of U/Th LLS 25	6/18/2013 2:46:45 P	(P)0.962	(P)-0.1359	(P)-0.1389	(P)-0.1459	(P)27.1700	(P)0.4053
	SD of U/Th LLS 25ppt		(P)n/a	(P)0.0042	(P)0.0022	(P)0.0044	(P)0.4346	(P)0.1278
	%RSD of U/Th LLS 2		(P)n/a	(P)3.0530	(P)1.5920	(P)3.0300	(P)1.5990	(P)31.5400
1	U/Th LLS 5ppt	6/18/2013 2:52:32 P	(P)0.951	(P)-0.1399	(P)-0.1399	(P)-0.1489	(P)7.5170	(P)0.1545
2	U/Th LLS 5ppt	6/18/2013 2:52:59 P	(P)0.956	(P)-0.1301	(P)-0.1399	(P)-0.1342	(P)6.9740	(P)0.1329
3	U/Th LLS 5ppt	6/18/2013 2:53:27 P	(P)0.955	(P)-0.1448	(P)-0.1448	(P)-0.1391	(P)6.5430	(P)0.1284
4	U/Th LLS 5ppt	6/18/2013 2:53:55 P	(P)0.950	(P)-0.1448	(P)-0.1448	(P)-0.1440	(P)6.5160	(P)0.1232
5	U/Th LLS 5ppt	6/18/2013 2:54:22 P	(P)0.952	(P)-0.1448	(P)-0.1399	(P)-0.1440	(P)6.3210	(P)0.0789
	Mean of U/Th LLS 5p	6/18/2013 2:52:32 P	(P)0.951	(P)-0.1409	(P)-0.1418	(P)-0.1420	(P)6.7740	(P)0.1236
	SD of U/Th LLS 5ppt		(P)n/a	(P)0.0064	(P)0.0027	(P)0.0056	(P)0.4790	(P)0.0277
	%RSD of U/Th LLS 5		(P)n/a	(P)4.5440	(P)1.8900	(P)3.9450	(P)7.0710	(P)22.3900
1	U233/Np LLS 5ppt	6/18/2013 2:58:19 P	(P)0.961	(P)-0.1399	(P)-0.1448	(P)-0.1439	(P)0.5943	(P)5.1350
2	U233/Np LLS 5ppt	6/18/2013 2:58:46 P	(P)0.964	(P)-0.1448	(P)-0.1349	(P)-0.1390	(P)0.5563	(P)5.2940
3	U233/Np LLS 5ppt	6/18/2013 2:59:14 P	(P)0.965	(P)-0.1398	(P)-0.1448	(P)-0.1489	(P)0.5224	(P)5.3960
4	U233/Np LLS 5ppt	6/18/2013 2:59:42 P	(P)0.966	(P)-0.1349	(P)-0.1448	(P)-0.1489	(P)0.5236	(P)4.8490
5	U233/Np LLS 5ppt	6/18/2013 3:00:09 P	(P)0.953	(P)-0.1350	(P)-0.1448	(P)-0.1489	(P)0.4950	(P)4.8810
	Mean of U233/Np LLS	6/18/2013 2:58:19 P	(P)0.961	(P)-0.1389	(P)-0.1428	(P)-0.1459	(P)0.5383	(P)5.1110
	SD of U233/Np LLS 5		(P)n/a	(P)0.0041	(P)0.0044	(P)0.0044	(P)0.0381	(P)0.2432
	%RSD of U233/Np L		(P)n/a	(P)2.9700	(P)3.1010	(P)3.0340	(P)7.0780	(P)4.7590
1	CCB	6/18/2013 3:04:07 P	(P)0.987	(P)-0.1397	(P)-0.1397	(P)-0.1438	(P)0.2689	(P)0.0174

15:39:50 6/18/13
Act130618.vge

Multi Element | Internal Standard

Dilution Corrected Concentration Per Analyte

S-Calibration Has Edited Standard E-Calibration Edited I-Invalid Calibration V-Valley Integration Failed
F-Interference Correction Failed T-Tripped P-Pulse Counting M-Result Over Max

Run	Label	TimeStamp	234U ppt	235U ppt	236U ppt	237Np ppt	238U ppt
	%RSD of Prep Std 4		(P)0.0000	(P)87.4100	(P)141.5000	(P)1.0210	(P)4.3850
1	U/Th CCV	6/18/2013 2:35:13 P	(P)0.0087	(P)2.1970	(P)0.0203	(P)0.5234	(P)1066.0000
2	U/Th CCV	6/18/2013 2:35:40 P	(P)-0.0002	(P)2.2900	(P)0.0201	(P)0.4899	(P)1063.0000
3	U/Th CCV	6/18/2013 2:36:08 P	(P)-0.0002	(P)2.0950	(P)0.0024	(P)0.4380	(P)1052.0000
4	U/Th CCV	6/18/2013 2:36:36 P	(P)0.0130	(P)1.9880	(P)0.0423	(P)0.3525	(P)1063.0000
5	U/Th CCV	6/18/2013 2:37:03 P	(P)-0.0090	(P)2.2200	(P)0.0200	(P)0.4257	(P)1059.0000
	Mean of U/Th CCV	6/18/2013 2:35:13 P	(P)0.0024	(P)2.1580	(P)0.0210	(P)0.4459	(P)1061.0000
	SD of U/Th CCV		(P)0.0086	(P)0.1177	(P)0.0142	(P)0.0655	(P)5.4010
	%RSD of U/Th CCV		(P)351.2000	(P)5.4560	(P)67.4000	(P)14.6800	(P)0.5093
1	U233/Np CCV	6/18/2013 2:40:59 P	(P)2.1930	(P)1.3270	(P)0.3540	(P)1092.0000	(P)4.3110
2	U233/Np CCV	6/18/2013 2:41:26 P	(P)2.0690	(P)1.4990	(P)0.3601	(P)1102.0000	(P)4.5060
3	U233/Np CCV	6/18/2013 2:41:54 P	(P)2.0130	(P)1.3700	(P)0.3861	(P)1108.0000	(P)4.3280
4	U233/Np CCV	6/18/2013 2:42:22 P	(P)1.9410	(P)1.4950	(P)0.3436	(P)1113.0000	(P)4.2260
5	U233/Np CCV	6/18/2013 2:42:49 P	(P)1.9630	(P)1.3990	(P)0.3513	(P)1091.0000	(P)4.1020
	Mean of U233/Np CC	6/18/2013 2:40:59 P	(P)2.0360	(P)1.4180	(P)0.3590	(P)1101.0000	(P)4.2950
	SD of U233/Np CCV		(P)0.1010	(P)0.0766	(P)0.0163	(P)9.6200	(P)0.1482
	%RSD of U233/Np C		(P)4.9590	(P)5.3980	(P)4.5310	(P)0.8739	(P)3.4500
1	U/Th LLS 25ppt	6/18/2013 2:46:45 P	(P)-0.0090	(P)0.2154	(P)-0.0109	(P)0.7347	(P)26.9300
2	U/Th LLS 25ppt	6/18/2013 2:47:12 P	(P)-0.0090	(P)0.1768	(P)-0.0109	(P)0.5360	(P)27.3300
3	U/Th LLS 25ppt	6/18/2013 2:47:40 P	(P)-0.0047	(P)0.1756	(P)-0.0066	(P)0.5287	(P)26.9900
4	U/Th LLS 25ppt	6/18/2013 2:48:08 P	(P)-0.0047	(P)0.2069	(P)-0.0022	(P)0.4578	(P)27.0300
5	U/Th LLS 25ppt	6/18/2013 2:48:35 P	(P)-0.0090	(P)0.1238	(P)-0.0109	(P)0.5176	(P)27.7000
	Mean of U/Th LLS 25	6/18/2013 2:46:45 P	(P)-0.0073	(P)0.1797	(P)-0.0083	(P)0.5550	(P)27.2000
	SD of U/Th LLS 25ppt		(P)0.0024	(P)0.0360	(P)0.0039	(P)0.1051	(P)0.3224
	%RSD of U/Th LLS 2		(P)32.4300	(P)20.0000	(P)46.9200	(P)18.9400	(P)1.1850
1	U/Th LLS 5ppt	6/18/2013 2:52:32 P	(P)-0.0047	(P)0.0367	(P)-0.0023	(P)0.2962	(P)5.3990
2	U/Th LLS 5ppt	6/18/2013 2:52:59 P	(P)-0.0090	(P)0.0369	(P)-0.0066	(P)0.2058	(P)5.2750
3	U/Th LLS 5ppt	6/18/2013 2:53:27 P	(P)-0.0090	(P)0.0196	(P)-0.0023	(P)0.1635	(P)5.2030
4	U/Th LLS 5ppt	6/18/2013 2:53:55 P	(P)-0.0090	(P)0.0495	(P)-0.0109	(P)0.1550	(P)5.2230
5	U/Th LLS 5ppt	6/18/2013 2:54:22 P	(P)-0.0090	(P)0.0195	(P)-0.0066	(P)0.1095	(P)5.1520
	Mean of U/Th LLS 5p	6/18/2013 2:52:32 P	(P)-0.0081	(P)0.0324	(P)-0.0057	(P)0.1860	(P)5.2500
	SD of U/Th LLS 5ppt		(P)0.0019	(P)0.0129	(P)0.0036	(P)0.0704	(P)0.0940
	%RSD of U/Th LLS 5		(P)23.4300	(P)39.7000	(P)62.9800	(P)37.8700	(P)1.7910
1	U233/Np LLS 5ppt	6/18/2013 2:58:19 P	(P)-0.0004	(P)0.0023	(P)-0.0066	(P)5.3170	(P)0.0064
2	U233/Np LLS 5ppt	6/18/2013 2:58:46 P	(P)0.0169	(P)0.0067	(P)-0.0065	(P)5.2320	(P)0.0958
3	U233/Np LLS 5ppt	6/18/2013 2:59:14 P	(P)0.0213	(P)0.0111	(P)-0.0065	(P)5.4280	(P)0.1021
4	U233/Np LLS 5ppt	6/18/2013 2:59:42 P	(P)-0.0047	(P)0.0068	(P)-0.0109	(P)5.1860	(P)0.1122
5	U233/Np LLS 5ppt	6/18/2013 3:00:09 P	(P)-0.0004	(P)0.0023	(P)-0.0023	(P)5.0040	(P)-0.0481
	Mean of U233/Np LLS	6/18/2013 2:58:19 P	(P)0.0065	(P)0.0058	(P)-0.0066	(P)5.2330	(P)0.0537
	SD of U233/Np LLS 5		(P)0.0117	(P)0.0037	(P)0.0030	(P)0.1578	(P)0.0709
	%RSD of U233/Np L		(P)178.7000	(P)63.0900	(P)46.4500	(P)3.0140	(P)132.2000
1	CCB	6/18/2013 3:04:07 P	(P)-0.0046	(P)-0.0064	(P)-0.0064	(P)0.0308	(P)-0.0169

15:39:50 6/18/13
Act130618.vge

Excluded In Calib | Multi Element | Internal Standard

Dilution Corrected Concentration Per Analyte

S-Calibration Has Edited Standard
F-Interference Correction Failed
E-Calibration Edited
T-Tripped
I-Invalid Calibration
P-Pulse Counting
V-Valley Integration Failed
M-Result Over Max

Run	Label	TimeStamp	193Ir	229Th	230Th	231Pa	232Th	233U
			ppb	ppt	ppt	ppt	ppt	ppt
2	CCB	6/18/2013 3:04:34 P	(P)0.984	(P)-0.1448	(P)-0.1397	(P)-0.1388	(P)0.2730	(P)0.0082
3	CCB	6/18/2013 3:05:02 P	(P)0.981	(P)-0.1448	(P)-0.1397	(P)-0.1388	(P)0.1707	(P)0.0173
4	CCB	6/18/2013 3:05:30 P	(P)0.983	(P)-0.1397	(P)-0.1397	(P)-0.1489	(P)0.2170	(P)0.0035
5	CCB	6/18/2013 3:05:57 P	(P)0.986	(P)-0.1296	(P)-0.1448	(P)-0.1388	(P)0.2230	(P)-0.0010
	Mean of CCB	6/18/2013 3:04:07 P	(P)0.987	(P)-0.1397	(P)-0.1407	(P)-0.1418	(P)0.2305	(P)0.0091
	SD of CCB		(P)n/a	(P)0.0062	(P)0.0023	(P)0.0045	(P)0.0421	(P)0.0082
	%RSD of CCB		(P)n/a	(P)4.4390	(P)1.6060	(P)3.1860	(P)18.2700	(P)90.6600

Excluded In Calib | Multi Element | Internal Standard | Standard Addition

Dilution Corrected Concentration Per Analyte

S-Calibration Has Edited Standard
F-Interference Correction Failed
E-Calibration Edited
T-Tripped
I-Invalid Calibration
P-Pulse Counting
V-Valley Integration Failed
M-Result Over Max

Run	Label	TimeStamp	234U	235U	236U	237Np	238U
			ppt	ppt	ppt	ppt	ppt
2	CCB	6/18/2013 3:04:34 P	(P)-0.0046	(P)-0.0064	(P)-0.0109	(P)0.0228	(P)0.0335
3	CCB	6/18/2013 3:05:02 P	(P)-0.0002	(P)-0.0064	(P)-0.0065	(P)0.0188	(P)-0.0538
4	CCB	6/18/2013 3:05:30 P	(P)-0.0046	(P)-0.0019	(P)-0.0020	(P)0.0189	(P)0.0008
5	CCB	6/18/2013 3:05:57 P	(P)0.0043	(P)-0.0019	(P)-0.0109	(P)0.0308	(P)0.0207
	Mean of CCB	6/18/2013 3:04:07 P	(P)-0.0019	(P)-0.0046	(P)-0.0073	(P)0.0244	(P)-0.0031
	SD of CCB		(P)0.0040	(P)0.0024	(P)0.0037	(P)0.0060	(P)0.0342
	%RSD of CCB		(P)204.2000	(P)53.3500	(P)50.6900	(P)24.7600	(P)1091.0000

15:39:50 6/18/13
Act130618.vge

Uncorrected ICPS Per Mass

Multi Element | Internal Standard

S-Calibration Has Edited Standard
F-Interference Correction Failed
E-Calibration Edited
T-Tripped
I-Invalid Calibration
P-Pulse Counting
V-Valley Integration Failed
M-Result Over Max

Run	Label	TimeStamp	115	193Ir	229Th	230Th	231Pa	232Th
1	rinse	6/18/2013 12:26:43 F	(P)126.001	(P)109804.38	(P)0.000	(P)0.000	(P)2.000	(P)21.000
2	rinse	6/18/2013 12:27:11 F	(P)99.000	(P)112654.44	(P)2.000	(P)1.000	(P)1.000	(P)22.000
3	rinse	6/18/2013 12:27:39 F	(P)116.000	(P)111729.22	(P)1.000	(P)2.000	(P)0.000	(P)24.000
	Mean of rinse	6/18/2013 12:26:43 F	(P)113.667	(P)111396.01	(P)1.000	(P)1.000	(P)1.000	(P)22.333
	SD of rinse		(P)13.651	(P)1453.954	(P)1.000	(P)1.000	(P)1.000	(P)1.528
	%RSD of rinse		(P)12.009	(P)1.305	(P)100.000	(P)100.000	(P)100.000	(P)6.840
1	rinse	6/18/2013 12:31:34 F	(P)127.001	(P)110862.50	(P)1.000	(P)3.000	(P)2.000	(P)25.000
2	rinse	6/18/2013 12:32:01 F	(P)111.000	(P)110915.92	(P)3.000	(P)1.000	(P)0.000	(P)30.000
3	rinse	6/18/2013 12:32:29 F	(P)118.000	(P)111520.60	(P)1.000	(P)0.000	(P)3.000	(P)37.000
	Mean of rinse	6/18/2013 12:31:34 F	(P)118.667	(P)111099.67	(P)1.667	(P)1.333	(P)1.667	(P)30.667
	SD of rinse		(P)8.021	(P)365.508	(P)1.155	(P)1.528	(P)1.528	(P)6.028
	%RSD of rinse		(P)6.759	(P)0.329	(P)69.282	(P)114.564	(P)91.652	(P)19.656
1	Cal Blank	6/18/2013 12:36:25 F	(P)115.000	(P)114296.41	(P)1.000	(P)1.000	(P)2.000	(P)28.000
2	Cal Blank	6/18/2013 12:36:52 F	(P)119.001	(P)113050.55	(P)1.000	(P)0.000	(P)0.000	(P)25.000
3	Cal Blank	6/18/2013 12:37:20 F	(P)118.000	(P)114378.06	(P)0.000	(P)1.000	(P)2.000	(P)21.000
4	Cal Blank	6/18/2013 12:37:47 F	(P)113.000	(P)115331.68	(P)0.000	(P)0.000	(P)1.000	(P)31.000
5	Cal Blank	6/18/2013 12:38:15 F	(P)113.000	(P)115183.49	(P)1.000	(P)1.000	(P)2.000	(P)33.000
	Mean of Cal Blank	6/18/2013 12:36:25 F	(P)115.600	(P)114448.04	(P)0.600	(P)0.600	(P)1.400	(P)27.600
	SD of Cal Blank		(P)2.793	(P)908.648	(P)0.548	(P)0.548	(P)0.894	(P)4.775
	%RSD of Cal Blank		(P)2.416	(P)0.794	(P)91.287	(P)91.287	(P)63.888	(P)17.301
1	U/Th Nat Cal 2ppb	6/18/2013 12:42:10 F	(P)135.001	(P)111407.72	(P)1.000	(P)0.000	(P)0.000	(P)375515.39
2	U/Th Nat Cal 2ppb	6/18/2013 12:42:38 F	(P)119.001	(P)112181.74	(P)0.000	(P)0.000	(P)3.000	(P)380559.26
3	U/Th Nat Cal 2ppb	6/18/2013 12:43:05 F	(P)95.000	(P)111639.52	(P)5.000	(P)2.000	(P)4.000	(P)378303.52
4	U/Th Nat Cal 2ppb	6/18/2013 12:43:33 F	(P)104.000	(PM)111929.7	(PM)0.000	(PM)1.000	(PM)0.000	(P)382531.91
5	U/Th Nat Cal 2ppb	6/18/2013 12:44:01 F	(P)125.001	(PM)112369.2	(PM)2.000	(PM)3.000	(PM)3.000	(P)386436.92
	Mean of U/Th Nat Cal :	6/18/2013 12:42:10 F	(P)115.600	(PM)111905.5	(PM)1.600	(PM)1.200	(PM)2.000	(P)380669.40
	SD of U/Th Nat Cal 2		(P)16.087	(PM)390.658	(PM)2.074	(PM)1.304	(PM)1.871	(P)4150.501
	%RSD of U/Th Nat C		(P)13.916	(PM)0.349	(PM)129.603	(PM)108.653	(PM)93.541	(P)1.090
1	U233/Np Cal 2ppb	6/18/2013 12:47:56 F	(P)281.003	(P)112126.31	(P)40.000	(P)0.000	(P)1.000	(PM)3518.433
2	U233/Np Cal 2ppb	6/18/2013 12:48:23 F	(P)303.003	(P)112338.97	(P)41.000	(P)0.000	(P)2.000	(PM)3383.401
3	U233/Np Cal 2ppb	6/18/2013 12:48:51 F	(P)265.002	(P)113762.17	(P)41.000	(P)1.000	(P)1.000	(P)3195.357
4	U233/Np Cal 2ppb	6/18/2013 12:49:19 F	(P)275.003	(P)112667.54	(P)34.000	(P)1.000	(P)1.000	(PM)3088.334
5	U233/Np Cal 2ppb	6/18/2013 12:49:46 F	(P)280.003	(P)113551.50	(P)39.000	(P)0.000	(P)0.000	(P)3006.316
	Mean of U233/Np Cal :	6/18/2013 12:47:56 F	(P)280.803	(P)112889.30	(P)39.000	(P)0.400	(P)1.000	(PM)3238.368
	SD of U233/Np Cal 2		(P)13.936	(P)730.513	(P)2.915	(P)0.548	(P)0.707	(PM)210.760
	%RSD of U233/Np C		(P)4.963	(P)0.647	(P)7.476	(P)136.931	(P)70.711	(PM)6.508
1	U/Th ICV 1ppb	6/18/2013 12:53:42 F	(P)106.000	(P)111264.61	(P)0.000	(P)2.000	(P)1.000	(P)196190.99
2	U/Th ICV 1ppb	6/18/2013 12:54:09 F	(P)88.000	(P)111862.25	(P)1.000	(P)1.000	(P)1.000	(P)199601.76
3	U/Th ICV 1ppb	6/18/2013 12:54:37 F	(P)109.000	(P)113074.74	(P)1.000	(P)2.000	(P)1.000	(P)202192.81
4	U/Th ICV 1ppb	6/18/2013 12:55:05 F	(P)98.000	(P)113260.20	(P)0.000	(P)1.000	(P)1.000	(P)203043.75
5	U/Th ICV 1ppb	6/18/2013 12:55:32 F	(P)91.000	(P)112319.82	(P)1.000	(P)4.000	(P)1.000	(P)203411.94
	Mean of U/Th ICV 1p	6/18/2013 12:53:42 F	(P)98.400	(P)112356.33	(P)0.600	(P)2.000	(P)1.000	(P)200888.25
	SD of U/Th ICV 1ppb		(P)9.127	(P)832.225	(P)0.548	(P)1.225	(P)0.000	(P)3018.127
	%RSD of U/Th ICV 1		(P)9.275	(P)0.741	(P)91.287	(P)61.237	(P)0.000	(P)1.502

Excluded In Calib | Multi Element | Internal Standard | Surrogate Standard

Uncorrected ICPS Per Mass

S-Calibration Has Edited Standard
F-Interference Correction Failed
E-Calibration Edited
T-Tripped
I-Invalid Calibration
P-Pulse Counting
V-Valley Integration Failed
M-Result Over Max

Run	Label	TimeStamp	233U	234U	235U	236U	237Np	238U
1	rinse	6/18/2013 12:26:43 F	(P)2.000	(P)0.000	(P)1.000	(P)0.000	(P)1.000	(P)306.003
2	rinse	6/18/2013 12:27:11 F	(P)2.000	(P)1.000	(P)3.000	(P)3.000	(P)2.000	306.337
3	rinse	6/18/2013 12:27:39 F	(P)2.000	(P)2.000	(P)1.000	(P)1.000	(P)1.000	308.337
	Mean of rinse	6/18/2013 12:26:43 F	(P)2.000	(P)1.000	(P)1.667	(P)1.333	(P)1.333	306.892
	SD of rinse		(P)0.000	(P)1.000	(P)1.155	(P)1.528	(P)0.577	1.262
	%RSD of rinse		(P)0.000	(P)100.000	(P)69.282	(P)114.564	(P)43.301	0.411
1	rinse	6/18/2013 12:31:34 F	(P)1.000	(P)1.000	(P)0.000	(P)0.000	(P)0.000	305.337
2	rinse	6/18/2013 12:32:01 F	(P)0.000	(P)1.000	(P)0.000	(P)1.000	(P)0.000	310.003
3	rinse	6/18/2013 12:32:29 F	(P)1.000	(P)0.000	(P)2.000	(P)3.000	(P)0.000	312.003
	Mean of rinse	6/18/2013 12:31:34 F	(P)0.667	(P)0.667	(P)0.667	(P)1.333	(P)0.000	309.114
	SD of rinse		(P)0.577	(P)0.577	(P)1.155	(P)1.528	(P)0.000	3.421
	%RSD of rinse		(P)86.603	(P)86.603	(P)173.205	(P)114.564	(P)0.000	1.107
1	Cal Blank	6/18/2013 12:36:25 F	(P)3.000	(P)0.000	(P)0.000	(P)1.000	(P)0.000	313.670
2	Cal Blank	6/18/2013 12:36:52 F	(P)3.000	(P)1.000	(P)3.000	(P)2.000	(P)1.000	319.004
3	Cal Blank	6/18/2013 12:37:20 F	(P)0.000	(P)1.000	(P)2.000	(P)2.000	(P)0.000	324.004
4	Cal Blank	6/18/2013 12:37:47 F	(P)0.000	(P)0.000	(P)1.000	(P)0.000	(P)3.000	311.670
5	Cal Blank	6/18/2013 12:38:15 F	(P)0.000	(P)1.000	(P)1.000	(P)0.000	(P)2.000	319.004
	Mean of Cal Blank	6/18/2013 12:36:25 F	(P)1.200	(P)0.600	(P)1.400	(P)1.000	(P)1.200	317.470
	SD of Cal Blank		(P)1.643	(P)0.548	(P)1.140	(P)1.000	(P)1.304	4.885
	%RSD of Cal Blank		(P)136.931	(P)91.287	(P)81.441	(P)100.000	(P)108.653	1.539
1	U/Th Nat Cal 2ppb	6/18/2013 12:42:10 F	(PM)28.000	(PM)27.000	(PM)3130.343	(P)0.000	(P)3.000	422028.370
2	U/Th Nat Cal 2ppb	6/18/2013 12:42:38 F	(P)33.000	(P)29.000	(P)3099.336	(P)1.000	(P)6.000	427673.930
3	U/Th Nat Cal 2ppb	6/18/2013 12:43:05 F	(P)24.000	(P)19.000	(P)3013.318	(P)3.000	(PM)3.000	425817.010
4	U/Th Nat Cal 2ppb	6/18/2013 12:43:33 F	(PM)21.000	(PM)27.000	(PM)3164.350	(P)0.000	(PM)2.000	427068.550
5	U/Th Nat Cal 2ppb	6/18/2013 12:44:01 F	(PM)20.000	(PM)25.000	(PM)3169.352	(P)1.000	(PM)4.000	430601.940
	Mean of U/Th Nat Cal 2	6/18/2013 12:42:10 F	(PM)25.200	(PM)25.400	(PM)3115.340	(P)1.000	(PM)3.600	426637.960
	SD of U/Th Nat Cal 2		(PM)5.357	(PM)3.847	(PM)63.657	(P)1.225	(PM)1.517	3118.255
	%RSD of U/Th Nat C		(PM)21.259	(PM)15.146	(PM)2.043	(P)122.474	(PM)42.127	0.731
1	U233/Np Cal 2ppb	6/18/2013 12:47:56 F	(P)403543.27	(P)815.023	(P)352.004	(PM)64.000	(P)491911.86	2677.584
2	U233/Np Cal 2ppb	6/18/2013 12:48:23 F	(P)402796.64	(P)827.024	(P)346.004	(PM)74.000	(P)493594.43	2709.924
3	U233/Np Cal 2ppb	6/18/2013 12:48:51 F	(P)404450.39	(P)825.024	(P)363.005	(P)66.000	(P)490347.43	2629.242
4	U233/Np Cal 2ppb	6/18/2013 12:49:19 F	(P)405918.15	(P)789.022	(P)345.004	(P)60.000	(P)491476.24	2715.591
5	U233/Np Cal 2ppb	6/18/2013 12:49:46 F	(P)404646.84	(P)811.023	(P)353.004	(PM)74.000	(P)495473.84	2677.584
	Mean of U233/Np Cal 2	6/18/2013 12:47:56 F	(P)404271.06	(P)813.423	(P)351.804	(PM)67.600	(P)492560.76	2681.985
	SD of U233/Np Cal 2		(P)1182.146	(P)15.193	(P)7.190	(PM)6.229	(P)2003.157	34.389
	%RSD of U233/Np C		(P)0.292	(P)1.868	(P)2.044	(PM)9.214	(P)0.407	1.282
1	U/Th ICV 1ppb	6/18/2013 12:53:42 F	(P)40.000	(P)3.000	(P)450.007	(P)3.000	(P)31.000	222405.540
2	U/Th ICV 1ppb	6/18/2013 12:54:09 F	(P)35.000	(P)4.000	(P)456.007	(P)7.000	(P)60.000	223339.610
3	U/Th ICV 1ppb	6/18/2013 12:54:37 F	(P)36.000	(P)4.000	(P)467.008	(P)9.000	(P)53.000	226240.050
4	U/Th ICV 1ppb	6/18/2013 12:55:05 F	(P)37.000	(P)4.000	(P)504.009	(P)7.000	(P)48.000	224936.030
5	U/Th ICV 1ppb	6/18/2013 12:55:32 F	(P)80.000	(P)5.000	(P)438.007	(P)5.000	(P)93.000	225086.710
	Mean of U/Th ICV 1p	6/18/2013 12:53:42 F	(P)45.600	(P)4.000	(P)463.008	(P)6.200	(P)57.000	224401.590
	SD of U/Th ICV 1ppb		(P)19.321	(P)0.707	(P)25.200	(P)2.280	(P)22.793	1520.442
	%RSD of U/Th ICV 1		(P)42.371	(P)17.678	(P)5.443	(P)36.780	(P)39.987	0.678

15:39:50 6/18/13
Act130618.vge

Multi Element | Internal Standard

Uncorrected ICPS Per Mass

S-Calibration Has Edited Standard
F-Interference Correction Failed
E-Calibration Edited
T-Tripped
I-Invalid Calibration
P-Pulse Counting
V-Valley Integration Failed
M-Result Over Max

Run	Label	TimeStamp	115	193Ir	229Th	230Th	231Pa	232Th
1	U233/Np ICV 1ppb	6/18/2013 12:59:27 F	(P)1118.044	(P)113107.00	(P)29.000	(P)2.000	(P)3.000	(P)1706.102
2	U233/Np ICV 1ppb	6/18/2013 12:59:55 F	(P)1104.043	(P)113640.20	(P)22.000	(P)3.000	(P)5.000	(P)1482.077
3	U233/Np ICV 1ppb	6/18/2013 1:00:23 P	(P)1047.038	(P)114886.11	(P)20.000	(P)0.000	(P)1.000	(P)1360.065
4	U233/Np ICV 1ppb	6/18/2013 1:00:50 P	(P)1074.040	(P)114168.39	(P)30.000	(P)1.000	(P)2.000	(P)1279.057
5	U233/Np ICV 1ppb	6/18/2013 1:01:18 P	(P)1139.045	(P)113714.79	(P)24.000	(P)3.000	(P)1.000	(P)1186.049
	Mean of U233/Np ICV	6/18/2013 12:59:27 F	(P)1096.442	(P)113903.30	(P)25.000	(P)1.800	(P)2.400	(P)1402.670
	SD of U233/Np ICV 1		(P)36.339	(P)666.153	(P)4.359	(P)1.304	(P)1.673	(P)201.492
	%RSD of U233/Np I		(P)3.314	(P)0.585	(P)17.436	(P)72.436	(P)69.722	(P)14.365
1	U/Th LLS 25ppt	6/18/2013 1:05:14 P	(P)124.001	(P)112854.01	(P)1.000	(P)1.000	(P)0.000	(P)4908.843
2	U/Th LLS 25ppt	6/18/2013 1:05:42 P	(P)130.001	(P)113803.49	(P)1.000	(P)1.000	(P)0.000	(P)5196.945
3	U/Th LLS 25ppt	6/18/2013 1:06:09 P	(P)98.000	(P)113107.00	(P)3.000	(P)1.000	(P)4.000	(P)4943.855
4	U/Th LLS 25ppt	6/18/2013 1:06:37 P	(P)93.000	(P)114417.37	(P)0.000	(P)2.000	(P)0.000	(P)5077.902
5	U/Th LLS 25ppt	6/18/2013 1:07:04 P	(P)83.000	(P)113103.97	(P)4.000	(P)4.000	(P)0.000	(P)5183.940
	Mean of U/Th LLS 25	6/18/2013 1:05:14 P	(P)105.600	(P)113457.17	(P)1.800	(P)1.800	(P)0.800	(P)5062.297
	SD of U/Th LLS 25ppt		(P)20.379	(P)642.864	(P)1.643	(P)1.304	(P)1.789	(P)132.992
	%RSD of U/Th LLS 2		(P)19.298	(P)0.567	(P)91.287	(P)72.436	(P)223.607	(P)2.627
1	U/Th LLS 5ppt	6/18/2013 1:11:01 P	(P)86.000	(P)112407.51	(P)1.000	(P)0.000	(P)1.000	(P)1125.044
2	U/Th LLS 5ppt	6/18/2013 1:11:28 P	(P)98.000	(P)112536.52	(P)1.000	(P)3.000	(P)2.000	(P)1097.042
3	U/Th LLS 5ppt	6/18/2013 1:11:56 P	(P)85.000	(P)112301.68	(P)0.000	(P)0.000	(P)1.000	(P)1109.043
4	U/Th LLS 5ppt	6/18/2013 1:12:23 P	(P)98.000	(P)112709.88	(P)2.000	(P)1.000	(P)1.000	(P)1208.051
5	U/Th LLS 5ppt	6/18/2013 1:12:51 P	(P)74.000	(P)113113.04	(P)3.000	(P)0.000	(P)4.000	(P)1155.047
	Mean of U/Th LLS 5p	6/18/2013 1:11:01 P	(P)88.200	(P)112613.72	(P)1.400	(P)0.800	(P)1.800	(P)1138.845
	SD of U/Th LLS 5ppt		(P)10.109	(P)317.971	(P)1.140	(P)1.304	(P)1.304	(P)44.379
	%RSD of U/Th LLS 5		(P)11.462	(P)0.282	(P)81.441	(P)162.980	(P)72.436	(P)3.897
1	U233/Np LLS 5ppt	6/18/2013 1:16:48 P	(P)123.001	(P)113400.31	(P)1.000	(P)0.000	(P)1.000	(P)156.001
2	U233/Np LLS 5ppt	6/18/2013 1:17:15 P	(P)112.000	(P)114227.86	(P)1.000	(P)0.000	(P)1.000	(P)143.001
3	U233/Np LLS 5ppt	6/18/2013 1:17:43 P	(P)97.000	(P)114380.07	(P)1.000	(P)2.000	(P)2.000	(P)144.001
4	U233/Np LLS 5ppt	6/18/2013 1:18:10 P	(P)97.000	(P)114861.92	(P)1.000	(P)2.000	(P)1.000	(P)146.001
5	U233/Np LLS 5ppt	6/18/2013 1:18:38 P	(P)89.000	(P)115362.93	(P)2.000	(P)1.000	(P)1.000	(P)121.001
	Mean of U233/Np LLS	6/18/2013 1:16:48 P	(P)103.600	(P)114446.62	(P)1.200	(P)1.000	(P)1.200	(P)142.001
	SD of U233/Np LLS 5		(P)13.668	(P)734.701	(P)0.447	(P)1.000	(P)0.447	(P)12.826
	%RSD of U233/Np L		(P)13.193	(P)0.642	(P)37.268	(P)100.000	(P)37.268	(P)9.032
1	ICB	6/18/2013 1:22:35 P	(P)112.000	(P)113622.06	(P)0.000	(P)0.000	(P)0.000	(P)104.000
2	ICB	6/18/2013 1:23:02 P	(P)116.000	(P)113935.54	(P)0.000	(P)0.000	(P)1.000	(P)85.000
3	ICB	6/18/2013 1:23:30 P	(P)99.000	(P)114750.02	(P)2.000	(P)0.000	(P)0.000	(P)108.000
4	ICB	6/18/2013 1:23:58 P	(P)89.000	(P)114129.08	(P)2.000	(P)0.000	(P)0.000	(P)87.000
5	ICB	6/18/2013 1:24:25 P	(P)102.000	(P)113502.11	(P)1.000	(P)1.000	(P)1.000	(P)70.000
	Mean of ICB	6/18/2013 1:22:35 P	(P)103.600	(P)113987.76	(P)1.000	(P)0.200	(P)0.400	(P)90.800
	SD of ICB		(P)10.738	(P)493.288	(P)1.000	(P)0.447	(P)0.548	(P)15.418
	%RSD of ICB		(P)10.365	(P)0.433	(P)100.000	(P)223.607	(P)136.931	(P)16.980
1	ICB	6/18/2013 1:28:22 P	(P)109.000	(P)113808.53	(P)0.000	(P)0.000	(P)0.000	(P)78.000
2	ICB	6/18/2013 1:28:50 P	(P)122.001	(P)113444.66	(P)1.000	(P)0.000	(P)0.000	(P)76.000
3	ICB	6/18/2013 1:29:18 P	(P)87.000	(P)114036.34	(P)0.000	(P)4.000	(P)2.000	(P)84.000

15:39:50 6/18/13
Act130618.vge

Excluded Results | Multi Element | Internal Standard | Uncorrected Results

Uncorrected ICPS Per Mass

S-Calibration Has Edited Standard E-Calibration Edited I-Invalid Calibration V-Valley Integration Failed
F-Interference Correction Failed T-Tripped P-Pulse Counting M-Result Over Max

Run	Label	TimeStamp	233U	234U	235U	236U	237Np	238U
1	U233/Np ICV 1ppb	6/18/2013 12:59:27 F	(P)218507.41	(P)417.006	(P)282.003	(P)74.000	(P)268956.20	1192.383
2	U233/Np ICV 1ppb	6/18/2013 12:59:55 F	(P)219283.16	(P)436.007	(P)300.003	(P)70.000	(P)270150.42	1244.721
3	U233/Np ICV 1ppb	6/18/2013 1:00:23 P	(P)219878.20	(P)449.007	(P)275.003	(P)81.000	(P)270799.54	1252.722
4	U233/Np ICV 1ppb	6/18/2013 1:00:50 P	(P)217727.64	(P)431.007	(P)285.003	(P)79.000	(P)268816.61	1227.386
5	U233/Np ICV 1ppb	6/18/2013 1:01:18 P	(P)219878.20	(P)481.008	(P)301.003	(P)77.000	(P)270503.00	1237.387
	Mean of U233/Np ICV	6/18/2013 12:59:27 F	(P)219054.92	(P)442.807	(P)288.603	(P)76.200	(P)269845.15	1230.920
	SD of U233/Np ICV 1		(P)931.279	(P)24.233	(P)11.459	(P)4.324	(P)906.219	23.480
	%RSD of U233/Np I		(P)0.425	(P)5.473	(P)3.970	(P)5.675	(P)0.336	1.907
1	U/Th LLS 25ppt	6/18/2013 1:05:14 P	(P)19.000	(P)4.000	(P)43.000	(P)0.000	(P)25.000	6091.965
2	U/Th LLS 25ppt	6/18/2013 1:05:42 P	(P)44.000	(P)0.000	(P)43.000	(P)0.000	(P)35.000	6057.617
3	U/Th LLS 25ppt	6/18/2013 1:06:09 P	(P)30.000	(P)2.000	(P)48.000	(P)0.000	(P)46.000	6120.978
4	U/Th LLS 25ppt	6/18/2013 1:06:37 P	(P)23.000	(P)1.000	(P)35.000	(P)0.000	(P)25.000	6186.006
5	U/Th LLS 25ppt	6/18/2013 1:07:04 P	(P)27.000	(P)1.000	(P)45.000	(P)0.000	(P)28.000	6175.334
	Mean of U/Th LLS 25	6/18/2013 1:05:14 P	(P)28.600	(P)1.600	(P)42.800	(P)0.000	(P)31.800	6126.380
	SD of U/Th LLS 25ppt		(P)9.555	(P)1.517	(P)4.817	(P)0.000	(P)8.928	54.529
	%RSD of U/Th LLS 2		(P)33.409	(P)94.786	(P)11.254	(P)0.000	(P)28.074	0.890
1	U/Th LLS 5ppt	6/18/2013 1:11:01 P	(P)8.000	(P)2.000	(P)5.000	(P)1.000	(P)6.000	1420.071
2	U/Th LLS 5ppt	6/18/2013 1:11:28 P	(P)6.000	(P)1.000	(P)10.000	(P)0.000	(P)15.000	1452.407
3	U/Th LLS 5ppt	6/18/2013 1:11:56 P	(P)11.000	(P)0.000	(P)12.000	(P)0.000	(P)12.000	1429.738
4	U/Th LLS 5ppt	6/18/2013 1:12:23 P	(P)9.000	(P)1.000	(P)7.000	(P)1.000	(P)7.000	1447.740
5	U/Th LLS 5ppt	6/18/2013 1:12:51 P	(P)6.000	(P)0.000	(P)11.000	(P)0.000	(P)13.000	1407.069
	Mean of U/Th LLS 5p	6/18/2013 1:11:01 P	(P)8.000	(P)0.800	(P)9.000	(P)0.400	(P)10.600	1431.405
	SD of U/Th LLS 5ppt		(P)2.121	(P)0.837	(P)2.915	(P)0.548	(P)3.912	18.917
	%RSD of U/Th LLS 5		(P)26.517	(P)104.583	(P)32.394	(P)136.931	(P)36.901	1.322
1	U233/Np LLS 5ppt	6/18/2013 1:16:48 P	(P)988.034	(P)1.000	(P)0.000	(P)2.000	(P)1244.054	321.004
2	U233/Np LLS 5ppt	6/18/2013 1:17:15 P	(P)995.035	(P)2.000	(P)1.000	(P)3.000	(P)1266.056	322.670
3	U233/Np LLS 5ppt	6/18/2013 1:17:43 P	(P)1008.036	(P)6.000	(P)3.000	(P)2.000	(P)1267.056	325.004
4	U233/Np LLS 5ppt	6/18/2013 1:18:10 P	(P)1051.039	(P)1.000	(P)4.000	(P)0.000	(P)1261.056	310.670
5	U233/Np LLS 5ppt	6/18/2013 1:18:38 P	(P)956.032	(P)2.000	(P)2.000	(P)2.000	(P)1213.052	309.003
	Mean of U233/Np LLS	6/18/2013 1:16:48 P	(P)999.635	(P)2.400	(P)2.000	(P)1.800	(P)1250.255	317.670
	SD of U233/Np LLS 5		(P)34.532	(P)2.074	(P)1.581	(P)1.095	(P)22.755	7.315
	%RSD of U233/Np L		(P)3.454	(P)86.402	(P)79.057	(P)60.858	(P)1.820	2.303
1	ICB	6/18/2013 1:22:35 P	(P)1.000	(P)0.000	(P)3.000	(P)1.000	(P)1.000	291.670
2	ICB	6/18/2013 1:23:02 P	(P)1.000	(P)0.000	(P)2.000	(P)1.000	(P)1.000	307.337
3	ICB	6/18/2013 1:23:30 P	(P)1.000	(P)3.000	(P)1.000	(P)1.000	(P)0.000	295.336
4	ICB	6/18/2013 1:23:58 P	(P)0.000	(P)2.000	(P)0.000	(P)2.000	(P)2.000	297.670
5	ICB	6/18/2013 1:24:25 P	(P)0.000	(P)1.000	(P)1.000	(P)0.000	(P)3.000	327.004
	Mean of ICB	6/18/2013 1:22:35 P	(P)0.600	(P)1.200	(P)1.400	(P)1.000	(P)1.400	303.803
	SD of ICB		(P)0.548	(P)1.304	(P)1.140	(P)0.707	(P)1.140	14.206
	%RSD of ICB		(P)91.287	(P)108.653	(P)81.441	(P)70.711	(P)81.441	4.676
1	ICB	6/18/2013 1:28:22 P	(P)2.000	(P)2.000	(P)1.000	(P)0.000	(P)1.000	300.670
2	ICB	6/18/2013 1:28:50 P	(P)2.000	(P)1.000	(P)1.000	(P)1.000	(P)2.000	299.670
3	ICB	6/18/2013 1:29:18 P	(P)0.000	(P)2.000	(P)0.000	(P)1.000	(P)2.000	295.003

15:39:50 6/18/13
Act130618.vge

Uncorrected ICPS Per Mass

Multi Element | Internal Standard

S-Calibration Has Edited Standard
F-Interference Correction Failed
E-Calibration Edited
T-Tripped
I-Invalid Calibration
P-Pulse Counting
V-Valley Integration Failed
M-Result Over Max

Run	Label	TimeStamp	115	193Ir	229Th	230Th	231Pa	232Th
4	ICB	6/18/2013 1:29:45 P	(P)92.000	(P)114015.17	(P)0.000	(P)0.000	(P)2.000	(P)88.000
5	ICB	6/18/2013 1:30:13 P	(P)94.000	(P)113705.72	(P)1.000	(P)1.000	(P)1.000	(P)89.000
	Mean of ICB	6/18/2013 1:28:22 P	(P)100.800	(P)113802.09	(P)0.400	(P)1.000	(P)1.000	(P)83.000
	SD of ICB		(P)14.412	(P)243.600	(P)0.548	(P)1.732	(P)1.000	(P)5.831
	%RSD of ICB		(P)14.297	(P)0.214	(P)136.931	(P)173.205	(P)100.000	(P)7.025
1	ICS ATL 2 50x	6/18/2013 1:34:30 P	(P)288.003	(P)115746.01	(P)1.000	(P)0.000	(P)1.000	(P)127.001
2	ICS ATL 2 50x	6/18/2013 1:34:58 P	(P)278.003	(P)115315.55	(P)0.000	(P)0.000	(P)1.000	(P)175.001
3	ICS ATL 2 50x	6/18/2013 1:35:25 P	(P)273.003	(P)116633.18	(P)1.000	(P)2.000	(P)0.000	(P)127.001
4	ICS ATL 2 50x	6/18/2013 1:35:53 P	(P)243.002	(P)118220.14	(P)0.000	(P)0.000	(P)1.000	(P)138.001
5	ICS ATL 2 50x	6/18/2013 1:36:21 P	(P)280.003	(P)119550.14	(P)0.000	(P)0.000	(P)3.000	(P)137.001
	Mean of ICS ATL 2 5	6/18/2013 1:34:09 P	(P)272.403	(P)117093.00	(P)0.400	(P)0.400	(P)1.200	(P)140.801
	SD of ICS ATL 2 50x		(P)17.301	(P)1767.284	(P)0.548	(P)0.894	(P)1.095	(P)19.829
	%RSD of ICS ATL 2 5		(P)6.351	(P)1.509	(P)136.931	(P)223.607	(P)91.287	(P)14.083
1	Prep Blank	6/18/2013 1:40:37 P	(P)91.000	(P)109710.66	(P)2.000	(P)0.000	(P)1.000	(P)60.000
2	Prep Blank	6/18/2013 1:41:04 P	(P)92.000	(P)110033.13	(P)2.000	(P)1.000	(P)0.000	(P)70.000
3	Prep Blank	6/18/2013 1:41:32 P	(P)80.000	(P)112179.73	(P)0.000	(P)1.000	(P)0.000	(P)74.000
4	Prep Blank	6/18/2013 1:41:59 P	(P)80.000	(P)111637.50	(P)4.000	(P)3.000	(P)2.000	(P)63.000
5	Prep Blank	6/18/2013 1:42:27 P	(P)60.000	(P)111939.86	(P)1.000	(P)1.000	(P)4.000	(P)82.000
	Mean of Prep Blank	6/18/2013 1:40:16 P	(P)80.600	(P)111100.18	(P)1.800	(P)1.200	(P)1.400	(P)69.800
	SD of Prep Blank		(P)12.876	(P)1143.301	(P)1.483	(P)1.095	(P)1.673	(P)8.786
	%RSD of Prep Blank		(P)15.976	(P)1.029	(P)82.402	(P)91.287	(P)119.523	(P)12.588
1	S13T004252_L	6/18/2013 1:46:42 P	(P)99.000	(P)109467.81	(P)0.000	(P)0.000	(P)1.000	(P)72.000
2	S13T004252_L	6/18/2013 1:47:09 P	(P)83.000	(P)111015.69	(P)2.000	(P)1.000	(P)0.000	(P)92.000
3	S13T004252_L	6/18/2013 1:47:37 P	(P)99.000	(P)109547.42	(P)0.000	(P)2.000	(P)2.000	(P)87.000
4	S13T004252_L	6/18/2013 1:48:04 P	(P)77.000	(P)110148.01	(P)3.000	(P)2.000	(P)1.000	(P)112.000
5	S13T004252_L	6/18/2013 1:48:32 P	(P)93.000	(P)111554.86	(P)1.000	(P)1.000	(P)2.000	(P)80.000
	Mean of S13T004252_	6/18/2013 1:46:21 P	(P)90.200	(P)110346.76	(P)1.200	(P)1.200	(P)1.200	(P)88.600
	SD of S13T004252_L		(P)9.859	(P)916.239	(P)1.304	(P)0.837	(P)0.837	(P)15.093
	%RSD of S13T004252		(P)10.930	(P)0.830	(P)108.653	(P)69.722	(P)69.722	(P)17.035
1	S13T004252	6/18/2013 1:52:47 P	(P)101.000	(P)111153.75	(P)4.000	(P)1.000	(P)2.000	(P)141.001
2	S13T004252	6/18/2013 1:53:15 P	(P)91.000	(P)111415.78	(P)4.000	(P)1.000	(P)1.000	(P)159.001
3	S13T004252	6/18/2013 1:53:42 P	(P)93.000	(P)110814.13	(P)1.000	(P)0.000	(P)0.000	(P)139.001
4	S13T004252	6/18/2013 1:54:10 P	(P)99.000	(P)111547.81	(P)0.000	(P)0.000	(P)1.000	(P)158.001
5	S13T004252	6/18/2013 1:54:38 P	(P)81.000	(P)112528.45	(P)1.000	(P)0.000	(P)0.000	(P)163.001
	Mean of S13T004252	6/18/2013 1:52:26 P	(P)93.000	(P)111491.99	(P)2.000	(P)0.400	(P)0.800	(P)152.001
	SD of S13T004252		(P)7.874	(P)643.637	(P)1.871	(P)0.548	(P)0.837	(P)11.136
	%RSD of S13T00425		(P)8.467	(P)0.577	(P)93.541	(P)136.931	(P)104.583	(P)7.326
1	S13T004252_D	6/18/2013 1:58:53 P	(P)102.000	(P)111323.07	(P)1.000	(P)0.000	(P)1.000	(P)167.001
2	S13T004252_D	6/18/2013 1:59:21 P	(P)75.000	(P)111374.46	(P)2.000	(P)1.000	(P)1.000	(P)167.001
3	S13T004252_D	6/18/2013 1:59:48 P	(P)81.000	(P)112652.43	(P)0.000	(P)0.000	(P)1.000	(P)152.001
4	S13T004252_D	6/18/2013 2:00:16 P	(P)74.000	(P)111431.91	(P)1.000	(P)0.000	(P)0.000	(P)164.001
5	S13T004252_D	6/18/2013 2:00:43 P	(P)54.000	(P)112565.75	(P)1.000	(P)1.000	(P)0.000	(P)155.001
	Mean of S13T004252_	6/18/2013 1:58:32 P	(P)77.200	(P)111869.52	(P)1.000	(P)0.400	(P)0.600	(P)161.001
	SD of S13T004252_D		(P)17.196	(P)676.917	(P)0.707	(P)0.548	(P)0.548	(P)7.036

15:39:50 6/18/13
Act130618.vge

Excluded In Calib | Multi Element | Internal Standard | Standard Addition

Uncorrected ICPS Per Mass

S-Calibration Has Edited Standard
F-Interference Correction Failed
E-Calibration Edited
T-Tripped
I-Invalid Calibration
P-Pulse Counting
V-Valley Integration Failed
M-Result Over Max

Run	Label	TimeStamp	233U	234U	235U	236U	237Np	238U
4	ICB	6/18/2013 1:29:45 P	(P)2.000	(P)0.000	(P)0.000	(P)1.000	(P)0.000	306.337
5	ICB	6/18/2013 1:30:13 P	(P)2.000	(P)1.000	(P)0.000	(P)0.000	(P)1.000	275.003
	Mean of ICB	6/18/2013 1:28:22 P	(P)1.600	(P)1.200	(P)0.400	(P)0.600	(P)1.200	295.336
	SD of ICB		(P)0.894	(P)0.837	(P)0.548	(P)0.548	(P)0.837	12.060
	%RSD of ICB		(P)55.902	(P)69.722	(P)136.931	(P)91.287	(P)69.722	4.084
1	ICS ATL 2 50x	6/18/2013 1:34:30 P	(P)2.000	(P)1.000	(P)0.000	(P)0.000	(P)4.000	378.338
2	ICS ATL 2 50x	6/18/2013 1:34:58 P	(P)1.000	(P)0.000	(P)1.000	(P)0.000	(P)1.000	368.005
3	ICS ATL 2 50x	6/18/2013 1:35:25 P	(P)0.000	(P)3.000	(P)1.000	(P)1.000	(P)2.000	369.005
4	ICS ATL 2 50x	6/18/2013 1:35:53 P	(P)4.000	(P)0.000	(P)3.000	(P)0.000	(P)2.000	379.672
5	ICS ATL 2 50x	6/18/2013 1:36:21 P	(P)2.000	(P)3.000	(P)2.000	(P)0.000	(P)3.000	356.004
	Mean of ICS ATL 2 5	6/18/2013 1:34:09 P	(P)1.800	(P)1.400	(P)1.400	(P)0.200	(P)2.400	370.205
	SD of ICS ATL 2 50x		(P)1.483	(P)1.517	(P)1.140	(P)0.447	(P)1.140	9.536
	%RSD of ICS ATL 2 5		(P)82.402	(P)108.327	(P)81.441	(P)223.607	(P)47.507	2.576
1	Prep Blank	6/18/2013 1:40:37 P	(P)0.000	(P)0.000	(P)1.000	(P)1.000	(P)1.000	584.679
2	Prep Blank	6/18/2013 1:41:04 P	(P)0.000	(P)0.000	(P)4.000	(P)0.000	(P)2.000	589.345
3	Prep Blank	6/18/2013 1:41:32 P	(P)0.000	(P)1.000	(P)1.000	(P)1.000	(P)0.000	588.345
4	Prep Blank	6/18/2013 1:41:59 P	(P)0.000	(P)0.000	(P)2.000	(P)3.000	(P)1.000	591.012
5	Prep Blank	6/18/2013 1:42:27 P	(P)1.000	(P)0.000	(P)3.000	(P)1.000	(P)0.000	586.345
	Mean of Prep Blank	6/18/2013 1:40:16 P	(P)0.200	(P)0.200	(P)2.200	(P)1.200	(P)0.800	587.945
	SD of Prep Blank		(P)0.447	(P)0.447	(P)1.304	(P)1.095	(P)0.837	2.488
	%RSD of Prep Blank		(P)223.607	(P)223.607	(P)59.265	(P)91.287	(P)104.583	0.423
1	S13T004252_L	6/18/2013 1:46:42 P	(P)5.000	(P)1.000	(P)59.000	(P)1.000	(P)4.000	7513.976
2	S13T004252_L	6/18/2013 1:47:09 P	(P)7.000	(P)5.000	(P)44.000	(P)2.000	(P)2.000	7539.656
3	S13T004252_L	6/18/2013 1:47:37 P	(P)9.000	(P)0.000	(P)65.000	(P)0.000	(P)1.000	7581.345
4	S13T004252_L	6/18/2013 1:48:04 P	(P)9.000	(P)0.000	(P)44.000	(P)1.000	(P)1.000	7610.693
5	S13T004252_L	6/18/2013 1:48:32 P	(P)10.000	(P)2.000	(P)50.000	(P)0.000	(P)3.000	7496.967
	Mean of S13T004252_	6/18/2013 1:46:21 P	(P)8.000	(P)1.600	(P)52.400	(P)0.800	(P)2.200	7548.527
	SD of S13T004252_L		(P)2.000	(P)2.074	(P)9.343	(P)0.837	(P)1.304	47.097
	%RSD of S13T004252		(P)25.000	(P)129.603	(P)17.831	(P)104.583	(P)59.265	0.624
1	S13T004252	6/18/2013 1:52:47 P	(P)43.000	(P)1.000	(P)244.002	(P)2.000	(P)5.000	35343.667
2	S13T004252	6/18/2013 1:53:15 P	(P)41.000	(P)1.000	(P)238.002	(P)5.000	(P)8.000	35521.441
3	S13T004252	6/18/2013 1:53:42 P	(P)40.000	(P)3.000	(P)232.002	(P)5.000	(P)6.000	35666.134
4	S13T004252	6/18/2013 1:54:10 P	(P)26.000	(P)4.000	(P)245.002	(P)5.000	(P)4.000	35728.957
5	S13T004252	6/18/2013 1:54:38 P	(P)35.000	(P)2.000	(P)290.003	(P)7.000	(P)5.000	35990.278
	Mean of S13T004252	6/18/2013 1:52:26 P	(P)37.000	(P)2.200	(P)249.802	(P)4.800	(P)5.600	35650.095
	SD of S13T004252		(P)6.819	(P)1.304	(P)23.070	(P)1.789	(P)1.517	241.170
	%RSD of S13T00425		(P)18.430	(P)59.265	(P)9.235	(P)37.268	(P)27.082	0.676
1	S13T004252_D	6/18/2013 1:58:53 P	(P)2.000	(P)2.000	(P)284.003	(P)3.000	(P)10.000	39578.417
2	S13T004252_D	6/18/2013 1:59:21 P	(P)0.000	(P)1.000	(P)283.003	(P)5.000	(P)1.000	39983.208
3	S13T004252_D	6/18/2013 1:59:48 P	(P)3.000	(P)1.000	(P)233.002	(P)1.000	(P)7.000	39955.464
4	S13T004252_D	6/18/2013 2:00:16 P	(P)1.000	(P)2.000	(P)257.002	(P)3.000	(P)10.000	40063.767
5	S13T004252_D	6/18/2013 2:00:43 P	(P)2.000	(P)3.000	(P)262.002	(P)4.000	(P)4.000	40098.196
	Mean of S13T004252_	6/18/2013 1:58:32 P	(P)1.600	(P)1.800	(P)263.802	(P)3.200	(P)6.400	39935.810
	SD of S13T004252_D		(P)1.140	(P)0.837	(P)21.065	(P)1.483	(P)3.912	208.030

Excluded in Calib | Multi Element | Internal Standard

Uncorrected ICPS Per Mass

S-Calibration Has Edited Standard
F-Interference Correction Failed
E-Calibration Edited
T-Tripped
I-Invalid Calibration
P-Pulse Counting
V-Valley Integration Failed
M-Result Over Max

Run	Label	TimeStamp	115	193Ir	229Th	230Th	231Pa	232Th
	%RSD of S13T004252		(P)22.275	(P)0.605	(P)70.711	(P)136.931	(P)91.287	(P)4.370
1	S13T004280	6/18/2013 2:04:59 P	(P)85.000	(P)110706.30	(P)3.000	(P)0.000	(P)1.000	(P)173.001
2	S13T004280	6/18/2013 2:05:26 P	(P)84.000	(P)111708.05	(P)1.000	(P)0.000	(P)0.000	(P)198.001
3	S13T004280	6/18/2013 2:05:54 P	(P)103.000	(P)110945.14	(P)1.000	(P)1.000	(P)0.000	(P)209.002
4	S13T004280	6/18/2013 2:06:22 P	(P)92.000	(P)111550.83	(P)2.000	(P)1.000	(P)0.000	(P)182.001
5	S13T004280	6/18/2013 2:06:49 P	(P)82.000	(P)112206.94	(P)1.000	(P)0.000	(P)2.000	(P)213.002
	Mean of S13T004280	6/18/2013 2:04:38 P	(P)89.200	(P)111423.45	(P)1.600	(P)0.400	(P)0.600	(P)195.001
	SD of S13T004280		(P)8.585	(P)602.944	(P)0.894	(P)0.548	(P)0.894	(P)17.190
	%RSD of S13T00428		(P)9.624	(P)0.541	(P)55.902	(P)136.931	(P)149.071	(P)8.816
1	S13T004307	6/18/2013 2:11:05 P	(P)88.000	(P)109634.08	(P)0.000	(P)1.000	(P)0.000	(P)115.000
2	S13T004307	6/18/2013 2:11:33 P	(P)75.000	(P)111795.74	(P)1.000	(P)3.000	(P)2.000	(P)101.000
3	S13T004307	6/18/2013 2:12:00 P	(P)103.000	(P)111889.46	(P)0.000	(P)0.000	(P)1.000	(P)104.000
4	S13T004307	6/18/2013 2:12:28 P	(P)82.000	(P)111916.68	(P)2.000	(P)0.000	(P)0.000	(P)112.000
5	S13T004307	6/18/2013 2:12:55 P	(P)92.000	(P)112885.25	(P)1.000	(P)3.000	(P)0.000	(P)116.000
	Mean of S13T004307	6/18/2013 2:10:44 P	(P)88.000	(P)111624.24	(P)0.800	(P)1.400	(P)0.600	(P)109.600
	SD of S13T004307		(P)10.559	(P)1197.515	(P)0.837	(P)1.517	(P)0.894	(P)6.731
	%RSD of S13T00430		(P)11.999	(P)1.073	(P)104.583	(P)108.327	(P)149.071	(P)6.141
1	S13T004252_A	6/18/2013 2:17:11 P	(P)249.002	(P)115322.60	(P)23.000	(P)0.000	(P)2.000	(P)199584.52
2	S13T004252_A	6/18/2013 2:17:39 P	(P)196.001	(P)114900.22	(P)29.000	(P)0.000	(P)1.000	(P)201856.10
3	S13T004252_A	6/18/2013 2:18:07 P	(P)204.001	(P)115068.57	(P)21.000	(P)3.000	(P)2.000	(P)201764.83
4	S13T004252_A	6/18/2013 2:18:34 P	(P)203.001	(P)113872.04	(P)24.000	(P)2.000	(P)1.000	(P)200806.46
5	S13T004252_A	6/18/2013 2:19:02 P	(P)174.001	(P)113941.59	(P)19.000	(P)4.000	(P)2.000	(P)199141.40
	Mean of S13T004252_	6/18/2013 2:16:50 P	(P)205.201	(P)114621.00	(P)23.200	(P)1.800	(P)1.600	(P)200630.66
	SD of S13T004252_A		(P)27.308	(P)669.529	(P)3.768	(P)1.789	(P)0.548	(P)1238.069
	%RSD of S13T004252		(P)13.308	(P)0.584	(P)16.243	(P)99.381	(P)34.233	(P)0.617
1	Prep Std 3	6/18/2013 2:23:18 P	(P)155.001	(P)107353.86	(P)0.000	(P)0.000	(P)1.000	(P)198744.93
2	Prep Std 3	6/18/2013 2:23:46 P	(P)136.001	(P)109559.51	(P)1.000	(P)1.000	(P)3.000	(P)202397.68
3	Prep Std 3	6/18/2013 2:24:14 P	(P)134.001	(P)108600.23	(P)2.000	(P)2.000	(P)0.000	(P)201324.68
4	Prep Std 3	6/18/2013 2:24:41 P	(P)131.001	(P)108943.83	(P)1.000	(P)1.000	(P)3.000	(P)203381.51
5	Prep Std 3	6/18/2013 2:25:09 P	(P)114.000	(P)108129.68	(P)2.000	(P)1.000	(P)1.000	(P)202804.39
	Mean of Prep Std 3	6/18/2013 2:22:57 P	(P)134.001	(P)108517.42	(P)1.200	(P)1.000	(P)1.600	(P)201730.64
	SD of Prep Std 3		(P)14.612	(P)833.494	(P)0.837	(P)0.707	(P)1.342	(P)1830.471
	%RSD of Prep Std 3		(P)10.904	(P)0.768	(P)69.722	(P)70.711	(P)83.853	(P)0.907
1	Prep Std 4	6/18/2013 2:29:26 P	(P)160.001	(P)106017.94	(P)2.000	(P)1.000	(P)0.000	(P)1242.054
2	Prep Std 4	6/18/2013 2:29:53 P	(P)133.001	(P)105246.26	(P)3.000	(P)0.000	(P)0.000	(P)970.033
3	Prep Std 4	6/18/2013 2:30:21 P	(P)133.001	(P)107487.86	(P)1.000	(P)0.000	(P)0.000	(P)921.030
4	Prep Std 4	6/18/2013 2:30:49 P	(P)135.001	(P)106406.81	(P)0.000	(P)2.000	(P)0.000	(P)761.020
5	Prep Std 4	6/18/2013 2:31:16 P	(P)130.001	(P)107681.31	(P)2.000	(P)0.000	(P)0.000	(P)720.018
	Mean of Prep Std 4	6/18/2013 2:29:05 P	(P)138.201	(P)106568.04	(P)1.600	(P)0.600	(P)0.000	(P)922.831
	SD of Prep Std 4		(P)12.317	(P)1019.944	(P)1.140	(P)0.894	(P)0.000	(P)207.033
	%RSD of Prep Std 4		(P)8.912	(P)0.957	(P)71.261	(P)149.071	(P)0.000	(P)22.435
1	U/Th CCV	6/18/2013 2:35:13 P	(P)95.000	(P)116283.35	(P)3.000	(P)1.000	(P)1.000	(P)206523.10
2	U/Th CCV	6/18/2013 2:35:40 P	(P)71.000	(P)116754.16	(P)2.000	(P)1.000	(P)2.000	(P)210132.16

Uncorrected ICPS Per Mass

Multi Element | Internal Standard

S-Calibration Has Edited Standard
F-Interference Correction Failed
E-Calibration Edited
T-Tripped
I-Invalid Calibration
P-Pulse Counting
V-Valley Integration Failed
M-Result Over Max

Run	Label	TimeStamp	233U	234U	235U	236U	237Np	238U
	%RSD of S13T004252		(P)71.261	(P)46.481	(P)7.985	(P)46.351	(P)61.118	0.521
1	S13T004280	6/18/2013 2:04:59 P	(P)7.000	(P)6.000	(P)441.007	(P)10.000	(P)9.000	68475.385
2	S13T004280	6/18/2013 2:05:26 P	(P)5.000	(P)5.000	(P)469.008	(P)8.000	(P)9.000	69251.446
3	S13T004280	6/18/2013 2:05:54 P	(P)7.000	(P)3.000	(P)423.006	(P)5.000	(P)12.000	70046.642
4	S13T004280	6/18/2013 2:06:22 P	(P)6.000	(P)1.000	(P)492.008	(P)4.000	(P)10.000	70017.500
5	S13T004280	6/18/2013 2:06:49 P	(P)3.000	(P)8.000	(P)461.007	(P)8.000	(P)5.000	70224.177
	Mean of S13T004280	6/18/2013 2:04:38 P	(P)5.600	(P)4.600	(P)457.207	(P)7.000	(P)9.000	69603.030
	SD of S13T004280		(P)1.673	(P)2.702	(P)26.443	(P)2.449	(P)2.550	733.075
	%RSD of S13T00428		(P)29.881	(P)58.736	(P)5.784	(P)34.993	(P)28.328	1.053
1	S13T004307	6/18/2013 2:11:05 P	(P)2.000	(P)3.000	(P)192.001	(P)4.000	(P)9.000	32904.518
2	S13T004307	6/18/2013 2:11:33 P	(P)4.000	(P)3.000	(P)220.002	(P)4.000	(P)2.000	32867.099
3	S13T004307	6/18/2013 2:12:00 P	(P)1.000	(P)0.000	(P)179.001	(P)4.000	(P)2.000	33247.978
4	S13T004307	6/18/2013 2:12:28 P	(P)2.000	(P)3.000	(P)236.002	(P)2.000	(P)7.000	33405.011
5	S13T004307	6/18/2013 2:12:55 P	(P)5.000	(P)3.000	(P)223.002	(P)4.000	(P)3.000	33570.064
	Mean of S13T004307	6/18/2013 2:10:44 P	(P)2.800	(P)2.400	(P)210.002	(P)3.600	(P)4.600	33198.934
	SD of S13T004307		(P)1.643	(P)1.342	(P)23.612	(P)0.894	(P)3.209	307.980
	%RSD of S13T00430		(P)58.685	(P)55.902	(P)11.244	(P)24.845	(P)69.769	0.928
1	S13T004252_A	6/18/2013 2:17:11 P	(P)282948.62	(P)542.010	(P)2065.149	(P)44.000	(P)363759.00	251737.980
2	S13T004252_A	6/18/2013 2:17:39 P	(P)268066.71	(P)558.011	(P)1991.139	(P)51.000	(P)350249.62	250789.180
3	S13T004252_A	6/18/2013 2:18:07 P	(P)253359.95	(P)548.011	(P)1970.136	(P)37.000	(P)333531.59	253443.410
4	S13T004252_A	6/18/2013 2:18:34 P	(P)240136.47	(P)469.008	(P)2029.144	(P)37.000	(P)317085.38	251678.620
5	S13T004252_A	6/18/2013 2:19:02 P	(P)229654.22	(P)468.008	(P)1978.137	(P)46.000	(P)300979.55	252381.860
	Mean of S13T004252_	6/18/2013 2:16:50 P	(P)254833.19	(P)517.009	(P)2006.741	(P)43.000	(P)333121.03	252006.210
	SD of S13T004252_A		(P)21317.529	(P)44.645	(P)39.733	(P)6.042	(P)25112.043	983.245
	%RSD of S13T004252		(P)8.365	(P)8.635	(P)1.980	(P)14.050	(P)7.538	0.390
1	Prep Std 3	6/18/2013 2:23:18 P	(P)17.000	(P)9.000	(P)505.009	(P)5.000	(P)102.000	222605.280
2	Prep Std 3	6/18/2013 2:23:46 P	(P)12.000	(P)1.000	(P)467.008	(P)13.000	(P)94.000	224464.030
3	Prep Std 3	6/18/2013 2:24:14 P	(P)24.000	(P)1.000	(P)480.008	(P)7.000	(P)71.000	222955.350
4	Prep Std 3	6/18/2013 2:24:41 P	(P)11.000	(P)1.000	(P)514.009	(P)8.000	(P)58.000	224109.870
5	Prep Std 3	6/18/2013 2:25:09 P	(P)11.000	(P)2.000	(P)459.007	(P)9.000	(P)70.000	223977.140
	Mean of Prep Std 3	6/18/2013 2:22:57 P	(P)15.000	(P)2.800	(P)485.008	(P)8.400	(P)79.000	223622.330
	SD of Prep Std 3		(P)5.612	(P)3.493	(P)23.802	(P)2.966	(P)18.303	798.639
	%RSD of Prep Std 3		(P)37.417	(P)124.745	(P)4.908	(P)35.315	(P)23.168	0.357
1	Prep Std 4	6/18/2013 2:29:26 P	(P)7.000	(P)0.000	(P)6.000	(P)1.000	(P)161978.12	777.688
2	Prep Std 4	6/18/2013 2:29:53 P	(P)2.000	(P)0.000	(P)1.000	(P)3.000	(P)160722.05	797.022
3	Prep Std 4	6/18/2013 2:30:21 P	(P)0.000	(P)0.000	(P)3.000	(P)1.000	(P)160738.23	759.020
4	Prep Std 4	6/18/2013 2:30:49 P	(P)3.000	(P)0.000	(P)4.000	(P)1.000	(P)160238.66	789.688
5	Prep Std 4	6/18/2013 2:31:16 P	(P)2.000	(P)0.000	(P)3.000	(P)2.000	(P)161431.99	774.021
	Mean of Prep Std 4	6/18/2013 2:29:05 P	(P)2.800	(P)0.000	(P)3.400	(P)1.600	(P)161021.81	779.488
	SD of Prep Std 4		(P)2.588	(P)0.000	(P)1.817	(P)0.894	(P)683.074	14.693
	%RSD of Prep Std 4		(P)92.444	(P)0.000	(P)53.429	(P)55.902	(P)0.424	1.885
1	U/Th CCV	6/18/2013 2:35:13 P	(P)46.000	(P)4.000	(P)495.009	(P)7.000	(P)134.001	238123.530
2	U/Th CCV	6/18/2013 2:35:40 P	(P)50.000	(P)2.000	(P)518.009	(P)7.000	(P)126.001	238356.700

15:39:50 6/18/13
Act130618.vge

Uncorrected ICPS Per Mass

Multi Element | Internal Standard

S-Calibration Has Edited Standard
F-Interference Correction Failed
E-Calibration Edited
T-Tripped
I-Invalid Calibration
P-Pulse Counting
V-Valley Integration Failed
M-Result Over Max

Run	Label	TimeStamp	115	193Ir	229Th	230Th	231Pa	232Th
3	U/Th CCV	6/18/2013 2:36:08 P	(P)76.000	(P)116966.89	(P)2.000	(P)0.000	(P)0.000	(P)211371.24
4	U/Th CCV	6/18/2013 2:36:36 P	(P)72.000	(P)116748.11	(P)2.000	(P)4.000	(P)1.000	(P)211717.31
5	U/Th CCV	6/18/2013 2:37:03 P	(P)63.000	(P)117126.19	(P)0.000	(P)3.000	(P)2.000	(P)213763.44
	Mean of U/Th CCV	6/18/2013 2:35:13 P	(P)75.400	(P)116775.74	(P)1.800	(P)1.800	(P)1.200	(P)210701.45
	SD of U/Th CCV		(P)11.929	(P)317.425	(P)1.095	(P)1.643	(P)0.837	(P)2675.775
	%RSD of U/Th CCV		(P)15.821	(P)0.272	(P)60.858	(P)91.287	(P)69.722	(P)1.270
1	U233/Np CCV	6/18/2013 2:40:59 P	(P)1048.038	(P)119128.64	(P)18.000	(P)2.000	(P)1.000	(P)2346.193
2	U233/Np CCV	6/18/2013 2:41:26 P	(P)1091.042	(P)118569.02	(P)21.000	(P)1.000	(P)0.000	(P)1916.129
3	U233/Np CCV	6/18/2013 2:41:54 P	(P)949.032	(P)117303.64	(P)16.000	(P)4.000	(P)1.000	(P)1746.107
4	U233/Np CCV	6/18/2013 2:42:22 P	(P)1038.038	(P)118228.21	(P)24.000	(P)0.000	(P)0.000	(P)1426.071
5	U233/Np CCV	6/18/2013 2:42:49 P	(P)1027.037	(P)120024.09	(P)21.000	(P)2.000	(P)0.000	(P)1227.053
	Mean of U233/Np CC	6/18/2013 2:40:59 P	(P)1030.637	(P)118650.72	(P)20.000	(P)1.800	(P)0.400	(P)1732.310
	SD of U233/Np CCV		(P)51.669	(P)1014.198	(P)3.082	(P)1.483	(P)0.548	(P)435.861
	%RSD of U233/Np C		(P)5.013	(P)0.855	(P)15.411	(P)82.402	(P)136.931	(P)25.161
1	U/Th LLS 25ppt	6/18/2013 2:46:45 P	(P)68.000	(P)119011.68	(P)2.000	(P)2.000	(P)0.000	(P)5623.106
2	U/Th LLS 25ppt	6/18/2013 2:47:12 P	(P)70.000	(P)118656.74	(P)3.000	(P)1.000	(P)0.000	(P)5483.052
3	U/Th LLS 25ppt	6/18/2013 2:47:40 P	(P)65.000	(P)119431.15	(P)2.000	(P)1.000	(P)0.000	(P)5554.079
4	U/Th LLS 25ppt	6/18/2013 2:48:08 P	(P)69.000	(P)118911.85	(P)1.000	(P)1.000	(P)2.000	(P)5392.017
5	U/Th LLS 25ppt	6/18/2013 2:48:35 P	(P)58.000	(P)119324.27	(P)1.000	(P)1.000	(P)1.000	(P)5604.099
	Mean of U/Th LLS 25	6/18/2013 2:46:45 P	(P)66.000	(P)119067.14	(P)1.800	(P)1.200	(P)0.600	(P)5531.271
	SD of U/Th LLS 25ppt		(P)4.848	(P)313.942	(P)0.837	(P)0.447	(P)0.894	(P)94.835
	%RSD of U/Th LLS 2		(P)7.345	(P)0.264	(P)46.481	(P)37.268	(P)149.071	(P)1.715
1	U/Th LLS 5ppt	6/18/2013 2:52:32 P	(P)55.000	(P)120307.46	(P)1.000	(P)1.000	(P)0.000	(P)1567.086
2	U/Th LLS 5ppt	6/18/2013 2:52:59 P	(P)65.000	(P)119738.71	(P)3.000	(P)1.000	(P)3.000	(P)1449.074
3	U/Th LLS 5ppt	6/18/2013 2:53:27 P	(P)51.000	(P)119812.33	(P)0.000	(P)0.000	(P)2.000	(P)1362.065
4	U/Th LLS 5ppt	6/18/2013 2:53:55 P	(P)63.000	(P)120479.91	(P)0.000	(P)0.000	(P)1.000	(P)1364.065
5	U/Th LLS 5ppt	6/18/2013 2:54:22 P	(P)59.000	(P)120279.23	(P)0.000	(P)1.000	(P)1.000	(P)1322.061
	Mean of U/Th LLS 5p	6/18/2013 2:52:32 P	(P)58.600	(P)120123.53	(P)0.800	(P)0.600	(P)1.400	(P)1412.870
	SD of U/Th LLS 5ppt		(P)5.727	(P)327.875	(P)1.304	(P)0.548	(P)1.140	(P)97.855
	%RSD of U/Th LLS 5		(P)9.773	(P)0.273	(P)162.980	(P)91.287	(P)81.441	(P)6.926
1	U233/Np LLS 5ppt	6/18/2013 2:58:19 P	(P)50.000	(P)119033.86	(P)1.000	(P)0.000	(P)1.000	(P)149.001
2	U233/Np LLS 5ppt	6/18/2013 2:58:46 P	(P)73.000	(P)118776.73	(P)0.000	(P)2.000	(P)2.000	(P)141.001
3	U233/Np LLS 5ppt	6/18/2013 2:59:14 P	(P)62.000	(P)118634.56	(P)1.000	(P)0.000	(P)0.000	(P)134.001
4	U233/Np LLS 5ppt	6/18/2013 2:59:42 P	(P)64.000	(P)118422.81	(P)2.000	(P)0.000	(P)0.000	(P)134.001
5	U233/Np LLS 5ppt	6/18/2013 3:00:09 P	(P)54.000	(P)120062.41	(P)2.000	(P)0.000	(P)0.000	(P)130.001
	Mean of U233/Np LLS	6/18/2013 2:58:19 P	(P)60.600	(P)118986.08	(P)1.200	(P)0.400	(P)0.600	(P)137.601
	SD of U233/Np LLS 5		(P)8.989	(P)641.373	(P)0.837	(P)0.894	(P)0.894	(P)7.503
	%RSD of U233/Np L		(P)14.833	(P)0.539	(P)69.722	(P)223.607	(P)149.071	(P)5.453
1	CCB	6/18/2013 3:04:07 P	(P)58.000	(P)115983.93	(P)1.000	(P)1.000	(P)1.000	(P)81.000
2	CCB	6/18/2013 3:04:34 P	(P)69.000	(P)116263.18	(P)0.000	(P)1.000	(P)2.000	(P)82.000
3	CCB	6/18/2013 3:05:02 P	(P)57.000	(P)116688.63	(P)0.000	(P)1.000	(P)2.000	(P)62.000
4	CCB	6/18/2013 3:05:30 P	(P)59.000	(P)116370.05	(P)1.000	(P)1.000	(P)0.000	(P)71.000
5	CCB	6/18/2013 3:05:57 P	(P)52.000	(P)116092.80	(P)3.000	(P)0.000	(P)2.000	(P)72.000
	Mean of CCB	6/18/2013 3:04:07 P	(P)59.000	(P)116279.72	(P)1.000	(P)0.800	(P)1.400	(P)73.600

15:39:50 6/18/13
Act130618.vge

Exponential Calib | Multi Element | Internal Standard

Uncorrected ICPS Per Mass

S-Calibration Has Edited Standard
F-Interference Correction Failed
E-Calibration Edited
T-Tripped
I-Invalid Calibration
P-Pulse Counting
V-Valley Integration Failed
M-Result Over Max

Run	Label	TimeStamp	233U	234U	235U	236U	237Np	238U
3	U/Th CCV	6/18/2013 2:36:08 P	(P)40.000	(P)2.000	(P)475.008	(P)3.000	(P)113.000	236368.070
4	U/Th CCV	6/18/2013 2:36:36 P	(P)46.000	(P)5.000	(P)450.007	(P)12.000	(P)91.000	238348.910
5	U/Th CCV	6/18/2013 2:37:03 P	(P)62.000	(P)0.000	(P)504.009	(P)7.000	(P)110.000	238222.150
	Mean of U/Th CCV	6/18/2013 2:35:13 P	(P)48.800	(P)2.600	(P)488.408	(P)7.200	(P)114.800	237883.870
	SD of U/Th CCV		(P)8.198	(P)1.949	(P)26.540	(P)3.194	(P)16.483	852.842
	%RSD of U/Th CCV		(P)16.798	(P)74.975	(P)5.434	(P)44.358	(P)14.358	0.359
1	U233/Np CCV	6/18/2013 2:40:59 P	(P)235634.43	(P)511.009	(P)307.003	(P)84.000	(P)283721.73	1315.727
2	U233/Np CCV	6/18/2013 2:41:26 P	(P)235742.19	(P)480.008	(P)345.004	(P)85.000	(P)284946.75	1353.731
3	U233/Np CCV	6/18/2013 2:41:54 P	(P)234111.70	(P)462.007	(P)312.003	(P)90.000	(P)283439.20	1299.392
4	U233/Np CCV	6/18/2013 2:42:22 P	(P)234140.16	(P)449.007	(P)343.004	(P)81.000	(P)286977.80	1286.391
5	U233/Np CCV	6/18/2013 2:42:49 P	(P)233968.38	(P)461.007	(P)326.004	(P)84.000	(P)285609.80	1277.390
	Mean of U233/Np CC	6/18/2013 2:40:59 P	(P)234719.37	(P)472.608	(P)326.604	(P)84.800	(P)284939.06	1306.526
	SD of U233/Np CCV		(P)887.724	(P)24.152	(P)17.358	(P)3.271	(P)1443.771	30.075
	%RSD of U233/Np C		(P)0.378	(P)5.110	(P)5.315	(P)3.857	(P)0.507	2.302
1	U/Th LLS 25ppt	6/18/2013 2:46:45 P	(P)132.001	(P)0.000	(P)51.000	(P)0.000	(P)192.001	6477.135
2	U/Th LLS 25ppt	6/18/2013 2:47:12 P	(P)95.000	(P)0.000	(P)42.000	(P)0.000	(P)140.001	6549.834
3	U/Th LLS 25ppt	6/18/2013 2:47:40 P	(P)100.000	(P)1.000	(P)42.000	(P)1.000	(P)139.001	6515.819
4	U/Th LLS 25ppt	6/18/2013 2:48:08 P	(P)72.000	(P)1.000	(P)49.000	(P)2.000	(P)120.001	6496.143
5	U/Th LLS 25ppt	6/18/2013 2:48:35 P	(P)58.000	(P)0.000	(P)30.000	(P)0.000	(P)136.001	6672.225
	Mean of U/Th LLS 25	6/18/2013 2:46:45 P	(P)91.400	(P)0.400	(P)42.800	(P)0.600	(P)145.401	6542.231
	SD of U/Th LLS 25ppt		(P)28.404	(P)0.548	(P)8.228	(P)0.894	(P)27.273	77.484
	%RSD of U/Th LLS 2		(P)31.077	(P)136.931	(P)19.224	(P)149.071	(P)18.757	1.184
1	U/Th LLS 5ppt	6/18/2013 2:52:32 P	(P)36.000	(P)1.000	(P)10.000	(P)2.000	(P)79.000	1579.754
2	U/Th LLS 5ppt	6/18/2013 2:52:59 P	(P)31.000	(P)0.000	(P)10.000	(P)1.000	(P)55.000	1543.750
3	U/Th LLS 5ppt	6/18/2013 2:53:27 P	(P)30.000	(P)0.000	(P)6.000	(P)2.000	(P)44.000	1528.082
4	U/Th LLS 5ppt	6/18/2013 2:53:55 P	(P)29.000	(P)0.000	(P)13.000	(P)0.000	(P)42.000	1541.417
5	U/Th LLS 5ppt	6/18/2013 2:54:22 P	(P)19.000	(P)0.000	(P)6.000	(P)1.000	(P)30.000	1522.415
	Mean of U/Th LLS 5p	6/18/2013 2:52:32 P	(P)29.000	(P)0.200	(P)9.000	(P)1.200	(P)50.000	1543.083
	SD of U/Th LLS 5ppt		(P)6.205	(P)0.447	(P)3.000	(P)0.837	(P)18.480	22.362
	%RSD of U/Th LLS 5		(P)21.396	(P)223.607	(P)33.333	(P)69.722	(P)36.960	1.449
1	U233/Np LLS 5ppt	6/18/2013 2:58:19 P	(P)1143.046	(P)2.000	(P)2.000	(P)1.000	(P)1382.067	331.671
2	U233/Np LLS 5ppt	6/18/2013 2:58:46 P	(P)1176.048	(P)6.000	(P)3.000	(P)1.000	(P)1357.065	351.338
3	U233/Np LLS 5ppt	6/18/2013 2:59:14 P	(P)1197.050	(P)7.000	(P)4.000	(P)1.000	(P)1406.069	352.338
4	U233/Np LLS 5ppt	6/18/2013 2:59:42 P	(P)1074.040	(P)1.000	(P)3.000	(P)0.000	(P)1341.063	354.004
5	U233/Np LLS 5ppt	6/18/2013 3:00:09 P	(P)1096.042	(P)2.000	(P)2.000	(P)2.000	(P)1312.060	322.004
	Mean of U233/Np LLS	6/18/2013 2:58:19 P	(P)1137.245	(P)3.600	(P)2.800	(P)1.000	(P)1359.665	342.271
	SD of U233/Np LLS 5		(P)51.982	(P)2.702	(P)0.837	(P)0.707	(P)36.312	14.529
	%RSD of U233/Np L		(P)4.571	(P)75.051	(P)29.881	(P)70.711	(P)2.671	4.245
1	CCB	6/18/2013 3:04:07 P	(P)5.000	(P)1.000	(P)0.000	(P)1.000	(P)9.000	318.004
2	CCB	6/18/2013 3:04:34 P	(P)3.000	(P)1.000	(P)0.000	(P)0.000	(P)7.000	330.004
3	CCB	6/18/2013 3:05:02 P	(P)5.000	(P)2.000	(P)0.000	(P)1.000	(P)6.000	311.670
4	CCB	6/18/2013 3:05:30 P	(P)2.000	(P)1.000	(P)1.000	(P)2.000	(P)6.000	323.004
5	CCB	6/18/2013 3:05:57 P	(P)1.000	(P)3.000	(P)1.000	(P)0.000	(P)9.000	326.670
	Mean of CCB	6/18/2013 3:04:07 P	(P)3.200	(P)1.600	(P)0.400	(P)0.800	(P)7.400	321.870

Excluded in Calib | Multi Element | Internal Standard | Standard Addition

Uncorrected ICPS Per Mass

S-Calibration Has Edited Standard
F-Interference Correction Failed
E-Calibration Edited
T-Tripped
I-Invalid Calibration
P-Pulse Counting
V-Valley Integration Failed
M-Result Over Max

Run	Label	TimeStamp	115	193Ir	229Th	230Th	231Pa	232Th
	SD of CCB		(P)6.205	(P)272.979	(P)1.225	(P)0.447	(P)0.894	(P)8.204
	%RSD of CCB		(P)10.517	(P)0.235	(P)122.474	(P)55.902	(P)63.888	(P)11.146

15:39:50 6/18/13
Act130618.vge

Multi Element | Internal Standard

Uncorrected ICPS Per Mass

S-Calibration Has Edited Standard
F-Interference Correction Failed
E-Calibration Edited
T-Tripped
I-Invalid Calibration
P-Pulse Counting
V-Valley Integration Failed
M-Result Over Max

Run	Label	TimeStamp	233U	234U	235U	236U	237Np	238U
	SD of CCB		(P)1.789	(P)0.894	(P)0.548	(P)0.837	(P)1.517	7.237
	%RSD of CCB		(P)55.902	(P)55.902	(P)136.931	(P)104.583	(P)20.494	2.248

Evaluated by Calib | Multi Element | Internal Standard | Standard Addition

Corrected ICPS Per Analyte Isotope - Ratio

S-Calibration Has Edited Standard
F-Interference Correction Failed
E-Calibration Edited
T-Tripped
I-Invalid Calibration
P-Pulse Counting
V-Valley Integration Failed
M-Result Over Max

Run	Label	TimeStamp	235U / 238U
1	rinse	6/18/2013 12:26:43 F	0.0000
2	rinse	6/18/2013 12:27:11 F	0.0000
3	rinse	6/18/2013 12:27:39 F	0.0000
	Mean of rinse	6/18/2013 12:26:43 F	0.0000
	SD of rinse		0.0000
	%RSD of rinse		0.0000
1	rinse	6/18/2013 12:31:34 F	0.0000
2	rinse	6/18/2013 12:32:01 F	0.0000
3	rinse	6/18/2013 12:32:29 F	0.0000
	Mean of rinse	6/18/2013 12:31:34 F	0.0000
	SD of rinse		0.0000
	%RSD of rinse		0.0000
1	Cal Blank	6/18/2013 12:36:25 F	0.4119
2	Cal Blank	6/18/2013 12:36:52 F	0.2995
3	Cal Blank	6/18/2013 12:37:20 F	0.0889
4	Cal Blank	6/18/2013 12:37:47 F	0.0502
5	Cal Blank	6/18/2013 12:38:15 F	0.7758
	Mean of Cal Blank	6/18/2013 12:36:25 F	0.3253
	SD of Cal Blank		0.2927
	%RSD of Cal Blank		89.9815
1	U/Th Nat Cal 2ppb	6/18/2013 12:42:10 F	0.0074
2	U/Th Nat Cal 2ppb	6/18/2013 12:42:38 F	0.0072
3	U/Th Nat Cal 2ppb	6/18/2013 12:43:05 F	0.0071
4	U/Th Nat Cal 2ppb	6/18/2013 12:43:33 F	0.0074
5	U/Th Nat Cal 2ppb	6/18/2013 12:44:01 F	0.0074
	Mean of U/Th Nat Cal :	6/18/2013 12:42:10 F	0.0073
	SD of U/Th Nat Cal 2		0.0001
	%RSD of U/Th Nat C		1.9630
1	U233/Np Cal 2ppb	6/18/2013 12:47:56 F	0.1482
2	U233/Np Cal 2ppb	6/18/2013 12:48:23 F	0.1437
3	U233/Np Cal 2ppb	6/18/2013 12:48:51 F	0.1563
4	U233/Np Cal 2ppb	6/18/2013 12:49:19 F	0.1430
5	U233/Np Cal 2ppb	6/18/2013 12:49:46 F	0.1488
	Mean of U233/Np Cal 2	6/18/2013 12:47:56 F	0.1480
	SD of U233/Np Cal 2		0.0053
	%RSD of U233/Np C		3.5923
1	U/Th ICV 1ppb	6/18/2013 12:53:42 F	0.0020
2	U/Th ICV 1ppb	6/18/2013 12:54:09 F	0.0020
3	U/Th ICV 1ppb	6/18/2013 12:54:37 F	0.0021
4	U/Th ICV 1ppb	6/18/2013 12:55:05 F	0.0022
5	U/Th ICV 1ppb	6/18/2013 12:55:32 F	0.0019
	Mean of U/Th ICV 1p	6/18/2013 12:53:42 F	0.0021
	SD of U/Th ICV 1ppb		0.0001
	%RSD of U/Th ICV 1		5.2855

Excluded In Calib | Multi Element | Internal Standard | Standard Addition

Corrected ICPS Per Analyte Isotope - Ratio

S-Calibration Has Edited Standard
F-Interference Correction Failed
E-Calibration Edited
T-Tripped
I-Invalid Calibration
P-Pulse Counting
V-Valley Integration Failed
M-Result Over Max

Run	Label	TimeStamp	235U / 238U
1	U233/Np ICV 1ppb	6/18/2013 12:59:27 F	0.3194
2	U233/Np ICV 1ppb	6/18/2013 12:59:55 F	0.3213
3	U233/Np ICV 1ppb	6/18/2013 1:00:23 P	0.2929
4	U233/Np ICV 1ppb	6/18/2013 1:00:50 P	0.3114
5	U233/Np ICV 1ppb	6/18/2013 1:01:18 P	0.3250
	Mean of U233/Np ICV	6/18/2013 12:59:27 F	0.3140
	SD of U233/Np ICV 1		0.0128
	%RSD of U233/Np I		4.0701
1	U/Th LLS 25ppt	6/18/2013 1:05:14 P	0.0072
2	U/Th LLS 25ppt	6/18/2013 1:05:42 P	0.0072
3	U/Th LLS 25ppt	6/18/2013 1:06:09 P	0.0080
4	U/Th LLS 25ppt	6/18/2013 1:06:37 P	0.0057
5	U/Th LLS 25ppt	6/18/2013 1:07:04 P	0.0074
	Mean of U/Th LLS 25	6/18/2013 1:05:14 P	0.0071
	SD of U/Th LLS 25ppt		0.0009
	%RSD of U/Th LLS 2		11.9326
1	U/Th LLS 5ppt	6/18/2013 1:11:01 P	0.0033
2	U/Th LLS 5ppt	6/18/2013 1:11:28 P	0.0076
3	U/Th LLS 5ppt	6/18/2013 1:11:56 P	0.0095
4	U/Th LLS 5ppt	6/18/2013 1:12:23 P	0.0049
5	U/Th LLS 5ppt	6/18/2013 1:12:51 P	0.0088
	Mean of U/Th LLS 5p	6/18/2013 1:11:01 P	0.0068
	SD of U/Th LLS 5ppt		0.0026
	%RSD of U/Th LLS 5		38.6533
1	U233/Np LLS 5ppt	6/18/2013 1:16:48 P	-0.2170
2	U233/Np LLS 5ppt	6/18/2013 1:17:15 P	-0.0695
3	U233/Np LLS 5ppt	6/18/2013 1:17:43 P	0.2074
4	U233/Np LLS 5ppt	6/18/2013 1:18:10 P	-0.3248
5	U233/Np LLS 5ppt	6/18/2013 1:18:38 P	-0.0529
	Mean of U233/Np LLS	6/18/2013 1:16:48 P	-0.0914
	SD of U233/Np LLS 5		0.2009
	%RSD of U233/Np L		219.8882
1	ICB	6/18/2013 1:22:35 P	-0.0682
2	ICB	6/18/2013 1:23:02 P	-0.0688
3	ICB	6/18/2013 1:23:30 P	0.0178
4	ICB	6/18/2013 1:23:58 P	0.0740
5	ICB	6/18/2013 1:24:25 P	-0.0324
	Mean of ICB	6/18/2013 1:22:35 P	-0.0155
	SD of ICB		0.0613
	%RSD of ICB		394.1579
1	ICB	6/18/2013 1:28:22 P	0.0264
2	ICB	6/18/2013 1:28:50 P	0.0261
3	ICB	6/18/2013 1:29:18 P	0.0656

Excluded in Calib | Multi Element | Internal Standard | Standard Addition

Corrected ICPS Per Analyte Isotope - Ratio

S-Calibration Has Edited Standard
F-Interference Correction Failed
E-Calibration Edited
T-Tripped
I-Invalid Calibration
P-Pulse Counting
V-Valley Integration Failed
M-Result Over Max

Run	Label	TimeStamp	235U / 238U
4	ICB	6/18/2013 1:29:45 P	0.1405
5	ICB	6/18/2013 1:30:13 P	0.0345
	Mean of ICB	6/18/2013 1:28:22 P	0.0586
	SD of ICB		0.0486
	%RSD of ICB		82.8603
1	ICS ATL 2 50x	6/18/2013 1:34:30 P	-0.0248
2	ICS ATL 2 50x	6/18/2013 1:34:58 P	-0.0086
3	ICS ATL 2 50x	6/18/2013 1:35:25 P	-0.0095
4	ICS ATL 2 50x	6/18/2013 1:35:53 P	0.0300
5	ICS ATL 2 50x	6/18/2013 1:36:21 P	0.0219
	Mean of ICS ATL 2 5	6/18/2013 1:34:09 P	0.0018
	SD of ICS ATL 2 50x		0.0231
	%RSD of ICS ATL 2 5		1305.3851
1	Prep Blank	6/18/2013 1:40:37 P	-0.0012
2	Prep Blank	6/18/2013 1:41:04 P	0.0093
3	Prep Blank	6/18/2013 1:41:32 P	-0.0014
4	Prep Blank	6/18/2013 1:41:59 P	0.0022
5	Prep Blank	6/18/2013 1:42:27 P	0.0059
	Mean of Prep Blank	6/18/2013 1:40:16 P	0.0030
	SD of Prep Blank		0.0046
	%RSD of Prep Blank		155.9372
1	S13T004252_L	6/18/2013 1:46:42 P	0.0080
2	S13T004252_L	6/18/2013 1:47:09 P	0.0059
3	S13T004252_L	6/18/2013 1:47:37 P	0.0087
4	S13T004252_L	6/18/2013 1:48:04 P	0.0058
5	S13T004252_L	6/18/2013 1:48:32 P	0.0068
	Mean of S13T004252_	6/18/2013 1:46:21 P	0.0070
	SD of S13T004252_L		0.0013
	%RSD of S13T004252		18.3016
1	S13T004252	6/18/2013 1:52:47 P	0.0069
2	S13T004252	6/18/2013 1:53:15 P	0.0067
3	S13T004252	6/18/2013 1:53:42 P	0.0065
4	S13T004252	6/18/2013 1:54:10 P	0.0069
5	S13T004252	6/18/2013 1:54:38 P	0.0081
	Mean of S13T004252	6/18/2013 1:52:26 P	0.0070
	SD of S13T004252		0.0006
	%RSD of S13T00425		8.7423
1	S13T004252_D	6/18/2013 1:58:53 P	0.0072
2	S13T004252_D	6/18/2013 1:59:21 P	0.0071
3	S13T004252_D	6/18/2013 1:59:48 P	0.0058
4	S13T004252_D	6/18/2013 2:00:16 P	0.0064
5	S13T004252_D	6/18/2013 2:00:43 P	0.0066
	Mean of S13T004252_	6/18/2013 1:58:32 P	0.0066
	SD of S13T004252_D		0.0005

15:39:50 6/18/13
Act130618.vge

Extended Th Calib | Multi Element | Internal Standard | Standard Addition

Corrected ICPS Per Analyte Isotope - Ratio

S-Calibration Has Edited Standard
F-Interference Correction Failed
E-Calibration Edited
T-Tripped
I-Invalid Calibration
P-Pulse Counting
V-Valley Integration Failed
M-Result Over Max

Run	Label	TimeStamp	235U / 238U
	%RSD of S13T004252		8.2947
1	S13T004280	6/18/2013 2:04:59 P	0.0064
2	S13T004280	6/18/2013 2:05:26 P	0.0068
3	S13T004280	6/18/2013 2:05:54 P	0.0060
4	S13T004280	6/18/2013 2:06:22 P	0.0070
5	S13T004280	6/18/2013 2:06:49 P	0.0066
	Mean of S13T004280	6/18/2013 2:04:38 P	0.0066
	SD of S13T004280		0.0004
	%RSD of S13T00428		5.6554
1	S13T004307	6/18/2013 2:11:05 P	0.0058
2	S13T004307	6/18/2013 2:11:33 P	0.0067
3	S13T004307	6/18/2013 2:12:00 P	0.0054
4	S13T004307	6/18/2013 2:12:28 P	0.0071
5	S13T004307	6/18/2013 2:12:55 P	0.0067
	Mean of S13T004307	6/18/2013 2:10:44 P	0.0063
	SD of S13T004307		0.0007
	%RSD of S13T00430		10.9995
1	S13T004252_A	6/18/2013 2:17:11 P	0.0082
2	S13T004252_A	6/18/2013 2:17:39 P	0.0079
3	S13T004252_A	6/18/2013 2:18:07 P	0.0078
4	S13T004252_A	6/18/2013 2:18:34 P	0.0081
5	S13T004252_A	6/18/2013 2:19:02 P	0.0078
	Mean of S13T004252_	6/18/2013 2:16:50 P	0.0080
	SD of S13T004252_A		0.0002
	%RSD of S13T004252		2.1757
1	Prep Std 3	6/18/2013 2:23:18 P	0.0023
2	Prep Std 3	6/18/2013 2:23:48 P	0.0021
3	Prep Std 3	6/18/2013 2:24:14 P	0.0021
4	Prep Std 3	6/18/2013 2:24:41 P	0.0023
5	Prep Std 3	6/18/2013 2:25:09 P	0.0020
	Mean of Prep Std 3	6/18/2013 2:22:57 P	0.0022
	SD of Prep Std 3		0.0001
	%RSD of Prep Std 3		5.0560
1	Prep Std 4	6/18/2013 2:29:26 P	0.0097
2	Prep Std 4	6/18/2013 2:29:53 P	-0.0006
3	Prep Std 4	6/18/2013 2:30:21 P	0.0036
4	Prep Std 4	6/18/2013 2:30:49 P	0.0054
5	Prep Std 4	6/18/2013 2:31:16 P	0.0035
	Mean of Prep Std 4	6/18/2013 2:29:05 P	0.0044
	SD of Prep Std 4		0.0037
	%RSD of Prep Std 4		85.5399
1	U/Th CCV	6/18/2013 2:35:13 P	0.0021
2	U/Th CCV	6/18/2013 2:35:40 P	0.0022

Excluded In Calib | Multi Element | Internal Standard | Standard Addition

Corrected ICPS Per Analyte Isotope - Ratio

S-Calibration Has Edited Standard
F-Interference Correction Failed
E-Calibration Edited
T-Tripped
I-Invalid Calibration
P-Pulse Counting
V-Valley Integration Failed
M-Result Over Max

Run	Label	TimeStamp	235U / 238U
3	U/Th CCV	6/18/2013 2:36:08 P	0.0020
4	U/Th CCV	6/18/2013 2:36:36 P	0.0019
5	U/Th CCV	6/18/2013 2:37:03 P	0.0021
	Mean of U/Th CCV	6/18/2013 2:35:13 P	0.0020
	SD of U/Th CCV		0.0001
	%RSD of U/Th CCV		5.3603
1	U233/Np CCV	6/18/2013 2:40:59 P	0.3101
2	U233/Np CCV	6/18/2013 2:41:26 P	0.3352
3	U233/Np CCV	6/18/2013 2:41:54 P	0.3189
4	U233/Np CCV	6/18/2013 2:42:22 P	0.3564
5	U233/Np CCV	6/18/2013 2:42:49 P	0.3436
	Mean of U233/Np CC	6/18/2013 2:40:59 P	0.3328
	SD of U233/Np CCV		0.0186
	%RSD of U233/Np C		5.5961
1	U/Th LLS 25ppt	6/18/2013 2:46:45 P	0.0081
2	U/Th LLS 25ppt	6/18/2013 2:47:12 P	0.0065
3	U/Th LLS 25ppt	6/18/2013 2:47:40 P	0.0066
4	U/Th LLS 25ppt	6/18/2013 2:48:08 P	0.0077
5	U/Th LLS 25ppt	6/18/2013 2:48:35 P	0.0045
	Mean of U/Th LLS 25	6/18/2013 2:46:45 P	0.0067
	SD of U/Th LLS 25ppt		0.0014
	%RSD of U/Th LLS 2		20.8831
1	U/Th LLS 5ppt	6/18/2013 2:52:32 P	0.0068
2	U/Th LLS 5ppt	6/18/2013 2:52:59 P	0.0070
3	U/Th LLS 5ppt	6/18/2013 2:53:27 P	0.0038
4	U/Th LLS 5ppt	6/18/2013 2:53:55 P	0.0095
5	U/Th LLS 5ppt	6/18/2013 2:54:22 P	0.0038
	Mean of U/Th LLS 5p	6/18/2013 2:52:32 P	0.0062
	SD of U/Th LLS 5ppt		0.0024
	%RSD of U/Th LLS 5		39.3610
1	U233/Np LLS 5ppt	6/18/2013 2:58:19 P	0.3711
2	U233/Np LLS 5ppt	6/18/2013 2:58:46 P	0.0706
3	U233/Np LLS 5ppt	6/18/2013 2:59:14 P	0.1095
4	U233/Np LLS 5ppt	6/18/2013 2:59:42 P	0.0607
5	U233/Np LLS 5ppt	6/18/2013 3:00:09 P	-0.0475
	Mean of U233/Np LLS	6/18/2013 2:58:19 P	0.1129
	SD of U233/Np LLS 5		0.1557
	%RSD of U233/Np L		137.9144
1	CCB	6/18/2013 3:04:07 P	0.3792
2	CCB	6/18/2013 3:04:34 P	-0.1910
3	CCB	6/18/2013 3:05:02 P	0.1189
4	CCB	6/18/2013 3:05:30 P	-2.4496
5	CCB	6/18/2013 3:05:57 P	-0.0922
	Mean of CCB	6/18/2013 3:04:07 P	-0.4469

Excluded In Calib | Recalib Curve Required | Multi Element | Internal Standard | Standard Addition

Corrected ICPS Per Analyte Isotope - Ratio

S-Calibration Has Edited Standard
F-Interference Correction Failed
E-Calibration Edited
T-Tripped
I-Invalid Calibration
P-Pulse Counting
V-Valley Integration Failed
M-Result Over Max

Run	Label	TimeStamp	235U / 238U
	SD of CCB		1.1407
	%RSD of CCB		255.2357

Thermo Electron - PlasmaLab - [stab130703 - Needs Peak Matrix]

Instrument Status - PQ Connected - Version 3.12 / 4.26 / 2.26

7.2 x 10 -7 mbar | 1.9 mbar | 2.49 bar | 1210 W | 3.4 W | 1700 V | 2750 V | BTCNPESLQM

Back | Forward | On | Off | Queue

Plasmalab Service

Time	Event	
09:30:37	Starting Run 4	stab130703.vge
09:28:55	Starting Run 3	1ppb tune (non sopt) 1
09:27:13	Starting Run 2	Main
09:25:22	Starting Run 1	Run 4 of 10
		Simultaneous

Acquired 234 sweeps

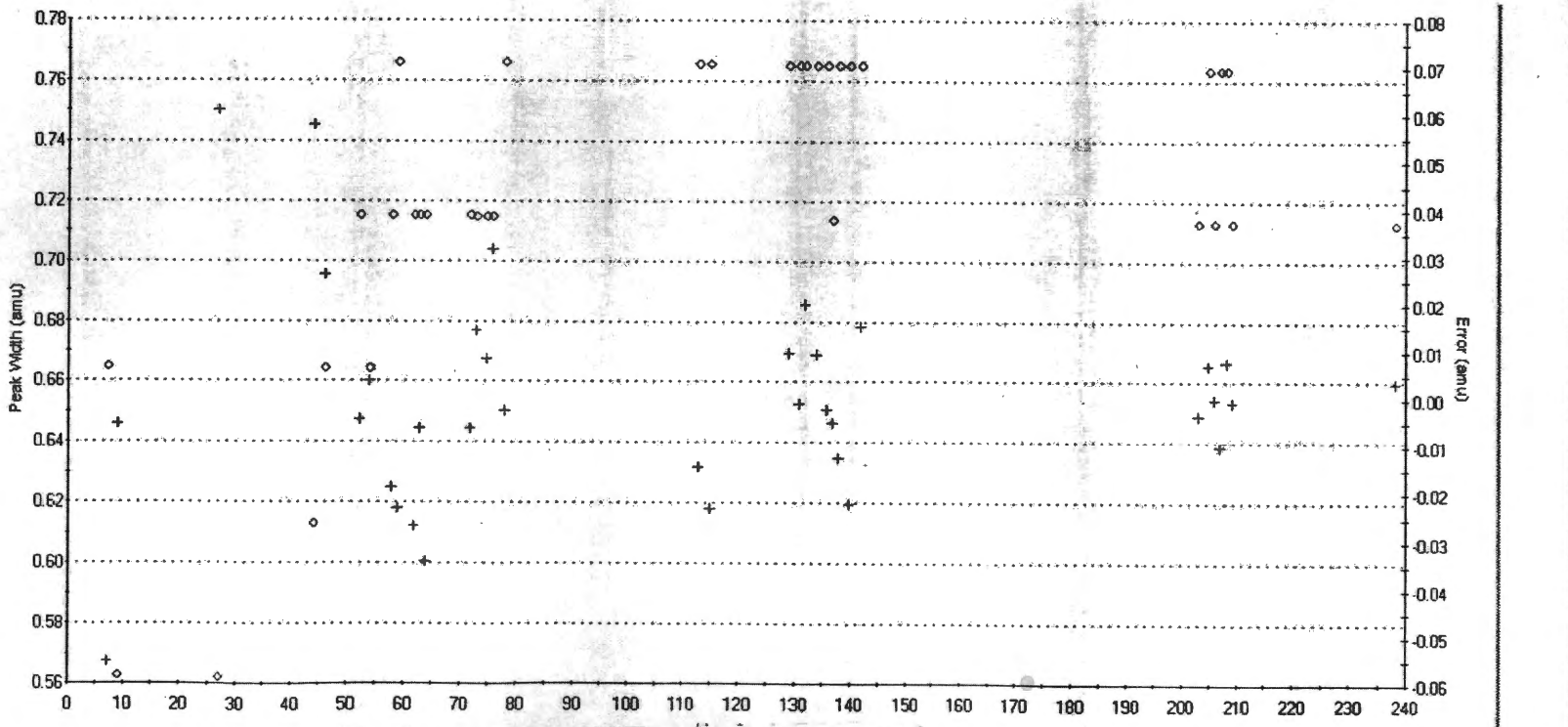
Setup | Instrument Parameters | Calibration Method | QC Setup | Sample List | Results | Reports

Configuration Editor | Timings | Detector Plateau | Mass Calibration | Detector Cross Calibration | Gas AutoTune

Date/Time	Coeff 0	Coeff 1	Coeff 2	
7/2/2013 9:40:3	0.87635	0.0039337	-1.4521e-010	New Mass Calib
7/3/2013 9:21:1	0.85627	0.003936	-1.6877e-010	New Mass Calib

Mass	Mass DAC	Peak Width (AMU)	Error (AMU)	Include
7.016	1551	0.665	-0.055	☑
9.012	2071	0.563	-0.005	☑
26.992	6655	0.563	0.061	☑
43.956	10970	0.813	0.058	☑

Detector Mass Calibration



Expansion Press.: 1.9 mbar
Analytical Press.: 7.2x10-7 mbar
Nebulizer Press.: 2.49 bar
Nebulizer Flow.: 0.92 L/min
Foward Power: 1210 W
Reflected Power: 3.4 W
PeltierTemp: 4.0 °c
Tune Soln Book #: 130605-3

FOWARD POWER SET @ 1350W

07/03/13

PlasmaLab | Instrument | Technician | Experiment | stab130703 - Needs R... | U130703 | Pu130703 | SrSb130703 | Act130702 | Templates

Ready

stab130703/1ppb tune (non sopt) 1/Main%0 run 4 NUM

Start | Thermo Electron - Pla... 9:31 AM

10:31:59 7/8/13
stab130703b.vge

Excluded Intensity | Multi Element | Internal Standard

Uncorrected ICPS Per Mass

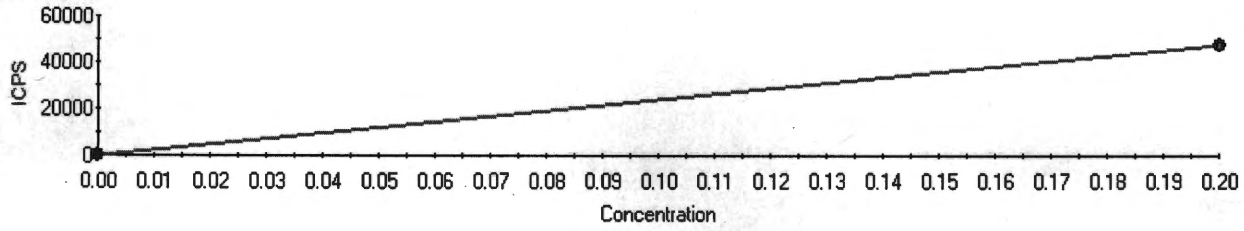
S-Calibration Has Edited Standard
F-Interference Correction Failed
E-Calibration Edited
T-Tripped
I-Invalid Calibration
P-Pulse Counting
V-Valley Integration Failed
M-Result Over Max

Run	Label	TimeStamp	5Bkg	7Li	9Be	59Co	140Ce++	101Bkg
1	1ppb tune (non sopt) 1	7/3/2013 9:51:39 A	(P)3.250	(P)92263.983	(P)4781.300	(P)60952.757	(P)3391.903	(P)21.250
2	1ppb tune (non sopt) 1	7/3/2013 9:53:21 A	(P)1.500	(P)89693.441	(P)4779.049	(P)59854.628	(P)3271.875	(P)20.750
3	1ppb tune (non sopt) 1	7/3/2013 9:55:03 A	(P)1.000	(P)89240.115	(P)4666.512	(P)59251.873	(P)3346.142	(P)24.250
4	1ppb tune (non sopt) 1	7/3/2013 9:56:44 A	(P)1.000	(P)89633.567	(P)4650.257	(P)57852.154	(P)3302.882	(P)29.000
5	1ppb tune (non sopt) 1	7/3/2013 9:58:26 A	(P)1.500	(P)88504.309	(P)4510.212	(P)56583.086	(P)3240.368	(P)24.000
6	1ppb tune (non sopt) 1	7/3/2013 10:00:08 A	(P)1.000	(P)88201.444	(P)4545.973	(P)56038.446	(P)3231.365	(P)22.500
7	1ppb tune (non sopt) 1	7/3/2013 10:01:50 A	(P)1.000	(P)88192.892	(P)4558.477	(P)56392.334	(P)3207.610	(P)25.750
8	1ppb tune (non sopt) 1	7/3/2013 10:03:32 A	(P)2.500	(P)88220.059	(P)4523.466	(P)56498.502	(P)3266.373	(P)27.000
9	1ppb tune (non sopt) 1	7/3/2013 10:05:14 A	(P)3.750	(P)89144.773	(P)4675.765	(P)56594.883	(P)3261.622	(P)21.250
10	1ppb tune (non sopt) 1	7/3/2013 10:06:56 A	(P)2.000	(P)89484.386	(P)4515.463	(P)56920.924	(P)3241.368	(P)21.750
	Mean of 1ppb tune (n	7/3/2013 9:50:59 A	(P)1.850	(P)89257.897	(P)4620.648	(P)57693.959	(P)3276.151	(P)23.750
	SD of 1ppb tune (non s		(P)1.008	(P)1216.878	(P)104.915	(P)1720.595	(P)56.303	(P)2.779
	%RSD of 1ppb tune (		(P)54.503	(P)1.363	(P)2.271	(P)2.982	(P)1.719	(P)11.701

Run	Label	TimeStamp	115In	140Ce	156Ce O	209Bi	220Bkg	238U
1	1ppb tune (non sopt) 1	7/3/2013 9:51:39 A	(P)139621.98	(P)141190.54	(P)4829.816	(P)204529.47	(P)0.250	(P)272196.21
2	1ppb tune (non sopt) 1	7/3/2013 9:53:21 A	(P)136344.30	(P)138568.80	(P)4651.257	(P)199328.99	(P)0.500	(P)265881.44
3	1ppb tune (non sopt) 1	7/3/2013 9:55:03 A	(P)136279.18	(P)138283.31	(P)4260.885	(P)197729.49	(P)0.250	(P)263975.58
4	1ppb tune (non sopt) 1	7/3/2013 9:56:44 A	(P)134587.26	(P)135620.46	(P)4254.633	(P)194513.03	(P)0.500	(P)261242.02
5	1ppb tune (non sopt) 1	7/3/2013 9:58:26 A	(P)132092.89	(P)133191.52	(P)4215.622	(P)191233.19	(P)1.000	(P)257714.56
6	1ppb tune (non sopt) 1	7/3/2013 10:00:08 A	(P)129906.98	(P)132598.04	(P)4124.845	(P)189960.13	(P)0.500	(P)255450.94
7	1ppb tune (non sopt) 1	7/3/2013 10:01:50 A	(P)131274.90	(P)132073.46	(P)4197.367	(P)190276.55	(P)0.000	(P)253813.90
8	1ppb tune (non sopt) 1	7/3/2013 10:03:32 A	(P)132020.22	(P)132413.33	(P)4065.078	(P)190367.75	(P)0.500	(P)253366.82
9	1ppb tune (non sopt) 1	7/3/2013 10:05:14 A	(P)132324.52	(P)133544.04	(P)3992.308	(P)190298.08	(P)0.750	(P)253098.37
10	1ppb tune (non sopt) 1	7/3/2013 10:06:56 A	(P)132892.25	(P)132455.22	(P)3965.300	(P)191095.88	(P)1.250	(P)253252.06
	Mean of 1ppb tune (n	7/3/2013 9:50:59 A	(P)133734.45	(P)134993.87	(P)4255.711	(P)193933.26	(P)0.550	(P)258999.19
	SD of 1ppb tune (non s		(P)2938.381	(P)3250.898	(P)278.544	(P)5017.380	(P)0.369	(P)6599.846
	%RSD of 1ppb tune (		(P)2.197	(P)2.408	(P)6.545	(P)2.587	(P)67.079	(P)2.548

10:41:46 7/8/13
Pu130703.vge

Fully Quant Calibration 242Pu FQ Block 1



Intercept CPS=0.404925 Intercept Conc=0.000002
Sensitivity=238532.395612 Correlation Coeff=1.000000

Label	Defined	Measured	Error	Mean CPS	%Error
Cal Blank	0.00	0.00	0.00	0.40	
Pu242 200ppt Cal	0.20	0.20	0.00	47,706.88	0.00

Fully Quantitative Concentrations

ID	Label	242Pu
		ppt
2	Pu242 200ppt Cal	200.0

Experiment Details

Template Filename - C:\Program Files\Thermo Elemental\PlasmaLab\data\Act130628.vge

Created By User - Inorganic

Analyte Database - Corrected Analyte.vga

Creation Timestamp - 8:44:30 7/3/13

Last Edited By - Inorganic

Last Edit Timestamp - 9:19:37 7/3/13

Instrument Detector - Simultaneous

Database Version - 3.48

Acquisition Mode - Continuous

Prescan Selected - No

Survey Run Setup

Sweeps - 20

Dwell Time - 300

Channels Per Mass - 10

Acquisition Duration - 15 Secs

Main Run Setup

Main Run - Peak Jumping

Sweeps - 100

Dwell Time - 10,000

Channels Per Mass - 1

Acquisition Duration - 4.00

Channel Spacing - 0.02

Main Scan Regions

Symbol	Dwell Time	Symbol	Dwell Time	Symbol	Dwell Time
115In	10,000	193Ir	10,000	242Pu	10,000

Instrument Setup - Sample Configuration

Sample	Configuration	Date
All Samples	Inorganic	9:17:56 7/3/13

Instrument Setup - Configurations

Configuration Name - Inorganic
Description - PQExcell CCT Sim Default
Date - 9:17:56 7/3/13
Maximum Uptake Time - 90
Maximum Washout Time - 90
S-Option Pump Running - No
Plasma Screen Forward - No
Makeup Gas On - No
Use CCT - No
Use Accessory Gas - No

Setting	Value
Extraction	-680.00
Lens1	7.00
Lens2	-38.00
Lens3	-130.00
Pole Bias	-1.00
Sampling Depth	380.00
Horizontal	-2.00
Vertical	75.00
Cool	13.00
Auxiliary	0.93
Nebuliser	0.92
Forward power	1,350.00
HT1 Voltage	1,900.00
HT2 Voltage	2,600.00
D1	-33.00
Focus	27.00

ATL	ICP-MS BENCH SHEET - PQ EXCELL	○ IH ◉ Non IH

LA-506-102 Rev G-1 Instrument ID# PQ EXCELL

Client/Project: C109 CLO

Batch #: 41872 Analyst: Levi Shaw

Date/Time Start: 07/03/13 / 1136 Date/Time End: 07/03/13 / 1303

Instrument File #: Act130703.vge Standard Book # & page HNF-N-667 1 pg 125

Pump Tubing OK ☒ Chiller Water OK ☒ Wash Station OK ☒ 4 °C. Peltier Temp

(Pipette #); Pipette ID; Volume Range or Fixed Volume; Check box if pipette passes visual verification:

(1) 210897A (Range/Vol: 1.0-10.0mL) ☒ (4) 439095 (Range/Vol: 0.5-5.0mL) ☒

(2) 141655Z (Range/Vol: 0.01-0.1mL) ☒ (5) NA (Range/Vol: NA) ☐

(3) 2230539 (Range/Vol: 0.01-0.1mL) ☒ (6) NA (Range/Vol: NA) ☐

Calibration Standards:

Blank - 0.03mL(120816-1) + 10.0mL(130628-1)

200ppt Cal - 0.1mL(136B64) + 0.03mL(120816-1) + 9.9mL(130628-1) Prepared by Levi Shaw

Verification Standards:

ICB/CCB - 0.03mL(120816-1) + 10.0mL(130628-1)

100ppt ICV/CCV - 0.05mL(136B64) + 0.03mL (120816-1) + 9.95mL(130628-1) Prepared by Andrew Getz

5ppt LLS - 1.0mL(136B64) + 9.0mL (130628-1);0.25mL + 0.03mL(120816-1) + 9.75mL (130628-1)

ICS ATL 2 50x - 0.2mL(SL018961) + 0.03mL (120816-1) + 9.8mL(130628-1)

Post Spike:

100ppt from 136B64

Sample Number	Dilution Factor	Dilution
ICV	1	see above
rinse 10% HNO3	1	10% HNO3
LLS	1	see above
rinse 10% HNO3	1	10% HNO3
ICB	1	see above
ICB	1	see above
ICS	1	see above
Prep Blank	100	0.1mL(3)-0.03mL(2)-9.9mL(1)
S13T004252_L	500	0.1mL(3)-9.9mL(1);2.0mL(4)-0.03mL(2)-8.0mL(1)
S13T004252	100	0.1mL(3)-0.03mL(2)-9.9mL(1)
S13T004252_D	100	0.1mL(3)-0.03mL(2)-9.9mL(1)
S13T004280	100	0.1mL(3)-0.03mL(2)-9.9mL(1)
S13T004307	100	0.1mL(3)-0.03mL(2)-9.9mL(1)
S13T004252_A	100	0.1mL(3)-0.03mL(2)-0.05mL(3)-9.85mL(1)
CCV	1	see above
rinse 10% HNO3	1	10% HNO3

ATL	ICP-MS BENCH SHEET - PQ EXCELL (continued)	○ IH ◉ Non IH

LA-506-102 Rev G-1 Instrument ID# PQ EXCELL

Client/Project: C109 CLO

Batch #: 41872 Analyst: Levi Shaw

Sample Number	Dilution Factor	Dilution
LLS	1	see above
rinse 10% HNO3	1	10% HNO3
CCB	1	see above
CCB	1	see above

Dilution Key:

(www) indicates the sample volume in mL

(xxx) indicates the internal standard in mL

(yyy) indicates the post spike volume in mL

(zzz) indicates the diluents volume in mL

Examples (Where (#) is the pipette #):

Single dilution: www(#)-xxx(#)-zzz(#)	0.25(#) - 0.03(#) - 9.75(#)	DF=40
Single dilution with Post Spike: www(#)-xxx(#)-yyy(#)-zzz(#)	0.25(#) - 0.03(#) - 0.025(#) - 9.725(#)	DF=40
Double dilution: www(#)-zzz(#); www(#)-xxx(#)-zzz(#)	0.10(#) - 9.9(#); 0.25(#) - 0.03(#) - 9.75(#)	DF=4000
Double dilution with Post Spike: www(#)-zzz(#); www(#)-xxx(#)-yyy(#)-zzz(#)	0.10(#) - 9.9(#); 0.25(#) - 0.03(#) - 0.025(#) - 9.725(#)	DF=4000

Comments:

TJA Solutions

10:33:04 7/8/13
Plasmalab Report

Multi Element	Internal Standard	Standard Addition
QC Pass	Acquired	Skipped	Unaquired

		Label	Type	Rack	Row	Column	Height (	Survey	Main	Dilution	Internal
1	TR	Cal Blank	Blank	1	2	1	144	0	5	1	193Ir[Default
2	TR	Pu242 200ppt Ca	Fully Quant Stan	1	2	2	144	0	5	1	193Ir[Default
3	TR	Pu242 100ppt IC	Unknown	1	2	3	144	0	5	1	193Ir[Default
4	TR	rinse 10% HNO3	Unknown	1	5	1	144	0	5	1	193Ir[Default
5	TR	Pu242 5ppt LLS	Unknown	1	2	4	144	0	5	1	193Ir[Default
6	TR	rinse 10% HNO3	Unknown	1	5	1	144	0	3	1	193Ir[Default
7	TR	ICB	Unknown	1	2	5	144	0	5	1	193Ir[Default
8	TR	ICB	Unknown	1	2	5	144	0	5	1	193Ir[Default
9	TR	ICS ATL 2	Unknown	1	1	7	144	0	5	1	193Ir[Default
10	TR	Prep Blank	Unknown	1	2	6	144	1	5	100	193Ir[Default
11	TR	S13T004252 L	Unknown	1	2	7	144	1	5	500	193Ir[Default
12	TR	S13T004252	Unknown	1	2	8	144	1	5	100	193Ir[Default
13	TR	S13T004252 D	Unknown	1	2	9	144	1	5	100	193Ir[Default
14	TR	S13T004280	Unknown	1	2	10	144	1	5	100	193Ir[Default
15	TR	S13T004307	Unknown	1	2	11	144	1	5	100	193Ir[Default
16	TR	S13T004252 A	Unknown	1	2	12	144	1	5	100	193Ir[Default
17	TR	Pu242 100ppt CC	Unknown	1	2	3	144	1	5	1	193Ir[Default
18	TR	rinse 10% HNO3	Unknown	1	5	1	144	0	5	1	193Ir[Default
19	TR	Pu242 5ppt LLS	Unknown	1	2	4	144	0	5	1	193Ir[Default
20	TR	rinse 10% HNO3	Unknown	1	5	1	144	0	3	1	193Ir[Default
21	TR	CCB	Unknown	1	2	1	144	0	5	1	193Ir[Default
22	TR	CCB	Unknown	1	2	5	144	0	5	1	193Ir[Default

10:41:57 7/8/13
Pu130703.vge

Excluded In Calib | Excluded In Results | Multi Element | Internal Standard | Standard Addition

Dilution Corrected Concentration Per Analyte

S-Calibration Has Edited Standard E-Calibration Edited I-Invalid Calibration V-Valley Integration Failed
F-Interference Correction Failed T-Tripped P-Pulse Counting M-Result Over Max

Run	Label	TimeStamp	193Ir	242Pu
			ppb	ppt
1	Cal Blank	7/3/2013 11:36:10 A	(P)0.983	(P)-0.0017
2	Cal Blank	7/3/2013 11:36:17 A	(P)0.994	(P)-0.0017
3	Cal Blank	7/3/2013 11:36:25 A	(P)1.000	(P)-0.0017
4	Cal Blank	7/3/2013 11:36:32 A	(P)1.018	(P)0.0026
5	Cal Blank	7/3/2013 11:36:40 A	(P)1.007	(P)0.0025
	Mean of Cal Blank	7/3/2013 11:36:10 A	(P)0.983	(P)-0.0000
	SD of Cal Blank		(P)n/a	(P)0.0023
	%RSD of Cal Blank		(P)n/a	(P)0.0000
1	Pu242 200ppt Cal	7/3/2013 11:40:13 A	(P)0.987	(P)194.1000
2	Pu242 200ppt Cal	7/3/2013 11:40:20 A	(P)0.988	(P)199.4000
3	Pu242 200ppt Cal	7/3/2013 11:40:28 A	(P)0.985	(PM)200.2000
4	Pu242 200ppt Cal	7/3/2013 11:40:35 A	(P)0.969	(PM)202.3000
5	Pu242 200ppt Cal	7/3/2013 11:40:43 A	(P)0.987	(PM)204.0000
	Mean of Pu242 200ppt	7/3/2013 11:40:13 A	(P)0.987	(PM)200.0000
	SD of Pu242 200ppt C		(P)n/a	(PM)3.7470
	%RSD of Pu242 200		(P)n/a	(PM)1.8740
1	Pu242 100ppt ICV	7/3/2013 11:44:16 A	(P)1.005	(P)97.5700
2	Pu242 100ppt ICV	7/3/2013 11:44:23 A	(P)1.021	(P)100.9000
3	Pu242 100ppt ICV	7/3/2013 11:44:31 A	(P)1.012	(P)102.6000
4	Pu242 100ppt ICV	7/3/2013 11:44:38 A	(P)1.008	(P)103.4000
5	Pu242 100ppt ICV	7/3/2013 11:44:46 A	(P)1.011	(P)105.2000
	Mean of Pu242 100ppt	7/3/2013 11:44:16 A	(P)1.005	(P)101.9000
	SD of Pu242 100ppt I		(P)n/a	(P)2.9030
	%RSD of Pu242 100		(P)n/a	(P)2.8480
1	rinse 10% HNO3	7/3/2013 11:48:19 A	(P)22.053	(P)137.5000
2	rinse 10% HNO3	7/3/2013 11:48:27 A	(P)22.511	(P)126.1000
3	rinse 10% HNO3	7/3/2013 11:48:34 A	(P)24.245	(P)119.3000
4	rinse 10% HNO3	7/3/2013 11:48:42 A	(P)26.113	(P)120.4000
5	rinse 10% HNO3	7/3/2013 11:48:49 A	(P)27.524	(P)110.4000
	Mean of rinse 10% HN	7/3/2013 11:48:19 A	(P)22.053	(P)122.8000
	SD of rinse 10% HNO		(P)n/a	(P)9.9630
	%RSD of rinse 10% H		(P)n/a	(P)8.1160
1	Pu242 5ppt LLS	7/3/2013 11:52:22 A	(P)0.979	(P)4.6300
2	Pu242 5ppt LLS	7/3/2013 11:52:30 A	(P)0.972	(P)4.5320
3	Pu242 5ppt LLS	7/3/2013 11:52:37 A	(P)0.976	(P)4.4280
4	Pu242 5ppt LLS	7/3/2013 11:52:45 A	(P)0.964	(P)4.6020
5	Pu242 5ppt LLS	7/3/2013 11:52:52 A	(P)0.972	(P)4.5350
	Mean of Pu242 5ppt L	7/3/2013 11:52:22 A	(P)0.979	(P)4.5460
	SD of Pu242 5ppt LLS		(P)n/a	(P)0.0783
	%RSD of Pu242 5ppt L		(P)n/a	(P)1.7220
1	rinse 10% HNO3	7/3/2013 11:56:25 A	(P)33.401	(P)42.5700
2	rinse 10% HNO3	7/3/2013 11:56:33 A	(P)34.390	(P)45.9900
3	rinse 10% HNO3	7/3/2013 11:56:41 A	(P)36.955	(P)53.2900

10:41:58 7/8/13
Pu130703.vge

Excluded In Calib | Excluded In Results | Multi Element | Semi Quant | Internal Standard | Standard Addition

Dilution Corrected Concentration Per Analyte

S-Calibration Has Edited Standard
F-Interference Correction Failed
E-Calibration Edited
T-Tripped
I-Invalid Calibration
P-Pulse Counting
V-Valley Integration Failed
M-Result Over Max

Run	Label	TimeStamp	193Ir	242Pu
			ppb	ppt
	Mean of rinse 10% HN	7/3/2013 11:56:25 A	(P)33.401	(P)47.2800
	SD of rinse 10% HNO		(P)n/a	(P)5.4790
	%RSD of rinse 10% H		(P)n/a	(P)11.5900
1	ICB	7/3/2013 12:00:14 P	(P)1.002	(P)0.0487
2	ICB	7/3/2013 12:00:22 P	(P)1.006	(P)0.0700
3	ICB	7/3/2013 12:00:29 P	(P)1.005	(P)0.0362
4	ICB	7/3/2013 12:00:37 P	(P)0.998	(P)0.0527
5	ICB	7/3/2013 12:00:44 P	(P)1.013	(P)0.0578
	Mean of ICB	7/3/2013 12:00:14 P	(P)1.002	(P)0.0531
	SD of ICB		(P)n/a	(P)0.0124
	%RSD of ICB		(P)n/a	(P)23.2900
1	ICB	7/3/2013 12:04:18 P	(P)1.022	(P)0.0583
2	ICB	7/3/2013 12:04:25 P	(P)1.027	(P)0.0328
3	ICB	7/3/2013 12:04:33 P	(P)1.012	(P)0.0365
4	ICB	7/3/2013 12:04:41 P	(P)1.013	(P)0.0238
5	ICB	7/3/2013 12:04:48 P	(P)1.007	(P)0.0279
	Mean of ICB	7/3/2013 12:04:18 P	(P)1.022	(P)0.0358
	SD of ICB		(P)n/a	(P)0.0135
	%RSD of ICB		(P)n/a	(P)37.5300
1	ICS ATL 2	7/3/2013 12:08:22 P	(P)0.986	(P)0.0603
2	ICS ATL 2	7/3/2013 12:08:30 P	(P)0.989	(P)0.0688
3	ICS ATL 2	7/3/2013 12:08:37 P	(P)0.996	(P)0.0568
4	ICS ATL 2	7/3/2013 12:08:45 P	(P)0.991	(P)0.0856
5	ICS ATL 2	7/3/2013 12:08:52 P	(P)0.978	(P)0.0762
	Mean of ICS ATL 2	7/3/2013 12:08:22 P	(P)0.986	(P)0.0695
	SD of ICS ATL 2		(P)n/a	(P)0.0117
	%RSD of ICS ATL 2		(P)n/a	(P)16.8600
1	Prep Blank	7/3/2013 12:12:47 P	(P)1.070	(P)3.8670
2	Prep Blank	7/3/2013 12:12:54 P	(P)1.058	(P)4.2680
3	Prep Blank	7/3/2013 12:13:02 P	(P)1.052	(P)4.6840
4	Prep Blank	7/3/2013 12:13:09 P	(P)1.052	(P)7.3270
5	Prep Blank	7/3/2013 12:13:17 P	(P)1.050	(P)2.4720
	Mean of Prep Blank	7/3/2013 12:12:28 P	(P)1.070	(P)4.5240
	SD of Prep Blank		(P)n/a	(P)1.7740
	%RSD of Prep Blank		(P)n/a	(P)39.2200
1	S13T004252_L	7/3/2013 12:17:11 P	(P)0.997	(P)9.5960
2	S13T004252_L	7/3/2013 12:17:18 P	(P)0.999	(P)5.4360
3	S13T004252_L	7/3/2013 12:17:26 P	(P)0.997	(P)13.7700
4	S13T004252_L	7/3/2013 12:17:34 P	(P)0.994	(P)22.0800
5	S13T004252_L	7/3/2013 12:17:41 P	(P)0.981	(P)15.6000
	Mean of S13T004252_	7/3/2013 12:16:52 P	(P)0.997	(P)13.3000
	SD of S13T004252_L		(P)n/a	(P)6.2880
	%RSD of S13T004252		(P)n/a	(P)47.2900

10:41:58 7/8/13
Pu130703.vge

Excluded In Calib | Excluded In Results | Multi Element | Semi Quant | Internal Standard | Standard Addition

Dilution Corrected Concentration Per Analyte

S-Calibration Has Edited Standard
F-Interference Correction Failed
E-Calibration Edited
T-Tripped
I-Invalid Calibration
P-Pulse Counting
V-Valley Integration Failed
M-Result Over Max

Run	Label	TimeStamp	193Ir	242Pu
			ppb	ppt
1	S13T004252	7/3/2013 12:21:36 P	(P)1.048	(P)2.4670
2	S13T004252	7/3/2013 12:21:44 P	(P)1.045	(P)5.9610
3	S13T004252	7/3/2013 12:21:51 P	(P)1.049	(P)4.6660
4	S13T004252	7/3/2013 12:21:59 P	(P)1.036	(P)7.2160
5	S13T004252	7/3/2013 12:22:06 P	(P)1.044	(P)4.2060
	Mean of S13T004252	7/3/2013 12:21:17 P	(P)1.048	(P)4.9030
	SD of S13T004252		(P)n/a	(P)1.7990
	%RSD of S13T00425		(P)n/a	(P)36.6900
1	S13T004252_D	7/3/2013 12:26:00 P	(P)1.042	(P)2.4500
2	S13T004252_D	7/3/2013 12:26:08 P	(P)1.044	(P)3.7700
3	S13T004252_D	7/3/2013 12:26:16 P	(P)1.052	(P)3.3570
4	S13T004252_D	7/3/2013 12:26:23 P	(P)1.035	(P)5.9050
5	S13T004252_D	7/3/2013 12:26:31 P	(P)1.040	(P)5.0600
	Mean of S13T004252_	7/3/2013 12:25:42 P	(P)1.042	(P)4.1090
	SD of S13T004252_D		(P)n/a	(P)1.3750
	%RSD of S13T004252		(P)n/a	(P)33.4700
1	S13T004280	7/3/2013 12:30:26 P	(P)1.027	(P)4.5680
2	S13T004280	7/3/2013 12:30:33 P	(P)1.022	(P)4.9710
3	S13T004280	7/3/2013 12:30:41 P	(P)1.029	(P)2.4180
4	S13T004280	7/3/2013 12:30:48 P	(P)1.013	(P)5.3490
5	S13T004280	7/3/2013 12:30:56 P	(P)1.023	(P)5.8330
	Mean of S13T004280	7/3/2013 12:30:07 P	(P)1.027	(P)4.6280
	SD of S13T004280		(P)n/a	(P)1.3210
	%RSD of S13T00428		(P)n/a	(P)28.5400
1	S13T004307	7/3/2013 12:34:51 P	(P)1.021	(P)2.8270
2	S13T004307	7/3/2013 12:34:59 P	(P)1.026	(P)3.2710
3	S13T004307	7/3/2013 12:35:06 P	(P)1.032	(P)3.2920
4	S13T004307	7/3/2013 12:35:14 P	(P)1.019	(P)3.6750
5	S13T004307	7/3/2013 12:35:21 P	(P)1.023	(P)4.5480
	Mean of S13T004307	7/3/2013 12:34:32 P	(P)1.021	(P)3.5230
	SD of S13T004307		(P)n/a	(P)0.6470
	%RSD of S13T00430		(P)n/a	(P)18.3700
1	S13T004252_A	7/3/2013 12:39:17 P	(P)1.056	(P)12180.000
2	S13T004252_A	7/3/2013 12:39:24 P	(P)1.053	(P)11990.000
3	S13T004252_A	7/3/2013 12:39:32 P	(P)1.050	(P)11930.000
4	S13T004252_A	7/3/2013 12:39:40 P	(P)1.056	(P)12320.000
5	S13T004252_A	7/3/2013 12:39:47 P	(P)1.059	(P)12430.000
	Mean of S13T004252_	7/3/2013 12:38:58 P	(P)1.056	(P)12170.000
	SD of S13T004252_A		(P)n/a	(P)211.1000
	%RSD of S13T004252		(P)n/a	(P)1.7350
1	Pu242 100ppt CCV	7/3/2013 12:43:42 P	(P)1.035	(P)107.9000
2	Pu242 100ppt CCV	7/3/2013 12:43:49 P	(P)1.017	(P)109.0000

10:41:58 7/8/13
Pu130703.vge

Excluded In Calib | Excluded In Results | Multi Element | Semi Quant | Internal Standard | Standard Addition

Dilution Corrected Concentration Per Analyte

S-Calibration Has Edited Standard E-Calibration Edited I-Invalid Calibration V-Valley Integration Failed
F-Interference Correction Failed T-Tripped P-Pulse Counting M-Result Over Max

Run	Label	TimeStamp	193Ir	242Pu
			ppb	ppt
3	Pu242 100ppt CCV	7/3/2013 12:43:57 P	(P)1.027	(P)109.9000
4	Pu242 100ppt CCV	7/3/2013 12:44:05 P	(P)1.013	(P)111.4000
5	Pu242 100ppt CCV	7/3/2013 12:44:12 P	(P)1.009	(P)111.6000
	Mean of Pu242 100ppt	7/3/2013 12:43:23 P	(P)1.035	(P)110.0000
	SD of Pu242 100ppt C		(P)n/a	(P)1.5950
	%RSD of Pu242 100		(P)n/a	(P)1.4500
1	rinse 10% HNO3	7/3/2013 12:47:45 P	(P)22.808	(P)86.0600
2	rinse 10% HNO3	7/3/2013 12:47:53 P	(P)25.687	(P)82.2800
3	rinse 10% HNO3	7/3/2013 12:48:00 P	(P)26.134	(P)69.7900
4	rinse 10% HNO3	7/3/2013 12:48:08 P	(P)28.744	(P)67.2400
5	rinse 10% HNO3	7/3/2013 12:48:16 P	(P)30.233	(P)67.1700
	Mean of rinse 10% HN	7/3/2013 12:47:45 P	(P)22.808	(P)74.5100
	SD of rinse 10% HNO		(P)n/a	(P)8.9810
	%RSD of rinse 10% H		(P)n/a	(P)12.0500
1	Pu242 5ppt LLS	7/3/2013 12:51:49 P	(P)0.952	(P)4.5730
2	Pu242 5ppt LLS	7/3/2013 12:51:56 P	(P)0.960	(P)4.8100
3	Pu242 5ppt LLS	7/3/2013 12:52:04 P	(P)0.955	(P)4.9620
4	Pu242 5ppt LLS	7/3/2013 12:52:12 P	(P)0.967	(P)4.8960
5	Pu242 5ppt LLS	7/3/2013 12:52:19 P	(P)0.968	(P)5.0140
	Mean of Pu242 5ppt L	7/3/2013 12:51:49 P	(P)0.952	(P)4.8510
	SD of Pu242 5ppt LLS		(P)n/a	(P)0.1733
	%RSD of Pu242 5ppt L		(P)n/a	(P)3.5720
1	rinse 10% HNO3	7/3/2013 12:55:52 P	(P)35.998	(P)30.0300
2	rinse 10% HNO3	7/3/2013 12:56:00 P	(P)39.698	(P)36.7800
3	rinse 10% HNO3	7/3/2013 12:56:07 P	(P)40.945	(P)30.2100
	Mean of rinse 10% HN	7/3/2013 12:55:52 P	(P)35.998	(P)32.3400
	SD of rinse 10% HNO		(P)n/a	(P)3.8460
	%RSD of rinse 10% H		(P)n/a	(P)11.8900
1	CCB	7/3/2013 12:59:40 P	(P)0.999	(P)0.0151
2	CCB	7/3/2013 12:59:47 P	(P)0.997	(P)0.0526
3	CCB	7/3/2013 12:59:55 P	(P)0.990	(P)0.0439
4	CCB	7/3/2013 1:00:03 P	(P)0.989	(P)0.0107
5	CCB	7/3/2013 1:00:10 P	(P)0.991	(P)0.0191
	Mean of CCB	7/3/2013 12:59:40 P	(P)0.999	(P)0.0283
	SD of CCB		(P)n/a	(P)0.0187
	%RSD of CCB		(P)n/a	(P)66.2600
1	CCB	7/3/2013 1:03:44 P	(P)1.008	(P)0.0068
2	CCB	7/3/2013 1:03:51 P	(P)1.015	(P)0.0281
3	CCB	7/3/2013 1:03:59 P	(P)1.003	(P)0.0151
4	CCB	7/3/2013 1:04:06 P	(P)1.006	(P)0.0067
5	CCB	7/3/2013 1:04:14 P	(P)1.009	(P)0.0449
	Mean of CCB	7/3/2013 1:03:44 P	(P)1.008	(P)0.0203
	SD of CCB		(P)n/a	(P)0.0163

Excluded In Calib | Excluded In Results | Multi Element | Semi Quant | Internal Standard | Standard Addition

Dilution Corrected Concentration Per Analyte

S-Calibration Has Edited Standard
F-Interference Correction Failed
E-Calibration Edited
T-Tripped
I-Invalid Calibration
P-Pulse Counting
V-Valley Integration Failed
M-Result Over Max

Run	Label	TimeStamp	193Ir	242Pu
			ppb	ppt
	%RSD of CCB		(P)n/a	(P)80.0700

10:42:06 7/8/13
Pu130703.vge

Excluded In Calib | Excluded In Results | Multi Element | Semi Quant | Internal Standard | Standard Addition

Uncorrected ICPS Per Mass

S-Calibration Has Edited Standard
F-Interference Correction Failed
E-Calibration Edited
T-Tripped
I-Invalid Calibration
P-Pulse Counting
V-Valley Integration Failed
M-Result Over Max

Run	Label	TimeStamp	115	193Ir	242Pu
1	Cal Blank	7/3/2013 11:36:10 A	(P)42.000	(P)130070.46	(P)0.000
2	Cal Blank	7/3/2013 11:36:17 A	(P)47.000	(P)128661.79	0.000
3	Cal Blank	7/3/2013 11:36:25 A	(P)56.000	(P)127899.99	0.000
4	Cal Blank	7/3/2013 11:36:32 A	(P)56.000	(P)125616.87	1.000
5	Cal Blank	7/3/2013 11:36:40 A	(P)47.000	(P)126966.72	1.000
	Mean of Cal Blank	7/3/2013 11:36:10 A	(P)49.600	(P)127843.17	0.400
	SD of Cal Blank		(P)6.189	(P)1685.138	0.548
	%RSD of Cal Blank		(P)12.477	(P)1.318	136.931
1	Pu242 200ppt Cal	7/3/2013 11:40:13 A	(P)87.000	(P)129469.03	46889.827
2	Pu242 200ppt Cal	7/3/2013 11:40:20 A	(P)69.000	(P)129446.83	48165.059
3	Pu242 200ppt Cal	7/3/2013 11:40:28 A	(P)85.000	(PM)129795.9	48488.149
4	Pu242 200ppt Cal	7/3/2013 11:40:35 A	(P)80.000	(PM)131897.0	49779.579
5	Pu242 200ppt Cal	7/3/2013 11:40:43 A	(P)99.000	(PM)129540.6	49302.931
	Mean of Pu242 200ppt	7/3/2013 11:40:13 A	(P)84.000	(PM)130029.9	48525.109
	SD of Pu242 200ppt C		(P)10.909	(PM)1052.973	1116.227
	%RSD of Pu242 200		(P)12.987	(PM)0.810	2.300
1	Pu242 100ppt ICV	7/3/2013 11:44:16 A	(P)66.000	(P)127225.01	23161.761
2	Pu242 100ppt ICV	7/3/2013 11:44:23 A	(P)51.000	(P)125263.79	23573.434
3	Pu242 100ppt ICV	7/3/2013 11:44:31 A	(P)57.000	(P)126302.88	24186.457
4	Pu242 100ppt ICV	7/3/2013 11:44:38 A	(P)59.000	(P)126786.13	24462.927
5	Pu242 100ppt ICV	7/3/2013 11:44:46 A	(P)58.000	(P)126471.36	24831.562
	Mean of Pu242 100ppt	7/3/2013 11:44:16 A	(P)58.200	(P)126409.83	24043.228
	SD of Pu242 100ppt I		(P)5.357	(P)730.539	673.763
	%RSD of Pu242 100		(P)9.205	(P)0.578	2.802
1	rinse 10% HNO3	7/3/2013 11:48:19 A	(P)51.000	(P)5797.176	1487.077
2	rinse 10% HNO3	7/3/2013 11:48:27 A	(P)38.000	(P)5679.129	1336.063
3	rinse 10% HNO3	7/3/2013 11:48:34 A	(P)41.000	(P)5272.973	1174.048
4	rinse 10% HNO3	7/3/2013 11:48:42 A	(P)31.000	(P)4895.839	1100.042
5	rinse 10% HNO3	7/3/2013 11:48:49 A	(P)42.000	(P)4644.755	957.032
	Mean of rinse 10% HN	7/3/2013 11:48:19 A	(P)40.600	(P)5257.974	1210.853
	SD of rinse 10% HNO		(P)7.232	(P)493.841	206.177
	%RSD of rinse 10% H		(P)17.813	(P)9.392	17.027
1	Pu242 5ppt LLS	7/3/2013 11:52:22 A	(P)28.000	(P)130525.58	1128.045
2	Pu242 5ppt LLS	7/3/2013 11:52:30 A	(P)25.000	(P)131568.08	1113.043
3	Pu242 5ppt LLS	7/3/2013 11:52:37 A	(P)33.000	(P)130927.23	1082.041
4	Pu242 5ppt LLS	7/3/2013 11:52:45 A	(P)36.000	(P)132608.63	1139.045
5	Pu242 5ppt LLS	7/3/2013 11:52:52 A	(P)26.000	(P)131480.28	1113.043
	Mean of Pu242 5ppt L	7/3/2013 11:52:22 A	(P)29.600	(P)131421.96	1115.044
	SD of Pu242 5ppt LLS		(P)4.722	(P)787.591	21.461
	%RSD of Pu242 5ppt L		(P)15.954	(P)0.599	1.925
1	rinse 10% HNO3	7/3/2013 11:56:25 A	(P)44.000	(P)3827.513	304.003
2	rinse 10% HNO3	7/3/2013 11:56:33 A	(P)32.000	(P)3717.484	319.004
3	rinse 10% HNO3	7/3/2013 11:56:41 A	(P)23.000	(P)3459.419	344.004
	Mean of rinse 10% HN	7/3/2013 11:56:25 A	(P)33.000	(P)3668.138	322.337

10:42:07 7/8/13
Pu130703.vge

Excluded In Calib | Excluded In Results | Multi Element | Semi Quant | Internal Standard | Standard Addition

Uncorrected ICPS Per Mass

S-Calibration Has Edited Standard
F-Interference Correction Failed
E-Calibration Edited
T-Tripped
I-Invalid Calibration
P-Pulse Counting
V-Valley Integration Failed
M-Result Over Max

Run	Label	TimeStamp	115	193Ir	242Pu
	SD of rinse 10% HNO		(P)10.536	(P)188.943	20.208
	%RSD of rinse 10% H		(P)31.926	(P)5.151	6.269
1	ICB	7/3/2013 12:00:14 P	(P)41.000	(P)127648.76	12.000
2	ICB	7/3/2013 12:00:22 P	(P)25.000	(P)127135.21	17.000
3	ICB	7/3/2013 12:00:29 P	(P)27.000	(P)127217.94	9.000
4	ICB	7/3/2013 12:00:37 P	(P)37.000	(P)128115.91	13.000
5	ICB	7/3/2013 12:00:44 P	(P)38.000	(P)126197.96	14.000
	Mean of ICB	7/3/2013 12:00:14 P	(P)33.600	(P)127263.16	13.000
	SD of ICB		(P)7.127	(P)712.207	2.915
	%RSD of ICB		(P)21.213	(P)0.560	22.427
1	ICB	7/3/2013 12:04:18 P	(P)35.000	(P)125077.16	14.000
2	ICB	7/3/2013 12:04:25 P	(P)33.000	(P)124450.73	8.000
3	ICB	7/3/2013 12:04:33 P	(P)40.000	(P)126276.65	9.000
4	ICB	7/3/2013 12:04:41 P	(P)29.000	(P)126238.31	6.000
5	ICB	7/3/2013 12:04:48 P	(P)30.000	(P)126959.66	7.000
	Mean of ICB	7/3/2013 12:04:18 P	(P)33.400	(P)125800.50	8.800
	SD of ICB		(P)4.393	(P)1013.305	3.114
	%RSD of ICB		(P)13.153	(P)0.805	35.392
1	ICS ATL 2	7/3/2013 12:08:22 P	(P)255.002	(P)129691.03	15.000
2	ICS ATL 2	7/3/2013 12:08:30 P	(P)284.003	(P)129221.81	17.000
3	ICS ATL 2	7/3/2013 12:08:37 P	(P)283.003	(P)128304.60	14.000
4	ICS ATL 2	7/3/2013 12:08:45 P	(P)270.003	(P)128997.80	21.000
5	ICS ATL 2	7/3/2013 12:08:52 P	(P)270.003	(P)130720.35	19.000
	Mean of ICS ATL 2	7/3/2013 12:08:22 P	(P)272.403	(P)129387.12	17.200
	SD of ICS ATL 2		(P)11.845	(P)897.304	2.864
	%RSD of ICS ATL 2		(P)4.348	(P)0.694	16.649
1	Prep Blank	7/3/2013 12:12:47 P	(P)42.000	(P)119491.66	9.000
2	Prep Blank	7/3/2013 12:12:54 P	(P)42.000	(P)120779.42	10.000
3	Prep Blank	7/3/2013 12:13:02 P	(P)43.000	(P)121473.26	11.000
4	Prep Blank	7/3/2013 12:13:09 P	(P)56.000	(P)121538.82	17.000
5	Prep Blank	7/3/2013 12:13:17 P	(P)56.000	(P)121713.30	6.000
	Mean of Prep Blank	7/3/2013 12:12:28 P	(P)47.800	(P)120999.29	10.600
	SD of Prep Blank		(P)7.497	(P)914.719	4.037
	%RSD of Prep Blank		(P)15.683	(P)0.756	38.088
1	S13T004252_L	7/3/2013 12:17:11 P	(P)43.000	(P)128286.43	5.000
2	S13T004252_L	7/3/2013 12:17:18 P	(P)66.000	(P)127927.24	3.000
3	S13T004252_L	7/3/2013 12:17:26 P	(P)49.000	(P)128287.44	7.000
4	S13T004252_L	7/3/2013 12:17:34 P	(P)49.000	(P)128572.99	11.000
5	S13T004252_L	7/3/2013 12:17:41 P	(P)47.000	(P)130310.63	8.000
	Mean of S13T004252_	7/3/2013 12:16:52 P	(P)50.800	(P)128676.95	6.800
	SD of S13T004252_L		(P)8.843	(P)941.543	3.033
	%RSD of S13T004252		(P)17.408	(P)0.732	44.605
1	S13T004252	7/3/2013 12:21:36 P	(P)114.000	(P)121948.29	6.000

10:42:07 7/8/13
Pu130703.vge

Excluded In Calib | Excluded In Results | Multi Element | Semi Quant | Internal Standard | Standard Addition

Uncorrected ICPS Per Mass

S-Calibration Has Edited Standard
F-Interference Correction Failed
E-Calibration Edited
T-Tripped
I-Invalid Calibration
P-Pulse Counting
V-Valley Integration Failed
M-Result Over Max

Run	Label	TimeStamp	115	193Ir	242Pu
2	S13T004252	7/3/2013 12:21:44 P	(P)103.000	(P)122394.07	14.000
3	S13T004252	7/3/2013 12:21:51 P	(P)93.000	(P)121903.91	11.000
4	S13T004252	7/3/2013 12:21:59 P	(P)88.000	(P)123361.34	17.000
5	S13T004252	7/3/2013 12:22:06 P	(P)115.000	(P)122482.83	10.000
	Mean of S13T004252	7/3/2013 12:21:17 P	(P)102.600	(P)122418.09	11.600
	SD of S13T004252		(P)12.137	(P)587.279	4.159
	%RSD of S13T00425		(P)11.829	(P)0.480	35.856
1	S13T004252_D	7/3/2013 12:26:00 P	(P)92.000	(P)122737.00	6.000
2	S13T004252_D	7/3/2013 12:26:08 P	(P)108.000	(P)122424.33	9.000
3	S13T004252_D	7/3/2013 12:26:16 P	(P)98.000	(P)121580.17	8.000
4	S13T004252_D	7/3/2013 12:26:23 P	(P)101.000	(P)123520.71	14.000
5	S13T004252_D	7/3/2013 12:26:31 P	(P)95.000	(P)122969.99	12.000
	Mean of S13T004252_	7/3/2013 12:25:42 P	(P)98.800	(P)122646.44	9.800
	SD of S13T004252_D		(P)6.140	(P)718.244	3.194
	%RSD of S13T004252		(P)6.215	(P)0.586	32.589
1	S13T004280	7/3/2013 12:30:26 P	(P)94.000	(P)124431.56	11.000
2	S13T004280	7/3/2013 12:30:33 P	(P)106.000	(P)125118.52	12.000
3	S13T004280	7/3/2013 12:30:41 P	(P)100.000	(P)124265.12	6.000
4	S13T004280	7/3/2013 12:30:48 P	(P)81.000	(P)126241.34	13.000
5	S13T004280	7/3/2013 12:30:56 P	(P)112.000	(P)124996.46	14.000
	Mean of S13T004280	7/3/2013 12:30:07 P	(P)98.600	(P)125010.60	11.200
	SD of S13T004280		(P)11.908	(P)777.429	3.114
	%RSD of S13T00428		(P)12.077	(P)0.622	27.808
1	S13T004307	7/3/2013 12:34:51 P	(P)88.000	(P)125181.07	7.000
2	S13T004307	7/3/2013 12:34:59 P	(P)110.000	(P)124629.27	8.000
3	S13T004307	7/3/2013 12:35:06 P	(P)78.000	(P)123847.52	8.000
4	S13T004307	7/3/2013 12:35:14 P	(P)102.000	(P)125452.43	9.000
5	S13T004307	7/3/2013 12:35:21 P	(P)96.000	(P)124970.23	11.000
	Mean of S13T004307	7/3/2013 12:34:32 P	(P)94.800	(P)124816.11	8.600
	SD of S13T004307		(P)12.377	(P)619.461	1.517
	%RSD of S13T00430		(P)13.056	(P)0.496	17.635
1	S13T004252_A	7/3/2013 12:39:17 P	(P)123.001	(P)121112.22	27514.471
2	S13T004252_A	7/3/2013 12:39:24 P	(P)118.000	(P)121448.05	27170.814
3	S13T004252_A	7/3/2013 12:39:32 P	(P)82.000	(P)121775.82	27100.681
4	S13T004252_A	7/3/2013 12:39:40 P	(P)89.000	(P)121032.55	27816.054
5	S13T004252_A	7/3/2013 12:39:47 P	(P)96.000	(P)120738.07	27992.398
	Mean of S13T004252_	7/3/2013 12:38:58 P	(P)101.600	(P)121221.34	27518.884
	SD of S13T004252_A		(P)18.036	(P)399.984	390.061
	%RSD of S13T004252		(P)17.752	(P)0.330	1.417
1	Pu242 100ppt CCV	7/3/2013 12:43:42 P	(P)64.000	(P)123493.48	24859.611
2	Pu242 100ppt CCV	7/3/2013 12:43:49 P	(P)64.000	(P)125664.28	25551.831
3	Pu242 100ppt CCV	7/3/2013 12:43:57 P	(P)42.000	(P)124488.05	25528.790
4	Pu242 100ppt CCV	7/3/2013 12:44:05 P	(P)57.000	(P)126153.57	26230.058
5	Pu242 100ppt CCV	7/3/2013 12:44:12 P	(P)56.000	(P)126673.13	26380.335

10:42:07 7/8/13
Pu130703.vge

Excluded In Calib | Excluded In Results | Multi Element | Semi Quant | Internal Standard | Standard Addition

Uncorrected ICPS Per Mass

S-Calibration Has Edited Standard
F-Interference Correction Failed
E-Calibration Edited
T-Tripped
I-Invalid Calibration
P-Pulse Counting
V-Valley Integration Failed
M-Result Over Max

Run	Label	TimeStamp	115	193Ir	242Pu
	Mean of Pu242 100ppt	7/3/2013 12:43:23 P	(P)56.600	(P)125294.50	25710.125
	SD of Pu242 100ppt C		(P)8.989	(P)1291.261	612.541
	%RSD of Pu242 100		(P)15.881	(P)1.031	2.382
1	rinse 10% HNO3	7/3/2013 12:47:45 P	(P)40.000	(P)5605.099	900.028
2	rinse 10% HNO3	7/3/2013 12:47:53 P	(P)39.000	(P)4976.867	764.020
3	rinse 10% HNO3	7/3/2013 12:48:00 P	(P)34.000	(P)4891.837	637.014
4	rinse 10% HNO3	7/3/2013 12:48:08 P	(P)40.000	(P)4447.692	558.011
5	rinse 10% HNO3	7/3/2013 12:48:16 P	(P)33.000	(P)4228.626	530.010
	Mean of rinse 10% HN	7/3/2013 12:47:45 P	(P)37.200	(P)4830.024	677.817
	SD of rinse 10% HNO		(P)3.421	(P)532.443	153.846
	%RSD of rinse 10% H		(P)9.195	(P)11.024	22.697
1	Pu242 5ppt LLS	7/3/2013 12:51:49 P	(P)23.000	(P)134275.09	1146.046
2	Pu242 5ppt LLS	7/3/2013 12:51:56 P	(P)28.000	(P)133222.30	1196.050
3	Pu242 5ppt LLS	7/3/2013 12:52:04 P	(P)31.000	(P)133907.67	1240.054
4	Pu242 5ppt LLS	7/3/2013 12:52:12 P	(P)23.000	(P)132192.81	1208.051
5	Pu242 5ppt LLS	7/3/2013 12:52:19 P	(P)21.000	(P)132066.65	1236.054
	Mean of Pu242 5ppt L	7/3/2013 12:51:49 P	(P)25.200	(P)133132.90	1205.251
	SD of Pu242 5ppt LLS		(P)4.147	(P)991.656	37.940
	%RSD of Pu242 5ppt L		(P)16.458	(P)0.745	3.148
1	rinse 10% HNO3	7/3/2013 12:55:52 P	(P)44.000	(P)3551.441	199.001
2	rinse 10% HNO3	7/3/2013 12:56:00 P	(P)24.000	(P)3220.363	221.002
3	rinse 10% HNO3	7/3/2013 12:56:07 P	(P)39.000	(P)3122.341	176.001
	Mean of rinse 10% HN	7/3/2013 12:55:52 P	(P)35.667	(P)3298.049	198.668
	SD of rinse 10% HNO		(P)10.408	(P)224.851	22.502
	%RSD of rinse 10% H		(P)29.182	(P)6.818	11.327
1	CCB	7/3/2013 12:59:40 P	(P)44.000	(P)127983.74	4.000
2	CCB	7/3/2013 12:59:47 P	(P)29.000	(P)128288.45	13.000
3	CCB	7/3/2013 12:59:55 P	(P)45.000	(P)129173.37	11.000
4	CCB	7/3/2013 1:00:03 P	(P)39.000	(P)129317.67	3.000
5	CCB	7/3/2013 1:00:10 P	(P)46.000	(P)129017.98	5.000
	Mean of CCB	7/3/2013 12:59:40 P	(P)40.600	(P)128756.24	7.200
	SD of CCB		(P)7.021	(P)585.938	4.494
	%RSD of CCB		(P)17.294	(P)0.455	62.423
1	CCB	7/3/2013 1:03:44 P	(P)27.000	(P)126848.68	2.000
2	CCB	7/3/2013 1:03:51 P	(P)27.000	(P)125977.02	7.000
3	CCB	7/3/2013 1:03:59 P	(P)31.000	(P)127481.28	4.000
4	CCB	7/3/2013 1:04:06 P	(P)25.000	(P)127130.17	2.000
5	CCB	7/3/2013 1:04:14 P	(P)28.000	(P)126649.93	11.000
	Mean of CCB	7/3/2013 1:03:44 P	(P)27.600	(P)126817.41	5.200
	SD of CCB		(P)2.191	(P)564.318	3.834
	%RSD of CCB		(P)7.938	(P)0.445	73.732

15:56:41 6/30/13
Act130628.vge

Excluded In Calib | Excluded In Results | Multi Element | Internal Standard | Standard Addition

Uncorrected ICPS Per Mass

S-Calibration Has Edited Standard
F-Interference Correction Failed
E-Calibration Edited
T-Tripped
I-Invalid Calibration
P-Pulse Counting
V-Valley Integration Failed
M-Result Over Max

Run	Label	TimeStamp	115	193Ir	239Pu	240Pu	241Am	242Pu
1	Pu242 5ppt LLS	6/28/2013 11:00:26 A	(P)94.000	(P)114774.21	(P)4.000	(P)0.000	(P)1.000	(P)926.030
2	Pu242 5ppt LLS	6/28/2013 11:00:44 A	(P)78.000	(P)114297.41	(P)8.000	(P)2.000	(P)0.000	(P)969.033
3	Pu242 5ppt LLS	6/28/2013 11:01:01 A	(P)93.000	(P)115053.45	(P)2.000	(P)1.000	(P)0.000	(P)964.033
4	Pu242 5ppt LLS	6/28/2013 11:01:19 A	(P)122.001	(P)114195.61	(P)4.000	(P)2.000	(P)0.000	(P)1094.042
5	Pu242 5ppt LLS	6/28/2013 11:01:37 A	(P)99.000	(P)115501.04	(P)6.000	(P)0.000	(P)2.000	(P)1077.041
	Mean of Pu242 5ppt L	6/28/2013 11:00:26 A	(P)97.200	(P)114764.34	(P)4.800	(P)1.000	(P)0.600	(P)1006.036
	SD of Pu242 5ppt LLS		(P)15.928	(P)540.343	(P)2.280	(P)1.000	(P)0.894	(P)74.701
	%RSD of Pu242 5ppt L		(P)16.387	(P)0.471	(P)47.507	(P)100.000	(P)149.071	(P)7.425
1	ICB	6/28/2013 11:05:22 A	(P)115.000	(P)114718.77	(P)2.000	(P)4.000	(P)1.000	(P)49.000
2	ICB	6/28/2013 11:05:39 A	(P)107.000	(P)115090.75	(P)4.000	(P)1.000	(P)0.000	(P)52.000
3	ICB	6/28/2013 11:05:57 A	(P)81.000	(P)115132.08	(P)4.000	(P)2.000	(P)1.000	(P)64.000
4	ICB	6/28/2013 11:06:15 A	(P)85.000	(P)116077.68	(P)6.000	(P)1.000	(P)0.000	(P)56.000
5	ICB	6/28/2013 11:06:32 A	(P)79.000	(P)116022.24	(P)5.000	(P)2.000	(P)1.000	(P)50.000
	Mean of ICB	6/28/2013 11:05:22 A	(P)93.400	(P)115408.30	(P)4.200	(P)2.000	(P)0.600	(P)54.200
	SD of ICB		(P)16.456	(P)607.778	(P)1.483	(P)1.225	(P)0.548	(P)6.099
	%RSD of ICB		(P)17.619	(P)0.527	(P)35.315	(P)61.237	(P)91.287	(P)11.253
1	rinse	6/28/2013 11:10:17 A	(P)166.001	(P)7059.744	(P)48.000	(P)5.000	(P)1.000	(P)542.010
2	rinse	6/28/2013 11:10:35 A	(P)156.001	(P)5918.226	(P)55.000	(P)6.000	(P)1.000	(P)435.007
3	rinse	6/28/2013 11:10:52 A	(P)157.001	(P)5103.912	(P)44.000	(P)5.000	(P)1.000	(P)431.007
	Mean of rinse	6/28/2013 11:10:17 A	(P)159.668	(P)6027.294	(P)49.000	(P)5.333	(P)1.000	(P)469.341
	SD of rinse		(P)5.508	(P)982.467	(P)5.568	(P)0.577	(P)0.000	(P)62.965
	%RSD of rinse		(P)3.449	(P)16.300	(P)11.363	(P)10.825	(P)0.000	(P)13.416
1	ICB	6/28/2013 11:14:36 A	(P)87.000	(P)115721.81	(P)4.000	(P)1.000	(P)1.000	(P)17.000
2	ICB	6/28/2013 11:14:54 A	(P)106.000	(P)114536.32	(P)3.000	(P)1.000	(P)0.000	(P)18.000
3	ICB	6/28/2013 11:15:12 A	(P)90.000	(P)115985.94	(P)2.000	(P)4.000	(P)1.000	(P)24.000
4	ICB	6/28/2013 11:15:29 A	(P)75.000	(P)117325.82	(P)4.000	(P)0.000	(P)0.000	(P)16.000
5	ICB	6/28/2013 11:15:47 A	(P)79.000	(P)116495.06	(P)6.000	(P)4.000	(P)0.000	(P)17.000
	Mean of ICB	6/28/2013 11:14:36 A	(P)87.400	(P)116012.99	(P)3.800	(P)2.000	(P)0.400	(P)18.400
	SD of ICB		(P)12.013	(P)1027.374	(P)1.483	(P)1.871	(P)0.548	(P)3.209
	%RSD of ICB		(P)13.744	(P)0.886	(P)39.033	(P)93.541	(P)136.931	(P)17.442
1	ICS ATL 2	6/28/2013 11:19:32 A	(P)264.002	(P)116088.77	(P)2.000	(P)0.000	(P)1.000	(P)32.000
2	ICS ATL 2	6/28/2013 11:19:50 A	(P)275.003	(P)117585.94	(P)4.000	(P)1.000	(P)3.000	(P)33.000
3	ICS ATL 2	6/28/2013 11:20:07 A	(P)296.003	(P)117643.41	(P)7.000	(P)0.000	(P)0.000	(P)29.000
4	ICS ATL 2	6/28/2013 11:20:25 A	(P)265.002	(P)118210.06	(P)6.000	(P)1.000	(P)0.000	(P)20.000
5	ICS ATL 2	6/28/2013 11:20:43 A	(P)277.003	(P)119236.54	(P)8.000	(P)0.000	(P)0.000	(P)24.000
	Mean of ICS ATL 2	6/28/2013 11:19:32 A	(P)275.403	(P)117752.95	(P)5.400	(P)0.400	(P)0.800	(P)27.600
	SD of ICS ATL 2		(P)12.896	(P)1142.297	(P)2.408	(P)0.548	(P)1.304	(P)5.505
	%RSD of ICS ATL 2		(P)4.683	(P)0.970	(P)44.599	(P)136.931	(P)162.980	(P)19.944
1	Pu239 response chec	6/28/2013 11:24:49 A	(P)199.001	(P)117746.25	(P)435362.34	(P)8891.736	(P)18.000	(P)35.000
2	Pu239 response chec	6/28/2013 11:25:06 A	(P)229.002	(P)117829.94	(P)438774.39	(P)8797.708	(P)32.000	(P)24.000
3	Pu239 response chec	6/28/2013 11:25:24 A	(P)197.001	(P)118417.77	(P)438367.17	(P)8756.683	(P)36.000	(P)40.000
4	Pu239 response chec	6/28/2013 11:25:42 A	(P)214.002	(P)118822.11	(P)440335.33	(P)8858.746	(P)21.000	(P)32.000
5	Pu239 response chec	6/28/2013 11:25:59 A	(P)212.002	(P)119255.70	(P)442755.43	(P)8984.825	(P)18.000	(P)24.000
	Mean of Pu239 respo	6/28/2013 11:24:28 A	(P)210.202	(P)118414.35	(P)439118.93	(P)8857.946	(P)25.000	(P)31.000
	SD of Pu239 response		(P)12.950	(P)644.599	(P)2715.675	(P)88.212	(P)8.426	(P)7.000
	%RSD of Pu239 res		(P)6.161	(P)0.544	(P)0.618	(P)0.996	(P)33.705	(P)22.581

16:13:14 6/30/13
Act130628.vge

Excluded In Calib | Excluded In Results | Peak Run Excluded | Multi Element | Semi Quant | Internal Standard | Standard Addition

Dilution Corrected Concentration Per Analyte

S-Calibration Has Edited Standard
F-Interference Correction Failed
E-Calibration Edited
T-Tripped
I-Invalid Calibration
P-Pulse Counting
V-Valley Integration Failed
M-Result Over Max

Run	Label	TimeStamp	193Ir ppb	242Pu ppt
3	rinse	6/28/2013 11:10:52 A	(P)23.046	(P)43.4400
	Mean of rinse	6/28/2013 11:10:17 A	(P)16.662	(P)40.2500
	SD of rinse		(P)n/a	(P)2.8900
	%RSD of rinse		(P)n/a	(P)7.1800
1	ICB	6/28/2013 11:14:36 A	(P)1.016	(P)0.0738
2	ICB	6/28/2013 11:14:54 A	(P)1.027	(P)0.0791
3	ICB	6/28/2013 11:15:12 A	(P)1.014	(P)0.1047
4	ICB	6/28/2013 11:15:29 A	(P)1.003	(P)0.0684
5	ICB	6/28/2013 11:15:47 A	(P)1.010	(P)0.0733
	Mean of ICB	6/28/2013 11:14:36 A	(P)1.016	(P)0.0799
	SD of ICB		(P)n/a	(P)0.0144
	%RSD of ICB		(P)n/a	(P)18.0200
1	ICS ATL 2	6/28/2013 11:19:32 A	(P)1.013	(P)0.1400
2	ICS ATL 2	6/28/2013 11:19:50 A	(P)1.000	(P)0.1426
3	ICS ATL 2	6/28/2013 11:20:07 A	(P)1.000	(P)0.1251
4	ICS ATL 2	6/28/2013 11:20:25 A	(P)0.995	(P)0.0853
5	ICS ATL 2	6/28/2013 11:20:43 A	(P)0.987	(P)0.1018
	Mean of ICS ATL 2	6/28/2013 11:19:32 A	(P)1.013	(P)0.1190
	SD of ICS ATL 2		(P)n/a	(P)0.0249
	%RSD of ICS ATL 2		(P)n/a	(P)20.8900
1	Pu239 response chec	6/28/2013 11:24:49 A	(P)0.999	(P)0.1512
2	Pu239 response chec	6/28/2013 11:25:06 A	(P)0.998	(P)0.1030
3	Pu239 response chec	6/28/2013 11:25:24 A	(P)0.993	(P)0.1720
4	Pu239 response chec	6/28/2013 11:25:42 A	(P)0.990	(P)0.1368
5	Pu239 response chec	6/28/2013 11:25:59 A	(P)0.986	(P)0.1018
	Mean of Pu239 respo	6/28/2013 11:24:28 A	(P)0.999	(P)0.1329
	SD of Pu239 response		(P)n/a	(P)0.0306
	%RSD of Pu239 res		(P)n/a	(P)23.0000
1	rinse	6/28/2013 11:29:44 A	(P)22.730	(P)18.4900
2	rinse	6/28/2013 11:30:02 A	(P)26.968	(P)17.2200
3	rinse	6/28/2013 11:30:20 A	(P)29.425	(P)15.5700

(ADDITIONAL CHECK OF PU242 STD.)

Pu239 RESPONSE CHECK:

Pu239 $\frac{439118.93 \text{ cps}}{2180 \text{ ppt}} = 201.4 \frac{\text{cps}}{\text{ppt}}$

Pu242 $\frac{457628.68 \text{ cps}}{2000 \text{ ppt}} = 228.8 \frac{\text{cps}}{\text{ppt}}$

$\frac{228.8 \frac{\text{cps}}{\text{ppt}}}{201.4 \frac{\text{cps}}{\text{ppt}}} * 100 = 113.6\%$

~~228.8 cps~~ KW 6/30/13

KW 6/30/13

ATL	ICP-MS DATA REVIEW CHECKLIST	○ IH ◉ NON IH

◉ LA-506-102 Rev G-1 (*) ○ LA-506-103 Rev _____ (*) ○ _____ Rev _____ (*)

Worklist/Project Information: 41812 / C109 CLO (Sn&Sb)

Analysis Date(s): 6/19/13

Instrument Id: PQ EXCELL Prep Batches Run: 41587

Review Items	Level 1 Yes	Level 1 No	Level 1 N/A	Level 2
A. Calibration				
1. Were the applicable instrument tune, mass calibration and stability check within acceptance criteria?	◉	○	○	☑
2. Was the instrument calibrated per SOP?	◉	○	○	☑
3. Were ICV/CCV analyzed at appropriate frequency and were recoveries within control limits of 90 - 110%? If not in control, was the CCV reanalyzed to show return to control?	◉	○	○	☑
4. Were ICB/CCB analyzed at appropriate frequency and were results < EQL (or, with client consent, <5% of lowest sample result)?	◉	○	○	☑
5. Was an LLS run at required frequency and were recoveries within control limits of 75 - 125% for IH or 70 - 130% for non-IH work?	◉	○	○	☑
B. Sample Results				
1. Were samples with concentrations above the linear range for any analyte diluted and reanalyzed?	○	○	◉	☑
2. Were sample analyses done within holding time?	◉	○	○	☑
C. Preparation/Matrix QC				
1. Was a method blank done per prep batch and were results < EQL or less than 5% of lowest sample result?	◉	○	○	☑
2. Was an LCS (and LCS dup, if required) done per prep batch and were recoveries within control limits of 80 - 120%, and % RPD <20%?	◉	○	○	☑
3. Was an MS run as required and was recovery within control limits of 75 - 125% for all analytes for which the spike level was at least 25% of the sample result?	○	◉	○	☑
4. Was an MSD or DUP run at required frequency and was the % RPD within control limits of <20% (or, with client consent, <30%) for all analytes > EQL?	◉	○	○	☑
5. Was a serial dilution done per analytical batch, if required, and was the % difference within control limits of <10% for all analytes > 100 times the DL?	◉	○	○	☑
6. Was a post digest spike analyzed if required and was the recovery within control limits of 80 - 120%?	◉	○	○	☑
D. Other				
1. Are internal standard responses acceptable? (Suggested Limits: 70 - 120% of the calibration blank)	◉	○	○	☑
2. Were the appropriate flags added to data?	◉	○	○	☑
3. Is current IDL/MDL/EQL data on file?	◉	○	○	☑
4. Were calculations checked for errors?	◉	○	○	☑
5. Were transcriptions and data upload checked for errors?	◉	○	○	☑
6. Were all client/project specific requirements met?	◉	○	○	☑
7. Was the date/time of analysis verified as correct?	◉	○	○	☑
8. Were ICS values below the detection limits?	○	◉	○	☑

Comments/Samples Affected (indicate review item letter and number):

See next page

(*) This form is not used by the subject procedure; rather, it is used to assist in verifying the data produced during the performance of the procedure.

A-6005-346 (REV 2)

ATL	ICP-MS DATA REVIEW CHECKLIST (continued)	○ IH ◉ NON IH

◉ LA-506-102 Rev G-1 (*) ○ LA-506-103 Rev _____ (*) ○ _____ Rev _____ (*)

Worklist/Project Information: 41812 / C109 CLO (Sn&Sb)

Analysis Date(s): 6/19/13

Instrument Id: PQ EXCELL Prep Batches Run: 41587

C.3. MS for Tin117 had 142% recovery; spike was diluted to a level equal to the EQL. However, the sample result was < DL, demonstrating that the possible high bias did not affect the reported sample result. Sample results were flagged with a "b" for Sn117.

C.4. Sb %RPD was > 20% but sample results were < EQL so acceptance criteria does not apply.

D.8. ICS @ ~3X DL for Sb; ICS analytes in sample were diluted to < concentration in the ICS standards so data results are not affected.

C.5. SERDIL FOR Sb WAS → < DL BUT SAMPLE WAS < 100X DL SO ACCEPTANCE CRITERIA DOES NOT APPLY. KW 6/28/13 KW 6/28/13

"I" flags were added to sample results for ^{126}Sn to denote quantitation by indirect calibration method. JTO 7/24/13

1st Level Data Reviewer: K A Kelton (Signature) Date: 06/27/13

2nd Level Data Reviewer: J. S. Lachut (Signature) Date: 6/28/13

PC: Julie Osborn 7/15/13

(*) This form is not used by the subject procedure; rather, it is used to assist in verifying the data produced during the performance of the procedure.

A-6005-346 (REV 2)

LABCORE Completed Batch Report for Batch# 00041812

Analyst: Getz, Andrew **Book#:** SEBBENCHSHEET

Instrument: ICP/MS PQ-EXCELL

Method: MS ANTIMONY, LA-506-102 Rev/Mod G-1

Specification: C109 CLO

Prep Batch: 00041587

Batch Comment: NONE

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
Sample Sequence 1																	
1	ICV	S1306190057		0 0			Antimony	LIQUID	.001	1.0360E-03			2.00E-06	ug/mL	103.6	% Recovery	
1	ICV	S1306190057		0 0			Tin-117	LIQUID	.001001	1.0570E-03			1.00E-05	ug/mL	105.59	% Recovery	
Sample Sequence 2																	
2	LLS	S1306190059		0 0			Antimony	LIQUID	.00002	2.2370E-05			2.00E-06	ug/mL	111.85	% Recovery	
2	LLS	S1306190059		0 0			Tin-117	LIQUID	.00002	2.1420E-05			1.00E-05	ug/mL	107.1	% Recovery	
Sample Sequence 3																	
4	ICB	S1306190058		0 1			Antimony	LIQUID		<2.0000E-06			2.00E-06	ug/mL			
4	ICB	S1306190058		0 1			Tin-117	LIQUID		<1.0000E-05			1.00E-05	ug/mL			
4	ICB	S1306190058		0 1			Tin-126	LIQUID		<2.0000E-07			2.00E-07	ug/mL			
Sample Sequence 5																	
5	BLNK-PREP	S1306100027		0 0	A		Antimony	LIQUID		<2.0000E-04			2.00E-04	ug/mL			
5	BLNK-PREP	S1306100027		0 0	A		Tin-117	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
5	BLNK-PREP	S1306100027		0 0	A		Tin-126	LIQUID		<2.0000E-05			2.00E-05	ug/mL			
Sample Sequence 6																	
6	STD-PREP	S1306100028		0 0	A		Antimony	LIQUID	.01	9.9230E-03			2.00E-05	ug/mL	99.23	% Recovery	
6	STD-PREP	S1306100028		0 0	A		Tin-117	LIQUID	.00076877	8.6180E-04			1.00E-04	ug/mL	112.1	% Recovery	
Sample Sequence 7																	
7	SERDIL	S1306190060	S13T004249	0 0			Antimony	SOLID		<2.0392E-01			0.20392	ug/mL	N/A		
7	SERDIL	S1306190060	S13T004249	0 0			Tin-117	SOLID		<1.0196E+00			1.0196	ug/mL	N/A		
7	SERDIL	S1306190060	S13T004249	0 0			Tin-126	SOLID		<2.0392E-02			0.020392	ug/mL	N/A		
Sample Sequence 8																	
8	SAMPLE	S13T004249		0 2	A		Antimony	SOLID	N/A	2.7325E-01			0.040783	ug/g			J
8	SAMPLE	S13T004249		0 2	A		Tin-117	SOLID	N/A	<2.0392E-01			0.20392	ug/g			Ub
8	SAMPLE	S13T004249		0 2	A		Tin-126	SOLID	N/A	<4.0783E-03			4.08E-03	ug/g			UbI
Sample Sequence 9																	
9	DUP	S1306100029	S13T004249	0 0	A		Antimony	SOLID	2.7325E-01	1.6426E-01			0.041391	ug/g	49.822	% RPD	
9	DUP	S1306100029	S13T004249	0 0	A		Tin-117	SOLID	<2.0392E-01	<2.0695E-01			0.20695	ug/g			
9	DUP	S1306100029	S13T004249	0 0	A		Tin-126	SOLID	<4.0783E-03	<4.1391E-03			4.14E-03	ug/g			
Sample Sequence 10																	
10	SPK-PREDIG	S1306100030	S13T004249	0 0	A		Antimony	SOLID	2.042	2.3540E+00			0.040833	ug/g	101.9	% Recovery	

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

* = Rejected Analyte
N, A = Non-reported Analyte

7/15/2013 2:54:06PM
CompleteBatch Version 2.7.32
batchreports 2.7.32

LABCORE Completed Batch Report for Batch# 00041812

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
10	SPK-PREDIG	S1306100030	S13T004249	0 0	A		Tin-117	SOLID	.156982834	2.2336E-01			0.20416	ug/g	142.28	% Recovery	
Sample Sequence 11																	
11	SPK-POST	S1306190061	S13T004249	0 0			Antimony	SOLID	.1	1.0250E-01			2.00E-06	ug/mL	101.16	% Recovery	
11	SPK-POST	S1306190061	S13T004249	0 0			Tin-117	SOLID	.1	1.0310E-01			1.00E-05	ug/mL	103.1	% Recovery	
Sample Sequence 12																	
12	SAMPLE	S13T004277		0 2	A		Antimony	SOLID	N/A	4.8634E-01			0.040177	ug/g			
12	SAMPLE	S13T004277		0 2	A		Tin-117	SOLID	N/A	<2.0088E-01			0.20088	ug/g			Ub
12	SAMPLE	S13T004277		0 2	A		Tin-126	SOLID	N/A	<4.0177E-03			4.02E-03	ug/g			UbI
Sample Sequence 13																	
13	SAMPLE	S13T004304		0 2	A		Antimony	SOLID	N/A	4.1429E-01			0.040816	ug/g			
13	SAMPLE	S13T004304		0 2	A		Tin-117	SOLID	N/A	<2.0408E-01			0.20408	ug/g			Ub
13	SAMPLE	S13T004304		0 2	A		Tin-126	SOLID	N/A	<4.0816E-03			4.08E-03	ug/g			UbI
Sample Sequence 14																	
14	CCV	S1306190064		0 0			Antimony	LIQUID	.001	1.0030E-03			2.00E-06	ug/mL	100.3	% Recovery	
14	CCV	S1306190064		0 0			Tin-117	LIQUID	.001	1.0230E-03			1.00E-05	ug/mL	102.3	% Recovery	
Sample Sequence 15																	
15	LLS	S1306190066		0 0			Antimony	LIQUID	.00002	1.9880E-05			2.00E-06	ug/mL	99.4	% Recovery	
15	LLS	S1306190066		0 0			Tin-117	LIQUID	.00002	2.1160E-05			1.00E-05	ug/mL	105.8	% Recovery	
Sample Sequence 16																	
17	CCB	S1306190065		0 1			Antimony	LIQUID		<2.0000E-06			2.00E-06	ug/mL			
17	CCB	S1306190065		0 1			Tin-117	LIQUID		<1.0000E-05			1.00E-05	ug/mL			
17	CCB	S1306190065		0 1			Tin-126	LIQUID		<2.0000E-07			2.00E-07	ug/mL			

Comments Section:

Data Flagger Status:
Flagging Completed

Final Page for Batch# 00041812

[signature] 07/15/13
Reviewer Signature Date

PC: Julie Osborn 7/15/13

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041812

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Method	Customer Id	Specification
1	S1306190057	ICV			MS ANTIMONY		
2	S1306190059	LLS			MS ANTIMONY		
3	S1306190058	ICB			MS ANTIMONY		
4	S1306190058	ICB			MS ANTIMONY		
5	S1306100027	BLNK-PREP			MS ANTIMONY		
6	S1306100028	STD-PREP			MS ANTIMONY		
7	S1306190060	SERDIL	S13T004249		MS ANTIMONY		
8	S13T004249	SAMPLE		20130402	MS ANTIMONY	9C-13-Comp A	C109 CLO
9	S1306100029	DUP	S13T004249		MS ANTIMONY		
10	S1306100030	SPK-PREDIG	S13T004249		MS ANTIMONY		
11	S1306190061	SPK-POST	S13T004249		MS ANTIMONY		
12	S13T004277	SAMPLE		20130402	MS ANTIMONY	9C-13-Comp B	C109 CLO
13	S13T004304	SAMPLE		20130402	MS ANTIMONY	9C-13-Comp C	C109 CLO
14	S1306190064	CCV			MS ANTIMONY		
15	S1306190066	LLS			MS ANTIMONY		
16	S1306190065	CCB			MS ANTIMONY		
17	S1306190065	CCB			MS ANTIMONY		

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

* = Rejected Analyte
N, A = Non-reported Analyte

6/25/2013 8:11:15AM
IncompleteBatchShort Version 2.7.29
batchreports 2.7.32

LABCORE Data Entry Template for Batch# 00041812

Analyst: Getz, Andrew **Standard ID / Book#:** See Benchsheet
Instrument: ICP/MS PQ-EXCELL
Method: MS ANTIMONY, LA-506-102 Rev/Mod G-1
Prep Batch: 00041587
Batch Comment: N/A

CACN:3A.26

S	Type	Sample	R	A	Matrix	Group#	Project
1	ICV	S1306190057	0		LIQUID		
	Analytes Requested:	Antimony, Tin-117, Tin-126					
2	LLS	S1306190059	0		LIQUID		
	Analytes Requested:	Antimony, Tin-117, Tin-126					
3	ICB	S1306190058	0		LIQUID		
	Analytes Requested:	Antimony, Tin-117, Tin-126					
5	BLNK-PREP	S1306100027	0	A	LIQUID		
	Analytes Requested:	Antimony, Tin-117, Tin-126					
6	STD-PREP	S1306100028	0	A	LIQUID		
	Analytes Requested:	Antimony, Tin-117, Tin-126					
7	SERDIL	S1306190060	0		SOLID		
	Analytes Requested:	Antimony, Tin-117, Tin-126					
8	SAMPLE	S13T004249	2	A	SOLID	20130402	C109 CLO
	Analytes Requested:	Antimony, Tin-117, Tin-126					
9	DUP	S1306100029	0	A	SOLID		
	Analytes Requested:	Antimony					
10	SPK-PREDIG	S1306100030	0	A	SOLID		
	Analytes Requested:	Antimony, Tin-117, Tin-126					
11	SPK-POST	S1306190061	0		SOLID		
	Analytes Requested:	Antimony, Tin-117, Tin-126					
12	SAMPLE	S13T004277	2	A	SOLID	20130402	C109 CLO
	Analytes Requested:	Antimony, Tin-117, Tin-126					
13	SAMPLE	S13T004304	2	A	SOLID	20130402	C109 CLO
	Analytes Requested:	Antimony, Tin-117, Tin-126					
14	CCV	S1306190064	0		LIQUID		
	Analytes Requested:	Antimony, Tin-117, Tin-126					
15	LLS	S1306190066	0		LIQUID		
	Analytes Requested:	Antimony, Tin-117, Tin-126					
16	CCB	S1306190065	0		LIQUID		
	Analytes Requested:	Antimony, Tin-117, Tin-126					

Final Page for Batch# 00041812

A. W. 06/25/13
Analyst Signature **Date**

A. W. 06/25/13
Data Entry Signature **Date**

Data Entry Comments:

S = Batch Slot Number, R = Retest Number, A = Aliquot Code.

6/10/2013 3:21:50PM
IncompleteBatchShort Version 2.7.29
batchreports 2.7.32

LABCORE Data Entry Template for Batch# 00041587

Analyst: Hexum, Troy
Standard ID / Book#: See Bench Sheet
Instrument: LE-BAL-040
Method: ACID DIGEST, Sb, LA-505-163 Rev/Mod H-0-A
Prep Batch: N/A
Batch Comment:
ACID DIGEST C109 CLO
CACN:3A.26

S	Type	Sample	R	A	Matrix	Group#	Project
1	BLNK-PREP	S1306100027		A	LIQUID		
2	STD-PREP	S1306100028		A	LIQUID		
3	SAMPLE	S13T004249		A	SOLID	20130402	C109 CLO
4	DUP	S1306100029		A	SOLID		
5	SPK-PREDIG	S1306100030		A	SOLID		
6	SAMPLE	S13T004277		A	SOLID	20130402	C109 CLO
7	SAMPLE	S13T004304		A	SOLID	20130402	C109 CLO

Final Page for Batch# 00041587

Analyst Signature — Date: 6/10/13

Data Entry Signature — Date: 6/10/13

Data Entry Comments:

S = Batch Slot Number, R = Retest Number, A = Aliquot Code.

12:27:08 6/20/13
stab130619.vge

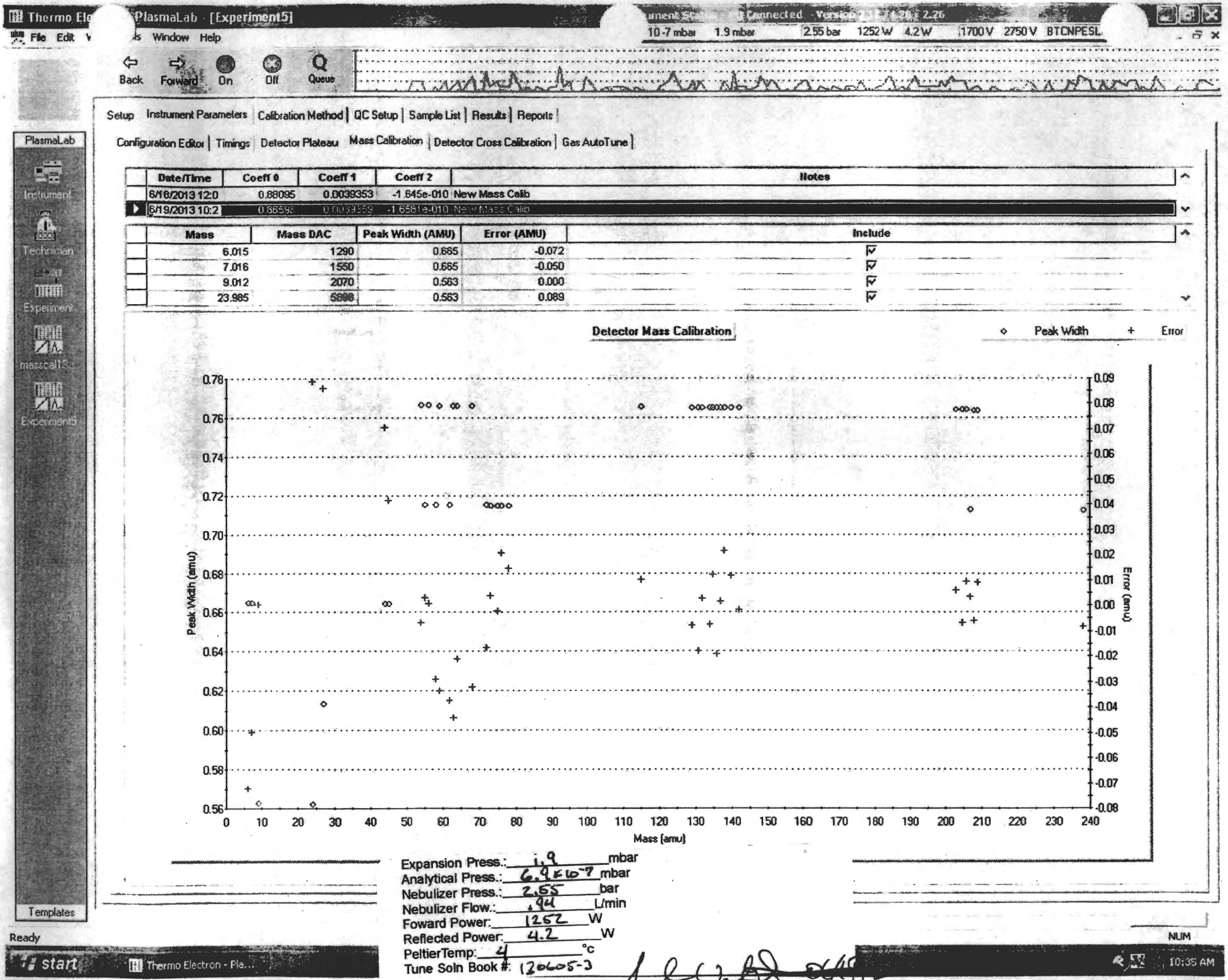
Multi Element | Internal Standard

Uncorrected ICPS Per Mass

S-Calibration Has Edited Standard
F-Interference Correction Failed
E-Calibration Edited
T-Tripped
I-Invalid Calibration
P-Pulse Counting
V-Valley Integration Failed
M-Result Over Max

Run	Label	TimeStamp	5Bkg	7Li	9Be	59Co	140Ce++	101Bkg
1	1ppb tune (non sopt) 1	6/19/2013 10:39:38 A	(P)1.750	(P)114450.89	(P)5222.204	(P)69578.529	(P)3465.170	(P)34.250
2	1ppb tune (non sopt) 1	6/19/2013 10:41:20 A	(P)1.750	(P)111500.94	(P)5200.196	(P)68156.700	(P)3374.399	(P)28.750
3	1ppb tune (non sopt) 1	6/19/2013 10:43:02 A	(P)1.500	(P)111364.64	(P)5278.975	(P)67967.803	(P)3316.385	(P)26.500
4	1ppb tune (non sopt) 1	6/19/2013 10:44:44 A	(P)0.500	(P)111666.98	(P)5231.958	(P)67215.757	(P)3369.147	(P)28.000
5	1ppb tune (non sopt) 1	6/19/2013 10:46:26 A	(P)2.000	(P)112707.10	(P)5386.265	(P)67412.431	(P)3290.629	(P)29.000
6	1ppb tune (non sopt) 1	6/19/2013 10:48:08 A	(P)3.000	(P)113349.41	(P)5359.755	(P)67963.030	(P)3387.402	(P)32.750
7	1ppb tune (non sopt) 1	6/19/2013 10:49:50 A	(P)2.000	(P)113847.85	(P)5305.985	(P)67678.434	(P)3321.636	(P)32.000
8	1ppb tune (non sopt) 1	6/19/2013 10:51:32 A	(P)1.500	(P)114910.55	(P)5328.994	(P)67446.089	(P)3356.144	(P)28.250
9	1ppb tune (non sopt) 1	6/19/2013 10:53:14 A	(P)2.500	(P)115487.93	(P)5276.974	(P)67406.654	(P)3291.379	(P)31.250
10	1ppb tune (non sopt) 1	6/19/2013 10:54:56 A	(P)1.750	(P)116321.15	(P)5255.717	(P)66862.355	(P)3365.897	(P)30.000
	Mean of 1ppb tune (n	6/19/2013 10:38:59 A	(P)1.825	(P)113560.74	(P)5284.702	(P)67768.778	(P)3353.819	(P)30.075
	SD of 1ppb tune (non s		(P)0.657	(P)1746.616	(P)60.667	(P)745.421	(P)52.351	(P)2.427
	%RSD of 1ppb tune (		(P)35.983	(P)1.538	(P)1.148	(P)1.100	(P)1.561	(P)8.069

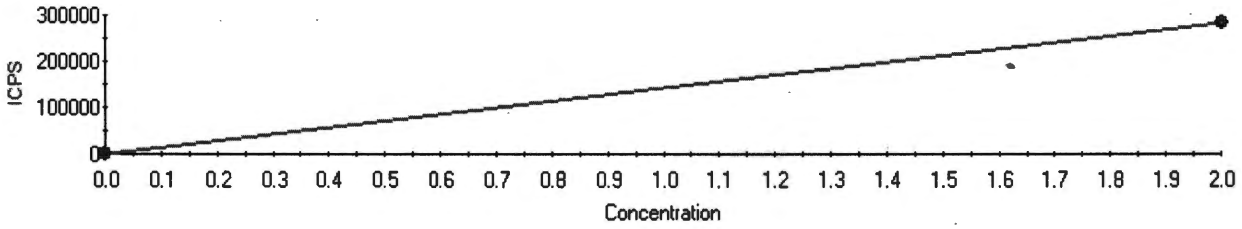
Run	Label	TimeStamp	115In	140Ce	156Ce O	209Bi	220Bkg	238U
1	1ppb tune (non sopt) 1	6/19/2013 10:39:38 A	(P)155748.92	(P)162200.11	(P)3757.244	(P)206219.76	(P)1.250	(P)269338.04
2	1ppb tune (non sopt) 1	6/19/2013 10:41:20 A	(P)154830.01	(P)160291.00	(P)3676.973	(P)203216.69	(P)0.250	(P)265332.37
3	1ppb tune (non sopt) 1	6/19/2013 10:43:02 A	(P)153680.19	(P)159252.48	(P)3504.430	(P)200488.04	(P)1.500	(P)262225.54
4	1ppb tune (non sopt) 1	6/19/2013 10:44:44 A	(P)152535.52	(P)157906.41	(P)3511.682	(P)198469.14	(P)1.250	(P)260153.93
5	1ppb tune (non sopt) 1	6/19/2013 10:46:26 A	(P)153125.28	(P)157989.82	(P)3550.941	(P)198708.43	(P)1.750	(P)260157.49
6	1ppb tune (non sopt) 1	6/19/2013 10:48:08 A	(P)152234.34	(P)157534.33	(P)3526.185	(P)198726.43	(P)2.000	(P)261235.14
7	1ppb tune (non sopt) 1	6/19/2013 10:49:50 A	(P)153458.33	(P)157898.07	(P)3476.173	(P)198938.09	(P)0.250	(P)262137.70
8	1ppb tune (non sopt) 1	6/19/2013 10:51:32 A	(P)152482.46	(P)157372.82	(P)3412.157	(P)198461.03	(P)1.250	(P)261063.04
9	1ppb tune (non sopt) 1	6/19/2013 10:53:14 A	(P)153239.50	(P)158041.39	(P)3346.892	(P)198847.85	(P)1.000	(P)260048.03
10	1ppb tune (non sopt) 1	6/19/2013 10:54:56 A	(P)152324.54	(P)156976.49	(P)3283.877	(P)197267.67	(P)0.500	(P)260748.37
	Mean of 1ppb tune (n	6/19/2013 10:38:59 A	(P)153365.91	(P)158546.29	(P)3504.656	(P)199934.31	(P)1.100	(P)262243.97
	SD of 1ppb tune (non s		(P)1146.901	(P)1603.908	(P)141.087	(P)2731.512	(P)0.603	(P)2945.217
	%RSD of 1ppb tune (		(P)0.748	(P)1.012	(P)4.026	(P)1.366	(P)54.839	(P)1.123



Expansion Press.: 1.9 mbar
Analytical Press.: 6.9E-07 mbar
Nebulizer Press.: 2.55 bar
Nebulizer Flow.: .94 L/min
Foward Power: 1252 W
Reflected Power: 4.2 W
PeltierTemp: 4 °c
Tune Soln Book #: 120605-3

12:19:47 6/20/13 Page 1 of 1
SnSb130619.vge

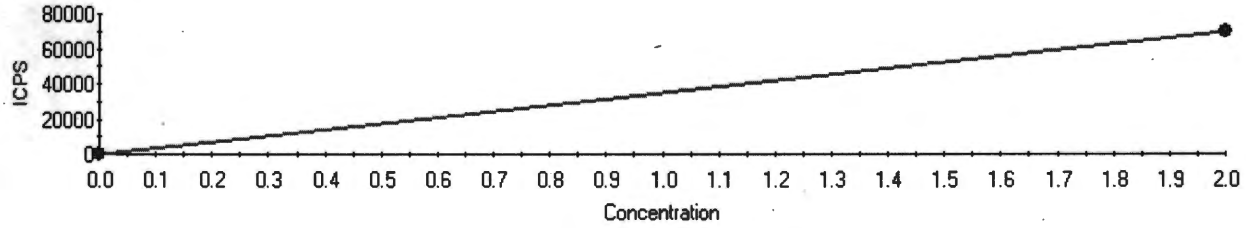
Fully Quant Calibration 117Sn FQ Block 1



Intercept CPS=725.473388 Intercept Conc=0.005136
Sensitivity=141241.952386 Correlation Coeff=1.000000

Label	Defined	Measured	Error	Mean CPS	%Error
Blank	0.00	0.00	0.00	725.47	
Sb/Sn117 2ppb CAL	2.00	2.00	0.00	283,209.38	0.00

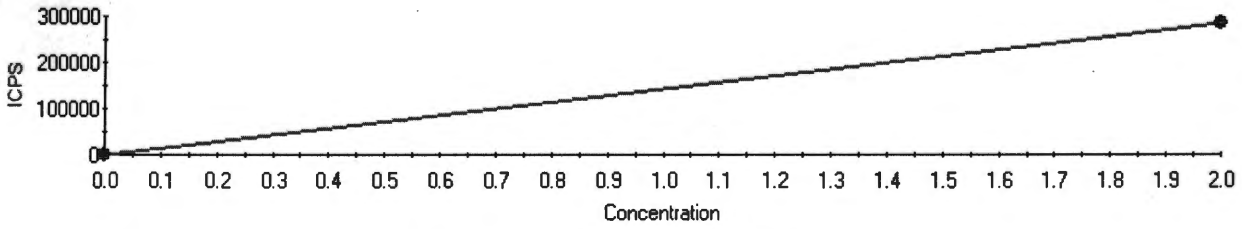
Fully Quant Calibration 121Sb FQ Block 1



Intercept CPS=219.595582 Intercept Conc=0.006275
Sensitivity=34995.826133 Correlation Coeff=1.000000

Label	Defined	Measured	Error	Mean CPS	%Error
Blank	0.00	0.00	0.00	219.60	
Sb/Sn117 2ppb CAL	2.00	2.00	0.00	70,211.25	0.00

Fully Quant Calibration 126Sn FQ Block 1



Intercept CPS=780.086679 Intercept Conc=0.005523
Sensitivity=141235.073513 Correlation Coeff=1.000000

Label	Defined	Measured	Error	Mean CPS	%Error
Blank	0.00	0.00	0.00	780.09	
Sb/Sn117 2ppb CAL	2.00	2.00	0.00	283,250.23	0.00

12:19:31 6/20/13
SnSb130619.vge

Fully Quantitative Concentrations

ID	Label	117Sn	121Sb	126Sn
		ppt	ppt	ppt
5	Sb/Sn117 2ppb CAL	2000	2000	2000

Calibration Technique

Use External Drift Correction - No

Calibrate By - Isotope

Symbol	Interference Correction	RSF	Calibration Method	Line Fit	Weighting	Forcing	Use for Semi-Quant	Max Error	Minimum Correlation
115In	No	0.99	None						
117Sn	Yes	0.96	Fully-Quantified	Linea	None	None	No	Not Used	Not Used
121Sb	No	0.39	Fully-Quantified	Linea	None	None	No	Not Used	Not Used
126Sn	Yes	0.96	Fully-Quantified	Linea	None	None	No	Not Used	Not Used

Instrument Setup - Sample Configuration

Sample	Configuration	Date
All Samples	Inorganic	10:19:56 6/19/13

Instrument Setup - Configurations

Configuration Name - Inorganic
Description - PQExcell CCT Sim Default
Date - 10:19:56 6/19/13
Maximum Uptake Time - 90
Maximum Washout Time - 90
S-Option Pump Running - No
Plasma Screen Forward - No
Makeup Gas On - No
Use CCT - No
Use Accessory Gas - No

Setting	Value
Extraction	-680.00
Lens1	7.00
Lens2	-38.00
Lens3	-130.00
Pole Bias	-1.00
Sampling Depth	380.00
Horizontal	-13.00
Vertical	67.00
Cool	13.00
Auxiliary	0.92
Nebuliser	0.94
Forward power	1,400.00
HT1 Voltage	1,900.00
HT2 Voltage	2,600.00
D1	-33.00
Focus	27.00

Survey Run Setup

Sweeps - 20

Dwell Time - 300

Channels Per Mass - 10

Acquisition Duration - 15 Secs

Main Run Setup

Main Run - Peak Jumping

Sweeps - 100

Dwell Time - 10,000

Channels Per Mass - 1

Acquisition Duration - 6.00

Channel Spacing - 0.02

Main Scan Regions

Symbol	Dwell Time	Symbol	Dwell Time	Symbol	Dwell Time
115In	30,000	117Sn	10,000	121Sb	10,000
126Sn	10,000				

ATL	ICP-MS BENCH SHEET - PQ EXCELL	○ IH ◉ Non IH

LA-506-102 Rev G-1 Instrument ID# PQ EXCELL

Client/Project: C109 CLO Sn/Sb

Batch #: ~~00041414~~ 06/24/13 41812 Analyst: Andrew Getz

Date/Time Start: 06/19/13 / 1143 Date/Time End: 06/19/13 / 1327

Instrument File #: SnSb130619.vge Standard Book # & page HNF-N-667 1 pg 124

Pump Tubing OK ☒ Chiller Water OK ☒ Wash Station OK ☒ 4 °C. Peltier Temp

(Pipette #); Pipette ID; Volume Range or Fixed Volume; Check box if pipette passes visual verification:

(1) 210897A (Range/Vol: 1.0-10.0mL) ☒ (4) 439095 (Range/Vol: 0.5-5.0mL) ☒

(2) 114655Z (Range/Vol: 0.01-0.1mL) ☒ (5) 1140299 (Range/Vol: 0.1-1.0mL) ☒

(3) 2230539 (Range/Vol: 0.01-0.1mL) ☒ (6) NA (Range/Vol: NA) ☐

Calibration Standards:

Blank - 0.03mL(120815-1) + 10.0mL(130613-1)

2ppb Sn117/Sb - 1.3mL(SL019464) + 0.1mL (SL019422) + 8.6mL(130613-1);0.2mL + 0.03mL (120815-1) + 9.8mL(130613-1)

Verification Standards:

ICB/CCB - 0.03mL(120815-1) + 10.0mL(130613-1)

1ppb Sn117/Sb ICV - 1.3mL(SL017738) + 0.1mL (SL017736) + 8.6mL(130613-1);0.1mL + 9.9mL (130613-1);0.1mL + 0.03mL(120815-1) + 9.9mL (130514-1)

1ppb Sn117/Sb CCV - 1.3mL(SL019464) + 0.1mL (SL019422) + 8.6mL(130613-1);0.1mL + 9.9mL (130613-1);0.1mL + 0.03mL(120815-1) + 9.9mL (130613-1)

20ppt Sn117/Sb LLS - 1.3mL(SL019464) + 0.1mL (SL019422) + 8.6mL(130613-1);0.2mL + 9.8mL (130613-1);0.1mL + 0.03mL(120815-1) + 9.9mL (130613-1)

ICS ATL 2 50x - 0.2mL(SL018961) + 0.03mL (120815-1) + 9.8mL(130613-1)

Post Spike:

1ppb from Cal standards

Sample Number	Dilution Factor	Dilution
ICV	1	see above
LLS	1	see above
ICB	1	see above
ICB	1	see above
ICS	1	see above
Prep Blank	100	0.1mL(3)-0.03mL(2)-9.9mL(1)
Prep Std	10	1.0mL(5)-0.03mL(2)-9.0mL(1)
S13T004249_L	500	0.1mL(3)-9.9mL(1);2.0mL(4)-0.03mL(2)-8.0mL(1)
S13T004249	100	0.1mL(3)-0.03mL(2)-9.9mL(1)
S13T004249_D	100	0.1mL(3)-0.03mL(2)-9.9mL(1)
S13T004249_S	100	0.1mL(3)-0.03mL(2)-9.9mL(1)

ATL	ICP-MS BENCH SHEET - PQ EXCELL (continued)	○ IH ◉ Non IH

LA-506-102 Rev G-1 Instrument ID# PQ EXCELL

Client/Project: C109 CLO Sn/Sb

Batch #: 00041414 Analyst: Andrew Getz

Sample Number	Dilution Factor	Dilution
S13T004249_A	100	0.1mL(3)-0.03mL(2)-0.1(2)-9.8mL(1)
S13T004277	100	0.1mL(3)-0.03mL(2)-9.9mL(1)
S13T004304	100	0.1mL(3)-0.03mL(2)-9.9mL(1)
CCV	1	see above
LLS	1	see above
CCB	1	see above
CCB	1	see above

Dilution Key:

(www) indicates the sample volume in mL

(xxx) indicates the internal standard in mL

(yyy) indicates the post spike volume in mL

(zzz) indicates the diluents volume in mL

Examples (Where (#) is the pipette #):

Single dilution: www(#)-xxx(#)-zzz(#)	0.25(#) - 0.03(#) - 9.75(#)	DF=40
Single dilution with Post Spike: www(#)-xxx(#)-yyy(#)-zzz(#)	0.25(#) - 0.03(#) - 0.025(#) - 9.725(#)	DF=40
Double dilution: www(#)-zzz(#); www(#)-xxx(#)-zzz(#)	0.10(#) - 9.9(#); 0.25(#) - 0.03(#) - 9.75(#)	DF=4000
Double dilution with Post Spike: www(#)-zzz(#); www(#)-xxx(#)-yyy(#)-zzz(#)	0.10(#) - 9.9(#); 0.25(#) - 0.03(#) - 0.025(#) - 9.725(#)	DF=4000

Comments:

ATL	ACID DIGESTION BENCH SHEET	○ IH ● Non IH

○ LA-505-158 Rev _____ ◉ LA-505-163 Rev H-0-A ○ LA-505-172 Rev _____ ○ _____ Rev _____

Project: C109 CLO Group 20130402 (Sb/Sn digest-extra HCl)

Batch #: 00041587 Analyst: TJH

Prep. Date/Time Start: 6/10/13 / 0915 Prep. Date/Time End: 6/10/13 / 1340

☒ Verified Thermometer Calibration ☒ Verified Thermometer 95±5 °C

Balance Number: LE-BAL-040 Mod Block Temp: 96.7 °C

Standard	Lot/Book # or Barcode #	Exp. Date	Standard	Lot/Book # or Barcode #	Exp. Date
HCl	SL018577	12-13-17	HS50	N/A	N/A
HNO_3	SL017975	4-10-18	HS51	N/A	N/A
H_2O_2	N/A	N/A	HS52	N/A	N/A
HS29	N/A	N/A	HS53	N/A	N/A
1000 ppm Sn	SL017738	04/01/2014	1000 ppm Sb	SLB17736	04/01/2014

(Pipette #); Pipette ID; Volume Range or Fixed Volume; Check box if pipette passes visual verification:

(1) 141655 Z (Range/Vol: .010 - .100 mL) ☒ (3) N/A (Range/Vol: N/A) ☐

(2) J1207550 u (Range/Vol: 1 - 10 mL) ☒ (4) N/A (Range/Vol: N/A) ☐

Sample ID	Final Volume (mL)	Sample Qty/Unit [a]	Spike Added [b]	Dose Rate (mrem/hr)
Prep Blank	50	N/A	N/A	<0.5
Prep Std 1	50	N/A	0.05 mL (/)10 ppm Sn & 0.05 mL (/) 10 ppm Sb	<0.5
S13T004249	50	.2452 g		TJH 35 1610
S13T004249 Dup	50	.2416 g		TJH 35 1610
S13T004249 S1	50	.2449 g	0.05 mL (/) 10 ppm Sn & 0.05 mL (/) 10 ppm Sb	TJH 40 1840
S13T004277	50	.2489 g	6/10/13	TJH 45 2070
S13T004304	50	.2450 g		TJH 40 1840

(a) Sample Qty/Unit: For solid samples, record the weight in g (e.g., "0.25g"). For liquid samples, record the volume in mL and record the pipette number used in parentheses (e.g., "2.5mL (1)"). For filter media, use "Each" (i.e., "1 each").

(b) Spike Added: Record the volume in mL and record the pipette number used in parentheses for each standard used, indicate the standard used (e.g., "0.5mL (3) HS50 + 1.0mL (1) HS51").

Note: Observation of sample before and after prep. (i.e., sample appearance, digestate color, clarity, approx. % dissolved, and multiple phases).

Comments:

1000 ppm standards from Inorganic Ventures must be diluted to 10 ppm. The 10 ppm standards are used for the prep standard and spike.

Sample size is approximately 0.25 g

Follow Step 8.37 for Sn/Sb. (Additional HCl is required).

Parent sample IDs are shown on the SBDs.

Customer requests that we report appearance of samples after digestion and provide an estimate of the percent sample digested for each sample.

All samples were about 95% digested with small pebbles remaining.

Digest instructions provided by SD Bolling. Stacey D Bolling 6/10/13

A-6005-369 (REV 1)

TJA Solutions

12:18:56 6/20/13
Plasmalab Report

Multi Element		Internal Standard	Standard Addition
QC Pass	Acquired	Skipped	Unaquired

		Label	Type	Rack	Row	Column	Height (	Survey	Main	Dilution	Internal
1	TR	rinse	Unknown	1	5	1	144	1	1	1	115In[Defaul
2	TR	rinse	Unknown	1	5	1	144	1	1	1	115In[Defaul
3	TR	rinse	Unknown	1	5	1	144	1	1	1	115In[Defaul
4	TR	Blank	Blank	1	1	1	144	0	5	1	115In[Defaul
5	TR	Sb/Sn117 2ppb C	Fully Quant Stan	1	1	2	144	0	5	1	115In[Defaul
6	TR	Sb/Sn117 1ppb I	Unknown	1	1	3	144	0	5	1	115In[Defaul
7	TR	Sb/Sn117 LLS 2	Unknown	1	1	4	144	0	5	1	115In[Defaul
8	TR	ICB	Unknown	1	1	5	144	0	5	1	115In[Defaul
9	TR	ICB	Unknown	1	1	5	144	0	5	1	115In[Defaul
10	TR	ICS (50x)	Unknown	1	1	6	144	1	5	1	115In[Defaul
11	TR	Prep Blank	Unknown	1	2	1	144	1	5	100	115In[Defaul
12	TR	Prep Std	Unknown	1	2	2	144	1	5	10	115In[Defaul
13	TR	S13T004249 L	Unknown	1	2	3	144	1	5	500	115In[Defaul
14	TR	S13T004249	Unknown	1	2	4	144	1	5	100	115In[Defaul
15	TR	S13T004249 D	Unknown	1	2	5	144	1	5	100	115In[Defaul
16	TR	S13T004249 S	Unknown	1	2	6	144	1	5	100	115In[Defaul
17	TR	S13T004249 A	Unknown	1	2	7	144	1	5	100	115In[Defaul
18	TR	S13T004277	Unknown	1	2	8	144	1	5	100	115In[Defaul
19	TR	S13T004304	Unknown	1	2	9	144	1	5	100	115In[Defaul
20	TR	Sb/Sn117 CCV	Unknown	1	1	7	144	0	5	1	115In[Defaul
21	TR	Sb/Sn117 LLS 2	Unknown	1	1	4	144	0	5	1	115In[Defaul
22	TR	CCB	Unknown	1	1	1	144	0	5	1	115In[Defaul
23	TR	CCB	Unknown	1	1	1	144	0	5	1	115In[Defaul

12:20:06 6/20/13
SnSb130619.vge

Excluded In Calib | Excluded In Results | Multi Element | Internal Standard | Standard Addition

Dilution Corrected Concentration Per Analyte

S-Calibration Has Edited Standard
F-Interference Correction Failed
E-Calibration Edited
T-Tripped
I-Invalid Calibration
P-Pulse Counting
V-Valley Integration Failed
M-Result Over Max

Run	Label	TimeStamp	115In ppt	117Sn ppt	121Sb ppt	126Sn ppt
1	rinse	6/19/2013 11:43:38 A	(P)0.000	(P)0.000	(P)0.000	(P)0.000
1	rinse	6/19/2013 11:47:50 A	(P)0.000	(P)0.000	(P)0.000	(P)0.000
1	rinse	6/19/2013 11:52:01 A	(P)0.000	(P)0.000	(P)0.000	(P)0.000
1	Blank	6/19/2013 11:55:52 A	(P)1.001	(P)0.051	(P)0.275	(P)0.040
2	Blank	6/19/2013 11:56:04 A	(P)1.000	(P)-0.147	(P)0.294	(P)-0.201
3	Blank	6/19/2013 11:56:15 A	(P)1.004	(P)0.315	(P)-0.365	(P)0.391
4	Blank	6/19/2013 11:56:26 A	(P)0.997	(P)-0.174	(P)-0.093	(P)-0.257
5	Blank	6/19/2013 11:56:37 A	(P)0.999	(P)-0.045	(P)-0.111	(P)0.028
	Mean of Blank	6/19/2013 11:55:52 A	(P)1.001	(P)0.000	(P)0.000	(P)-0.000
	SD of Blank		(P)n/a	(P)0.198	(P)0.281	(P)0.256
	%RSD of Blank		(P)n/a	(P)0.000	(P)0.000	(P)0.000
1	Sb/Sn117 2ppb CAL	6/19/2013 12:00:28 F	(P)0.942	(P)2000.000	(PM)2007.000	(P)2000.000
2	Sb/Sn117 2ppb CAL	6/19/2013 12:00:40 F	(P)0.945	(PM)2009.000	(PM)2008.000	(PM)2009.000
3	Sb/Sn117 2ppb CAL	6/19/2013 12:00:51 F	(P)0.937	(P)1989.000	(P)1990.000	(P)1989.000
4	Sb/Sn117 2ppb CAL	6/19/2013 12:01:02 F	(P)0.943	(PM)2010.000	(PM)2000.000	(PM)2010.000
5	Sb/Sn117 2ppb CAL	6/19/2013 12:01:13 F	(P)0.940	(P)1993.000	(P)1995.000	(P)1993.000
	Mean of Sb/Sn117 2p	6/19/2013 12:00:28 F	(P)0.942	(PM)2000.000	(PM)2000.000	(PM)2000.000
	SD of Sb/Sn117 2ppb		(P)n/a	(PM)9.399	(PM)7.879	(PM)9.384
	%RSD of Sb/Sn117 2		(P)n/a	(PM)0.470	(PM)0.394	(PM)0.469
1	Sb/Sn117 1ppb ICV	6/19/2013 12:05:05 F	(P)0.991	(P)1055.000	(P)1040.000	(P)-5.250
2	Sb/Sn117 1ppb ICV	6/19/2013 12:05:16 F	(P)0.998	(P)1065.000	(P)1034.000	(P)-5.325
3	Sb/Sn117 1ppb ICV	6/19/2013 12:05:27 F	(P)0.997	(P)1051.000	(P)1037.000	(P)-5.241
4	Sb/Sn117 1ppb ICV	6/19/2013 12:05:38 F	(P)1.000	(P)1057.000	(P)1042.000	(P)-5.290
5	Sb/Sn117 1ppb ICV	6/19/2013 12:05:49 F	(P)0.991	(P)1056.000	(P)1026.000	(P)-5.207
	Mean of Sb/Sn117 1p	6/19/2013 12:05:05 F	(P)0.991	(P)1057.000	(P)1036.000	(P)-5.263
	SD of Sb/Sn117 1ppb		(P)n/a	(P)4.922	(P)6.275	(P)0.046
	%RSD of Sb/Sn117 1		(P)n/a	(P)0.466	(P)0.606	(P)0.869
1	Sb/Sn117 LLS 20ppt	6/19/2013 12:09:41 F	(P)1.019	(P)21.610	(P)22.230	(P)-5.163
2	Sb/Sn117 LLS 20ppt	6/19/2013 12:09:53 F	(P)1.014	(P)21.410	(P)21.900	(P)-5.272
3	Sb/Sn117 LLS 20ppt	6/19/2013 12:10:04 F	(P)1.009	(P)21.270	(P)21.350	(P)-5.352
4	Sb/Sn117 LLS 20ppt	6/19/2013 12:10:15 F	(P)1.013	(P)21.510	(P)23.770	(P)-5.172
5	Sb/Sn117 LLS 20ppt	6/19/2013 12:10:26 F	(P)1.008	(P)21.300	(P)22.580	(P)-5.259
	Mean of Sb/Sn117 LL	6/19/2013 12:09:41 F	(P)1.019	(P)21.420	(P)22.370	(P)-5.243
	SD of Sb/Sn117 LLS 2		(P)n/a	(P)0.144	(P)0.907	(P)0.078
	%RSD of Sb/Sn117 L		(P)n/a	(P)0.670	(P)4.056	(P)1.492
1	ICB	6/19/2013 12:14:18 F	(P)1.027	(P)-0.176	(P)-0.199	(P)-5.254
2	ICB	6/19/2013 12:14:29 F	(P)1.020	(P)-0.321	(P)0.398	(P)-5.220
3	ICB	6/19/2013 12:14:41 F	(P)1.022	(P)-0.464	(P)-0.232	(P)-5.256
4	ICB	6/19/2013 12:14:52 F	(P)1.017	(P)-0.650	(P)0.759	(P)-5.271
5	ICB	6/19/2013 12:15:03 F	(P)1.037	(P)-0.363	(P)-0.050	(P)-5.237
	Mean of ICB	6/19/2013 12:14:18 F	(P)1.027	(P)-0.395	(P)0.135	(P)-5.248

12:20:06 6/20/13
SnSb130619.vge

Excluded In Calib | Excluded In Results | Multi Element | Internal Standard | Standard Addition

Dilution Corrected Concentration Per Analyte

S-Calibration Has Edited Standard
F-Interference Correction Failed
E-Calibration Edited
T-Tripped
I-Invalid Calibration
P-Pulse Counting
V-Valley Integration Failed
M-Result Over Max

Run	Label	TimeStamp	115In ppt	117Sn ppt	121Sb ppt	126Sn ppt
	SD of ICB		(P)n/a	(P)0.176	(P)0.430	(P)0.020
	%RSD of ICB		(P)n/a	(P)44.620	(P)318.100	(P)0.374
1	ICB	6/19/2013 12:18:55 F	(P)1.053	(P)-0.648	(P)-0.557	(P)-5.277
2	ICB	6/19/2013 12:19:06 F	(P)1.049	(P)-0.605	(P)-0.309	(P)-5.204
3	ICB	6/19/2013 12:19:17 F	(P)1.047	(P)-0.546	(P)0.728	(P)-5.256
4	ICB	6/19/2013 12:19:29 F	(P)1.049	(P)-0.411	(P)0.533	(P)-5.293
5	ICB	6/19/2013 12:19:40 F	(P)1.043	(P)-1.060	(P)-0.910	(P)-5.184
	Mean of ICB	6/19/2013 12:18:55 F	(P)1.053	(P)-0.654	(P)-0.103	(P)-5.243
	SD of ICB		(P)n/a	(P)0.244	(P)0.706	(P)0.047
	%RSD of ICB		(P)n/a	(P)37.300	(P)684.800	(P)0.900
1	ICS (50x)	6/19/2013 12:23:52 F	(P)1.039	(P)-0.761	(P)5.657	(P)-5.214
2	ICS (50x)	6/19/2013 12:24:04 F	(P)1.028	(P)-0.704	(P)6.649	(P)-5.196
3	ICS (50x)	6/19/2013 12:24:15 F	(P)1.031	(P)-0.860	(P)5.712	(P)-5.195
4	ICS (50x)	6/19/2013 12:24:26 F	(P)1.031	(P)-1.152	(P)7.155	(P)-5.261
5	ICS (50x)	6/19/2013 12:24:37 F	(P)1.035	(P)-1.039	(P)5.764	(P)-5.303
	Mean of ICS (50x)	6/19/2013 12:23:33 F	(P)1.039	(P)-0.903	(P)6.187	(P)-5.234
	SD of ICS (50x)		(P)n/a	(P)0.189	(P)0.678	(P)0.047
	%RSD of ICS (50x)		(P)n/a	(P)20.870	(P)10.950	(P)0.901
1	Prep Blank	6/19/2013 12:28:49 F	(P)1.071	(P)-148.800	(P)9.292	(P)-524.300
2	Prep Blank	6/19/2013 12:29:00 F	(P)1.061	(P)-147.100	(P)-12.080	(P)-521.500
3	Prep Blank	6/19/2013 12:29:12 F	(P)1.065	(P)-156.400	(P)-9.952	(P)-532.000
4	Prep Blank	6/19/2013 12:29:23 F	(P)1.059	(P)-155.300	(P)4.919	(P)-520.100
5	Prep Blank	6/19/2013 12:29:34 F	(P)1.059	(P)-159.600	(P)50.570	(P)-525.300
	Mean of Prep Blank	6/19/2013 12:28:30 F	(P)1.071	(P)-153.400	(P)8.550	(P)-524.600
	SD of Prep Blank		(P)n/a	(P)5.299	(P)25.240	(P)4.605
	%RSD of Prep Blank		(P)n/a	(P)3.454	(P)295.200	(P)0.878
1	Prep Std	6/19/2013 12:33:45 F	(P)1.114	(P)870.000	(P)10060.000	(P)-52.240
2	Prep Std	6/19/2013 12:33:56 F	(P)1.095	(P)867.400	(P)9931.000	(P)-52.830
3	Prep Std	6/19/2013 12:34:08 F	(P)1.104	(P)862.800	(P)9891.000	(P)-51.790
4	Prep Std	6/19/2013 12:34:19 F	(P)1.108	(P)859.800	(P)9952.000	(P)-52.090
5	Prep Std	6/19/2013 12:34:30 F	(P)1.104	(P)848.900	(P)9777.000	(P)-52.030
	Mean of Prep Std	6/19/2013 12:33:26 F	(P)1.114	(P)861.800	(P)9923.000	(P)-52.200
	SD of Prep Std		(P)n/a	(P)8.231	(P)104.100	(P)0.388
	%RSD of Prep Std		(P)n/a	(P)0.955	(P)1.049	(P)0.744
1	S13T004249_L	6/19/2013 12:38:41 F	(P)1.032	(P)-273.200	(P)1169.000	(P)-2601.000
2	S13T004249_L	6/19/2013 12:38:52 F	(P)1.027	(P)-419.100	(P)663.700	(P)-2551.000
3	S13T004249_L	6/19/2013 12:39:03 F	(P)1.034	(P)-482.300	(P)1249.000	(P)-2601.000
4	S13T004249_L	6/19/2013 12:39:15 F	(P)1.018	(P)-309.400	(P)788.200	(P)-2610.000
5	S13T004249_L	6/19/2013 12:39:26 F	(P)1.019	(P)-410.000	(P)722.500	(P)-2603.000
	Mean of S13T004249_	6/19/2013 12:38:22 F	(P)1.032	(P)-378.800	(P)918.500	(P)-2593.000
	SD of S13T004249_L		(P)n/a	(P)85.560	(P)270.400	(P)24.000
	%RSD of S13T004249		(P)n/a	(P)22.590	(P)29.440	(P)0.925

12:20:06 6/20/13
SnSb130619.vge

Excluded In Calib | Excluded In Results | Multi Element | Internal Standard | Standard Addition

Dilution Corrected Concentration Per Analyte

S-Calibration Has Edited Standard
F-Interference Correction Failed
E-Calibration Edited
T-Tripped
I-Invalid Calibration
P-Pulse Counting
V-Valley Integration Failed
M-Result Over Max

Run	Label	TimeStamp	115In	117Sn	121Sb	126Sn
			ppt	ppt	ppt	ppt
1	S13T004249	6/19/2013 12:43:37 F	(P)1.047	(P)78.420	(P)1466.000	(P)-479.000
2	S13T004249	6/19/2013 12:43:48 F	(P)1.048	(P)100.800	(P)1430.000	(P)-497.400
3	S13T004249	6/19/2013 12:44:00 F	(P)1.047	(P)53.470	(P)1335.000	(P)-494.500
4	S13T004249	6/19/2013 12:44:11 F	(P)1.047	(P)59.320	(P)1242.000	(P)-499.000
5	S13T004249	6/19/2013 12:44:22 F	(P)1.035	(P)71.130	(P)1227.000	(P)-490.800
	Mean of S13T004249	6/19/2013 12:43:18 F	(P)1.047	(P)72.630	(P)1340.000	(P)-492.100
	SD of S13T004249		(P)n/a	(P)18.530	(P)107.700	(P)7.989
	%RSD of S13T00424		(P)n/a	(P)25.510	(P)8.034	(P)1.623
1	S13T004249_D	6/19/2013 12:48:34 F	(P)1.058	(P)104.100	(P)807.900	(P)-483.400
2	S13T004249_D	6/19/2013 12:48:45 F	(P)1.062	(P)98.260	(P)698.300	(P)-483.200
3	S13T004249_D	6/19/2013 12:48:57 F	(P)1.060	(P)130.500	(P)872.400	(P)-482.500
4	S13T004249_D	6/19/2013 12:49:08 F	(P)1.060	(P)105.500	(P)820.300	(P)-487.800
5	S13T004249_D	6/19/2013 12:49:19 F	(P)1.063	(P)44.690	(P)769.500	(P)-483.100
	Mean of S13T004249_	6/19/2013 12:48:15 F	(P)1.058	(P)96.610	(P)793.700	(P)-484.000
	SD of S13T004249_D		(P)n/a	(P)31.560	(P)64.780	(P)2.143
	%RSD of S13T004249		(P)n/a	(P)32.670	(P)8.162	(P)0.443
1	S13T004249_S	6/19/2013 12:53:32 F	(P)1.073	(P)1143.000	(P)11570.000	(P)-481.700
2	S13T004249_S	6/19/2013 12:53:43 F	(P)1.068	(P)1087.000	(P)11370.000	(P)-488.100
3	S13T004249_S	6/19/2013 12:53:54 F	(P)1.068	(P)1045.000	(P)11870.000	(P)-487.300
4	S13T004249_S	6/19/2013 12:54:06 F	(P)1.067	(P)1094.000	(P)11500.000	(P)-471.500
5	S13T004249_S	6/19/2013 12:54:17 F	(P)1.071	(P)1101.000	(P)11370.000	(P)-494.700
	Mean of S13T004249_	6/19/2013 12:53:13 F	(P)1.073	(P)1094.000	(P)11530.000	(P)-484.600
	SD of S13T004249_S		(P)n/a	(P)34.700	(P)202.900	(P)8.687
	%RSD of S13T004249		(P)n/a	(P)3.172	(P)1.759	(P)1.792
1	S13T004249_A	6/19/2013 12:58:30 F	(P)1.025	(P)102800.00	(P)102100.00	(P)-498.600
2	S13T004249_A	6/19/2013 12:58:41 F	(P)1.017	(P)103000.00	(P)102800.00	(P)-488.300
3	S13T004249_A	6/19/2013 12:58:52 F	(P)1.029	(P)103700.00	(P)101800.00	(P)-497.700
4	S13T004249_A	6/19/2013 12:59:04 F	(P)1.038	(P)104000.00	(P)103900.00	(P)-487.600
5	S13T004249_A	6/19/2013 12:59:15 F	(P)1.033	(P)102300.00	(P)101800.00	(P)-494.500
	Mean of S13T004249_	6/19/2013 12:58:11 F	(P)1.025	(P)103100.00	(P)102500.00	(P)-493.300
	SD of S13T004249_A		(P)n/a	(P)704.400	(P)905.100	(P)5.157
	%RSD of S13T004249		(P)n/a	(P)0.683	(P)0.883	(P)1.045
1	S13T004277	6/19/2013 1:03:28 P	(P)1.098	(P)299.400	(P)2412.000	(P)-434.200
2	S13T004277	6/19/2013 1:03:39 P	(P)1.098	(P)294.200	(P)2570.000	(P)-462.100
3	S13T004277	6/19/2013 1:03:51 P	(P)1.088	(P)319.500	(P)2533.000	(P)-448.300
4	S13T004277	6/19/2013 1:04:02 P	(P)1.091	(P)300.200	(P)2299.000	(P)-458.900
5	S13T004277	6/19/2013 1:04:13 P	(P)1.084	(P)316.600	(P)2290.000	(P)-447.200
	Mean of S13T004277	6/19/2013 1:03:09 P	(P)1.098	(P)306.000	(P)2421.000	(P)-450.100
	SD of S13T004277		(P)n/a	(P)11.300	(P)129.300	(P)11.040
	%RSD of S13T00427		(P)n/a	(P)3.692	(P)5.343	(P)2.453
1	S13T004304	6/19/2013 1:08:27 P	(P)1.088	(P)188.900	(P)2049.000	(P)-478.400
2	S13T004304	6/19/2013 1:08:39 P	(P)1.099	(P)191.900	(P)1884.000	(P)-492.400
3	S13T004304	6/19/2013 1:08:50 P	(P)1.100	(P)136.000	(P)2079.000	(P)-484.600

12:20:06 6/20/13
SnSb130619.vge

Excluded In Calib | Excluded In Results | Multi Element | Internal Standard | Standard Addition

Dilution Corrected Concentration Per Analyte

S-Calibration Has Edited Standard
F-Interference Correction Failed
E-Calibration Edited
T-Tripped
I-Invalid Calibration
P-Pulse Counting
V-Valley Integration Failed
M-Result Over Max

Run	Label	TimeStamp	115In ppt	117Sn ppt	121Sb ppt	126Sn ppt
4	S13T004304	6/19/2013 1:09:01 P	(P)1.085	(P)157.300	(P)2084.000	(P)-496.200
5	S13T004304	6/19/2013 1:09:13 P	(P)1.088	(P)133.300	(P)2052.000	(P)-470.700
	Mean of S13T004304	6/19/2013 1:08:08 P	(P)1.088	(P)161.500	(P)2030.000	(P)-484.500
	SD of S13T004304		(P)n/a	(P)27.990	(P)82.860	(P)10.350
	%RSD of S13T00430		(P)n/a	(P)17.330	(P)4.083	(P)2.137
1	Sb/Sn117 CCV	6/19/2013 1:13:06 P	(P)1.016	(P)1031.000	(P)1003.000	(P)-5.315
2	Sb/Sn117 CCV	6/19/2013 1:13:17 P	(P)1.004	(P)1020.000	(P)990.800	(P)-5.346
3	Sb/Sn117 CCV	6/19/2013 1:13:28 P	(P)1.006	(P)1035.000	(P)990.700	(P)-5.352
4	Sb/Sn117 CCV	6/19/2013 1:13:40 P	(P)1.000	(P)1015.000	(P)1015.000	(P)-5.283
5	Sb/Sn117 CCV	6/19/2013 1:13:51 P	(P)0.995	(P)1012.000	(P)1017.000	(P)-5.375
	Mean of Sb/Sn117 CC	6/19/2013 1:13:06 P	(P)1.016	(P)1023.000	(P)1003.000	(P)-5.334
	SD of Sb/Sn117 CCV		(P)n/a	(P)10.200	(P)12.540	(P)0.036
	%RSD of Sb/Sn117 C		(P)n/a	(P)0.997	(P)1.250	(P)0.676
1	Sb/Sn117 LLS 20ppt	6/19/2013 1:17:44 P	(P)1.039	(P)21.950	(P)19.620	(P)-5.339
2	Sb/Sn117 LLS 20ppt	6/19/2013 1:17:55 P	(P)1.040	(P)21.000	(P)19.900	(P)-5.332
3	Sb/Sn117 LLS 20ppt	6/19/2013 1:18:06 P	(P)1.045	(P)21.350	(P)20.160	(P)-5.301
4	Sb/Sn117 LLS 20ppt	6/19/2013 1:18:18 P	(P)1.039	(P)20.620	(P)20.120	(P)-5.347
5	Sb/Sn117 LLS 20ppt	6/19/2013 1:18:29 P	(P)1.037	(P)20.880	(P)19.580	(P)-5.303
	Mean of Sb/Sn117 LL	6/19/2013 1:17:44 P	(P)1.039	(P)21.160	(P)19.880	(P)-5.325
	SD of Sb/Sn117 LLS 2		(P)n/a	(P)0.511	(P)0.270	(P)0.021
	%RSD of Sb/Sn117 L		(P)n/a	(P)2.416	(P)1.359	(P)0.395
1	CCB	6/19/2013 1:22:21 P	(P)1.057	(P)-0.607	(P)-1.139	(P)-5.216
2	CCB	6/19/2013 1:22:32 P	(P)1.058	(P)-0.529	(P)-0.591	(P)-5.246
3	CCB	6/19/2013 1:22:44 P	(P)1.069	(P)-0.602	(P)-0.715	(P)-5.319
4	CCB	6/19/2013 1:22:55 P	(P)1.057	(P)-0.782	(P)-0.840	(P)-5.314
5	CCB	6/19/2013 1:23:06 P	(P)1.060	(P)-0.731	(P)-1.095	(P)-5.328
	Mean of CCB	6/19/2013 1:22:21 P	(P)1.057	(P)-0.650	(P)-0.876	(P)-5.285
	SD of CCB		(P)n/a	(P)0.103	(P)0.238	(P)0.050
	%RSD of CCB		(P)n/a	(P)15.900	(P)27.130	(P)0.949
1	CCB	6/19/2013 1:26:58 P	(P)1.066	(P)-0.791	(P)-0.703	(P)-5.327
2	CCB	6/19/2013 1:27:09 P	(P)1.067	(P)-0.741	(P)-1.185	(P)-5.304
3	CCB	6/19/2013 1:27:20 P	(P)1.063	(P)-0.673	(P)-1.020	(P)-5.305
4	CCB	6/19/2013 1:27:32 P	(P)1.051	(P)-0.910	(P)0.392	(P)-5.270
5	CCB	6/19/2013 1:27:43 P	(P)1.051	(P)-1.014	(P)-0.509	(P)-5.285
	Mean of CCB	6/19/2013 1:26:58 P	(P)1.066	(P)-0.826	(P)-0.605	(P)-5.298
	SD of CCB		(P)n/a	(P)0.136	(P)0.617	(P)0.022
	%RSD of CCB		(P)n/a	(P)16.500	(P)101.900	(P)0.408

12:20:16 6/20/13
SnSb130619.vge

Excluded In Calib | Excluded In Results | [illegible] | Multi Element | [illegible] | Internal Standard | Standard Addition

Uncorrected ICPS Per Mass

S-Calibration Has Edited Standard
F-Interference Correction Failed
E-Calibration Edited
T-Tripped
I-Invalid Calibration
P-Pulse Counting
V-Valley Integration Failed
M-Result Over Max

Run	Label	TimeStamp	115In	117Sn	121Sb	126Sn
1	rinse	6/19/2013 11:43:38 A	(P)120082.25	(P)949.032	(P)211.002	(P)31.000
1	rinse	6/19/2013 11:47:50 A	(P)118067.56	(P)766.021	(P)250.002	(P)44.000
1	rinse	6/19/2013 11:52:01 A	(P)118538.10	(P)772.021	(P)207.002	(P)55.000
1	Blank	6/19/2013 11:55:52 A	(P)140915.93	(P)732.019	(P)229.002	(P)53.000
2	Blank	6/19/2013 11:56:04 A	(P)141120.60	(P)705.017	(P)230.002	(P)47.000
3	Blank	6/19/2013 11:56:15 A	(P)140501.21	(P)767.021	(P)206.001	(P)65.000
4	Blank	6/19/2013 11:56:26 A	(P)141482.82	(P)703.017	(P)217.002	(P)43.000
5	Blank	6/19/2013 11:56:37 A	(P)141239.77	(P)720.018	(P)216.002	(P)65.000
	Mean of Blank	6/19/2013 11:55:52 A	(P)141052.07	(P)725.418	(P)219.602	(P)54.600
	SD of Blank		(P)369.953	(P)26.084	(P)10.015	(P)10.139
	%RSD of Blank		(P)0.262	(P)3.596	(P)4.561	(P)18.570
1	Sb/Sn117 2ppb CAL	6/19/2013 12:00:28 F	(P)149814.12	(P)300756.94	(PM)74843.54	(P)38.000
2	Sb/Sn117 2ppb CAL	6/19/2013 12:00:40 F	(P)149197.04	(PM)300933.6	(PM)74560.06	(PM)36.000
3	Sb/Sn117 2ppb CAL	6/19/2013 12:00:51 F	(P)150476.69	(P)300427.10	(P)74521.867	(P)46.000
4	Sb/Sn117 2ppb CAL	6/19/2013 12:01:02 F	(P)149576.99	(PM)301753.6	(PM)74463.56	(PM)48.000
5	Sb/Sn117 2ppb CAL	6/19/2013 12:01:13 F	(P)149983.89	(P)300078.90	(P)74460.549	(P)49.000
	Mean of Sb/Sn117 2p	6/19/2013 12:00:28 F	(P)149809.75	(PM)300790.0	(PM)74569.91	(PM)43.400
	SD of Sb/Sn117 2ppb (		(P)475.590	(PM)630.009	(PM)158.547	(PM)5.983
	%RSD of Sb/Sn117 2		(P)0.317	(PM)0.209	(PM)0.213	(PM)13.786
1	Sb/Sn117 1ppb ICV	6/19/2013 12:05:05 F	(P)142312.67	(P)151137.28	(P)36959.749	(P)39.000
2	Sb/Sn117 1ppb ICV	6/19/2013 12:05:16 F	(P)141296.32	(P)151373.76	(P)36465.481	(P)28.000
3	Sb/Sn117 1ppb ICV	6/19/2013 12:05:27 F	(P)141426.94	(P)149595.18	(P)36601.829	(P)40.000
4	Sb/Sn117 1ppb ICV	6/19/2013 12:05:38 F	(P)141019.61	(P)149934.71	(P)36687.047	(P)33.000
5	Sb/Sn117 1ppb ICV	6/19/2013 12:05:49 F	(P)142278.33	(P)151190.84	(P)36452.448	(P)45.000
	Mean of Sb/Sn117 1p	6/19/2013 12:05:05 F	(P)141666.78	(P)150646.35	(P)36633.311	(P)37.000
	SD of Sb/Sn117 1ppb I		(P)592.613	(P)818.233	(P)206.953	(P)6.595
	%RSD of Sb/Sn117 1		(P)0.418	(P)0.543	(P)0.565	(P)17.826
1	Sb/Sn117 LLS 20ppt	6/19/2013 12:09:41 F	(P)138410.95	(P)3707.481	(P)979.034	(P)50.000
2	Sb/Sn117 LLS 20ppt	6/19/2013 12:09:53 F	(P)139071.32	(P)3697.478	(P)972.033	(P)35.000
3	Sb/Sn117 LLS 20ppt	6/19/2013 12:10:04 F	(P)139755.28	(P)3695.478	(P)958.032	(P)24.000
4	Sb/Sn117 LLS 20ppt	6/19/2013 12:10:15 F	(P)139231.20	(P)3714.483	(P)1038.038	(P)49.000
5	Sb/Sn117 LLS 20ppt	6/19/2013 12:10:26 F	(P)139955.89	(P)3704.480	(P)1002.035	(P)37.000
	Mean of Sb/Sn117 LL	6/19/2013 12:09:41 F	(P)139284.93	(P)3703.880	(P)989.834	(P)39.000
	SD of Sb/Sn117 LLS 2		(P)609.052	(P)7.703	(P)31.294	(P)10.794
	%RSD of Sb/Sn117 L		(P)0.437	(P)0.208	(P)3.162	(P)27.676
1	ICB	6/19/2013 12:14:18 F	(P)137313.77	(P)682.016	(P)207.002	(P)37.000
2	ICB	6/19/2013 12:14:29 F	(P)138321.42	(P)667.016	(P)229.002	(P)42.000
3	ICB	6/19/2013 12:14:41 F	(P)138069.33	(P)646.015	(P)207.002	(P)37.000
4	ICB	6/19/2013 12:14:52 F	(P)138670.11	(P)623.014	(P)242.002	(P)35.000
5	ICB	6/19/2013 12:15:03 F	(P)135982.80	(P)650.015	(P)210.002	(P)39.000
	Mean of ICB	6/19/2013 12:14:18 F	(P)137671.49	(P)653.615	(P)219.002	(P)38.000
	SD of ICB		(P)1067.425	(P)22.324	(P)15.796	(P)2.646

12:20:16 6/20/13
SnSb130619.vge

Excluded In Calib | Excluded In Results | Multi Element | Internal Standard | Standard Addition

Uncorrected ICPS Per Mass

S-Calibration Has Edited Standard
F-Interference Correction Failed
E-Calibration Edited
T-Tripped
I-Invalid Calibration
P-Pulse Counting
V-Valley Integration Failed
M-Result Over Max

Run	Label	TimeStamp	115In	117Sn	121Sb	126Sn
	%RSD of ICB		(P)0.775	(P)3.415	(P)7.213	(P)6.963
1	ICB	6/19/2013 12:18:55 F	(P)133930.21	(P)602.013	(P)190.001	(P)33.000
2	ICB	6/19/2013 12:19:06 F	(P)134447.03	(P)610.013	(P)199.001	(P)43.000
3	ICB	6/19/2013 12:19:17 F	(P)134682.90	(P)619.013	(P)234.002	(P)36.000
4	ICB	6/19/2013 12:19:29 F	(P)134401.61	(P)636.014	(P)227.002	(P)31.000
5	ICB	6/19/2013 12:19:40 F	(P)135229.36	(P)552.011	(P)180.001	(P)46.000
	Mean of ICB	6/19/2013 12:18:55 F	(P)134538.22	(P)603.813	(P)206.002	(P)37.800
	SD of ICB		(P)473.093	(P)31.596	(P)23.484	(P)6.458
	%RSD of ICB		(P)0.352	(P)5.233	(P)11.400	(P)17.083
1	ICS (50x)	6/19/2013 12:23:52 F	(P)135800.41	(P)595.012	(P)402.006	(P)42.000
2	ICS (50x)	6/19/2013 12:24:04 F	(P)137224.59	(P)609.013	(P)440.007	(P)45.000
3	ICS (50x)	6/19/2013 12:24:15 F	(P)136856.75	(P)586.012	(P)407.006	(P)45.000
4	ICS (50x)	6/19/2013 12:24:26 F	(P)136852.04	(P)546.010	(P)456.007	(P)36.000
5	ICS (50x)	6/19/2013 12:24:37 F	(P)136260.42	(P)559.011	(P)407.006	(P)30.000
	Mean of ICS (50x)	6/19/2013 12:23:33 F	(P)136598.84	(P)579.012	(P)422.406	(P)39.600
	SD of ICS (50x)		(P)564.404	(P)25.953	(P)24.132	(P)6.504
	%RSD of ICS (50x)		(P)0.413	(P)4.482	(P)5.713	(P)16.424
1	Prep Blank	6/19/2013 12:28:49 F	(P)131655.21	(P)481.008	(P)208.002	(P)37.000
2	Prep Blank	6/19/2013 12:29:00 F	(P)132953.48	(P)488.008	(P)203.001	(P)41.000
3	Prep Blank	6/19/2013 12:29:12 F	(P)132494.58	(P)474.008	(P)203.001	(P)27.000
4	Prep Blank	6/19/2013 12:29:23 F	(P)133203.13	(P)478.008	(P)209.002	(P)43.000
5	Prep Blank	6/19/2013 12:29:34 F	(P)133150.98	(P)472.008	(P)224.002	(P)36.000
	Mean of Prep Blank	6/19/2013 12:28:30 F	(P)132691.48	(P)478.608	(P)209.402	(P)36.800
	SD of Prep Blank		(P)643.077	(P)6.309	(P)8.620	(P)6.181
	%RSD of Prep Blank		(P)0.485	(P)1.318	(P)4.116	(P)16.795
1	Prep Std	6/19/2013 12:33:45 F	(P)126660.69	(P)11685.778	(P)31825.411	(P)38.000
2	Prep Std	6/19/2013 12:33:56 F	(P)128787.58	(P)11848.912	(P)31931.647	(P)31.000
3	Prep Std	6/19/2013 12:34:08 F	(P)127768.83	(P)11695.786	(P)31553.809	(P)44.000
4	Prep Std	6/19/2013 12:34:19 F	(P)127276.80	(P)11612.718	(P)31624.966	(P)40.000
5	Prep Std	6/19/2013 12:34:30 F	(P)127801.11	(P)11520.644	(P)31199.031	(P)41.000
	Mean of Prep Std	6/19/2013 12:33:26 F	(P)127659.00	(P)11672.767	(P)31626.973	(P)38.800
	SD of Prep Std		(P)782.408	(P)120.907	(P)283.150	(P)4.868
	%RSD of Prep Std		(P)0.613	(P)1.036	(P)0.895	(P)12.547
1	S13T004249_L	6/19/2013 12:38:41 F	(P)136636.66	(P)628.014	(P)292.003	(P)44.000
2	S13T004249_L	6/19/2013 12:38:52 F	(P)137315.79	(P)591.012	(P)259.002	(P)58.000
3	S13T004249_L	6/19/2013 12:39:03 F	(P)136452.58	(P)570.011	(P)297.003	(P)44.000
4	S13T004249_L	6/19/2013 12:39:15 F	(P)138609.19	(P)627.014	(P)270.003	(P)42.000
5	S13T004249_L	6/19/2013 12:39:26 F	(P)138355.42	(P)598.013	(P)265.002	(P)44.000
	Mean of S13T004249_	6/19/2013 12:38:22 F	(P)137473.93	(P)602.813	(P)276.603	(P)46.400
	SD of S13T004249_L		(P)979.161	(P)24.794	(P)16.891	(P)6.542
	%RSD of S13T004249		(P)0.712	(P)4.113	(P)6.107	(P)14.100
1	S13T004249	6/19/2013 12:43:37 F	(P)134775.10	(P)799.022	(P)700.017	(P)99.000
2	S13T004249	6/19/2013 12:43:48 F	(P)134581.96	(P)828.024	(P)687.017	(P)74.000

12:20:16 6/20/13
SnSb130619.vge

Excluded In Calib | Excluded In Results | Multi Element | Internal Standard | Standard Addition

Uncorrected ICPS Per Mass

S-Calibration Has Edited Standard
F-Interference Correction Failed
E-Calibration Edited
T-Tripped
I-Invalid Calibration
P-Pulse Counting
V-Valley Integration Failed
M-Result Over Max

Run	Label	TimeStamp	115In	117Sn	121Sb	126Sn
3	S13T004249	6/19/2013 12:44:00 F	(P)134717.90	(P)765.020	(P)656.015	(P)78.000
4	S13T004249	6/19/2013 12:44:11 F	(P)134736.40	(P)773.021	(P)625.014	(P)72.000
5	S13T004249	6/19/2013 12:44:22 F	(P)136284.32	(P)798.022	(P)627.014	(P)84.000
	Mean of S13T004249	6/19/2013 12:43:18 F	(P)135019.14	(P)792.622	(P)659.015	(P)81.400
	SD of S13T004249		(P)710.993	(P)24.847	(P)34.112	(P)10.854
	%RSD of S13T00424		(P)0.527	(P)3.135	(P)5.176	(P)13.334
1	S13T004249_D	6/19/2013 12:48:34 F	(P)133381.44	(P)825.024	(P)475.008	(P)92.000
2	S13T004249_D	6/19/2013 12:48:45 F	(P)132853.56	(P)814.023	(P)437.007	(P)92.000
3	S13T004249_D	6/19/2013 12:48:57 F	(P)133021.78	(P)858.026	(P)495.009	(P)93.000
4	S13T004249_D	6/19/2013 12:49:08 F	(P)133071.91	(P)825.024	(P)478.008	(P)86.000
5	S13T004249_D	6/19/2013 12:49:19 F	(P)132722.35	(P)742.019	(P)460.007	(P)92.000
	Mean of S13T004249_	6/19/2013 12:48:15 F	(P)133010.21	(P)812.823	(P)469.008	(P)91.000
	SD of S13T004249_D		(P)249.579	(P)42.882	(P)21.784	(P)2.828
	%RSD of S13T004249		(P)0.188	(P)5.276	(P)4.645	(P)3.108
1	S13T004249_S	6/19/2013 12:53:32 F	(P)131463.79	(P)2180.166	(P)3977.554	(P)93.000
2	S13T004249_S	6/19/2013 12:53:43 F	(P)132092.55	(P)2117.157	(P)3932.541	(P)85.000
3	S13T004249_S	6/19/2013 12:53:54 F	(P)132096.59	(P)2062.149	(P)4094.587	(P)86.000
4	S13T004249_S	6/19/2013 12:54:06 F	(P)132179.35	(P)2128.159	(P)3975.553	(P)107.000
5	S13T004249_S	6/19/2013 12:54:17 F	(P)131696.92	(P)2129.159	(P)3921.538	(P)76.000
	Mean of S13T004249_	6/19/2013 12:53:13 F	(P)131905.84	(P)2123.358	(P)3980.355	(P)89.400
	SD of S13T004249_S		(P)310.285	(P)42.038	(P)68.603	(P)11.546
	%RSD of S13T004249		(P)0.235	(P)1.980	(P)1.724	(P)12.915
1	S13T004249_A	6/19/2013 12:58:30 F	(P)137545.65	(P)142228.51	(P)35060.972	(P)74.000
2	S13T004249_A	6/19/2013 12:58:41 F	(P)138711.17	(P)143727.40	(P)35593.286	(P)89.000
3	S13T004249_A	6/19/2013 12:58:52 F	(P)137063.05	(P)143068.83	(P)34825.397	(P)75.000
4	S13T004249_A	6/19/2013 12:59:04 F	(P)135854.59	(P)142137.61	(P)35236.403	(P)88.000
5	S13T004249_A	6/19/2013 12:59:15 F	(P)136533.68	(P)140514.67	(P)34687.061	(P)79.000
	Mean of S13T004249_	6/19/2013 12:58:11 F	(P)137141.63	(P)142335.40	(P)35080.623	(P)81.000
	SD of S13T004249_A		(P)1079.231	(P)1208.427	(P)356.198	(P)7.106
	%RSD of S13T004249		(P)0.787	(P)0.849	(P)1.015	(P)8.773
1	S13T004277	6/19/2013 1:03:28 P	(P)128480.50	(P)1046.038	(P)969.033	(P)152.001
2	S13T004277	6/19/2013 1:03:39 P	(P)128450.23	(P)1039.038	(P)1019.036	(P)116.000
3	S13T004277	6/19/2013 1:03:51 P	(P)129587.43	(P)1081.041	(P)1016.036	(P)135.001
4	S13T004277	6/19/2013 1:04:02 P	(P)129339.87	(P)1054.039	(P)939.031	(P)121.001
5	S13T004277	6/19/2013 1:04:13 P	(P)130150.85	(P)1082.041	(P)942.031	(P)137.001
	Mean of S13T004277	6/19/2013 1:03:09 P	(P)129201.78	(P)1060.439	(P)977.033	(P)132.201
	SD of S13T004277		(P)733.758	(P)19.984	(P)38.791	(P)14.237
	%RSD of S13T00427		(P)0.568	(P)1.884	(P)3.970	(P)10.770
1	S13T004304	6/19/2013 1:08:27 P	(P)129647.98	(P)912.029	(P)861.026	(P)96.000
2	S13T004304	6/19/2013 1:08:39 P	(P)128389.35	(P)907.029	(P)800.022	(P)77.000
3	S13T004304	6/19/2013 1:08:50 P	(P)128209.75	(P)834.024	(P)861.026	(P)87.000
4	S13T004304	6/19/2013 1:09:01 P	(P)129943.31	(P)873.027	(P)874.027	(P)73.000
5	S13T004304	6/19/2013 1:09:13 P	(P)129663.45	(P)840.025	(P)862.026	(P)106.000
	Mean of S13T004304	6/19/2013 1:08:08 P	(P)129170.77	(P)873.227	(P)851.625	(P)87.800

12:20:16 6/20/13 Page 4 of 4
SnSb130619.vge

Excluded in Calib | Multi-Element | Internal Standard | Standard Addition

Uncorrected ICPS Per Mass

S-Calibration Has Edited Standard
F-Interference Correction Failed
E-Calibration Edited
T-Tripped
I-Invalid Calibration
P-Pulse Counting
V-Valley Integration Failed
M-Result Over Max

Run	Label	TimeStamp	115In	117Sn	121Sb	126Sn
	SD of S13T004304		(P)806.450	(P)36.357	(P)29.367	(P)13.554
	%RSD of S13T00430		(P)0.624	(P)4.164	(P)3.448	(P)15.437
1	Sb/Sn117 CCV	6/19/2013 1:13:06 P	(P)138826.62	(P)144030.42	(P)34770.263	(P)29.000
2	Sb/Sn117 CCV	6/19/2013 1:13:17 P	(P)140540.93	(P)144209.22	(P)34766.253	(P)25.000
3	Sb/Sn117 CCV	6/19/2013 1:13:28 P	(P)140193.88	(P)146055.83	(P)34678.039	(P)24.000
4	Sb/Sn117 CCV	6/19/2013 1:13:40 P	(P)141066.74	(P)144139.52	(P)35726.618	(P)34.000
5	Sb/Sn117 CCV	6/19/2013 1:13:51 P	(P)141742.04	(P)144297.10	(P)35986.268	(P)21.000
	Mean of Sb/Sn117 CC	6/19/2013 1:13:06 P	(P)140474.04	(P)144546.42	(P)35185.488	(P)26.600
	SD of Sb/Sn117 CCV		(P)1090.421	(P)849.414	(P)620.432	(P)5.030
	%RSD of Sb/Sn117 C		(P)0.776	(P)0.588	(P)1.763	(P)18.909
1	Sb/Sn117 LLS 20ppt	6/19/2013 1:17:44 P	(P)135743.54	(P)3681.474	(P)872.027	(P)25.000
2	Sb/Sn117 LLS 20ppt	6/19/2013 1:17:55 P	(P)135662.10	(P)3550.441	(P)881.027	(P)26.000
3	Sb/Sn117 LLS 20ppt	6/19/2013 1:18:06 P	(P)134941.32	(P)3578.448	(P)885.027	(P)30.000
4	Sb/Sn117 LLS 20ppt	6/19/2013 1:18:18 P	(P)135775.84	(P)3502.429	(P)889.028	(P)24.000
5	Sb/Sn117 LLS 20ppt	6/19/2013 1:18:29 P	(P)136083.75	(P)3545.440	(P)873.027	(P)30.000
	Mean of Sb/Sn117 LL	6/19/2013 1:17:44 P	(P)135641.31	(P)3571.647	(P)880.027	(P)27.000
	SD of Sb/Sn117 LLS 2		(P)422.704	(P)67.149	(P)7.417	(P)2.828
	%RSD of Sb/Sn117 L		(P)0.312	(P)1.880	(P)0.843	(P)10.476
1	CCB	6/19/2013 1:22:21 P	(P)133399.95	(P)605.013	(P)170.001	(P)41.000
2	CCB	6/19/2013 1:22:32 P	(P)133303.72	(P)615.013	(P)188.001	(P)37.000
3	CCB	6/19/2013 1:22:44 P	(P)131928.04	(P)599.013	(P)182.001	(P)27.000
4	CCB	6/19/2013 1:22:55 P	(P)133486.42	(P)582.012	(P)180.001	(P)28.000
5	CCB	6/19/2013 1:23:06 P	(P)133056.10	(P)587.012	(P)171.001	(P)26.000
	Mean of CCB	6/19/2013 1:22:21 P	(P)133034.85	(P)597.613	(P)178.201	(P)31.800
	SD of CCB		(P)639.332	(P)13.372	(P)7.629	(P)6.760
	%RSD of CCB		(P)0.481	(P)2.238	(P)4.281	(P)21.258
1	CCB	6/19/2013 1:26:58 P	(P)132378.51	(P)576.012	(P)183.001	(P)26.000
2	CCB	6/19/2013 1:27:09 P	(P)132248.99	(P)582.012	(P)167.001	(P)29.000
3	CCB	6/19/2013 1:27:20 P	(P)132682.65	(P)593.012	(P)173.001	(P)29.000
4	CCB	6/19/2013 1:27:32 P	(P)134211.50	(P)568.011	(P)222.002	(P)34.000
5	CCB	6/19/2013 1:27:43 P	(P)134220.92	(P)554.011	(P)192.001	(P)32.000
	Mean of CCB	6/19/2013 1:26:58 P	(P)133148.51	(P)574.612	(P)187.401	(P)30.000
	SD of CCB		(P)987.302	(P)14.691	(P)21.571	(P)3.082
	%RSD of CCB		(P)0.742	(P)2.557	(P)11.511	(P)10.274

6/10/2013 9:51:03AM
CompleteBatch Version 2.7.32
batchreports 2.7.32

LABCORE Completed Batch Report for Batch# 00041414

Analyst: Shaw, Levi **Book#:** SEE BENCH SHEET

Instrument: ICP/MS PQ-EXCELL

Method: MS ANTIMONY, LA-506-102 Rev/Mod G-1

Specification: C109 CLO

Prep Batch: 00041394

Batch Comment:

Data not used; exact final volume of digest was not obtainable. Samples redigested and analyzed kak 6/10/13

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
Sample Sequence 1																	
1	ICV	S1305280061		0 0			Antimony	LIQUID	.001	1.0320E-03			2.00E-06	ug/mL	103.2	% Recovery	
1	ICV	S1305280061		0 0			Tin-117	LIQUID	.001	1.0710E-03			1.00E-05	ug/mL	107.1	% Recovery	
Sample Sequence 2																	
3	ICB	S1305280062		0 1			Antimony	LIQUID		<2.0000E-06			2.00E-06	ug/mL			
3	ICB	S1305280062		0 1			Tin-117	LIQUID		<1.0000E-05			1.00E-05	ug/mL			
3	ICB	S1305280062		0 1			Tin-126	LIQUID		<2.0000E-07			2.00E-07	ug/mL			
Sample Sequence 4																	
4	LLS	S1305280063		0 0			Antimony	LIQUID	.00002	2.3090E-05			2.00E-06	ug/mL	115.45	% Recovery	
4	LLS	S1305280063		0 0			Tin-117	LIQUID	.00002	2.2860E-05			1.00E-05	ug/mL	114.3	% Recovery	
Sample Sequence 5																	
5	BLNK-PREP	S1305230071		0 0	A		Antimony	LIQUID		5.3320E-04			2.00E-04	ug/mL			
5	BLNK-PREP	S1305230071		0 0	A		Tin-117	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
5	BLNK-PREP	S1305230071		0 0	A		Tin-126	LIQUID		<2.0000E-05			2.00E-05	ug/mL			
Sample Sequence 6																	
6	SERDIL	S1305280064	S13T004249	0 0			Antimony	SOLID		2.6400E-01			0.20137	ug/mL	15.584	% Diff	
6	SERDIL	S1305280064	S13T004249	0 0			Tin-117	SOLID		<1.0068E+00			1.0068	ug/mL	N/A		
6	SERDIL	S1305280064	S13T004249	0 0			Tin-126	SOLID		<2.0137E-02			0.020137	ug/mL	N/A		
Sample Sequence 11																	
11	SPK-PREDIG	S1305230074	S13T004249	0 0	A		Antimony	SOLID	2.02839	3.7992E+00			0.040568	ug/g	171.88	% Recovery	
11	SPK-PREDIG	S1305230074	S13T004249	0 0	A		Tin-117	SOLID	.155780352	2.9168E-01			0.20284	ug/g	187.24	% Recovery	
Sample Sequence 12																	
12	STD-PREP	S1305230072		0 0	A		Antimony	LIQUID	.1	1.0390E-01			2.00E-04	ug/mL	103.9	% Recovery	
12	STD-PREP	S1305230072		0 0	A		Tin-117	LIQUID	.00768	8.8590E-03			1.00E-03	ug/mL	115.35	% Recovery	
Sample Sequence 13																	
13	SPK-POST	S1305280065	S13T004249	0 0			Antimony	SOLID	.1	1.2000E-01			2.00E-06	ug/mL	118.45	% Recovery	
13	SPK-POST	S1305280065	S13T004249	0 0			Tin-117	SOLID	.1	1.1820E-01			1.00E-05	ug/mL	118.2	% Recovery	
Sample Sequence 14																	
14	CCV	S1305280068		0 0			Antimony	LIQUID	.001	1.0460E-03			2.00E-06	ug/mL	104.6	% Recovery	
14	CCV	S1305280068		0 0			Tin-117	LIQUID	.001	1.0660E-03			1.00E-05	ug/mL	106.6	% Recovery	
Sample Sequence 15																	

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041414

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
15	LLS	S1305280070		0 0			Antimony	LIQUID	.00002	2.3530E-05			2.00E-06	ug/mL	117.65	% Recovery	
15	LLS	S1305280070		0 0			Tin-117	LIQUID	.00002	1.9540E-05			1.00E-05	ug/mL	97.7	% Recovery	
Sample Sequence 16																	
17	CCB	S1305280069		0 1			Antimony	LIQUID		<2.0000E-06			2.00E-06	ug/mL			
17	CCB	S1305280069		0 1			Tin-117	LIQUID		<1.0000E-05			1.00E-05	ug/mL			
17	CCB	S1305280069		0 1			Tin-126	LIQUID		<2.0000E-07			2.00E-07	ug/mL			

Comments Section:

Data Flagger Status:
Flagging Completed

Final Page for Batch# 00041414

KAKelton 06/10/13
Reviewer Signature **Date**

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041414

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Method	Customer Id	Specification
1	S1305280061	ICV			MS ANTIMONY		
2	S1305280062	ICB			MS ANTIMONY		
3	S1305280062	ICB			MS ANTIMONY		
4	S1305280063	LLS			MS ANTIMONY		
5	S1305230071	BLNK-PREP			MS ANTIMONY		
6	S1305280064	SERDIL	S13T004249		MS ANTIMONY		
7	S13T004249	SAMPLE		20130402	MS ANTIMONY	9C-13-Comp A	C109 CLO
8	S1305230073	DUP	S13T004249		MS ANTIMONY		
9	S13T004277	SAMPLE		20130402	MS ANTIMONY	9C-13-Comp B	C109 CLO
10	S13T004304	SAMPLE		20130402	MS ANTIMONY	9C-13-Comp C	C109 CLO
11	S1305230074	SPK-PREDIG	S13T004249		MS ANTIMONY		
12	S1305230072	STD-PREP			MS ANTIMONY		
13	S1305280065	SPK-POST	S13T004249		MS ANTIMONY		
14	S1305280068	CCV			MS ANTIMONY		
15	S1305280070	LLS			MS ANTIMONY		
16	S1305280069	CCB			MS ANTIMONY		
17	S1305280069	CCB			MS ANTIMONY		

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

* = Rejected Analyte
N, A = Non-reported Analyte

5/28/2013 3:49:01PM
IncompleteBatchShort Version 2.7.29
batchreports 2.7.32

LABCORE Data Entry Template for Batch# 00041414

Analyst: Shaw, Levi
Standard ID / Book#: SEE BENCHSHEET
Instrument: ICP/MS PQ-EXCELL
Method: MS ANTIMONY, LA-506-102 Rev/Mod G-1
Prep Batch: 00041394
Batch Comment: NONE

CACN:3A.26

S	Type	Sample	R	A	Matrix	Group#	Project
1	ICV	S1305280061	0		LIQUID		
	Analytes Requested:	Antimony, Tin-117, Tin-126					
2	ICB	S1305280062	0		LIQUID		
	Analytes Requested:	Antimony, Tin-117, Tin-126					
3	LLS	S1305280063	0		LIQUID		
	Analytes Requested:	Antimony, Tin-117, Tin-126					
4	BLNK-PREP	S1305230071	0	A	LIQUID		
	Analytes Requested:	Antimony, Tin-117, Tin-126					
5	SERDIL	S1305280064	0		SOLID		
	Analytes Requested:	Antimony, Tin-117, Tin-126					
6	SAMPLE	S13T004249	0	A	SOLID	20130402	C109 CLO
	Analytes Requested:	Antimony, Tin-117, Tin-126					
7	DUP	S1305230073	0	A	SOLID		
	Analytes Requested:	Antimony					
8	SAMPLE	S13T004277	0	A	SOLID	20130402	C109 CLO
	Analytes Requested:	Antimony, Tin-117, Tin-126					
9	SAMPLE	S13T004304	0	A	SOLID	20130402	C109 CLO
	Analytes Requested:	Antimony, Tin-117, Tin-126					
10	SPK-PREDIG	S1305230074	0	A	SOLID		
	Analytes Requested:	Antimony, Tin-117, Tin-126					
11	STD-PREP	S1305230072	0	A	LIQUID		
	Analytes Requested:	Antimony, Tin-117, Tin-126					
12	SPK-POST	S1305280065	0		SOLID		
	Analytes Requested:	Antimony, Tin-117, Tin-126					
13	CCV	S1305280068	0		LIQUID		
	Analytes Requested:	Antimony, Tin-117, Tin-126					
14	LLS	S1305280070	0		LIQUID		
	Analytes Requested:	Antimony, Tin-117, Tin-126					
15	CCB	S1305280069	0		LIQUID		
	Analytes Requested:	Antimony, Tin-117, Tin-126					

Final Page for Batch# 00041414

05/28/13
Analyst Signature **Date**

05/28/13
Data Entry Signature **Date**

Data Entry Comments:

S = Batch Slot Number, R = Retest Number, A = Aliquot Code.

5/23/2013 1:45:17PM
IncompleteBatchShort Version 2.7.29
batchreports 2.7.32

LABCORE Data Entry Template for Batch# 00041394

Analyst: Dinh, Liem

Standard ID / Book#: See Bench Sheet

Instrument: LE-BAL-040

Method: ACID DIGEST, Sb, LA-505-163 Rev/Mod H-0-A

Prep Batch: N/A

Batch Comment:

CACN:3A.26

S	Type	Sample	R	A	Matrix	Group#	Project
1	BLNK-PREP	S1305230071		A	LIQUID		
2	STD-PREP	S1305230072		A	LIQUID		
3	SAMPLE	S13T004249		A	SOLID	20130402	C109 CLO
4	DUP	S1305230073		A	SOLID		
5	SPK-PREDIG	S1305230074		A	SOLID		
6	SAMPLE	S13T004277		A	SOLID	20130402	C109 CLO
7	SAMPLE	S13T004304		A	SOLID	20130402	C109 CLO

Final Page for Batch# 00041394

Analyst Signature — 5/23/13 Date

Data Entry Signature — 5/23/13 Date

Data Entry Comments:

S = Batch Slot Number, R = Retest Number, A = Aliquot Code.

ATL	ICP-MS BENCH SHEET - PQ EXCELL	○ IH ◉ Non IH

LA-506-102 Rev G-1 Instrument ID# PQ EXCELL

Client/Project: C109 CLO Sn/Sb

Batch #: 00041414 Analyst: Levi Shaw

Date/Time Start: 05/28/13 / 1100 Date/Time End: 05/28/13 / 1300

Instrument File #: SnSb130528.vge Standard Book # & page HNF-N-667 1 pg 124

Pump Tubing OK ☒ Chiller Water OK ☒ Wash Station OK ☒ 4 °C. Peltier Temp

(Pipette #); Pipette ID; Volume Range or Fixed Volume; Check box if pipette passes visual verification:

(1) 210897A (Range/Vol: 1.0-10.0mL) ☒ (4) 439095 (Range/Vol: 0.5-5.0mL) ☒

(2) 114655Z (Range/Vol: 0.01-0.1mL) ☒ (5) 1140299 (Range/Vol: 0.1-1.0mL) ☒

(3) 2230539 (Range/Vol: 0.01-0.1mL) ☒ (6) NA (Range/Vol: NA) ☐

Calibration Standards:

Blank - 0.03mL(120815-1) + 10.0mL(130514-1)

2ppb Sn117/Sb - 1.3mL(SL013133) + 0.1mL (SL016325) + 8.6mL(130514-1);0.2mL + 0.03mL (120815-1) + 9.8mL(130514-1)

Verification Standards:

ICB/CCB - 0.03mL(120815-1) + 10.0mL(130514-1)

2ppb Sn117/Sb ICV/CCV - 1.3mL(SL017738) + 0.1mL(SL017736) + 8.6mL(130514-1);0.1mL + 9.9mL(130514-1);0.1mL + 0.03mL(120815-1) + 9.9mL(130514-1)

20ppt Sn117/Sb ICV - 1.3mL(SL013133) + 0.1mL (SL016325) + 8.6mL(130514-1);0.2mL + 9.8mL (130514-1);0.1mL + 0.03mL(120815-1) + 9.9mL (130514-1)

ICS ATL 2 50x - 0.2mL(SL018961) + 0.03mL (120815-1) + 9.8mL(130514-1)

Post Spike:

1ppb from Cal standards

Sample Number	Dilution Factor	Dilution
ICV	1	see above
LLS	1	see above
ICB	1	see above
ICB	1	see above
ICS	1	see above
Prep Blank	100	0.1mL(3)-0.03mL(2)-9.9mL(1)
S13T004249_L	500	0.1mL(3)-9.9mL(1);2.0mL(4)-0.03mL(2)-8.0mL(1)
S13T004249	100	0.1mL(3)-0.03mL(2)-9.9mL(1)
S13T004249_D	100	0.1mL(3)-0.03mL(2)-9.9mL(1)
S13T004277	100	0.1mL(3)-0.03mL(2)-9.9mL(1)
S13T004304	100	0.1mL(3)-0.03mL(2)-9.9mL(1)
S13T004249_S	100	0.1mL(3)-0.03mL(2)-9.9mL(1)
Prep Std	10	1.0mL(5)-0.03mL(2)-9.0mL(1)
S13T004249_A	100	0.1mL(3)-0.03mL(2)-0.1(2)-9.8mL(1)

ATL	ICP-MS BENCH SHEET - PQ EXCELL (continued)	○ IH ◉ Non IH

LA-506-102 Rev G-1 Instrument ID# PQ EXCELL

Client/Project: C109 CLO Sn/Sb

Batch #: 00041414 Analyst: Levi Shaw

Sample Number	Dilution Factor	Dilution
CCV	1	see above
LLS	1	see above
CCB	1	see above
CCB	1	see above

Dilution Key:

(www) indicates the sample volume in mL

(xxx) indicates the internal standard in mL

(yyy) indicates the post spike volume in mL

(zzz) indicates the diluents volume in mL

Examples (Where (#) is the pipette #):

Single dilution: www(#)-xxx(#)-zzz(#)	0.25(#) - 0.03(#) - 9.75(#)	DF=40
Single dilution with Post Spike: www(#)-xxx(#)-yyy(#)-zzz(#)	0.25(#) - 0.03(#) - 0.025(#) - 9.725(#)	DF=40
Double dilution: www(#)-zzz(#); www(#)-xxx(#)-zzz(#)	0.10(#) - 9.9(#); 0.25(#) - 0.03(#) - 9.75(#)	DF=4000
Double dilution with Post Spike: www(#)-zzz(#); www(#)-xxx(#)-yyy(#)-zzz(#)	0.10(#) - 9.9(#); 0.25(#) - 0.03(#) - 0.025(#) - 9.725(#)	DF=4000

Comments:

ATL	ACID DIGESTION BENCH SHEET	○ IH ◉ Non IH

○ LA-505-158 Rev _____ ⊗ LA-505-163 Rev H-0-A ○ LA-505-172 Rev _____

Project: C109 CLO Group 20130402 (Sb/Sn digest-extra HCl)

Batch #: 41394 Analyst: KW/LND

Prep. Date/Time Start: 05-23-13 / 09:00 Prep. Date/Time End: 05-23-13 / 13:45

Balance Number: LE-BAL-040 Mod Block Temp: 95.1 °C 92.3 KW 05-23-13

Standard	Lot/Book #	Exp. Date	Standard	Lot/Book #	Exp. Date
HCl	000012753	12-13-17	HS50	N/A	N/A
HNO_3	000034085	4-10-15	HS51	N/A	N/A
H_2O_2	N/A	N/A	HS52	N/A	N/A
HS29	N/A	N/A	HS53	N/A	N/A
10 ppm Sn	133512	05-31-13	10 ppm Sb	110514	06-08-13

(Pipette #); Pipette ID; Volume Range or Fixed Volume; Check box if pipette passes visual verification:

(1) 6103153F (Range/Vol: 0.1-1.0/mL) ☒ (3) 1413227 (Range/Vol: 10-100/mL) ☒

(2) _____ (Range/Vol: _____) ☐ (4) _____ (Range/Vol: _____) ☐

Sample ID	Final Volume (mL)	Sample Qty/Unit (a)	Spike Added (b)	Dose Rate (mrem/hr)
Prep Blank	50	N/A	N/A	<0.5
Prep Std 1	50	N/A	0.05 mL (3) 10 ppm Sn & 0.05 mL (3) 10 ppm Sb	<0.5
S13T004249	50	0.2483g		1426
S13T004249 Dup	50	0.2517g		1380
S13T004249 S1	50	0.2465g	0.05 mL (2)3 10 ppm Sn & 0.05 mL (2)3 10 ppm Sb KW 05-23-13	3220
S13T004277	50	0.2464g	KW 05-23-13	1932
S13T004304	50	0.2525g		1058

(a) Sample Qty/Unit: For solid samples, record the weight in g (e.g., "0.25g"). For liquid samples, record the volume in mL and record the pipette number used in parentheses (e.g., "2.5mL (1)"). For filter media, use "Each" (i.e., "1 each").

(b) Spike Added: Record the volume in mL and record the pipette number used in parentheses for each standard used, indicate the standard used (e.g., "0.5mL (3) HS50 + 1.0mL (1) HS51").

Note: Observation of sample before and after prep. (i.e., sample appearance, digestate color, clarity, approx. % dissolved, and multiple phases).

Comments:

Sample size is approximately 0.25 g

Follow Step 8.37 for Sn/Sb. (Additional HCl is required).

Parent sample IDs are shown on the SBDs.

Customer requests that we report appearance of samples after digestion and provide an estimate of the percent sample digested for each sample.

Digest instructions provided by SD Bolling. Stacey O [illegible] 5/16/13

All the samples were diluted to about 51-52mL. LND
There were 3 little pieces of solids for the spike when filtering.

A-6005-369 (REV 0)

Instrument Setup - Configurations

Configuration Name - Inorganic
Description - PQExcell CCT Sim Default
Date - 10:51:44 5/2/13
Maximum Uptake Time - 90
Maximum Washout Time - 90
S-Option Pump Running - No
Plasma Screen Forward - No
Makeup Gas On - No
Use CCT - No
Use Accessory Gas - No

Setting	Value
Extraction	-680.00
Lens1	7.00
Lens2	-38.00
Lens3	-130.00
Pole Bias	-1.00
Sampling Depth	380.00
Horizontal	-13.00
Vertical	67.00
Cool	13.00
Auxiliary	0.95
Nebuliser	0.94
Forward power	1,410.00
HT1 Voltage	1,900.00
HT2 Voltage	2,600.00
D1	-33.00
Focus	27.00

Survey Run Setup

Sweeps - 20

Dwell Time - 300

Channels Per Mass - 10

Acquisition Duration - 15 Secs

Main Run Setup

Main Run - Peak Jumping

Sweeps - 100

Dwell Time - 10,000

Channels Per Mass - 1

Acquisition Duration - 7.00

Channel Spacing - 0.02

Main Scan Regions

Symbol	Dwell Time	Symbol	Dwell Time	Symbol	Dwell Time
115In	30,000	117Sn	10,000	121Sb	10,000
125Te	10,000	126Sn	10,000		

Instrument Setup - Sample Configuration

Sample	Configuration	Date
All Samples	Inorganic	10:51:44 5/2/13

PlasmaLab - [stab130528]

File Edit Window Help

10 -7 mbar 1.8 mbar 2.57 bar 1244 W 4.2 W 1700 V 2750 V BTCNPESL

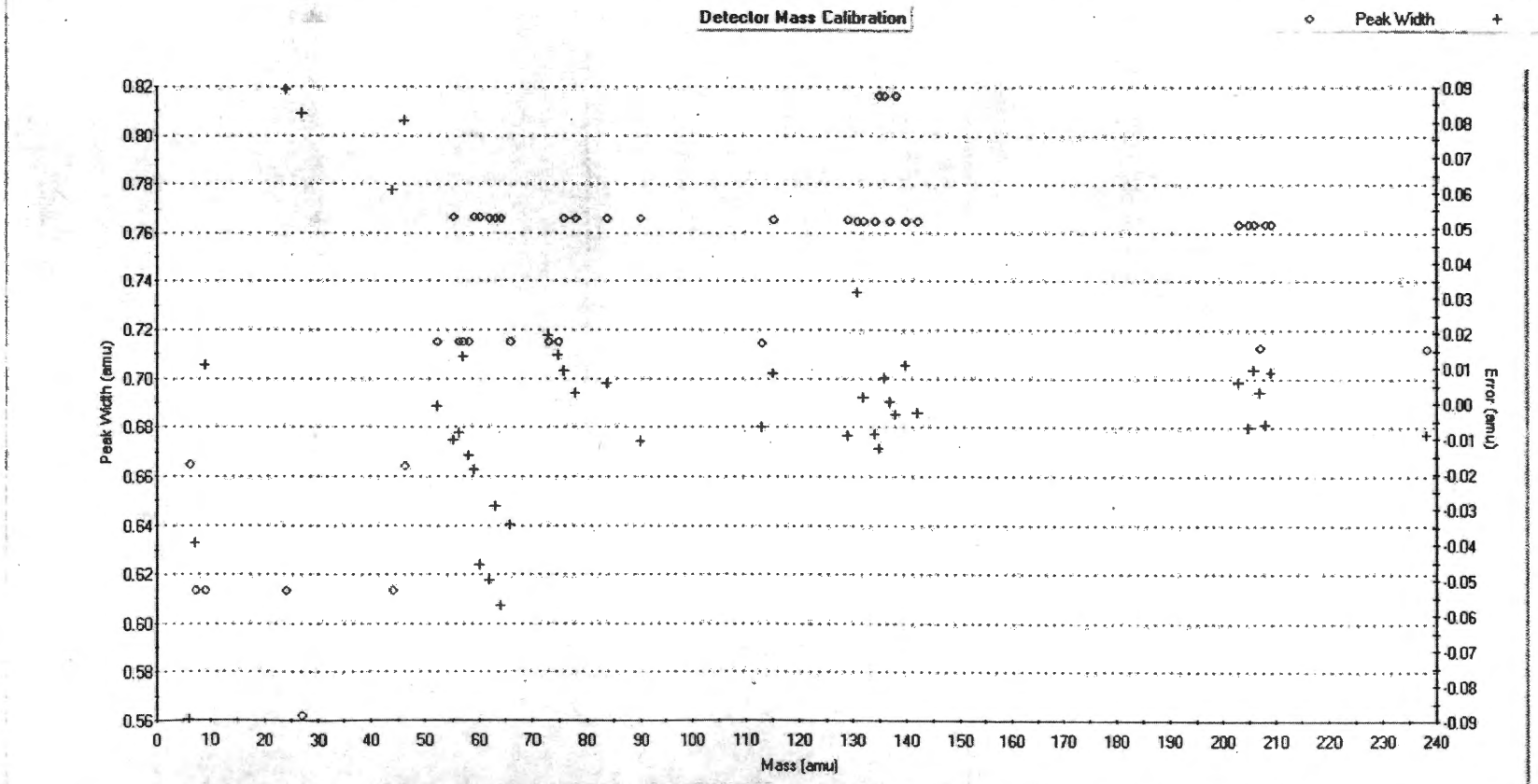
Back Foward On Off Queue

Setup | Instrument Parameters | Calibration Method | QC Setup | Sample List | Results | Reports

Configuration Editor | Timings | Detector Plateau | Mass Calibration | Detector Cross Calibration | Gas AutoTune

Date/Time	Coeff 0	Coeff 1	Coeff 2	Notes
5/15/2013 11:2	0.83801	0.0039382	-1.9221e-010	New Mass Calib
5/28/2013 10:2	0.86002	0.0039363	-1.6956e-010	New Mass Calib

Mass	Mass DAC	Peak Width (AMU)	Error (AMU)	Include
6.015	1287	0.685	-0.089	☑
7.016	1554	0.614	-0.039	☑
9.012	2074	0.614	0.011	☑
23.985	5899	0.614	0.089	☑



Expansion Press.: 1.8 mbar
Analytical Press.: 6.86-7 mbar
Nebulizer Press.: 2.57 bar
Nebulizer Flow.: 0.94 L/min
Foward Power: 12.44 W
Reflected Power: 4.2 W
PeltierTemp: 4.0 °c
Tune Soln Book #: 130528-1

FOWARD POWER SET @ 1400 W
05/28/13

Ready NUM

15:35:56 5/28/13
stab130528.vge

Excluded In Calib | Excluded In Results | Multi Element | Internal Standard | Standard Addition

Uncorrected ICPS Per Mass

S-Calibration Has Edited Standard
F-Interference Correction Failed
E-Calibration Edited
T-Tripped
I-Invalid Calibration
P-Pulse Counting
V-Valley Integration Failed
M-Result Over Max

Run	Label	TimeStamp	5Bkg	7Li	9Be	59Co	140Ce++	101Bkg
1	1ppb tune (non sopt) 1	5/28/2013 10:31:29 A	(P)0.750	(P)70528.420	(P)4683.017	(P)68186.341	(P)3629.961	(P)29.250
2	1ppb tune (non sopt) 1	5/28/2013 10:33:11 A	(P)1.750	(P)70877.140	(P)4671.764	(P)67195.914	(P)3540.439	(P)28.000
3	1ppb tune (non sopt) 1	5/28/2013 10:34:53 A	(P)2.500	(P)71820.333	(P)4722.280	(P)66845.024	(P)3597.953	(P)30.750
4	1ppb tune (non sopt) 1	5/28/2013 10:36:35 A	(P)1.750	(P)72561.313	(P)4827.816	(P)67045.209	(P)3523.935	(P)29.750
5	1ppb tune (non sopt) 1	5/28/2013 10:38:17 A	(P)1.500	(P)73609.153	(P)4832.317	(P)67318.992	(P)3558.443	(P)29.750
6	1ppb tune (non sopt) 1	5/28/2013 10:39:58 A	(P)1.750	(P)74498.998	(P)4879.333	(P)67382.540	(P)3592.452	(P)33.000
7	1ppb tune (non sopt) 1	5/28/2013 10:41:40 A	(P)0.500	(P)75524.110	(P)4853.574	(P)67081.629	(P)3634.962	(P)30.750
8	1ppb tune (non sopt) 1	5/28/2013 10:43:22 A	(P)1.500	(P)76402.512	(P)4860.327	(P)66273.872	(P)3633.712	(P)27.500
9	1ppb tune (non sopt) 1	5/28/2013 10:45:04 A	(P)0.750	(P)77215.365	(P)4861.827	(P)66618.972	(P)3561.944	(P)32.500
10	1ppb tune (non sopt) 1	5/28/2013 10:46:46 A	(P)1.750	(P)77988.045	(P)4818.813	(P)66497.910	(P)3613.457	(P)29.750
	Mean of 1ppb tune (n	5/28/2013 10:30:50 A	(P)1.450	(P)74102.539	(P)4801.107	(P)67044.640	(P)3588.726	(P)30.100
	SD of 1ppb tune (non s		(P)0.610	(P)2651.196	(P)78.142	(P)540.701	(P)40.465	(P)1.741
	%RSD of 1ppb tune (		(P)42.076	(P)3.578	(P)1.628	(P)0.806	(P)1.128	(P)5.784

Run	Label	TimeStamp	115In	140Ce	156Ce O	209Bi	220Bkg	238U
1	1ppb tune (non sopt) 1	5/28/2013 10:31:29 A	(P)151595.09	(P)159152.88	(P)3645.215	(P)201275.75	(P)2.000	(P)258780.06
2	1ppb tune (non sopt) 1	5/28/2013 10:33:11 A	(P)149442.59	(P)155550.52	(P)3676.473	(P)199186.77	(P)4.500	(P)254112.89
3	1ppb tune (non sopt) 1	5/28/2013 10:34:53 A	(P)149165.21	(P)155471.42	(P)3581.199	(P)197776.63	(P)1.000	(P)253721.02
4	1ppb tune (non sopt) 1	5/28/2013 10:36:35 A	(P)148936.85	(P)155255.09	(P)3612.707	(P)198112.49	(P)1.500	(P)252545.97
5	1ppb tune (non sopt) 1	5/28/2013 10:38:17 A	(P)150456.15	(P)155814.12	(P)3641.714	(P)197824.54	(P)1.750	(P)255061.32
6	1ppb tune (non sopt) 1	5/28/2013 10:39:58 A	(P)150507.18	(P)154122.17	(P)3609.706	(P)198485.87	(P)0.500	(P)253707.03
7	1ppb tune (non sopt) 1	5/28/2013 10:41:40 A	(P)150452.86	(P)156456.08	(P)3465.170	(P)196727.80	(P)2.750	(P)253631.96
8	1ppb tune (non sopt) 1	5/28/2013 10:43:22 A	(P)149089.43	(P)155206.06	(P)3566.945	(P)195436.51	(P)1.500	(P)254123.33
9	1ppb tune (non sopt) 1	5/28/2013 10:45:04 A	(P)150107.00	(P)155497.96	(P)3489.926	(P)196219.63	(P)2.000	(P)254986.76
10	1ppb tune (non sopt) 1	5/28/2013 10:46:46 A	(P)149210.43	(P)156337.29	(P)3549.441	(P)196087.08	(P)0.750	(P)255497.77
	Mean of 1ppb tune (n	5/28/2013 10:30:50 A	(P)149896.28	(P)155886.36	(P)3583.850	(P)197713.31	(P)1.825	(P)254616.81
	SD of 1ppb tune (non s		(P)863.391	(P)1317.101	(P)67.969	(P)1721.285	(P)1.149	(P)1694.078
	%RSD of 1ppb tune (		(P)0.576	(P)0.845	(P)1.897	(P)0.871	(P)62.957	(P)0.665

TJA Solutions

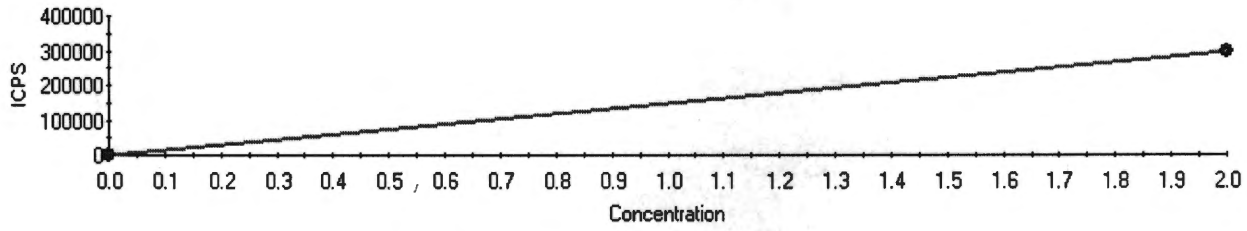
15:31:25 5/28/13
Plasmalab Report

Multi Element | Semi Quant | Internal Standard | Standard Addition
QC Pass | QC Failure | Acquired | Skipped | Aborted | Unaquired

		Label	Type	Rack	Row	Column	Height (	Survey	Main	Dilution	Internal	
1	TR	rinse	Unknown	1	5	1	144	1	1	1	115In[Defaul	
2	TR	rinse	Unknown	1	5	1	144	1	1	1	115In[Defaul	
3	TR	rinse	Unknown	1	5	1	144	1	1	1	115In[Defaul	
4	TR	rinse	Unknown	1	5	1	144	1	1	1	115In[Defaul	
5	TR	S13T004249 10	Unknown	1	3	1	144	1	3	1	115In[Defaul	
6	TR	Blank	Blank	1	1	1	144	0	5	1	115In[Defaul	
7	TR	Sb/Sn117 2ppb C	Fully Quant Stan	1	1	2	144	0	5	1	115In[Defaul	
8	TR	Sb/Sn117 1ppb I	Unknown	1	1	3	144	0	5	1	115In[Defaul	
9	TR	Sb/Sn117 LLS 2	Unknown	1	1	4	144	0	5	1	115In[Defaul	
10	TR	ICB	Unknown	1	1	5	144	0	5	1	115In[Defaul	
11	TR	ICB	Unknown	1	1	5	144	0	5	1	115In[Defaul	
12	TR	ICS (INTA 1 - 1	Unknown	1	1	6	144	1	5	1	115In[Defaul	
13	TR	Prep Blank	Unknown	1	2	1	144	1	5	100	115In[Defaul	
14	TR	S13T004249 L	Unknown	1	2	2	144	1	5	500	115In[Defaul	
15	TR	S13T004249	Unknown	1	2	3	144	1	5	100	115In[Defaul	
16	TR	S13T004249 D	Unknown	1	2	4	144	1	5	100	115In[Defaul	
17	TR	S13T004277	Unknown	1	2	5	144	1	5	100	115In[Defaul	
18	TR	S13T004304	Unknown	1	2	6	144	1	5	100	115In[Defaul	
19	TR	S13T004249 S	Unknown	1	2	7	144	1	5	100	115In[Defaul	
20	TR	Prep Std	Unknown	1	2	8	144	1	5	100	115In[Defaul	
21	TR	S13T004249 A	Unknown	1	2	9	144	1	5	100	115In[Defaul	
22	TR	Sb/Sn117 CCV	Unknown	1	1	3	144	0	5	1	115In[Defaul	
23	TR	Sb/Sn117 LLS 2	Unknown	1	1	4	144	0	5	1	115In[Defaul	
24	TR	CCB	Unknown	1	1	7	144	0	5	1	115In[Defaul	
25	TR	CCB	Unknown	1	1	7	144	0	5	1	115In[Defaul	

15:32:48 5/28/13
SnSb130528.vge

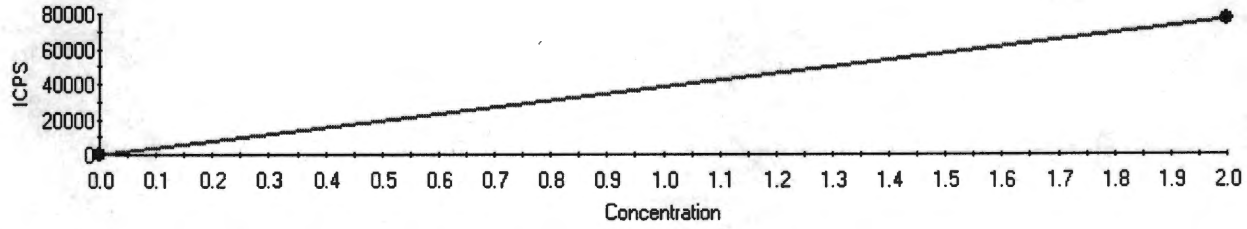
Fully Quant Calibration 117Sn FQ Block 1



Intercept CPS=1046.423424 Intercept Conc=0.007048
Sensitivity=148464.633671 Correlation Coeff=1.000000

Label	Defined	Measured	Error	Mean CPS	%Error
Blank	0.00	0.00	0.00	1,046.42	
Sb/Sn117 2ppb CAL	2.00	2.00	0.00	297,975.69	0.00

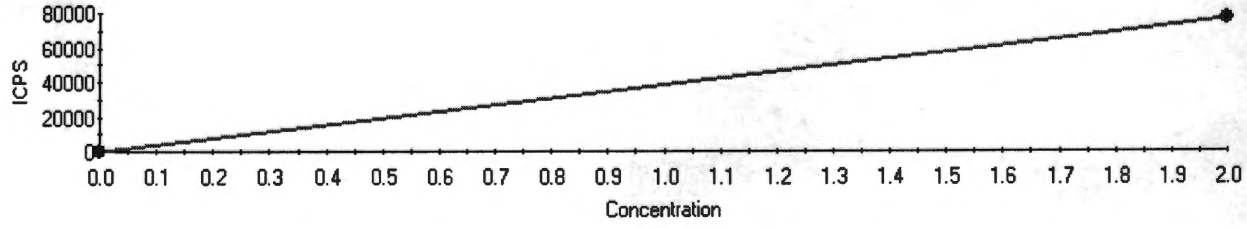
Fully Quant Calibration 121Sb FQ Block 1



Intercept CPS=44.603622 Intercept Conc=0.001166
Sensitivity=38249.493645 Correlation Coeff=1.000000

Label	Defined	Measured	Error	Mean CPS	%Error
Blank	0.00	0.00	0.00	44.60	
Sb/Sn117 2ppb CAL	2.00	2.00	0.00	76,543.59	0.00

Fully Quant Calibration 125Te FQ Block 1

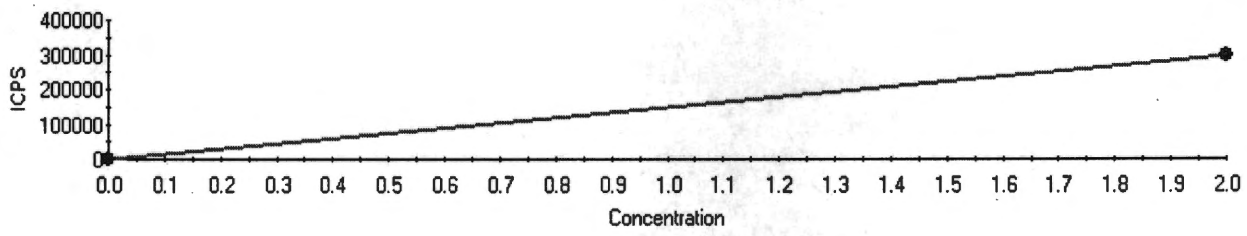


Intercept CPS=51.211697 Intercept Conc=0.001339
Sensitivity=38252.250096 Correlation Coeff=1.000000

Label	Defined	Measured	Error	Mean CPS	%Error
Blank	0.00	0.00	0.00	51.21	
Sb/Sn117 2ppb CAL	2.00	2.00	0.00	76,555.71	0.00

15:32:49 5/28/13
SnSb130528.vge

Fully Quant Calibration 126Sn FQ Block 1



Intercept CPS=1209.184268 Intercept Conc=0.008145
Sensitivity=148459.772674 Correlation Coeff=1.000000

Label	Defined	Measured	Error	Mean CPS	%Error
Blank	0.00	0.00	0.00	1,209.18	
Sb/Sn117 2ppb CAL	2.00	2.00	0.00	298,128.73	0.00

15:34:09 5/28/13 Page 3 of 11
SnSb130528.vge

Excluded In Calib | Excluded In Results | Peak Run Exclusion | Multi Element | Semi Quant | Internal Standard | Standard Addition

Dilution Corrected Concentration Per Analyte

S-Calibration Has Edited Standard
F-Interference Correction Failed
E-Calibration Edited
T-Tripped
I-Invalid Calibration
P-Pulse Counting
V-Valley Integration Failed
M-Result Over Max

Run	Label	TimeStamp	115In	117Sn	121Sb	125Te	126Sn
			ppt	ppt	ppt	ppb	ppt
1	rinse	5/28/2013 11:01:12 A	(P)0.000	(P)0.000	(P)0.000	(P)0.000	(P)0.000
1	rinse	5/28/2013 11:05:26 A	(P)0.000	(P)0.000	(P)0.000	(P)0.000	(P)0.000
1	rinse	5/28/2013 11:09:40 A	(P)0.000	(P)0.000	(P)0.000	(P)0.000	(P)0.000
1	rinse	5/28/2013 11:13:54 A	(P)0.000	(P)0.000	(P)0.000	(P)0.000	(P)0.000
1	S13T004249 100x	5/28/2013 11:18:06 A	(P)0.000	(P)0.000	(P)0.000	(P)0.000	(P)0.000
2	S13T004249 100x	5/28/2013 11:18:19 A	(P)0.000	(P)0.000	(P)0.000	(P)0.000	(P)0.000
3	S13T004249 100x	5/28/2013 11:18:32 A	(P)0.000	(P)0.000	(P)0.000	(P)0.000	(P)0.000
	Mean of S13T004249	5/28/2013 11:17:46 A	(P)0.000	(P)0.000	(P)0.000	(P)0.000	(P)0.000
	SD of S13T004249 1		(P)n/a	(P)0.000	(P)0.000	(P)0.000	(P)0.000
	%RSD of S13T00424		(P)n/a	(P)0.000	(P)0.000	(P)0.000	(P)0.000
1	Blank	5/28/2013 11:22:25 A	(P)0.998	(P)0.376	(P)-0.227	(P)-0.000	(P)0.389
2	Blank	5/28/2013 11:22:38 A	(P)1.006	(P)0.646	(P)-0.193	(P)-0.000	(P)0.451
3	Blank	5/28/2013 11:22:51 A	(P)1.003	(P)-0.173	(P)0.354	(P)0.000	(P)-0.087
4	Blank	5/28/2013 11:23:04 A	(P)0.998	(P)-0.376	(P)0.268	(P)0.000	(P)-0.316
5	Blank	5/28/2013 11:23:17 A	(P)0.995	(P)-0.473	(P)-0.204	(P)-0.000	(P)-0.436
	Mean of Blank	5/28/2013 11:22:25 A	(P)0.998	(P)0.000	(P)-0.000	(P)-0.000	(P)-0.000
	SD of Blank		(P)n/a	(P)0.488	(P)0.286	(P)0.000	(P)0.404
	%RSD of Blank		(P)n/a	(P)0.000	(P)0.000	(P)0.000	(P)0.000
1	Sb/Sn117 2ppb CAL	5/28/2013 11:27:11 A	(P)0.906	(P)1990.000	(P)1988.000	(P)1.988	(P)1990.000
2	Sb/Sn117 2ppb CAL	5/28/2013 11:27:24 A	(P)0.904	(PM)2019.000	(PM)2011.000	(PM)2.011	(PM)2019.000
3	Sb/Sn117 2ppb CAL	5/28/2013 11:27:37 A	(P)0.910	(PM)2012.000	(PM)2000.000	(PM)2.000	(PM)2012.000
4	Sb/Sn117 2ppb CAL	5/28/2013 11:27:50 A	(P)0.899	(P)1975.000	(P)2000.000	(P)2.000	(P)1975.000
5	Sb/Sn117 2ppb CAL	5/28/2013 11:28:04 A	(P)0.905	(PM)2004.000	(PM)2000.000	(PM)2.000	(PM)2004.000
	Mean of Sb/Sn117 2p	5/28/2013 11:27:11 A	(P)0.906	(PM)2000.000	(PM)2000.000	(PM)2.000	(PM)2000.000
	SD of Sb/Sn117 2ppb		(P)n/a	(PM)17.470	(PM)8.050	(PM)0.008	(PM)17.450
	%RSD of Sb/Sn117 2		(P)n/a	(PM)0.873	(PM)0.403	(PM)0.406	(PM)0.872
1	Sb/Sn117 1ppb ICV	5/28/2013 11:31:58 A	(P)0.978	(P)1071.000	(P)1027.000	(P)1.027	(P)1071.000
2	Sb/Sn117 1ppb ICV	5/28/2013 11:32:11 A	(P)0.979	(P)1078.000	(P)1034.000	(P)1.034	(P)1078.000
3	Sb/Sn117 1ppb ICV	5/28/2013 11:32:24 A	(P)0.979	(P)1068.000	(P)1036.000	(P)1.036	(P)1068.000
4	Sb/Sn117 1ppb ICV	5/28/2013 11:32:37 A	(P)0.978	(P)1066.000	(P)1028.000	(P)1.028	(P)1066.000
5	Sb/Sn117 1ppb ICV	5/28/2013 11:32:50 A	(P)0.978	(P)1070.000	(P)1036.000	(P)1.036	(P)1070.000
	Mean of Sb/Sn117 1p	5/28/2013 11:31:58 A	(P)0.978	(P)1071.000	(P)1032.000	(P)1.032	(P)1071.000
	SD of Sb/Sn117 1ppb I		(P)n/a	(P)4.711	(P)4.437	(P)0.004	(P)4.695
	%RSD of Sb/Sn117 1		(P)n/a	(P)0.440	(P)0.430	(P)0.427	(P)0.439
1	Sb/Sn117 LLS 20ppt	5/28/2013 11:36:45 A	(P)1.025	(P)23.310	(P)22.790	(P)-0.001	(P)-7.102
2	Sb/Sn117 LLS 20ppt	5/28/2013 11:36:58 A	(P)1.014	(P)23.030	(P)22.500	(P)-0.001	(P)-7.025
3	Sb/Sn117 LLS 20ppt	5/28/2013 11:37:11 A	(P)1.017	(P)22.670	(P)23.820	(P)-0.001	(P)-7.077
4	Sb/Sn117 LLS 20ppt	5/28/2013 11:37:24 A	(P)1.027	(P)22.540	(P)24.290	(P)-0.001	(P)-7.031
5	Sb/Sn117 LLS 20ppt	5/28/2013 11:37:37 A	(P)1.014	(P)22.750	(P)22.030	(P)-0.001	(P)-7.018
	Mean of Sb/Sn117 LL	5/28/2013 11:36:45 A	(P)1.025	(P)22.860	(P)23.090	(P)-0.001	(P)-7.051

15:34:09 5/28/13
SnSb130528.vge

Excluded In Calib | Excluded In Results | Peak Not Selected | Multi Element | Semi Quant | Internal Standard | Standard Addition

Dilution Corrected Concentration Per Analyte

S-Calibration Has Edited Standard
F-Interference Correction Failed
E-Calibration Edited
T-Tripped
I-Invalid Calibration
P-Pulse Counting
V-Valley Integration Failed
M-Result Over Max

Run	Label	TimeStamp	115In	117Sn	121Sb	125Te	126Sn
			ppt	ppt	ppt	ppb	ppt
	SD of Sb/Sn117 LLS 2		(P)n/a	(P)0.310	(P)0.941	(P)0.000	(P)0.037
	%RSD of Sb/Sn117 L		(P)n/a	(P)1.355	(P)4.077	(P)5.843	(P)0.524
1	ICB	5/28/2013 11:41:32 A	(P)1.022	(P)0.648	(P)0.437	(P)-0.001	(P)-6.720
2	ICB	5/28/2013 11:41:45 A	(P)1.014	(P)0.474	(P)0.452	(P)-0.001	(P)-6.450
3	ICB	5/28/2013 11:41:58 A	(P)1.014	(P)-0.368	(P)0.796	(P)-0.001	(P)-6.649
4	ICB	5/28/2013 11:42:11 A	(P)1.015	(P)-0.205	(P)0.612	(P)-0.001	(P)-6.566
5	ICB	5/28/2013 11:42:24 A	(P)1.013	(P)-0.420	(P)0.821	(P)-0.001	(P)-6.520
	Mean of ICB	5/28/2013 11:41:32 A	(P)1.022	(P)0.026	(P)0.623	(P)-0.001	(P)-6.581
	SD of ICB		(P)n/a	(P)0.499	(P)0.182	(P)0.000	(P)0.106
	%RSD of ICB		(P)n/a	(P)1935.000	(P)29.270	(P)6.757	(P)1.609
1	ICB	5/28/2013 11:46:19 A	(P)1.031	(P)0.803	(P)0.479	(P)-0.001	(P)-6.707
2	ICB	5/28/2013 11:46:32 A	(P)1.030	(P)0.650	(P)1.041	(P)-0.001	(P)-6.591
3	ICB	5/28/2013 11:46:45 A	(P)1.038	(P)-0.010	(P)0.977	(P)-0.001	(P)-6.663
4	ICB	5/28/2013 11:46:58 A	(P)1.027	(P)0.044	(P)1.305	(P)-0.001	(P)-6.623
5	ICB	5/28/2013 11:47:11 A	(P)1.025	(P)-0.487	(P)0.737	(P)-0.001	(P)-6.598
	Mean of ICB	5/28/2013 11:46:19 A	(P)1.031	(P)0.200	(P)0.908	(P)-0.001	(P)-6.636
	SD of ICB		(P)n/a	(P)0.526	(P)0.314	(P)0.000	(P)0.048
	%RSD of ICB		(P)n/a	(P)263.300	(P)34.540	(P)14.010	(P)0.729
1	ICS (INTA 1 - 100x)	5/28/2013 11:51:26 A	(P)0.998	(P)0.319	(P)6.922	(P)-0.001	(P)-6.592
2	ICS (INTA 1 - 100x)	5/28/2013 11:51:39 A	(P)0.994	(P)-0.424	(P)5.983	(P)-0.001	(P)-6.718
3	ICS (INTA 1 - 100x)	5/28/2013 11:51:52 A	(P)0.996	(P)-0.778	(P)5.133	(P)-0.001	(P)-6.435
4	ICS (INTA 1 - 100x)	5/28/2013 11:52:05 A	(P)0.996	(P)-0.904	(P)5.734	(P)-0.001	(P)-6.501
5	ICS (INTA 1 - 100x)	5/28/2013 11:52:19 A	(P)0.995	(P)-1.600	(P)6.976	(P)-0.001	(P)-6.838
	Mean of ICS (INTA 1 -	5/28/2013 11:51:07 A	(P)0.998	(P)-0.677	(P)6.150	(P)-0.001	(P)-6.617
	SD of ICS (INTA 1 - 1		(P)n/a	(P)0.702	(P)0.793	(P)0.000	(P)0.163
	%RSD of ICS (INTA 1		(P)n/a	(P)103.600	(P)12.890	(P)11.750	(P)2.464
1	Prep Blank	5/28/2013 11:56:33 A	(P)1.022	(P)-112.600	(P)546.300	(P)-0.096	(P)-657.500
2	Prep Blank	5/28/2013 11:56:46 A	(P)1.028	(P)-128.900	(P)606.200	(P)-0.118	(P)-660.100
3	Prep Blank	5/28/2013 11:56:59 A	(P)1.021	(P)-184.100	(P)558.900	(P)-0.118	(P)-652.200
4	Prep Blank	5/28/2013 11:57:12 A	(P)1.018	(P)-156.100	(P)511.700	(P)-0.107	(P)-694.400
5	Prep Blank	5/28/2013 11:57:26 A	(P)1.009	(P)-213.200	(P)442.900	(P)-0.115	(P)-655.400
	Mean of Prep Blank	5/28/2013 11:56:14 A	(P)1.022	(P)-159.000	(P)533.200	(P)-0.111	(P)-663.900
	SD of Prep Blank		(P)n/a	(P)40.760	(P)60.770	(P)0.009	(P)17.310
	%RSD of Prep Blank		(P)n/a	(P)25.640	(P)11.400	(P)8.280	(P)2.608
1	S13T004249_L	5/28/2013 12:01:39 P	(P)0.958	(P)-1392.000	(P)1370.000	(P)-0.494	(P)-3324.000
2	S13T004249_L	5/28/2013 12:01:52 P	(P)0.962	(P)-1466.000	(P)1178.000	(P)-0.569	(P)-3275.000
3	S13T004249_L	5/28/2013 12:02:05 P	(P)0.962	(P)-1583.000	(P)1279.000	(P)-0.581	(P)-3379.000
4	S13T004249_L	5/28/2013 12:02:19 P	(P)0.958	(P)-1414.000	(P)1195.000	(P)-0.519	(P)-3372.000
5	S13T004249_L	5/28/2013 12:02:32 P	(P)0.957	(P)-1613.000	(P)1531.000	(P)-0.482	(P)-3344.000
	Mean of S13T004249_	5/28/2013 12:01:20 P	(P)0.958	(P)-1494.000	(P)1311.000	(P)-0.529	(P)-3339.000
	SD of S13T004249_L		(P)n/a	(P)99.580	(P)145.000	(P)0.044	(P)41.900
	%RSD of S13T004249		(P)n/a	(P)6.667	(P)11.070	(P)8.384	(P)1.255

15:34:09 5/28/13
SnSb130528.vge

Excluded In Calib | Excluded In Results | Peak Rim Extended | Multi Element | Semi Quant | Internal Standard | Standard Addition

Dilution Corrected Concentration Per Analyte

S-Calibration Has Edited Standard
F-Interference Correction Failed
E-Calibration Edited
T-Tripped
I-Invalid Calibration
P-Pulse Counting
V-Valley Integration Failed
M-Result Over Max

Run	Label	TimeStamp	115In	117Sn	121Sb	125Te	126Sn
			ppt	ppt	ppt	ppb	ppt
1	S13T004249	5/28/2013 12:06:45 F	(P)1.048	(P)26.150	(P)1554.000	(P)-0.060	(P)-643.700
2	S13T004249	5/28/2013 12:06:59 F	(P)1.038	(P)30.490	(P)1552.000	(P)-0.066	(P)-632.800
3	S13T004249	5/28/2013 12:07:12 F	(P)1.041	(P)34.160	(P)1592.000	(P)-0.052	(P)-625.200
4	S13T004249	5/28/2013 12:07:25 F	(P)1.037	(P)57.880	(P)1472.000	(P)-0.077	(P)-639.900
5	S13T004249	5/28/2013 12:07:38 F	(P)1.032	(P)-32.010	(P)1594.000	(P)-0.064	(P)-636.500
	Mean of S13T004249	5/28/2013 12:06:26 F	(P)1.048	(P)23.340	(P)1553.000	(P)-0.064	(P)-635.600
	SD of S13T004249		(P)n/a	(P)33.290	(P)49.440	(P)0.009	(P)7.106
	%RSD of S13T00424		(P)n/a	(P)142.600	(P)3.184	(P)14.160	(P)1.118
1	S13T004249_D	5/28/2013 12:11:52 F	(P)1.013	(P)5.336	(P)1462.000	(P)-0.078	(P)-628.900
2	S13T004249_D	5/28/2013 12:12:05 F	(P)1.009	(P)2.196	(P)1519.000	(P)-0.060	(P)-648.600
3	S13T004249_D	5/28/2013 12:12:18 F	(P)1.001	(P)4.837	(P)1530.000	(P)-0.068	(P)-618.900
4	S13T004249_D	5/28/2013 12:12:32 F	(P)1.013	(P)-2.275	(P)1321.000	(P)-0.054	(P)-639.200
5	S13T004249_D	5/28/2013 12:12:45 F	(P)1.007	(P)-29.500	(P)1576.000	(P)-0.071	(P)-621.200
	Mean of S13T004249_	5/28/2013 12:11:33 F	(P)1.013	(P)-3.882	(P)1482.000	(P)-0.066	(P)-631.400
	SD of S13T004249_D		(P)n/a	(P)14.640	(P)98.550	(P)0.009	(P)12.480
	%RSD of S13T004249		(P)n/a	(P)377.100	(P)6.652	(P)14.040	(P)1.977
1	S13T004277	5/28/2013 12:16:59 F	(P)1.109	(P)813.000	(P)6477.000	(P)0.026	(P)-490.900
2	S13T004277	5/28/2013 12:17:12 F	(P)1.103	(P)766.500	(P)6313.000	(P)0.002	(P)-533.600
3	S13T004277	5/28/2013 12:17:25 F	(P)1.090	(P)714.400	(P)6338.000	(P)-0.006	(P)-531.100
4	S13T004277	5/28/2013 12:17:38 F	(P)1.094	(P)697.400	(P)6296.000	(P)-0.019	(P)-518.900
5	S13T004277	5/28/2013 12:17:51 F	(P)1.091	(P)668.900	(P)5869.000	(P)-0.006	(P)-553.600
	Mean of S13T004277	5/28/2013 12:16:40 F	(P)1.109	(P)732.000	(P)6259.000	(P)-0.001	(P)-525.600
	SD of S13T004277		(P)n/a	(P)57.540	(P)229.300	(P)0.017	(P)23.050
	%RSD of S13T00427		(P)n/a	(P)7.860	(P)3.663	(P)2513.000	(P)4.386
1	S13T004304	5/28/2013 12:22:06 F	(P)1.045	(P)359.000	(P)3439.000	(P)-0.044	(P)-604.700
2	S13T004304	5/28/2013 12:22:19 F	(P)1.048	(P)265.300	(P)3443.000	(P)-0.035	(P)-594.200
3	S13T004304	5/28/2013 12:22:32 F	(P)1.029	(P)243.100	(P)3235.000	(P)-0.059	(P)-565.700
4	S13T004304	5/28/2013 12:22:46 F	(P)1.038	(P)167.800	(P)3233.000	(P)-0.061	(P)-599.800
5	S13T004304	5/28/2013 12:22:59 F	(P)1.023	(P)162.400	(P)3022.000	(P)-0.070	(P)-621.500
	Mean of S13T004304	5/28/2013 12:21:47 F	(P)1.045	(P)239.500	(P)3274.000	(P)-0.054	(P)-597.200
	SD of S13T004304		(P)n/a	(P)80.680	(P)175.000	(P)0.014	(P)20.320
	%RSD of S13T00430		(P)n/a	(P)33.680	(P)5.344	(P)25.860	(P)3.403
1	S13T004249_S	5/28/2013 12:27:14 F	(P)1.053	(P)1560.000	(P)19940.000	(P)0.092	(P)-598.200
2	S13T004249_S	5/28/2013 12:27:27 F	(P)1.051	(P)1522.000	(P)19450.000	(P)0.042	(P)-607.100
3	S13T004249_S	5/28/2013 12:27:40 F	(P)1.048	(P)1468.000	(P)18730.000	(P)0.083	(P)-613.300
4	S13T004249_S	5/28/2013 12:27:53 F	(P)1.034	(P)1353.000	(P)17920.000	(P)0.085	(P)-579.800
5	S13T004249_S	5/28/2013 12:28:06 F	(P)1.047	(P)1289.000	(P)17580.000	(P)0.044	(P)-626.200
	Mean of S13T004249_	5/28/2013 12:26:54 F	(P)1.053	(P)1438.000	(P)18730.000	(P)0.069	(P)-604.900
	SD of S13T004249_S		(P)n/a	(P)114.500	(P)997.000	(P)0.024	(P)17.360
	%RSD of S13T004249		(P)n/a	(P)7.961	(P)5.324	(P)34.870	(P)2.869
1	Prep Std	5/28/2013 12:32:22 F	(P)1.085	(P)9045.000	(P)104900.00	(P)-0.106	(P)-667.600
2	Prep Std	5/28/2013 12:32:35 F	(P)1.083	(P)8897.000	(P)104400.00	(P)-0.103	(P)-652.600
3	Prep Std	5/28/2013 12:32:48 F	(P)1.072	(P)8857.000	(P)103000.00	(P)-0.086	(P)-687.400

15:34:09 5/28/13
SnSb130528.vge

Excluded In Calib | Excluded In Results | Peak Not Evaluated | Multi Element | Semi Quant | Internal Standard | Standard Addition

Dilution Corrected Concentration Per Analyte

S-Calibration Has Edited Standard
F-Interference Correction Failed
E-Calibration Edited
T-Tripped
I-Invalid Calibration
P-Pulse Counting
V-Valley Integration Failed
M-Result Over Max

Run	Label	TimeStamp	115In	117Sn	121Sb	125Te	126Sn
			ppt	ppt	ppt	ppb	ppt
4	Prep Std	5/28/2013 12:33:01 F	(P)1.080	(P)8766.000	(P)103800.00	(P)-0.117	(P)-684.200
5	Prep Std	5/28/2013 12:33:14 F	(P)1.069	(P)8728.000	(P)103400.00	(P)-0.112	(P)-655.300
	Mean of Prep Std	5/28/2013 12:32:02 F	(P)1.085	(P)8859.000	(P)103900.00	(P)-0.105	(P)-669.400
	SD of Prep Std		(P)n/a	(P)124.200	(P)786.100	(P)0.012	(P)16.030
	%RSD of Prep Std		(P)n/a	(P)1.402	(P)0.757	(P)11.130	(P)2.395
1	S13T004249_A	5/28/2013 12:37:29 F	(P)1.004	(P)119300.00	(P)121200.00	(P)-0.026	(P)-623.900
2	S13T004249_A	5/28/2013 12:37:43 F	(P)1.002	(P)118500.00	(P)120800.00	(P)-0.024	(P)-608.000
3	S13T004249_A	5/28/2013 12:37:56 F	(P)0.993	(P)118300.00	(P)119900.00	(P)-0.030	(P)-610.600
4	S13T004249_A	5/28/2013 12:38:09 F	(P)0.995	(P)118600.00	(P)119500.00	(P)-0.064	(P)-620.100
5	S13T004249_A	5/28/2013 12:38:22 F	(P)0.995	(P)116300.00	(P)118900.00	(P)-0.017	(P)-605.300
	Mean of S13T004249_	5/28/2013 12:37:10 F	(P)1.004	(P)118200.00	(P)120000.00	(P)-0.032	(P)-613.600
	SD of S13T004249_A		(P)n/a	(P)1139.000	(P)932.700	(P)0.018	(P)8.005
	%RSD of S13T004249		(P)n/a	(P)0.963	(P)0.777	(P)56.800	(P)1.305
1	Sb/Sn117 CCV	5/28/2013 12:42:17 F	(P)0.961	(P)1075.000	(P)1048.000	(P)-0.001	(P)-6.987
2	Sb/Sn117 CCV	5/28/2013 12:42:30 F	(P)0.963	(P)1059.000	(P)1057.000	(P)-0.001	(P)-6.866
3	Sb/Sn117 CCV	5/28/2013 12:42:44 F	(P)0.955	(P)1061.000	(P)1038.000	(P)-0.001	(P)-6.787
4	Sb/Sn117 CCV	5/28/2013 12:42:57 F	(P)0.952	(P)1065.000	(P)1038.000	(P)-0.001	(P)-6.830
5	Sb/Sn117 CCV	5/28/2013 12:43:10 F	(P)0.957	(P)1071.000	(P)1049.000	(P)-0.001	(P)-6.817
	Mean of Sb/Sn117 CC	5/28/2013 12:42:17 F	(P)0.961	(P)1066.000	(P)1046.000	(P)-0.001	(P)-6.858
	SD of Sb/Sn117 CCV		(P)n/a	(P)6.824	(P)7.794	(P)0.000	(P)0.078
	%RSD of Sb/Sn117 C		(P)n/a	(P)0.640	(P)0.745	(P)8.358	(P)1.131
1	Sb/Sn117 LLS 20ppt	5/28/2013 12:47:04 F	(P)0.986	(P)20.370	(P)22.630	(P)-0.001	(P)-6.770
2	Sb/Sn117 LLS 20ppt	5/28/2013 12:47:17 F	(P)0.989	(P)18.910	(P)24.020	(P)-0.001	(P)-6.846
3	Sb/Sn117 LLS 20ppt	5/28/2013 12:47:31 F	(P)0.988	(P)19.630	(P)23.240	(P)-0.001	(P)-6.654
4	Sb/Sn117 LLS 20ppt	5/28/2013 12:47:44 F	(P)0.991	(P)19.530	(P)24.360	(P)-0.001	(P)-6.529
5	Sb/Sn117 LLS 20ppt	5/28/2013 12:47:57 F	(P)0.986	(P)19.240	(P)23.410	(P)-0.001	(P)-6.823
	Mean of Sb/Sn117 LL	5/28/2013 12:47:04 F	(P)0.986	(P)19.540	(P)23.530	(P)-0.001	(P)-6.724
	SD of Sb/Sn117 LLS 2		(P)n/a	(P)0.545	(P)0.680	(P)0.000	(P)0.132
	%RSD of Sb/Sn117 L		(P)n/a	(P)2.791	(P)2.890	(P)5.871	(P)1.962
1	CCB	5/28/2013 12:51:52 F	(P)1.009	(P)-3.051	(P)0.259	(P)-0.001	(P)-6.724
2	CCB	5/28/2013 12:52:05 F	(P)1.010	(P)-3.403	(P)0.180	(P)-0.001	(P)-6.791
3	CCB	5/28/2013 12:52:18 F	(P)1.009	(P)-3.162	(P)0.205	(P)-0.001	(P)-6.779
4	CCB	5/28/2013 12:52:31 F	(P)1.004	(P)-3.504	(P)0.304	(P)-0.001	(P)-6.833
5	CCB	5/28/2013 12:52:45 F	(P)1.003	(P)-3.057	(P)-0.039	(P)-0.001	(P)-6.578
	Mean of CCB	5/28/2013 12:51:52 F	(P)1.009	(P)-3.236	(P)0.182	(P)-0.001	(P)-6.741
	SD of CCB		(P)n/a	(P)0.207	(P)0.132	(P)0.000	(P)0.099
	%RSD of CCB		(P)n/a	(P)6.399	(P)72.860	(P)5.272	(P)1.469
1	CCB	5/28/2013 12:56:40 F	(P)1.012	(P)-2.619	(P)-0.240	(P)-0.001	(P)-6.659
2	CCB	5/28/2013 12:56:53 F	(P)1.010	(P)-2.730	(P)0.048	(P)-0.001	(P)-6.758
3	CCB	5/28/2013 12:57:06 F	(P)1.007	(P)-3.291	(P)-0.060	(P)-0.001	(P)-6.863
4	CCB	5/28/2013 12:57:19 F	(P)1.011	(P)-2.780	(P)0.129	(P)-0.001	(P)-6.654
5	CCB	5/28/2013 12:57:32 F	(P)1.005	(P)-3.414	(P)-0.063	(P)-0.001	(P)-6.778
	Mean of CCB	5/28/2013 12:56:40 F	(P)1.012	(P)-2.967	(P)-0.037	(P)-0.001	(P)-6.742

Excluded In Calib | Excluded In Results | Peak Purity Failed | Multi Element | Semi Quant | Internal Standard | Standard Addition

Dilution Corrected Concentration Per Analyte

S-Calibration Has Edited Standard
F-Interference Correction Failed
E-Calibration Edited
T-Tripped
I-Invalid Calibration
P-Pulse Counting
V-Valley Integration Failed
M-Result Over Max

Run	Label	TimeStamp	115In	117Sn	121Sb	125Te	126Sn
			ppt	ppt	ppt	ppb	ppt
	SD of CCB		(P)n/a	(P)0.360	(P)0.139	(P)0.000	(P)0.088
	%RSD of CCB		(P)n/a	(P)12.120	(P)371.700	(P)5.553	(P)1.300

15:34:09 5/28/13
SnSb130528.vge

Excluded In Calib | Excluded In Results | Peak Not Evaluated | Multi Element | Semi Quant | Internal Standard | Standard Addition

Uncorrected ICPS Per Mass

S-Calibration Has Edited Standard
F-Interference Correction Failed
E-Calibration Edited
T-Tripped
I-Invalid Calibration
P-Pulse Counting
V-Valley Integration Failed
M-Result Over Max

Run	Label	TimeStamp	115In	117Sn	121Sb	125Te	126Sn
1	rinse	5/28/2013 11:01:12 A	(P)149499.18	(P)949.032	(P)53.000	(P)6.000	(P)117.000
1	rinse	5/28/2013 11:05:26 A	(P)147461.83	(P)998.035	(P)57.000	(P)3.000	(P)143.001
1	rinse	5/28/2013 11:09:40 A	(P)145151.69	(P)994.035	(P)63.000	(P)18.000	(P)111.000
1	rinse	5/28/2013 11:13:54 A	(P)143321.35	(P)1052.039	(P)55.000	(P)7.000	(P)113.000
1	S13T004249 100x	5/28/2013 11:18:06 A	(P)142511.64	(P)1571.086	(P)629.014	(P)26.000	(P)197.001
2	S13T004249 100x	5/28/2013 11:18:19 A	(P)145467.54	(P)1466.075	(P)682.016	(P)28.000	(P)200.001
3	S13T004249 100x	5/28/2013 11:18:32 A	(P)144117.29	(P)1342.063	(P)631.014	(P)25.000	(P)197.001
	Mean of S13T004249	5/28/2013 11:17:46 A	(P)144032.16	(P)1459.742	(P)647.348	(P)26.333	(P)198.001
	SD of S13T004249 1		(P)1479.789	(P)114.643	(P)30.040	(P)1.528	(P)1.732
	%RSD of S13T00424		(P)1.027	(P)7.854	(P)4.641	(P)5.801	(P)0.875
1	Blank	5/28/2013 11:22:25 A	(P)150055.63	(P)1104.043	(P)36.000	(P)7.000	(P)165.001
2	Blank	5/28/2013 11:22:38 A	(P)148855.51	(P)1135.045	(P)37.000	(P)11.000	(P)133.001
3	Blank	5/28/2013 11:22:51 A	(P)149406.55	(P)1018.036	(P)58.000	(P)5.000	(P)175.001
4	Blank	5/28/2013 11:23:04 A	(P)150162.08	(P)993.035	(P)55.000	(P)7.000	(P)172.001
5	Blank	5/28/2013 11:23:17 A	(P)150543.39	(P)981.034	(P)37.000	(P)3.000	(P)169.001
	Mean of Blank	5/28/2013 11:22:25 A	(P)149804.63	(P)1046.238	(P)44.600	(P)6.600	(P)162.801
	SD of Blank		(P)670.044	(P)69.112	(P)10.922	(P)2.966	(P)17.065
	%RSD of Blank		(P)0.447	(P)6.606	(P)24.490	(P)44.947	(P)10.482
1	Sb/Sn117 2ppb CAL	5/28/2013 11:27:11 A	(P)165422.92	(P)327440.08	(P)84035.444	(P)11.000	(P)185.001
2	Sb/Sn117 2ppb CAL	5/28/2013 11:27:24 A	(P)165791.49	(PM)332877.6	(PM)85186.22	(PM)19.000	(PM)182.001
3	Sb/Sn117 2ppb CAL	5/28/2013 11:27:37 A	(P)164647.03	(PM)329434.1	(PM)84139.05	(PM)11.000	(PM)147.001
4	Sb/Sn117 2ppb CAL	5/28/2013 11:27:50 A	(P)166648.04	(P)327388.92	(P)85148.002	(P)11.000	(P)172.001
5	Sb/Sn117 2ppb CAL	5/28/2013 11:28:04 A	(P)165481.93	(PM)329781.0	(PM)84559.52	(PM)15.000	(PM)160.001
	Mean of Sb/Sn117 2p	5/28/2013 11:27:11 A	(P)165598.28	(PM)329384.3	(PM)84613.65	(PM)13.400	(PM)169.201
	SD of Sb/Sn117 2ppb		(P)722.578	(PM)2243.019	(PM)542.189	(PM)3.578	(PM)15.802
	%RSD of Sb/Sn117 2		(P)0.436	(PM)0.681	(PM)0.641	(PM)26.699	(PM)9.339
1	Sb/Sn117 1ppb ICV	5/28/2013 11:31:58 A	(P)153163.02	(P)163606.51	(P)40225.554	(P)9.000	(P)160.001
2	Sb/Sn117 1ppb ICV	5/28/2013 11:32:11 A	(P)153055.88	(P)164611.97	(P)40462.221	(P)6.000	(P)157.001
3	Sb/Sn117 1ppb ICV	5/28/2013 11:32:24 A	(P)153066.32	(P)163014.81	(P)40538.436	(P)3.000	(P)154.001
4	Sb/Sn117 1ppb ICV	5/28/2013 11:32:37 A	(P)153188.62	(P)162891.41	(P)40237.588	(P)7.000	(P)168.001
5	Sb/Sn117 1ppb ICV	5/28/2013 11:32:50 A	(P)153154.93	(P)163516.49	(P)40563.507	(P)9.000	(P)173.001
	Mean of Sb/Sn117 1p	5/28/2013 11:31:58 A	(P)153125.75	(P)163528.24	(P)40405.461	(P)6.800	(P)162.401
	SD of Sb/Sn117 1ppb I		(P)60.430	(P)680.053	(P)163.119	(P)2.490	(P)7.893
	%RSD of Sb/Sn117 1		(P)0.039	(P)0.416	(P)0.404	(P)36.617	(P)4.860
1	Sb/Sn117 LLS 20ppt	5/28/2013 11:36:45 A	(P)146154.84	(P)4397.677	(P)894.028	(P)7.000	(P)151.001
2	Sb/Sn117 LLS 20ppt	5/28/2013 11:36:58 A	(P)147799.63	(P)4405.679	(P)893.028	(P)4.000	(P)164.001
3	Sb/Sn117 LLS 20ppt	5/28/2013 11:37:11 A	(P)147355.07	(P)4340.659	(P)940.031	(P)10.000	(P)156.001
4	Sb/Sn117 LLS 20ppt	5/28/2013 11:37:24 A	(P)145830.21	(P)4275.640	(P)948.031	(P)8.000	(P)161.001
5	Sb/Sn117 LLS 20ppt	5/28/2013 11:37:37 A	(P)147737.66	(P)4363.666	(P)875.027	(P)10.000	(P)165.001
	Mean of Sb/Sn117 LL	5/28/2013 11:36:45 A	(P)146975.48	(P)4356.664	(P)910.029	(P)7.800	(P)159.401
	SD of Sb/Sn117 LLS 2		(P)920.506	(P)52.332	(P)32.072	(P)2.490	(P)5.857

15:34:09 5/28/13 Page 9 of 11
SnSb130528.vge

Excluded In Calib | Excluded In Results | Prep Run Excluded | Multi Element | Semi Quant | Internal Standard | Standard Addition

Uncorrected ICPS Per Mass

S-Calibration Has Edited Standard
F-Interference Correction Failed
E-Calibration Edited
T-Tripped
I-Invalid Calibration
P-Pulse Counting
V-Valley Integration Failed
M-Result Over Max

Run	Label	TimeStamp	115In	117Sn	121Sb	125Te	126Sn
	%RSD of Sb/Sn117 L		(P)0.626	(P)1.201	(P)3.524	(P)31.923	(P)3.674
1	ICB	5/28/2013 11:41:32 A	(P)146575.45	(P)1118.044	(P)60.000	(P)2.000	(P)207.002
2	ICB	5/28/2013 11:41:45 A	(P)147691.52	(P)1101.042	(P)61.000	(P)9.000	(P)248.002
3	ICB	5/28/2013 11:41:58 A	(P)147730.25	(P)978.033	(P)74.000	(P)3.000	(P)219.002
4	ICB	5/28/2013 11:42:11 A	(P)147604.29	(P)1001.035	(P)67.000	(P)8.000	(P)231.002
5	ICB	5/28/2013 11:42:24 A	(P)147820.51	(P)971.033	(P)75.000	(P)5.000	(P)238.002
	Mean of ICB	5/28/2013 11:41:32 A	(P)147484.41	(P)1033.838	(P)67.400	(P)5.400	(P)228.602
	SD of ICB		(P)514.024	(P)70.253	(P)7.021	(P)3.050	(P)16.041
	%RSD of ICB		(P)0.349	(P)6.795	(P)10.418	(P)56.474	(P)7.017
1	ICB	5/28/2013 11:46:19 A	(P)145235.87	(P)1130.045	(P)61.000	(P)12.000	(P)207.002
2	ICB	5/28/2013 11:46:32 A	(P)145501.89	(P)1110.043	(P)82.000	(P)6.000	(P)224.002
3	ICB	5/28/2013 11:46:45 A	(P)144376.90	(P)1007.036	(P)79.000	(P)14.000	(P)212.002
4	ICB	5/28/2013 11:46:58 A	(P)145830.55	(P)1025.037	(P)92.000	(P)2.000	(P)220.002
5	ICB	5/28/2013 11:47:11 A	(P)146110.05	(P)950.032	(P)71.000	(P)15.000	(P)224.002
	Mean of ICB	5/28/2013 11:46:19 A	(P)145411.05	(P)1044.438	(P)77.000	(P)9.800	(P)217.402
	SD of ICB		(P)665.769	(P)74.700	(P)11.683	(P)5.586	(P)7.603
	%RSD of ICB		(P)0.458	(P)7.152	(P)15.173	(P)56.997	(P)3.497
1	ICS (INTA 1 - 100x)	5/28/2013 11:51:26 A	(P)150111.89	(P)1096.042	(P)310.003	(P)4.000	(P)231.002
2	ICS (INTA 1 - 100x)	5/28/2013 11:51:39 A	(P)150654.22	(P)989.034	(P)275.003	(P)16.000	(P)213.002
3	ICS (INTA 1 - 100x)	5/28/2013 11:51:52 A	(P)150463.89	(P)935.031	(P)242.002	(P)12.000	(P)255.002
4	ICS (INTA 1 - 100x)	5/28/2013 11:52:05 A	(P)150423.81	(P)916.029	(P)265.002	(P)9.000	(P)245.002
5	ICS (INTA 1 - 100x)	5/28/2013 11:52:19 A	(P)150562.93	(P)813.023	(P)313.003	(P)5.000	(P)195.001
	Mean of ICS (INTA 1 -	5/28/2013 11:51:07 A	(P)150443.35	(P)949.832	(P)281.003	(P)9.200	(P)227.802
	SD of ICS (INTA 1 - 1		(P)205.813	(P)103.673	(P)30.324	(P)4.970	(P)24.191
	%RSD of ICS (INTA 1		(P)0.137	(P)10.915	(P)10.791	(P)54.021	(P)10.619
1	Prep Blank	5/28/2013 11:56:33 A	(P)146525.61	(P)860.026	(P)248.002	(P)14.000	(P)228.002
2	Prep Blank	5/28/2013 11:56:46 A	(P)145762.19	(P)832.024	(P)269.003	(P)6.000	(P)223.002
3	Prep Blank	5/28/2013 11:56:59 A	(P)146696.68	(P)757.020	(P)253.002	(P)6.000	(P)236.002
4	Prep Blank	5/28/2013 11:57:12 A	(P)147098.45	(P)800.022	(P)236.002	(P)10.000	(P)175.001
5	Prep Blank	5/28/2013 11:57:26 A	(P)148404.86	(P)723.018	(P)212.002	(P)7.000	(P)234.002
	Mean of Prep Blank	5/28/2013 11:56:14 A	(P)146897.56	(P)794.422	(P)243.602	(P)8.600	(P)219.202
	SD of Prep Blank		(P)972.119	(P)55.332	(P)21.268	(P)3.435	(P)25.233
	%RSD of Prep Blank		(P)0.662	(P)6.965	(P)8.731	(P)39.943	(P)11.511
1	S13T004249_L	5/28/2013 12:01:39 P	(P)156380.26	(P)661.015	(P)156.001	(P)14.000	(P)232.002
2	S13T004249_L	5/28/2013 12:01:52 P	(P)155682.03	(P)635.014	(P)140.001	(P)8.000	(P)246.002
3	S13T004249_L	5/28/2013 12:02:05 P	(P)155672.93	(P)599.013	(P)148.001	(P)7.000	(P)214.002
4	S13T004249_L	5/28/2013 12:02:19 P	(P)156383.97	(P)654.015	(P)142.001	(P)12.000	(P)217.002
5	S13T004249_L	5/28/2013 12:02:32 P	(P)156543.70	(P)593.012	(P)169.001	(P)15.000	(P)226.002
	Mean of S13T004249_	5/28/2013 12:01:20 P	(P)156132.58	(P)628.414	(P)151.001	(P)11.200	(P)227.002
	SD of S13T004249_L		(P)420.665	(P)31.143	(P)11.832	(P)3.564	(P)12.806
	%RSD of S13T004249		(P)0.269	(P)4.956	(P)7.836	(P)31.819	(P)5.642
1	S13T004249	5/28/2013 12:06:45 P	(P)143011.26	(P)1036.038	(P)610.013	(P)27.000	(P)242.002
2	S13T004249	5/28/2013 12:06:59 P	(P)144363.43	(P)1052.039	(P)615.013	(P)25.000	(P)260.002

15:34:09 5/28/13
SnSb130528.vge

Excluded In Calib | Excluded In Results | Peak Not Excluded | Multi Element | Semi Quant | Internal Standard | Standard Addition

Uncorrected ICPS Per Mass

S-Calibration Has Edited Standard
F-Interference Correction Failed
E-Calibration Edited
T-Tripped
I-Invalid Calibration
P-Pulse Counting
V-Valley Integration Failed
M-Result Over Max

Run	Label	TimeStamp	115In	117Sn	121Sb	125Te	126Sn
3	S13T004249	5/28/2013 12:07:12 F	(P)143919.65	(P)1054.039	(P)628.014	(P)30.000	(P)270.003
4	S13T004249	5/28/2013 12:07:25 F	(P)144470.84	(P)1092.042	(P)586.012	(P)21.000	(P)250.002
5	S13T004249	5/28/2013 12:07:38 F	(P)145174.59	(P)968.033	(P)634.014	(P)26.000	(P)256.002
	Mean of S13T004249	5/28/2013 12:06:26 F	(P)144187.95	(P)1040.438	(P)614.613	(P)25.800	(P)255.602
	SD of S13T004249		(P)797.002	(P)45.399	(P)18.677	(P)3.271	(P)10.526
	%RSD of S13T00424		(P)0.553	(P)4.363	(P)3.039	(P)12.679	(P)4.118
1	S13T004249_D	5/28/2013 12:11:52 F	(P)147913.80	(P)1041.038	(P)596.012	(P)21.000	(P)272.003
2	S13T004249_D	5/28/2013 12:12:05 F	(P)148428.10	(P)1040.038	(P)620.013	(P)28.000	(P)244.002
3	S13T004249_D	5/28/2013 12:12:18 F	(P)149582.04	(P)1052.039	(P)629.014	(P)25.000	(P)290.003
4	S13T004249_D	5/28/2013 12:12:32 F	(P)147936.37	(P)1030.037	(P)543.010	(P)30.000	(P)257.002
5	S13T004249_D	5/28/2013 12:12:45 F	(P)148820.14	(P)996.035	(P)643.014	(P)24.000	(P)285.003
	Mean of S13T004249_	5/28/2013 12:11:33 F	(P)148536.09	(P)1031.837	(P)606.213	(P)25.600	(P)269.603
	SD of S13T004249_D		(P)695.209	(P)21.477	(P)39.253	(P)3.507	(P)19.192
	%RSD of S13T004249		(P)0.468	(P)2.081	(P)6.475	(P)13.700	(P)7.118
1	S13T004277	5/28/2013 12:16:59 F	(P)135025.78	(P)2031.144	(P)2273.181	(P)55.000	(P)433.007
2	S13T004277	5/28/2013 12:17:12 F	(P)135797.04	(P)1980.137	(P)2229.174	(P)47.000	(P)378.005
3	S13T004277	5/28/2013 12:17:25 F	(P)137436.27	(P)1933.131	(P)2265.180	(P)45.000	(P)386.005
4	S13T004277	5/28/2013 12:17:38 F	(P)136877.95	(P)1902.127	(P)2241.176	(P)40.000	(P)401.006
5	S13T004277	5/28/2013 12:17:51 F	(P)137290.89	(P)1869.122	(P)2098.154	(P)45.000	(P)355.004
	Mean of S13T004277	5/28/2013 12:16:40 F	(P)136485.59	(P)1943.132	(P)2221.373	(P)46.400	(P)390.605
	SD of S13T004277		(P)1038.193	(P)63.981	(P)71.132	(P)5.459	(P)28.954
	%RSD of S13T00427		(P)0.761	(P)3.293	(P)3.202	(P)11.765	(P)7.413
1	S13T004304	5/28/2013 12:22:06 F	(P)143325.39	(P)1511.080	(P)1301.059	(P)33.000	(P)298.003
2	S13T004304	5/28/2013 12:22:19 F	(P)142916.32	(P)1374.066	(P)1299.059	(P)36.000	(P)312.003
3	S13T004304	5/28/2013 12:22:32 F	(P)145619.75	(P)1368.066	(P)1246.054	(P)28.000	(P)359.005
4	S13T004304	5/28/2013 12:22:46 F	(P)144311.24	(P)1248.055	(P)1234.053	(P)27.000	(P)307.003
5	S13T004304	5/28/2013 12:22:59 F	(P)146371.37	(P)1258.055	(P)1173.048	(P)24.000	(P)280.003
	Mean of S13T004304	5/28/2013 12:21:47 F	(P)144508.81	(P)1351.864	(P)1250.655	(P)29.600	(P)311.203
	SD of S13T004304		(P)1472.996	(P)106.866	(P)52.922	(P)4.827	(P)29.372
	%RSD of S13T00430		(P)1.019	(P)7.905	(P)4.232	(P)16.307	(P)9.438
1	S13T004249_S	5/28/2013 12:27:14 F	(P)142317.38	(P)3194.357	(P)7288.859	(P)82.000	(P)305.003
2	S13T004249_S	5/28/2013 12:27:27 F	(P)142596.48	(P)3147.347	(P)7125.777	(P)64.000	(P)293.003
3	S13T004249_S	5/28/2013 12:27:40 F	(P)142931.13	(P)3078.332	(P)6879.656	(P)79.000	(P)285.003
4	S13T004249_S	5/28/2013 12:27:53 F	(P)144883.99	(P)2954.305	(P)6673.558	(P)81.000	(P)337.004
5	S13T004249_S	5/28/2013 12:28:06 F	(P)143097.79	(P)2827.280	(P)6464.462	(P)65.000	(P)267.003
	Mean of S13T004249_	5/28/2013 12:26:54 F	(P)143165.36	(P)3040.324	(P)6886.463	(P)74.200	(P)297.403
	SD of S13T004249_S		(P)1006.952	(P)149.509	(P)332.661	(P)8.928	(P)26.093
	%RSD of S13T004249		(P)0.703	(P)4.918	(P)4.831	(P)12.032	(P)8.774
1	Prep Std	5/28/2013 12:32:22 F	(P)138035.68	(P)13337.223	(P)37022.912	(P)10.000	(P)201.001
2	Prep Std	5/28/2013 12:32:35 F	(P)138373.59	(P)13168.066	(P)36924.658	(P)11.000	(P)222.002
3	Prep Std	5/28/2013 12:32:48 F	(P)139710.17	(P)13239.132	(P)36771.264	(P)17.000	(P)176.001
4	Prep Std	5/28/2013 12:33:01 F	(P)138678.19	(P)13015.927	(P)36793.320	(P)6.000	(P)179.001
5	Prep Std	5/28/2013 12:33:14 F	(P)140071.69	(P)13094.999	(P)37010.881	(P)8.000	(P)221.002
	Mean of Prep Std	5/28/2013 12:32:02 F	(P)138973.86	(P)13171.069	(P)36904.607	(P)10.400	(P)199.801

15:34:09 5/28/13
SnSb130528.vge

Excluded In Calib | Excluded In Results | Peak Not Excluded | Multi Element | Semi Quant | Internal Standard | Standard Addition

Uncorrected ICPS Per Mass

S-Calibration Has Edited Standard
F-Interference Correction Failed
E-Calibration Edited
T-Tripped
I-Invalid Calibration
P-Pulse Counting
V-Valley Integration Failed
M-Result Over Max

Run	Label	TimeStamp	115In	117Sn	121Sb	125Te	126Sn
	SD of Prep Std		(P)876.828	(P)124.604	(P)118.171	(P)4.159	(P)22.039
	%RSD of Prep Std		(P)0.631	(P)0.946	(P)0.320	(P)39.994	(P)11.030
1	S13T004249_A	5/28/2013 12:37:29 F	(P)149278.89	(P)177600.14	(P)46231.687	(P)41.000	(P)282.003
2	S13T004249_A	5/28/2013 12:37:43 F	(P)149555.43	(P)176614.03	(P)46165.473	(P)42.000	(P)306.003
3	S13T004249_A	5/28/2013 12:37:56 F	(P)150933.81	(P)178071.96	(P)46247.739	(P)40.000	(P)305.003
4	S13T004249_A	5/28/2013 12:38:09 F	(P)150516.78	(P)177968.69	(P)45952.789	(P)27.000	(P)290.003
5	S13T004249_A	5/28/2013 12:38:22 F	(P)150502.97	(P)174509.40	(P)45740.108	(P)45.000	(P)312.003
	Mean of S13T004249_	5/28/2013 12:37:10 F	(P)150157.58	(P)176952.85	(P)46067.559	(P)39.000	(P)299.003
	SD of S13T004249_A		(P)704.545	(P)1482.275	(P)217.592	(P)6.964	(P)12.490
	%RSD of S13T004249		(P)0.469	(P)0.838	(P)0.472	(P)17.857	(P)4.177
1	Sb/Sn117 CCV	5/28/2013 12:42:17 F	(P)155954.98	(P)167245.29	(P)41757.941	(P)14.000	(P)179.001
2	Sb/Sn117 CCV	5/28/2013 12:42:30 F	(P)155489.95	(P)164247.81	(P)41994.634	(P)4.000	(P)197.001
3	Sb/Sn117 CCV	5/28/2013 12:42:44 F	(P)156811.61	(P)165944.25	(P)41618.535	(P)8.000	(P)211.002
4	Sb/Sn117 CCV	5/28/2013 12:42:57 F	(P)157329.26	(P)167156.25	(P)41761.953	(P)11.000	(P)205.001
5	Sb/Sn117 CCV	5/28/2013 12:43:10 F	(P)156597.96	(P)167302.96	(P)42007.672	(P)9.000	(P)206.001
	Mean of Sb/Sn117 CC	5/28/2013 12:42:17 F	(P)156436.75	(P)166379.31	(P)41828.147	(P)9.200	(P)199.601
	SD of Sb/Sn117 CCV		(P)723.120	(P)1317.123	(P)168.222	(P)3.701	(P)12.562
	%RSD of Sb/Sn117 C		(P)0.462	(P)0.792	(P)0.402	(P)40.232	(P)6.294
1	Sb/Sn117 LLS 20ppt	5/28/2013 12:47:04 F	(P)151926.27	(P)4128.597	(P)923.030	(P)7.000	(P)207.002
2	Sb/Sn117 LLS 20ppt	5/28/2013 12:47:17 F	(P)151441.48	(P)3895.531	(P)974.033	(P)9.000	(P)195.001
3	Sb/Sn117 LLS 20ppt	5/28/2013 12:47:31 F	(P)151631.81	(P)4008.562	(P)945.031	(P)4.000	(P)224.002
4	Sb/Sn117 LLS 20ppt	5/28/2013 12:47:44 F	(P)151109.66	(P)3980.555	(P)985.034	(P)8.000	(P)242.002
5	Sb/Sn117 LLS 20ppt	5/28/2013 12:47:57 F	(P)151895.93	(P)3957.548	(P)953.032	(P)11.000	(P)199.001
	Mean of Sb/Sn117 LL	5/28/2013 12:47:04 F	(P)151601.43	(P)3994.159	(P)956.032	(P)7.800	(P)213.402
	SD of Sb/Sn117 LLS 2		(P)339.818	(P)85.927	(P)24.415	(P)2.588	(P)19.476
	%RSD of Sb/Sn117 L		(P)0.224	(P)2.151	(P)2.554	(P)33.185	(P)9.126
1	CCB	5/28/2013 12:51:52 F	(P)148435.84	(P)588.012	(P)54.000	(P)4.000	(P)209.002
2	CCB	5/28/2013 12:52:05 F	(P)148373.53	(P)536.010	(P)51.000	(P)9.000	(P)199.001
3	CCB	5/28/2013 12:52:18 F	(P)148508.26	(P)572.011	(P)52.000	(P)7.000	(P)201.001
4	CCB	5/28/2013 12:52:31 F	(P)149189.30	(P)524.010	(P)56.000	(P)7.000	(P)194.001
5	CCB	5/28/2013 12:52:45 F	(P)149422.38	(P)591.012	(P)43.000	(P)10.000	(P)232.002
	Mean of CCB	5/28/2013 12:51:52 F	(P)148785.86	(P)562.211	(P)51.200	(P)7.400	(P)207.002
	SD of CCB		(P)484.125	(P)30.566	(P)4.970	(P)2.302	(P)14.984
	%RSD of CCB		(P)0.325	(P)5.437	(P)9.707	(P)31.110	(P)7.238
1	CCB	5/28/2013 12:56:40 F	(P)148063.68	(P)650.015	(P)35.000	(P)4.000	(P)218.002
2	CCB	5/28/2013 12:56:53 F	(P)148377.91	(P)635.014	(P)46.000	(P)10.000	(P)204.001
3	CCB	5/28/2013 12:57:06 F	(P)148762.89	(P)554.011	(P)42.000	(P)9.000	(P)189.001
4	CCB	5/28/2013 12:57:19 F	(P)148219.62	(P)627.014	(P)49.000	(P)8.000	(P)219.002
5	CCB	5/28/2013 12:57:32 F	(P)149105.43	(P)537.010	(P)42.000	(P)6.000	(P)202.001
	Mean of CCB	5/28/2013 12:56:40 F	(P)148505.90	(P)600.613	(P)42.800	(P)7.400	(P)206.402
	SD of CCB		(P)424.080	(P)51.328	(P)5.263	(P)2.408	(P)12.462
	%RSD of CCB		(P)0.286	(P)8.546	(P)12.297	(P)32.545	(P)6.038

ATL	**ICP-MS DATA REVIEW CHECKLIST**	○ IH ◉ NON IH

○ LA-506-102 Rev _____ (*) ◉ LA-506-103 Rev B-1 (*) ○ _____ Rev _____ (*)

Worklist/Project Information: 41736 / C109 CLO

Analysis Date(s): 06/13/13

Instrument Id: Agilent Prep Batches Run: 41440

	Level 1			Level 2
Review Items	Yes	No	N/A	
A. Calibration				
1. Were the applicable instrument tune, mass calibration and stability check within acceptance criteria?	◉	○	○	☑
2. Was the instrument calibrated per SOP?	◉	○	○	☑
3. Were ICV/CCV analyzed at appropriate frequency and were recoveries within control limits of 90 - 110%? If not in control, was the CCV reanalyzed to show return to control?	◉	○	○	☑
4. Were ICB/CCB analyzed at appropriate frequency and were results < EQL (or, with client consent, <5% of lowest sample result)?	◉	○	○	☑
5. Was an LLS run at required frequency and were recoveries within control limits of 75 - 125% for IH or 70 - 130% for non-IH work?	◉	○	○	☑
B. Sample Results				
1. Were samples with concentrations above the linear range for any analyte diluted and reanalyzed?	○	○	◉	☑
2. Were sample analyses done within holding time?	◉	○	○	☑
C. Preparation/Matrix QC				
1. Was a method blank done per prep batch and were results < EQL or less than 5% of lowest sample result?	◉	○	○	☑
2. Was an LCS (and LCS dup, if required) done per prep batch and were recoveries within control limits of 80 - 120%, and % RPD <20%?	◉	○	○	☑
3. Was an MS run as required and was recovery within control limits of 75 - 125% for all analytes for which the spike level was at least 25% of the sample result?	◉	○	○	☑
4. Was an MSD or DUP run at required frequency and was the % RPD within control limits of <20% (or, with client consent, <30%) for all analytes > EQL?	◉	○	○	☑
5. Was a serial dilution done per analytical batch, if required, and was the % difference within control limits of <10% for all analytes > 100 times the DL?	◉	○	○	☑
6. Was a post digest spike analyzed if required and was the recovery within control limits of 80 - 120%?	◉	○	○	☑
D. Other				
1. Are internal standard responses acceptable? (Suggested Limits: 70 - 120% of the calibration blank)	◉	○	○	☑
2. Were the appropriate flags added to data?	◉	○	○	☑
3. Is current IDL/MDL/EQL data on file?	◉	○	○	☑
4. Were calculations checked for errors?	◉	○	○	☑
5. Were transcriptions and data upload checked for errors?	◉	○	○	☑
6. Were all client/project specific requirements met?	◉	○	○	☑
7. Was the date/time of analysis verified as correct?	◉	○	○	☑
8. Were ICS values below the detection limits?	◉	○	○	☑

Comments/Samples Affected (indicate review item letter and number):

See next page.

(*) This form is not used by the subject procedure; rather, it is used to assist in verifying the data produced during the performance of the procedure.

A-6005-346 (REV 2)

ATL	ICP-MS DATA REVIEW CHECKLIST (continued)	○ IH ◉ NON IH

○ LA-506-102 Rev _____ (*) ◉ LA-506-103 Rev B-1 (*) ○ _____ Rev _____ (*)

Worklist/Project Information: 41736 / C109 CLO

Analysis Date(s): 06/13/13

Instrument Id: Agilent Prep Batches Run: 41440

C.5. SerDil was > 10% difference, but the sample was < 100X DL so acceptance criteria does not apply.

1st Level Data Reviewer: K A Kelton (Signature) Date: 06/24/13

2nd Level Data Reviewer: J. S. Lachut (Signature) Date: 6/24/13

PC: Julie Osborn 7/15/13

(*) This form is not used by the subject procedure; rather, it is used to assist in verifying the data produced during the performance of the procedure.

A-6005-346 (REV 2)

6/24/2013 2:13:44PM
CompleteBatch Version 2.7.32
batchreports 2.7.32

LABCORE Completed Batch Report for Batch# 00041736

Analyst: Getz, Andrew

Book#: SEE BENCHSHEET

Instrument: ICP/MS AGILENT

Method: MS TC-99, LA-506-103 Rev/Mod B-1

Specification: C109 CLO

Prep Batch: 00041440

Batch Comment: NONE

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
Sample Sequence 1																	
1	ICV	S1306170054		0 0			Technetium-99	LIQUID	.00099	9.8630E-04			6.00E-07	ug/mL	99.626	% Recovery	
Sample Sequence 2																	
2	LLS	S1306170056		0 0			Technetium-99	LIQUID	.00000501	5.4880E-06			6.00E-07	ug/mL	109.54	% Recovery	
Sample Sequence 3																	
4	ICB	S1306170055		0 1			Technetium-99	LIQUID		<6.0000E-07			6.00E-07	ug/mL			
Sample Sequence 5																	
5	BLNK-PREP	S1305300006		0 0	A		Technetium-99	LIQUID		<6.0000E-05			6.00E-05	ug/mL			
Sample Sequence 6																	
6	STD-PREP	S1305300007		0 0	A		Technetium-99	LIQUID	.000932	9.2610E-04			6.00E-07	ug/mL	99.367	% Recovery	
Sample Sequence 7																	
7	SERDIL	S1306170057	S13T004250	0 0			Technetium-99	SOLID		6.2946E-02			0.05823	ug/mL	44.648	% Diff	
Sample Sequence 8																	
8	SAMPLE	S13T004250		0 0	A		Technetium-99	SOLID	N/A	4.3517E-02			0.011646	ug/g			J
Sample Sequence 9																	
9	DUP	S1305300008	S13T004250	0 0	A		Technetium-99	SOLID	4.3517E-02	4.0881E-02			0.011641	ug/g	6.2466	% RPD	
Sample Sequence 10																	
10	SPK-PREDIG	S1305300009	S13T004250	0 0	A		Technetium-99	SOLID	.1824856	1.9581E-01			0.011751	ug/g	83.454	% Recovery	
Sample Sequence 11																	
12	SPK-POST	S1306170058	S13T004250	0 1			Technetium-99	SOLID	.1002	9.8610E-02			6.00E-07	ug/mL	98.189	% Recovery	
Sample Sequence 13																	
13	CCV	S1306170059		0 0			Technetium-99	LIQUID	.001002	9.7120E-04			6.00E-07	ug/mL	96.926	% Recovery	
Sample Sequence 14																	
14	CCB	S1306170060		0 0			Technetium-99	LIQUID		<6.0000E-07			6.00E-07	ug/mL			
Sample Sequence 15																	
15	SAMPLE	S13T004278		0 0	A		Technetium-99	SOLID	N/A	4.3825E-02			0.011579	ug/g			J
Sample Sequence 16																	
16	SAMPLE	S13T004305		0 0	A		Technetium-99	SOLID	N/A	3.1243E-02			0.011834	ug/g			J
Sample Sequence 17																	
17	CCV	S1306170061		0 0			Technetium-99	LIQUID	.001002	9.8130E-04			6.00E-07	ug/mL	97.934	% Recovery	

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041736

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
Sample Sequence 18																	
18	LLS	S1306170065		0 0			Technetium-99	LIQUID	.00000501	5.4940E-06			6.00E-07	ug/mL	109.66	% Recovery	
Sample Sequence 19																	
19	CCB	S1306170062		0 0			Technetium-99	LIQUID		<6.0000E-07			6.00E-07	ug/mL			
Sample Sequence 20																	
20	CCV	S1306170064		0 0			Technetium-99	LIQUID	.001002	9.5230E-04			6.00E-07	ug/mL	95.04	% Recovery	
Sample Sequence 21																	
21	LLS	S1306170066		0 0			Technetium-99	LIQUID	.00000501	5.6620E-06			6.00E-07	ug/mL	113.01	% Recovery	
Sample Sequence 22																	
22	CCB	S1306170063		0 0			Technetium-99	LIQUID		<6.0000E-07			6.00E-07	ug/mL			

Comments Section:

Data Flagger Status:
Flagging Completed

Final Page for Batch# 00041736

K J Kelton 06/24/13

Reviewer Signature **Date**

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041736

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Method	Customer Id	Specification
1	S1306170054	ICV			MS TC-99		
2	S1306170056	LLS			MS TC-99		
3	S1306170055	ICB			MS TC-99		
4	S1306170055	ICB			MS TC-99		
5	S1305300006	BLNK-PREP			MS TC-99		
6	S1305300007	STD-PREP			MS TC-99		
7	S1306170057	SERDIL	S13T004250		MS TC-99		
8	S13T004250	SAMPLE		20130402	MS TC-99	9C-13-Comp A	C109 CLO
9	S1305300008	DUP	S13T004250		MS TC-99		
10	S1305300009	SPK-PREDIG	S13T004250		MS TC-99		
11	S1306170058	SPK-POST	S13T004250		MS TC-99		
12	S1306170058	SPK-POST	S13T004250		MS TC-99		
13	S1306170059	CCV			MS TC-99		
14	S1306170060	CCB			MS TC-99		
15	S13T004278	SAMPLE		20130402	MS TC-99	9C-13-Comp B	C109 CLO
16	S13T004305	SAMPLE		20130402	MS TC-99	9C-13-Comp C	C109 CLO
17	S1306170061	CCV			MS TC-99		
18	S1306170065	LLS			MS TC-99		
19	S1306170062	CCB			MS TC-99		
20	S1306170064	CCV			MS TC-99		
21	S1306170066	LLS			MS TC-99		
22	S1306170063	CCB			MS TC-99		

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

* = Rejected Analyte
N, A = Non-reported Analyte

6/17/2013 1:34:28PM
IncompleteBatchShort Version 2.7.29
batchreports 2.7.32

LABCORE Data Entry Template for Batch# 00041736

Analyst: Getz, Andrew **Standard ID / Book#:** See Bench sheet

Instrument: ICP/MS AGILENT

Method: MS TC-99, LA-506-103 Rev/Mod B-1

Prep Batch: 00041440

Batch Comment: N/A

CACN:3A.26

S	Type	Sample	R	A	Matrix	Group#	Project
1	ICV	S1306170054	0		LIQUID		
	Analytes Requested:	Technetium-99					
2	LLS	S1306170056	0		LIQUID		
	Analytes Requested:	Technetium-99					
3	ICB	S1306170055	0		LIQUID		
	Analytes Requested:	Technetium-99					
5	BLNK-PREP	S1305300006	0	A	LIQUID		
	Analytes Requested:	Technetium-99					
6	STD-PREP	S1305300007	0	A	LIQUID		
	Analytes Requested:	Technetium-99					
7	SERDIL	S1306170057	0		SOLID		
	Analytes Requested:	Technetium-99					
8	SAMPLE	S13T004250	0	A	SOLID	20130402	C109 CLO
	Analytes Requested:	Technetium-99					
9	DUP	S1305300008	0	A	SOLID		
	Analytes Requested:	Technetium-99					
10	SPK-PREDIG	S1305300009	0	A	SOLID		
	Analytes Requested:	Technetium-99					
11	SPK-POST	S1306170058	0		SOLID		
	Analytes Requested:	Technetium-99					
13	CCV	S1306170059	0		LIQUID		
	Analytes Requested:	Technetium-99					
14	CCB	S1306170060	0		LIQUID		
	Analytes Requested:	Technetium-99					
15	SAMPLE	S13T004278	0	A	SOLID	20130402	C109 CLO
	Analytes Requested:	Technetium-99					
16	SAMPLE	S13T004305	0	A	SOLID	20130402	C109 CLO
	Analytes Requested:	Technetium-99					
17	CCV	S1306170061	0		LIQUID		
	Analytes Requested:	Technetium-99					
18	LLS	S1306170065	0		LIQUID		
	Analytes Requested:	Technetium-99					
19	CCB	S1306170062	0		LIQUID		
	Analytes Requested:	Technetium-99					
20	CCV	S1306170064	0		LIQUID		
	Analytes Requested:	Technetium-99					

Data Entry Comments:

S = Batch Slot Number, R = Retest Number, A = Aliquot Code.

LABCORE Data Entry Template for Batch# 00041736

21	**LLS**	**S1306170066**	**0**	**LIQUID**
	Analytes Requested:	Technetium-99		
22	**CCB**	**S1306170063**	**0**	**LIQUID**
	Analytes Requested:	Technetium-99		

Final Page for Batch# 00041736

Analyst Signature 06/17/13 **Date**

Data Entry Signature 06/17/13 **Date**

Data Entry Comments:

S = Batch Slot Number, R = Retest Number, A = Aliquot Code.

5/30/2013 2:36:09PM
IncompleteBatchShort Version 2.7.29
batchreports 2.7.32

LABCORE Data Entry Template for Batch# 00041440

Analyst: Dinh, Liem **Standard ID / Book#:** See Bench Sheet

Instrument: LE-BAL-040

Method: ACID DIGEST, Tc, LA-505-163 Rev/Mod H-0-A

Prep Batch: N/A

Batch Comment:

Acid digest for determination of Tc 99, C109 CLO. aks

CACN:3A.26

S	Type	Sample	R	A	Matrix	Group#	Project
1	BLNK-PREP	S1305300006		A	LIQUID		
2	STD-PREP	S1305300007		A	LIQUID		
3	SAMPLE	S13T004250		A	SOLID	20130402	C109 CLO
4	DUP	S1305300008		A	SOLID		
5	SPK-PREDIG	S1305300009		A	SOLID		
6	SAMPLE	S13T004278		A	SOLID	20130402	C109 CLO
7	SAMPLE	S13T004305		A	SOLID	20130402	C109 CLO

Final Page for Batch# 00041440

Analyst Signature 5/30/13 Date

Amelia Stultz 5/30/2013

Data Entry Signature 5/30/13 Date

Amelia Stultz 5/30/2013

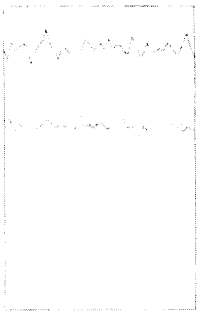
Data Entry Comments:

S = Batch Slot Number, R = Retest Number, A = Aliquot Code.

05/31/2013 09:28 15093721142 2225/8C PAGE 01/02

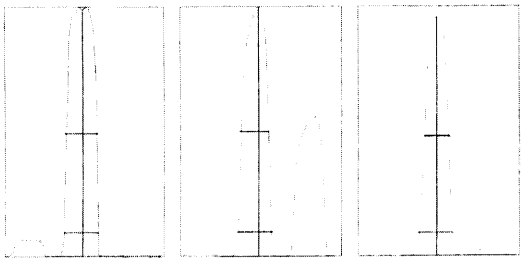
Tune Report

Tune File : nogas.u
Comment :



m/z	Range	Count	Mean	RSD%	Background
7	20,000	16565.0	17216.9	2.50	7.40
89	50,000	29704.0	30100.2	2.25	6.90
205	20,000	11867.0	12341.8	2.79	15.50

Integration Time: 0.1000 sec
Sampling Period: 0.3100 sec
n: 50
Oxide: 156/140 1.683%
Doubly Charged: 70/140 3.662%



m/z:	7	89	205
Height:	16,672	30,747	12,329
Axis:	7.00	89.00	205.00
W-50%:	0.65	0.55	0.50
W-10%:	0.6500	0.6500	0.6500

Integration Time: 0.1000 sec
Acquisition Time: 22.7600 sec
Y axis : Linear

===Plasma Condition===

RF Power	:	1500 W
RF Matching	:	1.68 V
Smpl Depth	:	7 mm
Torch-H	:	0 mm
Torch-V	:	-0.4 mm
Carrier Gas	:	0.88 L/min
Makeup Gas	:	0.15 L/min
Optional Gas	:	--- %
Nebulizer Pump	:	0.1 rps
Sample Pump	:	--- rps
S/C Temp	:	2 degC

===Ion Lenses===

Extract 1	:	3.5 V
Extract 2	:	-126 V
Omega Bias-ce	:	-16 V
Omega Lens-ce	:	1.8 V
Cell Entrance	:	-26 V
QP Focus	:	4 V
Cell Exit	:	-32 V

===Octopole Parameters===

OctP RF	:	172 V
OctP Bias	:	-6 V

===Q-Pole Parameters===

AMU Gain	:	134
AMU Offset	:	128
Axis Gain	:	1.0004
Axis Offset	:	-0.02
QP Bias	:	-3 V

===Detector Parameters===

Discriminator	:	8 mV
Analog HV	:	1790 V
Pulse HV	:	1140 V

===Reaction Cell===

Reaction Mode : OFF
H2 Gas : 0 mL/min He Gas : 0 mL/min Optional Gas : 0 %

Tune File : he.u
He Gas: 5.6 mL/min
Optional Gas: 0 %
QP Focus: -10 V
Cell Exit: -40 V
OctP Bias: -18 V
QP Bias: -15 V

m/z	Count(Mean)	RSD%
51	0.9	94.00
59	2552.9	2.70
89	1108.2	4.01

Integration Time: 0.1000sec

Ar Tank Press.: 734 kPaG
Foward Power: 1503 W
Reflected Power: 1 W
IF/BK Press.: 307 Pa
Analytical Press.: 7.95×10^{-5} Pa
S/C Temp: 1.9 °C
Tune Soln Book #: 130603-1
Analyst: Andrew Getz

Date: 06/13/13

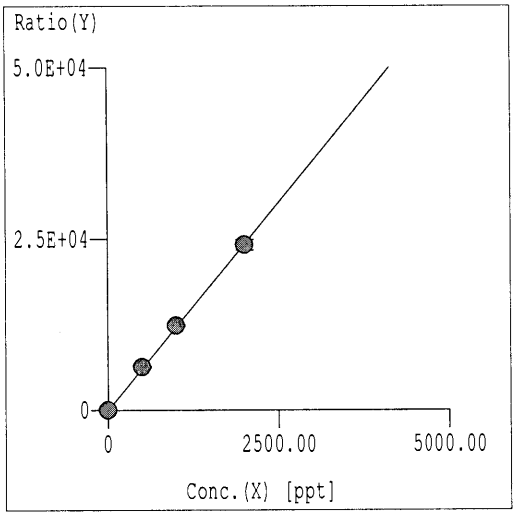
Generated : Jun 13, 2013 11:18:59
Printed : Jun 13, 2013 11:19:50

06/13/13

Calibration - i:\ICP-MS\ICP-MS Agilent\RawData2013\130613_Tc\TC99.C

=== Graph Detail ===

Step Mass Element ISTD Unit
(1) 99 Tc 115 ppt

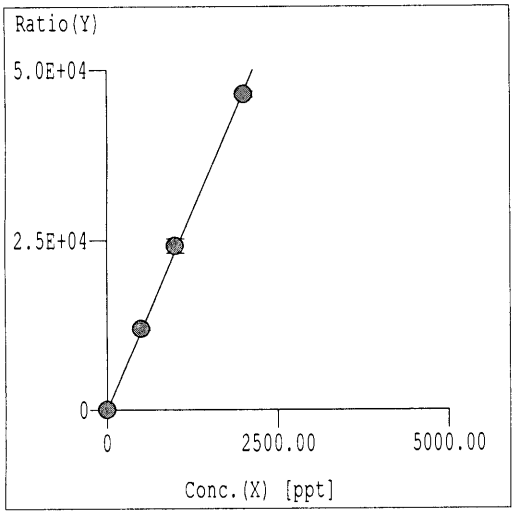


	Rjct	Conc	Calc Conc	CPS/Count	Ratio		RSD [%]
1		0.000	0.000	20.67	9.813E-01	P	52.66
2		501.0	518.7	1.489E+05	6.288E+03	P	1.359
3		1002	1018	2.933E+05	1.234E+04	P	9.126E-01
4		2004	1992	5.938E+05	2.414E+04	P	3.140
5		---	---	---	---		---
6		---	---	---	---		---
7		---	---	---	---		---
8		---	---	---	---		---
9		---	---	---	---		---
10		---	---	---	---		---
11		---	---	---	---		---
12		---	---	---	---		---
13		---	---	---	---		---
14		---	---	---	---		---
15		---	---	---	---		---
16		---	---	---	---		---
17		---	---	---	---		---
18		---	---	---	---		---
19		---	---	---	---		---
20		---	---	---	---		---

Curve Fit: Y=aX+[blank]
r = 0.9999
Y = 1.212E+001*X +9.813E-001
X = 8.250E-002*Y -8.096E-002
DL = 1.279E-01 ppt
BEC = 8.096E-02 ppt

Weight: OFF
Min Conc: ---

Step Mass Element ISTD Unit
(2) 99 Tc 115 ppt



	Rjct	Conc	Calc Conc	CPS/Count	Ratio		RSD [%]
1		0.000	0.000	4.000	3.355E+00	P	70.60
2		501.0	515.1	1.465E+04	1.205E+04	P	1.588
3		1002	1033	2.931E+04	2.417E+04	P	4.407
4		2004	1985	5.880E+04	4.642E+04	P	8.662E-01
5		---	---	---	---		---
6		---	---	---	---		---
7		---	---	---	---		---
8		---	---	---	---		---
9		---	---	---	---		---
10		---	---	---	---		---
11		---	---	---	---		---
12		---	---	---	---		---
13		---	---	---	---		---
14		---	---	---	---		---
15		---	---	---	---		---
16		---	---	---	---		---
17		---	---	---	---		---
18		---	---	---	---		---
19		---	---	---	---		---
20		---	---	---	---		---

Curve Fit: Y=aX+[blank]
r = 0.9997
Y = 2.338E+001*X +3.355E+000
X = 4.276E-002*Y -1.435E-001
DL = 3.039E-01 ppt
BEC = 1.435E-01 ppt

Weight: OFF
Min Conc: ---

Calibration - i:\ICP-MS\ICP-MS Agilent\RawData2013\130613_Tc\TC99.C

Last Calib: Jun 13, 2013 11:54 am
Calibration Type: External Calibration Method
Calibration Title:
Weighting Method: 1/(SD*SD)
Mass Interpolation Fit for VIS: Point to Point
Method: i:\ICP-MS\ICP-MS Agilent\RawData2013\130613_Tc\TC99.M
Multi Tune: #1 nogas.u
#2 he.u

=== Standard Files ===
<Data Correction>
Bkg File: ---
Rejected Masses: ---
Interference Correction: OFF

	Data File	Sample Name	Date Acquired
1	c:\icpchem\1\data\13f13l00.b\003_std.d	Blank	Jun 13 2013 11:40 am
2	c:\icpchem\1\data\13f13l00.b\004_std.d	0.5ppb Cal	Jun 13 2013 11:44 am
3	c:\icpchem\1\data\13f13l00.b\005_std.d	1.0ppb Cal	Jun 13 2013 11:48 am
4	c:\icpchem\1\data\13f13l00.b\006_std.d	2.0ppb Cal	Jun 13 2013 11:52 am
5	---		
6	---		
7	---		
8	---		
9	---		
10	---		
11	---		
12	---		
13	---		
14	---		
15	---		
16	---		
17	---		
18	---		
19	---		
20	---		

ATL	ICP-MS BENCH SHEET - AGILENT	○ IH ◉ Non IH

LA-506-103 Rev B-0 Instrument ID# AGILENT

Client/Project: C109 CLO

Batch #: 41736 Analyst: Andrew Getz

Date/Time Start: 06/13/13 / 1132 Date/Time End: 06/13/13 / 1437

Instrument File #: 13F13100.b Standard Book # & page HNF-N-667 1 pg 124

Pump Tubing OK ☒ Chiller Water OK ☒ Wash Station OK ☒ 2.0 °C. Peltier Temp

(Pipette #); Pipette ID; Volume Range or Fixed Volume; Check box if pipette passes visual verification:

(1) G1025181F (Range/Vol: 1.0-10.0mL) ☒ (4) 439095 (Range/Vol: 0.5-5.0mL) ☒

(2) 2230539 (Range/Vol: 0.01-0.1mL) ☒ (5) NA (Range/Vol: NA) ☐

(3) 1140299 (Range/Vol: 0.1-1.0mL) ☒ (6) NA (Range/Vol: NA) ☐

Calibration Standards:

Blank (130613-1)

0.501ppb Tc99 Cal - 0.1mL(14B63) + 9.9mL (130613-1);5.0mL + 5.0mL(130424-1);5.0mL + 5.0mL(130613-1)

1.002ppb Tc99 Cal - 0.1mL(14B63) + 9.9mL (130613-1);5.0mL + 5.0mL(130613-1)

2.004ppb Tc99 Cal - 0.1mL(14B63) + 9.9mL (130613-1)

Verification Standards:

ICB/CCB/rinse - (130613-1)

0.99ppb Tc99 ICV/CCV - 0.1mL(15B63) + 9.9mL (130613-1)

1.002ppb Tc99 CCV - 0.1mL(14B63) + 9.9mL (130613-1);5.0mL + 5.0mL(130613-1)

5.01ppt Tc99 LLS - 0.1mL(14B63) + 9.9mL (130613-1);5.0mL + 5.0mL(130613-1);5.0mL + 5.0mL(130613-1);0.1mL + 9.9mL(130613-1)

ICS Co 50ppb - 0.05mL(SL016329) + 9.95mL (130613-1)

ICS ATL2 50x - 0.2mL(Sl018961) + 9.8mL (130613-1)

Internal Standard Book Number: 130311-1

Post Spike:

1.002 ppb from 14B63

Sample Number	Dilution Factor	Dilution
ICV	1	see above
rinse	1	see above
LLS	1	see above
ICB	1	see above
ICB	1	see above
ICS Co	1	see above
ICS ATL 2	1	see above
Prep Blank	100	0.1(2)-9.9(1)
Prep Std	1	
S13T004250_L	500	0.1(2)-9.9(1);1.0(3)-4.0(1)
S13T004250	100	0.1(2)-9.9(1)

ATL	ICP-MS BENCH SHEET - AGILENT (continued)	○ IH ◉ Non IH

LA-506-103 Rev B-0 Instrument ID# AGILENT

Client/Project: C109 CLO

Batch #: 41736 Analyst: Andrew Getz

Sample Number	Dilution Factor	Dilution
S13T004250_D	100	0.1(2)-9.9(1)
S13T004250_S	100	0.1(2)-9.9(1)
S13T004250_A	100	0.1(2)-0.05(2)-9.85(1)
CCV	1	see above
CCB	1	see above
S13T004278	100	0.1(2)-9.9(1)
S13T004305	100	0.1(2)-9.9(1)
CCV	1	see above
Rinse	1	see above
LLS	1	see above
CCB	1	see above
S13T0004250_A	100	0.1(2)-0.05(2)-9.85(1)
CCV	1	see above
Rinse	1	see above
LLS	1	see above
CCB	1	see above

Dilution Key:

(www) indicates the sample volume in mL (yyy) indicates the post spike volume in mL (zzz) indicates the diluents volume in mL

Examples (Where (#) is the pipette #):

Single dilution: www(#) - zzz(#)	0.25(#) - 9.75(#)	DF=40
Single dilution with Post Spike: www(#) - yyy(#) - zzz(#)	0.25(#) - 0.025(#) - 9.725(#)	DF=40
Double dilution: www(#) - zzz(#); www(#) - zzz(#)	0.10(#) - 9.9(#); 0.25(#) - 9.75(#)	DF=4000
Double dilution with Post Spike: www(#) - zzz(#); www(#) - yyy(#) - zzz(#)	0.10(#) - 9.9(#); 0.25(#) - 0.025(#) - 9.725(#)	DF=4000

Comments:

ATL	ACID DIGESTION BENCH SHEET	○ IH ◉ Non IH

○ LA-505-158 Rev N/A ◉ LA-505-183 Rev H-0-A ○ LA-505-172 Rev N/A

Project: C109 CLO (Group 20130402) Tc-99

Batch #: 00041440 Analyst: AKS/LND

Prep. Date/Time Start: 5/30/2013 / 0930 Prep. Date/Time End: 5/30/2013 / 1400

Balance Number: LE-BAL-040 Mod Block Temp: 95 °C

Standard	Lot/Book #	Exp. Date	Standard	Lot/Book #	Exp. Date
HCl	N/A	N/A	HS50	N/A	N/A
HNO_3	000034085	4/10/2018	HS51	N/A	N/A
H_2O_2	K418000098	1/31/2016	HS52	N/A	N/A
HS29	N/A	N/A	HS53	N/A	N/A
Tc-99 ~50 ppb	130304-1	10/18/2015	N/A	N/A	N/A

(Pipette #); Pipette ID; Volume Range or Fixed Volume; Check box if pipette passes visual verification:

(1) GI030153F (Range/Vol: 0.1mL-1.0mL) ☑ (3) N/A (Range/Vol: N/A) ☐

(2) J1207550U (Range/Vol: 1.0mL-10.0mL) ☑ (4) N/A (Range/Vol: N/A) ☐

Sample ID	Final Volume (mL)	Sample Qty/Unit (a)	Spike Added (b)	Dose Rate (mrem/hr)
Prep Blank	50	N/A		<0.5
Prep Std	50	N/A	1.0 mL (1) of 50 ppb Tc-99	<0.5
S13T004250	50	0.2576 g		1840
S13T004250 Dup	50	0.2577 g		1840
S13T004250_S1	50	0.2553 g	1.0 mL (1) of 50 ppb Tc-99	1840
S13T004278	50	0.2591 g		5/30/13 1610 4278 230
S13T004305	50	0.2535 g		4278 1610

(a) Sample Qty/Unit: For solid samples, record the weight in g (e.g., "0.25g"). For liquid samples, record the volume in mL and record the pipette number used in parentheses (e.g., "2.5mL (1)"). For filter media, use "Each" (i.e., "1 each").

(b) Spike Added: Record the volume in mL and record the pipette number used in parentheses for each standard used, indicate the standard used (e.g., "0.5mL (3) HS50 + 1.0mL (1) HS51").

Note: Observation of sample before and after prep. (i.e., sample appearance, digestate color, clarity, approx. % dissolved, and multiple phases).

Comments:

Sample size is approximately 0.25 g
Parent Samples: Refer to Sample Breakdown Diagrams
NO HCl. Skip step #23 per the NOTE.
Chemist instructions provided by SD Bolling.

Sample 4250 was a dry, granulated, sample with uniform small grains and a light orange/beige color.
Sample 4278 was similar in appearance but had a higher moisture content.
sample 4305 again was similar in appearance but had a high moisture content. Consistency was similar to peanut butter.
After the digest, all samples were similar to tap water.

A-6005-369 (REV 0)

05/31/2013 09:28 15093721142 222S/BC PAGE 02/02

Starting sequence Thu Jun 13 11:30:53 2013

Sequence Name: C:\ICPCHEM\1\SEQUENCE\Tc130613.S
Comment: Tc99 C109 CLO
Operator: AG
Data Path: C:\ICPCHEM\1\DATA\13F13100.B\

======== Error Action Codes =========

1:NextSmpl
2:Abort
3:Blk(Abort)-NextSmpl
4:Blk(Cont.)-NextSmpl
5:Blk(Abort)-SameSmpl
6:Blk(Cont.)-SameSmpl
7:Cal-SameSmpl
8:Cal-AllSmpls
9:Next Lot
10:Run User Macro
12:SameSmpl
13:Reslope-NextSmpl

Line	Method	Type	Vial	DataFile	Sample Name	Dil.	Result	Action
1)		Keyword		SMPLBEG	START OF SMPL			
2)	C:\ICPCHEM\1\METHODS\TC99.M	Sample	1501	001SMPL	rinse	---	Pass	---
3)	C:\ICPCHEM\1\METHODS\TC99.M	Sample	1501	002SMPL	rinse	---	Pass	---
4)	C:\ICPCHEM\1\METHODS\TC99.M	CalStd	1101	003_STD	Blank	---	Pass	---
5)	C:\ICPCHEM\1\METHODS\TC99.M	CalStd	1102	004_STD	0.5ppb Cal	---	Pass	---
6)	C:\ICPCHEM\1\METHODS\TC99.M	CalStd	1103	005_STD	1.0ppb Cal	---	Pass	---
7)	C:\ICPCHEM\1\METHODS\TC99.M	CalStd	1104	006_STD	2.0ppb Cal	---	Pass	---
8)	C:\ICPCHEM\1\METHODS\TC99.M	Sample	1105	007SMPL	.99ppb ICV	---	Pass	---
9)	C:\ICPCHEM\1\METHODS\TC99.M	Sample	1501	008SMPL	rinse	---	Pass	---
10)	C:\ICPCHEM\1\METHODS\TC99.M	Sample	1106	009SMPL	LLS 5ppt	---	Pass	---
11)	C:\ICPCHEM\1\METHODS\TC99.M	Sample	1107	010SMPL	ICB	---	Pass	---
12)	C:\ICPCHEM\1\METHODS\TC99.M	Sample	1107	011SMPL	ICB	---	Pass	---
13)	C:\ICPCHEM\1\METHODS\TC99.M	Sample	1108	012SMPL	ICS Co 50ppb	---	Pass	---
14)	C:\ICPCHEM\1\METHODS\TC99.M	Sample	1109	013SMPL	ICS ATL 2 50x	---	Pass	---
15)	C:\ICPCHEM\1\METHODS\TC99.M	Sample	1201	014SMPL	Prep Blank	---	Pass	---
16)	C:\ICPCHEM\1\METHODS\TC99.M	Sample	1202	015SMPL	Prep Std	---	Pass	---
17)	C:\ICPCHEM\1\METHODS\TC99.M	Sample	1203	016SMPL	S13T004250_L	---	Pass	---
18)	C:\ICPCHEM\1\METHODS\TC99.M	Sample	1204	017SMPL	S13T004250	---	Pass	---
19)	C:\ICPCHEM\1\METHODS\TC99.M	Sample	1205	018SMPL	S13T004250_D	---	Pass	---
20)	C:\ICPCHEM\1\METHODS\TC99.M	Sample	1206	019SMPL	S13T004250_S1	---	Pass	---
21)	C:\ICPCHEM\1\METHODS\TC99.M	Sample	1207	020SMPL	S13T004250_A	---	Pass	---
22)	C:\ICPCHEM\1\METHODS\TC99.M	Sample	1103	021SMPL	CCV 1 ppb	---	Pass	---
23)	C:\ICPCHEM\1\METHODS\TC99.M	Sample	1101	022SMPL	CCB	---	Pass	---
24)	C:\ICPCHEM\1\METHODS\TC99.M	Sample	1208	023SMPL	S13T004278	---	Pass	---
25)	C:\ICPCHEM\1\METHODS\TC99.M	Sample	1209	024SMPL	S13T004305	---	Pass	---
26)	C:\ICPCHEM\1\METHODS\TC99.M	Sample	1103	025SMPL	CCV 1 ppb	---	Pass	---
27)	C:\ICPCHEM\1\METHODS\TC99.M	Sample	1501	026SMPL	rinse	---	Pass	---
28)	C:\ICPCHEM\1\METHODS\TC99.M	Sample	1106	027SMPL	LLS 5ppt	---	Pass	---
29)	C:\ICPCHEM\1\METHODS\TC99.M	Sample	1101	028SMPL	CCB	---	Pass	---
30)		Keyword		SMPLEND	END OF SMPL			

Sequence completed Thu Jun 13 13:23:47 2013

Starting sequence Thu Jun 13 14:20:00 2013

Sequence Name: C:\ICPCHEM\1\SEQUENCE\Tc130613.S
Comment: Tc99 C109 CLO
Operator: AG
Data Path: C:\ICPCHEM\1\DATA\13F13100.B\

======== Error Action Codes =========

1:NextSmpl	9:Next Lot
2:Abort	10:Run User Macro
3:Blk(Abort)-NextSmpl	
4:Blk(Cont.)-NextSmpl	12:SameSmpl
5:Blk(Abort)-SameSmpl	13:Reslope-NextSmpl
6:Blk(Cont.)-SameSmpl	
7:Cal-SameSmpl	
8:Cal-AllSmpls	

Line	Method	Type	Vial	DataFile	Sample Name	Dil. Result	Result	Action
30)	C:\ICPCHEM\1\METHODS\TC99.M	Sample	1210	29	S13T004250_A	---	Pass	---
31)	C:\ICPCHEM\1\METHODS\TC99.M	Sample	1103	30	CCV 1 ppb	---	Pass	---
32)	C:\ICPCHEM\1\METHODS\TC99.M	Sample	1501	31	rinse	---	Pass	---
33)	C:\ICPCHEM\1\METHODS\TC99.M	Sample	1106	32	LLS 5ppt	---	Pass	---
34)	C:\ICPCHEM\1\METHODS\TC99.M	Sample	1101	33	CCB	---	Pass	---
35)		Keyword		SMPLEND	END OF SMPL			

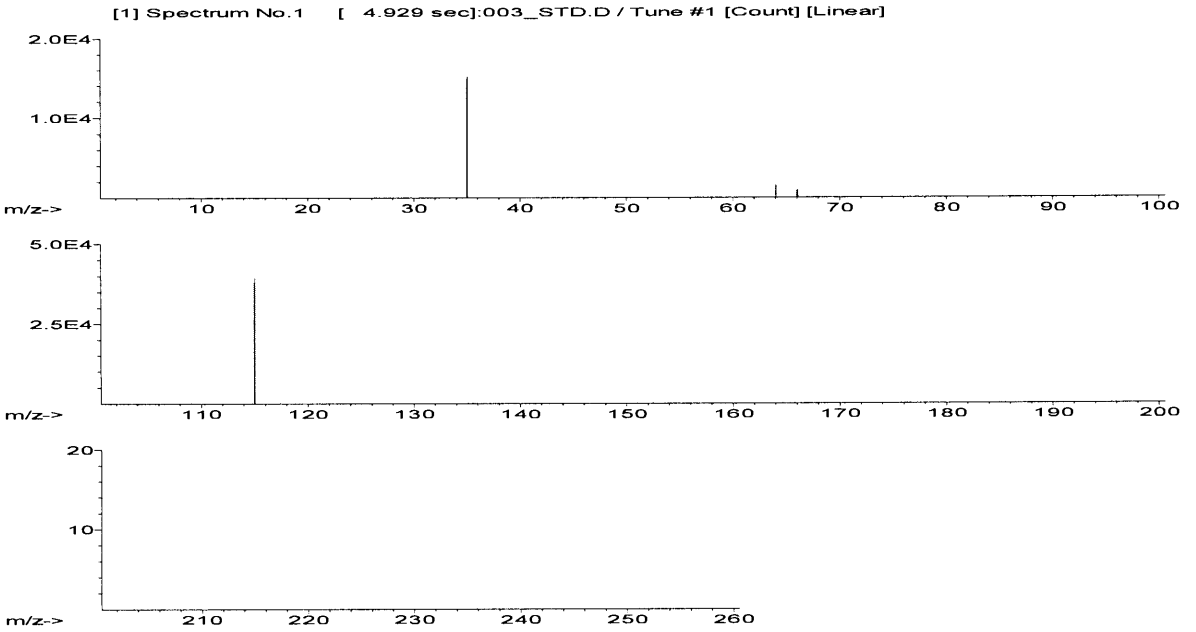
Sequence completed Thu Jun 13 14:39:09 2013

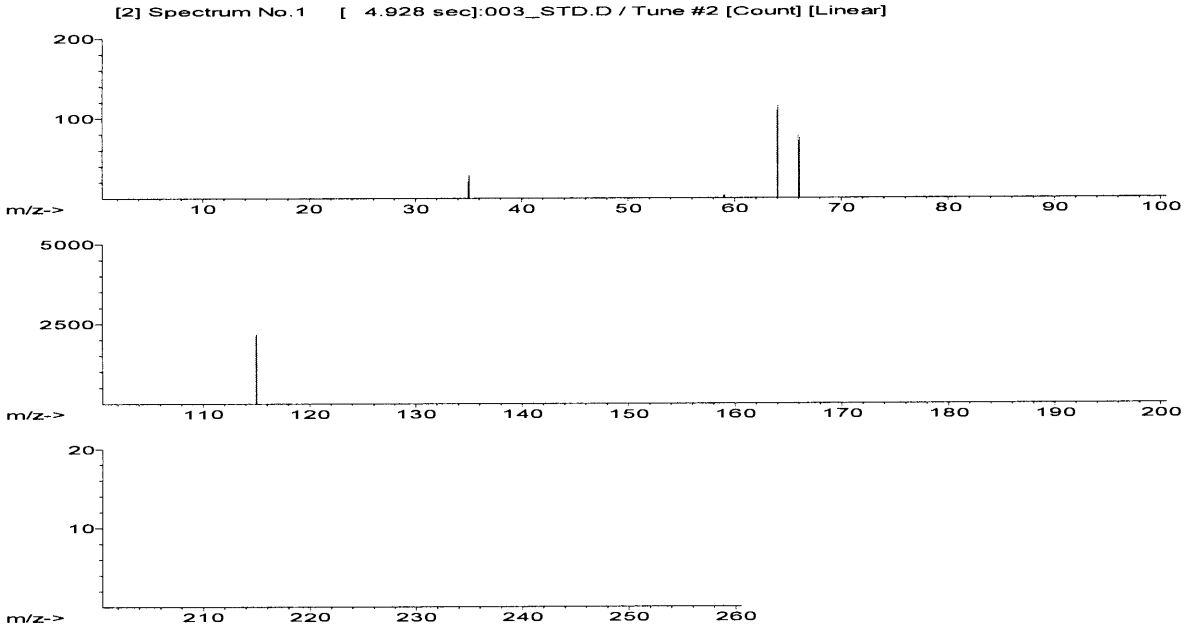
Quantitation Report - Detailed

```
File Name    : 003_STD.D
File Path    : I:\ICP-MS\ICP-MS AGILENT\RAWDATA2013\130613_TC\
Method       : i:\ICP-MS\ICP-MS Agilent\RawData2013\130613_Tc\TC99.M
Calibration  : i:\ICP-MS\ICP-MS Agilent\RawData2013\130613_Tc\TC99.C
Acq Time     : Jun 13 2013  11:40 am
Sample Name  : Blank
Sample Type  : CalStd
Comments     :
Prep Dilution  : 1.000
Auto Dilution  : Undiluted
Total Dilution : 1.000
Operator Name: AG
Acq Mode     : Spectrum
Cal Title    :
Cal Type     : External Calibration Method
Last Calib   : Jun 17 2013  11:25 am
Bkg File     : --------
Bkg Rejected Masses: --------
Interference Correction : OFF
Blank File   : --------
VIS Fit      : Point to Point
Weighting Method: 1/(SD*SD)
Multi Tune   : #1 nogas.u
               #2 he.u
```

Element	Mass	ISTD	Tune	CPS or Ratio	SD	RSD(%)	Time(sec)
Tc	99	115	#1	0.9812819 P	0.5167	52.66	0.30
Tc	99	115	#2	3.354811 P	2.369	70.62	0.30
In	115		#1	387,918.1 P	31,680	8.17	0.30
In	115		#2	21,494.35 P	463.3	2.16	0.30

Element	Mass	Tune	Conc.	SD	RSD(%)	Rep	VI
Tc	99	#1	1.141E-09 ppt	0.04263	3.7E+9	5	
Tc	99	#2	5.065E-09 ppt	0.1013	2.0E+9	5	
In	115	#1	[1.800E+04 ppt]	---	---	[5]	
In	115	#2	[1.800E+04 ppt]	---	---	[5]	


[1] Spectrum No.1 [4.929 sec]:003_STD.D / Tune #1 [Count] [Linear]
2.0E4
1.0E4
m/z->
10 20 30 40 50 60 70 80 90 100
5.0E4
2.5E4
m/z->
110 120 130 140 150 160 170 180 190 200
20
10
m/z->
210 220 230 240 250 260

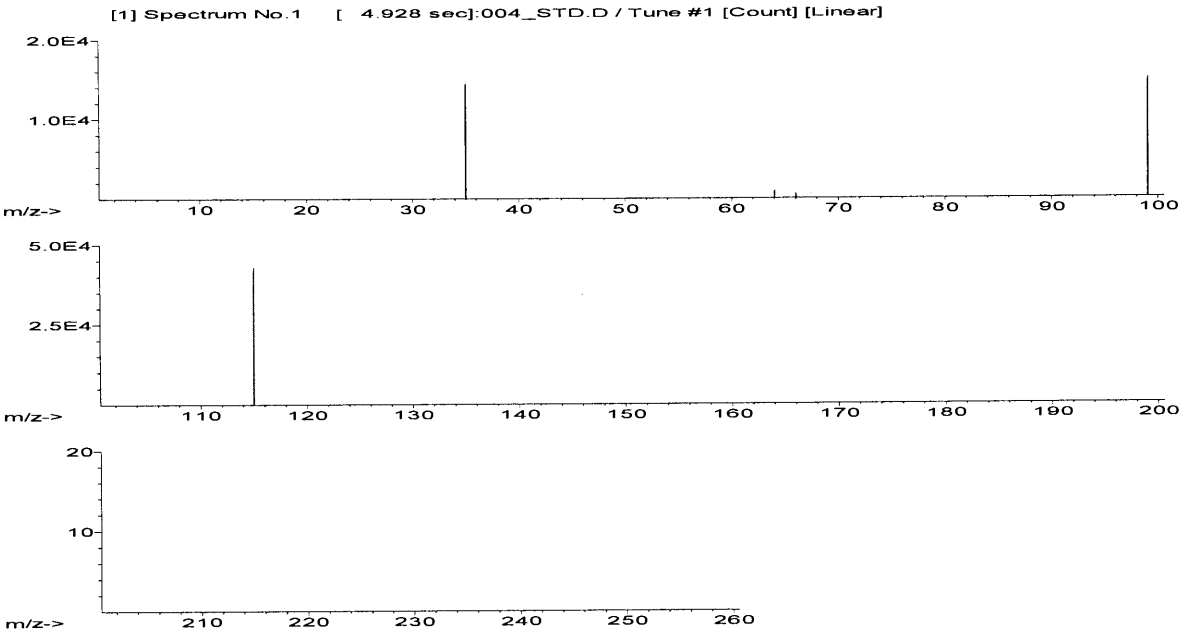

[2] Spectrum No.1 [4.928 sec]:003_STD.D / Tune #2 [Count] [Linear]
200
100
m/z->
10 20 30 40 50 60 70 80 90 100
5000
2500
m/z->
110 120 130 140 150 160 170 180 190 200
20
10
m/z->
210 220 230 240 250 260

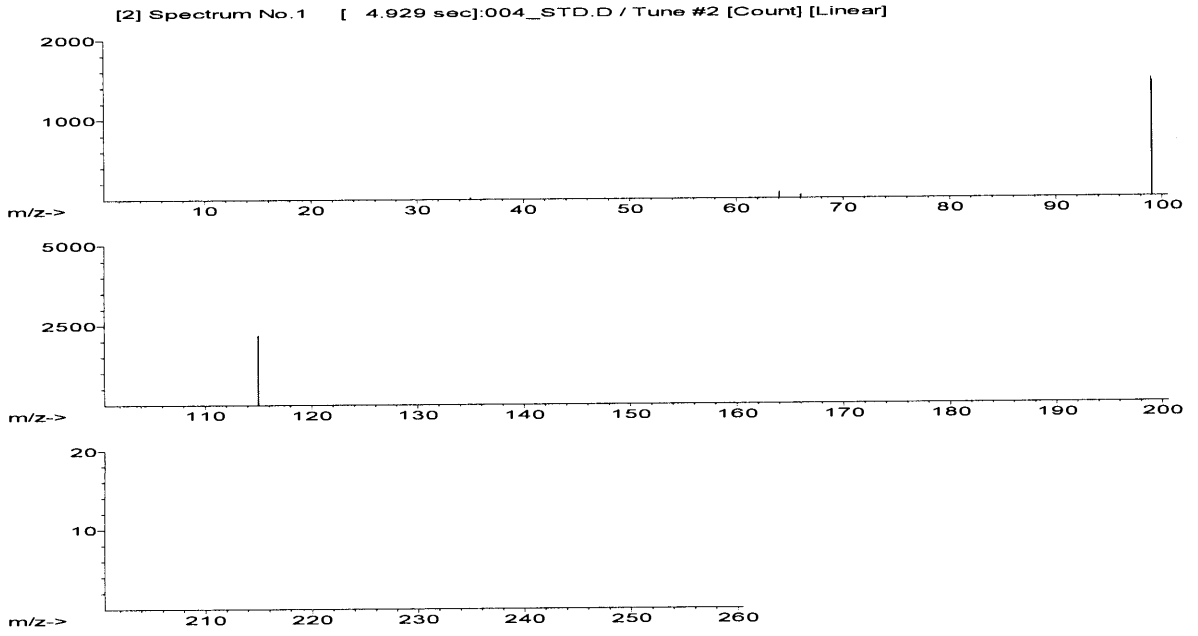
Quantitation Report - Detailed

```
File Name     : 004_STD.D
File Path     : I:\ICP-MS\ICP-MS AGILENT\RAWDATA2013\130613_TC\
Method        : i:\ICP-MS\ICP-MS Agilent\RawData2013\130613_Tc\TC99.M
Calibration   : i:\ICP-MS\ICP-MS Agilent\RawData2013\130613_Tc\TC99.C
Acq Time      : Jun 13 2013  11:44 am
Sample Name   : 0.5ppb Cal
Sample Type   : CalStd
Comments      :
Prep Dilution  : 1.000
Auto Dilution  : Undiluted
Total Dilution : 1.000
Operator Name: AG
Acq Mode      : Spectrum
Cal Title     :
Cal Type      : External Calibration Method
Last Calib    : Jun 17 2013  11:25 am
Bkg File      : --------
Bkg Rejected Masses: --------
Interference Correction : OFF
Blank File    : --------
VIS Fit       : Point to Point
Weighting Method: 1/(SD*SD)
Multi Tune    : #1 nogas.u
                #2 he.u
```

Element	Mass	ISTD	Tune	CPS or Ratio	SD	RSD(%)	Time(sec)
Tc	99	115	#1	6,287.596 P	85.43	1.36	0.30
Tc	99	115	#2	12,049.22 P	191.3	1.59	0.30
In	115		#1	426,149.2 P	4,377	1.03	0.30
In	115		#2	21,896.33 P	765.8	3.50	0.30

Element	Mass	Tune	Conc.	SD	RSD(%)	Rep	VI
Tc	99	#1	518.7 ppt	7.049	1.36	5	
Tc	99	#2	515.1 ppt	8.181	1.59	5	
In	115	#1	[1.800E+04 ppt]	---	---	[5]	
In	115	#2	[1.800E+04 ppt]	---	---	[5]	


[1] Spectrum No.1 [4.928 sec]:004_STD.D / Tune #1 [Count] [Linear]
2.0E4
1.0E4
m/z->
10 20 30 40 50 60 70 80 90 100
5.0E4
2.5E4
m/z->
110 120 130 140 150 160 170 180 190 200
20
10
m/z->
210 220 230 240 250 260

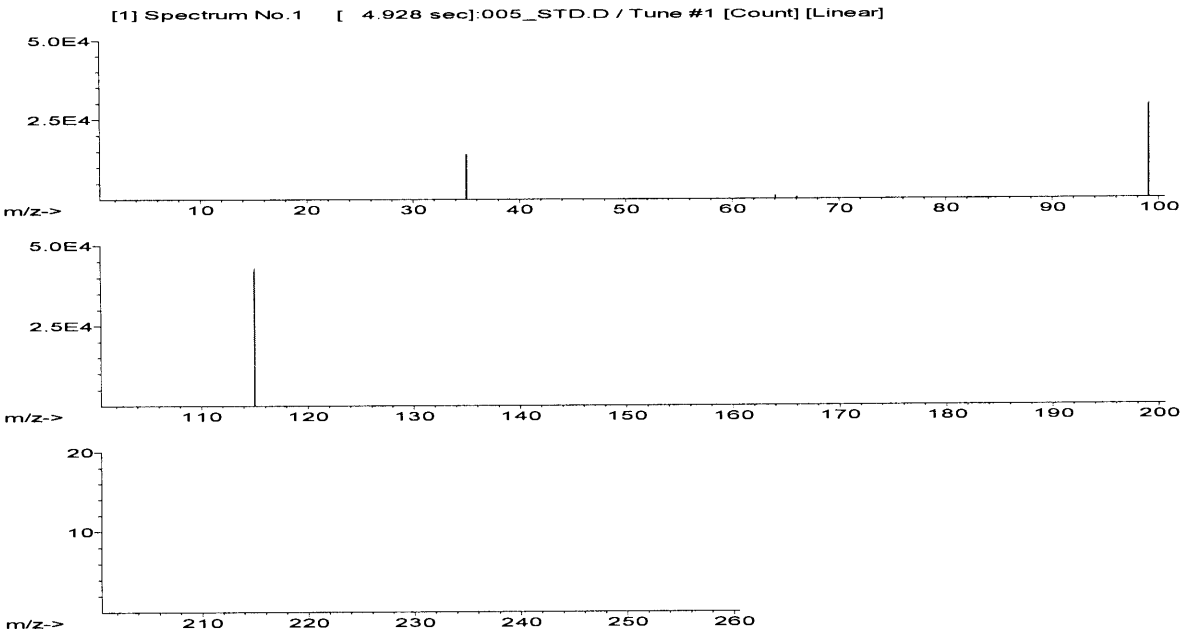

[2] Spectrum No.1 [4.929 sec]:004_STD.D / Tune #2 [Count] [Linear]
2000
1000
m/z->
10 20 30 40 50 60 70 80 90 100
5000
2500
m/z->
110 120 130 140 150 160 170 180 190 200
20
10
m/z->
210 220 230 240 250 260

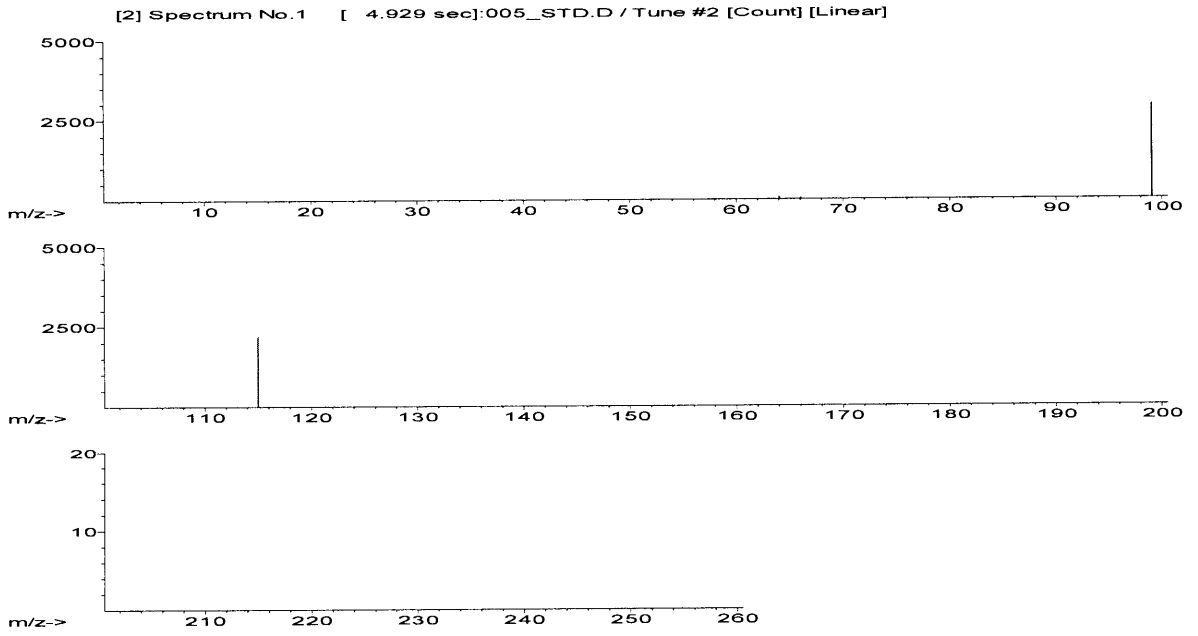
Quantitation Report - Detailed

File Name : 005_STD.D
File Path : I:\ICP-MS\ICP-MS AGILENT\RAWDATA2013\130613_TC\
Method : i:\ICP-MS\ICP-MS Agilent\RawData2013\130613_Tc\TC99.M
Calibration : i:\ICP-MS\ICP-MS Agilent\RawData2013\130613_Tc\TC99.C
Acq Time : Jun 13 2013 11:48 am
Sample Name : 1.0ppb Cal
Sample Type : CalStd
Comments :
Prep Dilution : 1.000
Auto Dilution : Undiluted
Total Dilution : 1.000
Operator Name: AG
Acq Mode : Spectrum
Cal Title :
Cal Type : External Calibration Method
Last Calib : Jun 17 2013 11:25 am
Bkg File : --------
Bkg Rejected Masses: --------
Interference Correction : OFF
Blank File : --------
VIS Fit : Point to Point
Weighting Method: 1/(SD*SD)
Multi Tune : #1 nogas.u
#2 he.u

Element	Mass	ISTD	Tune	CPS or Ratio	SD	RSD(%)	Time(sec)
Tc	99	115	#1	12,338.61 P	112.6	0.91	0.30
Tc	99	115	#2	24,171.66 P	1,065	4.41	0.30
In	115		#1	427,881.4 P	3,113	0.73	0.30
In	115		#2	21,849.63 P	819.8	3.75	0.30

Element	Mass	Tune	Conc.	SD	RSD(%)	Rep	VI
Tc	99	#1	1.018E+03 ppt	9.290	0.91	5	
Tc	99	#2	1.033E+03 ppt	45.56	4.41	5	
In	115	#1	[1.800E+04 ppt]	---	---	[5]	
In	115	#2	[1.800E+04 ppt]	---	---	[5]	


[1] Spectrum No.1 [4.928 sec]:005_STD.D / Tune #1 [Count] [Linear]
5.0E4
2.5E4
m/z->
10 20 30 40 50 60 70 80 90 100
5.0E4
2.5E4
m/z->
110 120 130 140 150 160 170 180 190 200
20
10
m/z->
210 220 230 240 250 260

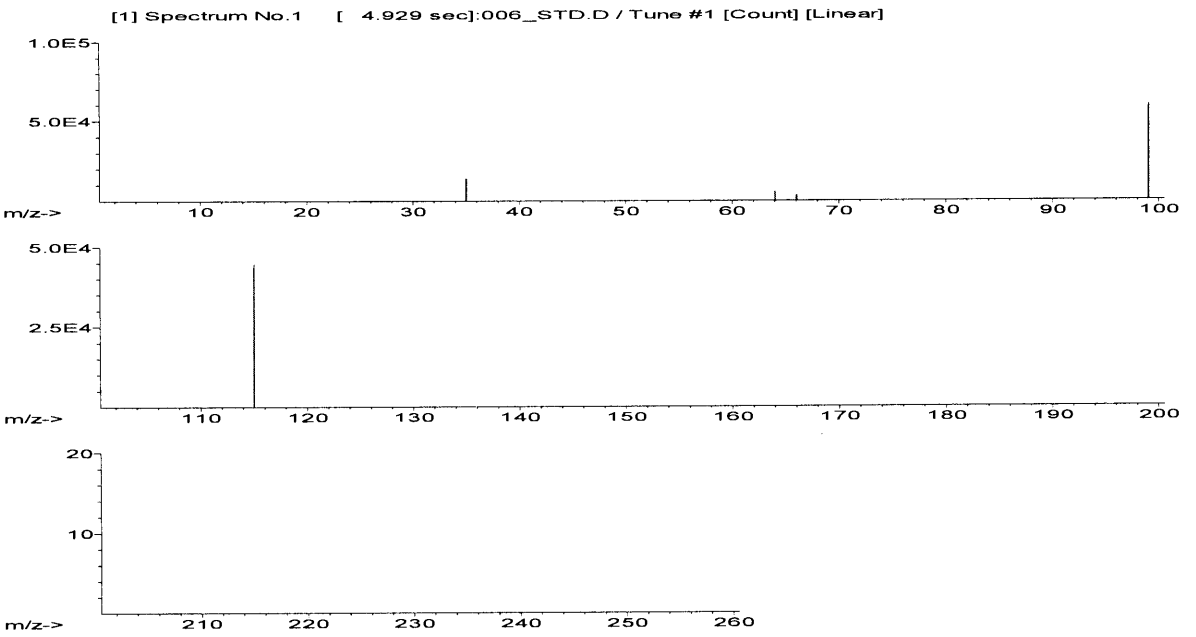

[2] Spectrum No.1 [4.929 sec]:005_STD.D / Tune #2 [Count] [Linear]
5000
2500
m/z->
10 20 30 40 50 60 70 80 90 100
5000
2500
m/z->
110 120 130 140 150 160 170 180 190 200
20
10
m/z->
210 220 230 240 250 260

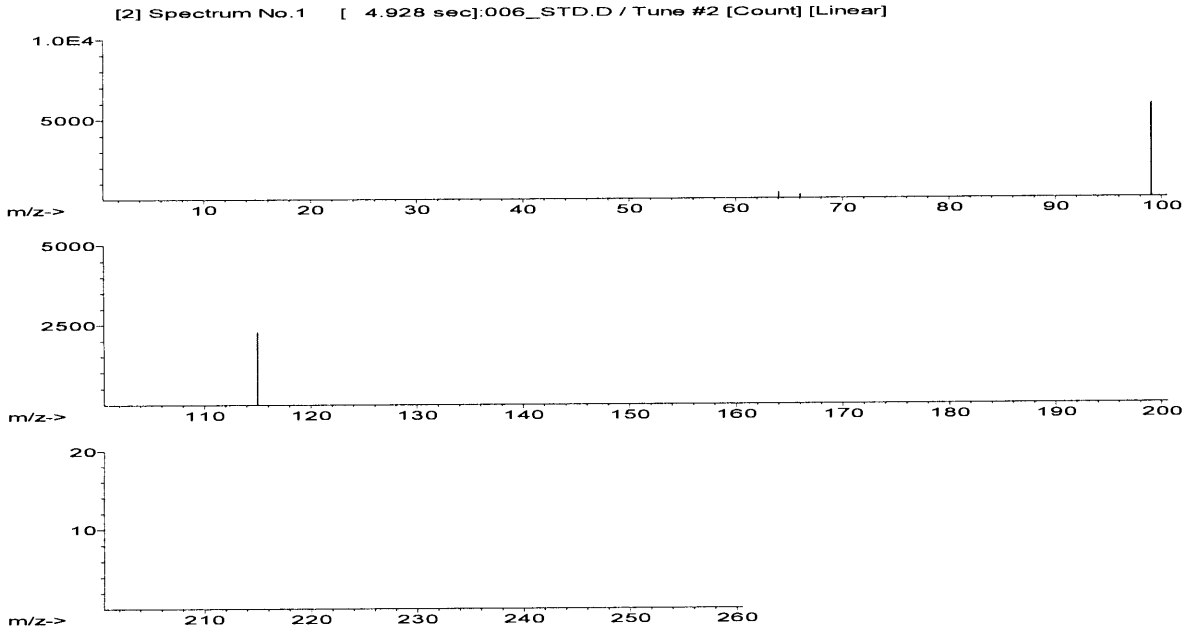
Quantitation Report - Detailed

File Name : 006_STD.D
File Path : I:\ICP-MS\ICP-MS AGILENT\RAWDATA2013\130613_TC\
Method : i:\ICP-MS\ICP-MS Agilent\RawData2013\130613_Tc\TC99.M
Calibration : i:\ICP-MS\ICP-MS Agilent\RawData2013\130613_Tc\TC99.C
Acq Time : Jun 13 2013 11:52 am
Sample Name : 2.0ppb Cal
Sample Type : CalStd
Comments :
Prep Dilution : 1.000
Auto Dilution : Undiluted
Total Dilution : 1.000
Operator Name: AG
Acq Mode : Spectrum
Cal Title :
Cal Type : External Calibration Method
Last Calib : Jun 17 2013 11:25 am
Bkg File : --------
Bkg Rejected Masses: --------
Interference Correction : OFF
Blank File : --------
VIS Fit : Point to Point
Weighting Method: 1/(SD*SD)
Multi Tune : #1 nogas.u
#2 he.u

Element	Mass	ISTD	Tune	CPS or Ratio	SD	RSD(%)	Time(sec)
Tc	99	115	#1	24,140.86 P	758.1	3.14	0.30
Tc	99	115	#2	46,416.01 P	402.1	0.87	0.30
In	115		#1	443,096.3 P	12,950	2.92	0.30
In	115		#2	22,803.19 P	542.8	2.38	0.30

Element	Mass	Tune	Conc.	SD	RSD(%)	Rep	VI
Tc	99	#1	1.992E+03 ppt	62.54	3.14	5	
Tc	99	#2	1.985E+03 ppt	17.19	0.87	5	
In	115	#1	[1.800E+04 ppt]	---	---	[5]	
In	115	#2	[1.800E+04 ppt]	---	---	[5]	


[1] Spectrum No.1 [4.929 sec]:006_STD.D / Tune #1 [Count] [Linear]
1.0E5
5.0E4
m/z->
10 20 30 40 50 60 70 80 90 100
5.0E4
2.5E4
m/z->
110 120 130 140 150 160 170 180 190 200
20
10
m/z->
210 220 230 240 250 260

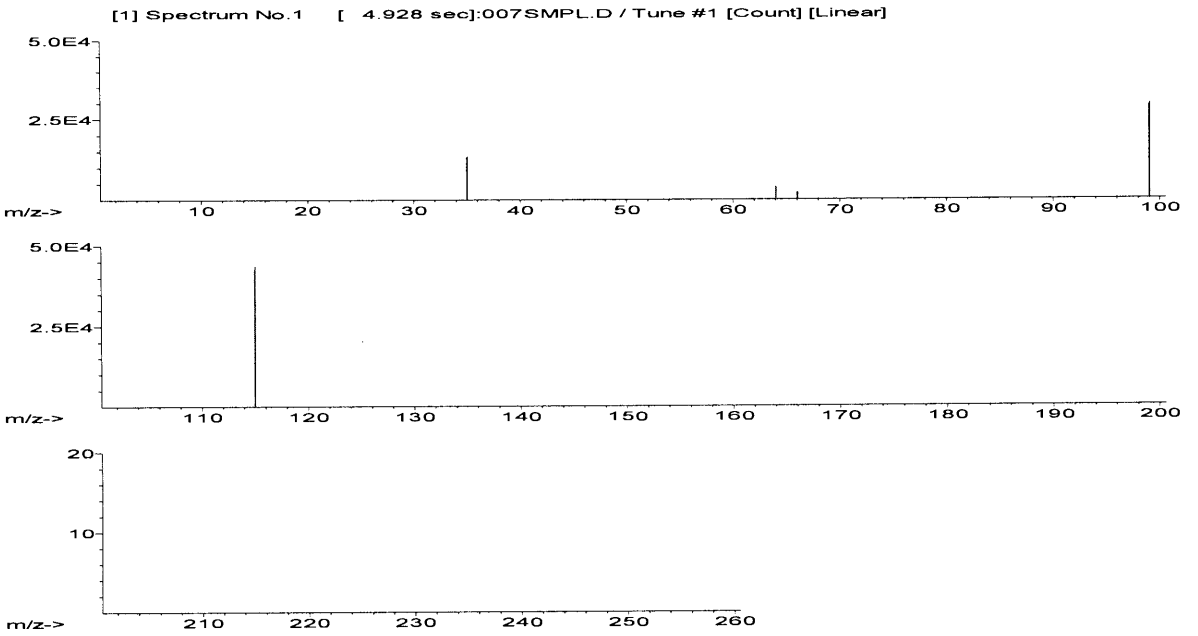

[2] Spectrum No.1 [4.928 sec]:006_STD.D / Tune #2 [Count] [Linear]
1.0E4
5000
m/z->
10 20 30 40 50 60 70 80 90 100
5000
2500
m/z->
110 120 130 140 150 160 170 180 190 200
20
10
m/z->
210 220 230 240 250 260

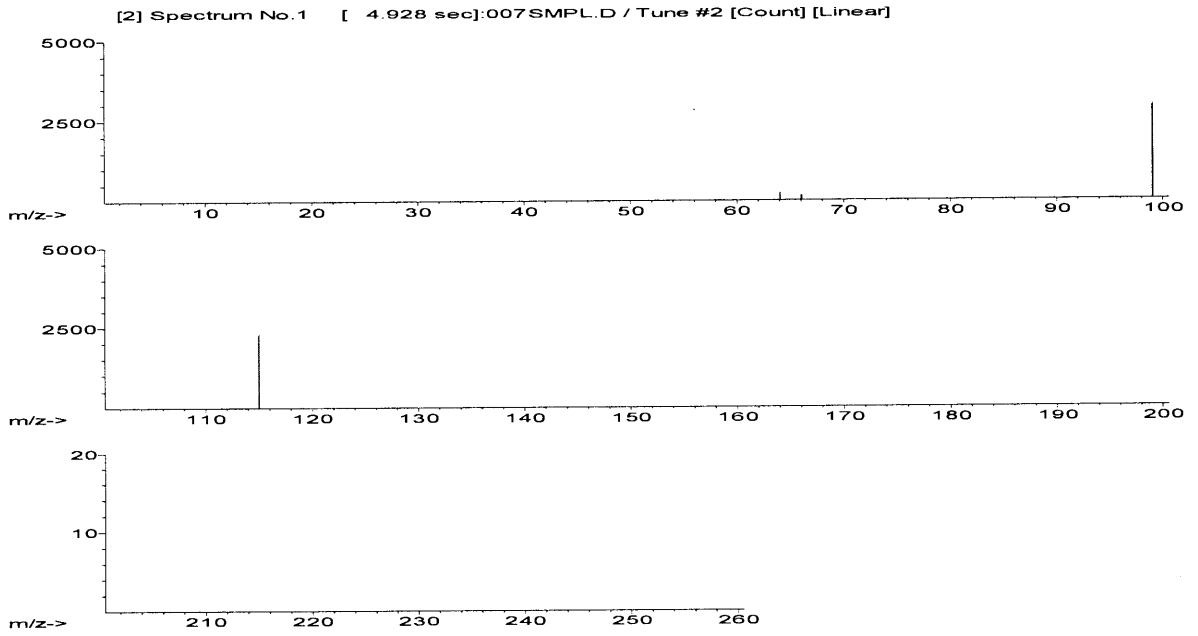
Quantitation Report - Detailed

File Name : 007SMPL.D
File Path : I:\ICP-MS\ICP-MS AGILENT\RAWDATA2013\130613_TC\
Method : i:\ICP-MS\ICP-MS Agilent\RawData2013\130613_Tc\TC99.M
Calibration : i:\ICP-MS\ICP-MS Agilent\RawData2013\130613_Tc\TC99.C
Acq Time : Jun 13 2013 11:56 am
Sample Name : .99ppb ICV
Sample Type : Sample
Comments :
Prep Dilution : 1.000
Auto Dilution : Undiluted
Total Dilution : 1.000
Operator Name: AG
Acq Mode : Spectrum
Cal Title :
Cal Type : External Calibration Method
Last Calib : Jun 17 2013 11:25 am
Bkg File : --------
Bkg Rejected Masses: --------
Interference Correction : OFF
Blank File : --------
VIS Fit : Point to Point
Weighting Method: 1/(SD*SD)
Multi Tune : #1 nogas.u
#2 he.u

Element	Mass	ISTD	Tune	CPS or Ratio	SD	RSD(%)	Time(sec)
Tc	99	115	#1	12,212.98 P	107.4	0.88	0.30
Tc	99	115	#2	23,067.18 P	997.6	4.32	0.30
In	115		#1	432,728.9 P	4,102	0.95	0.30
In	115		#2	22,825.32 P	1,246	5.46	0.30

Element	Mass	Tune	Conc.	SD	RSD(%)	Rep	VI
Tc	99	#1	1.008E+03 ppt	8.862	0.88	5	
Tc	99	#2	986.3 ppt	42.66	4.33	5	
In	115	#1	[1.800E+04 ppt]	---	---	[5]	
In	115	#2	[1.800E+04 ppt]	---	---	[5]	


[1] Spectrum No.1 [4.928 sec]:007SMPL.D / Tune #1 [Count] [Linear]
5.0E4
2.5E4
m/z->
10 20 30 40 50 60 70 80 90 100
5.0E4
2.5E4
m/z->
110 120 130 140 150 160 170 180 190 200
20
10
m/z->
210 220 230 240 250 260

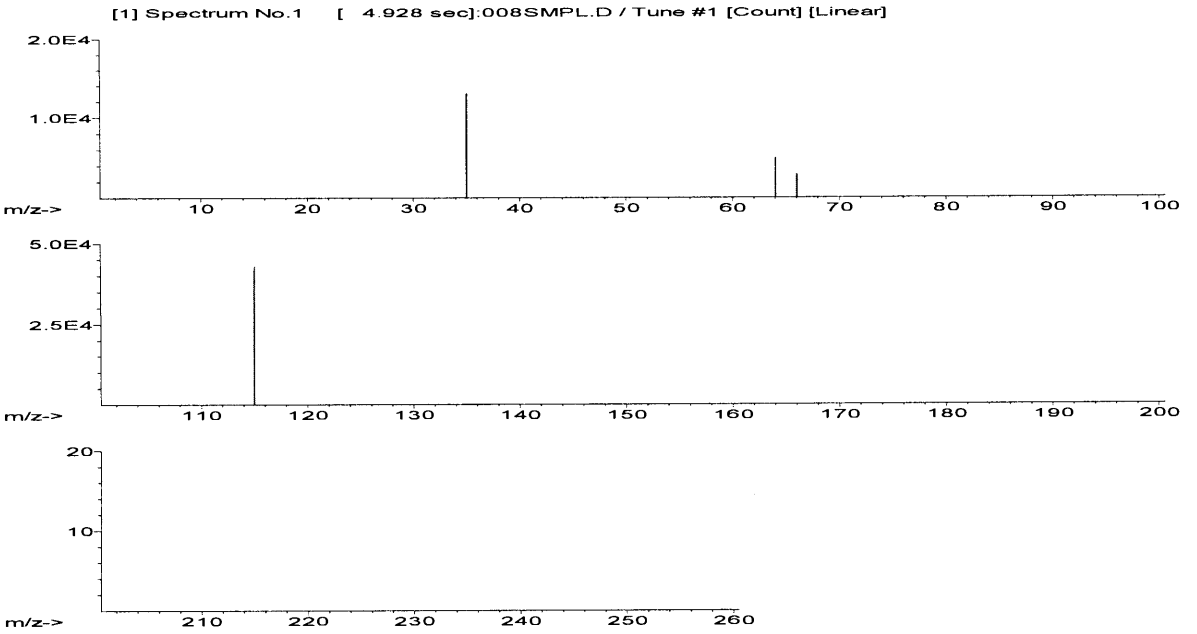

[2] Spectrum No.1 [4.928 sec]:007SMPL.D / Tune #2 [Count] [Linear]
5000
2500
m/z->
10 20 30 40 50 60 70 80 90 100
5000
2500
m/z->
110 120 130 140 150 160 170 180 190 200
20
10
m/z->
210 220 230 240 250 260

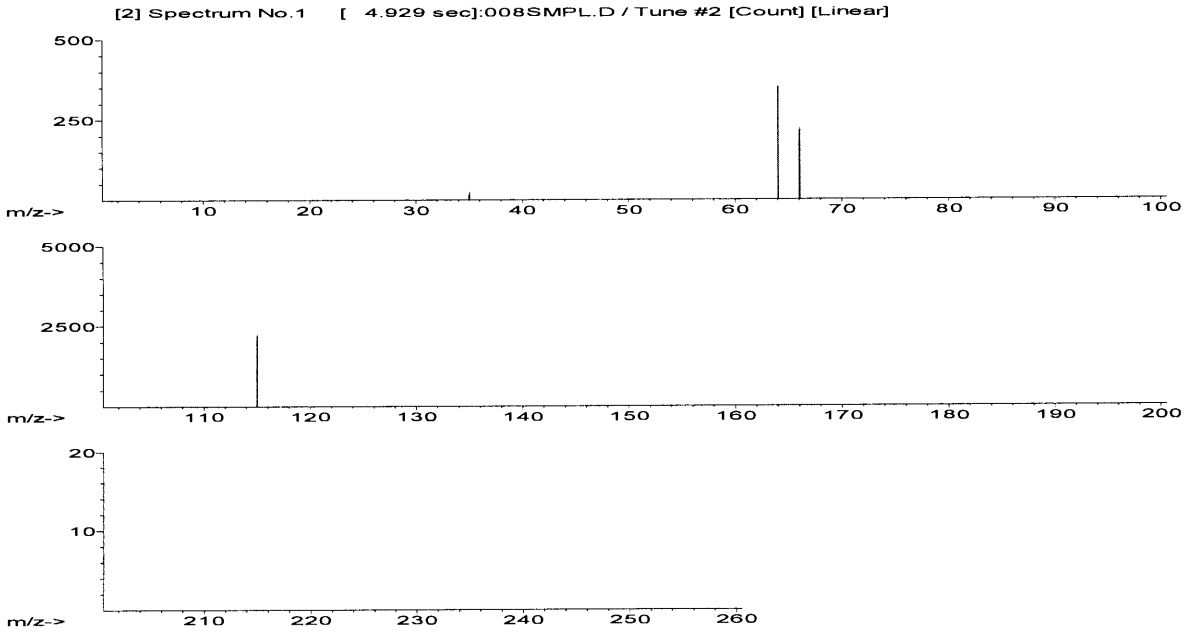
Quantitation Report - Detailed

File Name : 008SMPL.D
File Path : I:\ICP-MS\ICP-MS AGILENT\RAWDATA2013\130613_TC\
Method : i:\ICP-MS\ICP-MS Agilent\RawData2013\130613_Tc\TC99.M
Calibration : i:\ICP-MS\ICP-MS Agilent\RawData2013\130613_Tc\TC99.C
Acq Time : Jun 13 2013 12:00 pm
Sample Name : rinse
Sample Type : Sample
Comments :
Prep Dilution : 1.000
Auto Dilution : Undiluted
Total Dilution : 1.000
Operator Name: AG
Acq Mode : Spectrum
Cal Title :
Cal Type : External Calibration Method
Last Calib : Jun 17 2013 11:25 am
Bkg File : --------
Bkg Rejected Masses: --------
Interference Correction : OFF
Blank File : --------
VIS Fit : Point to Point
Weighting Method: 1/(SD*SD)
Multi Tune : #1 nogas.u
#2 he.u

Element	Mass	ISTD	Tune	CPS or Ratio	SD	RSD(%)	Time(sec)
Tc	99	115	#1	3.501719 P	0.7061	20.16	0.30
Tc	99	115	#2	13.44449 P	3.255	24.21	0.30
In	115		#1	425,946.7 P	15,070	3.54	0.30
In	115		#2	22,318.37 P	400.9	1.80	0.30

Element	Mass	Tune	Conc.	SD	RSD(%)	Rep	VI
Tc	99	#1	2.079E-01 ppt	0.05826	28.02	5	
Tc	99	#2	4.315E-01 ppt	0.1392	32.26	5	
In	115	#1	[1.800E+04 ppt]	---	---	[5]	
In	115	#2	[1.800E+04 ppt]	---	---	[5]	


[1] Spectrum No.1 [4.928 sec]:008SMPL.D / Tune #1 [Count] [Linear]
2.0E4
1.0E4
m/z->
10 20 30 40 50 60 70 80 90 100
5.0E4
2.5E4
m/z->
110 120 130 140 150 160 170 180 190 200
20
10
m/z->
210 220 230 240 250 260

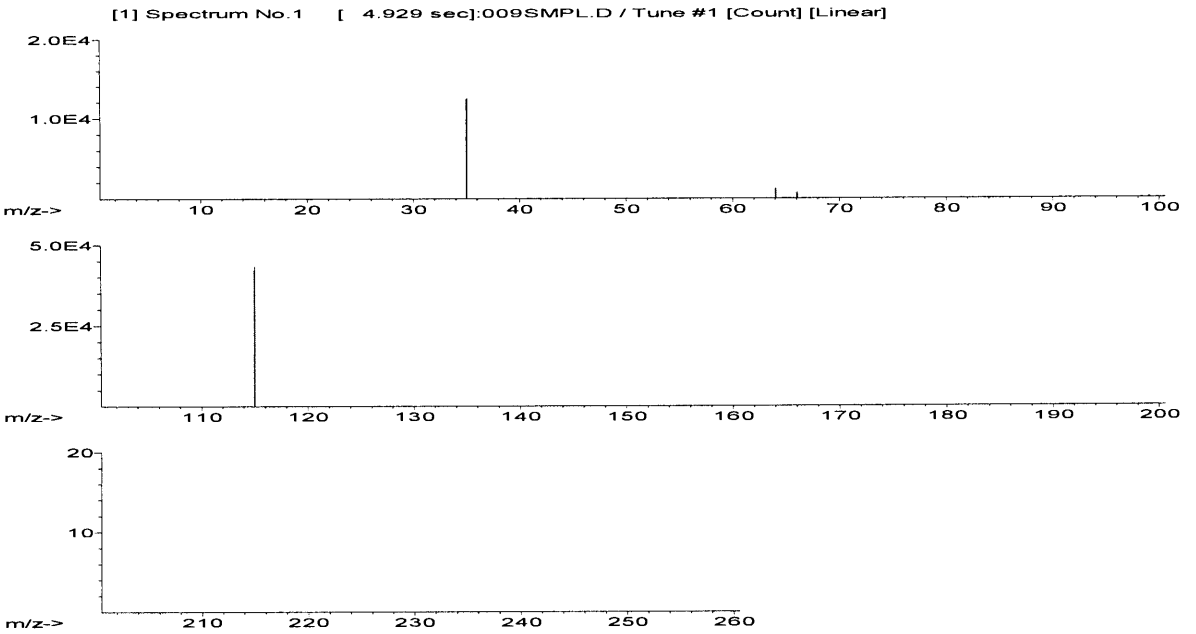

[2] Spectrum No.1 [4.929 sec]:008SMPL.D / Tune #2 [Count] [Linear]
500
250
m/z->
10 20 30 40 50 60 70 80 90 100
5000
2500
m/z->
110 120 130 140 150 160 170 180 190 200
20
10
m/z->
210 220 230 240 250 260

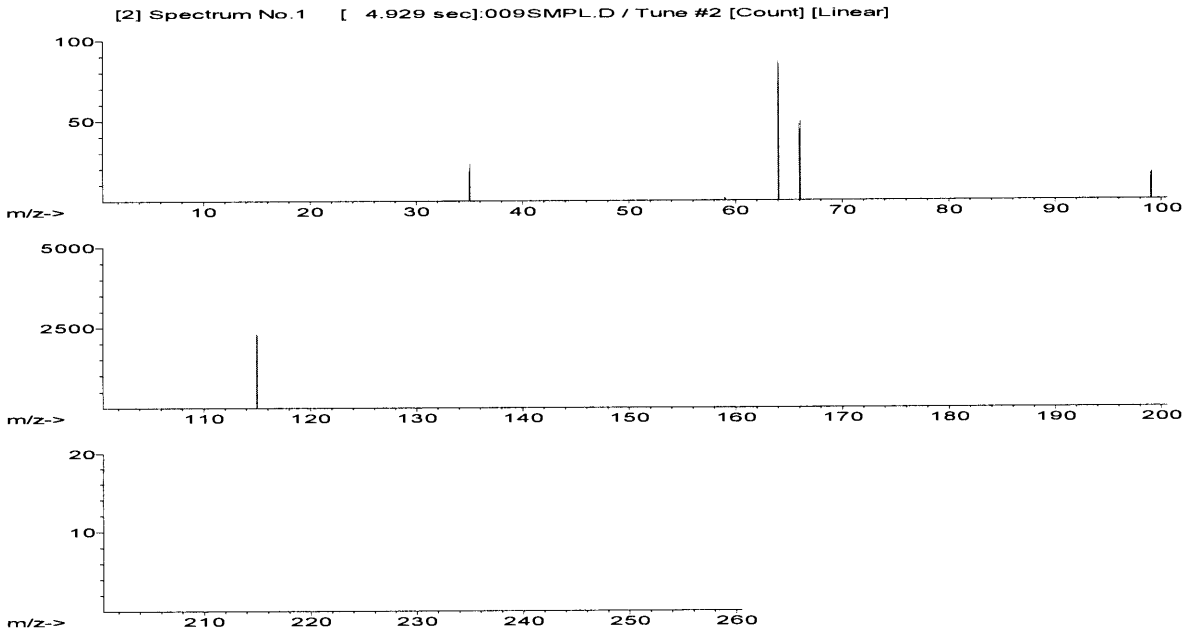
Quantitation Report - Detailed

File Name : 009SMPL.D
File Path : I:\ICP-MS\ICP-MS AGILENT\RAWDATA2013\130613_TC\
Method : i:\ICP-MS\ICP-MS Agilent\RawData2013\130613_Tc\TC99.M
Calibration : i:\ICP-MS\ICP-MS Agilent\RawData2013\130613_Tc\TC99.C
Acq Time : Jun 13 2013 12:05 pm
Sample Name : LLS 5ppt
Sample Type : Sample
Comments :
Prep Dilution : 1.000
Auto Dilution : Undiluted
Total Dilution : 1.000
Operator Name: AG
Acq Mode : Spectrum
Cal Title :
Cal Type : External Calibration Method
Last Calib : Jun 17 2013 11:25 am
Bkg File : --------
Bkg Rejected Masses: --------
Interference Correction : OFF
Blank File : --------
VIS Fit : Point to Point
Weighting Method: 1/(SD*SD)
Multi Tune : #1 nogas.u
#2 he.u

Element	Mass	ISTD	Tune	CPS or Ratio	SD	RSD(%)	Time(sec)
Tc	99	115	#1	72.89214 P	2.816	3.86	0.30
Tc	99	115	#2	131.6996 P	18.34	13.93	0.30
In	115		#1	429,097.5 P	3,078	0.72	0.30
In	115		#2	22,727.04 P	500.3	2.20	0.30

Element	Mass	Tune	Conc.	SD	RSD(%)	Rep	VI
Tc	99	#1	5.933 ppt	0.2323	3.92	5	
Tc	99	#2	5.488 ppt	0.7845	14.29	5	
In	115	#1	[1.800E+04 ppt]	---	---	[5]	
In	115	#2	[1.800E+04 ppt]	---	---	[5]	


[1] Spectrum No.1 [4.929 sec]:009SMPL.D / Tune #1 [Count] [Linear]
2.0E4
1.0E4
m/z->
10 20 30 40 50 60 70 80 90 100
5.0E4
2.5E4
m/z->
110 120 130 140 150 160 170 180 190 200
20
10
m/z->
210 220 230 240 250 260

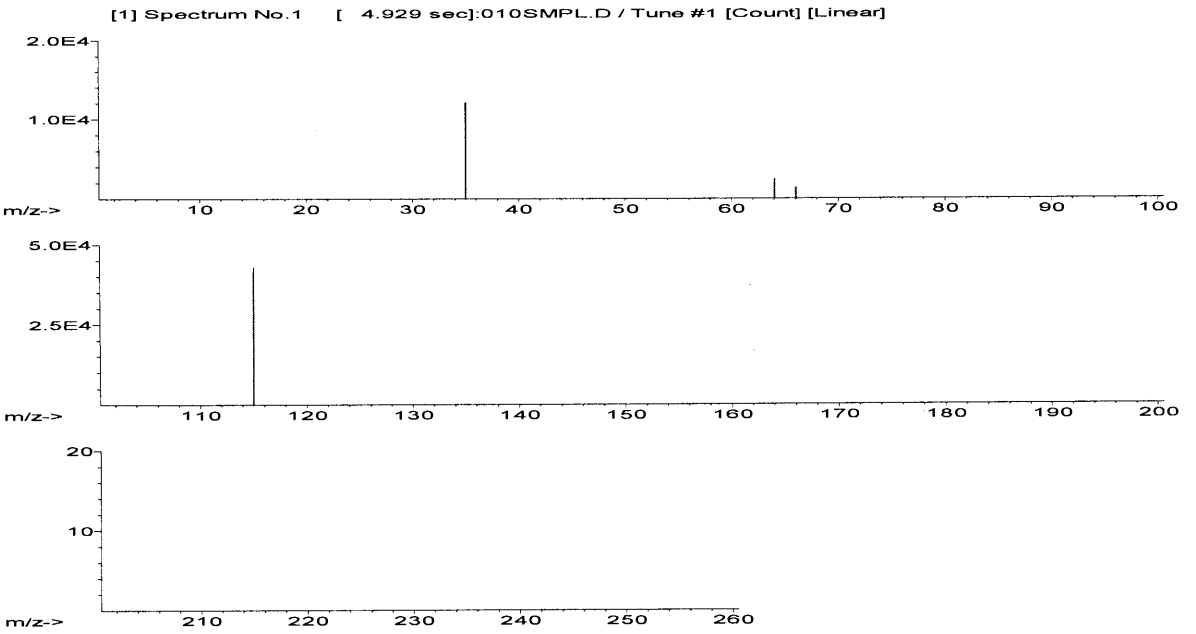

[2] Spectrum No.1 [4.929 sec]:009SMPL.D / Tune #2 [Count] [Linear]
100
50
m/z->
10 20 30 40 50 60 70 80 90 100
5000
2500
m/z->
110 120 130 140 150 160 170 180 190 200
20
10
m/z->
210 220 230 240 250 260

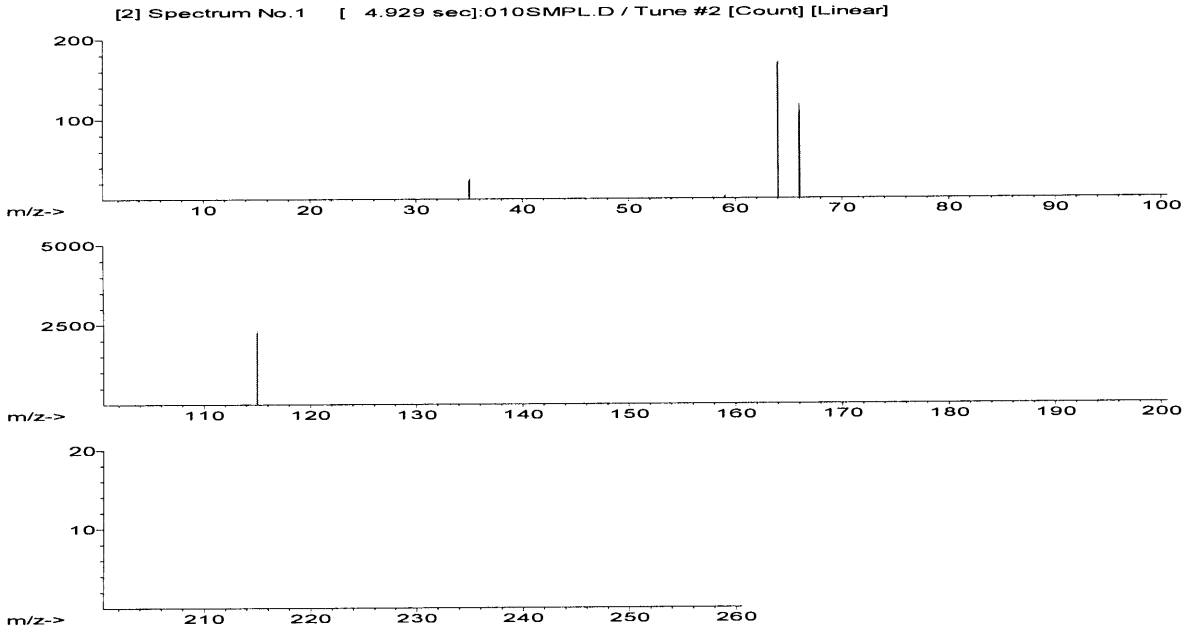
Quantitation Report - Detailed

File Name : 010SMPL.D
File Path : I:\ICP-MS\ICP-MS AGILENT\RAWDATA2013\130613_TC\
Method : i:\ICP-MS\ICP-MS Agilent\RawData2013\130613_Tc\TC99.M
Calibration : i:\ICP-MS\ICP-MS Agilent\RawData2013\130613_Tc\TC99.C
Acq Time : Jun 13 2013 12:09 pm
Sample Name : ICB
Sample Type : Sample
Comments :
Prep Dilution : 1.000
Auto Dilution : Undiluted
Total Dilution : 1.000
Operator Name: AG
Acq Mode : Spectrum
Cal Title :
Cal Type : External Calibration Method
Last Calib : Jun 17 2013 11:25 am
Bkg File : --------
Bkg Rejected Masses: --------
Interference Correction : OFF
Blank File : --------
VIS Fit : Point to Point
Weighting Method: 1/(SD*SD)
Multi Tune : #1 nogas.u
#2 he.u

Element	Mass	ISTD	Tune	CPS or Ratio	SD	RSD(%)	Time(sec)
Tc	99	115	#1	2.546181 P	0.8243	32.37	0.30
Tc	99	115	#2	3.668382 P	1.412	38.49	0.30
In	115		#1	424,402.5 P	2,546	0.60	0.30
In	115		#2	22,859.23 P	560.1	2.45	0.30

Element	Mass	Tune	Conc.	SD	RSD(%)	Rep	VI
Tc	99	#1	1.291E-01 ppt	0.06801	52.68	5	
Tc	99	#2	1.341E-02 ppt	0.06036	450.11	5	
In	115	#1	[1.800E+04 ppt]	---	---	[5]	
In	115	#2	[1.800E+04 ppt]	---	---	[5]	


[1] Spectrum No.1 [4.929 sec]:010SMPL.D / Tune #1 [Count] [Linear]
2.0E4
1.0E4
m/z->
10 20 30 40 50 60 70 80 90 100
5.0E4
2.5E4
m/z->
110 120 130 140 150 160 170 180 190 200
20
10
m/z->
210 220 230 240 250 260

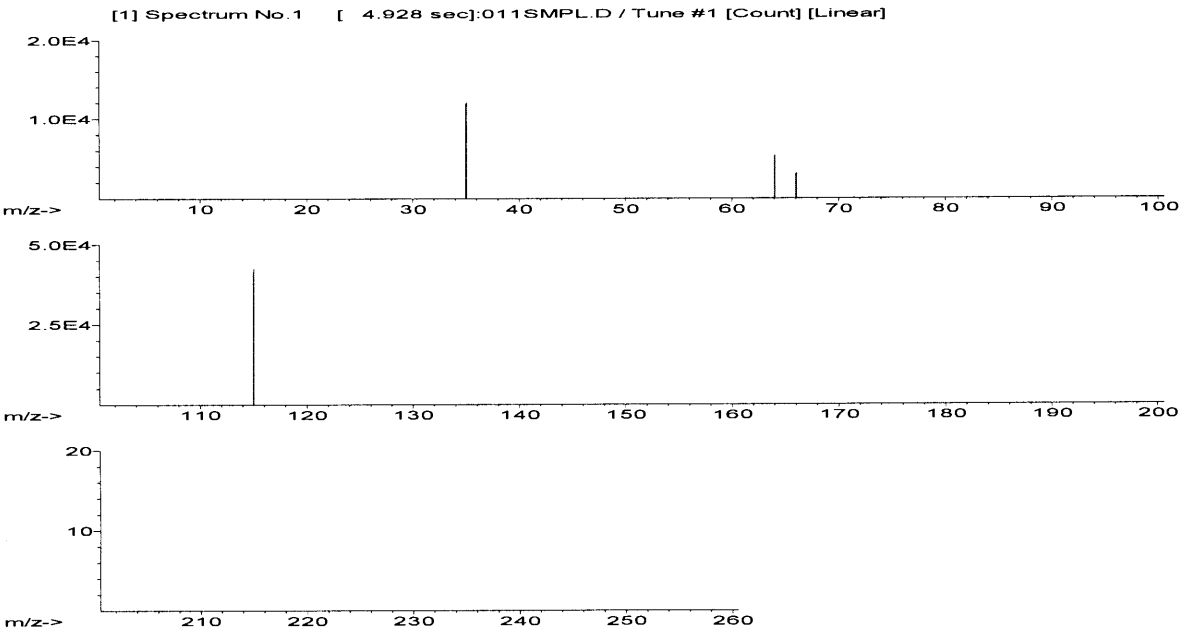

[2] Spectrum No.1 [4.929 sec]:010SMPL.D / Tune #2 [Count] [Linear]
200
100
m/z->
10 20 30 40 50 60 70 80 90 100
5000
2500
m/z->
110 120 130 140 150 160 170 180 190 200
20
10
m/z->
210 220 230 240 250 260

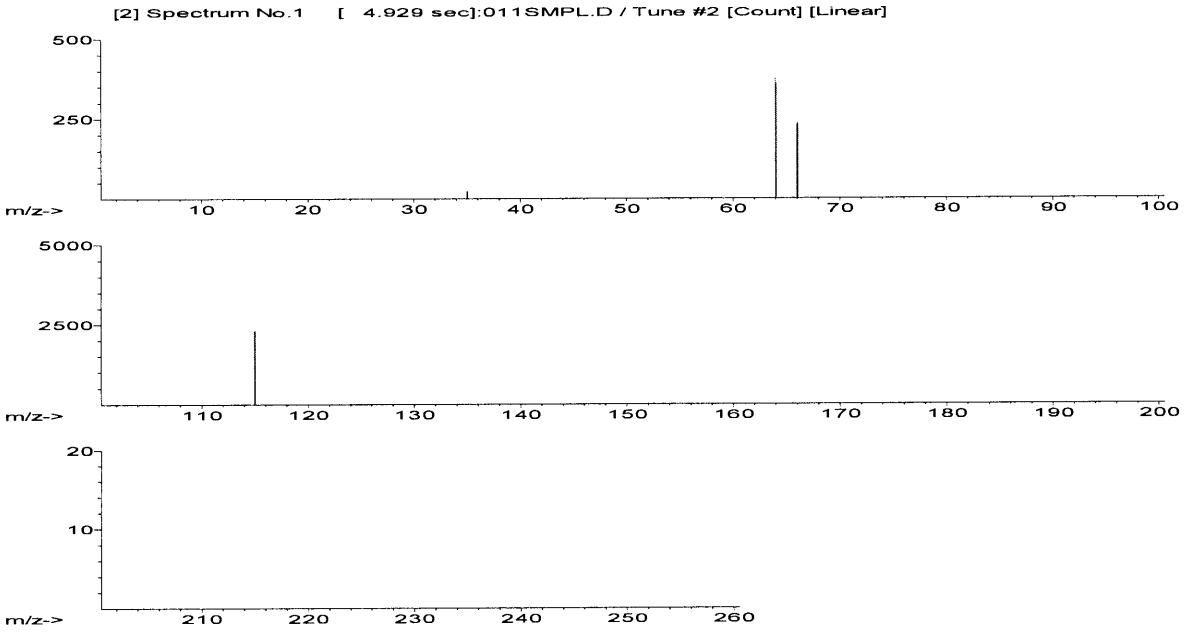
Quantitation Report - Detailed

File Name : 011SMPL.D
File Path : I:\ICP-MS\ICP-MS AGILENT\RAWDATA2013\130613_TC\
Method : i:\ICP-MS\ICP-MS Agilent\RawData2013\130613_Tc\TC99.M
Calibration : i:\ICP-MS\ICP-MS Agilent\RawData2013\130613_Tc\TC99.C
Acq Time : Jun 13 2013 12:13 pm
Sample Name : ICB
Sample Type : Sample
Comments :
Prep Dilution : 1.000
Auto Dilution : Undiluted
Total Dilution : 1.000
Operator Name: AG
Acq Mode : Spectrum
Cal Title :
Cal Type : External Calibration Method
Last Calib : Jun 17 2013 11:25 am
Bkg File : --------
Bkg Rejected Masses: --------
Interference Correction : OFF
Blank File : --------
VIS Fit : Point to Point
Weighting Method: 1/(SD*SD)
Multi Tune : #1 nogas.u
#2 he.u

Element	Mass	ISTD	Tune	CPS or Ratio	SD	RSD(%)	Time(sec)
Tc	99	115	#1	3.404192 P	1.151	33.81	0.30
Tc	99	115	#2	7.736691 P	5.592	72.28	0.30
In	115		#1	421,888.8 P	12,080	2.86	0.30
In	115		#2	23,048.51 P	3,900	16.92	0.30

Element	Mass	Tune	Conc.	SD	RSD(%)	Rep	VI
Tc	99	#1	1.999E-01 ppt	0.09493	47.49	5	
Tc	99	#2	1.874E-01 ppt	0.2391	127.59	5	
In	115	#1	[1.800E+04 ppt]	---	---	[5]	
In	115	#2	[1.800E+04 ppt]	---	---	[5]	


[1] Spectrum No.1 [4.928 sec]:011SMPL.D / Tune #1 [Count] [Linear]
2.0E4
1.0E4
m/z->
10 20 30 40 50 60 70 80 90 100
5.0E4
2.5E4
m/z->
110 120 130 140 150 160 170 180 190 200
20
10
m/z->
210 220 230 240 250 260

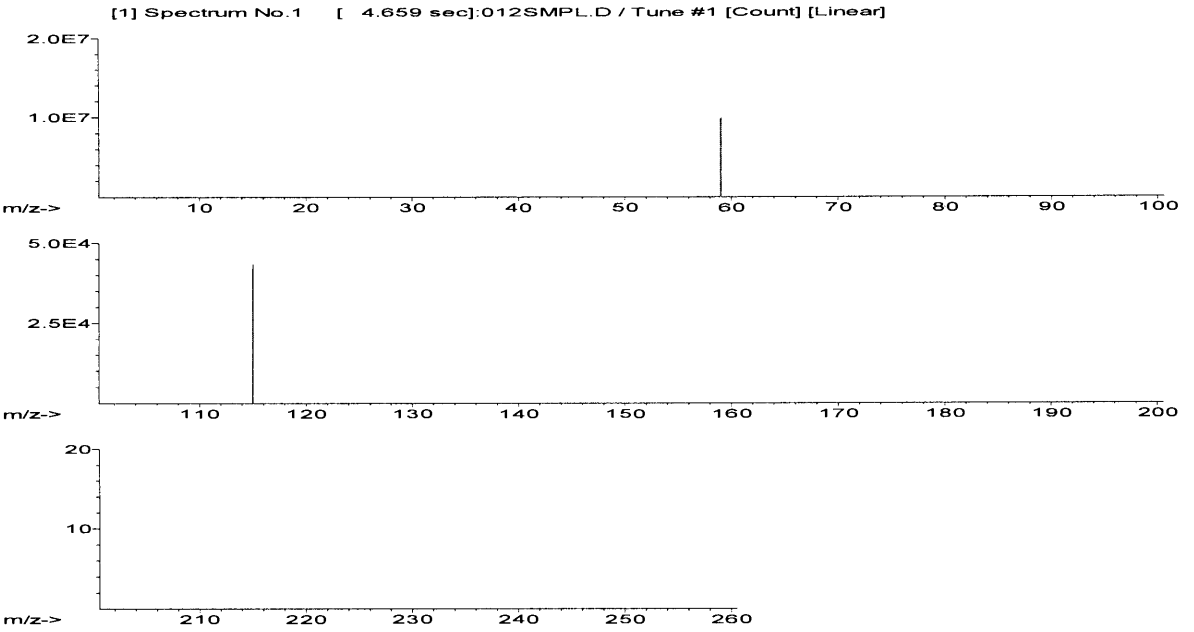

[2] Spectrum No.1 [4.929 sec]:011SMPL.D / Tune #2 [Count] [Linear]
500
250
m/z->
10 20 30 40 50 60 70 80 90 100
5000
2500
m/z->
110 120 130 140 150 160 170 180 190 200
20
10
m/z->
210 220 230 240 250 260

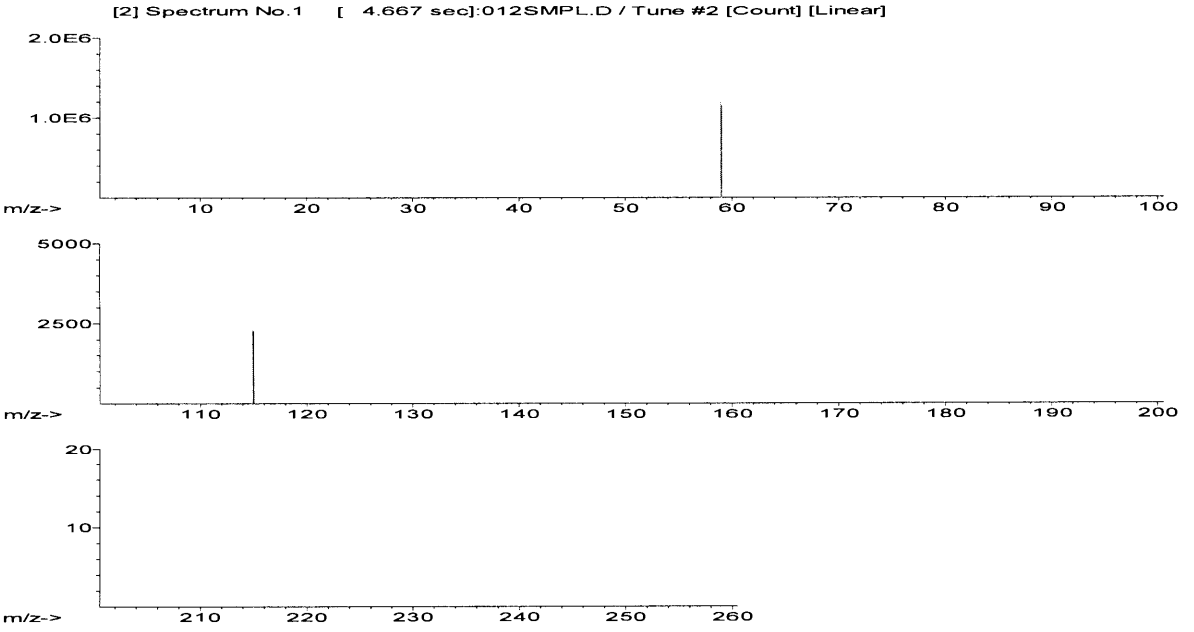
Quantitation Report - Detailed

File Name : 012SMPL.D
File Path : I:\ICP-MS\ICP-MS AGILENT\RAWDATA2013\130613_TC\
Method : i:\ICP-MS\ICP-MS Agilent\RawData2013\130613_Tc\TC99.M
Calibration : i:\ICP-MS\ICP-MS Agilent\RawData2013\130613_Tc\TC99.C
Acq Time : Jun 13 2013 12:17 pm
Sample Name : ICS Co 50ppb
Sample Type : Sample
Comments :
Prep Dilution : 1.000
Auto Dilution : Undiluted
Total Dilution : 1.000
Operator Name: AG
Acq Mode : Spectrum
Cal Title :
Cal Type : External Calibration Method
Last Calib : Jun 17 2013 11:25 am
Bkg File : --------
Bkg Rejected Masses: --------
Interference Correction : OFF
Blank File : --------
VIS Fit : Point to Point
Weighting Method: 1/(SD*SD)
Multi Tune : #1 nogas.u
#2 he.u

Element	Mass	ISTD	Tune	CPS or Ratio	SD	RSD(%)	Time(sec)
Tc	99	115	#1	8.701335 P	1.463	16.81	0.30
Tc	99	115	#2	7.271014 P	5.075	69.80	0.30
In	115		#1	430,609.2 P	13,530	3.14	0.30
In	115		#2	22,835.26 P	964.0	4.22	0.30

Element	Mass	Tune	Conc.	SD	RSD(%)	Rep	VI
Tc	99	#1	6.369E-01 ppt	0.1207	18.95	5	
Tc	99	#2	1.675E-01 ppt	0.2170	129.55	5	
In	115	#1	[1.800E+04 ppt]	---	---	[5]	
In	115	#2	[1.800E+04 ppt]	---	---	[5]	


[1] Spectrum No.1 [4.659 sec]:012SMPL.D / Tune #1 [Count] [Linear]
2.0E7
1.0E7
m/z->
10 20 30 40 50 60 70 80 90 100
5.0E4
2.5E4
m/z->
110 120 130 140 150 160 170 180 190 200
20
10
m/z->
210 220 230 240 250 260

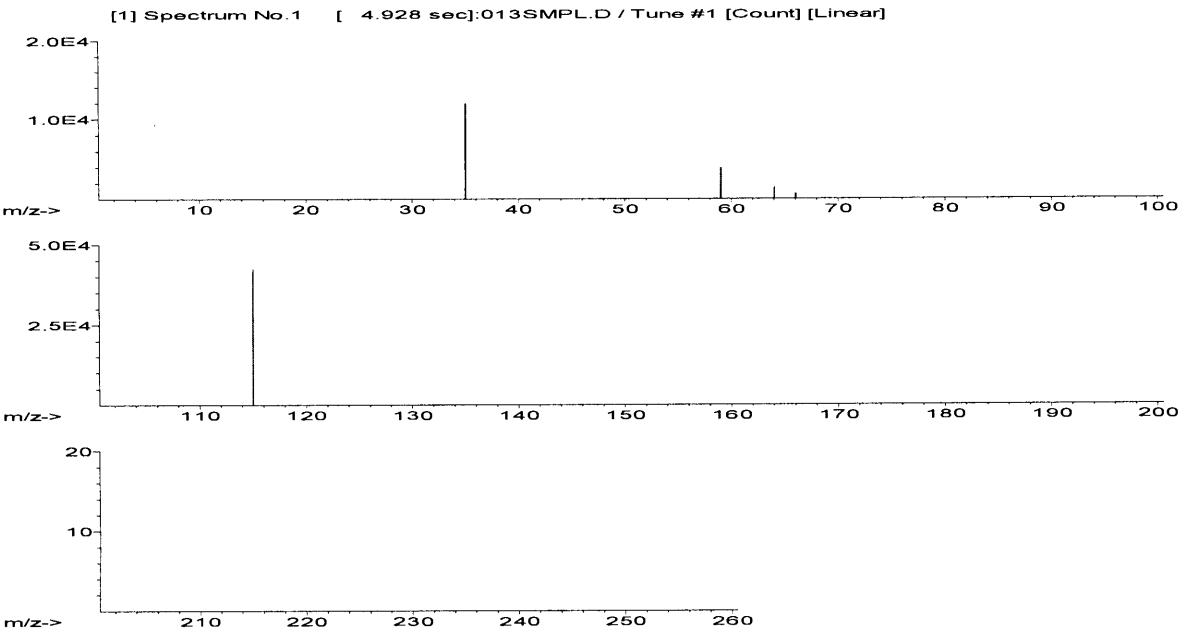

[2] Spectrum No.1 [4.667 sec]:012SMPL.D / Tune #2 [Count] [Linear]
2.0E6
1.0E6
m/z->
10 20 30 40 50 60 70 80 90 100
5000
2500
m/z->
110 120 130 140 150 160 170 180 190 200
20
10
m/z->
210 220 230 240 250 260

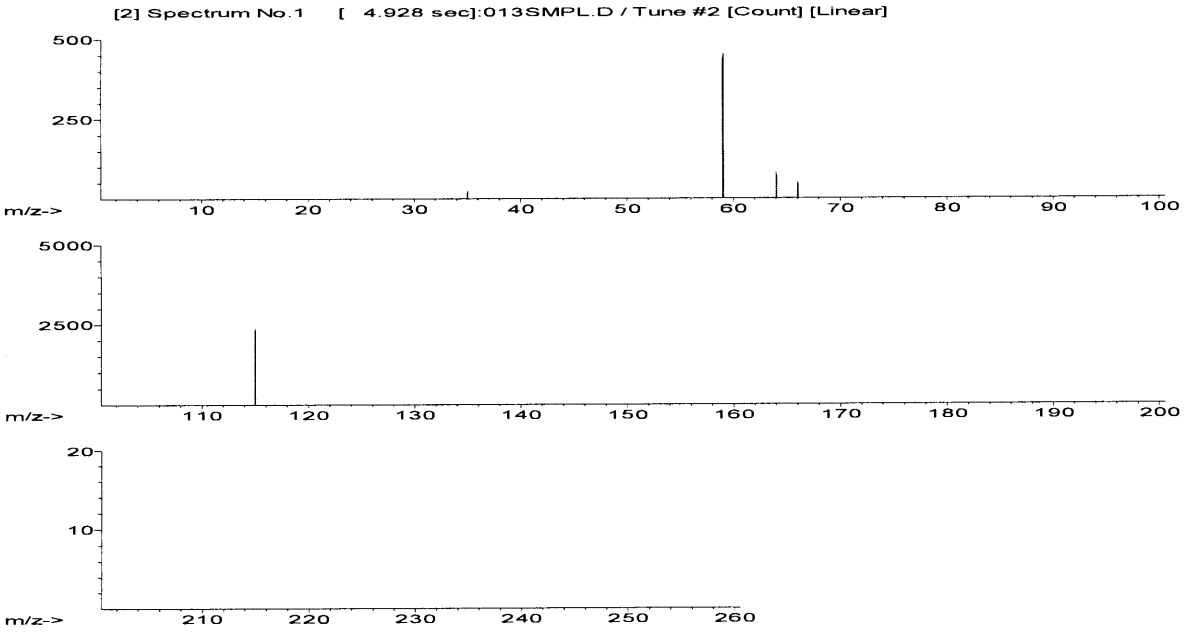
Quantitation Report - Detailed

File Name : 013SMPL.D
File Path : I:\ICP-MS\ICP-MS AGILENT\RAWDATA2013\130613_TC\
Method : i:\ICP-MS\ICP-MS Agilent\RawData2013\130613_Tc\TC99.M
Calibration : i:\ICP-MS\ICP-MS Agilent\RawData2013\130613_Tc\TC99.C
Acq Time : Jun 13 2013 12:21 pm
Sample Name : ICS ATL 2 50x
Sample Type : Sample
Comments :
Prep Dilution : 1.000
Auto Dilution : Undiluted
Total Dilution : 1.000
Operator Name: AG
Acq Mode : Spectrum
Cal Title :
Cal Type : External Calibration Method
Last Calib : Jun 17 2013 11:25 am
Bkg File : --------
Bkg Rejected Masses: --------
Interference Correction : OFF
Blank File : --------
VIS Fit : Point to Point
Weighting Method: 1/(SD*SD)
Multi Tune : #1 nogas.u
#2 he.u

Element	Mass	ISTD	Tune	CPS or Ratio	SD	RSD(%)	Time(sec)
Tc	99	115	#1	2.408551 P	0.4471	18.56	0.30
Tc	99	115	#2	7.739063 P	4.994	64.53	0.30
In	115		#1	423,242.8 P	3,955	0.93	0.30
In	115		#2	23,354.75 P	699.2	2.99	0.30

Element	Mass	Tune	Conc.	SD	RSD(%)	Rep	VI
Tc	99	#1	1.178E-01 ppt	0.03689	31.32	5	
Tc	99	#2	1.875E-01 ppt	0.2135	113.87	5	
In	115	#1	[1.800E+04 ppt]	---	---	[5]	
In	115	#2	[1.800E+04 ppt]	---	---	[5]	


[1] Spectrum No.1 [4.928 sec]:013SMPL.D / Tune #1 [Count] [Linear]
2.0E4
1.0E4
m/z->
10 20 30 40 50 60 70 80 90 100
5.0E4
2.5E4
m/z->
110 120 130 140 150 160 170 180 190 200
20
10
m/z->
210 220 230 240 250 260

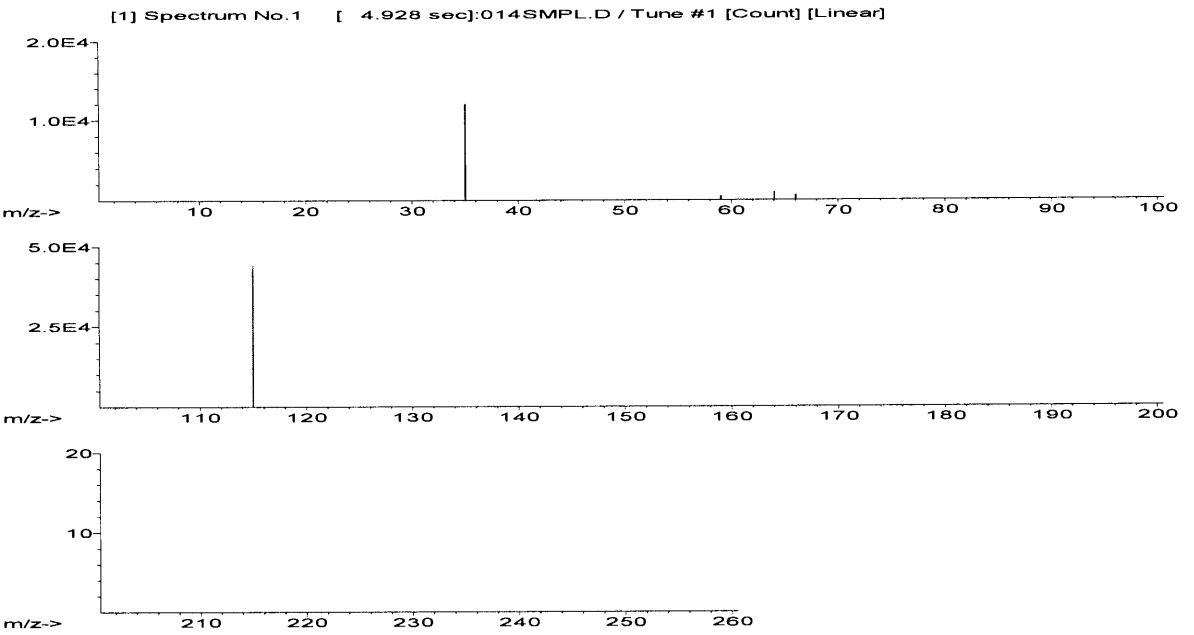

[2] Spectrum No.1 [4.928 sec]:013SMPL.D / Tune #2 [Count] [Linear]
500
250
m/z->
10 20 30 40 50 60 70 80 90 100
5000
2500
m/z->
110 120 130 140 150 160 170 180 190 200
20
10
m/z->
210 220 230 240 250 260

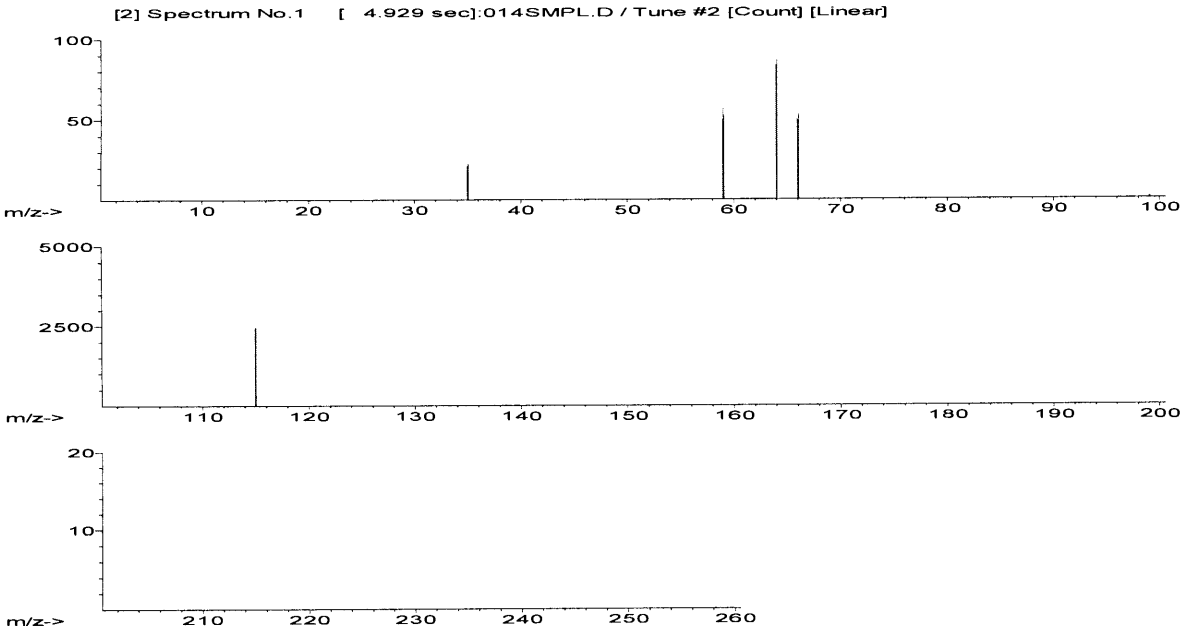
Quantitation Report - Detailed

File Name : 014SMPL.D
File Path : I:\ICP-MS\ICP-MS AGILENT\RAWDATA2013\130613_TC\
Method : i:\ICP-MS\ICP-MS Agilent\RawData2013\130613_Tc\TC99.M
Calibration : i:\ICP-MS\ICP-MS Agilent\RawData2013\130613_Tc\TC99.C
Acq Time : Jun 13 2013 12:25 pm
Sample Name : Prep Blank
Sample Type : Sample
Comments :
Prep Dilution : 100.0
Auto Dilution : Undiluted
Total Dilution : 100.0
Operator Name: AG
Acq Mode : Spectrum
Cal Title :
Cal Type : External Calibration Method
Last Calib : Jun 17 2013 11:25 am
Bkg File : --------
Bkg Rejected Masses: --------
Interference Correction : OFF
Blank File : --------
VIS Fit : Point to Point
Weighting Method: 1/(SD*SD)
Multi Tune : #1 nogas.u
#2 he.u

Element	Mass	ISTD	Tune	CPS or Ratio	SD	RSD(%)	Time(sec)
Tc	99	115	#1	1.647012 P	0.1745	10.59	0.30
Tc	99	115	#2	7.704970 P	4.900	63.60	0.30
In	115		#1	437,329.8 P	1,924	0.44	0.30
In	115		#2	24,605.68 P	670.5	2.72	0.30

Element	Mass	Tune	Conc.	SD	RSD(%)	Rep	VI
Tc	99	#1	5.492 ppt	1.439	26.20	5	
Tc	99	#2	18.60 ppt	20.95	112.63	5	
In	115	#1	[1.800E+04 ppt]	---	---	[5]	
In	115	#2	[1.800E+04 ppt]	---	---	[5]	


[1] Spectrum No.1 [4.928 sec]:014SMPL.D / Tune #1 [Count] [Linear]
2.0E4
1.0E4
m/z->
10 20 30 40 50 60 70 80 90 100
5.0E4
2.5E4
m/z->
110 120 130 140 150 160 170 180 190 200
20
10
m/z->
210 220 230 240 250 260

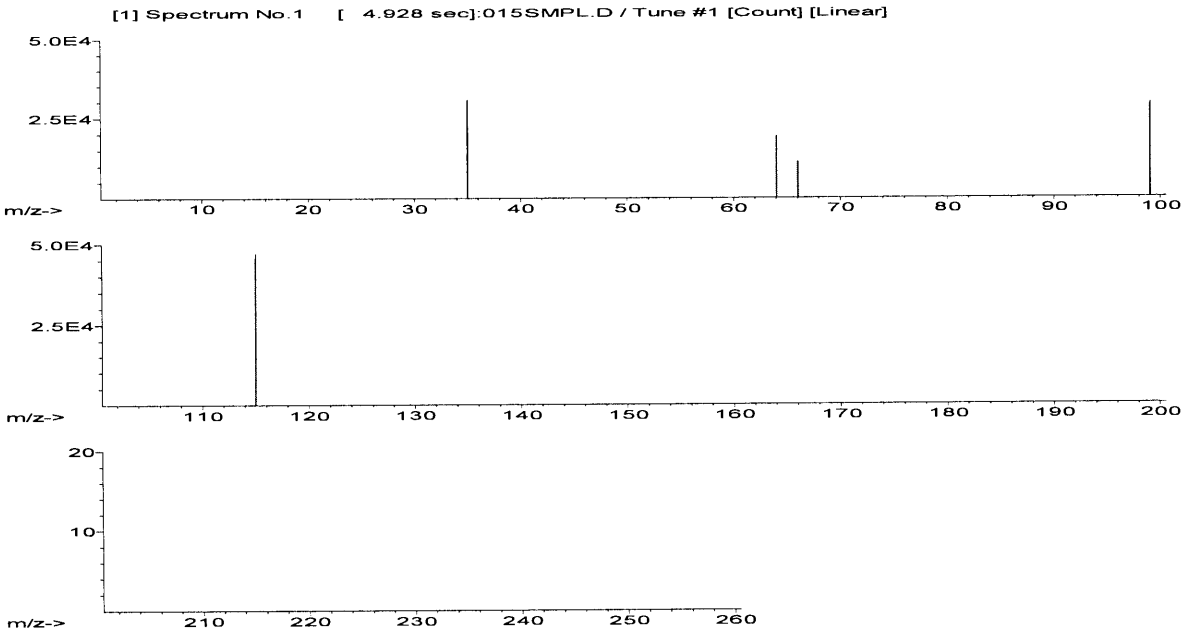

[2] Spectrum No.1 [4.929 sec]:014SMPL.D / Tune #2 [Count] [Linear]
100
50
m/z->
10 20 30 40 50 60 70 80 90 100
5000
2500
m/z->
110 120 130 140 150 160 170 180 190 200
20
10
m/z->
210 220 230 240 250 260

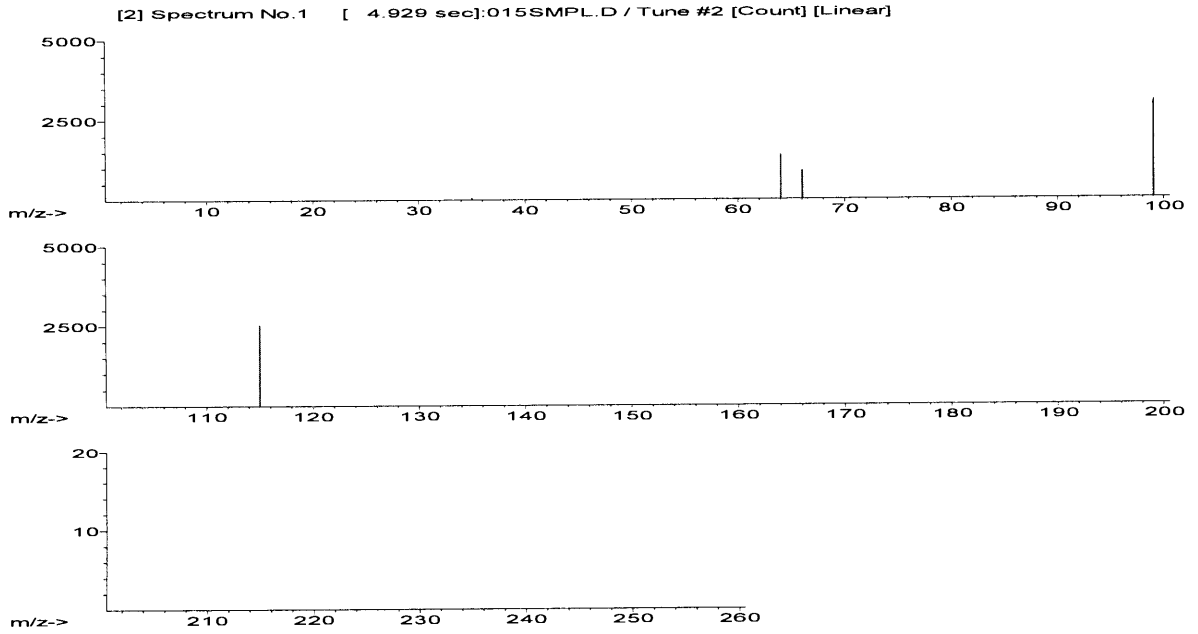
Quantitation Report - Detailed

File Name : 015SMPL.D
File Path : I:\ICP-MS\ICP-MS AGILENT\RAWDATA2013\130613_TC\
Method : i:\ICP-MS\ICP-MS Agilent\RawData2013\130613_Tc\TC99.M
Calibration : i:\ICP-MS\ICP-MS Agilent\RawData2013\130613_Tc\TC99.C
Acq Time : Jun 13 2013 12:29 pm
Sample Name : Prep Std
Sample Type : Sample
Comments :
Prep Dilution : 1.000
Auto Dilution : Undiluted
Total Dilution : 1.000
Operator Name: AG
Acq Mode : Spectrum
Cal Title :
Cal Type : External Calibration Method
Last Calib : Jun 17 2013 11:25 am
Bkg File : --------
Bkg Rejected Masses: --------
Interference Correction : OFF
Blank File : --------
VIS Fit : Point to Point
Weighting Method: 1/(SD*SD)
Multi Tune : #1 nogas.u
#2 he.u

Element	Mass	ISTD	Tune	CPS or Ratio	SD	RSD(%)	Time(sec)
Tc	99	115	#1	11,311.59 P	464.0	4.10	0.30
Tc	99	115	#2	21,661.34 P	769.6	3.55	0.30
In	115		#1	467,225.1 P	14,930	3.19	0.30
In	115		#2	25,260.82 P	747.1	2.96	0.30

Element	Mass	Tune	Conc.	SD	RSD(%)	Rep	VI
Tc	99	#1	933.2 ppt	38.28	4.10	5	
Tc	99	#2	926.1 ppt	32.91	3.55	5	
In	115	#1	[1.800E+04 ppt]	---	---	[5]	
In	115	#2	[1.800E+04 ppt]	---	---	[5]	


[1] Spectrum No.1 [4.928 sec]:015SMPL.D / Tune #1 [Count] [Linear]
5.0E4
2.5E4
m/z->
10 20 30 40 50 60 70 80 90 100
5.0E4
2.5E4
m/z->
110 120 130 140 150 160 170 180 190 200
20
10
m/z->
210 220 230 240 250 260

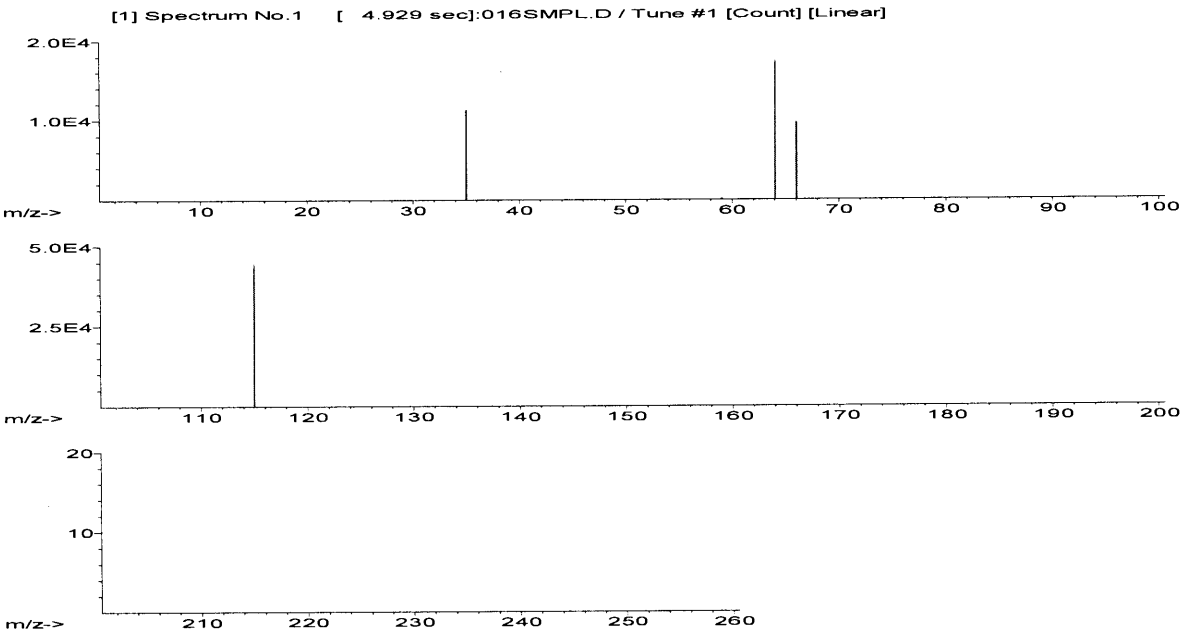

[2] Spectrum No.1 [4.929 sec]:015SMPL.D / Tune #2 [Count] [Linear]
5000
2500
m/z->
10 20 30 40 50 60 70 80 90 100
5000
2500
m/z->
110 120 130 140 150 160 170 180 190 200
20
10
m/z->
210 220 230 240 250 260

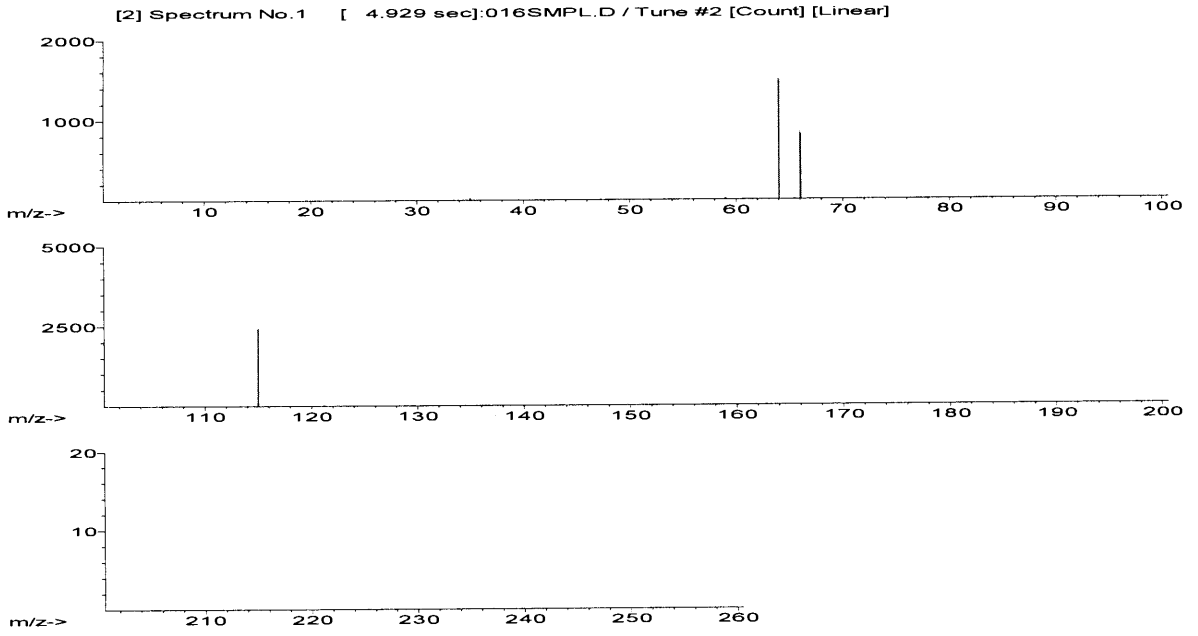
Quantitation Report - Detailed

File Name : 016SMPL.D
File Path : I:\ICP-MS\ICP-MS AGILENT\RAWDATA2013\130613_TC\
Method : i:\ICP-MS\ICP-MS Agilent\RawData2013\130613_Tc\TC99.M
Calibration : i:\ICP-MS\ICP-MS Agilent\RawData2013\130613_Tc\TC99.C
Acq Time : Jun 13 2013 12:33 pm
Sample Name : S13T004250_L
Sample Type : Sample
Comments :
Prep Dilution : 500.0
Auto Dilution : Undiluted
Total Dilution : 500.0
Operator Name: AG
Acq Mode : Spectrum
Cal Title :
Cal Type : External Calibration Method
Last Calib : Jun 17 2013 11:25 am
Bkg File : --------
Bkg Rejected Masses: --------
Interference Correction : OFF
Blank File : --------
VIS Fit : Point to Point
Weighting Method: 1/(SD*SD)
Multi Tune : #1 nogas.u
#2 he.u

Element	Mass	ISTD	Tune	CPS or Ratio	SD	RSD(%)	Time(sec)
Tc	99	115	#1	20.89802 P	13.73	65.70	0.30
Tc	99	115	#2	18.52132 P	9.013	48.66	0.30
In	115		#1	440,955.2 P	5,261	1.19	0.30
In	115		#2	24,243.70 P	780.1	3.22	0.30

Element	Mass	Tune	Conc.	SD	RSD(%)	Rep	VI
Tc	99	#1	821.6 ppt	566.2	68.91	5	
Tc	99	#2	324.3 ppt	192.7	59.42	5	
In	115	#1	[1.800E+04 ppt]	---	---	[5]	
In	115	#2	[1.800E+04 ppt]	---	---	[5]	


[1] Spectrum No.1 [4.929 sec]:016SMPL.D / Tune #1 [Count] [Linear]
2.0E4
1.0E4
m/z->
10 20 30 40 50 60 70 80 90 100
5.0E4
2.5E4
m/z->
110 120 130 140 150 160 170 180 190 200
20
10
m/z->
210 220 230 240 250 260

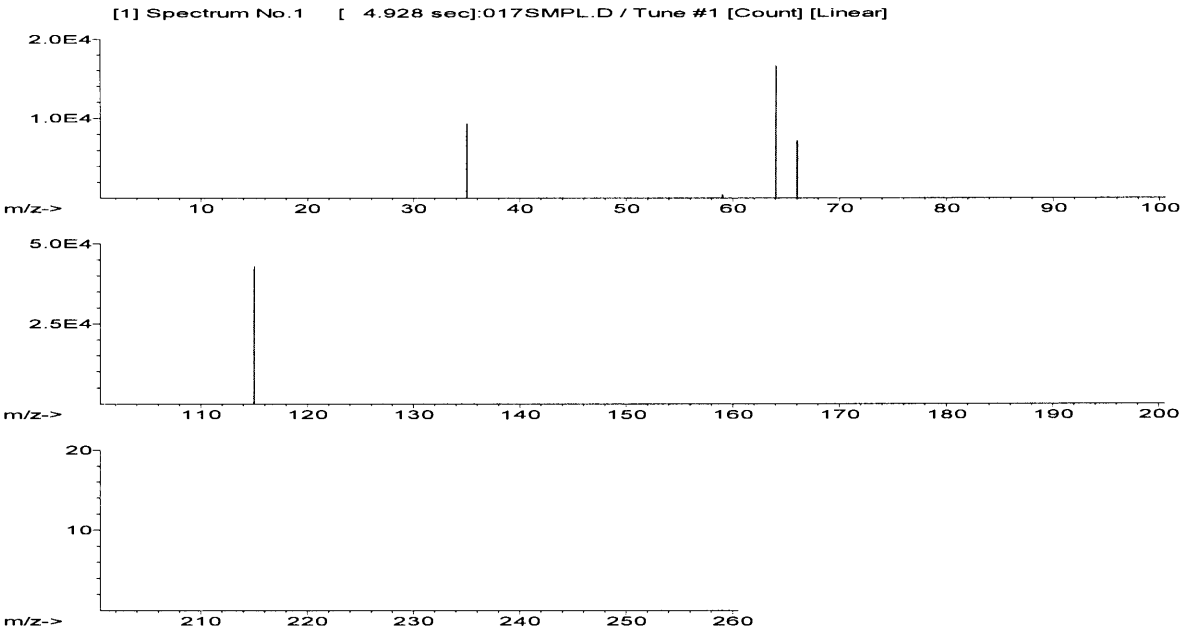

[2] Spectrum No.1 [4.929 sec]:016SMPL.D / Tune #2 [Count] [Linear]
2000
1000
m/z->
10 20 30 40 50 60 70 80 90 100
5000
2500
m/z->
110 120 130 140 150 160 170 180 190 200
20
10
m/z->
210 220 230 240 250 260

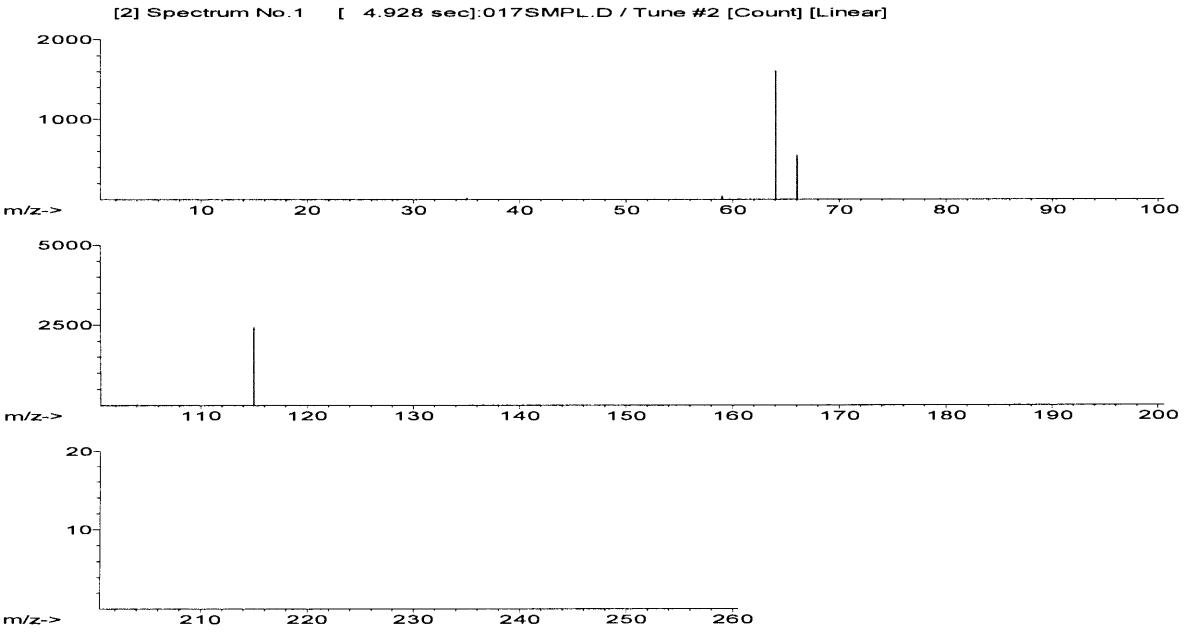
Quantitation Report - Detailed

File Name : 017SMPL.D
File Path : I:\ICP-MS\ICP-MS AGILENT\RAWDATA2013\130613_TC\
Method : i:\ICP-MS\ICP-MS Agilent\RawData2013\130613_Tc\TC99.M
Calibration : i:\ICP-MS\ICP-MS Agilent\RawData2013\130613_Tc\TC99.C
Acq Time : Jun 13 2013 12:37 pm
Sample Name : S13T004250
Sample Type : Sample
Comments :
Prep Dilution : 100.0
Auto Dilution : Undiluted
Total Dilution : 100.0
Operator Name: AG
Acq Mode : Spectrum
Cal Title :
Cal Type : External Calibration Method
Last Calib : Jun 17 2013 11:25 am
Bkg File : --------
Bkg Rejected Masses: --------
Interference Correction : OFF
Blank File : --------
VIS Fit : Point to Point
Weighting Method: 1/(SD*SD)
Multi Tune : #1 nogas.u
#2 he.u

Element	Mass	ISTD	Tune	CPS or Ratio	SD	RSD(%)	Time(sec)
Tc	99	115	#1	28.31242 P	0.9509	3.36	0.30
Tc	99	115	#2	55.78898 P	11.00	19.72	0.30
In	115		#1	428,507.6 P	8,244	1.92	0.30
In	115		#2	24,127.48 P	1,034	4.29	0.30

Element	Mass	Tune	Conc.	SD	RSD(%)	Rep	VI
Tc	99	#1	225.5 ppt	7.845	3.48	5	
Tc	99	#2	224.2 ppt	47.02	20.97	5	
In	115	#1	[1.800E+04 ppt]	---	---	[5]	
In	115	#2	[1.800E+04 ppt]	---	---	[5]	


[1] Spectrum No.1 [4.928 sec]:017SMPL.D / Tune #1 [Count] [Linear]
2.0E4
1.0E4
m/z->
10 20 30 40 50 60 70 80 90 100
5.0E4
2.5E4
m/z->
110 120 130 140 150 160 170 180 190 200
20
10
m/z->
210 220 230 240 250 260

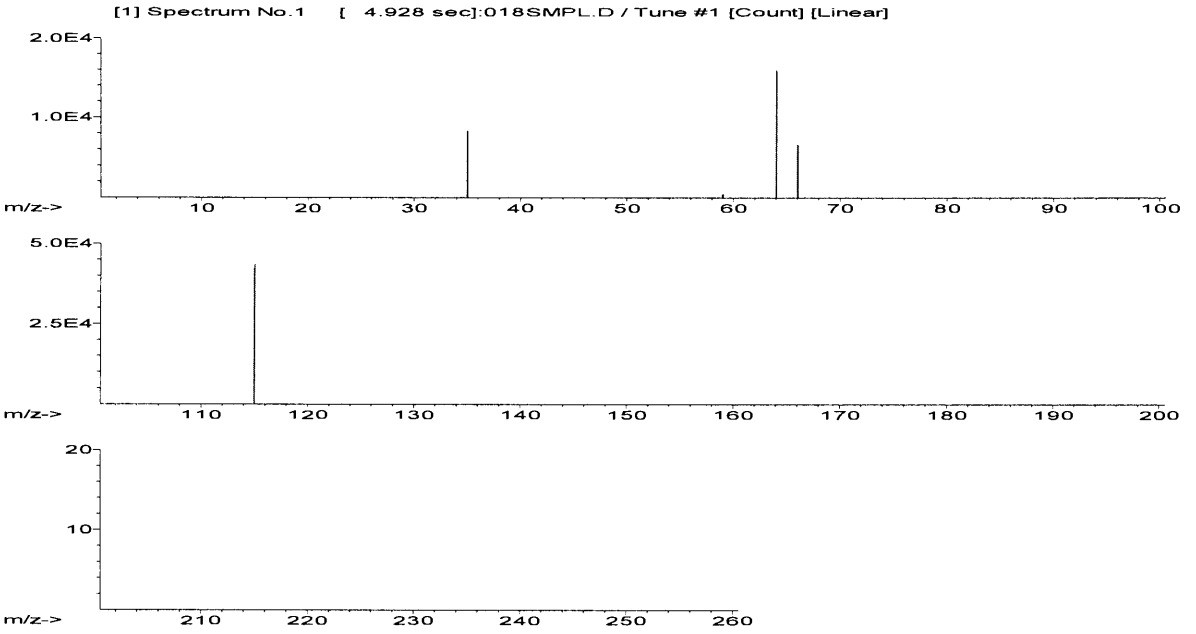

[2] Spectrum No.1 [4.928 sec]:017SMPL.D / Tune #2 [Count] [Linear]
2000
1000
m/z->
10 20 30 40 50 60 70 80 90 100
5000
2500
m/z->
110 120 130 140 150 160 170 180 190 200
20
10
m/z->
210 220 230 240 250 260

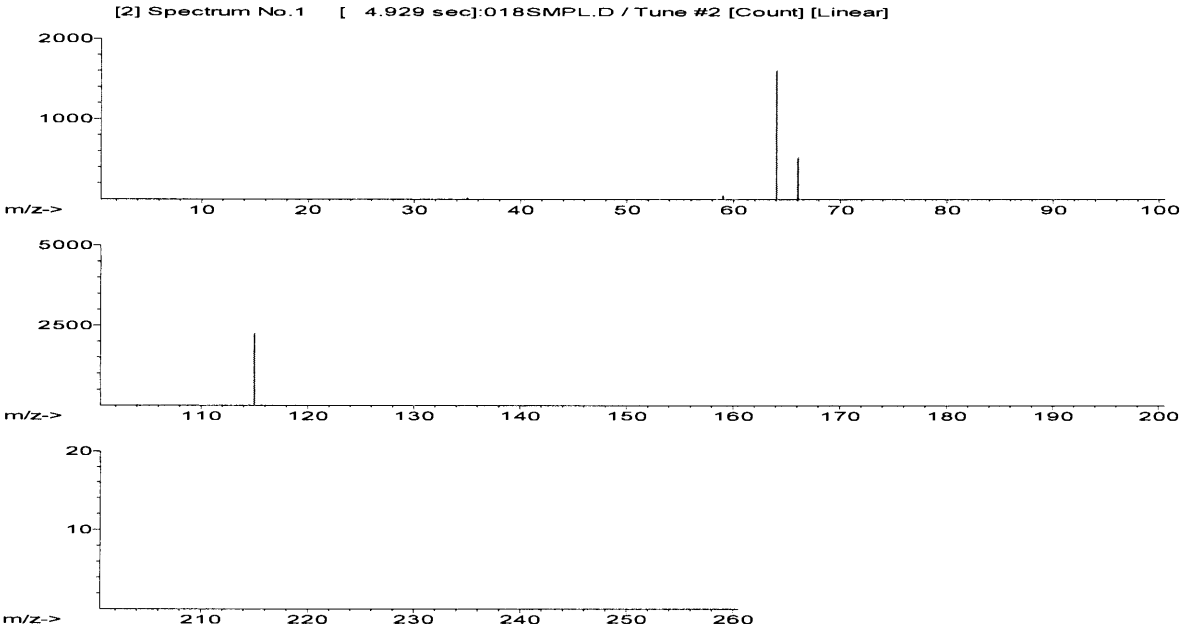
Quantitation Report - Detailed

File Name : 018SMPL.D
File Path : I:\ICP-MS\ICP-MS AGILENT\RAWDATA2013\130613_TC\
Method : i:\ICP-MS\ICP-MS Agilent\RawData2013\130613_Tc\TC99.M
Calibration : i:\ICP-MS\ICP-MS Agilent\RawData2013\130613_Tc\TC99.C
Acq Time : Jun 13 2013 12:41 pm
Sample Name : S13T004250_D
Sample Type : Sample
Comments :
Prep Dilution : 100.0
Auto Dilution : Undiluted
Total Dilution : 100.0
Operator Name: AG
Acq Mode : Spectrum
Cal Title :
Cal Type : External Calibration Method
Last Calib : Jun 17 2013 11:25 am
Bkg File : --------
Bkg Rejected Masses: --------
Interference Correction : OFF
Blank File : --------
VIS Fit : Point to Point
Weighting Method: 1/(SD*SD)
Multi Tune : #1 nogas.u
#2 he.u

Element	Mass	ISTD	Tune	CPS or Ratio	SD	RSD(%)	Time(sec)
Tc	99	115	#1	22.62495 P	2.404	10.63	0.30
Tc	99	115	#2	52.62634 P	11.23	21.34	0.30
In	115		#1	432,000.8 P	30,060	6.96	0.30
In	115		#2	22,663.76 P	2,467	10.88	0.30

Element	Mass	Tune	Conc.	SD	RSD(%)	Rep	VI
Tc	99	#1	178.6 ppt	19.84	11.11	5	
Tc	99	#2	210.7 ppt	48.01	22.79	5	
In	115	#1	[1.800E+04 ppt]	---	---	[5]	
In	115	#2	[1.800E+04 ppt]	---	---	[5]	


[1] Spectrum No.1 [4.928 sec]:018SMPL.D / Tune #1 [Count] [Linear]
2.0E4
1.0E4
m/z->
10 20 30 40 50 60 70 80 90 100
5.0E4
2.5E4
m/z->
110 120 130 140 150 160 170 180 190 200
20
10
m/z->
210 220 230 240 250 260

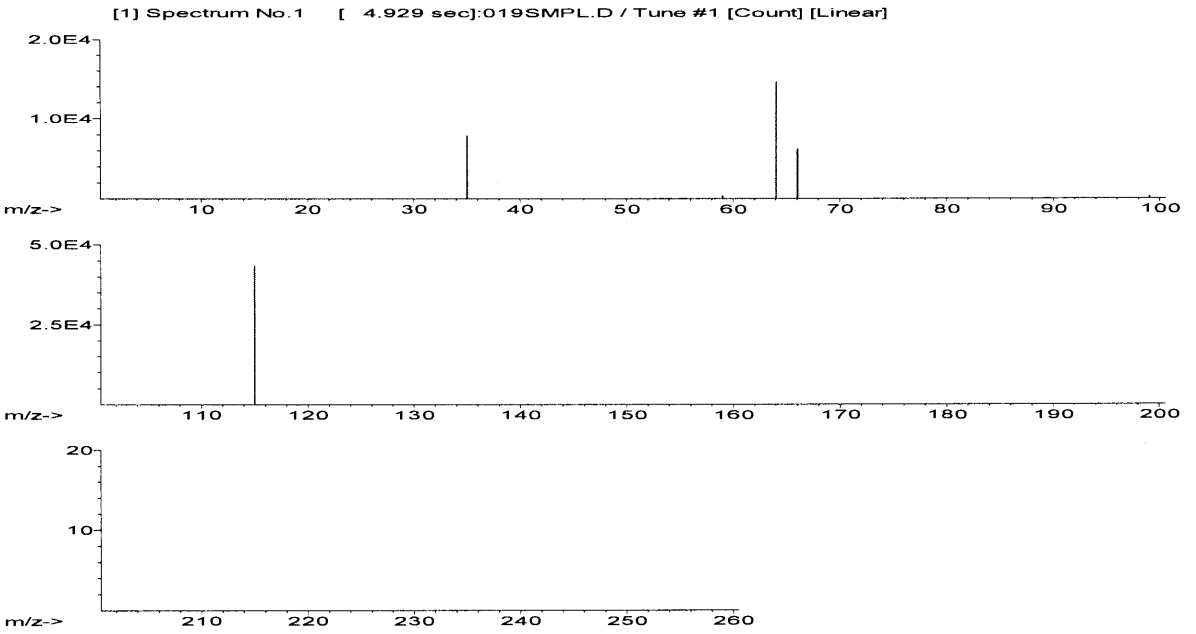

[2] Spectrum No.1 [4.929 sec]:018SMPL.D / Tune #2 [Count] [Linear]
2000
1000
m/z->
10 20 30 40 50 60 70 80 90 100
5000
2500
m/z->
110 120 130 140 150 160 170 180 190 200
20
10
m/z->
210 220 230 240 250 260

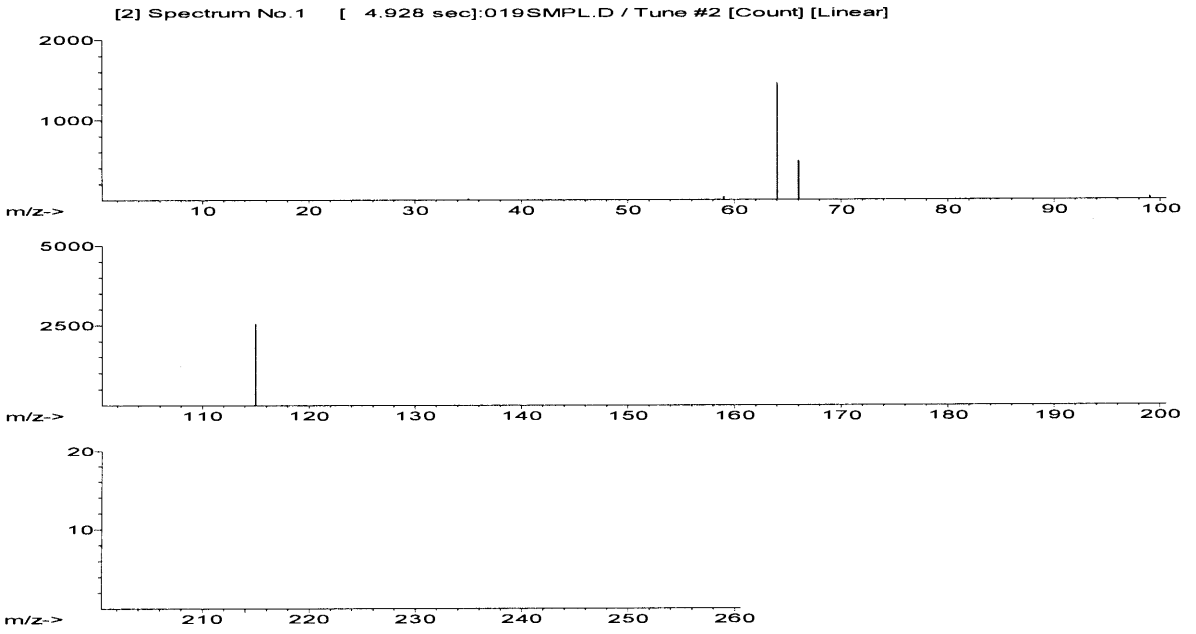
Quantitation Report - Detailed

File Name : 019SMPL.D
File Path : I:\ICP-MS\ICP-MS AGILENT\RAWDATA2013\130613_TC\
Method : i:\ICP-MS\ICP-MS Agilent\RawData2013\130613_Tc\TC99.M
Calibration : i:\ICP-MS\ICP-MS Agilent\RawData2013\130613_Tc\TC99.C
Acq Time : Jun 13 2013 12:45 pm
Sample Name : S13T004250_S1
Sample Type : Sample
Comments :
Prep Dilution : 100.0
Auto Dilution : Undiluted
Total Dilution : 100.0
Operator Name: AG
Acq Mode : Spectrum
Cal Title :
Cal Type : External Calibration Method
Last Calib : Jun 17 2013 11:25 am
Bkg File : --------
Bkg Rejected Masses: --------
Interference Correction : OFF
Blank File : --------
VIS Fit : Point to Point
Weighting Method: 1/(SD*SD)
Multi Tune : #1 nogas.u
#2 he.u

Element	Mass	ISTD	Tune	CPS or Ratio	SD	RSD(%)	Time(sec)
Tc	99	115	#1	132.3568 P	27.82	21.02	0.30
Tc	99	115	#2	237.1672 P	31.52	13.29	0.30
In	115		#1	433,165.2 P	90,840	20.97	0.30
In	115		#2	25,567.07 P	2,156	8.43	0.30

Element	Mass	Tune	Conc.	SD	RSD(%)	Rep	VI
Tc	99	#1	1.084E+03 ppt	229.5	21.17	5	
Tc	99	#2	999.8 ppt	134.8	13.48	5	
In	115	#1	[1.800E+04 ppt]	---	---	[5]	
In	115	#2	[1.800E+04 ppt]	---	---	[5]	


[1] Spectrum No.1 [4.929 sec]:019SMPL.D / Tune #1 [Count] [Linear]
2.0E4
1.0E4
m/z->
10 20 30 40 50 60 70 80 90 100
5.0E4
2.5E4
m/z->
110 120 130 140 150 160 170 180 190 200
20
10
m/z->
210 220 230 240 250 260


[2] Spectrum No.1 [4.928 sec]:019SMPL.D / Tune #2 [Count] [Linear]
2000
1000
m/z->
10 20 30 40 50 60 70 80 90 100
5000
2500
m/z->
110 120 130 140 150 160 170 180 190 200
20
10
m/z->
210 220 230 240 250 260

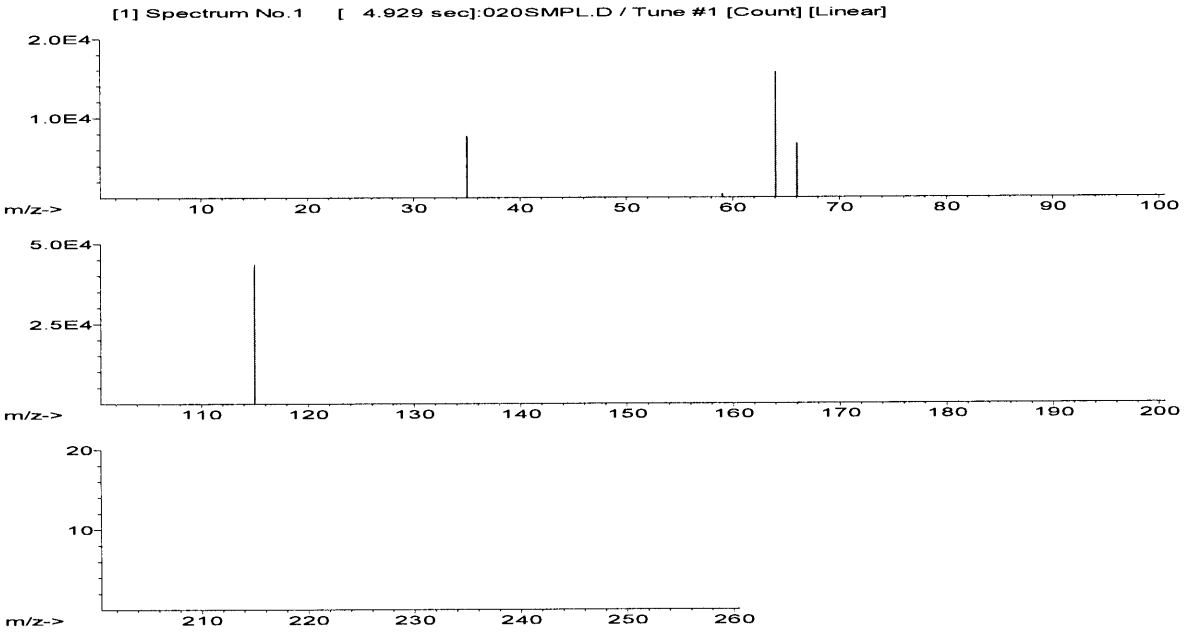
Quantitation Report - Detailed

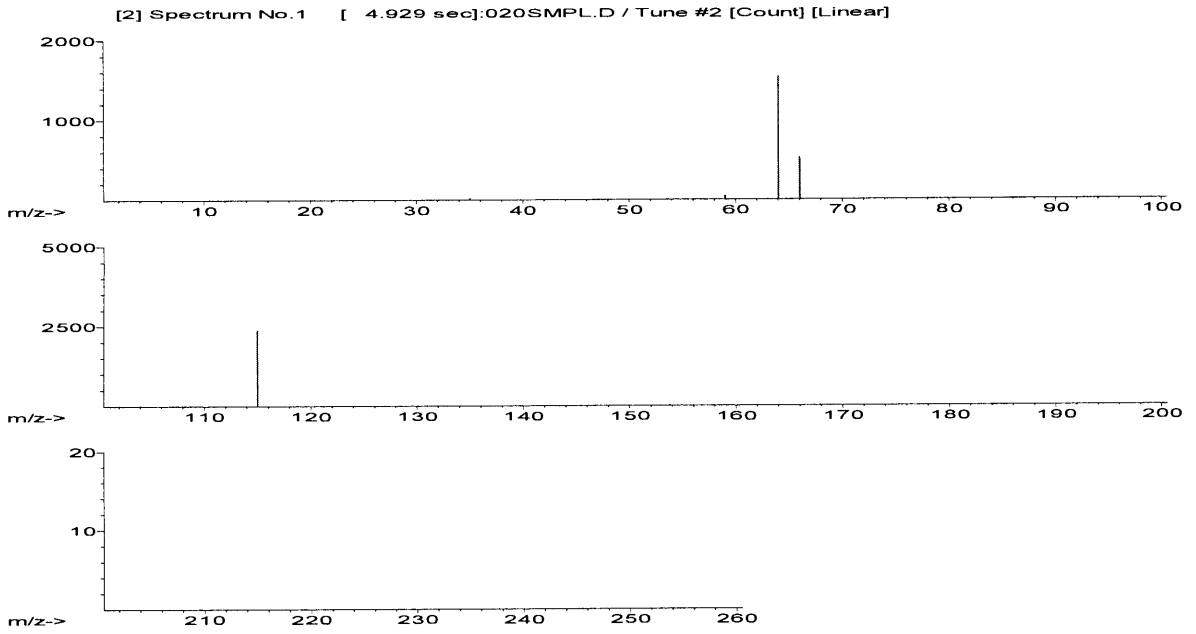
File Name : 020SMPL.D
File Path : I:\ICP-MS\ICP-MS AGILENT\RAWDATA2013\130613_TC\
Method : i:\ICP-MS\ICP-MS Agilent\RawData2013\130613_Tc\TC99.M
Calibration : i:\ICP-MS\ICP-MS Agilent\RawData2013\130613_Tc\TC99.C
Acq Time : Jun 13 2013 12:49 pm
Sample Name : S13T004250_A
Sample Type : Sample
Comments :
Prep Dilution : 100.0
Auto Dilution : Undiluted
Total Dilution : 100.0
Operator Name: AG
Acq Mode : Spectrum
Cal Title :
Cal Type : External Calibration Method
Last Calib : Jun 17 2013 11:25 am
Bkg File : --------
Bkg Rejected Masses: --------
Interference Correction : OFF
Blank File : --------
VIS Fit : Point to Point
Weighting Method: 1/(SD*SD)
Multi Tune : #1 nogas.u
#2 he.u

FORGOT TO ADD SPIKE; NOT USED. REPREPPED & ANALYZED VM 6/24/13

Element	Mass	ISTD	Tune	CPS or Ratio	SD	RSD(%)	Time(sec)
Tc	99	115	#1	23.92234 P	1.434	5.99	0.30
Tc	99	115	#2	47.43629 P	13.00	27.41	0.30
In	115		#1	434,344.7 P	5,916	1.36	0.30
In	115		#2	23,820.27 P	472.1	1.98	0.30

Element	Mass	Tune	Conc.	SD	RSD(%)	Rep	VI
Tc	99	#1	189.3 ppt	11.83	6.25	5	
Tc	99	#2	188.5 ppt	55.60	29.50	5	
In	115	#1	[1.800E+04 ppt]	---	---	[5]	
In	115	#2	[1.800E+04 ppt]	---	---	[5]	


[1] Spectrum No.1 [4.929 sec]:020SMPL.D / Tune #1 [Count] [Linear]
2.0E4
1.0E4
m/z->
10 20 30 40 50 60 70 80 90 100
5.0E4
2.5E4
m/z->
110 120 130 140 150 160 170 180 190 200
20
10
m/z->
210 220 230 240 250 260

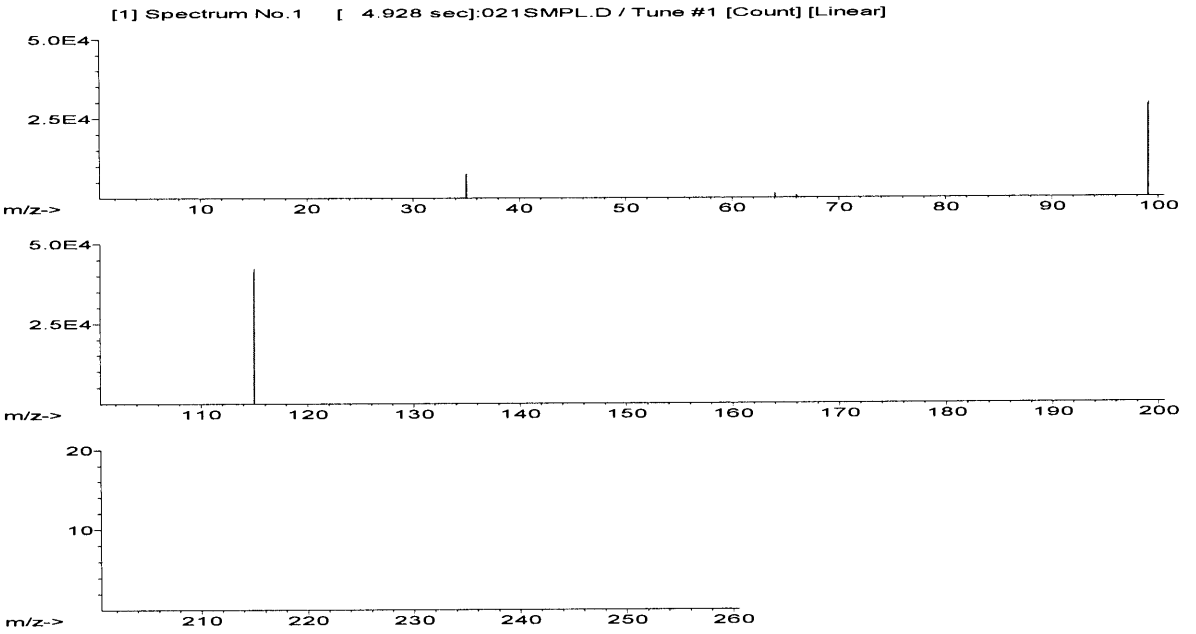

[2] Spectrum No.1 [4.929 sec]:020SMPL.D / Tune #2 [Count] [Linear]
2000
1000
m/z->
10 20 30 40 50 60 70 80 90 100
5000
2500
m/z->
110 120 130 140 150 160 170 180 190 200
20
10
m/z->
210 220 230 240 250 260

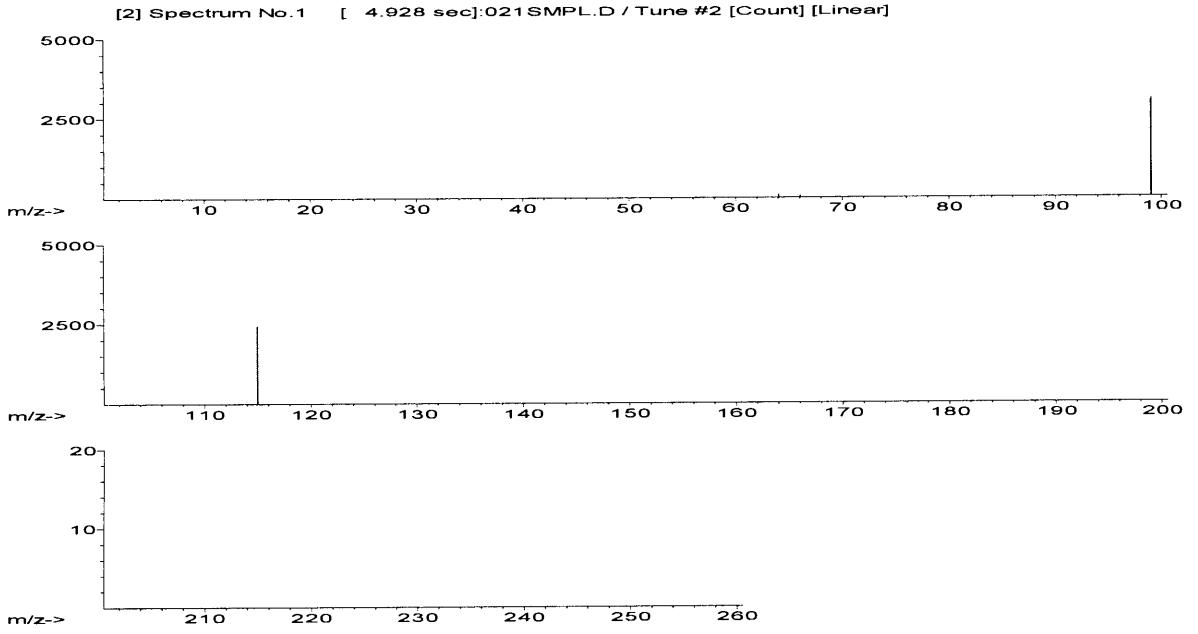
Quantitation Report - Detailed

File Name : 021SMPL.D
File Path : I:\ICP-MS\ICP-MS AGILENT\RAWDATA2013\130613_TC\
Method : i:\ICP-MS\ICP-MS Agilent\RawData2013\130613_Tc\TC99.M
Calibration : i:\ICP-MS\ICP-MS Agilent\RawData2013\130613_Tc\TC99.C
Acq Time : Jun 13 2013 12:53 pm
Sample Name : CCV 1 ppb
Sample Type : Sample
Comments :
Prep Dilution : 1.000
Auto Dilution : Undiluted
Total Dilution : 1.000
Operator Name: AG
Acq Mode : Spectrum
Cal Title :
Cal Type : External Calibration Method
Last Calib : Jun 17 2013 11:25 am
Bkg File : --------
Bkg Rejected Masses: --------
Interference Correction : OFF
Blank File : --------
VIS Fit : Point to Point
Weighting Method: 1/(SD*SD)
Multi Tune : #1 nogas.u
#2 he.u

Element	Mass	ISTD	Tune	CPS or Ratio	SD	RSD(%)	Time(sec)
Tc	99	115	#1	12,751.15 P	1,436	11.26	0.30
Tc	99	115	#2	22,715.35 P	1,746	7.69	0.30
In	115		#1	419,662.9 P	53,930	12.85	0.30
In	115		#2	24,274.50 P	1,078	4.44	0.30

Element	Mass	Tune	Conc.	SD	RSD(%)	Rep	VI
Tc	99	#1	1.052E+03 ppt	118.5	11.26	5	
Tc	99	#2	971.2 ppt	74.68	7.69	5	
In	115	#1	[1.800E+04 ppt]	---	---	[5]	
In	115	#2	[1.800E+04 ppt]	---	---	[5]	


[1] Spectrum No.1 [4.928 sec]:021SMPL.D / Tune #1 [Count] [Linear]
5.0E4
2.5E4
m/z->
10 20 30 40 50 60 70 80 90 100
5.0E4
2.5E4
m/z->
110 120 130 140 150 160 170 180 190 200
20
10
m/z->
210 220 230 240 250 260

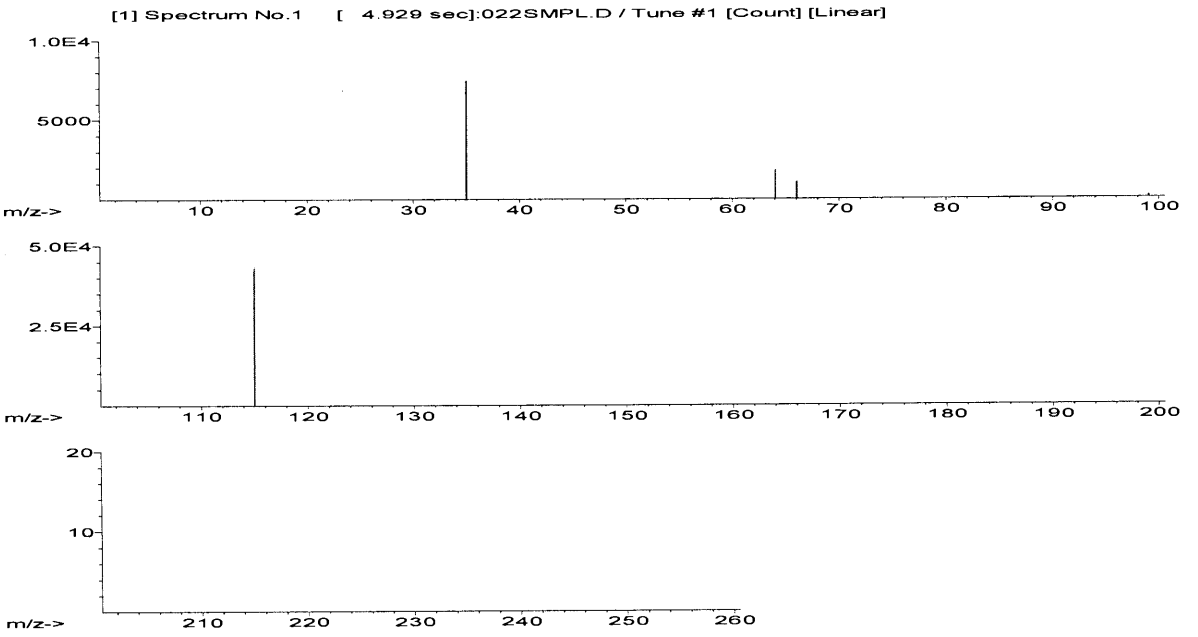

[2] Spectrum No.1 [4.928 sec]:021SMPL.D / Tune #2 [Count] [Linear]
5000
2500
m/z->
10 20 30 40 50 60 70 80 90 100
5000
2500
m/z->
110 120 130 140 150 160 170 180 190 200
20
10
m/z->
210 220 230 240 250 260

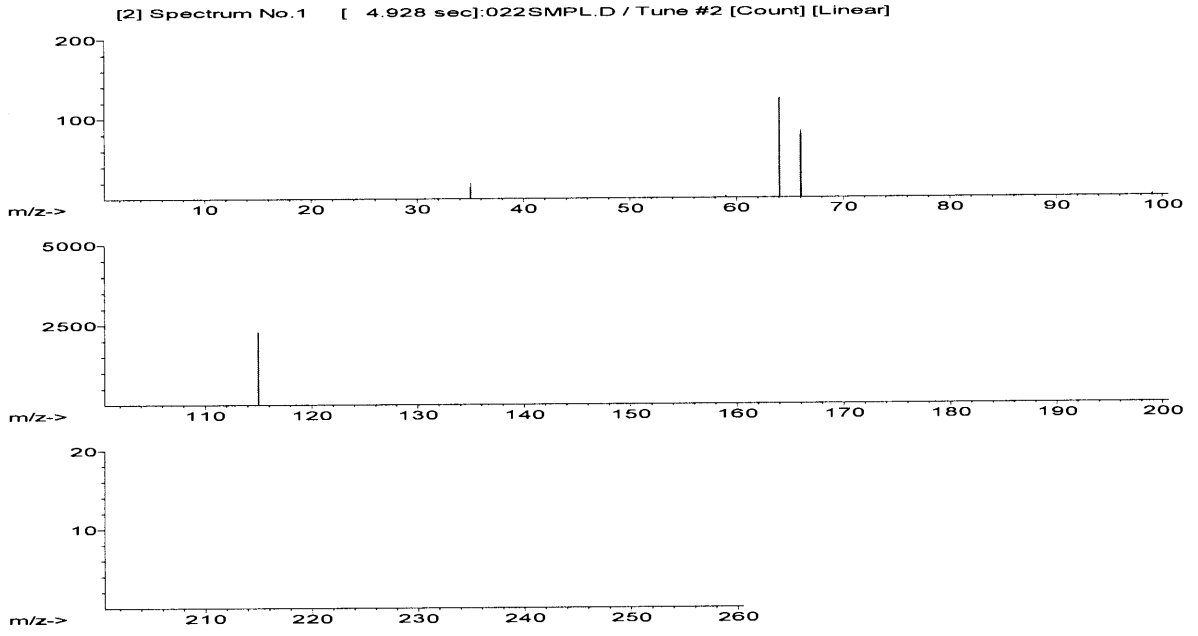
Quantitation Report - Detailed

File Name : 022SMPL.D
File Path : I:\ICP-MS\ICP-MS AGILENT\RAWDATA2013\130613_TC\
Method : i:\ICP-MS\ICP-MS Agilent\RawData2013\130613_Tc\TC99.M
Calibration : i:\ICP-MS\ICP-MS Agilent\RawData2013\130613_Tc\TC99.C
Acq Time : Jun 13 2013 12:58 pm
Sample Name : CCB
Sample Type : Sample
Comments :
Prep Dilution : 1.000
Auto Dilution : Undiluted
Total Dilution : 1.000
Operator Name: AG
Acq Mode : Spectrum
Cal Title :
Cal Type : External Calibration Method
Last Calib : Jun 17 2013 11:25 am
Bkg File : --------
Bkg Rejected Masses: --------
Interference Correction : OFF
Blank File : --------
VIS Fit : Point to Point
Weighting Method: 1/(SD*SD)
Multi Tune : #1 nogas.u
#2 he.u

Element	Mass	ISTD	Tune	CPS or Ratio	SD	RSD(%)	Time(sec)
Tc	99	115	#1	72.08522 P	38.02	52.74	0.30
Tc	99	115	#2	16.28092 P	15.73	96.62	0.30
In	115		#1	430,080.8 P	6,681	1.55	0.30
In	115		#2	22,864.88 P	1,956	8.56	0.30

Element	Mass	Tune	Conc.	SD	RSD(%)	Rep	VI
Tc	99	#1	5.866 ppt	3.137	53.48	5	
Tc	99	#2	5.527E-01 ppt	0.6726	121.69	5	
In	115	#1	[1.800E+04 ppt]	---	---	[5]	
In	115	#2	[1.800E+04 ppt]	---	---	[5]	


[1] Spectrum No.1 [4.929 sec]:022SMPL.D / Tune #1 [Count] [Linear]
1.0E4
5000
m/z->
10 20 30 40 50 60 70 80 90 100
5.0E4
2.5E4
m/z->
110 120 130 140 150 160 170 180 190 200
20
10
m/z->
210 220 230 240 250 260

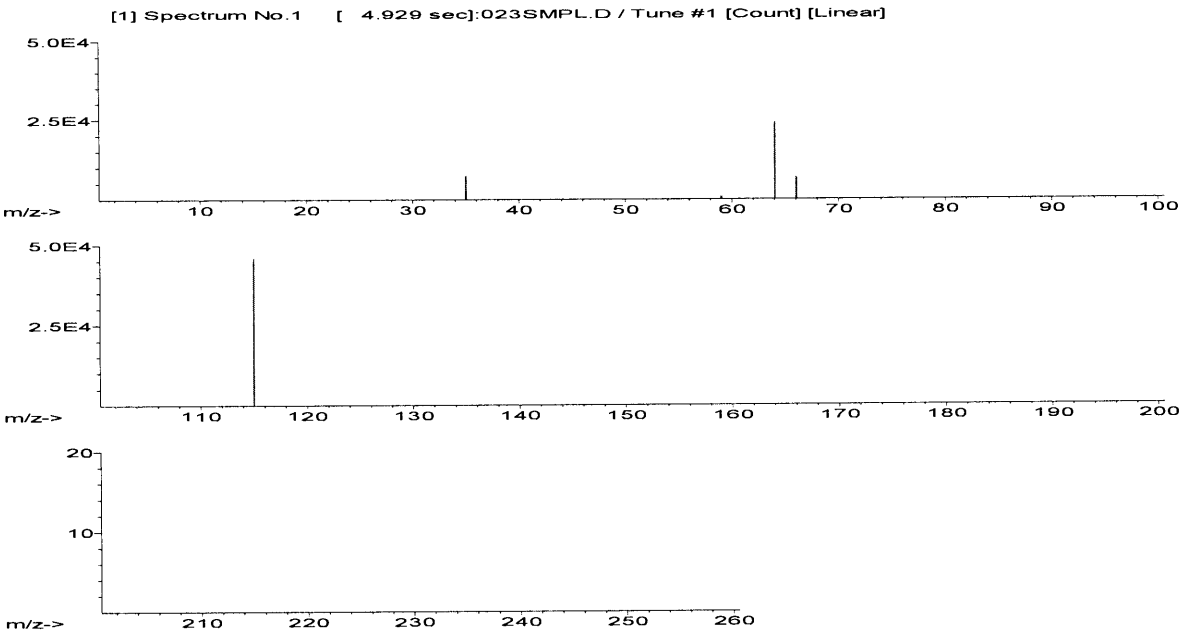

[2] Spectrum No.1 [4.928 sec]:022SMPL.D / Tune #2 [Count] [Linear]
200
100
m/z->
10 20 30 40 50 60 70 80 90 100
5000
2500
m/z->
110 120 130 140 150 160 170 180 190 200
20
10
m/z->
210 220 230 240 250 260

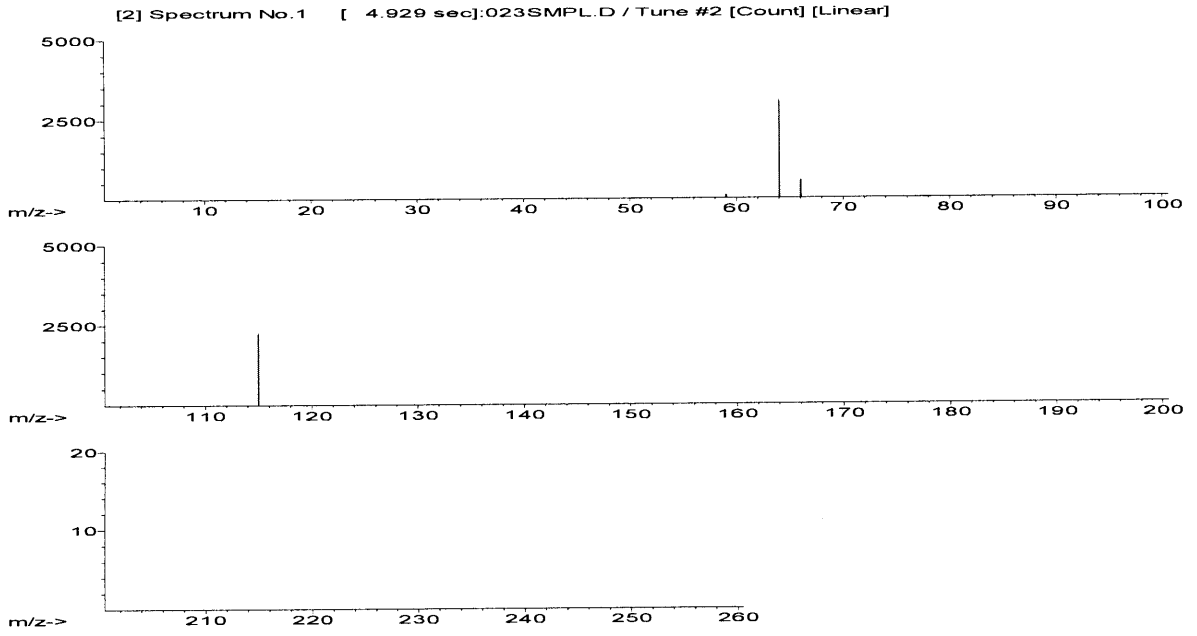
Quantitation Report - Detailed

File Name : 023SMPL.D
File Path : I:\ICP-MS\ICP-MS AGILENT\RAWDATA2013\130613_TC\
Method : i:\ICP-MS\ICP-MS Agilent\RawData2013\130613_Tc\TC99.M
Calibration : i:\ICP-MS\ICP-MS Agilent\RawData2013\130613_Tc\TC99.C
Acq Time : Jun 13 2013 01:02 pm
Sample Name : S13T004278
Sample Type : Sample
Comments :
Prep Dilution : 100.0
Auto Dilution : Undiluted
Total Dilution : 100.0
Operator Name: AG
Acq Mode : Spectrum
Cal Title :
Cal Type : External Calibration Method
Last Calib : Jun 17 2013 11:25 am
Bkg File : --------
Bkg Rejected Masses: --------
Interference Correction : OFF
Blank File : --------
VIS Fit : Point to Point
Weighting Method: 1/(SD*SD)
Multi Tune : #1 nogas.u
#2 he.u

Element	Mass	ISTD	Tune	CPS or Ratio	SD	RSD(%)	Time(sec)
Tc	99	115	#1	30.16379 P	8.704	28.86	0.30
Tc	99	115	#2	56.45537 P	17.60	31.18	0.30
In	115		#1	456,292.8 P	141,600	31.04	0.30
In	115		#2	22,395.38 P	2,965	13.24	0.30

Element	Mass	Tune	Conc.	SD	RSD(%)	Rep	VI
Tc	99	#1	240.8 ppt	71.81	29.82	5	
Tc	99	#2	227.1 ppt	75.25	33.14	5	
In	115	#1	[1.800E+04 ppt]	---	---	[5]	
In	115	#2	[1.800E+04 ppt]	---	---	[5]	


[1] Spectrum No.1 [4.929 sec]:023SMPL.D / Tune #1 [Count] [Linear]
5.0E4
2.5E4
m/z->
10 20 30 40 50 60 70 80 90 100
5.0E4
2.5E4
m/z->
110 120 130 140 150 160 170 180 190 200
20
10
m/z->
210 220 230 240 250 260

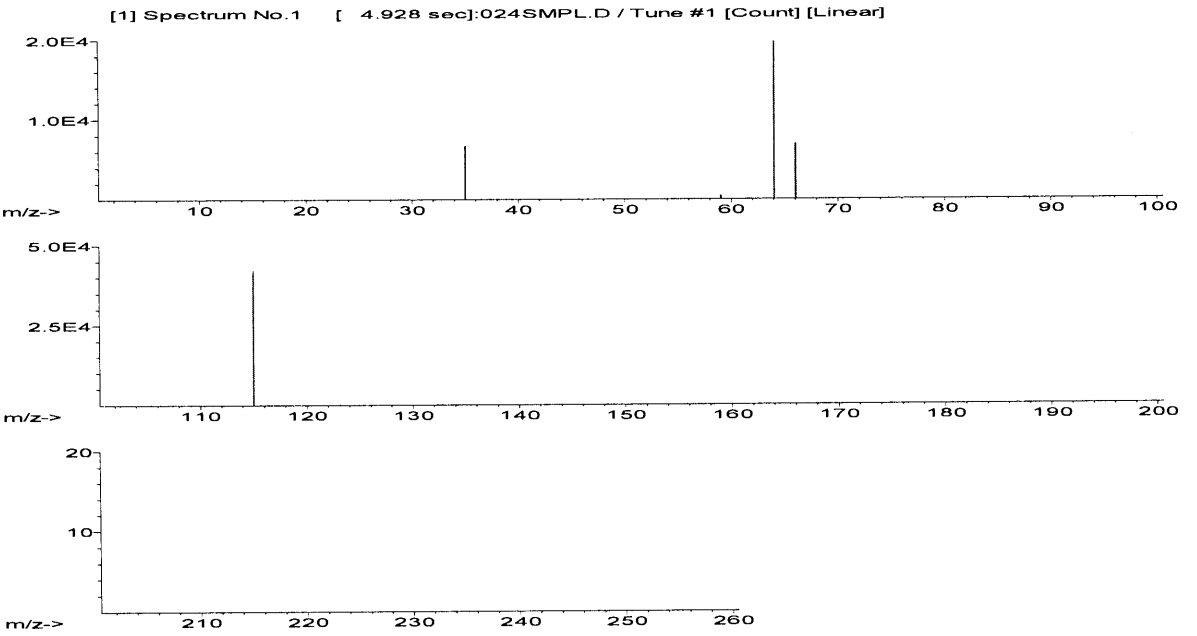

[2] Spectrum No.1 [4.929 sec]:023SMPL.D / Tune #2 [Count] [Linear]
5000
2500
m/z->
10 20 30 40 50 60 70 80 90 100
5000
2500
m/z->
110 120 130 140 150 160 170 180 190 200
20
10
m/z->
210 220 230 240 250 260

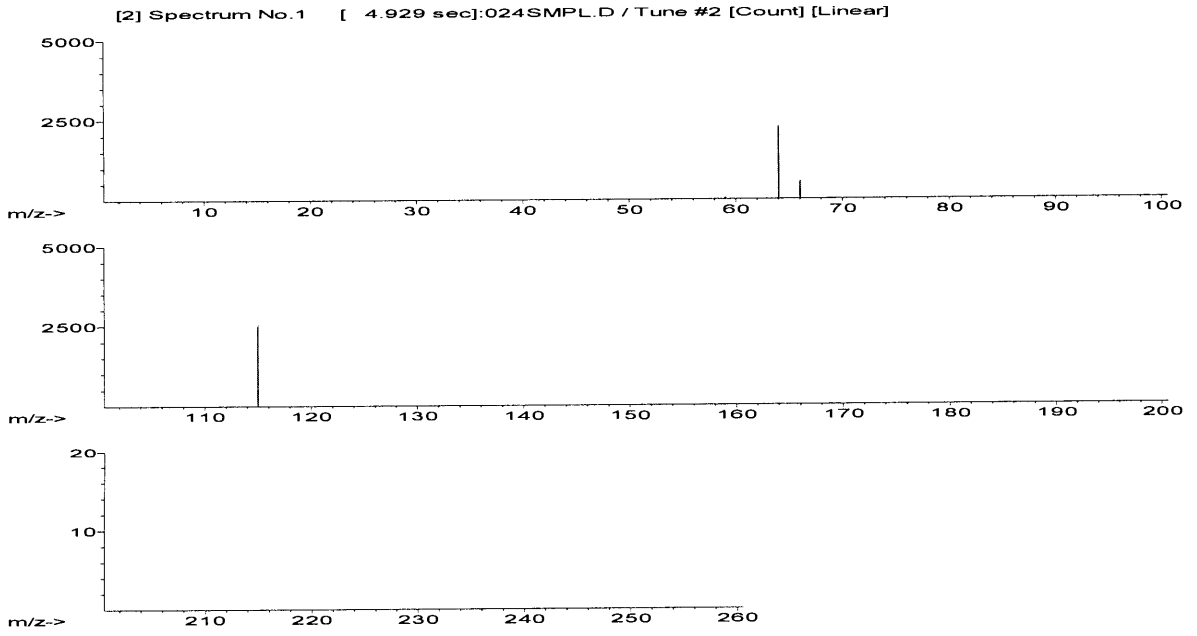
Quantitation Report - Detailed

File Name : 024SMPL.D
File Path : I:\ICP-MS\ICP-MS AGILENT\RAWDATA2013\130613_TC\
Method : i:\ICP-MS\ICP-MS Agilent\RawData2013\130613_Tc\TC99.M
Calibration : i:\ICP-MS\ICP-MS Agilent\RawData2013\130613_Tc\TC99.C
Acq Time : Jun 13 2013 01:06 pm
Sample Name : S13T004305
Sample Type : Sample
Comments :
Prep Dilution : 100.0
Auto Dilution : Undiluted
Total Dilution : 100.0
Operator Name: AG
Acq Mode : Spectrum
Cal Title :
Cal Type : External Calibration Method
Last Calib : Jun 17 2013 11:25 am
Bkg File : --------
Bkg Rejected Masses: --------
Interference Correction : OFF
Blank File : --------
VIS Fit : Point to Point
Weighting Method: 1/(SD*SD)
Multi Tune : #1 nogas.u
#2 he.u

Element	Mass	ISTD	Tune	CPS or Ratio	SD	RSD(%)	Time(sec)
Tc	99	115	#1	19.87477 P	1.563	7.86	0.30
Tc	99	115	#2	40.39901 P	15.38	38.07	0.30
In	115		#1	420,268.2 P	3,958	0.94	0.30
In	115		#2	25,167.50 P	2,094	8.32	0.30

Element	Mass	Tune	Conc.	SD	RSD(%)	Rep	VI
Tc	99	#1	155.9 ppt	12.90	8.27	5	
Tc	99	#2	158.4 ppt	65.76	41.52	5	
In	115	#1	[1.800E+04 ppt]	---	---	[5]	
In	115	#2	[1.800E+04 ppt]	---	---	[5]	


[1] Spectrum No.1 [4.928 sec]:024SMPL.D / Tune #1 [Count] [Linear]
2.0E4
1.0E4
m/z->
10 20 30 40 50 60 70 80 90 100
5.0E4
2.5E4
m/z->
110 120 130 140 150 160 170 180 190 200
20
10
m/z->
210 220 230 240 250 260

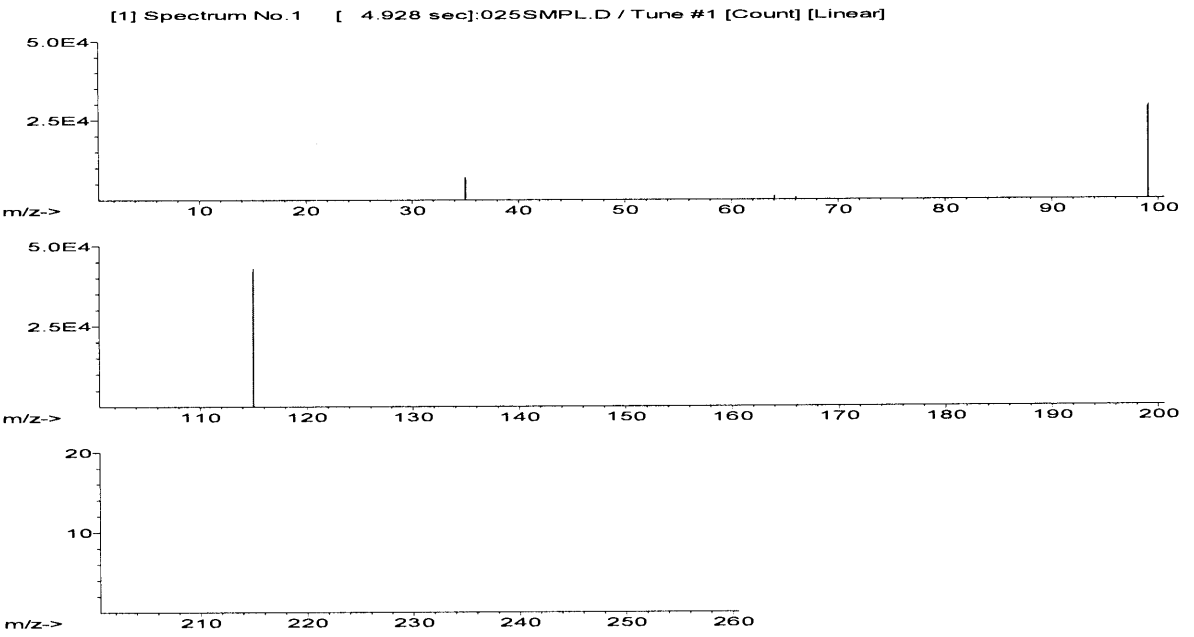

[2] Spectrum No.1 [4.929 sec]:024SMPL.D / Tune #2 [Count] [Linear]
5000
2500
m/z->
10 20 30 40 50 60 70 80 90 100
5000
2500
m/z->
110 120 130 140 150 160 170 180 190 200
20
10
m/z->
210 220 230 240 250 260

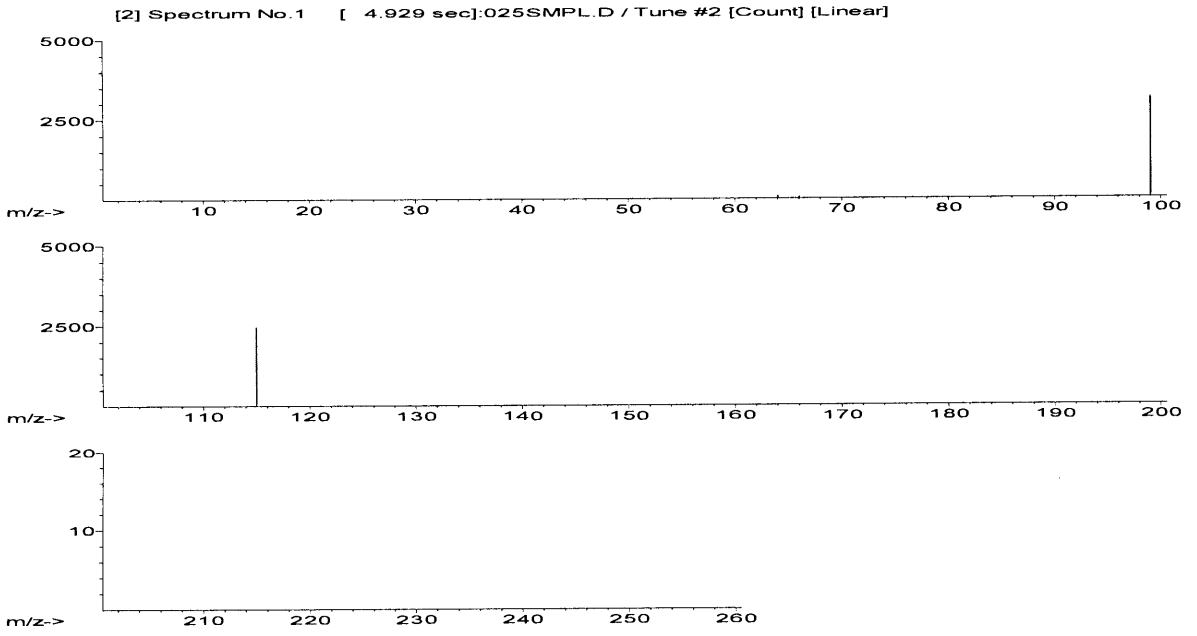
Quantitation Report - Detailed

File Name : 025SMPL.D
File Path : I:\ICP-MS\ICP-MS AGILENT\RAWDATA2013\130613_TC\
Method : i:\ICP-MS\ICP-MS Agilent\RawData2013\130613_Tc\TC99.M
Calibration : i:\ICP-MS\ICP-MS Agilent\RawData2013\130613_Tc\TC99.C
Acq Time : Jun 13 2013 01:10 pm
Sample Name : CCV 1 ppb
Sample Type : Sample
Comments :
Prep Dilution : 1.000
Auto Dilution : Undiluted
Total Dilution : 1.000
Operator Name: AG
Acq Mode : Spectrum
Cal Title :
Cal Type : External Calibration Method
Last Calib : Jun 17 2013 11:25 am
Bkg File : --------
Bkg Rejected Masses: --------
Interference Correction : OFF
Blank File : --------
VIS Fit : Point to Point
Weighting Method: 1/(SD*SD)
Multi Tune : #1 nogas.u
#2 he.u

Element	Mass	ISTD	Tune	CPS or Ratio	SD	RSD(%)	Time(sec)
Tc	99	115	#1	12,330.64 P	229.5	1.86	0.30
Tc	99	115	#2	22,950.73 P	457.6	1.99	0.30
In	115		#1	427,449.1 P	9,146	2.14	0.30
In	115		#2	24,597.00 P	467.7	1.90	0.30

Element	Mass	Tune	Conc.	SD	RSD(%)	Rep	VI
Tc	99	#1	1.017E+03 ppt	18.93	1.86	5	
Tc	99	#2	981.3 ppt	19.57	1.99	5	
In	115	#1	[1.800E+04 ppt]	---	---	[5]	
In	115	#2	[1.800E+04 ppt]	---	---	[5]	


[1] Spectrum No.1 [4.928 sec]:025SMPL.D / Tune #1 [Count] [Linear]
5.0E4
2.5E4
m/z->
10 20 30 40 50 60 70 80 90 100
5.0E4
2.5E4
m/z->
110 120 130 140 150 160 170 180 190 200
20
10
m/z->
210 220 230 240 250 260

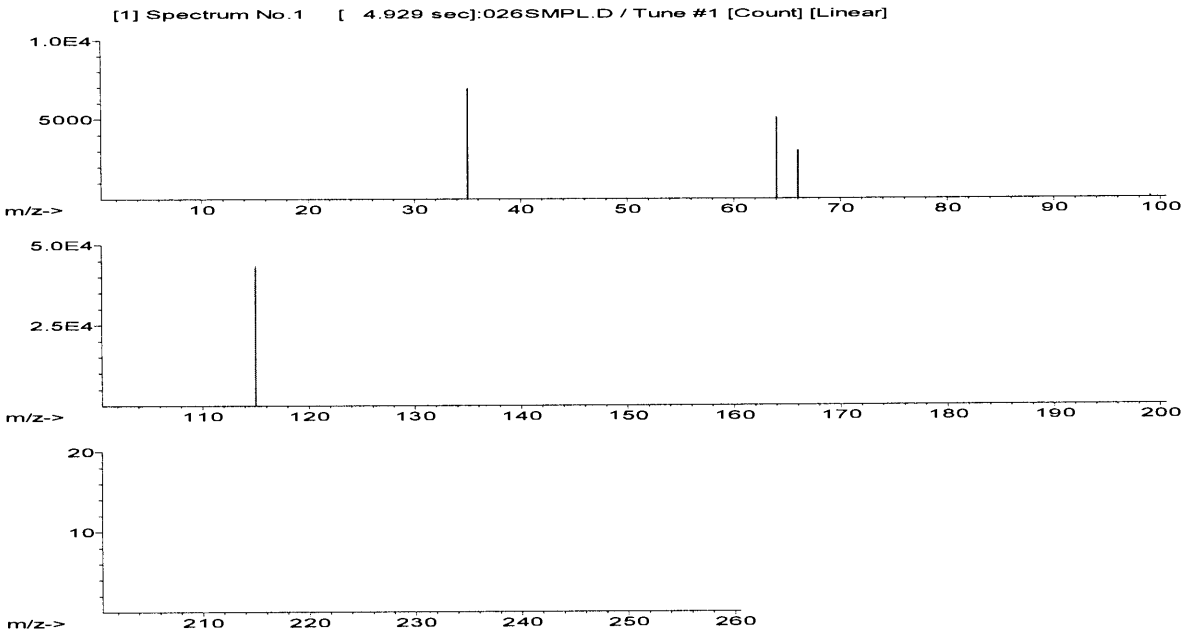

[2] Spectrum No.1 [4.929 sec]:025SMPL.D / Tune #2 [Count] [Linear]
5000
2500
m/z->
10 20 30 40 50 60 70 80 90 100
5000
2500
m/z->
110 120 130 140 150 160 170 180 190 200
20
10
m/z->
210 220 230 240 250 260

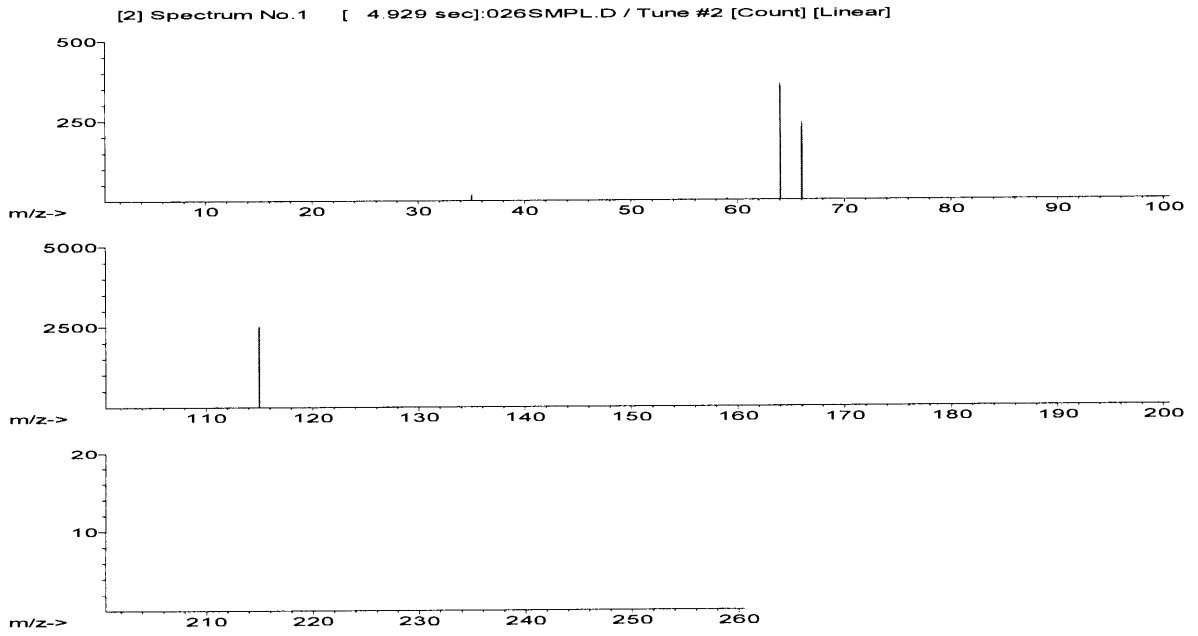
Quantitation Report - Detailed

File Name : 026SMPL.D
File Path : I:\ICP-MS\ICP-MS AGILENT\RAWDATA2013\130613_TC\
Method : i:\ICP-MS\ICP-MS Agilent\RawData2013\130613_Tc\TC99.M
Calibration : i:\ICP-MS\ICP-MS Agilent\RawData2013\130613_Tc\TC99.C
Acq Time : Jun 13 2013 01:14 pm
Sample Name : rinse
Sample Type : Sample
Comments :
Prep Dilution : 1.000
Auto Dilution : Undiluted
Total Dilution : 1.000
Operator Name: AG
Acq Mode : Spectrum
Cal Title :
Cal Type : External Calibration Method
Last Calib : Jun 17 2013 11:25 am
Bkg File : --------
Bkg Rejected Masses: --------
Interference Correction : OFF
Blank File : --------
VIS Fit : Point to Point
Weighting Method: 1/(SD*SD)
Multi Tune : #1 nogas.u
#2 he.u

Element	Mass	ISTD	Tune	CPS or Ratio	SD	RSD(%)	Time(sec)
Tc	99	115	#1	49.85945 P	18.44	36.98	0.30
Tc	99	115	#2	14.68984 P	25.12	171.00	0.30
In	115		#1	435,403.2 P	4,652	1.07	0.30
In	115		#2	25,125.99 P	659.8	2.63	0.30

Element	Mass	Tune	Conc.	SD	RSD(%)	Rep	VI
Tc	99	#1	4.033 ppt	1.521	37.71	5	
Tc	99	#2	4.847E-01 ppt	1.074	221.58	5	
In	115	#1	[1.800E+04 ppt]	---	---	[5]	
In	115	#2	[1.800E+04 ppt]	---	---	[5]	


[1] Spectrum No.1 [4.929 sec]:026SMPL.D / Tune #1 [Count] [Linear]
1.0E4
5000
m/z->
10 20 30 40 50 60 70 80 90 100
5.0E4
2.5E4
m/z->
110 120 130 140 150 160 170 180 190 200
20
10
m/z->
210 220 230 240 250 260

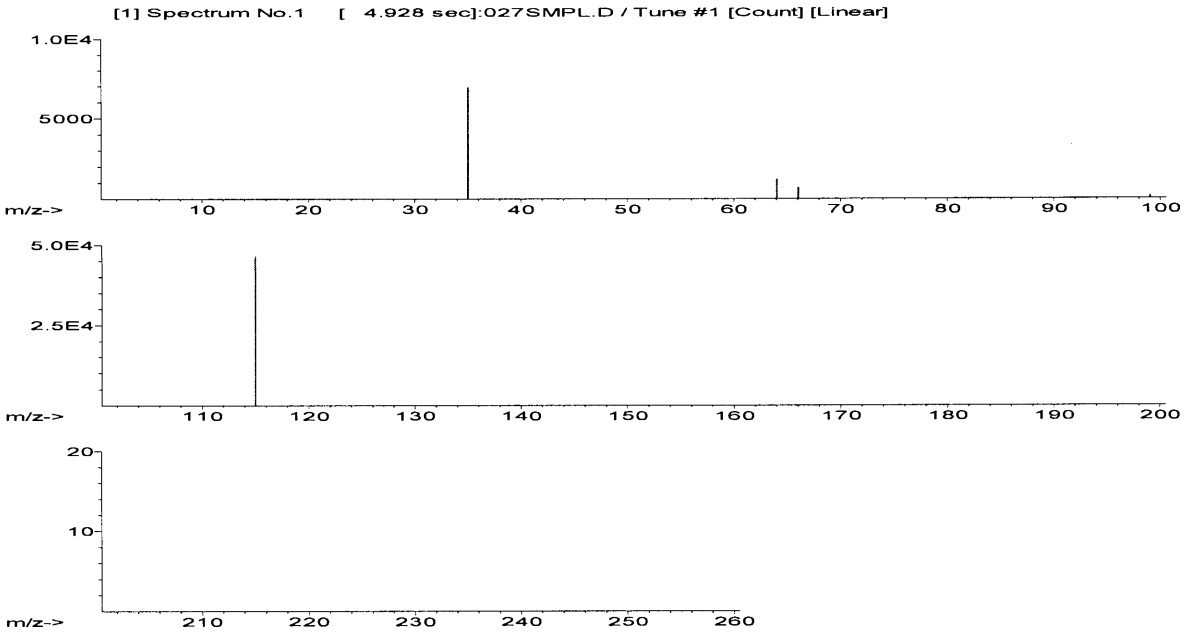

[2] Spectrum No.1 [4.929 sec]:026SMPL.D / Tune #2 [Count] [Linear]
500
250
m/z->
10 20 30 40 50 60 70 80 90 100
5000
2500
m/z->
110 120 130 140 150 160 170 180 190 200
20
10
m/z->
210 220 230 240 250 260

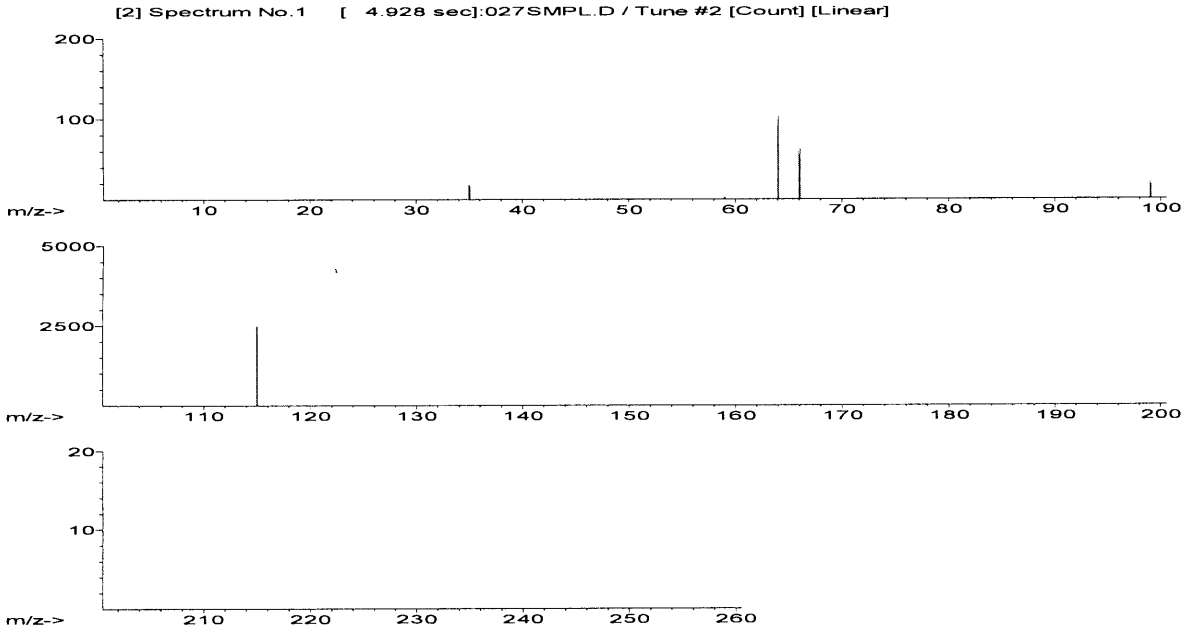
Quantitation Report - Detailed

File Name : 027SMPL.D
File Path : I:\ICP-MS\ICP-MS AGILENT\RAWDATA2013\130613_TC\
Method : i:\ICP-MS\ICP-MS Agilent\RawData2013\130613_Tc\TC99.M
Calibration : i:\ICP-MS\ICP-MS Agilent\RawData2013\130613_Tc\TC99.C
Acq Time : Jun 13 2013 01:18 pm
Sample Name : LLS 5ppt
Sample Type : Sample
Comments :
Prep Dilution : 1.000
Auto Dilution : Undiluted
Total Dilution : 1.000
Operator Name: AG
Acq Mode : Spectrum
Cal Title :
Cal Type : External Calibration Method
Last Calib : Jun 17 2013 11:25 am
Bkg File : --------
Bkg Rejected Masses: --------
Interference Correction : OFF
Blank File : --------
VIS Fit : Point to Point
Weighting Method: 1/(SD*SD)
Multi Tune : #1 nogas.u
#2 he.u

Element	Mass	ISTD	Tune	CPS or Ratio	SD	RSD(%)	Time(sec)
Tc	99	115	#1	64.46990 P	8.669	13.45	0.30
Tc	99	115	#2	131.8215 P	8.241	6.25	0.30
In	115		#1	463,931.8 P	60,630	13.07	0.30
In	115		#2	24,797.41 P	1,217	4.91	0.30

Element	Mass	Tune	Conc.	SD	RSD(%)	Rep	VI
Tc	99	#1	5.238 ppt	0.7152	13.65	5	
Tc	99	#2	5.494 ppt	0.3524	6.41	5	
In	115	#1	[1.800E+04 ppt]	---	---	[5]	
In	115	#2	[1.800E+04 ppt]	---	---	[5]	


[1] Spectrum No.1 [4.928 sec]:027SMPL.D / Tune #1 [Count] [Linear]
1.0E4
5000
m/z->
10 20 30 40 50 60 70 80 90 100
5.0E4
2.5E4
m/z->
110 120 130 140 150 160 170 180 190 200
20
10
m/z->
210 220 230 240 250 260

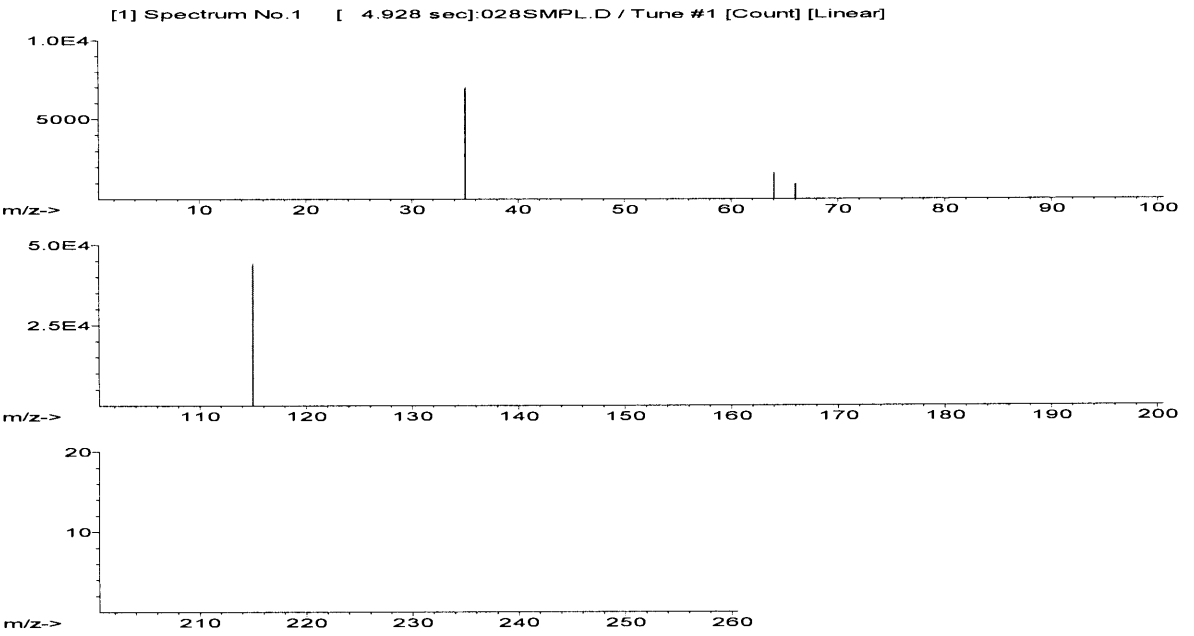

[2] Spectrum No.1 [4.928 sec]:027SMPL.D / Tune #2 [Count] [Linear]
200
100
m/z->
10 20 30 40 50 60 70 80 90 100
5000
2500
m/z->
110 120 130 140 150 160 170 180 190 200
20
10
m/z->
210 220 230 240 250 260

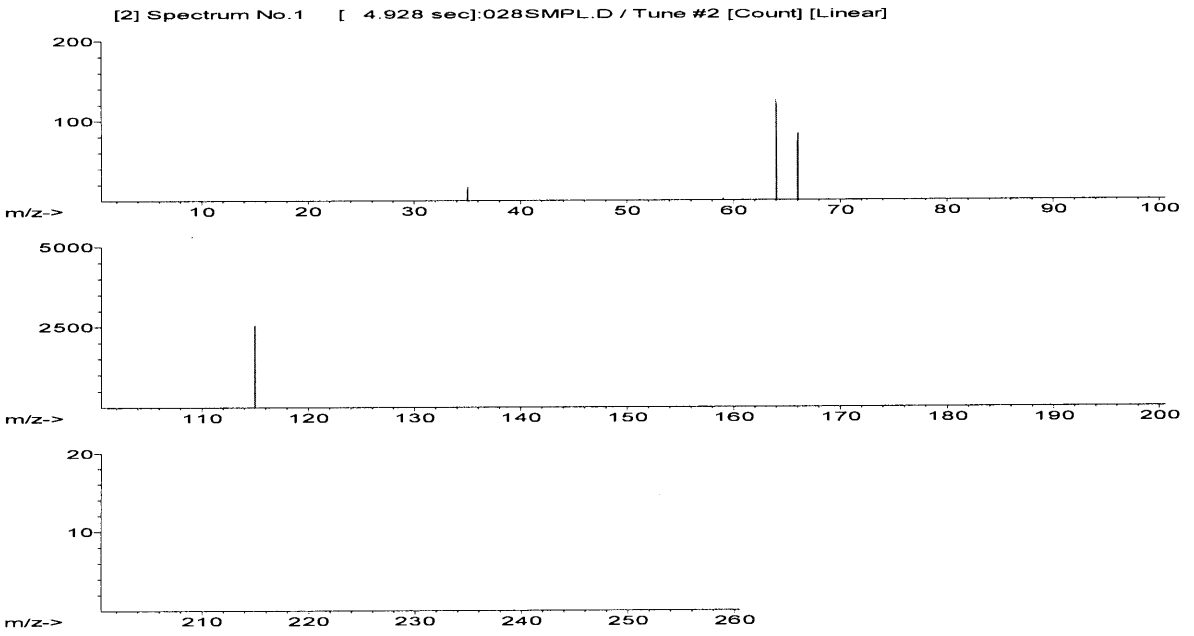
Quantitation Report - Detailed

File Name : 028SMPL.D
File Path : I:\ICP-MS\ICP-MS AGILENT\RAWDATA2013\130613_TC\
Method : i:\ICP-MS\ICP-MS Agilent\RawData2013\130613_Tc\TC99.M
Calibration : i:\ICP-MS\ICP-MS Agilent\RawData2013\130613_Tc\TC99.C
Acq Time : Jun 13 2013 01:22 pm
Sample Name : CCB
Sample Type : Sample
Comments :
Prep Dilution : 1.000
Auto Dilution : Undiluted
Total Dilution : 1.000
Operator Name: AG
Acq Mode : Spectrum
Cal Title :
Cal Type : External Calibration Method
Last Calib : Jun 17 2013 11:25 am
Bkg File : --------
Bkg Rejected Masses: --------
Interference Correction : OFF
Blank File : --------
VIS Fit : Point to Point
Weighting Method: 1/(SD*SD)
Multi Tune : #1 nogas.u
#2 he.u

Element	Mass	ISTD	Tune	CPS or Ratio	SD	RSD(%)	Time(sec)
Tc	99	115	#1	3.514250 P	0.3973	11.31	0.30
Tc	99	115	#2	6.705198 P	4.386	65.41	0.30
In	115		#1	440,454.8 P	1,322	0.30	0.30
In	115		#2	25,327.79 P	532.4	2.10	0.30

Element	Mass	Tune	Conc.	SD	RSD(%)	Rep	VI
Tc	99	#1	2.090E-01 ppt	0.03278	15.68	5	
Tc	99	#2	1.433E-01 ppt	0.1875	130.84	5	
In	115	#1	[1.800E+04 ppt]	---	---	[5]	
In	115	#2	[1.800E+04 ppt]	---	---	[5]	


[1] Spectrum No.1 [4.928 sec]:028SMPL.D / Tune #1 [Count] [Linear]
1.0E4
5000
m/z->
10 20 30 40 50 60 70 80 90 100
5.0E4
2.5E4
m/z->
110 120 130 140 150 160 170 180 190 200
20
10
m/z->
210 220 230 240 250 260

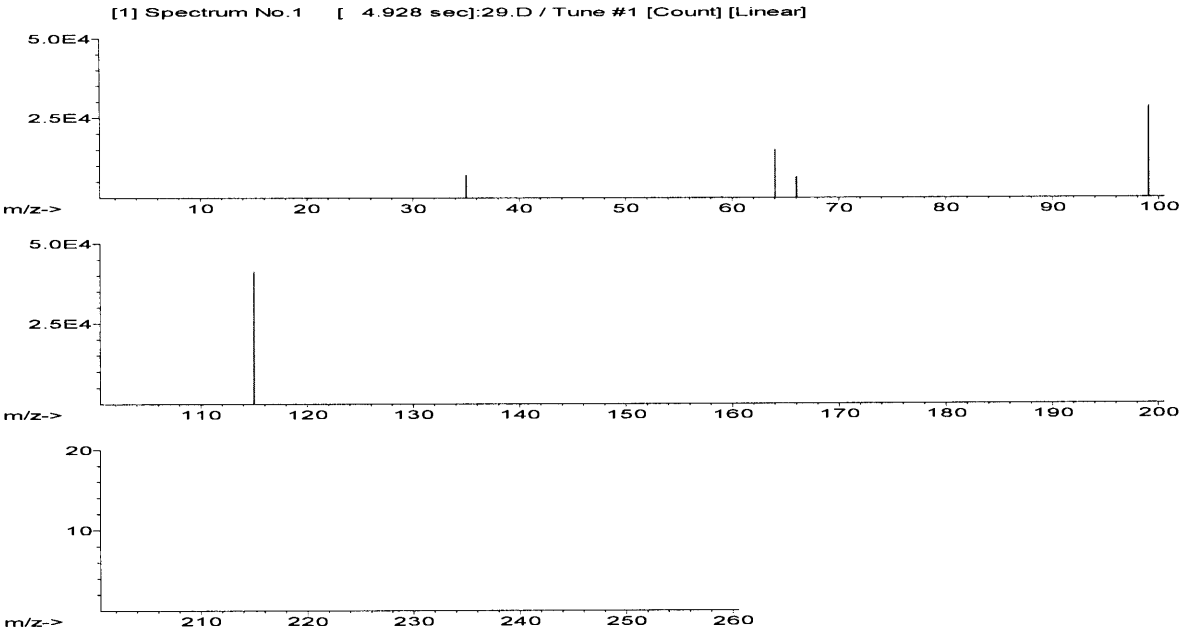

[2] Spectrum No.1 [4.928 sec]:028SMPL.D / Tune #2 [Count] [Linear]
200
100
m/z->
10 20 30 40 50 60 70 80 90 100
5000
2500
m/z->
110 120 130 140 150 160 170 180 190 200
20
10
m/z->
210 220 230 240 250 260

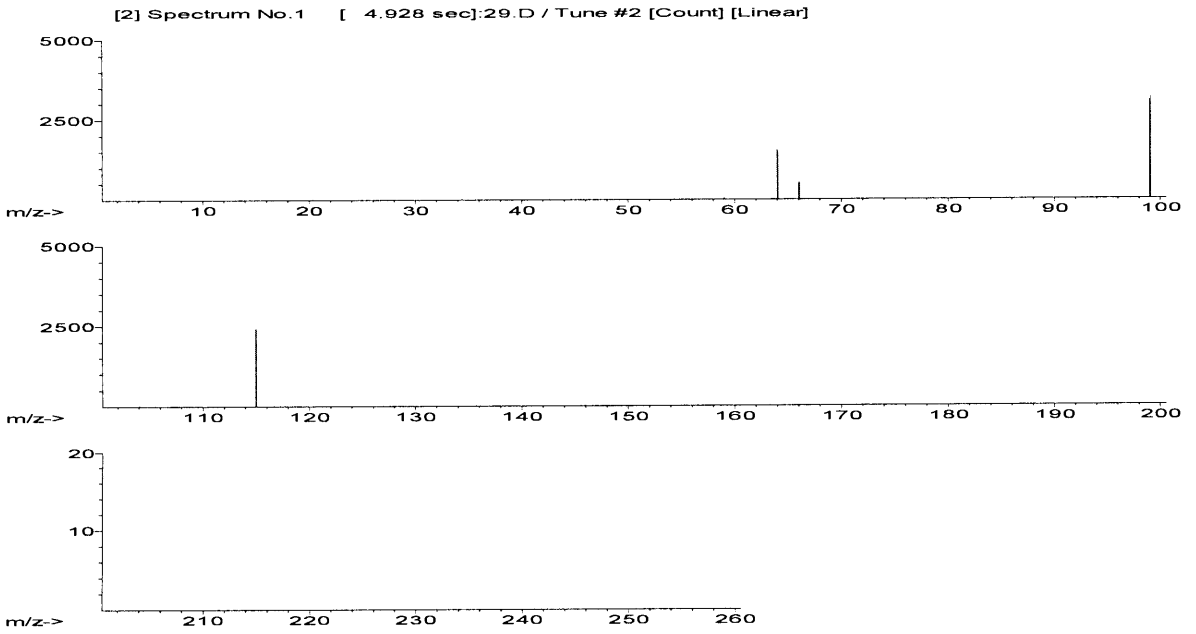
Quantitation Report - Detailed

File Name : 29.D
File Path : I:\ICP-MS\ICP-MS AGILENT\RAWDATA2013\130613_TC\
Method : i:\ICP-MS\ICP-MS Agilent\RawData2013\130613_Tc\TC99.M
Calibration : i:\ICP-MS\ICP-MS Agilent\RawData2013\130613_Tc\TC99.C
Acq Time : Jun 13 2013 02:21 pm
Sample Name : S13T004250_A
Sample Type : Sample
Comments :
Prep Dilution : 100.0
Auto Dilution : Undiluted
Total Dilution : 100.0
Operator Name: AG
Acq Mode : Spectrum
Cal Title :
Cal Type : External Calibration Method
Last Calib : Jun 17 2013 11:25 am
Bkg File : --------
Bkg Rejected Masses: --------
Interference Correction : OFF
Blank File : --------
VIS Fit : Point to Point
Weighting Method: 1/(SD*SD)
Multi Tune : #1 nogas.u
#2 he.u

Element	Mass	ISTD	Tune	CPS or Ratio	SD	RSD(%)	Time(sec)
Tc	99	115	#1	12,427.01 P	121.3	0.98	0.30
Tc	99	115	#2	23,064.48 P	479.6	2.08	0.30
In	115		#1	412,142.2 P	3,997	0.97	0.30
In	115		#2	24,233.64 P	606.8	2.50	0.30

Element	Mass	Tune	Conc.	SD	RSD(%)	Rep	VI
Tc	99	#1	1.025E+05 ppt	1,001	0.98	5	
Tc	99	#2	9.861E+04 ppt	2,051	2.08	5	
In	115	#1	[1.800E+04 ppt]	---	---	[5]	
In	115	#2	[1.800E+04 ppt]	---	---	[5]	


[1] Spectrum No.1 [4.928 sec]:29.D / Tune #1 [Count] [Linear]
5.0E4
2.5E4
m/z->
10 20 30 40 50 60 70 80 90 100
5.0E4
2.5E4
m/z->
110 120 130 140 150 160 170 180 190 200
20
10
m/z->
210 220 230 240 250 260

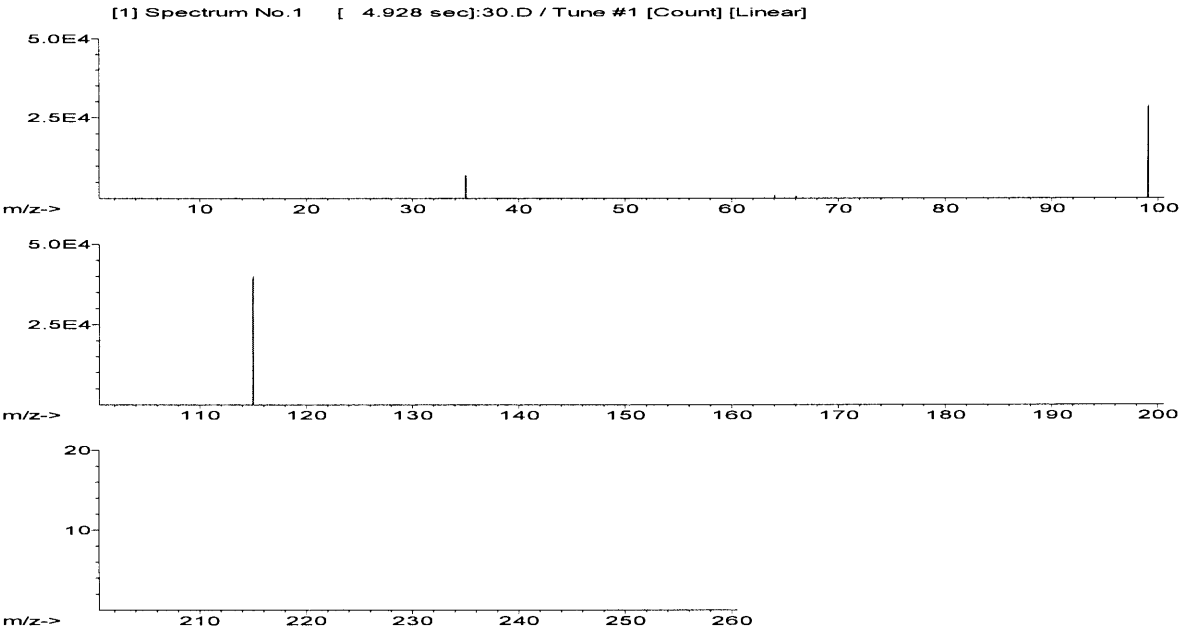

[2] Spectrum No.1 [4.928 sec]:29.D / Tune #2 [Count] [Linear]
5000
2500
m/z->
10 20 30 40 50 60 70 80 90 100
5000
2500
m/z->
110 120 130 140 150 160 170 180 190 200
20
10
m/z->
210 220 230 240 250 260

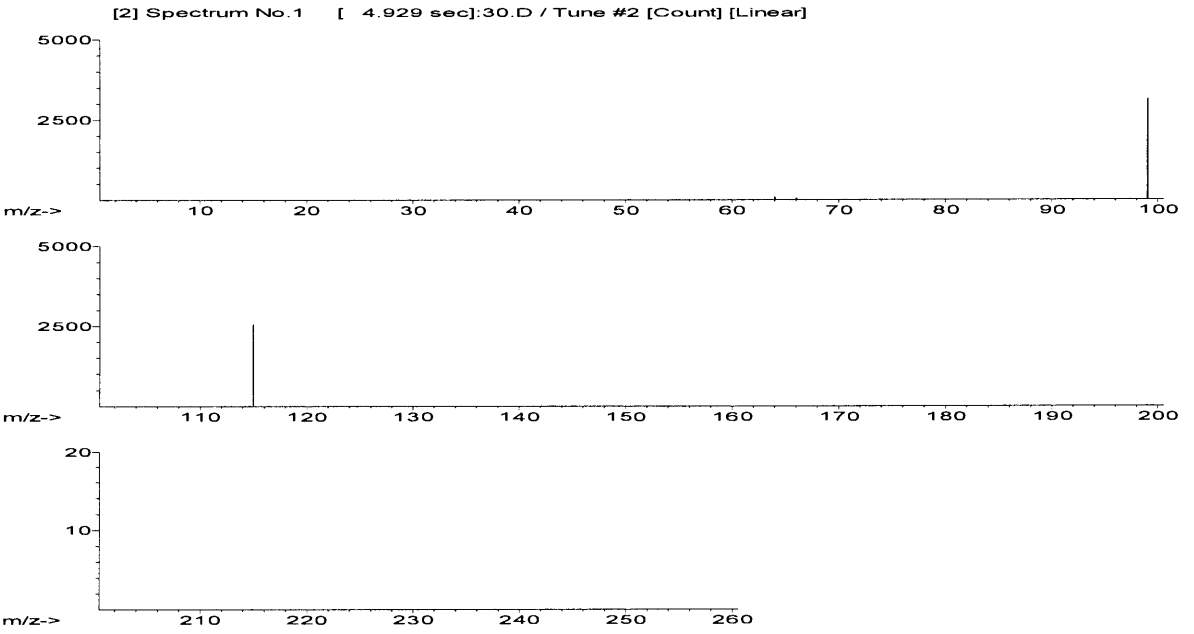
Quantitation Report - Detailed

File Name : 30.D
File Path : I:\ICP-MS\ICP-MS AGILENT\RAWDATA2013\130613_TC\
Method : i:\ICP-MS\ICP-MS Agilent\RawData2013\130613_Tc\TC99.M
Calibration : i:\ICP-MS\ICP-MS Agilent\RawData2013\130613_Tc\TC99.C
Acq Time : Jun 13 2013 02:25 pm
Sample Name : CCV 1 ppb
Sample Type : Sample
Comments :
Prep Dilution : 1.000
Auto Dilution : Undiluted
Total Dilution : 1.000
Operator Name: AG
Acq Mode : Spectrum
Cal Title :
Cal Type : External Calibration Method
Last Calib : Jun 17 2013 11:25 am
Bkg File : --------
Bkg Rejected Masses: --------
Interference Correction : OFF
Blank File : --------
VIS Fit : Point to Point
Weighting Method: 1/(SD*SD)
Multi Tune : #1 nogas.u
#2 he.u

Element	Mass	ISTD	Tune	CPS or Ratio	SD	RSD(%)	Time(sec)
Tc	99	115	#1	12,913.96 P	884.7	6.85	0.30
Tc	99	115	#2	22,273.90 P	695.4	3.12	0.30
In	115		#1	396,878.2 P	24,970	6.29	0.30
In	115		#2	25,506.10 P	1,326	5.20	0.30

Element	Mass	Tune	Conc.	SD	RSD(%)	Rep	VI
Tc	99	#1	1.065E+03 ppt	72.99	6.85	5	
Tc	99	#2	952.3 ppt	29.74	3.12	5	
In	115	#1	[1.800E+04 ppt]	---	---	[5]	
In	115	#2	[1.800E+04 ppt]	---	---	[5]	


[1] Spectrum No.1 [4.928 sec]:30.D / Tune #1 [Count] [Linear]
5.0E4
2.5E4
m/z->
10 20 30 40 50 60 70 80 90 100
5.0E4
2.5E4
m/z->
110 120 130 140 150 160 170 180 190 200
20
10
m/z->
210 220 230 240 250 260

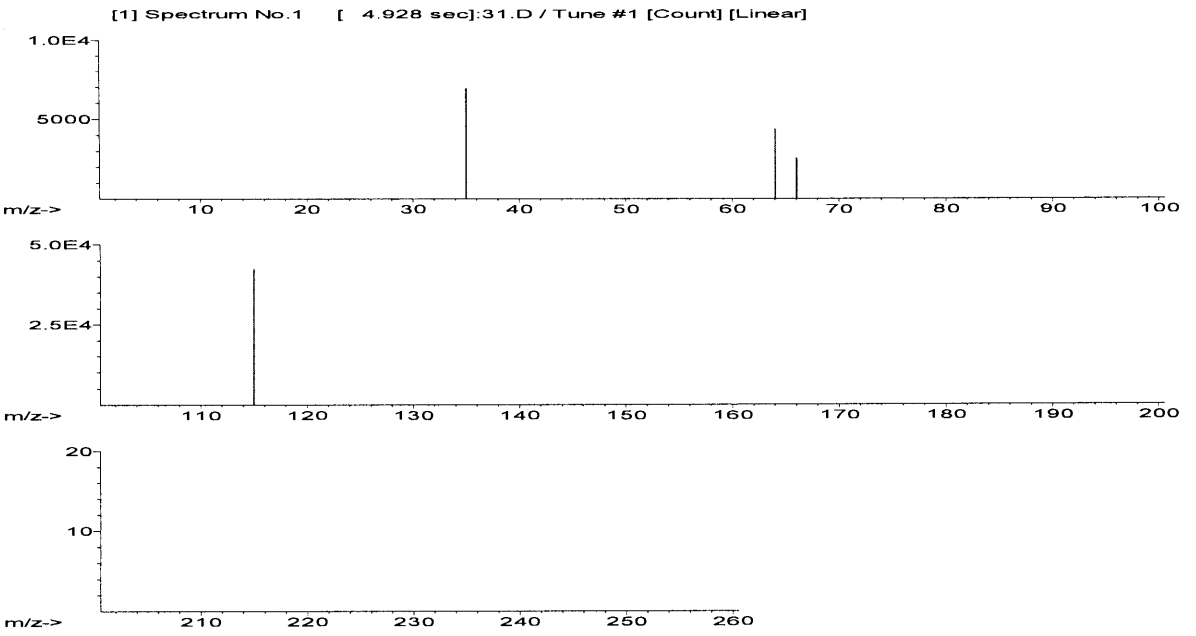

[2] Spectrum No.1 [4.929 sec]:30.D / Tune #2 [Count] [Linear]
5000
2500
m/z->
10 20 30 40 50 60 70 80 90 100
5000
2500
m/z->
110 120 130 140 150 160 170 180 190 200
20
10
m/z->
210 220 230 240 250 260

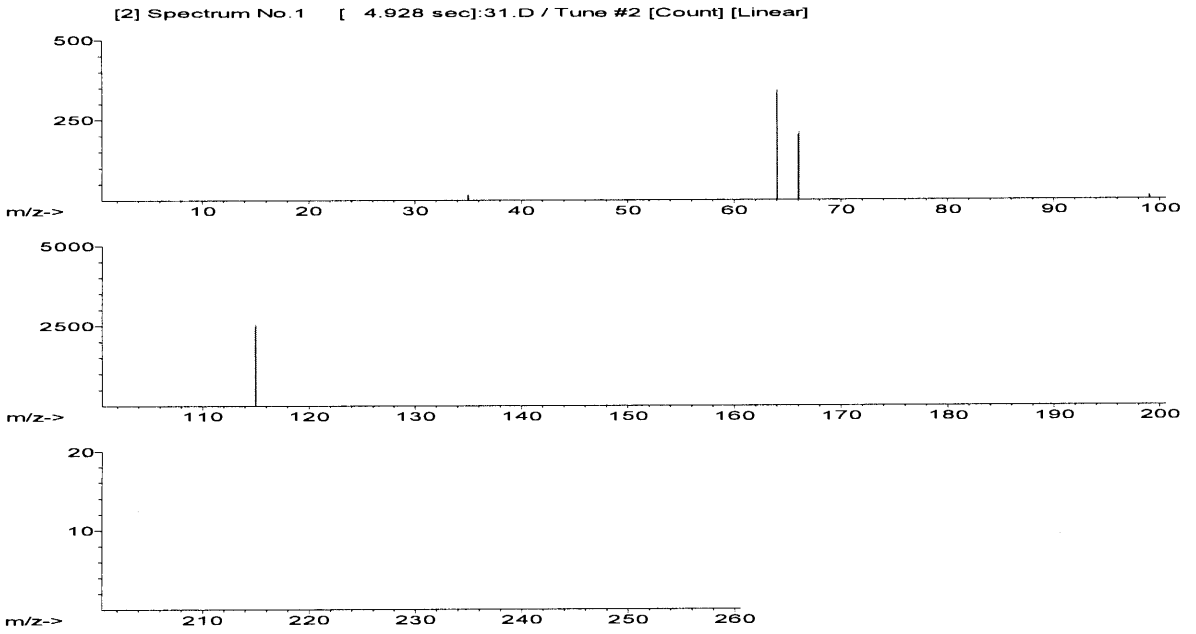
Quantitation Report - Detailed

File Name : 31.D
File Path : I:\ICP-MS\ICP-MS AGILENT\RAWDATA2013\130613_TC\
Method : i:\ICP-MS\ICP-MS Agilent\RawData2013\130613_Tc\TC99.M
Calibration : i:\ICP-MS\ICP-MS Agilent\RawData2013\130613_Tc\TC99.C
Acq Time : Jun 13 2013 02:29 pm
Sample Name : rinse
Sample Type : Sample
Comments :
Prep Dilution : 1.000
Auto Dilution : Undiluted
Total Dilution : 1.000
Operator Name: AG
Acq Mode : Spectrum
Cal Title :
Cal Type : External Calibration Method
Last Calib : Jun 17 2013 11:25 am
Bkg File : --------
Bkg Rejected Masses: --------
Interference Correction : OFF
Blank File : --------
VIS Fit : Point to Point
Weighting Method: 1/(SD*SD)
Multi Tune : #1 nogas.u
#2 he.u

Element	Mass	ISTD	Tune	CPS or Ratio	SD	RSD(%)	Time(sec)
Tc	99	115	#1	34.55485 P	13.71	39.68	0.30
Tc	99	115	#2	79.48502 P	16.73	21.05	0.30
In	115		#1	424,596.9 P	6,577	1.55	0.30
In	115		#2	25,262.30 P	696.0	2.75	0.30

Element	Mass	Tune	Conc.	SD	RSD(%)	Rep	VI
Tc	99	#1	2.770 ppt	1.131	40.83	5	
Tc	99	#2	3.256 ppt	0.7152	21.97	5	
In	115	#1	[1.800E+04 ppt]	---	---	[5]	
In	115	#2	[1.800E+04 ppt]	---	---	[5]	


[1] Spectrum No.1 [4.928 sec]:31.D / Tune #1 [Count] [Linear]
1.0E4
5000
m/z->
10 20 30 40 50 60 70 80 90 100
5.0E4
2.5E4
m/z->
110 120 130 140 150 160 170 180 190 200
20
10
m/z->
210 220 230 240 250 260

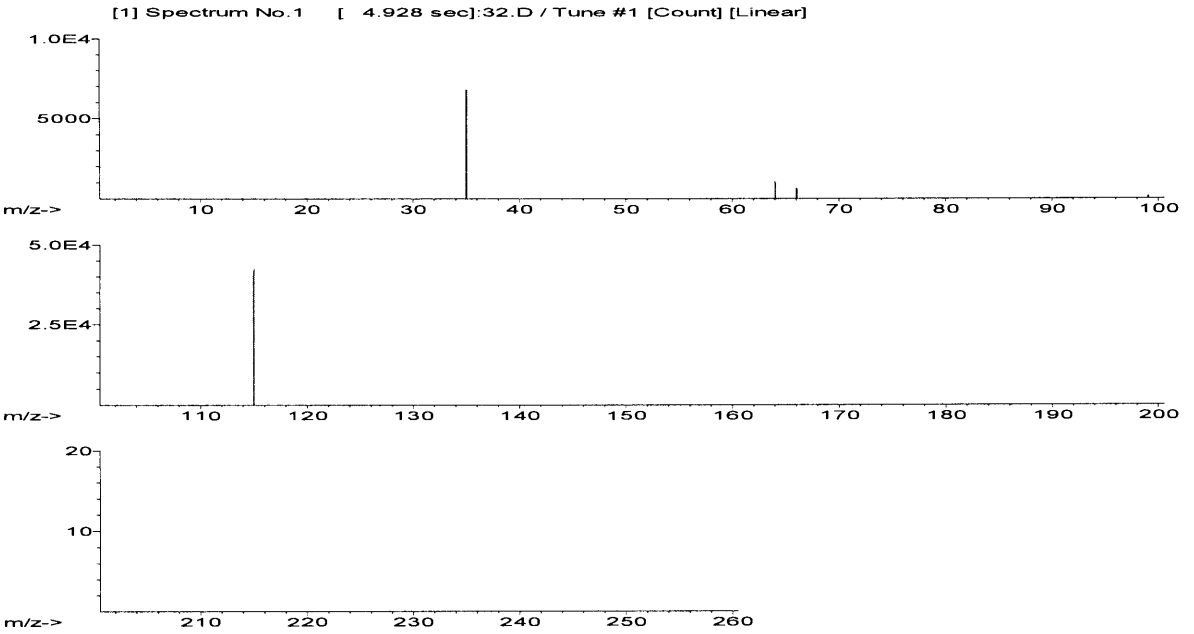

[2] Spectrum No.1 [4.928 sec]:31.D / Tune #2 [Count] [Linear]
500
250
m/z->
10 20 30 40 50 60 70 80 90 100
5000
2500
m/z->
110 120 130 140 150 160 170 180 190 200
20
10
m/z->
210 220 230 240 250 260

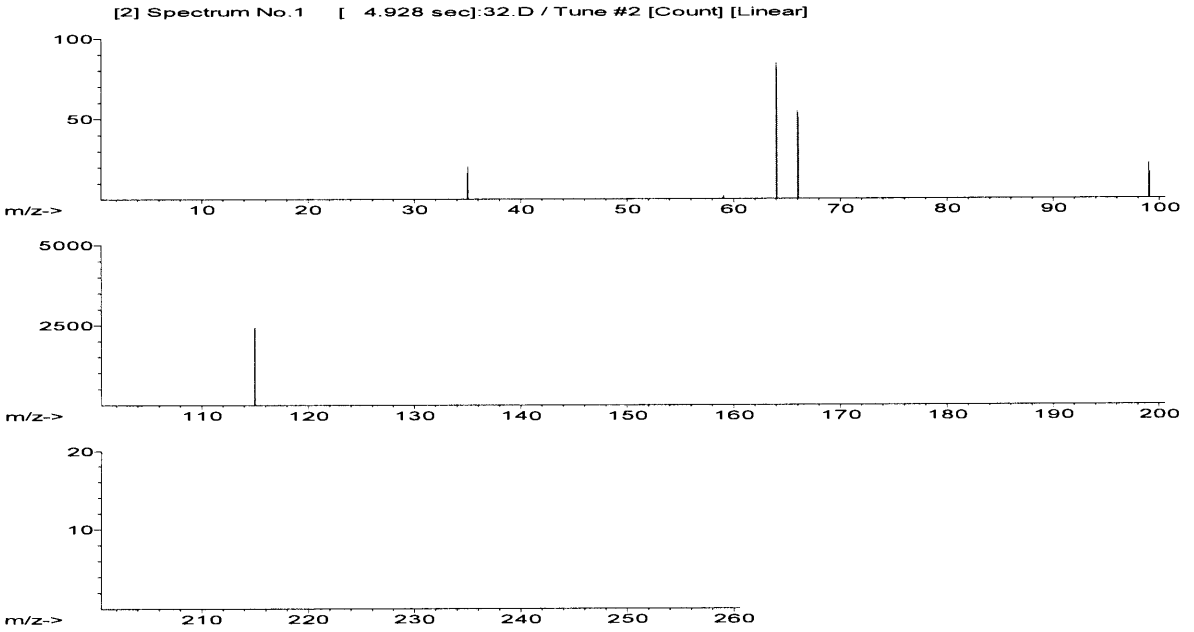
Quantitation Report - Detailed

File Name : 32.D
File Path : I:\ICP-MS\ICP-MS AGILENT\RAWDATA2013\130613_TC\
Method : i:\ICP-MS\ICP-MS Agilent\RawData2013\130613_Tc\TC99.M
Calibration : i:\ICP-MS\ICP-MS Agilent\RawData2013\130613_Tc\TC99.C
Acq Time : Jun 13 2013 02:33 pm
Sample Name : LLS 5ppt
Sample Type : Sample
Comments :
Prep Dilution : 1.000
Auto Dilution : Undiluted
Total Dilution : 1.000
Operator Name: AG
Acq Mode : Spectrum
Cal Title :
Cal Type : External Calibration Method
Last Calib : Jun 17 2013 11:25 am
Bkg File : --------
Bkg Rejected Masses: --------
Interference Correction : OFF
Blank File : --------
VIS Fit : Point to Point
Weighting Method: 1/(SD*SD)
Multi Tune : #1 nogas.u
#2 he.u

Element	Mass	ISTD	Tune	CPS or Ratio	SD	RSD(%)	Time(sec)
Tc	99	115	#1	63.64211 P	1.899	2.98	0.30
Tc	99	115	#2	135.7582 P	20.03	14.75	0.30
In	115		#1	421,853.8 P	3,390	0.80	0.30
In	115		#2	24,410.01 P	457.7	1.87	0.30

Element	Mass	Tune	Conc.	SD	RSD(%)	Rep	VI
Tc	99	#1	5.170 ppt	0.1567	3.03	5	
Tc	99	#2	5.662 ppt	0.8565	15.13	5	
In	115	#1	[1.800E+04 ppt]	---	---	[5]	
In	115	#2	[1.800E+04 ppt]	---	---	[5]	


[1] Spectrum No.1 [4.928 sec]:32.D / Tune #1 [Count] [Linear]
1.0E4
5000
m/z->
10 20 30 40 50 60 70 80 90 100
5.0E4
2.5E4
m/z->
110 120 130 140 150 160 170 180 190 200
20
10
m/z->
210 220 230 240 250 260

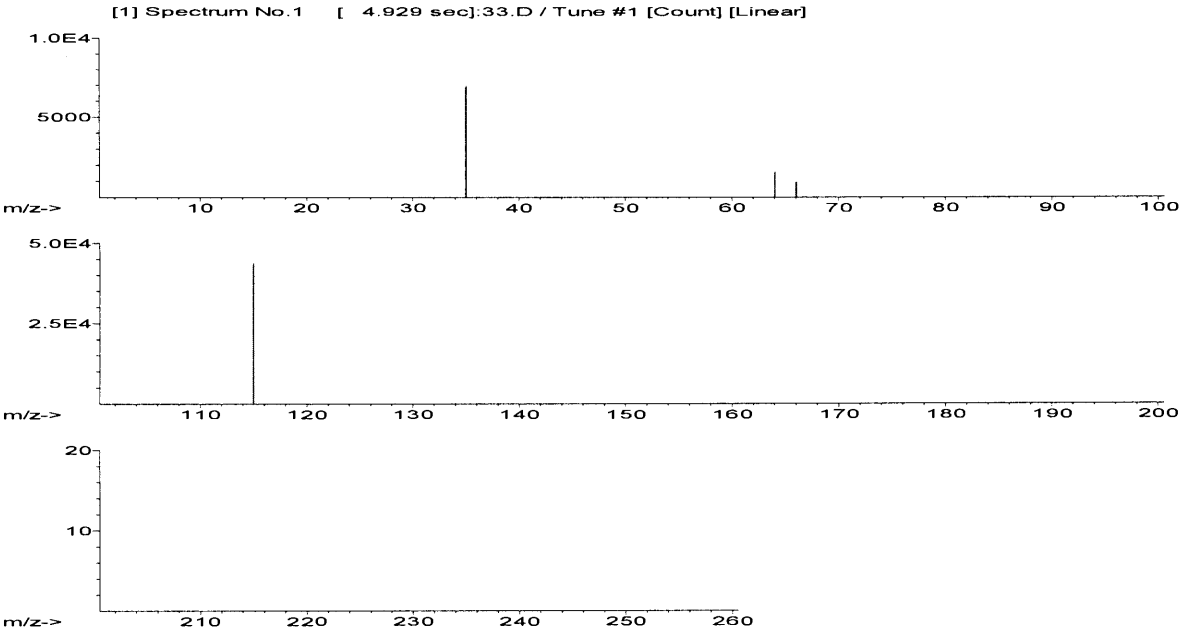

[2] Spectrum No.1 [4.928 sec]:32.D / Tune #2 [Count] [Linear]
100
50
m/z->
10 20 30 40 50 60 70 80 90 100
5000
2500
m/z->
110 120 130 140 150 160 170 180 190 200
20
10
m/z->
210 220 230 240 250 260

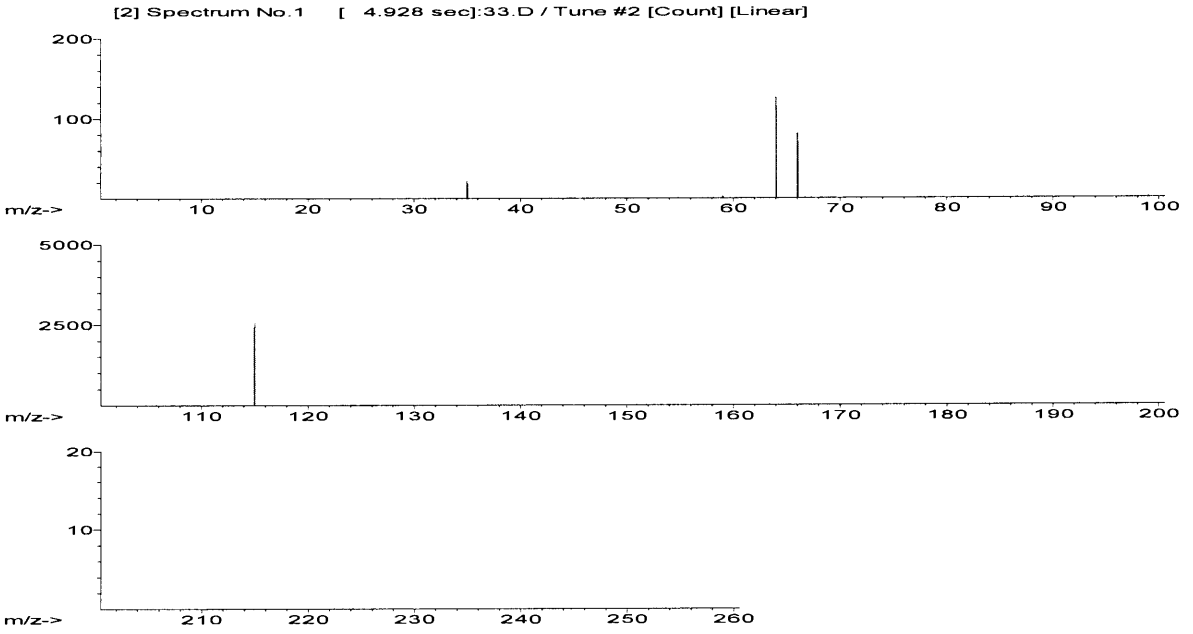
Quantitation Report - Detailed

File Name : 33.D
File Path : I:\ICP-MS\ICP-MS AGILENT\RAWDATA2013\130613_TC\
Method : i:\ICP-MS\ICP-MS Agilent\RawData2013\130613_Tc\TC99.M
Calibration : i:\ICP-MS\ICP-MS Agilent\RawData2013\130613_Tc\TC99.C
Acq Time : Jun 13 2013 02:37 pm
Sample Name : CCB
Sample Type : Sample
Comments :
Prep Dilution : 1.000
Auto Dilution : Undiluted
Total Dilution : 1.000
Operator Name: AG
Acq Mode : Spectrum
Cal Title :
Cal Type : External Calibration Method
Last Calib : Jun 17 2013 11:25 am
Bkg File : --------
Bkg Rejected Masses: --------
Interference Correction : OFF
Blank File : --------
VIS Fit : Point to Point
Weighting Method: 1/(SD*SD)
Multi Tune : #1 nogas.u
#2 he.u

Element	Mass	ISTD	Tune	CPS or Ratio	SD	RSD(%)	Time(sec)
Tc	99	115	#1	3.629004 P	0.8760	24.14	0.30
Tc	99	115	#2	8.293548 P	3.852	46.45	0.30
In	115		#1	436,579.4 P	2,250	0.52	0.30
In	115		#2	24,812.03 P	6,205	25.01	0.30

Element	Mass	Tune	Conc.	SD	RSD(%)	Rep	VI
Tc	99	#1	2.184E-01 ppt	0.07227	33.09	5	
Tc	99	#2	2.112E-01 ppt	0.1647	77.98	5	
In	115	#1	[1.800E+04 ppt]	---	---	[5]	
In	115	#2	[1.800E+04 ppt]	---	---	[5]	


[1] Spectrum No.1 [4.929 sec]:33.D / Tune #1 [Count] [Linear]
1.0E4
5000
m/z->
10 20 30 40 50 60 70 80 90 100
5.0E4
2.5E4
m/z->
110 120 130 140 150 160 170 180 190 200
20
10
m/z->
210 220 230 240 250 260


[2] Spectrum No.1 [4.928 sec]:33.D / Tune #2 [Count] [Linear]
200
100
m/z->
10 20 30 40 50 60 70 80 90 100
5000
2500
m/z->
110 120 130 140 150 160 170 180 190 200
20
10
m/z->
210 220 230 240 250 260

File:	003_STD.D		007SMPL.D		012SMPL.D		013SMPL.D		017SMPL.D		023SMPL.D		024SMPL.D	
Sample:	Blank		.99ppb ICV		ICS Co 50ppb		ICS ATL 2 50x		S13T004250		S13T004278		S13T004305	
Misc Info:														
Date/Time:	6/13/2013 11:40		6/13/2013 11:56		6/13/2013 12:17		6/13/2013 12:21		6/13/2013 12:37		6/13/2013 13:02		6/13/2013 13:06	
Operator:	AG		AG		AG		AG		AG		AG		AG	
ALS vial:	1101		1105		1108		1109		1204		1208		1209	
Method:	TC99.M		TC99.M		TC99.M		TC99.M		TC99.M		TC99.M		TC99.M	
Dilution:	1		1		1		1		100		100		100	
Cl / 35 [#1]	150238.5	0.92%	134235.4	1.10%	122355.2	0.43%	119881.8	1.21%	93730.6	1.24%	73871.41	1.37%	67606.81	0.71%
Cl / 35 [#2]	260.01	14.92%	224.68	11.13%	230.01	9.45%	227.34	7.92%	194.68	17.40%	169.34	19.31%	177.34	13.12%
Co / 59 [#1]	399.35	6.29%	549.37	3.77%	99259430	0.82%	39077.04	19.42%	4340.82	5.08%	8504.88	6.51%	4907.05	1.57%
Co / 59 [#2]	32	13.98%	53.34	15.31%	11655860	1.05%	4495.55	5.17%	466.69	4.95%	1006.07	1.84%	554.03	12.00%
Zn / 64 [#1]	15232.79	2.96%	38858.02	1.21%	12732.23	3.90%	14703.52	1.51%	165860.7	1.21%	240332.2	3.90%	197128.3	0.97%
Zn / 64 [#2]	1115.42	2.97%	2339.62	3.68%	762.05	5.73%	782.05	7.66%	16117.08	1.99%	30498.65	0.73%	22651.65	1.88%
Zn / 66 [#1]	8931.82	3.85%	22799.27	2.30%	7555.65	4.03%	6695.18	1.73%	72001.84	0.92%	68986.54	2.94%	69384.06	1.15%
Zn / 66 [#2]	748.72	5.01%	1560.14	2.13%	488.03	7.24%	470.03	10.70%	5435.93	2.23%	5550.65	3.92%	5531.32	3.51%
Tc / 99 [#1]	20.67	46.19%	293592.6	0.72%	207.34	13.99%	56.67	19.06%	674.04	4.04%	710.71	9.24%	464.03	7.83%
Tc / 99 [#2]	4	69.72%	29198.51	1.82%	9.33	68.70%	10	62.36%	74.67	18.57%	68.67	23.93%	55.34	32.61%
Ru / 101 [#1]	28	26.08%	40.67	27.43%	31.33	45.51%	41.34	55.46%	943.4	3.41%	1080.08	5.97%	648.04	11.55%
Ru / 101 [#2]	8.67	43.85%	10	70.71%	3.33	122.47%	8.67	58.33%	185.34	22.05%	256.01	10.51%	160.67	24.35%
Ru / 102 [#1]	66.01	39.84%	70.67	19.85%	104.02	52.55%	130.03	45.42%	850.73	4.83%	970.74	7.26%	584.7	6.21%
Ru / 102 [#2]	9.33	63.89%	10	57.74%	10	57.74%	17.33	55.07%	182.01	16.92%	224.68	13.00%	136.01	17.10%
Ru / 104 [#1]	49.34	29.99%	53.34	4.42%	54	28.08%	58.67	11.78%	770.72	8.81%	944.74	9.01%	587.37	7.63%
Ru / 104 [#2]	10.67	80.89%	20.67	31.02%	11.33	33.53%	12	46.48%	254.68	16.07%	286.68	10.50%	207.34	15.81%
In / 115 [#1]	387918.1	8.17%	432728.9	0.95%	430609.2	3.14%	423242.8	0.93%	428507.6	1.92%	456292.8	31.04%	420268.2	0.94%
In / 115 [#2]	21494.35	2.16%	22825.32	5.46%	22835.26	4.22%	23354.75	2.99%	24127.48	4.29%	22395.38	13.24%	25167.5	8.32%

Comments:
Collision cell reduces the CPS at 99 by ~ 90% for a Tc99 standard; sample CPS reduce by ~90% also; because the % drop does not differ betweenstandard and it strongly suggests that all mass 99 is Tc99. Ru 101:104 (cps) does not show ~ 1:1 ratio as natural Ru should show. It also does not show a 1:2 ratio with 101:102 closer to 1:1; this suggests that natural Ru would have negligible affect on the response at mass 99. Cl is knocked down to ~0.3% of the response without collision cell and should not produce an appreciable amount of ZnCl interferent.

KSKelton 06/17/13

ATL	**ICP-AES DATA REVIEW CHECKLIST**	○ IH ◉ NON IH

○ LA-505-170 (JY) Rev _____ (*) ○ LA-505-171 (TJA-JY) (IH) Rev _____ (*)

◉ LA-505-174 (iCAP 6500) Rev A-0 (*)

Worklist/Project Information: Batch 00041410 / Ni Tracer C109 CLO / 20130402

Analysis Date(s): 5/28/13 Instrument Id: iCAP 6500

Prep Batches Analyzed (Worklist #): 00041255 Prep Method: LA-549-141 M-1-A

Review Items	Level 1			Level 2
A. Calibration/Instrument Run QC	Yes	No	N/A	
1. Instrument calibrated per procedure and at specified levels?	◉	○	○	☐
2. ICV/CCV analyzed at appropriate frequency and within control limits (Recovery: 90-110%)?	◉	○	○	☐
3. ICB/CCB analyzed at required frequency and < EQL (or RL) or <5% of the lowest sample result with client consent. N/A if all samples are ND.	◉	○	○	☐
4. LLS run and within control limits (Recovery: 70-130%)? For IH, recovery is mandatory to verify RL.	◉	○	○	☐
5. ICSA and ICSAB run at required frequency and within control limits (Recovery: 80-120% or < EQL)?	◉	○	○	☐
B. Sample Results				
1. Were samples with concentrations > linear range for any analyte diluted and reanalyzed?	○	○	◉	☐
2. Are all reported results bracketed by in-control QC?	◉	○	○	☐
3. Are there 10 or fewer samples run between bracketed, in-control QC?	◉	○	○	☐
C. Preparation/Matrix QC				
1. LCS/Prep Std prepared per prep batch and within control limits? Recovery: ○ 80-120% or ○ Statistical _____	○	○	◉	☐
2. LCS Dup (Prep Std Dup) prepared per prep batch, if required, and within control limits? Recovery: ○ 80-120% or ○ Statistical _____ RPD: ○ ≤20% or ○ Statistical _____	○	○	◉	☐
3. IH RLS run (when required) and within mandatory control limits (Recovery: 70-130%)?	○	○	◉	☐
4. Method/Media Blank prepared per prep batch and < EQL (or RL) or <5% of the lowest sample result?	○	○	◉	☐
5. Duplicate or MS Duplicate run at required frequency and within control limits? %RPD: ◉ ≤20% or ○ Client-specified _____	◉	○	○	☐
6. MS run at required frequency and within control limit? Recovery: ○ 75-125% or ○ Client-specified _____	○	○	◉	☐
7. PDS analyzed if required and within control limit (Recovery: 80-120%)?	○	○	◉	☐
8. 5x serial dilution analyzed per prep batch and within control limit (% Diff <10%) or the sample result is < 50x MDL?	○	○	◉	☐
D. Other				
1. Are all problems and nonconformance issues documented appropriately?	◉	○	○	☐
2. Are current IDL / MDL / EQL / RL / IEC data on file?	◉	○	○	☐
3. Calculations/transcriptions checked for errors?	○	○	◉	☐
4. Are all raw data complete and verified in OmniLIMS?	◉	○	○	☐
5. Is calibration data included?	◉	○	○	☐
6. All client/project specific requirements met (e.g., MDL, holding times, etc.)?	○	○	◉	☐
7. Date/time of analysis verified as correct?	◉	○	○	☐
8. Prep/Breakdown Batch Benchsheet/Worklist properly completed and included, as required?	◉	○	○	☐
9. IH Only: Media Blank subtracted from Sample results?	○	○	◉	☐

(*) This form is not used by the subject procedure; rather, it is used to assist in verifying the data produced during the performance of the procedure.

A-6004-348 (REV 6)

ATL	ICP-AES DATA REVIEW CHECKLIST (continued)	○ IH ◉ NON IH

○ LA-505-170 (JY) Rev _____ (*) ○ LA-505-171 (TJA-JY) (IH) Rev _____ (*)

◉ LA-505-174 (iCAP 6500) Rev A-0 (*)

Worklist/Project Information: Batch 00041410 / Ni Tracer C109 CLO / 20130402

Analysis Date(s): 5/28/13 Instrument Id: iCAP 6500

Prep Batches Analyzed (Worklist #): 00041255 Prep Method: LA-549-141 M-1-A

Comments/Samples Affected (indicate review item letter and number):

C.4 Prep blank is for checking Ni tracer spike. It is not a prep blank for ICP Ni.

D.3 Results are reported in ug/mL units and are not back-calculated to ug/g for Ni tracer samples.

1st Level Data Reviewer: _____ (Signature) Date: 5/29/13

2nd Level Data Reviewer: Samuel A. Adams (Signature) Date: 06/05/2013

pc: Julie Osborn 7/16/13

(*) This form is not used by the subject procedure; rather, it is used to assist in verifying the data produced during the performance of the procedure.

5/29/2013 11:46:56AM
CompleteBatch Version 2.7.32
batchreports 2.7.32

LABCORE Completed Batch Report for Batch# 00041410

Analyst: Dinh, Liem

Book#: Dil Benchsheet

Instrument: ICP-ICAP6500

Method: NICKEL TRACER, LA-505-174 Rev/Mod A-0

Specification: C109 CLO

Prep Batch: 00041255

Batch Comment: N/A

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
Sample Sequence 1																	
1	ICV	S1305280031		0 0			Nickel	LIQUID	5	5.0706E+00			1.00E-03	ug/mL	101.41	% Recovery	
Sample Sequence 2																	
2	LLS	S1305280033		0 0			Nickel	LIQUID	.04	4.1503E-02			1.00E-03	ug/mL	103.76	% Recovery	
Sample Sequence 3																	
3	ICB	S1305280032		0 0			Nickel	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
Sample Sequence 4																	
4	ICSA	S1305280034		0 0			Nickel	LIQUID		6.5941E-03			1.00E-03	ug/mL	N/A		
Sample Sequence 5																	
5	ICSAB	S1305280035		0 0			Nickel	LIQUID	5	4.2395E+00			1.00E-03	ug/mL	84.789	% Recovery	
Sample Sequence 6																	
6	BLNK-PREP	S1305160012		0 0	Z		Nickel	SOLID		1.7726E+02			1.00E-03	ug/mL			
Sample Sequence 7																	
7	SAMPLE	S13T004254		0 0	Z		Nickel	SOLID	N/A	1.7630E+02			1.00E-03	ug/mL			
Sample Sequence 8																	
8	DUP	S1305160013	S13T004254	0 0	Z		Nickel	SOLID	1.7630E+02	1.7030E+02			1.00E-03	ug/mL	3.4622	% RPD	
Sample Sequence 9																	
9	SAMPLE	S13T004282		0 0	Z		Nickel	SOLID	N/A	1.7220E+02			1.00E-03	ug/mL			
Sample Sequence 10																	
10	CCV	S1305280042		0 0			Nickel	LIQUID	5	4.9708E+00			1.00E-03	ug/mL	99.416	% Recovery	
Sample Sequence 11																	
11	CCB	S1305280041		0 0			Nickel	LIQUID		<1.0000E-03			1.00E-03	ug/mL			
Sample Sequence 12																	
12	SAMPLE	S13T004309		0 0	Z		Nickel	SOLID	N/A	1.7018E+02			1.00E-03	ug/mL			
Sample Sequence 13																	
13	ICSA	S1305280037		0 0			Nickel	LIQUID		6.6757E-03			1.00E-03	ug/mL	N/A		
Sample Sequence 14																	
14	ICSAB	S1305280038		0 0			Nickel	LIQUID	5	4.1356E+00			1.00E-03	ug/mL	82.712	% Recovery	
Sample Sequence 15																	
15	CCV	S1305280039		0 0			Nickel	LIQUID	5	4.9612E+00			1.00E-03	ug/mL	99.224	% Recovery	

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041410

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
Sample Sequence 16																	
16	LLS	S1305280060		0 0			Nickel	LIQUID	.04	4.0778E-02			1.00E-03	ug/mL	101.95	% Recovery	
Sample Sequence 17																	
17	CCB	S1305280040		0 0			Nickel	LIQUID		<1.0000E-03			1.00E-03	ug/mL			

Comments Section:

Data Flagger Status:
Flagging Completed

Final Page for Batch# 00041410

Reviewer Signature 5/29/13 Date

LABCORE Completed Batch Report for Batch# 00041410

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Method	Customer Id	Specification
1	S1305280031	ICV			NICKEL TRACER		
2	S1305280033	LLS			NICKEL TRACER		
3	S1305280032	ICB			NICKEL TRACER		
4	S1305280034	ICSA			NICKEL TRACER		
5	S1305280035	ICSAB			NICKEL TRACER		
6	S1305160012	BLNK-PREP			NICKEL TRACER		
7	S13T004254	SAMPLE		20130402	NICKEL TRACER	9C-13-Comp A	C109 CLO
8	S1305160013	DUP	S13T004254		NICKEL TRACER		
9	S13T004282	SAMPLE		20130402	NICKEL TRACER	9C-13-Comp B	C109 CLO
10	S1305280042	CCV			NICKEL TRACER		
11	S1305280041	CCB			NICKEL TRACER		
12	S13T004309	SAMPLE		20130402	NICKEL TRACER	9C-13-Comp C	C109 CLO
13	S1305280037	ICSA			NICKEL TRACER		
14	S1305280038	ICSAB			NICKEL TRACER		
15	S1305280039	CCV			NICKEL TRACER		
16	S1305280060	LLS			NICKEL TRACER		
17	S1305280040	CCB			NICKEL TRACER		

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

* = Rejected Analyte
N, A = Non-reported Analyte

5/28/2013 2:37:11PM
IncompleteBatchShort Version 2.7.29
batchreports 2.7.32

LABCORE Data Entry Template for Batch# 00041410

Analyst: Dinh, Liem **Standard ID / Book#:** See Bench Sheet

Instrument: ICP-ICAP6500

Method: NICKEL TRACER, LA-505-174 Rev/Mod A-0

Prep Batch: 00041255

Batch Comment: N/A

CACN:3A.26

S	Type	Sample	R	A	Matrix	Group#	Project
1	ICV	S1305280031	0		LIQUID		
	Analytes Requested:	Nickel					
2	LLS	S1305280033	0		LIQUID		
	Analytes Requested:	Nickel					
3	ICB	S1305280032	0		LIQUID		
	Analytes Requested:	Nickel					
4	ICSA	S1305280034	0		LIQUID		
	Analytes Requested:	Nickel					
5	ICSAB	S1305280035	0		LIQUID		
	Analytes Requested:	Nickel					
6	BLNK-PREP	S1305160012	0	Z	SOLID		
	Analytes Requested:	Nickel					
7	SAMPLE	S13T004254	0	Z	SOLID	20130402	C109 CLO
	Analytes Requested:	Nickel					
8	DUP	S1305160013	0	Z	SOLID		
	Analytes Requested:	Nickel					
9	SAMPLE	S13T004282	0	Z	SOLID	20130402	C109 CLO
	Analytes Requested:	Nickel					
10	CCV	S1305280042	0		LIQUID		
	Analytes Requested:	Nickel					
11	CCB	S1305280041	0		LIQUID		
	Analytes Requested:	Nickel					
12	SAMPLE	S13T004309	0	Z	SOLID	20130402	C109 CLO
	Analytes Requested:	Nickel					
13	ICSA	S1305280037	0		LIQUID		
	Analytes Requested:	Nickel					
14	ICSAB	S1305280038	0		LIQUID		
	Analytes Requested:	Nickel					
15	CCV	S1305280039	0		LIQUID		
	Analytes Requested:	Nickel					
16	LLS	S1305280060	0		LIQUID		
	Analytes Requested:	Nickel					
17	CCB	S1305280040	0		LIQUID		
	Analytes Requested:	Nickel					

Data Entry Comments:

S = Batch Slot Number, R = Retest Number, A = Aliquot Code.

LABCORE Data Entry Template for Batch# 00041410

Final Page for Batch# 00041410

Analyst Signature	Date	Data Entry Signature	Date
	5/28/13		5/28/13

Data Entry Comments:

S = Batch Slot Number, R = Retest Number, A = Aliquot Code.

ATL	ICP BENCH SHEET	○ IH ◉ Non IH

○ LA-505-170 Rev N/A ○ LA-505-171 Rev N/A ○ LA-505-174 Rev A-0

○ N/A Rev N/A
(Other)

Client/Project: C109 Ni Tracer

Prep Batch #: 0004255 Batch (CCV) 1141C Analyst: LND 5/28/13 5/30/13 5/28/13

Date/Time Start: 05/28/13 / 0900 Date/Time End: ~~05/17/13~~ ~~1320~~ 1045

Instrument ID #: iCAP 6500 Instrument File #: 130528C109Ni

(Pipette #); Pipette ID; Volume Range or Fixed Volume; Check box if pipette passes visual verification:

(1) 210955A	(Range/Vol: 1.0-10.0mL) ☒	(5) N/A	(Range/Vol: N/A) ☐
(2) 1139979	(Range/Vol: 0.1-1.0mL) ☒	(6) N/A	(Range/Vol: N/A) ☐
(3) 1139969	(Range/Vol: 0.1-1.0mL) ☒	(7) N/A	(Range/Vol: N/A) ☐
(4) 2346763	(Range/Vol: 0.01-0.1mL) ☒	(8) N/A	(Range/Vol: N/A) ☐

Calibration Standards:
Blank - (B-25-130430-1)

10ppm HS50 - 1.0mL(SL018597) + 9.0mL (B-25-130430-1)

Verification Standards:
ICB/CCB - (B-25-130430-1)

ICV/CCV - 0.5mL(SL016788) + 9.5mL (B-25-130430-1)

LLS - 0.1mL(SL016509) + 9.9mL(B-25-130430-1)

ICSA - (SL018962)

ICSAB - 10mL(SL017183) + 10mL (SL017184)

Sample Number	Dilution Factor	Dilution
ICV	1	see above
LLS	1	see above
ICB	1	see above
ICSA	1	see above
ICSAB	1	see above
PREP STD	10	1mL(3)-9mL(1)
PREP BLK A	10	1mL(3)-9mL(1)
PREP BLK B	10	1mL(3)-9mL(1)
S13T004254 A	10	1mL(3)-9mL(1)
S13T004254 B	10	1mL(3)-9mL(1)
S13T004254 DUP A	10	1mL(3)-9mL(1)
S13T004254 DUP B	10	1mL(3)-9mL(1)
S13T004282 A	10	1mL(3)-9mL(1)
CCV	1	see above
CCB	1	see above
S13T004282 B	10	1mL(3)-9mL(1)
S13T004309 A	10	1mL(3)-9mL(1)
S13T004309 B	10	1mL(3)-9mL(1)

A-6005-297 (REV 4)

ATL	ICP BENCH SHEET (continued)	○ IH ◉ Non IH

○ LA-505-170 Rev N/A ○ LA-505-171 Rev N/A ○ LA-505-174 Rev A-0

○ N/A Rev N/A

Client/Project: C109 Ni Tracer

Prep Batch #: 00041255 batch 00041410 Analyst: LND 05/28/13 LND 5/28/13

Date/Time Start: 05/28/13 / 0900 5/29/13 Date/Time End: ~~05/17/13~~ / ~~1320~~ 1045

Sample Number	Dilution Factor	Dilution
ICSA	1	see above
ICSAB	1	see above
CCV	1	see above
LLS	1	see above
CCB	1	see above

ICP Dilution Key:

Example:

First entry is sample volume in ml (xxx)	Single dilution: xxx(#)-vvv(#)	1ml(#) - 9ml(#)	DF=10
Second entry is post spike volume in ml (sss)	Post Spike dilution: xxx(#)-sss(#)-sss(#)-vvv(#)	1ml(#) - 0.1ml(#) - 0.1ml(#) - 8.8ml(#)	DF=10
Last entry is diluent volume in ml (vvv)	Double dilution: xxx(#)-vvv(#), xxx(#)-vvv(#)	1ml(#) - 9ml(#), 1ml(#) - 9ml(#)	DF=100
	Post Spike dilution: xxx(#)-vvv(#), xxx(#)-sss(#)-vvv(#)	1ml(#) - 9ml(#), 1ml(#) - 1ml(#) - 8ml(#)	DF=100
Where (#) is the pipette #	Serial dilution: xxx(#)-vvv(#), xxx(#)-vvv(#)	1 ml(#) - 9ml(#), 2ml(#) - 8ml(#)	DF=50
	Triple dilution: xxx(#)-vvv(#), xxx(#)-vvv(#), xxx(#)-vvv(#)	1ml(#) - 9ml(#), 1ml(#) - 9ml(#), 1ml(#) - 9ml(#)	DF=1000

Comments:

A-6005-297 (REV 4)

Flexible Report By Sample

Author:

Published: 5/28/2013 10:37:06 AM

Method Name: Ni Tracer (2)

Sample Name	Acquisition Date	Sample type	Correction Factor
ICV	5/28/2013 9:40:35 AM	QC	1.00
Autosampler Locations		**Analyst Name**	**Method Name**
1/1/1		LND	Ni Tracer (2)

Concentration

Element/Wavelength	Ni2216
Units:	ppm
Avg. of Repeats:	5.07063
Std Dev:	0.0189251
%RSD:	0.37323
Repeat: 1	5.07905
Repeat: 2	5.04895
Repeat: 3	5.08387

Sample Name	Acquisition Date	Sample type	Correction Factor
LLS	5/28/2013 9:42:54 AM	QC	1.00
Autosampler Locations		**Analyst Name**	**Method Name**
1/2/1		LND	Ni Tracer (2)

Concentration

Element/Wavelength	Ni2216
Units:	ppm
Avg. of Repeats:	0.0415033
Std Dev:	0.000432661
%RSD:	1.04247
Repeat: 1	0.0414854
Repeat: 2	0.0410799
Repeat: 3	0.0419446

Sample Name	Acquisition Date	Sample type	Correction Factor
ICB	5/28/2013 9:45:15 AM	QC	1.00
Autosampler Locations		**Analyst Name**	**Method Name**
1/3/1		LND	Ni Tracer (2)

Concentration

Element/Wavelength	Ni2216
Units:	ppm
Avg. of Repeats:	-0.000132955
Std Dev:	0.000247725
%RSD:	186.322
Repeat: 1	-0.000355293
Repeat: 2	-0.000177646
Repeat: 3	0.000134073

Sample Name	Acquisition Date	Sample type	Correction Factor
ICSA	5/28/2013 9:47:36 AM	QC	1.00
Autosampler Locations		**Analyst Name**	**Method Name**
1/4/1		LND	Ni Tracer (2)

Concentration

Element/Wavelength	Ni2216
Units:	ppm
Avg. of Repeats:	0.00659414
Std Dev:	0.000696955
%RSD:	10.5693
Repeat: 1	0.00670363
Repeat: 2	0.00722987
Repeat: 3	0.00584892

Sample Name	Acquisition Date	Sample type	Correction Factor
ICSAB	5/28/2013 9:49:57 AM	QC	1.00
Autosampler Locations		**Analyst Name**	**Method Name**
1/5/1		LND	Ni Tracer (2)

Concentration

Element/Wavelength	Ni2216
Units:	ppm
Avg. of Repeats:	4.23947
Std Dev:	0.0133371
%RSD:	0.314594
Repeat: 1	4.22696
Repeat: 2	4.23794
Repeat: 3	4.25351

Sample Name	Acquisition Date	Sample type	Correction Factor
STD-A	5/28/2013 9:52:17 AM	Unknown	10.00
Autosampler Locations		**Analyst Name**	**Method Name**
1/6/1		LND	Ni Tracer (2)

Concentration

Element/Wavelength	Ni2216
Units:	ppm
Avg. of Repeats:	171.042
Std Dev:	0.567383
%RSD:	0.331721
Repeat: 1	170.77
Repeat: 2	171.694
Repeat: 3	170.662

Sample Name	Acquisition Date	Sample type	Correction Factor
BLK PREP A	5/28/2013 9:54:38 AM	Unknown	10.00
Autosampler Locations		**Analyst Name**	**Method Name**
1/7/1		LND	Ni Tracer (2)

Concentration

Element/Wavelength	Ni2216
Units:	ppm
Avg. of Repeats:	177.261
Std Dev:	0.211353
%RSD:	0.119233
Repeat: 1	177.498
Repeat: 2	177.192
Repeat: 3	177.092

Sample Name	Acquisition Date	Sample type	Correction Factor
BLK PREP B	5/28/2013 9:56:59 AM	Unknown	10.00
Autosampler Locations		**Analyst Name**	**Method Name**
1/8/1		LND	Ni Tracer (2)

Concentration

Element/Wavelength	Ni2216
Units:	ppm
Avg. of Repeats:	0.0152061
Std Dev:	0.00337725
%RSD:	22.2099
Repeat: 1	0.0154854
Repeat: 2	0.018435
Repeat: 3	0.0116978

Sample Name	Acquisition Date	Sample type	Correction Factor
S13T004254 A	5/28/2013 9:59:22 AM	Unknown	10.00
Autosampler Locations		**Analyst Name**	**Method Name**
1/9/1		LND	Ni Tracer (2)

Concentration

Element/Wavelength	Ni2216
Units:	ppm
Avg. of Repeats:	176.302
Std Dev:	0.728516
%RSD:	0.41322
Repeat: 1	177.124
Repeat: 2	176.047
Repeat: 3	175.735

Sample Name	Acquisition Date	Sample type	Correction Factor
S13T004254 B	5/28/2013 10:01:43 AM	Unknown	10.00
Autosampler Locations		**Analyst Name**	**Method Name**
1/10/1		LND	Ni Tracer (2)

Concentration

Element/Wavelength	Ni2216
Units:	ppm
Avg. of Repeats:	1.24617
Std Dev:	0.00387291
%RSD:	0.310784
Repeat: 1	1.2505
Repeat: 2	1.245
Repeat: 3	1.24302

Sample Name	Acquisition Date	Sample type	Correction Factor
S13T004254 DUP A	5/28/2013 10:04:07 AM	Unknown	10.00
Autosampler Locations		**Analyst Name**	**Method Name**
1/11/1		LND	Ni Tracer (2)

Concentration

Element/Wavelength	Ni2216
Units:	ppm
Avg. of Repeats:	170.302
Std Dev:	0.43621
%RSD:	0.256139
Repeat: 1	170.802
Repeat: 2	170.1
Repeat: 3	170.003

Sample Name	Acquisition Date	Sample type	Correction Factor
S13T004254 DUP B	5/28/2013 10:06:29 AM	Unknown	10.00
Autosampler Locations		**Analyst Name**	**Method Name**
1/12/1		LND	Ni Tracer (2)

Concentration

Element/Wavelength	Ni2216
Units:	ppm
Avg. of Repeats:	1.44988
Std Dev:	0.00654337
%RSD:	0.451303
Repeat: 1	1.44493
Repeat: 2	1.4573
Repeat: 3	1.44742

Sample Name	Acquisition Date	Sample type	Correction Factor
S13T004282 A	5/28/2013 10:08:52 AM	Unknown	10.00
Autosampler Locations		**Analyst Name**	**Method Name**
1/1/2		LND	Ni Tracer (2)

Concentration

Element/Wavelength	**Ni2216**
Units:	ppm
Avg. of Repeats:	172.201
Std Dev:	0.152584
%RSD:	0.0886084
Repeat: 1	172.039
Repeat: 2	172.342
Repeat: 3	172.221

Sample Name	Acquisition Date	Sample type	Correction Factor
CCV	5/28/2013 10:11:11 AM	QC	1.00
Autosampler Locations		**Analyst Name**	**Method Name**
1/2/2		LND	Ni Tracer (2)

Concentration

Element/Wavelength	**Ni2216**
Units:	ppm
Avg. of Repeats:	4.97079
Std Dev:	0.0181881
%RSD:	0.3659
Repeat: 1	4.95058
Repeat: 2	4.97593
Repeat: 3	4.98584

Sample Name	Acquisition Date	Sample type	Correction Factor
CCB	5/28/2013 10:13:31 AM	QC	1.00
Autosampler Locations		**Analyst Name**	**Method Name**
1/3/2		LND	Ni Tracer (2)

Concentration

Element/Wavelength	**Ni2216**
Units:	ppm
Avg. of Repeats:	0.000251386
Std Dev:	0.000113021
%RSD:	44.9592
Repeat: 1	0.000224572
Repeat: 2	0.000375404
Repeat: 3	0.000154184

Sample Name	Acquisition Date	Sample type	Correction Factor
S13T004282 B	5/28/2013 10:15:52 AM	Unknown	10.00
Autosampler Locations		**Analyst Name**	**Method Name**
1/4/2		LND	Ni Tracer (2)

Concentration

Element/Wavelength	Ni2216
Units:	ppm
Avg. of Repeats:	2.43689
Std Dev:	0.00695519
%RSD:	0.285412
Repeat: 1	2.42997
Repeat: 2	2.44388
Repeat: 3	2.43684

Sample Name	Acquisition Date	Sample type	Correction Factor
S13T004309 A	5/28/2013 10:18:14 AM	Unknown	10.00
Autosampler Locations		**Analyst Name**	**Method Name**
1/5/2		LND	Ni Tracer (2)

Concentration

Element/Wavelength	Ni2216
Units:	ppm
Avg. of Repeats:	170.176
Std Dev:	0.245613
%RSD:	0.144329
Repeat: 1	170.435
Repeat: 2	169.947
Repeat: 3	170.145

Sample Name	Acquisition Date	Sample type	Correction Factor
S13T004309 B	5/28/2013 10:20:34 AM	Unknown	10.00
Autosampler Locations		**Analyst Name**	**Method Name**
1/6/2		LND	Ni Tracer (2)

Concentration

Element/Wavelength	Ni2216
Units:	ppm
Avg. of Repeats:	1.90915
Std Dev:	0.0064686
%RSD:	0.338821
Repeat: 1	1.90336
Repeat: 2	1.91613
Repeat: 3	1.90795

Sample Name	Acquisition Date	Sample type	Correction Factor
ICSA	5/28/2013 10:22:56 AM	QC	1.00
Autosampler Locations		**Analyst Name**	**Method Name**
1/7/2		LND	Ni Tracer (2)

Concentration

Element/Wavelength	Ni2216
Units:	ppm
Avg. of Repeats:	0.0066757
Std Dev:	8.05367e-005
%RSD:	1.20641
Repeat: 1	0.00675391
Repeat: 2	0.00668017
Repeat: 3	0.00659302

Sample Name	Acquisition Date	Sample type	Correction Factor
ICSAB	5/28/2013 10:25:19 AM	QC	1.00
Autosampler Locations		**Analyst Name**	**Method Name**
1/8/2		LND	Ni Tracer (2)

Concentration

Element/Wavelength	Ni2216
Units:	ppm
Avg. of Repeats:	4.1356
Std Dev:	0.0187149
%RSD:	0.452533
Repeat: 1	4.11446
Repeat: 2	4.15006
Repeat: 3	4.14227

Sample Name	Acquisition Date	Sample type	Correction Factor
CCV	5/28/2013 10:27:40 AM	QC	1.00
Autosampler Locations		**Analyst Name**	**Method Name**
1/9/2		LND	Ni Tracer (2)

Concentration

Element/Wavelength	Ni2216
Units:	ppm
Avg. of Repeats:	4.96118
Std Dev:	0.0105583
%RSD:	0.212819
Repeat: 1	4.97136
Repeat: 2	4.96188
Repeat: 3	4.95028

Sample Name	Acquisition Date	Sample type	Correction Factor
LLS	5/28/2013 10:30:02 AM	QC	1.00
Autosampler Locations		**Analyst Name**	**Method Name**
1/10/2		LND	Ni Tracer (2)

Concentration

Element/Wavelength	**Ni2216**
Units:	ppm
Avg. of Repeats:	0.0407782
Std Dev:	6.20765e-005
%RSD:	0.15223
Repeat: 1	0.0408017
Repeat: 2	0.0408251
Repeat: 3	0.0407078

Sample Name	Acquisition Date	Sample type	Correction Factor
CCB	5/28/2013 10:32:26 AM	QC	1.00
Autosampler Locations		**Analyst Name**	**Method Name**
1/11/2		LND	Ni Tracer (2)

Concentration

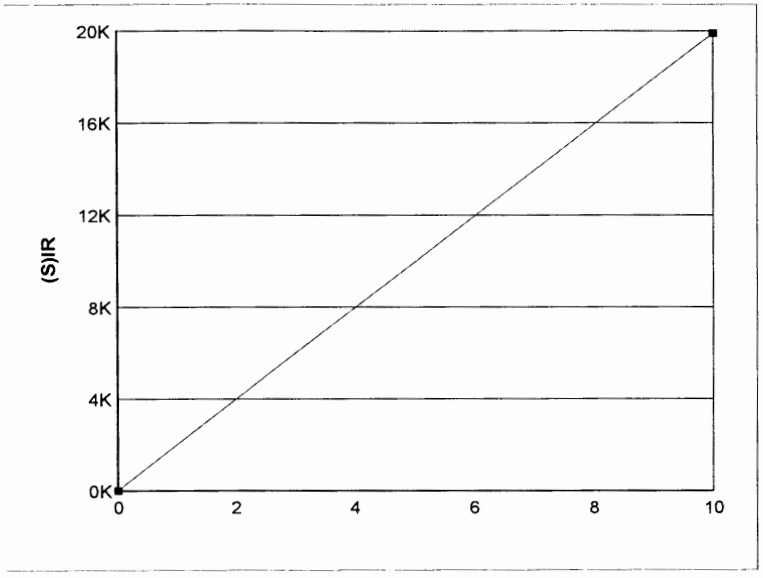
Element/Wavelength	**Ni2216**
Units:	ppm
Avg. of Repeats:	4.13391e-005
Std Dev:	0.000223653
%RSD:	541.02
Repeat: 1	2.01109e-005
Repeat: 2	0.000274849
Repeat: 3	-0.000170943

Flexible Report By Sample

Author:

Published: 5/28/2013 10:16:17 AM

Method Name: Ni Tracer (2)



Element Name:	Ni
Element Wavelength:	Ni 221.647 nm
Concentration Units:	ppm
Date of Calibration:	5/28/2013 9:39:52 AM
Date of Fit:	5/28/2013 9:39:52 AM
Type of Fit:	Linear
Correlation:	1.000
A0 (Offset):	1.000
A1 (Gain):	1,989
A2 (Curvature):	0.0000
n (Exponent):	1.000

Reslope		**QC Normalize**	
Slope:	1.000	**Slope factor:**	1.000
Y Int:	0.0000	**Offset:**	0.0000

Standard Name	Stated	Found	Diff	% Diff	(S)IR	Stddev	Emphasis
Blank	0.0000	0.0000	0.0000	0.0000	1.000	0.6359	1
Cal. Std. 1 - HS 50	10.00	10.000	0.0000000000	0.0000000000	19,891	67.86	1

ATL	Ni-63 ICP SAMPLE TRACKING	LA-285-102 Rev F-1

Analyst (ICP): Liem Dinh

ICP Batch #: 41410

Separation Batch #: 41338

Comments:
C109 CLO, Gp# 20130402.

Sample Type	Sample Number	Vial Number Before Separation	Vial Number After Separation	Digest Type
Standard	S1305210001	NA	STD-A	NA
Prep Blank	S1305160012	BLK PREP-B	BLK PREP-A	Fusion
Sample	S13T004254	SAM 4254-B	SAM 4254-A	Fusion
Prep Dup	S1305160013	DUP 4254-B	DUP 4254-A	Fusion
Sample	S13T004282	SAM 4282-B	SAM 4282-A	Fusion
Sample	S13T004309	SAM 4309-B	SAM 4309-A	Fusion

LAB 1K / HOOD 1

COPY

LABCORE Completed Batch Report for Batch# 00041255

Analyst: Hurson, Aleta

Book#: NA

Instrument: LE-BAL-091

Method: FUSION - ZR, LA-549-141 Rev/Mod M-1-A

Specification: C109 CLO

Prep Batch: N/A

Batch Comment:

C109 CLO for Fusion. gll

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
1	BLNK-PREP	S1305160012			Z		Dose Rate(1)	SOLID		<0.5				mRem/hr			
1	BLNK-PREP	S1305160012			Z		Digest Factor(1)	SOLID		0.001873				g / mL			
2	SAMPLE	S13T004254			Z		Dose Rate(1)	SOLID		200				mRem/hr			
2	SAMPLE	S13T004254			Z		Digest Factor(1)	SOLID		0.001873				g / mL			
3	DUP	S1305160013	S13T004254		Z		Dose Rate(1)	SOLID		200				mRem/hr			
3	DUP	S1305160013	S13T004254		Z		Digest Factor(1)	SOLID		0.001926				g / mL			
4	SAMPLE	S13T004282			Z		Dose Rate(1)	SOLID		180				mRem/hr			
4	SAMPLE	S13T004282			Z		Digest Factor(1)	SOLID		0.001790				g / mL			
5	SAMPLE	S13T004309			Z		Dose Rate(1)	SOLID		180				mRem/hr			
5	SAMPLE	S13T004309			Z		Digest Factor(1)	SOLID		0.002020				g / mL			

Comments Section:

Data Flagger Status:
Flagger Not Run

Final Page for Batch# 00041255

Reviewer Signature

16 May 13
Date

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041255

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Method	Customer Id	Specification
1	S1305160012	BLNK-PREP			FUSION - ZR		
2	S13T004254	SAMPLE		20130402	FUSION - ZR	9C-13-Comp A	C109 CLO
3	S1305160013	DUP	S13T004254		FUSION - ZR		
4	S13T004282	SAMPLE		20130402	FUSION - ZR	9C-13-Comp B	C109 CLO
5	S13T004309	SAMPLE		20130402	FUSION - ZR	9C-13-Comp C	C109 CLO

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Data Entry Template for Batch# 00041255

Analyst: H0076677 **Standard ID / Book#:** NA

Instrument: NA

Method: FUSION - ZR, LA-549-141 Rev/Mod M-1-A

Prep Batch: N/A

Batch Comment:

C109 CLO for Fusion. gll

CACN:3A.26

S	Type	Sample	R	A	Matrix	Group#	Project
1	BLNK-PREP	S1305160012		Z	SOLID		
2	SAMPLE	S13T004254		Z	SOLID	20130402	C109 CLO
3	DUP	S1305160013		Z	SOLID		
4	SAMPLE	S13T004282		Z	SOLID	20130402	C109 CLO
5	SAMPLE	S13T004309		Z	SOLID	20130402	C109 CLO

Final Page for Batch# 00041255

Alicia Hanson 5/16/13
Analyst Signature Date

5/16/13 ACH
Alicia Hanson 5/16/13
Data Entry Signature Date
5/16/13

Data Entry Comments:

S = Batch Slot Number, R = Retest Number, A = Aliquot Code.

ATL	DIGESTION BATCH LIST DATA COLLECTION FORM

○ LA-544-101 Rev _____ ○ LA-544-113 Rev _____ ○ _____ Rev _____ (Other)

○ LA-549-133 Rev _____ ◉ LA-549-141 Rev M-1-A

Batch #: 41255 Analyst: AKH Date: 5/16/2013

(Pipette #); Pipette ID; Volume Range or Fixed Volume; Check box if pipette passes visual verification:

(1) N/A (Range/Vol: N/A) ☐

(2) N/A (Range/Vol: N/A) ☐

(3) N/A (Range/Vol: N/A) ☐

Balance ID; Date of balance verification:

LE-BAL-091 (Verification Date: 5/16/2013)

○ Spike / ○ Carrier / ○ Tracer # N/A Vol N/A Pip # N/A

○ Spike / ○ Carrier / ○ Tracer # N/A Vol N/A Pip # N/A

○ Spike / ○ Carrier / ○ Tracer # N/A Vol N/A Pip # N/A

Special Instructions:

Use ZR Crucibles. gll

Sample Type	Digest Sample #	Parent Sample #	Sample Weight (g)	Final Volume (mL)	Dose Rate (mRem/hr)
Blank Prep	S1305160012	N/A	0.4682	250	<0.5
Sample	S13T004254	S13T004246	0.4682	250	200
Duplicate	S1305160013	S13T004246	0.4814	250	200
Sample	S13T004282	S13T004274	0.4474	250	180
Sample	S13T004309	S13T004301	0.5049	250	180

Comments:

C109 CLO Fusion-ZR. gll Digest Appearance: clear liquid. colorless. no solids.

A-6005-290 (REV 2)

5/20/2013 2:17:38PM
CompleteBatch Version 2.7.32
batchreports 2.7.32

LABCORE Completed Batch Report for Batch# 00041279

Analyst: Casey, Adam

Book#: SEE BENCH SHEET

Instrument: pH METER

Method: PH SOLID, LA-212-105 Rev/Mod I-0

Specification: C109 CLO

Prep Batch: N/A

Batch Comment:

pH solid for C109 Clo. ACC

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
Sample Sequence 1																	
1	ICVPH	S1305160061		0 0			pH	LIQUID		12.07			0.01	pH			
Sample Sequence 2																	
2	SAMPLE	S13T004245		0 0			pH	SOLID	N/A	12.72			0.01	pH			
Sample Sequence 3																	
3	DUP	S1305160063	S13T004245	0 0			pH	SOLID	12.72	12.97			0.01	pH	1.9463	% RPD	
Sample Sequence 4																	
4	SAMPLE	S13T004273		0 0			pH	SOLID	N/A	13.47			0.01	pH			E
Sample Sequence 5																	
5	SAMPLE	S13T004300		0 0			pH	SOLID	N/A	13.41			0.01	pH			E
Sample Sequence 6																	
6	CCVPH	S1305160064		0 0			pH	LIQUID		12.07			0.01	pH			

Comments Section:

Data Flagger Status:
Flagging Completed

Final Page for Batch# 00041279

5/20/13
Reviewer Signature Date

2nd Review 5/21/13

PC: Julie Osborn 6/28/13

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041279

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Method	Customer Id	Specification
1	S1305160061	ICVPH			PH SOLID		
2	S13T004245	SAMPLE		20130402	PH SOLID	9C-13-Comp A	C109 CLO
3	S1305160063	DUP	S13T004245		PH SOLID		
4	S13T004273	SAMPLE		20130402	PH SOLID	9C-13-Comp B	C109 CLO
5	S13T004300	SAMPLE		20130402	PH SOLID	9C-13-Comp C	C109 CLO
6	S1305160064	CCVPH			PH SOLID		

LABCORE Data Entry Template for Batch# 00041279

Analyst: Casey, Adam **Standard ID / Book#:** see benchsheet

Instrument: pH METER

Method: PH SOLID, LA-212-105 Rev/Mod I-0

Prep Batch: N/A

Batch Comment:

pH solid for C109 Clo. ACC

CACN:3A.26

S	Type	Sample	R	A	Matrix	Group#	Project
1	ICVPH	S1305160061	0		LIQUID		
	Analytes Requested:	pH					
2	SAMPLE	S13T004245	0		SOLID	20130402	C109 CLO
	Analytes Requested:	pH					
3	DUP	S1305160063	0		SOLID		
	Analytes Requested:	pH					
4	SAMPLE	S13T004273	0		SOLID	20130402	C109 CLO
	Analytes Requested:	pH					
5	SAMPLE	S13T004300	0		SOLID	20130402	C109 CLO
	Analytes Requested:	pH					
6	CCVPH	S1305160064	0		LIQUID		
	Analytes Requested:	pH					

Final Page for Batch# 00041279

Adam Casey 5-16-13
Analyst Signature Date

Adam Casey 05-16-13
Data Entry Signature Date

Data Entry Comments:

S = Batch Slot Number, R = Retest Number, A = Aliquot Code.

ATL	pH DETERMINATION

(●) LA-212-105 Rev I-0 (Solid) ( ) LA-212-106 Rev _____ (Liquid) Instrument: Mettler titrando

Project: C109 C10

Batch #: 41279 Analyst: [redacted]

Date/Time Start: 05-16-13 / 09:45 Date/Time End: 05-16-13 / 14:25

Standard	pH Value	ID or Lot #	Exp. Date
Calibration 1	10.00	2184	07-31-16
Calibration 2	13.00	120810	07/2013
ICV/CCV	12.0	C035-04	02-05-14

Calibration Slope: 96.50 (95% - 105%) Balance ID: LE-BAL-119 ☒ (Verified)

(Pipette #); Pipette ID; Volume Range or fixed Volume; check box if pipette passes visual verification:

1) 443082 (Range/Vol: 0.1-1.0mL ☒) 2) 447681 Range 10-100/mL ☒

Sample Number/Type	Measured pH	Sample Temp (°C)	Weight (g)	Water Added (mL)	Comments
Calibration 1	10.01	21.4	N/A	N/A	
Calibration 2	13.04	21.1	N/A	N/A	
ICV	12.07	22.2	N/A	N/A	
~~ICB~~ [redacted] 05-16-13	13	N/A	N/A	N/A	
S13T00 4245	12.72	20.6	1.07g	1.1 mL [redacted]	05-16-13
S13T00 4245 Dup	12.97	18.4	1.04g	1.04	Sam & Dup are dry, brittle, grated like & orange colored.
S13T00 4273	13.47	18.8	1.10g	1.10	wet, smearable orange colored.
S13T00 4300	13.41	18.3	1.12g	1.12	orange and viscous.
CCV	12.07	20.4	N/A	N/A	

Comments:

tiamo™

Program version tiamo 1.1 - 36
2013-05-16 1:46:11 PM UTC-

Calibration report

Determination

Method	pH 10-13 Calibration
Determination start	2013-05-16 13:43:05 UTC-7
User (full name)	Adam Casey

Results

Cal Slope	**96.50**	**%**
Temperature	**22.2**	**°C**

2013-05-16 1:49:59 PM UTC-

Result

Sample identification	pH 10
Determination start	2013-05-16 13:48:27 UTC-7
Method	pH Measurement
pH	10.01

ID1 Temperature21.4

2013-05-16 1:53:29 PM UTC-

Result

Sample identification	pH 13
Determination start	2013-05-16 13:51:57 UTC-7
Method	pH Measurement
pH	13.04
ID1	Temperature21.1

2013-05-16 1:57:47 PM UTC-

Result

Sample identification	icv
Determination start	2013-05-16 13:56:15 UTC-7
Method	pH Measurement
pH	12.07
ID1	Temperature22.2

2013-05-16 2:05:23 PM UTC-

Result

Sample identification	S13T004245
Determination start	2013-05-16 14:03:51 UTC-7
Method	pH Measurement
pH	12.72
ID1	Temperature20.6

2013-05-16 2:10:05 PM UTC-

Result

Sample identification	S13T004245 DUP
Determination start	2013-05-16 14:08:33 UTC-7
Method	pH Measurement
pH	12.97

ID1 Temperature18.4

2013-05-16 2:14:23 PM UTC-

Result

Sample identification	S13T004273
Determination start	2013-05-16 14:12:51 UTC-7
Method	pH Measurement
pH	13.47
ID1	Temperature18.8

2013-05-16 2:18:37 PM UTC-

Result

Sample identification	S13T004300
Determination start	2013-05-16 14:17:05 UTC-7
Method	pH Measurement
pH	13.41
ID1	Temperature18.3

2013-05-16 2:22:40 PM UTC-

Result

Sample identification	CCV
Determination start	2013-05-16 14:21:08 UTC-7
Method	pH Measurement
pH	12.07
ID1	Temperature20.4

5/22/2013 5:48:36AM
CompleteBatch Version 2.7.32
batchreports 2.7.32

LABCORE Completed Batch Report for Batch# 00041281

Analyst: Shaw, Levi **Book#:** 32N26A

Instrument: DSC4/TGA6 Analyzer

Method: TGA-TA, LA-514-115 Rev/Mod G-0

Specification: C109 CLO

Prep Batch: N/A

Batch Comment: None

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
Sample Sequence 1																	
1	LCS-INST	S1305160068		0 0			%WATER	LIQUID	58.035	59.6			0.01	%	102.7	% Recovery	
Sample Sequence 2																	
2	SAMPLE	S13T004246		0 0			%WATER	SOLID	N/A	17.55			0.01	%			
Sample Sequence 3																	
3	DUP	S1305160069	S13T004246	0 0			%WATER	SOLID	17.55	15.6			0.01	%	11.765	% RPD	

Comments Section:

Data Flagger Status:
Flagging Completed

Final Page for Batch# 00041281

5/22/13
Reviewer Signature Date

2nd Review Scott C 5/22/13

PC: Julie Osborn 7/2/13

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041281

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Method	Customer Id	Specification
1	S1305160068	LCS-INST			TGA-TA		
2	S13T004246	SAMPLE		20130402	TGA-TA	9C-13-Comp A	C109 CLO
3	S1305160069	DUP	S13T004246		TGA-TA		

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

* = Rejected Analyte
N, A = Non-reported Analyte

5/21/2013 3:37:28PM
IncompleteBatchShort Version 2.7.29
batchreports 2.7.32

LABCORE Data Entry Template for Batch# 00041281

Analyst: Shaw, Levi **Standard ID / Book#:** 32N26A

Instrument: DSC4/TGA6 Analyzer

Method: TGA-TA, LA-514-115 Rev/Mod G-0

Prep Batch: N/A

Batch Comment: none

CACN:3A.26

S	Type	Sample	R	A	Matrix	Group#	Project
1	LCS-INST	S1305160068	0		LIQUID		
	Analytes Requested:	%WATER					
2	SAMPLE	S13T004246	0		SOLID	20130402	C109 CLO
	Analytes Requested:	%WATER					
3	DUP	S1305160069	0		SOLID		
	Analytes Requested:	%WATER					

Final Page for Batch# 00041281

05/21/13
Analyst Signature **Date**

05/21/13
Data Entry Signature **Date**

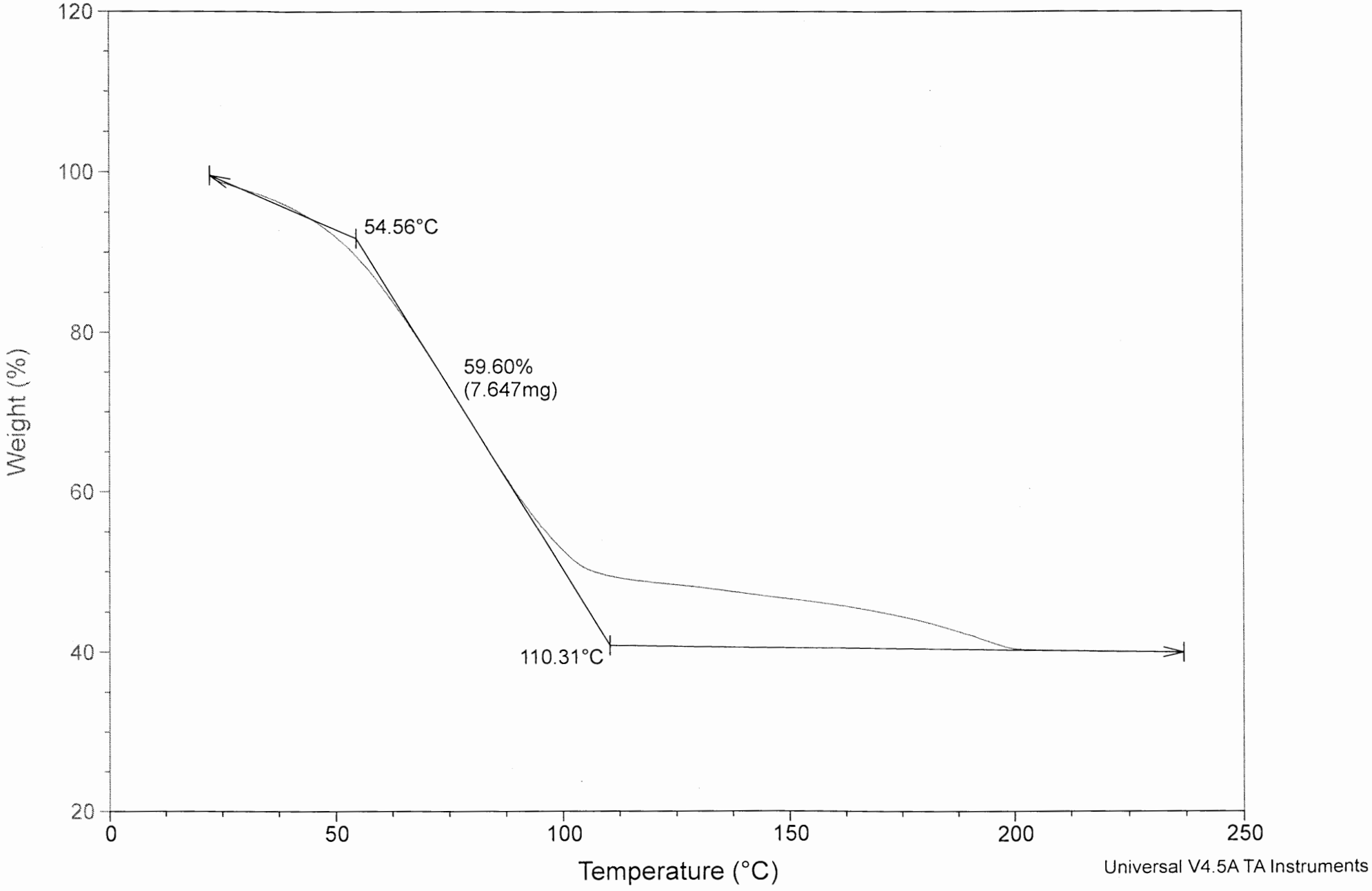
Data Entry Comments:

S = Batch Slot Number, R = Retest Number, A = Aliquot Code.

Sample: ICV
Size: 12.8290 mg
Method: TERLIQ
Comment: TERLIQ

TGA

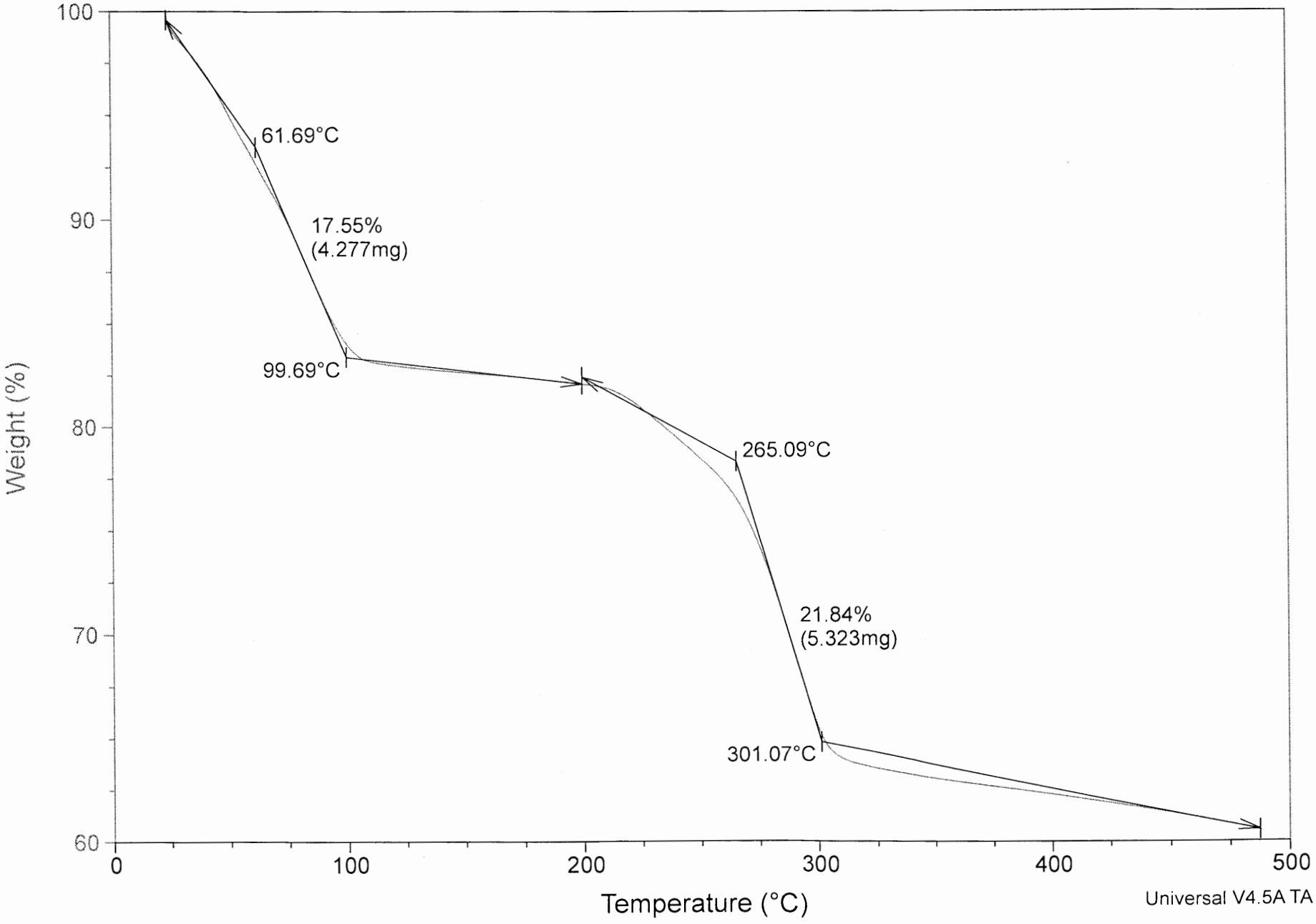
File: C:\TA\Data\TGA-6\TER130521.01
Operator: LND
Run Date: 21-May-2013 09:11
Instrument: 2050 TGA V5.4A



Sample: S13T004246
Size: 24.3760 mg
Method: Sample
Comment: SAMPLE

TGA

File: C:\TA\Data\TGA-6\SAM4130521.1
Operator: LS
Run Date: 21-May-2013 10:39
Instrument: 2050 TGA V5.4A

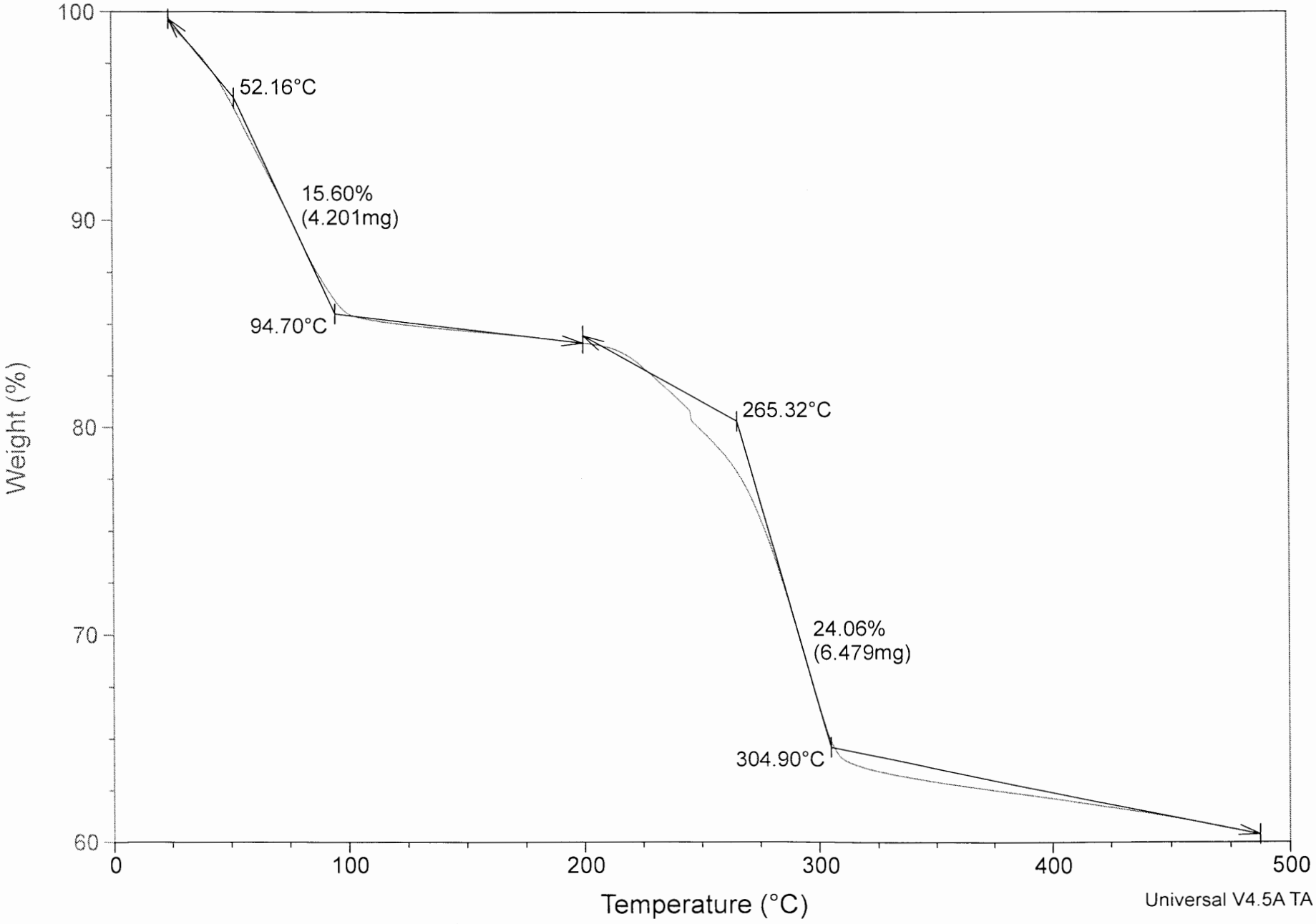


Universal V4.5A TA Instruments

Sample: S13T004246 dup
Size: 26.9350 mg
Method: Sample
Comment: DUPLICATE

TGA

File: C:\TA\Data\TGA-6\SAM4130521.3
Operator: LS
Run Date: 21-May-2013 14:31
Instrument: 2050 TGA V5.4A



LABCORE Completed Batch Report for Batch# 00041312

Analyst: Casey, Adam **Book#:** 32N26A

Instrument: DSC4/TGA6 Analyzer

Method: TGA-TA, LA-514-115 Rev/Mod G-0

Specification: C109 CLO

Prep Batch: N/A

Batch Comment: None

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
Sample Sequence 1																	
1	LCS-INST	S1305170101		0 0			%WATER	LIQUID	58.035	59.8			0.01	%	103.04	% Recovery	
Sample Sequence 2																	
2	SAMPLE	S13T004274		0 0			%WATER	SOLID	N/A	32.28			0.01	%			
Sample Sequence 3																	
3	DUP	S1305170102	S13T004274	0 0			%WATER	SOLID	32.28	34.58			0.01	%	6.8800	% RPD	
Sample Sequence 4																	
4	SAMPLE	S13T004301		0 0			%WATER	SOLID	N/A	32.59			0.01	%			

Comments Section:

Data Flagger Status:
Flagging Completed

Final Page for Batch# 00041312

5/20/13
Reviewer Signature Date

2nd Review 5/21/13

PC: Julie Askew 7/2/13

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041312

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Method	Customer Id	Specification
1	S1305170101	LCS-INST			TGA-TA		
2	S13T004274	SAMPLE		20130402	TGA-TA	9C-13-Comp B	C109 CLO
3	S1305170102	DUP	S13T004274		TGA-TA		
4	S13T004301	SAMPLE		20130402	TGA-TA	9C-13-Comp C	C109 CLO

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

* = Rejected Analyte
N, A = Non-reported Analyte

5/17/2013 2:48:32PM
IncompleteBatchShort Version 2.7.29
batchreports 2.7.32

LABCORE Data Entry Template for Batch# 00041312

Analyst: Casey, Adam
Standard ID / Book#: 32N26A
Instrument: DSC4/TGA6 Analyzer
Method: TGA-TA, LA-514-115 Rev/Mod G-0
Prep Batch: N/A
Batch Comment:

CACN:3A.26

S	Type	Sample	R	A	Matrix	Group#	Project
1	LCS-INST	S1305170101	0		LIQUID		
	Analytes Requested:	%WATER					
2	SAMPLE	S13T004274	0		SOLID	20130402	C109 CLO
	Analytes Requested:	%WATER					
3	DUP	S1305170102	0		SOLID		
	Analytes Requested:	%WATER					
4	SAMPLE	S13T004301	0		SOLID	20130402	C109 CLO
	Analytes Requested:	%WATER					

Final Page for Batch# 00041312

Adam Casey 05-17-13
Analyst Signature **Date**

Adam Casey 05-17-13
Data Entry Signature **Date**

Data Entry Comments:

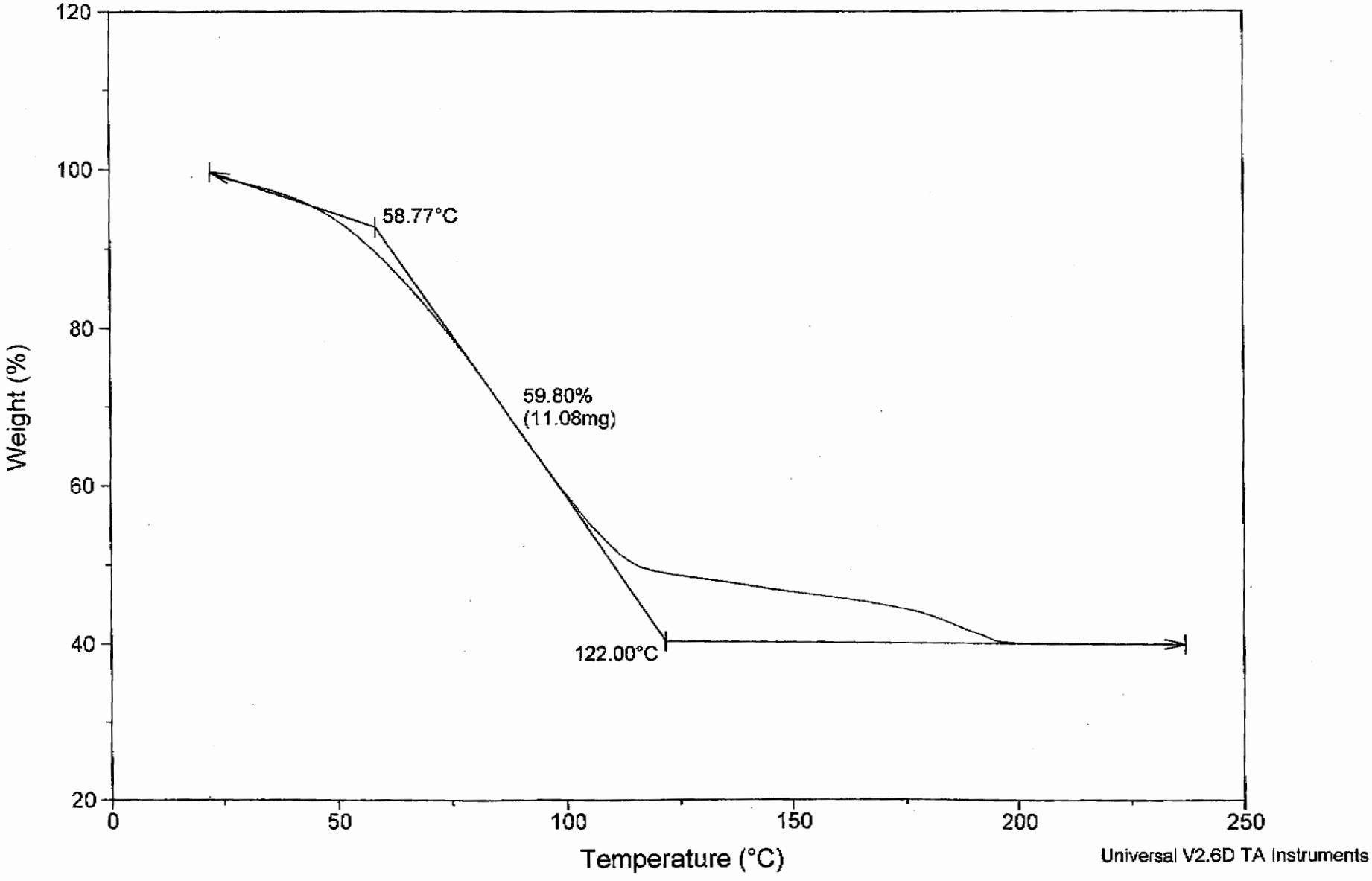
S = Batch Slot Number, R = Retest Number, A = Aliquot Code.

PAGE 01/04
225/8C
15093721142
05/17/2013 14:25

Sample: ICV
Size: 18.5300 mg
Method: TERLIQ
Comment: TERLIQ

TGA

File: C:...\TER130517.01
Operator: ACC
Run Date: 17-May-13 08:40

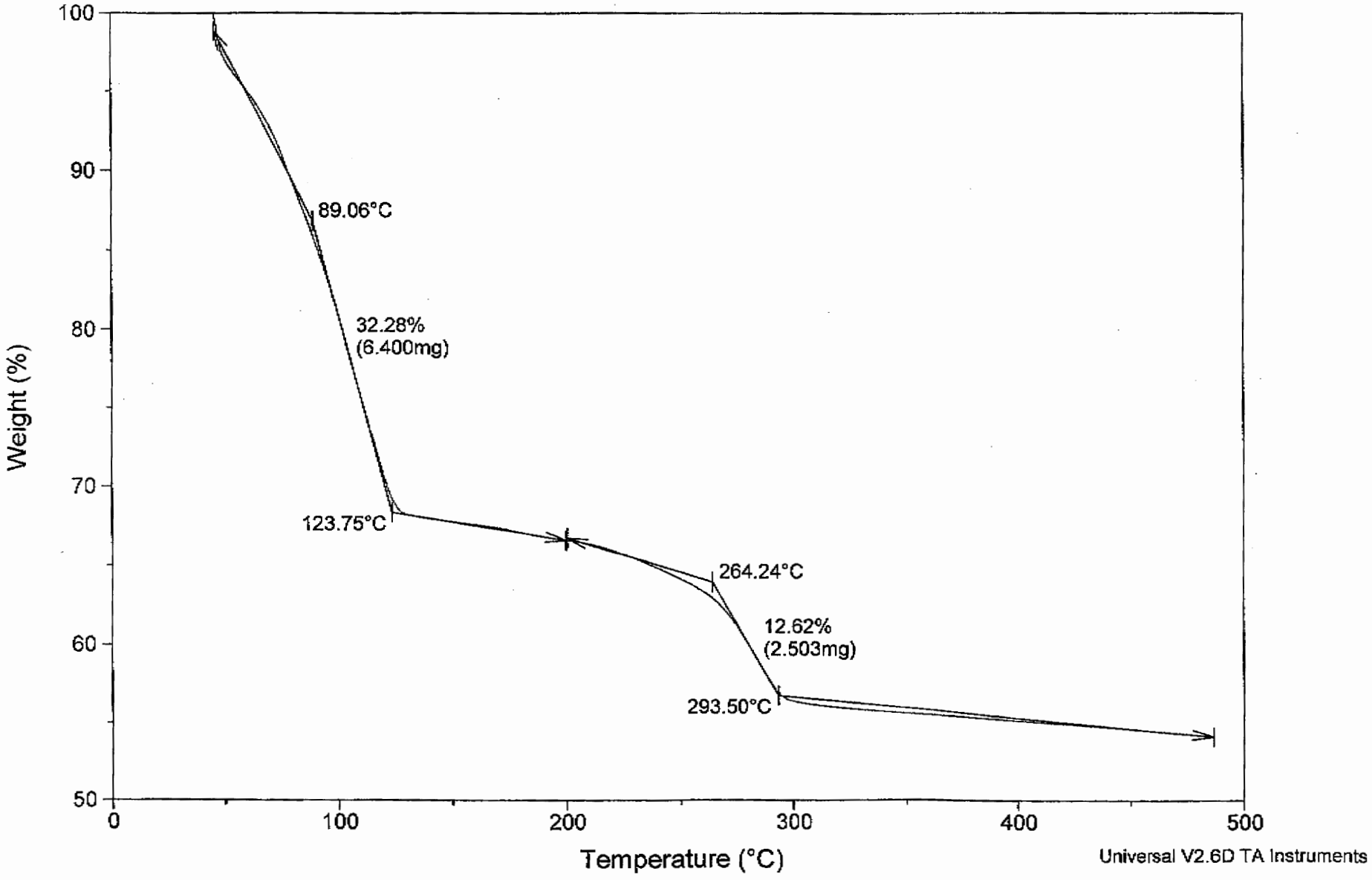


PAGE 02/04
225/8C
15093721142
05/17/2013 14:25

Sample: S13T004274
Size: 19.8300 mg
Method: Sample
Comment: c109 CLO

TGA

File: C:...\SAM130517.02
Operator: ACC
Run Date: 17-May-13 09:28

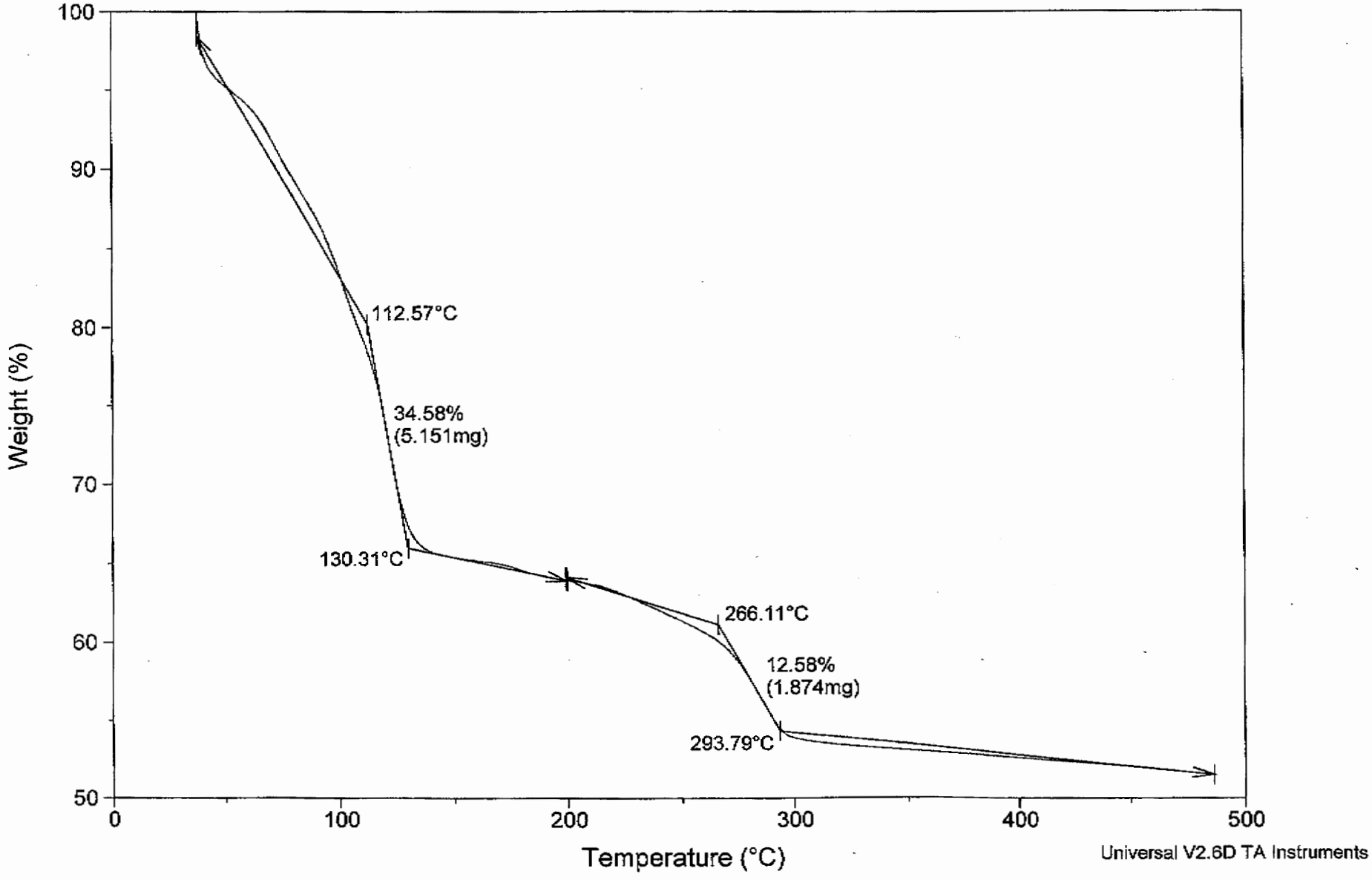


PAGE 03/04
225/8C
15093721142
05/17/2013 14:25

Sample: S13T004274 DUP
Size: 14.8960 mg
Method: Sample
Comment: c109 CLO

TGA

File: C:...\SAM130517.03
Operator: ACC
Run Date: 17-May-13 10:48

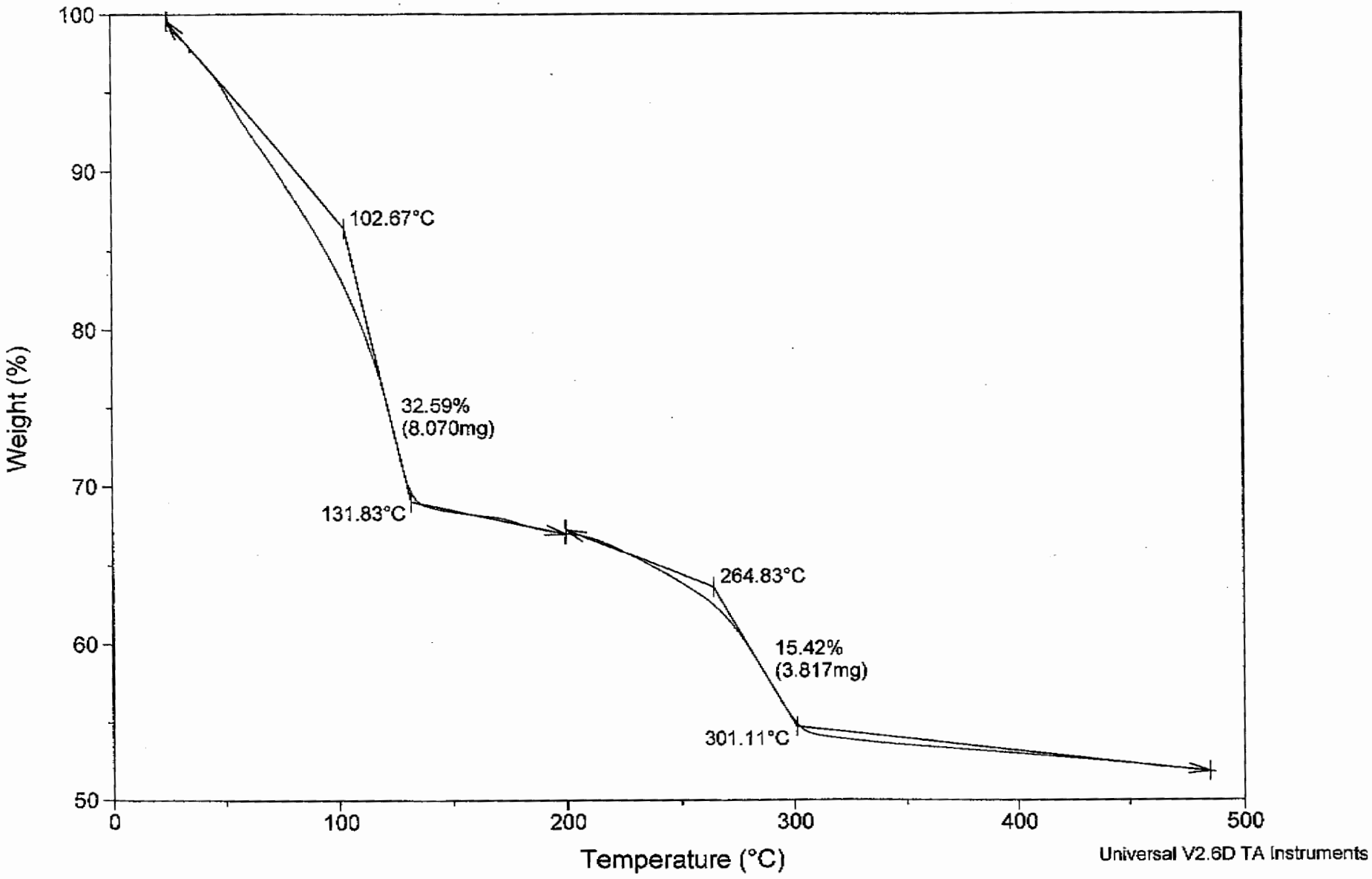


PAGE 04/04
05/17/2013 14:25 15093721142 222S/8C

Sample: S13T004301
Size: 24.7590 mg
Method: Sample
Comment: c109 CLO

TGA

File: C:...\SAM130517.04
Operator: ACC
Run Date: 17-May-13 13:33



Data Review Check List

Procedure LA-953-104 Pu/Am

Project: C109 CLO

Group: 20130402 **Am**

Batch # **41432**

Review Item	Yes	No	N/A	Level 2	Comments and Samples Affected
Batch Items					
1. Was an LCS and blank run the batch?	X			√	
2. Was a duplicate run with the batch?	X			√	
2.a Was a spike run with the batch?		X		√	Not Requested.
3. Was the book # of the standard and tracer (and spike) on the traveler?	X			√	
4. Was the batch traveler completed (sample #, dilution, aliquot size)?	X			√	
5. Were any line outs initialed and dated?			X	√	
6. Was balance check completed on the day of use (if used)?			X	√	
Result Items					
7. Was sample, traveler and counting data correct on Alpha Vision Report?	X			√	
8. If No, was Alpha Vision form corrected?			X	√	
9. Did results etc. correctly up-load to LABCORE (OMNILims or MULTILims)?	X			√	
10. If No, was LABCORE corrected?			X	√	
11. Are result units correct?	X			√	
12. If No, were units corrected?			X	√	
13. Was data flagged?	X			√	
14. Are all flags present and correct?	X			√	
15. Are LCS results within limits (Lab's or customer's)?	X			√	
16. Are Spike results within limits (Lab's or customer's)?			X	√	
17. Is blank <MDC, or <5% isotope concentration, or <5% decision level?	X			√	
18. Are duplicate RPDs <20% (or RSD) within customer limits?		X		√	Samples to be re-prep.
19. Are the correct procedure number and Rev/Mod on the report?	X			√	
Procedure Speciffic Items					
20. Were tracer recoveries between 30% and 120%?	X			√	
21. Were the customer required detection or quantification limits met?	X			√	

1st Level Reviewer: M Cattles **Date:** 3/Mar/13

2nd Level Reviewer: B P Al **Date:** 6/3/13

Data Review Checklist

ENERGY CALIBRATION OF ALPHA SPECTROMETERS

INSTRUMENT # __AEA-ORTEC_____ PROCEDURES LA-508-168 LQ-150-115

BATCH # ___41432_____

Review Items	--- Level 1 --- Yes	No	N/A	Comments & Samples Affected
Energy Calibration				
1. Alpha Spectrometer was energy calibrated with a std having > two peaks	X			
2. Energy Calibration spectrum had clearly resolvable peaks	X			
3. Energy range of peaks in calibration std encompasses alpha energies expected in samples	X			
Calibration Verification				
1. Weekly Instrument Control Std within limits	X			
2. Bkg check within limits and performed < one week ago	X			
3. Daily Pulsers are within control	X			

1st Level Reviewer: B. Pratt Date: 6/3/13

LABCORE Completed Batch Report for Batch# 00041432

Analyst: King, Rob W **Book#:** 147B64

Instrument: AEA-Ortec

Method: AMERICIUM, LA-508-168 Rev/Mod A-0-A

Specification: C109 CLO

Prep Batch: 00041255

Batch Comment:

C109 CLO - RWK

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
Sample Sequence 1																	
1	STD	S1305290016		0 0			Americium-241	SOLID	.000137	1.4000E-04		1.09	1.08E-07	uCi/mL	102.19	% Recovery	
1	STD	S1305290016		0 0			Americium-243T	SOLID		92.36				% Recovery	N/A		
Sample Sequence 2																	
2	BLNK-PREP	S1305160012		0 1	Z		Curium-243/244	SOLID		<5.1600E-04			5.16E-04	uCi/g			
2	BLNK-PREP	S1305160012		0 1	Z		Americium-241	SOLID		6.5300E-05		41.93	6.04E-05	uCi/g			
2	BLNK-PREP	S1305160012		0 1	Z		Americium-243T	SOLID		93.95			6.76E-05	% Recovery			
2	BLNK-PREP	S1305160012		0 1	Z		Curium-242	SOLID		<2.3900E-05			2.39E-05	uCi/g			
Sample Sequence 3																	
3	SAMPLE	S13T004254		0 1	Z		Curium-243/244	SOLID	N/A	<7.6200E-05			7.62E-05	uCi/g			U
3	SAMPLE	S13T004254		0 1	Z		Americium-241	SOLID	N/A	2.1300E-02		2.02	7.71E-05	uCi/g			c
3	SAMPLE	S13T004254		0 1	Z		Americium-243T	SOLID		94.9				% Recovery			
3	SAMPLE	S13T004254		0 1	Z		Curium-242	SOLID	N/A	7.4200E-05		37.50	2.51E-05	uCi/g			J
Sample Sequence 4																	
4	DUP	S1305160013	S13T004254	0 1	Z		Curium-243/244	SOLID	<7.6200E-05	<1.1900E-04			1.19E-04	uCi/g			
4	DUP	S1305160013	S13T004254	0 1	Z		Americium-241	SOLID	2.1300E-02	3.4800E-02		1.52	4.68E-05	uCi/g	48.128	% RPD	
4	DUP	S1305160013	S13T004254	0 1	Z		Americium-243T	SOLID	94.9	100.05				% Recovery			
4	DUP	S1305160013	S13T004254	0 1	Z		Curium-242	SOLID	7.4200E-05	<6.1300E-05			6.13E-05	uCi/g			
Sample Sequence 5																	
5	SAMPLE	S13T004282		0 1	Z		Curium-243/244	SOLID	N/A	<9.0800E-05			9.08E-05	uCi/g			U
5	SAMPLE	S13T004282		0 1	Z		Americium-241	SOLID	N/A	3.5400E-02		1.62	9.20E-05	uCi/g			c
5	SAMPLE	S13T004282		0 1	Z		Americium-243T	SOLID		93.69				% Recovery			
5	SAMPLE	S13T004282		0 1	Z		Curium-242	SOLID	N/A	<6.4600E-05			6.46E-05	uCi/g			U
Sample Sequence 6																	
6	SAMPLE	S13T004309		0 1	Z		Curium-243/244	SOLID	N/A	<7.3200E-05			7.32E-05	uCi/g			U
6	SAMPLE	S13T004309		0 1	Z		Americium-241	SOLID	N/A	2.3800E-02		1.77	5.66E-05	uCi/g			c
6	SAMPLE	S13T004309		0 1	Z		Americium-243T	SOLID		102.97				% Recovery			
6	SAMPLE	S13T004309		0 1	Z		Curium-242	SOLID	N/A	<5.3000E-05			5.30E-05	uCi/g			U

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041432

Comments Section:

Data Flagger Status:
Flagging Completed

Final Page for Batch# 00041432

Br P Arl 6/3/13
Reviewer Signature Date

PC: Julie Osborn 7/12/13

LABCORE Completed Batch Report for Batch# 00041432

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Method	Customer Id	Specification
1	S1305290016	STD			AMERICIUM		
2	S1305160012	BLNK-PREP			AMERICIUM		
3	S13T004254	SAMPLE		20130402	AMERICIUM	9C-13-Comp A	C109 CLO
4	S1305160013	DUP	S13T004254		AMERICIUM		
5	S13T004282	SAMPLE		20130402	AMERICIUM	9C-13-Comp B	C109 CLO
6	S13T004309	SAMPLE		20130402	AMERICIUM	9C-13-Comp C	C109 CLO

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

* = Rejected Analyte
N, A = Non-reported Analyte

5/29/2013 10:51:20AM
IncompleteBatchShort Version 2.7.29
batchreports 2.7.32

LABCORE Data Entry Template for Batch# 00041432

Analyst: H0661511 **Standard ID / Book#:** See bench sheet
Instrument: AEA ortec
Method: AMERICIUM, LA-508-168 Rev/Mod A-0-A
Prep Batch: 00041255
Batch Comment:
C109 CLO - RWK
CACN:3A.26

S	Type	Sample	R	A	Matrix	Group#	Project
1	STD	S1305290016	0		SOLID		
	Analytes Requested:	Americium-241, Americium-243T					
2	BLNK-PREP	S1305160012	1	Z	SOLID		
	Analytes Requested:	Americium-241, Americium-243T, Curium-242, Curium-243/244					
3	SAMPLE	S13T004254	1	Z	SOLID	20130402	C109 CLO
	Analytes Requested:	Americium-241, Americium-243T, Curium-242, Curium-243/244					
4	DUP	S1305160013	1	Z	SOLID		
	Analytes Requested:	Americium-241, Americium-243T, Curium-242, Curium-243/244					
5	SAMPLE	S13T004282	1	Z	SOLID	20130402	C109 CLO
	Analytes Requested:	Americium-241, Americium-243T, Curium-242, Curium-243/244					
6	SAMPLE	S13T004309	1	Z	SOLID	20130402	C109 CLO
	Analytes Requested:	Americium-241, Americium-243T, Curium-242, Curium-243/244					

Final Page for Batch# 00041432

Analyst Signature — 5/29/13 Date

Data Entry Signature — 5.30.13 Date

Data Entry **Comments:**

S = Batch ***Slot Number, R = Retest Number, A = Aliquot Code.***

5/28/2013 9:09:55AM
IncompleteBatchShort Version 2.7.29
batchreports 2.7.32

LABCORE Data Entry Template for Batch# 00041399

Analyst: H0076677 **Standard ID / Book#:** 147B64

Instrument: NA

Method: AMERICIUM SEPARATION, LA-953-104 Rev/Mod JØB1

Prep Batch: 00041255

Batch Comment:

AM-241 for C109 CLO. AKH

CACN:3A.26

S	Type	Sample	R	A	Matrix	Group#	Project
1	STD	S1305280015	0		SOLID		
	Analytes Requested:	Sample Volume, Standard/Spike Book No., Standard/Spike Volume, Tracer Book No., Tracer Volume					
2	BLNK-PREP	S1305160012	1	Z	SOLID		
	Analytes Requested:	Sample Volume, Standard/Spike Book No., Standard/Spike Volume, Tracer Book No., Tracer Volume					
3	SAMPLE	S13T004254	1	Z	SOLID	20130402	C109 CLO
	Analytes Requested:	Sample Volume, Standard/Spike Book No., Standard/Spike Volume, Tracer Book No., Tracer Volume					
4	DUP	S1305160013	1	Z	SOLID		
	Analytes Requested:	Sample Volume, Standard/Spike Book No., Standard/Spike Volume, Tracer Book No., Tracer Volume					
5	SAMPLE	S13T004282	1	Z	SOLID	20130402	C109 CLO
	Analytes Requested:	Sample Volume, Standard/Spike Book No., Standard/Spike Volume, Tracer Book No., Tracer Volume					
6	SAMPLE	S13T004309	1	Z	SOLID	20130402	C109 CLO
	Analytes Requested:	Sample Volume, Standard/Spike Book No., Standard/Spike Volume, Tracer Book No., Tracer Volume					

Final Page for Batch# 00041399

Aleta Hurson 5/29/13
Analyst Signature **Date**

Aleta Hurson 5/29/13
Data Entry Signature **Date**

Data Entry Comments:

S = Batch Slot Number, R = Retest Number, A = Aliquot Code.

ATL	ACTINIDE BATCH LIST DATA COLLECTION FORM	◉ LA-953-104 Rev J0B1 ○ LA-903-101 Rev

○ Plutonium ○ Pu-241 ◉ Americium ○ Thorium

Separation Batch #: 41399 Analyst Initials: AKH Analysis Date/Time: 5/29/13 / 10:10 ☒ LA-542-104 Rev I0

(Pipette #); Pipette ID; Volume Range or Fixed Volume; Check box if pipette passes visual inspection:

(1) 408058 (Range/Vol: 0.1-1.0 mL) ☒ (4) NA (Range/Vol: NA) ☐

(2) NA (Range/Vol: NA) ☐ (5) NA (Range/Vol: NA) ☐

(3) NA (Range/Vol: NA) ☐ (6) NA (Range/Vol: NA) ☐

Matrix: SOLID Prep Batch #: 41255 HASQARD Upload ☐

Standard Book #: 147B64

Spike Book #: NA Volume: NA (Pip # N)

Spike Book #: NA Volume: NA (Pip # N)

Tracer Book #: 61B63 Volume: 0.250 mL (Pip # 1)

Counting Room Information	LA-508-168 Rev A-0-A
Counting Batch #: 41432	
Detector No: AEA-ORTEC	

Special Instructions / Comments:
NA

Sample Type	Sample ID	Sample Vol (mL)	Pip #	Dilution Information	Pip #	DF
Sep Std	S1305280015	0.25	1	NA	NA	1
Cnt Std	S1305290016	NA	NA	NA	NA	NA
Blk Prep	S1305160012	0.25	1	NA	NA	1
Sample	S13T004254	0.25	1	NA	NA	1
Prep Dup	S1305160013	0.25	1	NA	NA	1
Sample	S13T004282	0.25	1	NA	NA	1
Sample	S13T004309	0.25	1	NA	NA	1

A-6005-778 (REV 1)

AlphaVision v5.3

Alpha-Spectroscopy Analysis Report

ATL, Inc.
222-S Laboratory

Results ID: 36,513
11:30:06AM 05/30/2013

Sample

Sample: S1305290016 Type: Control
Spectrum #1 Analysis #1
QC Type: STD
Sample Collection Date: 05/29/2013 12:00:00AM
Comment: LCS Sample
Lab Preparation:05/29/2013 12:00:00AM

Sample Volume : 0.25 Sample Units: mL
Digest Dilution: 1.00
Aliquot: 1.00 Aliquot Fraction: 100.00%
Aliquot2: 1.00 Fraction: 100.00%
Lab Dilution: 1.00

Batch

Batch Name: 41432
Description:

Tracer

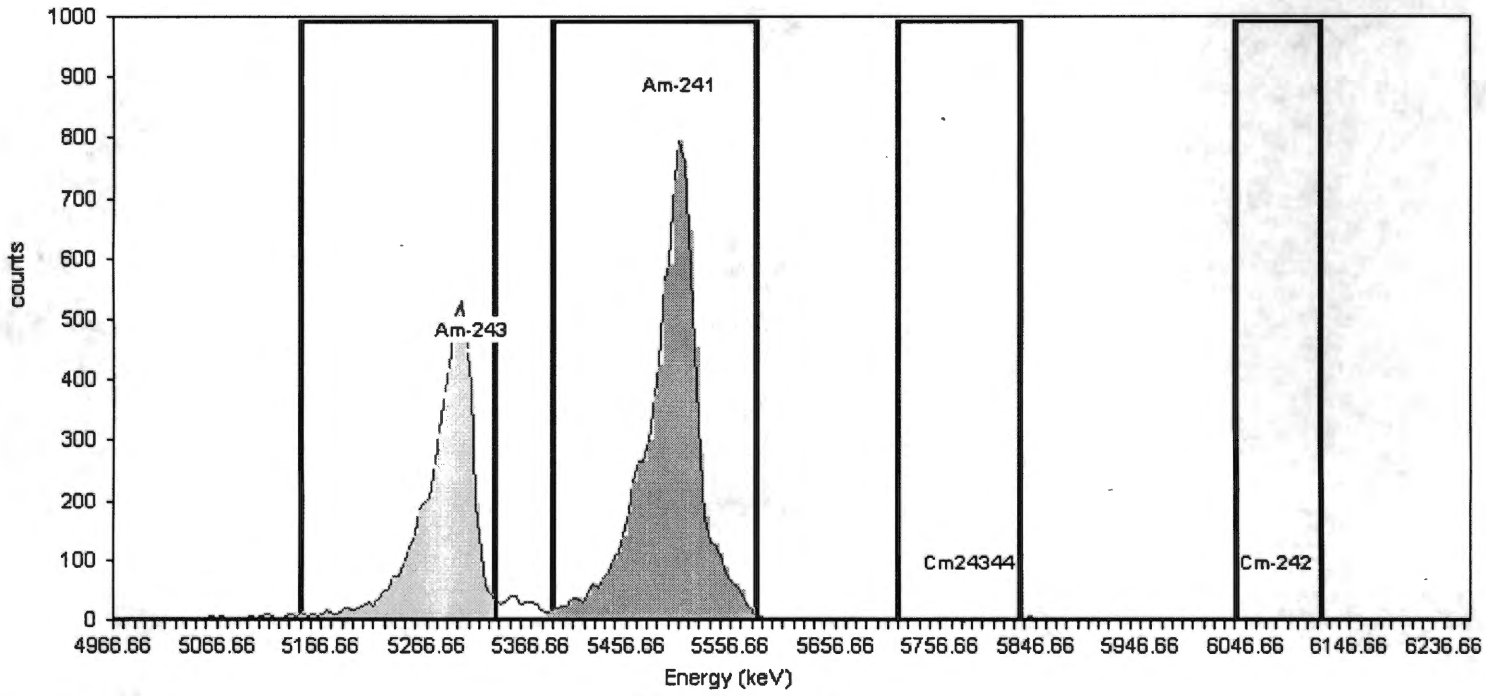
Tracer Name: 61B63
Tracer Activity: 183.00 DPM/mL x (Vol.)0.25 mL = 45.75 DPM
Tracer Ref. Date: 9/27/2012 12:00:59PM

Tracer Nuclide: Am-243
Tracer Recovery: 92.36%

Acquisition

Detector: A1 Inst chk# 82551 SN: 49-093 C1
Acquisition Start Date: 05/29/2013 11:06:40AM
Live Time: 480.00 min.
Real Time: 480.04 min.
Background Date: 05/24/2013 05:10:08PM
Bkgd Info: Sample: A1; Det: A1 Inst chk# 82551; Spectrum #1; May-24-2013 17:10

Energy Calibration: 2013.03.04 001
Efficiency Calibration:2013.03.04 001
Calibration Date: 03/04/2013 01:19:39PM
Energy Cal: Gain = 4.8706 keV / Ch
Offset = 3,052.51 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 25.22% +/- 0.32% TPU(2 sigma)



General Analysis

Analysis Method: Interactive ROI Analysis
Decay Correction:6/30/2010 12:00:00AM
MDA Constants: Kα = 1.64 , Kβ = 1.64

Nuclide Library: Am
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity uCi/mL	2.00Sig TPU uCi/mL	Count Uncert %	Critical Level uCi/mL	MDA uCi/mL
Cm-242	6080	6038	6121	0.0	100.0	0.00	1.3333	-1	-1.99E-006	4.59E-006	-114.56	3.27E-006	1.06E-005
Am-243	5308	5147	5332	31.6	99.7	5102.00	4.6667	5097	7.61E-005	1.10E-005	1.40	6.64E-008	1.76E-007
Am-241	5507	5386	5580	43.9	97.9	8477.00	1.0000	8476	1.40E-004	3.76E-005	1.09	3.14E-008	1.08E-007
Cm24344	5785	5717	5834	11.9	84.8	1.00	3.3333	-2	-4.96E-008	8.95E-008	-89.21	7.37E-008	2.05E-007

CR Analyst: H0061547 Separation Analyst: H0076677 CR Review: BS

AlphaVision v5.3 **Alpha-Spectroscopy Analysis Report**

ATL, Inc.
222-S Laboratory
Results ID: 36,512 11:25:26AM 05/30/2013

Sample

Sample: S1305160012 Type: Blank
Spectrum #1 Analysis #1
QC Type: BLK
Sample Collection Date: 05/16/2013 12:00:00AM
Comment: Blank
Lab Preparation:05/29/2013 12:00:00AM

Sample Weight : 0.25 Sample Units: g
Digest Dilution: 533.96
Aliquot: 1.00 Aliquot Fraction: 0.19%
Aliquot2: 1.00 Fraction: 100.00%
Lab Dilution: 1.00

Batch

Batch Name: 41432
Description:

Tracer

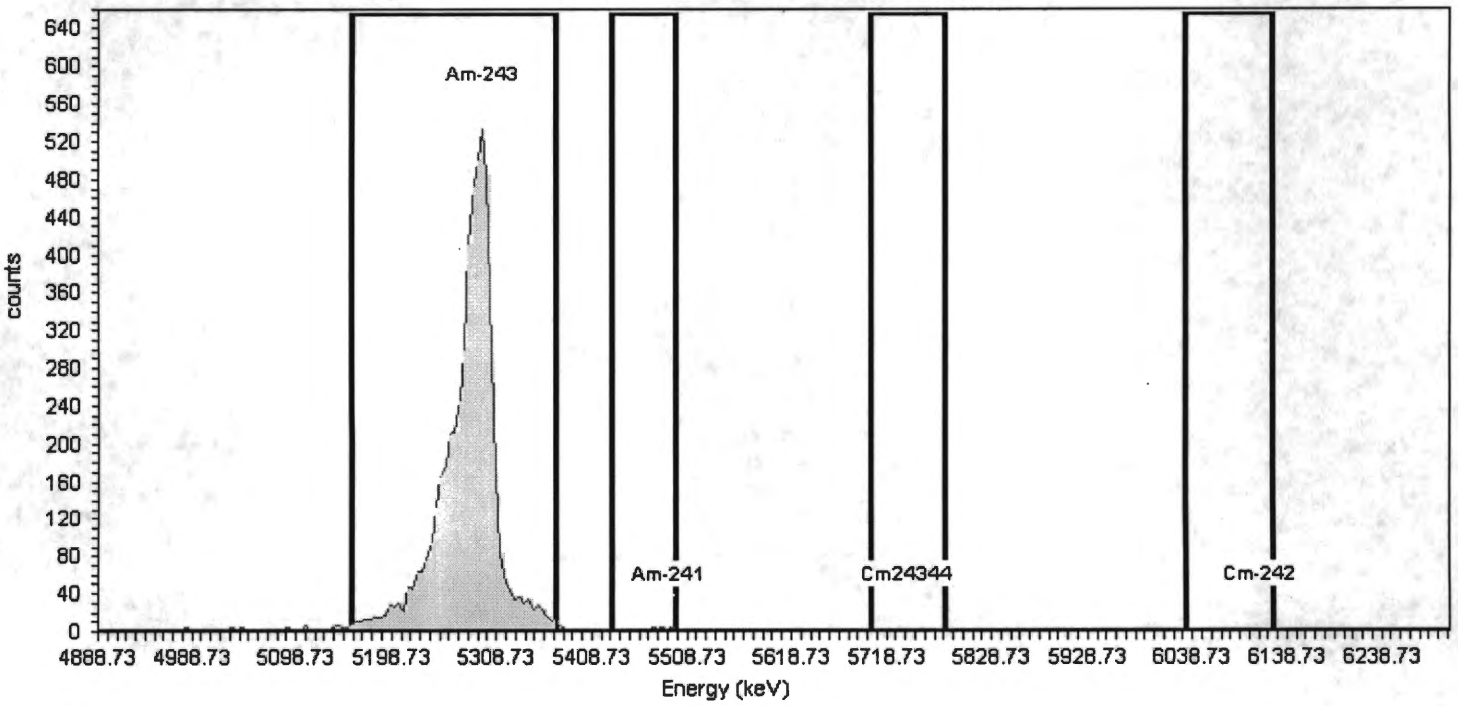
Tracer Name: 61B63
Tracer Activity: 183.00 DPM/mL x (Vol.)0.25 mL = 45.75 DPM
Tracer Ref. Date: 9/27/2012 12:00:59PM

Tracer Nuclide: Am-243
Tracer Recovery: 93.95%

Acquisition

Detector: A2 Inst chk# 82552 SN: 49-093 C2
Acquisition Start Date: 05/29/2013 11:06:32AM
Live Time: 480.00 min.
Real Time: 480.04 min.
Background Date: 05/24/2013 05:10:09PM
Bkgd Info: Sample: A2; Det: A2 Inst chk# 82552; Spectrum #1; May-24-2013 17:10

Energy Calibration: 2013.03.04 002
Efficiency Calibration:2013.03.04 002
Calibration Date: 03/04/2013 01:20:28PM
Energy Cal: Gain = 4.8706 keV / Ch
Offset = 3,052.51 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 25.60% +/- 0.32% TPU(2 sigma)



General Analysis

Analysis Method: Interactive ROI Analysis
Decay Correction:5/16/2013 12:00:00AM
MDA Constants: Kα = 1.64 , Kβ = 1.64

Nuclide Library: Am
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity uCi/g	2.00Sig TPU uCi/g	Count Uncert %	Critical Level uCi/g	MDA uCi/g
Am-241	5486	5429	5498	7.8	97.9	9.00	1.3333	8	6.53E-005	5.85E-005	41.93	3.50E-008	6.04E-005
Cm24344	5741	5702	5780	0.0	11.5	2.00	1.3333	1	4.85E-005	2.66E-004	273.86	2.99E-007	5.16E-004
Cm-242	6113	6033	6126	10.9	100.0	2.00	0.0000	2	1.76E-005	3.11E-005	86.60	0.00E+000	2.39E-005
Am-243	5293	5157	5371	40.9	99.7	5266.00	2.0000	5264	4.14E-002	7.27E-003	1.38	4.21E-008	6.76E-005

CR Analyst: H0061547 Separation Analyst: H0076677 CR Review: BS

AlphaVision v5.3 **Alpha-Spectroscopy Analysis Report**

ATL, Inc.
222-S Laboratory
Results ID: 36,514 11:32:23AM 05/30/2013

Sample

Sample: S13T004254 Type: Sample
Spectrum #1 Analysis #1
QC Type: SAM
Sample Collection Date: 05/08/2013 12:00:00AM
Comment:
Lab Preparation:05/29/2013 12:00:00AM

Sample Weight : 0.25 Sample Units: g
Digest Dilution: 533.96
Aliquot: 1.00 Aliquot Fraction: 0.19%
Aliquot2: 1.00 Fraction: 100.00%
Lab Dilution: 1.00

Batch

Batch Name: 41432
Description:

Tracer

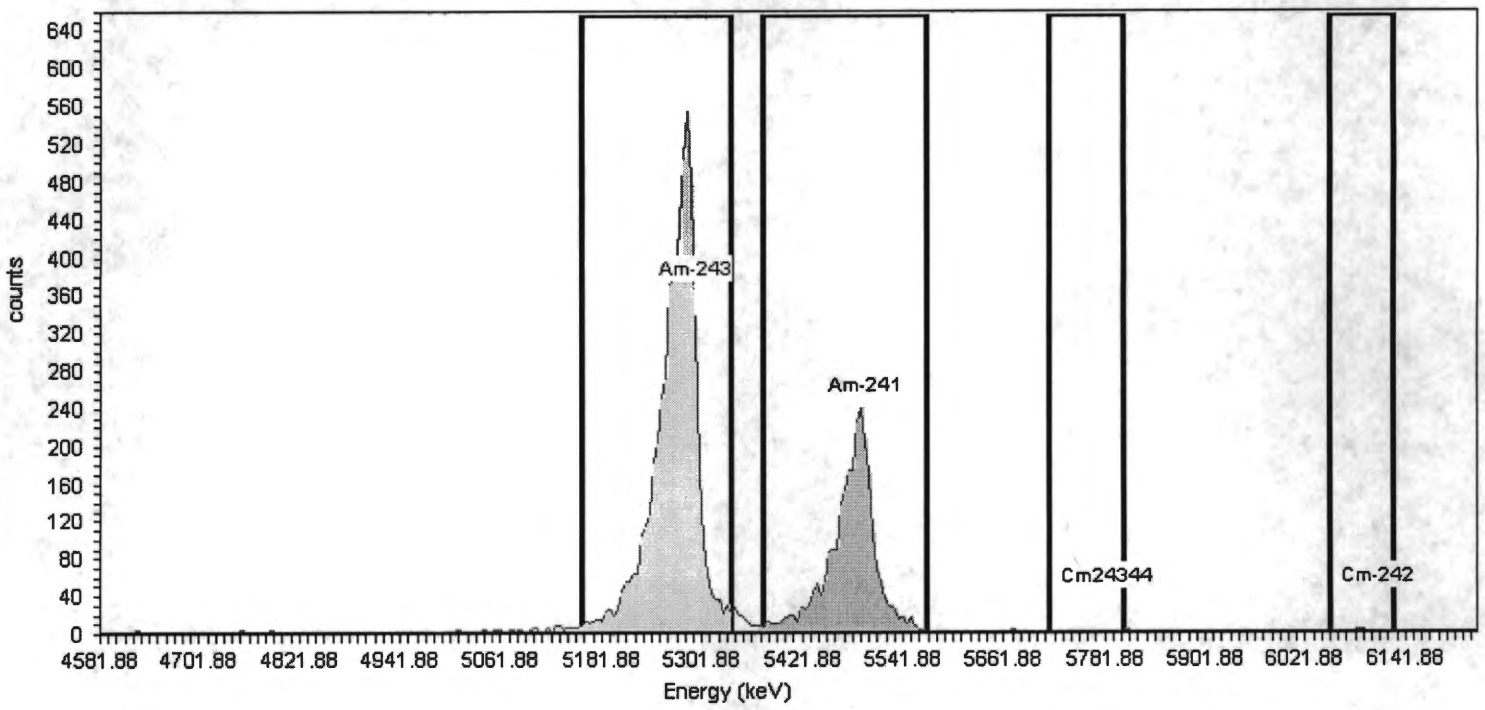
Tracer Name: 61B63
Tracer Activity: 183.00 DPM/mL x (Vol.)0.25 mL = 45.75 DPM
Tracer Ref. Date: 9/27/2012 12:00:59PM

Tracer Nuclide: Am-243
Tracer Recovery: 94.90%

Acquisition

Detector: A3 Inst chk# 82553 SN: 49-093 C3
Acquisition Start Date: 05/29/2013 11:06:34AM
Live Time: 480.00 min.
Real Time: 480.04 min.
Background Date: 05/24/2013 05:10:11PM
Bkgd Info: Sample: A3; Det: A3 Inst chk# 82553; Spectrum #1; May-24-2013 17:10

Energy Calibration: 2013.03.04 003
Efficiency Calibration:2013.03.04 003
Calibration Date: 03/04/2013 01:20:47PM
Energy Cal: Gain = 4.8706 keV / Ch
Offset = 3,052.51 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 24.95% +/- 0.31% TPU(2 sigma)



General Analysis

Analysis Method: Interactive ROI Analysis
Decay Correction:5/8/2013 12:00:00AM
MDA Constants: Kα = 1.64 , Kβ = 1.64

Nuclide Library: Am
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity uCi/g	2.00Sig TPU uCi/g	Count Uncert %	Critical Level uCi/g	MDA uCi/g
Am-243	5293	5157	5337	44.2	99.7	5183.00	1.6667	5181	4.18E-002	7.35E-003	1.39	3.90E-008	6.47E-005
Am-241	5498	5376	5571	45.8	97.9	2469.00	2.6667	2466	2.13E-002	6.85E-003	2.02	5.02E-008	7.71E-005
Cm24344	5785	5717	5804	11.9	84.8	3.00	1.6667	1	1.33E-005	4.34E-005	162.02	4.60E-008	7.62E-005
Cm-242	6113	6053	6131	40.5	100.0	8.00	0.0000	8	7.42E-005	6.05E-005	37.50	0.00E+000	2.51E-005

CR Analyst: H0061547 Separation Analyst: H0076677 CR Review: BS

AlphaVision v5.3 **Alpha-Spectroscopy Analysis Report**

ATL, Inc.
222-S Laboratory
Results ID: 36,517 11:37:38AM 05/30/2013

Sample

Sample: S1305160013 Type: Sample
Spectrum #1 Analysis #1
QC Type: DUP
Sample Collection Date: 05/08/2013 12:00:00AM
Comment: DUP
Lab Preparation:05/29/2013 12:00:00AM

Sample Weight : 0.25 Sample Units: g
Digest Dilution: 519.32
Aliquot: 1.00 Aliquot Fraction: 0.19%
Aliquot2: 1.00 Fraction: 100.00%
Lab Dilution: 1.00

Batch

Batch Name: 41432
Description:

Tracer

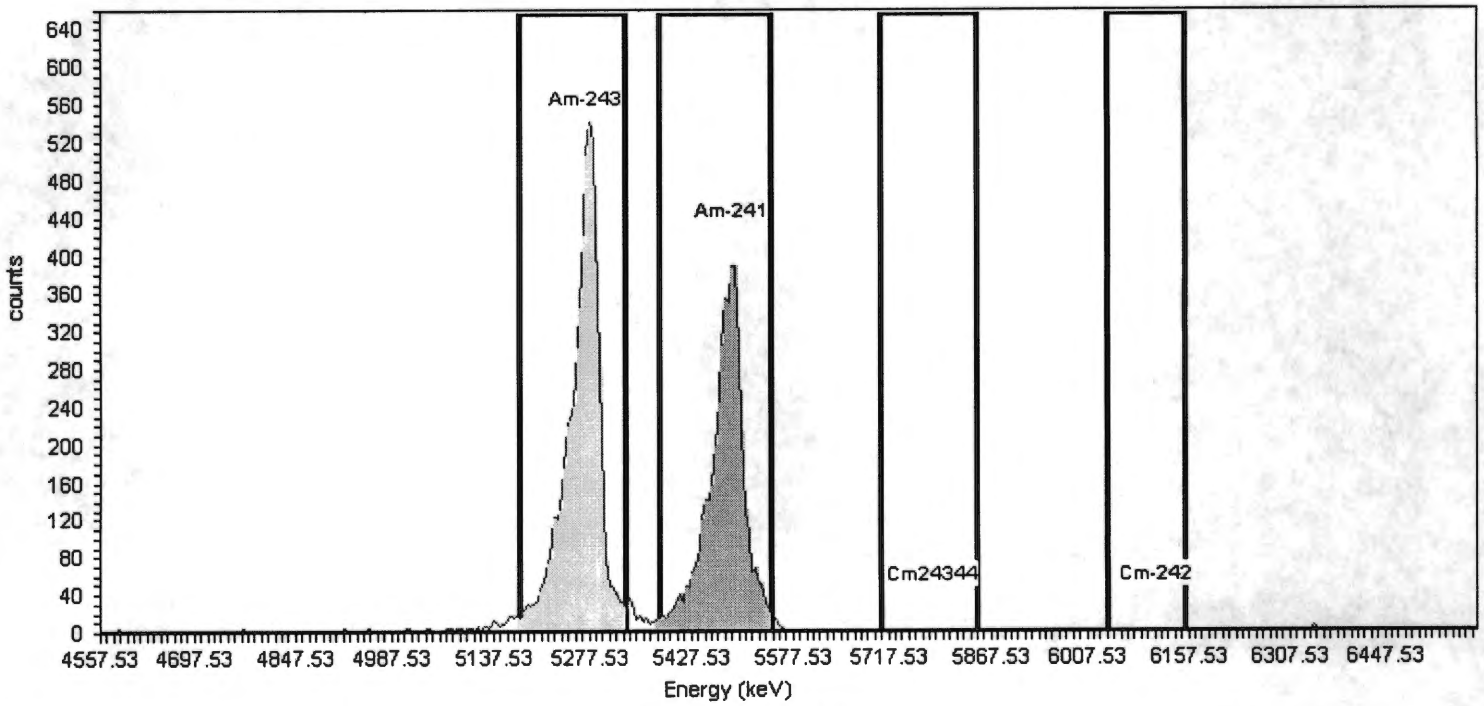
Tracer Name: 61B63
Tracer Activity: 183.00 DPM/mL x (Vol.)0.25 mL = 45.75 DPM
Tracer Ref. Date: 9/27/2012 12:00:59PM

Tracer Nuclide: Am-243
Tracer Recovery: 100.05%

Acquisition

Detector: A4 Inst chk# 82554 SN: 49-093 C4
Acquisition Start Date: 05/29/2013 11:06:36AM
Live Time: 480.00 min.
Real Time: 480.04 min.
Background Date: 05/24/2013 05:09:36PM
Bkgd Info: Sample: A4; Det: A4 Inst chk# 82554; Spectrum #1; May-24-2013 17:09

Energy Calibration: 2013.03.04 004
Efficiency Calibration:2013.03.04 004
Calibration Date: 03/04/2013 01:21:27PM
Energy Cal: Gain = 4.8706 keV / Ch
Offset = 3,052.51 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 24.70% +/- 0.31% TPU(2 sigma)



General Analysis

Analysis Method: Interactive ROI Analysis
Decay Correction:5/8/2013 12:00:00AM
MDA Constants: Kα = 1.64 , Kβ = 1.64

Nuclide Library: Am
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity uCi/g	2.00Sig TPU uCi/g	Count Uncert %	Critical Level uCi/g	MDA uCi/g
Am-243	5275	5176	5332	42.7	99.7	5408.00	0.3333	5408	4.28E-002	7.53E-003	1.36	1.67E-008	3.88E-005
Am-241	5486	5381	5546	46.2	97.9	4318.00	0.6667	4317	3.48E-002	1.11E-002	1.52	2.41E-008	4.68E-005
Cm24344	5785	5707	5848	40.4	84.8	9.00	7.0000	2	1.87E-005	7.48E-005	200.00	9.02E-008	1.19E-004
Cm-242	6113	6038	6155	11.4	100.0	4.00	1.3333	3	2.30E-005	4.06E-005	86.60	3.65E-008	6.13E-005

CR Analyst: H0061547 Separation Analyst: H0076677 CR Review: BS

AlphaVision v5.3 **Alpha-Spectroscopy Analysis Report**

ATL, Inc.
222-S Laboratory

Results ID: 36,518 11:39:33AM 05/30/2013

Sample

Sample: S13T004282 Type: Sample
Spectrum #1 Analysis #1
QC Type: SAM
Sample Collection Date: 05/07/2013 12:00:00AM
Comment:
Lab Preparation:05/29/2013 12:00:00AM

Sample Weight : 0.25 Sample Units: g
Digest Dilution: 558.78
Aliquot: 1.00 Aliquot Fraction: 0.18%
Aliquot2: 1.00 Fraction: 100.00%
Lab Dilution: 1.00

Batch

Batch Name: 41432
Description:

Tracer

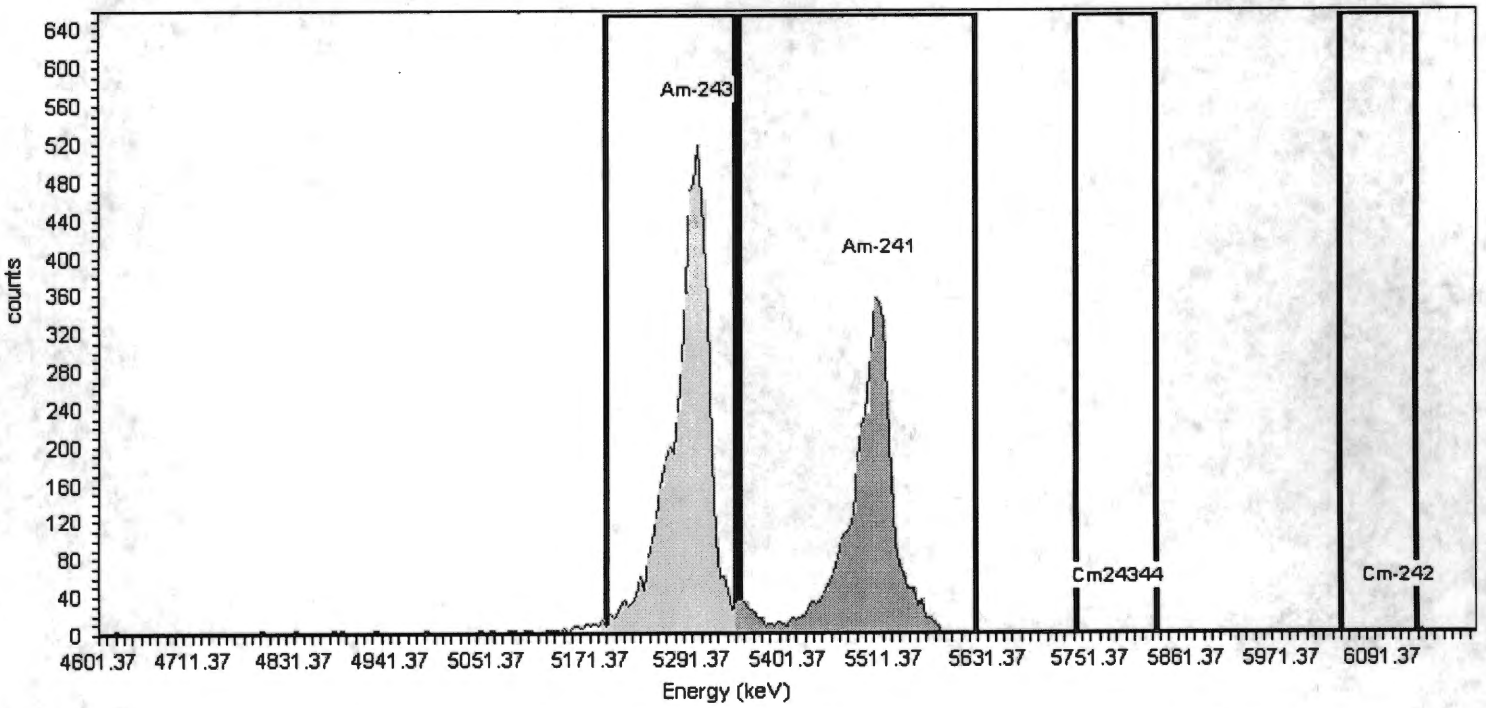
Tracer Name: 61B63
Tracer Activity: 183.00 DPM/mL x (Vol.)0.25 mL = 45.75 DPM
Tracer Ref. Date: 9/27/2012 12:00:59PM

Tracer Nuclide: Am-243
Tracer Recovery: 93.69%

Acquisition

Detector: A5 Inst chk# 37B30A SN: 49-093 C5
Acquisition Start Date: 05/29/2013 11:06:38AM
Live Time: 480.00 min.
Real Time: 480.04 min.
Background Date: 05/24/2013 05:09:36PM
Bkgd Info: Sample: A5; Det: A5 Inst chk# 37B30A; Spectrum #1; May-24-2013 17:09

Energy Calibration: 2013.03.04 005
Efficiency Calibration:2013.03.04 005
Calibration Date: 03/04/2013 01:21:44PM
Energy Cal: Gain = 4.8706 keV / Ch
Offset = 3,052.51 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 24.81% +/- 0.31% TPU(2 sigma)



General Analysis

Analysis Method: Interactive ROI Analysis
Decay Correction:5/7/2013 12:00:00AM
MDA Constants: Kα = 1.64 , Kβ = 1.64

Nuclide Library: Am
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity uCi/g	2.00Sig TPU uCi/g	Count Uncert %	Critical Level uCi/g	MDA uCi/g
Am-243	5298	5191	5342	34.9	98.3	5019.00	1.6667	5017	4.32E-002	7.59E-003	1.41	4.03E-008	6.99E-005
Am-241	5507	5348	5617	42.2	97.9	3838.71	3.6667	3835	3.54E-002	1.13E-002	1.62	6.00E-008	9.20E-005
Cm24344	5785	5736	5829	19.4	84.8	3.00	2.3333	1	7.11E-006	4.93E-005	346.41	5.54E-008	9.08E-005
Cm-242	6113	6043	6131	7.2	100.0	2.00	1.0000	1	9.93E-006	3.45E-005	173.21	3.38E-008	6.46E-005

CR Analyst: H0061547 Separation Analyst: H0076677 CR Review: BS

AlphaVision v5.3

Alpha-Spectroscopy Analysis Report

ATL, Inc.
222-S Laboratory

Results ID: 36,519 11:41:50AM 05/30/2013

Sample

Sample: S13T004309 Type: Sample
Spectrum #1 Analysis #1
QC Type: SAM
Sample Collection Date: 05/07/2013 12:00:00AM
Comment:
Lab Preparation:05/29/2013 12:00:00AM

Sample Weight : 0.25 Sample Units: g
Digest Dilution: 495.15
Aliquot: 1.00 Aliquot Fraction: 0.20%
Aliquot2: 1.00 Fraction: 100.00%
Lab Dilution: 1.00

Batch

Batch Name: 41432
Description:

Tracer

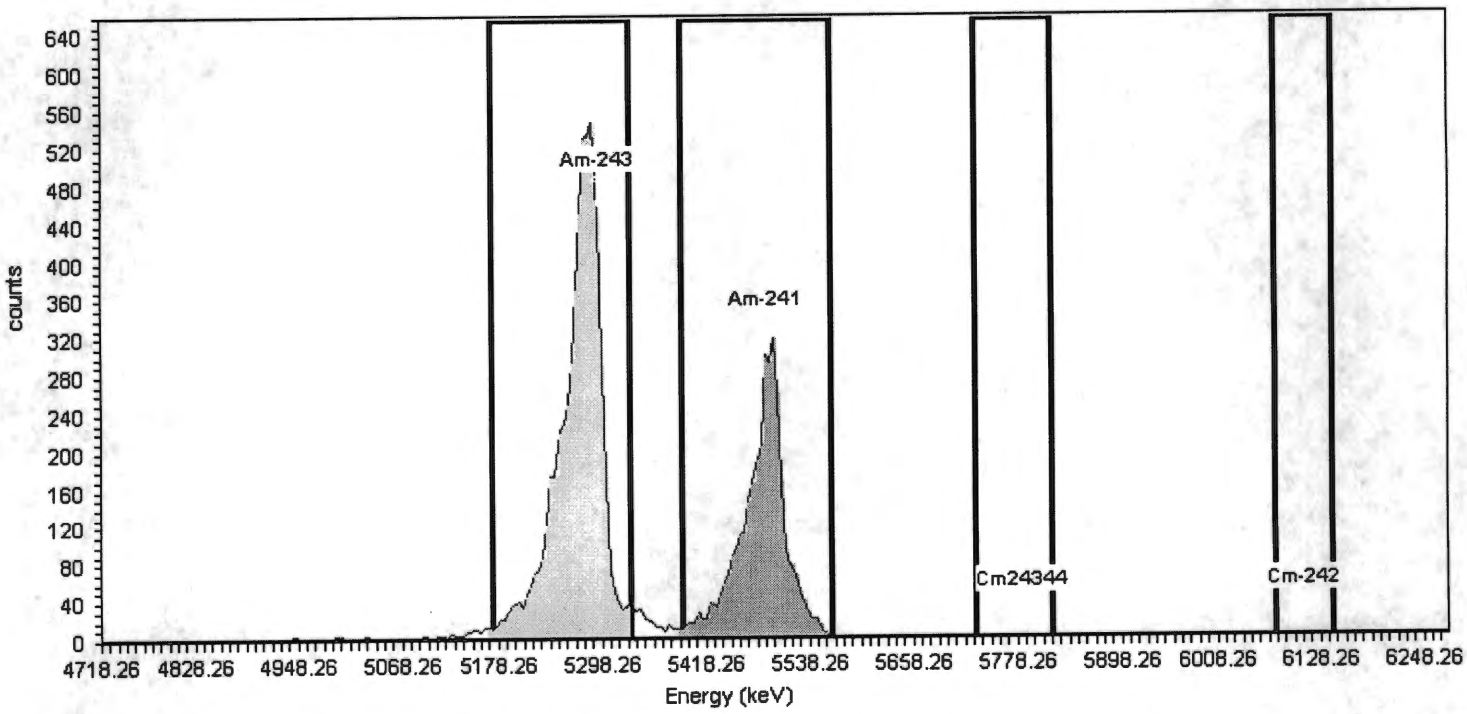
Tracer Name: 61B63
Tracer Activity: 183.00 DPM/mL x (Vol.)0.25 mL = 45.75 DPM
Tracer Ref. Date: 9/27/2012 12:00:59PM

Tracer Nuclide: Am-243
Tracer Recovery: 102.97%

Acquisition

Detector: A6 Inst chk# 37B30B SN: 49-093 C6
Acquisition Start Date: 05/29/2013 11:06:39AM
Live Time: 480.00 min.
Real Time: 480.04 min.
Background Date: 05/24/2013 05:09:37PM
Bkgd Info: Sample: A6; Det: A6 Inst chk# 37B30B; Spectrum #1; May-24-2013 17:09

Energy Calibration: 2013.03.04 006
Efficiency Calibration:2013.03.04 006
Calibration Date: 03/04/2013 01:22:18PM
Energy Cal: Gain = 4.8706 keV / Ch
Offset = 3,052.51 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 24.79% +/- 0.31% TPU(2 sigma)



General Analysis

Analysis Method: Interactive ROI Analysis
Decay Correction:5/7/2013 12:00:00AM
MDA Constants: Kα = 1.64 , Kβ = 1.64

Nuclide Library: Am
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity uCi/g	2.00Sig TPU uCi/g	Count Uncert %	Critical Level uCi/g	MDA uCi/g
Cm-242	6113	6077	6145	21.9	74.1	5.00	0.3333	5	5.05E-005	5.25E-005	49.49	2.39E-008	5.30E-005
Am-243	5293	5171	5332	42.5	99.7	5588.00	0.6667	5587	4.20E-002	7.39E-003	1.34	2.29E-008	4.24E-005
Am-241	5486	5390	5566	43.4	97.9	3207.00	1.6667	3205	2.38E-002	7.64E-003	1.77	3.68E-008	5.66E-005
Cm24344	5785	5731	5819	6.5	84.8	1.00	2.3333	-1	-1.15E-005	3.16E-005	-136.93	5.04E-008	7.32E-005

CR Analyst: H0061547 Separation Analyst: H0076677 CR Review: BS

5/16/2013 4:13:47PM
CompleteBatch Version 2.7.32
batchreports 2.7.32

LABCORE Completed Batch Report for Batch# 00041255

Analyst: Hurson, Aleta **Book#:** NA

Instrument: LE-BAL-091

Method: FUSION - ZR, LA-549-141 Rev/Mod M-1-A

Specification: C109 CLO

Prep Batch: N/A

Batch Comment:

C109 CLO for Fusion. gll

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
1	BLNK-PREP	S1305160012			Z		Dose Rate(1)	SOLID		<0.5				mRem/hr			
1	BLNK-PREP	S1305160012			Z		Digest Factor(1)	SOLID		0.001873				g / mL			
2	SAMPLE	S13T004254			Z		Dose Rate(1)	SOLID		200				mRem/hr			
2	SAMPLE	S13T004254			Z		Digest Factor(1)	SOLID		0.001873				g / mL			
3	DUP	S1305160013	S13T004254		Z		Dose Rate(1)	SOLID		200				mRem/hr			
3	DUP	S1305160013	S13T004254		Z		Digest Factor(1)	SOLID		0.001926				g / mL			
4	SAMPLE	S13T004282			Z		Dose Rate(1)	SOLID		180				mRem/hr			
4	SAMPLE	S13T004282			Z		Digest Factor(1)	SOLID		0.001790				g / mL			
5	SAMPLE	S13T004309			Z		Dose Rate(1)	SOLID		180				mRem/hr			
5	SAMPLE	S13T004309			Z		Digest Factor(1)	SOLID		0.002020				g / mL			

COPY

Comments Section:

Data Flagger Status:
Flagger Not Run

Final Page for Batch# 00041255

[signature] 16 May 13
Reviewer Signature Date

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041255

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Method	Customer Id	Specification
1	S1305160012	BLNK-PREP			FUSION - ZR		
2	S13T004254	SAMPLE		20130402	FUSION - ZR	9C-13-Comp A	C109 CLO
3	S1305160013	DUP	S13T004254		FUSION - ZR		
4	S13T004282	SAMPLE		20130402	FUSION - ZR	9C-13-Comp B	C109 CLO
5	S13T004309	SAMPLE		20130402	FUSION - ZR	9C-13-Comp C	C109 CLO

COPY

LABCORE Data Entry Template for Batch# 00041255

Analyst: H0076677 **Standard ID / Book#:** NA

Instrument: MA

Method: FUSION - ZR, LA-549-141 Rev/Mod M-1-A

Prep Batch: N/A

Batch Comment:

C109 CLO for Fusion. gll

CACN:3A.26

S	Type	Sample	R	A	Matrix	Group#	Project
1	BLNK-PREP	S1305160012		Z	SOLID		
2	SAMPLE	S13T004254		Z	SOLID	20130402	C109 CLO
3	DUP	S1305160013		Z	SOLID		
4	SAMPLE	S13T004282		Z	SOLID	20130402	C109 CLO
5	SAMPLE	S13T004309		Z	SOLID	20130402	C109 CLO

Final Page for Batch# 00041255

5/16/13 ACH

Alicia Hansen 5/16/13
Analyst Signature **Date**

Alicia Hansen 5/16/13
5/16/13
Data Entry Signature **Date**

COPY

Data Entry Comments:

S = Batch Slot Number, R = Retest Number, A = Aliquot Code.

ATL	DIGESTION BATCH LIST DATA COLLECTION FORM

○ LA-544-101 Rev _____ ○ LA-544-113 Rev _____ ○ _____ (Other) Rev _____

○ LA-549-133 Rev _____ ◉ LA-549-141 Rev M-1-A

Batch #: 41255 Analyst: AKH Date: 5/16/2013

(Pipette #); Pipette ID; Volume Range or Fixed Volume; Check box if pipette passes visual verification:

(1) N/A (Range/Vol: N/A) ☐

(2) N/A (Range/Vol: N/A) ☐

(3) N/A (Range/Vol: N/A) ☐

Balance ID; Date of balance verification:

LE-BAL-091 (Verification Date: 5/16/2013)

○ Spike / ○ Carrier / ○ Tracer # N/A Vol N/A Pip # N/A

○ Spike / ○ Carrier / ○ Tracer # N/A Vol N/A Pip # N/A

○ Spike / ○ Carrier / ○ Tracer # N/A Vol N/A Pip # N/A

Special Instructions:

Use ZR Crucibles. gll

COPY

Sample Type	Digest Sample #	Parent Sample #	Sample Weight (g)	Final Volume (mL)	Dose Rate (mRem/hr)
Blank Prep	S1305160012	N/A	0.4682	250	<0.5
Sample	S13T004254	S13T004246	0.4682	250	200
Duplicate	S1305160013	S13T004246	0.4814	250	200
Sample	S13T004282	S13T004274	0.4474	250	180
Sample	S13T004309	S13T004301	0.5049	250	180

Comments:

C109 CLO Fusion-ZR. gll Digest Appearance: clear liquid. colorless. no solids.

A-6005-290 (REV 2)

Data Review Check List

Procedure LA-348-104 **C-14** **--------- Solid**

Project: C-109 CLO

Group(s) 20130402

	41431				
	Level 1			Level 2	Comments and
Review Item	Yes	No	N/A		Samples Affected
Batch Items					
1. Was an LCS and blank run the batch?	x			√	
2. Was a duplicate and spike run with the batch?	x			√	
3. Was the book # of the standard (and spike) on the traveler?	x			√	
4. Was the batch traveler completed (sample #, dilution, aliquot size)?	x			√	
5. Were any line outs initialed and dated?	x			√	
6. Was balance check completed on the day of use (if used)?			x	√	
Result Items					
7. Was sample, traveler and counting data correct on ACE form?	x			√	
8. If No, was ACE form corrected?			x	√	
9. Did results etc. correctly up-load to LABCORE (OMNILims or MULTILims)?	x			√	
10. If No, was LABCORE corrected?			x	√	
11. Are result units correct?	x			√	
12. If No, were units corrected?			x	√	
13. Was data flagged?	x			√	
14. Are all flags present and correct?	x			√	
15. Are LCS results within limits (Lab's or customer's)?	x			√	
16. Are Spike results within limits (Lab's or customer's)?	x			√	
17. Is blank <MDC, or <5% isotope concentration, or <5% decision level?	x			√	
18. Are duplicate RPDs <20% (or RSD) within customer limits?			x	√	
19. Are the correct procedure number and Rev/Mod on the report?	x			√	
Procedure Speciffic Items					
20. Was the correct LSC program used for counting?	x			√	
21. Were the customer required detection or quantification limits met?	x			√	

1st Level Reviewer: [signature] **Date:** 5-30-2013

2nd Level Reviewer: [signature] **Date:** 5/30/13

Data Review Checklist

CALIBRATION OF LIQUID SCINTILLATION COUNTERS

INSTRUMENT # LSC 6500

BATCH # 41431

PROCEDURES LA-508-121 LQ-150-115

Review Items	--- Level 1 --- Yes	No	N/A	Comments & Samples Affected
Efficiency Calibration				
1. Instrument calibration stds ^{3}H & ^{14}C run prior to quench curve calibration	X			
2. Unquenched bkg vial run before quench curve calibration	X			
3. Calibration performed per procedure LA-508-121	X			
4. Quench curve calibration had > 7 data points	X			
5. Quench range of calibration matches expected range of samples	X			
6. Quench calibration performed in mode where bkg is subtracted from each analysis	X			
7. Calibration had a second, independent check.	X			
8. Any non-conformances are documented in maintnance notebook	X			
9. Calibration reports are pasted and signed in maintenance notebook	X			
Calibration Verification				
1. Instrument Control Std within limits before and after batch counted	X			
2. Bkg check within limits before and after batch counted	X			

Reviewer: [signature] Date: 5/30/2013

LABCORE Completed Batch Report for Batch# 00041431

Analyst: Massie, Valerie **Book#:** 38B63

Instrument: LSC3 LS6500 B-1A

Method: CARBON-14, LA-508-121 Rev/Mod G-0

Specification: C109 CLO

Prep Batch: 00041256

Batch Comment:

C 14 for C109 CLO vlm

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
Sample Sequence 1																	
1	STD	S1305290014		0 0			Carbon-14	SOLID	.0011497236	1.0283E-03		0.732	1.56E-06	uCi/mL	89.439	% Recovery	
Sample Sequence 2																	
2	BLNK-PREP	S1305160015		0 0	W		Carbon-14	SOLID		<5.9100E-05			5.91E-05	uCi/g			
Sample Sequence 3																	
3	SAMPLE	S13T004253		0 0	W		Carbon-14	SOLID	N/A	<5.9000E-05			5.90E-05	uCi/g			U
Sample Sequence 4																	
4	DUP	S1305160016	S13T004253	0 0	W		Carbon-14	SOLID	<5.9000E-05	<6.1800E-05			6.18E-05	uCi/g			
Sample Sequence 5																	
5	SPK	S1305290015	S13T004253	0 0			Carbon-14	SOLID	.00114972359670117	1.0303E-03		0.72	1.54E-06	uCi/g	89.609	% Recovery	
Sample Sequence 6																	
6	SAMPLE	S13T004281		0 0	W		Carbon-14	SOLID	N/A	<5.6900E-05			5.69E-05	uCi/g			U
Sample Sequence 7																	
7	SAMPLE	S13T004308		0 0	W		Carbon-14	SOLID	N/A	<5.5500E-05			5.55E-05	uCi/g			U

Comments Section:

Data Flagger Status:
Flagging Completed

Final Page for Batch# 00041431

Reviewer Signature 30 May 13 Date

PC: Julie Adkins 7/9/13

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041431

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Method	Customer Id	Specification
1	S1305290014	STD			CARBON-14		
2	S1305160015	BLNK-PREP			CARBON-14		
3	S13T004253	SAMPLE		20130402	CARBON-14	9C-13-Comp A	C109 CLO
4	S1305160016	DUP	S13T004253		CARBON-14		
5	S1305290015	SPK	S13T004253		CARBON-14		
6	S13T004281	SAMPLE		20130402	CARBON-14	9C-13-Comp B	C109 CLO
7	S13T004308	SAMPLE		20130402	CARBON-14	9C-13-Comp C	C109 CLO

LABCORE Data Entry Template for Batch# 00041431

Analyst: h00358814 **Standard ID / Book#:** See Bench Sheet

Instrument: WC51586 LSC 03

Method: CARBON-14, LA-508-121 Rev/Mod 6-0

Prep Batch: 00041256

Batch Comment:

C 14 for C109 CLO vlm

CACN:3A.26

S	Type	Sample	R	A	Matrix	Group#	Project
1	STD	S1305290014	0		SOLID		
	Analytes Requested:	Carbon-14					
2	BLNK-PREP	S1305160015	0	W	SOLID		
	Analytes Requested:	Carbon-14					
3	SAMPLE	S13T004253	0	W	SOLID	20130402	C109 CLO
	Analytes Requested:	Carbon-14					
4	DUP	S1305160016	0	W	SOLID		
	Analytes Requested:	Carbon-14					
5	SPK	S1305290015	0		SOLID		
	Analytes Requested:	Carbon-14					
6	SAMPLE	S13T004281	0	W	SOLID	20130402	C109 CLO
	Analytes Requested:	Carbon-14					
7	SAMPLE	S13T004308	0	W	SOLID	20130402	C109 CLO
	Analytes Requested:	Carbon-14					

Final Page for Batch# 00041431

Valerie L Massie 5-29-13

Analyst Signature **Date**

[signature] 5-29-2013

Data Entry Signature **Date**

[signature] 5.30.13

Data Entry Comments:

S = Batch Slot Number, R = Retest Number, A = Aliquot Code.

LABCORE Data Entry Template for Batch# 00041329

Analyst: H0102422 **Standard ID / Book#:** 38B63

Instrument: ~~WC51586 LSC-03~~ N/A VM5-29-13

Method: CARBON-14 SEPARATION, LA-348-104 Rev/Mod K-0

Prep Batch: 00041256

Batch Comment:

C-14 for C109 CLO. Spike is associated with S13T004253. AKH

CACN:3A.26

S	Type	Sample	R	A	Matrix	Group#	Project
1	STD	S1305200092	0		SOLID		
	Analytes Requested:	RadChem Separation					
2	BLNK-PREP	S1305160015	0	W	SOLID		
	Analytes Requested:	RadChem Separation					
3	SAMPLE	S13T004253	0	W	SOLID	20130402	C109 CLO
	Analytes Requested:	RadChem Separation					
4	DUP	S1305160016	0	W	SOLID		
	Analytes Requested:	RadChem Separation					
5	SPK	S1305200093	0		SOLID		
	Analytes Requested:	RadChem Separation					
6	SAMPLE	S13T004281	0	W	SOLID	20130402	C109 CLO
	Analytes Requested:	RadChem Separation					
7	SAMPLE	S13T004308	0	W	SOLID	20130402	C109 CLO
	Analytes Requested:	RadChem Separation					

Final Page for Batch# 00041329

Martha O. Fah 5-~~28~~ 29-13
Analyst Signature MO-F 5-29-13 **Date**

Martha Fah 5-29-13
Data Entry Signature **Date**

Data Entry Comments:

S = Batch Slot Number, R = Retest Number, A = Aliquot Code.

ATL	C-14 BATCH LIST DATA COLLECTION FORM	LA-348-104 Rev K-0

Separation Batch #: 41329 Analyst Initials: MOF MOF Analysis Date/Time: 5-29-13 / 09:17

(Pipette #); Pipette ID; Volume Range or Fixed Volume; Check box if pipette passes visual verification:

(1) 394781A (Range/Vol: 100-1000 ul) ☒ (3) NA (Range/Vol: NA) ☐

(2) 4710792 (Range/Vol: 500-5000 ul) ☒ (4) NA (Range/Vol: NA) ☐

Balance ID: NA Verification Date: NA

Matrix: Solid Prep Batch #: 41256 HASQARD Upload ☐

Standard Book #: 38B63

Spike Book #: 38b63 /Volume: 1.0 ml (Pip #: 1)

Counting Room Information

☒ LA-508-121 Rev G-0 ○ LA-508-122 Rev

Counting Batch #: 41431

Instrument ID: WC51586 LSC-03

Inst. Check Std ID: Perkin Elmer FX

Special Instructions/Comments:

Dup/Spk associated with S13T004253. MOF
C109 CLO, Gp# 20130402.

							Counting Room Info
Sample Type	Sample ID	Sample Size (g or mL)	Pip #	Dilution Information	Pip #	DF	LSC Position #
Sep Std	S1305200092	1.0	1	NA	NA	1	N/A
Cnt Std	S1305290014	NA	NA	NA	NA	NA	3
Blk Prep	S1305160015	5.0	2	NA	NA	1	4
Sample	S13T004253	5.0	2	NA	NA	1	5
Prep Dup	S1305160016	5.0	2	NA	NA	1	6
Sep Spk	S1305200093	5.0	2	NA	NA	1	N/A
Cnt Spk	S1305290015	NA	NA	NA	NA	NA	7
Sample	S13T004281	5.0	2	NA	NA	1	8
Sample	S13T004308	5.0	2	NA	NA	1	9

PAGE: 1

ID = C-14 29 MAY 2013 09:47
USER: 2 COMMENT:LS 6500 WC51586
PRESET TIME : 50.00
DATA CALC : SL DPM H# :YES SAMPLE REPEATS: 1 PRINTER : STD
COUNT BLANK : YES IC# : NO REPLICATES : 1 RS232 : STD
TWO PHASE : YES AQC : NO CYCLE REPEATS : 1 DISK : OFF
SCINTILLATOR: LIQUID LUMEX:YES LOW SAMPLE REJ: 0
LOW LEVEL : NO HALF LIFE CORRECTION DATE: none

ISOTOPE 1: C-14 %ERROR: 0.00 FACTOR: 1.000000 BKG. SUB: 0

BACKGROUND QUENCH CURVE: Off COLOR QUENCH CORRECTION: Off

Quench Limits Low:-7.596 High:301.24

SAM NO	POS	TIME MIN	H#	C-14 CPM	C-14 %ERROR	C-14 DPM	C-14 EFF-1	LUMEX %	ELAPSED TIME	2P
B1	**-1	50.00	308.3	48.70	19.63	74.24	65.60	94.88	64.41	
		WARNING: QUENCH VALUE IS OUTSIDE QUENCH LIMIT								
		Blank Average DPM for C-14 : 74.24 COEF. OF VAR: 0.000								
1	**-3	50.00	303.1	1574.90	0.72	2282.83	66.82	1.53	117.85	
		WARNING: QUENCH VALUE IS OUTSIDE QUENCH LIMIT								
2	**-4	50.00	304.4	42.26	5.07	-10.70	66.51	22.84	170.83	
		WARNING: QUENCH VALUE IS OUTSIDE QUENCH LIMIT								
3	**-5	50.00	303.1	43.56	4.80	-9.04	66.81	17.66	223.60	2P
		WARNING: QUENCH VALUE IS OUTSIDE QUENCH LIMIT								
4	**-6	50.00	299.7	43.22	4.75	-10.30	67.60	15.35	276.27	
5	**-7	50.00	294.4	1624.38	0.70	2287.16	68.79	0.52	328.88	
6	**-8	50.00	304.4	46.78	4.43	-3.91	66.51	10.98	381.36	
		WARNING: QUENCH VALUE IS OUTSIDE QUENCH LIMIT								
7	**-9	50.00	305.9	44.14	4.53	-7.53	66.17	10.01	433.77	
		WARNING: QUENCH VALUE IS OUTSIDE QUENCH LIMIT								

Carbon-14

		STD
Type	Disintegrations per minute from Counter	2282.83
STD	Sample Volume in mL	1.00
Work List	Dilution Factor	1.00
00041431	Digest Dilution Factor	1.000E+00
Test Code	Sample Count Rate in CPM	1574.90
CARBON-14	Instrument Fractional Efficiency	0.6682
Matrix	Count Time in Minutes	50
SOLID	Background Count Rate in CPM	48.70
Rerun	Background Efficiency	0.656
0	Relative Percent Counting Uncertainty	0.73
Sample Prep	Detection Limit	7.03
	Critical Level Lc (CPM)	2.32
Sample #	Rmax Level (CPM)	1534.70
S1305290014	Carbon-14 Concentration in uCi/g	1.03E-03
Instrument Code	Lc, Rmax, or Rs, (Sample Rate) as appropriate (CPM)	1525.29
WC51586	Standard Book No.	38B63
Data Entry By	Standard Value in uCi/g	1.1497E-03
GY		
Analyst	**Procedure using this form*:**	**LA-508-121 G-0**
MOF		
Date Completed		
5/29/2013		
Analysis Date		
5/29/2013	* The specific formulae used in the calculations for this spreadsheet can be found	
Analysis Time	in the applicable procedure, as identified on the worklist.	
9:17 AM		

Specification			
C109 CLO	**Carbon-14 Concentration in uCi/g**	=	1.03E-03
Units	**% Recovery**	=	89.44%
uCi/g	**Detection Limit in uCi/g**	=	1.56E-06
	Relative Percent Counting Uncertainty	=	0.73

Carbon-14 Std Template 2.0

Printed at: 8:21:52 AM 5/30/2013 Version: 2.01

Workbook Page BLANK 2

Carbon-14

			BLNK-PREP
Type	Disintegrations per minute from Counter		-10.70
BLNK-PREP	Sample Volume in mL		5.00
Work List	Dilution Factor		1.00
00041431	Digest Dilution Factor		5.308E-03
Test Code	Sample Count Rate in CPM		42.26
CARBON-14	Instrument Fractional Efficiency		0.6651
Matrix	Count Time in Minutes		50
SOLID	Background Count Rate in CPM		48.70
Rerun	Background Efficiency		0.656
0	Relative Percent Counting Uncertainty		41.05
Sample Prep	Detection Limit		7.04
S1305160015-001	Critical Level Lc (CPM)		2.32
Sample #	Rmax Level (CPM)		-4.88
S1305160015	Carbon-14 Concentration in uCi/g	<	5.91E-05
Instrument Code	Lc, Rmax, or Rs, (Sample Rate) as appropriate (CPM)		2.32
WC51586			
Data Entry By			
GY			
Analyst			
MOF			
Date Completed			
5/29/2013			
Analysis Date			
5/29/2013			
Analysis Time			
9:17 AM			

Procedure using this Form*: **LA-508-121 G-0**

* The specific formulae used in the calculations for this spreadsheet can be found in the applicable procedure, as identified on the worklist.

Specification			
C109 CLO	**HAZQUARD Concentration**	=	-1.82E-04
	Carbon-14 Concentration in uCi/g	<	5.91E-05
Units	**Detection Limit in uCi/g**		5.91E-05
uCi/g	**Relative Percent Counting Uncertainty**		41.05

Carbon-14 Sample Template 2.0

Printed at: 8:22:02 AM 5/30/2013 Version: 2.01

Workbook Page SAMPLE 3

Carbon-14

			SAMPLE
Type	Disintegrations per minute from Counter		-9.04
SAMPLE	Sample Volume in mL		5.00
Work List	Dilution Factor		1.00
00041431	Digest Dilution Factor		5.308E-03
Test Code	Sample Count Rate in CPM		43.56
CARBON-14	Instrument Fractional Efficiency		0.6681
Matrix	Count Time in Minutes		50
SOLID	Background Count Rate in CPM		48.70
Rerun	Background Efficiency		0.656
0	Relative Percent Counting Uncertainty		51.80
Sample Prep	Detection Limit		7.03
S13T004253-001	Critical Level Lc (CPM)		2.32
Sample #	Rmax Level (CPM)		-3.79
S13T004253	Carbon-14 Concentration in uCi/g	<	5.90E-05
Instrument Code	Lc, Rmax, or Rs, (Sample Rate) as appropriate (CPM)		2.32
WC51586			
Data Entry By			
GY			
Analyst			
MOF			
Date Completed			
5/29/2013			
Analysis Date			
5/29/2013			
Analysis Time			
9:17 AM			

Procedure using this Form*: **LA-508-121 G-0**

* The specific formulae used in the calculations for this spreadsheet can be found in the applicable procedure, as identified on the worklist.

Specification			
C109 CLO	**HAZQUARD Concentration**	=	-1.53E-04
	Carbon-14 Concentration in uCi/g	<	5.90E-05
Units	**Detection Limit in uCi/g**		5.90E-05
uCi/g	**Relative Percent Counting Uncertainty**		51.80

Carbon-14 Sample Template 2.0

Printed at: 8:22:08 AM 5/30/2013 Version: 2.01

Workbook Page DUP 4

Carbon-14

			DUP	
Type	Disintegrations per minute from Counter		-10.30	Associated Sample Number
DUP	Sample Volume in mL		5.00	S13T004253
Work List	Dilution Factor		1.00	
00041431	Digest Dilution Factor		5.034E-03	
Test Code	Sample Count Rate in CPM		43.22	
CARBON-14	Instrument Fractional Efficiency		0.6760	
Matrix	Count Time in Minutes		50	
SOLID	Background Count Rate in CPM		48.70	
Rerun	Background Efficiency		0.656	
0	Relative Percent Counting Uncertainty		48.49	
Sample Prep	Detection Limit		6.99	
S1305160016-001	Critical Level Lc (CPM)		2.33	
Sample #	Rmax Level (CPM)		-4.71	
S1305160016	Carbon-14 Concentration in uCi/g	<	6.18E-05	
Instrument Code	Lc, Rmax, or Rs, (Sample Rate) as appropriate (CPM)		2.33	
WC51586				
Data Entry By				
GY				
Analyst				
MOF				
Date Completed				
5/29/2013				
Analysis Date				
5/29/2013				
Analysis Time				
9:17 AM				

Procedure using this Form*: **LA-508-121 G-0**

* The specific formulae used in the calculations for this spreadsheet can be found in the applicable procedure, as identified on the worklist.

Specification			
C109 CLO	**HAZQUARD Concentration**	=	-1.84E-04
	Carbon-14 Concentration in uCi/g	<	6.18E-05
Units	**Detection Limit in uCi/g**		6.18E-05
uCi/g	**Relative Percent Counting Uncertainty**		48.49

Carbon-14 Sample Template 2.0

Printed at: 8:22:12 AM 5/30/2013 Version: 2.01

Carbon-14

		SPK	
Type	DPM of Sample + Spike from Counter	2287.16	Associated Sample Number
SPK	Volume of Sample in Sample + Spike Vial in mL	5.00	S13T004253
Work List	Background in CPM	48.70	
00041431	Count Time in Minutes	50	
Test Code	Background Efficiency	0.656	
CARBON-14	Volume of Spike in mL	1.00	
Matrix	Sample Dilution Factor	1.00	
SOLID	Spike Dilution Factor	1.00	
Rerun	Sample Digest Factor	1.000E+00	
0	Spike Book No.	38B63	
Sample Prep	Spike Value in uCi/g	1.1497E-03	
	Sample Count Rate in CPM	1624.38	
Sample #	Instrument Fractional Efficiency	0.6879	
S1305290015	Detection Limit	6.76	
Instrument Code	Critical Level Lc (CPM)	2.35	
WC51586	Rmax Level (CPM)	1582.86	
Data Entry By	Carbon-14 uCi/g in Sample	< 5.90E-05	
GY	Carbon-14 uCi/g in Sample + Spike Vial	2.06E-04	
Analyst			
MOF			
Date Completed			
5/29/2013			
Analysis Date			
5/29/2013			
Analysis Time			
9:17 AM			
Specification			
C109 CLO			
Units			
uCi/g			

Procedure using this Form*: LA-508-121 G-0

* The specific formulae used in the calculations for this spreadsheet can be found in the applicable procedure, as identified on the worklist.

QC ACTUAL	=	1.15E-03
QCFOUND	=	1.03E-03
PERCENT SPIKE RECOVERY	=	89.6%
Detection Limit in uCi/mL	=	1.54E-06
Relative Percent Counting Uncertainty	=	0.72

Carbon-14 Spike Template 2.0

Printed at: 8:22:17 AM 5/30/2013 Version: 2.01

Workbook Page SAMPLE 6

Carbon-14

			SAMPLE
Type	Disintegrations per minute from Counter		-3.91
SAMPLE	Sample Volume in mL		5.00
Work List	Dilution Factor		1.00
00041431	Digest Dilution Factor		5.512E-03
Test Code	Sample Count Rate in CPM		46.78
CARBON-14	Instrument Fractional Efficiency		0.6651
Matrix	Count Time in Minutes		50
SOLID	Background Count Rate in CPM		48.70
Rerun	Background Efficiency		0.656
0	Relative Percent Counting Uncertainty		141.07
Sample Prep	Detection Limit		7.04
S13T004281-001	Critical Level Lc (CPM)		2.32
Sample #	Rmax Level (CPM)		-0.31
S13T004281	Carbon-14 Concentration in uCi/g	<	5.69E-05
Instrument Code	Lc, Rmax, or Rs, (Sample Rate) as appropriate (CPM)		2.32
WC51586			
Data Entry By			
GY			
Analyst			
MOF			
Date Completed			
5/29/2013			
Analysis Date			
5/29/2013			
Analysis Time			
9:17 AM			

Procedure using this Form*: **LA-508-121 G-0**

* The specific formulae used in the calculations for this spreadsheet can be found in the applicable procedure, as identified on the worklist.

Specification			
C109 CLO	**HAZQUARD Concentration**	=	-6.39E-05
	Carbon-14 Concentration in uCi/g	<	5.69E-05
Units	**Detection Limit in uCi/g**		5.69E-05
uCi/g	**Relative Percent Counting Uncertainty**		141.07

Carbon-14 Sample Template 2.0

Printed at: 8:22:21 AM 5/30/2013 Version: 2.01

Workbook Page SAMPLE 7

Carbon-14

			SAMPLE
Type	Disintegrations per minute from Counter		-7.53
SAMPLE	Sample Volume in mL		5.00
Work List	Dilution Factor		1.00
00041431	Digest Dilution Factor		5.666E-03
Test Code	Sample Count Rate in CPM		44.14
CARBON-14	Instrument Fractional Efficiency		0.6617
Matrix	Count Time in Minutes		50
SOLID	Background Count Rate in CPM		48.70
Rerun	Background Efficiency		0.656
0	Relative Percent Counting Uncertainty		58.57
Sample Prep	Detection Limit		7.06
S13T004308-001	Critical Level Lc (CPM)		2.31
Sample #	Rmax Level (CPM)		-2.73
S13T004308	Carbon-14 Concentration in uCi/g	<	5.55E-05
Instrument Code	Lc, Rmax, or Rs, (Sample Rate) as appropriate (CPM)		2.31
WC51586			
Data Entry By			
GY			
Analyst			
MOF			
Date Completed			
5/29/2013			
Analysis Date			
5/29/2013			
Analysis Time			
9:17 AM			

Procedure using this Form*: **LA-508-121 G-0**

* The specific formulae used in the calculations for this spreadsheet can be found in the applicable procedure, as identified on the worklist.

Specification			
C109 CLO	**HAZQUARD Concentration**	=	-1.20E-04
	Carbon-14 Concentration in uCi/g	<	5.55E-05
Units	**Detection Limit in uCi/g**		5.55E-05
uCi/g	**Relative Percent Counting Uncertainty**		58.57

Carbon-14 Sample Template 2.0

Printed at: 8:22:26 AM 5/30/2013 Version: 2.01

5/16/2013 4:14:38PM
CompleteBatch Version 2.7.32
batchreports 2.7.32

LABCORE Completed Batch Report for Batch# 00041256

Analyst: LaPlant, Gary **Book#:** N/A

Instrument: LE-BAL-091

Method: WATER DIGEST, LA-504-101 Rev/Mod N-0

Specification: C109 CLO

Prep Batch: N/A

Batch Comment:

C109 CLO for Water Digest. gll

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
1	BLNK-PREP	S1305160015			W		Dose Rate(1)	SOLID		<0.5				mRem/hr			
1	BLNK-PREP	S1305160015			W		Digest Factor(1)	SOLID		0.005308				g / mL			
2	SAMPLE	S13T004253			W		Dose Rate(1)	SOLID		46				mRem/hr			
2	SAMPLE	S13T004253			W		Digest Factor(1)	SOLID		0.005308				g / mL			
3	DUP	S1305160016	S13T004253		W		Dose Rate(1)	SOLID		46				mRem/hr			
3	DUP	S1305160016	S13T004253		W		Digest Factor(1)	SOLID		0.005034				g / mL			
4	SAMPLE	S13T004281			W		Dose Rate(1)	SOLID		23				mRem/hr			
4	SAMPLE	S13T004281			W		Digest Factor(1)	SOLID		0.005512				g / mL			
5	SAMPLE	S13T004308			W		Dose Rate(1)	SOLID		23				mRem/hr			
5	SAMPLE	S13T004308			W		Digest Factor(1)	SOLID		0.005666				g / mL			

Comments Section:

Data Flagger Status:
Flagger Not Run

Final Page for Batch# 00041256

Reviewer Signature 16 May 13 Date

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041256

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Method	Customer Id	Specification
1	S1305160015	BLNK-PREP			WATER DIGEST		
2	S13T004253	SAMPLE		20130402	WATER DIGEST	9C-13-Comp A	C109 CLO
3	S1305160016	DUP	S13T004253		WATER DIGEST		
4	S13T004281	SAMPLE		20130402	WATER DIGEST	9C-13-Comp B	C109 CLO
5	S13T004308	SAMPLE		20130402	WATER DIGEST	9C-13-Comp C	C109 CLO

5/16/2013 9:01:10AM
IncompleteBatchShort Version 2.7.29
batchreports 2.7.32

LABCORE Data Entry Template for Batch# 00041256

Analyst: h0074758 **Standard ID / Book#:** N/A
Instrument: LE-BAL-091
Method: WATER DIGEST, LA-544-113 Rev/Mod A-0
Prep Batch: N/A
Batch Comment:
C109 CLO for Water Digest. gll
CACN:3A.26

S	Type	Sample	R	A	Matrix	Group#	Project
1	BLNK-PREP	S1305160015		W	SOLID		
2	SAMPLE	S13T004253		W	SOLID	20130402	C109 CLO
3	DUP	S1305160016		W	SOLID		
4	SAMPLE	S13T004281		W	SOLID	20130402	C109 CLO
5	SAMPLE	S13T004308		W	SOLID	20130402	C109 CLO

Final Page for Batch# 00041256

Analyst Signature — Date: 5-16-13
Data Entry Signature — Date: 5-16-13

Data Entry Comments:

S = Batch Slot Number, R = Retest Number, A = Aliquot Code.

ATL	DIGESTION BATCH LIST DATA COLLECTION FORM

○ LA-544-101 Rev _____ ◉ LA-544-113 Rev A-0 ○ _____ Rev _____ (Other)

○ LA-549-133 Rev _____ ○ LA-549-141 Rev _____

Batch #: 41256 Analyst: gll Date: 5/16/2013

(Pipette #); Pipette ID; Volume Range or Fixed Volume; Check box if pipette passes visual verification:

(1) N/A (Range/Vol: N/A) ☐

(2) N/A (Range/Vol: N/A) ☐

(3) N/A (Range/Vol: N/A) ☐

Balance ID; Date of balance verification:

LE-BAL-091 (Verification Date: 5/16/2013)

○ Spike / ○ Carrier / ○ Tracer # N/A Vol N/A Pip # N/A

○ Spike / ○ Carrier / ○ Tracer # N/A Vol N/A Pip # N/A

○ Spike / ○ Carrier / ○ Tracer # N/A Vol N/A Pip # N/A

Special Instructions:

Weigh approximately 0.25 g to 50 mL. gll

Sample Type	Digest Sample #	Parent Sample #	Sample Weight (g)	Final Volume (mL)	Dose Rate (mRem/hr)
Blank Prep	S1305160015	N/A	0.2654	50	<0.5
Sample	S13T004253	S13T004246	0.2654	50	46
Duplicate	S1305160016	S13T004246	0.2517	50	46
Sample	S13T004281	S13T004274	0.2756	50	23
Sample	S13T004308	S13T004301	0.2833	50	23

Comments:

C109 CLO for Water Digest. gll

Digest Appearance: CLEAR / COLORLESS. NO SOLIDS GLL

A-6005-290 (REV 2)

Data Review Check List

Procedure LA-548-121 GEA

Project: C109 CLO

Group(s):20130402

Batch #	41415

Review Item	Level 1 Yes	Level 1 No	Level 1 N/A	Level 2	Comments and Samples Affected
Batch Items					
1. Was an LCS and blank run the batch?	x				
2. Was a duplicate run with the batch?	x				
3. Was the book # of the standard (and spike) on the traveler?	x				no spike run
4. Was the batch traveler completed (sample #, dilution, aliquot size)?	x				
5. Were any line outs initialed and dated?	x				
6. Was balance check completed on the day of use (if used)?			x		
Result Items					
7. Did results etc. correctly up-load to OMNILims?	x				
8. If No, was LABCORE corrected?			x		
9. Are result units correct?	x				
10. If No, were units corrected?			x		
11. Was data flagged?	x				
12. Are all flags present and correct?	x				
13. Are LCS results within limits (Lab's or customer's)?	x				
14. Is blank <MDC, or <5% isotope concentration, or <5% decision level?	x				
15. Are duplicate RPDs <20% (or RSD) or within customer limits?	x				
16. Are the correct procedure number and Rev/Mod on the report?	x				
Procedure Specific Items					
27. Were the customer required detection or quantification limits met?	x				

1st Level Reviewer: B. P. Al **Date:** 5/30/13

2nd Level Reviewer: S A Cutter **Date:** 30 May 13

Data Review Check List

Procedure LA-508-167 Gamma Spectroscopy

Batch: 41415 Instrument: GEA-2, 3, 140, 150

	Review Item	— Level 1 — Yes	No	N/A	Comments & Samples Affected
	Standard Reference Material				
1	Was the certificate from standards lab checked for accuracy?	X			
2	Were the standard activities verified on an appropriate detector?	X			
3	Were the results sent to standards lab for standard approval?	X			
4	Is the Standards Laboratory Certificate data correctly entered as a certificate file?	X			
	Spectrum Collection				
5	Was the Instrument Check Standard counted and within limits before obtaining the calibration spectrum?	X			
6	Did the file name correspond to the convention specified by the calibration procedure?	X			
7	Was the appropriate Calibration library selected for peak and nuclide ID?	X			
8	Was the correct decay date entered?	X			
	Energy Calibration				
9	Are there a minimum of 5 peaks evenly spread over the energy region of interest?	X			
10	For an initial calibration was a full energy and shape calibration performed?	X			
11	Did all the peaks fit the energy vs channel graph?	X			
12	Was a graphical report printed for energy vs channel for the log book?	X			
13	If this was a full energy and peak shape calibration, was a graphical report printed of the full width half max and low tail shape fitting?	X			
	Efficiency Calibration				
14	Do the error bars for all isotopes encompass the calibration curve?	X			
15	Was a graphical report printed for energy vs efficiency for the log book?	X			
	Calibration Check				
16	Was the average radionuclide recovery for the recalcuclated calibration spectrum within 5% (1.96 Standard Deviations) of the mean standard value?	X			
17	Are all graphical reports posted in the detector log book and signed by the chemist?	X			
	Data Review				
18	Instrument check standards in limits on the day of analys(es)is	X			
19	Background counts on the day of analysis is satisfactory	X			
20	Dead time below limits	X			
21	Decay correction applied where necessary	X			

1st Level Reviewer: Bn P al **Date:** 5/30/13

H:\DATA REVIEW CHECKLISTS\GEA ICAL

5/30/2013 9:00:34AM
CompleteBatch Version 2.7.32
batchreports 2.7.32

LABCORE Completed Batch Report for Batch# 00041415

Analyst: Yager, Gary **Book#:** 77B63
Instrument: GEA02 B-1A
Method: GEA, LA-508-167 Rev/Mod A-0-A
Specification: C109 CLO
Prep Batch: 00041255
Batch Comment:
C-109 CLO for GEA - gy

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
Sample Sequence 1																	
1	STD	S1305280071		0 0			Cobalt-60	SOLID	.00369	3.6080E-03		1.59	5.66E-05	uCi/mL	97.778	% Recovery	
1	STD	S1305280071		0 0			Antimony-125	SOLID	.01385	1.3977E-02		1.07	2.09E-04	uCi/mL	100.92	% Recovery	
1	STD	S1305280071		0 0			Cesium-137	SOLID	.00512	5.1520E-03		1.12	6.55E-05	uCi/mL	100.62	% Recovery	
Sample Sequence 2																	
2	BLNK-PREP	S1305160012		0 0	Z		Cobalt-60	SOLID		<1.6907E-02			0.016907	uCi/g			
2	BLNK-PREP	S1305160012		0 0	Z		Antimony-125	SOLID		<4.9034E-02			0.049034	uCi/g			
2	BLNK-PREP	S1305160012		0 0	Z		Cesium-137	SOLID		<2.7598E-02			0.027598	uCi/g			
2	BLNK-PREP	S1305160012		0 0	Z		Europium-152	SOLID		<5.0411E-02			0.050411	uCi/g			
2	BLNK-PREP	S1305160012		0 0	Z		Europium-154	SOLID		<5.1575E-02			0.051575	uCi/g			
2	BLNK-PREP	S1305160012		0 0	Z		Europium-155	SOLID		<3.5990E-02			0.03599	uCi/g			
Sample Sequence 3																	
3	SAMPLE	S13T004254		0 0	Z		Cobalt-60	SOLID	N/A	<1.8942E-02			0.018942	uCi/g			U
3	SAMPLE	S13T004254		0 0	Z		Antimony-125	SOLID	N/A	<6.5026E-02			0.065026	uCi/g			U
3	SAMPLE	S13T004254		0 0	Z		Cesium-137	SOLID	N/A	2.8979E+00		0.66	0.025428	uCi/g			
3	SAMPLE	S13T004254		0 0	Z		Europium-152	SOLID	N/A	<6.7978E-02			0.067978	uCi/g			U
3	SAMPLE	S13T004254		0 0	Z		Europium-154	SOLID	N/A	<4.0780E-02			0.04078	uCi/g			U
3	SAMPLE	S13T004254		0 0	Z		Europium-155	SOLID	N/A	<8.0559E-02			0.080559	uCi/g			U
Sample Sequence 4																	
4	DUP	S1305160013	S13T004254	0 0	Z		Cobalt-60	SOLID	<1.8942E-02	<3.9503E-02			0.039503	uCi/g			
4	DUP	S1305160013	S13T004254	0 0	Z		Antimony-125	SOLID	<6.5026E-02	<1.2294E-01			0.12294	uCi/g			
4	DUP	S1305160013	S13T004254	0 0	Z		Cesium-137	SOLID	2.8979E+00	3.0879E+00		1.34	0.059696	uCi/g	6.3490	% RPD	
4	DUP	S1305160013	S13T004254	0 0	Z		Europium-152	SOLID	<6.7978E-02	<1.5375E-01			0.15375	uCi/g			
4	DUP	S1305160013	S13T004254	0 0	Z		Europium-154	SOLID	<4.0780E-02	<1.0646E-01			0.10646	uCi/g			
4	DUP	S1305160013	S13T004254	0 0	Z		Europium-155	SOLID	<8.0559E-02	<1.7489E-01			0.17489	uCi/g			
Sample Sequence 5																	
5	SAMPLE	S13T004282		0 0	Z		Cobalt-60	SOLID	N/A	<2.0407E-02			0.020407	uCi/g			U
5	SAMPLE	S13T004282		0 0	Z		Antimony-125	SOLID	N/A	<1.3843E-01			0.13843	uCi/g			U
5	SAMPLE	S13T004282		0 0	Z		Cesium-137	SOLID	N/A	4.1496E+00		1.28	0.054153	uCi/g			
5	SAMPLE	S13T004282		0 0	Z		Europium-152	SOLID	N/A	<1.3296E-01			0.13296	uCi/g			U
5	SAMPLE	S13T004282		0 0	Z		Europium-154	SOLID	N/A	<6.5964E-02			0.065964	uCi/g			U

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

* = Rejected Analyte
N, A = Non-reported Analyte

5/30/2013 9:00:34AM
CompleteBatch Version 2.7.32
batchreports 2.7.32

Page: 2

LABCORE Completed Batch Report for Batch# 00041415

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
5	SAMPLE	S13T004282		0 0	Z		Europium-155	SOLID	N/A	<2.3415E-01			0.23415	uCi/g			U
Sample Sequence 6																	
6	SAMPLE	S13T004309		0 0	Z		Cobalt-60	SOLID	N/A	<4.4232E-02			0.044232	uCi/g			U
6	SAMPLE	S13T004309		0 0	Z		Antimony-125	SOLID	N/A	<1.3073E-01			0.13073	uCi/g			U
6	SAMPLE	S13T004309		0 0	Z		Cesium-137	SOLID	N/A	4.2407E+00		1.06	0.050743	uCi/g			
6	SAMPLE	S13T004309		0 0	Z		Europium-152	SOLID	N/A	<1.0698E-01			0.10698	uCi/g			U
6	SAMPLE	S13T004309		0 0	Z		Europium-154	SOLID	N/A	<1.1933E-01			0.11933	uCi/g			U
6	SAMPLE	S13T004309		0 0	Z		Europium-155	SOLID	N/A	<9.9158E-02			0.099158	uCi/g			U

Comments Section:

Data Flagger Status:
Flagging Completed

Final Page for Batch# 00041415

[signature] 30 May 13
Reviewer Signature Date

PC: Julie Askom 7/12/13

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041415

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Method	Customer Id	Specification
1	S1305280071	STD			GEA		
2	S1305160012	BLNK-PREP			GEA		
3	S13T004254	SAMPLE		20130402	GEA	9C-13-Comp A	C109 CLO
4	S1305160013	DUP	S13T004254		GEA		
5	S13T004282	SAMPLE		20130402	GEA	9C-13-Comp B	C109 CLO
6	S13T004309	SAMPLE		20130402	GEA	9C-13-Comp C	C109 CLO

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

* = Rejected Analyte
N, A = Non-reported Analyte

5/28/2013 4:24:26PM
IncompleteBatchShort Version 2.7.29
batchreports 2.7.32

LABCORE Data Entry Template for Batch# 00041415

Analyst: 0095610 **Standard ID / Book#:** See Bench Sheet
Instrument: GEA Ortec
Method: GEA, LA-508-167 Rev/Mod A-0 A
Prep Batch: 00041255
Batch Comment:
C-109 CLO for GEA - gy
CACN:3A.26

S	Type	Sample	R	A	Matrix	Group#	Project
1	STD	S1305280071	0		SOLID		
	Analytes Requested:	Antimony-125, Cesium-137, Cobalt-60					
2	BLNK-PREP	S1305160012	0	Z	SOLID		
	Analytes Requested:	Actinium-228, Americium-241, Antimony-125, Bismuth-212, Bismuth-214, Cerium-144, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Lead-212, Lead-214, Niobium-94, Potassium-40, Radium-226, Ruthenium/Rhodium-106, Thallium-208, Thorium-228, Thorium-234					
3	SAMPLE	S13T004254	0	Z	SOLID	20130402	C109 CLO
	Analytes Requested:	Actinium-228, Americium-241, Antimony-125, Bismuth-212, Bismuth-214, Cerium-144, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Lead-212, Lead-214, Niobium-94, Potassium-40, Radium-226, Ruthenium/Rhodium-106, Thallium-208, Thorium-228, Thorium-234					
4	DUP	S1305160013	0	Z	SOLID		
	Analytes Requested:	Actinium-228, Americium-241, Antimony-125, Bismuth-212, Bismuth-214, Cerium-144, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Lead-212, Lead-214, Niobium-94, Potassium-40, Radium-226, Ruthenium/Rhodium-106, Thallium-208, Thorium-228, Thorium-234					
5	SAMPLE	S13T004282	0	Z	SOLID	20130402	C109 CLO
	Analytes Requested:	Actinium-228, Americium-241, Antimony-125, Bismuth-212, Bismuth-214, Cerium-144, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Lead-212, Lead-214, Niobium-94, Potassium-40, Radium-226, Ruthenium/Rhodium-106, Thallium-208, Thorium-228, Thorium-234					
6	SAMPLE	S13T004309	0	Z	SOLID	20130402	C109 CLO
	Analytes Requested:	Actinium-228, Americium-241, Antimony-125, Bismuth-212, Bismuth-214, Cerium-144, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Lead-212, Lead-214, Niobium-94, Potassium-40, Radium-226, Ruthenium/Rhodium-106, Thallium-208, Thorium-228, Thorium-234					

Final Page for Batch# 00041415

D. Yag 5-28-2013
Analyst Signature **Date**

Valerie J Massie 5-29-13
Data Entry Signature **Date**

Data Entry Comments:

S = Batch Slot Number, R = Retest Number, A = Aliquot Code.

5/17/2013 9:44:40AM
IncompleteBatchShort Version 2.7.29
batchreports 2.7.32

LABCORE Data Entry Template for Batch# 00041295

Analyst: H0076677 **Standard ID / Book#:** 77663

Instrument: NA

Method: GEA SEPARATION, LA-548-120 Rev/Mod J-0

Prep Batch: 00041255

Batch Comment:

GEA for C109 CLO. AKH

CACN:3A.26

S	Type	Sample	R	A	Matrix	Group#	Project
1	STD	S1305170018	0		SOLID		
	Analytes Requested:	RadChem Separation					
2	BLNK-PREP	S1305160012	0	Z	SOLID		
	Analytes Requested:	RadChem Separation					
3	SAMPLE	S13T004254	0	Z	SOLID	20130402	C109 CLO
	Analytes Requested:	RadChem Separation					
4	DUP	S1305160013	0	Z	SOLID		
	Analytes Requested:	RadChem Separation					
5	SAMPLE	S13T004282	0	Z	SOLID	20130402	C109 CLO
	Analytes Requested:	RadChem Separation					
6	SAMPLE	S13T004309	0	Z	SOLID	20130402	C109 CLO
	Analytes Requested:	RadChem Separation					

Final Page for Batch# 00041295

Qleta Hansen 5/28/13
Analyst Signature **Date**

Qleta Hansen 5/28/13
Data Entry Signature **Date**

Data Entry Comments:

S = Batch Slot Number, R = Retest Number, A = Aliquot Code.

ATL	GEA BATCH LIST DATA COLLECTION FORM	LA-548-121 Rev J-0

41295 (◉) GEA ( ) GEA Flat Mount ( ) GEA Hanford Library ( ) GEA Screen

Separation Batch #: ~~41255~~ AKH 5/28/13 Analyst Initials: AKH Analysis Date/Time: 5/28/13 / 15:30

(Pipette #); Pipette ID; Volume Range or Fixed Volume;
Check box if pipette passes visual verification:

(1) 408058 (Range/Vol: 0.1-1.0 mL) ☒
(2) NA (Range/Vol: NA) ☐
(3) NA (Range/Vol: NA) ☐

Balance ID: NA Date of Balance Verification: NA
Matrix: SOLID HASQARD Upload ☐
Standard Book #: 77B63
Decay to Date & Time if required: 5/21/13 / 12:00

Counting Room Information LA-508-167 Rev A-0-A

Counting Batch #: 41415

Enter the Instrument Check Standard next to each detector checked:

☐ GEA-1: ☒ GEA-150: 148B64C
☒ GEA-2: 124B64E ☐ LEPS-180:
☒ GEA-3: 126B64E ☐ LEPS-190:
☒ GEA-140: 127B64E

Special Instructions:
NA

Sample Type	Sample ID	Sample Size	Pip #	Dilution Information	Pip #	DF	Final Bottle Size	Matrix	Shelf/Pos	Counting Room Info Gamma Spectra No.
Sep Std	S1305170018	1.0	1	NA	NA	1	125 cc	Liq	NA	NA
Cnt Std	S130528007	NA	NA	NA	NA	NA	NA	NA	P2	2-20130528004
Prep Blk	S130516012	0.5	1	NA	NA	1	125 cc	Liq	P2	3-20130528003
Sample	S13T004254	0.5	1	NA	NA	1	125 cc	Liq	P1	140_20130528003
Prep Dup	S1305160013	0.5	1	NA	NA	1	125 cc	Liq	P1	150_20130528003
Sample	S13T004282	0.5	1	NA	NA	1	125 cc	Liq	P2	2-20130528005
Sample	S13T004309	0.5	1	NA	NA	1	125 cc	Liq	P2	3-20130528004

Comments:
NA

A-6005-392 (REV 2)

222-S Lab

Sample Description: BatchID: 00041415, SampleID: S1305280071, QCType: STD
Sample Comment:

Batch ID:	00041415	Batch Sequence:	01
Sample ID:	S1305280071	QC Type:	STD
Method:	GEA	Matrix:	SOLID
Detector:	GEA # 2	Sample Type:	LCS
Spectrum:	2_20130528004		

Collection Start Date:	5/21/2013 12:00	Live Time:	9000 sec
Collection Stop Date:	5/21/2013 12:00	Real Time:	9024 sec
Acquired:	5/28/2013 16:38:39	Dead Time:	0.27 %
Analysis Date:	5/28/2013 19:09	Analyst:	Gary Yager
Sample Quantity:	1.0000E+00 mL	Editor:	
Dilution Factor:	1.0000E+00	Edit Date:	
Analysis Quantity:	1.000E+00 mL	Reviewer:	Brian Anderson
		Review Date:	5/29/2013 08:37

Library:	Main.lib		
Analysis Engine:	Env32 G70W0.30	En Cal Date:	5/28/2013 09:26
PBC File:	2_2013-05-25_1709.PBC	PBC Date:	5/25/2013 17:09
Efficiency File:	2_LIQ_125ml_POS2.Clb	Eff Cal Date:	4/8/2011 08:46
Efficiency Desc:	125 mL liquid Detector #2 Position #2 using 126B64C		

Comments:

Nuclides > Critical Level

Nuclide	Flags	Activity uCi/mL	1-Sigma Counting Uncert %	1-Sigma Counting Uncert uCi/mL	1-Sigma Total Uncert uCi/mL	MDA uCi/mL	Critical Level uCi/mL
Cs-137		5.152E-03	1.12E+00	5.79E-05	1.59E-04	6.55E-05	3.20E-05
Co-60		3.608E-03	1.59E+00	5.72E-05	1.18E-04	5.66E-05	2.73E-05
Sb-125		1.398E-02	1.07E+00	1.50E-04	4.33E-04	2.09E-04	1.03E-04

Nuclide Flags: E = Edited, # = Bad Shape, A = <MDA, B = <Critical Level

Bi-212/Pb-212 Ratio: 5.651
Bi-214/Pb-214 Ratio: -8.974
Tl-208/Bi-212 Ratio: 0.041

222-S Lab

Spectrum: 2_20130528004
Sample Description: BatchID: 00041415, SampleID: S1305280071, QCType: STD
Sample Comment:
Detector: GEA # 2

Nuclides <= Critical Level

Nuclide	Flags	Activity uCi/mL	1-Sigma Counting Uncert %	1-Sigma Counting Uncert uCi/mL	1-Sigma Total Uncert uCi/mL	MDA uCi/mL	Critical Level uCi/mL
Sn-126	#AB	8.183E-06	1.63E+02	1.34E-05	1.34E-05	4.49E-05	2.18E-05
Sb-126	#AB	-1.510E-06	1.42E+03	2.14E-05	2.14E-05	7.14E-05	3.52E-05
Ce-144	#AB	2.001E-04	6.35E+01	1.27E-04	1.27E-04	4.19E-04	2.07E-04
Am-241	#AB	2.483E-04	6.52E+01	1.62E-04	1.62E-04	5.34E-04	2.64E-04
Tl-208	#AB	3.692E-06	4.84E+02	1.79E-05	1.79E-05	6.11E-05	2.99E-05
Pb-212	AB	1.583E-05	1.63E+02	2.58E-05	2.58E-05	8.61E-05	4.25E-05
Bi-212	#AB	8.947E-05	2.44E+02	2.18E-04	2.18E-04	7.34E-04	3.57E-04
Nb-94	#AB	2.124E-06	6.00E+02	1.27E-05	1.27E-05	4.34E-05	2.09E-05
Ra-226	#AB	9.620E-05	4.00E+02	3.85E-04	3.85E-04	1.28E-03	6.34E-04
Bi-214	AB	-1.485E-05	4.33E+02	6.43E-05	6.43E-05	1.46E-04	7.16E-05
Pb-214	#AB	1.655E-06	2.73E+03	4.52E-05	4.52E-05	1.52E-04	7.51E-05
K-40	AB	9.492E-05	1.81E+02	1.72E-04	1.72E-04	7.19E-04	3.49E-04
RuRh106	#AB	-2.684E-05	5.08E+02	1.36E-04	1.36E-04	4.60E-04	2.24E-04
Cs-134	#AB	7.547E-05	1.23E+02	9.28E-05	9.28E-05	3.09E-04	1.51E-04
Eu-152	#AB	2.814E-05	1.91E+02	5.38E-05	5.38E-05	1.79E-04	8.81E-05
Eu-154	#AB	2.553E-05	8.88E+01	2.27E-05	2.27E-05	7.65E-05	3.52E-05
Eu-155	#AB	2.790E-05	2.72E+02	7.58E-05	7.58E-05	2.52E-04	1.25E-04
Ac-228	#AB	5.951E-05	1.30E+02	7.74E-05	7.74E-05	2.63E-04	1.28E-04
Th-228	#AB	1.285E-02	7.26E+01	9.33E-03	9.34E-03	3.08E-02	1.52E-02
Th-234	#AB	-1.903E-03	5.48E+01	1.04E-03	1.05E-03	3.43E-03	1.69E-03

Nuclide Flags: E = Edited, # = Bad Shape, A = <MDA, B = <Critical Level

222-S Lab

Sample Description: BatchID: 00041415, SampleID: S1305160012, QCType: BLNK-PREP
Sample Comment:

Batch ID:	00041415	Batch Sequence:	02
Sample ID:	S1305160012	QC Type:	BLNK-PREP
Method:	GEA	Matrix:	SOLID
Detector:	GEA # 3	Sample Type:	RBK
Spectrum:	3_20130528003		

Collection Start Date:	5/21/2013 12:00	Live Time:	9000 sec
Collection Stop Date:	5/21/2013 12:00	Real Time:	9072 sec
Acquired:	5/28/2013 16:40:31	Dead Time:	0.79 %
Analysis Date:	5/28/2013 19:11	Analyst:	Gary Yager
Sample Quantity:	5.0000E-01 mL	Editor:	
Dilution Factor:	1.0000E+00	Edit Date:	
Analysis Quantity:	5.000E-01 mL	Reviewer:	Brian Anderson
		Review Date:	5/29/2013 08:38

Library:	Main.lib		
Analysis Engine:	Env32 G70W0.30	En Cal Date:	5/28/2013 08:37
PBC File:	3_2013-05-25_1719.PBC	PBC Date:	5/25/2013 17:19
Efficiency File:	3_LIQ_125ml_POS2.Clb	Eff Cal Date:	1/10/2012 08:44
Efficiency Desc:	125 mL Liquid Geometry in position #2 using 44B63A		

Comments:

Nuclides > Critical Level

Nuclide	Flags	Activity uCi/mL	1-Sigma Counting Uncert %	1-Sigma Counting Uncert uCi/mL	1-Sigma Total Uncert uCi/mL	MDA uCi/mL	Critical Level uCi/mL
Am-241	#A	2.407E-05	4.81E+01	1.16E-05	1.16E-05	3.77E-05	1.82E-05
Bi-214	A	7.288E-05	3.87E+01	2.82E-05	2.83E-05	8.90E-05	4.27E-05
Cs-134	#A	1.480E-04	3.46E+01	5.11E-05	5.13E-05	1.59E-04	7.45E-05

Nuclide Flags: E = Edited, # = Bad Shape, A = <MDA, B = <Critical Level

Bi-212/Pb-212 Ratio: 2.342
Bi-214/Pb-214 Ratio: -2.879
Tl-208/Bi-212 Ratio: -0.218

222-S Lab

Spectrum: 3_20130528003
Sample Description: BatchID: 00041415, SampleID: S1305160012, QCType: BLNK-PREP
Sample Comment:
Detector: GEA # 3

Nuclides <= Critical Level

Nuclide	Flags	Activity uCi/mL	1-Sigma Counting Uncert %	1-Sigma Counting Uncert uCi/mL	1-Sigma Total Uncert uCi/mL	MDA uCi/mL	Critical Level uCi/mL
Sn-126	#AB	0.000E+00	1.00E+03	4.05E-06	4.05E-06	3.35E-05	1.58E-05
Sb-126	#AB	-8.575E-06	1.04E+02	8.94E-06	8.94E-06	3.00E-05	1.43E-05
Ce-144	#AB	3.849E-05	1.15E+02	4.44E-05	4.44E-05	1.48E-04	7.19E-05
Cs-137	AB	8.326E-06	1.90E+02	1.58E-05	1.58E-05	5.17E-05	2.48E-05
Co-60	#AB	-1.064E-05	8.80E+01	9.36E-06	9.36E-06	3.17E-05	1.44E-05
Tl-208	AB	1.616E-05	9.47E+01	1.53E-05	1.53E-05	4.47E-05	2.14E-05
Pb-212	#AB	-3.159E-05	2.62E+02	8.28E-05	8.28E-05	6.50E-05	3.17E-05
Bi-212	#AB	-7.399E-05	3.56E+02	2.63E-04	2.63E-04	5.02E-04	2.36E-04
Nb-94	#AB	2.036E-08	3.30E+04	6.72E-06	6.72E-06	2.44E-05	1.11E-05
Ra-226	#AB	0.000E+00	0.00E+00	1.56E-04	1.56E-04	5.62E-04	2.72E-04
Pb-214	AB	-2.531E-05	1.81E+02	4.59E-05	4.59E-05	8.49E-05	4.10E-05
K-40	#AB	-1.926E-04	1.46E+02	2.82E-04	2.82E-04	1.23E-03	5.99E-04
RuRh106	#AB	9.730E-05	1.16E+02	1.13E-04	1.13E-04	3.80E-04	1.81E-04
Sb-125	#AB	-1.876E-05	1.45E+02	2.71E-05	2.71E-05	9.18E-05	4.38E-05
Eu-152	#AB	1.429E-05	1.95E+02	2.79E-05	2.79E-05	9.44E-05	4.53E-05
Eu-154	#AB	0.000E+00	1.00E+03	8.07E-06	8.07E-06	9.66E-05	4.38E-05
Eu-155	#AB	1.122E-05	1.78E+02	2.00E-05	2.00E-05	6.74E-05	3.26E-05
Ac-228	#AB	4.927E-05	9.03E+01	4.45E-05	4.45E-05	1.72E-04	8.14E-05
Th-228	#AB	-2.499E-03	5.71E+02	1.43E-02	1.43E-02	1.36E-02	6.62E-03
Th-234	#AB	-2.298E-05	6.01E+02	1.38E-04	1.38E-04	4.06E-04	1.97E-04

Nuclide Flags: E = Edited, # = Bad Shape, A = <MDA, B = <Critical Level

222-S Lab

Sample Description: BatchID: 00041415, SampleID: S13T004254, QCType: SAMPLE
Sample Comment:

Batch ID:	00041415	Batch Sequence:	03
Sample ID:	S13T004254	QC Type:	SAMPLE
Method:	GEA	Matrix:	SOLID
Detector:	GEA #140 Array	Sample Type:	ANA
Spectrum:	140_20130528003		

Collection Start Date:	5/8/2013 13:35	Live Time:	9000 sec
Collection Stop Date:	5/8/2013 13:35	Real Time:	9101 sec
Acquired:	5/28/2013 16:42:25	Dead Time:	1.11 %
Analysis Date:	5/28/2013 19:17	Analyst:	Gary Yager
Sample Quantity:	5.0000E-01 mL	Editor:	
Dilution Factor:	1.0000E+00	Edit Date:	
Analysis Quantity:	5.000E-01 mL	Reviewer:	Brian Anderson
		Review Date:	5/29/2013 08:40

Library:	Main.lib		
Analysis Engine:	Env32 G53W4.25	En Cal Date:	5/28/2013 08:38
PBC File:	140_2013-05-25_1759.PBC	PBC Date:	5/25/2013 17:59
Efficiency File:	140_LIQ_125mL.Clb	Eff Cal Date:	6/20/2011 15:13
Efficiency Desc:	125 mL Liquid using 25B63A		

Comments:

Nuclides > Critical Level

Nuclide	Flags	Activity uCi/mL	1-Sigma Counting Uncert %	1-Sigma Counting Uncert uCi/mL	1-Sigma Total Uncert uCi/mL	MDA uCi/mL	Critical Level uCi/mL
Sb-126	A	4.836E-07	2.74E+03	1.33E-05	1.33E-05	4.41E-05	0.00E+00
Cs-137		5.427E-03	6.62E-01	3.60E-05	1.60E-04	4.76E-05	0.00E+00
Am-241	#A	3.917E-06	9.21E+02	3.61E-05	3.61E-05	1.19E-04	0.00E+00
Co-60	#A	2.648E-07	4.00E+03	1.06E-05	1.06E-05	3.55E-05	0.00E+00
Tl-208		1.381E-04	1.16E+01	1.61E-05	1.65E-05	3.88E-05	0.00E+00
Ra-226	A	5.980E-05	3.55E+02	2.12E-04	2.12E-04	7.03E-04	0.00E+00
Bi-214	A	1.814E-05	1.64E+02	2.97E-05	2.97E-05	8.63E-05	0.00E+00
Pb-214		2.741E-04	1.18E+01	3.23E-05	3.33E-05	8.33E-05	0.00E+00
K-40	A	1.537E-04	1.50E+02	2.30E-04	2.30E-04	9.23E-04	0.00E+00
RuRh106	#A	9.671E-05	9.96E+01	9.63E-05	9.63E-05	3.19E-04	0.00E+00
Sb-125	#A	2.198E-07	1.67E+04	3.67E-05	3.67E-05	1.22E-04	0.00E+00
Ac-228	A	7.236E-06	8.25E+02	5.97E-05	5.97E-05	1.61E-04	0.00E+00

Nuclide Flags: E = Edited, # = Bad Shape, A = <MDA, B = <Critical Level

Bi-212/Pb-212 Ratio: 6.777
Bi-214/Pb-214 Ratio: 0.066
Tl-208/Bi-212 Ratio: -1.197

222-S Lab

Spectrum: 140_20130528003
Sample Description: BatchID: 00041415, SampleID: S13T004254, QCType: SAMPLE
Sample Comment:
Detector: GEA #140 Array

Nuclides <= Critical Level

Nuclide	Flags	Activity uCi/mL	1-Sigma Counting Uncert %	1-Sigma Counting Uncert uCi/mL	1-Sigma Total Uncert uCi/mL	MDA uCi/mL	Critical Level uCi/mL
Sn-126	AB	-2.555E-06	4.06E+02	1.04E-05	1.04E-05	3.45E-05	0.00E+00
Ce-144	#AB	-3.034E-05	2.88E+02	8.73E-05	8.73E-05	2.89E-04	0.00E+00
Pb-212	#AB	-1.703E-05	1.51E+02	2.57E-05	2.57E-05	6.27E-05	0.00E+00
Bi-212	AB	-1.154E-04	2.53E+02	2.92E-04	2.92E-04	6.07E-04	0.00E+00
Nb-94	AB	-4.184E-06	2.72E+02	1.14E-05	1.14E-05	3.78E-05	0.00E+00
Cs-134	#AB	-2.722E-05	2.12E+02	5.76E-05	5.76E-05	1.91E-04	0.00E+00
Eu-152	#AB	-6.356E-07	6.04E+03	3.84E-05	3.84E-05	1.27E-04	0.00E+00
Eu-154	#AB	-2.081E-06	1.09E+03	2.27E-05	2.27E-05	7.64E-05	0.00E+00
Eu-155	AB	-3.678E-05	1.24E+02	4.57E-05	4.57E-05	1.51E-04	0.00E+00
Th-228	#AB	-4.131E-04	9.50E+04	3.92E-01	3.92E-01	2.27E-02	0.00E+00
Th-234	AB	-2.801E-04	2.39E+02	6.68E-04	6.68E-04	1.13E-03	0.00E+00

Nuclide Flags: E = Edited, # = Bad Shape, A = <MDA, B = <Critical Level

222-S Lab

Sample Description: BatchID: 00041415, SampleID: S1305160013, QCType: DUP
Sample Comment:

Batch ID:	00041415	Batch Sequence:	04
Sample ID:	S1305160013	QC Type:	DUP
Method:	GEA	Matrix:	SOLID
Detector:	GEA #150	Sample Type:	DUP
Spectrum:	150_20130528003		

Collection Start Date:	5/8/2013 13:35	Live Time:	9000 sec
Collection Stop Date:	5/8/2013 13:35	Real Time:	9038 sec
Acquired:	5/28/2013 16:43:33	Dead Time:	0.41 %
Analysis Date:	5/28/2013 19:14	Analyst:	Gary Yager
Sample Quantity:	5.0000E-01 mL	Editor:	
Dilution Factor:	1.0000E+00	Edit Date:	
Analysis Quantity:	5.000E-01 mL	Reviewer:	Brian Anderson
		Review Date:	5/29/2013 08:41

Library:	Main.lib		
Analysis Engine:	Env32 G53W4.25	En Cal Date:	5/28/2013 08:31
PBC File:	150_2013-05-25_1704.PBC	PBC Date:	5/25/2013 17:04
Efficiency File:	150_LIQ_125ml_POS1.Clb	Eff Cal Date:	2/25/2011 09:11
Efficiency Desc:	GEA150_125 mL Bottle Liquid #126B64C Position #1		

Comments:

Nuclides > Critical Level

Nuclide	Flags	Activity uCi/mL	1-Sigma Counting Uncert %	1-Sigma Counting Uncert uCi/mL	1-Sigma Total Uncert uCi/mL	MDA uCi/mL	Critical Level uCi/mL
Sn-126	A	4.150E-06	6.62E+02	2.75E-05	2.75E-05	9.18E-05	0.00E+00
Sb-126	#A	2.385E-05	1.26E+02	3.02E-05	3.02E-05	1.00E-04	0.00E+00
Ce-144	#A	1.831E-05	9.91E+02	1.82E-04	1.82E-04	6.03E-04	0.00E+00
Cs-137		5.946E-03	1.34E+00	7.99E-05	1.91E-04	1.15E-04	0.00E+00
Am-241	#A	4.126E-06	1.84E+03	7.61E-05	7.61E-05	2.52E-04	0.00E+00
Tl-208	A	1.310E-05	2.54E+02	3.32E-05	3.32E-05	1.15E-04	0.00E+00
Pb-212		1.955E-04	2.62E+01	5.12E-05	5.15E-05	1.43E-04	0.00E+00
Nb-94	A	2.101E-06	8.10E+02	1.70E-05	1.70E-05	5.76E-05	0.00E+00
Bi-214	A	1.527E-04	4.94E+01	7.55E-05	7.56E-05	2.04E-04	0.00E+00
Pb-214		3.691E-04	1.46E+01	5.37E-05	5.48E-05	1.68E-04	0.00E+00
Sb-125	#A	1.687E-05	4.20E+02	7.09E-05	7.09E-05	2.37E-04	0.00E+00
Cs-134	#A	1.297E-04	1.28E+02	1.66E-04	1.66E-04	5.51E-04	0.00E+00
Eu-152	#A	9.141E-06	9.72E+02	8.88E-05	8.88E-05	2.96E-04	0.00E+00
Eu-155	#A	2.420E-05	4.20E+02	1.02E-04	1.02E-04	3.37E-04	0.00E+00
Th-234	#A	1.134E-04	6.74E+02	7.64E-04	7.64E-04	2.54E-03	0.00E+00

Nuclide Flags: E = Edited, # = Bad Shape, A = <MDA, B = <Critical Level

Bi-212/Pb-212 Ratio: -3.143
Bi-214/Pb-214 Ratio: 0.414
Tl-208/Bi-212 Ratio: -0.021

222-S Lab

Spectrum: 150_20130528003
Sample Description: BatchID: 00041415, SampleID: S1305160013, QCType: DUP
Sample Comment:
Detector: GEA #150

Nuclides <= Critical Level

Nuclide	Flags	Activity uCi/mL	1-Sigma Counting Uncert %	1-Sigma Counting Uncert uCi/mL	1-Sigma Total Uncert uCi/mL	MDA uCi/mL	Critical Level uCi/mL
Co-60	#AB	-7.717E-06	2.93E+02	2.26E-05	2.26E-05	7.61E-05	0.00E+00
Bi-212	#AB	-6.144E-04	2.91E+04	1.79E-01	1.79E-01	1.37E-03	0.00E+00
Ra-226	#AB	-1.023E-04	6.90E+02	7.05E-04	7.05E-04	1.92E-03	0.00E+00
K-40	#AB	-1.717E-04	2.94E+02	5.05E-04	5.05E-04	1.88E-03	0.00E+00
RuRh106	#AB	-2.645E-04	1.06E+02	2.81E-04	2.81E-04	9.31E-04	0.00E+00
Eu-154	#AB	-2.008E-05	3.02E+02	6.07E-05	6.07E-05	2.05E-04	0.00E+00
Ac-228	#AB	-5.032E-05	2.68E+02	1.35E-04	1.35E-04	4.09E-04	0.00E+00
Th-228	#AB	-1.701E-03	1.62E+03	2.76E-02	2.76E-02	3.68E-02	0.00E+00

Nuclide Flags: E = Edited, # = Bad Shape, A = <MDA, B = <Critical Level

222-S Lab

Sample Description: BatchID: 00041415, SampleID: S13T004282, QCType: SAMPLE
Sample Comment:

Batch ID:	00041415	Batch Sequence:	05
Sample ID:	S13T004282	QC Type:	SAMPLE
Method:	GEA	Matrix:	SOLID
Detector:	GEA # 2	Sample Type:	ANA
Spectrum:	2_20130528005		

Collection Start Date:	5/7/2013 14:30	Live Time:	9000 sec
Collection Stop Date:	5/7/2013 14:30	Real Time:	9016 sec
Acquired:	5/28/2013 19:57:57	Dead Time:	0.17 %
Analysis Date:	5/28/2013 22:29	Analyst:	Gary Yager
Sample Quantity:	5.0000E-01 mL	Editor:	
Dilution Factor:	1.0000E+00	Edit Date:	
Analysis Quantity:	5.000E-01 mL	Reviewer:	Brian Anderson
		Review Date:	5/29/2013 08:42

Library:	Main.lib		
Analysis Engine:	Env32 G70W0.30	En Cal Date:	5/28/2013 09:26
PBC File:	2_2013-05-25_1709.PBC	PBC Date:	5/25/2013 17:09
Efficiency File:	2_LIQ_125ml_POS2.Clb	Eff Cal Date:	4/8/2011 08:46
Efficiency Desc:	125 mL liquid Detector #2 Position #2 using 126B64C		

Comments:

Nuclides > Critical Level

Nuclide	Flags	Activity uCi/mL	1-Sigma Counting Uncert %	1-Sigma Counting Uncert uCi/mL	1-Sigma Total Uncert uCi/mL	MDA uCi/mL	Critical Level uCi/mL
Cs-137		7.426E-03	1.28E+00	9.50E-05	2.34E-04	9.69E-05	4.70E-05
Ac-228		2.230E-04	2.77E+01	6.18E-05	6.21E-05	1.86E-04	8.67E-05

Nuclide Flags: E = Edited, # = Bad Shape, A = <MDA, B = <Critical Level

Bi-212/Pb-212 Ratio: 2.689
Bi-214/Pb-214 Ratio: -1.224
Tl-208/Bi-212 Ratio: -0.364

222-S Lab

Spectrum: 2_20130528005
Sample Description: BatchID: 00041415, SampleID: S13T004282, QCType: SAMPLE
Sample Comment:
Detector: GEA # 2

Nuclides <= Critical Level

Nuclide	Flags	Activity uCi/mL	1-Sigma Counting Uncert %	1-Sigma Counting Uncert uCi/mL	1-Sigma Total Uncert uCi/mL	MDA uCi/mL	Critical Level uCi/mL
Sn-126	#AB	-8.121E-06	1.45E+02	1.18E-05	1.18E-05	4.03E-05	1.89E-05
Sb-126	#AB	-1.486E-05	1.65E+02	2.45E-05	2.45E-05	8.21E-05	4.01E-05
Ce-144	#AB	-3.176E-05	6.31E+02	2.00E-04	2.00E-04	6.68E-04	3.30E-04
Am-241	#AB	-8.891E-05	3.10E+02	2.75E-04	2.75E-04	9.17E-04	4.52E-04
Co-60	#AB	5.724E-06	1.80E+02	1.03E-05	1.03E-05	3.65E-05	1.63E-05
Tl-208	AB	-2.608E-05	2.21E+02	5.77E-05	5.77E-05	6.43E-05	3.08E-05
Pb-212	#AB	2.667E-05	1.65E+02	4.39E-05	4.39E-05	1.47E-04	7.24E-05
Bi-212	#AB	7.170E-05	2.64E+02	1.89E-04	1.89E-04	6.55E-04	3.07E-04
Nb-94	#AB	0.000E+00	1.00E+03	7.73E-06	7.73E-06	8.00E-05	3.84E-05
Ra-226	#AB	0.000E+00	0.00E+00	5.16E-04	5.16E-04	1.74E-03	8.58E-04
Bi-214	AB	-2.053E-05	2.42E+02	4.98E-05	4.98E-05	1.29E-04	6.19E-05
Pb-214	AB	1.677E-05	2.71E+02	4.55E-05	4.55E-05	1.58E-04	7.70E-05
K-40	AB	1.801E-04	1.69E+02	3.04E-04	3.04E-04	1.39E-03	6.75E-04
RuRh106	#AB	-2.618E-04	6.61E+01	1.73E-04	1.73E-04	5.72E-04	2.74E-04
Sb-125	AB	-5.920E-05	1.26E+02	7.43E-05	7.43E-05	2.48E-04	1.21E-04
Cs-134	#AB	2.558E-06	4.21E+03	1.08E-04	1.08E-04	3.69E-04	1.77E-04
Eu-152	#AB	4.152E-05	1.71E+02	7.12E-05	7.12E-05	2.38E-04	1.16E-04
Eu-154	#AB	2.230E-05	1.51E+02	3.37E-05	3.37E-05	1.18E-04	5.30E-05
Eu-155	#AB	-1.620E-05	7.76E+02	1.26E-04	1.26E-04	4.19E-04	2.07E-04
Th-228	AB	1.433E-02	8.40E+01	1.20E-02	1.21E-02	3.99E-02	1.96E-02
Th-234	#AB	-7.536E-04	2.82E+02	2.13E-03	2.13E-03	7.09E-03	3.50E-03

Nuclide Flags: E = Edited, # = Bad Shape, A = <MDA, B = <Critical Level

222-S Lab

Sample Description: BatchID: 00041415, SampleID: S13T004309, QCType: SAMPLE
Sample Comment:

Batch ID:	00041415	Batch Sequence:	06
Sample ID:	S13T004309	QC Type:	SAMPLE
Method:	GEA	Matrix:	SOLID
Detector:	GEA # 3	Sample Type:	ANA
Spectrum:	3_20130528004		

Collection Start Date:	5/7/2013 10:27	Live Time:	9000 sec
Collection Stop Date:	5/7/2013 10:27	Real Time:	9083 sec
Acquired:	5/28/2013 19:59:33	Dead Time:	0.91 %
Analysis Date:	5/28/2013 22:31	Analyst:	Gary Yager
Sample Quantity:	5.0000E-01 mL	Editor:	
Dilution Factor:	1.0000E+00	Edit Date:	
Analysis Quantity:	5.000E-01 mL	Reviewer:	Brian Anderson
		Review Date:	5/29/2013 08:43

Library:	Main.lib		
Analysis Engine:	Env32 G70W0.30	En Cal Date:	5/28/2013 08:37
PBC File:	3_2013-05-25_1719.PBC	PBC Date:	5/25/2013 17:19
Efficiency File:	3_LIQ_125ml_POS2.Clb	Eff Cal Date:	1/10/2012 08:44
Efficiency Desc:	125 mL Liquid Geometry in position #2 using 44B63A		

Comments:

Nuclides > Critical Level

Nuclide	Flags	Activity uCi/mL	1-Sigma Counting Uncert %	1-Sigma Counting Uncert uCi/mL	1-Sigma Total Uncert uCi/mL	MDA uCi/mL	Critical Level uCi/mL
Cs-137		8.565E-03	1.06E+00	9.10E-05	2.73E-04	1.02E-04	5.02E-05

Nuclide Flags: E = Edited, # = Bad Shape, A = <MDA, B = <Critical Level

Bi-212/Pb-212 Ratio: -22.771
Bi-214/Pb-214 Ratio: -0.019
Tl-208/Bi-212 Ratio: -0.013

222-S Lab

Spectrum: 3_20130528004
Sample Description: BatchID: 00041415, SampleID: S13T004309, QCType: SAMPLE
Sample Comment:
Detector: GEA # 3

Nuclides <= Critical Level

Nuclide	Flags	Activity uCi/mL	1-Sigma Counting Uncert %	1-Sigma Counting Uncert uCi/mL	1-Sigma Total Uncert uCi/mL	MDA uCi/mL	Critical Level uCi/mL
Sn-126	#AB	-2.771E-05	8.29E+01	2.30E-05	2.30E-05	7.62E-05	3.72E-05
Sb-126	#AB	-1.745E-05	1.63E+02	2.85E-05	2.85E-05	9.48E-05	4.67E-05
Ce-144	AB	4.284E-05	2.16E+02	9.26E-05	9.27E-05	3.09E-04	1.52E-04
Am-241	#AB	-1.667E-05	3.01E+02	5.01E-05	5.01E-05	1.66E-04	8.24E-05
Co-60	#AB	-1.871E-05	1.42E+02	2.66E-05	2.66E-05	8.93E-05	4.32E-05
Tl-208	AB	8.543E-06	2.82E+02	2.41E-05	2.41E-05	8.31E-05	4.06E-05
Pb-212	AB	2.951E-05	1.07E+02	3.15E-05	3.15E-05	1.06E-04	5.22E-05
Bi-212	#AB	-6.719E-04	1.18E+02	7.93E-04	7.93E-04	1.33E-03	6.49E-04
Nb-94	#AB	-1.765E-05	1.58E+02	2.78E-05	2.78E-05	9.31E-05	4.54E-05
Ra-226	#AB	0.000E+00	0.00E+00	3.44E-04	3.44E-04	1.16E-03	5.72E-04
Bi-214	AB	-1.031E-06	4.57E+03	4.71E-05	4.71E-05	1.63E-04	7.98E-05
Pb-214	#AB	5.568E-05	1.02E+02	5.69E-05	5.69E-05	1.91E-04	9.43E-05
K-40	AB	1.985E-04	1.84E+02	3.66E-04	3.66E-04	1.33E-03	6.49E-04
RuRh106	#AB	3.048E-05	8.61E+02	2.63E-04	2.63E-04	8.82E-04	4.32E-04
Sb-125	AB	-9.206E-05	8.66E+01	7.97E-05	7.98E-05	2.64E-04	1.30E-04
Cs-134	#AB	2.194E-04	7.01E+01	1.54E-04	1.54E-04	5.08E-04	2.49E-04
Eu-152	#AB	-4.341E-05	1.49E+02	6.49E-05	6.49E-05	2.16E-04	1.06E-04
Eu-154	#AB	-3.238E-05	2.20E+02	7.12E-05	7.12E-05	2.41E-04	1.16E-04
Eu-155	#AB	-1.555E-05	3.87E+02	6.02E-05	6.02E-05	2.00E-04	9.90E-05
Ac-228	#AB	-7.940E-05	3.53E+02	2.81E-04	2.81E-04	3.93E-04	1.92E-04
Th-228	#AB	1.327E-02	8.30E+01	1.10E-02	1.10E-02	3.64E-02	1.80E-02
Th-234	#AB	3.273E-04	1.41E+02	4.60E-04	4.61E-04	1.53E-03	7.58E-04

Nuclide Flags: E = Edited, # = Bad Shape, A = <MDA, B = <Critical Level

LABCORE Completed Batch Report for Batch# 00041255

Analyst: Hurson, Aleta

Book#: NA

Instrument: LE-BAL-091

Method: FUSION - ZR, LA-549-141 Rev/Mod M-1-A

Specification: C109 CLO

Prep Batch: N/A

Batch Comment:

C109 CLO for Fusion. gll

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
1	BLNK-PREP	S1305160012			Z		Dose Rate(1)	SOLID		<0.5				mRem/hr			
1	BLNK-PREP	S1305160012			Z		Digest Factor(1)	SOLID		0.001873				g / mL			
2	SAMPLE	S13T004254			Z		Dose Rate(1)	SOLID		200				mRem/hr			
2	SAMPLE	S13T004254			Z		Digest Factor(1)	SOLID		0.001873				g / mL			
3	DUP	S1305160013	S13T004254		Z		Dose Rate(1)	SOLID		200				mRem/hr			
3	DUP	S1305160013	S13T004254		Z		Digest Factor(1)	SOLID		0.001926				g / mL			
4	SAMPLE	S13T004282			Z		Dose Rate(1)	SOLID		180				mRem/hr			
4	SAMPLE	S13T004282			Z		Digest Factor(1)	SOLID		0.001790				g / mL			
5	SAMPLE	S13T004309			Z		Dose Rate(1)	SOLID		180				mRem/hr			
5	SAMPLE	S13T004309			Z		Digest Factor(1)	SOLID		0.002020				g / mL			

COPY

Comments Section:

Data Flagger Status:
Flagger Not Run

Final Page for Batch# 00041255

Reviewer Signature 16 May 13 Date

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041255

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Method	Customer Id	Specification
1	S1305160012	BLNK-PREP			FUSION - ZR		
2	S13T004254	SAMPLE		20130402	FUSION - ZR	9C-13-Comp A	C109 CLO
3	S1305160013	DUP	S13T004254		FUSION - ZR		
4	S13T004282	SAMPLE		20130402	FUSION - ZR	9C-13-Comp B	C109 CLO
5	S13T004309	SAMPLE		20130402	FUSION - ZR	9C-13-Comp C	C109 CLO

COPY

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

* = Rejected Analyte
N, A = Non-reported Analyte

5/16/2013 8:41:34AM
IncompleteBatchShort Version 2.7.29
batchreports 2.7.32

LABCORE Data Entry Template for Batch# 00041255

Analyst: H0076677 **Standard ID / Book#:** NA
Instrument: NA
Method: FUSION - ZR, LA-549-141 Rev/Mod M-1-A
Prep Batch: N/A
Batch Comment:
C109 CLO for Fusion. gll
CACN:3A.26

S	Type	Sample	R	A	Matrix	Group#	Project
1	BLNK-PREP	S1305160012		Z	SOLID		
2	SAMPLE	S13T004254		Z	SOLID	20130402	C109 CLO
3	DUP	S1305160013		Z	SOLID		
4	SAMPLE	S13T004282		Z	SOLID	20130402	C109 CLO
5	SAMPLE	S13T004309		Z	SOLID	20130402	C109 CLO

Final Page for Batch# 00041255

Alicia Hansen 5/16/13
Analyst Signature **Date**

Alicia Hansen 5/16/13 5/16/13 ALH
Data Entry Signature **Date**

COPY

Data Entry Comments:

S = Batch Slot Number, R = Retest Number, A = Aliquot Code.

ATL	DIGESTION BATCH LIST DATA COLLECTION FORM

○ LA-544-101 Rev _____ ○ LA-544-113 Rev _____ ○ _____ Rev _____ (Other)

○ LA-549-133 Rev _____ ◉ LA-549-141 Rev M-1-A

Batch #: 41255 Analyst: AKH Date: 5/16/2013

(Pipette #); Pipette ID; Volume Range or Fixed Volume; Check box if pipette passes visual verification:

(1) N/A (Range/Vol: N/A) ☐

(2) N/A (Range/Vol: N/A) ☐

(3) N/A (Range/Vol: N/A) ☐

Balance ID; Date of balance verification:

LE-BAL-091 (Verification Date: 5/16/2013)

○ Spike / ○ Carrier / ○ Tracer # N/A Vol N/A Pip # N/A

○ Spike / ○ Carrier / ○ Tracer # N/A Vol N/A Pip # N/A

○ Spike / ○ Carrier / ○ Tracer # N/A Vol N/A Pip # N/A

Special Instructions:

Use ZR Crucibles. gll

Sample Type	Digest Sample #	Parent Sample #	Sample Weight (g)	Final Volume (mL)	Dose Rate (mRem/hr)
Blank Prep	S1305160012	N/A	0.4682	250	<0.5
Sample	S13T004254	S13T004246	0.4682	250	200
Duplicate	S1305160013	S13T004246	0.4814	250	200
Sample	S13T004282	S13T004274	0.4474	250	180
Sample	S13T004309	S13T004301	0.5049	250	180

Comments:

C109 CLO Fusion-ZR. gll Digest Appearance: clear liquid. colorless. no solids.

XDO

A-6005-290 (REV 2)

Data Review Check List

Procedure LA-378-103, 104, 105 I-129

Project: C109 CLO

Group(s) 20130402

	41744				
Review Item	**Level 1**			**Level 2**	**Comments and Samples Affected**
	Yes	**No**	**N/A**		
Batch Items					
1. Was an LCS and blank run the batch?	X			√	
2. Was a duplicate run with the batch?	X			√	
2a. Was a spike run with the batch?		X		√	Not requested.
3. Was the book # of the standard (and spike) on the traveler?	X			√	
4. Was the batch traveler completed (sample #, dilution, aliquot size)?	X			√	
5. Were any line outs initialed and dated?	X			√	
6. Was balance check completed on the day of use (if used)?	X			√	
Result Items					
7. Was sample, traveler and counting data correct on ACE form?	X			√	
8. If No, was ACE form corrected?			X	√	
9. Did results etc. correctly up-load to LABCORE (OMNILims or MULTILims)?	X			√	
10. If No, was LABCORE corrected?			X	√	
11. Are result units correct?	X			√	
12. If No, were units corrected?			X	√	
13. Was data flagged?	X			√	
14. Are all flags present and correct?	X			√	
15. Are LCS results within limits (Lab's or customer's)?	X			√	
16. Are Spike results within limits (Lab's or customer's)?			X	√	
17. Is blank <MDC, or <5% isotope concentration, or <5% decision level?	X			√	
18. Are duplicate RPDs <20% (or RSD) within customer limits?			X	√	
19. Are the correct procedure number and Rev/Mod on the report?	X			√	
Procedure Speciffic Items					
20. Were carrier recoveries between 30% and 110%?	X			√	
21. Were the customer required detection or quantification limits met?	X			√	

1st Level Reviewer: B w P Arl **Date:** 6/19/13

2nd Level Reviewer: S A Catlett **Date:** 19 Jun 13

Data Review Check List

Procedure LA-508-167 Gamma Spectroscopy

Batch: 41650 Instrument: GEA-180, 190		— Level 1 —			Comments & Samples Affected
	Review Item	Yes	No	N/A	
	Standard Reference Material				
1	Was the certificate from standards lab checked for accuracy?	X			
2	Were the standard activities verified on an appropriate detector?	X			
3	Were the results sent to standards lab for standard approval?	X			
4	Is the Standards Laboratory Certificate data correctly entered as a certificate file?	X			
	Spectrum Collection				
5	Was the Instrument Check Standard counted and within limits before obtaining the calibration spectrum?	X			
6	Did the file name correspond to the convention specified by the calibration procedure?	X			
7	Was the appropriate Calibration library selected for peak and nuclide ID?	X			
8	Was the correct decay date entered?	X			
	Energy Calibration				
9	Are there a minimum of 5 peaks evenly spread over the energy region of interest?	X			
10	For an initial calibration was a full energy and shape calibration performed?	X			
11	Did all the peaks fit the energy vs channel graph?	X			
12	Was a graphical report printed for energy vs channel for the log book?	X			
13	If this was a full energy and peak shape calibration, was a graphical report printed of the full width half max and low tail shape fitting?	X			
	Efficiency Calibration				
14	Do the error bars for all isotopes encompass the calibration curve?	X			
15	Was a graphical report printed for energy vs efficiency for the log book?	X			
	Calibration Check				
16	Was the average radionuclide recovery for the recalcuclated calibration spectrum within 5% (1.96 Standard Deviations) of the mean standard value?	X			
17	Are all graphical reports posted in the detector log book and signed by the chemist?	X			
	Data Review				
18	Instrument check standards in limits on the day of analys(es)is	X			
19	Background counts on the day of analysis is satisfactory	X			
20	Dead time below limits	X			
21	Decay correction applied where necessary	X			

1st Level Reviewer: Bn P al **Date:** 6/19/12

H:\DATA REVIEW CHECKLISTS\GEA ICAL

LABCORE Completed Batch Report for Batch# 00041744

Analyst: Bierman, Marcus **Book#:** 116B54

Instrument: GEA Ortec

Method: IODINE-129 SOLIDS, LA-508-167 Rev/Mod A-0-A

Specification: C109 CLO

Prep Batch: N/A

Batch Comment:

mcb

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
Sample Sequence 1																	
1	STD	S1306170091		0 0			Iodine-129	SOLID	.021413	1.9524E-02		2.86	4.05E-04	uCi/mL	91.177	% Recovery	
1	STD	S1306170091		0 0			Iodine-C	SOLID		74.832			1	% Recovery	N/A		
Sample Sequence 2																	
2	BLNK	S1306170092		0 0			Iodine-129	SOLID		<1.5231E-05			1.52E-05	uCi/g			
2	BLNK	S1306170092		0 0			Iodine-C	SOLID		77.457			1	% Recovery			
Sample Sequence 3																	
3	SAMPLE	S13T004246		0 1			Iodine-129	SOLID	N/A	<1.1023E-05			1.10E-05	uCi/g			U
3	SAMPLE	S13T004246		0 1			Iodine-C	SOLID		73.519			1	% Recovery			
Sample Sequence 4																	
4	DUP	S1306170093	S13T004246	0 0			Iodine-129	SOLID	<1.1023E-05	<9.9686E-06			9.97E-06	uCi/g			
4	DUP	S1306170093	S13T004246	0 0			Iodine-C	SOLID	73.519	73.191			1	% Recovery			
Sample Sequence 5																	
5	SAMPLE	S13T004274		0 1			Iodine-129	SOLID	N/A	<1.1711E-05			1.17E-05	uCi/g			U
5	SAMPLE	S13T004274		0 1			Iodine-C	SOLID		69.252			1	% Recovery			
Sample Sequence 6																	
6	SAMPLE	S13T004301		0 1			Iodine-129	SOLID	N/A	<1.3823E-05			1.38E-05	uCi/g			U
6	SAMPLE	S13T004301		0 1			Iodine-C	SOLID		68.596			1	% Recovery			

Comments Section:

Data Flagger Status:
Flagging Completed

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041744

Final Page for Batch# 00041744

Reviewer Signature 19 Jun 13 Date

PC: Julie Osborn 7/10/13

LABCORE Completed Batch Report for Batch# 00041744

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Method	Customer Id	Specification
1	S1306170091	STD			IODINE-129 SOLIDS		
2	S1306170092	BLNK			IODINE-129 SOLIDS		
3	S13T004246	SAMPLE		20130402	IODINE-129 SOLIDS	9C-13-Comp A	C109 CLO
4	S1306170093	DUP	S13T004246		IODINE-129 SOLIDS		
5	S13T004274	SAMPLE		20130402	IODINE-129 SOLIDS	9C-13-Comp B	C109 CLO
6	S13T004301	SAMPLE		20130402	IODINE-129 SOLIDS	9C-13-Comp C	C109 CLO

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

* = Rejected Analyte
N, A = Non-reported Analyte

6/17/2013 2:28:15PM
IncompleteBatchShort Version 2.7.29
batchreports 2.7.32

LABCORE Data Entry Template for Batch# 00041744

Analyst: 0098493 6 **Standard ID / Book#:** NA
Instrument: ~~LEPS #1/#2~~ 6.17.13 BEAORTEC
Method: IODINE-129 SOLIDS, LA 508 467 Rev/Mod A-0-A
Prep Batch: N/A
Batch Comment:
mcb
CACN:3A.26

S	Type	Sample	R	A	Matrix	Group#	Project
1	STD	S1306170091	0		SOLID		
	Analytes Requested:	Iodine-129, Iodine-C					
2	BLNK	S1306170092	0		SOLID		
	Analytes Requested:	Iodine-129, Iodine-C					
3	SAMPLE	S13T004246	1		SOLID	20130402	C109 CLO
	Analytes Requested:	Iodine-129, Iodine-C					
4	DUP	S1306170093	0		SOLID		
	Analytes Requested:	Iodine-129, Iodine-C					
5	SAMPLE	S13T004274	1		SOLID	20130402	C109 CLO
	Analytes Requested:	Iodine-129, Iodine-C					
6	SAMPLE	S13T004301	1		SOLID	20130402	C109 CLO
	Analytes Requested:	Iodine-129, Iodine-C					

Final Page for Batch# 00041744

6.17.13
Analyst Signature **Date**

6.18.13
Data Entry Signature **Date**
Valerie J Massie 6-18-13

Data Entry Comments:

S = Batch Slot Number, R = Retest Number, A = Aliquot Code.

6/13/2013 8:57:44AM
IncompleteBatchShort Version 2.7.29
batchreports 2.7.32

LABCORE Data Entry Template for Batch# 00041645

Analyst: 10074758 **Standard ID / Book#:** 116B54

Instrument: LE-BAL-078

Method: IODINE-129 SOLIDS SEPARATION, LA-378-104 Rev/Mod H-0

Prep Batch: N/A

Batch Comment:

Dup Associated with S13T004246. MOF

CACN:3A.26

S	Type	Sample	R	A	Matrix	Group#	Project
1	STD	S1306120007	0		SOLID		
	Analytes Requested:	RadChem Separation					
2	BLNK	S1306120008	0		SOLID		
	Analytes Requested:	RadChem Separation					
3	SAMPLE	S13T004246	1		SOLID	20130402	C109 CLO
	Analytes Requested:	RadChem Separation					
4	DUP	S1306120009	0		SOLID		
	Analytes Requested:	RadChem Separation					
5	SAMPLE	S13T004274	1		SOLID	20130402	C109 CLO
	Analytes Requested:	RadChem Separation					
6	SAMPLE	S13T004301	1		SOLID	20130402	C109 CLO
	Analytes Requested:	RadChem Separation					

Final Page for Batch# 00041645

Jay LaPlant 6-17-13
Analyst Signature **Date**

Jay LaPlant 6-17-13
Data Entry Signature **Date**

Data Entry Comments:

S = Batch Slot Number, R = Retest Number, A = Aliquot Code.

ATL

I-129 (SOLID) BATCH LIST DATA COLLECTION FORM

(●) LA-378-104 Rev H-0 ( ) LA-378-105 Rev _____

Separation Batch #: 41645 Analyst Initials: gll Analysis Date/Time: 6/17/2013 / 1039

(Pipette #); Pipette ID; Volume Range; Check box if pipette passes verification:

(1) 374088 (Range/Vol: 10-100 uL) ☒
(2) N/A (Range/Vol: N/A) ☐
(3) N/A (Range/Vol: N/A) ☐

Balance ID; Date of balance verification:

LE-BAL-091 (Verification Date: 6/13/2013)
LE-BAL-078 (Verification Date: 6/17/2013)

Matrix: SOLID HASQARD ☐

Carrier Book #: 28N12C /Volume: 0.1 mL (Pip #: 1)
Spike Book #: N/A /Volume: N/A (Pip #: N/A)
Std Book #: 116B54 /Volume: 0.1 mL (Pip #: 1)

Counting Room Information	LA-508-167 Rev A-0-A
Counting Batch #: 00041744	
☒ LEPS-180 Std ID: 113B64	
☒ LEPS-190 Std ID: 28B63B	

Special Instructions/Comments:
C109 CLO for I129. Dup Associated with S13T004246. gll

					Counting Room Information
Sample Type	Sample ID	Sample Size (g or mL)	Tare Weight	Gross Weight	Spectrum Number
Sep Std	S1306120007	0.1	7.5633	7.5861	NA
Cnt Std	S1306170091	N/A	N/A	N/A	180_20130617003
Sep Blk	S1306120008	0.9748	7.6064	7.6300	NA
Cnt Blk	S1306170092	N/A	N/A	N/A	190_20130617003
Sample	S13T004246	0.9748	7.6358	7.6582	180_20130617004
Sep Dup	S1306120009	0.9882	7.5855	7.6078	NA
Cnt Dup	S1306170093	N/A	N/A	N/A	190_20130617004
Sample	S13T004274	0.9741	7.5690	7.5901	180_20130617005
Sample	S13T004301	1.0409	7.6026	7.6235	190_20130617005

A-6005-736 (REV 2)

Workbook Page STD 1

Iodine 129 : SOLID

			STD
Type	GROSS WEIGHT in grams	W_2	7.5861
STD	TARE WEIGHT in grams	W_1	7.5633
Work List	MASS PRECIPITATE in grams		0.0228
00041744	Iodine 129 µCi / Sample From GEA	I(GEA)	1.461E-03
Test Code	SAMPLE VOLUME in mL		0.100
IODINE-129 SOLIDS	DETECTION LIMIT µCi / Sample		3.030E-05
Matrix	CARRIER BOOK NUMBER		28N12C
SOLID	CARRIER VALUE in gm KI / mL		2.8084E-01
Rerun	VOLUME CARRIER ADDED in mL		0.100
0	CARRIER FRACTIONAL RECOVERY	REC	0.7483
Sample Prep	COUNT TIME IN MINUTES		150.0
	COUNTING UNCERTAINTY		2.860
Sample #	STANDARD BOOK NUMBER		116B54
S1306170091	STANDARD VALUE in uCi/g		2.1413E-02
Instrument Code			
LEPS 180/190			
Data Entry By			
MCB			
Analyst			
GLL			
Date Completed			
6/18/2013			
Analysis Date			
6/17/2013			
Analysis Time			
10:39 AM			
Sample Point			
C109 CLO			
Units			
uCi/g			

<< Prefix with "<" for "Less Than" results

Procedure using this form*: **LA-508-167 A-0-A**

* The specific formulae used in the calculations for this spreadsheet can be found in the applicable procedure, as identified on the worklist.

Iodine 129 in uCi/g	=	1.952E-02	**DETECTION LEVEL in uCi/g**
Carrier Per Cent Recovery	=	74.83	
Counting Uncertainty	=	2.86%	4.049E-04
Standard Recovery	=	91.18%	

Iodine Solid Standard Template 2.0

Printed at: 12:20:55 PM 6/18/2013 Version: 2.02

222-S Lab

Sample Description: Batch ID:00041744, Sample ID:S1306170091, QC Type:Std
Sample Comment:

Batch ID:		Batch Sequence:	00
Sample ID:		QC Type:	
Method:		Matrix:	
Detector:	GEA #180	Sample Type:	LCS
Spectrum:	180_20130617003		

Collection Start Date:	6/17/2013 10:39	Live Time:	9000 sec
Collection Stop Date:	6/17/2013 10:39	Real Time:	9167 sec
Acquired:	6/17/2013 14:38:53	Dead Time:	1.82 %
Analysis Date:	6/18/2013 11:35	Analyst:	MC Bierman
Sample Quantity:	1.0000E+00 Each	Editor:	
Dilution Factor:	1.0000E+00	Edit Date:	
Analysis Quantity:	1.000E+00 Each	Reviewer:	BobSwoboda
		Review Date:	6/18/2013 11:45

Library:	I129.lib		
Analysis Engine:	Env32 G70W0.30	En Cal Date:	9/23/2010 10:27
PBC File:	180_2013-06-15_2204.PBC	PBC Date:	6/15/2013 22:04
Efficiency File:	180_PDI2.Clb	Eff Cal Date:	6/7/2011 09:31
Efficiency Desc:	Interpolative fit of the two 29 KeV lines and the 39 KeV line for I·		

Comments:

Nuclides > Critical Level

Nuclide	Flags	Activity uCi/Each	1-Sigma Counting Uncert %	1-Sigma Counting Uncert uCi/Each	1-Sigma Total Uncert uCi/Each	MDA uCi/Each	Critical Level uCi/Each
I-129		1.461E-03	2.86E+00	4.18E-05	6.20E-05	3.03E-05	1.37E-05

Nuclide Flags: E = Edited, # = Bad Shape, A = <MDA, B = <Critical Level

222-S Lab

Spectrum: 180_20130617003
Sample Description: Batch ID:00041744, Sample ID:S1306170091, QC Type:Std
Sample Comment:
Detector: GEA #180

Nuclides <= Critical Level

Nuclide	Flags	Activity uCi/Each	1-Sigma Counting Uncert %	1-Sigma Counting Uncert uCi/Each	1-Sigma Total Uncert uCi/Each	MDA uCi/Each	Critical Level uCi/Each
None	_F_						

Nuclide Flags: E = Edited, # = Bad Shape, A = <MDA, B = <Critical Level

Workbook Page BLANK 2

Iodine 129 : SOLID

			BLNK	
Type	GROSS WEIGHT in grams	W_2	7.6300	
BLNK	TARE WEIGHT in grams	W_1	7.6064	
Work List	MASS PRECIPITATE in grams		0.0236	
00041744	Iodine 129 µCi / SAMPLE from GEA	I(GEA)	<1.15e-5	<< Prefix with "<" for "Less Than" results
Test Code	GRAMS OF SAMPLE	Wsam	0.9748	
IODINE-129 SOLIDS	DETECTION LIMIT µCi / Sample		1.1500E-05	
Matrix	CARRIER BOOK NUMBER		28N12C	
SOLID	CARRIER VALUE in gm KI / mL		2.8084E-01	
Rerun	VOLUME CARRIER ADDED in mL		0.100	
0	CARRIER FRACTIONAL RECOVERY	REC	0.7746	
Sample Prep	COUNT TIME IN MINUTES		150.0	
	COUNTING UNCERTAINTY		N/A	<< N/A (please enter N/A)

Sample #	
S1306170092	
Instrument Code	
LEPS 180/190	
Data Entry By	
MCB	
Analyst	
GLL	
Date Completed	**Procedure using this form*:** **LA-508-167 A-0-A**
6/18/2013	
Analysis Date	* The specific formulae used in the calculations for this spreadsheet can be found
6/17/2013	in the applicable procedure, as identified on the worklist.
Analysis Time	
10:39 AM	

Sample Point				
C109 CLO	**HASQARD Concentration**	=	1.523E-05	
Units	**Iodine 129 in uCi/g**	<	1.523E-05	**DETECTION LEVEL**
uCi/g	**Carrier Per Cent Recovery**	=	77.46%	**in uCi/g**
	Counting Uncertainty	=		1.523E-05

Iodine Solid Sample Template 2.0

Printed at: 12:21:44 PM 6/18/2013 Version: 2.02

222-S Lab

Sample Description: Batch ID:00041744, Sample ID:S1306170092, QC Type: Blank
Sample Comment:

Batch ID:		Batch Sequence:	00
Sample ID:		QC Type:	
Method:		Matrix:	
Detector:	GEA #190	Sample Type:	RBK
Spectrum:	190_20130617003		

Collection Start Date:	6/17/2013 10:39	Live Time:	9000 sec
Collection Stop Date:	6/17/2013 10:39	Real Time:	9182 sec
Acquired:	6/17/2013 14:33:01	Dead Time:	1.98 %
Analysis Date:	6/18/2013 11:35	Analyst:	MC Bierman
Sample Quantity:	1.0000E+00 Each	Editor:	
Dilution Factor:	1.0000E+00	Edit Date:	
Analysis Quantity:	1.000E+00 Each	Reviewer:	BobSwoboda
		Review Date:	6/18/2013 11:46

Library:	I129.lib		
Analysis Engine:	Env32 G70W0.30	En Cal Date:	7/26/2012 13:25
PBC File:	190_2013-06-15_2207.PBC	PBC Date:	6/15/2013 22:07
Efficiency File:	190_PDI2_Shelf1(7-27-12).Clb	Eff Cal Date:	7/27/2012 08:14
Efficiency Desc:	Energy and Efficiency Calibration for LEPS 190 on PdI2 on shelf#1		

Comments:

Nuclides > Critical Level

Nuclide	Flags	Activity uCi/Each	1-Sigma Counting Uncert %	1-Sigma Counting Uncert uCi/Each	1-Sigma Total Uncert uCi/Each	MDA uCi/Each	Critical Level uCi/Each
None	_F_						

Nuclide Flags: E = Edited, # = Bad Shape, A = <MDA, B = <Critical Level

222-S Lab

Spectrum: 190_20130617003
Sample Description: Batch ID:00041744, Sample ID:S1306170092, QC Type: Blank
Sample Comment:
Detector: GEA #190

Nuclides <= Critical Level

Nuclide	Flags	Activity uCi/Each	1-Sigma Counting Uncert %	1-Sigma Counting Uncert uCi/Each	1-Sigma Total Uncert uCi/Each	MDA uCi/Each	Critical Level uCi/Each
I-129	#AB	-9.928E-07	2.88E+02	2.86E-06	2.86E-06	1.15E-05	4.42E-06

Nuclide Flags: E = Edited, # = Bad Shape, A = <MDA, B = <Critical Level

Workbook Page SAMPLE 3

Iodine 129 : SOLID

			SAMPLE	
Type	GROSS WEIGHT in grams	W_2	7.6582	
SAMPLE	TARE WEIGHT in grams	W_1	7.6358	
Work List	MASS PRECIPITATE in grams		0.0224	
00041744	Iodine 129 µCi / SAMPLE from GEA	I(GEA)	<7.90e-6	<< Prefix with "<" for "Less Than" results
Test Code	GRAMS OF SAMPLE	Wsam	0.9748	
IODINE-129 SOLIDS	DETECTION LIMIT µCi / Sample		7.9000E-06	
Matrix	CARRIER BOOK NUMBER		28N12C	
SOLID	CARRIER VALUE in gm KI / mL		2.8084E-01	
Rerun	VOLUME CARRIER ADDED in mL		0.100	
1	CARRIER FRACTIONAL RECOVERY	REC	0.7352	
Sample Prep	COUNT TIME IN MINUTES		150.0	
	COUNTING UNCERTAINTY		N/A	<< N/A (please enter N/A)

Sample #
S13T004246
Instrument Code
LEPS 180/190
Data Entry By
MCB
Analyst
GLL
Date Completed
6/18/2013
Analysis Date
6/17/2013
Analysis Time
10:39 AM
Sample Point
C109 CLO
Units
uCi/g

Procedure using this form*: **LA-508-167 A-0-A**

* The specific formulae used in the calculations for this spreadsheet can be found in the applicable procedure, as identified on the worklist.

HASQARD Concentration	=	1.102E-05	
Iodine 129 in uCi/g	<	1.102E-05	**DETECTION LEVEL in uCi/g**
Carrier Per Cent Recovery	=	73.52%	
Counting Uncertainty	=		1.102E-05

Iodine Solid Sample Template 2.0

Printed at: 12:22:43 PM 6/18/2013 Version: 2.02

222-S Lab

Sample Description: Batch ID:41744,SAM ID:S13T004246,QC TYPE:SAM
Sample Comment:

Batch ID:		Batch Sequence:	00
Sample ID:		QC Type:	
Method:		Matrix:	
Detector:	GEA #180	Sample Type:	ANA
Spectrum:	180_20130617004		

Collection Start Date:	6/17/2013 10:39	Live Time:	9000 sec
Collection Stop Date:	6/17/2013 10:39	Real Time:	9166 sec
Acquired:	6/17/2013 17:14:35	Dead Time:	1.81 %
Analysis Date:	6/18/2013 11:36	Analyst:	MC Bierman
Sample Quantity:	1.0000E+00 Each	Editor:	
Dilution Factor:	1.0000E+00	Edit Date:	
Analysis Quantity:	1.000E+00 Each	Reviewer:	BobSwoboda
		Review Date:	6/18/2013 11:45

Library:	I129.lib		
Analysis Engine:	Env32 G70W0.30	En Cal Date:	9/23/2010 10:27
PBC File:	180_2013-06-15_2204.PBC	PBC Date:	6/15/2013 22:04
Efficiency File:	180_PDI2.Clb	Eff Cal Date:	6/7/2011 09:31
Efficiency Desc:	Interpolative fit of the two 29 KeV lines and the 39 KeV line for I·		

Comments:

Nuclides > Critical Level

Nuclide	Flags	Activity uCi/Each	1-Sigma Counting Uncert %	1-Sigma Counting Uncert uCi/Each	1-Sigma Total Uncert uCi/Each	MDA uCi/Each	Critical Level uCi/Each
None	_F_						

Nuclide Flags: E = Edited, # = Bad Shape, A = <MDA, B = <Critical Level

222-S Lab

Spectrum: 180_20130617004
Sample Description: Batch ID:41744,SAM ID:S13T004246,QC TYPE:SAM
Sample Comment:
Detector: GEA #180

Nuclides <= Critical Level

Nuclide	Flags	Activity uCi/Each	1-Sigma Counting Uncert %	1-Sigma Counting Uncert uCi/Each	1-Sigma Total Uncert uCi/Each	MDA uCi/Each	Critical Level uCi/Each
I-129	#AB	0.000E+00	1.00E+03	2.62E-06	2.62E-06	7.90E-06	2.50E-06

Nuclide Flags: E = Edited, # = Bad Shape, A = <MDA, B = <Critical Level

Workbook Page DUP 4

Iodine 129 : SOLID

			DUP		
Type	GROSS WEIGHT in grams	W_2	7.6078	Associated Sample Number	**S13T004246**
DUP	TARE WEIGHT in grams	W_1	7.5855	Associated Sample Value	<7.90e-6
Work List	MASS PRECIPITATE in grams		0.0223		
00041744	Iodine 129 µCi / SAMPLE from GEA	I(GEA)	<7.21e-6	<< Prefix with "<" for "Less Than" results	
Test Code	GRAMS OF SAMPLE	Wsam	0.9882		
IODINE-129 SOLIDS	DETECTION LIMIT µCi / Sample		7.2100E-06		
Matrix	CARRIER BOOK NUMBER		28N12C		
SOLID	CARRIER VALUE in gm KI / mL		2.8084E-01		
Rerun	VOLUME CARRIER ADDED in mL		0.100		
0	CARRIER FRACTIONAL RECOVERY	REC	0.7319		
Sample Prep	COUNT TIME IN MINUTES		150.0		
	COUNTING UNCERTAINTY		N/A	<< N/A (please enter N/A)	

Sample #
S1306170093
Instrument Code
LEPS 180/190
Data Entry By
MCB
Analyst
GLL
Date Completed
6/18/2013
Analysis Date
6/17/2013
Analysis Time
10:39 AM

Procedure using this form*: **LA-508-167 A-0-A**

* The specific formulae used in the calculations for this spreadsheet can be found in the applicable procedure, as identified on the worklist.

Sample Point				
C109 CLO	**HASQARD Concentration**	=	9.969E-06	
Units	**Iodine 129 in uCi/g**	<	9.969E-06	**DETECTION LEVEL in uCi/g**
uCi/g	**Carrier Per Cent Recovery**	=	73.19%	
	Counting Uncertainty	=		9.969E-06

Iodine Solid Sample Template 2.0

Printed at: 12:23:41 PM 6/18/2013 Version: 2.02

222-S Lab

Sample Description: Batch ID:41744,SAM ID:S1306170093,QC TYPE:DUP
Sample Comment:

Batch ID:		Batch Sequence:	00
Sample ID:		QC Type:	
Method:		Matrix:	
Detector:	GEA #190	Sample Type:	DUP
Spectrum:	190_20130617004		

Collection Start Date:	6/17/2013 10:39	Live Time:	9000 sec
Collection Stop Date:	6/17/2013 10:39	Real Time:	9185 sec
Acquired:	6/17/2013 17:14:01	Dead Time:	2.01 %
Analysis Date:	6/18/2013 11:35	Analyst:	MC Bierman
Sample Quantity:	1.0000E+00 Each	Editor:	
Dilution Factor:	1.0000E+00	Edit Date:	
Analysis Quantity:	1.000E+00 Each	Reviewer:	BobSwoboda
		Review Date:	6/18/2013 11:46

Library:	I129.lib		
Analysis Engine:	Env32 G70W0.30	En Cal Date:	7/26/2012 13:25
PBC File:	190_2013-06-15_2207.PBC	PBC Date:	6/15/2013 22:07
Efficiency File:	190_PDI2_Shelf1(7-27-12).Clb	Eff Cal Date:	7/27/2012 08:14
Efficiency Desc:	Energy and Efficiency Calibration for LEPS 190 on PdI2 on shelf#1		

Comments:

Nuclides > Critical Level

Nuclide	Flags	Activity uCi/Each	1-Sigma Counting Uncert %	1-Sigma Counting Uncert uCi/Each	1-Sigma Total Uncert uCi/Each	MDA uCi/Each	Critical Level uCi/Each
None	_F_						

Nuclide Flags: E = Edited, # = Bad Shape, A = <MDA, B = <Critical Level

222-S Lab

Spectrum: 190_20130617004
Sample Description: Batch ID:41744,SAM ID:S1306170093,QC TYPE:DUP
Sample Comment:
Detector: GEA #190

Nuclides <= Critical Level

Nuclide	Flags	Activity uCi/Each	1-Sigma Counting Uncert %	1-Sigma Counting Uncert uCi/Each	1-Sigma Total Uncert uCi/Each	MDA uCi/Each	Critical Level uCi/Each
I-129	#AB	0.000E+00	1.00E+03	9.78E-07	9.78E-07	7.21E-06	2.28E-06

Nuclide Flags: E = Edited, # = Bad Shape, A = <MDA, B = <Critical Level

Workbook Page SAMPLE 5

Iodine 129 : SOLID

			SAMPLE	
Type	GROSS WEIGHT in grams	W_2	7.5901	
SAMPLE	TARE WEIGHT in grams	W_1	7.5690	
Work List	MASS PRECIPITATE in grams		0.0211	
00041744	Iodine 129 µCi / SAMPLE from GEA	I(GEA)	<7.90e-6	<< Prefix with "<" for "Less Than" results
Test Code	GRAMS OF SAMPLE	Wsam	0.9741	
IODINE-129 SOLIDS	DETECTION LIMIT µCi / Sample		7.9000E-06	
Matrix	CARRIER BOOK NUMBER		28N12C	
SOLID	CARRIER VALUE in gm KI / mL		2.8084E-01	
Rerun	VOLUME CARRIER ADDED in mL		0.100	
1	CARRIER FRACTIONAL RECOVERY	REC	0.6925	
Sample Prep	COUNT TIME IN MINUTES		150.0	
	COUNTING UNCERTAINTY		N/A	<< N/A (please enter N/A)

Sample #				
S13T004274				
Instrument Code				
LEPS 180/190				
Data Entry By				
MCB				
Analyst				
GLL				
Date Completed	**Procedure using this form*:**		**LA-508-167 A-0-A**	
6/18/2013				
Analysis Date	* The specific formulae used in the calculations for this spreadsheet can be found			
6/17/2013	in the applicable procedure, as identified on the worklist.			
Analysis Time				
10:39 AM				
Sample Point	**HASQARD Concentration**	=	1.171E-05	
C109 CLO	**Iodine 129 in uCi/g**	<	1.171E-05	**DETECTION LEVEL**
Units	**Carrier Per Cent Recovery**	=	69.25%	**in uCi/g**
uCi/g	**Counting Uncertainty**	=		1.171E-05

Iodine Solid Sample Template 2.0

Printed at: 12:24:24 PM 6/18/2013 Version: 2.02

222-S Lab

Sample Description: Batch ID:41744,SAM ID:S13T004274,QC TYPE:SAM
Sample Comment:

Batch ID:		Batch Sequence:	00
Sample ID:		QC Type:	
Method:		Matrix:	
Detector:	GEA #180	Sample Type:	ANA
Spectrum:	180_20130617005		

Collection Start Date:	6/17/2013 10:39	Live Time:	9000 sec
Collection Stop Date:	6/17/2013 10:39	Real Time:	9165 sec
Acquired:	6/17/2013 19:55:08	Dead Time:	1.80 %
Analysis Date:	6/18/2013 11:34	Analyst:	MC Bierman
Sample Quantity:	1.0000E+00 Each	Editor:	
Dilution Factor:	1.0000E+00	Edit Date:	
Analysis Quantity:	1.000E+00 Each	Reviewer:	BobSwoboda
		Review Date:	6/18/2013 11:45

Library:	I129.lib		
Analysis Engine:	Env32 G70W0.30	En Cal Date:	9/23/2010 10:27
PBC File:	180_2013-06-15_2204.PBC	PBC Date:	6/15/2013 22:04
Efficiency File:	180_PDI2.Clb	Eff Cal Date:	6/7/2011 09:31
Efficiency Desc:	Interpolative fit of the two 29 KeV lines and the 39 KeV line for I-		

Comments:

Nuclides > Critical Level

Nuclide	Flags	Activity uCi/Each	1-Sigma Counting Uncert %	1-Sigma Counting Uncert uCi/Each	1-Sigma Total Uncert uCi/Each	MDA uCi/Each	Critical Level uCi/Each
None	_F_						

Nuclide Flags: E = Edited, # = Bad Shape, A = <MDA, B = <Critical Level

222-S Lab

Spectrum: 180_20130617005
Sample Description: Batch ID:41744,SAM ID:S13T004274,QC TYPE:SAM
Sample Comment:
Detector: GEA #180

Nuclides <= Critical Level

Nuclide	Flags	Activity uCi/Each	1-Sigma Counting Uncert %	1-Sigma Counting Uncert uCi/Each	1-Sigma Total Uncert uCi/Each	MDA uCi/Each	Critical Level uCi/Each
I-129	#AB	0.000E+00	1.00E+03	3.39E-06	3.39E-06	7.90E-06	2.50E-06

Nuclide Flags: E = Edited, # = Bad Shape, A = <MDA, B = <Critical Level

Workbook Page SAMPLE 6

Iodine 129 : SOLID

			SAMPLE	
Type	GROSS WEIGHT in grams	W_2	7.6235	
SAMPLE	TARE WEIGHT in grams	W_1	7.6026	
Work List	MASS PRECIPITATE in grams		0.0209	
00041744	Iodine 129 µCi / SAMPLE from GEA	I(GEA)	<9.87e-6	<< Prefix with "<" for "Less Than" results
Test Code	GRAMS OF SAMPLE	Wsam	1.0409	
IODINE-129 SOLIDS	DETECTION LIMIT µCi / Sample		9.8700E-06	
Matrix	CARRIER BOOK NUMBER		28N12C	
SOLID	CARRIER VALUE in gm KI / mL		2.8084E-01	
Rerun	VOLUME CARRIER ADDED in mL		0.100	
1	CARRIER FRACTIONAL RECOVERY	REC	0.6860	
Sample Prep	COUNT TIME IN MINUTES		150.0	
	COUNTING UNCERTAINTY		N/A	<< N/A (please enter N/A)

Sample #
S13T004301
Instrument Code
LEPS 180/190
Data Entry By
MCB
Analyst
GLL
Date Completed
6/18/2013
Analysis Date
6/17/2013
Analysis Time
10:39 AM
Sample Point
C109 CLO
Units
uCi/g

Procedure using this form*: **LA-508-167 A-0-A**

* The specific formulae used in the calculations for this spreadsheet can be found in the applicable procedure, as identified on the worklist.

HASQARD Concentration	=	1.382E-05	
Iodine 129 in uCi/g	<	1.382E-05	**DETECTION LEVEL in uCi/g**
Carrier Per Cent Recovery	=	68.60%	
Counting Uncertainty	=		1.382E-05

Iodine Solid Sample Template 2.0

Printed at: 12:27:50 PM 6/18/2013 Version: 2.02

222-S Lab

Sample Description: Batch ID:41744,SAM ID:S13T004301,QC TYPE:SAM
Sample Comment:

Batch ID:		Batch Sequence:	00
Sample ID:		QC Type:	
Method:		Matrix:	
Detector:	GEA #190	Sample Type:	ANA
Spectrum:	190_20130617005		

Collection Start Date:	6/17/2013 00:00	Live Time:	9000 sec
Collection Stop Date:	6/17/2013 00:00	Real Time:	9173 sec
Acquired:	6/17/2013 21:41:00	Dead Time:	1.88 %
Analysis Date:	6/18/2013 11:34	Analyst:	MC Bierman
Sample Quantity:	1.0000E+00 Each	Editor:	
Dilution Factor:	1.0000E+00	Edit Date:	
Analysis Quantity:	1.000E+00 Each	Reviewer:	BobSwoboda
		Review Date:	6/18/2013 11:46

Library:	I129.lib		
Analysis Engine:	Env32 G70W0.30	En Cal Date:	7/26/2012 13:25
PBC File:	190_2013-06-15_2207.PBC	PBC Date:	6/15/2013 22:07
Efficiency File:	190_PDI2_Shelf1(7-27-12).Clb	Eff Cal Date:	7/27/2012 08:14
Efficiency Desc:	Energy and Efficiency Calibration for LEPS 190 on PdI2 on shelf#1		

Comments:

Nuclides > Critical Level

Nuclide	Flags	Activity uCi/Each	1-Sigma Counting Uncert %	1-Sigma Counting Uncert uCi/Each	1-Sigma Total Uncert uCi/Each	MDA uCi/Each	Critical Level uCi/Each
I-129	#A	4.579E-06	6.65E+01	3.05E-06	3.05E-06	9.87E-06	3.61E-06

Nuclide Flags: E = Edited, # = Bad Shape, A = <MDA, B = <Critical Level

222-S Lab

Spectrum: 190_20130617005
Sample Description: Batch ID:41744,SAM ID:S13T004301,QC TYPE:SAM
Sample Comment:
Detector: GEA #190

Nuclides <= Critical Level

Nuclide	Flags	Activity uCi/Each	1-Sigma Counting Uncert %	1-Sigma Counting Uncert uCi/Each	1-Sigma Total Uncert uCi/Each	MDA uCi/Each	Critical Level uCi/Each
None	_F_						

Nuclide Flags: E = Edited, # = Bad Shape, A = <MDA, B = <Critical Level

Data Review Check List

Procedure LA-285-102 **NI-63** **solid**

Project: C109 CLO

Group(s): 20130402 **41633**

Review Item	Level 1 Yes	Level 1 No	Level 1 N/A	Level 2	Comments and Samples Affected
Batch Items					
1. Was an LCS and blank run the batch?	X			√	
2. Was a duplicate run with the batch?	X			√	
2a Was a spike run with the batch?			X	√	
3. Was the book # of the standard and carrier (and spike) on the traveler?	X			√	
4. Was the batch traveler completed (sample #, dilution, aliquot size)?	X			√	
5. Were any line outs initialed and dated?	X			√	
6. Was balance check completed on the day of use (if used)?			X	√	
Result Items					
7. Was sample, traveler and counting data correct on ACE form?	X			√	
8. If No, was ACE form corrected?			X	√	
9. Did results etc. correctly up-load to LABCORE (OMNILims or MULTILims)?	X			√	
10. If No, was LABCORE corrected?			X	√	
11. Are result units correct?	X			√	
12. If No, were units corrected?			X	√	
13. Was data flagged?	X			√	
14. Are all flags present and correct?			X	√	
15. Are LCS results within limits (Lab's or customer's)?	X			√	
16. Are Spike results within limits (Lab's or customer's)?			X	√	
17. Is blank <MDC, or <5% isotope concentration, or <5% decision level?	X			√	
18. Are duplicate RPDs <20% (or RSD) within customer limits?	X			√	
19. Are the correct procedure number and Rev/Mod on the report?	X			√	
Procedure Speciffic Items					
20. Was the correct LSC program used for counting?	X			√	
21. Are carrier recoveries between 30% and 110%?	X			√	
22. Were the customer required detection or quantification limits met?	X			√	

1st Level Reviewer: [signature] **Date:** 6/25/2013

2nd Level Reviewer: [signature] **Date:** 25 Jun 13

Data Review Checklist

CALIBRATION OF LIQUID SCINTILLATION COUNTERS

INSTRUMENT # LSC-03_6500 **PROCEDURES LA-508-121 LQ-150-115**

BATCH # 41633 Ni-63

Review Items	--- Level 1 --- Yes	No	N/A	Comments & Samples Affected
Efficiency Calibration				
1. Instrument calibration stds ^{3}H & ^{14}C run prior to quench curve calibration	X			
2. Unquenched bkg vial run before quench curve calibration	X			
3. Calibration performed per procedure LA-508-121	X			
4. Quench curve calibration had > 7 data points	X			
5. Quench range of calibration matches expected range of samples	X			
6. Quench calibration performed in mode where bkg is subtracted from each analysis	X			
7. Calibration had a second, independent check.	X			
8. Any non-conformances are documented in maintenance notebook	X			
9. Calibration reports are pasted and signed in maintenance notebook	X			
Instrument Control				
1. Instrument Control Std within limits before and after batch counted	X			
2. Bkg check within limits before and after batch counted	X			

Reviewer: Karl L Hunt Date: 6/25/13

LABCORE Completed Batch Report for Batch# 00041633

Analyst: King, Rob W **Book#:** 65B63

Instrument: LSC3 LS6500 B-1A

Method: NICKEL-63, LA-508-121 Rev/Mod G-0

Specification: C109 CLO

Prep Batch: 00041255

Batch Comment:

C109 CLO RWK

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
Sample Sequence 1																	
1	STD	S1306110114		0 0			Nickel-63	SOLID	.001959	1.9264E-03		1.334	5.16E-06	uCi/mL	98.334	% Recovery	
1	STD	S1306110114		0 0			Nickel-C	SOLID		97.185				% Recovery	N/A		
Sample Sequence 2																	
2	BLNK-PREP	S1305160012		0 1	Z		Nickel-63	SOLID		<1.4300E-03			1.43E-03	uCi/g			
2	BLNK-PREP	S1305160012		0 1	Z		Nickel-C	SOLID		93.419				% Recovery			
Sample Sequence 3																	
3	SAMPLE	S13T004254		0 1	Z		Nickel-63	SOLID	N/A	6.8100E-02		4.29	1.37E-03	uCi/g			
3	SAMPLE	S13T004254		0 1	Z		Nickel-C	SOLID		97.39				% Recovery			
Sample Sequence 4																	
4	DUP	S1305160013	S13T004254	0 1	Z		Nickel-63	SOLID	6.8100E-02	5.6400E-02		4.644	1.28E-03	uCi/g	18.795	% RPD	
4	DUP	S1305160013	S13T004254	0 1	Z		Nickel-C	SOLID	97.39	101.17				% Recovery			
Sample Sequence 5																	
5	SAMPLE	S13T004282		0 1	Z		Nickel-63	SOLID	N/A	7.0300E-02		4.35	1.45E-03	uCi/g			
5	SAMPLE	S13T004282		0 1	Z		Nickel-C	SOLID		96.806				% Recovery			
Sample Sequence 6																	
6	SAMPLE	S13T004309		0 1	Z		Nickel-63	SOLID	N/A	7.9600E-02		3.595	1.22E-03	uCi/g			
6	SAMPLE	S13T004309		0 1	Z		Nickel-C	SOLID		101.91				% Recovery			

Comments Section:

Data Flagger Status:
Flagging Completed

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041633

Final Page for Batch# 00041633

S A Catter 25 Jan 13
Reviewer Signature Date

PC: Julie Osborn 7/9/13

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041633

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Method	Customer Id	Specification
1	S1306110114	STD			NICKEL-63		
2	S1305160012	BLNK-PREP			NICKEL-63		
3	S13T004254	SAMPLE		20130402	NICKEL-63	9C-13-Comp A	C109 CLO
4	S1305160013	DUP	S13T004254		NICKEL-63		
5	S13T004282	SAMPLE		20130402	NICKEL-63	9C-13-Comp B	C109 CLO
6	S13T004309	SAMPLE		20130402	NICKEL-63	9C-13-Comp C	C109 CLO

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Data Entry Template for Batch# 00041633

Analyst: H006154?

Standard ID / Book#: See bench sheet

Instrument: LSC 3 6500

Method: NICKEL-63, LA-508-121 Rev/Mod 6-0

Prep Batch: 00041255

Batch Comment:

C109 CLO RWK

CACN:3A.26

S	Type	Sample	R	A	Matrix	Group#	Project
1	STD	S1306110114	0		SOLID		
	Analytes Requested:	Nickel-63, Nickel-C					
2	BLNK-PREP	S1305160012	1	Z	SOLID		
	Analytes Requested:	Nickel-63, Nickel-C					
3	SAMPLE	S13T004254	1	Z	SOLID	20130402	C109 CLO
	Analytes Requested:	Nickel-63, Nickel-C					
4	DUP	S1305160013	1	Z	SOLID		
	Analytes Requested:	Nickel-63, Nickel-C					
5	SAMPLE	S13T004282	1	Z	SOLID	20130402	C109 CLO
	Analytes Requested:	Nickel-63, Nickel-C					
6	SAMPLE	S13T004309	1	Z	SOLID	20130402	C109 CLO
	Analytes Requested:	Nickel-63, Nickel-C					

Final Page for Batch# 00041633

Rob Wing 6/11/13

Analyst Signature **Date**

Valerie L Massie 6-25-13

Data Entry Signature **Date**

Rob Wing 6.25.13

Data Entry Comments:

S = Batch Slot Number, R = Retest Number, A = Aliquot Code.

LABCORE Data Entry Template for Batch# 00041551

Analyst: 14010242 2 **Standard ID / Book#:** 65863

Instrument: NA

Method: NICKEL-63 SEPARATION, LA-285-102 Rev/Mod G-0

Prep Batch: 00041255

Batch Comment:

Dup associated with S13T004254. MOF

CACN:3A.26

S	Type	Sample	R	A	Matrix	Group#	Project
1	STD	S1306060001	0		LIQUID		
	Analytes Requested:	RadChem Separation					
2	BLNK-PREP	S1305160012	1	Z	SOLID		
	Analytes Requested:	RadChem Separation					
3	SAMPLE	S13T004254	1	Z	SOLID	20130402	C109 CLO
	Analytes Requested:	RadChem Separation					
4	DUP	S1305160013	1	Z	SOLID		
	Analytes Requested:	RadChem Separation					
5	SAMPLE	S13T004282	1	Z	SOLID	20130402	C109 CLO
	Analytes Requested:	RadChem Separation					
6	SAMPLE	S13T004309	1	Z	SOLID	20130402	C109 CLO
	Analytes Requested:	RadChem Separation					

Final Page for Batch# 00041551

Martha O. Fale 6-11-13
Analyst Signature **Date**

Martha O. Fale 6-11-13
Data Entry Signature **Date**

Data Entry Comments:

S = Batch Slot Number, R = Retest Number, A = Aliquot Code.

ATL	**Ni-63 BATCH LIST DATA COLLECTION FORM**	◉ LA-285-102 Rev G-0 ○ LA-285- Rev

Separation Batch #: 41551 Analyst Initials: MOF MM.Of. Analysis Date/Time: 6-11-13 / 14:51

(Pipette #); Pipette ID; Volume Range or Fixed Volume; Check box if pipette passes visual verification:

(1) 4171674 (Range/Vol: 100-1000 ul) ☒

(2) 3029969 (Range/Vol: 500-5000 ul) ☐

(3) NA (Range/Vol: NA) ☐

Balance ID; Date of balance verification:

NA (Verification Date: NA)

NA (Verification Date: NA)

Matrix: Solid Prep Batch #: 41255 HASQARD Upload ☐

Standard Book #: 65B63

Spike Book #: NA Volume: NA (Pip # NA)

Carrier Book #: 132N14B Volume: 1.0 ml (Pip # 1)

Counting Room Information

⊗ LA-508-121 Rev 6-0 ○ LA-508-122 Rev

Counting Batch #: 41633

Instrument ID: LSC-03/WCS1586

Inst. Check Std ID: PerkinElmer DX, EX

Special Instructions/Comments:

Dup associated with S13T004254. MOF
C109 CLO, Gp# 20130402.

Sample Type	Sample ID	Sample Size	Pip #	Dilution Information	Pip #	DF	Ni Conc.(*) Before Separation	Ni Conc.(*) After Separation	Counting Room Info Sample Pos #
Sep Std	S1306060001	1.0 ml	1	NA	NA	1	N/A	N/A	19
Cnt Std	S1306110114	NA	NA	NA	NA	NA	0	194.565	3
Blk Prep	S1305160012	2.0 ml	2	NA	NA	1	0.047152	187.034	4
Sample	S13T004254	2.0 ml	2	NA	NA	1	1.38114	195.243	5
Prep Dup	S1305160013	2.0 ml	2	NA	NA	1	1.59354	202.87	6
Sample	S13T004282	2.0 ml	2	NA	NA	1	2.69913	194.328	7
Sample	S13T004309	2.0 ml	2	NA	NA	1	2.11934	204.454	8

(*) From ICP - Ni Concentration

A-6005-354 (REV 1)

PAGE: 1

ID:NI-63 11 JUN 2013 17:51

USER: 8 COMMENT:LS 6500 WC51586

PRESET TIME : 20.00

DATA CALC :	SL DPM	H# :YES	SAMPLE REPEATS:	1	PRINTER	: STD
COUNT BLANK :	YES	IC# : NO	REPLICATES :	1	RS232	: STD
TWO PHASE :	YES	AQC : NO	CYCLE REPEATS :	1	DISK	:EDIT
SCINTILLATOR:	LIQUID	LUMEX:YES	LOW SAMPLE REJ:	0		
LOW LEVEL :	NO	HALF LIFE CORRECTION DATE:			none	

ISOTOPE 1: NI-63 %ERROR: 0.00 FACTOR: 1.000000 BKG. SUB: 0

CHAN: 600.0 - 1000.0 %ERROR: 0.00 FACTOR: 1.000000 BKG. SUB: 0

BACKGROUND QUENCH CURVE: Off COLOR QUENCH CORRECTION: Off

Quench Limits Low:120.11 High:485.72

SAM NO	POS	TIME MIN	H#	NI-63 CPM	NI-63 %ERROR	WIND1 CPM	WIND1 %ERROR	NI-63 DPM	NI-63 EFF-1	LUMEX %	ELAPSED 2P TIME
B1	**-1	20.00	170.9	34.65	10.06	22.10	9.51	**62.85**	55.13	31.59	21.68
		Blank Average DPM for NI-63 :						**62.85**	**COEF. OF VAR:**		**0.000**
1	**-3	20.00	171.3	1178.75	1.31	19.70	10.08	**2078.07**	55.06	1.19	43.22
2	**-4	20.00	170.0	32.70	9.14	21.20	9.71	**-3.75**	55.33	18.36	64.67
3	**-5	20.00	170.9	186.60	3.37	29.85	8.19	**275.61**	55.13	5.10	86.10
4	**-6	20.00	170.3	169.50	3.54	31.95	7.91	**243.92**	55.25	4.79	107.51
5	**-7	20.00	171.4	183.45	3.38	39.70	7.10	**270.48**	55.04	3.80	128.90
6	**-8	20.00	171.5	234.75	2.97	37.20	7.33	**363.79**	55.02	3.11	150.28

Sample Name	Acquisition Date	Sample type
Prep Blank B	6/24/2013 2:35:54 PM	Unknown
Avg. of Repeats:	0.0471521	

Sample Name	Acquisition Date	Sample type
Prep Blank A	6/24/2013 2:38:15 PM	Unknown
Avg. of Repeats:	187.034	

Sample Name	Acquisition Date	Sample type
Prep Std A	6/24/2013 2:40:35 PM	Unknown
Avg. of Repeats:	194.565	

Sample Name	Acquisition Date	Sample type
S13T004254-B	6/24/2013 2:42:55 PM	Unknown
Avg. of Repeats:	1.38114	

Sample Name	Acquisition Date	Sample type
S13T004254-B Dup	6/24/2013 2:45:18 PM	Unknown
Avg. of Repeats:	1.59354	

Sample Name	Acquisition Date	Sample type
B S13T004282	6/24/2013 2:47:39 PM	Unknown
Avg. of Repeats:	2.69913	

Sample Name	Acquisition Date	Sample type
B S13T004309	6/24/2013 2:50:01 PM	Unknown
Avg. of Repeats:	2.11934	

Sample Name ym 6.25-13	Acquisition Date	Sample type
S13T004252-A	6/24/2013 2:52:24 PM	Unknown
Avg. of Repeats:	195.243	

Sample Name ym 6.25-13	Acquisition Date	Sample type
S13T004252-A Dup	6/24/2013 2:59:29 PM	Unknown
Avg. of Repeats:	202.87	

Sample Name	Acquisition Date	Sample type
S13T004282-A	6/24/2013 3:01:50 PM	Unknown
Avg. of Repeats:	194.328	

Sample Name	Acquisition Date	Sample type
S13T004309-A	6/24/2013 3:04:13 PM	Unknown
Avg. of Repeats:	204.454	

NI-63

			STD
Type	Disintegrations per Minute of Standard	(DPM)	2078.07
STD	Counts per Minute of Standard	(CPM)	1178.75
Work List	Background Count Rate in cpm	(CPM_{BKG})	34.65
00041633	Count Time in Minutes	(CT)	20
Test Code	Instrument Fractional Efficiency	(EFF)	0.5506
NICKEL-63	Counting Efficiency of the BKG	(EFF_{BKG})	0.5513
Matrix	Sample Size in mL	(SS)	1.00
SOLID	Dilution Factor	(DF)	1.00
Rerun	Digest Dilution Factor	(DDF)	1.0000E+00
0	Nickel Concentration After Separation	(NiC_F)	194.5650
Sample Prep	Carrier Book Number		132N14B
	Nickel Concentration of Carrier	(NIC_A)	2002.00
Sample #	Volume of Carrier added in mL	(NiVol)	1.00
S1306110114	Lc, Rmax, or Rs, (Sample Rate) as appropriate	DPM	2078.07
Instrument Code	Critical Level	DPM	5.57
WC51586	Rmax Level	DPM	2101.34
Data Entry By	Detection Limit	DPM	20.47
VLM	Standard Book No.		65B63
Analyst	Standard Value in uCi/g		1.959E-03
MOF			
Date Completed	**Procedure using this form*:**		**LA-508-121 G-0**
6/25/2013			
Analysis Date	* The specific formulae used in the calculations for this spreadsheet can be found in the applicable procedure, as identified on the worklist.		
6/11/2013			
Analysis Time			
2:51 PM	**Calculated Carrier Recovery Factor (RF)**	=	97.2%
Specification	**Result in uCi/g**		1.93E-03
C109 CLO	**Detection Limit in uCi/g**	=	5.16E-06
Units	**Relative Percent Counting Uncertainty**	=	1.3%
uCi/g	**% Standard Recovery**	=	98.3%

Nickel-63 Std Template 2.0

Printed at: 2:04:51 PM 6/25/2013 Version: 2.01

Workbook Page BLANK 2

NI-63

			BLNK-PREP
Type	Disintegrations per Minute	(DPM)	-3.75
BLNK-PREP	Counts per Minute of BLNK-PREP	(CPM)	32.70
Work List	Background Count Rate in cpm	(CPM)	34.65
00041633	Count Time in Minutes	(CT)	20
Test Code	Instrument Fractional Efficiency	(EFF)	0.5533
NICKEL-63	Counting Efficiency of the BKG	(EFF)	0.5513
Matrix	Sample Size in mL	(SS)	2.00
SOLID	Dilution Factor	(DF)	1.00
Rerun	Digest Dilution Factor	(DDF)	1.8728E-03
1	Nickel Concentration After Separation	(NiC_F)	187.0340
Sample Prep	Carrier Book Number		132N14B
S1305160012-001	Nickel Concentration of Carrier	(NIC_f)	2002.00
Sample #	Volume of Carrier added in mL	(NiVol)	1.000
S1305160012	Nickel Concentration of Sample	(NiC_o)	4.7152E-02
Instrument Code	Lc, Rmax, or Rs, (Sample Rate) as appropriate	DPM	5.55
WC51586	Critical Level	DPM	5.55
Data Entry By	Rmax Level	DPM	1.73
VLM	Detection Limit	DPM	20.32
Analyst			
MOF			
Date Completed			
6/25/2013			
Analysis Date			
6/11/2013			
Analysis Time			
2:51 PM			
Specification			
C109 CLO			
Units			
uCi/g			

Procedure using this form*: **LA-508-121 G-0**

* The specific formulae used in the calculations for this spreadsheet can be found in the applicable procedure, as identified on the worklist.

HAZQUARD Concentration	=	-9.65E-04
Calculated Carrier Recovery Factor (RF)	=	93.4%
Result in uCi/g	<	1.43E-03
Detection Limit in uCi/g	=	1.43E-03
Relative Percent Counting Uncertainty	=	184.4%

Nickel-63 Sample Template 2.0

Printed at: 1:23:19 PM 6/25/2013 Version: 2.01

Workbook Page SAMPLE 3

NI-63

			SAMPLE
Type	Disintegrations per Minute	(DPM)	275.61
SAMPLE	Counts per Minute of SAMPLE	(CPM)	186.60
Work List	Background Count Rate in cpm	(CPM)	34.65
00041633	Count Time in Minutes	(CT)	20
Test Code	Instrument Fractional Efficiency	(EFF)	0.5513
NICKEL-63	Counting Efficiency of the BKG	(EFF)	0.5513
Matrix	Sample Size in mL	(SS)	2.00
SOLID	Dilution Factor	(DF)	1.00
Rerun	Digest Dilution Factor	(DDF)	1.8728E-03
1	Nickel Concentration After Separation	(NiC_F)	195.2430
Sample Prep	Carrier Book Number		132N14B
S13T004254-001	Nickel Concentration of Carrier	(NIC_f)	2002.00
Sample #	Volume of Carrier added in mL	(NiVol)	1.000
S13T004254	Nickel Concentration of Sample	(NiC_o)	1.3811E+00
Instrument Code	Lc, Rmax, or Rs, (Sample Rate) as appropriate	DPM	275.61
WC51586	Critical Level	DPM	5.56
Data Entry By	Rmax Level	DPM	285.58
VLM	Detection Limit	DPM	20.43
Analyst			
MOF			
Date Completed			
6/25/2013			
Analysis Date			
6/11/2013			
Analysis Time			
2:51 PM			
Specification			
C109 CLO			
Units			
uCi/g			

Procedure using this form*: **LA-508-121 G-0**

* The specific formulae used in the calculations for this spreadsheet can be found in the applicable procedure, as identified on the worklist.

HAZQUARD Concentration	=	6.81E-02
Calculated Carrier Recovery Factor (RF)	=	97.4%
Result in uCi/g		6.81E-02
Detection Limit in uCi/g	=	1.37E-03
Relative Percent Counting Uncertainty	=	4.3%

Nickel-63 Sample Template 2.0

Printed at: 1:24:45 PM 6/25/2013 Version: 2.01

Workbook Page DUP 4

NI-63

			DUP
Type	Disintegrations per Minute	(DPM)	243.92
DUP	Counts per Minute of DUP	(CPM)	169.50
Work List	Background Count Rate in cpm	(CPM)	34.65
00041633	Count Time in Minutes	(CT)	20
Test Code	Instrument Fractional Efficiency	(EFF)	0.5525
NICKEL-63	Counting Efficiency of the BKG	(EFF)	0.5513
Matrix	Sample Size in mL	(SS)	2.00
SOLID	Dilution Factor	(DF)	1.00
Rerun	Digest Dilution Factor	(DDF)	1.9256E-03
1	Nickel Concentration After Separation	(NiC_F)	202.8700
Sample Prep	Carrier Book Number		132N14B
S1305160013-001	Nickel Concentration of Carrier	(NIC_f)	2002.00
Sample #	Volume of Carrier added in mL	(NiVol)	1.000
S1305160013	Nickel Concentration of Sample	(NiC_o)	1.5935E+00
Instrument Code	Lc, Rmax, or Rs, (Sample Rate) as appropriate	DPM	243.92
WC51586	Critical Level	DPM	5.56
Data Entry By	Rmax Level	DPM	253.48
VLM	Detection Limit	DPM	20.36

Associated Sample Number
S13T004254

Analyst	
MOF	
Date Completed	
6/25/2013	
Analysis Date	
6/11/2013	
Analysis Time	
2:51 PM	
Specification	
C109 CLO	
Units	
uCi/g	

Procedure using this form*: **LA-508-121 G-0**

* The specific formulae used in the calculations for this spreadsheet can be found in the applicable procedure, as identified on the worklist.

HAZQUARD Concentration	=	5.64E-02
Calculated Carrier Recovery Factor (RF)	=	101.2%
Result in uCi/g		5.64E-02
Detection Limit in uCi/g	=	1.28E-03
Relative Percent Counting Uncertainty	=	4.6%

Nickel-63 Sample Template 2.0

Printed at: 1:26:15 PM 6/25/2013 Version: 2.01

Workbook Page SAMPLE 5

NI-63			SAMPLE
Type	Disintegrations per Minute	(DPM)	270.48
SAMPLE	Counts per Minute of SAMPLE	(CPM)	183.45
Work List	Background Count Rate in cpm	(CPM)	34.65
00041633	Count Time in Minutes	(CT)	20
Test Code	Instrument Fractional Efficiency	(EFF)	0.5504
NICKEL-63	Counting Efficiency of the BKG	(EFF)	0.5513
Matrix	Sample Size in mL	(SS)	2.00
SOLID	Dilution Factor	(DF)	1.00
Rerun	Digest Dilution Factor	(DDF)	1.7896E-03
1	Nickel Concentration After Separation	(NiC_F)	194.3280
Sample Prep	Carrier Book Number		132N14B
S13T004282-001	Nickel Concentration of Carrier	(NIC_f)	2002.00
Sample #	Volume of Carrier added in mL	(NiVol)	1.000
S13T004282	Nickel Concentration of Sample	(NiC_o)	2.6991E+00
Instrument Code	Lc, Rmax, or Rs, (Sample Rate) as appropriate	DPM	270.48
WC51586	Critical Level	DPM	5.57
Data Entry By	Rmax Level	DPM	280.35
VLM	Detection Limit	DPM	20.48
Analyst			
MOF			
Date Completed			
6/25/2013			
Analysis Date			
6/11/2013			
Analysis Time			
2:51 PM			
Specification			
C109 CLO			
Units			
uCi/g			

Procedure using this form*: **LA-508-121 G-0**

* The specific formulae used in the calculations for this spreadsheet can be found in the applicable procedure, as identified on the worklist.

HAZQUARD Concentration	=	7.03E-02
Calculated Carrier Recovery Factor (RF)	=	96.8%
Result in uCi/g		7.03E-02
Detection Limit in uCi/g	=	1.45E-03
Relative Percent Counting Uncertainty	=	4.3%

Nickel-63 Sample Template 2.0

Printed at: 1:27:29 PM 6/25/2013 Version: 2.01

Workbook Page SAMPLE 6

NI-63

			SAMPLE
Type	Disintegrations per Minute	(DPM)	363.79
SAMPLE	Counts per Minute of SAMPLE	(CPM)	234.75
Work List	Background Count Rate in cpm	(CPM)	34.65
00041633	Count Time in Minutes	(CT)	20
Test Code	Instrument Fractional Efficiency	(EFF)	0.5502
NICKEL-63	Counting Efficiency of the BKG	(EFF)	0.5513
Matrix	Sample Size in mL	(SS)	2.00
SOLID	Dilution Factor	(DF)	1.00
Rerun	Digest Dilution Factor	(DDF)	2.0196E-03
1	Nickel Concentration After Separation	(NiC_F)	204.4540
Sample Prep	Carrier Book Number		132N14B
S13T004309-001	Nickel Concentration of Carrier	(NIC_f)	2002.00
Sample #	Volume of Carrier added in mL	(NiVol)	1.000
S13T004309	Nickel Concentration of Sample	(NiC_o)	2.1193E+00
Instrument Code	Lc, Rmax, or Rs, (Sample Rate) as appropriate	DPM	363.79
WC51586	Critical Level	DPM	5.57
Data Entry By	Rmax Level	DPM	374.82
VLM	Detection Limit	DPM	20.49
Analyst			
MOF			
Date Completed			
6/25/2013			
Analysis Date			
6/11/2013			
Analysis Time			
2:51 PM			
Specification			
C109 CLO			
Units			
uCi/g			

Procedure using this form*: **LA-508-121 G-0**

* The specific formulae used in the calculations for this spreadsheet can be found in the applicable procedure, as identified on the worklist.

HAZQUARD Concentration	=	7.96E-02
Calculated Carrier Recovery Factor (RF)	=	101.9%
Result in uCi/g		7.96E-02
Detection Limit in uCi/g	=	1.22E-03
Relative Percent Counting Uncertainty	=	3.6%

Nickel-63 Sample Template 2.0

Printed at: 1:28:40 PM 6/25/2013 Version: 2.01

5/16/2013 4:13:47PM
CompleteBatch Version 2.7.32
batchreports 2.7.32

LABCORE Completed Batch Report for Batch# 00041255

Analyst: Hurson, Aleta

Book#: NA

Instrument: LE-BAL-091

Method: FUSION - ZR, LA-549-141 Rev/Mod M-1-A

Specification: C109 CLO

Prep Batch: N/A

Batch Comment:

C109 CLO for Fusion. gll

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
1	BLNK-PREP	S1305160012			Z		Dose Rate(1)	SOLID		<0.5				mRem/hr			
1	BLNK-PREP	S1305160012			Z		Digest Factor(1)	SOLID		0.001873				g / mL			
2	SAMPLE	S13T004254			Z		Dose Rate(1)	SOLID		200				mRem/hr			
2	SAMPLE	S13T004254			Z		Digest Factor(1)	SOLID		0.001873				g / mL			
3	DUP	S1305160013	S13T004254		Z		Dose Rate(1)	SOLID		200				mRem/hr			
3	DUP	S1305160013	S13T004254		Z		Digest Factor(1)	SOLID		0.001926				g / mL			
4	SAMPLE	S13T004282			Z		Dose Rate(1)	SOLID		180				mRem/hr			
4	SAMPLE	S13T004282			Z		Digest Factor(1)	SOLID		0.001790				g / mL			
5	SAMPLE	S13T004309			Z		Dose Rate(1)	SOLID		180				mRem/hr			
5	SAMPLE	S13T004309			Z		Digest Factor(1)	SOLID		0.002020				g / mL			

Comments Section:

Data Flagger Status:
Flagger Not Run

Final Page for Batch# 00041255

Reviewer Signature 16 May 13 Date

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041255

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Method	Customer Id	Specification
1	S1305160012	BLNK-PREP			FUSION - ZR		
2	S13T004254	SAMPLE		20130402	FUSION - ZR	9C-13-Comp A	C109 CLO
3	S1305160013	DUP	S13T004254		FUSION - ZR		
4	S13T004282	SAMPLE		20130402	FUSION - ZR	9C-13-Comp B	C109 CLO
5	S13T004309	SAMPLE		20130402	FUSION - ZR	9C-13-Comp C	C109 CLO

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

* = Rejected Analyte
N, A = Non-reported Analyte

5/16/2013 8:41:54AM
IncompleteBatchShort Version 2.7.29
batchreports 2.7.32

LABCORE Data Entry Template for Batch# 00041255

Analyst: H0076677 **Standard ID / Book#:** NA

Instrument: NA

Method: FUSION - ZR, LA-549-141 Rev/Mod M-1-A

Prep Batch: N/A

Batch Comment:

C109 CLO for Fusion. gll

CACN:3A.26

S	Type	Sample	R	A	Matrix	Group#	Project
1	BLNK-PREP	S1305160012		Z	SOLID		
2	SAMPLE	S13T004254		Z	SOLID	20130402	C109 CLO
3	DUP	S1305160013		Z	SOLID		
4	SAMPLE	S13T004282		Z	SOLID	20130402	C109 CLO
5	SAMPLE	S13T004309		Z	SOLID	20130402	C109 CLO

Final Page for Batch# 00041255

5/16/13 ALH

Alicia Hanson 5/16/13
Analyst Signature Date

Alicia Hanson 5/16/13
Data Entry Signature Date
5/16/13

Data Entry Comments:

S = Batch Slot Number, R = Retest Number, A = Aliquot Code.

ATL	DIGESTION BATCH LIST DATA COLLECTION FORM

○ LA-544-101 Rev _____ ○ LA-544-113 Rev _____ ○ _____ (Other) Rev _____

○ LA-549-133 Rev _____ ◉ LA-549-141 Rev M-1-A

Batch #: 41255 Analyst: AKH Date: 5/16/2013

(Pipette #); Pipette ID; Volume Range or Fixed Volume; Check box if pipette passes visual verification:

(1) N/A (Range/Vol: N/A) ☐

(2) N/A (Range/Vol: N/A) ☐

(3) N/A (Range/Vol: N/A) ☐

Balance ID; Date of balance verification:

LE-BAL-091 (Verification Date: 5/16/2013)

○ Spike / ○ Carrier / ○ Tracer # N/A Vol N/A Pip # N/A

○ Spike / ○ Carrier / ○ Tracer # N/A Vol N/A Pip # N/A

○ Spike / ○ Carrier / ○ Tracer # N/A Vol N/A Pip # N/A

Special Instructions:

Use ZR Crucibles. gll

Sample Type	Digest Sample #	Parent Sample #	Sample Weight (g)	Final Volume (mL)	Dose Rate (mRem/hr)
Blank Prep	S1305160012	N/A	0.4682	250	<0.5
Sample	S13T004254	S13T004246	0.4682	250	200
Duplicate	S1305160013	S13T004246	0.4814	250	200
Sample	S13T004282	S13T004274	0.4474	250	180
Sample	S13T004309	S13T004301	0.5049	250	180

Comments:

C109 CLO Fusion-ZR. gll Digest Appearance: Clear liquid. colorless. no solids.

A-6005-290 (REV 2)

Data Review Check List

Procedure LA-953-104 Pu/Am

Project: C109 CLO

Group: 20130402 **Pu**

Batch # 41353

Review Item	Yes	No	N/A	Level 2	Comments and Samples Affected
Batch Items					
1. Was an LCS and blank run the batch?	X			√	
2. Was a duplicate run with the batch?	X			√	
2.a Was a spike run with the batch?		X		√	Not Requested.
3. Was the book # of the standard and tracer (and spike) on the traveler?	X			√	
4. Was the batch traveler completed (sample #, dilution, aliquot size)?	X			√	
5. Were any line outs initialed and dated?			X	√	
6. Was balance check completed on the day of use (if used)?			X	√	
Result Items					
7. Was sample, traveler and counting data correct on Alpha Vision Report?	X			√	
8. If No, was Alpha Vision form corrected?			X	√	
9. Did results etc. correctly up-load to LABCORE (OMNILims or MULTILims)?	X			√	
10. If No, was LABCORE corrected?			X	√	
11. Are result units correct?	X			√	
12. If No, were units corrected?			X	√	
13. Was data flagged?	X			√	
14. Are all flags present and correct?			X	√	
15. Are LCS results within limits (Lab's or customer's)?	X			√	
16. Are Spike results within limits (Lab's or customer's)?			X	√	
17. Is blank <MDC, or <5% isotope concentration, or <5% decision level?	X			√	
18. Are duplicate RPDs <20% (or RSD) within customer limits?	X			√	
19. Are the correct procedure number and Rev/Mod on the report?	X			√	
Procedure Speciffic Items					
20. Were tracer recoveries between 30% and 120%?	X			√	
21. Were the customer required detection or quantification limits met?	X			√	

1st Level Reviewer: JA Cattlin **Date:** 5/22/13

2nd Level Reviewer: [signature] **Date:** 5/28/2013

Data Review Checklist

ENERGY CALIBRATION OF ALPHA SPECTROMETERS

INSTRUMENT # __AEA-ORTEC_____ **PROCEDURES LA-508-168 LQ-150-115**

BATCH # ___41353_____

Review Items	--- Level 1 --- Yes	No	N/A	Comments & Samples Affected
Energy Calibration				
1. Alpha Spectrometer was energy calibrated with a std having > two peaks	X			
2. Energy Calibration spectrum had clearly resolvable peaks	X			
3. Energy range of peaks in calibration std encompasses alpha energies expected in samples	X			
Calibration Verification				
1. Weekly Instrument Control Std within limits	X			
2. Bkg check within limits and performed < one week ago	X			
3. Daily Pulsers are within control	X			

1st Level Reviewer: Karl D Hustad KI Hustad Date: 5/22/13

5/22/2013 12:40:37PM
CompleteBatch Version 2.7.32
batchreports 2.7.32

LABCORE Completed Batch Report for Batch# 00041353

Analyst: King, Rob W **Book#:** 147B64

Instrument: AEA-Ortec

Method: PLUTONIUM, LA-508-168 Rev/Mod A-0-A

Specification: C109 CLO

Prep Batch: 00041255

Batch Comment:

C109 CLO RWK

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
Sample Sequence 1																	
1	STD	S1305210093		0 0			Pu-239/240	SOLID	.000142	1.6500E-04		0.72	8.32E-08	uCi/mL	116.2	% Recovery	
1	STD	S1305210093		0 0			Plutonium-236T	SOLID		87.38				% Recovery	N/A		
Sample Sequence 2																	
2	BLNK-PREP	S1305160012		0 0	Z		Pu-239/240	SOLID		1.0100E-04		24.74	3.83E-05	uCi/g			
2	BLNK-PREP	S1305160012		0 0	Z		Plutonium-236T	SOLID		72.94				% Recovery			
2	BLNK-PREP	S1305160012		0 0	Z		Plutonium-238	SOLID		<5.0200E-05			5.02E-05	uCi/g			
Sample Sequence 3																	
3	SAMPLE	S13T004254		0 0	Z		Pu-239/240	SOLID	N/A	2.6800E-02		1.31	5.50E-05	uCi/g			
3	SAMPLE	S13T004254		0 0	Z		Plutonium-236T	SOLID		88.55				% Recovery			
3	SAMPLE	S13T004254		0 0	Z		Plutonium-238	SOLID	N/A	1.1900E-03		8.44	4.57E-05	uCi/g			
Sample Sequence 4																	
4	DUP	S1305160013	S13T004254	0 0	Z		Pu-239/240	SOLID	2.6800E-02	2.8100E-02		1.27	4.65E-05	uCi/g	4.7359	% RPD	
4	DUP	S1305160013	S13T004254	0 0	Z		Plutonium-236T	SOLID	88.55	90.84				% Recovery			
4	DUP	S1305160013	S13T004254	0 0	Z		Plutonium-238	SOLID	1.1900E-03	1.2400E-03		8.08	4.65E-05	uCi/g	4.1152	% RPD	
Sample Sequence 5																	
5	SAMPLE	S13T004282		0 0	Z		Pu-239/240	SOLID	N/A	5.0700E-02		0.97	4.57E-05	uCi/g			
5	SAMPLE	S13T004282		0 0	Z		Plutonium-236T	SOLID		90.05				% Recovery			
5	SAMPLE	S13T004282		0 0	Z		Plutonium-238	SOLID	N/A	1.6400E-03		6.91	4.22E-05	uCi/g			
Sample Sequence 6																	
6	SAMPLE	S13T004309		0 0	Z		Pu-239/240	SOLID	N/A	2.2800E-02		1.33	3.60E-05	uCi/g			
6	SAMPLE	S13T004309		0 0	Z		Plutonium-236T	SOLID		94.51				% Recovery			
6	SAMPLE	S13T004309		0 0	Z		Plutonium-238	SOLID	N/A	8.8500E-04		9.82	4.16E-05	uCi/g			

Comments Section:

Data Flagger Status:
Flagging Completed

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041353

Final Page for Batch# 00041353

Reviewer Signature 5/28/2013 Date

PC: Julie Osborn 7/10/13

LABCORE Completed Batch Report for Batch# 00041353

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Method	Customer Id	Specification
1	S1305210093	STD			PLUTONIUM		
2	S1305160012	BLNK-PREP			PLUTONIUM		
3	S13T004254	SAMPLE		20130402	PLUTONIUM	9C-13-Comp A	C109 CLO
4	S1305160013	DUP	S13T004254		PLUTONIUM		
5	S13T004282	SAMPLE		20130402	PLUTONIUM	9C-13-Comp B	C109 CLO
6	S13T004309	SAMPLE		20130402	PLUTONIUM	9C-13-Comp C	C109 CLO

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

* = Rejected Analyte
N, A = Non-reported Analyte

5/21/2013 4:27:52PM
IncompleteBatchShort Version 2.7.29
batchreports 2.7.32

LABCORE Data Entry Template for Batch# 00041353

Analyst: H0061547 **Standard ID / Book#:** See bench sheet
Instrument: AEA ortec
Method: PLUTONIUM, LA-508-168 Rev/Mod A-04
Prep Batch: 00041255
Batch Comment:
C109 CLO RWK
CACN:3A.26

S	Type	Sample	R	A	Matrix	Group#	Project
1	STD	S1305210093	0		SOLID		
	Analytes Requested:	Plutonium-236T, Pu-239/240					
2	BLNK-PREP	S1305160012	0	Z	SOLID		
	Analytes Requested:	Plutonium-236T, Plutonium-238, Plutonium-242, Pu-239/240					
3	SAMPLE	S13T004254	0	Z	SOLID	20130402	C109 CLO
	Analytes Requested:	Plutonium-236T, Plutonium-238, Plutonium-242, Pu-239/240					
4	DUP	S1305160013	0	Z	SOLID		
	Analytes Requested:	Plutonium-236T, Plutonium-238, Plutonium-242, Pu-239/240					
5	SAMPLE	S13T004282	0	Z	SOLID	20130402	C109 CLO
	Analytes Requested:	Plutonium-236T, Plutonium-238, Plutonium-242, Pu-239/240					
6	SAMPLE	S13T004309	0	Z	SOLID	20130402	C109 CLO
	Analytes Requested:	Plutonium-236T, Plutonium-238, Plutonium-242, Pu-239/240					

Final Page for Batch# 00041353

5/21/13
Analyst Signature **Date**

5-22-13
Data Entry Signature **Date**

Data Entry Comments:

S = Batch Slot Number, R = Retest Number, A = Aliquot Code.

5/20/2013 3:02:00PM
IncompleteBatchShort Version 2.7.29
batchreports 2.7.32

LABCORE Data Entry Template for Batch# 00041333

Analyst: H0076670 **Standard ID / Book#:** 147 B64

Instrument: NA

Method: PLUTONIUM SEPARATION, LA-953-104 Rev/Mod 5081

Prep Batch: 00041255

Batch Comment:

Pu 239 for C109 CLO. AKH

CACN:3A.26

S	Type	Sample	R	A	Matrix	Group#	Project
1	STD	S1305200120	0		SOLID		
	Analytes Requested:	Sample Volume, Standard/Spike Book No., Standard/Spike Volume, Tracer Book No., Tracer Volume					
2	BLNK-PREP	S1305160012	0	Z	SOLID		
	Analytes Requested:	Sample Volume, Standard/Spike Book No., Standard/Spike Volume, Tracer Book No., Tracer Volume					
3	SAMPLE	S13T004254	0	Z	SOLID	20130402	C109 CLO
	Analytes Requested:	Sample Volume, Standard/Spike Book No., Standard/Spike Volume, Tracer Book No., Tracer Volume					
4	DUP	S1305160013	0	Z	SOLID		
	Analytes Requested:	Sample Volume, Standard/Spike Book No., Standard/Spike Volume, Tracer Book No., Tracer Volume					
5	SAMPLE	S13T004282	0	Z	SOLID	20130402	C109 CLO
	Analytes Requested:	Sample Volume, Standard/Spike Book No., Standard/Spike Volume, Tracer Book No., Tracer Volume					
6	SAMPLE	S13T004309	0	Z	SOLID	20130402	C109 CLO
	Analytes Requested:	Sample Volume, Standard/Spike Book No., Standard/Spike Volume, Tracer Book No., Tracer Volume					

Final Page for Batch# 00041333

Alicia Hinson 5/21/13
Analyst Signature **Date**

Alicia Hinson 5/21/13
Data Entry Signature **Date**

Data Entry Comments:

S = Batch Slot Number, R = Retest Number, A = Aliquot Code.

ATL	ACTINIDE BATCH LIST DATA COLLECTION FORM	(●) LA-953-104 Rev J0B1 ( ) LA-903-101 Rev

(●) Plutonium (●) Pu-241 ( ) Americium ( ) Thorium

Separation Batch #: 41333 Analyst Initials: AKH Analysis Date/Time: 5/21/13 / 14:15 [X] LA-542-104 Rev I-0

(Pipette #); Pipette ID; Volume Range or Fixed Volume; Check box if pipette passes visual inspection:

(1) 408058 (Range/Vol: 0.1-1.0 mL) [X] (4) NA (Range/Vol: NA) [ ]

(2) NA (Range/Vol: NA) [ ] (5) NA (Range/Vol: NA) [ ]

(3) NA (Range/Vol: NA) [ ] (6) NA (Range/Vol: NA) [ ]

Matrix: SOLID Prep Batch #: 41255 HASQARD Upload [ ]

Standard Book #: 147B64

Spike Book #: NA Volume: NA (Pip # N)

Spike Book #: NA Volume: NA (Pip # N)

Tracer Book #: 138B64 Volume: 0.25 mL (Pip # 1)

Counting Room Information	LA-508-168 Rev A-0-A
Counting Batch #: 41353	
Detector No: AEA-ORTEC	

Special Instructions / Comments:

RETURN FOR PU-241 MOUNT.

Sample Type	Sample ID	Sample Vol (mL)	Pip #	Dilution Information	Pip #	DF
Sep Std	S1305200120	0.5	1	NA	NA	1
Cnt Std	S13052/0093	NA	NA	NA	NA	NA
Blk Prep	S1305160012	0.5	1	NA	NA	1
Sample	S13T004254	0.5	1	NA	NA	1
Prep Dup	S1305160013	0.5	1	NA	NA	1
Sample	S13T004282	0.5	1	NA	NA	1
Sample	S13T004309	0.5	1	NA	NA	1

A-6005-778 (REV 1)

AlphaVision v5.3

Alpha-Spectroscopy Analysis Report

ATL, Inc.
222-S Laboratory

Results ID: 36,273 08:48:00AM 05/22/2013

Sample

Sample: S1305210093 Type: Control
Spectrum #1 Analysis #1
QC Type: STD
Sample Collection Date: 05/21/2013 12:00:00AM
Comment: LCS Sample
Lab Preparation:05/21/2013 12:00:00AM

Sample Volume : 0.50 Sample Units: mL
Digest Dilution: 1.00
Aliquot: 1.00 Aliquot Fraction: 100.00%
Aliquot2: 1.00 Fraction: 100.00%
Lab Dilution: 1.00

Batch

Batch Name: 41353
Description:

Tracer

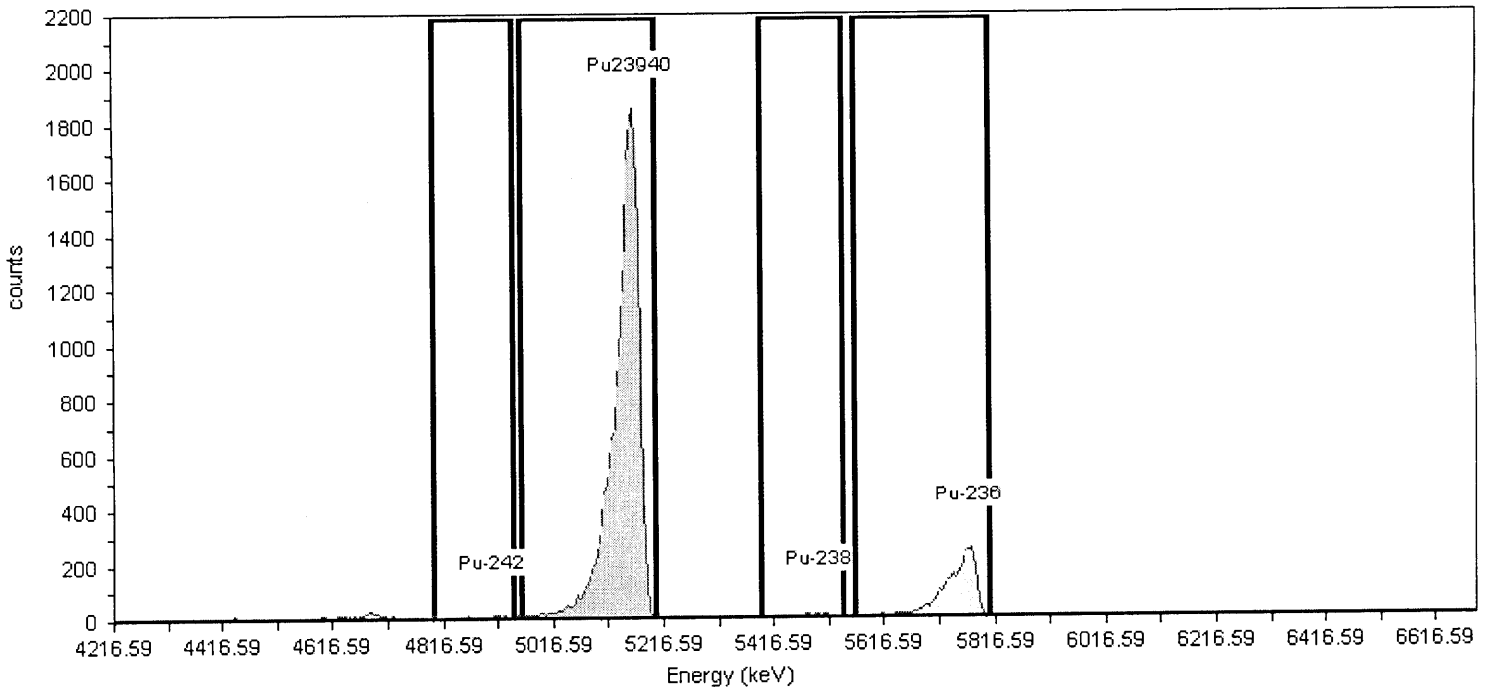
Tracer Name: 138B64
Tracer Activity: 215.00 DPM/mL x (Vol.)0.25 mL = 53.75 DPM
Tracer Ref. Date: 8/25/2010 12:00:26PM

Tracer Nuclide: Pu-236
Tracer Recovery: 87.38%

Acquisition

Detector: B1 Inst chk# 82551 SN: 49-102 G1
Acquisition Start Date: 05/21/2013 05:05:48PM
Live Time: 480.00 min.
Real Time: 480.03 min.
Background Date: 05/17/2013 07:08:03PM
Bkgd Info: Sample: B1; Det: B1 Inst chk# 82551; Spectrum #1; May-17-2013 19:08

Energy Calibration: 2013.03.04 009
Efficiency Calibration:2013.03.04 009
Calibration Date: 03/04/2013 02:48:03PM
Energy Cal: Gain = 4.8706 keV / Ch
Offset = 3,052.51 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 24.90% +/- 0.31% TPU(2 sigma)



General Analysis

Analysis Method: Interactive ROI Analysis
Decay Correction:6/30/2010 12:00:00AM
MDA Constants: Kα = 1.64 , Kβ = 1.64

Nuclide Library: Pu
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity uCi/mL	2.00Sig TPU uCi/mL	Count Uncert %	Critical Level uCi/mL	MDA uCi/mL
Pu-242	4901	4796	4941	137.0	100.0	70.23	1.0000	69	5.97E-007	2.18E-007	12.19	1.64E-008	5.61E-008
Pu23940	5155	4957	5199	32.7	99.9	19083.31	3.3333	19080	1.65E-004	4.50E-005	0.72	2.99E-008	8.32E-008
Pu-238	5499	5396	5539	45.1	99.9	67.51	1.4972	7	6.50E-008	2.65E-007	203.25	2.05E-008	6.50E-008
Pu-236	5770	5566	5808	27.5	99.9	2882.95	1.0874	2882	4.23E-005	6.52E-006	1.86	3.33E-008	1.12E-007

CR Analyst: H0061547 Separation Analyst: H0076677 CR Review: KIHusted

AlphaVision v5.3 **Alpha-Spectroscopy Analysis Report**

ATL, Inc.
222-S Laboratory
Results ID: 36,274 08:52:24AM 05/22/2013

Sample

Sample: S1305160012 Type: Blank
Spectrum #1 Analysis #1
QC Type: BLK
Sample Collection Date: 05/16/2013 12:00:00AM
Comment: Blank
Lab Preparation:05/21/2013 12:00:00AM

Sample Weight : 0.50 Sample Units: g
Digest Dilution: 533.96
Aliquot: 1.00 Aliquot Fraction: 0.19%
Aliquot2: 1.00 Fraction: 100.00%
Lab Dilution: 1.00

Batch

Batch Name: 41353
Description:

Tracer

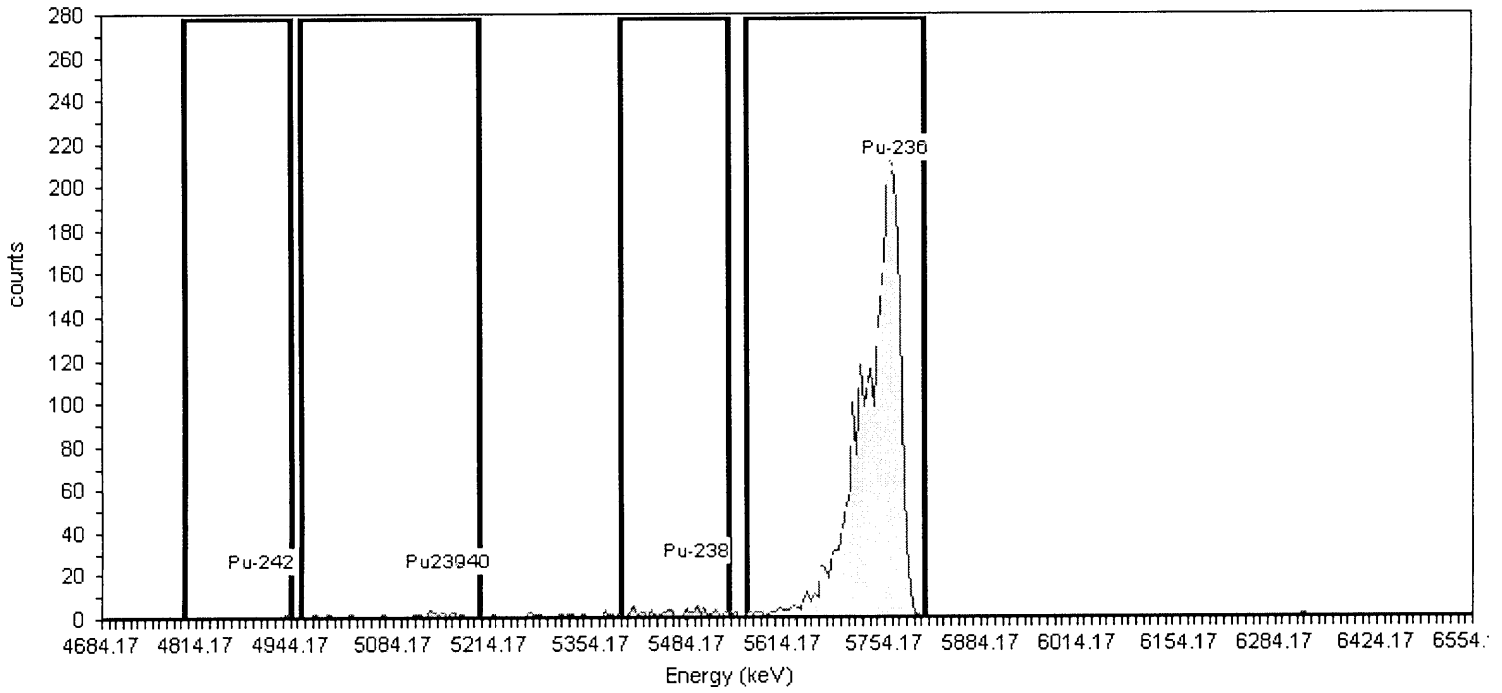
Tracer Name: 138B64
Tracer Activity: 215.00 DPM/mL x (Vol.)0.25 mL = 53.75 DPM
Tracer Ref. Date: 8/25/2010 12:00:26PM

Tracer Nuclide: Pu-236
Tracer Recovery: 72.94%

Acquisition

Detector: B2 Inst chk# 82552 SN: 49-102 G2
Acquisition Start Date: 05/21/2013 05:05:49PM
Live Time: 480.00 min.
Real Time: 480.03 min.
Background Date: 05/17/2013 07:08:04PM
Bkgd Info: Sample: B2; Det: B2 Inst chk# 82552; Spectrum #1; May-17-2013 19:08

Energy Calibration: 2013.03.04 010
Efficiency Calibration:2013.03.04 010
Calibration Date: 03/04/2013 02:48:34PM
Energy Cal: Gain = 4.8706 keV / Ch
Offset = 3,052.51 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 25.47% +/- 0.32% TPU(2 sigma)



General Analysis

Analysis Method: Interactive ROI Analysis
Decay Correction:5/16/2013 12:00:00AM
MDA Constants: Kα = 1.64 , Kβ = 1.64

Nuclide Library: Pu
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity uCi/g	2.00Sig TPU uCi/g	Count Uncert %	Critical Level uCi/g	MDA uCi/g
Pu-242	4901	4796	4941	0.0	100.0	0.27	0.3333	0	-3.48E-007	8.38E-006	-1202.41	1.11E-008	2.64E-005
Pu23940	5155	4957	5199	49.6	99.9	20.00	1.3333	19	1.01E-004	5.96E-005	24.74	2.22E-008	3.83E-005
Pu-238	5499	5396	5539	110.1	99.9	48.00	3.0000	-5	-2.74E-005	1.39E-004	-252.77	3.33E-008	5.02E-005
Pu-236	5770	5566	5808	63.7	99.9	2461.05	1.3333	2460	1.89E-002	3.48E-003	2.02	4.32E-008	7.46E-005

CR Analyst: H0061547 Separation Analyst: H0076677 CR Review: KIHusted

AlphaVision v5.3

Alpha-Spectroscopy Analysis Report

ATL, Inc.
222-S Laboratory

Results ID: 36,275 08:54:51AM 05/22/2013

Sample

Sample: S13T004254 Type: Sample
Spectrum #1 Analysis #1
QC Type: SAM
Sample Collection Date: 05/08/2013 12:00:00AM
Comment:
Lab Preparation:05/21/2013 12:00:00AM

Sample Weight : 0.50 Sample Units: g
Digest Dilution: 533.96
Aliquot: 1.00 Aliquot Fraction: 0.19%
Aliquot2: 1.00 Fraction: 100.00%
Lab Dilution: 1.00

Batch

Batch Name: 41353
Description:

Tracer

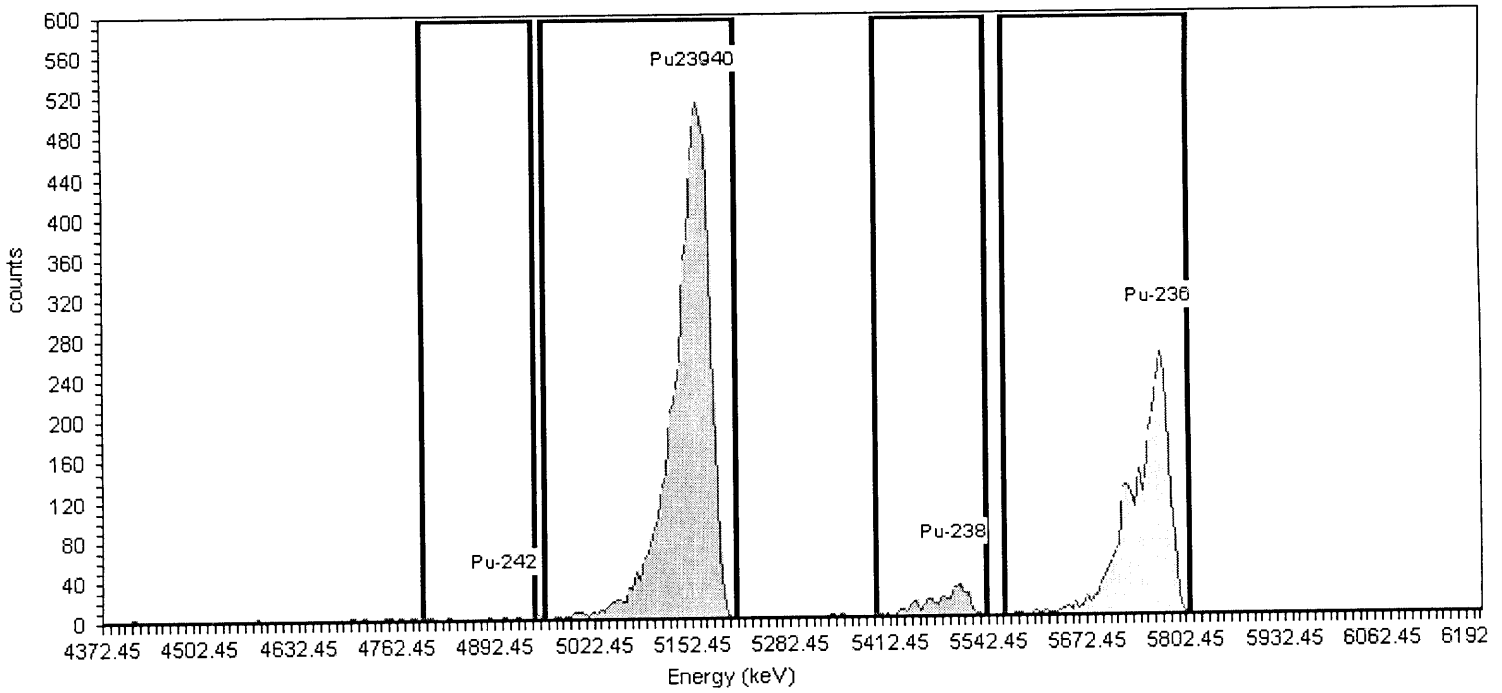
Tracer Name: 138B64
Tracer Activity: 215.00 DPM/mL x (Vol.)0.25 mL = 53.75 DPM
Tracer Ref. Date: 8/25/2010 12:00:26PM

Tracer Nuclide: Pu-236
Tracer Recovery: 88.55%

Acquisition

Detector: B3 Inst chk# 82553 SN: 49-112 Q5
Acquisition Start Date: 05/21/2013 05:05:51PM
Live Time: 480.00 min.
Real Time: 480.03 min.
Background Date: 05/17/2013 07:08:06PM
Bkgd Info: Sample: B3; Det: B3 Inst chk# 82553; Spectrum #1; May-17-2013 19:08

Energy Calibration: 2013.03.04 011
Efficiency Calibration:2013.03.04 011
Calibration Date: 03/04/2013 02:48:51PM
Energy Cal: Gain = 4.8706 keV / Ch
Offset = 3,052.51 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 24.76% +/- 0.31% TPU(2 sigma)



General Analysis

Analysis Method: Interactive ROI Analysis
Decay Correction:5/8/2013 12:00:00AM
MDA Constants: Kα = 1.64 , Kβ = 1.64

Nuclide Library: Pu
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity uCi/g	2.00Sig TPU uCi/g	Count Uncert %	Critical Level uCi/g	MDA uCi/g
Pu-242	4901	4796	4941	9.1	100.0	28.65	1.3203	27	1.25E-004	6.43E-005	20.03	1.87E-008	3.23E-005
Pu23940	5155	4957	5210	47.1	99.9	5856.00	6.0000	5850	2.68E-002	8.67E-003	1.31	3.99E-008	5.50E-005
Pu-238	5499	5396	5539	55.2	99.9	323.66	3.6667	261	1.19E-003	4.35E-004	8.44	3.12E-008	4.57E-005
Pu-236	5770	5566	5808	30.3	99.9	2904.90	2.0000	2903	2.29E-002	4.20E-003	1.86	4.48E-008	7.20E-005

CR Analyst: H0061547 Separation Analyst: H0076677 CR Review: KIHusted

AlphaVision v5.3 **Alpha-Spectroscopy Analysis Report**

ATL, Inc.
222-S Laboratory
Results ID: 36,276 08:58:38AM 05/22/2013

Sample

Sample: S1305160013 Type: Sample
Spectrum #1 Analysis #1
QC Type: DUP
Sample Collection Date: 05/08/2013 12:00:00AM
Comment: DUP
Lab Preparation:05/21/2013 12:00:00AM

Sample Weight : 0.50 Sample Units: g
Digest Dilution: 519.32
Aliquot: 1.00 Aliquot Fraction: 0.19%
Aliquot2: 1.00 Fraction: 100.00%
Lab Dilution: 1.00

Batch

Batch Name: 41353
Description:

Tracer

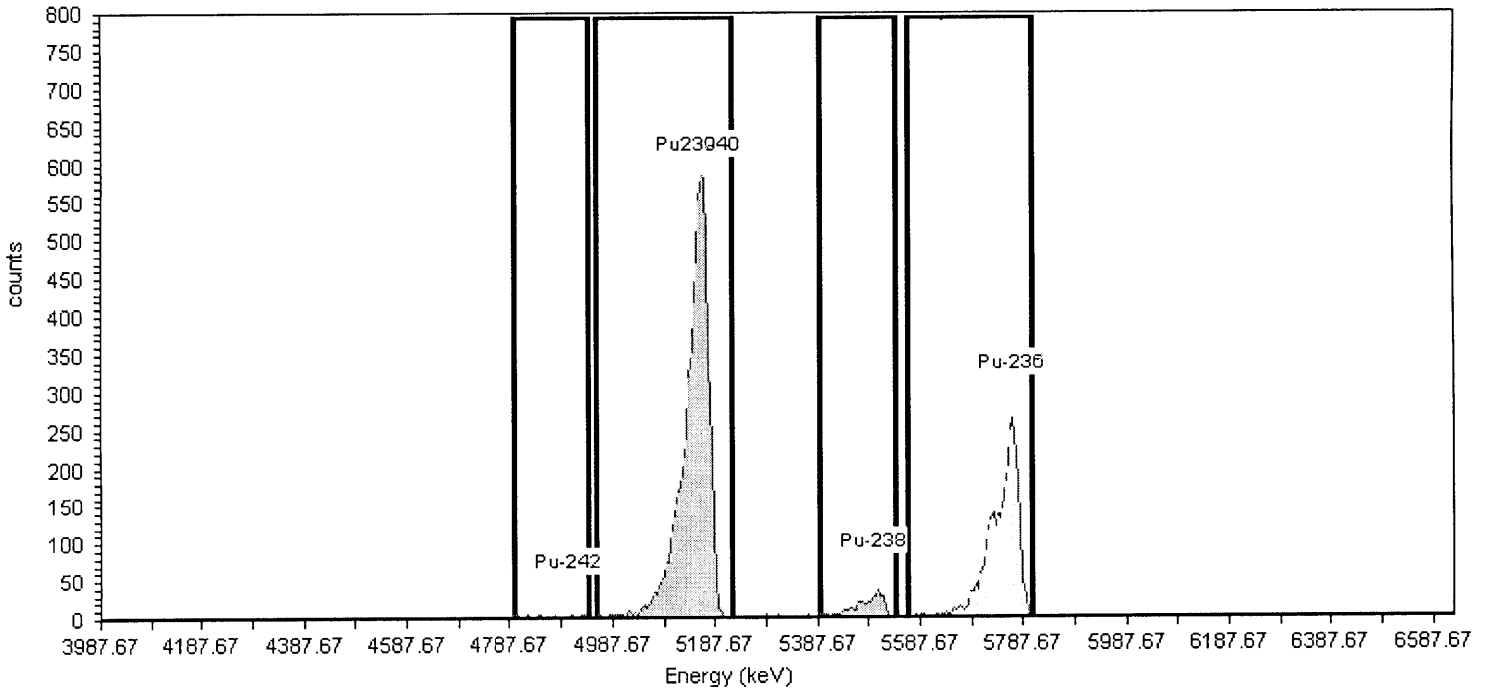
Tracer Name: 138B64
Tracer Activity: 215.00 DPM/mL x (Vol.)0.25 mL = 53.75 DPM
Tracer Ref. Date: 8/25/2010 12:00:26PM

Tracer Nuclide: Pu-236
Tracer Recovery: 90.84%

Acquisition

Detector: B4 Inst chk# 82554 SN: 49-102 F3
Acquisition Start Date: 05/21/2013 05:05:52PM
Live Time: 480.00 min.
Real Time: 480.03 min.
Background Date: 05/17/2013 07:07:44PM
Bkgd Info: Sample: B4; Det: B4 Inst chk# 82554; Spectrum #1; May-17-2013 19:07

Energy Calibration: 2013.03.04 012
Efficiency Calibration:2013.03.04 012
Calibration Date: 03/04/2013 02:49:13PM
Energy Cal: Gain = 4.8706 keV / Ch
Offset = 3,052.51 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 23.79% +/- 0.31% TPU(2 sigma)



General Analysis

Analysis Method: Interactive ROI Analysis
Decay Correction:5/8/2013 12:00:00AM
MDA Constants: Kα = 1.64 , Kβ = 1.64

Nuclide Library: Pu
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity uCi/g	2.00Sig TPU uCi/g	Count Uncert %	Critical Level uCi/g	MDA uCi/g
Pu-242	4901	4796	4941	0.0	100.0	22.12	1.0000	21	9.53E-005	5.32E-005	22.77	1.65E-008	2.93E-005
Pu23940	5155	4957	5220	45.1	99.9	6224.00	4.0000	6220	2.81E-002	9.10E-003	1.27	3.30E-008	4.65E-005
Pu-238	5499	5396	5539	52.6	99.9	337.51	4.0000	275	1.24E-003	4.49E-004	8.08	3.30E-008	4.65E-005
Pu-236	5770	5566	5808	34.2	99.9	2863.05	1.3333	2862	2.28E-002	4.20E-003	1.87	3.71E-008	6.23E-005

CR Analyst: H0061547 Separation Analyst: H0076677 CR Review: KIHusted

AlphaVision v5.3 **Alpha-Spectroscopy Analysis Report**

ATL, Inc.
222-S Laboratory
Results ID: 36,277 09:01:22AM 05/22/2013

Sample

Sample: S13T004282 Type: Sample
Spectrum #1 Analysis #1
QC Type: SAM
Sample Collection Date: 05/07/2013 12:00:00AM
Comment:
Lab Preparation:05/21/2013 12:00:00AM

Sample Weight : 0.50 Sample Units: g
Digest Dilution: 558.78
Aliquot: 1.00 Aliquot Fraction: 0.18%
Aliquot2: 1.00 Fraction: 100.00%
Lab Dilution: 1.00

Batch

Batch Name: 41353
Description:

Tracer

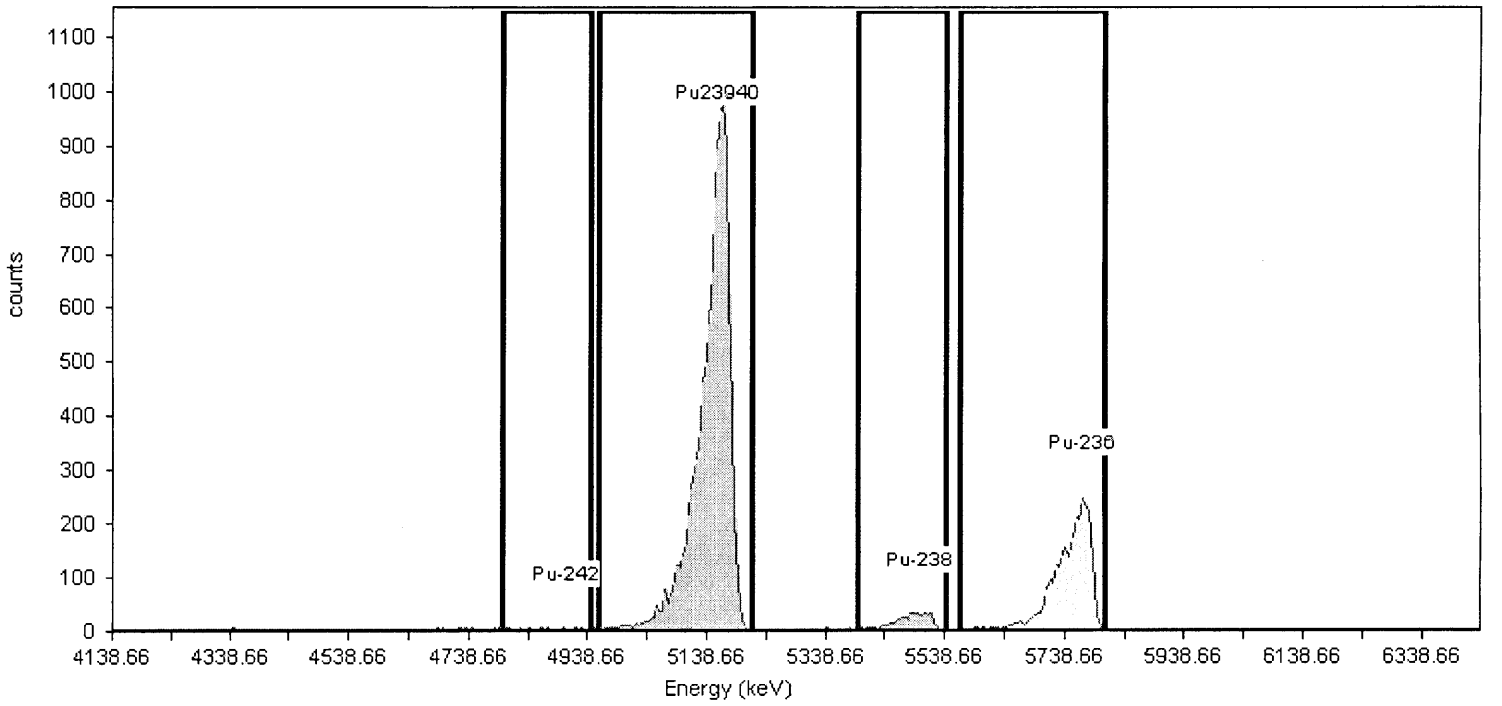
Tracer Name: 138B64
Tracer Activity: 215.00 DPM/mL x (Vol.)0.25 mL = 53.75 DPM
Tracer Ref. Date: 8/25/2010 12:00:26PM

Tracer Nuclide: Pu-236
Tracer Recovery: 90.05%

Acquisition

Detector: B5 Inst chk# 37B30A SN: 49-102 F4
Acquisition Start Date: 05/21/2013 05:05:54PM
Live Time: 480.00 min.
Real Time: 480.03 min.
Background Date: 05/17/2013 07:07:45PM
Bkgd Info: Sample: B5; Det: B5 Inst chk# 37B30A; Spectrum #1; May-17-2013 19:07

Energy Calibration: 2013.03.04 013
Efficiency Calibration:2013.03.04 013
Calibration Date: 03/04/2013 02:50:04PM
Energy Cal: Gain = 4.8706 keV / Ch
Offset = 3,052.51 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 24.62% +/- 0.31% TPU(2 sigma)



General Analysis

Analysis Method: Interactive ROI Analysis
Decay Correction:5/7/2013 12:00:00AM
MDA Constants: Kα = 1.64 , Kβ = 1.64

Nuclide Library: Pu
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity uCi/g	2.00Sig TPU uCi/g	Count Uncert %	Critical Level uCi/g	MDA uCi/g
Pu-242	4901	4796	4941	8.2	100.0	32.81	0.3333	32	1.54E-004	7.37E-005	17.73	9.29E-009	2.32E-005
Pu23940	5155	4957	5215	46.3	99.9	10705.00	3.3333	10702	5.07E-002	1.64E-002	0.97	2.94E-008	4.57E-005
Pu-238	5499	5396	5539	64.4	99.9	408.34	2.6667	346	1.64E-003	5.76E-004	6.91	2.63E-008	4.22E-005
Pu-236	5770	5566	5808	24.8	99.9	2937.95	2.3333	2936	2.44E-002	4.47E-003	1.85	4.79E-008	7.84E-005

CR Analyst: H0061547 Separation Analyst: H0076677 CR Review: KIHusted

AlphaVision v5.3 **Alpha-Spectroscopy Analysis Report**

ATL, Inc.
222-S Laboratory
09:05:57AM 05/22/2013

Results ID: 36,279

Sample

Sample: S13T004309 Type: Sample
Spectrum #1 Analysis #1
QC Type: SAM
Sample Collection Date: 05/07/2013 12:00:00AM
Comment:
Lab Preparation:05/21/2013 12:00:00AM

Sample Weight : 0.50 Sample Units: g
Digest Dilution: 495.15
Aliquot: 1.00 Aliquot Fraction: 0.20%
Aliquot2: 1.00 Fraction: 100.00%
Lab Dilution: 1.00

Batch

Batch Name: 41353
Description:

Tracer

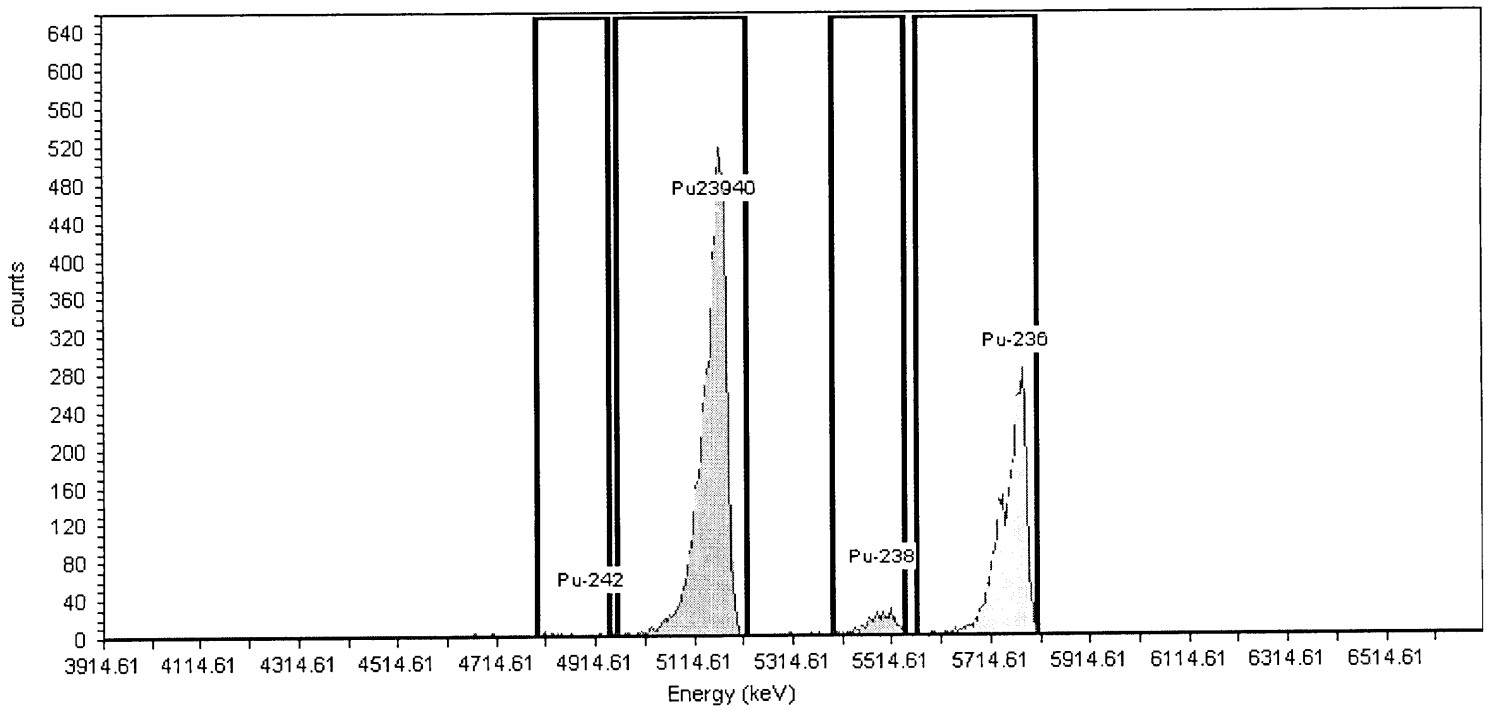
Tracer Name: 138B64
Tracer Activity: 215.00 DPM/mL x (Vol.)0.25 mL = 53.75 DPM
Tracer Ref. Date: 8/25/2010 12:00:26PM

Tracer Nuclide: Pu-236
Tracer Recovery: 94.51%

Acquisition

Detector: B6 Inst chk# 37B30B SN: 49-102 F5
Acquisition Start Date: 05/21/2013 05:05:55PM
Live Time: 480.00 min.
Real Time: 480.03 min.
Background Date: 05/17/2013 07:07:47PM
Bkgd Info: Sample: B6; Det: B6 Inst chk# 37B30B; Spectrum #1; May-17-2013 19:07

Energy Calibration: 2013.03.04 014
Efficiency Calibration:2013.03.04 014
Calibration Date: 03/04/2013 02:50:34PM
Energy Cal: Gain = 4.8706 keV / Ch
Offset = 3,052.51 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 24.37% +/- 0.31% TPU(2 sigma)



General Analysis

Analysis Method: Interactive ROI Analysis
Decay Correction:5/7/2013 12:00:00AM
MDA Constants: Kα = 1.64 , Kβ = 1.64

Nuclide Library: Pu
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity uCi/g	2.00Sig TPU uCi/g	Count Uncert %	Critical Level uCi/g	MDA uCi/g
Pu-242	4901	4796	4941	119.7	100.0	27.61	1.0000	27	1.07E-004	5.54E-005	20.10	1.55E-008	2.63E-005
Pu23940	5155	4957	5220	49.0	99.9	5653.00	2.6667	5650	2.28E-002	7.39E-003	1.33	2.53E-008	3.60E-005
Pu-238	5499	5396	5539	68.6	99.9	285.21	4.0000	219	8.85E-004	3.35E-004	9.82	3.10E-008	4.16E-005
Pu-236	5770	5566	5808	15.7	99.9	3051.26	1.0000	3050	2.27E-002	4.16E-003	1.81	3.02E-008	5.11E-005

CR Analyst: H0061547 Separation Analyst: H0076677 CR Review: KIHusted

5/16/2013 4:13:47PM
CompleteBatch Version 2.7.32
batchreports 2.7.32

LABCORE Completed Batch Report for Batch# 00041255

Analyst: Hurson, Aleta

Book#: NA

Instrument: LE-BAL-091

Method: FUSION - ZR, LA-549-141 Rev/Mod M-1-A

Specification: C109 CLO

Prep Batch: N/A

Batch Comment:

C109 CLO for Fusion. gll

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
1	BLNK-PREP	S1305160012			Z		Dose Rate(1)	SOLID		<0.5				mRem/hr			
1	BLNK-PREP	S1305160012			Z		Digest Factor(1)	SOLID		0.001873				g / mL			
2	SAMPLE	S13T004254			Z		Dose Rate(1)	SOLID		200				mRem/hr			
2	SAMPLE	S13T004254			Z		Digest Factor(1)	SOLID		0.001873				g / mL			
3	DUP	S1305160013	S13T004254		Z		Dose Rate(1)	SOLID		200				mRem/hr			
3	DUP	S1305160013	S13T004254		Z		Digest Factor(1)	SOLID		0.001926				g / mL			
4	SAMPLE	S13T004282			Z		Dose Rate(1)	SOLID		180				mRem/hr			
4	SAMPLE	S13T004282			Z		Digest Factor(1)	SOLID		0.001790				g / mL			
5	SAMPLE	S13T004309			Z		Dose Rate(1)	SOLID		180				mRem/hr			
5	SAMPLE	S13T004309			Z		Digest Factor(1)	SOLID		0.002020				g / mL			

Comments Section:

Data Flagger Status:
Flagger Not Run

Final Page for Batch# 00041255

Reviewer Signature 16 May 13 Date

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041255

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Method	Customer Id	Specification
1	S1305160012	BLNK-PREP			FUSION - ZR		
2	S13T004254	SAMPLE		20130402	FUSION - ZR	9C-13-Comp A	C109 CLO
3	S1305160013	DUP	S13T004254		FUSION - ZR		
4	S13T004282	SAMPLE		20130402	FUSION - ZR	9C-13-Comp B	C109 CLO
5	S13T004309	SAMPLE		20130402	FUSION - ZR	9C-13-Comp C	C109 CLO

Copy

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Data Entry Template for Batch# 00041255

Analyst: H0076677 **Standard ID / Book#:** NA

Instrument: NA

Method: FUSION - ZR, LA-549-141 Rev/Mod M-1-A

Prep Batch: N/A

Batch Comment:

C109 CLO for Fusion. gll

CACN:3A.26

S	Type	Sample	R	A	Matrix	Group#	Project
1	BLNK-PREP	S1305160012		Z	SOLID		
2	SAMPLE	S13T004254		Z	SOLID	20130402	C109 CLO
3	DUP	S1305160013		Z	SOLID		
4	SAMPLE	S13T004282		Z	SOLID	20130402	C109 CLO
5	SAMPLE	S13T004309		Z	SOLID	20130402	C109 CLO

Final Page for Batch# 00041255

Alicia Hansen 5/16/13
Analyst Signature Date

Alicia Hansen 5/16/13 5/16/13 ACH
Data Entry Signature Date

5/16/13

COPY

Data Entry Comments:

S = Batch Slot Number, R = Retest Number, A = Aliquot Code.

ATL	DIGESTION BATCH LIST DATA COLLECTION FORM

○ LA-544-101 Rev _____ ○ LA-544-113 Rev _____ ○ _____ Rev _____ (Other)

○ LA-549-133 Rev _____ ◉ LA-549-141 Rev M-1-A

Batch #: 41255 Analyst: AKH Date: 5/16/2013

(Pipette #); Pipette ID; Volume Range or Fixed Volume; Check box if pipette passes visual verification:

(1) N/A (Range/Vol: N/A) ☐

(2) N/A (Range/Vol: N/A) ☐

(3) N/A (Range/Vol: N/A) ☐

Balance ID; Date of balance verification:

LE-BAL-091 (Verification Date: 5/16/2013)

○ Spike / ○ Carrier / ○ Tracer # N/A Vol N/A Pip # N/A

○ Spike / ○ Carrier / ○ Tracer # N/A Vol N/A Pip # N/A

○ Spike / ○ Carrier / ○ Tracer # N/A Vol N/A Pip # N/A

Special Instructions:

Use ZR Crucibles. gll

Sample Type	Digest Sample #	Parent Sample #	Sample Weight (g)	Final Volume (mL)	Dose Rate (mRem/hr)
Blank Prep	S1305160012	N/A	0.4682	250	<0.5
Sample	S13T004254	S13T004246	0.4682	250	200
Duplicate	S1305160013	S13T004246	0.4814	250	200
Sample	S13T004282	S13T004274	0.4474	250	180
Sample	S13T004309	S13T004301	0.5049	250	180

Comments:

C109 CLO Fusion-ZR. gll Digest Appearance: Clear liquid. colorless. no solids.

A-6005-290 (REV 2)

Data Review Check List

Procedure LA-953-104 Pu-241

Project: C-109 CLO

Group(s) 20130402

Batch Number 41628

Review Item	Level 1 Yes	Level 1 No	Level 1 N/A	Level 2	Comments and Samples Affected
Batch Items					
1. Was an LCS and blank run the batch?	x			√	
2. Was a duplicate and spike run with the batch?	x			√	
3. Was the book # of the standard (and spike) on the traveler?	x			√	
4. Was the batch traveler completed (sample #, dilution, aliquot size)?	x			√	
5. Were any line outs initialed and dated?			x	√	
6. Was balance check completed on the day of use (if used)?			x	√	
Result Items					
7. Was sample, traveler and counting data correct on ACE form?	x			√	
8. If No, was ACE form corrected?			x	√	
9. Did results etc. correctly up-load to LABCORE (OMNILims or MULTILims)?	x			√	
10. If No, was LABCORE corrected?			x	√	
11. Are result units correct?	x			√	
12. If No, were units corrected?			x	√	
13. Was data flagged?	x			√	
14. Are all flags present and correct?			x	√	
15. Are LCS results within limits (Lab's or customer's)?	x			√	
16. Are Spike results within limits (Lab's or customer's)?			x	√	
17. Is blank <MDC, or <5% isotope concentration, or <5% decision level?	x			√	
18. Are duplicate RPDs <20% (or RSD) within customer limits?	x			√	
19. Are the correct procedure number and Rev/Mod on the report?	x			√	
Procedure Specifffic Items					
20. Was the correct LSC program used for counting?	x			√	
21. Was the correct % recoveries transferred to the calculation form?	x			√	
22. Were the customer required detection or quantification limits met?	x			√	

1st Level Reviewer: [signature] **Date:** 6/13/2013

2nd Level Reviewer: [signature] **Date:** 14/Jun/13

Counting Uncert listed on the Calculation form are incorrect. Those on the report have been corrected

Data Review Checklist

CALIBRATION OF LIQUID SCINTILLATION COUNTERS

INSTRUMENT # LSC 3 LS6500

BATCH # 41628 - Pu-241

PROCEDURES LA-508-121 LQ-150-115

Review Items	--- Level 1 --- Yes	No	N/A	Comments & Samples Affected
Efficiency Calibration				
1. Instrument calibration stds ^{3}H & ^{14}C run prior to quench curve calibration	X			
2. Unquenched bkg vial run before quench curve calibration	X			
3. Calibration performed per procedure LA-508-121	X			
4. Quench curve calibration had > 7 data points	X			
5. Quench range of calibration matches expected range of samples	X			
6. Quench calibration performed in mode where bkg is subtracted from each analysis	X			
7. Calibration had a second, independent check.	X			
8. Any non-conformances are documented in maintnance notebook	X			
9. Calibration reports are pasted and signed in maintenance notebook	X			
Calibration Verification				
1. Instrument Control Std within limits before and after batch counted	X			
2. Bkg check within limits before and after batch counted	X			

Reviewer: [signature]

Date: 6/13/2013

H:\DATA REVIEW CHECKLISTS\LSC ICAL.XLS

6/14/2013 1:07:56PM
CompleteBatch Version 2.7.32
batchreports 2.7.32

LABCORE Completed Batch Report for Batch# 00041628

Analyst: King, Rob W **Book#:** 147B64

Instrument: LSC3 LS6500 B-1A

Method: PLUTONIUM-241, LA-508-121 Rev/Mod G-0

Specification: C109 CLO

Prep Batch: 00041255

Batch Comment:

C109 CLO RWK

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
Sample Sequence 1																	
1	STD	S1306110111		0 0			Plutonium-241	SOLID	.000182	1.5282E-04		1.63	4.59E-06	uCi/g	83.97	% Recovery	
1	STD	S1306110111		0 0			Plutonium-236T	SOLID		98.74				% Recovery	N/A		
Sample Sequence 2																	
2	BLNK-PREP	S1305160012		0 1	Z		Plutonium-241	SOLID		<6.5100E-04			6.51E-04	uCi/g			
2	BLNK-PREP	S1305160012		0 1	Z		Plutonium-236T	SOLID		74.33				% Recovery			
Sample Sequence 3																	
3	SAMPLE	S13T004254		0 1	Z		Plutonium-241	SOLID	N/A	5.2200E-02		0.75	4.96E-04	uCi/g			
3	SAMPLE	S13T004254		0 1	Z		Plutonium-236T	SOLID		97.67				% Recovery			
Sample Sequence 4																	
4	DUP	S1305160013	S13T004254	0 1	Z		Plutonium-241	SOLID	5.2200E-02	5.4000E-02		0.7	4.63E-04	uCi/g	3.3898	% RPD	
4	DUP	S1305160013	S13T004254	0 1	Z		Plutonium-236T	SOLID	97.67	101.65				% Recovery			
Sample Sequence 5																	
5	SAMPLE	S13T004282		0 1	Z		Plutonium-241	SOLID	N/A	5.6500E-02		0.77	5.62E-04	uCi/g			
5	SAMPLE	S13T004282		0 1	Z		Plutonium-236T	SOLID		90.07				% Recovery			
Sample Sequence 6																	
6	SAMPLE	S13T004309		0 1	Z		Plutonium-241	SOLID	N/A	4.9000E-02		0.73	4.41E-04	uCi/g			
6	SAMPLE	S13T004309		0 1	Z		Plutonium-236T	SOLID		101.68				% Recovery			

Comments Section:

Data Flagger Status:
Flagging Completed

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041628

Final Page for Batch# 00041628

S A Catlett 17 June 13
Reviewer Signature Date

PC: Julie Askew 7/10/13

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041628

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Method	Customer Id	Specification
1	S1306110111	STD			PLUTONIUM-241		
2	S1305160012	BLNK-PREP			PLUTONIUM-241		
3	S13T004254	SAMPLE		20130402	PLUTONIUM-241	9C-13-Comp A	C109 CLO
4	S1305160013	DUP	S13T004254		PLUTONIUM-241		
5	S13T004282	SAMPLE		20130402	PLUTONIUM-241	9C-13-Comp B	C109 CLO
6	S13T004309	SAMPLE		20130402	PLUTONIUM-241	9C-13-Comp C	C109 CLO

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

* = Rejected Analyte
N, A = Non-reported Analyte

6/11/2013 2:14:07PM
IncompleteBatchShort Version 2.7.29
batchreports 2.7.32

LABCORE Data Entry Template for Batch# 00041628

Analyst: #c061547 **Standard ID / Book#:** See bench sheet
Instrument: AEA ortec, LSC-03 WC 51586
Method: PLUTONIUM-241, LA-508-168 Rev/Mod A-0-A
Prep Batch: 00041255
Batch Comment:
C109 CLO RWK
CACN:3A.26

S	Type	Sample	R	A	Matrix	Group#	Project
1	STD	S1306110111	0		SOLID		
	Analytes Requested:	Plutonium-236T, Plutonium-241					
2	BLNK-PREP	S1305160012	1	Z	SOLID		
	Analytes Requested:	Plutonium-236T, Plutonium-241					
3	SAMPLE	S13T004254	1	Z	SOLID	20130402	C109 CLO
	Analytes Requested:	Plutonium-236T, Plutonium-241					
4	DUP	S1305160013	1	Z	SOLID		
	Analytes Requested:	Plutonium-236T, Plutonium-241					
5	SAMPLE	S13T004282	1	Z	SOLID	20130402	C109 CLO
	Analytes Requested:	Plutonium-236T, Plutonium-241					
6	SAMPLE	S13T004309	1	Z	SOLID	20130402	C109 CLO
	Analytes Requested:	Plutonium-236T, Plutonium-241					

Final Page for Batch# 00041628

R. Klump 6/11/13
Analyst Signature **Date**
R. Klump 6/12/13

M C Brehm 6.13.13
Data Entry Signature **Date**

Data Entry Comments:

S = Batch Slot Number, R = Retest Number, A = Aliquot Code.

6/10/2013 9:50:41AM
IncompleteBatchShort Version 2.7.29
batchreports 2.7.32

LABCORE Data Entry Template for Batch# 00041579

Analyst: H00076677 **Standard ID / Book#:** 147B64

Instrument: NA

Method: PLUTONIUM-241 SEPARATION, LA-953-104 Rev/Mod JØB1

Prep Batch: 00041255

Batch Comment:

Re-run of PU-241. Dup is associated with S13T004254. AKH

CACN:3A.26

S	Type	Sample	R	A	Matrix	Group#	Project
1	STD	S1306100009	0		SOLID		
	Analytes Requested:	Sample Volume, Standard/Spike Book No., Standard/Spike Volume, Tracer Book No., Tracer Volume					
2	BLNK-PREP	S1305160012	0	Z	SOLID		
	Analytes Requested:	Sample Volume, Standard/Spike Book No., Standard/Spike Volume, Tracer Book No., Tracer Volume					
3	SAMPLE	S13T004254	0	Z	SOLID	20130402	C109 CLO
	Analytes Requested:	Sample Volume, Standard/Spike Book No., Standard/Spike Volume, Tracer Book No., Tracer Volume					
4	DUP	S1305160013	0	Z	SOLID		
	Analytes Requested:	Sample Volume, Standard/Spike Book No., Standard/Spike Volume, Tracer Book No., Tracer Volume					
5	SAMPLE	S13T004282	0	Z	SOLID	20130402	C109 CLO
	Analytes Requested:	Sample Volume, Standard/Spike Book No., Standard/Spike Volume, Tracer Book No., Tracer Volume					
6	SAMPLE	S13T004309	0	Z	SOLID	20130402	C109 CLO
	Analytes Requested:	Sample Volume, Standard/Spike Book No., Standard/Spike Volume, Tracer Book No., Tracer Volume					

Final Page for Batch# 00041579

Alicia Hinson 6/11/13
Analyst Signature **Date**

Alicia Hinson 6/11/13
Data Entry Signature **Date**

Data Entry Comments:

S = Batch Slot Number, R = Retest Number, A = Aliquot Code.

ATL	LIQUID SCINTILLATION COUNTING BATCH LIST DATA COLLECTION FORM	LA-548-111 Rev NA

(●) AT/TB ( ) Total Activity

Separation Batch #: 00041579 Analyst Initials: AKH Analysis Date/Time: 6/12/2013 /

(Pipette #); Pipette ID; Volume Range or Fixed Volume; Check box if pipette passes visual verification:

(1) NA (Range/Vol: NA) ☐

(2) NA (Range/Vol: NA) ☐

Matrix: Solid HASQARD Upload ☐

Standard Book #: 147B64

Spike Book #: NA Volume: NA (Pip # N)

Balance ID; Date of balance verification:

NA (Verification Date: NA)

Counting Room Information

(●) LA-508-121 Rev G-0 ( ) LA-508-122 Rev

Counting Batch #: 00041628

Instrument ID: WC.51576 LSC-03

Inst. Check Std ID: Perkin Elmer EX, DX

Special Instructions/Comments:

Sample Type	Sample ID (g or mL)	Sample Size	Pip #	Dilution Information	Pip #	Dilution Factor	Sample Pos #
Cnt Std	S1306110111	1.0	-	NA	NA	NA	3
Blk Prep	S1305160012	5.0	-	NA	NA	NA	4
Sample	S13T004254	5.0	-	NA	NA	NA	5
Prep Dup	S1305160013	5.0	-	NA	NA	NA	6
Sample	S13T004282	5.0	-	NA	NA	NA	7
Sample	S13T004309	5.0	-	NA	NA	NA	8

ATL	ACTINIDE BATCH LIST DATA COLLECTION FORM	◉ LA-953-104 Rev J0B1 ○ LA-903-101 Rev

○ Plutonium ◉ Pu-241 ○ Americium ○ Thorium

Separation Batch #: 41579 Analyst Initials: AKH Analysis Date/Time: 6/11/13 / 10:50 ☒ LA-542-104 Rev I0

(Pipette #); Pipette ID; Volume Range or Fixed Volume; Check box if pipette passes visual inspection:

(1) 408058 (Range/Vol: 0.1-1.0 mL) ☒ (4) NA (Range/Vol: NA) ☐

(2) 436223 (Range/Vol: 1-5 mL) ☒ (5) NA (Range/Vol: NA) ☐

(3) NA (Range/Vol: NA) ☐ (6) NA (Range/Vol: NA) ☐

Matrix: SOLID Prep Batch #: 41255 HASQARD Upload ☐

Standard Book #: 147B64

Spike Book #: NA Volume: NA (Pip # N)

Spike Book #: NA Volume: NA (Pip # N)

Tracer Book #: 138B64 Volume: 0.250 mL (Pip # 1)

Counting Room Information	LA-508-168 Rev A-0-A
Counting Batch #: 6/628	
Detector No: AEA-ORTEC	

Special Instructions / Comments:

Return for PU-241 Mount. AKH

Sample Type	Sample ID	Sample Vol (mL)	Pip #	Dilution Information	Pip #	DF
Sep Std	S1306100009	1.0	1	NA	NA	1
Cnt Std	S1306110111	NA	NA	NA	NA	NA
Blk Prep	S1305160012	5.0	2	NA	NA	1
Sample	S13T004254	5.0	2	NA	NA	1
Prep Dup	S1305160013	5.0	2	NA	NA	1
Sample	S13T004282	5.0	2	NA	NA	1
Sample	S13T004309	5.0	2	NA	NA	1

A-6005-778 (REV 1)

PAGE: 1

ID:ALPHA+BETA H#85 12 JUN 2013 12:58
USER:35 COMMENT:LS 6500 WC51586
PRESET TIME : 30.00
DATA CALC : CPM H# :YES SAMPLE REPEATS: 1 PRINTER : STD
COUNT BLANK : YES IC# : NO REPLICATES : 1 RS232 : STD
TWO PHASE : YES AQC :YES CYCLE REPEATS : 1 DISK :EDIT
SCINTILLATOR: LIQUID LUMEX: NO LOW SAMPLE REJ: 0
DATA BUFFER IS FULL. DATA WILL GO TO PRINTER ONLY.

LOW LEVEL : YES α HALF LIFE CORRECTION DATE: none
ß HALF LIFE CORRECTION DATE: none

WIDE OPEN WINDOW %ERROR: 0.00 α FACTOR: 1.000000 BKG. SUB: 0
ß FACTOR: 1.000000 BKG. SUB: 0

ALPHA-BETA DISCRIMINATION: YES CALIBRATION: AB DISCRIM H#85
LEFT RVALUE LIMITS : 1.25 - 500.00 RIGHT RVALUE LIMITS: 1.34 - 500.00
PULSE HEIGHT LIMITS: 582.6 - 855.9 PRIMARY COUNT SOURCE: TOTAL

SAM NO	POS	TIME MIN	H#		WIDE CPM	WIDE %ERROR	LUMEX %	ELAPSED 2P TIME
B1	**-1	30.00	82.9	α	11.77	10.64	6.44	30.92
				ß	43.43	5.54		
		Blank Average CPM for			WIDE	11.77	COEF. OF VAR:	0.000
						43.43	COEF. OF VAR:	0.000
1	**-3	30.00	82.0	α	332.47	2.07	1.02	62.00
				ß	93.33	5.25		
2	**-4	30.00	81.3	α	19.90	12.09	3.34	92.91
				ß	-0.90	1.E+06		
3	**-5	30.00	82.6	α	816.60	1.30	0.89	124.14
				ß	295.27	2.42		
4	**-6	30.00	84.0	α	837.40	1.28	0.19	155.08
				ß	326.77	2.27		
5	**-7	30.00	80.2	α	1067.13	1.13	0.16	186.03
				ß	281.83	2.49		
6	**-8	30.00	81.0	α	731.37	1.37	0.21	216.96
				ß	310.97	2.34		

Plutonium-241

		STD
Type	Sample Count Rate in CPM	93.33
STD	Sample Volume in mL	1.000
Work List	Dilution Factor	1
00041628	Pu-236 Tracer Recovery	98.74%
Test Code	Instrument Fractional Efficiency	1.0000
PLUTONIUM-241	Pu-241 Efficiency	0.2786
Matrix	Count Time in Minutes	30
SOLID	Background Count Rate in CPM	43.43
Rerun	Background Efficiency	1.0000
0	Digest Dilution Factor	1.0000
Sample Prep	Detection Limit	5.70
	Critical Level Lc (CPM)	2.80
Sample #	Rmax Level (CPM)	96.85
S1306110111	Lc, Rmax, or Rs, (Sample Rate) as appropriate (CPM)	93.33
Instrument Code	Standard Book No.	147B64
WC51586	Standard Value in uCi/g	1.8200E-04
Data Entry By		
MCB		
Analyst		
AKH		
Date Completed		
6/13/2013		
Analysis Date		
6/11/2013		
Analysis Time		
10:50 AM		
Specification		
C109 CLO		
Units		
uCi/g		

Procedure using this form*: **LA-508-121 G-0**

* The specific formulae used in the calculations for this spreadsheet can be found in the applicable procedure, as identified on the worklist.

Plutonium-241 Concentration in uCi/g	=	1.53E-04
% Recovery	=	83.97%
Detection Limit in uCi/g	=	4.59E-06
Relative Percent Counting Uncertainty	=	8.39

Plutonium-241 Std Template 1.0

Printed at: 8:11:23 AM 6/13/2013 Version: 1.00

AlphaVision v5.3

Alpha-Spectroscopy Analysis Report

ATL, Inc.
222-S Laboratory
Results ID: 36,908 08:58:50AM 06/12/2013

Sample

Sample: S1306110111 Type: Control
Spectrum #1 Analysis #1
QC TYPE: STD
Sample Collection Date:
Comment: STD
Lab Preparation:

Sample Volume : 1.00 Sample Units: mL
Digest Dilution: N/A
Aliquot: N/A Aliquot Fraction: N/A

Lab Dilution: N/A

Batch

Batch Name: 2013.06.11 001 41628
Description: PU 241 RERUN

Tracer

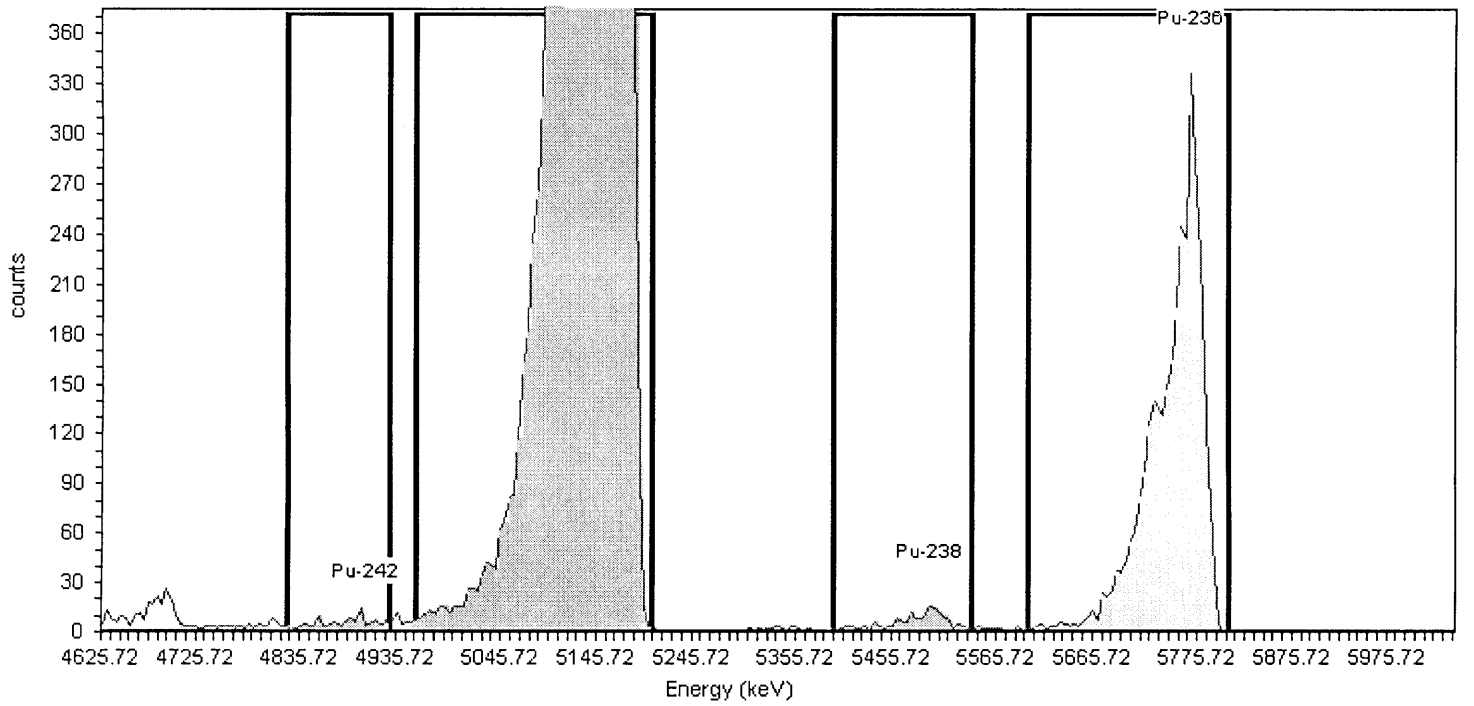
Tracer Name: 138B64
Tracer Activity: 215.00 DPM/mL x (Vol.)0.25 mL = 53.75 DPM
Tracer Ref. Date: 8/25/2010 12:00:26PM

Tracer Nuclide: Pu-236
Tracer Recovery: 98.74%

Acquisition

Detector: B1 Inst chk# 82551 SN: 49-102 G1
Acquisition Start Date: 06/11/2013 02:50:49PM
Live Time: 480.00 min.
Real Time: 480.18 min.
Background Date: 06/07/2013 06:17:21PM
Bkgd Info: Sample: B1; Det: B1 Inst chk# 82551; Spectrum #1; Jun-07-2013 18:17

Energy Calibration: 2013.03.04 009
Efficiency Calibration:2013.03.04 009
Calibration Date: 03/04/2013 02:48:03PM
Energy Cal: Gain = 4.8706 keV / Ch
Offset = 3,052.51 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 24.90% +/- 0.31% TPU(2 sigma)



General Analysis

Analysis Method: Interactive ROI Analysis
Decay Correction:6/30/2010 12:00:29PM
MDA Constants: Kα = 1.64 , Kβ = 1.64

Nuclide Library: Pu
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity uCi/mL	2.00Sig TPU uCi/mL	Count Uncert %	Critical Level uCi/mL	MDA uCi/mL
Pu-242	4901	4821	4928	32.0	100.0	97.00	0.0000	97	3.70E-007	9.48E-008	10.21	0.00E+000	1.03E-008
Pu23940	5155	4957	5205	47.3	99.9	38281.00	2.6667	38278	1.46E-004	2.26E-005	0.51	1.19E-008	3.40E-008
Pu-238	5499	5396	5539	41.6	99.9	136.34	2.2838	68	2.65E-007	1.49E-007	27.03	1.12E-008	3.30E-008
Pu-236	5770	5600	5809	42.3	99.9	3212.00	0.6667	3211	2.39E-005	1.45E-006	1.77	1.17E-008	4.38E-008

CR Analyst: H0061547 SEP ANALYST: H0076677 CR Review: KIHusted

Workbook Page BLANK 2

Plutonium-241

		BLNK-PREP
Type	Sample Count Rate in CPM	-0.90
BLNK-PREP	Sample Volume in mL	5.000
Work List	Dilution Factor	1
00041628	Pu-236 Tracer Recovery	74.33%
Test Code	Instrument Fractional Efficiency	1.0000
PLUTONIUM-241	Pu-241 Efficiency	0.2786
Matrix	Count Time in Minutes	30
SOLID	Background Count Rate in CPM	43.43
Rerun	Background Efficiency	1.0000
1	Digest Dilution Factor	0.002
Sample Prep	Detection Limit	5.70
S1305160012-001	Critical Level Lc (CPM)	2.80
Sample #	Rmax Level (CPM)	1.06
S1305160012	Lc, Rmax, or Rs, (Sample Rate) as appropriate (CPM)	2.80
Instrument Code		
WC51586		
Data Entry By	**Procedure using this Form*:**	**LA-508-121 G-0**
MCB		
Analyst		
AKH		
Date Completed		
6/13/2013		
Analysis Date	* The specific formulae used in the calculations for this spreadsheet can be found	
6/11/2013	in the applicable procedure, as identified on the worklist.	
Analysis Time		
10:50 AM		

Specification			
C109 CLO	**HASQARD Concentration**	=	-2.09E-04
	Plutonium-241 Concentration in uCi/g	<	6.51E-04
Units	**Detection Limit in uCi/g**		6.51E-04
uCi/g	**Relative Percent Counting Uncertainty**		5.26

Plutonium-241 Sample Template 1.0

Printed at: 8:11:51 AM 6/13/2013 Version: 1.00

AlphaVision v5.3

Alpha-Spectroscopy Analysis Report

ATL, Inc.
222-S Laboratory
08:23:25AM 06/12/2013

Results ID: 36,901

Sample

Sample: S1305160012 Type: Blank
Spectrum #1 Analysis #1
QC TYPE: PREP BLK
Sample Collection Date:
Comment: PREP BLK
Lab Preparation:

Sample Weight : 5.00 Sample Units: g
Digest Dilution: 533.90
Aliquot: 1.00 Aliquot Fraction: 0.19%
Aliquot2: 1.00 Fraction: 100.00%
Lab Dilution: 1.00

Batch

Batch Name: 2013.06.11 001 41628
Description: PU 241 RERUN

Tracer

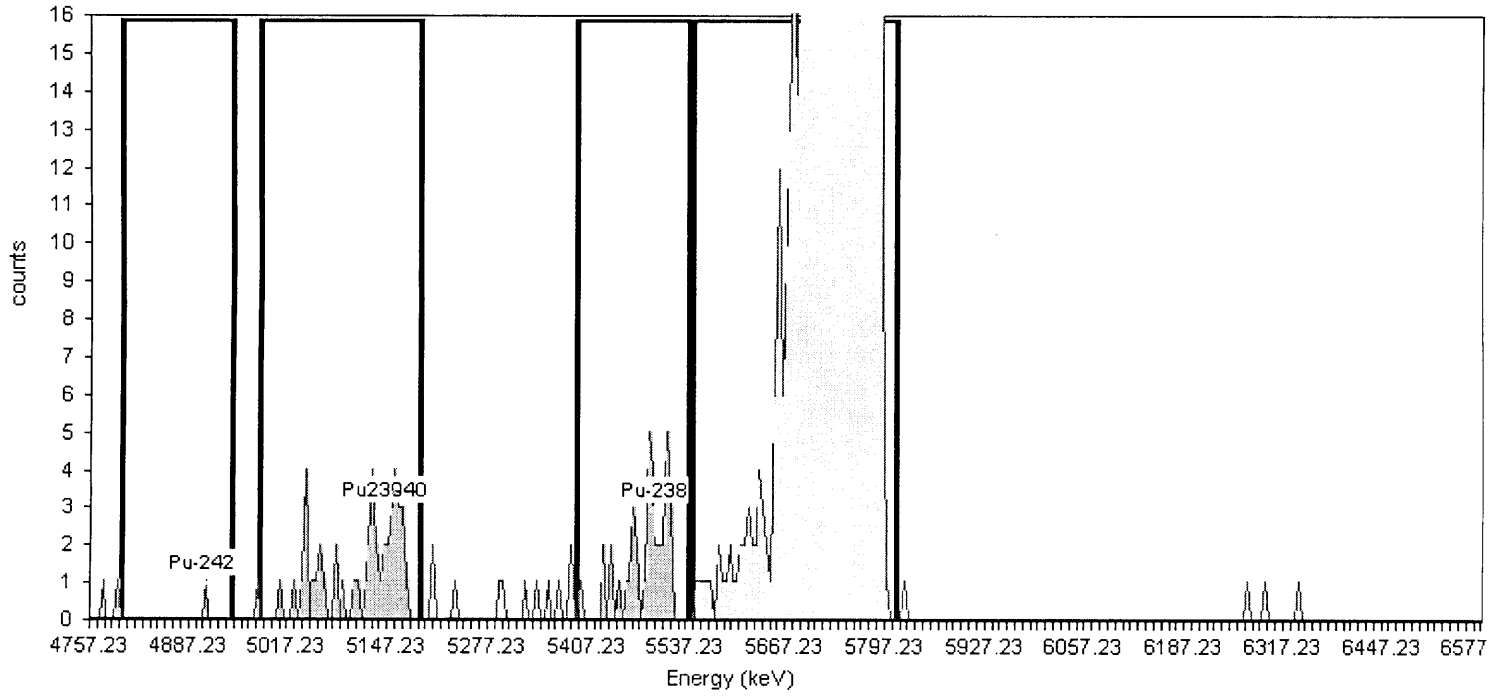
Tracer Name: 138B64
Tracer Activity: 215.00 DPM/mL x (Vol.)0.25 mL = 53.75 DPM
Tracer Ref. Date: 8/25/2010 12:00:26PM

Tracer Nuclide: Pu-236
Tracer Recovery: 74.33%

Acquisition

Detector: B2 Inst chk# 82552 SN: 49-102 G2
Acquisition Start Date: 06/11/2013 02:50:51PM
Live Time: 480.00 min.
Real Time: 480.18 min.
Background Date: 06/07/2013 06:17:23PM
Bkgd Info: Sample: B2; Det: B2 Inst chk# 82552; Spectrum #1; Jun-07-2013 18:17

Energy Calibration: 2013.03.04 010
Efficiency Calibration:2013.03.04 010
Calibration Date: 03/04/2013 02:48:34PM
Energy Cal: Gain = 4.8706 keV / Ch
Offset = 3,052.51 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 25.47% +/- 0.32% TPU(2 sigma)



General Analysis

Analysis Method: Interactive ROI Analysis
Decay Correction:6/11/2013 2:40:29PM
MDA Constants: Kα = 1.64 , Kβ = 1.64

Nuclide Library: Pu
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity uCi/g	2.00Sig TPU uCi/g	Count Uncert %	Critical Level uCi/g	MDA uCi/g
Pu-238	5499	5396	5539	32.5	99.9	36.15	4.0000	-19	-1.00E-005	1.38E-005	-66.54	3.77E-009	5.46E-006
Pu-236	5770	5546	5814	57.6	99.9	2474.00	2.0000	2472	1.92E-003	4.03E-004	2.01	5.26E-009	8.45E-006
Pu-242	4901	4796	4941	0.0	100.0	1.04	0.7693	0	1.43E-007	1.43E-006	498.31	1.65E-009	3.20E-006
Pu23940	5142	4981	5191	23.5	99.9	45.00	3.6667	41	2.19E-005	1.11E-005	16.88	3.61E-009	5.29E-006

CR Analyst: H0061547 SEP ANALYST: H0076677 CR Review: KIHusted

Workbook Page SAMPLE 3

Plutonium-241

		SAMPLE
Type	Sample Count Rate in CPM	295.27
SAMPLE	Sample Volume in mL	5.000
Work List	Dilution Factor	1
00041628	Pu-236 Tracer Recovery	97.67%
Test Code	Instrument Fractional Efficiency	1.0000
PLUTONIUM-241	Pu-241 Efficiency	0.2786
Matrix	Count Time in Minutes	30
SOLID	Background Count Rate in CPM	43.43
Rerun	Background Efficiency	1.0000
1	Digest Dilution Factor	0.002
Sample Prep	Detection Limit	5.70
S13T004254-001	Critical Level Lc (CPM)	2.80
Sample #	Rmax Level (CPM)	300.81
S13T004254	Lc, Rmax, or Rs, (Sample Rate) as appropriate (CPM)	295.27
Instrument Code		
WC51586		
Data Entry By		
MCB		
Analyst		
AKH		
Date Completed		
6/13/2013		
Analysis Date		
6/11/2013		
Analysis Time		
10:50 AM		
Specification		
C109 CLO		
Units		
uCi/g		

Procedure using this Form*: **LA-508-121 G-0**

* The specific formulae used in the calculations for this spreadsheet can be found in the applicable procedure, as identified on the worklist.

HASQARD Concentration	=	5.22E-02
Plutonium-241 Concentration in uCi/g	=	5.22E-02
Detection Limit in uCi/g		4.96E-04
Relative Percent Counting Uncertainty		2.62

Plutonium-241 Sample Template 1.0

Printed at: 8:12:15 AM 6/13/2013 Version: 1.00

AlphaVision v5.3

Alpha-Spectroscopy Analysis Report

ATL, Inc.
222-S Laboratory
09:24:25AM 06/12/2013

Results ID: 36,909

Sample

Sample: S13T004254 Type: Sample
Spectrum #1 Analysis #1
QC TYPE: SAM
Sample Collection Date:
Comment: SAM
Lab Preparation:

Sample Weight : 5.00 Sample Units: g
Digest Dilution: 533.90
Aliquot: 1.00 Aliquot Fraction: 0.19%
Aliquot2: 1.00 Fraction: 100.00%
Lab Dilution: 1.00

Batch

Batch Name: 2013.06.11 001 41628
Description: PU 241 RERUN

Tracer

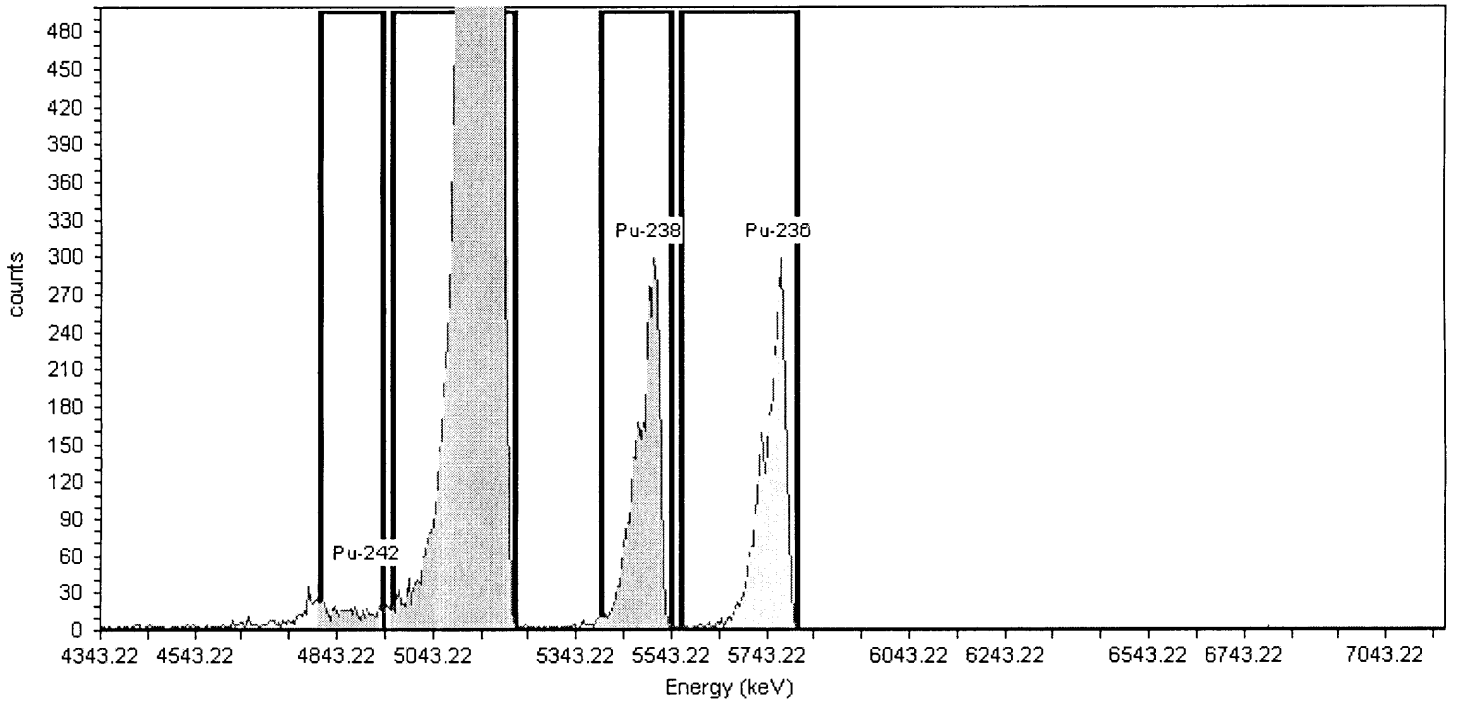
Tracer Name: 138B64
Tracer Activity: 215.00 DPM/mL x (Vol.)0.25 mL = 53.75 DPM
Tracer Ref. Date: 8/25/2010 12:00:26PM

Tracer Nuclide: Pu-236
Tracer Recovery: 97.67%

Acquisition

Detector: B3 Inst chk# 82553 SN: 49-112 Q5
Acquisition Start Date: 06/11/2013 02:50:53PM
Live Time: 480.00 min.
Real Time: 480.18 min.
Background Date: 06/07/2013 06:17:24PM
Bkgd Info: Sample: B3; Det: B3 Inst chk# 82553; Spectrum #1; Jun-07-2013 18:17

Energy Calibration: 2013.03.04 011
Efficiency Calibration:2013.03.04 011
Calibration Date: 03/04/2013 02:48:51PM
Energy Cal: Gain = 4.8706 keV / Ch
Offset = 3,052.51 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 24.76% +/- 0.31% TPU(2 sigma)



General Analysis

Analysis Method: Interactive ROI Analysis
Decay Correction:6/11/2013 2:40:29PM
MDA Constants: Kα = 1.64 , Kβ = 1.64

Nuclide Library: Pu
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity uCi/g	2.00Sig TPU uCi/g	Count Uncert %	Critical Level uCi/g	MDA uCi/g
Pu-242	4901	4806	4937	0.0	100.0	396.00	0.0000	396	1.64E-004	6.44E-005	5.03	0.00E+000	1.12E-006
Pu23940	5155	4957	5215	45.2	99.9	66204.00	4.3333	66200	2.75E-002	1.04E-002	0.39	3.07E-009	4.40E-006
Pu-238	5499	5396	5539	54.1	99.9	3192.82	3.3829	3124	1.30E-003	4.94E-004	1.86	2.71E-009	4.02E-006
Pu-236	5770	5566	5808	25.4	99.9	3159.26	1.5793	3158	2.53E-003	5.28E-004	1.78	3.66E-009	6.12E-006

CR Analyst: H0061547 SEP ANALYST: H0076677 CR Review: KIHusted

AlphaVision v5.3

Alpha-Spectroscopy Analysis Report

ATL, Inc.
222-S Laboratory
08:53:17AM 06/12/2013

Results ID: 36,907

Sample

Sample: S1305160013 Type: Sample
Spectrum #1 Analysis #1
QC TYPE: DUP
Sample Collection Date:
Comment: DUP
Lab Preparation:

Sample Weight : 5.00 Sample Units: g
Digest Dilution: 519.21
Aliquot: 1.00 Aliquot Fraction: 0.19%
Aliquot2: 1.00 Fraction: 100.00%
Lab Dilution: 1.00

Batch

Batch Name: 2013.06.11 001 41628
Description: PU 241 RERUN

Tracer

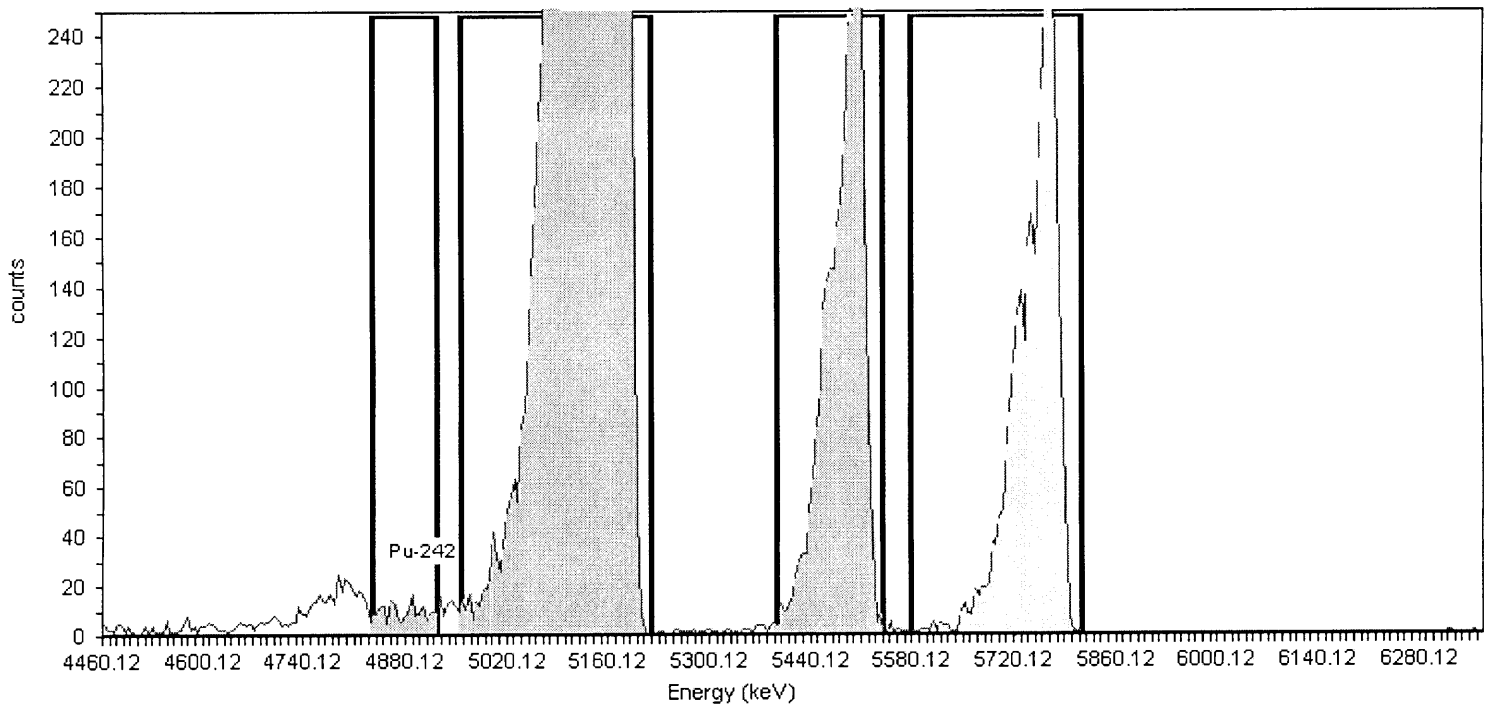
Tracer Name: 138B64
Tracer Activity: 215.00 DPM/mL x (Vol.)0.25 mL = 53.75 DPM
Tracer Ref. Date: 8/25/2010 12:00:26PM

Tracer Nuclide: Pu-236
Tracer Recovery: 101.65%

Acquisition

Detector: B4 Inst chk# 82554 SN: 49-102 F3
Acquisition Start Date: 06/11/2013 02:50:54PM
Live Time: 480.00 min.
Real Time: 480.18 min.
Background Date: 06/07/2013 06:17:26PM
Bkgd Info: Sample: B4; Det: B4 Inst chk# 82554; Spectrum #1; Jun-07-2013 18:17

Energy Calibration: 2013.03.04 012
Efficiency Calibration:2013.03.04 012
Calibration Date: 03/04/2013 02:49:13PM
Energy Cal: Gain = 4.8706 keV / Ch
Offset = 3,052.51 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 23.79% +/- 0.31% TPU(2 sigma)



General Analysis

Analysis Method: Interactive ROI Analysis
Decay Correction:6/11/2013 2:40:29PM
MDA Constants: Kα = 1.64 , Kβ = 1.64

Nuclide Library: Pu
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity uCi/g	2.00Sig TPU uCi/g	Count Uncert %	Critical Level uCi/g	MDA uCi/g
Pu-242	4901	4835	4923	105.8	100.0	169.00	0.6667	168	6.79E-005	2.78E-005	7.74	1.20E-009	2.34E-006
Pu23940	5155	4957	5220	45.1	99.9	68847.00	6.6667	68840	2.78E-002	1.05E-002	0.38	3.81E-009	5.05E-006
Pu-238	5499	5396	5539	44.7	99.9	3233.80	4.2838	3164	1.28E-003	4.87E-004	1.85	3.05E-009	4.26E-006
Pu-236	5770	5580	5814	63.4	99.9	3159.00	1.0000	3158	2.56E-003	5.34E-004	1.78	2.91E-009	5.18E-006

CR Analyst: H0061547 SEP ANALYST: H0076677 CR Review: KIHusted

Workbook Page DUP 4

Plutonium-241

		DUP	
Type	Sample Count Rate in CPM	326.77	Associated Sample Nu
DUP	Sample Volume in mL	5.000	S13T004254
Work List	Dilution Factor	1	
00041628	Pu-236 Tracer Recovery	101.65%	
Test Code	Instrument Fractional Efficiency	1.0000	
PLUTONIUM-241	Pu-241 Efficiency	0.2786	
Matrix	Count Time in Minutes	30	
SOLID	Background Count Rate in CPM	43.43	
Rerun	Background Efficiency	1.0000	
1	Digest Dilution Factor	0.002	
Sample Prep	Detection Limit	5.70	
S1305160013-001	Critical Level Lc (CPM)	2.80	
Sample #	Rmax Level (CPM)	332.57	
S1305160013	Lc, Rmax, or Rs, (Sample Rate) as appropriate (CPM)	326.77	
Instrument Code			
WC51586			
Data Entry By			
MCB			
Analyst			
AKH			
Date Completed			
6/13/2013			
Analysis Date			
6/11/2013			
Analysis Time			
10:50 AM			
Specification			
C109 CLO			
Units			
uCi/g			

Procedure using this Form*: **LA-508-121 G-0**

* The specific formulae used in the calculations for this spreadsheet can be found in the applicable procedure, as identified on the worklist.

HASQARD Concentration	=	5.40E-02
Plutonium-241 Concentration in uCi/g	=	5.40E-02
Detection Limit in uCi/g		4.63E-04
Relative Percent Counting Uncertainty		2.43

Plutonium-241 Sample Template 1.0

Printed at: 8:12:44 AM 6/13/2013 Version: 1.00

AlphaVision v5.3

Alpha-Spectroscopy Analysis Report

ATL, Inc.
222-S Laboratory
09:29:13AM 06/12/2013

Results ID: 36,910

Sample

Sample: S13T004282 Type: Sample
Spectrum #1 Analysis #1
QC TYPE: SAM
Sample Collection Date:
Comment: SAM
Lab Preparation:

Sample Weight : 5.00 Sample Units: g
Digest Dilution: 558.66
Aliquot: 1.00 Aliquot Fraction: 0.18%
Aliquot2: 1.00 Fraction: 100.00%
Lab Dilution: 1.00

Batch

Batch Name: 2013.06.11 001 41628
Description: PU 241 RERUN

Tracer

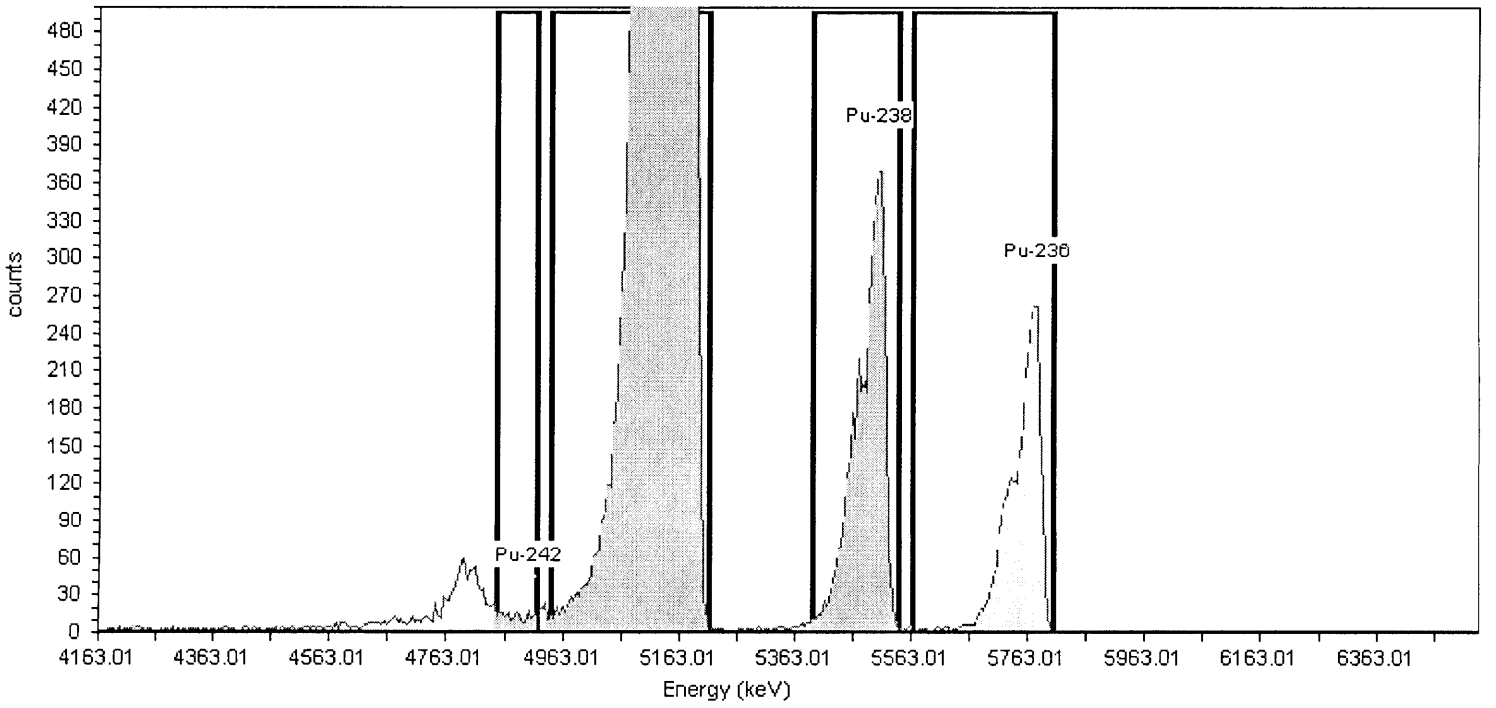
Tracer Name: 138B64
Tracer Activity: 215.00 DPM/mL x (Vol.)0.25 mL = 53.75 DPM
Tracer Ref. Date: 8/25/2010 12:00:26PM

Tracer Nuclide: Pu-236
Tracer Recovery: 90.07%

Acquisition

Detector: B5 Inst chk# 37B30A SN: 49-102 F4
Acquisition Start Date: 06/11/2013 02:50:56PM
Live Time: 480.00 min.
Real Time: 480.18 min.
Background Date: 06/07/2013 06:17:27PM
Bkgd Info: Sample: B5; Det: B5 Inst chk# 37B30A; Spectrum #1; Jun-07-2013 18:17

Energy Calibration: 2013.03.04 013
Efficiency Calibration:2013.03.04 013
Calibration Date: 03/04/2013 02:50:04PM
Energy Cal: Gain = 4.8706 keV / Ch
Offset = 3,052.51 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 24.62% +/- 0.31% TPU(2 sigma)



General Analysis

Analysis Method: Interactive ROI Analysis
Decay Correction:6/11/2013 2:40:29PM
MDA Constants: Kα = 1.64 , Kβ = 1.64

Nuclide Library: Pu
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity uCi/g	2.00Sig TPU uCi/g	Count Uncert %	Critical Level uCi/g	MDA uCi/g
Pu-242	4901	4850	4918	57.4	100.0	179.00	1.6667	177	8.39E-005	3.43E-005	7.58	2.08E-009	3.60E-006
Pu23940	5155	4942	5215	44.6	99.9	107369.00	3.6667	107365	5.08E-002	1.93E-002	0.31	3.08E-009	4.72E-006
Pu-238	5507	5396	5539	50.7	99.9	4039.46	3.0000	3977	1.88E-003	7.17E-004	1.63	2.79E-009	4.40E-006
Pu-236	5780	5566	5808	22.9	99.9	2898.00	2.0000	2896	2.44E-003	5.10E-004	1.86	4.49E-009	7.55E-006

CR Analyst: H0061547 SEP ANALYST: H0076677 CR Review: KIHusted

Workbook Page SAMPLE 5

Plutonium-241

		SAMPLE
Type	Sample Count Rate in CPM	281.83
SAMPLE	Sample Volume in mL	5.000
Work List	Dilution Factor	1
00041628	Pu-236 Tracer Recovery	90.07%
Test Code	Instrument Fractional Efficiency	1.0000
PLUTONIUM-241	Pu-241 Efficiency	0.2786
Matrix	Count Time in Minutes	30
SOLID	Background Count Rate in CPM	43.43
Rerun	Background Efficiency	1.0000
1	Digest Dilution Factor	0.002
Sample Prep	Detection Limit	5.70
S13T004282-001	Critical Level Lc (CPM)	2.80
Sample #	Rmax Level (CPM)	287.26
S13T004282	Lc, Rmax, or Rs, (Sample Rate) as appropriate (CPM)	281.83
Instrument Code		
WC51586		
Data Entry By		
MCB		
Analyst		
AKH		
Date Completed		
6/13/2013		
Analysis Date		
6/11/2013		
Analysis Time		
10:50 AM		

Procedure using this Form*: **LA-508-121 G-0**

* The specific formulae used in the calculations for this spreadsheet can be found in the applicable procedure, as identified on the worklist.

Specification			
C109 CLO	**HASQARD Concentration**	=	5.65E-02
Units	**Plutonium-241 Concentration in uCi/g**	=	5.65E-02
uCi/g	**Detection Limit in uCi/g**		5.62E-04
	Relative Percent Counting Uncertainty		2.71

Plutonium-241 Sample Template 1.0

Printed at: 8:13:03 AM 6/13/2013 Version: 1.00

AlphaVision v5.3

Alpha-Spectroscopy Analysis Report

ATL, Inc.
222-S Laboratory
09:41:20AM 06/12/2013

Results ID: 36,914

Sample

Sample: S13T004309 Type: Sample
Spectrum #1 Analysis #1
QC TYPE: SAM
Sample Collection Date:
Comment: SAM
Lab Preparation:

Sample Weight : 5.00 Sample Units: g
Digest Dilution: 495.05
Aliquot: 1.00 Aliquot Fraction: 0.20%
Aliquot2: 1.00 Fraction: 100.00%
Lab Dilution: 1.00

Batch

Batch Name: 2013.06.11 001 41628
Description: PU 241 RERUN

Tracer

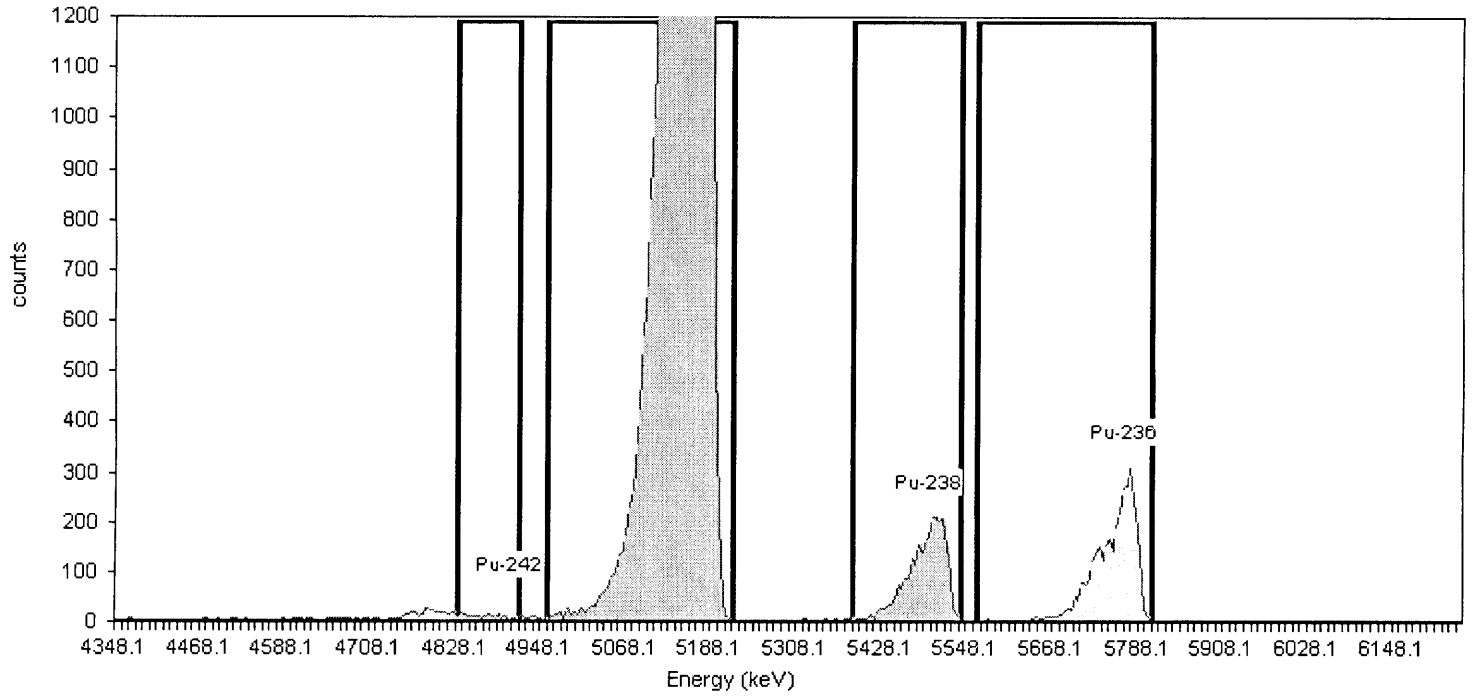
Tracer Name: 138B64
Tracer Activity: 215.00 DPM/mL x (Vol.)0.25 mL = 53.75 DPM
Tracer Ref. Date: 8/25/2010 12:00:26PM

Tracer Nuclide: Pu-236
Tracer Recovery: 101.68%

Acquisition

Detector: B6 Inst chk# 37B30B SN: 49-102 F5
Acquisition Start Date: 06/11/2013 02:50:57PM
Live Time: 480.00 min.
Real Time: 480.18 min.
Background Date: 06/07/2013 06:17:28PM
Bkgd Info: Sample: B6; Det: B6 Inst chk# 37B30B; Spectrum #1; Jun-07-2013 18:17

Energy Calibration: 2013.03.04 014
Efficiency Calibration:2013.03.04 014
Calibration Date: 03/04/2013 02:50:34PM
Energy Cal: Gain = 4.8706 keV / Ch
Offset = 3,052.51 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 24.37% +/- 0.31% TPU(2 sigma)



General Analysis

Analysis Method: Interactive ROI Analysis
Decay Correction:6/11/2013 2:40:29PM
MDA Constants: Kα = 1.64 , Kβ = 1.64

Nuclide Library: Pu
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity uCi/g	2.00Sig TPU uCi/g	Count Uncert %	Critical Level uCi/g	MDA uCi/g
Pu-242	4901	4830	4918	79.2	100.0	156.00	0.6667	155	5.83E-005	2.40E-005	8.06	1.18E-009	2.18E-006
Pu23940	5155	4957	5220	46.4	99.9	61363.00	4.6667	61358	2.30E-002	8.74E-003	0.40	3.11E-009	4.10E-006
Pu-238	5499	5390	5541	53.3	99.9	2491.00	2.6667	2422	9.09E-004	3.47E-004	2.14	2.35E-009	3.34E-006
Pu-236	5770	5566	5808	15.9	99.9	3237.10	1.0000	3236	2.44E-003	5.09E-004	1.76	2.84E-009	4.82E-006

CR Analyst: H0061547 SEP ANALYST: H0076677 CR Review: KIHusted

Workbook Page SAMPLE 6

Plutonium-241

		SAMPLE
Type	Sample Count Rate in CPM	310.97
SAMPLE	Sample Volume in mL	5.000
Work List	Dilution Factor	1
00041628	Pu-236 Tracer Recovery	101.68%
Test Code	Instrument Fractional Efficiency	1.0000
PLUTONIUM-241	Pu-241 Efficiency	0.2786
Matrix	Count Time in Minutes	30
SOLID	Background Count Rate in CPM	43.43
Rerun	Background Efficiency	1.0000
1	Digest Dilution Factor	0.002
Sample Prep	Detection Limit	5.70
S13T004309-001	Critical Level Lc (CPM)	2.80
Sample #	Rmax Level (CPM)	316.64
S13T004309	Lc, Rmax, or Rs, (Sample Rate) as appropriate (CPM)	310.97
Instrument Code		
WC51586		
Data Entry By		
MCB		
Analyst		
AKH		
Date Completed		
6/13/2013		
Analysis Date		
6/11/2013		
Analysis Time		
10:50 AM		
Specification		
C109 CLO		
Units		
uCi/g		

Procedure using this Form*: **LA-508-121 G-0**

* The specific formulae used in the calculations for this spreadsheet can be found in the applicable procedure, as identified on the worklist.

HASQARD Concentration	=	4.90E-02
Plutonium-241 Concentration in uCi/g	=	4.90E-02
Detection Limit in uCi/g		4.41E-04
Relative Percent Counting Uncertainty		2.52

Plutonium-241 Sample Template 1.0

Printed at: 8:13:41 AM 6/13/2013 Version: 1.00

LABCORE Completed Batch Report for Batch# 00041255

Analyst: Hurson, Aleta

Book#: NA

Instrument: LE-BAL-091

Method: FUSION - ZR, LA-549-141 Rev/Mod M-1-A

Specification: C109 CLO

Prep Batch: N/A

Batch Comment:

C109 CLO for Fusion. gll

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
1	BLNK-PREP	S1305160012			Z		Dose Rate(1)	SOLID		<0.5				mRem/hr			
1	BLNK-PREP	S1305160012			Z		Digest Factor(1)	SOLID		0.001873				g / mL			
2	SAMPLE	S13T004254			Z		Dose Rate(1)	SOLID		200				mRem/hr			
2	SAMPLE	S13T004254			Z		Digest Factor(1)	SOLID		0.001873				g / mL			
3	DUP	S1305160013	S13T004254		Z		Dose Rate(1)	SOLID		200				mRem/hr			
3	DUP	S1305160013	S13T004254		Z		Digest Factor(1)	SOLID		0.001926				g / mL			
4	SAMPLE	S13T004282			Z		Dose Rate(1)	SOLID		180				mRem/hr			
4	SAMPLE	S13T004282			Z		Digest Factor(1)	SOLID		0.001790				g / mL			
5	SAMPLE	S13T004309			Z		Dose Rate(1)	SOLID		180				mRem/hr			
5	SAMPLE	S13T004309			Z		Digest Factor(1)	SOLID		0.002020				g / mL			

Comments Section:

Data Flagger Status:
Flagger Not Run

Final Page for Batch# 00041255

Reviewer Signature 16 May 13 Date

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041255

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Method	Customer Id	Specification
1	S1305160012	BLNK-PREP			FUSION - ZR		
2	S13T004254	SAMPLE		20130402	FUSION - ZR	9C-13-Comp A	C109 CLO
3	S1305160013	DUP	S13T004254		FUSION - ZR		
4	S13T004282	SAMPLE		20130402	FUSION - ZR	9C-13-Comp B	C109 CLO
5	S13T004309	SAMPLE		20130402	FUSION - ZR	9C-13-Comp C	C109 CLO

COPY

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

* = Rejected Analyte
N, A = Non-reported Analyte

5/16/2013 8:41:54AM
IncompleteBatchShort Version 2.7.29
batchreports 2.7.32

LABCORE Data Entry Template for Batch# 00041255

Analyst: H0076677 **Standard ID / Book#:** NA
Instrument: NA
Method: FUSION - ZR, LA-549-141 Rev/Mod M-1-A
Prep Batch: N/A
Batch Comment:
C109 CLO for Fusion. gll
CACN:3A.26

S	Type	Sample	R	A	Matrix	Group#	Project
1	BLNK-PREP	S1305160012		Z	SOLID		
2	SAMPLE	S13T004254		Z	SOLID	20130402	C109 CLO
3	DUP	S1305160013		Z	SOLID		
4	SAMPLE	S13T004282		Z	SOLID	20130402	C109 CLO
5	SAMPLE	S13T004309		Z	SOLID	20130402	C109 CLO

Final Page for Batch# 00041255

Alicia Hansen 5/16/13
Analyst Signature Date

Alicia Hansen 5/16/13 5/16/13 ACH
Data Entry Signature Date

Adobe

Data Entry Comments:

S = Batch Slot Number, R = Retest Number, A = Aliquot Code.

ATL	DIGESTION BATCH LIST DATA COLLECTION FORM

○ LA-544-101 Rev _____ ○ LA-544-113 Rev _____ ○ _____ Rev _____

○ LA-549-133 Rev _____ ◉ LA-549-141 Rev M-1-A ○ _____ (Other)

Batch #: 41255 Analyst: AKH Date: 5/16/2013

(Pipette #); Pipette ID; Volume Range or Fixed Volume; Check box if pipette passes visual verification:

(1) N/A (Range/Vol: N/A) ☐

(2) N/A (Range/Vol: N/A) ☐

(3) N/A (Range/Vol: N/A) ☐

Balance ID; Date of balance verification:

LE-BAL-091 (Verification Date: 5/16/2013)

○ Spike / ○ Carrier / ○ Tracer # N/A Vol N/A Pip # N/A

○ Spike / ○ Carrier / ○ Tracer # N/A Vol N/A Pip # N/A

◎ Spike / ○ Carrier / ○ Tracer # N/A Vol N/A Pip # N/A

Special Instructions:

Use ZR Crucibles. gll

Sample Type	Digest Sample #	Parent Sample #	Sample Weight (g)	Final Volume (mL)	Dose Rate (mRem/hr)
Blank Prep	S1305160012	N/A	0.4682	250	<0.5
Sample	S13T004254	S13T004246	0.4682	250	200
Duplicate	S1305160013	S13T004246	0.4814	250	200
Sample	S13T004282	S13T004274	0.4474	250	180
Sample	S13T004309	S13T004301	0.5049	250	180

Comments:

C109 CLO Fusion-ZR. gll Digest Appearance: Clear liquid. colorless. no solids.

A-6005-290 (REV 2)

Data Review Check List

Procedure LA-365-132 Se-79

Project: C109 CLO

Group(s)20130402

	41355				
Review Item	**Level 1**			**Level 2**	**Comments and Samples Affected**
	Yes	**No**	**N/A**		
Batch Items					
1. Was a blank run the batch?	X			✓	
2. Was a duplicate run with the batch?	X			✓	
3. Was the batch (worklist) completed (sample #, dilution, aliquot size)?	X			✓	
4. Were any line outs initialed and dated?			X	✓	
5. Was balance check completed on the day of use (if used)?	X			✓	
Result Items					
6. Was sample, traveler and counting data correct on ACE form?	X			✓	
7. If No, was ACE form corrected?			X	✓	
8. Did results etc. correctly up-load to LABCORE (OMNILims or MULTILims)?	X			✓	
9. If No, was LABCORE corrected?			X	✓	
10. Are result units correct?	X			✓	
11. If No, were units corrected?			X	✓	
12. Was data flagged?	X			✓	
13. Are all flags present and correct?	X			✓	
14. Is blank <MDC, or <5% isotope concentration, or <5% decision level?	X			✓	
15. Are duplicate RPDs <20% (or RSD) within customer limits?			X	✓	Sample and DUP < detection limit
16. Are the correct procedure number and Rev/Mod on the report?	X			✓	
Procedure Specific Items					
17. Was correct LSC program used for counting?	X			✓	
18. Were carrier recoveries between 30% and 110%?	X			✓	
19. Were the customer required detection or quantification limits met?	X			✓	

1st Level Reviewer: K L Husted KL Husted **Date:** 5/22/13

2nd Level Reviewer: [signature] **Date:** 23 May 13

Data Review Checklist

CALIBRATION OF LIQUID SCINTILLATION COUNTERS

INSTRUMENT # ___LSC-2_____ **PROCEDURES LA-508-121 LQ-150-115**

BATCH # __41355_____

Review Items	--- Level 1 --- Yes	No	N/A	Comments & Samples Affected
Efficiency Calibration				
1. Instrument calibration stds ^{3}H & ^{14}C run prior to quench curve calibration	X			
2. Unquenched bkg vial run before quench curve calibration	X			
3. Calibration performed per procedure LA-508-121	X			
4. Quench curve calibration had > 7 data points	X			
5. Quench range of calibration matches expected range of samples	X			
6. Quench calibration performed in mode where bkg is subtracted from each analysis	X			
7. Calibration had a second, independent check.	X			
8. Any non-conformances are documented in maintnance notebook	X			
9. Calibration reports are pasted and signed in maintenance notebook	X			
Calibration Verification				
1. Instrument Control Std within limits before and after batch counted	X			
2. Bkg check within limits before and after batch counted	X			

Reviewer: Kurtis Hustad KI Hustad Date: 5/22/13

5/22/2013 3:08:04PM
CompleteBatch Version 2.7.32
batchreports 2.7.32

LABCORE Completed Batch Report for Batch# 00041355

Analyst: King, Rob W

Book#:

Instrument: LSC2 LS6000 B-1A

Method: SELENIUM-79, LA-508-121 Rev/Mod G-0

Specification: C109 CLO

Prep Batch: 00041258

Batch Comment:

C109 CLO RWK

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
Sample Sequence 1																	
1	BLNK-PREP	S1305160018		0 0	E		Selenium-79	SOLID		<3.1700E-04			3.17E-04	uCi/g			
1	BLNK-PREP	S1305160018		0 0	E		Selenium-C	SOLID		82.488				% Recovery			
Sample Sequence 2																	
2	SAMPLE	S13T004255		0 0	E		Selenium-79	SOLID	N/A	<3.1400E-04			3.14E-04	uCi/g			U
2	SAMPLE	S13T004255		0 0	E		Selenium-C	SOLID		83.487				% Recovery			
Sample Sequence 3																	
3	DUP	S1305160019	S13T004255	0 0	E		Selenium-79	SOLID	<3.1400E-04	<3.4800E-04			3.48E-04	uCi/g			
3	DUP	S1305160019	S13T004255	0 0	E		Selenium-C	SOLID	83.487	83.487				% Recovery			
Sample Sequence 4																	
4	SAMPLE	S13T004283		0 0	E		Selenium-79	SOLID	N/A	<3.4900E-04			3.49E-04	uCi/g			U
4	SAMPLE	S13T004283		0 0	E		Selenium-C	SOLID		78.488				% Recovery			
Sample Sequence 5																	
5	SAMPLE	S13T004310		0 0	E		Selenium-79	SOLID	N/A	<3.4400E-04			3.44E-04	uCi/g			U
5	SAMPLE	S13T004310		0 0	E		Selenium-C	SOLID		82.988				% Recovery			

Comments Section:

Data Flagger Status:
Flagging Completed

Final Page for Batch# 00041355

[signature] 23 May 13
Reviewer Signature Date

PC: [signature] 7/9/13

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041355

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Method	Customer Id	Specification
1	S1305160018	BLNK-PREP			SELENIUM-79		
2	S13T004255	SAMPLE		20130402	SELENIUM-79	9C-13-Comp A	C109 CLO
3	S1305160019	DUP	S13T004255		SELENIUM-79		
4	S13T004283	SAMPLE		20130402	SELENIUM-79	9C-13-Comp B	C109 CLO
5	S13T004310	SAMPLE		20130402	SELENIUM-79	9C-13-Comp C	C109 CLO

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

* = Rejected Analyte
N, A = Non-reported Analyte

5/21/2013 3:53:55PM
IncompleteBatchShort Version 2.7.29
batchreports 2.7.32

LABCORE Data Entry Template for Batch# 00041355

Analyst: H0061547 **Standard ID / Book#:** See bench sheet
Instrument: LSC-02
Method: SELENIUM-79, LA-508-121 Rev/Mod G-0
Prep Batch: 00041258
Batch Comment:
C109 CLO RWK
CACN:3A.26

S	Type	Sample	R	A	Matrix	Group#	Project
1	BLNK-PREP	S1305160018	0	E	SOLID		
	Analytes Requested:	Selenium-79, Selenium-C					
2	SAMPLE	S13T004255	0	E	SOLID	20130402	C109 CLO
	Analytes Requested:	Selenium-79, Selenium-C					
3	DUP	S1305160019	0	E	SOLID		
	Analytes Requested:	Selenium-79, Selenium-C					
4	SAMPLE	S13T004283	0	E	SOLID	20130402	C109 CLO
	Analytes Requested:	Selenium-79, Selenium-C					
5	SAMPLE	S13T004310	0	E	SOLID	20130402	C109 CLO
	Analytes Requested:	Selenium-79, Selenium-C					

Final Page for Batch# 00041355

[signature] 5/21/13
Analyst Signature **Date**

[signature] 5/21/13
Data Entry Signature **Date**

[signature] 5-22-2013

Data Entry Comments:

S = Batch Slot Number, R = Retest Number, A = Aliquot Code.

5/17/2013 1:07:30PM
IncompleteBatchShort Version 2.7.29
batchreports 2.7.32

LABCORE Data Entry Template for Batch# 00041301

Analyst: h0074758 **Standard ID / Book#:** N/A

Instrument: LE-BAL-108

Method: SELENIUM-79 SEPARATION, LA-365-132 Rev/Mod L-0

Prep Batch: 00041258

Batch Comment:

C109 CLO for Se79. gll

CACN:3A.26

S	Type	Sample	R	A	Matrix	Group#	Project
1	BLNK-PREP	S1305160018	0	E	SOLID		
	Analytes Requested:	RadChem Separation					
2	SAMPLE	S13T004255	0	E	SOLID	20130402	C109 CLO
	Analytes Requested:	RadChem Separation					
3	DUP	S1305160019	0	E	SOLID		
	Analytes Requested:	RadChem Separation					
4	SAMPLE	S13T004283	0	E	SOLID	20130402	C109 CLO
	Analytes Requested:	RadChem Separation					
5	SAMPLE	S13T004310	0	E	SOLID	20130402	C109 CLO
	Analytes Requested:	RadChem Separation					

Final Page for Batch# 00041301

Analyst Signature — Date: 5-21-13

Data Entry Signature — Date: 5-21-13

Data Entry Comments:

S = Batch Slot Number, R = Retest Number, A = Aliquot Code.

ATL	Se-79 BATCH LIST DATA COLLECTION FORM	LA-365-132 Rev L-0

Separation Batch #: 41301 Analyst Initials: gll

Analysis Date/Time: 5-21-13 / 13:14

(Pipette #); Pipette ID; Volume Range or Fixed Volume; Check box if pipette passes visual verification:

(1) 392164A (Range/Vol: 100-1000 uL) ☒

(2) N/A (Range/Vol: N/A) ☐

(3) N/A (Range/Vol: N/A) ☐

Matrix: Solid HASQARD Upload ☐

Prep Batch #: 41258

Carrier Book #: 123S1A Volume: 1 mL (Pip # 1)

Balance ID; Date of balance verification:

LE-BAL-108 (Verification Date: 5-21-13)

N/A (Verification Date: N/A)

Counting Room Information

⊗ LA-508-121 Rev 6-0 ○ LA-508-122 Rev

Counting Batch #: 41355

Instrument ID: WC16085 LSC-02

Inst. Check Std ID: PEDX

Special Instructions/Comments:

C109 CLO for SE79. gll

Sample Type	Sample ID	Sample Size (mL)	Pip #	Dilution Information	Pip #	DF	Gross Weight (g)	Tare Weight (g)	Counting Room Info Sample Pos #
Blk Prep	S1305160018	1	1	N/A	N/A	1	0.7827	0.7662	3
Sample	S13T004255	1	1	N/A	N/A	1	0.7939	0.7772	4
Prep Dup	S1305160019	1	1	N/A	N/A	1	0.7905	0.7738	5
Sample	S13T004283	1	1	N/A	N/A	1	0.7855	0.7698	6
Sample	S13T004310	1	1	N/A	N/A	1	0.7815	0.7649	7

PAGE: 1

ID:SE-79 21 MAY 2013 15:18

USER: 3 COMMENT:LS 6000 WC 16085

PRESET TIME :	50.00						
DATA CALC :	SL DPM	H# :YES	SAMPLE REPEATS:	1	PRINTER	: STD	
COUNT BLANK :	YES	IC# : NO	REPLICATES :	1	RS232	: STD	
TWO PHASE :	YES	AQC : NO	CYCLE REPEATS :	1			
SCINTILLATOR:	LIQUID	LUMEX:YES	LOW SAMPLE REJ:	0			
LOW LEVEL :	NO	HALF LIFE CORRECTION DATE:			none		

ISOTOPE 1: C-14 %ERROR: 0.00 FACTOR: 1.000000 BKG. SUB: 0

BACKGROUND QUENCH CURVE: Off COLOR QUENCH CORRECTION: Off

Quench Limits Low:-7.704 High:300.69

SAM NO	POS	TIME MIN	H#	C-14 CPM	C-14 %ERROR	C-14 DPM	C-14 EFF-1	LUMEX %	ELAPSED TIME	2P
B1	**-1	50.00	138.6	69.34	3.68	**76.45**	90.71	11.78	52.78	2P
		Blank Average		**DPM for C-14 :**		**76.45**	**COEF. OF VAR:**		**0.000**	
1	**-3	50.00	139.3	66.42	3.66	**-3.18**	90.66	8.11	105.39	2P
2	**-4	50.00	145.7	62.42	3.71	**-7.24**	90.19	5.51	157.74	2P
3	**-5	50.00	145.9	56.96	3.85	**-13.29**	90.19	4.06	209.93	2P
4	**-6	50.00	148.7	40.38	4.59	**-31.56**	89.97	4.30	262.04	2P
5	**-7	50.00	153.0	52.86	3.96	**-17.47**	89.63	2.78	314.10	2P

Workbook Page BLANK 1

Se-79			BLNK-PREP
Type	Sample Volume in mL		1.00
BLNK-PREP	Dilution Factor		1.00
Work List	Digest Dilution Factor		5.214E-03
00041355	DPM of Sample from Liquid Scintillation Counter		-3.18
Test Code	Instrument Fractional Efficiency		0.9066
SELENIUM-79	Sample Count Rate in CPM		66.42
Matrix	Count Time in Minutes		50
SOLID	Background Count Rate in CPM		69.34
Rerun	Background Efficiency		0.9071
0	Relative Percent Counting Uncertainty		110.60
Sample Prep	Gross Weight		0.7827
S1305160018-001	Tare Weight		0.7662
Sample #	Carrier Book Number		123S1A
S1305160018	Carrier Value		0.020
Instrument Code	Volume Carrier Added in mL		1.000
WC16085	Carrier Recovery Factor		0.8249
Data Entry By	Detection Limit		6.11
RWK	Critical Level Lc (CPM)		2.74
Analyst	Rmax Level (CPM)		-0.16
GLL	Se-79 Concentration in uCi/g	<	3.17E-04
Date Completed	Lc, Rmax, or Rs, (Sample Rate) as appropriate (CPM)		2.74
5/21/2013			
Analysis Date	**Procedure using this Form*:**		**LA-508-121** **G-0**
5/21/2013	* The specific formulae used in the calculations for this spreadsheet can be found		
Analysis Time	in the applicable procedure, as identified on the worklist.		
1:14 PM	**HAZQUARD Concentration**	=	-3.33E-04
Specification	**Se-79 Concentration in uCi/g**	<	3.17E-04
C109 CLO	**Relative Percent Counting Uncertainty**		110.60
Units	**% Carrier Recovery**		82.5%
uCi/g	**Detection Level in uCi/g**		3.17E-04

Selenium-79 Sample Template 2.0

Printed at: 8:33:21 PM 5/21/2013 Version: 2.01

Workbook Page SAMPLE 2

Se-79			SAMPLE
Type	Sample Volume in mL		1.00
SAMPLE	Dilution Factor		1.00
Work List	Digest Dilution Factor		5.214E-03
00041355	DPM of Sample from Liquid Scintillation Counter		-7.24
Test Code	Instrument Fractional Efficiency		0.9019
SELENIUM-79	Sample Count Rate in CPM		62.42
Matrix	Count Time in Minutes		50
SOLID	Background Count Rate in CPM		69.34
Rerun	Background Efficiency		0.9071
0	Relative Percent Counting Uncertainty		45.98
Sample Prep	Gross Weight		0.7939
S13T004255-001	Tare Weight		0.7772
Sample #	Carrier Book Number		123S1A
S13T004255	Carrier Value		0.020
Instrument Code	Volume Carrier Added in mL		1.000
WC16085	Carrier Recovery Factor		0.8349
Data Entry By	Detection Limit		6.13
RWK	Critical Level Lc (CPM)		2.74
Analyst	Rmax Level (CPM)		-3.85
GLL	Se-79 Concentration in uCi/g	<	3.14E-04
Date Completed	Lc, Rmax, or Rs, (Sample Rate) as appropriate (CPM)		2.74
5/21/2013			
Analysis Date	**Procedure using this Form*:**	**LA-508-121**	**G-0**
5/21/2013	* The specific formulae used in the calculations for this spreadsheet can be found		
Analysis Time	in the applicable procedure, as identified on the worklist.		
1:14 PM	**HAZQUARD Concentration**	=	-7.49E-04
Specification	**Se-79 Concentration in uCi/g**	<	3.14E-04
C109 CLO	**Relative Percent Counting Uncertainty**		45.98
Units	**% Carrier Recovery**		83.5%
uCi/g	**Detection Level in uCi/g**		3.14E-04

Selenium-79 Sample Template 2.0

Printed at: 8:33:59 PM 5/21/2013 Version: 2.01

Workbook Page DUP 3

Se-79

			DUP	
Type	Sample Volume in mL		1.00	Associated Sample Number
DUP	Dilution Factor		1.00	S13T004255
Work List	Digest Dilution Factor		4.708E-03	
00041355	DPM of Sample from Liquid Scintillation Counter		-13.29	
Test Code	Instrument Fractional Efficiency		0.9019	
SELENIUM-79	Sample Count Rate in CPM		56.96	
Matrix	Count Time in Minutes		50	
SOLID	Background Count Rate in CPM		69.34	
Rerun	Background Efficiency		0.9071	
0	Relative Percent Counting Uncertainty		25.16	
Sample Prep	Gross Weight		0.7905	
S1305160019-001	Tare Weight		0.7738	
Sample #	Carrier Book Number		123S1A	
S1305160019	Carrier Value		0.020	
Instrument Code	Volume Carrier Added in mL		1.000	
WC16085	Carrier Recovery Factor		0.8349	
Data Entry By	Detection Limit		6.13	
RWK	Critical Level Lc (CPM)		2.74	
Analyst	Rmax Level (CPM)		-9.36	
GLL	Se-79 Concentration in uCi/g	<	3.48E-04	
Date Completed	Lc, Rmax, or Rs, (Sample Rate) as appropriate (CPM)		2.74	
5/21/2013				
Analysis Date	**Procedure using this Form*:**		**LA-508-121**	**G-0**
5/21/2013	* The specific formulae used in the calculations for this spreadsheet can be found			
Analysis Time	in the applicable procedure, as identified on the worklist.			
1:14 PM	**HAZQUARD Concentration**	=	-1.52E-03	
Specification	**Se-79 Concentration in uCi/g**	<	3.48E-04	
C109 CLO	**Relative Percent Counting Uncertainty**		25.16	
Units	**% Carrier Recovery**		83.5%	
uCi/g	**Detection Level in uCi/g**		3.48E-04	

Selenium-79 Sample Template 2.0

Printed at: 8:35:03 PM 5/21/2013 Version: 2.01

Workbook Page SAMPLE 4

Se-79			SAMPLE
Type	Sample Volume in mL		1.00
SAMPLE	Dilution Factor		1.00
Work List	Digest Dilution Factor		4.996E-03
00041355	DPM of Sample from Liquid Scintillation Counter		-31.56
Test Code	Instrument Fractional Efficiency		0.8997
SELENIUM-79	Sample Count Rate in CPM		40.38
Matrix	Count Time in Minutes		50
SOLID	Background Count Rate in CPM		69.34
Rerun	Background Efficiency		0.9071
0	Relative Percent Counting Uncertainty		10.03
Sample Prep	Gross Weight		0.7855
S13T004283-001	Tare Weight		0.7698
Sample #	Carrier Book Number		123S1A
S13T004283	Carrier Value		0.020
Instrument Code	Volume Carrier Added in mL		1.000
WC16085	Carrier Recovery Factor		0.7849
Data Entry By	Detection Limit		6.13
RWK	Critical Level Lc (CPM)		2.73
Analyst	Rmax Level (CPM)		-25.96
GLL	Se-79 Concentration in uCi/g	<	3.49E-04
Date Completed	Lc, Rmax, or Rs, (Sample Rate) as appropriate (CPM)		2.73
5/21/2013			
Analysis Date	**Procedure using this Form*:**	**LA-508-121**	**G-0**
5/21/2013	* The specific formulae used in the calculations for this spreadsheet can be found		
Analysis Time	in the applicable procedure, as identified on the worklist.		
1:14 PM	**HAZQUARD Concentration**	=	-3.63E-03
Specification	**Se-79 Concentration in uCi/g**	<	3.49E-04
C109 CLO	**Relative Percent Counting Uncertainty**		10.03
Units	**% Carrier Recovery**		78.5%
uCi/g	**Detection Level in uCi/g**		3.49E-04

Selenium-79 Sample Template 2.0

Printed at: 8:36:05 PM 5/21/2013 Version: 2.01

Workbook Page SAMPLE 5

Se-79			SAMPLE
Type	Sample Volume in mL		1.00
SAMPLE	Dilution Factor		1.00
Work List	Digest Dilution Factor		4.804E-03
00041355	DPM of Sample from Liquid Scintillation Counter		-17.47
Test Code	Instrument Fractional Efficiency		0.8963
SELENIUM-79	Sample Count Rate in CPM		52.86
Matrix	Count Time in Minutes		50
SOLID	Background Count Rate in CPM		69.34
Rerun	Background Efficiency		0.9071
0	Relative Percent Counting Uncertainty		18.59
Sample Prep	Gross Weight		0.7815
S13T004310-001	Tare Weight		0.7649
Sample #	Carrier Book Number		123S1A
S13T004310	Carrier Value		0.020
Instrument Code	Volume Carrier Added in mL		1.000
WC16085	Carrier Recovery Factor		0.8299
Data Entry By	Detection Limit		6.15
RWK	Critical Level Lc (CPM)		2.73
Analyst	Rmax Level (CPM)		-13.08
GLL	Se-79 Concentration in uCi/g	<	3.44E-04
Date Completed	Lc, Rmax, or Rs, (Sample Rate) as appropriate (CPM)		2.73
5/21/2013			
Analysis Date	**Procedure using this Form*:**	**LA-508-121**	**G-0**
5/21/2013	* The specific formulae used in the calculations for this spreadsheet can be found		
Analysis Time	in the applicable procedure, as identified on the worklist.		
1:14 PM	**HAZQUARD Concentration**	=	-1.97E-03
Specification	**Se-79 Concentration in uCi/g**	<	3.44E-04
C109 CLO	**Relative Percent Counting Uncertainty**		18.59
Units	**% Carrier Recovery**		83.0%
uCi/g	**Detection Level in uCi/g**		3.44E-04

Selenium-79 Sample Template 2.0

Printed at: 8:36:57 PM 5/21/2013 Version: 2.01

5/16/2013 4:15:51PM
CompleteBatch Version 2.7.32
batchreports 2.7.32

LABCORE Completed Batch Report for Batch# 00041258

Analyst: LaPlant, Gary **Book#:** N/A

Instrument: LE-BAL-091

Method: ENVIRONMENTAL DIGEST, LA-544-101 Rev/Mod I-0

Specification: C109 CLO

Prep Batch: N/A

Batch Comment:

C109 CLO for ENV DIG. gll

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
1	BLNK-PREP	S1305160018			E		Dose Rate(1)	SOLID		<0.5				mRem/hr			
1	BLNK-PREP	S1305160018			E		Digest Factor(1)	SOLID		0.005214				g / mL			
2	SAMPLE	S13T004255			E		Dose Rate(1)	SOLID		1196				mRem/hr			
2	SAMPLE	S13T004255			E		Digest Factor(1)	SOLID		0.005214				g / mL			
3	DUP	S1305160019	S13T004255		E		Dose Rate(1)	SOLID		1196				mRem/hr			
3	DUP	S1305160019	S13T004255		E		Digest Factor(1)	SOLID		0.004708				g / mL			
4	SAMPLE	S13T004283			E		Dose Rate(1)	SOLID		1196				mRem/hr			
4	SAMPLE	S13T004283			E		Digest Factor(1)	SOLID		0.004996				g / mL			
5	SAMPLE	S13T004310			E		Dose Rate(1)	SOLID		1196				mRem/hr			
5	SAMPLE	S13T004310			E		Digest Factor(1)	SOLID		0.004804				g / mL			

Comments Section:

Data Flagger Status:
Flagger Not Run

Final Page for Batch# 00041258

Reviewer Signature 16 May 13 Date

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041258

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Method	Customer Id	Specification
1	S1305160018	BLNK-PREP			ENVIRONMENTAL D		
2	S13T004255	SAMPLE		20130402	ENVIRONMENTAL D	9C-13-Comp A	C109 CLO
3	S1305160019	DUP	S13T004255		ENVIRONMENTAL D		
4	S13T004283	SAMPLE		20130402	ENVIRONMENTAL D	9C-13-Comp B	C109 CLO
5	S13T004310	SAMPLE		20130402	ENVIRONMENTAL D	9C-13-Comp C	C109 CLO

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

* = Rejected Analyte
N, A = Non-reported Analyte

5/16/2013 9:31:58AM
IncompleteBatchShort Version 2.7.29
batchreports 2.7.32

LABCORE Data Entry Template for Batch# 00041258

Analyst: h0074758 **Standard ID / Book#:** N/A

Instrument: LC-BHL-091

Method: ENVIRONMENTAL DIGEST, LA-544-101 Rev/Mod I-0

Prep Batch: N/A

Batch Comment:

C109 CLO for ENV DIG. gll

CACN:3A.26

S	Type	Sample	R	A	Matrix	Group#	Project
1	BLNK-PREP	S1305160018		E	SOLID		
2	SAMPLE	S13T004255		E	SOLID	20130402	C109 CLO
3	DUP	S1305160019		E	SOLID		
4	SAMPLE	S13T004283		E	SOLID	20130402	C109 CLO
5	SAMPLE	S13T004310		E	SOLID	20130402	C109 CLO

Final Page for Batch# 00041258

[signature] 5-16-13

Analyst Signature **Date**

[signature] 5-16-13

Data Entry Signature **Date**

Data Entry Comments:

S = Batch Slot Number, R = Retest Number, A = Aliquot Code.

ATL	DIGESTION BATCH LIST DATA COLLECTION FORM

(●) LA-544-101 Rev I-0 ( ) LA-544-113 Rev _____ ( ) _____ (Other) Rev _____

( ) LA-549-133 Rev _____ ( ) LA-549-141 Rev _____

Batch #: 41258 Analyst: gll Date: 5/16/2013

(Pipette #); Pipette ID; Volume Range or Fixed Volume; Check box if pipette passes visual verification:

(1) N/A (Range/Vol: N/A) ☐

(2) N/A (Range/Vol: N/A) ☐

(3) N/A (Range/Vol: N/A) ☐

Balance ID; Date of balance verification:

LE-BAL-091 (Verification Date: 5/16/2013)

( ) Spike / ( ) Carrier / ( ) Tracer # N/A Vol N/A Pip # N/A

( ) Spike / ( ) Carrier / ( ) Tracer # N/A Vol N/A Pip # N/A

( ) Spike / ( ) Carrier / ( ) Tracer # N/A Vol N/A Pip # N/A

Special Instructions:

Weigh out approximately 0.25 g. gll

Sample Type	Digest Sample #	Parent Sample #	Sample Weight (g)	Final Volume (mL)	Dose Rate (mRem/hr)
Blank Prep	S1305160018	N/A	0.2607	50	<0.5
Sample	S13T004255	S13T004246	0.2607	50	1196
Duplicate	S1305160019	S13T004246	0.2354	50	1196
Sample	S13T004283	S13T004274	0.2498	50	1196
Sample	S13T004310	S13T004301	0.2402	50	1196

Comments:

C109 CLO for ENV DIG. gll

Digest Appearance: CLEAR / NO COLOR. JZ

A-6005-290 (REV 2)

Data Review Check List

Procedure LA-220-101, 103, 105 Sr-90

Project: C109 CLO

Group(s): 20130402

Batch # 41709

Review Item	Level 1 Yes	Level 1 No	Level 1 N/A	Level 2	Comments and Samples Affected
Batch Items					
1. Was an LCS and blank run the batch?	X			√	
2. Was a duplicate run with the batch?	X			√	
2a. Was a spike run with the batch?		X		√	Not requested.
3. Was the book # of the standard (and spike) on the traveler?	X			√	
4. Was the batch traveler completed (sample #, dilution, aliquot size)?	X			√	
5. Were any line outs initialed and dated?	X			√	
6. Was balance check completed on the day of use (if used)?	X			√	
Result Items					
7. Was sample, traveler and counting data correct on ACE form?	X			√	
8. If No, was ACE form corrected?			X	√	
9. Did results etc. correctly up-load to LABCORE (OMNILims or MULTILims)?	X			√	
10. If No, was LABCORE corrected?			X	√	
11. Are result units correct?	X			√	
12. If No, were units corrected?			X	√	
13. Was data flagged?	X			√	
14. Are all flags present and correct?			X	√	
15. Are LCS results within limits (Lab's or customer's)?	X			√	
16. Are Spike results within limits (Lab's or customer's)?			X	√	
17. Is blank <MDC, or <5% isotope concentration, or <5% decision level?	X			√	
18. Are duplicate RPDs <20% (or RSD) within customer limits?	X			√	
19. Are the correct procedure number and Rev/Mod on the report?	X			√	
Procedure Speciffic Items					
20. Were carrier recoveries between 45% and 110%?	X			√	
21. Were the customer required detection or quantification limits met?		X		√	Sr-90 activity too high.

1st Level Reviewer: [signature] **Date:** 18 Jun 13

2nd Level Reviewer: [signature] **Date:** 6/18/2013

Data Review Checklist

CALIBRATION OF GAS FLOW PROPORTIONAL COUNTER

INSTRUMENT # __A/B 13_____ **PROCEDURES LQ-508-102 LQ-150-115**

BATCH # _41709_____

Review Items	--- Level 1 --- Yes	No	N/A	Comments & Samples Affected
Initial Calibration (Plateau generation) and Cross Talk				
1. The PP-10 gas flow rate was 0.1 +/- 0.05 SCFH	X			
2. Plateau generated before initial calibration or after major maintenance activity	X			
3. Final plateau has step voltages < 25 V within +/- 50 V of operating value	X			
4. There were > 5000 counts collected per point near the knee of each plateau	X			
5. The required raw data is in maintenance notebook	X			
6. Any non-conformances are documented in maintnance notebook	X			
7. At least 125,000 counts collected for the cross talk determinations	X			
8. Crosstalk of alpha into beta is < 10 %	X			
9. Crosstalk of beta into alpha is < 1 %	X			
Efficiency Calibration				
1. Calibration sources are NIST traceable & verified with 2nd source	X			
2. The PP-10 gas flow rate was 0.1 +/- 0.05 SCFH	X			
3. Plateau V checked/adjusted before calibration	X			
4. The required raw data is in maintenance notebook	X			
5. The alpha and beta efficiencies were calculated per procedure LQ-508-002	X			
6. Calibration had a second, independent check.	X			
7. Non-conformances are documented	X			
8. Calibrations are verified by second technical staff member.	X			
9. Calibrations signed off by Counting Room Manager	X			
10. Efficiency tables for automated calculation were updated.	X			
Calibration Verification				
1. Instrument Control Std within limits before and after batch counted	X			
2. Bkg check within limits before and after batch counted	X			

Reviewer: _____ Date: 6/18/2013

H:\DATA REVIEW CHECKLISTS\AB ICAL.XLS

LABCORE Completed Batch Report for Batch# 00041709

Analyst: Yager, Gary **Book#:** 120B64

Instrument: A/B Detector 13 B-1A

Method: STRONTIUM-90, LA-508-114 Rev/Mod H-1

Specification: C109 CLO

Prep Batch: 00041255

Batch Comment:

C-109 CLO for Sr-90 - gy

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
Sample Sequence 1																	
1	STD	S1306140030		0 0			Strontium-89/90	SOLID	.0006505303	6.7075E-04		2.68	1.72E-06	uCi/mL	103.11	% Recovery	
1	STD	S1306140030		0 0			Strontium-C	SOLID		83.043				% Recovery	N/A		
Sample Sequence 2																	
2	BLNK-PREP	S1305160012		0 0	Z		Strontium-89/90	SOLID		2.3541E-02		132.868	0.020023	uCi/g			
2	BLNK-PREP	S1305160012		0 0	Z		Strontium-C	SOLID		83.43				% Recovery			
Sample Sequence 3																	
3	SAMPLE	S13T004254		0 0	Z		Strontium-89/90	SOLID	N/A	2.3341E+02		0.485	0.019958	uCi/g			
3	SAMPLE	S13T004254		0 0	Z		Strontium-C	SOLID		83.527				% Recovery			
Sample Sequence 4																	
4	DUP	S1305160013	S13T004254	0 0	Z		Strontium-89/90	SOLID	2.3341E+02	2.4452E+02		0.468	0.019465	uCi/g	4.6475	% RPD	
4	DUP	S1305160013	S13T004254	0 0	Z		Strontium-C	SOLID	83.527	83.14				% Recovery			
Sample Sequence 5																	
5	SAMPLE	S13T004282		0 0	Z		Strontium-89/90	SOLID	N/A	2.1830E+02		0.516	0.021077	uCi/g			
5	SAMPLE	S13T004282		0 0	Z		Strontium-C	SOLID		82.461				% Recovery			
Sample Sequence 6																	
6	SAMPLE	S13T004309		0 0	Z		Strontium-89/90	SOLID	N/A	1.6078E+02		0.565	0.018638	uCi/g			
6	SAMPLE	S13T004309		0 0	Z		Strontium-C	SOLID		82.461				% Recovery			

Comments Section:

Data Flagger Status:
Flagging Completed

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041709

Final Page for Batch# 00041709

Reviewer Signature _____ Date 6/18/2013

PC: Julie Oxham 7/10/13

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041709

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Method	Customer Id	Specification
1	S1306140030	STD			STRONTIUM-90		
2	S1305160012	BLNK-PREP			STRONTIUM-90		
3	S13T004254	SAMPLE		20130402	STRONTIUM-90	9C-13-Comp A	C109 CLO
4	S1305160013	DUP	S13T004254		STRONTIUM-90		
5	S13T004282	SAMPLE		20130402	STRONTIUM-90	9C-13-Comp B	C109 CLO
6	S13T004309	SAMPLE		20130402	STRONTIUM-90	9C-13-Comp C	C109 CLO

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

* = Rejected Analyte
N, A = Non-reported Analyte

6/14/2013 3:29:03PM
IncompleteBatchShort Version 2.7.29
batchreports 2.7.32

LABCORE Data Entry Template for Batch# 00041709

Analyst: h0095610
Standard ID / Book#: See Bench Sheet
Instrument: a/β det 13
Method: STRONTIUM-90, LA-508-~~121~~ 114 Rev/Mod H-1
6.14.13
Prep Batch: 00041255
Batch Comment:
C-109 CLO for Sr-90 - gy
CACN:3A.26

S	Type	Sample	R	A	Matrix	Group#	Project
1	STD	S1306140030	0		SOLID		
	Analytes Requested:	Strontium-89/90, Strontium-C					
2	BLNK-PREP	S1305160012	0	Z	SOLID		
	Analytes Requested:	Strontium-89/90, Strontium-C					
3	SAMPLE	S13T004254	0	Z	SOLID	20130402	C109 CLO
	Analytes Requested:	Strontium-89/90, Strontium-C					
4	DUP	S1305160013	0	Z	SOLID		
	Analytes Requested:	Strontium-89/90, Strontium-C					
5	SAMPLE	S13T004282	0	Z	SOLID	20130402	C109 CLO
	Analytes Requested:	Strontium-89/90, Strontium-C					
6	SAMPLE	S13T004309	0	Z	SOLID	20130402	C109 CLO
	Analytes Requested:	Strontium-89/90, Strontium-C					

Final Page for Batch# 00041709

[signature] 6-14-2013
Analyst Signature **Date**

[signature] 6-14-2013
Data Entry Signature **Date**

[signature] 6.12.13

Data Entry Comments:

S = Batch Slot Number, R = Retest Number, A = Aliquot Code.

5/17/2013 10:52:09AM
IncompleteBatchShort Version 2.7.29
batchreports 2.7.32

LABCORE Data Entry Template for Batch# 00041299

Analyst: H010 2422 **Standard ID / Book#:** 120 B64

Instrument: NA

Method: STRONTIUM-90 SEPARATION, LA-220-101 Rev/Mod K-0

Prep Batch: 00041255

Batch Comment:

SR-90 for C109 CLO. AKH

CACN:3A.26

S	Type	Sample	R	A	Matrix	Group#	Project
1	STD	S1305170073	0		SOLID		
	Analytes Requested:	RadChem Separation					
2	BLNK-PREP	S1305160012	0	Z	SOLID		
	Analytes Requested:	RadChem Separation					
3	SAMPLE	S13T004254	0	Z	SOLID	20130402	C109 CLO
	Analytes Requested:	RadChem Separation					
4	DUP	S1305160013	0	Z	SOLID		
	Analytes Requested:	RadChem Separation					
5	SAMPLE	S13T004282	0	Z	SOLID	20130402	C109 CLO
	Analytes Requested:	RadChem Separation					
6	SAMPLE	S13T004309	0	Z	SOLID	20130402	C109 CLO
	Analytes Requested:	RadChem Separation					

Final Page for Batch# 00041299

Martha O. Fab 6-14-13
Analyst Signature **Date**

Martha O. Fab 6-14-13
Data Entry Signature **Date**

Data Entry Comments:

S = Batch Slot Number, R = Retest Number, A = Aliquot Code.

ATL	Sr-90 BATCH LIST DATA COLLECTION FORM

◉ LA-220-101 Rev K-0 ○ LA-220-103 Rev _____ ○ LA-220-104 Rev _____

Batch #: 41299 Analyst Initials: MOF/M.O.F Analysis Date/Time: 6-14-13 / 14:00

(Pipette #); Pipette ID; Volume Range or Fixed Volume; Check box if pipette passes visual verification: Balance ID; Date of balance verification:

(1) 408058 (Range/Vol: 0.1-1.0 mL) ☒ LE-BAL-078 (Verification Date: 6-14-13)

(2) G1025295F (Range/Vol: 1.0-10 mL) ☒ NA (Verification Date: NA)

(3) 4564795 (Range/Vol: 0.1-1.0 mL) ☒

Matrix: SOLID Prep Batch #: 41255

Separation Date: 6-14-13 HASQARD Upload ☐

Standard Book #: 120B64 Volume: 1.0 mL (Pip # 3)

Spike Book #: NA Volume: NA (Pip # NA)

Carrier #: 140N19B Volume: 1.0 mL (Pip # 3)

Counting Room Information

LA-508-~~124~~ 114 ~~72~~ 8/14/13, Rev ~~C-1~~ 3/6/14/13 H-1

Instrument ID: a/β det 13

Inst. Check Std ID: 35B64-G

Bkg: 5.36

Date of First Count: 6-14-2013

Special Instructions:

Dup associated with S13T004254. MOF

Sample Type	Sample ID	Sample Size (mL)	Pip #	Dilution Information	Pip #	Sep. Time	Gross Weight (g)	Tare Weight (g)
Sep Standard	S1305170073	1.0	3	NA	NA	09:32	7.6281	7.5424
Cnt Standard	S1306140030	NA	NA	NA	NA	09:32	NA	NA
Blank Prep	S1305160012	0.5	3	1.0-10 mL	1,2	09:32	7.9322	7.8461
Sample	S13T004254	0.5	3	1.0-10 mL	1,2	09:32	8.0124	7.9262
Prep Duplicate	S1305160013	0.5	3	1.0-10 mL	1,2	09:32	7.9667	7.8809
Sample	S13T004282	0.5	3	1.0-10 mL	1,2	09:32	7.9445	7.8594
Sample	S13T004309	0.5	3	1.0-10 mL	1,2	09:32	7.5940	7.5089

A-6005-777 (REV 1)

ATL	Sr-90 BATCH LIST DATA COLLECTION FORM (continued)

◉ LA-220-101 Rev K-0 ○ LA-220-103 Rev _____ ○ LA-220-104 Rev _____

Batch #: 41299 Analyst Initials: MOF MOF Analysis Date/Time: 6-14-13 / 14:00

			Counting Room Information		
Sample Type	Sample ID	Dilution Factor	Total Counts	Cnt. Time (Min.)	Time of Count
Cnt Standard	S1306140030	NA	5507	10	1604
Blank Prep	S1305160012	11	70	1	1614
Sample	S13T004254	11	163183	1	1625
Duplicate Prep	S1305160013	11	175278	1	1635
Sample	S13T004282	11	144527	1	1645
Sample	S13T004309	11	120381	1	1656

Comments:
C109 CLO, Gp# 20130402. MOF

A-6005-777 (REV 1)

Sr-89/90

Type	DETECTOR NUMBER	13
STD	TOTAL COUNTS	5507
Work List	COUNT TIME in MINUTES	10
00041709	BACKGROUND in cpm	5.36
Test Code	BACKGROUND COUNT TIME in MINUTES	30
STRONTIUM-90	SAMPLE VOLUME in mL	1.000
Matrix	DILUTION FACTOR	1.00
SOLID	DIGEST DILUTION FACTOR	1.0000E+00
Rerun	SAMPLE COUNT RATE	545.34
0	CRITICAL LEVEL	1.39
Sample Prep	TIME OF SEPARATION	9:32
	DATE OF SEPARATION	6/14/2013
Sample #	TIME OF COUNT	16:04
S1306140030	DATE OF COUNT	6/14/2013
Instrument Code	STANDARD BOOK #	120B64
WB27810	STANDARD VALUE in uCi/g	6.5053E-04

		STD
CARRIER BOOK NUMBER		140N19B
CARRIER VALUE		1.0320E-01
CARRIER ADDED in mL		1.000
GROSS WEIGHT		7.6281
TARE WEIGHT		7.5424
NET WEIGHT		0.0857
DELTA TIME (HOURS)		6.53
SR-90 EFFICIENCY FACTOR		0.4071
Y-90 EFFICIENCY FACTOR		0.4979
Rmax		N/A
DETECTION LIMIT		2.88

0.000698
6/30/2010

Data Entry By
GY
Analyst
MOF
Date Completed
6/14/2013
Analysis Date
6/14/2013
Analysis Time
2:00 PM
Specification
C109 CLO
Units
uCi/g

Procedure using this form*: **LA-508-114** **H-1**

* The specific formulae used in the calculations for this spreadsheet can be found in the applicable procedure, as identified on the worklist.

			DETECTION LEVEL in µCi/mL
Sr-89/90 CONCENTRATION	6.708E-04	**uCi/g**	
Relative Counting Error	2.7%		
Sr-89/90 Standard Recovery	103.11%		
PERCENT CARRIER RECOVERY	83.0%		1.716E-06

Strontium Std Template 2.0

Printed at: 5:49:12 PM 6/14/2013 Version: 2.01

Workbook Page BLANK 2

Sr-89/90

Type	DETECTOR NUMBER	13
BLNK-PREP	TOTAL COUNTS	70
Work List	COUNT TIME in MINUTES	10
00041709	BACKGROUND in cpm	5.36
Test Code	BACKGROUND COUNT TIME in MINUTES	30
STRONTIUM-90	SAMPLE VOLUME in mL	0.500
Matrix	DILUTION FACTOR	11.00
SOLID	DIGEST DILUTION FACTOR	1.8728E-03
Rerun	SAMPLE COUNT RATE	1.64
0	CRITICAL LEVEL	1.39
Sample Prep	TIME OF SEPARATION	9:32
S1305160012-001	DATE OF SEPARATION	6/14/2013
Sample #	TIME OF COUNT	16:14
S1305160012	DATE OF COUNT	6/14/2013

		BLNK-PREP
CARRIER BOOK NUMBER		140N19B
CARRIER VALUE		1.0320E-01
CARRIER ADDED in mL		1.000
GROSS WEIGHT		7.9322
TARE WEIGHT		7.8461
NET WEIGHT		0.0861
DELTA TIME (HOURS)		6.70
SR-90 EFFICIENCY FACTOR		0.4071
Y-90 EFFICIENCY FACTOR		0.4979
Rmax		N/A
DETECTION LIMIT		2.88

Instrument Code	
WB27810	
Data Entry By	
GY	
Analyst	
MOF	
Date Completed	
6/14/2013	
Analysis Date	
6/14/2013	
Analysis Time	
2:00 PM	
Specification	
C109 CLO	
Units	
uCi/g	

Procedure using this form*: **LA-508-114** **H-1**

* The specific formulae used in the calculations for this spreadsheet can be found in the applicable procedure, as identified on the worklist.

HAZQUARD Concentration	=	2.354E-02	**uCi/g**	**DETECTION LEVEL in µCi/mL**
Sr-89/90 CONCENTRATION	=	2.354E-02	**uCi/g**	
Relative Counting Error	=	132.9%		
PERCENT CARRIER RECOVERY	=	83.4%		2.002E-02

Strontium Sample Template 2.0

Printed at: 5:50:11 PM 6/14/2013 Version: 2.01

Workbook Page SAMPLE 3

Sr-89/90

Type	DETECTOR NUMBER	13
SAMPLE	TOTAL COUNTS	163183
Work List	COUNT TIME in MINUTES	10
00041709	BACKGROUND in cpm	5.36
Test Code	BACKGROUND COUNT TIME in MINUTES	30
STRONTIUM-90	SAMPLE VOLUME in mL	0.500
Matrix	DILUTION FACTOR	11.00
SOLID	DIGEST DILUTION FACTOR	1.8728E-03
Rerun	SAMPLE COUNT RATE	16312.94
0	CRITICAL LEVEL	1.39
Sample Prep	TIME OF SEPARATION	9:32
S13T004254-001	DATE OF SEPARATION	6/14/2013
Sample #	TIME OF COUNT	16:25
S13T004254	DATE OF COUNT	6/14/2013

		SAMPLE
CARRIER BOOK NUMBER		140N19B
CARRIER VALUE		1.0320E-01
CARRIER ADDED in mL		1.000
GROSS WEIGHT		8.0124
TARE WEIGHT		7.9262
NET WEIGHT		0.0862
DELTA TIME (HOURS)		6.88
SR-90 EFFICIENCY FACTOR		0.4071
Y-90 EFFICIENCY FACTOR		0.4979
Rmax		N/A
DETECTION LIMIT		2.88

Instrument Code
WB27810
Data Entry By
GY
Analyst
MOF
Date Completed
6/14/2013
Analysis Date
6/14/2013
Analysis Time
2:00 PM
Specification
C109 CLO
Units
uCi/g

Procedure using this form*: **LA-508-114** **H-1**

* The specific formulae used in the calculations for this spreadsheet can be found in the applicable procedure, as identified on the worklist.

HAZQUARD Concentration	=	2.334E+02	**uCi/g**	**DETECTION LEVEL in µCi/mL**
Sr-89/90 CONCENTRATION	=	2.334E+02	**uCi/g**	
Relative Counting Error	=	0.5%		
PERCENT CARRIER RECOVERY	=	83.5%		1.996E-02

Strontium Sample Template 2.0

Printed at: 5:51:10 PM 6/14/2013 Version: 2.01

Workbook Page DUP 4

Sr-89/90

Type	DETECTOR NUMBER	13
DUP	TOTAL COUNTS	175278
Work List	COUNT TIME in MINUTES	10
00041709	BACKGROUND in cpm	5.36
Test Code	BACKGROUND COUNT TIME in MINUTES	30
STRONTIUM-90	SAMPLE VOLUME in mL	0.500
Matrix	DILUTION FACTOR	11.00
SOLID	DIGEST DILUTION FACTOR	1.9256E-03
Rerun	SAMPLE COUNT RATE	17522.44
0	CRITICAL LEVEL	1.39
Sample Prep	TIME OF SEPARATION	9:32
S1305160013-001	DATE OF SEPARATION	6/14/2013
Sample #	TIME OF COUNT	16:35
S1305160013	DATE OF COUNT	6/14/2013
Instrument Code	Associated Sample Number	
WB27810	S13T004254	
Data Entry By		
GY		
Analyst		
MOF		
Date Completed		
6/14/2013		
Analysis Date		
6/14/2013		
Analysis Time		
2:00 PM		
Specification		
C109 CLO		
Units		
uCi/g		

		DUP
CARRIER BOOK NUMBER		140N19B
CARRIER VALUE		1.0320E-01
CARRIER ADDED in mL		1.000
GROSS WEIGHT		7.9667
TARE WEIGHT		7.8809
NET WEIGHT		0.0858
DELTA TIME (HOURS)		7.05
SR-90 EFFICIENCY FACTOR		0.4071
Y-90 EFFICIENCY FACTOR		0.4979
Rmax		N/A
DETECTION LIMIT		2.88

Procedure using this form*: **LA-508-114** **H-1**

* The specific formulae used in the calculations for this spreadsheet can be found in the applicable procedure, as identified on the worklist.

HAZQUARD Concentration	=	2.445E+02	**uCi/g**	**DETECTION LEVEL in µCi/mL**
Sr-89/90 CONCENTRATION	=	2.445E+02	**uCi/g**	
Relative Counting Error	=	0.5%		
PERCENT CARRIER RECOVERY	=	83.1%		1.946E-02

Strontium Sample Template 2.0

Printed at: 5:52:25 PM 6/14/2013 Version: 2.01

Workbook Page SAMPLE 5

Sr-89/90

Type	DETECTOR NUMBER	13
SAMPLE	TOTAL COUNTS	144527
Work List	COUNT TIME in MINUTES	10
00041709	BACKGROUND in cpm	5.36
Test Code	BACKGROUND COUNT TIME in MINUTES	30
STRONTIUM-90	SAMPLE VOLUME in mL	0.500
Matrix	DILUTION FACTOR	11.00
SOLID	DIGEST DILUTION FACTOR	1.7896E-03
Rerun	SAMPLE COUNT RATE	14447.34
0	CRITICAL LEVEL	1.39
Sample Prep	TIME OF SEPARATION	9:32
S13T004282-001	DATE OF SEPARATION	6/14/2013
Sample #	TIME OF COUNT	16:45
S13T004282	DATE OF COUNT	6/14/2013

		SAMPLE
CARRIER BOOK NUMBER		140N19B
CARRIER VALUE		1.0320E-01
CARRIER ADDED in mL		1.000
GROSS WEIGHT		7.9445
TARE WEIGHT		7.8594
NET WEIGHT		0.0851
DELTA TIME (HOURS)		7.22
SR-90 EFFICIENCY FACTOR		0.4071
Y-90 EFFICIENCY FACTOR		0.4979
Rmax		N/A
DETECTION LIMIT		2.88

Instrument Code	
WB27810	
Data Entry By	
GY	
Analyst	
MOF	
Date Completed	
6/14/2013	
Analysis Date	
6/14/2013	
Analysis Time	
2:00 PM	
Specification	
C109 CLO	
Units	
uCi/g	

Procedure using this form*: **LA-508-114** **H-1**

* The specific formulae used in the calculations for this spreadsheet can be found in the applicable procedure, as identified on the worklist.

HAZQUARD Concentration	=	2.183E+02	**uCi/g**	**DETECTION LEVEL in µCi/mL**
Sr-89/90 CONCENTRATION	=	2.183E+02	**uCi/g**	
Relative Counting Error	=	0.5%		
PERCENT CARRIER RECOVERY	=	82.5%		2.108E-02

Strontium Sample Template 2.0

Printed at: 5:53:17 PM 6/14/2013 Version: 2.01

Workbook Page SAMPLE 6

Sr-89/90

Type	DETECTOR NUMBER	13
SAMPLE	TOTAL COUNTS	120381
Work List	COUNT TIME in MINUTES	10
00041709	BACKGROUND in cpm	5.36
Test Code	BACKGROUND COUNT TIME in MINUTES	30
STRONTIUM-90	SAMPLE VOLUME in mL	0.500
Matrix	DILUTION FACTOR	11.00
SOLID	DIGEST DILUTION FACTOR	2.0196E-03
Rerun	SAMPLE COUNT RATE	12032.74
0	CRITICAL LEVEL	1.39
Sample Prep	TIME OF SEPARATION	9:32
S13T004309-001	DATE OF SEPARATION	6/14/2013
Sample #	TIME OF COUNT	16:56
S13T004309	DATE OF COUNT	6/14/2013

		SAMPLE
CARRIER BOOK NUMBER		140N19B
CARRIER VALUE		1.0320E-01
CARRIER ADDED in mL		1.000
GROSS WEIGHT		7.5940
TARE WEIGHT		7.5089
NET WEIGHT		0.0851
DELTA TIME (HOURS)		7.40
SR-90 EFFICIENCY FACTOR		0.4071
Y-90 EFFICIENCY FACTOR		0.4979
Rmax		N/A
DETECTION LIMIT		2.88

Instrument Code	
WB27810	
Data Entry By	
GY	
Analyst	
MOF	
Date Completed	
6/14/2013	
Analysis Date	
6/14/2013	
Analysis Time	
2:00 PM	
Specification	
C109 CLO	
Units	
uCi/g	

Procedure using this form*: **LA-508-114** **H-1**

* The specific formulae used in the calculations for this spreadsheet can be found in the applicable procedure, as identified on the worklist.

HAZQUARD Concentration	=	1.608E+02	**uCi/g**	**DETECTION LEVEL in µCi/mL**
Sr-89/90 CONCENTRATION	=	1.608E+02	**uCi/g**	
Relative Counting Error	=	0.6%		
PERCENT CARRIER RECOVERY	=	82.5%		1.864E-02

Strontium Sample Template 2.0

Printed at: 5:54:05 PM 6/14/2013 Version: 2.01

5/16/2013 4:13:47PM
CompleteBatch Version 2.7.32
batchreports 2.7.32

LABCORE Completed Batch Report for Batch# 00041255

Analyst: Hurson, Aleta

Book#: NA

Instrument: LE-BAL-091

Method: FUSION - ZR, LA-549-141 Rev/Mod M-1-A

Specification: C109 CLO

Prep Batch: N/A

Batch Comment:

C109 CLO for Fusion. gll

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
1	BLNK-PREP	S1305160012			Z		Dose Rate(1)	SOLID		<0.5				mRem/hr			
1	BLNK-PREP	S1305160012			Z		Digest Factor(1)	SOLID		0.001873				g / mL			
2	SAMPLE	S13T004254			Z		Dose Rate(1)	SOLID		200				mRem/hr			
2	SAMPLE	S13T004254			Z		Digest Factor(1)	SOLID		0.001873				g / mL			
3	DUP	S1305160013	S13T004254		Z		Dose Rate(1)	SOLID		200				mRem/hr			
3	DUP	S1305160013	S13T004254		Z		Digest Factor(1)	SOLID		0.001926				g / mL			
4	SAMPLE	S13T004282			Z		Dose Rate(1)	SOLID		180				mRem/hr			
4	SAMPLE	S13T004282			Z		Digest Factor(1)	SOLID		0.001790				g / mL			
5	SAMPLE	S13T004309			Z		Dose Rate(1)	SOLID		180				mRem/hr			
5	SAMPLE	S13T004309			Z		Digest Factor(1)	SOLID		0.002020				g / mL			

Comments Section:

Data Flagger Status:
Flagger Not Run

Final Page for Batch# 00041255

[signature] 16 May 13

Reviewer Signature Date

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041255

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Method	Customer Id	Specification
1	S1305160012	BLNK-PREP			FUSION - ZR		
2	S13T004254	SAMPLE		20130402	FUSION - ZR	9C-13-Comp A	C109 CLO
3	S1305160013	DUP	S13T004254		FUSION - ZR		
4	S13T004282	SAMPLE		20130402	FUSION - ZR	9C-13-Comp B	C109 CLO
5	S13T004309	SAMPLE		20130402	FUSION - ZR	9C-13-Comp C	C109 CLO

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

* = Rejected Analyte
N, A = Non-reported Analyte

5/16/2013 8:41:34AM
IncompleteBatchShort Version 2.7.29
batchreports 2.7.32

LABCORE Data Entry Template for Batch# 00041255

Analyst: H0076677 **Standard ID / Book#:** NA
Instrument: NA
Method: FUSION - ZR, LA-549-141 Rev/Mod M-1-A
Prep Batch: N/A
Batch Comment:
C109 CLO for Fusion. gll
CACN:3A.26

S	Type	Sample	R	A	Matrix	Group#	Project
1	BLNK-PREP	S1305160012		Z	SOLID		
2	SAMPLE	S13T004254		Z	SOLID	20130402	C109 CLO
3	DUP	S1305160013		Z	SOLID		
4	SAMPLE	S13T004282		Z	SOLID	20130402	C109 CLO
5	SAMPLE	S13T004309		Z	SOLID	20130402	C109 CLO

Final Page for Batch# 00041255

Aleta Hansen 5/16/13
Analyst Signature **Date**

Aleta Hansen ~~5/16/13~~ 5/16/13 AKH
Data Entry Signature 5/16/13 **Date**

Data Entry Comments:

S = Batch Slot Number, R = Retest Number, A = Aliquot Code.

ATL	DIGESTION BATCH LIST DATA COLLECTION FORM

○ LA-544-101 Rev _____ ○ LA-544-113 Rev _____ ○ _____ (Other) Rev _____

○ LA-549-133 Rev _____ ◉ LA-549-141 Rev M-1-A

Batch #: 41255 Analyst: AKH Date: 5/16/2013

(Pipette #); Pipette ID; Volume Range or Fixed Volume; Check box if pipette passes visual verification:

(1) N/A (Range/Vol: N/A) ☐

(2) N/A (Range/Vol: N/A) ☐

(3) N/A (Range/Vol: N/A) ☐

Balance ID; Date of balance verification:

LE-BAL-091 (Verification Date: 5/16/2013)

○ Spike / ○ Carrier / ○ Tracer # N/A Vol N/A Pip # N/A

○ Spike / ○ Carrier / ○ Tracer # N/A Vol N/A Pip # N/A

○ Spike / ○ Carrier / ○ Tracer # N/A Vol N/A Pip # N/A

Special Instructions:

Use ZR Crucibles. gll

Sample Type	Digest Sample #	Parent Sample #	Sample Weight (g)	Final Volume (mL)	Dose Rate (mRem/hr)
Blank Prep	S1305160012	N/A	0.4682	250	<0.5
Sample	S13T004254	S13T004246	0.4682	250	200
Duplicate	S1305160013	S13T004246	0.4814	250	200
Sample	S13T004282	S13T004274	0.4474	250	180
Sample	S13T004309	S13T004301	0.5049	250	180

Comments:

C109 CLO Fusion-ZR. gll Digest Appearance: Clear liquid. colorless. no solids.

A-6005-290 (REV 2)

Data Review Check List

Procedure LA-438-101 **Tc-99**

Project: C-109 CLO, LA-508-121

Solid

Group(s): 20130402

Batch # 41596

Review Item	Level 1 Yes	Level 1 No	Level 1 N/A	Level 2	Comments and Samples Affected
Batch Items					
1. Was an LCS and blank run the batch?	x			√	
2. Was a duplicate and spike run with the batch?	x			√	
3. Was the book # of the standard (and spike) on the traveler?	x			√	
4. Was the batch (worklist) completed (sample #, dilution, aliquot size)?	x			√	
5. Were any line outs initialed and dated?			x	√	
6. Was balance check completed on the day of use (if used)?			x	√	
Result Items					
7. Was sample, traveler and counting data correct on ACE form?	x			√	
8. If No, was ACE form corrected?			x	√	
9. Did results etc. correctly up-load to LABCORE (OMNILims or MULTILims)?	x			√	
10. If No, was LABCORE corrected?			x	√	
11. Are result units correct?	x			√	
12. If No, were units corrected?			x	√	
13. Was data flagged?	x			√	
14. Are all flags present and correct?			x	√	
15. Are LCS results within limits (Lab's or customer's)?	x			√	
16. Are Spike results within limits (Lab's or customer's)?			x	√	
17. Is blank <MDC, or <5% isotope concentration, or <5% decision level?	x			√	
18. Are duplicate RPDs <20% (or RSD) within customer limits?			x	√	both < values
19. Are the correct procedure number and Rev/Mod on the report?	x			√	
Procedure Specific Items					
20. Was the correct LSC program used for counting?	x			√	
21. Were spikes(tracer) recoveries between 25% and 80%?	x			√	
22. Were the customer required detection or quantification limits met?	x			√	

1st Level Reviewer: **Date:** 6/4/2013

2nd Level Reviewer: **Date:** 12 Jun 13

Data Review Checklist

CALIBRATION OF LIQUID SCINTILLATION COUNTERS

INSTRUMENT # LSC #3 ^{99}Tc

BATCH # 41596

PROCEDURES LA-508-121 LQ-150-115

Review Items	--- Level 1 --- Yes	No	N/A	Comments & Samples Affected
Efficiency Calibration				
1. Instrument calibration stds ^{3}H & ^{14}C run prior to quench curve calibration	X			
2. Unquenched bkg vial run before quench curve calibration	X			
3. Calibration performed per procedure LA-508-121	X			
4. Quench curve calibration had > 7 data points	X			Quench Curve Validated by check of A New Aliquot of
5. Quench range of calibration matches expected range of samples	X			Pedigreed Tc-99 stock Material
6. Quench calibration performed in mode where bkg is subtracted from each analysis	X			And was within 1% of expected Activity
7. Calibration had a second, independent check.	X			6/11/2013
8. Any non-conformances are documented in maintnance notebook	X			
9. Calibration reports are pasted and signed in maintenance notebook	X			
Calibration Verification				
1. Instrument Control Std within limits before and after batch counted	X			
2. Bkg check within limits before and after batch counted	X			

Reviewer: [signature] Date: 6/11/2013

H:\DATA REVIEW CHECKLISTS\LSC ICAL.XLS

6/11/2013 3:07:38PM
CompleteBatch Version 2.7.32
batchreports 2.7.32

LABCORE Completed Batch Report for Batch# 00041596

Analyst: King, Rob W

Book#: 120B64

Instrument: LSC3 LS6500 B-1A

Method: TC-99, LA-508-121 Rev/Mod G-0

Specification: C109 CLO

Prep Batch: 00041258

Batch Comment:

C109 CLO RWK

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
Sample Sequence 1																	
1	STD	S1306110006		0 0			Technetium-99	SOLID	.00100999023036029	9.9856E-04		1.7	9.99E-04	uCi/g	98.868	% Recovery	
1	STD	S1306110006		0 0			Technetium-99T	SOLID		66.802				% Recovery	N/A		
Sample Sequence 2																	
2	BLNK-PREP	S1305160018		0 1	E		Technetium-99	SOLID		<1.6734E-04			1.67E-04	uCi/g			
2	BLNK-PREP	S1305160018		0 1	E		Technetium-99T	SOLID		65.996				% Recovery			
Sample Sequence 3																	
3	SAMPLE	S13T004255		0 1	E		Technetium-99	SOLID	N/A	<1.6530E-04			1.65E-04	uCi/g			U
3	SAMPLE	S13T004255		0 1	E		Technetium-99T	SOLID		66.802				% Recovery			
Sample Sequence 4																	
4	DUP	S1305160019	S13T004255	0 1	E		Technetium-99	SOLID	<1.6530E-04	<1.8142E-04			1.81E-04	uCi/g			
4	DUP	S1305160019	S13T004255	0 1	E		Technetium-99T	SOLID	66.802	67.269				% Recovery	.13339	% Recovery	
Sample Sequence 5																	
5	SAMPLE	S13T004283		0 1	E		Technetium-99	SOLID	N/A	<1.8996E-04			1.90E-04	uCi/g			U
5	SAMPLE	S13T004283		0 1	E		Technetium-99T	SOLID		67.069				% Recovery			
Sample Sequence 6																	
6	SAMPLE	S13T004310		0 1	E		Technetium-99	SOLID	N/A	<1.7676E-04			1.77E-04	uCi/g			U
6	SAMPLE	S13T004310		0 1	E		Technetium-99T	SOLID		67.706				% Recovery			

Comments Section:

Data Flagger Status:
Flagging Completed

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041596

Final Page for Batch# 00041596

Reviewer Signature 12 June 13 Date

PC: Julie Osborn 7/11/13

6/11/2013 2:01:44PM
CompleteBatch Version 2.7.32
batchreports 2.7.32

LABCORE Completed Batch Report for Batch# 00041596

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Method	Customer Id	Specification
1	S1306110006	STD			TC-99		
2	S1305160018	BLNK-PREP			TC-99		
3	S13T004255	SAMPLE		20130402	TC-99	9C-13-Comp A	C109 CLO
4	S1305160019	DUP	S13T004255		TC-99		
5	S13T004283	SAMPLE		20130402	TC-99	9C-13-Comp B	C109 CLO
6	S13T004310	SAMPLE		20130402	TC-99	9C-13-Comp C	C109 CLO

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Data Entry Template for Batch# 00041596

Analyst: #c061547 **Standard ID / Book#:** See bench sheet
Instrument: LSC-03 WC57586
Method: TC-99, LA-508-121 Rev/Mod G-0
Prep Batch: 00041258
Batch Comment:
C109 CLO RWK
CACN:3A.26

S	Type	Sample	R	A	Matrix	Group#	Project
1	STD	S1306110006	0		SOLID		
	Analytes Requested:	Technetium-99, Technetium-99T					
2	BLNK-PREP	S1305160018	1	E	SOLID		
	Analytes Requested:	Technetium-99, Technetium-99T					
3	SAMPLE	S13T004255	1	E	SOLID	20130402	C109 CLO
	Analytes Requested:	Technetium-99, Technetium-99T					
4	DUP	S1305160019	1	E	SOLID		
	Analytes Requested:	Technetium-99, Technetium-99T					
5	SAMPLE	S13T004283	1	E	SOLID	20130402	C109 CLO
	Analytes Requested:	Technetium-99, Technetium-99T					
6	SAMPLE	S13T004310	1	E	SOLID	20130402	C109 CLO
	Analytes Requested:	Technetium-99, Technetium-99T					

Final Page for Batch# 00041596

Robert King 6/11/13
Analyst Signature **Date**

J. King 6/11/13
Data Entry Signature **Date**
Valerie L Massie 6-11-13

Data Entry Comments:

S = Batch Slot Number, R = Retest Number, A = Aliquot Code.

LABCORE Data Entry Template for Batch# 00041553

Analyst: h0074758 **Standard ID / Book#:** 120864

Instrument: HA

Method: TC-99 SEPARATION, LA-438-101 Rev/Mod M-0

Prep Batch: 00041258

Batch Comment:

Dup associated with S13T004255. MOF

CACN:3A.26

S	Type	Sample	R	A	Matrix	Group#	Project
1	STD	S1306060003	0		LIQUID		
	Analytes Requested:	RadChem Separation					
2	BLNK-PREP	S1305160018	1	E	SOLID		
	Analytes Requested:	RadChem Separation					
3	SAMPLE	S13T004255	1	E	SOLID	20130402	C109 CLO
	Analytes Requested:	RadChem Separation					
4	DUP	S1305160019	1	E	SOLID		
	Analytes Requested:	RadChem Separation					
5	SAMPLE	S13T004283	1	E	SOLID	20130402	C109 CLO
	Analytes Requested:	RadChem Separation					
6	SAMPLE	S13T004310	1	E	SOLID	20130402	C109 CLO
	Analytes Requested:	RadChem Separation					

Final Page for Batch# 00041553

Analyst Signature — Date: 6-10-13

Data Entry Signature — Date: 6-10-13

Data Entry Comments:

S = Batch Slot Number, R = Retest Number, A = Aliquot Code.

ATL	Tc-99 SOLVENT OR COLUMN EXTRACTION BATCH LIST DATA COLLECTION FORM	◉ LA-438-101 Rev M-0 ○ LA-438-114 Rev

Separation Batch #: 41553 Analyst Initials: gll Analysis Date/Time: 6-10-13 / 1443

(Pipette #); Pipette ID; Volume Range or Fixed Volume; Check box if pipette passes visual verification:

(1) 60878 (Range/Vol: 10-100 uL) ☒ (3) 2113721 (Range/Vol: 1-5 mL) ☒

(2) 365914 (Range/Vol: 100-1000 uL) ☒ (4) N/A (Range/Vol: N/A) ☐

Matrix: Solid Prep Batch #: 41258 HASQARD Upload ☐

Standard Book #: 120B64

Spike Book #: N/A /Volume: N/A (Pip #: N/A)

Tracer Book #: 7B63

Counting Room Information	LA-508-121 Rev C-0
Counting Batch #:	415796
Instrument ID:	WC51586 LSC-03
Inst. Check Std ID:	PE EX, PE 0X

Special Instructions:
Use 5 mL sample size. gll

									Counting Room Info
Sample Type	Sample ID	Sample Size (mL)	Pip #	Dilution Information	Pip #	DF	Tracer Volume (mL)	Pip #	LSC Position #
Sep Std	S1306060003	1	2	N/A	N/A	1	0.100	1	NA
Cnt Std	S1306110006	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3-4
Blk Prep	S1305160018	5	3	N/A	N/A	1	0.100	1	5-6
Sample	S13T004255	5	3	N/A	N/A	1	0.100	1	7-8
Prep Dup	S1305160019	5	3	N/A	N/A	1	0.100	1	9-10
Sample	S13T004283	5	3	N/A	N/A	1	0.100	1	11-12
Sample	S13T004310	5	3	N/A	N/A	1	0.100	1	1-2

Comments:
C109 CLO for Tc99. gll

A-6005-759 (REV 1)

PAGE: 1

ID:TC-99 NARROW 11 JUN 2013 08:16

USER: 5 COMMENT:LS 6500 WC51586

PRESET TIME :	20.00						
DATA CALC :	SL DPM	H# :YES	SAMPLE REPEATS:	1	PRINTER	: STD	
COUNT BLANK :	YES	IC# : NO	REPLICATES :	1	RS232	: STD	
TWO PHASE :	YES	AQC : NO	CYCLE REPEATS :	1	DISK	: OFF	
SCINTILLATOR:	LIQUID	LUMEX:YES	LOW SAMPLE REJ:	0			
LOW LEVEL :	NO	HALF LIFE CORRECTION DATE:			none		

ISOTOPE 1: TC-99 %ERROR: 0.00 FACTOR: 1.000000 BKG. SUB: 0
CHAN: 748.0 - 1000.0 %ERROR: 0.00 FACTOR: 1.000000 BKG. SUB: 0

BACKGROUND QUENCH CURVE: Off COLOR QUENCH CORRECTION: Off

Quench Limits Low:69.458 High:296.83

SAM NO	POS	TIME MIN	H#	TC-99 CPM	TC-99 %ERROR	WIND1 CPM	WIND1 %ERROR	TC-99 DPM	TC-99 EFF-1	LUMEX %	ELAPSED TIME	2P
B1	**-1	20.00	263.3	29.35	8.25	6.65	17.34	**48.87**	60.05	30.61	21.75	
		Blank Average DPM for TC-99 :						**48.87**	**COEF. OF VAR:**		**0.000**	
1	**-3	20.00	192.1	761.30	1.62	8.85	15.03	**987.24**	73.48	4.99	43.78	
2	**-4	20.00	195.2	2407.50	0.91	9.35	14.63	**3233.10**	73.36	1.49	65.77	
3	**-5	20.00	200.1	18.05	10.53	9.35	14.63	**-24.17**	73.07	51.57	87.81	2P
4	**-6	20.00	201.4	1637.15	1.11	7.95	15.86	**2194.61**	72.97	2.30	109.83	
5	**-7	20.00	199.9	30.05	8.16	10.50	13.80	**-7.76**	73.09	40.56	131.88	
6	**-8	20.00	200.3	1670.75	1.09	10.50	13.80	**2238.11**	73.05	2.34	153.91	
7	**-9	20.00	194.3	27.70	8.50	9.80	14.29	**-11.13**	73.39	38.76	175.89	
8	**-10	20.00	198.2	1683.05	1.09	10.45	13.83	**2250.43**	73.20	2.17	197.89	2P
9	**-11	20.00	194.2	36.20	7.43	10.95	13.51	**0.44**	73.40	31.84	219.89	2P
10	**-12	20.00	198.7	1685.80	1.09	9.80	14.29	**2255.28**	73.16	2.13	241.90	
11	**-1	20.00	196.4	26.50	8.69	10.70	13.67	**-12.72**	73.30	34.49	263.89	
12	**-2	20.00	197.7	1693.30	1.09	10.90	13.55	**2263.54**	73.23	1.98	285.87	

Tc-99

		STD
Type	Tracer Book Number	7B63
STD	Activity of Tracer Added in dpm	50429.6
Work List	Volume of Tracer added in mL	0.1
00041596	Activity of Tracer in dpm for volume added	5043.0
Test Code	Sample Volume in mL	1.00
TC-99	Dilution Factor	1.00
Matrix	Digest Dilution Factor	1.0000E+00
SOLID	Sample Count Rate in cpm	761.30
Rerun	dpm of Sample from Liquid Scintillation Counter	987.24
0	dpm of Sample+Tracer from Liquid Scintillation Counter	3233.10
Sample Prep	Instrument Fractional Efficiency	0.7348
	Count Time in Minutes	20
Sample #	Background Count Rate in cpm	29.35
S1306110006	Background Efficiency	0.6005
Instrument Code	Relative Percent Counting Uncertainty	1.68
WC51586	Detection Limit in dpm	8.68
Data Entry By	Critical Level Lc in cpm	3.12
RWK	Rmax Level (CPM)	735.80
Analyst	Tc-99 Concentration in uCi/g	9.9856E-04
GLL	Lc, Rmax, or Rs, (Sample Rate) as appropriate (cpm)	725.39
Date Completed	Standard Book No.	120B64
6/11/2013	Standard Value in uCi/g	1.010E-03

Analysis Date
6/10/2013
Analysis Time
2:43 PM
Specification
C109 CLO
Units
uCi/g

Procedure using this form*: **LA-508-121 G-0**

* The specific formulae used in the calculations for this spreadsheet can be found in the applicable procedure, as identified on the worklist.

Tc-99 Concentration in uCi/g	=	9.99E-04
% Recovery	=	98.87%
Detection Limit in uCi/g	=	4.30E-06
Relative Percent Counting Uncertainty	=	1.68
Tracer Recovery	=	66.8%

Technetium-99 Std Template 2.0

Printed at: 1:24:16 PM 6/11/2013 Version: 2.01

Workbook Page BLANK 2

Tc-99

			BLNK-PREP
Type	Tracer Book Number		7B63
BLNK-PREP	Activity of Tracer Added in dpm		50429.6
Work List	Volume of Tracer added in mL		0.1
00041596	Activity of Tracer in dpm for volume added		5043.0
Test Code	Sample Volume in mL		5.00
TC-99	Dilution Factor		1.00
Matrix	Digest Dilution Factor		5.2140E-03
SOLID	Sample Count Rate in cpm		18.05
Rerun	dpm of Sample from Liquid Scintillation Counter		-24.17
1	dpm of Sample+Tracer from Liquid Scintillation Counter		2194.61
Sample Prep	Instrument Fractional Efficiency		0.7307
S1305160018-001	Count Time in Minutes		20
Sample #	Background Count Rate in cpm		29.35
S1305160018	Background Efficiency		0.6005
Instrument Code	Relative Percent Counting Uncertainty		26.70
WC51586	Detection Limit in dpm		8.71
Data Entry By	Critical Level Lc in cpm		3.11
RWK	Rmax Level (CPM)		-14.96
Analyst	Tc-99 Concentration in uCi/g	<	1.6734E-04
GLL	Lc, Rmax, or Rs, (Sample Rate) as appropriate)		3.11
Date Completed			
6/11/2013			
Analysis Date			
6/10/2013			
Analysis Time			
2:43 PM			
Specification			
C109 CLO			
Units			
uCi/g			

Procedure using this Form*: **LA-508-121** **G-0**

* The specific formulae used in the calculations for this spreadsheet can be found in the applicable procedure, as identified on the worklist.

HAZQUARD Concentration	=	-9.49E-04
Tc-99 Concentration in uCi/g	<	1.67E-04
Detection Limit in uCi/g	=	1.67E-04
Relative Percent Counting Uncertainty	=	26.70
Tracer Recovery	=	66.0%

Technetium-99 Sample Template 2.0

Printed at: 1:25:11 PM 6/11/2013 Version: 2.01

Workbook Page SAMPLE 3

Tc-99

Type	Tracer Book Number		SAMPLE
SAMPLE	Activity of Tracer Added in dpm		50429.6
Work List	Volume of Tracer added in mL		0.1
00041596	Activity of Tracer in dpm for volume added		5043.0
Test Code	Sample Volume in mL		5.00
TC-99	Dilution Factor		1.00
Matrix	Digest Dilution Factor		5.2140E-03
SOLID	Sample Count Rate in cpm		30.05
Rerun	dpm of Sample from Liquid Scintillation Counter		-7.76
1	dpm of Sample+Tracer from Liquid Scintillation Counter		2238.11
Sample Prep	Instrument Fractional Efficiency		0.7309
S13T004255-001	Count Time in Minutes		20
Sample #	Background Count Rate in cpm		29.35
S13T004255	Background Efficiency		0.6005
Instrument Code	Relative Percent Counting Uncertainty		482.54
WC51586	Detection Limit in dpm		8.71
Data Entry By	Critical Level Lc in cpm		3.11
RWK	Rmax Level (CPM)		-2.68
Analyst	Tc-99 Concentration in uCi/g	<	1.6530E-04
GLL	Lc, Rmax, or Rs, (Sample Rate) as appropriate)		3.11
Date Completed			
6/11/2013			
Analysis Date			
6/10/2013			
Analysis Time			
2:43 PM			
Specification			
C109 CLO			
Units			
uCi/g			

Procedure using this Form*: **LA-508-121** **G-0**

* The specific formulae used in the calculations for this spreadsheet can be found in the applicable procedure, as identified on the worklist.

HAZQUARD Concentration	=	-3.01E-04
Tc-99 Concentration in uCi/g	<	1.65E-04
Detection Limit in uCi/g	=	1.65E-04
Relative Percent Counting Uncertainty	=	482.54
Tracer Recovery	=	66.8%

Technetium-99 Sample Template 2.0

Printed at: 1:25:51 PM 6/11/2013 Version: 2.01

Workbook Page DUP 4

Tc-99

			DUP	
Type	Tracer Book Number		7B63	Associated Sample Number
DUP	Activity of Tracer Added in dpm		50429.6	S13T004255
Work List	Volume of Tracer added in mL		0.1	
00041596	Activity of Tracer in dpm for volume added		5043.0	
Test Code	Sample Volume in mL		5.00	
TC-99	Dilution Factor		1.00	
Matrix	Digest Dilution Factor		4.7080E-03	
SOLID	Sample Count Rate in cpm		27.70	
Rerun	dpm of Sample from Liquid Scintillation Counter		-11.13	
1	dpm of Sample+Tracer from Liquid Scintillation Counter		2250.43	
Sample Prep	Instrument Fractional Efficiency		0.7339	
S1305160019-001	Count Time in Minutes		20	
Sample #	Background Count Rate in cpm		29.35	
S1305160019	Background Efficiency		0.6005	
Instrument Code	Relative Percent Counting Uncertainty		200.62	
WC51586	Detection Limit in dpm		8.69	
Data Entry By	Critical Level Lc in cpm		3.12	
RWK	Rmax Level (CPM)		-5.23	
Analyst	Tc-99 Concentration in uCi/g	<	1.8142E-04	
GLL	Lc, Rmax, or Rs, (Sample Rate) as appropriate)		3.12	

Date Completed	**Procedure using this Form*:**	**LA-508-121** **G-0**
6/11/2013		
Analysis Date	* The specific formulae used in the calculations for this spreadsheet can be found	
6/10/2013	in the applicable procedure, as identified on the worklist.	
Analysis Time		
2:43 PM		

Specification	**HAZQUARD Concentration**	=	-4.75E-04
C109 CLO	**Tc-99 Concentration in uCi/g**	<	1.81E-04
Units	**Detection Limit in uCi/g**	=	1.81E-04
uCi/g	**Relative Percent Counting Uncertainty**	=	200.62
	Tracer Recovery	=	67.3%

Technetium-99 Sample Template 2.0

Printed at: 1:26:29 PM 6/11/2013 Version: 2.01

Workbook Page SAMPLE 5

Tc-99

Type	Tracer Book Number	SAMPLE
SAMPLE	Activity of Tracer Added in dpm	50429.6
Work List	Volume of Tracer added in mL	0.1
00041596	Activity of Tracer in dpm for volume added	5043.0
Test Code	Sample Volume in mL	5.00
TC-99	Dilution Factor	1.00
Matrix	Digest Dilution Factor	4.9960E-03
SOLID	Sample Count Rate in cpm	36.20
Rerun	dpm of Sample from Liquid Scintillation Counter	0.44
1	dpm of Sample+Tracer from Liquid Scintillation Counter	2255.28
Sample Prep	Instrument Fractional Efficiency	0.7340
S13T004283-001	Count Time in Minutes	20
Sample #	Background Count Rate in cpm	29.35
S13T004283	Background Efficiency	0.6005
Instrument Code	Relative Percent Counting Uncertainty	51.80
WC51586	Detection Limit in dpm	8.69
Data Entry By	Critical Level Lc in cpm	3.12
RWK	Rmax Level (CPM)	3.46
Analyst	Tc-99 Concentration in uCi/g <	1.8996E-04
GLL	Lc, Rmax, or Rs, (Sample Rate) as appropriate)	3.46

Date Completed
6/11/2013
Analysis Date
6/10/2013
Analysis Time
2:43 PM
Specification
C109 CLO
Units
uCi/g

Procedure using this Form*: **LA-508-121** **G-0**

* The specific formulae used in the calculations for this spreadsheet can be found in the applicable procedure, as identified on the worklist.

HAZQUARD Concentration	=	1.77E-05
Tc-99 Concentration in uCi/g	<	1.90E-04
Detection Limit in uCi/g	=	1.90E-04
Relative Percent Counting Uncertainty	=	51.80
Tracer Recovery	=	67.1%

Technetium-99 Sample Template 2.0

Printed at: 1:27:06 PM 6/11/2013 Version: 2.01

Workbook Page SAMPLE 6

Tc-99

Type	Tracer Book Number		SAMPLE
SAMPLE	Activity of Tracer Added in dpm		50429.6
Work List	Volume of Tracer added in mL		0.1
00041596	Activity of Tracer in dpm for volume added		5043.0
Test Code	Sample Volume in mL		5.00
TC-99	Dilution Factor		1.00
Matrix	Digest Dilution Factor		4.8040E-03
SOLID	Sample Count Rate in cpm		26.50
Rerun	dpm of Sample from Liquid Scintillation Counter		-12.72
1	dpm of Sample+Tracer from Liquid Scintillation Counter		2263.54
Sample Prep	Instrument Fractional Efficiency		0.7330
S13T004310-001	Count Time in Minutes		20
Sample #	Background Count Rate in cpm		29.35
S13T004310	Background Efficiency		0.6005
Instrument Code	Relative Percent Counting Uncertainty		114.92
WC51586	Detection Limit in dpm		8.69
Data Entry By	Critical Level Lc in cpm		3.12
RWK	Rmax Level (CPM)		-6.41
Analyst	Tc-99 Concentration in uCi/g	<	1.7676E-04
GLL	Lc, Rmax, or Rs, (Sample Rate) as appropriate)		3.12
Date Completed			
6/11/2013			
Analysis Date			
6/10/2013			
Analysis Time			
2:43 PM			
Specification			
C109 CLO			
Units			
uCi/g			

Procedure using this Form*: **LA-508-121** **G-0**

* The specific formulae used in the calculations for this spreadsheet can be found in the applicable procedure, as identified on the worklist.

HAZQUARD Concentration	=	-5.28E-04
Tc-99 Concentration in uCi/g	<	1.77E-04
Detection Limit in uCi/g	=	1.77E-04
Relative Percent Counting Uncertainty	=	114.92
Tracer Recovery	=	67.7%

Technetium-99 Sample Template 2.0

Printed at: 1:27:42 PM 6/11/2013 Version: 2.01

5/16/2013 4:15:51PM
CompleteBatch Version 2.7.32
batchreports 2.7.32

LABCORE Completed Batch Report for Batch# 00041258

Analyst: LaPlant, Gary

Book#: N/A

Instrument: LE-BAL-091

Method: ENVIRONMENTAL DIGEST, LA-544-101 Rev/Mod I-0

Specification: C109 CLO

Prep Batch: N/A

Batch Comment:

C109 CLO for ENV DIG. gll

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
1	BLNK-PREP	S1305160018			E		Dose Rate(1)	SOLID		<0.5				mRem/hr			
1	BLNK-PREP	S1305160018			E		Digest Factor(1)	SOLID		0.005214				g / mL			
2	SAMPLE	S13T004255			E		Dose Rate(1)	SOLID		1196				mRem/hr			
2	SAMPLE	S13T004255			E		Digest Factor(1)	SOLID		0.005214				g / mL			
3	DUP	S1305160019	S13T004255		E		Dose Rate(1)	SOLID		1196				mRem/hr			
3	DUP	S1305160019	S13T004255		E		Digest Factor(1)	SOLID		0.004708				g / mL			
4	SAMPLE	S13T004283			E		Dose Rate(1)	SOLID		1196				mRem/hr			
4	SAMPLE	S13T004283			E		Digest Factor(1)	SOLID		0.004996				g / mL			
5	SAMPLE	S13T004310			E		Dose Rate(1)	SOLID		1196				mRem/hr			
5	SAMPLE	S13T004310			E		Digest Factor(1)	SOLID		0.004804				g / mL			

Comments Section:

Data Flagger Status:
Flagger Not Run

Final Page for Batch# 00041258

Reviewer Signature — Date: 16 May 13

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041258

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Method	Customer Id	Specification
1	S1305160018	BLNK-PREP			ENVIRONMENTAL D		
2	S13T004255	SAMPLE		20130402	ENVIRONMENTAL D	9C-13-Comp A	C109 CLO
3	S1305160019	DUP	S13T004255		ENVIRONMENTAL D		
4	S13T004283	SAMPLE		20130402	ENVIRONMENTAL D	9C-13-Comp B	C109 CLO
5	S13T004310	SAMPLE		20130402	ENVIRONMENTAL D	9C-13-Comp C	C109 CLO

COPY

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

* = Rejected Analyte
N, A = Non-reported Analyte

5/16/2013 9:31:58AM
IncompleteBatchShort Version 2.7.29
batchreports 2.7.32

LABCORE Data Entry Template for Batch# 00041258

Analyst: h0074758 **Standard ID / Book#:** N/A

Instrument: LC-3HL-091

Method: ENVIRONMENTAL DIGEST, LA-544-101 Rev/Mod J-0

Prep Batch: N/A

Batch Comment:

C109 CLO for ENV DIG. gll

CACN:3A.26

S	Type	Sample	R	A	Matrix	Group#	Project
1	BLNK-PREP	S1305160018		E	SOLID		
2	SAMPLE	S13T004255		E	SOLID	20130402	C109 CLO
3	DUP	S1305160019		E	SOLID		
4	SAMPLE	S13T004283		E	SOLID	20130402	C109 CLO
5	SAMPLE	S13T004310		E	SOLID	20130402	C109 CLO

Final Page for Batch# 00041258

Analyst Signature — Date: 5-16-13

Data Entry Signature — Date: 5-16-13

Copy

Data Entry Comments:

S = Batch Slot Number, R = Retest Number, A = Aliquot Code.

ATL	DIGESTION BATCH LIST DATA COLLECTION FORM

(●) LA-544-101 Rev I-0 ( ) LA-544-113 Rev _____ ( ) _____ (Other) Rev _____

( ) LA-549-133 Rev _____ ( ) LA-549-141 Rev _____

Batch #: 41258 Analyst: gll Date: 5/16/2013

(Pipette #); Pipette ID; Volume Range or Fixed Volume; Check box if pipette passes visual verification:

(1) N/A (Range/Vol: N/A) ☐

(2) N/A (Range/Vol: N/A) ☐

(3) N/A (Range/Vol: N/A) ☐

Balance ID; Date of balance verification:

LE-BAL-091 (Verification Date: 5/16/2013)

( ) Spike / ( ) Carrier / ( ) Tracer # N/A Vol N/A Pip # N/A

( ) Spike / ( ) Carrier / ( ) Tracer # N/A Vol N/A Pip # N/A

( ) Spike / ( ) Carrier / ( ) Tracer # N/A Vol N/A Pip # N/A

Special Instructions:

Weigh out approximately 0.25 g. gll

Sample Type	Digest Sample #	Parent Sample #	Sample Weight (g)	Final Volume (mL)	Dose Rate (mRem/hr)
Blank Prep	S1305160018	N/A	0.2607	50	<0.5
Sample	S13T004255	S13T004246	0.2607	50	1196
Duplicate	S1305160019	S13T004246	0.2354	50	1196
Sample	S13T004283	S13T004274	0.2498	50	1196
Sample	S13T004310	S13T004301	0.2402	50	1196

Comments:

C109 CLO for ENV DIG. gll

Digest Appearance: CLEAR / NO COLOR. JZ

A-6005-290 (REV 2)

Data Review Check List

Procedure Thorium

Project: C109 CLO Thorium LA-508-168 #41395 mms 6/24/13

Group(s) 20130402

~~40395~~ **Th**

Review Item	Yes	No	N/A	Level 2	Comments and Samples Affected
Batch Items					
1. Was an LCS and blank run the batch?	x			√	
2. Was a duplicate run with the batch?	x			√	
2.a Was a spike run with the batch?		x		√	Not requested.
3. Was the book # of the standard and tracer (and spike) on the traveler?	x			√	
4. Was the batch traveler completed (sample #, dilution, aliquot size)?	x			√	
5. Were any line outs initialed and dated?			x	√	
6. Was balance check completed on the day of use (if used)?			x	√	
Result Items					
7. Was sample traveler and Prep data correctly entered on Alpha Vision ?	x			√	
8. If No, was ACE form corrected?			x	√	
9. Did results etc. correctly up-load from Alpha-Vision to OMNILims ?	x			√	
10. If No, was LABCORE corrected?			x	√	
11. Are result units correct?	x			√	
12. If No, were units corrected?			x	√	
13. Was data flagged?	x			√	
14. Are all flags present and correct?			x	√	
15. Are LCS results within limits (Lab's or customer's)?	x			√	
16. Are Spike results within limits (Lab's or customer's)?			x	√	
17. Is blank <MDC, or <5% isotope concentration, or <5% decision level?	x			√	
18. Are duplicate RPDs <20% (or RSD) within customer limits?	x			√	
19. Are the correct procedure number and Rev/Mod on the report?	x			√	
Procedure Speciffic Items					
20. Were tracer recoveries between 30% and 120%?	x			√	
21. Were the customer required detection or quantification limits met?	x			√	

1st Level Reviewer: **Date:** 5-28-2013

2nd Level Reviewer: **Date:** 29/May/13

Data Review Checklist

ENERGY CALIBRATION OF ALPHA SPECTROMETERS

INSTRUMENT # __AEA-ORTEC_____Th

BATCH # 41395

PROCEDURES LA-508-168 LQ-150-115

Review Items	--- Level 1 --- Yes	No	N/A	Comments & Samples Affected
Energy Calibration				
1. Alpha Spectrometer was energy calibrated with a std having > two peaks	X			
2. Energy Calibration spectrum had clearly resolvable peaks	X			
3. Energy range of peaks in calibration std encompasses alpha energies expected in samples	X			
Calibration Verification				
1. Weekly Instrument Control Std within limits	X			
2. Bkg check within limits and performed < one week ago	X			
3. Daily Pulsers are within control	X			

1st Level Reviewer: _____ Date: 5/28/2013

7/29/2013 11:58:04AM
CompleteBatch Version 2.7.32
batchreports 2.7.32

LABCORE Completed Batch Report for Batch# 00041395

Analyst: King, Rob W

Book#: 147B64

Instrument: AEA-Ortec

Method: THORIUM, LA-508-168 Rev/Mod A-0-A

Specification: C109 CLO

Prep Batch: 00041255

Batch Comment:

C109 CLO RWK

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
Sample Sequence 1																	
1	STD	S1305230075		0 0			Thorium-230	SOLID	.000126	1.1600E-04		0.56	3.46E-08	uCi/mL	92.063	% Recovery	
1	STD	S1305230075		0 0			Thorium-229T	SOLID		104.01				% Recovery	N/A		
Sample Sequence 2																	
2	BLNK-PREP	S1305160012		0 0	Z		Thorium-228	SOLID		<1.6300E-05			1.63E-05	uCi/g			
2	BLNK-PREP	S1305160012		0 0	Z		Thorium-229T	SOLID		92.26				% Recovery			
Sample Sequence 3																	
3	SAMPLE	S13T004254		0 0	Z		Thorium-228	SOLID	N/A	2.3400E-05		36.02	1.84E-05	uCi/g			J
3	SAMPLE	S13T004254		0 0	Z		Thorium-229T	SOLID		98.95				% Recovery			
Sample Sequence 4																	
4	DUP	S1305160013	S13T004254	0 0	Z		Thorium-228	SOLID	2.3400E-05	2.4300E-05		32.09	1.50E-05	uCi/g	3.7736	% RPD	
4	DUP	S1305160013	S13T004254	0 0	Z		Thorium-229T	SOLID	98.95	102.32				% Recovery			
Sample Sequence 5																	
5	SAMPLE	S13T004282		0 0	Z		Thorium-228	SOLID	N/A	3.1400E-05		36.42	2.69E-05	uCi/g			J
5	SAMPLE	S13T004282		0 0	Z		Thorium-229T	SOLID		96.47				% Recovery			
Sample Sequence 6																	
6	SAMPLE	S13T004309		0 0	Z		Thorium-228	SOLID	N/A	<2.0000E-05			2.00E-05	uCi/g			U
6	SAMPLE	S13T004309		0 0	Z		Thorium-229T	SOLID		95.52				% Recovery			

Comments Section:

Data Flagger Status:
Flagging Completed

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

* = Rejected Analyte
N, A = Non-reported Analyte

5/28/2013 4:28:58PM
CompleteBatch Version 2.7.32
batchreports 2.7.32

Page: 2

LABCORE Completed Batch Report for Batch# 00041395

Final Page for Batch# 00041395

S A Oatts 29 May 13
Reviewer Signature Date

PC Julie Osborn 7/10/13

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041395

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Method	Customer Id	Specification
1	S1305230075	STD			THORIUM		
2	S1305160012	BLNK-PREP			THORIUM		
3	S13T004254	SAMPLE		20130402	THORIUM	9C-13-Comp A	C109 CLO
4	S1305160013	DUP	S13T004254		THORIUM		
5	S13T004282	SAMPLE		20130402	THORIUM	9C-13-Comp B	C109 CLO
6	S13T004309	SAMPLE		20130402	THORIUM	9C-13-Comp C	C109 CLO

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

* = Rejected Analyte
N, A = Non-reported Analyte

5/23/2013 3:49:19PM
IncompleteBatchShort Version 2.7.29
batchreports 2.7.32

LABCORE Data Entry Template for Batch# 00041395

Analyst: H0061547 **Standard ID / Book#:** See bench sheet
Instrument: AEA ortech
Method: THORIUM, LA-508-168 Rev/Mod A-0-A
Prep Batch: 00041255
Batch Comment:
C109 CLO RWK
CACN:3A.26

S	Type	Sample	R	A	Matrix	Group#	Project
1	STD	S1305230075	0		SOLID		
	Analytes Requested:	Thorium-229T, Thorium-230					
2	BLNK-PREP	S1305160012	0	Z	SOLID		
	Analytes Requested:	Thorium-228, Thorium-229T, Thorium-230, Thorium-232					
3	SAMPLE	S13T004254	0	Z	SOLID	20130402	C109 CLO
	Analytes Requested:	Thorium-228, Thorium-229T, Thorium-230, Thorium-232					
4	DUP	S1305160013	0	Z	SOLID		
	Analytes Requested:	Thorium-228, Thorium-229T, Thorium-230, Thorium-232					
5	SAMPLE	S13T004282	0	Z	SOLID	20130402	C109 CLO
	Analytes Requested:	Thorium-228, Thorium-229T, Thorium-230, Thorium-232					
6	SAMPLE	S13T004309	0	Z	SOLID	20130402	C109 CLO
	Analytes Requested:	Thorium-228, Thorium-229T, Thorium-230, Thorium-232					

Final Page for Batch# 00041395

[signature] 5/23/13 [signature] 5.28.13

Analyst Signature **Date** **Data Entry Signature** **Date**

Data Entry Comments:

S = Batch Slot Number, R = Retest Number, A = Aliquot Code.

5/22/2013 8:57:10AM
IncompleteBatchShort Version 2.7.29
batchreports 2.7.32

LABCORE Data Entry Template for Batch# 00041361

Analyst: H007667 **Standard ID / Book#:** 147864

Instrument: NA

Method: THORIUM SEPARATION, LA-903-101 Rev/Mod A-0

Prep Batch: 00041255

Batch Comment:

TH for C109 CLO. AKH

CACN:3A.26

S	Type	Sample	R	A	Matrix	Group#	Project
1	STD	S1305220015	0		SOLID		
	Analytes Requested:	Sample Volume, Standard/Spike Book No., Standard/Spike Volume, Tracer Book No., Tracer Volume					
2	BLNK-PREP	S1305160012	0	Z	SOLID		
	Analytes Requested:	Sample Volume, Standard/Spike Book No., Standard/Spike Volume, Tracer Book No., Tracer Volume					
3	SAMPLE	S13T004254	0	Z	SOLID	20130402	C109 CLO
	Analytes Requested:	Sample Volume, Standard/Spike Book No., Standard/Spike Volume, Tracer Book No., Tracer Volume					
4	DUP	S1305160013	0	Z	SOLID		
	Analytes Requested:	Sample Volume, Standard/Spike Book No., Standard/Spike Volume, Tracer Book No., Tracer Volume					
5	SAMPLE	S13T004282	0	Z	SOLID	20130402	C109 CLO
	Analytes Requested:	Sample Volume, Standard/Spike Book No., Standard/Spike Volume, Tracer Book No., Tracer Volume					
6	SAMPLE	S13T004309	0	Z	SOLID	20130402	C109 CLO
	Analytes Requested:	Sample Volume, Standard/Spike Book No., Standard/Spike Volume, Tracer Book No., Tracer Volume					

Final Page for Batch# 00041361

Alta Hansen 5/23/13
Analyst Signature **Date**

Alta Hansen 5/23/13
Data Entry Signature **Date**

Data Entry Comments:

S = Batch Slot Number, R = Retest Number, A = Aliquot Code.

ATL	ACTINIDE BATCH LIST DATA COLLECTION FORM	○ LA-953-104 Rev ____ ◉ LA-903-101 Rev A-0

○ Plutonium ○ Pu-241 ○ Americium ◉ Thorium

Separation Batch #: 41361 Analyst Initials: AKH Analysis Date/Time: 5/23/13 / 10:00 ☒ LA-542-104 Rev I-0

(Pipette #); Pipette ID; Volume Range or Fixed Volume; Check box if pipette passes visual inspection:

(1) 4036266 (Range/Vol: 0.1-1.0 mL) ☒ (4) NA (Range/Vol: NA) ☐

(2) NA (Range/Vol: NA) ☐ (5) NA (Range/Vol: NA) ☐

(3) NA (Range/Vol: NA) ☐ (6) NA (Range/Vol: NA) ☐

Matrix: SOLID Prep Batch #: 41255 HASQARD Upload ☐

Standard Book #: 147B64

Spike Book #: NA Volume: NA (Pip # N)

Spike Book #: NA Volume: NA (Pip # N)

Tracer Book #: 133B59A Volume: .25 (Pip # 1)

Counting Room Information	LA-508-168 Rev A-0-A
Counting Batch #: 41345	
Detector No: AEA-ORTEC	

Special Instructions / Comments:

NA

Sample Type	Sample ID	Sample Vol (mL)	Pip #	Dilution Information	Pip #	DF
Sep Std	S1305220015	1	1	NA	NA	1
Cnt Std	S1305230015	NA	NA	NA	NA	NA
Blk Prep	S1305160012	1	1	NA	NA	1
Sample	S13T004254	1	1	NA	NA	1
Sep Dup	S1305160013	1	1	NA	NA	1
Sample	S13T004282	1	1	NA	NA	1
Sample	S13T004309	1	1	NA	NA	1

AlphaVision v5.3

Alpha-Spectroscopy Analysis Report

ATL, Inc.
222-S Laboratory
10:57:17AM 05/28/2013

Results ID: 36,426

Sample

Sample: S1305230075 Type: Control
Spectrum #1 Analysis #1
QC Type: STD
Sample Collection Date: 05/23/2013 12:00:00AM
Comment: LCS Sample
Lab Preparation:05/23/2013 12:00:00AM

Sample Volume : 1.00 Sample Units: mL
Digest Dilution: 1.00
Aliquot: 1.00 Aliquot Fraction: 100.00%
Aliquot2: 1.00 Fraction: 100.00%
Lab Dilution: 1.00

Batch

Batch Name: 41395
Description:

Tracer

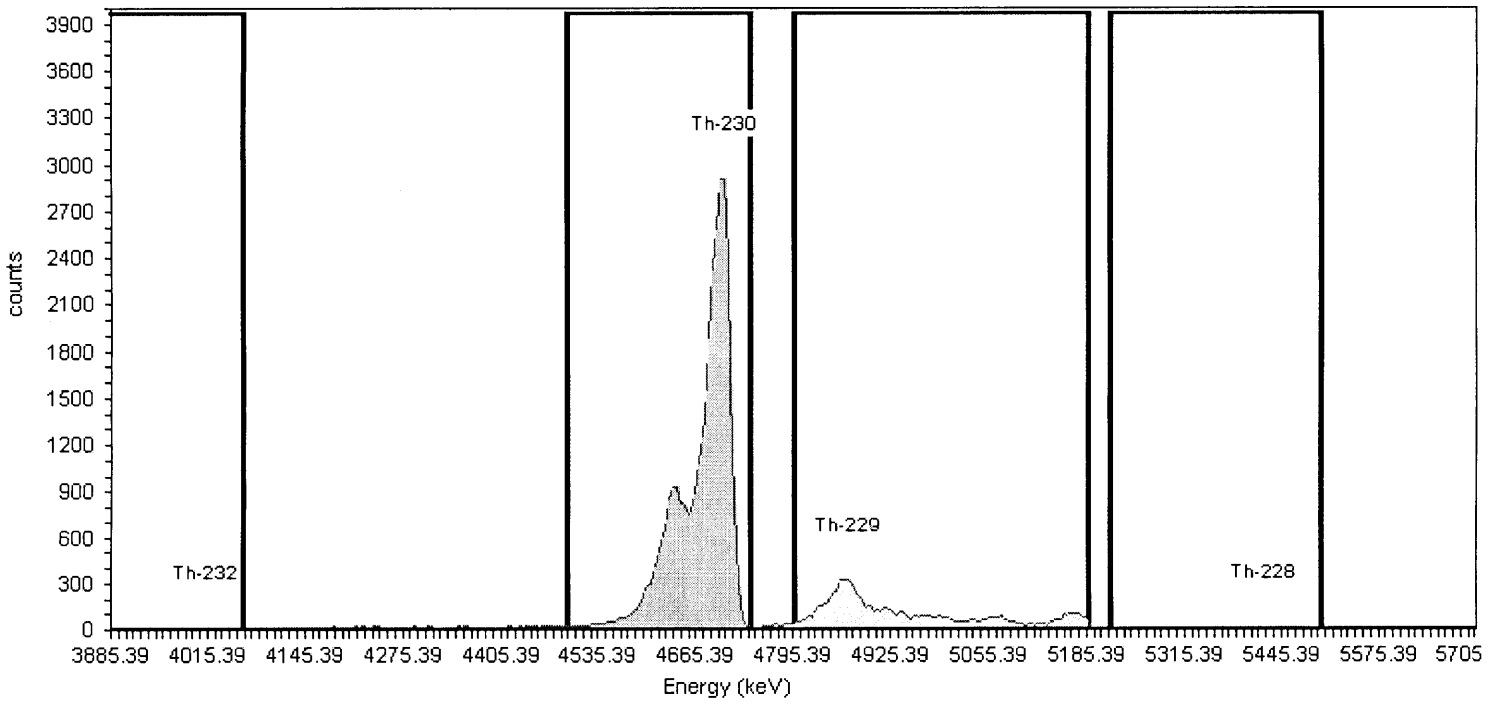
Tracer Name: 133B59A
Tracer Activity: 233.00 DPM/mL x (Vol.)0.25 mL = 58.25 DPM
Tracer Ref. Date: 1/3/2011 8:24:24AM

Tracer Nuclide: Th-229
Tracer Recovery: 104.01%

Acquisition

Detector: A1 Inst chk# 82551 SN: 49-093 C1
Acquisition Start Date: 05/23/2013 05:22:37PM
Live Time: 480.00 min.
Real Time: 480.07 min.
Background Date: 05/17/2013 08:33:23PM
Bkgd Info: Sample: A1; Det: A1 Inst chk# 82551; Spectrum #1; May-17-2013 20:33

Energy Calibration: 2013.03.04 001
Efficiency Calibration:2013.03.04 001
Calibration Date: 03/04/2013 01:19:39PM
Energy Cal: Gain = 4.8706 keV / Ch
Offset = 3,052.51 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 25.22% +/- 0.32% TPU(2 sigma)



General Analysis

Analysis Method: Interactive ROI Analysis
Decay Correction:6/30/2010 12:00:00AM
MDA Constants: Kα = 1.64 , Kβ = 1.64

Nuclide Library: Th
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity uCi/mL	1.00Sig TPU uCi/mL	Count Uncert %	Critical Level uCi/mL	MDA uCi/mL
Th-230	4704	4494	4738	39.5	99.7	32356.00	3.3333	32261	1.16E-004	1.43E-005	0.56	1.24E-008	3.46E-008
Th-229	4869	4796	5191	56.5	98.8	7247.00	6.6667	7240	2.73E-005	1.96E-006	1.18	1.78E-008	4.54E-008
Th-228	5423	5220	5502	21.2	99.4	16.00	7.0000	9	9.26E-008	5.07E-008	53.29	5.17E-008	1.31E-007
Th-232	4010	3850	4060	8.1	100.0	74.62	0.0000	75	2.67E-007	4.54E-008	11.65	0.00E+000	9.68E-009

CR Analyst: H0061547 Separation Analyst: H0076677 CR Review: Brian Anderson

AlphaVision v5.3

Alpha-Spectroscopy Analysis Report

ATL, Inc.
222-S Laboratory
10:59:35AM 05/28/2013

Results ID: 36,427

Sample

Sample: S1305160012 Type: Blank
Spectrum #1 Analysis #1
QC Type: BLK
Sample Collection Date: 05/16/2013 12:00:00AM
Comment: Blank
Lab Preparation:05/23/2013 12:00:00AM

Sample Weight : 1.00 Sample Units: g
Digest Dilution: 533.96
Aliquot: 1.00 Aliquot Fraction: 0.19%
Aliquot2: 1.00 Fraction: 100.00%
Lab Dilution: 1.00

Batch

Batch Name: 41395
Description:

Tracer

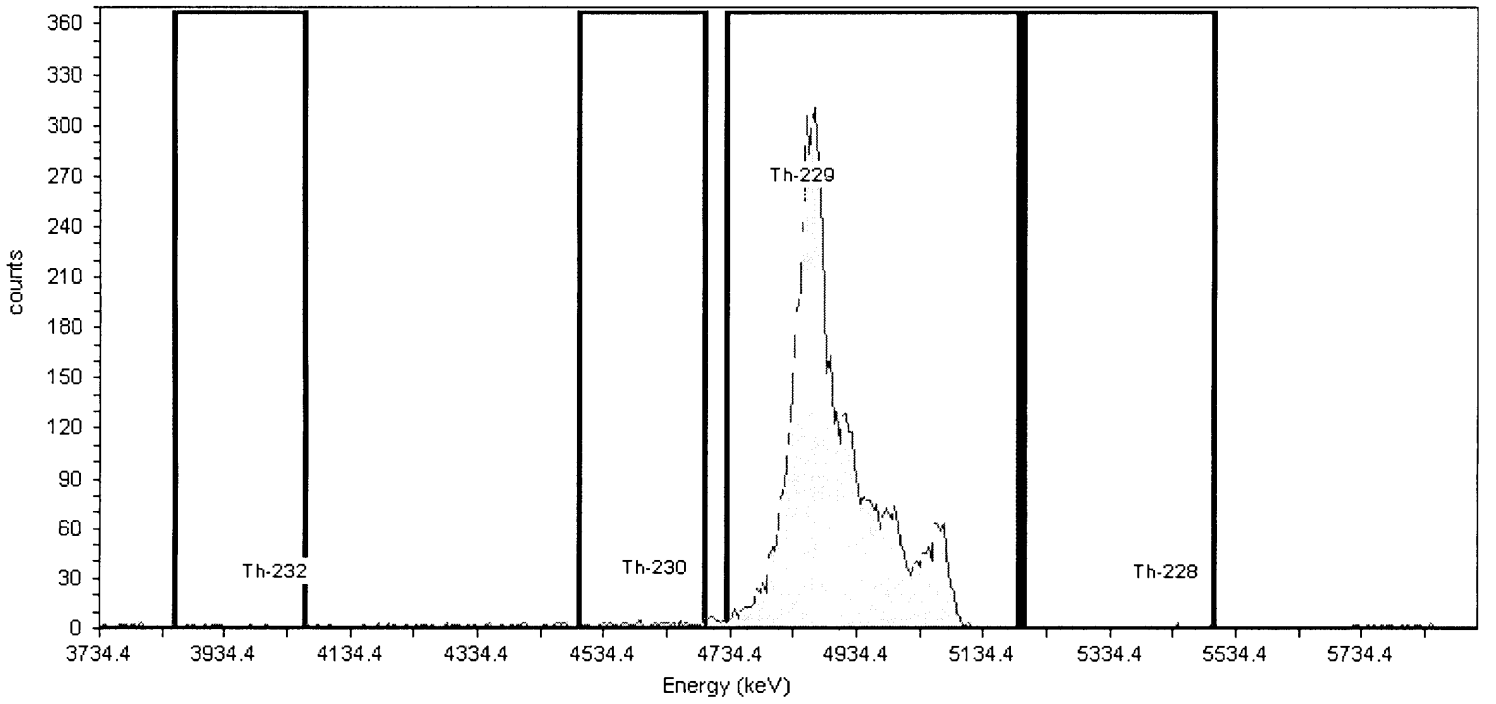
Tracer Name: 133B59A
Tracer Activity: 233.00 DPM/mL x (Vol.)0.25 mL = 58.25 DPM
Tracer Ref. Date: 1/3/2011 8:24:24AM

Tracer Nuclide: Th-229
Tracer Recovery: 92.26%

Acquisition

Detector: A2 Inst chk# 82552 SN: 49-093 C2
Acquisition Start Date: 05/23/2013 05:22:29PM
Live Time: 480.00 min.
Real Time: 480.07 min.
Background Date: 05/17/2013 08:33:24PM
Bkgd Info: Sample: A2; Det: A2 Inst chk# 82552; Spectrum #1; May-17-2013 20:33

Energy Calibration: 2013.03.04 002
Efficiency Calibration:2013.03.04 002
Calibration Date: 03/04/2013 01:20:28PM
Energy Cal: Gain = 4.8706 keV / Ch
Offset = 3,052.51 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 25.60% +/- 0.32% TPU(2 sigma)



General Analysis

Analysis Method: Interactive ROI Analysis
Decay Correction:5/16/2013 12:00:00AM
MDA Constants: Kα = 1.64 , Kβ = 1.64

Nuclide Library: Th
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity uCi/g	1.00Sig TPU uCi/g	Count Uncert %	Critical Level uCi/g	MDA uCi/g
Th-232	4010	3850	4060	78.7	100.0	8.73	0.3333	8	1.78E-005	6.93E-006	35.84	4.36E-009	1.04E-005
Th-230	4616	4494	4694	0.4	99.7	54.00	0.3333	-30	-6.31E-005	4.18E-005	-64.46	4.37E-009	1.04E-005
Th-229	4848	4727	5189	58.9	99.6	6585.41	6.0000	6579	1.29E-002	1.13E-003	1.23	1.86E-008	2.56E-005
Th-228	5423	5200	5500	29.0	99.8	2.50	1.6667	1	1.78E-006	4.38E-006	245.30	9.84E-009	1.63E-005

CR Analyst: H0061547 Separation Analyst: H0076677 CR Review: Brian Anderson

AlphaVision v5.3

Alpha-Spectroscopy Analysis Report

ATL, Inc.
222-S Laboratory

Results ID: 36,430 11:02:33AM 05/28/2013

Sample

Sample: S13T004254 Type: Sample
Spectrum #1 Analysis #1
QC Type: SAM
Sample Collection Date: 05/08/2013 12:00:00AM
Comment:
Lab Preparation:05/23/2013 12:00:00AM

Sample Weight : 1.00 Sample Units: g
Digest Dilution: 533.96
Aliquot: 1.00 Aliquot Fraction: 0.19%
Aliquot2: 1.00 Fraction: 100.00%
Lab Dilution: 1.00

Batch

Batch Name: 41395
Description:

Tracer

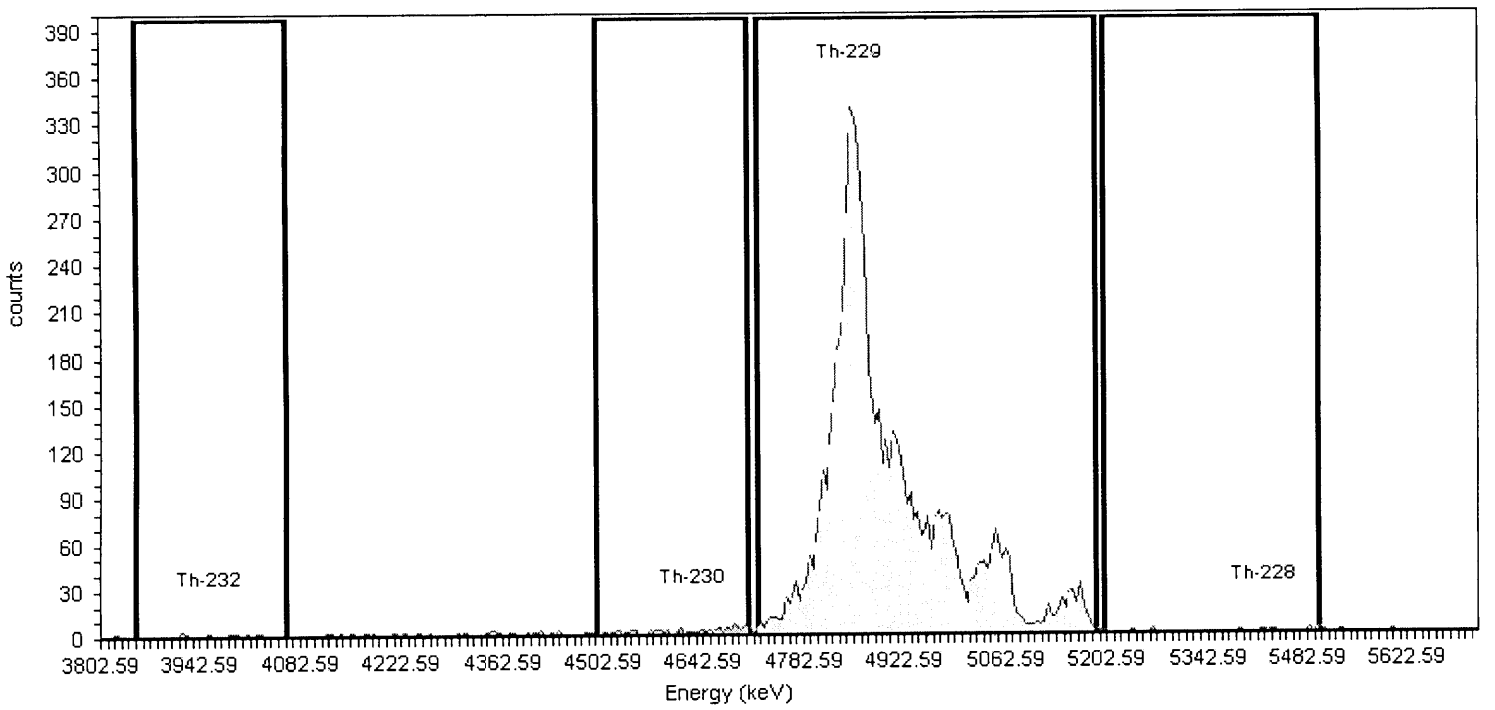
Tracer Name: 133B59A
Tracer Activity: 233.00 DPM/mL x (Vol.)0.25 mL = 58.25 DPM
Tracer Ref. Date: 1/3/2011 8:24:24AM

Tracer Nuclide: Th-229
Tracer Recovery: 98.95%

Acquisition

Detector: A3 Inst chk# 82553 SN: 49-093 C3
Acquisition Start Date: 05/23/2013 05:22:30PM
Live Time: 480.00 min.
Real Time: 480.07 min.
Background Date: 05/17/2013 08:33:26PM
Bkgd Info: Sample: A3; Det: A3 Inst chk# 82553; Spectrum #1; May-17-2013 20:33

Energy Calibration: 2013.03.04 003
Efficiency Calibration:2013.03.04 003
Calibration Date: 03/04/2013 01:20:47PM
Energy Cal: Gain = 4.8706 keV / Ch
Offset = 3,052.51 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 24.95% +/- 0.31% TPU(2 sigma)



General Analysis

Analysis Method: Interactive ROI Analysis
Decay Correction:5/8/2013 12:00:00AM
MDA Constants: Kα = 1.64 , Kβ = 1.64

Nuclide Library: Th
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity uCi/g	1.00Sig TPU uCi/g	Count Uncert %	Critical Level uCi/g	MDA uCi/g
Th-232	3954	3850	4060	126.7	100.0	10.00	0.7552	9	1.88E-005	7.24E-006	35.47	6.28E-009	1.22E-005
Th-230	4626	4494	4704	53.8	99.7	76.00	1.0000	-12	-2.46E-005	4.17E-005	-168.91	7.24E-009	1.32E-005
Th-229	4848	4718	5191	52.9	99.6	6882.00	5.6667	6876	1.39E-002	1.22E-003	1.21	1.73E-008	2.39E-005
Th-228	5423	5200	5500	6.7	99.8	14.00	2.6667	11	2.34E-005	9.15E-006	36.02	1.20E-008	1.84E-005

CR Analyst: H0061547 Separation Analyst: H0076677 CR Review: Brian Anderson

AlphaVision v5.3 **Alpha-Spectroscopy Analysis Report**

ATL, Inc.
222-S Laboratory
11:06:29AM 05/28/2013

Results ID: 36,436

Sample

Sample: S1305160013 Type: Sample
Spectrum #1 Analysis #1
QC Type: DUP
Sample Collection Date: 05/08/2013 12:00:00AM
Comment: DUP
Lab Preparation:05/23/2013 12:00:00AM

Sample Weight : 1.00 Sample Units: g
Digest Dilution: 519.32
Aliquot: 1.00 Aliquot Fraction: 0.19%
Aliquot2: 1.00 Fraction: 100.00%
Lab Dilution: 1.00

Batch

Batch Name: 41395
Description:

Tracer

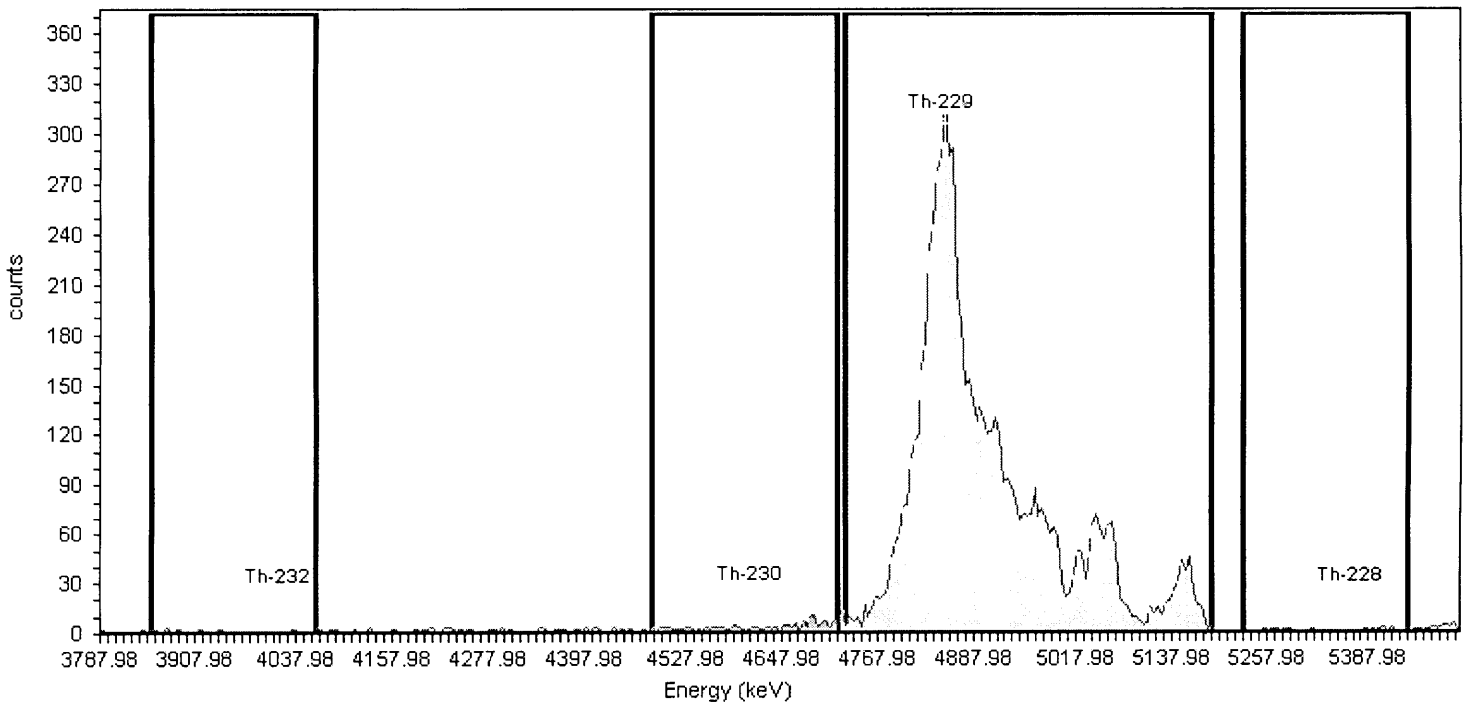
Tracer Name: 133B59A
Tracer Activity: 233.00 DPM/mL x (Vol.)0.25 mL = 58.25 DPM
Tracer Ref. Date: 1/3/2011 8:24:24AM

Tracer Nuclide: Th-229
Tracer Recovery: 102.32%

Acquisition

Detector: A4 Inst chk# 82554 SN: 49-093 C4
Acquisition Start Date: 05/23/2013 05:22:32PM
Live Time: 480.00 min.
Real Time: 480.07 min.
Background Date: 05/17/2013 08:33:28PM
Bkgd Info: Sample: A4; Det: A4 Inst chk# 82554; Spectrum #1; May-17-2013 20:33

Energy Calibration: 2013.03.04 004
Efficiency Calibration:2013.03.04 004
Calibration Date: 03/04/2013 01:21:27PM
Energy Cal: Gain = 4.8706 keV / Ch
Offset = 3,052.51 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 24.70% +/- 0.31% TPU(2 sigma)



General Analysis

Analysis Method: Interactive ROI Analysis
Decay Correction:5/8/2013 12:00:00AM
MDA Constants: Kα = 1.64 , Kβ = 1.64

Nuclide Library: Th
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity uCi/g	1.00Sig TPU uCi/g	Count Uncert %	Critical Level uCi/g	MDA uCi/g
Th-232	4010	3850	4060	180.1	100.0	9.43	0.0000	9	1.82E-005	6.81E-006	34.24	0.00E+000	5.22E-006
Th-230	4606	4484	4718	32.0	99.7	121.00	1.6667	30	5.83E-005	4.32E-005	72.60	9.13E-009	1.47E-005
Th-229	4848	4727	5189	59.6	99.6	7047.30	7.6667	7040	1.39E-002	1.22E-003	1.19	1.96E-008	2.56E-005
Th-228	5366	5230	5439	6.8	99.4	14.00	1.6667	12	2.43E-005	8.62E-006	32.09	9.30E-009	1.50E-005

CR Analyst: H0061547 Separation Analyst: H0076677 CR Review: Brian Anderson

AlphaVision v5.3

Alpha-Spectroscopy Analysis Report

ATL, Inc.
222-S Laboratory
11:09:28AM 05/28/2013

Results ID: 36,438

Sample

Sample: S13T004282 Type: Sample
Spectrum #1 Analysis #1
QC Type: SAM
Sample Collection Date: 05/07/2013 12:00:00AM
Comment:
Lab Preparation:05/23/2013 12:00:00AM

Sample Weight : 1.00 Sample Units: g
Digest Dilution: 558.78
Aliquot: 1.00 Aliquot Fraction: 0.18%
Aliquot2: 1.00 Fraction: 100.00%
Lab Dilution: 1.00

Batch

Batch Name: 41395
Description:

Tracer

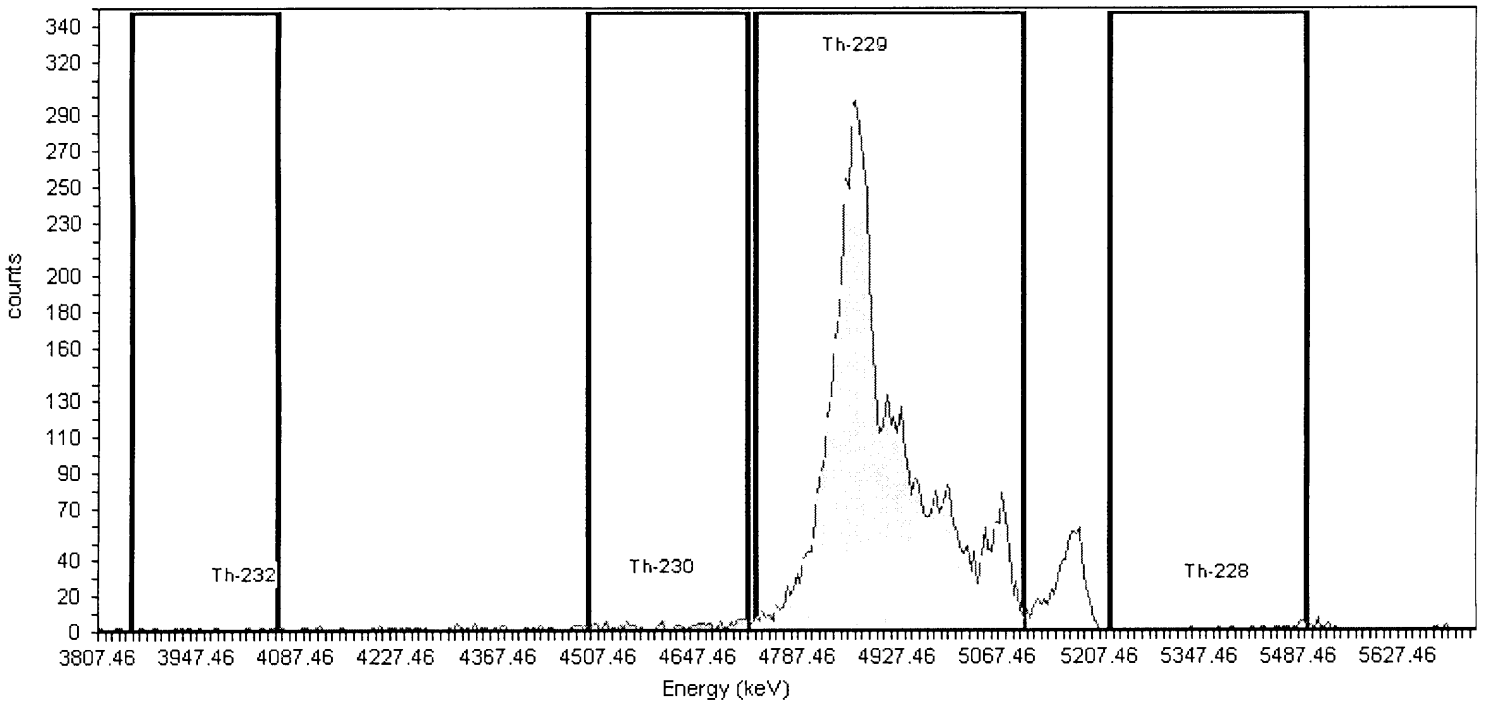
Tracer Name: 133B59A
Tracer Activity: 233.00 DPM/mL x (Vol.)0.25 mL = 58.25 DPM
Tracer Ref. Date: 1/3/2011 8:24:24AM

Tracer Nuclide: Th-229
Tracer Recovery: 96.47%

Acquisition

Detector: A5 Inst chk# 37B30A SN: 49-093 C5
Acquisition Start Date: 05/23/2013 05:22:33PM
Live Time: 480.00 min.
Real Time: 480.07 min.
Background Date: 05/17/2013 08:33:31PM
Bkgd Info: Sample: A5; Det: A5 Inst chk# 37B30A; Spectrum #1; May-17-2013 20:33

Energy Calibration: 2013.03.04 005
Efficiency Calibration:2013.03.04 005
Calibration Date: 03/04/2013 01:21:44PM
Energy Cal: Gain = 4.8706 keV / Ch
Offset = 3,052.51 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 24.81% +/- 0.31% TPU(2 sigma)



General Analysis

Analysis Method: Interactive ROI Analysis
Decay Correction:5/7/2013 12:00:00AM
MDA Constants: Kα = 1.64 , Kβ = 1.64

Nuclide Library: Th
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity uCi/g	1.00Sig TPU uCi/g	Count Uncert %	Critical Level uCi/g	MDA uCi/g
Th-232	4010	3850	4060	21.4	100.0	10.00	0.3333	10	2.12E-005	7.74E-006	33.25	4.30E-009	1.07E-005
Th-230	4596	4493	4717	48.2	99.7	78.50	1.3333	-7	-1.60E-005	4.40E-005	-275.01	8.63E-009	1.56E-005
Th-229	4869	4728	5103	61.1	99.6	6672.00	5.0000	6667	1.41E-002	1.24E-003	1.23	1.67E-008	2.46E-005
Th-228	5376	5225	5502	28.2	99.4	20.00	6.0000	14	3.14E-005	1.24E-005	36.42	1.87E-008	2.69E-005

CR Analyst: H0061547 Separation Analyst: H0076677 CR Review: Brian Anderson

AlphaVision v5.3

Alpha-Spectroscopy Analysis Report

ATL, Inc.
222-S Laboratory
11:11:05AM 05/28/2013

Results ID: 36,439

Sample

Sample: S13T004309 Type: Sample
Spectrum #1 Analysis #1
QC Type: SAM
Sample Collection Date: 05/07/2013 12:00:00AM
Comment:
Lab Preparation:05/23/2013 12:00:00AM

Sample Weight : 1.00 Sample Units: g
Digest Dilution: 495.15
Aliquot: 1.00 Aliquot Fraction: 0.20%
Aliquot2: 1.00 Fraction: 100.00%
Lab Dilution: 1.00

Batch

Batch Name: 41395
Description:

Tracer

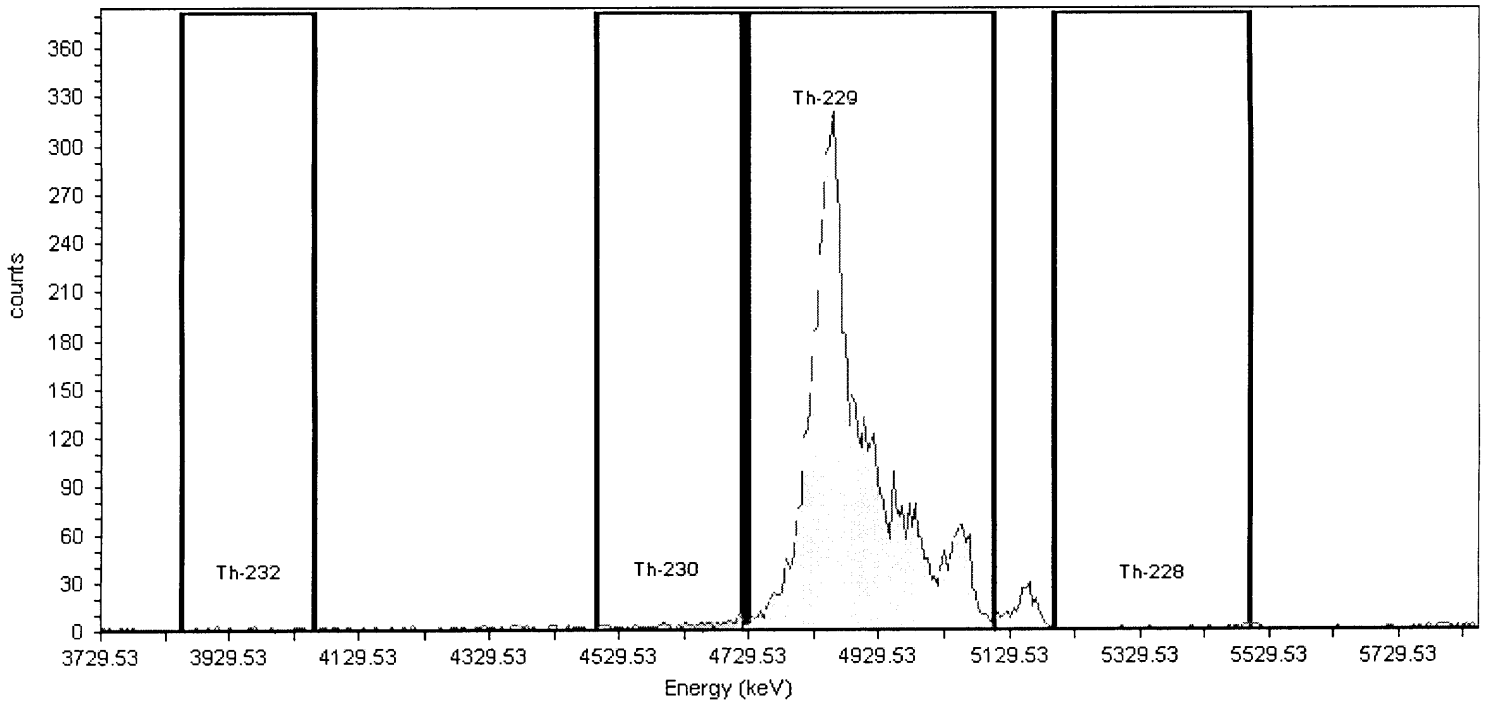
Tracer Name: 133B59A
Tracer Activity: 233.00 DPM/mL x (Vol.)0.25 mL = 58.25 DPM
Tracer Ref. Date: 1/3/2011 8:24:24AM

Tracer Nuclide: Th-229
Tracer Recovery: 95.52%

Acquisition

Detector: A6 Inst chk# 37B30B SN: 49-093 C6
Acquisition Start Date: 05/23/2013 05:22:35PM
Live Time: 480.00 min.
Real Time: 480.07 min.
Background Date: 05/17/2013 08:33:32PM
Bkgd Info: Sample: A6; Det: A6 Inst chk# 37B30B; Spectrum #1; May-17-2013 20:33

Energy Calibration: 2013.03.04 006
Efficiency Calibration:2013.03.04 006
Calibration Date: 03/04/2013 01:22:18PM
Energy Cal: Gain = 4.8706 keV / Ch
Offset = 3,052.51 keV
Quadratic = 0.0000 keV / Ch^2
Efficiency: 24.79% +/- 0.31% TPU(2 sigma)



General Analysis

Analysis Method: Interactive ROI Analysis
Decay Correction:5/7/2013 12:00:00AM
MDA Constants: Kα = 1.64 , Kβ = 1.64

Nuclide Library: Th
MDA Source: Background

Nuclide Summary (ROI)

Nuclide	Peak Energy keV	ROI Start keV	ROI End keV	FWHM keV	B.R. %	Gross Counts	Bkgd Counts	Net Counts	Activity uCi/g	1.00Sig TPU uCi/g	Count Uncert %	Critical Level uCi/g	MDA uCi/g
Th-228	5351	5200	5500	12.1	99.8	11.00	3.6976	7	1.46E-005	7.98E-006	52.50	1.48E-008	2.00E-005
Th-232	3958	3850	4060	15.7	100.0	12.00	0.6667	11	2.22E-005	7.75E-006	31.40	6.15E-009	1.14E-005
Th-230	4601	4493	4717	46.2	99.7	96.78	1.7497	11	2.25E-005	4.01E-005	177.35	9.99E-009	1.52E-005
Th-229	4848	4728	5108	58.7	99.6	6605.00	8.0000	6597	1.24E-002	1.09E-003	1.23	2.14E-008	2.65E-005

CR Analyst: H0061547 Separation Analyst: H0076677 CR Review: Brian Anderson

LABCORE Completed Batch Report for Batch# 00041255

Analyst: Hurson, Aleta

Book#: NA

Instrument: LE-BAL-091

Method: FUSION - ZR, LA-549-141 Rev/Mod M-1-A

Specification: C109 CLO

Prep Batch: N/A

Batch Comment:

C109 CLO for Fusion. gll

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
1	BLNK-PREP	S1305160012			Z		Dose Rate(1)	SOLID		<0.5				mRem/hr			
1	BLNK-PREP	S1305160012			Z		Digest Factor(1)	SOLID		0.001873				g / mL			
2	SAMPLE	S13T004254			Z		Dose Rate(1)	SOLID		200				mRem/hr			
2	SAMPLE	S13T004254			Z		Digest Factor(1)	SOLID		0.001873				g / mL			
3	DUP	S1305160013	S13T004254		Z		Dose Rate(1)	SOLID		200				mRem/hr			
3	DUP	S1305160013	S13T004254		Z		Digest Factor(1)	SOLID		0.001926				g / mL			
4	SAMPLE	S13T004282			Z		Dose Rate(1)	SOLID		180				mRem/hr			
4	SAMPLE	S13T004282			Z		Digest Factor(1)	SOLID		0.001790				g / mL			
5	SAMPLE	S13T004309			Z		Dose Rate(1)	SOLID		180				mRem/hr			
5	SAMPLE	S13T004309			Z		Digest Factor(1)	SOLID		0.002020				g / mL			

Comments Section:

Data Flagger Status:
Flagger Not Run

Final Page for Batch# 00041255

Reviewer Signature 16 May 13 Date

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041255

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Method	Customer Id	Specification
1	S1305160012	BLNK-PREP			FUSION - ZR		
2	S13T004254	SAMPLE		20130402	FUSION - ZR	9C-13-Comp A	C109 CLO
3	S1305160013	DUP	S13T004254		FUSION - ZR		
4	S13T004282	SAMPLE		20130402	FUSION - ZR	9C-13-Comp B	C109 CLO
5	S13T004309	SAMPLE		20130402	FUSION - ZR	9C-13-Comp C	C109 CLO

Copy

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

* = Rejected Analyte
N, A = Non-reported Analyte

5/16/2013 8:41:34AM
IncompleteBatchShort Version 2.7.29
batchreports 2.7.32

LABCORE Data Entry Template for Batch# 00041255

Analyst: H0076677 **Standard ID / Book#:** NA

Instrument: NA

Method: FUSION - ZR, LA-549-141 Rev/Mod M-1-A

Prep Batch: N/A

Batch Comment:

C109 CLO for Fusion. gll

CACN:3A.26

S	Type	Sample	R	A	Matrix	Group#	Project
1	BLNK-PREP	S1305160012		Z	SOLID		
2	SAMPLE	S13T004254		Z	SOLID	20130402	C109 CLO
3	DUP	S1305160013		Z	SOLID		
4	SAMPLE	S13T004282		Z	SOLID	20130402	C109 CLO
5	SAMPLE	S13T004309		Z	SOLID	20130402	C109 CLO

Final Page for Batch# 00041255

Alicia Hansen 5/16/13
Analyst Signature Date

5/16/13 ACH
Alicia Hansen 5/16/13
Data Entry Signature Date
5/16/13

Copy

Data Entry Comments:

S = Batch Slot Number, R = Retest Number, A = Aliquot Code.

ATL	DIGESTION BATCH LIST DATA COLLECTION FORM

○ LA-544-101 Rev _____ ○ LA-544-113 Rev _____ ○ _____ (Other) Rev _____

○ LA-549-133 Rev _____ ◉ LA-549-141 Rev M-1-A

Batch #: 41255 Analyst: AKH Date: 5/16/2013

(Pipette #); Pipette ID; Volume Range or Fixed Volume; Check box if pipette passes visual verification:

(1) N/A (Range/Vol: N/A) ☐

(2) N/A (Range/Vol: N/A) ☐

(3) N/A (Range/Vol: N/A) ☐

Balance ID; Date of balance verification:

LE-BAL-091 (Verification Date: 5/16/2013)

○ Spike / ○ Carrier / ○ Tracer # N/A Vol N/A Pip # N/A

○ Spike / ○ Carrier / ○ Tracer # N/A Vol N/A Pip # N/A

◯ Spike / ○ Carrier / ○ Tracer # N/A Vol N/A Pip # N/A

Special Instructions:

Use ZR Crucibles. gll

Sample Type	Digest Sample #	Parent Sample #	Sample Weight (g)	Final Volume (mL)	Dose Rate (mRem/hr)
Blank Prep	S1305160012	N/A	0.4682	250	<0.5
Sample	S13T004254	S13T004246	0.4682	250	200
Duplicate	S1305160013	S13T004246	0.4814	250	200
Sample	S13T004282	S13T004274	0.4474	250	180
Sample	S13T004309	S13T004301	0.5049	250	180

Comments:

C109 CLO Fusion-ZR. gll Digest Appearance: Clear liquid. colorless. no solids.

A-6005-290 (REV 2)

Data Review Check List

Procedure LA-218-114 Tritium

Project: C109 CLO

Group(s): 20130402

Batch # 41354

Review Item	Level 1 Yes	Level 1 No	Level 1 N/A	Level 2	Comments and Samples Affected
Batch Items					
1. Was an LCS and blank run the batch?	X			√	
2. Was a duplicate and spike run with the batch?	X			√	
3. Was the book # of the standard (and spike) on the traveler?	X			√	
4. Was the batch traveler completed (sample #, dilution, aliquot size)?	X			√	
5. Were any line outs initialed and dated?			X	√	
6. Was balance check completed on the day of use (if used)?			X	√	
Result Items					
7. Was sample, traveler and counting data correct on ACE form?	X			√	
8. If No, was ACE form corrected?			X	√	
9. Did results etc. correctly up-load to LABCORE (OMNILims or MULTILims)?	X			√	
10. If No, was LABCORE corrected?			X	√	
11. Are result units correct?	X			√	
12. If No, were units corrected?			X	√	
13. Was data flagged?	X				
14. Are all flags present and correct?	X			√	
15. Are LCS results within limits (Lab's or customer's)?	X			√	
16. Are Spike results within limits (Lab's or customer's)?	X			√	
17. Is blank <MDC, or <5% isotope concentration, or <5% decision level?	X			√	
18. Are duplicate RPDs <20% (or RSD) within customer limits?			X	√	Sample and Dup < detection limit
19. Are the correct procedure number and Rev/Mod on the report?	X			√	
Procedure Speciffic Items					
20. Was the correct LSC program used for counting?	X			√	
21. Were the customer required detection or quantification limits met?	X			√	

1st Level Reviewer: Karl Husted K. THusted **Date:** 5/22/13

2nd Level Reviewer: [signature] **Date:** 22 May 13

Data Review Checklist

CALIBRATION OF LIQUID SCINTILLATION COUNTERS

INSTRUMENT # LSC-4 **PROCEDURES LA-508-121 LQ-150-115**

BATCH # 41354

Review Items	--- Level 1 --- Yes	No	N/A	Comments & Samples Affected
Efficiency Calibration				
1. Instrument calibration stds ^{3}H & ^{14}C run prior to quench curve calibration	X			
2. Unquenched bkg vial run before quench curve calibration	X			
3. Calibration performed per procedure LA-508-121	X			
4. Quench curve calibration had > 7 data points	X			
5. Quench range of calibration matches expected range of samples	X			
6. Quench calibration performed in mode where bkg is subtracted from each analysis	X			
7. Calibration had a second, independent check.	X			
8. Any non-conformances are documented in maintnance notebook	X			
9. Calibration reports are pasted and signed in maintenance notebook	X			
Calibration Verification				
1. Instrument Control Std within limits before and after batch counted	X			
2. Bkg check within limits before and after batch counted	X			

Reviewer: [signature] K I Husted Date: 5/22/13

H:\DATA REVIEW CHECKLISTS\LSC ICAL.XLS

LABCORE Completed Batch Report for Batch# 00041354

Analyst: King, Rob W **Book#:** 70B63

Instrument: LSC-4 LS6500 B-1A

Method: TRITIUM, LA-508-121 Rev/Mod G-0

Specification: C109 CLO

Prep Batch: 00041256

Batch Comment:

C109 CLO RWK

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
Sample Sequence 1																	
1	STD	S1305210095		0 0			Tritium	SOLID	.00297	2.5982E-03		0.705	2.08E-06	uCi/g	87.482	% Recovery	
Sample Sequence 2																	
2	BLNK-PREP	S1305160015		0 0	W		Tritium	SOLID		<3.9202E-04			3.92E-04	uCi/g			
Sample Sequence 3																	
3	SAMPLE	S13T004253		0 0	W		Tritium	SOLID	N/A	<3.9000E-04			3.90E-04	uCi/g			U
Sample Sequence 4																	
4	DUP	S1305160016	S13T004253	0 0	W		Tritium	SOLID	<3.9000E-04	<4.1200E-04			4.12E-04	uCi/g			
Sample Sequence 5																	
5	SPK-PREDIG	S1305210096	S13T004253	0 0			Tritium	SOLID	.00297	2.5666E-03		1.006906764	2.07E-06	uCi/g	86.416	% Recovery	
Sample Sequence 6																	
6	SAMPLE	S13T004281		0 0	W		Tritium	SOLID	N/A	<3.7800E-04			3.78E-04	uCi/g			U
Sample Sequence 7																	
7	SAMPLE	S13T004308		0 0	W		Tritium	SOLID	N/A	<3.6705E-04			3.67E-04	uCi/g			U

Comments Section:

Data Flagger Status:
Flagging Completed

Final Page for Batch# 00041354

Reviewer Signature 22 May 13 Date

PC: Julie Osborn 7/9/13

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041354

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Method	Customer Id	Specification
1	S1305210095	STD			TRITIUM		
2	S1305160015	BLNK-PREP			TRITIUM		
3	S13T004253	SAMPLE		20130402	TRITIUM	9C-13-Comp A	C109 CLO
4	S1305160016	DUP	S13T004253		TRITIUM		
5	S1305210096	SPK-PREDIG	S13T004253		TRITIUM		
6	S13T004281	SAMPLE		20130402	TRITIUM	9C-13-Comp B	C109 CLO
7	S13T004308	SAMPLE		20130402	TRITIUM	9C-13-Comp C	C109 CLO

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

* = Rejected Analyte
N, A = Non-reported Analyte

5/21/2013 3:46:08PM
IncompleteBatchShort Version 2.7.29
batchreports 2.7.32

LABCORE Data Entry Template for Batch# 00041354

Analyst: H0061547 **Standard ID / Book#:** See bench sheet
Instrument: LSC-04
Method: TRITIUM, LA-508-121 Rev/Mod 6-0
Prep Batch: 00041256
Batch Comment:
C109 CLO RWK
CACN:3A.26

S	Type	Sample	R	A	Matrix	Group#	Project
1	STD	S1305210095	0		SOLID		
	Analytes Requested:	Tritium					
2	BLNK-PREP	S1305160015	0	W	SOLID		
	Analytes Requested:	Tritium					
3	SAMPLE	S13T004253	0	W	SOLID	20130402	C109 CLO
	Analytes Requested:	Tritium					
4	DUP	S1305160016	0	W	SOLID		
	Analytes Requested:	Tritium					
5	SPK-PREDIG	S1305210096	0		SOLID		
	Analytes Requested:	Tritium					
6	SAMPLE	S13T004281	0	W	SOLID	20130402	C109 CLO
	Analytes Requested:	Tritium					
7	SAMPLE	S13T004308	0	W	SOLID	20130402	C109 CLO
	Analytes Requested:	Tritium					

Final Page for Batch# 00041354

[signature] 5/21/13
Analyst Signature **Date**

[signature] 5/21/13
Data Entry Signature **Date**

[signature] 5-22-2013

Data Entry Comments:

S = Batch Slot Number, R = Retest Number, A = Aliquot Code.

5/20/2013 2:08:24PM
IncompleteBatchShort Version 2.7.29
batchreports 2.7.32

LABCORE Data Entry Template for Batch# 00041331

Analyst: H0076677 **Standard ID / Book#:** 70863
Instrument: NA
Method: TRITIUM SEPARATION, LA-218-114 Rev/Mod H0
Prep Batch: 00041256
Batch Comment:
H3 for C109 CLO. Spike is associated with S13T004253. AKH
CACN:3A.26

S	Type	Sample	R	A	Matrix	Group#	Project
1	STD	S1305200100	0		SOLID		
	Analytes Requested:	RadChem Separation					
2	BLNK-PREP	S1305160015	0	W	SOLID		
	Analytes Requested:	RadChem Separation					
3	SAMPLE	S13T004253	0	W	SOLID	20130402	C109 CLO
	Analytes Requested:	RadChem Separation					
4	DUP	S1305160016	0	W	SOLID		
	Analytes Requested:	RadChem Separation					
5	SPK	S1305200102	0		SOLID		
	Analytes Requested:	RadChem Separation					
6	SAMPLE	S13T004281	0	W	SOLID	20130402	C109 CLO
	Analytes Requested:	RadChem Separation					
7	SAMPLE	S13T004308	0	W	SOLID	20130402	C109 CLO
	Analytes Requested:	RadChem Separation					

Final Page for Batch# 00041331

Alicia Hinson 5/21/13
Analyst Signature **Date**

Alicia Hinson 5/21/13
Data Entry Signature **Date**

Data Entry Comments:

S = Batch Slot Number, R = Retest Number, A = Aliquot Code.

ATL

TRITIUM BATCH LIST DATA COLLECTION FORM

○ LA-218-111 Rev _____ ◉ LA-218-114 Rev H-0 ○ LA-218-116 Rev _____

Separation Batch #: 41331 Analyst Initials: AKH Analysis Date/Time: 5/21/13 / 14:40

(Pipette #); Pipette ID; Volume Range or Fixed Volume; Check box if pipette passes visual verification:

(1) 1140429 (Range/Vol: 0.1-1.0 mL) ☒ (3) NA (Range/Vol: NA) ☐

(2) 436223 (Range/Vol: 1.0-5.0 mL) ☒ (4) NA (Range/Vol: NA) ☐

Matrix: SOLID Prep Batch #: 41256 HASQARD Upload ☐

Standard Book #: 70B63

Spike Information

Spike Book #: 70B63 Volume: 1.5 mL (Pip # 2)

Sample Vol.: 1.5 mL (Pip # 2)

Counting Room Information LA-508-121 Rev C-0

Counting Batch #: 41354

Instrument ID: WC 74082 LSC-04

Inst. Check Std ID: Perkin Elmer EX

Special Instructions/Comments:

NA

Sample Type	Sample ID	Initial Sample Vol (mL)	Pip #	Dilution Information	Pip #	DF	Final Sample Vol (mL)	Pip #	Counting Room Info Sample Pos #
Sep Std	S1305200100	3	2	NA	NA	1	1	1	NA
Cnt Std	S13052100995	NA	NA	NA	NA	NA	NA	NA	3
Blk Prep	S1305160015	3	2	NA	NA	1	1	1	4
Sample	S13T004253	3	2	NA	NA	1	1	1	5
Prep Dup	S1305160016	3	2	NA	NA	1	1	1	6
Sep Spk	S1305200102	3	2	NA	NA	1	1	1	NA
Cnt Spk	S13052100996	NA	NA	NA	NA	NA	NA	NA	7
Sample	S13T004281	3	2	NA	NA	1	1	1	8
Sample	S13T004308	3	2	NA	NA	1	1	1	9

A-6005-802 (REV 2)

PAGE: 1

ID:H-3 TRITIUM 21 MAY 2013 14:32
USER: 1 COMMENT:LS 6500 WC74002
PRESET TIME : 50.00
DATA CALC : SL DPM H# :YES SAMPLE REPEATS: 1 PRINTER : STD
COUNT BLANK : YES IC# : NO REPLICATES : 1 RS232 : STD
TWO PHASE : YES AQC : NO CYCLE REPEATS : 1 DISK : OFF
SCINTILLATOR: LIQUID LUMEX:YES LOW SAMPLE REJ: 0
LOW LEVEL : NO HALF LIFE CORRECTION DATE: none

ISOTOPE 1: H-3 %ERROR: 0.00 FACTOR: 1.0000000 BKG. SUB: 0
CHAN: 500.0 - 1000.0 %ERROR: 0.00 FACTOR: 1.0000000 BKG. SUB: 0

BACKGROUND QUENCH CURVE: Off COLOR QUENCH CORRECTION: Off

Quench Limits Low: 0.071 High:369.30

SAM NO	POS	TIME MIN	H#	H-3 CPM	H-3 %ERROR	WIND1 CPM	WIND1 %ERROR	H-3 DPM	H-3 EFF-1	LUM
01	**-1	50.00	133.2	14.38	0.00	28.60	5.29	53.44	26.91	4.
1	51.99	2P								
	Blank Average DPM for H-3 : 53.44 COEF. OF VAR: 0.000									
1	**-3	50.00	131.3	1590.42	0.71	25.04	5.65	5769.06	27.32	0.
5	103.87	2P								
2	**-4	50.00	131.9	12.52	0.32	25.20	5.63	-7.39	27.19	2.
7	155.75									
3	**-5	50.00	130.6	11.70	0.52	27.10	5.43	-10.86	27.48	1.
4	207.57	2P								
4	**-6	50.00	130.8	12.38	0.25	27.44	5.40	-8.29	27.42	1.
3	259.37	2P								
5	**-7	50.00	130.2	799.94	1.00	25.62	5.59	2848.89	27.56	0.
9	311.15	2P								
6	**-8	50.00	131.9	12.78	0.05	28.80	5.27	-6.42	27.18	1.
0	362.89	2P								
7	**-9	50.00	131.8	12.60	0.10	26.64	5.48	-7.14	27.22	1.
7	414.64	2P								

?QP

Tritium

		STD
Type	Disintegrations per minute from Counter	5769.06
STD	Sample Volume in mL	1.00
Work List	Dilution Factor	1.00
00041354	Digest Dilution Factor	1.000E+00
Test Code	Sample Count Rate in CPM	1590.42
TRITIUM	Instrument Fractional Efficiency	0.2732
Matrix	Count Time in Minutes	50
SOLID	Background Count Rate in CPM	14.38
Rerun	Background Efficiency	0.2691
0	Relative Percent Counting Uncertainty	0.70
Sample Prep	Detection Limit	9.42
	Critical Level Lc (CPM)	1.26
Sample #	Rmax Level (CPM)	1585.17
S1305210095	Tritium Concentration in uCi/g	2.60E-03
Instrument Code	Lc, Rmax, or Rs, (Sample Rate) as appropriate CPM	1575.82
WC74082	Standard Book No.	70B63
Data Entry By	Standard Value in uCi/g	2.9700E-03
RWK		
Analyst		
AKH		
Date Completed		
5/21/2013		
Analysis Date		
5/21/2013		
Analysis Time		
2:40 PM		

Procedure using this form*: **LA-508-121 G-0**

* The specific formulae used in the calculations for this spreadsheet can be found in the applicable procedure, as identified on the worklist.

Specification		
C109 CLO	**Tritium Concentration in uCi/g**	2.60E-03
Units	**% Recovery**	= 87.48%
uCi/g	**Detection Limit in uCi/g**	= 2.08E-06
	Relative Percent Counting Uncertainty	= 0.70

Tritium Std Template 2.0

Printed at: 10:34:04 PM 5/21/2013 Version: 2.01

Workbook Page BLANK 2

Tritium

Type	Work List	Test Code	Matrix	Rerun	Sample Prep	Sample #	Instrument Code	Data Entry By	Analyst	Date Completed	Analysis Date	Analysis Time	Specification	Units
BLNK-PREP	00041354	TRITIUM	SOLID	0	S1305160015-001	S1305160015	WC74082	RWK	AKH	5/21/2013	5/21/2013	2:40 PM	C109 CLO	uCi/g

		BLNK-PREP
Disintegrations per minute from Counter		-7.39
Sample Volume in mL		1.00
Dilution Factor		1.00
Digest Dilution Factor		5.308E-03
Sample Count Rate in CPM		12.52
Instrument Fractional Efficiency		0.2719
Count Time in Minutes		50
Background Count Rate in CPM		14.38
Background Efficiency		0.2691
Relative Percent Counting Uncertainty		77.29
Detection Limit		9.44
Critical Level Lc (CPM)		1.26
Rmax Level (CPM)		-0.80
Tritium Concentration in uCi/g	<	3.92E-04
Lc, Rmax, or Rs, (Sample Rate) as appropriate (CPM)		1.26

Procedure using this Form*: **LA-508-121 G-0**

* The specific formulae used in the calculations for this spreadsheet can be found in the applicable procedure, as identified on the worklist.

HAZQUARD Concentration	=	-6.27E-04
Tritium Concentration in uCi/g	<	3.92E-04
Detection Limit in uCi/g		3.92E-04
Relative Percent Counting Uncertainty		77.29

Tritium Sample Template 2.0

Printed at: 10:34:27 PM 5/21/2013 Version: 2.01

Workbook Page SAMPLE 3

Tritium

			SAMPLE
Type	Disintegrations per minute from Counter		-10.86
SAMPLE	Sample Volume in mL		1.00
Work List	Dilution Factor		1.00
00041354	Digest Dilution Factor		5.308E-03
Test Code	Sample Count Rate in CPM		11.70
TRITIUM	Instrument Fractional Efficiency		0.2748
Matrix	Count Time in Minutes		50
SOLID	Background Count Rate in CPM		14.38
Rerun	Background Efficiency		0.2691
0	Relative Percent Counting Uncertainty		52.82
Sample Prep	Detection Limit		9.39
S13T004253-001	Critical Level Lc (CPM)		1.26
Sample #	Rmax Level (CPM)		-1.79
S13T004253	Tritium Concentration in uCi/g	<	3.90E-04
Instrument Code	Lc, Rmax, or Rs, (Sample Rate) as appropriate (CPM)		1.26
WC74082			
Data Entry By			
RWK			
Analyst			
AKH			
Date Completed			
5/21/2013			
Analysis Date			
5/21/2013			
Analysis Time			
2:40 PM			

Procedure using this Form*: **LA-508-121 G-0**

* The specific formulae used in the calculations for this spreadsheet can be found in the applicable procedure, as identified on the worklist.

Specification			
C109 CLO	**HAZQUARD Concentration**	=	-9.22E-04
	Tritium Concentration in uCi/g	<	3.90E-04
Units	**Detection Limit in uCi/g**		3.90E-04
uCi/g	**Relative Percent Counting Uncertainty**		52.82

Tritium Sample Template 2.0

Printed at: 10:34:56 PM 5/21/2013 Version: 2.01

Workbook Page DUP 4

Tritium

			DUP	
Type	Disintegrations per minute from Counter		-8.29	Associated Sample Number
DUP	Sample Volume in mL		1.00	S13T004253
Work List	Dilution Factor		1.00	
00041354	Digest Dilution Factor		5.034E-03	
Test Code	Sample Count Rate in CPM		12.38	
TRITIUM	Instrument Fractional Efficiency		0.2742	
Matrix	Count Time in Minutes		50	
SOLID	Background Count Rate in CPM		14.38	
Rerun	Background Efficiency		0.2691	
0	Relative Percent Counting Uncertainty		71.69	
Sample Prep	Detection Limit		9.40	
S1305160016-001	Critical Level Lc (CPM)		1.26	
Sample #	Rmax Level (CPM)		-1.06	
S1305160016	Tritium Concentration in uCi/g	<	4.12E-04	
Instrument Code	Lc, Rmax, or Rs, (Sample Rate) as appropriate (CPM)		1.26	
WC74082				
Data Entry By				
RWK				
Analyst				
AKH				
Date Completed				
5/21/2013				
Analysis Date				
5/21/2013				
Analysis Time				
2:40 PM				

Procedure using this Form*: **LA-508-121 G-0**

* The specific formulae used in the calculations for this spreadsheet can be found in the applicable procedure, as identified on the worklist.

Specification	**HAZQUARD Concentration**	=	-7.42E-04
C109 CLO	**Tritium Concentration in uCi/g**	<	4.12E-04
Units	**Detection Limit in uCi/g**		4.12E-04
uCi/g	**Relative Percent Counting Uncertainty**		71.69

Tritium Sample Template 2.0

Printed at: 10:35:28 PM 5/21/2013 Version: 2.01

Tritium

		SPK-PREDIG	
Type	DPM of Sample from Counter	-10.86	Associated Sample Number
SPK-PREDIG	DPM of Sample + Spike from Counter	2848.89	S13T004253
Work List	Volume of Sample in Distillation Vial in mL	1.50	
00041354	Volume of Spike in Distillation Vial in mL	1.50	
Test Code	Volume Transferred to Scintillation Vial in mL	1.0	
TRITIUM	Spike Book No.	70B63	
Matrix	Spike Value in uCi/mL	2.970E-03	
SOLID	Sample Count Rate in CPM	799.94	
Rerun	Instrument Fractional Efficiency	0.2756	
0	Count Time in Minutes	50	
Sample Prep	Background in CPM	14.38	
	Background Efficiency	0.2691	
Sample #	Detection Limit	9.37	
S1305210096	Critical Level Lc (CPM)	1.26	
Instrument Code	Rmax Level (CPM)	791.87	
WC74082	H3 uCi/mL in Sample Vial	0.00E+00	
Data Entry By	H3 uCi/mL in Sample + Spike Vial	1.28E-03	
RWK	Vol. Ratio Sample Vol. to Total Vol.	**5.00E-01**	
Analyst	Vol. Ratio Spike Vol. to Total Vol.	**5.00E-01**	
AKH			
Date Completed	**Procedure using this Form*:**	LA-508-121	G-0
5/21/2013			
Analysis Date	* The specific formulae used in the calculations for this spreadsheet can be found		
5/21/2013	in the applicable procedure, as identified on the worklist.		
Analysis Time			
2:40 PM	**QC ACTUAL**	=	2.97E-03
Specification	**QCFOUND**	=	2.57E-03
C109 CLO	**PERCENT SPIKE RECOVERY**	=	86.4%
Units	**Detection Limit in uCi/mL**	=	2.06681E-06
uCi/g	**Relative Percent Counting Uncertainty**	=	1.007

Tritium Spike Template 2.0

Printed at: 10:36:46 PM 5/21/2013 Version: 2.01

Workbook Page SAMPLE 6

Tritium

			SAMPLE
Type	Disintegrations per minute from Counter		-6.42
SAMPLE	Sample Volume in mL		1.00
Work List	Dilution Factor		1.00
00041354	Digest Dilution Factor		5.512E-03
Test Code	Sample Count Rate in CPM		12.78
TRITIUM	Instrument Fractional Efficiency		0.2718
Matrix	Count Time in Minutes		50
SOLID	Background Count Rate in CPM		14.38
Rerun	Background Efficiency		0.2691
0	Relative Percent Counting Uncertainty		90.29
Sample Prep	Detection Limit		9.44
S13T004281-001	Critical Level Lc (CPM)		1.26
Sample #	Rmax Level (CPM)		-0.52
S13T004281	Tritium Concentration in uCi/g	<	3.78E-04
Instrument Code	Lc, Rmax, or Rs, (Sample Rate) as appropriate (CPM)		1.26
WC74082			
Data Entry By			
RWK			
Analyst			
AKH			
Date Completed			
5/21/2013			
Analysis Date			
5/21/2013			
Analysis Time			
2:40 PM			

Procedure using this Form*: **LA-508-121 G-0**

* The specific formulae used in the calculations for this spreadsheet can be found in the applicable procedure, as identified on the worklist.

Specification			
C109 CLO	**HAZQUARD Concentration**	=	-5.25E-04
Units	**Tritium Concentration in uCi/g**	<	3.78E-04
uCi/g	**Detection Limit in uCi/g**		3.78E-04
	Relative Percent Counting Uncertainty		90.29

Tritium Sample Template 2.0

Printed at: 10:37:11 PM 5/21/2013 Version: 2.01

Workbook Page SAMPLE 7

Tritium

			SAMPLE
Type	Disintegrations per minute from Counter		-7.14
SAMPLE	Sample Volume in mL		1.00
Work List	Dilution Factor		1.00
00041354	Digest Dilution Factor		5.666E-03
Test Code	Sample Count Rate in CPM		12.60
TRITIUM	Instrument Fractional Efficiency		0.2722
Matrix	Count Time in Minutes		50
SOLID	Background Count Rate in CPM		14.38
Rerun	Background Efficiency		0.2691
0	Relative Percent Counting Uncertainty		80.89
Sample Prep	Detection Limit		9.43
S13T004308-001	Critical Level Lc (CPM)		1.26
Sample #	Rmax Level (CPM)		-0.73
S13T004308	Tritium Concentration in uCi/g	<	3.67E-04
Instrument Code	Lc, Rmax, or Rs, (Sample Rate) as appropriate (CPM)		1.26
WC74082			
Data Entry By			
RWK			
Analyst			
AKH			
Date Completed			
5/21/2013			
Analysis Date			
5/21/2013			
Analysis Time			
2:40 PM			
Specification	**HAZQUARD Concentration**	=	-5.68E-04
C109 CLO	**Tritium Concentration in uCi/g**	<	3.67E-04
Units	**Detection Limit in uCi/g**		3.67E-04
uCi/g	**Relative Percent Counting Uncertainty**		80.89

Procedure using this Form*: **LA-508-121 G-0**

* The specific formulae used in the calculations for this spreadsheet can be found in the applicable procedure, as identified on the worklist.

Tritium Sample Template 2.0

Printed at: 10:37:31 PM 5/21/2013 Version: 2.01

LABCORE Completed Batch Report for Batch# 00041256

Analyst: LaPlant, Gary **Book#:**

Instrument: LE-BAL-091

Method: WATER DIGEST, LA-504-101 Rev/Mod N-0

Specification: C109 CLO

Prep Batch: N/A

Batch Comment:

C109 CLO for Water Digest. gll

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
1	BLNK-PREP	S1305160015			W		Dose Rate(1)	SOLID		<0.5				mRem/hr			
1	BLNK-PREP	S1305160015			W		Digest Factor(1)	SOLID		0.005308				g / mL			
2	SAMPLE	S13T004253			W		Dose Rate(1)	SOLID		46				mRem/hr			
2	SAMPLE	S13T004253			W		Digest Factor(1)	SOLID		0.005308				g / mL			
3	DUP	S1305160016	S13T004253		W		Dose Rate(1)	SOLID		46				mRem/hr			
3	DUP	S1305160016	S13T004253		W		Digest Factor(1)	SOLID		0.005034				g / mL			
4	SAMPLE	S13T004281			W		Dose Rate(1)	SOLID		23				mRem/hr			
4	SAMPLE	S13T004281			W		Digest Factor(1)	SOLID		0.005512				g / mL			
5	SAMPLE	S13T004308			W		Dose Rate(1)	SOLID		23				mRem/hr			
5	SAMPLE	S13T004308			W		Digest Factor(1)	SOLID		0.005666				g / mL			

Comments Section:

Data Flagger Status:
Flagger Not Run

Final Page for Batch# 00041256

Reviewer Signature 24 Jun 13 Date

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041256

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Method	Customer Id	Specification
1	S1305160015	BLNK-PREP			WATER DIGEST		
2	S13T004253	SAMPLE		20130402	WATER DIGEST	9C-13-Comp A	C109 CLO
3	S1305160016	DUP	S13T004253		WATER DIGEST		
4	S13T004281	SAMPLE		20130402	WATER DIGEST	9C-13-Comp B	C109 CLO
5	S13T004308	SAMPLE		20130402	WATER DIGEST	9C-13-Comp C	C109 CLO

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

* = Rejected Analyte
N, A = Non-reported Analyte

5/16/2013 9:01:10AM
IncompleteBatchShort Version 2.7.29
batchreports 2.7.32

LABCORE Data Entry Template for Batch# 00041256

Analyst: h0074758 Standard ID / Book#: N/A
Instrument: LE-BAL-091
Method: WATER DIGEST, LA-544-113 Rev/Mod A-8
Prep Batch: N/A
Batch Comment:
C109 CLO for Water Digest. gll
CACN:3A.26

S	Type	Sample	R	A	Matrix	Group#	Project
1	BLNK-PREP	S1305160015		W	SOLID		
2	SAMPLE	S13T004253		W	SOLID	20130402	C109 CLO
3	DUP	S1305160016		W	SOLID		
4	SAMPLE	S13T004281		W	SOLID	20130402	C109 CLO
5	SAMPLE	S13T004308		W	SOLID	20130402	C109 CLO

Final Page for Batch# 00041256

Analyst Signature 5-16-13 Date
Data Entry Signature 5-16-13 Date

ADO

Data Entry Comments:

S = Batch Slot Number, R = Retest Number, A = Aliquot Code.

ATL	DIGESTION BATCH LIST DATA COLLECTION FORM

○ LA-544-101 Rev _____ ◉ LA-544-113 Rev A-0 ○ _____ (Other) Rev _____

○ LA-549-133 Rev _____ ○ LA-549-141 Rev _____

Batch #: 41256 Analyst: gll Date: 5/16/2013

(Pipette #); Pipette ID; Volume Range or Fixed Volume; Check box if pipette passes visual verification:

(1) N/A (Range/Vol: N/A) ☐

(2) N/A (Range/Vol: N/A) ☐

(3) N/A (Range/Vol: N/A) ☐

Balance ID; Date of balance verification:

LE-BAL-091 (Verification Date: 5/16/2013)

○ Spike / ○ Carrier / ○ Tracer # N/A Vol N/A Pip # N/A

○ Spike / ○ Carrier / ○ Tracer # N/A Vol N/A Pip # N/A

○ Spike / ○ Carrier / ○ Tracer # N/A Vol N/A Pip # N/A

Special Instructions:

Weigh approximately 0.25 g to 50 mL. gll

Sample Type	Digest Sample #	Parent Sample #	Sample Weight (g)	Final Volume (mL)	Dose Rate (mRem/hr)
Blank Prep	S1305160015	N/A	0.2654	50	<0.5
Sample	S13T004253	S13T004246	0.2654	50	46
Duplicate	S1305160016	S13T004246	0.2517	50	46
Sample	S13T004281	S13T004274	0.2756	50	23
Sample	S13T004308	S13T004301	0.2833	50	23

Comments:

C109 CLO for Water Digest. gll

Digest Appearance: CLEAR / COLORLESS. NO SOLIDS AT

A-6005-290 (REV 2)

LABCORE Completed Batch Report for Batch# 00041363

Analyst: Karch, Katharine **Book#:** SEE BENCH SHEET

Instrument: GCECD1 for PCB's

Method: PCB ADT-2, LA-523-140 Rev/Mod H-0-A

Specification: C109 CLO

Prep Batch: 00041313

Batch Comment:

PCB by ASE extraction on C-109 CLO. RJB, KEK

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
Sample Sequence 1																	
1	BLNK	S1305200001		0 0	O		Aroclor-1016	SOLID		<4.3360E+01			43.36	ug/Kg			U
1	BLNK	S1305200001		0 0	O		Aroclor-1221	SOLID		<7.1680E+00			7.168	ug/Kg			U
1	BLNK	S1305200001		0 0	O		Aroclor-1232	SOLID		<1.2160E+01			12.16	ug/Kg			U
1	BLNK	S1305200001		0 0	O		Aroclor-1242	SOLID		<2.8976E+01			28.976	ug/Kg			U
1	BLNK	S1305200001		0 0	O		Aroclor-1248	SOLID		<1.6392E+01			16.392	ug/Kg			U
1	BLNK	S1305200001		0 0	O		Aroclor-1254	SOLID		<1.0504E+01			10.504	ug/Kg			U
1	BLNK	S1305200001		0 0	O		Aroclor-1260	SOLID		<1.6976E+01			16.976	ug/Kg			U
1	BLNK	S1305200001		0 0	O		Tetrachloro-m-xylene	SOLID	160	1.1370E+02				ug/Kg	71.062	% Recovery	
1	BLNK	S1305200001		0 0	O		Decachlorobiphenyl	SOLID	160	1.4420E+02				ug/Kg	90.125	% Recovery	
Sample Sequence 2																	
2	LCS	S1305200002		0 0	O		Aroclor-1254	SOLID	400	3.3890E+02			10.504	ug/Kg	84.725	% Recovery	
2	LCS	S1305200002		0 0	O		Tetrachloro-m-xylene	SOLID	160	1.3320E+02				ug/Kg	83.25	% Recovery	
2	LCS	S1305200002		0 0	O		Decachlorobiphenyl	SOLID	160	1.5380E+02				ug/Kg	96.125	% Recovery	
Sample Sequence 3																	
3	SAMPLE	S13T004248		0 0	O		Aroclor-1016	SOLID	N/A	<4.9952E+01			49.952	ug/Kg			U
3	SAMPLE	S13T004248		0 0	O		Aroclor-1221	SOLID	N/A	<8.2577E+00			8.2577	ug/Kg			U
3	SAMPLE	S13T004248		0 0	O		Aroclor-1232	SOLID	N/A	<1.4009E+01			14.009	ug/Kg			U
3	SAMPLE	S13T004248		0 0	O		Aroclor-1242	SOLID	N/A	<3.3381E+01			33.381	ug/Kg			U
3	SAMPLE	S13T004248		0 0	O		Aroclor-1248	SOLID	N/A	<1.8884E+01			18.884	ug/Kg			U
3	SAMPLE	S13T004248		0 0	O		Aroclor-1254	SOLID	N/A	<1.2101E+01			12.101	ug/Kg			U
3	SAMPLE	S13T004248		0 0	O		Aroclor-1260	SOLID	N/A	<1.9557E+01			19.557	ug/Kg			U
3	SAMPLE	S13T004248		0 0	O		Tetrachloro-m-xylene	SOLID	184.3246	1.2200E+02				ug/Kg	66.188	% Recovery	
3	SAMPLE	S13T004248		0 0	O		Decachlorobiphenyl	SOLID	184.3246	1.7100E+02				ug/Kg	92.771	% Recovery	
Sample Sequence 4																	
4	DUP	S1305200003	S13T004248	0 0	O		Aroclor-1016	SOLID	<4.9952E+01	<4.9688E+01			49.688	ug/Kg			U
4	DUP	S1305200003	S13T004248	0 0	O		Aroclor-1221	SOLID	<8.2577E+00	<8.2141E+00			8.2141	ug/Kg			U
4	DUP	S1305200003	S13T004248	0 0	O		Aroclor-1232	SOLID	<1.4009E+01	<1.3935E+01			13.935	ug/Kg			U
4	DUP	S1305200003	S13T004248	0 0	O		Aroclor-1242	SOLID	<3.3381E+01	<3.3205E+01			33.205	ug/Kg			U
4	DUP	S1305200003	S13T004248	0 0	O		Aroclor-1248	SOLID	<1.8884E+01	<1.8784E+01			18.784	ug/Kg			U
4	DUP	S1305200003	S13T004248	0 0	O		Aroclor-1254	SOLID	<1.2101E+01	<1.2037E+01			12.037	ug/Kg			U
4	DUP	S1305200003	S13T004248	0 0	O		Aroclor-1260	SOLID	<1.9557E+01	<1.9453E+01			19.453	ug/Kg			U

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041363

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
4	DUP	S1305200003	S13T004248	0 0	O		Tetrachloro-m-xylene	SOLID	1.2200E+02	1.2170E+02				ug/Kg	0.28364	% RPD	
4	DUP	S1305200003	S13T004248	0 0	O		Decachlorobiphenyl	SOLID	1.7100E+02	1.7070E+02				ug/Kg	0.35508	% RPD	
Sample Sequence 5																	
5	MS	S1305200004	S13T004248	0 0	O		Aroclor-1254	SOLID	480.7198	3.9760E+02			12.624	ug/Kg	82.709	% Recovery	
5	MS	S1305200004	S13T004248	0 0	O		Tetrachloro-m-xylene	SOLID	192.2879	1.2280E+02				ug/Kg	63.863	% Recovery	
5	MS	S1305200004	S13T004248	0 0	O		Decachlorobiphenyl	SOLID	192.2879	1.8060E+02				ug/Kg	93.922	% Recovery	
Sample Sequence 6																	
6	MSD	S1305200005	S13T004248	0 0	O		Aroclor-1254	SOLID	459.0674	3.8320E+02			12.055	ug/Kg	83.474	% Recovery	
															0.92067	% RPD	
6	MSD	S1305200005	S13T004248	0 0	O		Tetrachloro-m-xylene	SOLID	183.6269	1.2070E+02				ug/Kg	65.731	% Recovery	
															2.8828	% RPD	
6	MSD	S1305200005	S13T004248	0 0	O		Decachlorobiphenyl	SOLID	183.6269	1.5920E+02				ug/Kg	86.698	% Recovery	
															7.9991	% RPD	
Sample Sequence 7																	
7	SAMPLE	S13T004276		0 0	O		Aroclor-1016	SOLID	N/A	<5.8893E+01			58.893	ug/Kg			U
7	SAMPLE	S13T004276		0 0	O		Aroclor-1221	SOLID	N/A	<9.7358E+00			9.7358	ug/Kg			U
7	SAMPLE	S13T004276		0 0	O		Aroclor-1232	SOLID	N/A	<1.6516E+01			16.516	ug/Kg			U
7	SAMPLE	S13T004276		0 0	O		Aroclor-1242	SOLID	N/A	<3.9356E+01			39.356	ug/Kg			U
7	SAMPLE	S13T004276		0 0	O		Aroclor-1248	SOLID	N/A	<2.2264E+01			22.264	ug/Kg			U
7	SAMPLE	S13T004276		0 0	O		Aroclor-1254	SOLID	N/A	<1.4267E+01			14.267	ug/Kg			U
7	SAMPLE	S13T004276		0 0	O		Aroclor-1260	SOLID	N/A	<2.3057E+01			23.057	ug/Kg			U
7	SAMPLE	S13T004276		0 0	O		Tetrachloro-m-xylene	SOLID	217.3169	1.4270E+02				ug/Kg	65.664	% Recovery	
7	SAMPLE	S13T004276		0 0	O		Decachlorobiphenyl	SOLID	217.3169	1.9300E+02				ug/Kg	88.81	% Recovery	
Sample Sequence 8																	
8	SAMPLE	S13T004303		0 0	O		Aroclor-1016	SOLID	N/A	<6.3136E+01			63.136	ug/Kg			U
8	SAMPLE	S13T004303		0 0	O		Aroclor-1221	SOLID	N/A	<1.0437E+01			10.437	ug/Kg			U
8	SAMPLE	S13T004303		0 0	O		Aroclor-1232	SOLID	N/A	<1.7706E+01			17.706	ug/Kg			U
8	SAMPLE	S13T004303		0 0	O		Aroclor-1242	SOLID	N/A	<4.2192E+01			42.192	ug/Kg			U
8	SAMPLE	S13T004303		0 0	O		Aroclor-1248	SOLID	N/A	<2.3868E+01			23.868	ug/Kg			U
8	SAMPLE	S13T004303		0 0	O		Aroclor-1254	SOLID	N/A	<1.5295E+01			15.295	ug/Kg			U
8	SAMPLE	S13T004303		0 0	O		Aroclor-1260	SOLID	N/A	<2.4718E+01			24.718	ug/Kg			U
8	SAMPLE	S13T004303		0 0	O		Tetrachloro-m-xylene	SOLID	232.9736	1.5760E+02				ug/Kg	67.647	% Recovery	
8	SAMPLE	S13T004303		0 0	O		Decachlorobiphenyl	SOLID	232.9736	2.2190E+02				ug/Kg	95.247	% Recovery	

Comments Section:

Data Flagger Status:
Flagging Completed

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041363

Final Page for Batch# 00041363

Carol J. Ojinen 5/29/13
Analyst Signature Date

Data Entry Signature 5-28-13
Data Entry Signature Date

Leslie P. Miller 5-29-13
Reviewer Signature Date

PC: Julie Osborn 7/12/13

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041363

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Method	Customer Id	Specification
1	S1305200001	BLNK			PCB ADT-2		
2	S1305200002	LCS			PCB ADT-2		
3	S13T004248	SAMPLE		20130402	PCB ADT-2	9C-13-Comp A	C109 CLO
4	S1305200003	DUP	S13T004248		PCB ADT-2		
5	S1305200004	MS	S13T004248		PCB ADT-2		
6	S1305200005	MSD	S13T004248		PCB ADT-2		
7	S13T004276	SAMPLE		20130402	PCB ADT-2	9C-13-Comp B	C109 CLO
8	S13T004303	SAMPLE		20130402	PCB ADT-2	9C-13-Comp C	C109 CLO

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

* = Rejected Analyte
N, A = Non-reported Analyte

5/23/2013 8:58:03AM
CompleteBatch Version 2.7.32
batchreports 2.7.32

LABCORE Completed Batch Report for Batch# 00041313

Analyst: Karch, Katharine

Book#: See Bench sheet

Instrument: ASE EXTRACTOR 2 (R2D2)

Method: ORGANIC EXT.-SOLIDS by ASE, LA-523-144 Rev/Mod E-0

Specification: C109 CLO

Prep Batch: N/A

Batch Comment:

C109 CLO, PCB SOL by ASE, Group #20130402

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
1	BLNK	S1305200001			O		Extraction Complete	SOLID		Complete							
2	LCS	S1305200002			O		Extraction Complete	SOLID		Complete					N/A		
3	SAMPLE	S13T004248			O		Extraction Complete	SOLID	N/A	Complete							
4	DUP	S1305200003	S13T004248		O		Extraction Complete	SOLID	Complete	Complete							
5	MS	S1305200004	S13T004248		O		Extraction Complete	SOLID		Complete					N/A		
6	MSD	S1305200005	S13T004248		O		Extraction Complete	SOLID		Complete					N/A		
7	SAMPLE	S13T004276			O		Extraction Complete	SOLID	N/A	Complete							
8	SAMPLE	S13T004303			O		Extraction Complete	SOLID	N/A	Complete							

Comments Section:

Data Flagger Status:
Flagger Not Run

Final Page for Batch# 00041313

Katherine E Karch 5/23/13
Analyst Signature **Date**

Data Entry Signature 5-23-13 **Date**

Reviewer Signature 5/23/13 **Date**

PC: Julie Osborn 7/12/13

LABCORE Completed Batch Report for Batch# 00041313

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Method	Customer Id	Specification
1	S1305200001	BLNK			ORGANIC EXT.-SO		
2	S1305200002	LCS			ORGANIC EXT.-SO		
3	S13T004248	SAMPLE		20130402	ORGANIC EXT.-SO	9C-13-Comp A	C109 CLO
4	S1305200003	DUP	S13T004248		ORGANIC EXT.-SO		
5	S1305200004	MS	S13T004248		ORGANIC EXT.-SO		
6	S1305200005	MSD	S13T004248		ORGANIC EXT.-SO		
7	S13T004276	SAMPLE		20130402	ORGANIC EXT.-SO	9C-13-Comp B	C109 CLO
8	S13T004303	SAMPLE		20130402	ORGANIC EXT.-SO	9C-13-Comp C	C109 CLO

222-S LABORATORY
Discussion of PCB Analysis
C109 CL0
Analytical Batch: 41363
Group: 20130402

Sample Information:

Extracts for three PCB analyses were generated from solid samples. They were sampled on 5/7/2013 and 5/8/2013. Customer ID numbers (ATL PCB extraction sample #) are as follows: 9C-13-Comp A (S13T004248), 9C-13-Comp B (S13T004276), and 9C-13-Comp C (S13T004303).
Extractions were performed in accordance with LA-523-144 Rev E-0. Analysis was performed in accordance with LA-523-140 Rev. H-0-A.

Extraction:

Extraction was performed on May 20, 2013.

Analysis:

The analysis was performed on May 22, 2013 with the last samples completing on May 23, 2013

Quality Control

- Initial Calibration was within acceptance criteria.
- Opening and closing CCVs were within acceptance criteria.
- Sample Prep Batch (#41313)
    - Blank
        - No target analytes found above the MDLs.
        - TCX and DCB were within SPC acceptance criteria.
    - LCS
        - Spiked with Aroclor 1254. Recovery of the Aroclor was 85.7%, which is within ASE extraction SPC Limits of 57 to 117%. This is also within Tank Sampling Analysis Plan RPP-PLAN-53814, Rev 0 limits of 70 to130%.
        - TCX and DCB were within SPC acceptance criteria.
    - Duplicate
        - A Duplicate was requested for this sample. The sample and duplicate did not have any Aroclors above MDL.
        - TCX and DCB were within acceptance criteria.
    - MS/MSD
        - In addition to a sample duplicate, a matrix spike and a matrix spike duplicate were requested for this set. The MS (recovery of 82.7%) and the MSD (recovery 83.5%) meet the TSAP requested limits of 70 to 130%. The %RPD of <1% also meets the limits of ≤30%.
        - TCX and DCB were within SPC acceptance criteria.

Sample Results

- Aroclor MDLs (adjusted for sample size and moisture content) ranged from 12.1 µg/Kg to 15.3 µg/Kg for Aroclor1254. The TSAP lists a dry weight basis detection limit of 0.05 µg/g which is equivalent to 50 µg/Kg. All Aroclors meet detection limits except for Aroclor 1016 for samples S13T004276 and S13T004303 which had detection limits of 58.9 µg/Kg and 63.1 µg/Kg respectively. Sample sizes used (approximately 2.5 to 2.7 grams) were kept small due to ALARA concerns.
- The results were reported on a dry weight basis with TGA being used to determine the amount of moisture in the samples. A copy of the TGA batch reports is included in the supporting data.

- Analytical Batch #41363 (prep batch 41313)
  - S13T004248 (Parent S13T004244 / Composite A):
    - No Aroclors identified.
    - TCX and DCB were within SPC acceptance criteria.
  - S13T004248 DUP (Parent S13T004244 / Composite A):
    - No Aroclors identified.
      TCX and DCB were within SPC acceptance criteria.
  - S13T004276 (Parent S13T004272 / Composite B):
    - No Aroclors identified.
    - TCX and DCB were within SPC acceptance criteria.
  - S13T004303 (Parent S13T004299 / Composite C):
    - No Aroclors identified.
    - TCX and DCB were within SPC acceptance criteria.

ATL	PCB DATA REVIEW CHECKLIST	LA-523-140 Rev H-0-A

Worklist/Project Information: B#41363 / C109 CLO / Group 20130402 Instrument ID : GCECD1

Review Date : 5-23-2013

Review Items	Level 1 Yes	Level 1 No	Level 1 N/A	Level 2	Comments/Samples Affected
Initial Calibration					
1. Is completed ICAL checklist attached?	◉	○	○	☑	
Continuing Calibration (Beginning & Ending)					
1. Does the Aroclor/Surrogates %D meet method criteria?	◉	○	○	☑	
2. Traceability of standards properly documented?	◉	○	○	☑	
3. Manual integrations checked?	○	○	◉	☑	
4. Are retention times within the (calibration) retention time window?	◉	○	○	☑	
Client Samples & QC Sample Results					
1. Is the automated formula shown on the printout correct?	◉	○	○	☑	
2. MDL values checked for correctness?	◉	○	○	☑	
3. Are positive results within calibration range?	◉	○	○	☑	No positive results for field samples
4. Are positive results a good match for Aroclors?	◉	○	○	☑	
5. Dilutions due to PCBs? ☐ Dilutions due to non-PCB? ☐	○	○	◉	☑	No dilutions.
6. LCS within control limits?	◉	○	○	☑	
7. All PCBs in MB < method criteria?	◉	○	○	☑	
8. Are surrogate recoveries for MB and LCS within control limits?	◉	○	○	☑	
9. Are MS/MSD recoveries and RPDs within control limits?	◉	○	○	☑	
10. Are surrogate recoveries for samples within control limits?	◉	○	○	☑	Within SPC Limits for ASE
11. Manual integrations checked?	○	○	◉	☑	No Manual integrations
12. Is appropriate raw data included?	◉	○	○	☑	
13. Are all manually entered data verified?	◉	○	○	☑	
14. Are all flags present (B,J etc.)?	◉	○	○	☑	
15. Is the order of the analysis correct (CCV/Blank, etc.)?	◉	○	○	☑	
16. Is the data package complete - all required bench sheets, forms, etc.?	◉	○	○	☑	

1st Level Data Reviewer : Leslie P. Miller (Signature) Date : 5-23-2013

2nd Level Data Reviewer : (Signature) Date : 5/28/13

A-6005-253 (REV 0)

05/22/2013 WED 09:55 [TX/RX NO 5313] 001

ATL	PCB SOLID EXTRACTION BENCH SHEET

PCB Status: TSCA Regulated PCB

Extraction Procedure: ○ LA-523-138 Rev N/A (SOXHLET) ◉ LA-523-144 Rev E-0 (ASE)

Project: C109 CLO Preparation Batch #: 41313

Extraction START: Date: 5/20/2013 Time: 1547 Extraction FINISH: Date: 5/20/2013 Time: 1747

Extraction Analyst: KEK KEK RJB Balance Used: LE-BAL-016 ☒ (Verified)

Project Manager: Julie Osborn

Concentration: ☐ LA-523-165 Rev N/A ☒ LA-523-167 Rev A-0

Sample Number	Parent Sample #	Mass (g)	Bar Code #	Comments	Final Volume
Blank	N/A	2.5	3249		2 mL Hexane
LCS	N/A	2.5	3250		2 mL Hexane
S13T004248-SAM	S13T004244	2.632	3251	ORANGE GRANULES	2 mL Hexane
S13T004248-DUP	S13T004244	2.646	3252		2 mL Hexane
S13T004248-MS	S13T004244	2.523	3253		2 mL Hexane
S13T004248-MSD	S13T004244	2.642	3254	USED 5902	2 mL Hexane
S13T004276-SAM	S13T004272	2.718	3255	ORANGE CLAY LIKE	2 mL Hexane
S13T004303-SAM	S13T004299	2.547	3256	ORANGE GOOP	2 mL Hexane
Check Standard	N/A	N/A	3257	Amount of STD: 0.0125 mL SURR: 0.0125 mL	1 mL Hexane

Analysis Procedure: LA-523-140 Rev H-0-A Analytical Batch #: 41363

Analysis Analyst: Carol J. Opinen

Comments & Observations:

GRP: 20130402

Centrifuge Tube Verification- Balance Used: LE-BAL-078 Verified ✓

Want 2mL x 0.997770 = 1.99554 (at 22 °C)

Observed 1.9782g / 1.99554g x 100 = 99.1 % Recovery

RJB Pass 5/21/2013

Spike-KEK, Blow Down-RJB

Alpha/Beta mounts surveyed by: S. Kolek 5/21/2013

Samples split out and ran on GCECD #1. CJO 5-22-13.

Standard	Vol (mL)	Id #	Cat #	Date Opened	Exp. Date	Concentration
DCB/TCX (Surr)	0.025	HNF-N-526-2-4.03	N/A	3/19/13 CJO	9/19/2013	16 ug/mL in Acetone
AR-1254 (matrix spike)	0.025	A 073449	56530	3/16/13 KEK	4/2017	40 ug/mL in Acetone

KEK 5/20/13 ~~Methylene Chloride~~ Lot # 51334 Exp. Date: 4/16/2017 Hexane Lot # L08E07 Exp. Date: 5/31/2013

Acetone

A-6005-540 (REV 4)

05/22/2013 09:16 15093721142 2225/8C PAGE 01/03

Macro: upload2lims.mac, Revision: 0.2
Report Date: 05/23/2013

Data File: //apwscf02/slab/chem/gcecd1.i/2013/130522c109.b/05220004_BLAN
Method File: \\apwscf02\slab\chem\gcecd1.i\2013\130522c109.b\pcbECDAPR25.m

LIMS Upload Report

Lab Sample ID:	BLANK	Instrument ID:	gcecd1.i
Client Sample ID:	BLANK	Analyst:	cjo
SDG:	C109 CLO	Analysis Date:	22-MAY-2013 12:05
Lab Prep Batch:	41313	ALS Bottle:	12
Protocol:	@PCBDRY	Replicate:	0
Sample Fraction:	PEST	Dilution Factor:	1
Sample Type:	BLANK	Final Concentration Units:	ug/Kg
Matrix:	SOIL	Matrix Type:	SOLID
Actual Sample Size:	2.5	Expected Sample Size:	2.5
Actual Units:	g	Expected Units:	g

For a PEST, LOW Conc., SOLID sample,
the Method formula used was: Conc. = Amount * DF * Uf * Vt/(Vi * Ws * (100-M)/100).

The Macro formula used was: Conc. = Amount * DF * Uf * Vt/(Vi * Ws * (100 - M)/100),
where DF = 1, UF = 1, Vt = 2000, Vi = 1, Ws = 2.5, and M = 0.

-	CAS Number	Compound Name	RT	Spike	Adj. MDL	LOQ	Final Conc	Flag	Pct. Rec.
	12674-11-2	Aroclor-1016			43.36000	433.6	ND	U	
	11104-28-2	Aroclor-1221			7.168000	71.68	ND	U	
	11141-16-5	Aroclor-1232			12.16000	121.6	ND	U	
	53469-21-9	Aroclor-1242			28.97599	289.76	ND	U	
	12672-29-6	Aroclor-1248			16.39200	163.92	ND	U	
	11097-69-1	Aroclor-1254			10.50399	105.04	ND	U	
	11096-82-5	Aroclor-1260			16.97600	169.76	ND	U	
$	2051-24-3	Decachlorobiphenyl (DC	23.60101	160			144.2		90.10320
$	877-09-8	Tetrachloro-m-Xylene	10.60935	160			113.7		71.04843

Key: $ = Surrogate, T = TIC, K = Spike, and M = Summary

Macro: upload2lims.mac, Revision: 0.2
Report Date: 05/23/2013

Data File: //apwscf02/slab/chem/gcecd1.i/2013/130522c109.b/05220005_LCS.
Method File: \\apwscf02\slab\chem\gcecd1.i\2013\130522c109.b\pcbECDAPR25.m

LIMS Upload Report

Lab Sample ID:	LCS	Instrument ID:	gcecd1.i
Client Sample ID:	LCS	Analyst:	cjo
SDG:	C109 CLO	Analysis Date:	22-MAY-2013 12:53
Lab Prep Batch:	41313	ALS Bottle:	13
Protocol:	@PCBDRY	Replicate:	0
Sample Fraction:	PEST	Dilution Factor:	1
Sample Type:	LCS	Final Concentration Units:	ug/Kg
Matrix:	SOIL	Matrix Type:	SOLID
Actual Sample Size:	2.5	Expected Sample Size:	2.5
Actual Units:	g	Expected Units:	g

For a PEST, LOW Conc., SOLID sample,
the Method formula used was: Conc. = Amount * DF * Uf * Vt/(Vi * Ws * (100-M)/100).

The Macro formula used was: Conc. = Amount * DF * Uf * Vt/(Vi * Ws * (100 - M)/100),
where DF = 1, UF = 1, Vt = 2000, Vi = 1, Ws = 2.5, and M = 0.

-	CAS Number	Compound Name	RT	Spike	Adj. MDL	LOQ	Final Conc	Flag	Pct. Rec.
	12674-11-2	Aroclor-1016			43.36000	433.6	ND	U	
	11104-28-2	Aroclor-1221			7.168000	71.68	ND	U	
	11141-16-5	Aroclor-1232			12.16000	121.6	ND	U	
	53469-21-9	Aroclor-1242			28.97599	289.76	ND	U	
	12672-29-6	Aroclor-1248			16.39200	163.92	ND	U	
K	11097-69-1	Aroclor-1254	14.35845	400	10.50399	105.04	338.9		84.725
	11096-82-5	Aroclor-1260			16.97600	169.76	ND	U	
$	2051-24-3	Decachlorobiphenyl (DC	23.60178	160			153.8		96.09915
$	877-09-8	Tetrachloro-m-Xylene	10.61011	160			133.2		83.24955

Key: $ = Surrogate, T = TIC, K = Spike, and M = Summary

Macro: upload2lims.mac, Revision: 0.2
Report Date: 05/23/2013

Data File: //apwscf02/slab/chem/gcecd1.i/2013/130522c109.b/05220007_0424
Method File: \\apwscf02\slab\chem\gcecd1.i\2013\130522c109.b\pcbECDAPR25.m

LIMS Upload Report

Lab Sample ID:	S13T004248	Instrument ID:	gcecd1.i
Client Sample ID:	S13T004248	Analyst:	cjo
SDG:	C109 CLO	Analysis Date:	22-MAY-2013 14:28
Lab Prep Batch:	41313	ALS Bottle:	14
Protocol:	@PCBDRY	Replicate:	0
Sample Fraction:	PEST	Dilution Factor:	1
Sample Type:	SAMPLE	Final Concentration Units:	ug/Kg
Matrix:	SOIL	Matrix Type:	SOLID
Actual Sample Size:	2.632	Expected Sample Size:	2.5
Actual Units:	g	Expected Units:	g

For a PEST, LOW Conc., SOLID sample,
the Method formula used was: Conc. = Amount * DF * Uf * Vt/(Vi * Ws * (100-M)/100).

The Macro formula used was: Conc. = Amount * DF * Uf * Vt/(Vi * Ws * (100 - M)/100),
where DF = 1, UF = 1, Vt = 2000, Vi = 1, Ws = 2.632, and M = 17.55.

-	CAS Number	Compound Name	RT	Spike	Adj. MDL	LOQ	Final Conc	Flag	Pct. Rec.
=	==========	====================	========	=========	========	=========	==========	=====	=========
	12674-11-2	Aroclor-1016			49.95198	499.5198	ND	U	
	11104-28-2	Aroclor-1221			8.257745	82.57744	ND	U	
	11141-16-5	Aroclor-1232			14.00867	140.0867	ND	U	
	53469-21-9	Aroclor-1242			33.38119	333.8119	ND	U	
	12672-29-6	Aroclor-1248			18.88406	188.8406	ND	U	
	11097-69-1	Aroclor-1254			12.10091	121.0091	ND	U	
	11096-82-5	Aroclor-1260			19.55684	195.5684	ND	U	
$	2051-24-3	Decachlorobiphenyl (DC	23.60116	184.3246			171		92.77213
$	877-09-8	Tetrachloro-m-Xylene	10.60783	184.3246			122		66.20979

Key: $ = Surrogate, T = TIC, K = Spike, and M = Summary

Macro: upload2lims.mac, Revision: 0.2
Report Date: 05/23/2013

Data File: //apwscf02/slab/chem/gcecd1.i/2013/130522c109.b/05220009_0424
Method File: \\apwscf02\slab\chem\gcecd1.i\2013\130522c109.b\pcbECDAPR25.m

LIMS Upload Report

Lab Sample ID:	S13T004248Dup	Instrument ID:	gcecd1.i
Client Sample ID:	S13T004248Dup	Analyst:	cjo
SDG:	C109 CLO	Analysis Date:	22-MAY-2013 16:02
Lab Prep Batch:	41313	ALS Bottle:	15
Protocol:	@PCBDRY	Replicate:	0
Sample Fraction:	PEST	Dilution Factor:	1
Sample Type:	SAMPLE	Final Concentration Units:	ug/Kg
Matrix:	SOIL	Matrix Type:	SOLID
Actual Sample Size:	2.646	Expected Sample Size:	2.5
Actual Units:	g	Expected Units:	g

For a PEST, LOW Conc., SOLID sample,
the Method formula used was: Conc. = Amount * DF * Uf * Vt/(Vi * Ws * (100-M)/100).

The Macro formula used was: Conc. = Amount * DF * Uf * Vt/(Vi * Ws * (100 - M)/100),
where DF = 1, UF = 1, Vt = 2000, Vi = 1, Ws = 2.646, and M = 17.55.

-	CAS Number	Compound Name	RT	Spike	Adj. MDL	LOQ	Final Conc	Flag	Pct. Rec.
=	==========	==========	========	=========	========	=========	==========	=====	=========
	12674-11-2	Aroclor-1016			49.68768	496.8768	ND	U	
	11104-28-2	Aroclor-1221			8.214053	82.14053	ND	U	
	11141-16-5	Aroclor-1232			13.93455	139.3455	ND	U	
	53469-21-9	Aroclor-1242			33.20457	332.0457	ND	U	
	12672-29-6	Aroclor-1248			18.78414	187.8414	ND	U	
	11097-69-1	Aroclor-1254			12.03688	120.3688	ND	U	
	11096-82-5	Aroclor-1260			19.45337	194.5337	ND	U	
$	2051-24-3	Decachlorobiphenyl (DC	23.59988	183.3493			170.7		93.08855
$	877-09-8	Tetrachloro-m-Xylene	10.60821	183.3493			121.7		66.36606

Key: $ = Surrogate, T = TIC, K = Spike, and M = Summary

Macro: upload2lims.mac, Revision: 0.2
Report Date: 05/23/2013

Data File: //apwscf02/slab/chem/gcecd1.i/2013/130522c109.b/05220011_4248
Method File: \\apwscf02\slab\chem\gcecd1.i\2013\130522c109.b\pcbECDAPR25.m

LIMS Upload Report

Lab Sample ID:	S13T004248MS	Instrument ID:	gcecd1.i
Client Sample ID:	S13T004248MS	Analyst:	cjo
SDG:	C109 CLO	Analysis Date:	22-MAY-2013 17:37
Lab Prep Batch:	41313	ALS Bottle:	16
Protocol:	@PCBDRTY	Replicate:	0
Sample Fraction:	PEST	Dilution Factor:	1
Sample Type:	MS	Final Concentration Units:	ug/Kg
Matrix:	SOIL	Matrix Type:	SOLID
Actual Sample Size:	2.523	Expected Sample Size:	2.5
Actual Units:	g	Expected Units:	g

For a PEST, LOW Conc., SOLID sample,
the Method formula used was: Conc. = Amount * DF * Uf * Vt/(Vi * Ws * (100-M)/100).

The Macro formula used was: Conc. = Amount * DF * Uf * Vt/(Vi * Ws * (100 - M)/100),
where DF = 1, UF = 1, Vt = 2000, Vi = 1, Ws = 2.523, and M = 17.55.

-	CAS Number	Compound Name	RT	Spike	Adj. MDL	LOQ	Final Conc	Flag	Pct. Rec.
	12674-11-2	Aroclor-1016			52.11003	521.1003	ND	U	
	11104-28-2	Aroclor-1221			8.614500	86.14500	ND	U	
	11141-16-5	Aroclor-1232			14.61388	146.1388	ND	U	
	53469-21-9	Aroclor-1242			34.82334	348.2334	ND	U	
	12672-29-6	Aroclor-1248			19.69990	196.9990	ND	U	
K	11097-69-1	Aroclor-1254	14.35676	480.7198	12.62370	126.2370	397.6		82.70928
	11096-82-5	Aroclor-1260			20.40175	204.0175	ND	U	
$	2051-24-3	Decachlorobiphenyl (DC	23.6001	192.2879			180.6		93.95016
$	877-09-8	Tetrachloro-m-Xylene	10.60843	192.2879			122.8		63.86501

Key: $ = Surrogate, T = TIC, K = Spike, and M = Summary

Macro: upload2lims.mac, Revision: 0.2
Report Date: 05/23/2013

Data File: //apwscf02/slab/chem/gcecd1.i/2013/130522c109.b/05220013_4248
Method File: \\apwscf02\slab\chem\gcecd1.i\2013\130522c109.b\pcbECDAPR25.m

LIMS Upload Report

Lab Sample ID:	S13T004248MSD	Instrument ID:	gcecd1.i
Client Sample ID:	S13T004248MSD	Analyst:	cjo
SDG:	C109 CLO	Analysis Date:	22-MAY-2013 19:11
Lab Prep Batch:	41313	ALS Bottle:	17
Protocol:	@PCBDRY	Replicate:	0
Sample Fraction:	PEST	Dilution Factor:	1
Sample Type:	MSD	Final Concentration Units:	ug/Kg
Matrix:	SOIL	Matrix Type:	SOLID
Actual Sample Size:	2.642	Expected Sample Size:	2.5
Actual Units:	g	Expected Units:	g

For a PEST, LOW Conc., SOLID sample,
the Method formula used was: Conc. = Amount * DF * Uf * Vt/(Vi * Ws * (100-M)/100).

The Macro formula used was: Conc. = Amount * DF * Uf * Vt/(Vi * Ws * (100 - M)/100),
where DF = 1, UF = 1, Vt = 2000, Vi = 1, Ws = 2.642, and M = 17.55.

-	CAS Number	Compound Name	RT	Spike	Adj. MDL	LOQ	Final Conc	Flag	Pct. Rec.
	12674-11-2	Aroclor-1016			49.76291	497.6291	ND	U	
	11104-28-2	Aroclor-1221			8.226489	82.26489	ND	U	
	11141-16-5	Aroclor-1232			13.95565	139.5565	ND	U	
	53469-21-9	Aroclor-1242			33.25484	332.5484	ND	U	
	12672-29-6	Aroclor-1248			18.81258	188.1258	ND	U	
K	11097-69-1	Aroclor-1254	14.3578	459.0674	12.05511	120.5511	383.2		83.47356
	11096-82-5	Aroclor-1260			19.48282	194.8282	ND	U	
$	2051-24-3	Decachlorobiphenyl (DC	23.59946	183.6269			159.2		86.67263
$	877-09-8	Tetrachloro-m-Xylene	10.60946	183.6269			120.7		65.72255

Key: $ = Surrogate, T = TIC, K = Spike, and M = Summary

Macro: upload2lims.mac, Revision: 0.2
Report Date: 05/23/2013

Data File: //apwscf02/slab/chem/gcecd1.i/2013/130522c109.b/05220019_4276
Method File: \\apwscf02\slab\chem\gcecd1.i\2013\130522c109.b\pcbECDAPR25.m

LIMS Upload Report

Lab Sample ID:	S13T004276	Instrument ID:	gcecd1.i
Client Sample ID:	S13T004276	Analyst:	cjo
SDG:	C109 CLO	Analysis Date:	22-MAY-2013 23:54
Lab Prep Batch:	41313	ALS Bottle:	18
Protocol:	@PCBDRY	Replicate:	0
Sample Fraction:	PEST	Dilution Factor:	1
Sample Type:	SAMPLE	Final Concentration Units:	ug/Kg
Matrix:	SOIL	Matrix Type:	SOLID
Actual Sample Size:	2.718	Expected Sample Size:	2.5
Actual Units:	g	Expected Units:	g

For a PEST, LOW Conc., SOLID sample,
the Method formula used was: Conc. = Amount * DF * Uf * Vt/(Vi * Ws * (100-M)/100).

The Macro formula used was: Conc. = Amount * DF * Uf * Vt/(Vi * Ws * (100 - M)/100),
where DF = 1, UF = 1, Vt = 2000, Vi = 1, Ws = 2.718, and M = 32.28.

-	CAS Number	Compound Name	RT	Spike	Adj. MDL	LOQ	Final Conc	Flag	Pct. Rec.
=	==========	==========	========	=========	========	=========	==========	=====	=========
	12674-11-2	Aroclor-1016			58.89289	588.9289	ND	U	
	11104-28-2	Aroclor-1221			9.735799	97.35799	ND	U	
	11141-16-5	Aroclor-1232			16.51608	165.1608	ND	U	
	53469-21-9	Aroclor-1242			39.35609	393.5609	ND	U	
	12672-29-6	Aroclor-1248			22.26412	222.6412	ND	U	
	11097-69-1	Aroclor-1254			14.26685	142.6685	ND	U	
	11096-82-5	Aroclor-1260			23.05732	230.5732	ND	U	
$	2051-24-3	Decachlorobiphenyl (DC	23.5987	217.3169			193		88.78846
$	877-09-8	Tetrachloro-m-Xylene	10.60703	217.3169			142.7		65.65572

Key: $ = Surrogate, T = TIC, K = Spike, and M = Summary

Macro: upload2lims.mac, Revision: 0.2
Report Date: 05/23/2013

Data File: //apwscf02/slab/chem/gcecd1.i/2013/130522c109.b/05220021_4303
Method File: \\apwscf02\slab\chem\gcecd1.i\2013\130522c109.b\pcbECDAPR25.m

LIMS Upload Report

Lab Sample ID:	S13T004303	Instrument ID:	gcecd1.i
Client Sample ID:	S13T004303	Analyst:	cjo
SDG:	C109 CLO	Analysis Date:	23-MAY-2013 01:29
Lab Prep Batch:	41313	ALS Bottle:	19
Protocol:	@PCBDRY	Replicate:	0
Sample Fraction:	PEST	Dilution Factor:	1
Sample Type:	SAMPLE	Final Concentration Units:	ug/Kg
Matrix:	SOIL	Matrix Type:	SOLID
Actual Sample Size:	2.547	Expected Sample Size:	2.5
Actual Units:	g	Expected Units:	g

For a PEST, LOW Conc., SOLID sample,
the Method formula used was: Conc. = Amount * DF * Uf * Vt/(Vi * Ws * (100-M)/100).

The Macro formula used was: Conc. = Amount * DF * Uf * Vt/(Vi * Ws * (100 - M)/100),
where DF = 1, UF = 1, Vt = 2000, Vi = 1, Ws = 2.547, and M = 32.59.

-	CAS Number	Compound Name	RT	Spike	Adj. MDL	LOQ	Final Conc	Flag	Pct. Rec.
	12674-11-2	Aroclor-1016			63.13584	631.3584	ND	U	
	11104-28-2	Aroclor-1221			10.43721	104.3721	ND	U	
	11141-16-5	Aroclor-1232			17.70599	177.0599	ND	U	
	53469-21-9	Aroclor-1242			42.19151	421.9151	ND	U	
	12672-29-6	Aroclor-1248			23.86814	238.6814	ND	U	
	11097-69-1	Aroclor-1254			15.29471	152.9471	ND	U	
	11096-82-5	Aroclor-1260			24.71849	247.1849	ND	U	
$	2051-24-3	Decachlorobiphenyl (DC	23.5984	232.9736			221.9		95.24111
$	877-09-8	Tetrachloro-m-Xylene	10.60673	232.9736			157.6		67.64914

Key: $ = Surrogate, T = TIC, K = Spike, and M = Summary

2F
SOIL PESTICIDE SURROGATE RECOVERY

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: C109CLO

GC Column(1): RESTEK XTI-5 ID: 0.25 (mm)

	EPA SAMPLE NO.	S1 %REC #	TCX %REC #	S3 %REC #	S4 %REC #	S5 %REC #	S6 %REC #	TOT OUT
01	BLANK	90	71					0
02	LCS	96	83					0
03	S13T004248	93	66					0
04	S13T004248DU	93	66					0
05	S13T004248MS	94	64					0
06	S13T004248MS	87	66					0
07	S13T004303	95	68					0
08	S13T004276	89	66					0
09								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								

ADVISORY
QC LIMITS

S1 = Decachlorobiphenyl (DC (35-140)
S2 (TCX) = Tetrachloro-m-Xylene (30-121)

Column to be used to flag recovery values
* Values outside of QC limits
D Surrogate diluted out

3F

SOIL PESTICIDE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: C109CLO

Matrix Spike - EPA Sample No.: S13T004248

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Aroclor-1254	480.7	0.000	397.6	83	22-128

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Aroclor-1254	459.1	383.2	83	0	30	22-128

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 1 outside limits
Spike Recovery: 0 out of 2 outside limits

COMMENTS: _____

Data File: 05220005_LCS.D
Report Date: 23-May-2013 10:43

WSCF

RECOVERY REPORT

Client Name:
Sample Matrix: SOLID
Lab Smp Id: LCS
Level: LOW
Data Type: GC MULTI COMP
SpikeList File: LCSASE.spk
Sublist File: aroclor.sub
Method File: \\apwscf02\slab\chem\gcecd1.i\2013\130522c109.b\pcbECDAPR25.m
Misc Info:

Client SDG: C109 CLO
Fraction: PEST
Client Smp ID: LCS
Operator: cjo
SampleType: LCS
Quant Type: ESTD

SPIKE COMPOUND	CONC ADDED ug/Kg	CONC RECOVERED ug/Kg	% RECOVERED	LIMITS
8 Aroclor-1254	400.0	338.9	84.72	57-117

SURROGATE COMPOUND	CONC ADDED ug/Kg	CONC RECOVERED ug/Kg	% RECOVERED	LIMITS
$ 1 Tetrachloro-m-Xyle	160.0	133.2	83.25	30-121
$ 11 Decachlorobiphenyl	160.0	153.8	96.10	35-140

4C

PESTICIDE METHOD BLANK SUMMARY

EPA SAMPLE NO.

BLANK

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: C109CLO

Lab Sample ID: BLANK Lab File ID: 05220004_BLANK

Matrix (soil/water) SOIL Extraction:(SepF/Cont/Sonc) OTHER

Sulfur Cleanup (Y/N) N Date Extracted: 08/28/12

Date Analyzed (1): 05/22/13 Date Analyzed (2):

Time Analyzed (1): 1205 Time Analyzed (2):

Instrument ID (1): GCECD1 Instrument ID (2):

GC Column (1): RESTEK XTI-5 ID: 0.25(mm) GC Column (2): ID:

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
01	LCS	LCS	05/22/13	
02	S13T004248	S13T004248	05/22/13	
03	S13T004248DU	S13T004248DUP	05/22/13	
04	S13T004248MS	S13T004248MS	05/22/13	
05	S13T004248MS	S13T004248MSD	05/22/13	
06	S13T004303	S13T004303	05/23/13	
07	S13T004276	S13T004276	05/23/13	
08				
09				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				

COMMENTS:

Report Date : 23-May-2013 10:34 Page 1

WSCF

INITIAL CALIBRATION DATA

Start Cal Date : 25-APR-2013 15:49
End Cal Date : 26-APR-2013 23:42
Quant Method : ESTD
Origin : Disabled
Target Version : 4.14
Integrator : Falcon
Method file : \\apwscf02\slab\chem\gcecd1.i\2013\130522c109.b\pcbECDAPR2
Last Edit : 23-May-2013 09:51 LPM
Curve Type : Average

Calibration File Names:
Level 1: \\apwscf02\slab\chem\chem\gcecd1.i\2013\130425Cal.b\04250010Cal1.D
Level 2: \\apwscf02\slab\chem\chem\gcecd1.i\2013\130425Cal.b\04250011Cal2.D
Level 3: \\apwscf02\slab\chem\chem\gcecd1.i\2013\130425Cal.b\04250020AR32.D
Level 4: \\apwscf02\slab\chem\chem\gcecd1.i\2013\130425Cal.b\04250013Cal4.D
Level 5: \\apwscf02\slab\chem\chem\gcecd1.i\2013\130425Cal.b\04250014Cal5.D
Level 6: \\apwscf02\slab\chem\chem\gcecd1.i\2013\130425Cal.b\04250015Cal6.D
Level 7: \\apwscf02\slab\chem\chem\gcecd1.i\2013\130425Cal.b\04250016Cal7.D

Compound	0.10000 Level 1	0.25000 Level 2	0.50000 Level 3	0.75000 Level 4	1.000 Level 5	1.250 Level 6	1.500 Level 7	RRF	% RSD
2 Mix-1016/1260(1)	299650070	297175100	283127668	283431261	284270183	274377218	306877007	289844072	3.975
(2)	119352280	116393520	110035294	109496564	109470142	105698064	117826814	112610383	4.599
(3)	207016310	201569424	191300370	189024992	189976470	185173931	206154445	195745135	4.566
(4)	554582950	577161648	565943778	562966679	573974980	564253061	641666987	577221440	5.088
(5)	236243240	245573692	241878384	238893251	247301102	242507738	275396790	246827742	5.324
3 Aroclor-1016(1)	+++++	+++++	78101184	+++++	+++++	+++++	+++++	78101184	0.000
(2)	+++++	+++++	261767444	+++++	+++++	+++++	+++++	261767444	0.000
(3)	+++++	+++++	101950066	+++++	+++++	+++++	+++++	101950066	0.000

Report Date : 23-May-2013 10:34

WSCF

INITIAL CALIBRATION DATA

Start Cal Date : 25-APR-2013 15:49
End Cal Date : 26-APR-2013 23:42
Quant Method : ESTD
Origin : Disabled
Target Version : 4.14
Integrator : Falcon
Method file : \\apwscf02\slab\chem\gcecd1.i\2013\130522c109.b\pcbECDAPR2
Last Edit : 23-May-2013 09:51 LPM
Curve Type : Average

Compound	0.10000 Level 1	0.25000 Level 2	0.50000 Level 3	0.75000 Level 4	1.000 Level 5	1.250 Level 6	1.500 Level 7	___ RRF	% RSD
(4)	+++++	+++++	66582710	+++++	+++++	+++++	+++++	66582710	0.000
(5)	+++++	+++++	72629468	+++++	+++++	+++++	+++++	72629468	0.000
4 Aroclor-1221(1)	+++++	+++++	36649022	+++++	+++++	+++++	+++++	36649022	0.000
(2)	+++++	+++++	25367874	+++++	+++++	+++++	+++++	25367874	0.000
(3)	+++++	+++++	84145966	+++++	+++++	+++++	+++++	84145966	0.000
(4)	+++++	+++++	13695922	+++++	+++++	+++++	+++++	13695922	0.000
(5)	+++++	+++++	18270734	+++++	+++++	+++++	+++++	18270734	0.000
5 Aroclor-1232(1)	+++++	+++++	63434194	+++++	+++++	+++++	+++++	63434194	0.000
(2)	+++++	+++++	123304352	+++++	+++++	+++++	+++++	123304352	0.000
(3)	+++++	+++++	32030246	+++++	+++++	+++++	+++++	32030246	0.000
(4)	+++++	+++++	28490232	+++++	+++++	+++++	+++++	28490232	0.000

Report Date : 23-May-2013 10:34

WSCF

INITIAL CALIBRATION DATA

Start Cal Date : 25-APR-2013 15:49
End Cal Date : 26-APR-2013 23:42
Quant Method : ESTD
Origin : Disabled
Target Version : 4.14
Integrator : Falcon
Method file : \\apwscf02\slab\chem\gcecd1.i\2013\130522c109.b\pcbECDAPR2
Last Edit : 23-May-2013 09:51 LPM
Curve Type : Average

Compound	0.10000 Level 1	0.25000 Level 2	0.50000 Level 3	0.75000 Level 4	1.000 Level 5	1.250 Level 6	1.500 Level 7	___ RRF	% RSD
(5)	+++++	+++++	40992598	+++++	+++++	+++++	+++++	40992598	0.000
6 Aroclor-1242(1)	+++++	+++++	49239864	+++++	+++++	+++++	+++++	49239864	0.000
(2)	+++++	+++++	68463514	+++++	+++++	+++++	+++++	68463514	0.000
(3)	+++++	+++++	88509866	+++++	+++++	+++++	+++++	88509866	0.000
(4)	+++++	+++++	57419774	+++++	+++++	+++++	+++++	57419774	0.000
(5)	+++++	+++++	88875116	+++++	+++++	+++++	+++++	88875116	0.000
7 Aroclor-1248(1)	+++++	+++++	135401194	+++++	+++++	+++++	+++++	135401194	0.000
(2)	+++++	+++++	91301840	+++++	+++++	+++++	+++++	91301840	0.000
(3)	+++++	+++++	45553274	+++++	+++++	+++++	+++++	45553274	0.000
(4)	+++++	+++++	71897404	+++++	+++++	+++++	+++++	71897404	0.000
(5)	+++++	+++++	64325780	+++++	+++++	+++++	+++++	64325780	0.000

Report Date : 23-May-2013 10:34 Page 4

WSCF

INITIAL CALIBRATION DATA

Start Cal Date : 25-APR-2013 15:49
End Cal Date : 26-APR-2013 23:42
Quant Method : ESTD
Origin : Disabled
Target Version : 4.14
Integrator : Falcon
Method file : \\apwscf02\slab\chem\gcecd1.i\2013\130522c109.b\pcbECDAPR2
Last Edit : 23-May-2013 09:51 LPM
Curve Type : Average

Compound	0.10000 Level 1	0.25000 Level 2	0.50000 Level 3	0.75000 Level 4	1.000 Level 5	1.250 Level 6	RRF	% RSD
	1.500 Level 7							
8 Aroclor-1254(1)	+++++	+++++	75032656	+++++	+++++	+++++		
	+++++						75032656	0.000
(2)	+++++	+++++	72043110	+++++	+++++	+++++		
	+++++						72043110	0.000
(3)	+++++	+++++	247211768	+++++	+++++	+++++		
	+++++						247211768	0.000
(4)	+++++	+++++	109925454	+++++	+++++	+++++		
	+++++						109925454	0.000
(5)	+++++	+++++	213285166	+++++	+++++	+++++		
	+++++						213285166	0.000
9 Aroclor-1260(1)	+++++	+++++	314497760	+++++	+++++	+++++		
	+++++						314497760	0.000
(2)	+++++	+++++	215587378	+++++	+++++	+++++		
	+++++						215587378	0.000
(3)	+++++	+++++	181632242	+++++	+++++	+++++		
	+++++						181632242	0.000
(4)	+++++	+++++	524415662	+++++	+++++	+++++		
	+++++						524415662	0.000
(5)	+++++	+++++	246302246	+++++	+++++	+++++		
	+++++						246302246	0.000
$ 1 Tetrachloro-m-Xylene	3.723e+09	3.780e+09	3.728e+09	3.762e+09	3.853e+09	3.775e+09		
	4.409e+09						3.861e+09	6.351

Report Date : 23-May-2013 10:34

WSCF

INITIAL CALIBRATION DATA

Start Cal Date : 25-APR-2013 15:49
End Cal Date : 26-APR-2013 23:42
Quant Method : ESTD
Origin : Disabled
Target Version : 4.14
Integrator : Falcon
Method file : \\apwscf02\slab\chem\gcecd1.i\2013\130522c109.b\pcbECDAPR2
Last Edit : 23-May-2013 09:51 LPM
Curve Type : Average

Compound	0.10000 Level 1	0.25000 Level 2	0.50000 Level 3	0.75000 Level 4	1.000 Level 5	1.250 Level 6	___ RRF	% RSD
	1.500 Level 7							
$ 11 Decachlorobiphenyl (DCB)	3.957e+09	4.011e+09	3.974e+09	4.021e+09	4.132e+09	4.079e+09		
	4.829e+09						4.143e+09	7.439

Report Date : 23-May-2013 10:34

WSCF

INITIAL CALIBRATION DATA

Start Cal Date : 25-APR-2013 15:49
End Cal Date : 26-APR-2013 23:42
Quant Method : ESTD
Origin : Disabled
Target Version : 4.14
Integrator : Falcon
Method file : \\apwscf02\slab\chem\gcecd1.i\2013\130522c109.b\pcbECDAPR2
Last Edit : 23-May-2013 09:51 LPM
Curve Type : Average

Average %RSD Results.
Calculated Average %RSD = 5.33466
Maximun Average %RSD = 20.00000
* Passed Average %RSD Test.

Data File: 05220002ccv3.D
Report Date: 23-May-2013 10:43

WSCF

JLM 5/23/13

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: gcecd1.i Injection Date: 22-MAY-2013 10:31
Lab File ID: 05220002ccv3.D Init. Cal. Date(s): 25-APR-2013 26-APR-2013
Analysis Type: ~~WATER~~ SOIL Init. Cal. Times: 15:49 23:42
Lab Sample ID: PCB CCV 3 Quant Type: ESTD
Method: \\apwscf02\slab\chem\gcecd1.i\2013\130522c109.b\pcbECDAPR25.m

COMPOUND	RRF / AMOUNT	RF0.500	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
$ 1 Tetrachloro-m-Xylene	3.861e+09	3.742e+09	0.010	-3.08278	20.00000	Averaged
2 Mix-1016/1260(1)	289844072	305937964	0.010	5.55260	20.00000	Averaged
(2)	112610383	119313522	0.010	5.95251	20.00000	Averaged
(3)	195745135	202649128	0.010	3.52703	20.00000	Averaged
(4)	577221440	603260530	0.010	4.51111	20.00000	Averaged
(5)	246827742	259247624	0.010	5.03180	20.00000	Averaged
$ 11 Decachlorobiphenyl (DCB)	4.143e+09	4.017e+09	0.010	-3.05148	20.00000	Averaged

Data File: 05220015ccv3.D
Report Date: 23-May-2013 10:43

WSCF

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: gcecd1.i Injection Date: 22-MAY-2013 20:46
Lab File ID: 05220015ccv3.D Init. Cal. Date(s): 25-APR-2013 26-APR-2013
Analysis Type: SOIL Init. Cal. Times: 15:49 23:42
Lab Sample ID: ccv3 Quant Type: ESTD
Method: \\apwscf02\slab\chem\gcecd1.i\2013\130522c109.b\pcbECDAPR25.m

COMPOUND	RRF / AMOUNT	RF0.500	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
$ 1 Tetrachloro-m-Xylene	3.861e+09	3.839e+09	0.010	-0.56420	20.00000	Averaged
2 Mix-1016/1260(1)	289844072	316644460	0.010	9.24648	20.00000	Averaged
(2)	112610383	123716538	0.010	9.86246	20.00000	Averaged
(3)	195745135	208054816	0.010	6.28863	20.00000	Averaged
(4)	577221440	619578422	0.010	7.33808	20.00000	Averaged
(5)	246827742	267135888	0.010	8.22766	20.00000	Averaged
$ 11 Decachlorobiphenyl (DCB)	4.143e+09	4.110e+09	0.010	-0.79421	20.00000	Averaged

Data File: 05220017ccv3.D
Report Date: 23-May-2013 10:44

WSCF

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: gcecd1.i Injection Date: 22-MAY-2013 22:20
Lab File ID: 05220017ccv3.D Init. Cal. Date(s): 25-APR-2013 26-APR-2013
Analysis Type: SOIL Init. Cal. Times: 15:49 23:42
Lab Sample ID: ccv3 Quant Type: ESTD
Method: \\apwscf02\slab\chem\gcecd1.i\2013\130522c109.b\pcbECDAPR25.m

COMPOUND	RRF / AMOUNT	RF0.500	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
$ 1 Tetrachloro-m-Xylene	3.861e+09	3.860e+09	0.010	-0.02151	20.00000	Averaged
2 Mix-1016/1260(1)	289844072	317844908	0.010	9.66065	20.00000	Averaged
(2)	112610383	124501412	0.010	10.55944	20.00000	Averaged
(3)	195745135	209527048	0.010	7.04074	20.00000	Averaged
(4)	577221440	624358242	0.010	8.16616	20.00000	Averaged
(5)	246827742	269138740	0.010	9.03910	20.00000	Averaged
$ 11 Decachlorobiphenyl (DCB)	4.143e+09	4.130e+09	0.010	-0.33333	20.00000	Averaged

Data File: 05220025ccv3.D
Report Date: 23-May-2013 10:44

WSCF

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: gcecd1.i Injection Date: 23-MAY-2013 04:37
Lab File ID: 05220025ccv3.D Init. Cal. Date(s): 25-APR-2013 26-APR-2013
Analysis Type: SOIL Init. Cal. Times: 15:49 23:42
Lab Sample ID: ccv3 Quant Type: ESTD
Method: \\apwscf02\slab\chem\gcecd1.i\2013\130522c109.b\pcbECDAPR25.m

COMPOUND	RRF / AMOUNT	RF0.500	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
$ 1 Tetrachloro-m-Xylene	3.861e+09	3.842e+09	0.010	-0.50646	20.00000	Averaged
2 Mix-1016/1260(1)	289844072	316958746	0.010	9.35492	20.00000	Averaged
(2)	112610383	123886272	0.010	10.01319	20.00000	Averaged
(3)	195745135	209390552	0.010	6.97101	20.00000	Averaged
(4)	577221440	623507378	0.010	8.01875	20.00000	Averaged
(5)	246827742	268766362	0.010	8.88823	20.00000	Averaged
$ 11 Decachlorobiphenyl (DCB)	4.143e+09	4.117e+09	0.010	-0.63846	20.00000	Averaged

Data File: 05220002ccv3.D
Report Date: 23-May-2013 10:43

WSCF

222-S Laboratory

Data file : \\apwscf02\slab\chem\gcecd1.i\2013\130522c109.b\05220002ccv3.D
Lab Smp Id: PCB CCV 3 Client Smp ID: PCB CCV 3
Inj Date : 22-MAY-2013 10:31
Operator : cjo Inst ID: gcecd1.i
Smp Info : PCB CCV 3
Misc Info :
Comment : Undetected Aroclors Not Reported
Method : \\apwscf02\slab\chem\gcecd1.i\2013\130522c109.b\pcbECDAPR25.m
Meth Date : 23-May-2013 10:43 lpm Quant Type: ESTD
Cal Date : 26-APR-2013 23:42 Cal File: 04250020AR32.D
Als bottle: 1 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: indA.sub
Target Version: 4.14
Processing Host: WF21223

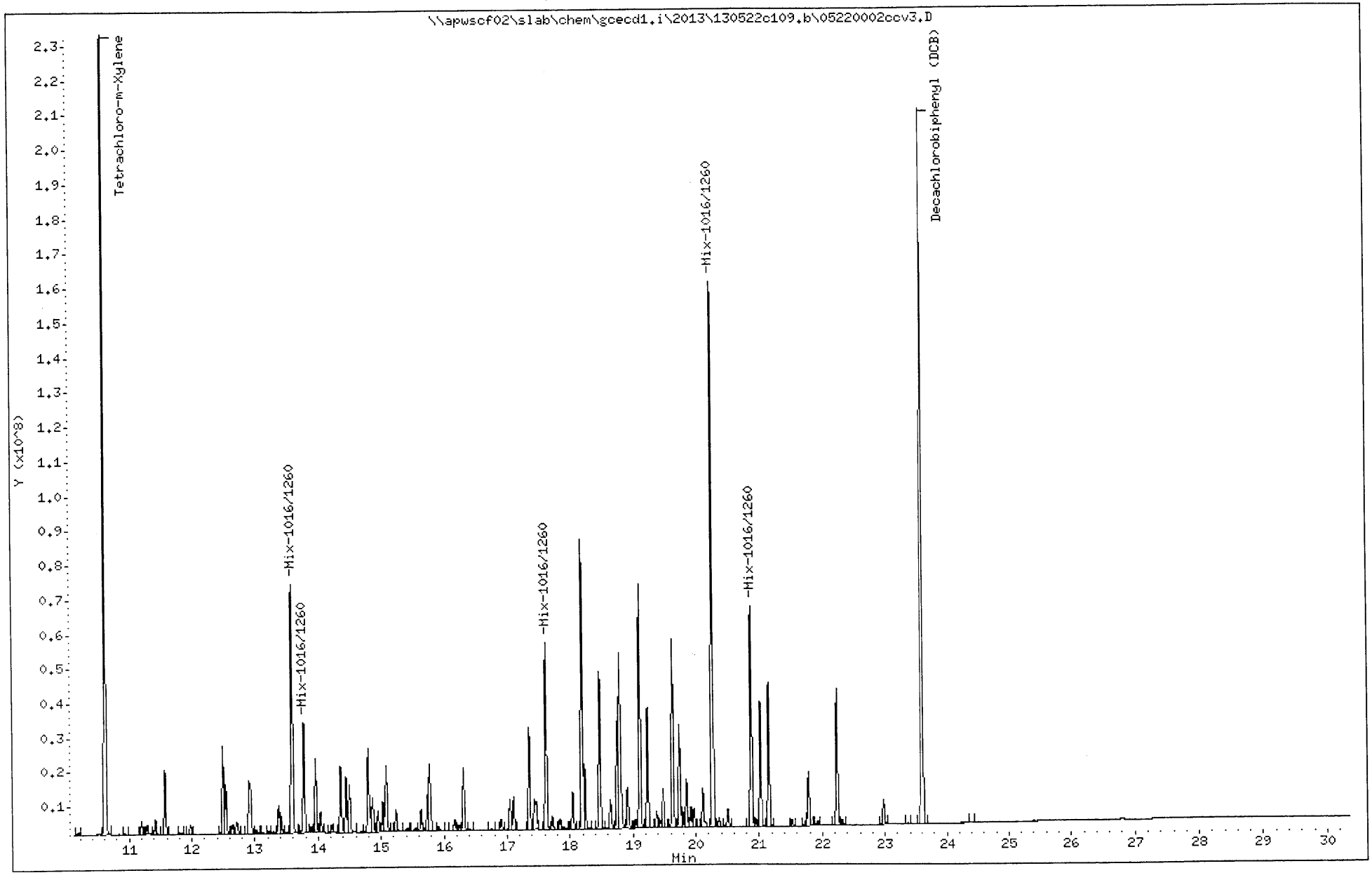
Concentration Formula: Amt * DF * Uf * Vt/(Vo * Vi) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng conversion factor
Vt	2000.000	FinalVolume
Vo	10.000	SampleVolume
Vi	1.000	InjectVol
Cpnd Variable		Local Compound Variable

					AMOUNTS	
					CAL-AMT	ON-COL
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/mL)
$ 1 Tetrachloro-m-Xylene	10.609	10.609	0.000	374219959	0.10000	0.0969
2 Mix-1016/1260	13.587	13.589	-0.002	152968982	0.50000	0.528
$ 11 Decachlorobiphenyl (DCB)	23.602	23.604	-0.002	401695616	0.10000	0.0969

Data File: \\apwscf02\slab\chem\gcecd1.i\2013\130522c109.b\05220002ccv3.D
Date : 22-MAY-2013 10:31
Client ID: PCB CCV 3
Sample Info: PCB CCV 3
Volume Injected (uL): 1.0
Column phase: Restek XTI-5

Instrument: gcecd1.i
Operator: cjo
Column diameter: 0.25



Data File: 05220004_BLANK.D Page 1
Report Date: 23-May-2013 10:43

WSCF

222-S Laboratory

Data file : \\apwscf02\slab\chem\gcecd1.i\2013\130522c109.b\05220004_BLANK.D
Lab Smp Id: BLANK Client Smp ID: BLANK
Inj Date : 22-MAY-2013 12:05
Operator : cjo Inst ID: gcecd1.i
Smp Info : 3249 BLANK
Misc Info :
Comment : Undetected Aroclors Not Reported
Method : \\apwscf02\slab\chem\gcecd1.i\2013\130522c109.b\pcbECDAPR25.m
Meth Date : 23-May-2013 10:43 lpm Quant Type: ESTD
Cal Date : 26-APR-2013 23:42 Cal File: 04250020AR32.D
Als bottle: 12 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: aroclor.sub
Target Version: 4.14

Concentration Formula: Amt * DF * Uf * Vt/(Vi * Ws * (100-M)/100) * CpndVari

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vt	2000.000	Volume of final extract (uL)
Vi	1.000	Volume injected (uL)
Ws	2.500	Weigth of sample extracted (g)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

					CONCENTRATIONS	
					ON-COLUMN	FINAL
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/Kg)
$ 1 Tetrachloro-m-Xylene	10.609	10.609	0.000	548669165	0.14210	113.7
$ 11 Decachlorobiphenyl (DCB)	23.601	23.604	-0.003	746665606	0.18021	144.2

Data File: \\apwscf02\slab\chem\gcecd1.i\2013\130522c109.b\05220004_BLANK.D

Date : 22-MAY-2013 12:05

Client ID: BLANK

Instrument: gcecd1.i

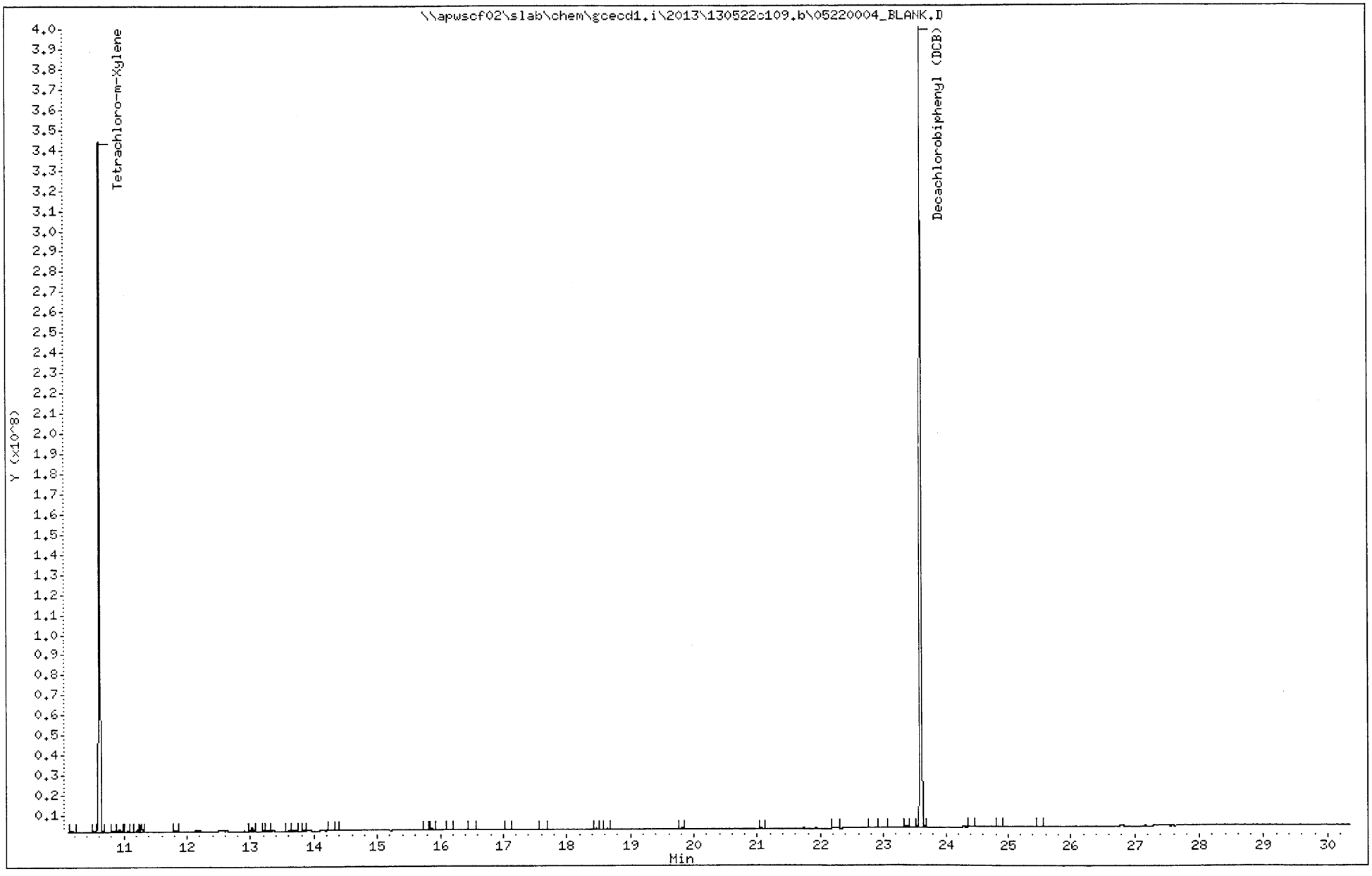
Sample Info: 3249 BLANK

Volume Injected (uL): 1.0

Operator: cjo

Column phase: Restek XTI-5

Column diameter: 0.25



Data File: 05220005_LCS.D
Report Date: 23-May-2013 10:43

WSCF

222-S Laboratory

Data file : \\apwscf02\slab\chem\gcecd1.i\2013\130522c109.b\05220005_LCS.D
Lab Smp Id: LCS Client Smp ID: LCS
Inj Date : 22-MAY-2013 12:53
Operator : cjo Inst ID: gcecd1.i
Smp Info : 3250 LCS
Misc Info :
Comment : Undetected Aroclors Not Reported
Method : \\apwscf02\slab\chem\gcecd1.i\2013\130522c109.b\pcbECDAPR25.m
Meth Date : 23-May-2013 10:43 lpm Quant Type: ESTD
Cal Date : 26-APR-2013 23:42 Cal File: 04250020AR32.D
Als bottle: 13 QC Sample: LCS
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: aroclor.sub
Target Version: 4.14

Concentration Formula: Amt * DF * Uf * Vt/(Vi * Ws * (100-M)/100) * CpndVari

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vt	2000.000	Volume of final extract (uL)
Vi	1.000	Volume injected (uL)
Ws	2.500	Weigth of sample extracted (g)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kg)
$ 1 Tetrachloro-m-Xylene	10.610	10.609	0.001	642891842	0.16650	133.2
8 Aroclor-1254	14.358	14.358	0.000	32025655	0.42359	338.9
$ 11 Decachlorobiphenyl (DCB)	23.601	23.604	-0.003	796352753	0.19220	153.8

Data File: \\apwscf02\slab\chem\gcecd1.i\2013\130522c109.b\05220005_LCS.D

Date : 22-MAY-2013 12:53

Client ID: LCS

Instrument: gcecd1.i

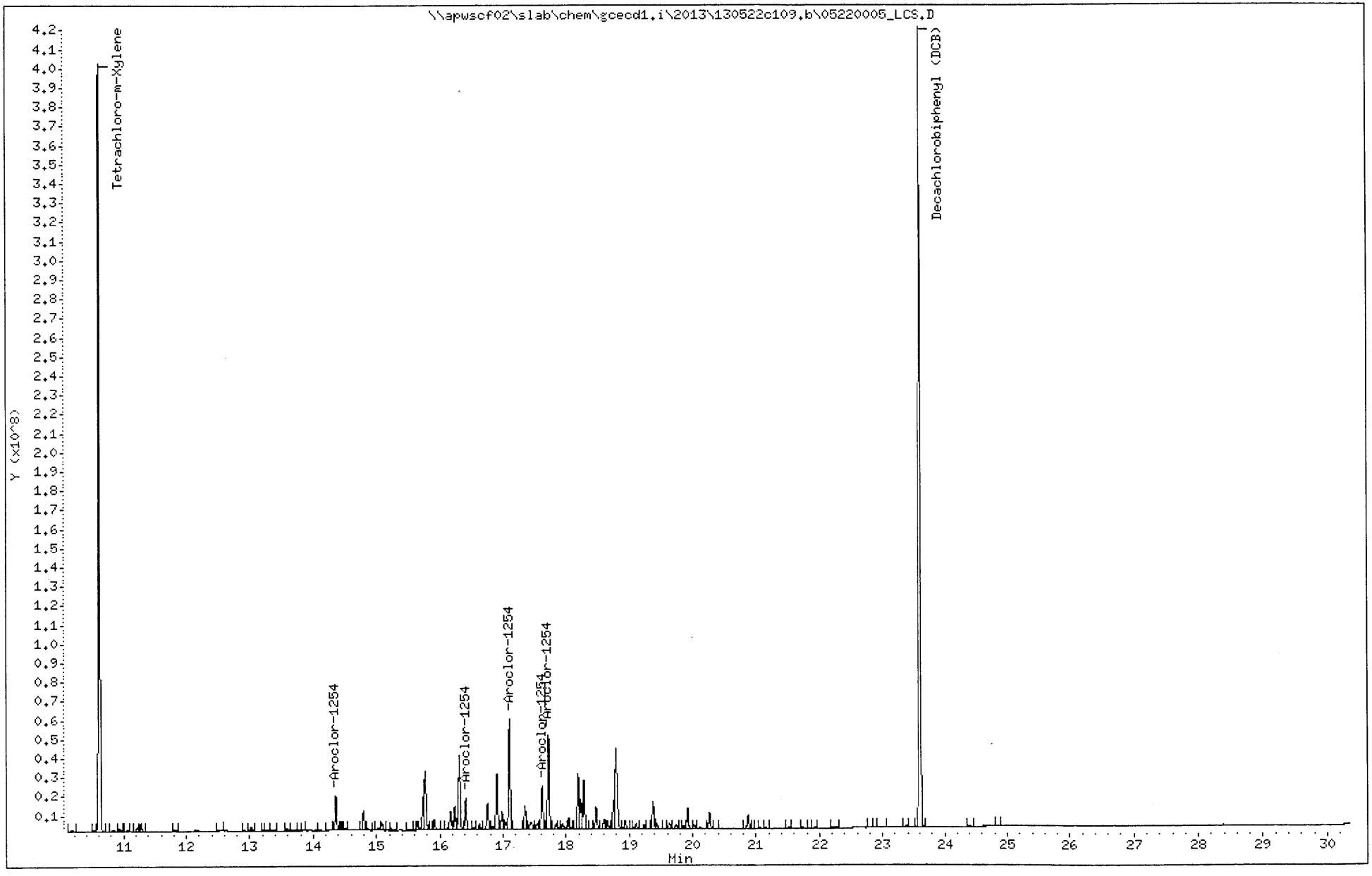
Sample Info: 3250 LCS

Volume Injected (uL): 1.0

Operator: cjo

Column phase: Restek XTI-5

Column diameter: 0.25



Data File: 05220007_04248.D Page 1
Report Date: 23-May-2013 12:16

WSCF

222-S Laboratory

Data file : \\apwscf02\slab\chem\gcecd1.i\2013\130522c109.b\05220007_04248.D
Lab Smp Id: S13T004248 Client Smp ID: S13T004248
Inj Date : 22-MAY-2013 14:28
Operator : cjo Inst ID: gcecd1.i
Smp Info : 3251 4248-SAM
Misc Info :
Comment : Undetected Aroclors Not Reported
Method : \\apwscf02\slab\chem\gcecd1.i\2013\130522c109.b\pcbECDAPR25.m
Meth Date : 23-May-2013 12:16 lpm Quant Type: ESTD
Cal Date : 26-APR-2013 23:42 Cal File: 04250020AR32.D
Als bottle: 14
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: aroclor.sub
Target Version: 4.14
Processing Host: WF21223

Concentration Formula: Amt * DF * Uf * Vt/(Vi * Ws * (100-M)/100) * CpndVari

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vt	2000.000	Volume of final extract (uL)
Vi	1.000	Volume injected (uL)
Ws	2.632	Weigth of sample extracted (g)
M	17.550	% Moisture
Cpnd Variable		Local Compound Variable

					CONCENTRATIONS	
					ON-COLUMN	FINAL
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/Kg)
$ 1 Tetrachloro-m-Xylene	10.607	10.609	-0.002	511302890	0.13242	122.0
$ 11 Decachlorobiphenyl (DCB)	23.601	23.604	-0.003	768782431	0.18554	171.0

Data File: \\apwscf02\slab\chem\gcecd1.i\2013\130522c109.b\05220007_04248.D

Date : 22-MAY-2013 14:28

Client ID: S13T004248

Instrument: gcecd1.i

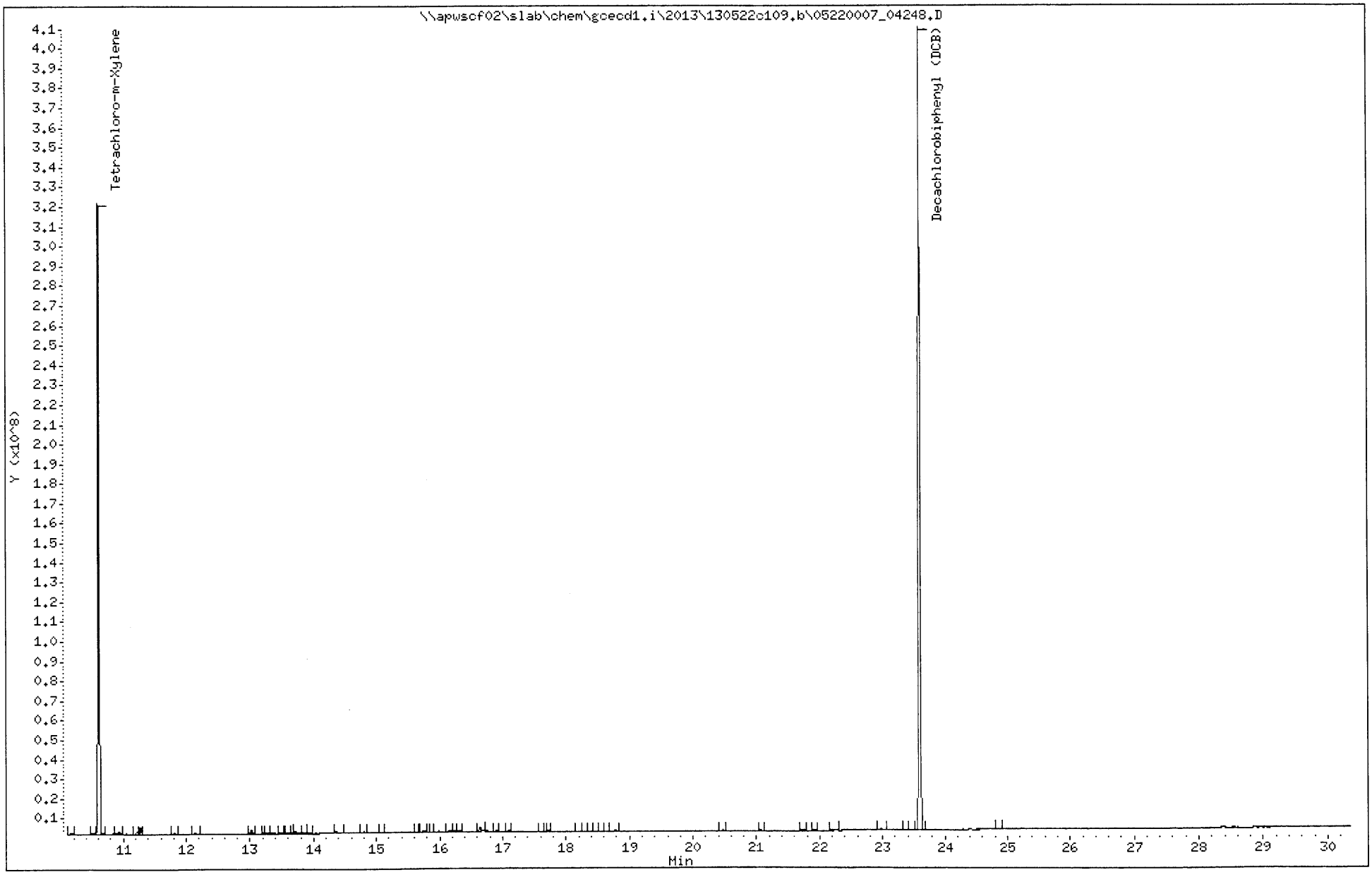
Sample Info: 3251 4248-SAM

Volume Injected (uL): 1.0

Operator: cjo

Column phase: Restek XTI-5

Column diameter: 0.25



Data File: 05220009_04248Dup.d
Report Date: 23-May-2013 12:16

WSCF

222-S Laboratory

Data file : \\apwscf02\slab\chem\gcecd1.i\2013\130522c109.b\05220009_04248Du
Lab Smp Id: S13T004248Dup Client Smp ID: S13T004248Dup
Inj Date : 22-MAY-2013 16:02
Operator : cjo Inst ID: gcecd1.i
Smp Info : 3252 4248-DUP
Misc Info :
Comment : Undetected Aroclors Not Reported
Method : \\apwscf02\slab\chem\gcecd1.i\2013\130522c109.b\pcbECDAPR25.m
Meth Date : 23-May-2013 12:16 lpm Quant Type: ESTD
Cal Date : 26-APR-2013 23:42 Cal File: 04250020AR32.D
Als bottle: 15
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: aroclor.sub
Target Version: 4.14
Processing Host: WF21223

Concentration Formula: Amt * DF * Uf * Vt/(Vi * Ws * (100-M)/100) * CpndVari

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vt	2000.000	Volume of final extract (uL)
Vi	1.000	Volume injected (uL)
Ws	2.646	Weigth of sample extracted (g)
M	17.550	% Moisture
Cpnd Variable		Local Compound Variable

					CONCENTRATIONS	
					ON-COLUMN	FINAL
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/Kg)
$ 1 Tetrachloro-m-Xylene	10.608	10.609	-0.001	512509719	0.13273	121.7
$ 11 Decachlorobiphenyl (DCB)	23.599	23.604	-0.005	771404546	0.18618	170.7

Data File: \\apwscf02\slab\chem\gcecd1.i\2013\130522c109.b\05220009_04248Dup.d

Date : 22-MAY-2013 16:02

Client ID: S13T004248Dup

Instrument: gcecd1.i

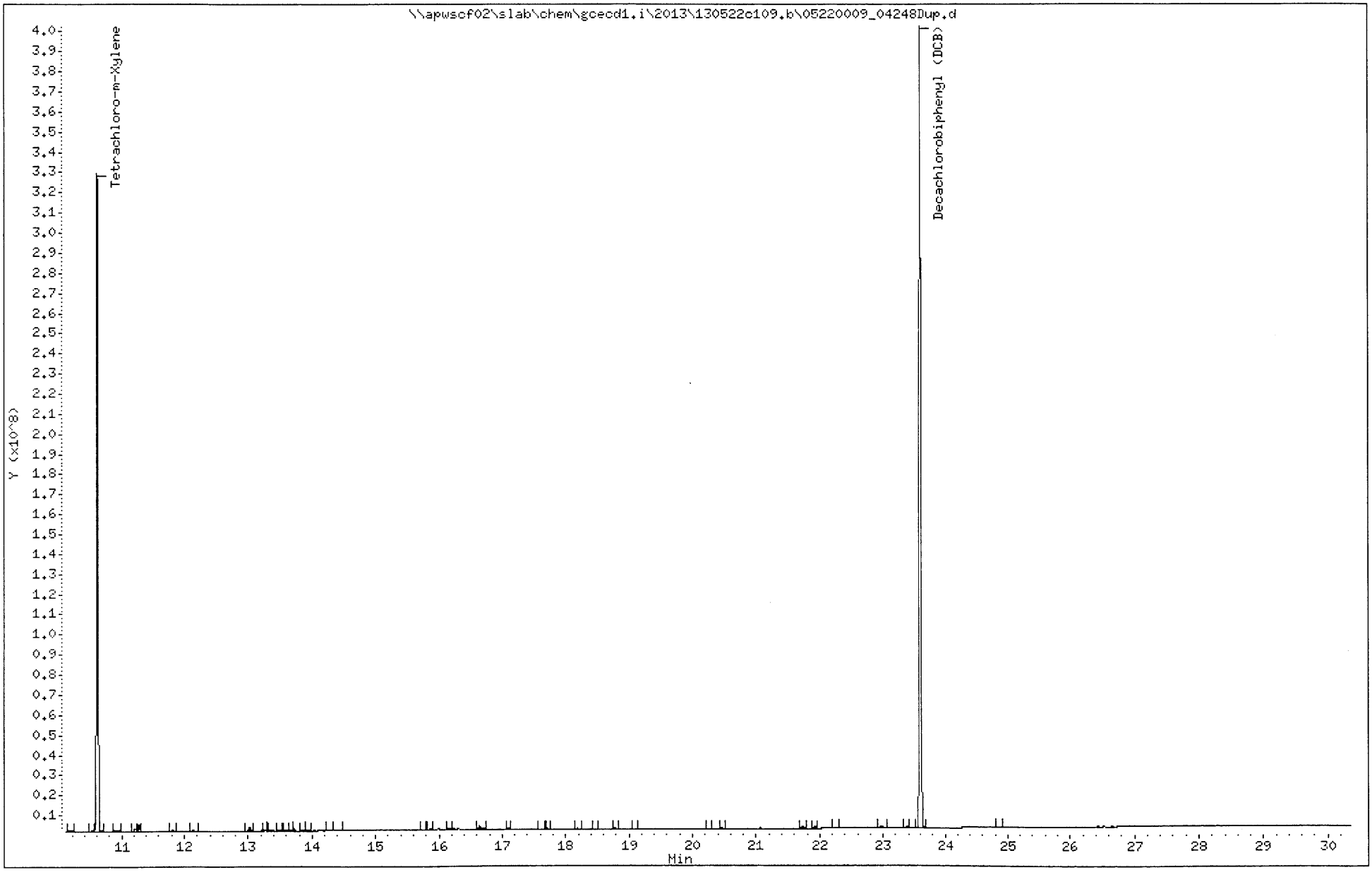
Sample Info: 3252 4248-DUP

Volume Injected (uL): 1.0

Operator: cjo

Column phase: Restek XTI-5

Column diameter: 0.25



Data File: 05220011_4248MS.D
Report Date: 23-May-2013 12:16

WSCF

222-S Laboratory

Data file : \\apwscf02\slab\chem\gcecd1.i\2013\130522c109.b\05220011_4248MS.
Lab Smp Id: S13T004248MS Client Smp ID: S13T004248MS
Inj Date : 22-MAY-2013 17:37
Operator : cjo Inst ID: gcecd1.i
Smp Info : 3253 4248-MS
Misc Info :
Comment   : Undetected Aroclors Not Reported
Method   : \\apwscf02\slab\chem\gcecd1.i\2013\130522c109.b\pcbECDAPR25.m
Meth Date : 23-May-2013 12:16 lpm Quant Type: ESTD
Cal Date : 26-APR-2013 23:42 Cal File: 04250020AR32.D
Als bottle: 16 QC Sample: MS
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: aroclor.sub
Target Version: 4.14
Processing Host: WF21223

Concentration Formula: Amt * DF * Uf * Vt/(Vi * Ws * (100-M)/100) * CpndVari

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vt	2000.000	Volume of final extract (uL)
Vi	1.000	Volume injected (uL)
Ws	2.523	Weigth of sample extracted (g)
M	17.550	% Moisture
Cpnd Variable		Local Compound Variable

						CONCENTRATIONS	
	Compounds	RT	EXP RT	DLT RT	RESPONSE	ON-COLUMN (ug/mL)	FINAL (ug/Kg)
$	1 Tetrachloro-m-Xylene	10.608	10.609	-0.001	493195385	0.12773	122.8
	8 Aroclor-1254	14.356	14.358	-0.002	31309176	0.41352	397.6
$	11 Decachlorobiphenyl (DCB)	23.600	23.604	-0.004	778544549	0.18790	180.6

Data File: \\apwscf02\slab\chem\gcecd1.i\2013\130522c109.b\05220011_4248MS.D

Date : 22-MAY-2013 17:37

Client ID: S13T004248MS

Instrument: gcecd1.i

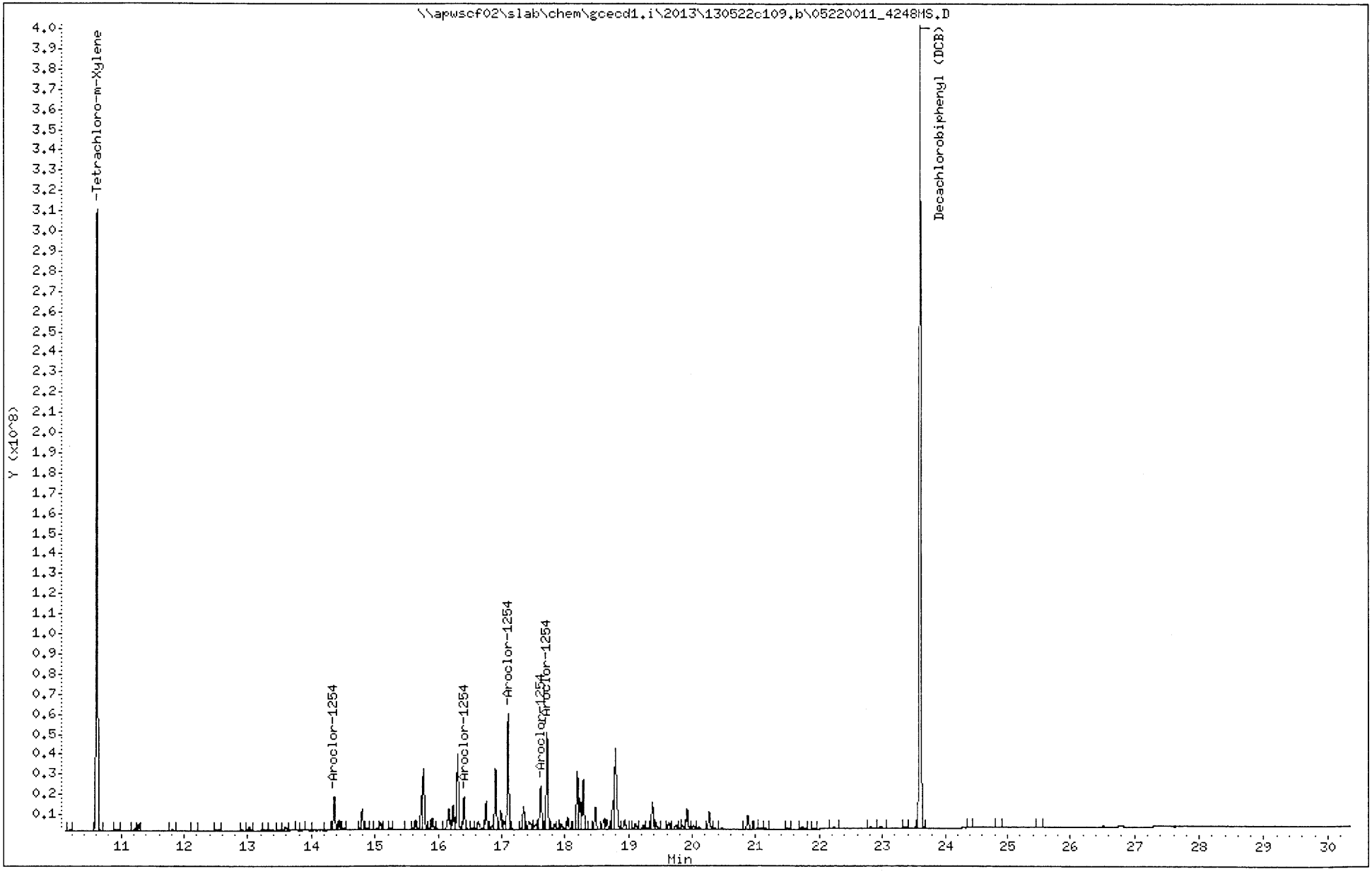
Sample Info: 3253 4248-MS

Volume Injected (uL): 1.0

Operator: cjo

Column phase: Restek XTI-5

Column diameter: 0.25



Data File: 05220013_4248MSD.d
Report Date: 23-May-2013 12:16

WSCF

222-S Laboratory

Data file : \\apwscf02\slab\chem\gcecd1.i\2013\130522c109.b\05220013_4248MSD
Lab Smp Id: S13T004248MSD Client Smp ID: S13T004248MSD
Inj Date : 22-MAY-2013 19:11
Operator : cjo Inst ID: gcecd1.i
Smp Info : 3254 4248-MSD
Misc Info :
Comment   : Undetected Aroclors Not Reported
Method   : \\apwscf02\slab\chem\gcecd1.i\2013\130522c109.b\pcbECDAPR25.m
Meth Date : 23-May-2013 12:16 lpm Quant Type: ESTD
Cal Date : 26-APR-2013 23:42 Cal File: 04250020AR32.D
Als bottle: 17 QC Sample: MSD
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: aroclor.sub
Target Version: 4.14
Processing Host: WF21223

Concentration Formula: Amt * DF * Uf * Vt/(Vi * Ws * (100-M)/100) * CpndVari

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vt	2000.000	Volume of final extract (uL)
Vi	1.000	Volume injected (uL)
Ws	2.642	Weigth of sample extracted (g)
M	17.550	% Moisture
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kg)
$ 1 Tetrachloro-m-Xylene	10.609	10.609	0.000	507540209	0.13145	120.7
8 Aroclor-1254	14.357	14.358	-0.001	34700857	0.41739	383.2
$ 11 Decachlorobiphenyl (DCB)	23.599	23.604	-0.005	718237264	0.17335	159.2

Data File: \\apwscf02\slab\chem\gcecd1.i\2013\130522c109.b\05220013_4248MSD.d

Date : 22-MAY-2013 19:11

Client ID: S13T004248MSD

Instrument: gcecd1.i

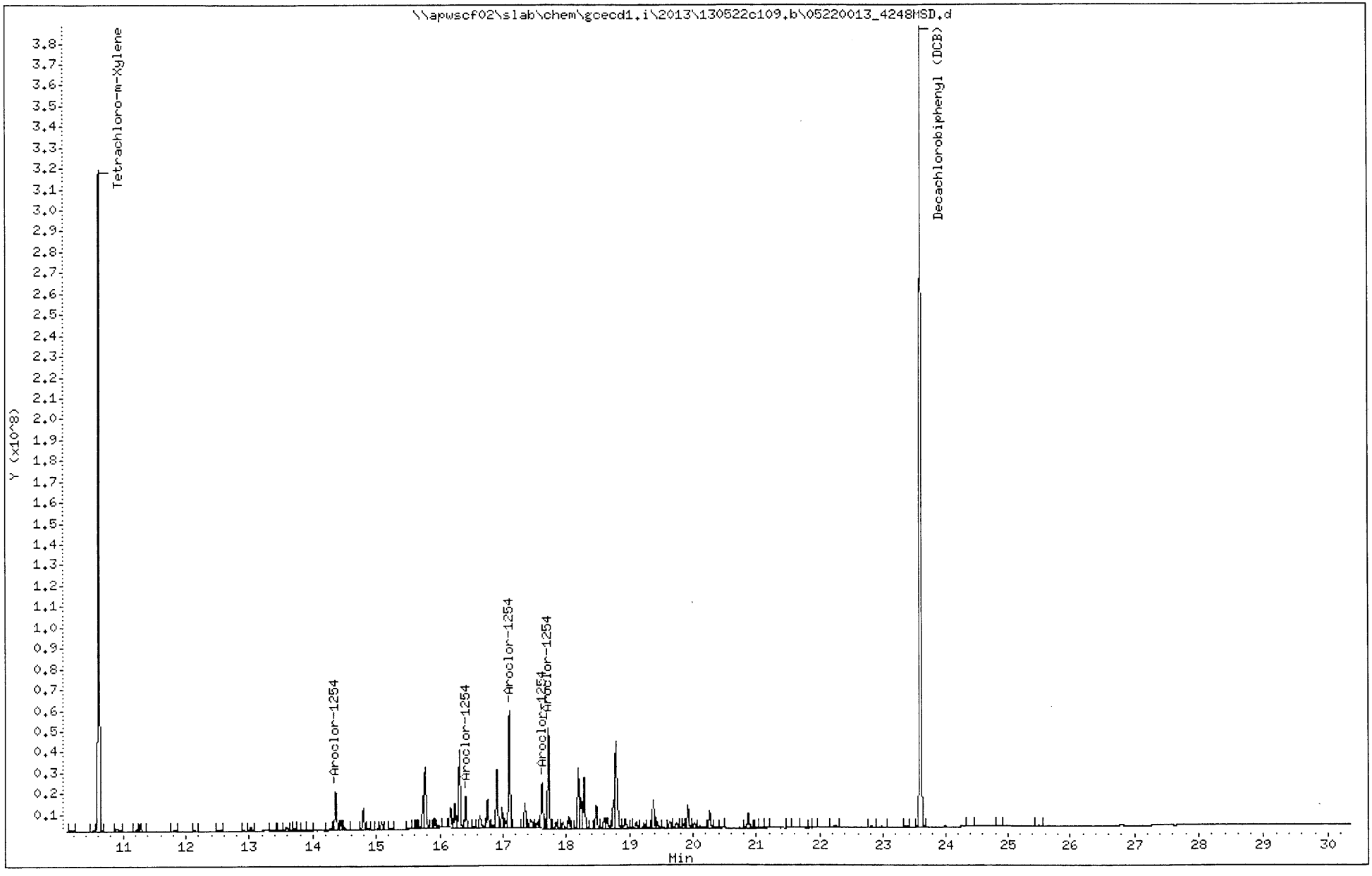
Sample Info: 3254 4248-MSD

Volume Injected (uL): 1.0

Operator: cjo

Column phase: Restek XTI-5

Column diameter: 0.25



Data File: 05220015ccv3.D
Report Date: 23-May-2013 10:43

WSCF

222-S Laboratory

Data file : \\apwscf02\slab\chem\gcecd1.i\2013\130522c109.b\05220015ccv3.D
Lab Smp Id: ccv3 Client Smp ID: ccv3
Inj Date : 22-MAY-2013 20:46
Operator : cjo Inst ID: gcecd1.i
Smp Info : PCB CCV 3
Misc Info :
Comment : Undetected Aroclors Not Reported
Method : \\apwscf02\slab\chem\gcecd1.i\2013\130522c109.b\pcbECDAPR25.m
Meth Date : 23-May-2013 10:43 lpm Quant Type: ESTD
Cal Date : 26-APR-2013 23:42 Cal File: 04250020AR32.D
Als bottle: 2 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: indA.sub
Target Version: 4.14
Processing Host: WF21223

Concentration Formula: Amt * DF * Uf * Vt/(Vi * Ws * (100-M)/100) * CpndVari

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vt	10000.000	Volume of final extract (uL)
Vi	1.000	Volume injected (uL)
Ws	1.000	Weigth of sample extracted (g)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

						AMOUNTS	
						CAL-AMT	ON-COL
	Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/mL)
$	1 Tetrachloro-m-Xylene	10.606	10.609	-0.003	383944785	0.10000	0.0994
	2 Mix-1016/1260	13.585	13.589	-0.004	158322230	0.50000	0.546
$	11 Decachlorobiphenyl (DCB)	23.598	23.604	-0.006	411048366	0.10000	0.0992

Data File: \\apwscf02\slab\chem\gcecd1.i\2013\130522c109.b\05220015ccv3.D

Date : 22-MAY-2013 20:46

Client ID: ccv3

Instrument: gcecd1.i

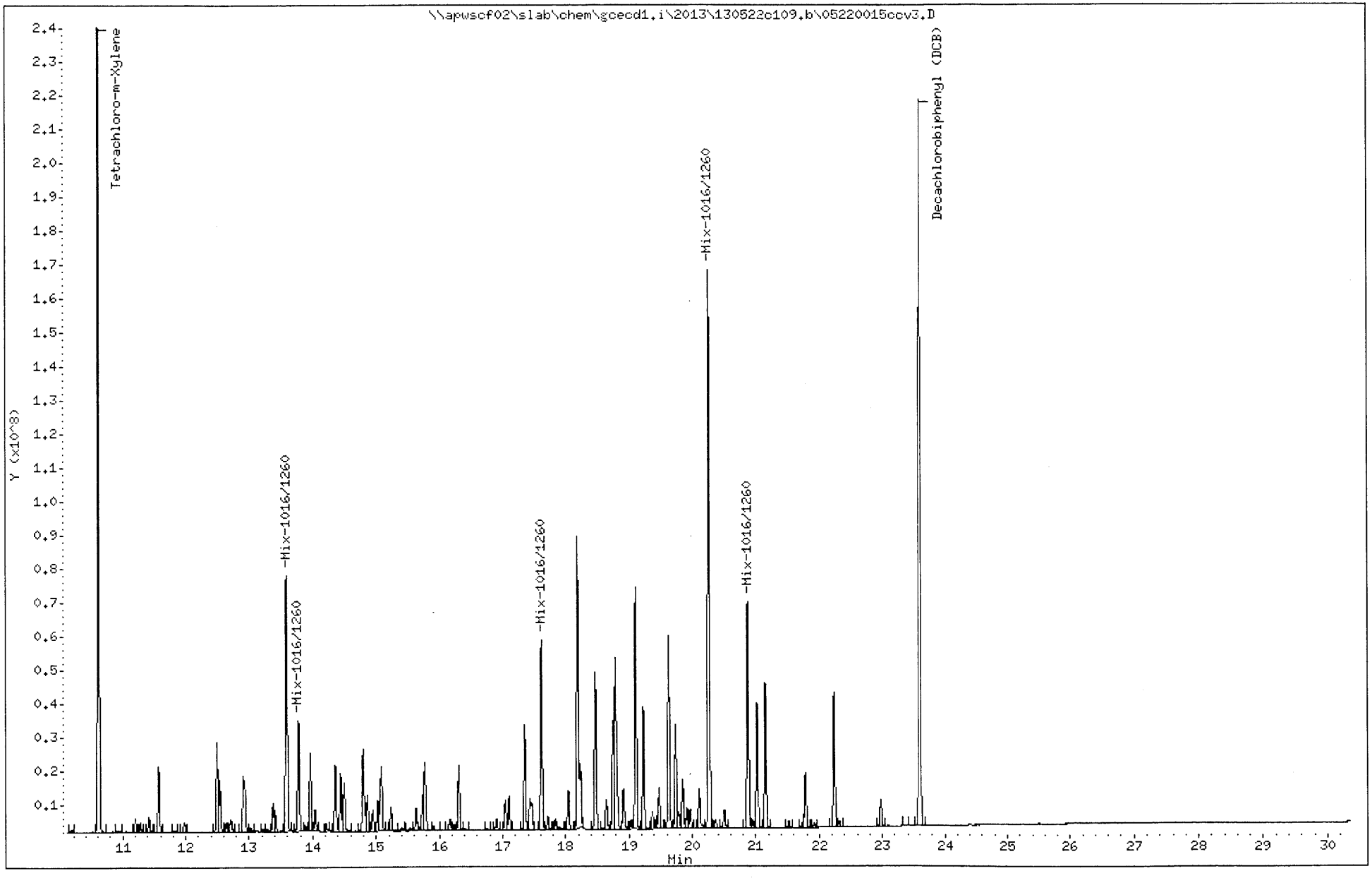
Sample Info: PCB CCV 3

Volume Injected (uL): 1.0

Operator: cjo

Column phase: Restek XTI-5

Column diameter: 0.25



Data File: 05220017ccv3.D Page 1
Report Date: 23-May-2013 10:44

WSCF

222-S Laboratory

Data file : \\apwscf02\slab\chem\gcecd1.i\2013\130522c109.b\05220017ccv3.D
Lab Smp Id: ccv3 Client Smp ID: ccv3
Inj Date : 22-MAY-2013 22:20
Operator : cjo Inst ID: gcecd1.i
Smp Info : PCB CCV 3
Misc Info :
Comment : Undetected Aroclors Not Reported
Method : \\apwscf02\slab\chem\gcecd1.i\2013\130522c109.b\pcbECDAPR25.m
Meth Date : 23-May-2013 10:43 lpm Quant Type: ESTD
Cal Date : 26-APR-2013 23:42 Cal File: 04250020AR32.D
Als bottle: 3 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: indA.sub
Target Version: 4.14
Processing Host: WF21223

Concentration Formula: Amt * DF * Uf * Vt/(Vi * Ws * (100-M)/100) * CpndVari

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vt	10000.000	Volume of final extract (uL)
Vi	1.000	Volume injected (uL)
Ws	1.000	Weigth of sample extracted (g)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

					AMOUNTS	
					CAL-AMT	ON-COL
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/mL)
$ 1 Tetrachloro-m-Xylene	10.608	10.609	-0.001	386040255	0.10000	0.1000
2 Mix-1016/1260	13.585	13.589	-0.004	158922454	0.50000	0.548
$ 11 Decachlorobiphenyl (DCB)	23.598	23.604	-0.006	412958001	0.10000	0.0997

Data File: \\apwscf02\slab\chem\gcecd1.i\2013\130522c109.b\05220017ccv3.D

Date : 22-MAY-2013 22:20

Client ID: ccv3

Instrument: gcecd1.i

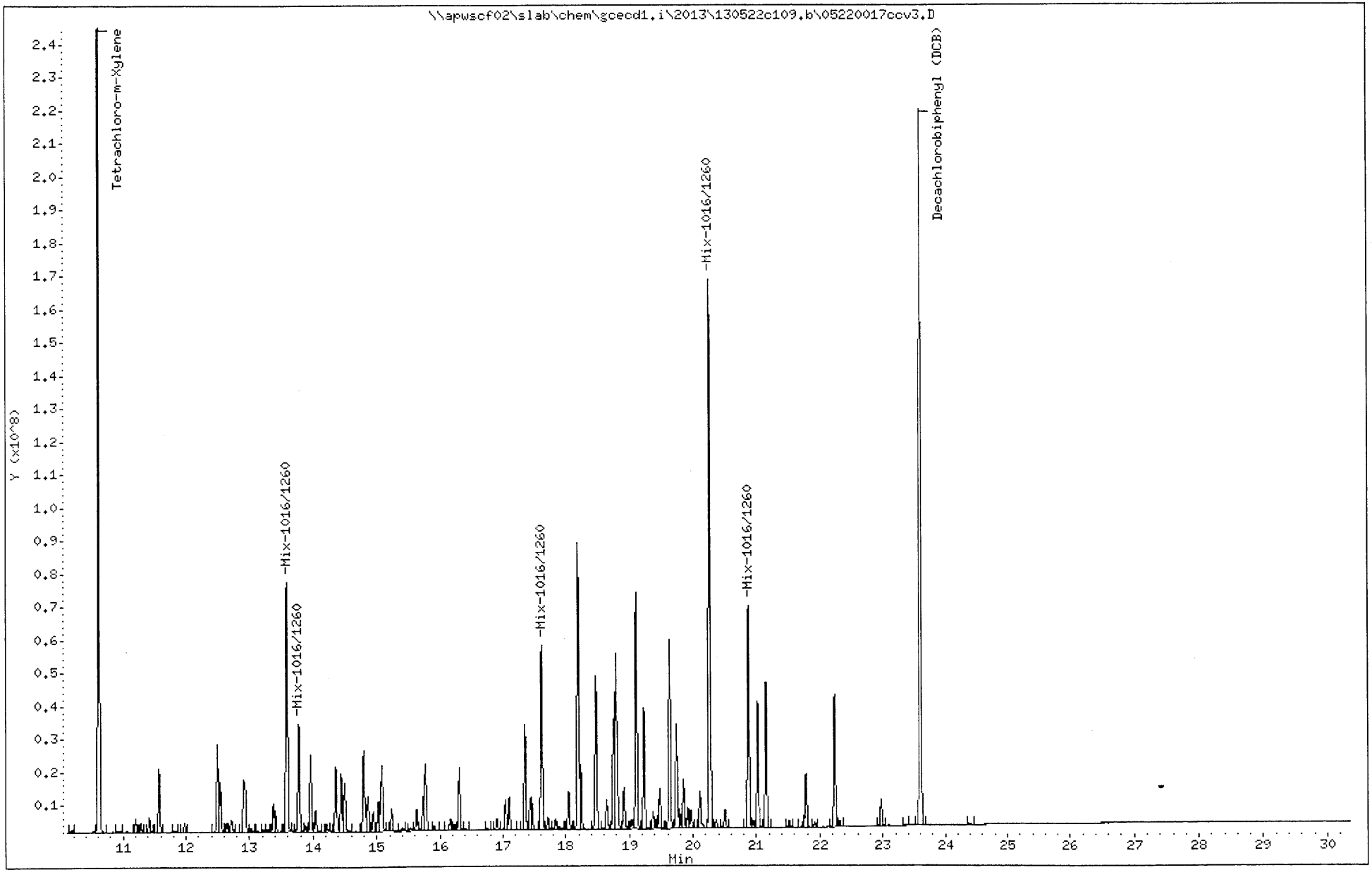
Sample Info: PCB CCV 3

Operator: cjo

Volume Injected (uL): 1.0

Column phase: Restek XTI-5

Column diameter: 0.25



Data File: 05220019_4276.D Page 1
Report Date: 23-May-2013 12:16

WSCF

222-S Laboratory

Data file : \\apwscf02\slab\chem\gcecd1.i\2013\130522c109.b\05220019_4276.D
Lab Smp Id: S13T004276 Client Smp ID: S13T004276
Inj Date : 22-MAY-2013 23:54
Operator : cjo Inst ID: gcecd1.i
Smp Info : 3255 4276-SAM
Misc Info :
Comment : Undetected Aroclors Not Reported
Method : \\apwscf02\slab\chem\gcecd1.i\2013\130522c109.b\pcbECDAPR25.m
Meth Date : 23-May-2013 12:16 lpm Quant Type: ESTD
Cal Date : 26-APR-2013 23:42 Cal File: 04250020AR32.D
Als bottle: 18
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: aroclor.sub
Target Version: 4.14
Processing Host: WF21223

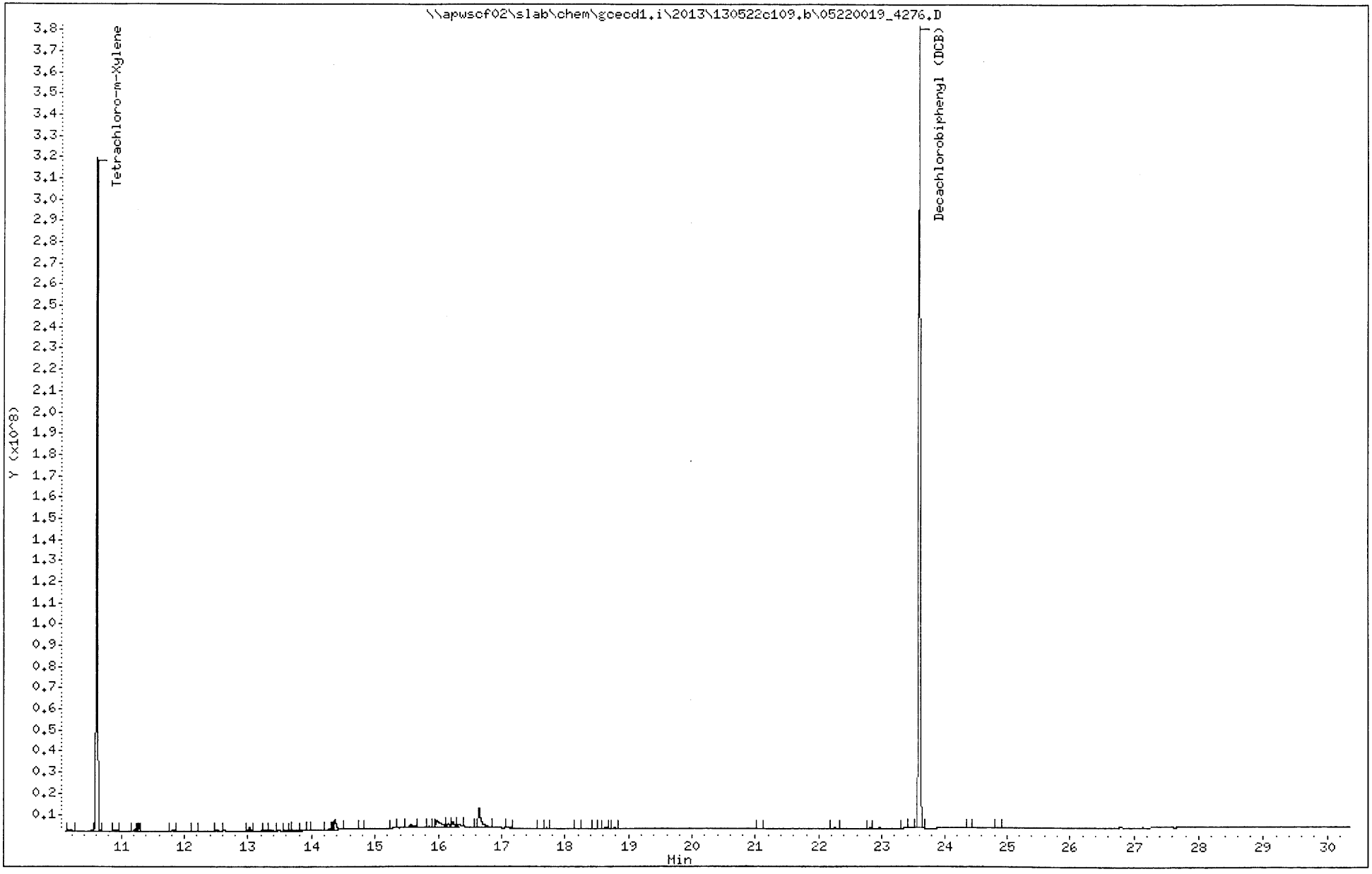
Concentration Formula: Amt * DF * Uf * Vt/(Vi * Ws * (100-M)/100) * CpndVari

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vt	2000.000	Volume of final extract (uL)
Vi	1.000	Volume injected (uL)
Ws	2.718	Weigth of sample extracted (g)
M	32.280	% Moisture
Cpnd Variable		Local Compound Variable

					CONCENTRATIONS	
					ON-COLUMN	FINAL
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/Kg)
$ 1 Tetrachloro-m-Xylene	10.607	10.609	-0.002	507024129	0.13131	142.7
$ 11 Decachlorobiphenyl (DCB)	23.598	23.604	-0.006	735770674	0.17758	193.0

Data File: \\apwscf02\slab\chem\gcecd1.i\2013\130522c109.b\05220019_4276.D
Date : 23-MAY-2013 23:54
Client ID: S13T004276
Sample Info: 3255 4276-SAM
Volume Injected (uL): 1.0
Column phase: Restek XTI-5

Instrument: gcecd1.i
Operator: cjo
Column diameter: 0.25



Data File: 05220021_4303.D Page 1
Report Date: 23-May-2013 12:16

WSCF

222-S Laboratory

Data file : \\apwscf02\slab\chem\gcecd1.i\2013\130522c109.b\05220021_4303.D
Lab Smp Id: S13T004303 Client Smp ID: S13T004303
Inj Date : 23-MAY-2013 01:29
Operator : cjo Inst ID: gcecd1.i
Smp Info : 3256 4303-SAM
Misc Info :
Comment : Undetected Aroclors Not Reported
Method : \\apwscf02\slab\chem\gcecd1.i\2013\130522c109.b\pcbECDAPR25.m
Meth Date : 23-May-2013 12:16 lpm Quant Type: ESTD
Cal Date : 26-APR-2013 23:42 Cal File: 04250020AR32.D
Als bottle: 19
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: aroclor.sub
Target Version: 4.14
Processing Host: WF21223

Concentration Formula: Amt * DF * Uf * Vt/(Vi * Ws * (100-M)/100) * CpndVari

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vt	2000.000	Volume of final extract (uL)
Vi	1.000	Volume injected (uL)
Ws	2.547	Weigth of sample extracted (g)
M	32.590	% Moisture
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/Kg)
$ 1 Tetrachloro-m-Xylene	10.606	10.609	-0.003	522418250	0.13530	157.6
$ 11 Decachlorobiphenyl (DCB)	23.598	23.604	-0.006	789242341	0.19048	221.9

Data File: \\apwscf02\slab\chem\gcecd1.i\2013\130522c109.b\05220021_4303.D

Date : 23-MAY-2013 01:29

Client ID: S13T004303

Instrument: gcecd1.i

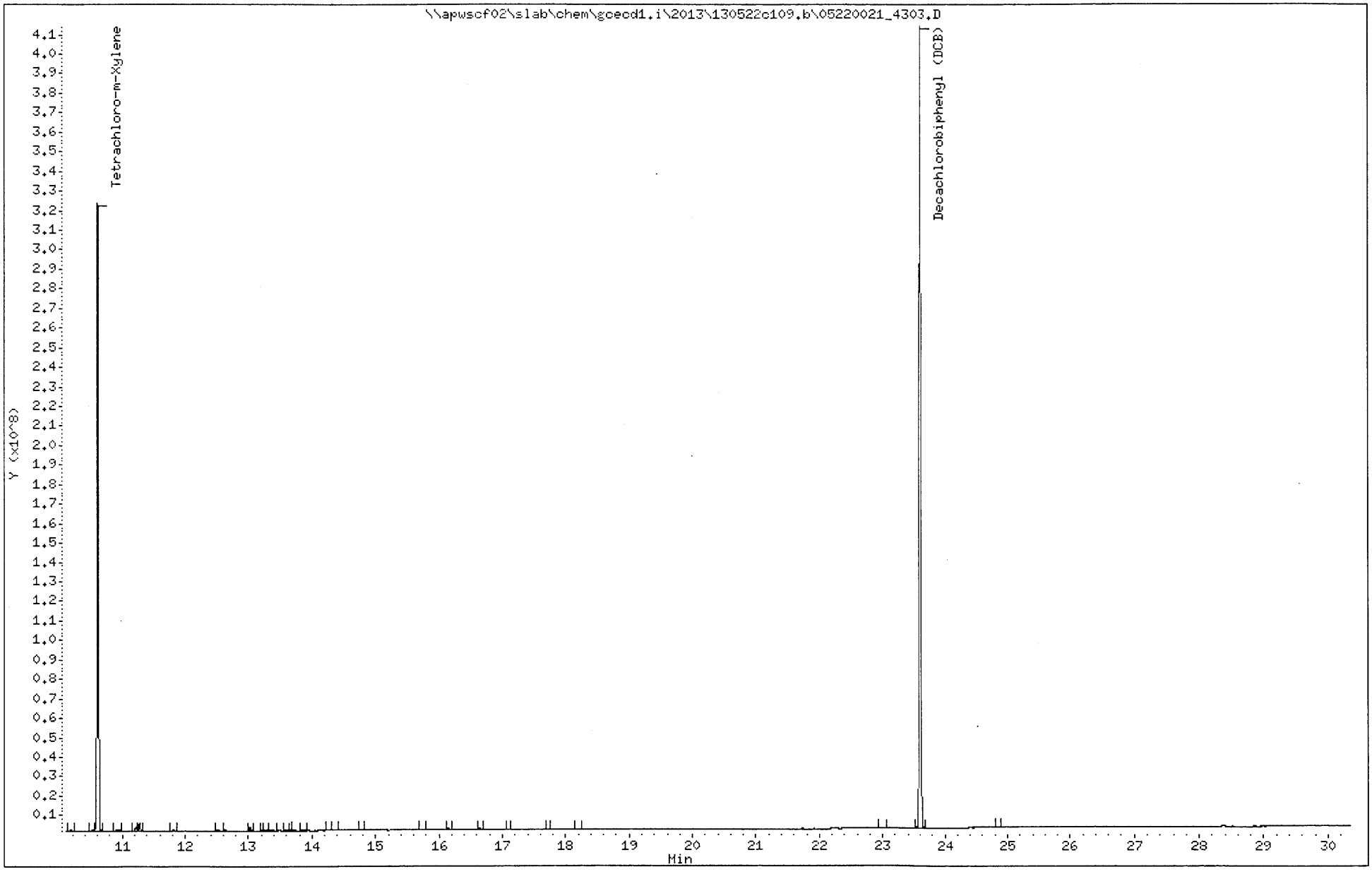
Sample Info: 3256 4303-SAM

Volume Injected (uL): 1.0

Operator: ojo

Column phase: Restek XTI-5

Column diameter: 0.25



Data File: 05220025ccv3.D Page 1
Report Date: 23-May-2013 10:44

WSCF

222-S Laboratory

Data file : \\apwscf02\slab\chem\gcecd1.i\2013\130522c109.b\05220025ccv3.D
Lab Smp Id: ccv3 Client Smp ID: ccv3
Inj Date : 23-MAY-2013 04:37
Operator : cjo Inst ID: gcecd1.i
Smp Info : PCB CCV 3
Misc Info :
Comment : Undetected Aroclors Not Reported
Method : \\apwscf02\slab\chem\gcecd1.i\2013\130522c109.b\pcbECDAPR25.m
Meth Date : 23-May-2013 10:43 lpm Quant Type: ESTD
Cal Date : 26-APR-2013 23:42 Cal File: 04250020AR32.D
Als bottle: 4 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: indA.sub
Target Version: 4.14
Processing Host: WF21223

Concentration Formula: Amt * DF * Uf * Vt/(Vi * Ws * (100-M)/100) * CpndVari

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vt	10000.000	Volume of final extract (uL)
Vi	1.000	Volume injected (uL)
Ws	1.000	Weigth of sample extracted (g)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

						AMOUNTS	
	Compounds	RT	EXP RT	DLT RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)
$	1 Tetrachloro-m-Xylene	10.605	10.609	-0.004	384167753	0.10000	0.0995
	2 Mix-1016/1260	13.585	13.589	-0.004	158479373	0.50000	0.547
$	11 Decachlorobiphenyl (DCB)	23.597	23.604	-0.007	411693732	0.10000	0.0994

Data File: \\apwscf02\slab\chem\gcecd1.i\2013\130522c109.b\05220025ccv3.D

Date : 23-MAY-2013 04:37

Client ID: ccv3

Instrument: gcecd1.i

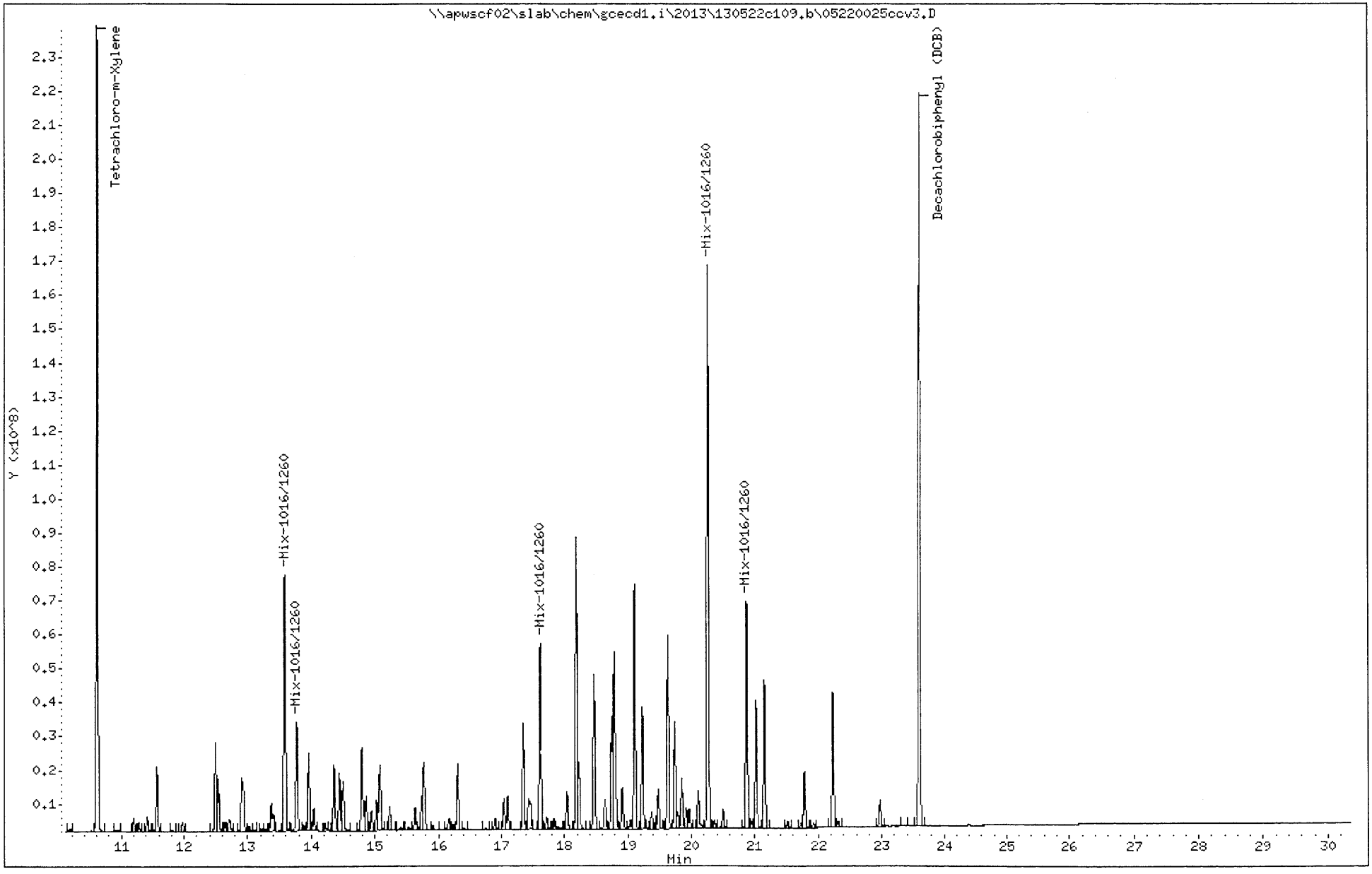
Sample Info: PCB CCV 3

Volume Injected (uL): 1.0

Operator: cjo

Column phase: Restek XTI-5

Column diameter: 0.25



Sequence: C:\HPCHEM\1\SEQUENCE\130522.S

Sequence Parameters:

Operator:	CJO
Data File Naming:	Prefix/Counter
Signal 1 Prefix:	0522
Counter:	0001
Signal 2 Prefix:	SIG2
Counter:	0001
Data Directory:	C:\HPCHEM\1\DATA\
Data Subdirectory:	130522
Part of Methods to run:	According to Runtime Checklist
Barcode Reader:	not used
Shutdown Cmd/Macro:	none

Sequence Comment:
C109 CLO,PCB, sol prep batch # 41313, CJO, 5/22/13

Sequence Table (Front Injector):

Sample Information Part:

Line	Location	Sample Information
1	Vial 6	Solvent Blank
2	Vial 1	PCB CCV 3, HNF-N-526-2-5.03, EXP: 10/18/13
3	Vial 6	Solvent Blank
4	Vial 12	BC 3249, BLANK, C109 CLO,PCB, sol prep batch # 41313
5	Vial 13	BC 3250, LCS, C109 CLO,PCB, sol prep batch # 41313
6	Vial 6	Solvent Blank
7	Vial 14	BC 3251, S13T004248-SAM, C109 CLO,PCB, sol prep batch # 41313
8	Vial 7	Solvent Blank
9	Vial 15	BC 3252, S13T004248-DUP, C109 CLO,PCB, sol prep batch # 41313
10	Vial 7	Solvent Blank
11	Vial 16	BC 3253, S13T004248-MS, C109 CLO,PCB, sol prep batch # 41313
12	Vial 7	Solvent Blank
13	Vial 17	BC 3254, S13T004248-MSD, C109 CLO,PCB, sol prep batch # 41313
14	Vial 8	Solvent Blank
15	Vial 2	PCB CCV 3, HNF-N-526-2-5.03, EXP: 10/18/13
16	Vial 8	Solvent Blank
17	Vial 3	PCB CCV 3, HNF-N-526-2-5.03, EXP: 10/18/13

Sequence: C:\HPCHEM\1\SEQUENCE\130522.S

Line	Location	Sample Information
18	Vial 8	Solvent Blank
19	Vial 18	BC 3255, S13T004276-SAM, C109 CLO,PCB, sol prep batch # 41313
20	Vial 9	Solvent Blank
21	Vial 19	BC 3256, S13T004303-SAM, C109 CLO,PCB, sol prep batch # 41313
22	Vial 9	Solvent Blank
23	Vial 20	BC 3230, Ck Std, Soil 82, PCB, SOL, prep batch # 41108
24	Vial 10	Solvent Blank
25	Vial 4	PCB CCV 3, HNF-N-526-2-5.03, EXP: 10/18/13
26	Vial 10	Solvent Blank
27	Vial 5	PCB CCV 3, HNF-N-526-2-5.03, EXP: 10/18/13
28	Vial 11	Solvent Blank
29	Vial 11	Solvent Blank
30	Vial 11	Solvent Blank

Method and Injection Info Part:

Line	Location	SampleName	Method	Inj	SampleType	InjVolume	DataFile
1	Vial 6	Hexane	PCB8082	1	Sample	1.0	
2	Vial 1	PCB CCV 3	PCB8082	1	Sample	1.0	
3	Vial 6	Hexane	PCB8082	1	Sample	1.0	
4	Vial 12	3249 BLANK	PCB8082	1	Sample	1.0	
5	Vial 13	3250 LCS	PCB8082	1	Sample	1.0	
6	Vial 6	Hexane	PCB8082	1	Sample	1.0	
7	Vial 14	3251 4248-SAM	PCB8082	1	Sample	1.0	
8	Vial 7	Hexane	PCB8082	1	Sample	1.0	
9	Vial 15	3252 4248-DUP	PCB8082	1	Sample	1.0	
10	Vial 7	Hexane	PCB8082	1	Sample	1.0	
11	Vial 16	3253 4248-MS	PCB8082	1	Sample	1.0	
12	Vial 7	Hexane	PCB8082	1	Sample	1.0	
13	Vial 17	3254 4248-MSD	PCB8082	1	Sample	1.0	
14	Vial 8	Hexane	PCB8082	1	Sample	1.0	
15	Vial 2	PCB CCV 3	PCB8082	1	Sample	1.0	
16	Vial 8	Hexane	PCB8082	1	Sample	1.0	
17	Vial 3	PCB CCV 3	PCB8082	1	Sample	1.0	
18	Vial 8	Hexane	PCB8082	1	Sample	1.0	
19	Vial 18	3255 4276-SAM	PCB8082	1	Sample	1.0	
20	Vial 9	Hexane	PCB8082	1	Sample	1.0	
21	Vial 19	3256 4303-SAM	PCB8082	1	Sample	1.0	
22	Vial 9	Hexane	PCB8082	1	Sample	1.0	
23	Vial 20	3230 Ck Std	PCB8082	1	Sample	1.0	
24	Vial 10	Hexane	PCB8082	1	Sample	1.0	
25	Vial 4	PCB CCV 3	PCB8082	1	Sample	1.0	
26	Vial 10	Hexane	PCB8082	1	Sample	1.0	
27	Vial 5	PCB CCV 3	PCB8082	1	Sample	1.0	
28	Vial 11	Hexane	PCB8082	1	Sample	1.0	
29	Vial 11	Hexane	PCB8082	1	Sample	1.0	
30	Vial 11	Hexane	PCB8082	1	Sample	1.0	

Sequence Table (Back Injector):

SAMPLE INFORMATION SUMMARY

BATCH: \\apwscf02\slab\chem\gcecd1.i\2013\130522c109.b

Data File	Injection Date	Sample Type	Dil Factor	Inst ID	Method	Method Batch
05220002ccv3.D	22-MAY-2013 10:31	Continuing Cal	1.00	gcecd1	pcbECDAPR25.m	130522c109.b
05220004_BLANK.D	22-MAY-2013 12:05	BLANK	1.00	gcecd1	pcbECDAPR25.m	130522c109.b
05220005_LCS.D	22-MAY-2013 12:53	LCS	1.00	gcecd1	pcbECDAPR25.m	130522c109.b
05220007_04248.D	22-MAY-2013 14:28	Unknown	1.00	gcecd1	pcbECDAPR25.m	130522c109.b
05220009_04248Dup.d	22-MAY-2013 16:02	Unknown	1.00	gcecd1	pcbECDAPR25.m	130522c109.b
05220011_4248MS.D	22-MAY-2013 17:37	MS	1.00	gcecd1	pcbECDAPR25.m	130522c109.b
05220013_4248MSD.d	22-MAY-2013 19:11	MSD	1.00	gcecd1	pcbECDAPR25.m	130522c109.b
05220015ccv3.D	22-MAY-2013 20:46	Continuing Cal	1.00	gcecd1	pcbECDAPR25.m	130522c109.b
05220017ccv3.D	22-MAY-2013 22:20	Continuing Cal	1.00	gcecd1	pcbECDAPR25.m	130522c109.b
05220021_4303.D	23-MAY-2013 01:29	Unknown	1.00	gcecd1	pcbECDAPR25.m	130522c109.b
05220023CkStd.D	23-MAY-2013 03:03	QCCHECK	1.00	gcecd1	pcbECDAPR25.m	130522c109.b
05220025ccv3.D	23-MAY-2013 04:37	Continuing Cal	1.00	gcecd1	pcbECDAPR25.m	130522c109.b
05220027ccv3.D	23-MAY-2013 06:12	Continuing Cal	1.00	gcecd1	pcbECDAPR25.m	130522c109.b
05220019_4276.D	~~23~~ 22-MAY-2013 23:54	Unknown	1.00	gcecd1	pcbECDAPR25.m	130522c109.b

* jpm 5/23/13

Data File	Matrix	Fraction	Lab Sample ID	Lab Prep Batch	Client Sample ID	Client Sample Group
05220002ccv3.D	LIQUID	OTHER	PCB CCV 3	41313	PCB CCV 3	C109 CLO
05220004_BLANK.D	SOLID	PEST	BLANK	41313	BLANK	C109 CLO
05220005_LCS.D	SOLID	PEST	LCS	41313	LCS	C109 CLO
05220007_04248.D	SOLID	PEST	S13T004248	41313	S13T004248	C109 CLO
05220009_04248Dup.d	SOLID	PEST	S13T004248Dup	41313	S13T004248Dup	C109 CLO
05220011_4248MS.D	SOLID	PEST	S13T004248MS	41313	S13T004248MS	C109 CLO
05220013_4248MSD.d	SOLID	OTHER	S13T004248MSD	41313	S13T004248MSD	C109 CLO
05220015ccv3.D	SOLID	OTHER	ccv3	41313	ccv3	C109 CLO
05220017ccv3.D	SOLID	OTHER	ccv3	41313	ccv3	C109 CLO
05220021_4303.D	SOLID	PEST	S13T004303	41313	S13T004303	C109 CLO
05220023CkStd.D	SOLID	PEST	Ck Std	41313	Ck Std	C109 CLO
05220025ccv3.D	SOLID	OTHER	ccv3	41313	ccv3	C109 CLO
05220027ccv3.D	SOLID	OTHER	ccv3	41313	ccv3	C109 CLO
05220019_4276.D	SOLID	PEST	S13T004276	41313	S13T004276	C109 CLO

Data File	Compound Sublist	Spike List File	Sample Ref #	QC Group Ref #	Init Cal Ref #	Batch Ref #
05220002ccv3.D	indA.sub	1254.spk	4601835	4601836	6000516	74403336
05220004_BLANK.D	aroclor.sub	1254.spk	6000767	4601836	6000516	74403336
05220005_LCS.D	aroclor.sub	LCSASE.spk	6000768	4601836	6000516	74403336
05220007_04248.D	aroclor.sub	1254.spk	6000785	4601836	6000516	74403336
05220009_04248Dup.d	aroclor.sub	1254.spk	6000786	4601836	6000516	74403336
05220011_4248MS.D	aroclor.sub	1254ase.spk	6000787	4601836	6000516	74403336
05220013_4248MSD.d	aroclor.sub	1254ase.spk	6000788	4601836	6000516	74403336
05220015ccv3.D	indA.sub	1254.spk	6000773	4601836	6000516	74403336
05220017ccv3.D	indA.sub	1254.spk	6000774	4601836	6000516	74403336
05220021_4303.D	aroclor.sub	1254ase.spk	6000790	4601836	6000516	74403336
05220023CkStd.D	aroclor.sub	LCSASE.spk	6000791	4601836	6000516	74403336
05220025ccv3.D	indA.sub	1254.spk	6000775	4601836	6000516	74403336
05220027ccv3.D	indA.sub	1254.spk	6000776	4601836	6000516	74403336
05220019_4276.D	aroclor.sub	1254ase.spk	6000789	4601836	6000516	74403336

Page 1

* Time Stamp error, actual analysis @ 23:54 on 22-May-2013

SAMPLE INFORMATION SUMMARY

BATCH: \\apwscf02\slab\chem\gcecd1.i\2013\130522c109.b

Data File	Injection Date	Sample Type	Dil Factor	Inst ID	Method	Method Batch

Data File	Matrix	Fraction	Lab Sample ID	Lab Prep Batch	Client Sample ID	Client Sample Group

Data File	Compound Sublist	Spike List File	Sample Ref #	QC Group Ref #	Init Cal Ref #	Batch Ref #

LABCORE Completed Batch Report for Batch# 00041315

Analyst: Ojanen, Carol **Book#:** See Bench Sheet

Instrument: GCMSD5 (TUVOK) for SVOA

Method: SVOA 222S SOLID, LA-523-135 Rev/Mod E-0

Specification: C109 CLO

Prep Batch: 00041251

Batch Comment:

C109 CLO, SVOA SOL, Group #20130402, Prep #41251
Hexachlorocyclopentadiene has been non-reported from all QC and samples as it does not recover in the LCS and MS/MSD at or above detection limits.

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
Sample Sequence 1																	
1	BLNK	S1305160007		0 0	O		1,2,4-Trichlorobenzene	SOLID		<5.1600E+02			516	ug/Kg			U
1	BLNK	S1305160007		0 0	O		1,2-Dichlorobenzene	SOLID		<6.7133E+02			671.33	ug/Kg			U
1	BLNK	S1305160007		0 0	O		1,4-Dichlorobenzene	SOLID		<7.5533E+02			755.33	ug/Kg			U
1	BLNK	S1305160007		0 0	O		1-Butanol	SOLID		<2.3000E+03			2.30E+03	ug/Kg			U
1	BLNK	S1305160007		0 0	O		2,2-oxybis(1-Chloropropane)	SOLID		<5.0200E+02			502	ug/Kg			U
1	BLNK	S1305160007		0 0	O		2,4,5-Trichlorophenol	SOLID		<2.9333E+02			293.33	ug/Kg			U
1	BLNK	S1305160007		0 0	O		2,4,6-Trichlorophenol	SOLID		<3.3000E+02			330	ug/Kg			U
1	BLNK	S1305160007		0 0	O		2,4-Dichlorophenol	SOLID		<3.5933E+02			359.33	ug/Kg			U
1	BLNK	S1305160007		0 0	O		2,4-Dimethylphenol	SOLID		<1.9000E+02			190	ug/Kg			U
1	BLNK	S1305160007		0 0	O		2,4-Dinitrophenol	SOLID		<2.7467E+02			274.67	ug/Kg			U
1	BLNK	S1305160007		0 0	O		2,4-Dinitrotoluene	SOLID		<2.5400E+02			254	ug/Kg			U
1	BLNK	S1305160007		0 0	O		2,6 bis-4Methylphenol	SOLID		<1.5707E+03			1.57E+03	ug/Kg			U
1	BLNK	S1305160007		0 0	O		2,6-Dinitrotoluene	SOLID		<2.5800E+02			258	ug/Kg			U
1	BLNK	S1305160007		0 0	O		2-Butoxyethanol	SOLID		<1.0019E+04			1.00E+04	ug/Kg			U
1	BLNK	S1305160007		0 0	O		2-Chloronaphthalene	SOLID		<3.3800E+02			338	ug/Kg			U
1	BLNK	S1305160007		0 0	O		2-Chlorophenol	SOLID		<4.4333E+02			443.33	ug/Kg			U
1	BLNK	S1305160007		0 0	O		2-Ethoxyethanol	SOLID		<1.2160E+03			1.22E+03	ug/Kg			U
1	BLNK	S1305160007		0 0	O		2-Methylnaphthalene	SOLID		<3.6933E+02			369.33	ug/Kg			U
1	BLNK	S1305160007		0 0	O		2-Methylphenol	SOLID		<3.8333E+02			383.33	ug/Kg			U
1	BLNK	S1305160007		0 0	O		2-Nitroaniline	SOLID		<3.1333E+02			313.33	ug/Kg			U
1	BLNK	S1305160007		0 0	O		2-Nitrophenol	SOLID		<3.5800E+02			358	ug/Kg			U
1	BLNK	S1305160007		0 0	O		3 & 4 Methylphenol Total	SOLID		<3.4267E+02			342.67	ug/Kg			U
1	BLNK	S1305160007		0 0	O		3-Nitroaniline	SOLID		<2.9867E+02			298.67	ug/Kg			U
1	BLNK	S1305160007		0 0	O		4,6-Dinitro-2-methylphenol	SOLID		<2.1000E+02			210	ug/Kg			U
1	BLNK	S1305160007		0 0	O		4-Bromophenyl-phenylether	SOLID		<2.2067E+02			220.67	ug/Kg			U
1	BLNK	S1305160007		0 0	O		4-Chloro-3-methylphenol	SOLID		<2.8800E+02			288	ug/Kg			U

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041315

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
1	BLNK	S1305160007		0 0	O		4-Chloroaniline	SOLID		<3.1667E+02			316.67	ug/Kg			U
1	BLNK	S1305160007		0 0	O		4-Chlorophenyl-phenylether	SOLID		<3.2000E+02			320	ug/Kg			U
1	BLNK	S1305160007		0 0	O		4-Nitroaniline	SOLID		<3.4400E+02			344	ug/Kg			U
1	BLNK	S1305160007		0 0	O		4-Nitrophenol	SOLID		<3.5067E+02			350.67	ug/Kg			U
1	BLNK	S1305160007		0 0	O		Acenaphthene	SOLID		<1.1733E+02			117.33	ug/Kg			U
1	BLNK	S1305160007		0 0	O		Acenaphthylene	SOLID		<3.0533E+02			305.33	ug/Kg			U
1	BLNK	S1305160007		0 0	O		Anthracene	SOLID		<2.0800E+02			208	ug/Kg			U
1	BLNK	S1305160007		0 0	O		Benzo(a)anthracene	SOLID		<2.5200E+02			252	ug/Kg			U
1	BLNK	S1305160007		0 0	O		Benzo(a)pyrene	SOLID		<2.7467E+02			274.67	ug/Kg			U
1	BLNK	S1305160007		0 0	O		Benzo(b)fluoranthene	SOLID		<3.2600E+02			326	ug/Kg			U
1	BLNK	S1305160007		0 0	O		Benzo(g,h,i)perylene	SOLID		<2.7400E+02			274	ug/Kg			U
1	BLNK	S1305160007		0 0	O		Benzo(k)fluoranthene	SOLID		<2.6067E+02			260.67	ug/Kg			U
1	BLNK	S1305160007		0 0	O		Butylbenzylphthalate	SOLID		<3.3333E+02			333.33	ug/Kg			U
1	BLNK	S1305160007		0 0	O		Chrysene	SOLID		<5.4267E+02			542.67	ug/Kg			U
1	BLNK	S1305160007		0 0	O		Cyclohexanone	SOLID		<3.7273E+03			3.73E+03	ug/Kg			U
1	BLNK	S1305160007		0 0	O		Di-n-butylphthalate	SOLID		<3.7487E+03			3.75E+03	ug/Kg			U
1	BLNK	S1305160007		0 0	O		Di-n-octylphthalate	SOLID		<3.1800E+02			318	ug/Kg			U
1	BLNK	S1305160007		0 0	O		Dibenz(a,h)anthracene	SOLID		<3.4067E+02			340.67	ug/Kg			U
1	BLNK	S1305160007		0 0	O		Dibenzofuran	SOLID		<3.1000E+02			310	ug/Kg			U
1	BLNK	S1305160007		0 0	O		Diethylphthalate	SOLID		<2.8133E+02			281.33	ug/Kg			U
1	BLNK	S1305160007		0 0	O		Dimethylphthalate	SOLID		<3.2267E+02			322.67	ug/Kg			U
1	BLNK	S1305160007		0 0	O		Diphenylamine	SOLID		<2.5733E+02			257.33	ug/Kg			U
1	BLNK	S1305160007		0 0	O		Fluoranthene	SOLID		<2.3600E+02			236	ug/Kg			U
1	BLNK	S1305160007		0 0	O		Fluorene	SOLID		<2.6400E+02			264	ug/Kg			U
1	BLNK	S1305160007		0 0	O		Hexachlorobenzene	SOLID		<3.1667E+02			316.67	ug/Kg			U
1	BLNK	S1305160007		0 0	O		Hexachlorobutadiene	SOLID		<4.6467E+02			464.67	ug/Kg			U
1	BLNK	S1305160007		0 0	O		Hexachloroethane	SOLID		<7.4533E+02			745.33	ug/Kg			U
1	BLNK	S1305160007		0 0	O		Indeno(1,2,3-cd)pyrene	SOLID		<3.4000E+02			340	ug/Kg			U
1	BLNK	S1305160007		0 0	O		Isobutanol	SOLID		<3.0687E+03			3.07E+03	ug/Kg			U
1	BLNK	S1305160007		0 0	O		Isophorone	SOLID		<3.5467E+02			354.67	ug/Kg			U
1	BLNK	S1305160007		0 0	O		Methylphenols, Total	SOLID		<7.1067E+02			710.67	ug/Kg			U
1	BLNK	S1305160007		0 0	O		N-Nitrosodimethylamine	SOLID		<5.1400E+02			514	ug/Kg			U
1	BLNK	S1305160007		0 0	O		N-Nitrosodipropylamine	SOLID		<3.8733E+02			387.33	ug/Kg			U
1	BLNK	S1305160007		0 0	O		N-Nitrosomorpholine	SOLID		<1.2753E+03			1.28E+03	ug/Kg			U
1	BLNK	S1305160007		0 0	O		Naphthalene	SOLID		<4.1733E+02			417.33	ug/Kg			U
1	BLNK	S1305160007		0 0	O		Nitrobenzene	SOLID		<4.3067E+02			430.67	ug/Kg			U
1	BLNK	S1305160007		0 0	O		Pentachlorophenol	SOLID		<2.5000E+02			250	ug/Kg			U
1	BLNK	S1305160007		0 0	O		Phenanthrene	SOLID		<2.3400E+02			234	ug/Kg			U
1	BLNK	S1305160007		0 0	O		Phenol	SOLID		<3.9600E+02			396	ug/Kg			U
1	BLNK	S1305160007		0 0	O		Pyrene	SOLID		<4.1933E+02			419.33	ug/Kg			U
1	BLNK	S1305160007		0 0	O		Pyridine	SOLID		<4.3333E+02			433.33	ug/Kg			U

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041315

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
1	BLNK	S1305160007		0 0	O		Tri-n-butylphosphate	SOLID		<7.1867E+02			718.67	ug/Kg			U
1	BLNK	S1305160007		0 0	O		bis(2-Chloroethoxy)methane	SOLID		<4.6000E+02			460	ug/Kg			U
1	BLNK	S1305160007		0 0	O		bis(2-Ethylhexyl)phthalate	SOLID		<3.9347E+03			3.93E+03	ug/Kg			U
1	BLNK	S1305160007		0 0	O		bis-(2-Chloroethyl) ether	SOLID		<5.0133E+02			501.33	ug/Kg			U
1	BLNK	S1305160007		0 0	O		2,4,6-Tribromophenol	SOLID	26666.66	1.9460E+04				ug/Kg	72.975	% Recovery	
1	BLNK	S1305160007		0 0	O		2-Fluorobiphenyl	SOLID	13333.33	1.0254E+04				ug/Kg	76.905	% Recovery	
1	BLNK	S1305160007		0 0	O		2-Fluorophenol	SOLID	26666.66	1.8409E+04				ug/Kg	69.034	% Recovery	
1	BLNK	S1305160007		0 0	O		Nitrobenzene-d5	SOLID	13333.33	9.9360E+03				ug/Kg	74.52	% Recovery	
1	BLNK	S1305160007		0 0	O		Phenol-d6	SOLID	26666.66	1.9410E+04				ug/Kg	72.788	% Recovery	
1	BLNK	S1305160007		0 0	O		Terphenyl-d14	SOLID	13333.33	1.3242E+04				ug/Kg	99.315	% Recovery	
1	BLNK	S1305160007		0 0	O		3-Penten-2-ol	SOLID		2454.4724				ug/Kg			JNT
1	BLNK	S1305160007		0 0	O		Trichloromethane	SOLID		2957.5664				ug/Kg			JNT
1	BLNK	S1305160007		0 0	O		Unknown-1	SOLID		2807.7008				ug/Kg			JT
Sample Sequence 2																	
2	LCS	S1305160008		0 0	O		1,2,4-Trichlorobenzene	SOLID	6666.666	6.3515E+03			516	ug/Kg	95.273	% Recovery	
2	LCS	S1305160008		0 0	O		1,2-Dichlorobenzene	SOLID	6666.666	6.1005E+03			671.33	ug/Kg	91.508	% Recovery	
2	LCS	S1305160008		0 0	O		1,4-Dichlorobenzene	SOLID	6666.666	6.0524E+03			755.33	ug/Kg	90.786	% Recovery	
2	LCS	S1305160008		0 0	O		1-Butanol	SOLID	26666.66	1.8016E+04			2.30E+03	ug/Kg	67.56	% Recovery	
2	LCS	S1305160008		0 0	O		2,2-oxybis(1-Chloropropane)	SOLID	6666.666	6.3368E+03			502	ug/Kg	95.052	% Recovery	
2	LCS	S1305160008		0 0	O		2,4,5-Trichlorophenol	SOLID	6666.666	6.1032E+03			293.33	ug/Kg	91.548	% Recovery	
2	LCS	S1305160008		0 0	O		2,4,6-Trichlorophenol	SOLID	6666.666	6.2057E+03			330	ug/Kg	93.086	% Recovery	
2	LCS	S1305160008		0 0	O		2,4-Dichlorophenol	SOLID	6666.666	6.3835E+03			359.33	ug/Kg	95.753	% Recovery	
2	LCS	S1305160008		0 0	O		2,4-Dimethylphenol	SOLID	6666.666	4.5825E+03			190	ug/Kg	68.738	% Recovery	
2	LCS	S1305160008		0 0	O		2,4-Dinitrophenol	SOLID	6666.666	3.7187E+03			274.67	ug/Kg	55.781	% Recovery	
2	LCS	S1305160008		0 0	O		2,4-Dinitrotoluene	SOLID	6666.666	6.5574E+03			254	ug/Kg	98.361	% Recovery	
2	LCS	S1305160008		0 0	O		2,6 bis-4Methylphenol	SOLID	6666.666	2.9553E+03			1.57E+03	ug/Kg	44.33	% Recovery	
2	LCS	S1305160008		0 0	O		2,6-Dinitrotoluene	SOLID	6666.666	6.3496E+03			258	ug/Kg	95.244	% Recovery	
2	LCS	S1305160008		0 0	O		2-Butoxyethanol	SOLID	13333.33	1.2222E+04			1.00E+04	ug/Kg	91.665	% Recovery	
2	LCS	S1305160008		0 0	O		2-Chloronaphthalene	SOLID	6666.666	6.1593E+03			338	ug/Kg	92.39	% Recovery	
2	LCS	S1305160008		0 0	O		2-Chlorophenol	SOLID	6666.666	5.9027E+03			443.33	ug/Kg	88.541	% Recovery	
2	LCS	S1305160008		0 0	O		2-Ethoxyethanol	SOLID	6666.666	5.5656E+03			1.22E+03	ug/Kg	83.484	% Recovery	
2	LCS	S1305160008		0 0	O		2-Methylnaphthalene	SOLID	6666.666	6.3643E+03			369.33	ug/Kg	95.465	% Recovery	
2	LCS	S1305160008		0 0	O		2-Methylphenol	SOLID	6666.666	5.6070E+03			383.33	ug/Kg	84.105	% Recovery	
2	LCS	S1305160008		0 0	O		2-Nitroaniline	SOLID	6666.666	6.0562E+03			313.33	ug/Kg	90.843	% Recovery	
2	LCS	S1305160008		0 0	O		2-Nitrophenol	SOLID	6666.666	6.5535E+03			358	ug/Kg	98.303	% Recovery	
2	LCS	S1305160008		0 0	O		3 & 4 Methylphenol Total	SOLID	6666.666	6.1716E+03			342.67	ug/Kg	92.574	% Recovery	
2	LCS	S1305160008		0 0	O		3-Nitroaniline	SOLID	6666.666	5.7720E+03			298.67	ug/Kg	86.58	% Recovery	
2	LCS	S1305160008		0 0	O		4,6-Dinitro-2-methylphenol	SOLID	6666.666	6.3509E+03			210	ug/Kg	95.264	% Recovery	

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041315

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
2	LCS	S1305160008		0 0	O		4-Bromophenyl-phenylether	SOLID	6666.666	6.9451E+03			220.67	ug/Kg	104.18	% Recovery	
2	LCS	S1305160008		0 0	O		4-Chloro-3-methylphenol	SOLID	6666.666	6.1978E+03			288	ug/Kg	92.967	% Recovery	
2	LCS	S1305160008		0 0	O		4-Chloroaniline	SOLID	6666.666	5.9061E+03			316.67	ug/Kg	88.592	% Recovery	
2	LCS	S1305160008		0 0	O		4-Chlorophenyl-phenylether	SOLID	6666.666	6.2755E+03			320	ug/Kg	94.133	% Recovery	
2	LCS	S1305160008		0 0	O		4-Nitroaniline	SOLID	6666.666	5.6236E+03			344	ug/Kg	84.354	% Recovery	
2	LCS	S1305160008		0 0	O		4-Nitrophenol	SOLID	6666.666	6.2350E+03			350.67	ug/Kg	93.525	% Recovery	
2	LCS	S1305160008		0 0	O		Acenaphthene	SOLID	6666.666	6.1921E+03			117.33	ug/Kg	92.882	% Recovery	
2	LCS	S1305160008		0 0	O		Acenaphthylene	SOLID	6666.666	6.0462E+03			305.33	ug/Kg	90.693	% Recovery	
2	LCS	S1305160008		0 0	O		Anthracene	SOLID	6666.666	6.9989E+03			208	ug/Kg	104.98	% Recovery	
2	LCS	S1305160008		0 0	O		Benzo(a)anthracene	SOLID	6666.666	6.7792E+03			252	ug/Kg	101.69	% Recovery	
2	LCS	S1305160008		0 0	O		Benzo(a)pyrene	SOLID	6666.666	6.5071E+03			274.67	ug/Kg	97.607	% Recovery	
2	LCS	S1305160008		0 0	O		Benzo(b)fluoranthene	SOLID	6666.666	6.6853E+03			326	ug/Kg	100.28	% Recovery	
2	LCS	S1305160008		0 0	O		Benzo(g,h,i)perylene	SOLID	6666.666	6.5476E+03			274	ug/Kg	98.214	% Recovery	
2	LCS	S1305160008		0 0	O		Benzo(k)fluoranthene	SOLID	6666.666	7.1490E+03			260.67	ug/Kg	107.24	% Recovery	
2	LCS	S1305160008		0 0	O		Butylbenzylphthalate	SOLID	6666.666	7.3152E+03			333.33	ug/Kg	109.73	% Recovery	
2	LCS	S1305160008		0 0	O		Chrysene	SOLID	6666.666	6.8260E+03			542.67	ug/Kg	102.39	% Recovery	
2	LCS	S1305160008		0 0	O		Cyclohexanone	SOLID	6666.666	6.0967E+03			3.73E+03	ug/Kg	91.451	% Recovery	
2	LCS	S1305160008		0 0	O		Di-n-butylphthalate	SOLID	6666.666	7.6988E+03			3.75E+03	ug/Kg	115.48	% Recovery	
2	LCS	S1305160008		0 0	O		Di-n-octylphthalate	SOLID	6666.666	7.6674E+03			318	ug/Kg	115.01	% Recovery	
2	LCS	S1305160008		0 0	O		Dibenz(a,h)anthracene	SOLID	6666.666	6.7161E+03			340.67	ug/Kg	100.74	% Recovery	
2	LCS	S1305160008		0 0	O		Dibenzofuran	SOLID	6666.666	6.1439E+03			310	ug/Kg	92.159	% Recovery	
2	LCS	S1305160008		0 0	O		Diethylphthalate	SOLID	6666.666	6.6080E+03			281.33	ug/Kg	99.12	% Recovery	
2	LCS	S1305160008		0 0	O		Dimethylphthalate	SOLID	6666.666	6.2823E+03			322.67	ug/Kg	94.235	% Recovery	
2	LCS	S1305160008		0 0	O		Diphenylamine	SOLID	6666.666	6.8056E+03			257.33	ug/Kg	102.08	% Recovery	
2	LCS	S1305160008		0 0	O		Fluoranthene	SOLID	6666.666	7.1782E+03			236	ug/Kg	107.67	% Recovery	
2	LCS	S1305160008		0 0	O		Fluorene	SOLID	6666.666	6.4324E+03			264	ug/Kg	96.486	% Recovery	
2	LCS	S1305160008		0 0	O		Hexachlorobenzene	SOLID	6666.666	6.9127E+03			316.67	ug/Kg	103.69	% Recovery	
2	LCS	S1305160008		0 0	O		Hexachlorobutadiene	SOLID	6666.666	6.3399E+03			464.67	ug/Kg	95.099	% Recovery	
2	LCS	S1305160008		0 0	O		Hexachloroethane	SOLID	6666.666	5.9364E+03			745.33	ug/Kg	89.046	% Recovery	
2	LCS	S1305160008		0 0	O		Indeno(1,2,3-cd)pyrene	SOLID	6666.666	6.5998E+03			340	ug/Kg	98.997	% Recovery	
2	LCS	S1305160008		0 0	O		Isobutanol	SOLID	13333.33	7.1227E+03			3.07E+03	ug/Kg	53.42	% Recovery	
2	LCS	S1305160008		0 0	O		Isophorone	SOLID	6666.666	6.1770E+03			354.67	ug/Kg	92.655	% Recovery	
2	LCS	S1305160008		0 0	O		Methylphenols, Total	SOLID	13333.33	1.1778E+04			710.67	ug/Kg	88.335	% Recovery	
2	LCS	S1305160008		0 0	O		N-Nitrosodimethylamine	SOLID	6666.666	5.7059E+03			514	ug/Kg	85.589	% Recovery	
2	LCS	S1305160008		0 0	O		N-Nitrosodipropylamine	SOLID	6666.666	5.6346E+03			387.33	ug/Kg	84.519	% Recovery	
2	LCS	S1305160008		0 0	O		N-Nitrosomorpholine	SOLID	6666.666	5.5326E+03			1.28E+03	ug/Kg	82.989	% Recovery	
2	LCS	S1305160008		0 0	O		Naphthalene	SOLID	6666.666	6.2706E+03			417.33	ug/Kg	94.059	% Recovery	
2	LCS	S1305160008		0 0	O		Nitrobenzene	SOLID	6666.666	6.1118E+03			430.67	ug/Kg	91.677	% Recovery	
2	LCS	S1305160008		0 0	O		Pentachlorophenol	SOLID	6666.666	6.9482E+03			250	ug/Kg	104.22	% Recovery	

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041315

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
2	LCS	S1305160008		0 0	O		Phenanthrene	SOLID	6666.666	7.0212E+03			234	ug/Kg	105.32	% Recovery	
2	LCS	S1305160008		0 0	O		Phenol	SOLID	6666.666	5.6463E+03			396	ug/Kg	84.695	% Recovery	
2	LCS	S1305160008		0 0	O		Pyrene	SOLID	6666.666	7.0752E+03			419.33	ug/Kg	106.13	% Recovery	
2	LCS	S1305160008		0 0	O		Pyridine	SOLID	6666.666	5.5090E+03			433.33	ug/Kg	82.635	% Recovery	
2	LCS	S1305160008		0 0	O		Tri-n-butylphosphate	SOLID	6666.666	7.3601E+03			718.67	ug/Kg	110.4	% Recovery	
2	LCS	S1305160008		0 0	O		bis(2-Chloroethoxy)methane	SOLID	6666.666	6.2983E+03			460	ug/Kg	94.475	% Recovery	
2	LCS	S1305160008		0 0	O		bis(2-Ethylhexyl)phthalate	SOLID	6666.666	7.9990E+03			3.93E+03	ug/Kg	119.99	% Recovery	
2	LCS	S1305160008		0 0	O		bis-(2-Chloroethyl) ether	SOLID	6666.666	5.8081E+03			501.33	ug/Kg	87.122	% Recovery	
2	LCS	S1305160008		0 0	O		2,4,6-Tribromophenol	SOLID	26666.66	2.3339E+04				ug/Kg	87.521	% Recovery	
2	LCS	S1305160008		0 0	O		2-Fluorobiphenyl	SOLID	13333.33	1.1336E+04				ug/Kg	85.02	% Recovery	
2	LCS	S1305160008		0 0	O		2-Fluorophenol	SOLID	26666.66	2.0639E+04				ug/Kg	77.396	% Recovery	
2	LCS	S1305160008		0 0	O		Nitrobenzene-d5	SOLID	13333.33	1.1017E+04				ug/Kg	82.628	% Recovery	
2	LCS	S1305160008		0 0	O		Phenol-d6	SOLID	26666.66	2.1511E+04				ug/Kg	80.666	% Recovery	
2	LCS	S1305160008		0 0	O		Terphenyl-d14	SOLID	13333.33	1.3976E+04				ug/Kg	104.82	% Recovery	
Sample Sequence 3																	
3	SAMPLE	S13T004247		0 0	O		1,2,4-Trichlorobenzene	SOLID	N/A	<4.9887E+02			498.87	ug/Kg			Ua
3	SAMPLE	S13T004247		0 0	O		1,2-Dichlorobenzene	SOLID	N/A	<6.4905E+02			649.05	ug/Kg			U
3	SAMPLE	S13T004247		0 0	O		1,4-Dichlorobenzene	SOLID	N/A	<7.3026E+02			730.26	ug/Kg			U
3	SAMPLE	S13T004247		0 0	O		1-Butanol	SOLID	N/A	<2.2237E+03			2.22E+03	ug/Kg			Uab
3	SAMPLE	S13T004247		0 0	O		2,2-oxybis(1-Chloropropane)	SOLID	N/A	<4.8534E+02			485.34	ug/Kg			U
3	SAMPLE	S13T004247		0 0	O		2,4,5-Trichlorophenol	SOLID	N/A	<2.8360E+02			283.6	ug/Kg			Ub
3	SAMPLE	S13T004247		0 0	O		2,4,6-Trichlorophenol	SOLID	N/A	<3.1905E+02			319.05	ug/Kg			Ub
3	SAMPLE	S13T004247		0 0	O		2,4-Dichlorophenol	SOLID	N/A	<3.4741E+02			347.41	ug/Kg			U
3	SAMPLE	S13T004247		0 0	O		2,4-Dimethylphenol	SOLID	N/A	<1.8369E+02			183.69	ug/Kg			Uab
3	SAMPLE	S13T004247		0 0	O		2,4-Dinitrophenol	SOLID	N/A	<2.6555E+02			265.55	ug/Kg			Uab
3	SAMPLE	S13T004247		0 0	O		2,4-Dinitrotoluene	SOLID	N/A	<2.4557E+02			245.57	ug/Kg			U
3	SAMPLE	S13T004247		0 0	O		2,6 bis-4Methylphenol	SOLID	N/A	<1.5185E+03			1.52E+03	ug/Kg			Uab
3	SAMPLE	S13T004247		0 0	O		2,6-Dinitrotoluene	SOLID	N/A	<2.4944E+02			249.44	ug/Kg			U
3	SAMPLE	S13T004247		0 0	O		2-Butoxyethanol	SOLID	N/A	<9.6861E+03			9.69E+03	ug/Kg			U
3	SAMPLE	S13T004247		0 0	O		2-Chloronaphthalene	SOLID	N/A	<3.2678E+02			326.78	ug/Kg			U
3	SAMPLE	S13T004247		0 0	O		2-Chlorophenol	SOLID	N/A	<4.2862E+02			428.62	ug/Kg			U
3	SAMPLE	S13T004247		0 0	O		2-Ethoxyethanol	SOLID	N/A	<1.1756E+03			1.18E+03	ug/Kg			U
3	SAMPLE	S13T004247		0 0	O		2-Methylnaphthalene	SOLID	N/A	<3.5707E+02			357.07	ug/Kg			U
3	SAMPLE	S13T004247		0 0	O		2-Methylphenol	SOLID	N/A	<3.7061E+02			370.61	ug/Kg			U
3	SAMPLE	S13T004247		0 0	O		2-Nitroaniline	SOLID	N/A	<3.0293E+02			302.93	ug/Kg			U
3	SAMPLE	S13T004247		0 0	O		2-Nitrophenol	SOLID	N/A	<3.4612E+02			346.12	ug/Kg			Ub
3	SAMPLE	S13T004247		0 0	O		3 & 4 Methylphenol Total	SOLID	N/A	<3.3129E+02			331.29	ug/Kg			U
3	SAMPLE	S13T004247		0 0	O		3-Nitroaniline	SOLID	N/A	<2.8875E+02			288.75	ug/Kg			U

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041315

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
3	SAMPLE	S13T004247		0 0	O		4,6-Dinitro-2-methylphenol	SOLID	N/A	<2.0303E+02			203.03	ug/Kg			Ub
3	SAMPLE	S13T004247		0 0	O		4-Bromophenyl-phenylether	SOLID	N/A	<2.1334E+02			213.34	ug/Kg			U
3	SAMPLE	S13T004247		0 0	O		4-Chloro-3-methylphenol	SOLID	N/A	<2.7844E+02			278.44	ug/Kg			U
3	SAMPLE	S13T004247		0 0	O		4-Chloroaniline	SOLID	N/A	<3.0616E+02			306.16	ug/Kg			U
3	SAMPLE	S13T004247		0 0	O		4-Chlorophenyl-phenylether	SOLID	N/A	<3.0938E+02			309.38	ug/Kg			U
3	SAMPLE	S13T004247		0 0	O		4-Nitroaniline	SOLID	N/A	<3.3258E+02			332.58	ug/Kg			U
3	SAMPLE	S13T004247		0 0	O		4-Nitrophenol	SOLID	N/A	<3.3903E+02			339.03	ug/Kg			Ub
3	SAMPLE	S13T004247		0 0	O		Acenaphthene	SOLID	N/A	<1.1344E+02			113.44	ug/Kg			U
3	SAMPLE	S13T004247		0 0	O		Acenaphthylene	SOLID	N/A	<2.9520E+02			295.2	ug/Kg			U
3	SAMPLE	S13T004247		0 0	O		Anthracene	SOLID	N/A	<2.0110E+02			201.1	ug/Kg			U
3	SAMPLE	S13T004247		0 0	O		Benzo(a)anthracene	SOLID	N/A	<2.4364E+02			243.64	ug/Kg			U
3	SAMPLE	S13T004247		0 0	O		Benzo(a)pyrene	SOLID	N/A	<2.6555E+02			265.55	ug/Kg			U
3	SAMPLE	S13T004247		0 0	O		Benzo(b)fluoranthene	SOLID	N/A	<3.1518E+02			315.18	ug/Kg			U
3	SAMPLE	S13T004247		0 0	O		Benzo(g,h,i)perylene	SOLID	N/A	<2.6490E+02			264.9	ug/Kg			U
3	SAMPLE	S13T004247		0 0	O		Benzo(k)fluoranthene	SOLID	N/A	<2.5201E+02			252.01	ug/Kg			U
3	SAMPLE	S13T004247		0 0	O		Butylbenzylphthalate	SOLID	N/A	<3.2227E+02			322.27	ug/Kg			U
3	SAMPLE	S13T004247		0 0	O		Chrysene	SOLID	N/A	<5.2465E+02			524.65	ug/Kg			U
3	SAMPLE	S13T004247		0 0	O		Cyclohexanone	SOLID	N/A	<3.6036E+03			3.60E+03	ug/Kg			U
3	SAMPLE	S13T004247		0 0	O		Di-n-butylphthalate	SOLID	N/A	<3.6242E+03			3.62E+03	ug/Kg			U
3	SAMPLE	S13T004247		0 0	O		Di-n-octylphthalate	SOLID	N/A	<3.0744E+02			307.44	ug/Kg			U
3	SAMPLE	S13T004247		0 0	O		Dibenz(a,h)anthracene	SOLID	N/A	<3.2936E+02			329.36	ug/Kg			U
3	SAMPLE	S13T004247		0 0	O		Dibenzofuran	SOLID	N/A	<2.9971E+02			299.71	ug/Kg			U
3	SAMPLE	S13T004247		0 0	O		Diethylphthalate	SOLID	N/A	<2.7199E+02			271.99	ug/Kg			U
3	SAMPLE	S13T004247		0 0	O		Dimethylphthalate	SOLID	N/A	<3.1196E+02			311.96	ug/Kg			U
3	SAMPLE	S13T004247		0 0	O		Diphenylamine	SOLID	N/A	<2.4879E+02			248.79	ug/Kg			U
3	SAMPLE	S13T004247		0 0	O		Fluoranthene	SOLID	N/A	<2.2817E+02			228.17	ug/Kg			U
3	SAMPLE	S13T004247		0 0	O		Fluorene	SOLID	N/A	<2.5524E+02			255.24	ug/Kg			U
3	SAMPLE	S13T004247		0 0	O		Hexachlorobenzene	SOLID	N/A	<3.0616E+02			306.16	ug/Kg			U
3	SAMPLE	S13T004247		0 0	O		Hexachlorobutadiene	SOLID	N/A	<4.4924E+02			449.24	ug/Kg			U
3	SAMPLE	S13T004247		0 0	O		Hexachloroethane	SOLID	N/A	<7.2059E+02			720.59	ug/Kg			U
3	SAMPLE	S13T004247		0 0	O		Indeno(1,2,3-cd)pyrene	SOLID	N/A	<3.2871E+02			328.71	ug/Kg			U
3	SAMPLE	S13T004247		0 0	O		Isobutanol	SOLID	N/A	<2.9668E+03			2.97E+03	ug/Kg			Uab
3	SAMPLE	S13T004247		0 0	O		Isophorone	SOLID	N/A	<3.4289E+02			342.89	ug/Kg			U
3	SAMPLE	S13T004247		0 0	O		Methylphenols, Total	SOLID	N/A	<6.8708E+02			687.08	ug/Kg			U
3	SAMPLE	S13T004247		0 0	O		N-Nitrosodimethylamine	SOLID	N/A	<4.9694E+02			496.94	ug/Kg			U
3	SAMPLE	S13T004247		0 0	O		N-Nitrosodipropylamine	SOLID	N/A	<3.7448E+02			374.48	ug/Kg			U
3	SAMPLE	S13T004247		0 0	O		N-Nitrosomorpholine	SOLID	N/A	<1.2330E+03			1.23E+03	ug/Kg			U
3	SAMPLE	S13T004247		0 0	O		Naphthalene	SOLID	N/A	<4.0348E+02			403.48	ug/Kg			U
3	SAMPLE	S13T004247		0 0	O		Nitrobenzene	SOLID	N/A	<4.1637E+02			416.37	ug/Kg			U

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041315

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
3	SAMPLE	S13T004247		0 0	O		Pentachlorophenol	SOLID	N/A	<2.4170E+02			241.7	ug/Kg			U
3	SAMPLE	S13T004247		0 0	O		Phenanthrene	SOLID	N/A	<2.2623E+02			226.23	ug/Kg			U
3	SAMPLE	S13T004247		0 0	O		Phenol	SOLID	N/A	<3.8286E+02			382.86	ug/Kg			U
3	SAMPLE	S13T004247		0 0	O		Pyrene	SOLID	N/A	<4.0541E+02			405.41	ug/Kg			U
3	SAMPLE	S13T004247		0 0	O		Pyridine	SOLID	N/A	<4.1895E+02			418.95	ug/Kg			U
3	SAMPLE	S13T004247		0 0	O		Tri-n-butylphosphate	SOLID	N/A	<6.9481E+02			694.81	ug/Kg			U
3	SAMPLE	S13T004247		0 0	O		bis(2-Chloroethoxy)methane	SOLID	N/A	<4.4473E+02			444.73	ug/Kg			U
3	SAMPLE	S13T004247		0 0	O		bis(2-Ethylhexyl)phthalate	SOLID	N/A	<3.8041E+03			3.80E+03	ug/Kg			U
3	SAMPLE	S13T004247		0 0	O		bis-(2-Chloroethyl) ether	SOLID	N/A	<4.8469E+02			484.69	ug/Kg			U
3	SAMPLE	S13T004247		0 0	O		2,4,6-Tribromophenol	SOLID	25781.5	1.6867E+04				ug/Kg	65.423	% Recovery	
3	SAMPLE	S13T004247		0 0	O		2-Fluorobiphenyl	SOLID	12890.75	9.9401E+03				ug/Kg	77.11	% Recovery	
3	SAMPLE	S13T004247		0 0	O		2-Fluorophenol	SOLID	25781.5	1.5782E+04				ug/Kg	61.214	% Recovery	
3	SAMPLE	S13T004247		0 0	O		Nitrobenzene-d5	SOLID	12890.75	9.3403E+03				ug/Kg	72.457	% Recovery	
3	SAMPLE	S13T004247		0 0	O		Phenol-d6	SOLID	25781.5	1.9302E+04				ug/Kg	74.868	% Recovery	
3	SAMPLE	S13T004247		0 0	O		Terphenyl-d14	SOLID	12890.75	1.2860E+04				ug/Kg	99.761	% Recovery	
3	SAMPLE	S13T004247		0 0	O		3-methyl-2-Butanone	SOLID		2809.6035				ug/Kg			JNT
3	SAMPLE	S13T004247		0 0	O		3-Penten-2-ol	SOLID		2909.5201				ug/Kg			BJNT
3	SAMPLE	S13T004247		0 0	O		Trichloromethane	SOLID		4282.951				ug/Kg			BJNT
Sample Sequence 4																	
4	DUP	S1305160009	S13T004247	0 0	O		1,2,4-Trichlorobenzene	SOLID	<4.9887E+02	<4.9504E+02			495.04	ug/Kg			U
4	DUP	S1305160009	S13T004247	0 0	O		1,2-Dichlorobenzene	SOLID	<6.4905E+02	<6.4407E+02			644.07	ug/Kg			U
4	DUP	S1305160009	S13T004247	0 0	O		1,4-Dichlorobenzene	SOLID	<7.3026E+02	<7.2466E+02			724.66	ug/Kg			U
4	DUP	S1305160009	S13T004247	0 0	O		1-Butanol	SOLID	<2.2237E+03	<2.2066E+03			2.21E+03	ug/Kg			U
4	DUP	S1305160009	S13T004247	0 0	O		2,2-oxybis(1-Chloropropane)	SOLID	<4.8534E+02	<4.8161E+02			481.61	ug/Kg			U
4	DUP	S1305160009	S13T004247	0 0	O		2,4,5-Trichlorophenol	SOLID	<2.8360E+02	<2.8142E+02			281.42	ug/Kg			U
4	DUP	S1305160009	S13T004247	0 0	O		2,4,6-Trichlorophenol	SOLID	<3.1905E+02	<3.1660E+02			316.6	ug/Kg			U
4	DUP	S1305160009	S13T004247	0 0	O		2,4-Dichlorophenol	SOLID	<3.4741E+02	<3.4474E+02			344.74	ug/Kg			U
4	DUP	S1305160009	S13T004247	0 0	O		2,4-Dimethylphenol	SOLID	<1.8369E+02	<1.8228E+02			182.28	ug/Kg			U
4	DUP	S1305160009	S13T004247	0 0	O		2,4-Dinitrophenol	SOLID	<2.6555E+02	<2.6351E+02			263.51	ug/Kg			U
4	DUP	S1305160009	S13T004247	0 0	O		2,4-Dinitrotoluene	SOLID	<2.4557E+02	<2.4368E+02			243.68	ug/Kg			U
4	DUP	S1305160009	S13T004247	0 0	O		2,6 bis-4Methylphenol	SOLID	<1.5185E+03	<1.5069E+03			1.51E+03	ug/Kg			U
4	DUP	S1305160009	S13T004247	0 0	O		2,6-Dinitrotoluene	SOLID	<2.4944E+02	<2.4752E+02			247.52	ug/Kg			U
4	DUP	S1305160009	S13T004247	0 0	O		2-Butoxyethanol	SOLID	<9.6861E+03	<9.6118E+03			9.61E+03	ug/Kg			U
4	DUP	S1305160009	S13T004247	0 0	O		2-Chloronaphthalene	SOLID	<3.2678E+02	<3.2427E+02			324.27	ug/Kg			U
4	DUP	S1305160009	S13T004247	0 0	O		2-Chlorophenol	SOLID	<4.2862E+02	<4.2533E+02			425.33	ug/Kg			U
4	DUP	S1305160009	S13T004247	0 0	O		2-Ethoxyethanol	SOLID	<1.1756E+03	<1.1666E+03			1.17E+03	ug/Kg			U
4	DUP	S1305160009	S13T004247	0 0	O		2-Methylnaphthalene	SOLID	<3.5707E+02	<3.5433E+02			354.33	ug/Kg			U
4	DUP	S1305160009	S13T004247	0 0	O		2-Methylphenol	SOLID	<3.7061E+02	<3.6776E+02			367.76	ug/Kg			U
4	DUP	S1305160009	S13T004247	0 0	O		2-Nitroaniline	SOLID	<3.0293E+02	<3.0061E+02			300.61	ug/Kg			U

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041315

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
4	DUP	S1305160009	S13T004247	0 0	O		2-Nitrophenol	SOLID	<3.4612E+02	<3.4346E+02			343.46	ug/Kg			U
4	DUP	S1305160009	S13T004247	0 0	O		3 & 4 Methylphenol Total	SOLID	<3.3129E+02	<3.2875E+02			328.75	ug/Kg			U
4	DUP	S1305160009	S13T004247	0 0	O		3-Nitroaniline	SOLID	<2.8875E+02	<2.8654E+02			286.54	ug/Kg			U
4	DUP	S1305160009	S13T004247	0 0	O		4,6-Dinitro-2-methylphenol	SOLID	<2.0303E+02	<2.0147E+02			201.47	ug/Kg			U
4	DUP	S1305160009	S13T004247	0 0	O		4-Bromophenyl-phenylether	SOLID	<2.1334E+02	<2.1170E+02			211.7	ug/Kg			U
4	DUP	S1305160009	S13T004247	0 0	O		4-Chloro-3-methylphenol	SOLID	<2.7844E+02	<2.7630E+02			276.3	ug/Kg			U
4	DUP	S1305160009	S13T004247	0 0	O		4-Chloroaniline	SOLID	<3.0616E+02	<3.0381E+02			303.81	ug/Kg			U
4	DUP	S1305160009	S13T004247	0 0	O		4-Chlorophenyl-phenylether	SOLID	<3.0938E+02	<3.0700E+02			307	ug/Kg			U
4	DUP	S1305160009	S13T004247	0 0	O		4-Nitroaniline	SOLID	<3.3258E+02	<3.3003E+02			330.03	ug/Kg			U
4	DUP	S1305160009	S13T004247	0 0	O		4-Nitrophenol	SOLID	<3.3903E+02	<3.3642E+02			336.42	ug/Kg			U
4	DUP	S1305160009	S13T004247	0 0	O		Acenaphthene	SOLID	<1.1344E+02	<1.1257E+02			112.57	ug/Kg			U
4	DUP	S1305160009	S13T004247	0 0	O		Acenaphthylene	SOLID	<2.9520E+02	<2.9293E+02			292.93	ug/Kg			U
4	DUP	S1305160009	S13T004247	0 0	O		Anthracene	SOLID	<2.0110E+02	<1.9955E+02			199.55	ug/Kg			U
4	DUP	S1305160009	S13T004247	0 0	O		Benzo(a)anthracene	SOLID	<2.4364E+02	<2.4177E+02			241.77	ug/Kg			U
4	DUP	S1305160009	S13T004247	0 0	O		Benzo(a)pyrene	SOLID	<2.6555E+02	<2.6351E+02			263.51	ug/Kg			U
4	DUP	S1305160009	S13T004247	0 0	O		Benzo(b)fluoranthene	SOLID	<3.1518E+02	<3.1276E+02			312.76	ug/Kg			U
4	DUP	S1305160009	S13T004247	0 0	O		Benzo(g,h,i)perylene	SOLID	<2.6490E+02	<2.6287E+02			262.87	ug/Kg			U
4	DUP	S1305160009	S13T004247	0 0	O		Benzo(k)fluoranthene	SOLID	<2.5201E+02	<2.5008E+02			250.08	ug/Kg			U
4	DUP	S1305160009	S13T004247	0 0	O		Butylbenzylphthalate	SOLID	<3.2227E+02	<3.1980E+02			319.8	ug/Kg			U
4	DUP	S1305160009	S13T004247	0 0	O		Chrysene	SOLID	<5.2465E+02	<5.2063E+02			520.63	ug/Kg			U
4	DUP	S1305160009	S13T004247	0 0	O		Cyclohexanone	SOLID	<3.6036E+03	<3.5760E+03			3.58E+03	ug/Kg			U
4	DUP	S1305160009	S13T004247	0 0	O		Di-n-butylphthalate	SOLID	<3.6242E+03	<3.5964E+03			3.60E+03	ug/Kg			U
4	DUP	S1305160009	S13T004247	0 0	O		Di-n-octylphthalate	SOLID	<3.0744E+02	<3.0508E+02			305.08	ug/Kg			U
4	DUP	S1305160009	S13T004247	0 0	O		Dibenz(a,h)anthracene	SOLID	<3.2936E+02	<3.2683E+02			326.83	ug/Kg			U
4	DUP	S1305160009	S13T004247	0 0	O		Dibenzofuran	SOLID	<2.9971E+02	<2.9741E+02			297.41	ug/Kg			U
4	DUP	S1305160009	S13T004247	0 0	O		Diethylphthalate	SOLID	<2.7199E+02	<2.6991E+02			269.91	ug/Kg			U
4	DUP	S1305160009	S13T004247	0 0	O		Dimethylphthalate	SOLID	<3.1196E+02	<3.0956E+02			309.56	ug/Kg			U
4	DUP	S1305160009	S13T004247	0 0	O		Diphenylamine	SOLID	<2.4879E+02	<2.4688E+02			246.88	ug/Kg			U
4	DUP	S1305160009	S13T004247	0 0	O		Fluoranthene	SOLID	<2.2817E+02	<2.2642E+02			226.42	ug/Kg			U
4	DUP	S1305160009	S13T004247	0 0	O		Fluorene	SOLID	<2.5524E+02	<2.5328E+02			253.28	ug/Kg			U
4	DUP	S1305160009	S13T004247	0 0	O		Hexachlorobenzene	SOLID	<3.0616E+02	<3.0381E+02			303.81	ug/Kg			U
4	DUP	S1305160009	S13T004247	0 0	O		Hexachlorobutadiene	SOLID	<4.4924E+02	<4.4579E+02			445.79	ug/Kg			U
4	DUP	S1305160009	S13T004247	0 0	O		Hexachloroethane	SOLID	<7.2059E+02	<7.1506E+02			715.06	ug/Kg			U
4	DUP	S1305160009	S13T004247	0 0	O		Indeno(1,2,3-cd)pyrene	SOLID	<3.2871E+02	<3.2619E+02			326.19	ug/Kg			U
4	DUP	S1305160009	S13T004247	0 0	O		Isobutanol	SOLID	<2.9668E+03	<2.9440E+03			2.94E+03	ug/Kg			U
4	DUP	S1305160009	S13T004247	0 0	O		Isophorone	SOLID	<3.4289E+02	<3.4026E+02			340.26	ug/Kg			U
4	DUP	S1305160009	S13T004247	0 0	O		Methylphenols, Total	SOLID	<6.8708E+02	<6.8180E+02			681.8	ug/Kg			U
4	DUP	S1305160009	S13T004247	0 0	O		N-Nitrosodimethylamine	SOLID	<4.9694E+02	<4.9312E+02			493.12	ug/Kg			U

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041315

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
4	DUP	S1305160009	S13T004247	0 0	O		N-Nitrosodipropylamine	SOLID	<3.7448E+02	<3.7160E+02			371.6	ug/Kg			U
4	DUP	S1305160009	S13T004247	0 0	O		N-Nitrosomorpholine	SOLID	<1.2330E+03	<1.2235E+03			1.22E+03	ug/Kg			U
4	DUP	S1305160009	S13T004247	0 0	O		Naphthalene	SOLID	<4.0348E+02	<4.0038E+02			400.38	ug/Kg			U
4	DUP	S1305160009	S13T004247	0 0	O		Nitrobenzene	SOLID	<4.1637E+02	<4.1318E+02			413.18	ug/Kg			U
4	DUP	S1305160009	S13T004247	0 0	O		Pentachlorophenol	SOLID	<2.4170E+02	<2.3985E+02			239.85	ug/Kg			U
4	DUP	S1305160009	S13T004247	0 0	O		Phenanthrene	SOLID	<2.2623E+02	<2.2450E+02			224.5	ug/Kg			U
4	DUP	S1305160009	S13T004247	0 0	O		Phenol	SOLID	<3.8286E+02	<3.7992E+02			379.92	ug/Kg			U
4	DUP	S1305160009	S13T004247	0 0	O		Pyrene	SOLID	<4.0541E+02	<4.0230E+02			402.3	ug/Kg			U
4	DUP	S1305160009	S13T004247	0 0	O		Pyridine	SOLID	<4.1895E+02	<4.1573E+02			415.73	ug/Kg			U
4	DUP	S1305160009	S13T004247	0 0	O		Tri-n-butylphosphate	SOLID	<6.9481E+02	<6.8948E+02			689.48	ug/Kg			U
4	DUP	S1305160009	S13T004247	0 0	O		bis(2-Chloroethoxy)methane	SOLID	<4.4473E+02	<4.4132E+02			441.32	ug/Kg			U
4	DUP	S1305160009	S13T004247	0 0	O		bis(2-Ethylhexyl)phthalate	SOLID	<3.8041E+03	<3.7749E+03			3.77E+03	ug/Kg			U
4	DUP	S1305160009	S13T004247	0 0	O		bis-(2-Chloroethyl) ether	SOLID	<4.8469E+02	<4.8097E+02			480.97	ug/Kg			U
4	DUP	S1305160009	S13T004247	0 0	O		2,4,6-Tribromophenol	SOLID	1.6867E+04	1.2497E+04				ug/Kg	29.010	% RPD	
4	DUP	S1305160009	S13T004247	0 0	O		2-Fluorobiphenyl	SOLID	9.9401E+03	1.0007E+04				ug/Kg	1.4420	% RPD	
4	DUP	S1305160009	S13T004247	0 0	O		2-Fluorophenol	SOLID	1.5782E+04	1.3113E+04				ug/Kg	17.710	% RPD	
4	DUP	S1305160009	S13T004247	0 0	O		Nitrobenzene-d5	SOLID	9.3403E+03	9.4791E+03				ug/Kg	2.2462	% RPD	
4	DUP	S1305160009	S13T004247	0 0	O		Phenol-d6	SOLID	1.9302E+04	1.9337E+04				ug/Kg	0.95180	% RPD	
4	DUP	S1305160009	S13T004247	0 0	O		Terphenyl-d14	SOLID	1.2860E+04	1.3412E+04				ug/Kg	4.9743	% RPD	
4	DUP	S1305160009	S13T004247	0 0	O		1,2-Benzenedicarboxyli	SOLID		2856.1176				ug/Kg			JNT
4	DUP	S1305160009	S13T004247	0 0	O		3-methyl-2-Butanone	SOLID	2809.6035	2627.8271				ug/Kg			JNT
4	DUP	S1305160009	S13T004247	0 0	O		Trichloromethane	SOLID	4282.951	4056.5332				ug/Kg			BJNT
4	DUP	S1305160009	S13T004247	0 0	O		Unknown-1	SOLID		2737.9223				ug/Kg			JT
Sample Sequence 5																	
5	MS	S1305160010	S13T004247	0 0	O		1,2,4-Trichlorobenzene	SOLID	6287.331	5.8593E+03			486.64	ug/Kg	93.192	% Recovery	
5	MS	S1305160010	S13T004247	0 0	O		1,2-Dichlorobenzene	SOLID	6287.331	5.5480E+03			633.13	ug/Kg	88.241	% Recovery	
5	MS	S1305160010	S13T004247	0 0	O		1,4-Dichlorobenzene	SOLID	6287.331	5.4870E+03			712.35	ug/Kg	87.271	% Recovery	
5	MS	S1305160010	S13T004247	0 0	O		1-Butanol	SOLID	25149.32	1.6926E+04			2.17E+03	ug/Kg	67.302	% Recovery	
5	MS	S1305160010	S13T004247	0 0	O		2,2-oxybis(1-Chloropropane)	SOLID	6287.331	5.7867E+03			473.44	ug/Kg	92.037	% Recovery	
5	MS	S1305160010	S13T004247	0 0	O		2,4,5-Trichlorophenol	SOLID	6287.331	3.4604E+03			276.64	ug/Kg	55.038	% Recovery	
5	MS	S1305160010	S13T004247	0 0	O		2,4,6-Trichlorophenol	SOLID	6287.331	3.9099E+03			311.22	ug/Kg	62.187	% Recovery	
5	MS	S1305160010	S13T004247	0 0	O		2,4-Dichlorophenol	SOLID	6287.331	5.0308E+03			338.89	ug/Kg	80.015	% Recovery	
5	MS	S1305160010	S13T004247	0 0	O		2,4-Dimethylphenol	SOLID	6287.331	2.6252E+03			179.19	ug/Kg	41.754	% Recovery	
5	MS	S1305160010	S13T004247	0 0	O		2,4-Dinitrophenol	SOLID	6287.331	1.8342E+03			259.04	ug/Kg	29.173	% Recovery	
5	MS	S1305160010	S13T004247	0 0	O		2,4-Dinitrotoluene	SOLID	6287.331	6.1253E+03			239.55	ug/Kg	97.423	% Recovery	
5	MS	S1305160010	S13T004247	0 0	O		2,6 bis-4Methylphenol	SOLID	6287.331	2.3000E+03			1.48E+03	ug/Kg	36.582	% Recovery	
5	MS	S1305160010	S13T004247	0 0	O		2,6-Dinitrotoluene	SOLID	6287.331	6.0885E+03			243.32	ug/Kg	96.838	% Recovery	
5	MS	S1305160010	S13T004247	0 0	O		2-Butoxyethanol	SOLID	12574.66	1.1953E+04			9.45E+03	ug/Kg	95.056	% Recovery	
5	MS	S1305160010	S13T004247	0 0	O		2-Chloronaphthalene	SOLID	6287.331	5.8273E+03			318.77	ug/Kg	92.683	% Recovery	

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041315

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
5	MS	S1305160010	S13T004247	0 0	O		2-Chlorophenol	SOLID	6287.331	5.3420E+03			418.11	ug/Kg	84.965	% Recovery	
5	MS	S1305160010	S13T004247	0 0	O		2-Ethoxyethanol	SOLID	6287.331	5.1951E+03			1.15E+03	ug/Kg	82.628	% Recovery	
5	MS	S1305160010	S13T004247	0 0	O		2-Methylnaphthalene	SOLID	6287.331	5.9586E+03			348.32	ug/Kg	94.772	% Recovery	
5	MS	S1305160010	S13T004247	0 0	O		2-Methylphenol	SOLID	6287.331	5.0585E+03			361.52	ug/Kg	80.455	% Recovery	
5	MS	S1305160010	S13T004247	0 0	O		2-Nitroaniline	SOLID	6287.331	5.5768E+03			295.5	ug/Kg	88.699	% Recovery	
5	MS	S1305160010	S13T004247	0 0	O		2-Nitrophenol	SOLID	6287.331	3.2240E+03			337.63	ug/Kg	51.278	% Recovery	
5	MS	S1305160010	S13T004247	0 0	O		3 & 4 Methylphenol Total	SOLID	6287.331	5.3934E+03			323.17	ug/Kg	85.782	% Recovery	
5	MS	S1305160010	S13T004247	0 0	O		3-Nitroaniline	SOLID	6287.331	5.3824E+03			281.67	ug/Kg	85.607	% Recovery	
5	MS	S1305160010	S13T004247	0 0	O		4,6-Dinitro-2-methylphenol	SOLID	6287.331	2.7408E+03			198.05	ug/Kg	43.592	% Recovery	
5	MS	S1305160010	S13T004247	0 0	O		4-Bromophenyl-phenylether	SOLID	6287.331	6.4732E+03			208.11	ug/Kg	102.96	% Recovery	
5	MS	S1305160010	S13T004247	0 0	O		4-Chloro-3-methylphenol	SOLID	6287.331	5.8660E+03			271.61	ug/Kg	93.299	% Recovery	
5	MS	S1305160010	S13T004247	0 0	O		4-Chloroaniline	SOLID	6287.331	5.4350E+03			298.65	ug/Kg	86.444	% Recovery	
5	MS	S1305160010	S13T004247	0 0	O		4-Chlorophenyl-phenylether	SOLID	6287.331	6.1208E+03			301.79	ug/Kg	97.351	% Recovery	
5	MS	S1305160010	S13T004247	0 0	O		4-Nitroaniline	SOLID	6287.331	5.1540E+03			324.43	ug/Kg	81.974	% Recovery	
5	MS	S1305160010	S13T004247	0 0	O		4-Nitrophenol	SOLID	6287.331	2.3844E+03			330.71	ug/Kg	37.924	% Recovery	
5	MS	S1305160010	S13T004247	0 0	O		Acenaphthene	SOLID	6287.331	5.8231E+03			110.66	ug/Kg	92.616	% Recovery	
5	MS	S1305160010	S13T004247	0 0	O		Acenaphthylene	SOLID	6287.331	5.7121E+03			287.96	ug/Kg	90.851	% Recovery	
5	MS	S1305160010	S13T004247	0 0	O		Anthracene	SOLID	6287.331	6.5849E+03			196.16	ug/Kg	104.73	% Recovery	
5	MS	S1305160010	S13T004247	0 0	O		Benzo(a)anthracene	SOLID	6287.331	6.3690E+03			237.66	ug/Kg	101.3	% Recovery	
5	MS	S1305160010	S13T004247	0 0	O		Benzo(a)pyrene	SOLID	6287.331	6.2761E+03			259.04	ug/Kg	99.821	% Recovery	
5	MS	S1305160010	S13T004247	0 0	O		Benzo(b)fluoranthene	SOLID	6287.331	6.5370E+03			307.45	ug/Kg	103.97	% Recovery	
5	MS	S1305160010	S13T004247	0 0	O		Benzo(g,h,i)perylene	SOLID	6287.331	6.4230E+03			258.41	ug/Kg	102.16	% Recovery	
5	MS	S1305160010	S13T004247	0 0	O		Benzo(k)fluoranthene	SOLID	6287.331	6.8684E+03			245.83	ug/Kg	109.24	% Recovery	
5	MS	S1305160010	S13T004247	0 0	O		Butylbenzylphthalate	SOLID	6287.331	7.0659E+03			314.37	ug/Kg	112.38	% Recovery	
5	MS	S1305160010	S13T004247	0 0	O		Chrysene	SOLID	6287.331	6.4320E+03			511.79	ug/Kg	102.3	% Recovery	
5	MS	S1305160010	S13T004247	0 0	O		Cyclohexanone	SOLID	6287.331	5.7116E+03			3.52E+03	ug/Kg	90.843	% Recovery	
5	MS	S1305160010	S13T004247	0 0	O		Di-n-butylphthalate	SOLID	6287.331	7.5641E+03			3.54E+03	ug/Kg	120.31	% Recovery	
5	MS	S1305160010	S13T004247	0 0	O		Di-n-octylphthalate	SOLID	6287.331	7.4007E+03			299.91	ug/Kg	117.71	% Recovery	
5	MS	S1305160010	S13T004247	0 0	O		Dibenz(a,h)anthracene	SOLID	6287.331	6.3297E+03			321.28	ug/Kg	100.67	% Recovery	
5	MS	S1305160010	S13T004247	0 0	O		Dibenzofuran	SOLID	6287.331	5.8202E+03			292.36	ug/Kg	92.57	% Recovery	
5	MS	S1305160010	S13T004247	0 0	O		Diethylphthalate	SOLID	6287.331	6.4375E+03			265.33	ug/Kg	102.39	% Recovery	
5	MS	S1305160010	S13T004247	0 0	O		Dimethylphthalate	SOLID	6287.331	5.9944E+03			304.31	ug/Kg	95.341	% Recovery	
5	MS	S1305160010	S13T004247	0 0	O		Diphenylamine	SOLID	6287.331	6.4455E+03			242.69	ug/Kg	102.52	% Recovery	
5	MS	S1305160010	S13T004247	0 0	O		Fluoranthene	SOLID	6287.331	6.7777E+03			222.57	ug/Kg	107.8	% Recovery	
5	MS	S1305160010	S13T004247	0 0	O		Fluorene	SOLID	6287.331	6.1770E+03			248.98	ug/Kg	98.245	% Recovery	
5	MS	S1305160010	S13T004247	0 0	O		Hexachlorobenzene	SOLID	6287.331	6.5629E+03			298.65	ug/Kg	104.38	% Recovery	
5	MS	S1305160010	S13T004247	0 0	O		Hexachlorobutadiene	SOLID	6287.331	5.7478E+03			438.23	ug/Kg	91.419	% Recovery	
5	MS	S1305160010	S13T004247	0 0	O		Hexachloroethane	SOLID	6287.331	5.3554E+03			702.92	ug/Kg	85.178	% Recovery	
5	MS	S1305160010	S13T004247	0 0	O		Indeno(1,2,3-cd)pyrene	SOLID	6287.331	6.3441E+03			320.65	ug/Kg	100.9	% Recovery	

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041315

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
5	MS	S1305160010	S13T004247	0 0	O		Isobutanol	SOLID	12574.66	8.6287E+03			2.89E+03	ug/Kg	68.62	% Recovery	
5	MS	S1305160010	S13T004247	0 0	O		Isophorone	SOLID	6287.331	5.6542E+03			334.49	ug/Kg	89.93	% Recovery	
5	MS	S1305160010	S13T004247	0 0	O		Methylphenols, Total	SOLID	12574.66	1.0452E+04			670.23	ug/Kg	83.12	% Recovery	
5	MS	S1305160010	S13T004247	0 0	O		N-Nitrosodimethylamine	SOLID	6287.331	5.2323E+03			484.75	ug/Kg	83.22	% Recovery	
5	MS	S1305160010	S13T004247	0 0	O		N-Nitrosodipropylamine	SOLID	6287.331	5.3481E+03			365.29	ug/Kg	85.062	% Recovery	
5	MS	S1305160010	S13T004247	0 0	O		N-Nitrosomorpholine	SOLID	6287.331	5.0341E+03			1.20E+03	ug/Kg	80.067	% Recovery	
5	MS	S1305160010	S13T004247	0 0	O		Naphthalene	SOLID	6287.331	5.8127E+03			393.59	ug/Kg	92.451	% Recovery	
5	MS	S1305160010	S13T004247	0 0	O		Nitrobenzene	SOLID	6287.331	5.7346E+03			406.16	ug/Kg	91.209	% Recovery	
5	MS	S1305160010	S13T004247	0 0	O		Pentachlorophenol	SOLID	6287.331	3.4310E+03			235.77	ug/Kg	54.57	% Recovery	
5	MS	S1305160010	S13T004247	0 0	O		Phenanthrene	SOLID	6287.331	6.6027E+03			220.69	ug/Kg	105.02	% Recovery	
5	MS	S1305160010	S13T004247	0 0	O		Phenol	SOLID	6287.331	5.4217E+03			373.47	ug/Kg	86.232	% Recovery	
5	MS	S1305160010	S13T004247	0 0	O		Pyrene	SOLID	6287.331	6.5145E+03			395.47	ug/Kg	103.61	% Recovery	
5	MS	S1305160010	S13T004247	0 0	O		Pyridine	SOLID	6287.331	5.0678E+03			408.68	ug/Kg	80.603	% Recovery	
5	MS	S1305160010	S13T004247	0 0	O		Tri-n-butylphosphate	SOLID	6287.331	7.3706E+03			677.77	ug/Kg	117.23	% Recovery	
5	MS	S1305160010	S13T004247	0 0	O		bis(2-Chloroethoxy)methane	SOLID	6287.331	5.8791E+03			433.83	ug/Kg	93.507	% Recovery	
5	MS	S1305160010	S13T004247	0 0	O		bis(2-Ethylhexyl)phthalate	SOLID	6287.331	7.9533E+03			3.71E+03	ug/Kg	126.5	% Recovery	
5	MS	S1305160010	S13T004247	0 0	O		bis-(2-Chloroethyl) ether	SOLID	6287.331	5.4802E+03			472.81	ug/Kg	87.163	% Recovery	
5	MS	S1305160010	S13T004247	0 0	O		2,4,6-Tribromophenol	SOLID	25149.32	1.8516E+04				ug/Kg	73.624	% Recovery	
5	MS	S1305160010	S13T004247	0 0	O		2-Fluorobiphenyl	SOLID	12574.66	1.0637E+04				ug/Kg	84.591	% Recovery	
5	MS	S1305160010	S13T004247	0 0	O		2-Fluorophenol	SOLID	25149.32	1.4564E+04				ug/Kg	57.91	% Recovery	
5	MS	S1305160010	S13T004247	0 0	O		Nitrobenzene-d5	SOLID	12574.66	9.9806E+03				ug/Kg	79.371	% Recovery	
5	MS	S1305160010	S13T004247	0 0	O		Phenol-d6	SOLID	25149.32	1.9900E+04				ug/Kg	79.127	% Recovery	
5	MS	S1305160010	S13T004247	0 0	O		Terphenyl-d14	SOLID	12574.66	1.2857E+04				ug/Kg	102.25	% Recovery	
Sample Sequence 6																	
6	MSD	S1305160011	S13T004247	0 0	O		1,2,4-Trichlorobenzene	SOLID	5709.391	5.1622E+03			441.91	ug/Kg	90.416	% Recovery	
															3.0238	% RPD	
6	MSD	S1305160011	S13T004247	0 0	O		1,2-Dichlorobenzene	SOLID	5709.391	4.8718E+03			574.94	ug/Kg	85.33	% Recovery	
															3.3542	% RPD	
6	MSD	S1305160011	S13T004247	0 0	O		1,4-Dichlorobenzene	SOLID	5709.391	4.7522E+03			646.87	ug/Kg	83.235	% Recovery	
															4.7341	% RPD	
6	MSD	S1305160011	S13T004247	0 0	O		1-Butanol	SOLID	22837.56	1.4332E+04			1.97E+03	ug/Kg	62.756	% Recovery	
															6.9907	% RPD	
6	MSD	S1305160011	S13T004247	0 0	O		2,2-oxybis(1-Chloropropane)	SOLID	5709.391	5.0616E+03			429.92	ug/Kg	88.654	% Recovery	
															3.7445	% RPD	
6	MSD	S1305160011	S13T004247	0 0	O		2,4,5-Trichlorophenol	SOLID	5709.391	3.4733E+03			251.21	ug/Kg	60.835	% Recovery	
															10.006	% RPD	
6	MSD	S1305160011	S13T004247	0 0	O		2,4,6-Trichlorophenol	SOLID	5709.391	4.0854E+03			282.61	ug/Kg	71.556	% Recovery	
															14.010	% RPD	
6	MSD	S1305160011	S13T004247	0 0	O		2,4-Dichlorophenol	SOLID	5709.391	5.1340E+03			307.74	ug/Kg	89.922	% Recovery	

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041315

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
															11.660	% RPD	
6	MSD	S1305160011	S13T004247	0 0	O		2,4-Dimethylphenol	SOLID	5709.391	2.3622E+03			162.72	ug/Kg	41.374	% Recovery	
															0.91425	% RPD	
6	MSD	S1305160011	S13T004247	0 0	O		2,4-Dinitrophenol	SOLID	5709.391	1.9281E+03			235.23	ug/Kg	33.771	% Recovery	
															14.610	% RPD	
6	MSD	S1305160011	S13T004247	0 0	O		2,4-Dinitrotoluene	SOLID	5709.391	5.5877E+03			217.53	ug/Kg	97.869	% Recovery	
															0.45675	% RPD	
6	MSD	S1305160011	S13T004247	0 0	O		2,6 bis-4Methylphenol	SOLID	5709.391	1.9531E+03			1.35E+03	ug/Kg	34.209	% Recovery	
															6.7042	% RPD	
6	MSD	S1305160011	S13T004247	0 0	O		2,6-Dinitrotoluene	SOLID	5709.391	5.3837E+03			220.95	ug/Kg	94.296	% Recovery	
															2.6599	% RPD	
6	MSD	S1305160011	S13T004247	0 0	O		2-Butoxyethanol	SOLID	11418.78	1.0643E+04			8.58E+03	ug/Kg	93.206	% Recovery	
															1.9653	% RPD	
6	MSD	S1305160011	S13T004247	0 0	O		2-Chloronaphthalene	SOLID	5709.391	5.1368E+03			289.47	ug/Kg	89.971	% Recovery	
															2.9695	% RPD	
6	MSD	S1305160011	S13T004247	0 0	O		2-Chlorophenol	SOLID	5709.391	4.8540E+03			379.67	ug/Kg	85.018	% Recovery	
															0.062359	% RPD	
6	MSD	S1305160011	S13T004247	0 0	O		2-Ethoxyethanol	SOLID	5709.391	4.5534E+03			1.04E+03	ug/Kg	79.753	% Recovery	
															3.5411	% RPD	
6	MSD	S1305160011	S13T004247	0 0	O		2-Methylnaphthalene	SOLID	5709.391	5.2761E+03			316.3	ug/Kg	92.411	% Recovery	
															2.5227	% RPD	
6	MSD	S1305160011	S13T004247	0 0	O		2-Methylphenol	SOLID	5709.391	4.5900E+03			328.29	ug/Kg	80.394	% Recovery	
															0.075848	% RPD	
6	MSD	S1305160011	S13T004247	0 0	O		2-Nitroaniline	SOLID	5709.391	5.2079E+03			268.34	ug/Kg	91.216	% Recovery	
															2.7980	% RPD	
6	MSD	S1305160011	S13T004247	0 0	O		2-Nitrophenol	SOLID	5709.391	3.9414E+03			306.59	ug/Kg	69.034	% Recovery	
															29.517	% RPD	
6	MSD	S1305160011	S13T004247	0 0	O		3 & 4 Methylphenol Total	SOLID	5709.391	4.7093E+03			293.46	ug/Kg	82.483	% Recovery	
															3.9212	% RPD	
6	MSD	S1305160011	S13T004247	0 0	O		3-Nitroaniline	SOLID	5709.391	4.6688E+03			255.78	ug/Kg	81.774	% Recovery	
															4.5800	% RPD	
6	MSD	S1305160011	S13T004247	0 0	O		4,6-Dinitro-2-methylphenol	SOLID	5709.391	3.0273E+03			179.85	ug/Kg	53.023	% Recovery	
															19.523	% RPD	
6	MSD	S1305160011	S13T004247	0 0	O		4-Bromophenyl-phenylether	SOLID	5709.391	5.8836E+03			188.98	ug/Kg	103.05	% Recovery	
															0.087374	% RPD	
6	MSD	S1305160011	S13T004247	0 0	O		4-Chloro-3-methylphenol	SOLID	5709.391	5.2031E+03			246.65	ug/Kg	91.132	% Recovery	
															2.3499	% RPD	
6	MSD	S1305160011	S13T004247	0 0	O		4-Chloroaniline	SOLID	5709.391	4.8555E+03			271.2	ug/Kg	85.044	% Recovery	
															1.6328	% RPD	

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041315

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
6	MSD	S1305160011	S13T004247	0 0	O		4-Chlorophenyl-phenyle ther	SOLID	5709.391	5.4678E+03			274.05	ug/Kg	95.769	% Recovery	
															1.6384	% RPD	
6	MSD	S1305160011	S13T004247	0 0	O		4-Nitroaniline	SOLID	5709.391	4.5835E+03			294.6	ug/Kg	80.28	% Recovery	
															2.0881	% RPD	
6	MSD	S1305160011	S13T004247	0 0	O		4-Nitrophenol	SOLID	5709.391	9.6035E+02			300.31	ug/Kg	16.821	% Recovery	
															77.096	% RPD	
6	MSD	S1305160011	S13T004247	0 0	O		Acenaphthene	SOLID	5709.391	5.2611E+03			100.49	ug/Kg	92.148	% Recovery	
															0.50659	% RPD	
6	MSD	S1305160011	S13T004247	0 0	O		Acenaphthylene	SOLID	5709.391	5.0824E+03			261.49	ug/Kg	89.018	% Recovery	
															2.0381	% RPD	
6	MSD	S1305160011	S13T004247	0 0	O		Anthracene	SOLID	5709.391	6.0437E+03			178.13	ug/Kg	105.86	% Recovery	
															1.0732	% RPD	
6	MSD	S1305160011	S13T004247	0 0	O		Benzo(a)anthracene	SOLID	5709.391	5.7816E+03			215.82	ug/Kg	101.26	% Recovery	
															0.039494	% RPD	
6	MSD	S1305160011	S13T004247	0 0	O		Benzo(a)pyrene	SOLID	5709.391	5.8336E+03			235.23	ug/Kg	102.18	% Recovery	
															2.3356	% RPD	
6	MSD	S1305160011	S13T004247	0 0	O		Benzo(b)fluoranthene	SOLID	5709.391	6.0665E+03			279.19	ug/Kg	106.25	% Recovery	
															2.1692	% RPD	
6	MSD	S1305160011	S13T004247	0 0	O		Benzo(g,h,i)perylene	SOLID	5709.391	6.4673E+03			234.66	ug/Kg	113.27	% Recovery	
															10.314	% RPD	
6	MSD	S1305160011	S13T004247	0 0	O		Benzo(k)fluoranthene	SOLID	5709.391	6.3132E+03			223.24	ug/Kg	110.58	% Recovery	
															1.2192	% RPD	
6	MSD	S1305160011	S13T004247	0 0	O		Butylbenzylphthalate	SOLID	5709.391	6.5835E+03			285.47	ug/Kg	115.31	% Recovery	
															2.5737	% RPD	
6	MSD	S1305160011	S13T004247	0 0	O		Chrysene	SOLID	5709.391	5.9095E+03			464.74	ug/Kg	103.5	% Recovery	
															1.1662	% RPD	
6	MSD	S1305160011	S13T004247	0 0	O		Cyclohexanone	SOLID	5709.391	5.0091E+03			3.19E+03	ug/Kg	87.734	% Recovery	
															3.4820	% RPD	
6	MSD	S1305160011	S13T004247	0 0	O		Di-n-butylphthalate	SOLID	5709.391	6.6283E+03			3.21E+03	ug/Kg	116.09	% Recovery	
															3.5702	% RPD	
6	MSD	S1305160011	S13T004247	0 0	O		Di-n-octylphthalate	SOLID	5709.391	6.9901E+03			272.34	ug/Kg	122.43	% Recovery	
															3.9310	% RPD	
6	MSD	S1305160011	S13T004247	0 0	O		Dibenz(a,h)anthracene	SOLID	5709.391	6.3705E+03			291.75	ug/Kg	111.58	% Recovery	
															10.280	% RPD	
6	MSD	S1305160011	S13T004247	0 0	O		Dibenzofuran	SOLID	5709.391	5.3068E+03			265.49	ug/Kg	92.949	% Recovery	
															0.40858	% RPD	
6	MSD	S1305160011	S13T004247	0 0	O		Diethylphthalate	SOLID	5709.391	5.8499E+03			240.94	ug/Kg	102.46	% Recovery	
															0.068343	% RPD	
6	MSD	S1305160011	S13T004247	0 0	O		Dimethylphthalate	SOLID	5709.391	5.4142E+03			276.33	ug/Kg	94.83	% Recovery	
															0.53741	% RPD	
6	MSD	S1305160011	S13T004247	0 0	O		Diphenylamine	SOLID	5709.391	5.9088E+03			220.38	ug/Kg	103.49	% Recovery	

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041315

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
															0.94170	% RPD	
6	MSD	S1305160011	S13T004247	0 0	O		Fluoranthene	SOLID	5709.391	6.2364E+03			202.11	ug/Kg	109.23	% Recovery	
															1.3178	% RPD	
6	MSD	S1305160011	S13T004247	0 0	O		Fluorene	SOLID	5709.391	5.5324E+03			226.09	ug/Kg	96.9	% Recovery	
															1.3785	% RPD	
6	MSD	S1305160011	S13T004247	0 0	O		Hexachlorobenzene	SOLID	5709.391	5.9913E+03			271.2	ug/Kg	104.94	% Recovery	
															0.53507	% RPD	
6	MSD	S1305160011	S13T004247	0 0	O		Hexachlorobutadiene	SOLID	5709.391	5.1574E+03			397.94	ug/Kg	90.332	% Recovery	
															1.1961	% RPD	
6	MSD	S1305160011	S13T004247	0 0	O		Hexachloroethane	SOLID	5709.391	4.6129E+03			638.31	ug/Kg	80.795	% Recovery	
															5.2816	% RPD	
6	MSD	S1305160011	S13T004247	0 0	O		Indeno(1,2,3-cd)pyrene	SOLID	5709.391	6.2629E+03			291.18	ug/Kg	109.69	% Recovery	
															8.3480	% RPD	
6	MSD	S1305160011	S13T004247	0 0	O		Isobutanol	SOLID	11418.78	7.8758E+03			2.63E+03	ug/Kg	68.972	% Recovery	
															0.51166	% RPD	
6	MSD	S1305160011	S13T004247	0 0	O		Isophorone	SOLID	5709.391	5.0054E+03			303.74	ug/Kg	87.67	% Recovery	
															2.5450	% RPD	
6	MSD	S1305160011	S13T004247	0 0	O		Methylphenols, Total	SOLID	11418.78	9.2993E+03			608.21	ug/Kg	81.439	% Recovery	
															2.0430	% RPD	
6	MSD	S1305160011	S13T004247	0 0	O		N-Nitrosodimethylamine	SOLID	5709.391	4.5716E+03			440.19	ug/Kg	80.072	% Recovery	
															3.8557	% RPD	
6	MSD	S1305160011	S13T004247	0 0	O		N-Nitrosodipropylamine	SOLID	5709.391	4.7318E+03			331.72	ug/Kg	82.877	% Recovery	
															2.6021	% RPD	
6	MSD	S1305160011	S13T004247	0 0	O		N-Nitrosomorpholine	SOLID	5709.391	4.4514E+03			1.09E+03	ug/Kg	77.966	% Recovery	
															2.6589	% RPD	
6	MSD	S1305160011	S13T004247	0 0	O		Naphthalene	SOLID	5709.391	5.1182E+03			357.41	ug/Kg	89.645	% Recovery	
															3.0819	% RPD	
6	MSD	S1305160011	S13T004247	0 0	O		Nitrobenzene	SOLID	5709.391	4.9132E+03			368.83	ug/Kg	86.055	% Recovery	
															5.8151	% RPD	
6	MSD	S1305160011	S13T004247	0 0	O		Pentachlorophenol	SOLID	5709.391	4.0422E+03			214.1	ug/Kg	70.799	% Recovery	
															25.890	% RPD	
6	MSD	S1305160011	S13T004247	0 0	O		Phenanthrene	SOLID	5709.391	6.0316E+03			200.4	ug/Kg	105.64	% Recovery	
															0.58863	% RPD	
6	MSD	S1305160011	S13T004247	0 0	O		Phenol	SOLID	5709.391	4.7735E+03			339.14	ug/Kg	83.608	% Recovery	
															3.0900	% RPD	
6	MSD	S1305160011	S13T004247	0 0	O		Pyrene	SOLID	5709.391	6.0191E+03			359.12	ug/Kg	105.42	% Recovery	
															1.7318	% RPD	
6	MSD	S1305160011	S13T004247	0 0	O		Pyridine	SOLID	5709.391	4.3251E+03			371.11	ug/Kg	75.754	% Recovery	
															6.2025	% RPD	
6	MSD	S1305160011	S13T004247	0 0	O		Tri-n-butylphosphate	SOLID	5709.391	6.7366E+03			615.47	ug/Kg	117.99	% Recovery	
															0.64620	% RPD	

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041315

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
6	MSD	S1305160011	S13T004247	0 0	O		bis(2-Chloroethoxy)methane	SOLID	5709.391	5.1534E+03			393.95	ug/Kg	90.262	% Recovery	
															3.5316	% RPD	
6	MSD	S1305160011	S13T004247	0 0	O		bis(2-Ethylhexyl)phthalate	SOLID	5709.391	6.9242E+03			3.37E+03	ug/Kg	121.28	% Recovery	
															4.2134	% RPD	
6	MSD	S1305160011	S13T004247	0 0	O		bis-(2-Chloroethyl) ether	SOLID	5709.391	4.8238E+03			429.35	ug/Kg	84.489	% Recovery	
															3.1156	% RPD	
6	MSD	S1305160011	S13T004247	0 0	O		2,4,6-Tribromophenol	SOLID	22837.56	1.8091E+04				ug/Kg	79.216	% Recovery	
															7.3175	% RPD	
6	MSD	S1305160011	S13T004247	0 0	O		2-Fluorobiphenyl	SOLID	11418.78	9.4672E+03				ug/Kg	82.909	% Recovery	
															2.0084	% RPD	
6	MSD	S1305160011	S13T004247	0 0	O		2-Fluorophenol	SOLID	22837.56	1.3968E+04				ug/Kg	61.162	% Recovery	
															5.4622	% RPD	
6	MSD	S1305160011	S13T004247	0 0	O		Nitrobenzene-d5	SOLID	11418.78	8.8308E+03				ug/Kg	77.336	% Recovery	
															2.5972	% RPD	
6	MSD	S1305160011	S13T004247	0 0	O		Phenol-d6	SOLID	22837.56	1.7229E+04				ug/Kg	75.442	% Recovery	
															4.7681	% RPD	
6	MSD	S1305160011	S13T004247	0 0	O		Terphenyl-d14	SOLID	11418.78	1.1582E+04				ug/Kg	101.43	% Recovery	
															0.80518	% RPD	
Sample Sequence 7																	
7	SAMPLE	S13T004275		0 0	O		1,2,4-Trichlorobenzene	SOLID	N/A	<4.4935E+02			449.35	ug/Kg			Ua
7	SAMPLE	S13T004275		0 0	O		1,2-Dichlorobenzene	SOLID	N/A	<5.8462E+02			584.62	ug/Kg			U
7	SAMPLE	S13T004275		0 0	O		1,4-Dichlorobenzene	SOLID	N/A	<6.5776E+02			657.76	ug/Kg			U
7	SAMPLE	S13T004275		0 0	O		1-Butanol	SOLID	N/A	<2.0029E+03			2.00E+03	ug/Kg			Ua
7	SAMPLE	S13T004275		0 0	O		2,2-oxybis(1-Chloropropane)	SOLID	N/A	<4.3716E+02			437.16	ug/Kg			U
7	SAMPLE	S13T004275		0 0	O		2,4,5-Trichlorophenol	SOLID	N/A	<2.5544E+02			255.44	ug/Kg			U
7	SAMPLE	S13T004275		0 0	O		2,4,6-Trichlorophenol	SOLID	N/A	<2.8737E+02			287.37	ug/Kg			U
7	SAMPLE	S13T004275		0 0	O		2,4-Dichlorophenol	SOLID	N/A	<3.1292E+02			312.92	ug/Kg			U
7	SAMPLE	S13T004275		0 0	O		2,4-Dimethylphenol	SOLID	N/A	<1.6546E+02			165.46	ug/Kg			Ua
7	SAMPLE	S13T004275		0 0	O		2,4-Dinitrophenol	SOLID	N/A	<2.3919E+02			239.19	ug/Kg			Ua
7	SAMPLE	S13T004275		0 0	O		2,4-Dinitrotoluene	SOLID	N/A	<2.2119E+02			221.19	ug/Kg			U
7	SAMPLE	S13T004275		0 0	O		2,6 bis-4Methylphenol	SOLID	N/A	<1.3678E+03			1.37E+03	ug/Kg			Ua
7	SAMPLE	S13T004275		0 0	O		2,6-Dinitrotoluene	SOLID	N/A	<2.2467E+02			224.67	ug/Kg			U
7	SAMPLE	S13T004275		0 0	O		2-Butoxyethanol	SOLID	N/A	<8.7245E+03			8.72E+03	ug/Kg			U
7	SAMPLE	S13T004275		0 0	O		2-Chloronaphthalene	SOLID	N/A	<2.9434E+02			294.34	ug/Kg			U
7	SAMPLE	S13T004275		0 0	O		2-Chlorophenol	SOLID	N/A	<3.8607E+02			386.07	ug/Kg			U
7	SAMPLE	S13T004275		0 0	O		2-Ethoxyethanol	SOLID	N/A	<1.0589E+03			1.06E+03	ug/Kg			U
7	SAMPLE	S13T004275		0 0	O		2-Methylnaphthalene	SOLID	N/A	<3.2163E+02			321.63	ug/Kg			U
7	SAMPLE	S13T004275		0 0	O		2-Methylphenol	SOLID	N/A	<3.3382E+02			333.82	ug/Kg			U
7	SAMPLE	S13T004275		0 0	O		2-Nitroaniline	SOLID	N/A	<2.7286E+02			272.86	ug/Kg			U

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041315

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
7	SAMPLE	S13T004275		0 0	O		2-Nitrophenol	SOLID	N/A	<3.1176E+02			311.76	ug/Kg			U
7	SAMPLE	S13T004275		0 0	O		3 & 4 Methylphenol Total	SOLID	N/A	<2.9840E+02			298.4	ug/Kg			U
7	SAMPLE	S13T004275		0 0	O		3-Nitroaniline	SOLID	N/A	<2.6009E+02			260.09	ug/Kg			U
7	SAMPLE	S13T004275		0 0	O		4,6-Dinitro-2-methylphenol	SOLID	N/A	<1.8287E+02			182.87	ug/Kg			U
7	SAMPLE	S13T004275		0 0	O		4-Bromophenyl-phenylether	SOLID	N/A	<1.9216E+02			192.16	ug/Kg			U
7	SAMPLE	S13T004275		0 0	O		4-Chloro-3-methylphenol	SOLID	N/A	<2.5080E+02			250.8	ug/Kg			U
7	SAMPLE	S13T004275		0 0	O		4-Chloroaniline	SOLID	N/A	<2.7576E+02			275.76	ug/Kg			U
7	SAMPLE	S13T004275		0 0	O		4-Chlorophenyl-phenylether	SOLID	N/A	<2.7866E+02			278.66	ug/Kg			U
7	SAMPLE	S13T004275		0 0	O		4-Nitroaniline	SOLID	N/A	<2.9956E+02			299.56	ug/Kg			U
7	SAMPLE	S13T004275		0 0	O		4-Nitrophenol	SOLID	N/A	<3.0537E+02			305.37	ug/Kg			U
7	SAMPLE	S13T004275		0 0	O		Acenaphthene	SOLID	N/A	<1.0218E+02			102.18	ug/Kg			U
7	SAMPLE	S13T004275		0 0	O		Acenaphthylene	SOLID	N/A	<2.6589E+02			265.89	ug/Kg			U
7	SAMPLE	S13T004275		0 0	O		Anthracene	SOLID	N/A	<1.8113E+02			181.13	ug/Kg			U
7	SAMPLE	S13T004275		0 0	O		Benzo(a)anthracene	SOLID	N/A	<2.1945E+02			219.45	ug/Kg			U
7	SAMPLE	S13T004275		0 0	O		Benzo(a)pyrene	SOLID	N/A	<2.3919E+02			239.19	ug/Kg			U
7	SAMPLE	S13T004275		0 0	O		Benzo(b)fluoranthene	SOLID	N/A	<2.8389E+02			283.89	ug/Kg			U
7	SAMPLE	S13T004275		0 0	O		Benzo(g,h,i)perylene	SOLID	N/A	<2.3861E+02			238.61	ug/Kg			U
7	SAMPLE	S13T004275		0 0	O		Benzo(k)fluoranthene	SOLID	N/A	<2.2700E+02			227	ug/Kg			U
7	SAMPLE	S13T004275		0 0	O		Butylbenzylphthalate	SOLID	N/A	<2.9028E+02			290.28	ug/Kg			U
7	SAMPLE	S13T004275		0 0	O		Chrysene	SOLID	N/A	<4.7257E+02			472.57	ug/Kg			U
7	SAMPLE	S13T004275		0 0	O		Cyclohexanone	SOLID	N/A	<3.2459E+03			3.25E+03	ug/Kg			U
7	SAMPLE	S13T004275		0 0	O		Di-n-butylphthalate	SOLID	N/A	<3.2644E+03			3.26E+03	ug/Kg			U
7	SAMPLE	S13T004275		0 0	O		Di-n-octylphthalate	SOLID	N/A	<2.7692E+02			276.92	ug/Kg			U
7	SAMPLE	S13T004275		0 0	O		Dibenz(a,h)anthracene	SOLID	N/A	<2.9666E+02			296.66	ug/Kg			U
7	SAMPLE	S13T004275		0 0	O		Dibenzofuran	SOLID	N/A	<2.6996E+02			269.96	ug/Kg			U
7	SAMPLE	S13T004275		0 0	O		Diethylphthalate	SOLID	N/A	<2.4499E+02			244.99	ug/Kg			U
7	SAMPLE	S13T004275		0 0	O		Dimethylphthalate	SOLID	N/A	<2.8099E+02			280.99	ug/Kg			U
7	SAMPLE	S13T004275		0 0	O		Diphenylamine	SOLID	N/A	<2.2409E+02			224.09	ug/Kg			U
7	SAMPLE	S13T004275		0 0	O		Fluoranthene	SOLID	N/A	<2.0552E+02			205.52	ug/Kg			U
7	SAMPLE	S13T004275		0 0	O		Fluorene	SOLID	N/A	<2.2990E+02			229.9	ug/Kg			U
7	SAMPLE	S13T004275		0 0	O		Hexachlorobenzene	SOLID	N/A	<2.7576E+02			275.76	ug/Kg			U
7	SAMPLE	S13T004275		0 0	O		Hexachlorobutadiene	SOLID	N/A	<4.0464E+02			404.64	ug/Kg			U
7	SAMPLE	S13T004275		0 0	O		Hexachloroethane	SOLID	N/A	<6.4906E+02			649.06	ug/Kg			U
7	SAMPLE	S13T004275		0 0	O		Indeno(1,2,3-cd)pyrene	SOLID	N/A	<2.9608E+02			296.08	ug/Kg			U
7	SAMPLE	S13T004275		0 0	O		Isobutanol	SOLID	N/A	<2.6723E+03			2.67E+03	ug/Kg			Ua
7	SAMPLE	S13T004275		0 0	O		Isophorone	SOLID	N/A	<3.0885E+02			308.85	ug/Kg			U
7	SAMPLE	S13T004275		0 0	O		Methylphenols, Total	SOLID	N/A	<6.1887E+02			618.87	ug/Kg			U
7	SAMPLE	S13T004275		0 0	O		N-Nitrosodimethylamine	SOLID	N/A	<4.4761E+02			447.61	ug/Kg			U

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041315

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
7	SAMPLE	S13T004275		0 0	O		N-Nitrosodipropylamine	SOLID	N/A	<3.3730E+02			337.3	ug/Kg			U
7	SAMPLE	S13T004275		0 0	O		N-Nitrosomorpholine	SOLID	N/A	<1.1106E+03			1.11E+03	ug/Kg			U
7	SAMPLE	S13T004275		0 0	O		Naphthalene	SOLID	N/A	<3.6343E+02			363.43	ug/Kg			U
7	SAMPLE	S13T004275		0 0	O		Nitrobenzene	SOLID	N/A	<3.7504E+02			375.04	ug/Kg			U
7	SAMPLE	S13T004275		0 0	O		Pentachlorophenol	SOLID	N/A	<2.1771E+02			217.71	ug/Kg			U
7	SAMPLE	S13T004275		0 0	O		Phenanthrene	SOLID	N/A	<2.0377E+02			203.77	ug/Kg			U
7	SAMPLE	S13T004275		0 0	O		Phenol	SOLID	N/A	<3.4485E+02			344.85	ug/Kg			U
7	SAMPLE	S13T004275		0 0	O		Pyrene	SOLID	N/A	<3.6517E+02			365.17	ug/Kg			U
7	SAMPLE	S13T004275		0 0	O		Pyridine	SOLID	N/A	<3.7736E+02			377.36	ug/Kg			U
7	SAMPLE	S13T004275		0 0	O		Tri-n-butylphosphate	SOLID	N/A	<6.2583E+02			625.83	ug/Kg			U
7	SAMPLE	S13T004275		0 0	O		bis(2-Chloroethoxy)methane	SOLID	N/A	<4.0058E+02			400.58	ug/Kg			U
7	SAMPLE	S13T004275		0 0	O		bis(2-Ethylhexyl)phthalate	SOLID	N/A	<3.4264E+03			3.43E+03	ug/Kg			U
7	SAMPLE	S13T004275		0 0	O		bis-(2-Chloroethyl) ether	SOLID	N/A	<4.3657E+02			436.57	ug/Kg			U
7	SAMPLE	S13T004275		0 0	O		2,4,6-Tribromophenol	SOLID	23222.06	4.7816E+03				ug/Kg	20.591	% Recovery	
7	SAMPLE	S13T004275		0 0	O		2-Fluorobiphenyl	SOLID	11611.03	8.8949E+03				ug/Kg	76.607	% Recovery	
7	SAMPLE	S13T004275		0 0	O		2-Fluorophenol	SOLID	23222.06	7.4292E+03				ug/Kg	31.992	% Recovery	
7	SAMPLE	S13T004275		0 0	O		Nitrobenzene-d5	SOLID	11611.03	7.8059E+03				ug/Kg	67.228	% Recovery	
7	SAMPLE	S13T004275		0 0	O		Phenol-d6	SOLID	23222.06	1.5990E+04				ug/Kg	68.857	% Recovery	
7	SAMPLE	S13T004275		0 0	O		Terphenyl-d14	SOLID	11611.03	1.1809E+04				ug/Kg	101.71	% Recovery	
7	SAMPLE	S13T004275		0 0	O		Trichloromethane	SOLID		3767.8076				ug/Kg			BJNT
7	SAMPLE	S13T004275		0 0	O		Unknown-1	SOLID		2478.8154				ug/Kg			BJT
7	SAMPLE	S13T004275		0 0	O		Unknown-2	SOLID		2296.1097				ug/Kg			JT
Sample Sequence 8																	
8	SAMPLE	S13T004302		0 0	O		1,2,4-Trichlorobenzene	SOLID	N/A	<4.6375E+02			463.75	ug/Kg			Ua
8	SAMPLE	S13T004302		0 0	O		1,2-Dichlorobenzene	SOLID	N/A	<6.0336E+02			603.36	ug/Kg			U
8	SAMPLE	S13T004302		0 0	O		1,4-Dichlorobenzene	SOLID	N/A	<6.7885E+02			678.85	ug/Kg			U
8	SAMPLE	S13T004302		0 0	O		1-Butanol	SOLID	N/A	<2.0671E+03			2.07E+03	ug/Kg			Ua
8	SAMPLE	S13T004302		0 0	O		2,2-oxybis(1-Chloropropane)	SOLID	N/A	<4.5117E+02			451.17	ug/Kg			U
8	SAMPLE	S13T004302		0 0	O		2,4,5-Trichlorophenol	SOLID	N/A	<2.6363E+02			263.63	ug/Kg			U
8	SAMPLE	S13T004302		0 0	O		2,4,6-Trichlorophenol	SOLID	N/A	<2.9658E+02			296.58	ug/Kg			U
8	SAMPLE	S13T004302		0 0	O		2,4-Dichlorophenol	SOLID	N/A	<3.2295E+02			322.95	ug/Kg			U
8	SAMPLE	S13T004302		0 0	O		2,4-Dimethylphenol	SOLID	N/A	<1.7076E+02			170.76	ug/Kg			Ua
8	SAMPLE	S13T004302		0 0	O		2,4-Dinitrophenol	SOLID	N/A	<2.4685E+02			246.85	ug/Kg			Ua
8	SAMPLE	S13T004302		0 0	O		2,4-Dinitrotoluene	SOLID	N/A	<2.2828E+02			228.28	ug/Kg			U
8	SAMPLE	S13T004302		0 0	O		2,6 bis-4Methylphenol	SOLID	N/A	<1.4116E+03			1.41E+03	ug/Kg			Ua
8	SAMPLE	S13T004302		0 0	O		2,6-Dinitrotoluene	SOLID	N/A	<2.3188E+02			231.88	ug/Kg			U
8	SAMPLE	S13T004302		0 0	O		2-Butoxyethanol	SOLID	N/A	<9.0042E+03			9.00E+03	ug/Kg			U
8	SAMPLE	S13T004302		0 0	O		2-Chloronaphthalene	SOLID	N/A	<3.0377E+02			303.77	ug/Kg			U
8	SAMPLE	S13T004302		0 0	O		2-Chlorophenol	SOLID	N/A	<3.9844E+02			398.44	ug/Kg			U

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041315

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
8	SAMPLE	S13T004302		0 0	O		2-Ethoxyethanol	SOLID	N/A	<1.0929E+03			1.09E+03	ug/Kg			U
8	SAMPLE	S13T004302		0 0	O		2-Methylnaphthalene	SOLID	N/A	<3.3194E+02			331.94	ug/Kg			U
8	SAMPLE	S13T004302		0 0	O		2-Methylphenol	SOLID	N/A	<3.4452E+02			344.52	ug/Kg			U
8	SAMPLE	S13T004302		0 0	O		2-Nitroaniline	SOLID	N/A	<2.8161E+02			281.61	ug/Kg			U
8	SAMPLE	S13T004302		0 0	O		2-Nitrophenol	SOLID	N/A	<3.2175E+02			321.75	ug/Kg			U
8	SAMPLE	S13T004302		0 0	O		3 & 4 Methylphenol Total	SOLID	N/A	<3.0797E+02			307.97	ug/Kg			U
8	SAMPLE	S13T004302		0 0	O		3-Nitroaniline	SOLID	N/A	<2.6842E+02			268.42	ug/Kg			U
8	SAMPLE	S13T004302		0 0	O		4,6-Dinitro-2-methylphenol	SOLID	N/A	<1.8874E+02			188.74	ug/Kg			U
8	SAMPLE	S13T004302		0 0	O		4-Bromophenyl-phenylether	SOLID	N/A	<1.9832E+02			198.32	ug/Kg			U
8	SAMPLE	S13T004302		0 0	O		4-Chloro-3-methylphenol	SOLID	N/A	<2.5884E+02			258.84	ug/Kg			U
8	SAMPLE	S13T004302		0 0	O		4-Chloroaniline	SOLID	N/A	<2.8460E+02			284.6	ug/Kg			U
8	SAMPLE	S13T004302		0 0	O		4-Chlorophenyl-phenylether	SOLID	N/A	<2.8760E+02			287.6	ug/Kg			U
8	SAMPLE	S13T004302		0 0	O		4-Nitroaniline	SOLID	N/A	<3.0917E+02			309.17	ug/Kg			U
8	SAMPLE	S13T004302		0 0	O		4-Nitrophenol	SOLID	N/A	<3.1516E+02			315.16	ug/Kg			U
8	SAMPLE	S13T004302		0 0	O		Acenaphthene	SOLID	N/A	<1.0545E+02			105.45	ug/Kg			U
8	SAMPLE	S13T004302		0 0	O		Acenaphthylene	SOLID	N/A	<2.7442E+02			274.42	ug/Kg			U
8	SAMPLE	S13T004302		0 0	O		Anthracene	SOLID	N/A	<1.8694E+02			186.94	ug/Kg			U
8	SAMPLE	S13T004302		0 0	O		Benzo(a)anthracene	SOLID	N/A	<2.2648E+02			226.48	ug/Kg			U
8	SAMPLE	S13T004302		0 0	O		Benzo(a)pyrene	SOLID	N/A	<2.4685E+02			246.85	ug/Kg			U
8	SAMPLE	S13T004302		0 0	O		Benzo(b)fluoranthene	SOLID	N/A	<2.9299E+02			292.99	ug/Kg			U
8	SAMPLE	S13T004302		0 0	O		Benzo(g,h,i)perylene	SOLID	N/A	<2.4626E+02			246.26	ug/Kg			U
8	SAMPLE	S13T004302		0 0	O		Benzo(k)fluoranthene	SOLID	N/A	<2.3427E+02			234.27	ug/Kg			U
8	SAMPLE	S13T004302		0 0	O		Butylbenzylphthalate	SOLID	N/A	<2.9958E+02			299.58	ug/Kg			U
8	SAMPLE	S13T004302		0 0	O		Chrysene	SOLID	N/A	<4.8772E+02			487.72	ug/Kg			U
8	SAMPLE	S13T004302		0 0	O		Cyclohexanone	SOLID	N/A	<3.3499E+03			3.35E+03	ug/Kg			U
8	SAMPLE	S13T004302		0 0	O		Di-n-butylphthalate	SOLID	N/A	<3.3691E+03			3.37E+03	ug/Kg			U
8	SAMPLE	S13T004302		0 0	O		Di-n-octylphthalate	SOLID	N/A	<2.8580E+02			285.8	ug/Kg			U
8	SAMPLE	S13T004302		0 0	O		Dibenz(a,h)anthracene	SOLID	N/A	<3.0617E+02			306.17	ug/Kg			U
8	SAMPLE	S13T004302		0 0	O		Dibenzofuran	SOLID	N/A	<2.7861E+02			278.61	ug/Kg			U
8	SAMPLE	S13T004302		0 0	O		Diethylphthalate	SOLID	N/A	<2.5285E+02			252.85	ug/Kg			U
8	SAMPLE	S13T004302		0 0	O		Dimethylphthalate	SOLID	N/A	<2.8999E+02			289.99	ug/Kg			U
8	SAMPLE	S13T004302		0 0	O		Diphenylamine	SOLID	N/A	<2.3128E+02			231.28	ug/Kg			U
8	SAMPLE	S13T004302		0 0	O		Fluoranthene	SOLID	N/A	<2.1210E+02			212.1	ug/Kg			U
8	SAMPLE	S13T004302		0 0	O		Fluorene	SOLID	N/A	<2.3727E+02			237.27	ug/Kg			U
8	SAMPLE	S13T004302		0 0	O		Hexachlorobenzene	SOLID	N/A	<2.8460E+02			284.6	ug/Kg			U
8	SAMPLE	S13T004302		0 0	O		Hexachlorobutadiene	SOLID	N/A	<4.1762E+02			417.62	ug/Kg			U
8	SAMPLE	S13T004302		0 0	O		Hexachloroethane	SOLID	N/A	<6.6986E+02			669.86	ug/Kg			U
8	SAMPLE	S13T004302		0 0	O		Indeno(1,2,3-cd)pyrene	SOLID	N/A	<3.0557E+02			305.57	ug/Kg			U
8	SAMPLE	S13T004302		0 0	O		Isobutanol	SOLID	N/A	<2.7579E+03			2.76E+03	ug/Kg			Ua

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041315

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
8	SAMPLE	S13T004302		0 0	O		Isophorone	SOLID	N/A	<3.1875E+02			318.75	ug/Kg			U
8	SAMPLE	S13T004302		0 0	O		Methylphenols, Total	SOLID	N/A	<6.3871E+02			638.71	ug/Kg			U
8	SAMPLE	S13T004302		0 0	O		N-Nitrosodimethylamine	SOLID	N/A	<4.6195E+02			461.95	ug/Kg			U
8	SAMPLE	S13T004302		0 0	O		N-Nitrosodipropylamine	SOLID	N/A	<3.4811E+02			348.11	ug/Kg			U
8	SAMPLE	S13T004302		0 0	O		N-Nitrosomorpholine	SOLID	N/A	<1.1462E+03			1.15E+03	ug/Kg			U
8	SAMPLE	S13T004302		0 0	O		Naphthalene	SOLID	N/A	<3.7507E+02			375.07	ug/Kg			U
8	SAMPLE	S13T004302		0 0	O		Nitrobenzene	SOLID	N/A	<3.8706E+02			387.06	ug/Kg			U
8	SAMPLE	S13T004302		0 0	O		Pentachlorophenol	SOLID	N/A	<2.2469E+02			224.69	ug/Kg			U
8	SAMPLE	S13T004302		0 0	O		Phenanthrene	SOLID	N/A	<2.1031E+02			210.31	ug/Kg			U
8	SAMPLE	S13T004302		0 0	O		Phenol	SOLID	N/A	<3.5590E+02			355.9	ug/Kg			U
8	SAMPLE	S13T004302		0 0	O		Pyrene	SOLID	N/A	<3.7687E+02			376.87	ug/Kg			U
8	SAMPLE	S13T004302		0 0	O		Pyridine	SOLID	N/A	<3.8945E+02			389.45	ug/Kg			U
8	SAMPLE	S13T004302		0 0	O		Tri-n-butylphosphate	SOLID	N/A	<6.4590E+02			645.9	ug/Kg			U
8	SAMPLE	S13T004302		0 0	O		bis(2-Chloroethoxy)methane	SOLID	N/A	<4.1342E+02			413.42	ug/Kg			U
8	SAMPLE	S13T004302		0 0	O		bis(2-Ethylhexyl)phthalate	SOLID	N/A	<3.5362E+03			3.54E+03	ug/Kg			U
8	SAMPLE	S13T004302		0 0	O		bis-(2-Chloroethyl) ether	SOLID	N/A	<4.5057E+02			450.57	ug/Kg			U
8	SAMPLE	S13T004302		0 0	O		2,4,6-Tribromophenol	SOLID	23966.44	1.1415E+04				ug/Kg	47.629	% Recovery	
8	SAMPLE	S13T004302		0 0	O		2-Fluorobiphenyl	SOLID	11983.22	9.4818E+03				ug/Kg	79.126	% Recovery	
8	SAMPLE	S13T004302		0 0	O		2-Fluorophenol	SOLID	23966.44	9.7638E+03				ug/Kg	40.739	% Recovery	
8	SAMPLE	S13T004302		0 0	O		Nitrobenzene-d5	SOLID	11983.22	8.3954E+03				ug/Kg	70.06	% Recovery	
8	SAMPLE	S13T004302		0 0	O		Phenol-d6	SOLID	23966.44	1.7962E+04				ug/Kg	74.946	% Recovery	
8	SAMPLE	S13T004302		0 0	O		Terphenyl-d14	SOLID	11983.22	1.1748E+04				ug/Kg	98.037	% Recovery	
8	SAMPLE	S13T004302		0 0	O		3-Penten-2-ol	SOLID		2826.4051				ug/Kg			BJNT
8	SAMPLE	S13T004302		0 0	O		Trichloromethane	SOLID		3496.8751				ug/Kg			BJNT
8	SAMPLE	S13T004302		0 0	O		Unknown-1	SOLID		2795.3172				ug/Kg			BJT

Comments Section:

Data Flagger Status:
Flagging Completed

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041315

Final Page for Batch# 00041315

Carol J. Ojineer 6/12/13
Analyst Signature **Date**

Carol J. Ojineer 6/12/13
Data Entry Signature **Date**

Julie P. Miller 6/12/13
Reviewer Signature **Date**

PC: Julie Axtom 7/15/13

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041315

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Method	Customer Id	Specification
1	S1305160007	BLNK			SVOA 222S SOLID		
2	S1305160008	LCS			SVOA 222S SOLID		
3	S13T004247	SAMPLE		20130402	SVOA 222S SOLID	9C-13-Comp A	C109 CLO
4	S1305160009	DUP	S13T004247		SVOA 222S SOLID		
5	S1305160010	MS	S13T004247		SVOA 222S SOLID		
6	S1305160011	MSD	S13T004247		SVOA 222S SOLID		
7	S13T004275	SAMPLE		20130402	SVOA 222S SOLID	9C-13-Comp B	C109 CLO
8	S13T004302	SAMPLE		20130402	SVOA 222S SOLID	9C-13-Comp C	C109 CLO

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

* = Rejected Analyte
N, A = Non-reported Analyte

5/20/2013 10:26:45AM
CompleteBatch Version 2.7.32
batchreports 2.7.32

LABCORE Completed Batch Report for Batch# 00041251

Analyst: Boisoneau, Ryan

Book#: See Bench Sheet

Instrument: SOXHLET EXTRACTORS

Method: ORGANIC EXT.-SVOA SOLIDS, LA-523-138 Rev/Mod H-0

Specification: C109 CLO

Prep Batch: N/A

Batch Comment:

Soxhlet SVOA extraction on C109 CLO

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
1	BLNK	S1305160007			O		Extraction Complete	SOLID		Complete							
2	LCS	S1305160008			O		Extraction Complete	SOLID		Complete					N/A		
3	SAMPLE	S13T004247			O		Extraction Complete	SOLID	N/A	Complete							
4	DUP	S1305160009	S13T004247		O		Extraction Complete	SOLID	Complete	Complete							
5	MS	S1305160010	S13T004247		O		Extraction Complete	SOLID		Complete					N/A		
6	MSD	S1305160011	S13T004247		O		Extraction Complete	SOLID		Complete					N/A		
7	SAMPLE	S13T004275			O		Extraction Complete	SOLID	N/A	Complete							
8	SAMPLE	S13T004302			O		Extraction Complete	SOLID	N/A	Complete							

Comments Section:

Data Flagger Status:
Flagger Not Run

Final Page for Batch# 00041251

5/21/13
Analyst Signature **Date**

5/20/13
Data Entry Signature **Date**

5/21/13
Reviewer Signature **Date**

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041251

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Method	Customer Id	Specification
1	S1305160007	BLNK			ORGANIC EXT.-SV		
2	S1305160008	LCS			ORGANIC EXT.-SV		
3	S13T004247	SAMPLE		20130402	ORGANIC EXT.-SV	9C-13-Comp A	C109 CLO
4	S1305160009	DUP	S13T004247		ORGANIC EXT.-SV		
5	S1305160010	MS	S13T004247		ORGANIC EXT.-SV		
6	S1305160011	MSD	S13T004247		ORGANIC EXT.-SV		
7	S13T004275	SAMPLE		20130402	ORGANIC EXT.-SV	9C-13-Comp B	C109 CLO
8	S13T004302	SAMPLE		20130402	ORGANIC EXT.-SV	9C-13-Comp C	C109 CLO

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

* = Rejected Analyte
N, A = Non-reported Analyte

Narrative

C109 CLO
Group 20130402
Prep Batch #41251
Analytical Batch #41315

Hold Times:

Three solid samples S13T004247 (Parent S13T004243 /Client ID 9C-13-CompA), S13T004275(Parent S13T004271 /Client ID 9C-13-Comp B), and S13T004302 (Parent S13T004298 /Client 9C-13-Comp C) were sampled on 5/7/2013 and 5/8/2013. Samples were extracted on 5/16/2013 with completion on 5/17/2013 which is within the 14 day hold time. Analysis of the extracted samples was performed on 5/29/2013. The project requested only one primary analyte by GC/MS (Semi-VOA). Per RPP-PLAN-53814, Rev 0, Tributyl-phosphate is listed as a primary. Several compounds are listed in a Secondary list many for which we do calibrate in our method.

CCV % Drift

The CCV all compounds were within the limits of 20% Drift. Internal standards in the CCV met Retention time and recovery limits.

Blank

All analytes in the blank were <MDL. Surrogate recoveries in the blank were within limits. Three tentatively identified compounds were observed: Trichloromethane estimate 2958 µg/Kg, 3-Penten-2-ol at 2454 µg/Kg and an unknown without sufficient match to be identified at 2808 µg/Kg estimated. The source of these TICS is not known.

LCS Recoveries

LCS recovery for the one primary analyte, tributylphosphate, was within limits of 70 to 130% per the TSAP RPP-PLAN-44844 Rev2. All other spiked compounds recoveries were within SPC limits (or administrative limits, 70-130) for compounds and surrogates included in the "Full List" (Full_Liq.spk) except for the following:

Constituent	% Recovery	Admin. Limits
Isobutylalcohol	53.42	70.00-130.00
2,4-Dimethylphenol	68.74	70.00-130.00
1,2,4-Trichlorobenzene	95.27	46.00-94.00
Hexachlorocyclopentadiene	<MDL	70.00-130.00
2,6-Bis (tertbutyl)4-methylphenol	44.33	70.00-130.00
2,4-Dinitrophenol	55.78	70.00-130.00

None of these compounds are listed in the Secondary SVOA Analytes list for RPP-PLAN-53814 Rev 0. Compounds outside administrative limits (70 to 130%) for the LCS do not necessarily constitute failures since the

laboratory has not generated sufficient data to determine normal recoveries for these compounds using extraction procedures. Hexachlorocyclopentadiene has been recovering very poorly if at all.

MS/MSD Recoveries

The target compound Tributyl phosphate at 117% was within recovery limits for the Matrix Spike which is 70 to 130%. The RPD for the MS/MSD pair was within limits for Tributyl phosphate at 1% which meets the ≤30% limit. Surrogates and Internal standards for the MS and MSD were within limits. NOTE: For the Matrix Spike duplicate per the direction of the Project Coordinator the parent for S13T004247 was both S13T004243 and S13T004244. The later Parent S13T004244 was also the parent for the PCB analysis.

Internal Standards:

Internal Standards were within limits for all samples.

Samples

None of the samples have Tributylphosphate above detection limits. Tentatively identified compounds were identified; however two of these were also observed in the extraction blank and may not actually be present in the samples. These are Trichloromethane and 3-Penten-2-ol. The surrogate 2,4,6-Tribromophenol recovered low, outside of SPC limits at 48.8% versus SPC limits of 49-111% for the duplicate sample; at 20.6% for sample S13T004275; and at 47.6% for S13T004302. 2-Fluorophenol was also outside of limits at 32% for S13T004275 and at 40.7% for sample S13T004203 versus SPC of 42-99%. Matrix effects are occurring with the acid surrogates. All other surrogates were within limits.

S13T004247

Compound	Result
Tributylphosphate	Not Detected

One TSAP secondary compound, 3-methyl-2-butanone, was identified as Tentatively Identified Compound (TIC) in the sample and duplicate.

TICS (estimated):	**µg/Kg**
Trichloromethane:	4283
3-methyl-2-Butanone:	2810
3-Penten-2-ol:	2910

S13T004247 Duplicate

Compound	Result
Tributylphosphate	Not Detected

No Secondary compounds from the TSAP detected.

TICS (estimated):	**µg/Kg**
Trichloromethane:	4057
3-methyl-2-Butanone:	2628
Unknown @ 3.45 min:	2738
Bis(2-methylpropyl)phthalate:	2856 (also known as 1,2-Benzenedicarboxylic acid bis(2-methylpropyl)ester

S13T004275

Compound	Result
Tributylphosphate	Not Detected

No Secondary compounds from the TSAP detected.

TICS (estimated):	**µg/Kg**
Trichloromethane:	3768
Unknown @ 3.23 min:	2479
Unknown @ 3.45 min:	2296

S13T004302

Compound	Result
Tributylphosphate	Not Detected

No Secondary compounds from the TSAP detected.

TICS:	**µg/Kg**
Trichloromethane:	3497
Unknown @ 3.22 min:	2795
3-Penten-2-ol:	2826

ATL	SVOC GC/MS DATA REVIEW CHECKLIST	LA-523-135 Rev E-0 (*)

Worklist/Project Information: B 41315 / C109 CLO / Group 20130402 Instrument ID : Tuvok

Review Date : 6-4-2013

Review Items	Level 1 Yes	Level 1 No	Level 1 N/A	Level 2	Comments/Samples Affected
Tune					
1. Did DFTPP/check cmpds meet tune criteria?	◉	○	○	☑	
2. Were all samples injected within 12 hours of the tune?	◉	○	○	☑	
Initial Calibration					
1. Is completed ICAL checklist attached?	◉	○	○	☑	
Continuing Calibration					
1. Do the target compounds %D meet method criteria?	◉	○	○	☑	
2. Was elution order checked for isomeric pairs?	◉	○	○	☑	
3. Traceability or standards properly documented?	◉	○	○	☑	
4. Manual integrations/ratio failures checked?	◉	○	○	☑	
5. Do the Internal Stds meet criteria against the ICAL?	◉	○	○	☑	
Client Samples & QC Sample Results					
1. Is the automated formula shown on the printout correct?	◉	○	○	☑	
2. MDL values checked for correctness?	◉	○	○	☑	
3. Were spectra for positive results evaluated?	◉	○	○	☑	
4. Are positive results within calibration range?	◉	○	○	☑	
5. Dilutions due to target cpds? ☐ Dilutions due to non-targets? ☐	○	○	◉	☑	
6. Data checked for detector saturation?	◉	○	○	☑	
7. Do internal standards (IS) meet criteria?	◉	○	○	☑	
8. Are target constituents in LCS within control limits?	◉	○	○	☑	Yes for TSAP Primary compound; See Narrative.
9. All target cpds in MB < method criteria?	◉	○	○	☑	
10. Are surrogate recoveries for MB and LCS within control limits?	◉	○	○	☑	
11. Are MS/MSD recoveries and RPDs within control limits?	◉	○	○	☑	Yes for TSAP Primary compound. See Narrative
12. Are surrogate recoveries for samples within control limits?	○	◉	○	☑	See Case Narrative. Matrix effects acid surrogates
13. Manual integrations checked?	◉	○	○	☑	
14. TIC's/Unknowns evaluated?	◉	○	○	☑	
15. Internal Stds used to quantitate TICs free form coelution?	◉	○	○	☑	
16. Chromatogram TIC/Unknown/I.S. peaks integrated properly?	◉	○	○	☑	
17. Is appropriate raw data included?	◉	○	○	☐	
18. Are all manually entered data verified?	◉	○	○	☑	
19. Are all flags present (B,J etc.)?	◉	○	○	☑	
20. Is the order of the analysis correct (Tune/CCV/Blank, etc.)?	◉	○	○	☑	
21. Is the data package complete - all required bench sheets, forms, etc.?	◉	○	○	☑	

1st Level Data Reviewer : (Sign) Leslie P. Miller Date : 6-4-2013 2nd Level Data Reviewer : (Sign) [signature] Date : 6/6/13

(*) This form is not used by the subject procedure; rather, it is used to assist in verifying the data produced during the performance of the procedure.

A-6005-335 (REV 0)

ATL	DATA REVIEW CHECKLIST CONTINUATION

◉ LA-523-135 (*) Rev E-0 ○ _____ (*) Rev _____
(Other)

Peer Reviewed By: Scott Clauss

Project: C109 CLO SVOA Worklist No.: 41315

Item	Review Comment	Resolution
1	The trichloromethane (chloroform) and 3-penten-2-ol may be coming from the dichloromethane solvent. Chloroform could be an impurity and amylene (a pentene) is used as a preservative.	Comment only no action expected.
2	Add ICAL checklist to data package	ICAL Checklist & Narrative (ICAL) added.
3	Qual ions for 2,4-dintrophenol misassigned on MS and MSD. Gives a Q flag. Need to fix and reprint Target.RP for Summary and for Supporting. Quant ion looks OK so uploadtolims and Form 3 are OK.	Fixed the qualifier ions for 2,4-dinitrophenol on MS & MSD, re-printed Target.RP reports for these two re-printed after corrections. Q flags no longer present.

Les Miller Resolved By: Name	Les Miller Signature	6/10/13 Date
Scott Clauss Peer Reviewer Concurrence: Name	Scott Clauss Signature	6/10/13 Date

(*) This form is not used by the subject procedure; rather, it is used to assist in verifying the data produced during the performance of the procedure.

ATL	SVOA SOLID EXTRACTION BENCH SHEET

PCB Status: TSCA Regulated PCB

Extraction Procedure: (●) LA-523-138 Rev H-0 (SOXHLET) ( ) LA-523-145 Rev N/A (ASE)

Project: C109 CLO Preparation Batch #: 41251

Extraction START: Date: 05/16/13 Time: 15:05 Extraction FINISH: Date: 05/17/13 Time: 08:39

Extraction Analyst: MOF, RJB KEK Balance Used: LE-BAL-026 [X] (Verified)

Project Manager: Julie Osborn

Concentration: [ ] LA-523-165 Rev N/A [X] LA-523-167 Rev A-0

Sample Number	Parent Sample #	Mass (g)	Bar Code #	Comments	Final Volume
Blank	N/A	3	3237		2 mL MeCl2
LCS	N/A	3	3238		2 mL MeCl2
S13T004247	S13T004243	3.103	3239	ORANGE GRANULES	2 mL MeCl2
S13T004247 DUP	S13T004243	3.127	3240		2 mL MeCl2
S13T004247 MS	S13T004243	3.181	3241		2 mL MeCl2
S13T004247 MSD	S13T004243	3.503*	3242		2 mL MeCl2
S13T004275	S13T004271	3.445	3243	Wet granule	2 mL MeCl2
S13T004302	S13T004298	3.338	3244	Very runny/Sludge	2 mL MeCl2
Check Standard	N/A	N/A	3245	Amount of STD: 0.020 mL SURR: 0.020 mL	1 mL MeCl2

Analysis Procedure: LA-523-135 Rev E-0 Analytical Batch #: 41315

Analysis Analyst: Carol J. Openen

Comments & Observations:

Centrifuge tube verification - Balance used: LE-BAL-0078 [X] Verified

Want 2mL x 0.996758 g/mL = 1.993516 g at 26 °C

observed 1.9754 / 1.99356 x100 = 99.3 % recovery RJB - Pass

KEK 5/16/13

* S13T004247 MSD parent was S13T004243 and S13T004244 ~~with~~ at PC's direction

Spike - RJB, KD - RJB, Blow Down - KEK

alpha/Beta mounts surveyed by: SL 5/20/13

Standard	Vol (mL)	Id'#	Cat #	Date Opened	Exp. Date	Concentration
B/N Surr	0.040	A087150	31024	5-7-13	2/2018	1000 ppm
Acid Surr	0.040	A084980	31025	5-7-13	8/2015	2000 ppm
LCS/MS/MSD Spike Mix	0.040	HNF-N-1896-144.03	N/A	5-7-13	11/7/13	
MM-DF 5-16-13						

Methylene Chloride Lot # DH215 Exp. Date: 9/20/13

ATL	SVOA SOLID EXTRACTION BENCH SHEET (continued)

TSCA Regulated PCB

Extraction Procedure: (●) LA-523-138 Rev H-0 (SOXHLET) ( ) LA-523-145 Rev N/A (ASE)

Project: C109 CLO Preparation Batch #: 41251

Extraction START: Date: 05/16/13 Time: N/A Extraction FINISH: Date: N/A Time: N/A

~~Methylene Chloride Lot #~~ ~~Exp. Date:~~ KEK 5/20/13

Comments & Observations (continued):

Samples split out. Added 2.5 µl Internal std. to each (HNF-N-1896-146.01) exp. date: 5/8/14. Ran on Tuvok. CJD 5-29-13.

A-6005-619 (REV 5)

Macro: upload2lims.mac, Revision: 0.2 Data File: //apwscf02/slab/chem/tuvok.i/2013/130529_C109.B/13052905BLANK
Report Date: 05/29/2013 Method File: \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\TCNTC130523.m

LIMS Upload Report

Lab Sample ID:	BLANK	Instrument ID:	tuvok.i
Client Sample ID:	BLANK	Analyst:	cjo
SDG:	C109 CLO	Analysis Date:	29-MAY-2013 10:39
Lab Prep Batch:	41251	ALS Bottle:	5
Protocol:	@222SV	Replicate:	0
Sample Fraction:	SV	Dilution Factor:	1
Sample Type:	BLANK	Final Concentration Units:	ug/Kg
Matrix:	SOIL	Matrix Type:	SOLID
Actual Sample Size:	3	Expected Sample Size:	3
Actual Units:	g	Expected Units:	g

For a SV, LOW Conc., SOLID sample,
the Method formula used was: Conc. = Amount * DF * Uf * Vt/(Vi * Ws * (100 - M)/100).

The Macro formula used was: Conc. = Amount * DF * Uf * Vt/(Vi * Ws * (100 - M)/100),
where DF = 1, UF = 1, Vt = 2000, Vi = 1, Ws = 3, and M = 0.

-	CAS Number	Compound Name	RT	Spike	Adj. MDL	LOQ	Final Conc	Flag	Pct. Rec.
=	==========	==========	========	=========	========	=========	==========	=====	=========
	120-82-1	1,2,4-Trichlorobenzene			515.9999	5160	ND	U	
	95-50-1	1,2-Dichlorobenzene			671.3333	6713.333	ND	U	
	106-46-7	1,4-Dichlorobenzene			755.3333	7553.333	ND	U	
	120-83-2	2,4-Dichlorophenol			359.3333	3593.333	ND	U	
	121-14-2	2,4-Dinitrotoluene			254.0000	2540	ND	U	
	95-95-4	2,4,5-Trichlorphenol			293.3333	2933.333	ND	U	
	88-06-2	2,4,6-Trichlorophenol			330.0000	3300	ND	U	
	105-67-9	2,4-Dimethylphenol			189.9999	1900	ND	U	
	606-20-2	2,6-Dinitrotoluene			257.9999	2580	ND	U	
	51-28-5	2,4-Dinitrophenol			274.6666	2746.666	ND	U	
	111-76-2	2-Butoxyethanol			10018.66	100186.6	ND	U	
	91-58-7	2-Chloronaphthalene			338.0000	3380	ND	U	
	91-57-6	2-Methylnaphthalene			369.3333	3693.333	ND	U	
	95-48-7	2-Methylphenol			383.3333	3833.333	ND	U	
	88-74-4	2-Nitroaniline			313.3333	3133.333	ND	U	
	88-75-5	2-Nitrophenol			358.0000	3580	ND	U	
	108-39-4a	3- and 4-Methylphenol			342.6666	3426.666	ND	U	
	99-09-2	3-Nitroaniline			298.6666	2986.666	ND	U	
	106-47-8	4-Chloroaniline			316.6666	3166.666	ND	U	
	534-52-1	4,6-Dinitro-2-methylph			209.9999	3666.666	ND	U	
	7005-72-3	4-Chlorophenyl-phenyle			319.9999	3200	ND	U	
	83-32-9	Acenaphthene			117.3333	1173.333	ND	U	
	208-96-8	Acenaphthylene			305.3333	3053.333	ND	U	
	120-12-7	Anthracene			208.0000	2080	ND	U	
	56-55-3	Benzo(a)anthracene			251.9999	2520	ND	U	
	205-99-2	Benzo(b)fluoranthene			325.9999	3260	ND	U	
	191-24-2	Benzo(g,h,i)perylene			274.0000	2740	ND	U	
	50-32-8	Benzo(a)pyrene			274.6666	2746.666	ND	U	
	111-44-4	bis(-2-Chloroethyl)Eth			501.3333	5013.333	ND	U	
	111-91-1	bis(-2-Chloroethoxy)me			459.9999	4600	ND	U	
	117-81-7	bis(2-Ethylhexyl)phtha			3934.666	39346.66	ND	U	
	108-60-1	bis(2-chloroisopropyl)			502.0000	5020	ND	U	
	207-08-9	Benzo(k)fluoranthene			260.6666	2606.666	ND	U	
	101-55-3	4-Bromophenyl-phenylet			220.6666	2206.666	ND	U	
	85-68-7	Butylbenzylphthalate			333.3333	3333.333	ND	U	
	59-50-7	4-Chloro-3-Methylpheno			288.0000	2880	ND	U	

	95-57-8	2-Chlorophenol			443.3333	4433.333	ND	U	
	218-01-9	Chrysene			542.6666	5426.666	ND	U	
	53-70-3	Dibenzo(a,h)anthracene			340.6666	3406.666	ND	U	
	132-64-9	Dibenzofuran			310.0000	3100	ND	U	
	84-74-2	Di-n-butylphthalate			3748.666	37486.66	ND	U	
	84-66-2	Diethylphthalate			281.3333	2813.333	ND	U	
	131-11-3	Dimethylphthalate			322.6666	3226.666	ND	U	
	117-84-0	Di-n-octylphthalate			317.9999	3180	ND	U	
	122-39-4	Diphenylamine (Nnitros			257.3333	2573.333	ND	U	
	621-64-7	N-Nitroso-di-n-propyla			387.3333	3873.333	ND	U	
	86-73-7	Fluorene			263.9999	2640	ND	U	
	206-44-0	Fluoranthene			236.0000	2360	ND	U	
	118-74-1	Hexachlorobenzene			316.6666	3166.666	ND	U	
	87-68-3	Hexachlorobutadiene			464.6666	4646.666	ND	U	
	77-47-4	Hexachlorocyclopentadi			94.66666	946.6666	ND	U	
	67-72-1	Hexachloroethane			745.3333	7453.333	ND	U	
	193-39-5	Indeno(1,2,3-cd)pyrene			339.9999	3400	ND	U	
	78-59-1	Isophorone			354.6666	3546.666	ND	U	
	108-95-2	Phenol			395.9999	3960	ND	U	
	91-20-3	Naphthalene			417.3333	4173.333	ND	U	
	98-95-3	Nitrobenzene			430.6666	4306.666	ND	U	
	100-02-7	4-Nitrophenol			350.6666	3666.666	ND	U	
	100-01-6	4-Nitroaniline			343.9999	3440	ND	U	
	87-86-5	Pentachlorophenol			250	2500	ND	U	
	85-01-8	Phenanthrene			234.0000	2340	ND	U	
	129-00-0	Pyrene			419.3333	4193.333	ND	U	
	110-86-1	Pyridine			433.3333	4333.333	ND	U	
	126-73-8	Tributyl Phosphate			718.6666	7186.666	ND	U	
M	1520-96-3	Methylphenol (total)			710.6666	7106.666	ND	U	
	62-75-9	n-Nitrosodimethylamine			514.0000	5140	ND	U	
	108-94-1	Cyclohexanone			3727.333	37273.33	ND	U	
	110-80-5	2-Ethoxyethanol			1216.000	12160	ND	U	
	59-89-2	n-Nitrosomorpholine			1275.333	12753.33	ND	U	
	128-37-0	2,6-Bis(tertbutyl)-4-m			1570.666	15706.66	ND	U	
	78-83-1	Isobutylalcohol			3068.666	30686.66	ND	U	
	71-36-3	1-Butanol			2300.000	23000	ND	U	
$	321-60-8	2-Fluorobiphenyl	11.07903	13333.33			10254		76.90140
$	367-12-4	2-Fluorophenol	5.5727	26666.66			18409		69.03523
$	4165-60-0	Nitrobenzene-d5	8.20165	13333.33			9936		74.52014
$	13127-88-3	Phenol-d6	6.773316	26666.66			19410		72.78862
$	118-79-6	2,4,6-Tribromophenol	13.52168	26666.66			19460		72.97502
$	1718-51-0	Terphenyl-d14	17.30986	13333.33			13242		99.31664
T	67-66-3	Trichloromethane	2.923033				2957.5664	NJ	
T		Unknown	3.223183				2807.7008	J	
T	1569-50-2	3-Penten-2-ol	3.4509				2454.4724	NJ	

Key: $ = Surrogate, T = TIC, K = Spike, and M = Summary

Macro: upload2lims.mac, Revision: 0.2 Data File: //apwscf02/slab/chem/tuvok.i/2013/130529_C109.B/13052906LCS.D
Report Date: 05/30/2013 Method File: \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\TCNTC130523.m

LIMS Upload Report

Lab Sample ID:	LCS	Instrument ID:	tuvok.i
Client Sample ID:	LCS	Analyst:	cjo
SDG:	C109 CLO	Analysis Date:	29-MAY-2013 11:23
Lab Prep Batch:	41251	ALS Bottle:	6
Protocol:	@222SV	Replicate:	0
Sample Fraction:	SV	Dilution Factor:	1
Sample Type:	LCS	Final Concentration Units:	ug/Kg
Matrix:	SOIL	Matrix Type:	SOLID
Actual Sample Size:	3	Expected Sample Size:	3
Actual Units:	g	Expected Units:	g

For a SV, LOW Conc., SOLID sample,
the Method formula used was: Conc. = Amount * DF * Uf * Vt/(Vi * Ws * (100 - M)/100).

The Macro formula used was: Conc. = Amount * DF * Uf * Vt/(Vi * Ws * (100 - M)/100),
where DF = 1, UF = 1, Vt = 2000, Vi = 1, Ws = 3, and M = 0.

-	CAS Number	Compound Name	RT	Spike	Adj. MDL	LOQ	Final Conc	Flag	Pct. Rec.
K	120-82-1	1,2,4-Trichlorobenzene	9.247	6666.666	515.9999	5160	6351.5		95.27311
K	95-50-1	1,2-Dichlorobenzene	7.642	6666.666	671.3333	6713.333	6100.5		91.50695
K	106-46-7	1,4-Dichlorobenzene	7.415	6666.666	755.3333	7553.333	6052.4		90.78647
K	120-83-2	2,4-Dichlorophenol	9.102	6666.666	359.3333	3593.333	6383.5		95.75302
K	121-14-2	2,4-Dinitrotoluene	12.497	6666.666	254.0000	2540	6557.4		98.36174
K	95-95-4	2,4,5-Trichlorphenol	10.996	6666.666	293.3333	2933.333	6103.2		91.54852
K	88-06-2	2,4,6-Trichlorophenol	10.934	6666.666	330.0000	3300	6205.7		93.08564
K	105-67-9	2,4-Dimethylphenol	8.74	6666.666	189.9999	1900	4582.5		68.73793
K	606-20-2	2,6-Dinitrotoluene	11.834	6666.666	257.9999	2580	6349.6		95.24353
K	51-28-5	2,4-Dinitrophenol	12.29	6666.666	274.6666	2746.666	3718.7		55.78046
K	111-76-2	2-Butoxyethanol	5.966	13333.33	10018.66	100186.6	12222		91.66900
K	91-58-7	2-Chloronaphthalene	11.296	6666.666	338.0000	3380	6159.3		92.38975
K	91-57-6	2-Methylnaphthalene	10.499	6666.666	369.3333	3693.333	6364.3		95.46447
K	95-48-7	2-Methylphenol	7.684	6666.666	383.3333	3833.333	5607		84.10482
K	88-74-4	2-Nitroaniline	11.441	6666.666	313.3333	3133.333	6056.2		90.84229
K	88-75-5	2-Nitrophenol	8.728983	6666.666	358.0000	3580	6553.5		98.30277
K	108-39-4a	3- and 4-Methylphenol	7.912	6666.666	342.6666	3426.666	6171.6		92.57363
K	99-09-2	3-Nitroaniline	12.114	6666.666	298.6666	2986.666	5772		86.58083
K	106-47-8	4-Chloroaniline	9.433	6666.666	316.6666	3166.666	5906.1		88.59186
K	534-52-1	4,6-Dinitro-2-methylph	13.18	6666.666	209.9999	3666.666	6350.9		95.26330
K	7005-72-3	4-Chlorophenyl-phenyle	13.107	6666.666	319.9999	3200	6275.5		94.13190
K	83-32-9	Acenaphthene	12.269	6666.666	117.3333	1173.333	6192.1		92.88154
K	208-96-8	Acenaphthylene	11.99	6666.666	305.3333	3053.333	6046.2		90.69279
K	120-12-7	Anthracene	14.815	6666.666	208.0000	2080	6998.9		104.9830
K	56-55-3	Benzo(a)anthracene	19.1	6666.666	251.9999	2520	6779.2		101.6883
K	205-99-2	Benzo(b)fluoranthene	21.16	6666.666	325.9999	3260	6685.3		100.2789
K	191-24-2	Benzo(g,h,i)perylene	25.911	6666.666	274.0000	2740	6547.6		98.21434
K	50-32-8	Benzo(a)pyrene	21.895	6666.666	274.6666	2746.666	6507.1		97.60722
K	111-44-4	bis(-2-Chloroethyl)Eth	6.959	6666.666	501.3333	5013.333	5808.1		87.12183
K	111-91-1	bis(-2-Chloroethoxy)me	8.905	6666.666	459.9999	4600	6298.3		94.47494
K	117-81-7	bis(2-Ethylhexyl)phtha	19.048	6666.666	3934.666	39346.66	7999		119.9853
K	108-60-1	bis(2-chloroisopropyl)	7.746	6666.666	502.0000	5020	6336.8		95.05283
K	207-08-9	Benzo(k)fluoranthene	21.222	6666.666	260.6666	2606.666	7149		107.2358
K	101-55-3	4-Bromophenyl-phenylet	13.925	6666.666	220.6666	2206.666	6945.1		104.1764
K	85-68-7	Butylbenzylphthalate	18.096	6666.666	333.3333	3333.333	7315.2		109.7274
K	59-50-7	4-Chloro-3-Methylpheno	10.189	6666.666	288.0000	2880	6197.8		92.96713

K	95-57-8	2-Chlorophenol	7.073	6666.666	443.3333	4433.333	5902.7		88.53993
K	218-01-9	Chrysene	19.162	6666.666	542.6666	5426.666	6826		102.3895
K	53-70-3	Dibenzo(a,h)anthracene	25.052	6666.666	340.6666	3406.666	6716.1		100.7420
K	132-64-9	Dibenzofuran	12.559	6666.666	310.0000	3100	6143.9		92.15805
K	84-74-2	Di-n-butylphthalate	15.602	6666.666	3748.666	37486.66	7698.8		115.4819
K	84-66-2	Diethylphthalate	12.89	6666.666	281.3333	2813.333	6608		99.12001
K	131-11-3	Dimethylphthalate	11.731	6666.666	322.6666	3226.666	6282.3		94.23429
K	117-84-0	Di-n-octylphthalate	20.27	6666.666	317.9999	3180	7667.4		115.0104
K	122-39-4	Diphenylamine (Nnitros	13.294	6666.666	257.3333	2573.333	6805.6		102.0842
K	621-64-7	N-Nitroso-di-n-propyla	7.943	6666.666	387.3333	3873.333	5634.6		84.51927
K	86-73-7	Fluorene	13.128	6666.666	263.9999	2640	6432.4		96.48546
K	206-44-0	Fluoranthene	16.709	6666.666	236.0000	2360	7178.2		107.6723
K	118-74-1	Hexachlorobenzene	14.039	6666.666	316.6666	3166.666	6912.7		103.6910
K	87-68-3	Hexachlorobutadiene	9.568	6666.666	464.6666	4646.666	6339.9		95.09889
K	77-47-4	Hexachlorocyclopentadi		6666.666	94.66666	946.6666	ND	U	
K	67-72-1	Hexachloroethane	8.16	6666.666	745.3333	7453.333	5936.4		89.04662
K	193-39-5	Indeno(1,2,3-cd)pyrene	25	6666.666	339.9999	3400	6599.8		98.99743
K	78-59-1	Isophorone	8.595	6666.666	354.6666	3546.666	6177		92.65501
K	108-95-2	Phenol	6.794	6666.666	395.9999	3960	5646.3		84.69416
K	91-20-3	Naphthalene	9.381	6666.666	417.3333	4173.333	6270.6		94.05847
K	98-95-3	Nitrobenzene	8.231983	6666.666	430.6666	4306.666	6111.8		91.67759
K	100-02-7	4-Nitrophenol	12.362	6666.666	350.6666	3666.666	6235		93.52541
K	100-01-6	4-Nitroaniline	13.118	6666.666	343.9999	3440	5623.6		84.35407
K	87-86-5	Pentachlorophenol	14.349	6666.666	250	2500	6948.2		104.2228
K	85-01-8	Phenanthrene	14.732	6666.666	234.0000	2340	7021.2		105.3188
K	129-00-0	Pyrene	17.09198	6666.666	419.3333	4193.333	7075.2		106.1283
K	110-86-1	Pyridine	4.091983	6666.666	433.3333	4333.333	5509		82.63464
K	126-73-8	Tributyl Phosphate	13.232	6666.666	718.6666	7186.666	7360.1		110.4010
K	1520-96-3	Methylphenol (total)	1.711	13333.33	710.6666	7106.666	11778		88.33922
K	62-75-9	n-Nitrosodimethylamine	4.03	6666.666	514.0000	5140	5705.9		85.58856
K	108-94-1	Cyclohexanone	5.945	6666.666	3727.333	37273.33	6096.7		91.45030
K	110-80-5	2-Ethoxyethanol	3.699	6666.666	1216.000	12160	5565.6		83.48429
K	59-89-2	n-Nitrosomorpholine	7.974	6666.666	1275.333	12753.33	5532.6		82.98978
K	128-37-0	2,6-Bis(tertbutyl)-4-m	12.207	6666.666	1570.666	15706.66	2955.3		44.32964
K	78-83-1	Isobutylalcohol	2.943	13333.33	3068.666	30686.66	7122.7		53.42026
K	71-36-3	1-Butanol	3.233	26666.66	2300.000	23000	18016		67.56219
$	321-60-8	2-Fluorobiphenyl	11.079	13333.33			11336		85.01694
$	367-12-4	2-Fluorophenol	5.572	26666.66			20639		77.39498
$	4165-60-0	Nitrobenzene-d5	8.201	13333.33			11017		82.63105
$	13127-88-3	Phenol-d6	6.773	26666.66			21511		80.66486
$	118-79-6	2,4,6-Tribromophenol	13.521	26666.66			23339		87.52016
$	1718-51-0	Terphenyl-d14	17.30998	13333.33			13976		104.8175

Key: $ = Surrogate, T = TIC, K = Spike, and M = Summary

Macro: upload2lims.mac, Revision: 0.2 Data File: //apwscf02/slab/chem/tuvok.i/2013/130529_C109.B/13052908_4247
Report Date: 05/29/2013 Method File: \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\TCNTC130523.m

LIMS Upload Report

Lab Sample ID:	S13T004247	Instrument ID:	tuvok.i
Client Sample ID:	S13T004247	Analyst:	cjo
SDG:	C109 CLO	Analysis Date:	29-MAY-2013 12:21
Lab Prep Batch:	41251	ALS Bottle:	8
Protocol:	@222SV	Replicate:	0
Sample Fraction:	SV	Dilution Factor:	1
Sample Type:	SAMPLE	Final Concentration Units:	ug/Kg
Matrix:	SOIL	Matrix Type:	SOLID
Actual Sample Size:	3.103	Expected Sample Size:	3
Actual Units:	g	Expected Units:	g

For a SV, LOW Conc., SOLID sample,
the Method formula used was: Conc. = Amount * DF * Uf * Vt/(Vi * Ws * (100 - M)/100).

The Macro formula used was: Conc. = Amount * DF * Uf * Vt/(Vi * Ws * (100 - M)/100),
where DF = 1, UF = 1, Vt = 2000, Vi = 1, Ws = 3.103, and M = 0.

-	CAS Number	Compound Name	RT	Spike	Adj. MDL	LOQ	Final Conc	Flag	Pct. Rec.
=									
	120-82-1	1,2,4-Trichlorobenzene			498.8720	4988.720	ND	U	
	95-50-1	1,2-Dichlorobenzene			649.0492	6490.493	ND	U	
	106-46-7	1,4-Dichlorobenzene			730.2610	7302.610	ND	U	
	120-83-2	2,4-Dichlorophenol			347.4057	3474.057	ND	U	
	121-14-2	2,4-Dinitrotoluene			245.5688	2455.688	ND	U	
	95-95-4	2,4,5-Trichlorphenol			283.5965	2835.965	ND	U	
	88-06-2	2,4,6-Trichlorophenol			319.0460	3190.460	ND	U	
	105-67-9	2,4-Dimethylphenol			183.6931	1836.932	ND	U	
	606-20-2	2,6-Dinitrotoluene			249.4360	2494.360	ND	U	
	51-28-5	2,4-Dinitrophenol			265.5494	2655.494	ND	U	
	111-76-2	2-Butoxyethanol			9686.110	96861.10	ND	U	
	91-58-7	2-Chloronaphthalene			326.7805	3267.805	ND	U	
	91-57-6	2-Methylnaphthalene			357.0738	3570.737	ND	U	
	95-48-7	2-Methylphenol			370.6090	3706.090	ND	U	
	88-74-4	2-Nitroaniline			302.9326	3029.326	ND	U	
	88-75-5	2-Nitrophenol			346.1166	3461.166	ND	U	
	108-39-4a	3- and 4-Methylphenol			331.2922	3312.922	ND	U	
	99-09-2	3-Nitroaniline			288.7528	2887.528	ND	U	
	106-47-8	4-Chloroaniline			306.1553	3061.553	ND	U	
	534-52-1	4,6-Dinitro-2-methylph			203.0293	3544.956	ND	U	
	7005-72-3	4-Chlorophenyl-phenyle			309.3780	3093.780	ND	U	
	83-32-9	Acenaphthene			113.4386	1134.386	ND	U	
	208-96-8	Acenaphthylene			295.1981	2951.981	ND	U	
	120-12-7	Anthracene			201.0957	2010.957	ND	U	
	56-55-3	Benzo(a)anthracene			243.6351	2436.351	ND	U	
	205-99-2	Benzo(b)fluoranthene			315.1788	3151.788	ND	U	
	191-24-2	Benzo(g,h,i)perylene			264.9049	2649.049	ND	U	
	50-32-8	Benzo(a)pyrene			265.5494	2655.494	ND	U	
	111-44-4	bis(-2-Chloroethyl)Eth			484.6922	4846.922	ND	U	
	111-91-1	bis(-2-Chloroethoxy)me			444.7309	4447.309	ND	U	
	117-81-7	bis(2-Ethylhexyl)phtha			3804.060	38040.60	ND	U	
	108-60-1	bis(2-chloroisopropyl)			485.3367	4853.367	ND	U	
	207-08-9	Benzo(k)fluoranthene			252.0141	2520.141	ND	U	
	101-55-3	4-Bromophenyl-phenylet			213.3419	2133.419	ND	U	
	85-68-7	Butylbenzylphthalate			322.2687	3222.687	ND	U	
	59-50-7	4-Chloro-3-Methylpheno			278.4402	2784.402	ND	U	

	95-57-8	2-Chlorophenol			428.6174	4286.174	ND	U	
	218-01-9	Chrysene			524.6535	5246.535	ND	U	
	53-70-3	Dibenzo(a,h)anthracene			329.3586	3293.586	ND	U	
	132-64-9	Dibenzofuran			299.7099	2997.099	ND	U	
	84-74-2	Di-n-butylphthalate			3624.234	36242.34	ND	U	
	84-66-2	Diethylphthalate			271.9948	2719.948	ND	U	
	131-11-3	Dimethylphthalate			311.9561	3119.561	ND	U	
	117-84-0	Di-n-octylphthalate			307.4444	3074.444	ND	U	
	122-39-4	Diphenylamine (Nnitros			248.7914	2487.914	ND	U	
	621-64-7	N-Nitroso-di-n-propyla			374.4762	3744.763	ND	U	
	86-73-7	Fluorene			255.2368	2552.368	ND	U	
	206-44-0	Fluoranthene			228.1662	2281.662	ND	U	
	118-74-1	Hexachlorobenzene			306.1553	3061.553	ND	U	
	87-68-3	Hexachlorobutadiene			449.2426	4492.426	ND	U	
	77-47-4	Hexachlorocyclopentadi			91.52433	915.2433	ND	U	
	67-72-1	Hexachloroethane			720.5929	7205.929	ND	U	
	193-39-5	Indeno(1,2,3-cd)pyrene			328.7141	3287.141	ND	U	
	78-59-1	Isophorone			342.8939	3428.939	ND	U	
	108-95-2	Phenol			382.8552	3828.553	ND	U	
	91-20-3	Naphthalene			403.4804	4034.805	ND	U	
	98-95-3	Nitrobenzene			416.3712	4163.712	ND	U	
	100-02-7	4-Nitrophenol			339.0267	3544.956	ND	U	
	100-01-6	4-Nitroaniline			332.5813	3325.813	ND	U	
	87-86-5	Pentachlorophenol			241.7015	2417.015	ND	U	
	85-01-8	Phenanthrene			226.2326	2262.326	ND	U	
	129-00-0	Pyrene			405.4141	4054.141	ND	U	
	110-86-1	Pyridine			418.9493	4189.494	ND	U	
	126-73-8	Tributyl Phosphate			694.8114	6948.114	ND	U	
M	1520-96-3	Methylphenol (total)			687.0770	6870.770	ND	U	
	62-75-9	n-Nitrosodimethylamine			496.9384	4969.384	ND	U	
	108-94-1	Cyclohexanone			3603.609	36036.09	ND	U	
	110-80-5	2-Ethoxyethanol			1175.636	11756.36	ND	U	
	59-89-2	n-Nitrosomorpholine			1233.000	12330.00	ND	U	
	128-37-0	2,6-Bis(tertbutyl)-4-m			1518.530	15185.30	ND	U	
	78-83-1	Isobutylalcohol			2966.806	29668.06	ND	U	
	71-36-3	1-Butanol			2223.654	22236.54	ND	U	
$	321-60-8	2-Fluorobiphenyl	11.07903	12890.75			9940.1		77.11038
$	367-12-4	2-Fluorophenol	5.5727	25781.50			15782		61.21608
$	4165-60-0	Nitrobenzene-d5	8.201666	12890.75			9340.3		72.45737
$	13127-88-3	Phenol-d6	6.773333	25781.50			19302		74.86981
$	118-79-6	2,4,6-Tribromophenol	13.52168	25781.50			16867		65.42156
$	1718-51-0	Terphenyl-d14	17.30988	12890.75			12860		99.76579
T	67-66-3	Trichloromethane	2.923033				4282.9510	NJ	
T	563-80-4	3-methyl-2-Butanone	3.2232				2809.6035	NJ	
T	1569-50-2	3-Penten-2-ol	3.4509				2909.5201	NJ	

Key: $ = Surrogate, T = TIC, K = Spike, and M = Summary

Macro: upload2lims.mac, Revision: 0.2 Data File: //apwscf02/slab/chem/tuvok.i/2013/130529_C109.B/13052909_4247
Report Date: 05/29/2013 Method File: \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\TCNTC130523.m

LIMS Upload Report

Lab Sample ID:	S13T004247DUP	Instrument ID:	tuvok.i
Client Sample ID:	S13T004247DUP	Analyst:	cjo
SDG:	C109 CLO	Analysis Date:	29-MAY-2013 13:04
Lab Prep Batch:	41251	ALS Bottle:	9
Protocol:	@222SV	Replicate:	0
Sample Fraction:	SV	Dilution Factor:	1
Sample Type:	SAMPLE	Final Concentration Units:	ug/Kg
Matrix:	SOIL	Matrix Type:	SOLID
Actual Sample Size:	3.127	Expected Sample Size:	3
Actual Units:	g	Expected Units:	g

For a SV, LOW Conc., SOLID sample,
the Method formula used was: Conc. = Amount * DF * Uf * Vt/(Vi * Ws * (100 - M)/100).

The Macro formula used was: Conc. = Amount * DF * Uf * Vt/(Vi * Ws * (100 - M)/100),
where DF = 1, UF = 1, Vt = 2000, Vi = 1, Ws = 3.127, and M = 0.

- =	CAS Number	Compound Name	RT	Spike	Adj. MDL	LOQ	Final Conc	Flag	Pct. Rec.
	120-82-1	1,2,4-Trichlorobenzene			495.0431	4950.431	ND	U	
	95-50-1	1,2-Dichlorobenzene			644.0677	6440.677	ND	U	
	106-46-7	1,4-Dichlorobenzene			724.6562	7246.562	ND	U	
	120-83-2	2,4-Dichlorophenol			344.7393	3447.393	ND	U	
	121-14-2	2,4-Dinitrotoluene			243.6840	2436.840	ND	U	
	95-95-4	2,4,5-Trichlorphenol			281.4198	2814.198	ND	U	
	88-06-2	2,4,6-Trichlorophenol			316.5973	3165.973	ND	U	
	105-67-9	2,4-Dimethylphenol			182.2833	1822.833	ND	U	
	606-20-2	2,6-Dinitrotoluene			247.5215	2475.215	ND	U	
	51-28-5	2,4-Dinitrophenol			263.5113	2635.113	ND	U	
	111-76-2	2-Butoxyethanol			9611.768	96117.68	ND	U	
	91-58-7	2-Chloronaphthalene			324.2724	3242.724	ND	U	
	91-57-6	2-Methylnaphthalene			354.3332	3543.332	ND	U	
	95-48-7	2-Methylphenol			367.7646	3677.646	ND	U	
	88-74-4	2-Nitroaniline			300.6076	3006.076	ND	U	
	88-75-5	2-Nitrophenol			343.4601	3434.601	ND	U	
	108-39-4a	3- and 4-Methylphenol			328.7495	3287.496	ND	U	
	99-09-2	3-Nitroaniline			286.5366	2865.366	ND	U	
	106-47-8	4-Chloroaniline			303.8055	3038.055	ND	U	
	534-52-1	4,6-Dinitro-2-methylph			201.4710	3517.748	ND	U	
	7005-72-3	4-Chlorophenyl-phenyle			307.0035	3070.035	ND	U	
	83-32-9	Acenaphthene			112.5679	1125.679	ND	U	
	208-96-8	Acenaphthylene			292.9325	2929.325	ND	U	
	120-12-7	Anthracene			199.5522	1995.522	ND	U	
	56-55-3	Benzo(a)anthracene			241.7652	2417.652	ND	U	
	205-99-2	Benzo(b)fluoranthene			312.7598	3127.598	ND	U	
	191-24-2	Benzo(g,h,i)perylene			262.8717	2628.717	ND	U	
	50-32-8	Benzo(a)pyrene			263.5113	2635.113	ND	U	
	111-44-4	bis(-2-Chloroethyl)Eth			480.9721	4809.721	ND	U	
	111-91-1	bis(-2-Chloroethoxy)me			441.3175	4413.175	ND	U	
	117-81-7	bis(2-Ethylhexyl)phtha			3774.864	37748.64	ND	U	
	108-60-1	bis(2-chloroisopropyl)			481.6117	4816.117	ND	U	
	207-08-9	Benzo(k)fluoranthene			250.0799	2500.799	ND	U	
	101-55-3	4-Bromophenyl-phenylet			211.7045	2117.045	ND	U	
	85-68-7	Butylbenzylphthalate			319.7953	3197.953	ND	U	
	59-50-7	4-Chloro-3-Methylpheno			276.3031	2763.031	ND	U	

	95-57-8	2-Chlorophenol			425.3278	4253.277	ND	U	
	218-01-9	Chrysene			520.6268	5206.267	ND	U	
	53-70-3	Dibenzo(a,h)anthracene			326.8308	3268.308	ND	U	
	132-64-9	Dibenzofuran			297.4096	2974.096	ND	U	
	84-74-2	Di-n-butylphthalate			3596.418	35964.18	ND	U	
	84-66-2	Diethylphthalate			269.9072	2699.072	ND	U	
	131-11-3	Dimethylphthalate			309.5618	3095.618	ND	U	
	117-84-0	Di-n-octylphthalate			305.0847	3050.847	ND	U	
	122-39-4	Diphenylamine (Nnitros			246.8820	2468.819	ND	U	
	621-64-7	N-Nitroso-di-n-propyla			371.6021	3716.021	ND	U	
	86-73-7	Fluorene			253.2779	2532.779	ND	U	
	206-44-0	Fluoranthene			226.4150	2264.150	ND	U	
	118-74-1	Hexachlorobenzene			303.8055	3038.055	ND	U	
	87-68-3	Hexachlorobutadiene			445.7947	4457.946	ND	U	
	77-47-4	Hexachlorocyclopentadi			90.82187	908.2187	ND	U	
	67-72-1	Hexachloroethane			715.0623	7150.623	ND	U	
	193-39-5	Indeno(1,2,3-cd)pyrene			326.1912	3261.912	ND	U	
	78-59-1	Isophorone			340.2622	3402.622	ND	U	
	108-95-2	Phenol			379.9168	3799.168	ND	U	
	91-20-3	Naphthalene			400.3837	4003.837	ND	U	
	98-95-3	Nitrobenzene			413.1755	4131.755	ND	U	
	100-02-7	4-Nitrophenol			336.4247	3517.748	ND	U	
	100-01-6	4-Nitroaniline			330.0287	3300.287	ND	U	
	87-86-5	Pentachlorophenol			239.8464	2398.464	ND	U	
	85-01-8	Phenanthrene			224.4963	2244.963	ND	U	
	129-00-0	Pyrene			402.3025	4023.025	ND	U	
	110-86-1	Pyridine			415.7339	4157.339	ND	U	
	126-73-8	Tributyl Phosphate			689.4787	6894.787	ND	U	
M	1520-96-3	Methylphenol (total)			681.8036	6818.036	ND	U	
	62-75-9	n-Nitrosodimethylamine			493.1244	4931.244	ND	U	
	108-94-1	Cyclohexanone			3575.951	35759.51	ND	U	
	110-80-5	2-Ethoxyethanol			1166.613	11666.13	ND	U	
	59-89-2	n-Nitrosomorpholine			1223.536	12235.36	ND	U	
	128-37-0	2,6-Bis(tertbutyl)-4-m			1506.875	15068.75	ND	U	
	78-83-1	Isobutylalcohol			2944.035	29440.35	ND	U	
	71-36-3	1-Butanol			2206.587	22065.87	ND	U	
$	321-60-8	2-Fluorobiphenyl	11.07903	12791.81			10007		78.22955
$	367-12-4	2-Fluorophenol	5.5727	25583.62			13113		51.25493
$	4165-60-0	Nitrobenzene-d5	8.201666	12791.81			9479.1		74.10269
$	13127-88-3	Phenol-d6	6.773333	25583.62			19337		75.58544
$	118-79-6	2,4,6-Tribromophenol	13.52168	25583.62			12497		48.84667
$	1718-51-0	Terphenyl-d14	17.30988	12791.81			13412		104.8528
T	67-66-3	Trichloromethane	2.923033				4056.5332	NJ	
T	563-80-4	3-methyl-2-Butanone	3.2232				2627.8271	NJ	
T		Unknown	3.4509				2737.9223	J	
T	84-69-5	1,2-Benzenedicarboxyli	14.93966				2856.1176	NJ	

Key: $ = Surrogate, T = TIC, K = Spike, and M = Summary

Macro: upload2lims.mac, Revision: 0.2 Data File: //apwscf02/slab/chem/tuvok.i/2013/130529_C109.B/13052910MS.D
Report Date: 05/30/2013 Method File: \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\TCNTC130523.m

LIMS Upload Report

Lab Sample ID:	S13T004247MS	Instrument ID:	tuvok.i
Client Sample ID:	S13T004247MS	Analyst:	cjo
SDG:	C109 CLO	Analysis Date:	29-MAY-2013 13:48
Lab Prep Batch:	41251	ALS Bottle:	10
Protocol:	@222SV	Replicate:	0
Sample Fraction:	SV	Dilution Factor:	1
Sample Type:	MS	Final Concentration Units:	ug/Kg
Matrix:	SOIL	Matrix Type:	SOLID
Actual Sample Size:	3.181	Expected Sample Size:	3
Actual Units:	g	Expected Units:	g

For a SV, LOW Conc., SOLID sample,
the Method formula used was: Conc. = Amount * DF * Uf * Vt/(Vi * Ws * (100 - M)/100).

The Macro formula used was: Conc. = Amount * DF * Uf * Vt/(Vi * Ws * (100 - M)/100),
where DF = 1, UF = 1, Vt = 2000, Vi = 1, Ws = 3.181, and M = 0.

-	CAS Number	Compound Name	RT	Spike	Adj. MDL	LOQ	Final Conc	Flag	Pct. Rec.
K	120-82-1	1,2,4-Trichlorobenzene	9.247	6287.331	486.6394	4866.394	5859.3		93.19212
K	95-50-1	1,2-Dichlorobenzene	7.643	6287.331	633.1342	6331.342	5548		88.24130
K	106-46-7	1,4-Dichlorobenzene	7.415	6287.331	712.3546	7123.546	5487		87.27054
K	120-83-2	2,4-Dichlorophenol	9.092	6287.331	338.8871	3388.871	5030.8		80.01571
K	121-14-2	2,4-Dinitrotoluene	12.497	6287.331	239.5473	2395.473	6125.3		97.42327
K	95-95-4	2,4,5-Trichlorphenol	10.996	6287.331	276.6425	2766.425	3460.4		55.03785
K	88-06-2	2,4,6-Trichlorophenol	10.934	6287.331	311.2228	3112.228	3909.9		62.18699
K	105-67-9	2,4-Dimethylphenol	8.74	6287.331	179.1889	1791.889	2625.2		41.75339
K	606-20-2	2,6-Dinitrotoluene	11.835	6287.331	243.3197	2433.197	6088.5		96.83707
K	51-28-5	2,4-Dinitrophenol	12.29	6287.331	259.0380	2590.380	1834.2		29.17342
K	111-76-2	2-Butoxyethanol	5.966	12574.66	9448.600	94486.01	11953		95.05660
K	91-58-7	2-Chloronaphthalene	11.296	6287.331	318.7677	3187.676	5827.3		92.68340
K	91-57-6	2-Methylnaphthalene	10.499	6287.331	348.3181	3483.181	5958.6		94.77199
K	95-48-7	2-Methylphenol	7.684	6287.331	361.5215	3615.215	5058.5		80.45601
K	88-74-4	2-Nitroaniline	11.441	6287.331	295.5045	2955.045	5576.8		88.69880
K	88-75-5	2-Nitrophenol	8.728983	6287.331	337.6296	3376.296	3224		51.27800
K	108-39-4a	3- and 4-Methylphenol	7.912	6287.331	323.1688	3231.688	5393.4		85.78250
K	99-09-2	3-Nitroaniline	12.114	6287.331	281.6724	2816.724	5382.4		85.60790
K	106-47-8	4-Chloroaniline	9.433	6287.331	298.6482	2986.482	5435		86.44432
K	534-52-1	4,6-Dinitro-2-methylph	13.17	6287.331	198.0509	3458.032	2740.8		43.59330
K	7005-72-3	4-Chlorophenyl-phenyle	13.108	6287.331	301.7918	3017.918	6120.8		97.35146
K	83-32-9	Acenaphthene	12.269	6287.331	110.6570	1106.570	5823.1		92.61705
K	208-96-8	Acenaphthylene	11.99	6287.331	287.9597	2879.597	5712.1		90.85055
K	120-12-7	Anthracene	14.815	6287.331	196.1647	1961.647	6584.9		104.7333
K	56-55-3	Benzo(a)anthracene	19.1	6287.331	237.6611	2376.611	6369		101.2986
K	205-99-2	Benzo(b)fluoranthene	21.16	6287.331	307.4504	3074.504	6537		103.9702
K	191-24-2	Benzo(g,h,i)perylene	25.911	6287.331	258.4093	2584.093	6423		102.1581
K	50-32-8	Benzo(a)pyrene	21.895	6287.331	259.0380	2590.380	6276.1		99.82148
K	111-44-4	bis(-2-Chloroethyl)Eth	6.96	6287.331	472.8072	4728.072	5480.2		87.16298
K	111-91-1	bis(-2-Chloroethoxy)me	8.905	6287.331	433.8258	4338.258	5879.1		93.50717
K	117-81-7	bis(2-Ethylhexyl)phtha	19.049	6287.331	3710.782	37107.82	7953.3		126.4976
K	108-60-1	bis(2-chloroisopropyl)	7.746	6287.331	473.4360	4734.360	5786.7		92.03807
K	207-08-9	Benzo(k)fluoranthene	21.222	6287.331	245.8346	2458.346	6868.4		109.2421
K	101-55-3	4-Bromophenyl-phenylet	13.925	6287.331	208.1106	2081.106	6473.2		102.9570
K	85-68-7	Butylbenzylphthalate	18.096	6287.331	314.3665	3143.665	7065.9		112.3826
K	59-50-7	4-Chloro-3-Methylpheno	10.189	6287.331	271.6127	2716.127	5866		93.29810

K	95-57-8	2-Chlorophenol	7.073	6287.331	418.1075	4181.075	5342		84.96528
K	218-01-9	Chrysene	19.163	6287.331	511.7887	5117.887	6432		102.3009
K	53-70-3	Dibenzo(a,h)anthracene	25.052	6287.331	321.2826	3212.826	6329.7		100.6742
K	132-64-9	Dibenzofuran	12.559	6287.331	292.3608	2923.608	5820.2		92.57078
K	84-74-2	Di-n-butylphthalate	15.602	6287.331	3535.366	35353.66	7564.1		120.3073
K	84-66-2	Diethylphthalate	12.89	6287.331	265.3253	2653.253	6437.5		102.3891
K	131-11-3	Dimethylphthalate	11.731	6287.331	304.3068	3043.068	5994.4		95.34150
K	117-84-0	Di-n-octylphthalate	20.27	6287.331	299.9056	2999.056	7400.7		117.7077
K	122-39-4	Diphenylamine (Nnitros	13.294	6287.331	242.6909	2426.909	6445.5		102.5151
K	621-64-7	N-Nitroso-di-n-propyla	7.943	6287.331	365.2939	3652.939	5348.1		85.06203
K	86-73-7	Fluorene	13.128	6287.331	248.9783	2489.783	6177		98.24452
K	206-44-0	Fluoranthene	16.699	6287.331	222.5715	2225.715	6777.7		107.7999
K	118-74-1	Hexachlorobenzene	14.039	6287.331	298.6482	2986.482	6562.9		104.3825
K	87-68-3	Hexachlorobutadiene	9.557	6287.331	438.2269	4382.269	5747.8		91.41837
K	77-47-4	Hexachlorocyclopentadi		6287.331	89.28010	892.8010	ND	U	
K	67-72-1	Hexachloroethane	8.16	6287.331	702.9236	7029.236	5355.4		85.17724
K	193-39-5	Indeno(1,2,3-cd)pyrene	25	6287.331	320.6538	3206.538	6344.1		100.9032
K	78-59-1	Isophorone	8.585	6287.331	334.4860	3344.860	5654.2		89.93047
K	108-95-2	Phenol	6.794	6287.331	373.4674	3734.674	5421.7		86.23217
K	91-20-3	Naphthalene	9.382	6287.331	393.5869	3935.869	5812.7		92.45042
K	98-95-3	Nitrobenzene	8.233	6287.331	406.1616	4061.615	5734.6		91.20912
K	100-02-7	4-Nitrophenol	12.362	6287.331	330.7136	3458.032	2384.4		37.92312
K	100-01-6	4-Nitroaniline	13.118	6287.331	324.4262	3244.262	5154		81.97406
K	87-86-5	Pentachlorophenol	14.35	6287.331	235.7749	2357.749	3431		54.56978
K	85-01-8	Phenanthrene	14.733	6287.331	220.6853	2206.853	6602.7		105.0161
K	129-00-0	Pyrene	17.082	6287.331	395.4731	3954.731	6514.5		103.6132
K	110-86-1	Pyridine	4.093	6287.331	408.6765	4086.765	5067.8		80.60341
K	126-73-8	Tributyl Phosphate	13.221	6287.331	677.7742	6777.742	7370.6		117.2287
K	1520-96-3	Methylphenol (total)	1.711	12574.66	670.2294	6702.294	10452		83.11925
K	62-75-9	n-Nitrosodimethylamine	4.03	6287.331	484.7532	4847.532	5232.3		83.21984
K	108-94-1	Cyclohexanone	5.945	6287.331	3515.246	35152.46	5711.6		90.84252
K	110-80-5	2-Ethoxyethanol	3.699	6287.331	1146.809	11468.09	5195.1		82.62795
K	59-89-2	n-Nitrosomorpholine	7.974	6287.331	1202.766	12027.66	5034.1		80.06742
K	128-37-0	2,6-Bis(tertbutyl)-4-m	12.207	6287.331	1481.295	14812.95	2300		36.58243
K	78-83-1	Isobutylalcohol	2.944	12574.66	2894.058	28940.58	8628.7		68.61998
K	71-36-3	1-Butanol	3.233	25149.32	2169.129	21691.29	16926		67.30033
$	321-60-8	2-Fluorobiphenyl	11.079	12574.66			10637		84.58758
$	367-12-4	2-Fluorophenol	5.573	25149.32			14564		57.90998
$	4165-60-0	Nitrobenzene-d5	8.202	12574.66			9980.6		79.37057
$	13127-88-3	Phenol-d6	6.773	25149.32			19900		79.12684
$	118-79-6	2,4,6-Tribromophenol	13.522	25149.32			18516		73.62296
$	1718-51-0	Terphenyl-d14	17.30998	12574.66			12857		102.2480

Key: $ = Surrogate, T = TIC, K = Spike, and M = Summary

Macro: uploaa2lims.mac, Revision: 0.2
Report Date: 05/30/2013

Data File: //apwscf02/slab/chem/tuvok.i/2013/130529_C109.B/13052911MSD.D
Method File: \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\TCNTC130523.m

LIMS Upload Report

Lab Sample ID:	S13T004247MSD	Instrument ID:	tuvok.i
Client Sample ID:	S13T004247MSD	Analyst:	cjo
SDG:	C109 CLO	Analysis Date:	29-MAY-2013 14:32
Lab Prep Batch:	41251	ALS Bottle:	11
Protocol:	@222SV	Replicate:	0
Sample Fraction:	SV	Dilution Factor:	1
Sample Type:	MSD	Final Concentration Units:	ug/Kg
Matrix:	SOIL	Matrix Type:	SOLID
Actual Sample Size:	3.503	Expected Sample Size:	3
Actual Units:	g	Expected Units:	g

For a SV, LOW Conc., SOLID sample,
the Method formula used was: Conc. = Amount * DF * Uf * Vt/(Vi * Ws * (100 - M)/100).

The Macro formula used was: Conc. = Amount * DF * Uf * Vt/(Vi * Ws * (100 - M)/100),
where DF = 1, UF = 1, Vt = 2000, Vi = 1, Ws = 3.503, and M = 0.

-	CAS Number	Compound Name	RT	Spike	Adj. MDL	LOQ	Final Conc	Flag	Pct. Rec.
K	120-82-1	1,2,4-Trichlorobenzene	9.247	5709.391	441.9069	4419.069	5162.2		90.41513
K	95-50-1	1,2-Dichlorobenzene	7.643	5709.391	574.9357	5749.357	4871.8		85.32983
K	106-46-7	1,4-Dichlorobenzene	7.415	5709.391	646.8741	6468.741	4752.2		83.23423
K	120-83-2	2,4-Dichlorophenol	9.092	5709.391	307.7362	3077.362	5134		89.92265
K	121-14-2	2,4-Dinitrotoluene	12.497	5709.391	217.5278	2175.278	5587.7		97.86862
K	95-95-4	2,4,5-Trichlorphenol	10.996	5709.391	251.2132	2512.132	3473.3		60.83528
K	88-06-2	2,4,6-Trichlorophenol	10.934	5709.391	282.6149	2826.149	4085.4		71.55579
K	105-67-9	2,4-Dimethylphenol	8.74	5709.391	162.7176	1627.176	2362.2		41.37350
K	606-20-2	2,6-Dinitrotoluene	11.835	5709.391	220.9534	2209.534	5383.7		94.29634
K	51-28-5	2,4-Dinitrophenol	12.29	5709.391	235.2269	2352.269	1928.1		33.77028
K	111-76-2	2-Butoxyethanol	5.966	11418.78	8580.074	85800.74	10643		93.20966
K	91-58-7	2-Chloronaphthalene	11.296	5709.391	289.4661	2894.661	5136.8		89.97114
K	91-57-6	2-Methylnaphthalene	10.499	5709.391	316.3003	3163.003	5276.1		92.41108
K	95-48-7	2-Methylphenol	7.684	5709.391	328.2900	3282.900	4590		80.39324
K	88-74-4	2-Nitroaniline	11.441	5709.391	268.3414	2683.414	5207.9		91.21663
K	88-75-5	2-Nitrophenol	8.728983	5709.391	306.5943	3065.943	3941.4		69.03429
K	108-39-4a	3- and 4-Methylphenol	7.912	5709.391	293.4627	2934.627	4709.3		82.48364
K	99-09-2	3-Nitroaniline	12.114	5709.391	255.7807	2557.807	4668.8		81.77484
K	106-47-8	4-Chloroaniline	9.433	5709.391	271.1961	2711.961	4855.5		85.04486
K	534-52-1	4,6-Dinitro-2-methylph	13.17	5709.391	179.8458	3140.165	3027.3		53.02254
K	7005-72-3	4-Chlorophenyl-phenyle	13.108	5709.391	274.0508	2740.508	5467.8		95.76774
K	83-32-9	Acenaphthene	12.269	5709.391	100.4852	1004.852	5261.1		92.14874
K	208-96-8	Acenaphthylene	11.99	5709.391	261.4901	2614.901	5082.4		89.01741
K	120-12-7	Anthracene	14.815	5709.391	178.1330	1781.330	6043.7		105.8547
K	56-55-3	Benzo(a)anthracene	19.09	5709.391	215.8150	2158.150	5781.6		101.2646
K	205-99-2	Benzo(b)fluoranthene	21.16	5709.391	279.1892	2791.892	6066.5		106.2551
K	191-24-2	Benzo(g,h,i)perylene	25.911	5709.391	234.6560	2346.560	6467.3		113.2754
K	50-32-8	Benzo(a)pyrene	21.895	5709.391	235.2269	2352.269	5833.6		102.1765
K	111-44-4	bis(-2-Chloroethyl)Eth	6.96	5709.391	429.3462	4293.462	4823.8		84.48935
K	111-91-1	bis(-2-Chloroethoxy)me	8.905	5709.391	393.9480	3939.480	5153.4		90.26256
K	117-81-7	bis(2-Ethylhexyl)phtha	19.049	5709.391	3369.683	33696.83	6924.2		121.2777
K	108-60-1	bis(2-chloroisopropyl)	7.746	5709.391	429.9172	4299.172	5061.6		88.65383
K	207-08-9	Benzo(k)fluoranthene	21.222	5709.391	223.2372	2232.372	6313.2		110.5763
K	101-55-3	4-Bromophenyl-phenylet	13.925	5709.391	188.9808	1889.808	5883.6		103.0510
K	85-68-7	Butylbenzylphthalate	18.096	5709.391	285.4695	2854.695	6583.5		115.3106
K	59-50-7	4-Chloro-3-Methylpheno	10.189	5709.391	246.6457	2466.457	5203.1		91.13217

K	95-57-8	2-Chlorophenol	7.073	5709.391	379.6745	3796.745	4854		85.01794
K	218-01-9	Cnrysene	19.163	5709.391	464.7445	4647.445	5909.5		103.5045
K	53-70-3	Dibenzo(a,h)anthracene	25.052	5709.391	291.7499	2917.499	6370.5		111.5787
K	132-64-9	Dibenzofuran	12.559	5709.391	265.4867	2654.867	5306.8		92.94843
K	84-74-2	Di-n-butylphthalate	15.602	5709.391	3210.391	32103.91	6628.3		116.0946
K	84-66-2	Diethylphthalate	12.89	5709.391	240.9363	2409.363	5849.9		102.4608
K	131-11-3	Dimethylphthalate	11.731	5709.391	276.3345	2763.345	5414.2		94.83059
K	117-84-0	Di-n-octylphthalate	20.27	5709.391	272.3379	2723.379	6990.1		122.4323
K	122-39-4	Diphenylamine (Nnitros	13.294	5709.391	220.3825	2203.825	5908.8		103.4918
K	621-64-7	N-Nitroso-di-n-propyla	7.943	5709.391	331.7156	3317.156	4731.8		82.87709
K	86-73-7	Fluorene	13.128	5709.391	226.0919	2260.919	5532.4		96.89919
K	206-44-0	Fluoranthene	16.699	5709.391	202.1124	2021.124	6236.4		109.2306
K	118-74-1	Hexachlorobenzene	14.039	5709.391	271.1961	2711.961	5991.3		104.9374
K	87-68-3	Hexachlorobutadiene	9.568	5709.391	397.9446	3979.446	5157.4		90.33266
K	77-47-4	Hexachlorocyclopentadi		5709.391	81.07336	810.7336	ND	U	
K	67-72-1	Hexachloroethane	8.16	5709.391	638.3100	6383.100	4612.9		80.79483
K	193-39-5	Indeno(1,2,3-cd)pyrene	25	5709.391	291.1789	2911.789	6262.9		109.6945
K	78-59-1	Isophorone	8.585	5709.391	303.7396	3037.396	5005.4		87.66952
K	108-95-2	Phenol	6.794	5709.391	339.1378	3391.378	4773.5		83.60853
K	91-20-3	Naphthalene	9.382	5709.391	357.4079	3574.079	5118.2		89.64456
K	98-95-3	Nitrobenzene	8.233	5709.391	368.8267	3688.267	4913.2		86.05440
K	100-02-7	4-Nitrophenol	12.373	5709.391	300.3140	3140.165	960.35		16.82046
K	100-01-6	4-Nitroaniline	13.118	5709.391	294.6046	2946.046	4583.5		80.28000
K	87-86-5	Pentachlorophenol	14.35	5709.391	214.1021	2141.021	4042.2		70.79848
K	85-01-8	Phenanthrene	14.722	5709.391	200.3996	2003.996	6031.6		105.6430
K	129-00-0	Pyrene	17.082	5709.391	359.1207	3591.207	6019.1		105.4248
K	110-86-1	Pyridine	4.093	5709.391	371.1104	3711.104	4325.1		75.75376
K	126-73-8	Tributyl Phosphate	13.222	5709.391	615.4724	6154.724	6736.6		117.9909
K	1520-96-3	Methylphenol (total)	1.711	11418.78	608.6211	6086.211	9299.3		81.43844
K	62-75-9	n-Nitrosodimethylamine	4.019983	5709.391	440.1941	4401.941	4571.6		80.07167
K	108-94-1	Cyclohexanone	5.945	5709.391	3192.121	31921.21	5009.1		87.73423
K	110-80-5	2-Ethoxyethanol	3.699	5709.391	1041.393	10413.93	4553.4		79.75243
K	59-89-2	n-Nitrosomorpholine	7.974	5709.391	1092.206	10922.06	4451.4		77.96614
K	128-37-0	2,6-Bis(tertbutyl)-4-m	12.207	5709.391	1345.132	13451.32	1953.1		34.20809
K	78-83-1	Isobutylalcohol	2.944	11418.78	2628.033	26280.33	7875.8		68.97273
K	71-36-3	1-Butanol	3.234	22837.56	1969.740	19697.40	14332		62.75675
$	321-60-8	2-Fluorobiphenyl	11.079	11418.78			9467.2		82.90891
$	367-12-4	2-Fluorophenol	5.573	22837.56			13968		61.16154
$	4165-60-0	Nitrobenzene-d5	8.202	11418.78			8830.8		77.33557
$	13127-88-3	Phenol-d6	6.773	22837.56			17229		75.44094
$	118-79-6	2,4,6-Tribromophenol	13.522	22837.56			18091		79.21716
$	1718-51-0	Terphenyl-d14	17.30998	11418.78			11582		101.4290

Key: $ = Surrogate, T = TIC, K = Spike, and M = Summary

Macro: upload2lims.mac, Revision: 0.2 Data File: //apwscf02/slab/chem/tuvok.i/2013/130529_C109.B/13052913_4275
Report Date: 05/30/2013 Method File: \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\TCNTC130523.m

LIMS Upload Report

Lab Sample ID:	S13T004275	Instrument ID:	tuvok.i
Client Sample ID:	S13T004275	Analyst:	cjo
SDG:	C109 CLO	Analysis Date:	29-MAY-2013 15:59
Lab Prep Batch:	41251	ALS Bottle:	13
Protocol:	@222SV	Replicate:	0
Sample Fraction:	SV	Dilution Factor:	1
Sample Type:	SAMPLE	Final Concentration Units:	ug/Kg
Matrix:	SOIL	Matrix Type:	SOLID
Actual Sample Size:	3.445	Expected Sample Size:	3
Actual Units:	g	Expected Units:	g

For a SV, LOW Conc., SOLID sample,
the Method formula used was: Conc. = Amount * DF * Uf * Vt/(Vi * Ws * (100 - M)/100).

The Macro formula used was: Conc. = Amount * DF * Uf * Vt/(Vi * Ws * (100 - M)/100),
where DF = 1, UF = 1, Vt = 2000, Vi = 1, Ws = 3.445, and M = 0.

-	CAS Number	Compound Name	RT	Spike	Adj. MDL	LOQ	Final Conc	Flag	Pct. Rec.
=	==========	==========	========	=========	========	=========	==========	=====	=========
	120-82-1	1,2,4-Trichlorobenzene			449.3468	4493.468	ND	U	
	95-50-1	1,2-Dichlorobenzene			584.6153	5846.153	ND	U	
	106-46-7	1,4-Dichlorobenzene			657.7648	6577.648	ND	U	
	120-83-2	2,4-Dichlorophenol			312.9172	3129.172	ND	U	
	121-14-2	2,4-Dinitrotoluene			221.1901	2211.901	ND	U	
	95-95-4	2,4,5-Trichlorphenol			255.4426	2554.426	ND	U	
	88-06-2	2,4,6-Trichlorophenol			287.3730	2873.730	ND	U	
	105-67-9	2,4-Dimethylphenol			165.4571	1654.571	ND	U	
	606-20-2	2,6-Dinitrotoluene			224.6734	2246.734	ND	U	
	51-28-5	2,4-Dinitrophenol			239.1872	2391.872	ND	U	
	111-76-2	2-Butoxyethanol			8724.528	87245.28	ND	U	
	91-58-7	2-Chloronaphthalene			294.3396	2943.396	ND	U	
	91-57-6	2-Methylnaphthalene			321.6255	3216.255	ND	U	
	95-48-7	2-Methylphenol			333.8171	3338.171	ND	U	
	88-74-4	2-Nitroaniline			272.8592	2728.592	ND	U	
	88-75-5	2-Nitrophenol			311.7561	3117.561	ND	U	
	108-39-4a	3- and 4-Methylphenol			298.4034	2984.034	ND	U	
	99-09-2	3-Nitroaniline			260.0870	2600.870	ND	U	
	106-47-8	4-Chloroaniline			275.7619	2757.619	ND	U	
	534-52-1	4,6-Dinitro-2-methylph			182.8737	3193.033	ND	U	
	7005-72-3	4-Chlorophenyl-phenyle			278.6647	2786.647	ND	U	
	83-32-9	Acenaphthene			102.1770	1021.770	ND	U	
	208-96-8	Acenaphthylene			265.8926	2658.925	ND	U	
	120-12-7	Anthracene			181.1320	1811.320	ND	U	
	56-55-3	Benzo(a)anthracene			219.4484	2194.484	ND	U	
	205-99-2	Benzo(b)fluoranthene			283.8896	2838.896	ND	U	
	191-24-2	Benzo(g,h,i)perylene			238.6066	2386.066	ND	U	
	50-32-8	Benzo(a)pyrene			239.1872	2391.872	ND	U	
	111-44-4	bis(-2-Chloroethyl)Eth			436.5747	4365.747	ND	U	
	111-91-1	bis(-2-Chloroethoxy)me			400.5805	4005.805	ND	U	
	117-81-7	bis(2-Ethylhexyl)phtha			3426.415	34264.15	ND	U	
	108-60-1	bis(2-chloroisopropyl)			437.1553	4371.552	ND	U	
	207-08-9	Benzo(k)fluoranthene			226.9956	2269.956	ND	U	
	101-55-3	4-Bromophenyl-phenylet			192.1625	1921.625	ND	U	
	85-68-7	Butylbenzylphthalate			290.2757	2902.757	ND	U	
	59-50-7	4-Chloro-3-Methylpheno			250.7982	2507.982	ND	U	

	95-57-8	2-Chlorophenol			386.0667	3860.667	ND	U		
	218-01-9	Chrysene			472.5689	4725.689	ND	U		
	53-70-3	Dibenzo(a,h)anthracene			296.6618	2966.618	ND	U		
	132-64-9	Dibenzofuran			269.9564	2699.564	ND	U		
	84-74-2	Di-n-butylphthalate			3264.441	32644.41	ND	U		
	84-66-2	Diethylphthalate			244.9927	2449.927	ND	U		
	131-11-3	Dimethylphthalate			280.9869	2809.869	ND	U		
	117-84-0	Di-n-octylphthalate			276.9230	2769.230	ND	U		
	122-39-4	Diphenylamine (Nnitros			224.0928	2240.928	ND	U		
	621-64-7	N-Nitroso-di-n-propyla			337.3004	3373.004	ND	U		
	86-73-7	Fluorene			229.8984	2298.984	ND	U		
	206-44-0	Fluoranthene			205.5152	2055.152	ND	U		
	118-74-1	Hexachlorobenzene			275.7619	2757.619	ND	U		
	87-68-3	Hexachlorobutadiene			404.6444	4046.444	ND	U		
	77-47-4	Hexachlorocyclopentadi			82.43831	824.3831	ND	U		
	67-72-1	Hexachloroethane			649.0566	6490.566	ND	U		
	193-39-5	Indeno(1,2,3-cd)pyrene			296.0812	2960.812	ND	U		
	78-59-1	Isophorone			308.8534	3088.534	ND	U		
	108-95-2	Phenol			344.8475	3448.476	ND	U		
	91-20-3	Naphthalene			363.4252	3634.252	ND	U		
	98-95-3	Nitrobenzene			375.0363	3750.362	ND	U		
	100-02-7	4-Nitrophenol			305.3701	3193.033	ND	U		
	100-01-6	4-Nitroaniline			299.5645	2995.645	ND	U		
	87-86-5	Pentachlorophenol			217.7068	2177.068	ND	U		
	85-01-8	Phenanthrene			203.7735	2037.735	ND	U		
	129-00-0	Pyrene			365.1669	3651.669	ND	U		
	110-86-1	Pyridine			377.3584	3773.584	ND	U		
	126-73-8	Tributyl Phosphate			625.8345	6258.345	ND	U		
M	1520-96-3	Methylphenol (total)			618.8679	6188.679	ND	U		
	62-75-9	n-Nitrosodimethylamine			447.6052	4476.052	ND	U		
	108-94-1	Cyclohexanone			3245.863	32458.63	ND	U		
	110-80-5	2-Ethoxyethanol			1058.925	10589.25	ND	U		
	59-89-2	n-Nitrosomorpholine			1110.595	11105.95	ND	U		
	128-37-0	2,6-Bis(tertbutyl)-4-m			1367.779	13677.79	ND	U		
	78-83-1	Isobutylalcohol			2672.278	26722.78	ND	U		
	71-36-3	1-Butanol			2002.902	20029.02	ND	U		
$	321-60-8	2-Fluorobiphenyl	11.079	11611.03			8894.9		76.60769	
$	367-12-4	2-Fluorophenol	5.572666	23222.06			7429.2		31.99214	
$	4165-60-0	Nitrobenzene-d5	8.201633	11611.03			7805.9		67.22832	
$	13127-88-3	Phenol-d6	6.7733	23222.06			15990		68.85547	
$	118-79-6	2,4,6-Tribromophenol	13.52165	23222.06			4781.6		20.59082	
$	1718-51-0	Terphenyl-d14	17.30985	11611.03			11809		101.7024	
T	67-66-3	Trichloromethane	2.93335				3767.8076	NJ		
T		Unknown	3.233516				2478.8154	J		
T		Unknown	3.450866				2296.1097	J		

Key: $ = Surrogate, T = TIC, K = Spike, and M = Summary

Macro: upload2lims.mac, Revision: 0.2
Report Date: 05/30/2013

Data File: //apwscf02/slab/chem/tuvok.i/2013/130529_C109.B/13052915_4302
Method File: \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\TCNTC130523.m

LIMS Upload Report

Lab Sample ID:	S13T004302	Instrument ID:	tuvok.i
Client Sample ID:	S13T004302	Analyst:	cjo
SDG:	C109 CLO	Analysis Date:	29-MAY-2013 16:57
Lab Prep Batch:	41251	ALS Bottle:	15
Protocol:	@222SV	Replicate:	0
Sample Fraction:	SV	Dilution Factor:	1
Sample Type:	SAMPLE	Final Concentration Units:	ug/Kg
Matrix:	SOIL	Matrix Type:	SOLID
Actual Sample Size:	3.338	Expected Sample Size:	3
Actual Units:	g	Expected Units:	g

For a SV, LOW Conc., SOLID sample,
the Method formula used was: Conc. = Amount * DF * Uf * Vt/(Vi * Ws * (100 - M)/100).

The Macro formula used was: Conc. = Amount * DF * Uf * Vt/(Vi * Ws * (100 - M)/100),
where DF = 1, UF = 1, Vt = 2000, Vi = 1, Ws = 3.338, and M = 0.

-	CAS Number	Compound Name	RT	Spike	Adj. MDL	LOQ	Final Conc	Flag	Pct. Rec.
=	==========	==========	========	=========	========	=========	==========	=====	=========
	120-82-1	1,2,4-Trichlorobenzene			463.7507	4637.507	ND	U	
	95-50-1	1,2-Dichlorobenzene			603.3552	6033.553	ND	U	
	106-46-7	1,4-Dichlorobenzene			678.8496	6788.496	ND	U	
	120-83-2	2,4-Dichlorophenol			322.9478	3229.478	ND	U	
	121-14-2	2,4-Dinitrotoluene			228.2804	2282.804	ND	U	
	95-95-4	2,4,5-Trichlorphenol			263.6309	2636.309	ND	U	
	88-06-2	2,4,6-Trichlorophenol			296.5847	2965.847	ND	U	
	105-67-9	2,4-Dimethylphenol			170.7609	1707.609	ND	U	
	606-20-2	2,6-Dinitrotoluene			231.8753	2318.753	ND	U	
	51-28-5	2,4-Dinitrophenol			246.8544	2468.544	ND	U	
	111-76-2	2-Butoxyethanol			9004.194	90041.94	ND	U	
	91-58-7	2-Chloronaphthalene			303.7747	3037.747	ND	U	
	91-57-6	2-Methylnaphthalene			331.9353	3319.352	ND	U	
	95-48-7	2-Methylphenol			344.5176	3445.176	ND	U	
	88-74-4	2-Nitroaniline			281.6057	2816.057	ND	U	
	88-75-5	2-Nitrophenol			321.7495	3217.495	ND	U	
	108-39-4a	3- and 4-Methylphenol			307.9688	3079.688	ND	U	
	99-09-2	3-Nitroaniline			268.4242	2684.242	ND	U	
	106-47-8	4-Chloroaniline			284.6015	2846.015	ND	U	
	534-52-1	4,6-Dinitro-2-methylph			188.7357	3295.386	ND	U	
	7005-72-3	4-Chlorophenyl-phenyle			287.5973	2875.973	ND	U	
	83-32-9	Acenaphthene			105.4523	1054.523	ND	U	
	208-96-8	Acenaphthylene			274.4158	2744.158	ND	U	
	120-12-7	Anthracene			186.9382	1869.382	ND	U	
	56-55-3	Benzo(a)anthracene			226.4829	2264.829	ND	U	
	205-99-2	Benzo(b)fluoranthene			292.9898	2929.898	ND	U	
	191-24-2	Benzo(g,h,i)perylene			246.2552	2462.552	ND	U	
	50-32-8	Benzo(a)pyrene			246.8544	2468.544	ND	U	
	111-44-4	bis(-2-Chloroethyl)Eth			450.5691	4505.692	ND	U	
	111-91-1	bis(-2-Chloroethoxy)me			413.4212	4134.212	ND	U	
	117-81-7	bis(2-Ethylhexyl)phtha			3536.249	35362.49	ND	U	
	108-60-1	bis(2-chloroisopropyl)			451.1683	4511.683	ND	U	
	207-08-9	Benzo(k)fluoranthene			234.2720	2342.720	ND	U	
	101-55-3	4-Bromophenyl-phenylet			198.3223	1983.223	ND	U	
	85-68-7	Butylbenzylphthalate			299.5805	2995.805	ND	U	
	59-50-7	4-Chloro-3-Methylpheno			258.8376	2588.376	ND	U	

	95-57-8	2-Chlorophenol			398.4421	3984.421	ND	U		
	218-01-9	Chrysene			487.7172	4877.171	ND	U		
	53-70-3	Dibenzo(a,h)anthracene			306.1713	3061.713	ND	U		
	132-64-9	Dibenzofuran			278.6099	2786.099	ND	U		
	84-74-2	Di-n-butylphthalate			3369.083	33690.83	ND	U		
	84-66-2	Diethylphthalate			252.8460	2528.460	ND	U		
	131-11-3	Dimethylphthalate			289.9940	2899.940	ND	U		
	117-84-0	Di-n-octylphthalate			285.7998	2857.998	ND	U		
	122-39-4	Diphenylamine (Nnitros			231.2762	2312.762	ND	U		
	621-64-7	N-Nitroso-di-n-propyla			348.1126	3481.126	ND	U		
	86-73-7	Fluorene			237.2678	2372.678	ND	U		
	206-44-0	Fluoranthene			212.1030	2121.030	ND	U		
	118-74-1	Hexachlorobenzene			284.6015	2846.015	ND	U		
	87-68-3	Hexachlorobutadiene			417.6153	4176.153	ND	U		
	77-47-4	Hexachlorocyclopentadi			85.08088	850.8088	ND	U		
	67-72-1	Hexachloroethane			669.8622	6698.621	ND	U		
	193-39-5	Indeno(1,2,3-cd)pyrene			305.5721	3055.721	ND	U		
	78-59-1	Isophorone			318.7537	3187.537	ND	U		
	108-95-2	Phenol			355.9017	3559.017	ND	U		
	91-20-3	Naphthalene			375.0748	3750.748	ND	U		
	98-95-3	Nitrobenzene			387.0581	3870.581	ND	U		
	100-02-7	4-Nitrophenol			315.1587	3295.386	ND	U		
	100-01-6	4-Nitroaniline			309.1671	3091.671	ND	U		
	87-86-5	Pentachlorophenol			224.6854	2246.854	ND	U		
	85-01-8	Phenanthrene			210.3055	2103.055	ND	U		
	129-00-0	Pyrene			376.8723	3768.723	ND	U		
	110-86-1	Pyridine			389.4547	3894.547	ND	U		
	126-73-8	Tributyl Phosphate			645.8957	6458.957	ND	U		
M	1520-96-3	Methylphenol (total)			638.7058	6387.058	ND	U		
	62-75-9	n-Nitrosodimethylamine			461.9532	4619.532	ND	U		
	108-94-1	Cyclohexanone			3349.910	33499.10	ND	U		
	110-80-5	2-Ethoxyethanol			1092.869	10928.69	ND	U		
	59-89-2	n-Nitrosomorpholine			1146.195	11461.95	ND	U		
	128-37-0	2,6-Bis(tertbutyl)-4-m			1411.623	14116.23	ND	U		
	78-83-1	Isobutylalcohol			2757.938	27579.38	ND	U		
	71-36-3	1-Butanol			2067.106	20671.06	ND	U		
$	321-60-8	2-Fluorobiphenyl	11.07891	11983.22			9481.8		79.12612	
$	367-12-4	2-Fluorophenol	5.5726	23966.44			9763.8		40.73943	
$	4165-60-0	Nitrobenzene-d5	8.20155	11983.22			8395.4		70.05920	
$	13127-88-3	Phenol-d6	6.773216	23966.44			17962		74.94768	
$	118-79-6	2,4,6-Tribromophenol	13.52158	23966.44			11415		47.63029	
$	1718-51-0	Terphenyl-d14	17.30976	11983.22			11748		98.03994	
T	67-66-3	Trichloromethane	2.922933				3496.8751	NJ		
T		Unknown	3.223083				2795.3172	J		
T	1569-50-2	3-Penten-2-ol	3.4508				2826.4051	NJ		

Key: $ = Surrogate, T = TIC, K = Spike, and M = Summary

FORM 2
SOIL SEMIVOLATILE SURROGATE RECOVERY

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: C109CLO

Level: (low/med) LOW

	CHG SAMPLE NO.	S1 (FBP) #	S2 (2FP) #	S3 (NBZ) #	S4 #	S5 (TBP) #	S6 (TPH) #	S7 #	S8 #	TOT OUT
01	BLANK	77	69	74	73	73	99			0
02	LCS	85	77	83	81	88	105			0
03	S13T004247	77	61	72	75	65	100			0
04	S13T004247DU	78	51	74	76	49*	105			1
05	S13T004247MS	84	58	79	79	74	102			0
06	S13T004247MS	83	61	77	75	79	101			0
07	S13T004275	77	32*	67	69	20*	102			2
08	S13T004302	79	41*	70	75	48*	98			2
09										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										

		QC LIMITS
S1 (FBP)	= 2-Fluorobiphenyl	(48-108)
S2 (2FP)	= 2-Fluorophenol	(42- 99)
S3 (NBZ)	= Nitrobenzene-d5	(44-100)
S4	= Phenol-d6	(44-105)
S5 (TBP)	= 2,4,6-Tribromophenol	(49-111)
S6 (TPH)	= Terphenyl-d14	(71-128)

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogate diluted out

FORM 3
SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: C109CLO

Matrix Spike - CHG Sample No.: S13T004247 Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
1,2,4-Trichlorobenzene	6287.3	0.00000	5859.3	93	46- 94
1,2-Dichlorobenzene	6287.3	0.00000	5548.0	88	70-130
1,4-Dichlorobenzene	6287.3	0.00000	5487.0	87	41- 97
2,4-Dichlorophenol	6287.3	0.00000	5030.8	80	70-130
2,4-Dinitrotoluene	6287.3	0.00000	6125.3	97	60- 99
2,4,5-Trichlorphenol	6287.3	0.00000	3460.4	55*	70-130
2,4,6-Trichlorophenol	6287.3	0.00000	3909.9	62*	70-130
2,4-Dimethylphenol	6287.3	0.00000	2625.2	42*	70-130
2,6-Dinitrotoluene	6287.3	0.00000	6088.5	97	70-130
2,4-Dinitrophenol	6287.3	0.00000	1834.2	29*	70-130
2-Butoxyethanol	12575	0.00000	11953	95	70-130
2-Chloronaphthalene	6287.3	0.00000	5827.3	93	70-130
2-Methylnaphthalene	6287.3	0.00000	5958.6	95	70-130
2-Methylphenol	6287.3	0.00000	5058.5	80	70-130
2-Nitroaniline	6287.3	0.00000	5576.8	89	70-130
2-Nitrophenol	6287.3	0.00000	3224.0	51*	70-130
3- and 4-Methylphenol (	6287.3	0.00000	5393.4	86	70-130
3-Nitroaniline	6287.3	0.00000	5382.4	86	70-130
4-Chloroaniline	6287.3	0.00000	5435.0	86	70-130
4,6-Dinitro-2-methylphe	6287.3	0.00000	2740.8	44*	70-130
4-Chlorophenyl-phenylet	6287.3	0.00000	6120.8	97	70-130
Acenaphthene	6287.3	0.00000	5823.1	93	49-102
Acenaphthylene	6287.3	0.00000	5712.1	91	70-130
Anthracene	6287.3	0.00000	6584.9	105	70-130
Benzo(a)anthracene	6287.3	0.00000	6369.0	101	70-130
Benzo(b)fluoranthene	6287.3	0.00000	6537.0	104	70-130
Benzo(g,h,i)perylene	6287.3	0.00000	6423.0	102	70-130
Benzo(a)pyrene	6287.3	0.00000	6276.1	100	70-130

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: C109CLO

Matrix Spike - CHG Sample No.: S13T004247 Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
bis(-2-Chloroethyl)Ethe	6287.3	0.00000	5480.2	87	70-130
bis(-2-Chloroethoxy)met	6287.3	0.00000	5879.1	94	70-130
bis(2-Ethylhexyl)phthal	6287.3	0.00000	7953.3	126	70-130
bis(2-chloroisopropyl)e	6287.3	0.00000	5786.7	92	70-130
Benzo(k)fluoranthene	6287.3	0.00000	6868.4	109	70-130
4-Bromophenyl-phenyleth	6287.3	0.00000	6473.2	103	70-130
Butylbenzylphthalate	6287.3	0.00000	7065.9	112	70-130
4-Chloro-3-Methylphenol	6287.3	0.00000	5866.0	93	52- 94
2-Chlorophenol	6287.3	0.00000	5342.0	85	48- 93
Chrysene	6287.3	0.00000	6432.0	102	70-130
Dibenzo(a,h)anthracene	6287.3	0.00000	6329.7	101	70-130
Dibenzofuran	6287.3	0.00000	5820.2	92	70-130
Di-n-butylphthalate	6287.3	0.00000	7564.1	120	70-130
Diethylphthalate	6287.3	0.00000	6437.5	102	70-130
Dimethylphthalate	6287.3	0.00000	5994.4	95	70-130
Di-n-octylphthalate	6287.3	0.00000	7400.7	118	70-130
Diphenylamine (Nnitroso	6287.3	0.00000	6445.5	102	70-130
N-Nitroso-di-n-prop.(1)	6287.3	0.00000	5348.1	85	43- 89
Fluorene	6287.3	0.00000	6177.0	98	70-130
Fluoranthene	6287.3	0.00000	6777.7	108	70-130
Hexachlorobenzene	6287.3	0.00000	6562.9	104	70-130
Hexachlorobutadiene	6287.3	0.00000	5747.8	91	70-130
Hexachlorocyclopentadie	6287.3	0.00000	0.00000	0*	70-130
Hexachloroethane	6287.3	0.00000	5355.4	85	70-130
Indeno(1,2,3-cd)pyrene	6287.3	0.00000	6344.1	101	70-130
Isophorone	6287.3	0.00000	5654.2	90	70-130
Phenol	6287.3	0.00000	5421.7	86	47- 96
Naphthalene	6287.3	0.00000	5812.7	92	70-130

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: Note = Hexachlorocyclopentadiene does not recover at or above mDL.

JPm 5/30/2013

FORM 3
SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: C109CLO

Matrix Spike - CHG Sample No.: S13T004247 Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Nitrobenzene	6287.3	0.00000	5734.6	91	70-130
4-Nitrophenol	6287.3	0.00000	2384.4	38*	70-130
4-Nitroaniline	6287.3	0.00000	5154.0	82	70-130
Pentachlorophenol	6287.3	0.00000	3431.0	54	46-115
Phenanthrene	6287.3	0.00000	6602.7	105	70-130
Pyrene	6287.3	0.00000	6514.5	104	63-106
Pyridine	6287.3	0.00000	5067.8	81	70-130
Tributyl Phosphate	6287.3	0.00000	7370.6	117	70-130
Methylphenol (total)	12575	0.00000	10452	83	70-130
n-Nitrosodimethylamine	6287.3	0.00000	5232.3	83	70-130
Cyclohexanone	6287.3	0.00000	5711.6	91	70-130
2-Ethoxyethanol	6287.3	0.00000	5195.1	83	70-130
n-Nitrosomorpholine	6287.3	0.00000	5034.1	80	70-130
2,6-Bis(tertbutyl)-4-me	6287.3	0.00000	2300.0	36*	70-130
Isobutylalcohol	12575	0.00000	8628.7	69*	70-130
1-Butanol	25149	0.00000	16926	67*	70-130

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: Tributyl Phosphate is a Primary organic Analyte per The TSAP jfm 6/3/13

FORM 3
SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: C109CLO

Matrix Spike - CHG Sample No.: S13T004247 Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1,2,4-Trichlorobenzene	5709.4	5162.2	90	3	30	46- 94
1,2-Dichlorobenzene	5709.4	4871.8	85	3	30	70-130
1,4-Dichlorobenzene	5709.4	4752.2	83	5	30	41- 97
2,4-Dichlorophenol	5709.4	5134.0	90	12	30	70-130
2,4-Dinitrotoluene	5709.4	5587.7	98	1	30	60- 99
2,4,5-Trichlorphenol	5709.4	3473.3	61*	10	30	70-130
2,4,6-Trichlorophenol	5709.4	4085.4	72	15	30	70-130
2,4-Dimethylphenol	5709.4	2362.2	41*	2	30	70-130
2,6-Dinitrotoluene	5709.4	5383.7	94	3	30	70-130
2,4-Dinitrophenol	5709.4	1928.1	34*	16	30	70-130
2-Butoxyethanol	11419	10643	93	2	30	70-130
2-Chloronaphthalene	5709.4	5136.8	90	3	30	70-130
2-Methylnaphthalene	5709.4	5276.1	92	3	30	70-130
2-Methylphenol	5709.4	4590.0	80	0	30	70-130
2-Nitroaniline	5709.4	5207.9	91	2	30	70-130
2-Nitrophenol	5709.4	3941.4	69*	30	30	70-130
3- and 4-Methylphenol (	5709.4	4709.3	82	5	30	70-130
3-Nitroaniline	5709.4	4668.8	82	5	30	70-130
4-Chloroaniline	5709.4	4855.5	85	1	30	70-130
4,6-Dinitro-2-methylphe	5709.4	3027.3	53*	18	30	70-130
4-Chlorophenyl-phenylet	5709.4	5467.8	96	1	30	70-130
Acenaphthene	5709.4	5261.1	92	1	30	49-102
Acenaphthylene	5709.4	5082.4	89	2	30	70-130
Anthracene	5709.4	6043.7	106	1	30	70-130
Benzo(a)anthracene	5709.4	5781.6	101	0	30	70-130
Benzo(b)fluoranthene	5709.4	6066.5	106	2	30	70-130
Benzo(g,h,i)perylene	5709.4	6467.3	113	10	30	70-130
Benzo(a)pyrene	5709.4	5833.6	102	2	30	70-130

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: C109CLO

Matrix Spike - CHG Sample No.: S13T004247 Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
bis(-2-Chloroethyl)Ethe	5709.4	4823.8	84	4	30	70-130
bis(-2-Chloroethoxy)met	5709.4	5153.4	90	4	30	70-130
bis(2-Ethylhexyl)phthal	5709.4	6924.2	121	4	30	70-130
bis(2-chloroisopropyl)e	5709.4	5061.6	89	3	30	70-130
Benzo(k)fluoranthene	5709.4	6313.2	110	1	30	70-130
4-Bromophenyl-phenyleth	5709.4	5883.6	103	0	30	70-130
Butylbenzylphthalate	5709.4	6583.5	115	3	30	70-130
4-Chloro-3-Methylphenol	5709.4	5203.1	91	2	30	52- 94
2-Chlorophenol	5709.4	4854.0	85	0	30	48- 93
Chrysene	5709.4	5909.5	104	2	30	70-130
Dibenzo(a,h)anthracene	5709.4	6370.5	112	10	30	70-130
Dibenzofuran	5709.4	5306.8	93	1	30	70-130
Di-n-butylphthalate	5709.4	6628.3	116	3	30	70-130
Diethylphthalate	5709.4	5849.9	102	0	30	70-130
Dimethylphthalate	5709.4	5414.2	95	0	30	70-130
Di-n-octylphthalate	5709.4	6990.1	122	3	30	70-130
Diphenylamine (Nnitroso	5709.4	5908.8	103	1	30	70-130
N-Nitroso-di-n-prop.(1)	5709.4	4731.8	83	2	30	43- 89
Fluorene	5709.4	5532.4	97	1	30	70-130
Fluoranthene	5709.4	6236.4	109	1	30	70-130
Hexachlorobenzene	5709.4	5991.3	105	1	30	70-130
Hexachlorobutadiene	5709.4	5157.4	90	1	30	70-130
Hexachlorocyclopentadie	5709.4	0.00000	0*		30	70-130
Hexachloroethane	5709.4	4612.9	81	5	30	70-130
Indeno(1,2,3-cd)pyrene	5709.4	6262.9	110	8	30	70-130
Isophorone	5709.4	5005.4	88	2	30	70-130
Phenol	5709.4	4773.5	84	2	30	47- 96
Naphthalene	5709.4	5118.2	90	2	30	70-130

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: C109CLO

Matrix Spike - CHG Sample No.: S13T004247 Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Nitrobenzene	5709.4	4913.2	86	6	30	70-130
4-Nitrophenol	5709.4	960.35	17*	76*	30	70-130
4-Nitroaniline	5709.4	4583.5	80	2	30	70-130
Pentachlorophenol	5709.4	4042.2	71	27	30	46-115
Phenanthrene	5709.4	6031.6	106	1	30	70-130
Pyrene	5709.4	6019.1	105	1	30	63-106
Pyridine	5709.4	4325.1	76	6	30	70-130
Tributyl Phosphate	5709.4	6736.6	118	1	30	70-130
Methylphenol (total)	11419	9299.3	81	2	30	70-130
n-Nitrosodimethylamine	5709.4	4571.6	80	4	30	70-130
Cyclohexanone	5709.4	5009.1	88	3	30	70-130
2-Ethoxyethanol	5709.4	4553.4	80	4	30	70-130
n-Nitrosomorpholine	5709.4	4451.4	78	2	30	70-130
2,6-Bis(tertbutyl)-4-me	5709.4	1953.1	34*	6	30	70-130
Isobutylalcohol	11419	7875.8	69*	0	30	70-130
1-Butanol	22838	14332	63*	6	30	70-130

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 1 out of 72 outside limits
Spike Recovery: 21 out of 144 outside limits

COMMENTS: Tributyl Phosphate is a primary organic analyte for the TSAP ytm 6/3/13.

Data File: 13052906LCS.D
Report Date: 29-May-2013 14:24

WSCF

RECOVERY REPORT

Client Name: CHG
Sample Matrix: SOLID
Lab Smp Id: LCS
Level: LOW
Data Type: MS DATA
SpikeList File: Full_SolLCS.spk
Sublist File: NTC+TC.sub
Method File: \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\TCNTC130523.m
Misc Info: Added 2.5ul Int.Std. HNF-N-1896-146.01

Client SDG: C109 CLO
Fraction: SV
Client Smp ID: LCS
Operator: cjo
SampleType: LCS
Quant Type: ISTD

	SPIKE	COMPOUND	CONC ADDED ug/Kg	CONC RECOVERED ug/Kg	% RECOVERED	LIMITS
M	1	Methylphenol (tota	13333	11778	88.34	70-130
	2	Isobutylalcohol	13333	7122.7	53.42*	70-130
	3	1-Butanol	26667	18016	67.56*	70-130
	4	2-Ethoxyethanol	6666.7	5565.6	83.48	70-130
	5	n-Nitrosodimethyla	6666.7	5705.9	85.59	70-130
	6	Pyridine	6666.7	5509.0	82.63	70-130
	8	Cyclohexanone	6666.7	6096.7	91.45	70-130
	9	2-Butoxyethanol	13333	12222	91.67	70-130
	11	Phenol	6666.7	5646.3	84.69	47-96
	13	bis(-2-Chloroethyl	6666.7	5808.1	87.12	70-130
	14	2-Chlorophenol	6666.7	5902.7	88.54	49-98
	16	1,4-Dichlorobenzen	6666.7	6052.4	90.79	41-97
	17	1,2-Dichlorobenzen	6666.7	6100.5	91.51	70-130
	18	2-Methylphenol	6666.7	5607.0	84.10	70-130
	19	bis(2-chloroisopro	6666.7	6336.8	95.05	70-130
	20	3- and 4-Methylphe	6666.7	6171.6	92.57	70-130
	21	N-Nitroso-di-n-pro	6666.7	5634.6	84.52	44-98
	22	n-Nitrosomorpholin	6666.7	5532.6	82.99	70-130
	23	Hexachloroethane	6666.7	5936.4	89.05	70-130
	25	Nitrobenzene	6666.7	6111.8	91.68	70-130
	26	Isophorone	6666.7	6177.0	92.66	70-130
	27	2-Nitrophenol	6666.7	6553.5	98.30	70-130
	28	2,4-Dimethylphenol	6666.7	4582.5	68.74*	70-130
	29	bis(-2-Chloroethox	6666.7	6298.3	94.47	70-130
	30	2,4-Dichlorophenol	6666.7	6383.5	95.75	70-130
	31	1,2,4-Trichloroben	6666.7	6351.5	95.27*	46-94
	33	Naphthalene	6666.7	6270.6	94.06	70-130
	34	4-Chloroaniline	6666.7	5906.1	88.59	70-130
	35	Hexachlorobutadien	6666.7	6339.9	95.10	70-130
	36	4-Chloro-3-Methylp	6666.7	6197.8	92.97	50-105
	37	2-Methylnaphthalen	6666.7	6364.3	95.46	70-130
	38	Hexachlorocyclope	6666.7	0.00000	*	70-130
	39	2,4,6-Trichlorophe	6666.7	6205.7	93.09	70-130
	40	2,4,5-Trichlorphen	6666.7	6103.2	91.55	70-130
	42	2-Chloronaphthalen	6666.7	6159.3	92.39	70-130
	43	2-Nitroaniline	6666.7	6056.2	90.84	70-130
	44	Dimethylphthalate	6666.7	6282.3	94.23	70-130
	45	2,6-Dinitrotoluene	6666.7	6349.6	95.24	70-130
	46	Acenaphthylene	6666.7	6046.2	90.69	70-130
	48	3-Nitroaniline	6666.7	5772.0	86.58	70-130

Data File: 13052906LCS.D
Report Date: 29-May-2013 14:24

SPIKE COMPOUND	CONC ADDED ug/Kg	CONC RECOVERED ug/Kg	% RECOVERED	LIMITS
49 2,6-Bis(tertbutyl)	6666.7	2955.3	44.33*	70-130
47 Acenaphthene	6666.7	6192.1	92.88	49-102
51 2,4-Dinitrophenol	6666.7	3718.7	55.78*	70-130
52 4-Nitrophenol	6666.7	6235.0	93.53	54-110
53 2,4-Dinitrotoluene	6666.7	6557.4	98.36	63-114
54 Dibenzofuran	6666.7	6143.9	92.16	70-130
55 Diethylphthalate	6666.7	6608.0	99.12	70-130
56 4-Chlorophenyl-phe	6666.7	6275.5	94.13	70-130
57 Fluorene	6666.7	6432.4	96.49	70-130
58 4-Nitroaniline	6666.7	5623.6	84.35	70-130
59 4,6-Dinitro-2-meth	6666.7	6350.9	95.26	70-130
60 Tributyl Phosphate	6666.7	7360.1	110.40	70-130
61 Diphenylamine (Nni	6666.7	6805.6	102.08	70-130
63 4-Bromophenyl-phen	6666.7	6945.1	104.18	70-130
64 Hexachlorobenzene	6666.7	6912.7	103.69	70-130
65 Pentachlorophenol	6666.7	6948.2	104.22	46-115
67 Phenanthrene	6666.7	7021.2	105.32	70-130
68 Anthracene	6666.7	6998.9	104.98	70-130
70 Di-n-butylphthalat	6666.7	7698.8	115.48	70-130
71 Fluoranthene	6666.7	7178.2	107.67	70-130
72 Pyrene	6666.7	7075.2	106.13	65-120
74 Butylbenzylphthala	6666.7	7315.2	109.73	70-130
75 bis(2-Ethylhexyl)p	6666.7	7999.0	119.99	70-130
76 Benzo(a)anthracene	6666.7	6779.2	101.69	70-130
78 Chrysene	6666.7	6826.0	102.39	70-130
79 Di-n-octylphthalat	6666.7	7667.4	115.01	70-130
80 Benzo(b)fluoranthe	6666.7	6685.3	100.28	70-130
81 Benzo(k)fluoranthe	6666.7	7149.0	107.24	70-130
82 Benzo(a)pyrene	6666.7	6507.1	97.61	70-130
84 Indeno(1,2,3-cd)py	6666.7	6599.8	99.00	70-130
85 Dibenzo(a,h)anthra	6666.7	6716.1	100.74	70-130
86 Benzo(g,h,i)peryle	6666.7	6547.6	98.21	70-130

SURROGATE COMPOUND	CONC ADDED ug/Kg	CONC RECOVERED ug/Kg	% RECOVERED	LIMITS
$ 7 2-Fluorophenol	26667	20639	77.39	42-99
$ 10 Phenol-d6	26667	21511	80.66	44-105
$ 24 Nitrobenzene-d5	13333	11017	82.63	44-100
$ 41 2-Fluorobiphenyl	13333	11336	85.02	48-108
$ 62 2,4,6-Tribromophen	26667	23339	87.52	49-111
$ 73 Terphenyl-d14	13333	13976	104.82	71-128

FORM 4
SEMIVOLATILE METHOD BLANK SUMMARY

CHG SAMPLE NO.

BLANK

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: C109CLO

Lab File ID: 13052905BLANK Lab Sample ID: BLANK

Instrument ID: TUVOK Date Extracted: 05/17/12

Matrix: (soil/water) SOIL Date Analyzed: 05/29/13

Level:(low/med) LOW Time Analyzed: 1039

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	CHG SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	LCS	LCS	13052906LCS	05/29/13
02	S13T004247	S13T004247	13052908_424	05/29/13
03	S13T004247DU	S13T004247DUP	13052909_424	05/29/13
04	S13T004247MS	S13T004247MS	13052910MS	05/29/13
05	S13T004247MS	S13T004247MSD	13052911MSD	05/29/13
06	S13T004275	S13T004275	13052913_427	05/29/13
07	S13T004302	S13T004302	13052915_430	05/29/13
08				
09				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				

COMMENTS:

FORM 5
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: C109CLO

Lab File ID: 13052902_DFTPP DFTPP Injection Date: 05/29/13

Instrument ID: TUVOK DFTPP Injection Time: 0919

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10.0 - 80.0% of mass 198	34.0
68	Less than 2.0% of mass 69	0.0 (0.1)1
69	Less than 100.0% of mass 198	28.5
70	Less than 2.0% of mass 69	0.1 (0.4)1
127	10.0 - 80.0% of mass 198	42.0
197	Less than 2.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.6
275	10.0 - 60.0% of mass 198	24.7
365	1.0 - 99.9% of mass 198	3.2
441	0.0 - 24.0% of mass 442	13.4 (14.7)2
442	50.0 - 99.9% of mass 198	91.1
443	15.0 - 24.0% of mass 442	17.5 (19.2)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	CCV4	CCV4	13052903_CCV4	05/29/13	0941
02	BLANK	BLANK	13052905BLANK	05/29/13	1039
03	LCS	LCS	13052906LCS	05/29/13	1123
04	S13T004247	S13T004247	13052908_4247	05/29/13	1221
05	S13T004247DU	S13T004247DUP	13052909_4247D	05/29/13	1304
06	S13T004247MS	S13T004247MS	13052910MS	05/29/13	1348
07	S13T004247MS	S13T004247MSD	13052911MSD	05/29/13	1432
08	S13T004275	S13T004275	13052913_4275	05/29/13	1559
09	S13T004302	S13T004302	13052915_4302	05/29/13	1657
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

Report Date : 30-May-2013 13:17

WSCF

INITIAL CALIBRATION DATA

Start Cal Date : 23-MAY-2013 11:40
End Cal Date : 23-MAY-2013 16:54
Quant Method : ISTD
Target Version : 4.14
Integrator : HP RTE
Method file : \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\TCNTC130523.m
Last Edit : 29-May-2013 14:18 lpm

Calibration File Names:
Level 1: \\apwscf02\slab\chem\chem\tuvok.i\2013\130523Cal.B\13052304Cal1.D
Level 2: \\apwscf02\slab\chem\chem\tuvok.i\2013\130523Cal.B\13052305Cal2.D
Level 3: \\apwscf02\slab\chem\chem\tuvok.i\2013\130523Cal.B\13052307Cal3.D
Level 4: \\apwscf02\slab\chem\chem\tuvok.i\2013\130523Cal.B\13052308Cal4.D
Level 5: \\apwscf02\slab\chem\chem\tuvok.i\2013\130523Cal.B\13052309Cal5.D
Level 6: \\apwscf02\slab\chem\chem\tuvok.i\2013\130523Cal.B\13052310Cal6.D
Level 7: \\apwscf02\slab\chem\chem\tuvok.i\2013\130523Cal.B\13052311Cal7.D

Compound	2.4000 Level 1	5.5000 Level 2	11.8000 Level 3	27.6000 Level 4	47.3000 Level 5	63.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
	78.8000 Level 7										
M 1 Methylphenol (total)	1.21978	1.26881	1.20825	1.14013	1.08888	1.06797					
	1.04390						AVRG		1.14825		7.47267
2 Isobutylalcohol	1.13480	1.10849	1.04489	0.91144	0.78678	0.72024					
	+++++						AVRG		0.95111		18.16142
3 1-Butanol	0.90921	0.89708	0.81056	0.71200	0.64964	0.63444					
	0.61171						AVRG		0.74638		16.81886
4 2-Ethoxyethanol	0.70161	0.74459	0.74330	0.71334	0.68815	0.67000					
	0.64551						AVRG		0.70093		5.22488

Report Date : 30-May-2013 13:17

WSCF

INITIAL CALIBRATION DATA

Start Cal Date : 23-MAY-2013 11:40
End Cal Date : 23-MAY-2013 16:54
Quant Method : ISTD
Target Version : 4.14
Integrator : HP RTE
Method file : \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\TCNTC130523.m
Last Edit : 29-May-2013 14:18 lpm

Compound	2.4000 Level 1	5.5000 Level 2	11.8000 Level 3	27.6000 Level 4	47.3000 Level 5	63.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
	78.8000 Level 7										
5 n-Nitrosodimethylamine	0.79507	0.84178	0.85948	0.80677	0.78628	0.75248					
	0.74295						AVRG		0.79783		5.37223
6 Pyridine	1.22936	1.30869	1.27860	1.25316	1.22459	1.21487					
	1.20895						AVRG		1.24546		2.95348
8 Cyclohexanone	1.34594	1.36966	1.30458	1.22318	1.14669	1.08971					
	1.04027						AVRG		1.21715		10.60786
9 2-Butoxyethanol	0.21659	0.22219	0.21250	0.19862	0.19094	0.18608					
	0.18306						AVRG		0.20143		7.78155
11 Phenol	1.46064	1.50689	1.45248	1.35481	1.26463	1.21901					
	1.22231						AVRG		1.35439		8.94170
12 Aniline	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000
13 bis(-2-Chloroethyl)Ether	1.19030	1.23279	1.19347	1.03277	0.99601	1.03386					
	1.10487						AVRG		1.11201		8.47146

Report Date : 30-May-2013 13:17

WSCF

INITIAL CALIBRATION DATA

Start Cal Date : 23-MAY-2013 11:40
End Cal Date : 23-MAY-2013 16:54
Quant Method : ISTD
Target Version : 4.14
Integrator : HP RTE
Method file : \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\TCNTC130523.m
Last Edit : 29-May-2013 14:18 lpm

Compound	2.4000 Level 1 / 78.8000 Level 7	5.5000 Level 2	11.8000 Level 3	27.6000 Level 4	47.3000 Level 5	63.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
14 2-Chlorophenol	1.47348 / 1.24505	1.54209	1.47497	1.37464	1.32599	1.27390	AVRG		1.38716		8.11816
16 1,4-Dichlorobenzene	1.81378 / 1.41494	1.83670	1.76042	1.65178	1.54687	1.47907	AVRG		1.64336		10.20265
17 1,2-Dichlorobenzene	1.74917 / 1.35573	1.76407	1.65872	1.56433	1.47318	1.41303	AVRG		1.56832		10.33321
18 2-Methylphenol	1.19132 / 1.04153	1.23348	1.18339	1.12586	1.06635	1.04667	AVRG		1.12694		6.88216
19 bis(2-chloroisopropyl)ether	2.29583 / 1.61657	2.33425	2.26506	2.00690	1.82531	1.72660	AVRG		2.01007		14.66158
20 3- and 4-Methylphenol (total)	1.24824 / 1.04628	1.30415	1.23311	1.15439	1.11142	1.08927	AVRG		1.16955		8.08128
21 N-Nitroso-di-n-propylamine	0.74557 / 0.70486	0.76121	0.75294	0.74035	0.71979	0.71238	AVRG		0.73387		2.93911

Report Date : 30-May-2013 13:17

WSCF

INITIAL CALIBRATION DATA

Start Cal Date : 23-MAY-2013 11:40
End Cal Date : 23-MAY-2013 16:54
Quant Method : ISTD
Target Version : 4.14
Integrator : HP RTE
Method file : \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\TCNTC130523.m
Last Edit : 29-May-2013 14:18 lpm

Compound	2.4000 Level 1	5.5000 Level 2	11.8000 Level 3	27.6000 Level 4	47.3000 Level 5	63.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
	78.8000 Level 7										
22 n-Nitrosomorpholine	0.83611	0.85746	0.86071	0.84242	0.81247	0.80303					
	0.79525						AVRG		0.82964		3.16225
23 Hexachloroethane	0.60234	0.61894	0.60818	0.56093	0.53325	0.52017					
	0.49944						AVRG		0.56332		8.41437
25 Nitrobenzene	0.31629	0.32816	0.31755	0.29697	0.28654	0.27537					
	0.27369						AVRG		0.29923		7.28554
26 Isophorone	0.48024	0.54333	0.52560	0.50135	0.48962	0.49343					
	0.49902						AVRG		0.50465		4.37544
27 2-Nitrophenol	0.18143	0.20647	0.20853	0.19759	0.18747	0.17978					
	0.17778						AVRG		0.19129		6.72868
28 2,4-Dimethylphenol	0.35206	0.35852	0.34304	0.31311	0.29872	0.29054					
	0.28534						AVRG		0.32019		9.55115
29 bis(-2-Chloroethoxy)methane	0.33513	0.34496	0.33398	0.30405	0.28767	0.28491					
	0.27849						AVRG		0.30989		8.92065

Report Date : 30-May-2013 13:17

WSCF

INITIAL CALIBRATION DATA

Start Cal Date : 23-MAY-2013 11:40
End Cal Date : 23-MAY-2013 16:54
Quant Method : ISTD
Target Version : 4.14
Integrator : HP RTE
Method file : \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\TCNTC130523.m
Last Edit : 29-May-2013 14:18 lpm

Compound	2.4000 Level 1 / 78.8000 Level 7	5.5000 Level 2	11.8000 Level 3	27.6000 Level 4	47.3000 Level 5	63.0000 Level 6	Curve	Coefficients b	Coefficients m1	Coefficients m2	%RSD or R^2
30 2,4-Dichlorophenol	0.33725	0.36149	0.35588	0.32456	0.30420	0.29277					
	0.28484						AVRG		0.32300		9.36628
31 1,2,4-Trichlorobenzene	0.40592	0.42291	0.39412	0.35981	0.33274	0.31659					
	0.30801						AVRG		0.36287		12.57989
33 Naphthalene	1.07609	1.11645	1.05539	0.96100	0.91295	0.87321					
	0.84096						AVRG		0.97658		10.98470
34 4-Chloroaniline	0.40812	0.43508	0.41761	0.39151	0.36839	0.36037					
	0.34434						AVRG		0.38935		8.48755
35 Hexachlorobutadiene	0.24381	0.25092	0.24287	0.21574	0.20102	0.19043					
	0.18446						AVRG		0.21846		12.59849
36 4-Chloro-3-Methylphenol	0.25566	0.28390	0.28573	0.27298	0.26600	0.26664					
	0.25957						AVRG		0.27007		4.25140
37 2-Methylnaphthalene	0.79998	0.82863	0.78778	0.70998	0.65903	0.62970					
	0.61090						AVRG		0.71800		12.27916

Report Date : 30-May-2013 13:17

WSCF

INITIAL CALIBRATION DATA

Start Cal Date : 23-MAY-2013 11:40
End Cal Date : 23-MAY-2013 16:54
Quant Method : ISTD
Target Version : 4.14
Integrator : HP RTE
Method file : \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\TCNTC130523.m
Last Edit : 29-May-2013 14:18 lpm

Compound	2.4000 Level 1 / 78.8000 Level 7	5.5000 Level 2	11.8000 Level 3	27.6000 Level 4	47.3000 Level 5	63.0000 Level 6	Curve	Coefficients b	Coefficients m1	Coefficients m2	%RSD or R^2
38 Hexachlorocyclopentadiene	0.26009 / 0.38465	0.32583	0.37741	0.38793	0.39562	0.39819	AVRG		0.36139		14.08859
39 2,4,6-Trichlorophenol	0.39782 / 0.43020	0.44704	0.46607	0.43644	0.42948	0.44582	AVRG		0.43613		4.82445
40 2,4,5-Trichlorphenol	0.42390 / 0.44507	0.47196	0.48986	0.47340	0.46638	0.47849	AVRG		0.46415		4.81975
42 2-Chloronaphthalene	1.33838 / 1.13614	1.38294	1.32709	1.25097	1.19569	1.17070	AVRG		1.25741		7.49183
43 2-Nitroaniline	0.23486 / 0.31200	0.28307	0.29370	0.30418	0.30737	0.31322	AVRG		0.29263		9.44077
44 Dimethylphthalate	1.39296 / 1.45478	1.50942	1.53540	1.46729	1.43926	1.48124	AVRG		1.46862		3.17731
45 2,6-Dinitrotoluene	0.33272 / 0.35141	0.36163	0.37725	0.36864	0.35786	0.35557	AVRG		0.35786		3.92727

Report Date : 30-May-2013 13:17

WSCF

INITIAL CALIBRATION DATA

Start Cal Date : 23-MAY-2013 11:40
End Cal Date : 23-MAY-2013 16:54
Quant Method : ISTD
Target Version : 4.14
Integrator : HP RTE
Method file : \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\TCNTC130523.m
Last Edit : 29-May-2013 14:18 lpm

Compound	2.4000 Level 1	5.5000 Level 2	11.8000 Level 3	27.6000 Level 4	47.3000 Level 5	63.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
	78.8000 Level 7										
46 Acenaphthylene	1.98308	2.09961	2.01845	1.93249	1.86446	1.85397					
	1.79016						AVRG		1.93460		5.53895
48 3-Nitroaniline	0.30701	0.35422	0.37177	0.36964	0.36582	0.37253					
	0.36130						AVRG		0.35747		6.48138
49 2,6-Bis(tertbutyl)-4-methylph	1.13980	1.17305	1.16038	1.09242	1.07971	1.07879					
	1.05662						AVRG		1.11154		4.09567
47 Acenaphthene	1.23163	1.25462	1.23348	1.14399	1.09272	1.09713					
	1.05936						AVRG		1.15899		6.89713
51 2,4-Dinitrophenol	1898	10453	39038	123769	236750	335419					
	427079						WLINR	0.12048	0.20803		0.98917
52 4-Nitrophenol	+++++	0.13092	0.16033	0.18207	0.17900	0.16594					
	0.16332						AVRG		0.16360		11.14666
53 2,4-Dinitrotoluene	0.40819	0.46588	0.49179	0.48283	0.47965	0.48455					
	0.46105						AVRG		0.46770		6.06338

Report Date : 30-May-2013 13:17

WSCF

INITIAL CALIBRATION DATA

Start Cal Date : 23-MAY-2013 11:40
End Cal Date : 23-MAY-2013 16:54
Quant Method : ISTD
Target Version : 4.14
Integrator : HP RTE
Method file : \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\TCNTC130523.m
Last Edit : 29-May-2013 14:18 lpm

Compound	2.4000 Level 1	5.5000 Level 2	11.8000 Level 3	27.6000 Level 4	47.3000 Level 5	63.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
	78.8000 Level 7										
54 Dibenzofuran	1.85753	1.90950	1.88679	1.77245	1.71061	1.71070					
	1.64076						AVRG		1.78405		5.74968
55 Diethylphthalate	1.32500	1.41730	1.43445	1.35404	1.31926	1.32158					
	1.27146						AVRG		1.34901		4.30293
56 4-Chlorophenyl-phenylether	0.76826	0.77391	0.75337	0.70953	0.68128	0.67087					
	0.65021						AVRG		0.71535		7.01062
57 Fluorene	1.55099	1.55838	1.51101	1.39222	1.29413	1.29289					
	1.24023						AVRG		1.40569		9.55533
58 4-Nitroaniline	0.28917	0.32189	0.31789	0.29913	0.30885	0.31323					
	0.31465						AVRG		0.30926		3.69874
59 4,6-Dinitro-2-methylphenol	+++++	0.10741	0.13241	0.14463	0.14967	0.14414					
	0.14277						AVRG		0.13684		11.31746
60 Tributyl Phosphate	0.43940	0.56511	0.59111	0.57890	0.54801	0.53488					
	0.51225						AVRG		0.53852		9.50541

Report Date : 30-May-2013 13:17 Page 9

WSCF

INITIAL CALIBRATION DATA

Start Cal Date : 23-MAY-2013 11:40
End Cal Date : 23-MAY-2013 16:54
Quant Method : ISTD
Target Version : 4.14
Integrator : HP RTE
Method file : \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\TCNTC130523.m
Last Edit : 29-May-2013 14:18 lpm

Compound	2.4000 Level 1	5.5000 Level 2	11.8000 Level 3	27.6000 Level 4	47.3000 Level 5	63.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
	78.8000 Level 7										
61 Diphenylamine (Nnitrosodiphen	0.71587	0.73400	0.70125	0.62878	0.58991	0.57048					
	0.54617						AVRG		0.64092		11.85032
63 4-Bromophenyl-phenylether	0.26458	0.26844	0.25388	0.22777	0.21354	0.20414					
	0.19885						AVRG		0.23303		12.50414
64 Hexachlorobenzene	0.27365	0.27392	0.26176	0.22740	0.21040	0.20335					
	0.19708						AVRG		0.23536		14.33157
65 Pentachlorophenol	0.09110	0.12173	0.14454	0.14681	0.14354	0.13886					
	0.13228						AVRG		0.13126		15.01682
67 Phenanthrene	1.27178	1.29557	1.23089	1.08582	1.00474	0.94607					
	0.90481						AVRG		1.10567		14.57096
68 Anthracene	1.29821	1.31100	1.26160	1.09982	1.01490	0.96287					
	0.90624						AVRG		1.12209		15.00496
69 Carbazole	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+000		0.000e+000

Report Date : 30-May-2013 13:17

WSCF

INITIAL CALIBRATION DATA

Start Cal Date : 23-MAY-2013 11:40
End Cal Date : 23-MAY-2013 16:54
Quant Method : ISTD
Target Version : 4.14
Integrator : HP RTE
Method file : \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\TCNTC130523.m
Last Edit : 29-May-2013 14:18 lpm

Compound	2.4000 Level 1	5.5000 Level 2	11.8000 Level 3	27.6000 Level 4	47.3000 Level 5	63.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
	78.8000 Level 7										
70 Di-n-butylphthalate	1.26715	1.35857	1.30535	1.15738	1.06649	1.00714					
	0.93213						AVRG		1.15632		13.94413
71 Fluoranthene	1.60761	1.63654	1.50083	1.32436	1.20579	1.15200					
	1.09146						AVRG		1.35980		16.39050
72 Pyrene	1.31055	1.34309	1.30342	1.19721	1.13306	1.11272					
	1.06336						AVRG		1.20906		9.16003
74 Butylbenzylphthalate	0.40310	0.47940	0.50134	0.48326	0.46831	0.45770					
	0.44719						AVRG		0.46290		6.85599
75 bis(2-Ethylhexyl)phthalate	0.58081	0.70047	0.71720	0.68574	0.66483	0.64772					
	0.61790						AVRG		0.65924		7.27093
76 Benzo(a)anthracene	1.21152	1.23764	1.21624	1.12217	1.08104	1.06009					
	1.04449						AVRG		1.13903		7.14666
78 Chrysene	1.11351	1.14276	1.09533	1.02736	0.98288	0.95719					
	0.94367						AVRG		1.03753		7.72509

Report Date : 30-May-2013 13:17

WSCF

INITIAL CALIBRATION DATA

Start Cal Date : 23-MAY-2013 11:40
End Cal Date : 23-MAY-2013 16:54
Quant Method : ISTD
Target Version : 4.14
Integrator : HP RTE
Method file : \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\TCNTC130523.m
Last Edit : 29-May-2013 14:18 lpm

Compound	2.4000 Level 1	5.5000 Level 2	11.8000 Level 3	27.6000 Level 4	47.3000 Level 5	63.0000 Level 6	78.8000 Level 7	Curve	Coefficients b	m1	m2	%RSD or R^2
79 Di-n-octylphthalate	0.96997	1.25655	1.37044	1.26935	1.19678	1.17279	1.12064	AVRG		1.19379		10.63713
80 Benzo(b)fluoranthene	1.25342	1.32493	1.33275	1.15692	1.10803	1.11154	1.11301	AVRG		1.20008		8.45617
81 Benzo(k)fluoranthene	1.32580	1.39907	1.31403	1.21997	1.15131	1.09317	1.03106	AVRG		1.21920		11.03484
82 Benzo(a)pyrene	1.04444	1.14714	1.16263	1.08108	1.03367	1.01267	0.97084	AVRG		1.06464		6.59119
84 Indeno(1,2,3-cd)pyrene	0.64988	0.78228	0.91130	0.90915	0.86850	0.78985	0.72583	AVRG		0.80526		12.13096
85 Dibenzo(a,h)anthracene	0.52438	0.63852	0.73572	0.72451	0.68748	0.63178	0.58735	AVRG		0.64710		11.70366
86 Benzo(g,h,i)perylene	0.50597	0.60252	0.70052	0.69742	0.63854	0.55999	0.50618	AVRG		0.60159		13.62534

Report Date : 30-May-2013 13:17

WSCF

INITIAL CALIBRATION DATA

Start Cal Date : 23-MAY-2013 11:40
End Cal Date : 23-MAY-2013 16:54
Quant Method : ISTD
Target Version : 4.14
Integrator : HP RTE
Method file : \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\TCNTC130523.m
Last Edit : 29-May-2013 14:18 lpm

Compound	2.4000 Level 1	5.5000 Level 2	11.8000 Level 3	27.6000 Level 4	47.3000 Level 5	63.0000 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
	78.8000 Level 7										
$ 7 2-Fluorophenol	1.30963	1.30048	1.31135	1.22970	1.20995	1.20067					
	1.18739						AVRG		1.24988		4.41119
$ 10 Phenol-d6	1.43395	1.38929	1.37074	1.28510	1.27137	1.24042					
	1.21465						AVRG		1.31507		6.30163
$ 24 Nitrobenzene-d5	0.34335	0.37112	0.37067	0.31427	0.31406	0.29388					
	0.28951						AVRG		0.32812		10.36803
$ 41 2-Fluorobiphenyl	1.64376	1.57763	1.56538	1.44541	1.41315	1.38382					
	1.35813						AVRG		1.48390		7.44854
$ 62 2,4,6-Tribromophenol	0.18083	0.19507	0.21248	0.19926	0.20329	0.20212					
	0.19475						AVRG		0.19826		4.91506
$ 73 Terphenyl-d14	0.90523	0.84644	0.81041	0.72754	0.70934	0.70492					
	0.68377						AVRG		0.76967		10.98854

Report Date : 30-May-2013 13:17

WSCF

INITIAL CALIBRATION DATA

Start Cal Date : 23-MAY-2013 11:40
End Cal Date : 23-MAY-2013 16:54
Quant Method : ISTD
Target Version : 4.14
Integrator : HP RTE
Method file : \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\TCNTC130523.m
Last Edit : 29-May-2013 14:18 lpm

Average %RSD Results.
Calculated Average %RSD = 8.85101
Maximun Average %RSD = 20.00000
* Passed Average %RSD Test.

Curve	Formula	Units
Averaged	Amt = Rsp/m1	Response
Wt Linear	Amt = b + Rsp/m1	Response

Data File: 13052903_ccv4.D
Report Date: 29-May-2013 10:34

WSCF

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: tuvok.i Injection Date: 29-MAY-2013 09:41
Lab File ID: 13052903_ccv4.D Init. Cal. Date(s): 23-MAY-2013 23-MAY-2013
Analysis Type: SOIL Init. Cal. Times: 11:40 16:54
Lab Sample ID: ccv4 Quant Type: ISTD
Method: \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\TCNTC130523.m

COMPOUND	RRF / AMOUNT	RF28	CCAL RRF28	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
M 1 Methylphenol (total)	1.14825	1.15203	1.15203	0.050	0.32922	20.00000	Averaged
2 Isobutylalcohol	0.95111	0.89410	0.89410	0.050	-5.99376	20.00000	Averaged
3 1-Butanol	0.74638	0.68994	0.68994	0.050	-7.56151	20.00000	Averaged
4 2-Ethoxyethanol	0.70093	0.70086	0.70086	0.050	-0.01027	20.00000	Averaged
5 n-Nitrosodimethylamine	0.79783	0.81271	0.81271	0.050	1.86449	20.00000	Averaged
6 Pyridine	1.24546	1.22740	1.22740	0.050	-1.45060	20.00000	Averaged
$ 7 2-Fluorophenol	1.24988	1.25374	1.25374	0.050	0.30903	20.00000	Averaged
8 Cyclohexanone	1.21715	1.22889	1.22889	0.050	0.96445	20.00000	Averaged
9 2-Butoxyethanol	0.20143	0.19925	0.19925	0.050	-1.07880	20.00000	Averaged
$ 10 Phenol-d6	1.31507	1.31083	1.31083	0.050	-0.32246	20.00000	Averaged
11 Phenol	1.35439	1.34194	1.34194	0.800	-0.91979	20.00000	Averaged
13 bis(-2-Chloroethyl)Ether	1.11201	1.05290	1.05290	0.700	-5.31528	20.00000	Averaged
14 2-Chlorophenol	1.38716	1.39505	1.39505	0.800	0.56919	20.00000	Averaged
16 1,4-Dichlorobenzene	1.64336	1.64404	1.64404	0.050	0.04119	20.00000	Averaged
17 1,2-Dichlorobenzene	1.56832	1.56575	1.56575	0.050	-0.16366	20.00000	Averaged
18 2-Methylphenol	1.12694	1.13140	1.13140	0.700	0.39518	20.00000	Averaged
19 bis(2-chloroisopropyl)ether	2.01007	2.03709	2.03709	0.050	1.34406	20.00000	Averaged
20 3- and 4-Methylphenol (tota	1.16955	1.17266	1.17266	0.600	0.26567	20.00000	Averaged
21 N-Nitroso-di-n-propylamine	0.73387	0.75192	0.75192	0.500	2.45999	20.00000	Averaged
22 n-Nitrosomorpholine	0.82964	0.87556	0.87556	0.050	5.53475	20.00000	Averaged
23 Hexachloroethane	0.56332	0.57362	0.57362	0.300	1.82844	20.00000	Averaged
$ 24 Nitrobenzene-d5	0.32812	0.32418	0.32418	0.050	-1.20143	20.00000	Averaged
25 Nitrobenzene	0.29923	0.30057	0.30057	0.200	0.45101	20.00000	Averaged
26 Isophorone	0.50465	0.51423	0.51423	0.400	1.89778	20.00000	Averaged
27 2-Nitrophenol	0.19129	0.20045	0.20045	0.100	4.78580	20.00000	Averaged
28 2,4-Dimethylphenol	0.32019	0.31921	0.31921	0.200	-0.30641	20.00000	Averaged
29 bis(-2-Chloroethoxy)methane	0.30989	0.30829	0.30829	0.300	-0.51562	20.00000	Averaged
30 2,4-Dichlorophenol	0.32300	0.32722	0.32722	0.200	1.30637	20.00000	Averaged
31 1,2,4-Trichlorobenzene	0.36287	0.36145	0.36145	0.050	-0.39166	20.00000	Averaged
33 Naphthalene	0.97658	0.98248	0.98248	0.700	0.60401	20.00000	Averaged
34 4-Chloroaniline	0.38935	0.40073	0.40073	0.010	2.92469	20.00000	Averaged
35 Hexachlorobutadiene	0.21846	0.22089	0.22089	0.010	1.11256	20.00000	Averaged
36 4-Chloro-3-Methylphenol	0.27007	0.27733	0.27733	0.200	2.69030	20.00000	Averaged
37 2-Methylnaphthalene	0.71800	0.72944	0.72944	0.400	1.59335	20.00000	Averaged
38 Hexachlorocyclopentadiene	0.36139	0.39210	0.39210	0.050	8.49732	20.00000	Averaged
39 2,4,6-Trichlorophenol	0.43613	0.46105	0.46105	0.200	5.71479	20.00000	Averaged
40 2,4,5-Trichlorphenol	0.46415	0.48738	0.48738	0.200	5.00390	20.00000	Averaged
$ 41 2-Fluorobiphenyl	1.48390	1.52516	1.52516	0.050	2.78087	20.00000	Averaged
42 2-Chloronaphthalene	1.25741	1.27670	1.27670	0.800	1.53378	20.00000	Averaged
43 2-Nitroaniline	0.29263	0.31543	0.31543	0.010	7.79103	20.00000	Averaged
44 Dimethylphthalate	1.46862	1.51739	1.51739	0.010	3.32045	20.00000	Averaged
45 2,6-Dinitrotoluene	0.35786	0.37127	0.37127	0.200	3.74495	20.00000	Averaged

Data File: 13052903_ccv4.D
Report Date: 29-May-2013 10:34

WSCF

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: tuvok.i Injection Date: 29-MAY-2013 09:41
Lab File ID: 13052903_ccv4.D Init. Cal. Date(s): 23-MAY-2013 23-MAY-2013
Analysis Type: SOIL Init. Cal. Times: 11:40 16:54
Lab Sample ID: ccv4 Quant Type: ISTD
Method: \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\TCNTC130523.m

COMPOUND	RRF / AMOUNT	RF28	CCAL RRF28	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
46 Acenaphthylene	1.93460	1.99523	1.99523	0.900	3.13400	20.00000	Averaged
48 3-Nitroaniline	0.35747	0.38037	0.38037	0.010	6.40557	20.00000	Averaged
49 2,6-Bis(tertbutyl)-4-methyl	1.11154	1.14984	1.14984	0.050	3.44530	20.00000	Averaged
47 Acenaphthene	1.15899	1.16502	1.16502	0.900	0.52040	20.00000	Averaged
51 2,4-Dinitrophenol	27.60000	26.58315	0.18220	0.010	-3.68424	20.00000	Wt Linear
52 4-Nitrophenol	0.16360	0.19199	0.19199	0.010	17.35639	20.00000	Averaged
53 2,4-Dinitrotoluene	0.46770	0.49889	0.49889	0.200	6.66840	20.00000	Averaged
54 Dibenzofuran	1.78405	1.84522	1.84522	0.800	3.42874	20.00000	Averaged
55 Diethylphthalate	1.34901	1.41472	1.41472	0.010	4.87095	20.00000	Averaged
56 4-Chlorophenyl-phenylether	0.71535	0.74244	0.74244	0.400	3.78799	20.00000	Averaged
57 Fluorene	1.40569	1.43057	1.43057	0.900	1.76940	20.00000	Averaged
58 4-Nitroaniline	0.30926	0.30803	0.30803	0.010	-0.39789	20.00000	Averaged
59 4,6-Dinitro-2-methylphenol	0.13684	0.14996	0.14996	0.010	9.58707	20.00000	Averaged
60 Tributyl Phosphate	0.53852	0.59304	0.59304	0.050	10.12403	20.00000	Averaged
61 Diphenylamine (Nnitrosodiph	0.64092	0.65293	0.65293	0.010	1.87263	20.00000	Averaged
$ 62 2,4,6-Tribromophenol	0.19826	0.20984	0.20984	0.050	5.84335	20.00000	Averaged
63 4-Bromophenyl-phenylether	0.23303	0.23335	0.23335	0.100	0.13673	20.00000	Averaged
64 Hexachlorobenzene	0.23536	0.23231	0.23231	0.100	-1.29824	20.00000	Averaged
65 Pentachlorophenol	0.13126	0.14568	0.14568	0.050	10.98245	20.00000	Averaged
67 Phenanthrene	1.10567	1.11674	1.11674	0.700	1.00131	20.00000	Averaged
68 Anthracene	1.12209	1.13720	1.13720	0.700	1.34627	20.00000	Averaged
70 Di-n-butylphthalate	1.15632	1.21200	1.21200	0.010	4.81586	20.00000	Averaged
71 Fluoranthene	1.35980	1.35867	1.35867	0.600	-0.08299	20.00000	Averaged
72 Pyrene	1.20906	1.25467	1.25467	0.600	3.77233	20.00000	Averaged
$ 73 Terphenyl-d14	0.76967	0.79079	0.79079	0.050	2.74437	20.00000	Averaged
74 Butylbenzylphthalate	0.46290	0.51564	0.51564	0.010	11.39276	20.00000	Averaged
75 bis(2-Ethylhexyl)phthalate	0.65924	0.72340	0.72340	0.010	9.73205	20.00000	Averaged
76 Benzo(a)anthracene	1.13903	1.17892	1.17892	0.800	3.50205	20.00000	Averaged
78 Chrysene	1.03753	1.06758	1.06758	0.700	2.89686	20.00000	Averaged
79 Di-n-octylphthalate	1.19379	1.34545	1.34545	0.010	12.70465	20.00000	Averaged
80 Benzo(b)fluoranthene	1.20008	1.28204	1.28204	0.700	6.82891	20.00000	Averaged
81 Benzo(k)fluoranthene	1.21920	1.20918	1.20918	0.700	-0.82225	20.00000	Averaged
82 Benzo(a)pyrene	1.06464	1.12039	1.12039	0.700	5.23675	20.00000	Averaged
84 Indeno(1,2,3-cd)pyrene	0.80526	0.94605	0.94605	0.500	17.48372	20.00000	Averaged
85 Dibenzo(a,h)anthracene	0.64710	0.75692	0.75692	0.400	16.97060	20.00000	Averaged
86 Benzo(g,h,i)perylene	0.60159	0.71290	0.71290	0.500	18.50175	20.00000	Averaged

Data File: 13052903_ccv4.D
Report Date: 29-May-2013 10:34

WSCF

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: tuvok.i Injection Date: 29-MAY-2013 09:41
Lab File ID: 13052903_ccv4.D Init. Cal. Date(s): 23-MAY-2013 23-MAY-2013
Analysis Type: SOIL Init. Cal. Times: 11:40 16:54
Lab Sample ID: ccv4 Quant Type: ISTD
Method: \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\TCNTC130523.m

Average %D / Drift Results.
Calculated Average %D/Drift = 4.00050
Maximun Average %D/Drift = 20.00000
* Passed Average %D/Drift Test.

FORM 8
SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: C109CLO

Lab File ID (Standard): 13052903_CCV4 Date Analyzed: 05/29/13

Instrument ID: TUVOK Time Analyzed: 0941

		IS1 (DCB) AREA #	RT #	IS2 (NPT) AREA #	RT #	IS3 (ANT) AREA #	RT #
	12 HOUR STD	239515	7.39	931006	9.35	513924	12.23
	UPPER LIMIT	479030	7.89	1862012	9.85	1027848	12.73
	LOWER LIMIT	119758	6.89	465503	8.85	256962	11.73
	CHG SAMPLE NO.						
01	BLANK	254561	7.38	966180	9.35	566699	12.22
02	LCS	255350	7.38	965185	9.35	565879	12.22
03	S13T004247	261223	7.38	982136	9.35	567092	12.22
04	S13T004247DU	258449	7.38	981189	9.35	578855	12.22
05	S13T004247MS	253003	7.38	962785	9.35	552377	12.22
06	S13T004247MS	262991	7.38	989893	9.35	564291	12.22
07	S13T004275	256700	7.38	982305	9.35	567612	12.22
08	S13T004302	260597	7.38	999251	9.35	573962	12.22
09							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

FORM 8
SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: C109CLO

Lab File ID (Standard): 13052903_CCV4 Date Analyzed: 05/29/13

Instrument ID: TUVOK Time Analyzed: 0941

		IS4(PHN) AREA #	RT #	IS5(CRY) AREA #	RT #	IS6(PRY) AREA #	RT #
	12 HOUR STD	1024741	14.69	1129043	19.13	1028172	22.04
	UPPER LIMIT	2049482	15.19	2258086	19.63	2056344	22.54
	LOWER LIMIT	512371	14.19	564522	18.63	514086	21.54
	CHG SAMPLE NO.						
01	BLANK	993513	14.69	1219930	19.11	936591	22.03
02	LCS	1029895	14.69	1208609	19.12	1057762	22.03
03	S13T004247	996449	14.69	1268450	19.11	990883	22.03
04	S13T004247DU	1017232	14.69	1239245	19.11	982379	22.03
05	S13T004247MS	1022169	14.69	1220748	19.12	1049369	22.03
06	S13T004247MS	1037486	14.69	1233440	19.12	1062029	22.03
07	S13T004275	1023168	14.69	1269938	19.11	993298	22.03
08	S13T004302	1028932	14.68	1268991	19.11	1000780	22.03
09							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

Data File: 13052903_ccv4.D
Report Date: 29-May-2013 10:34

WSCF

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: tuvok.i
Lab File ID: 13052903_ccv4.D
Lab Smp Id: ccv4
Analysis Type: SV
Quant Type: ISTD
Operator: cjo
Method File: \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\TCNTC130523.m
Misc Info: Added 2.5ul Int.Std. HNF-N-1896-146.01

Calibration Date: 23-MAY-2013
Calibration Time: 14:46
Client Smp ID: ccv4
Level: LOW
Sample Type: SOIL

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
15 1,4-Dichlorobenze	244305	122153	488610	239515	-1.96
32 Naphthalene-d8	943875	471938	1887750	931006	-1.36
50 Acenaphthene-d10	518908	259454	1037816	513924	-0.96
66 Phenanthrene-d10	1028399	514200	2056798	1024741	-0.36
77 Chrysene-d12	1172381	586191	2344762	1129043	-3.70
83 Perylene-d12	1109774	554887	2219548	1028172	-7.35

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
15 1,4-Dichlorobenze	7.38	6.88	7.88	7.39	0.14
32 Naphthalene-d8	9.35	8.85	9.85	9.35	-0.00
50 Acenaphthene-d10	12.23	11.73	12.73	12.23	-0.00
66 Phenanthrene-d10	14.69	14.19	15.19	14.69	-0.00
77 Chrysene-d12	19.12	18.62	19.62	19.13	0.05
83 Perylene-d12	22.04	21.54	22.54	22.04	-0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Page 1

Data File: \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\13052902_dftpp.D

Date : 29-MAY-2013 09:19

Client ID: DFTPP

Instrument: tuvok.i

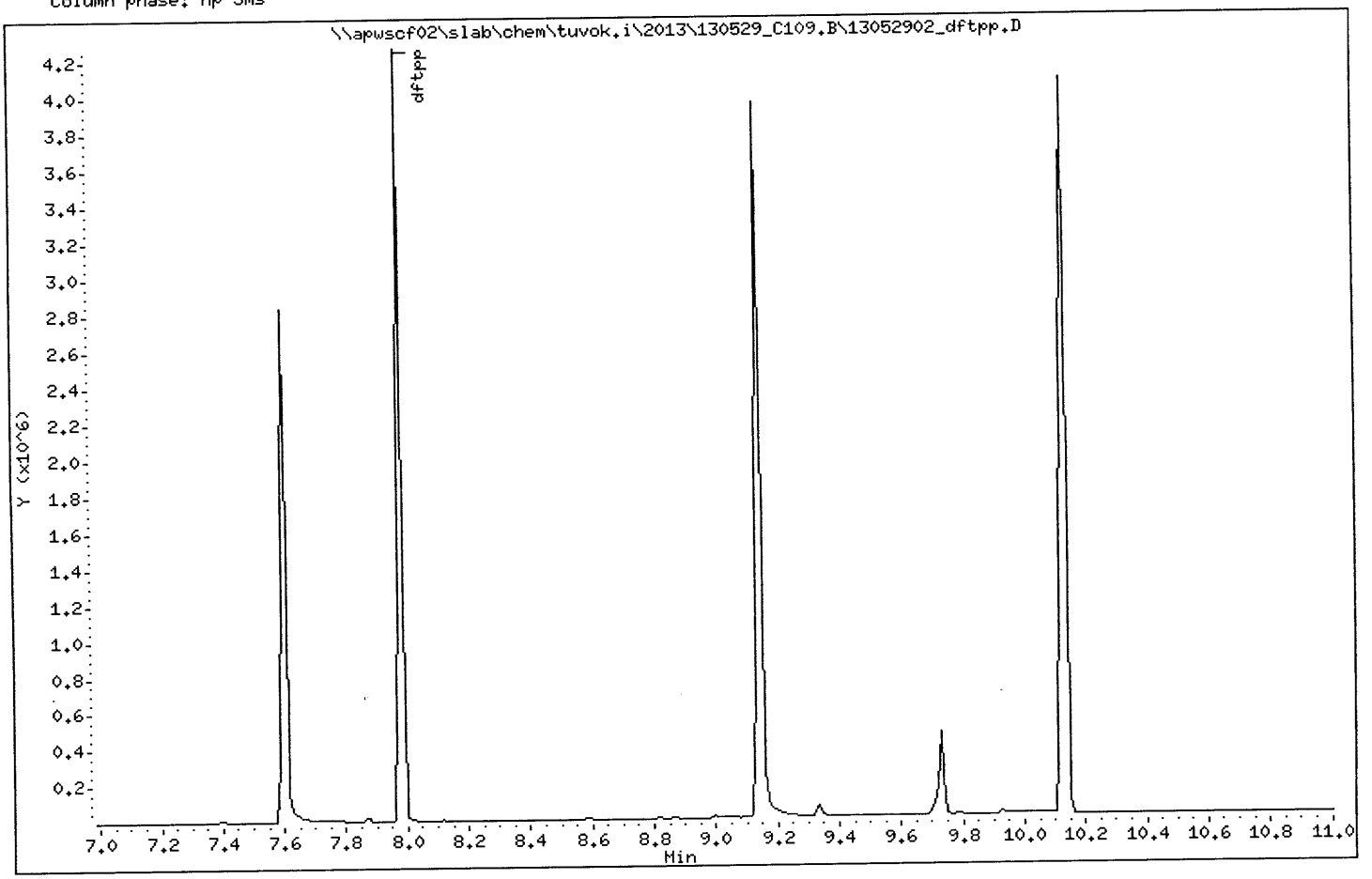
Sample Info: DFTPP

Volume Injected (uL): 1.0

Operator: CJO

Column phase: hp-5ms

Column diameter: 0.25



Data File: \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\13052902_dftpp.D

Date : 29-MAY-2013 09:19

Client ID: DFTPP

Instrument: tuvok.i

Sample Info: DFTPP

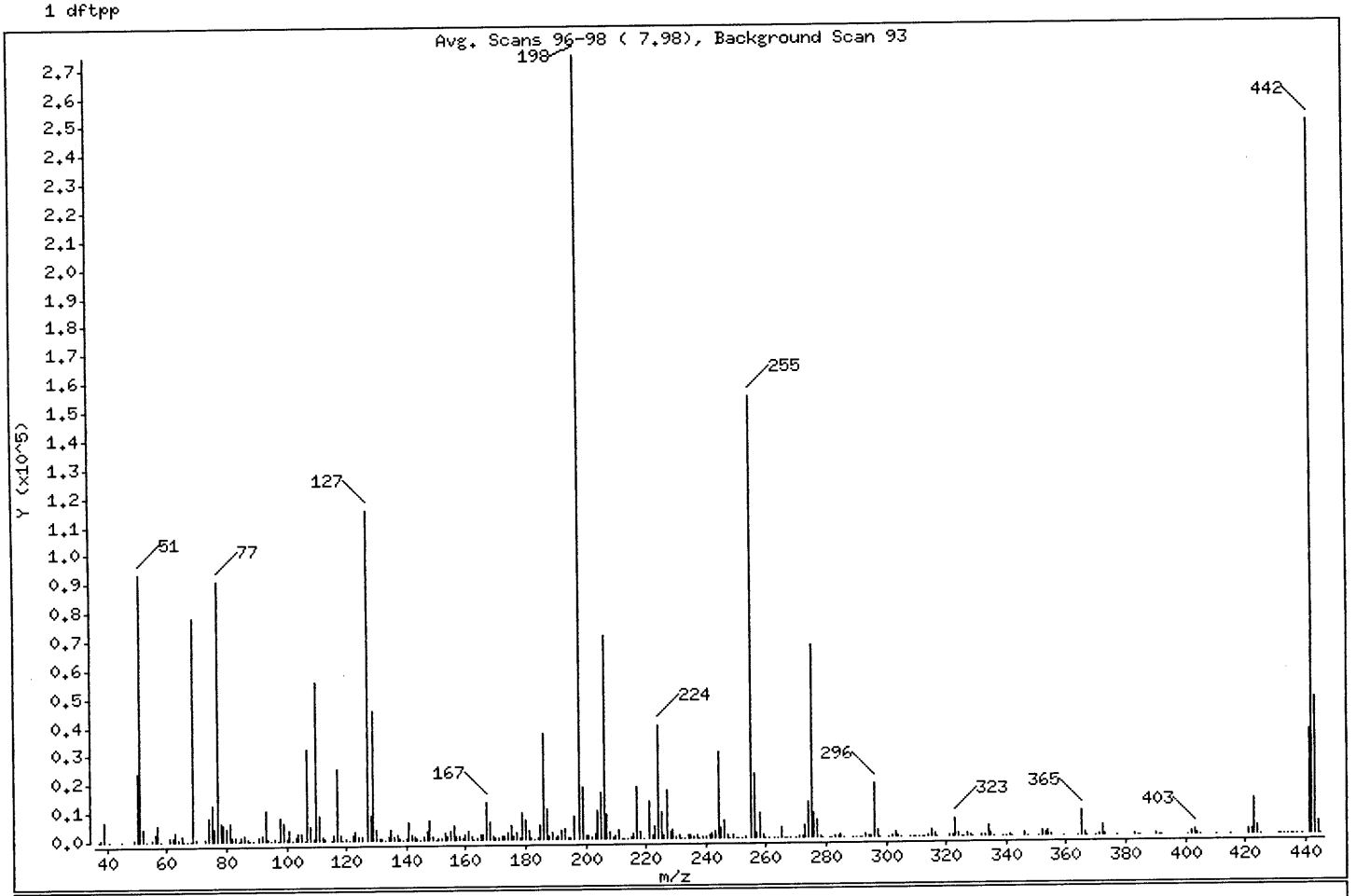
Volume Injected (uL): 1.0

Operator: CJO

Column phase: hp-5ms

Column diameter: 0.25

1 dftpp



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
198	Base Peak, 100% relative abundance	100.00
51	10.00 - 80.00% of mass 198	34.01
68	Less than 2.00% of mass 69	0.02 (0.07)
69	Less than 100.00% of mass 198	28.47
70	Less than 2.00% of mass 69	0.13 (0.45)
127	10.00 - 80.00% of mass 198	41.99
197	Less than 2.00% of mass 198	0.00
199	5.00 - 9.00% of mass 198	6.57
275	10.00 - 60.00% of mass 198	24.66
365	1.00 - 99.99% of mass 198	3.16
441	0.01 - 24.00% of mass 442	13.37 (14.67)
442	50.00 - 99.99% of mass 198	91.13
443	15.00 - 24.00% of mass 442	17.52 (19.22)

Data File: \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\13052902_dftpp.D

Date : 29-MAY-2013 09:19

Client ID: DFTPP

Instrument: tuvok.i

Sample Info: DFTPP

Volume Injected (uL): 1.0

Operator: CJO

Column phase: hp-5ms

Column diameter: 0.25

Data File: 13052902_dftpp.D

Spectrum: Avg. Scans 96-98 (7.98), Background Scan 93

Location of Maximum: 198.00

Number of points: 320

m/z	Y	m/z	Y	m/z	Y	m/z	Y
37.00	274	133.00	133	215.00	740	305.00	51
38.00	827	134.00	1293	216.00	1637	308.00	254
39.00	6622	135.00	3793	217.00	18008	309.00	186
41.00	152	136.00	1499	218.00	2353	310.00	272
45.00	166	137.00	1954	219.00	184	311.00	55
49.00	595	138.00	367	221.00	13028	312.00	88
50.00	24032	139.00	161	222.00	1447	313.00	179
51.00	93272	140.00	518	223.00	4140	314.00	943
52.00	4508	141.00	6043	224.00	39464	315.00	2304
53.00	158	142.00	2020	225.00	9705	316.00	1225
55.00	388	143.00	1356	226.00	1168	317.00	115
56.00	2515	144.00	363	227.00	16928	321.00	640
57.00	5836	145.00	281	228.00	2405	322.00	334
58.00	265	146.00	1074	229.00	3384	323.00	6342
61.00	1018	147.00	3317	230.00	570	324.00	1168
62.00	1245	148.00	6844	231.00	1545	325.00	119
63.00	3168	149.00	1387	232.00	223	326.00	96
64.00	430	150.00	310	233.00	259	327.00	1001
65.00	1725	151.00	716	234.00	1000	328.00	527
66.00	78	152.00	546	235.00	1164	329.00	75
67.00	56	153.00	2207	236.00	794	332.00	463
68.00	51	154.00	1371	237.00	1508	333.00	614
69.00	78064	155.00	3201	238.00	145	334.00	4084
70.00	348	156.00	5226	239.00	634	335.00	1146
73.00	734	157.00	1088	240.00	591	336.00	121
74.00	8117	158.00	1018	241.00	963	339.00	78
75.00	12837	159.00	825	242.00	2091	340.00	122
76.00	4453	160.00	1878	243.00	2247	341.00	686
77.00	90768	161.00	2951	244.00	30400	342.00	197
78.00	6301	162.00	1064	245.00	3965	346.00	1365
79.00	5597	163.00	223	246.00	6118	347.00	251
80.00	4675	164.00	329	247.00	1161	351.00	70
81.00	6451	165.00	2146	248.00	311	352.00	2131
82.00	1478	166.00	1931	249.00	1092	353.00	1359
83.00	1480	167.00	13050	250.00	204	354.00	2051

Data File: \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\13052902_dftpp.D

Date : 29-MAY-2013 09:19

Client ID: DFTPP

Instrument: tuvok.i

Sample Info: DFTPP

Volume Injected (uL): 1.0

Operator: CJO

Column phase: hp-5ms

Column diameter: 0.25

Data File: 13052902_dftpp.D

Spectrum: Avg. Scans 96-98 (7.98), Background Scan 93

Location of Maximum: 198.00

Number of points: 320

m/z	Y	m/z	Y	m/z	Y	m/z	Y
84.00	146	168.00	6231	251.00	250	355.00	416
85.00	1246	169.00	1037	252.00	224	359.00	90
86.00	1845	170.00	478	253.00	791	364.00	64
87.00	809	171.00	530	255.00	154176	365.00	8662
88.00	298	172.00	1031	256.00	22384	366.00	1183
89.00	165	173.00	1572	257.00	1678	367.00	113
91.00	1496	174.00	2805	258.00	8952	370.00	152
92.00	1767	175.00	5130	259.00	1460	371.00	450
93.00	10435	176.00	1415	260.00	262	372.00	3493
94.00	721	177.00	2426	261.00	246	373.00	858
95.00	249	178.00	904	263.00	66	377.00	71
96.00	505	179.00	9469	264.00	145	383.00	865
97.00	201	180.00	6736	265.00	3571	384.00	259
98.00	8226	181.00	2947	266.00	125	385.00	58
99.00	6588	182.00	473	267.00	78	390.00	373
100.00	621	183.00	305	268.00	5	391.00	306
101.00	3958	184.00	840	270.00	117	392.00	212
102.00	199	185.00	4795	271.00	362	401.00	237
103.00	1209	186.00	37040	272.00	438	402.00	1383
104.00	2564	187.00	10901	273.00	4373	403.00	1994
105.00	2404	188.00	1071	274.00	12408	404.00	781
106.00	273	189.00	2289	275.00	67632	405.00	72
107.00	32368	190.00	390	276.00	8565	410.00	51
108.00	4980	191.00	1107	277.00	6016	415.00	66
109.00	331	192.00	3058	278.00	936	421.00	1915
110.00	55528	193.00	3825	279.00	205	422.00	1723
111.00	8912	194.00	805	281.00	138	423.00	12497
112.00	1152	195.00	507	282.00	130	424.00	2938
113.00	323	196.00	8165	283.00	687	425.00	285
115.00	138	198.00	274240	284.00	377	431.00	121
116.00	1798	199.00	18008	285.00	1061	432.00	56
117.00	25208	200.00	1506	286.00	98	433.00	129
118.00	1910	201.00	1089	289.00	204	434.00	139
119.00	220	202.00	348	290.00	132	435.00	125
120.00	409	203.00	2096	291.00	159	436.00	53

Data File: \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\13052902_dftpp.D

Date : 29-MAY-2013 09:19

Client ID: DFTPP

Instrument: tuvok.i

Sample Info: DFTPP

Volume Injected (uL): 1.0

Operator: CJO

Column phase: hp-5ms

Column diameter: 0.25

Data File: 13052902_dftpp.D

Spectrum: Avg. Scans 96-98 (7.98), Background Scan 93

Location of Maximum: 198.00

Number of points: 320

m/z	Y	m/z	Y	m/z	Y	m/z	Y
121.00	73	204.00	10183	292.00	309	437.00	115
122.00	2167	205.00	16327	293.00	1446	439.00	71
123.00	3331	206.00	71128	294.00	375	441.00	36672
124.00	1521	207.00	9006	295.00	377	442.00	249920
125.00	1365	208.00	2425	296.00	19064	443.00	48040
127.00	115152	209.00	820	297.00	2741	444.00	4121
128.00	8947	210.00	1089	298.00	154	445.00	259
129.00	45680	211.00	2863	301.00	267		
130.00	3876	212.00	109	302.00	327		
131.00	822	213.00	164	303.00	2175		
132.00	376	214.00	52	304.00	621		

Data File: 13052903_ccv4.D
Report Date: 03-Jun-2013 07:12

WSCF

BASE NEUTRAL QUANT AND RATIO REPORT

Data file : \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\13052903_ccv4.D
Lab Smp Id: ccv4 Client Smp ID: ccv4
Inj Date : 29-MAY-2013 09:41
Operator : cjo Inst ID: tuvok.i
Smp Info : CCV 4,HNF-N-1896-152.02
Misc Info : Added 2.5ul Int.Std. HNF-N-1896-146.01
Comment :
Method : \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\TCNTC130523.m
Meth Date : 30-May-2013 14:16 lpm Quant Type: ISTD
Cal Date : 23-MAY-2013 14:01 Cal File: 13052307Cal3.D
Als bottle: 3 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: NTC+TC.sub
Target Version: 4.14

Concentration Formula: Amt * DF * Uf * Vt/(Vi * Ws * (100 - M)/100) * CpndVa

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vt	2000.000	Volume of final extract (uL)(1000 low, 2
Vi	1.000	Volume injected (uL)
Ws	20.000	Weight of sample extracted (g)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (NG)	AMOUNTS ON-COL (NG)
	2 Isobutylalcohol	43	2.933	2.944	(0.397)	599620	56.0000	52.643
	3 1-Butanol	56	3.243	3.244	(0.439)	925405	112.000	103.53
	4 2-Ethoxyethanol	59	3.699	3.699	(0.500)	235012	28.0000	27.997
	5 n-Nitrosodimethylamine	42	4.030	4.030	(0.545)	268624	27.6000	28.114
	6 Pyridine	79	4.092	4.093	(0.553)	405692	27.6000	27.200
$	7 2-Fluorophenol	112	5.572	5.573	(0.754)	462447	30.8000	30.895
	8 Cyclohexanone	55	5.945	5.945	(0.804)	412071	28.0000	28.270(a)
	9 2-Butoxyethanol	87	5.976	5.976	(0.808)	133627	56.0000	55.396(a)
$	10 Phenol-d6	99	6.773	6.773	(0.916)	483505	30.8000	30.701
	11 Phenol	94	6.793	6.794	(0.919)	443551	27.6000	27.346
	13 bis(-2-Chloroethyl)Ether	93	6.959	6.960	(0.941)	348017	27.6000	26.133
	14 2-Chlorophenol	128	7.083	7.084	(0.958)	461108	27.6000	27.757
*	15 1,4-Dichlorobenzene-d4	152	7.394	7.384	(1.000)	239515	20.0000	
	16 1,4-Dichlorobenzene	146	7.415	7.415	(1.003)	543406	27.6000	27.611
	17 1,2-Dichlorobenzene	146	7.642	7.643	(1.034)	517529	27.6000	27.555
	18 2-Methylphenol	108	7.684	7.684	(1.039)	373961	27.6000	27.709
	19 bis(2-chloroisopropyl)ether	45	7.746	7.746	(1.048)	673321	27.6000	27.971
	20 3- and 4-Methylphenol (total)	108	7.922	7.922	(1.071)	387599	27.6000	27.673
	21 N-Nitroso-di-n-propylamine	70	7.963	7.964	(1.077)	248534	27.6000	28.279
	22 n-Nitrosomorpholine	56	7.994	7.995	(1.081)	293592	28.0000	29.550

Data File: 13052903_ccv4.D
Report Date: 03-Jun-2013 07:12

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (NG)	AMOUNTS ON-COL (NG)
	23 Hexachloroethane	117	8.160	8.160	(1.104)	189599	27.6000	28.105
$	24 Nitrobenzene-d5	82	8.211	8.212	(0.878)	341655	22.6400	22.368
	25 Nitrobenzene	77	8.243	8.243	(0.882)	386175	27.6000	27.724
	26 Isophorone	82	8.605	8.605	(0.920)	660678	27.6000	28.124
	27 2-Nitrophenol	139	8.729	8.730	(0.934)	257531	27.6000	28.921
	28 2,4-Dimethylphenol	107	8.750	8.750	(0.936)	410113	27.6000	27.515
	29 bis(-2-Chloroethoxy)methane	93	8.905	8.905	(0.952)	396085	27.6000	27.458
	30 2,4-Dichlorophenol	162	9.102	9.102	(0.973)	420407	27.6000	27.960
	31 1,2,4-Trichlorobenzene	180	9.247	9.247	(0.989)	464386	27.6000	27.492
*	32 Naphthalene-d8	136	9.350	9.351	(1.000)	931006	20.0000	
	33 Naphthalene	128	9.391	9.392	(1.004)	1262276	27.6000	27.767
	34 4-Chloroaniline	127	9.443	9.444	(1.010)	514857	27.6000	28.407
	35 Hexachlorobutadiene	225	9.567	9.568	(1.023)	283803	27.6000	27.907
	36 4-Chloro-3-Methylphenol	107	10.188	10.189	(1.090)	356316	27.6000	28.342
	37 2-Methylnaphthalene	142	10.499	10.499	(1.123)	937177	27.6000	28.040
	38 Hexachlorocyclopentadiene	237	10.747	10.747	(0.879)	278080	27.6000	29.945
	39 2,4,6-Trichlorophenol	196	10.944	10.944	(0.895)	326983	27.6000	29.177
	40 2,4,5-Trichlorphenol	196	11.006	11.006	(0.900)	345656	27.6000	28.981
$	41 2-Fluorobiphenyl	172	11.089	11.079	(0.907)	887282	22.6400	23.270
	42 2-Chloronaphthalene	162	11.306	11.306	(0.925)	905455	27.6000	28.023
	43 2-Nitroaniline	65	11.451	11.441	(0.937)	223706	27.6000	29.750
	44 Dimethylphthalate	163	11.741	11.741	(0.960)	1076154	27.6000	28.516
	45 2,6-Dinitrotoluene	165	11.844	11.844	(0.969)	263308	27.6000	28.634
	46 Acenaphthylene	152	12.000	11.989	(0.981)	1415049	27.6000	28.465
	48 3-Nitroaniline	138	12.124	12.124	(0.992)	269763	27.6000	29.368
	49 2,6-Bis(tertbutyl)-4-methylph	205	12.207	12.207	(0.998)	827299	28.0000	28.965
*	50 Acenaphthene-d10	164	12.227	12.228	(1.000)	513924	20.0000	
	47 Acenaphthene	153	12.279	12.280	(1.004)	826251	27.6000	27.744
	51 2,4-Dinitrophenol	184	12.300	12.300	(1.006)	129220	27.6000	26.583
	52 4-Nitrophenol	109	12.372	12.362	(1.012)	136163	27.6000	32.390
	53 2,4-Dinitrotoluene	165	12.507	12.507	(1.023)	353822	27.6000	29.440
	54 Dibenzofuran	168	12.559	12.559	(1.027)	1308656	27.6000	28.546
	55 Diethylphthalate	149	12.900	12.901	(1.055)	1003342	27.6000	28.944
	56 4-Chlorophenyl-phenylether	204	13.107	13.108	(1.072)	526553	27.6000	28.645
	57 Fluorene	166	13.128	13.128	(1.074)	1014579	27.6000	28.088
	58 4-Nitroaniline	138	13.138	13.139	(1.074)	218458	27.6000	27.490
	59 4,6-Dinitro-2-methylphenol	198	13.190	13.190	(0.898)	212058	27.6000	30.246
	60 Tributyl Phosphate	99	13.242	13.232	(0.901)	850798	28.0000	30.835
	61 Diphenylamine (Nnitrosodiphen	169	13.304	13.304	(0.906)	923330	27.6000	28.117
$	62 2,4,6-Tribromophenol	330	13.532	13.522	(1.107)	166078	30.8000	32.600
	63 4-Bromophenyl-phenylether	248	13.925	13.925	(0.948)	329986	27.6000	27.638
	64 Hexachlorobenzene	284	14.049	14.050	(0.956)	328518	27.6000	27.242
	65 Pentachlorophenol	266	14.360	14.360	(0.977)	206011	27.6000	30.631
*	66 Phenanthrene-d10	188	14.691	14.691	(1.000)	1024741	20.0000	
	67 Phenanthrene	178	14.732	14.733	(1.003)	1579227	27.6000	27.876
	68 Anthracene	178	14.815	14.815	(1.008)	1608159	27.6000	27.972
	70 Di-n-butylphthalate	149	15.602	15.602	(1.062)	1713945	27.6000	28.929(a)
	71 Fluoranthene	202	16.709	16.710	(1.137)	1921352	27.6000	27.577
	72 Pyrene	202	17.092	17.093	(0.893)	1954871	27.6000	28.641
$	73 Terphenyl-d14	244	17.309	17.309	(0.905)	1010688	22.6400	23.261
	74 Butylbenzylphthalate	149	18.096	18.097	(0.946)	803405	27.6000	30.744
	75 bis(2-Ethylhexyl)phthalate	149	19.059	19.059	(0.996)	1127109	27.6000	30.286(a)
	76 Benzo(a)anthracene	228	19.100	19.100	(0.998)	1836844	27.6000	28.566
*	77 Chrysene-d12	240	19.131	19.121	(1.000)	1129043	20.0000	

Data File: 13052903_ccv4.D
Report Date: 03-Jun-2013 07:12

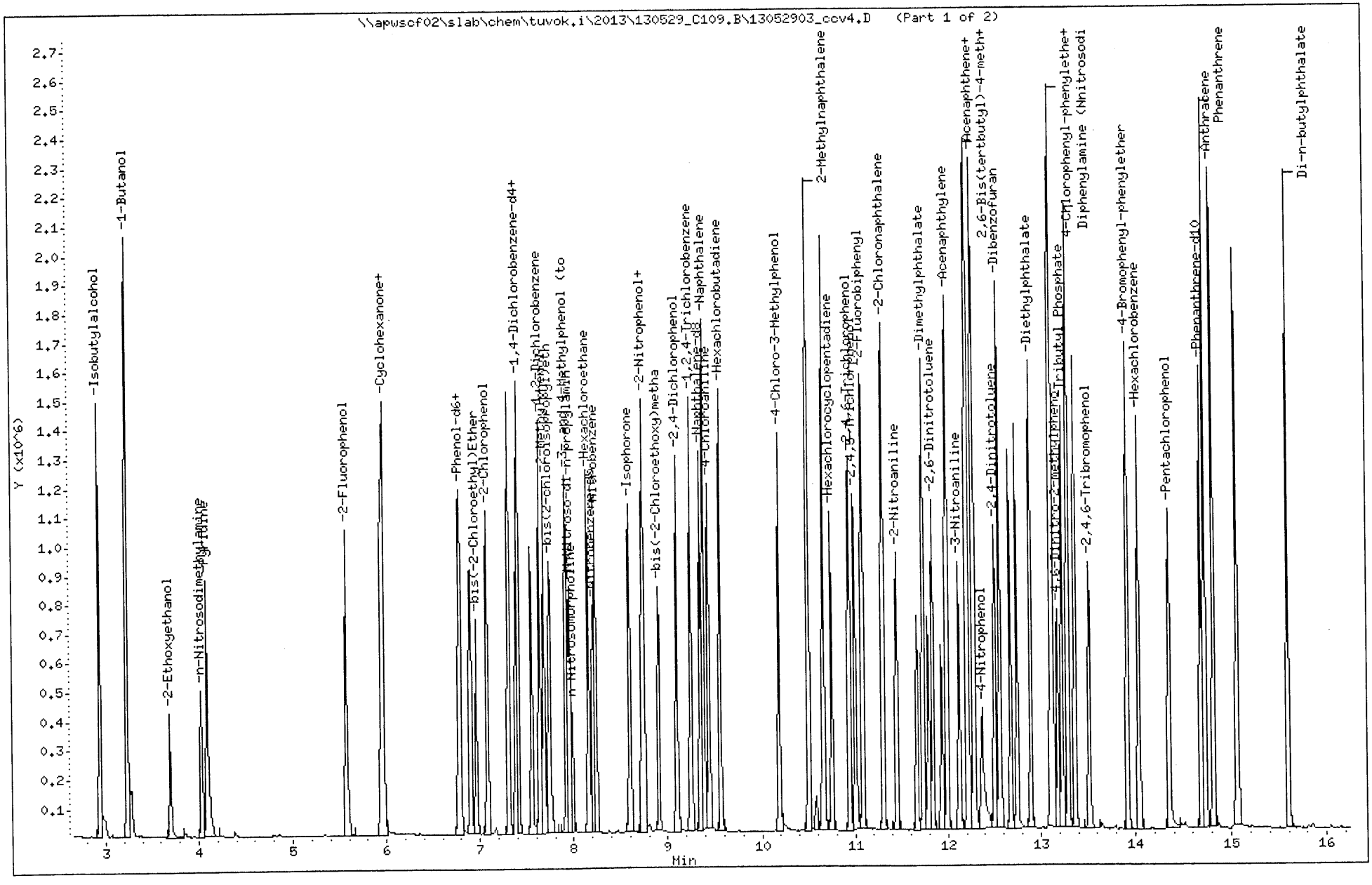
Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (NG)	AMOUNTS ON-COL (NG)
78 Chrysene	228	19.172	19.173	(1.002)	1663378	27.6000	28.400
79 Di-n-octylphthalate	149	20.270	20.270	(0.920)	1909034	27.6000	31.106
80 Benzo(b)fluoranthene	252	21.180	21.181	(0.961)	1819053	27.6000	29.485
81 Benzo(k)fluoranthene	252	21.242	21.243	(0.964)	1715673	27.6000	27.373
82 Benzo(a)pyrene	252	21.915	21.916	(0.994)	1589697	27.6000	29.045
* 83 Perylene-d12	264	22.039	22.040	(1.000)	1028172	20.0000	
84 Indeno(1,2,3-cd)pyrene	276	25.020	25.021	(1.135)	1342322	27.6000	32.426
85 Dibenzo(a,h)anthracene	278	25.072	25.073	(1.138)	1073980	27.6000	32.284
86 Benzo(g,h,i)perylene	276	25.941	25.932	(1.177)	1011513	27.6000	32.706(M)

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

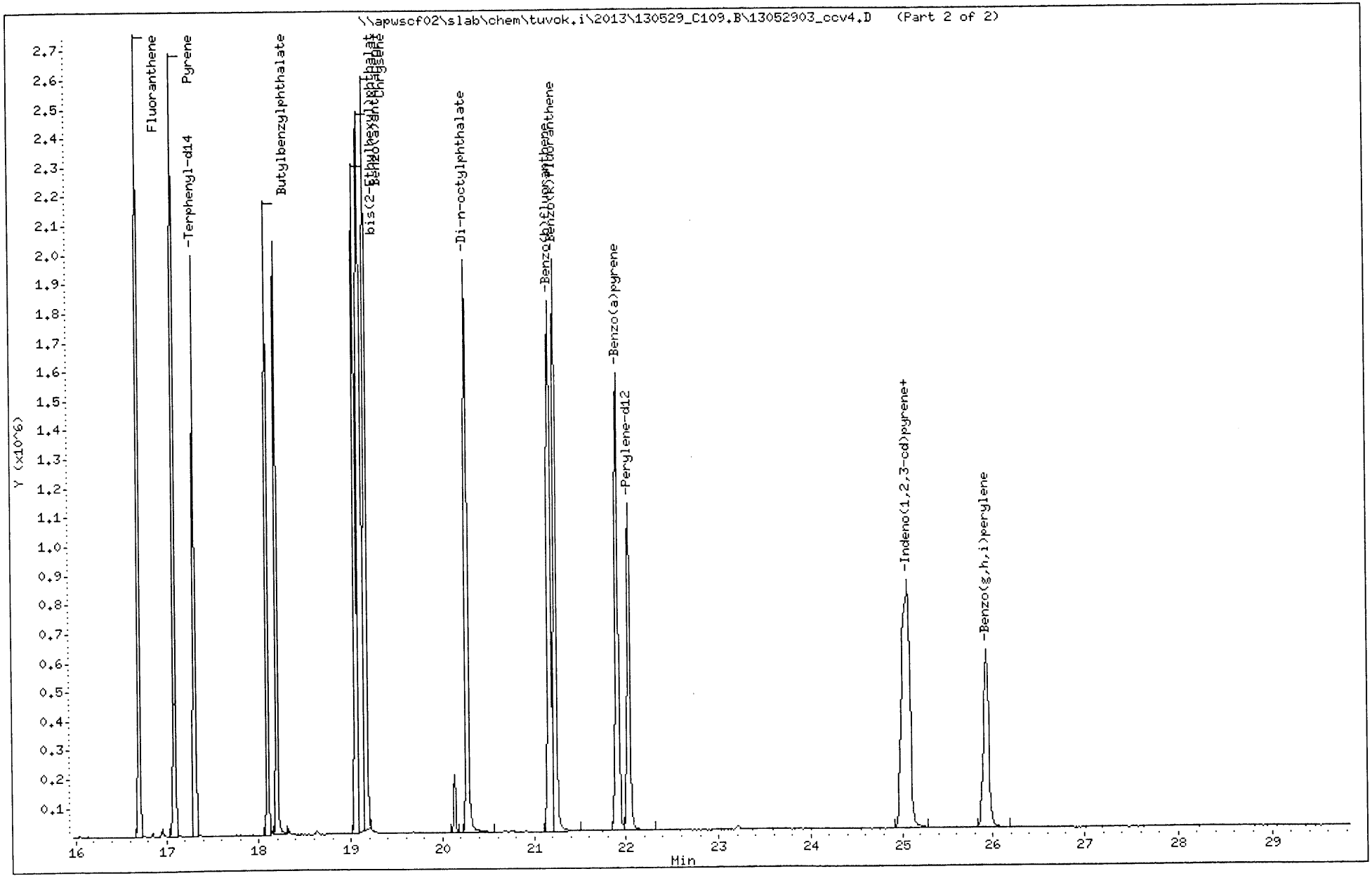
Data File: \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\13052903_ccv4.D
Date : 29-MAY-2013 09:41
Client ID: ccv4
Sample Info: CCV 4,HNF-N-1896-152.02
Volume Injected (uL): 1.0
Column phase: DB-5MS

Instrument: tuvok.i
Operator: cjo
Column diameter: 0.25



Data File: \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\13052903_ccv4.D
Date : 29-MAY-2013 09:41
Client ID: ccv4
Sample Info: CCV 4,HNF-N-1896-152.02
Volume Injected (uL): 1.0
Column phase: DB-5MS

Instrument: tuvok.i
Operator: cjo
Column diameter: 0.25



Data File: 13052905BLANK.D
Report Date: 30-May-2013 14:17

WSCF

BASE NEUTRAL QUANT AND RATIO REPORT

Data file : \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\13052905BLANK.D
Lab Smp Id: BLANK Client Smp ID: BLANK
Inj Date : 29-MAY-2013 10:39
Operator : cjo Inst ID: tuvok.i
Smp Info : 3237 Blank
Misc Info : Added 2.5ul Int.Std. HNF-N-1896-146.01
Comment :
Method : \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\TCNTC130523.m
Meth Date : 30-May-2013 14:16 lpm Quant Type: ISTD
Cal Date : 23-MAY-2013 14:01 Cal File: 13052307Cal3.D
Als bottle: 5 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: NTC+TC.sub
Target Version: 4.14

Concentration Formula: Amt * DF * Uf * Vt/(Vi * Ws * (100 - M)/100) * CpndVa

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vt	2000.000	Volume of final extract (uL)(1000 low, 2
Vi	1.000	Volume injected (uL)
Ws	3.000	Weight of sample extracted (g)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (NG)	CONCENTRATIONS FINAL (ug/Kg)
$	7 2-Fluorophenol	112	5.572	5.573	(0.755)	439300	27.6141	18409
$	10 Phenol-d6	99	6.773	6.773	(0.917)	487344	29.1155	19410
*	15 1,4-Dichlorobenzene-d4	152	7.383	7.384	(1.000)	254561	20.0000	
$	24 Nitrobenzene-d5	82	8.201	8.212	(0.877)	236249	14.9040	9936.0
*	32 Naphthalene-d8	136	9.350	9.351	(1.000)	966180	20.0000	
$	41 2-Fluorobiphenyl	172	11.079	11.079	(0.907)	646682	15.3803	10254
*	50 Acenaphthene-d10	164	12.217	12.228	(1.000)	566699	20.0000	
$	62 2,4,6-Tribromophenol	330	13.521	13.522	(1.107)	163978	29.1900	19460
*	66 Phenanthrene-d10	188	14.691	14.691	(1.000)	993513	20.0000	
$	73 Terphenyl-d14	244	17.309	17.309	(0.906)	932522	19.8633	13242
*	77 Chrysene-d12	240	19.110	19.121	(1.000)	1219930	20.0000	
*	83 Perylene-d12	264	22.029	22.040	(1.000)	936591	20.0000	

Data File: 13052905BLANK.D
Report Date: 30-May-2013 14:17

WSCF

BASE NEUTRAL QUANT AND RATIO REPORT

Data file : \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\13052905BLANK.D
Lab Smp Id: BLANK Client Smp ID: BLANK
Inj Date : 29-MAY-2013 10:39
Operator : cjo Inst ID: tuvok.i
Smp Info : 3237 Blank
Misc Info : Added 2.5ul Int.Std. HNF-N-1896-146.01
Comment :
Method : \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\TCNTC130523.m
Meth Date : 30-May-2013 14:16 lpm Quant Type: ISTD
Cal Date : 23-MAY-2013 14:01 Cal File: 13052307Cal3.D
Als bottle: 5 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: NTC+TC.sub
Target Version: 4.14

Concentration Formula: Amt * DF * Uf * Vt/(Vi * Ws * (100 - M)/100) * CpndVa

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vt	2000.000	Volume of final extract (uL)(1000 low, 2
Vi	1.000	Volume injected (uL)
Ws	3.000	Weight of sample extracted (g)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

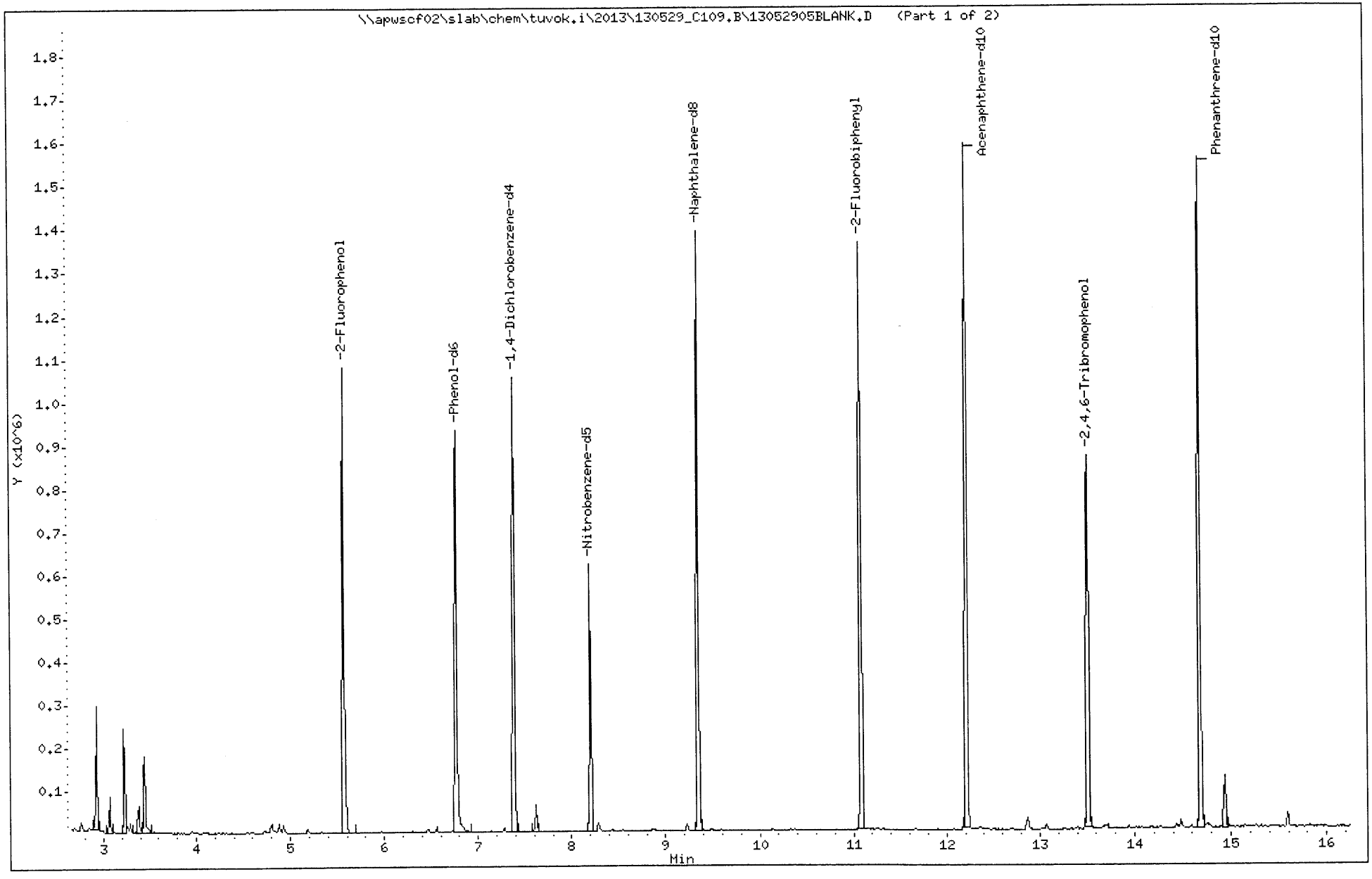
ISTD	RT	AREA	AMOUNT
* 15 1,4-Dichlorobenzene-d4	7.384	1422922	20.000

		CONCENTRATIONS			QUANT		
RT	AREA	ON-COL(NG)	FINAL(ug/Kg)	QUAL	LIBRARY	LIB ENTRY	CPND #
Trichloromethane				CAS #: 67-66-3			
2.923	315629	4.43634972	2957.6	95	NIST02.L	8713	15
Unknown				CAS #:			
3.223	299636	4.21155123	2807.7	0		0	15
3-Penten-2-ol				CAS #: 1569-50-2			
3.451	261939	3.68170866	2454.5	80	NIST02.L	1694	15

Data File: \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\13052905BLANK.D
Date : 29-MAY-2013 10:39
Client ID: BLANK
Sample Info: 3237 Blank
Volume Injected (uL): 1.0
Column phase: DB-5MS

Instrument: tuvok.i

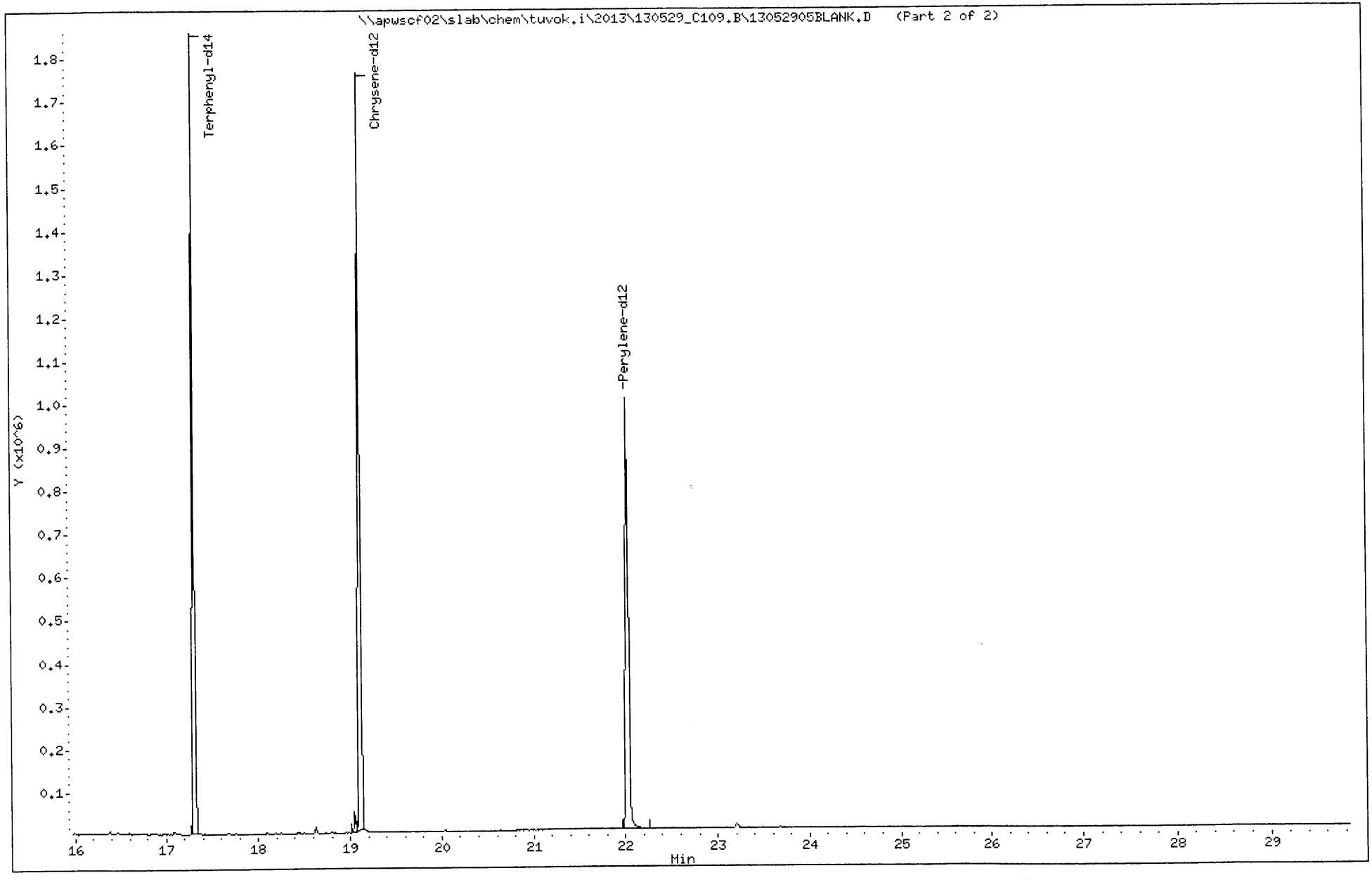
Operator: cjo
Column diameter: 0.25



Data File: \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\13052905BLANK.D
Date : 29-MAY-2013 10:39
Client ID: BLANK
Sample Info: 3237 Blank
Volume Injected (uL): 1.0
Column phase: DB-5MS

Instrument: tuvok.i

Operator: cjo
Column diameter: 0.25



Data File: 13052906LCS.D
Report Date: 30-May-2013 14:17

WSCF

BASE NEUTRAL QUANT AND RATIO REPORT

Data file : \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\13052906LCS.D
Lab Smp Id: LCS Client Smp ID: LCS
Inj Date : 29-MAY-2013 11:23
Operator : cjo Inst ID: tuvok.i
Smp Info : 3238 LCS
Misc Info : Added 2.5ul Int.Std. HNF-N-1896-146.01
Comment :
Method : \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\TCNTC130523.m
Meth Date : 30-May-2013 14:16 lpm Quant Type: ISTD
Cal Date : 23-MAY-2013 14:01 Cal File: 13052307Cal3.D
Als bottle: 6 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: NTC+TC.sub
Target Version: 4.14

Concentration Formula: Amt * DF * Uf * Vt/(Vi * Ws * (100 - M)/100) * CpndVa

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vt	2000.000	Volume of final extract (uL)(1000 low, 2
Vi	1.000	Volume injected (uL)
Ws	3.000	Weight of sample extracted (g)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (NG)	FINAL (ug/Kg)
M	1 Methylphenol (total)	108				259245	17.6678	11778
	2 Isobutylalcohol	43	2.943	2.944	(0.399)	129739	10.6841	7122.7(aR)
	3 1-Butanol	56	3.233	3.244	(0.438)	257530	27.0249	18016(aR)
	4 2-Ethoxyethanol	59	3.699	3.699	(0.501)	74711	8.34843	5565.6(a)
	5 n-Nitrosodimethylamine	42	4.030	4.030	(0.546)	87183	8.55886	5705.9
	6 Pyridine	79	4.091	4.093	(0.554)	131401	8.26346	5509.0
$	7 2-Fluorophenol	112	5.572	5.573	(0.755)	494023	30.9580	20639
	8 Cyclohexanone	55	5.945	5.945	(0.805)	142113	9.14503	6096.7(a)
	9 2-Butoxyethanol	87	5.966	5.976	(0.808)	47149	18.3338	12222(a)
$	10 Phenol-d6	99	6.773	6.773	(0.917)	541752	32.2659	21511
	11 Phenol	94	6.794	6.794	(0.920)	146455	8.46942	5646.3
	13 bis(-2-Chloroethyl)Ether	93	6.959	6.960	(0.943)	123692	8.71218	5808.1
	14 2-Chlorophenol	128	7.073	7.084	(0.958)	156809	8.85399	5902.7
*	15 1,4-Dichlorobenzene-d4	152	7.384	7.384	(1.000)	255350	20.0000	
	16 1,4-Dichlorobenzene	146	7.415	7.415	(1.004)	190485	9.07865	6052.4(a)
	17 1,2-Dichlorobenzene	146	7.642	7.643	(1.035)	183229	9.15070	6100.5(a)
	18 2-Methylphenol	108	7.684	7.684	(1.041)	121012	8.41048	5607.0
	19 bis(2-chloroisopropyl)ether	45	7.746	7.746	(1.049)	243940	9.50528	6336.8
	20 3- and 4-Methylphenol (total)	108	7.912	7.922	(1.071)	138233	9.25736	6171.6
	21 N-Nitroso-di-n-propylamine	70	7.943	7.964	(1.076)	79192	8.45193	5634.6

Data File: 13052906LCS.D
Report Date: 30-May-2013 14:17

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (NG)	CONCENTRATIONS FINAL (ug/Kg)
	22 n-Nitrosomorpholine	56	7.974	7.995	(1.080)	87906	8.29898	5532.6(a)
	23 Hexachloroethane	117	8.160	8.160	(1.105)	64044	8.90466	5936.4(a)
$	24 Nitrobenzene-d5	82	8.201	8.212	(0.877)	261693	16.5262	11017
	25 Nitrobenzene	77	8.231	8.243	(0.880)	132386	9.16776	6111.8
	26 Isophorone	82	8.595	8.605	(0.919)	225654	9.26550	6177.0
	27 2-Nitrophenol	139	8.728	8.730	(0.934)	90749	9.83028	6553.5
	28 2,4-Dimethylphenol	107	8.740	8.750	(0.935)	106214	6.87379	4582.5(R)
	29 bis(-2-Chloroethoxy)methane	93	8.905	8.905	(0.952)	141286	9.44749	6298.3
	30 2,4-Dichlorophenol	162	9.102	9.102	(0.973)	149257	9.57530	6383.5
	31 1,2,4-Trichlorobenzene	180	9.247	9.247	(0.989)	166841	9.52731	6351.5(R)
*	32 Naphthalene-d8	136	9.350	9.351	(1.000)	965185	20.0000	
	33 Naphthalene	128	9.381	9.392	(1.003)	443288	9.40585	6270.6
	34 4-Chloroaniline	127	9.433	9.444	(1.009)	166460	8.85919	5906.1
	35 Hexachlorobutadiene	225	9.568	9.568	(1.023)	100262	9.50989	6339.9
	36 4-Chloro-3-Methylphenol	107	10.189	10.189	(1.090)	121167	9.29671	6197.8
	37 2-Methylnaphthalene	142	10.499	10.499	(1.123)	330786	9.54645	6364.3
	39 2,4,6-Trichlorophenol	196	10.934	10.944	(0.895)	114865	9.30856	6205.7
	40 2,4,5-Trichlorphenol	196	10.996	11.006	(0.900)	120228	9.15485	6103.2
$	41 2-Fluorobiphenyl	172	11.079	11.079	(0.907)	713893	17.0034	11336
	42 2-Chloronaphthalene	162	11.296	11.306	(0.925)	328697	9.23898	6159.3
	43 2-Nitroaniline	65	11.441	11.441	(0.936)	75214	9.08423	6056.2
	44 Dimethylphthalate	163	11.731	11.741	(0.960)	391573	9.42343	6282.3
	45 2,6-Dinitrotoluene	165	11.834	11.844	(0.969)	96438	9.52435	6349.6
	46 Acenaphthylene	152	11.990	11.989	(0.981)	496430	9.06928	6046.2
	48 3-Nitroaniline	138	12.114	12.124	(0.992)	87570	8.65808	5772.0
	49 2,6-Bis(tertbutyl)-4-methylph	205	12.207	12.207	(0.999)	139416	4.43296	2955.3(aR)
*	50 Acenaphthene-d10	164	12.217	12.228	(1.000)	565879	20.0000	
	47 Acenaphthene	153	12.269	12.280	(1.004)	304581	9.28815	6192.1
	51 2,4-Dinitrophenol	184	12.290	12.300	(1.006)	18649	5.57805	3718.7(R)
	52 4-Nitrophenol	109	12.362	12.362	(1.012)	43291	9.35254	6235.0
	53 2,4-Dinitrotoluene	165	12.497	12.507	(1.023)	130164	9.83617	6557.4
	54 Dibenzofuran	168	12.559	12.559	(1.028)	465193	9.21581	6143.9
	55 Diethylphthalate	149	12.890	12.901	(1.055)	378330	9.91200	6608.0
	56 4-Chlorophenyl-phenylether	204	13.107	13.108	(1.073)	190523	9.41319	6275.5
	57 Fluorene	166	13.128	13.128	(1.075)	383748	9.64855	6432.4
	58 4-Nitroaniline	138	13.118	13.139	(1.074)	73811	8.43541	5623.6
	59 4,6-Dinitro-2-methylphenol	198	13.180	13.190	(0.897)	67126	9.52633	6350.9
	60 Tributyl Phosphate	99	13.232	13.232	(0.901)	306153	11.0401	7360.1
	61 Diphenylamine (Nnitrosodiphen	169	13.294	13.304	(0.905)	336921	10.2084	6805.6
$	62 2,4,6-Tribromophenol	330	13.521	13.522	(1.107)	196377	35.0081	23339
	63 4-Bromophenyl-phenylether	248	13.925	13.925	(0.948)	125009	10.4176	6945.1
	64 Hexachlorobenzene	284	14.039	14.050	(0.956)	125674	10.3691	6912.7
	65 Pentachlorophenol	266	14.349	14.360	(0.977)	70448	10.4223	6948.2
*	66 Phenanthrene-d10	188	14.691	14.691	(1.000)	1029895	20.0000	
	67 Phenanthrene	178	14.732	14.733	(1.003)	599644	10.5319	7021.2
	68 Anthracene	178	14.815	14.815	(1.008)	606611	10.4983	6998.9
	70 Di-n-butylphthalate	149	15.602	15.602	(1.062)	687628	11.5482	7698.8(a)
	71 Fluoranthene	202	16.709	16.710	(1.137)	753948	10.7672	7178.2
	72 Pyrene	202	17.091	17.093	(0.894)	775415	10.6128	7075.2
$	73 Terphenyl-d14	244	17.309	17.309	(0.905)	975039	20.9635	13976
	74 Butylbenzylphthalate	149	18.096	18.097	(0.946)	306944	10.9727	7315.2
	75 bis(2-Ethylhexyl)phthalate	149	19.048	19.059	(0.996)	477999	11.9985	7999.0(a)
	76 Benzo(a)anthracene	228	19.100	19.100	(0.999)	699940	10.1688	6779.2
*	77 Chrysene-d12	240	19.121	19.121	(1.000)	1208609	20.0000	

Data File: 13052906LCS.D
Report Date: 30-May-2013 14:17

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (NG)	CONCENTRATIONS FINAL (ug/Kg)
78 Chrysene	228	19.162	19.173	(1.002)	641964	10.2390	6826.0
79 Di-n-octylphthalate	149	20.270	20.270	(0.920)	726143	11.5010	7667.4
80 Benzo(b)fluoranthene	252	21.160	21.181	(0.961)	636472	10.0279	6685.3
81 Benzo(k)fluoranthene	252	21.222	21.243	(0.963)	691470	10.7236	7149.0
82 Benzo(a)pyrene	252	21.895	21.916	(0.994)	549594	9.76072	6507.1
* 83 Perylene-d12	264	22.029	22.040	(1.000)	1057762	20.0000	
84 Indeno(1,2,3-cd)pyrene	276	25.000	25.021	(1.135)	421615	9.89974	6599.8
85 Dibenzo(a,h)anthracene	278	25.052	25.073	(1.137)	344781	10.0742	6716.1
86 Benzo(g,h,i)perylene	276	25.911	25.932	(1.176)	312489	9.82143	6547.6(M)

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
R - Spike/Surrogate failed recovery limits.
M - Compound response manually integrated.

Data File: 13052906LCS.D
Report Date: 30-May-2013 14:17

WSCF

BASE NEUTRAL QUANT AND RATIO REPORT

Data file : \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\13052906LCS.D
Lab Smp Id: LCS Client Smp ID: LCS
Inj Date : 29-MAY-2013 11:23
Operator : cjo Inst ID: tuvok.i
Smp Info : 3238 LCS
Misc Info : Added 2.5ul Int.Std. HNF-N-1896-146.01
Comment :
Method : \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\TCNTC130523.m
Meth Date : 30-May-2013 14:16 lpm Quant Type: ISTD
Cal Date : 23-MAY-2013 14:01 Cal File: 13052307Cal3.D
Als bottle: 6 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: NTC+TC.sub
Target Version: 4.14

- NO TENTATIVELY IDENTIFIED COMPOUNDS -

Data File: \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\13052906LCS.D

Date : 29-MAY-2013 11:23

Client ID: LCS

Sample Info: 3238 LCS

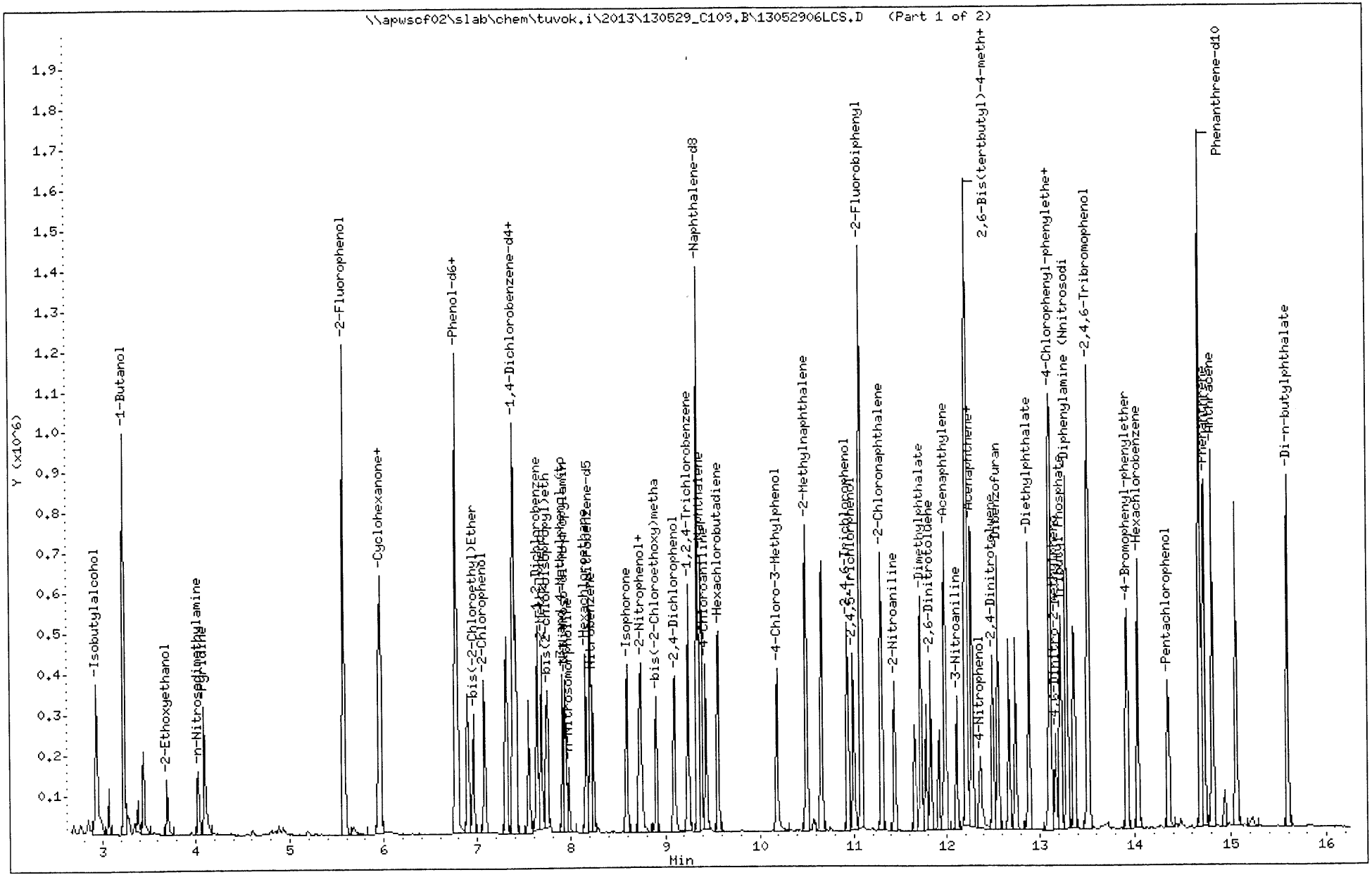
Volume Injected (uL): 1.0

Column phase: DB-5MS

Instrument: tuvok.i

Operator: cjo

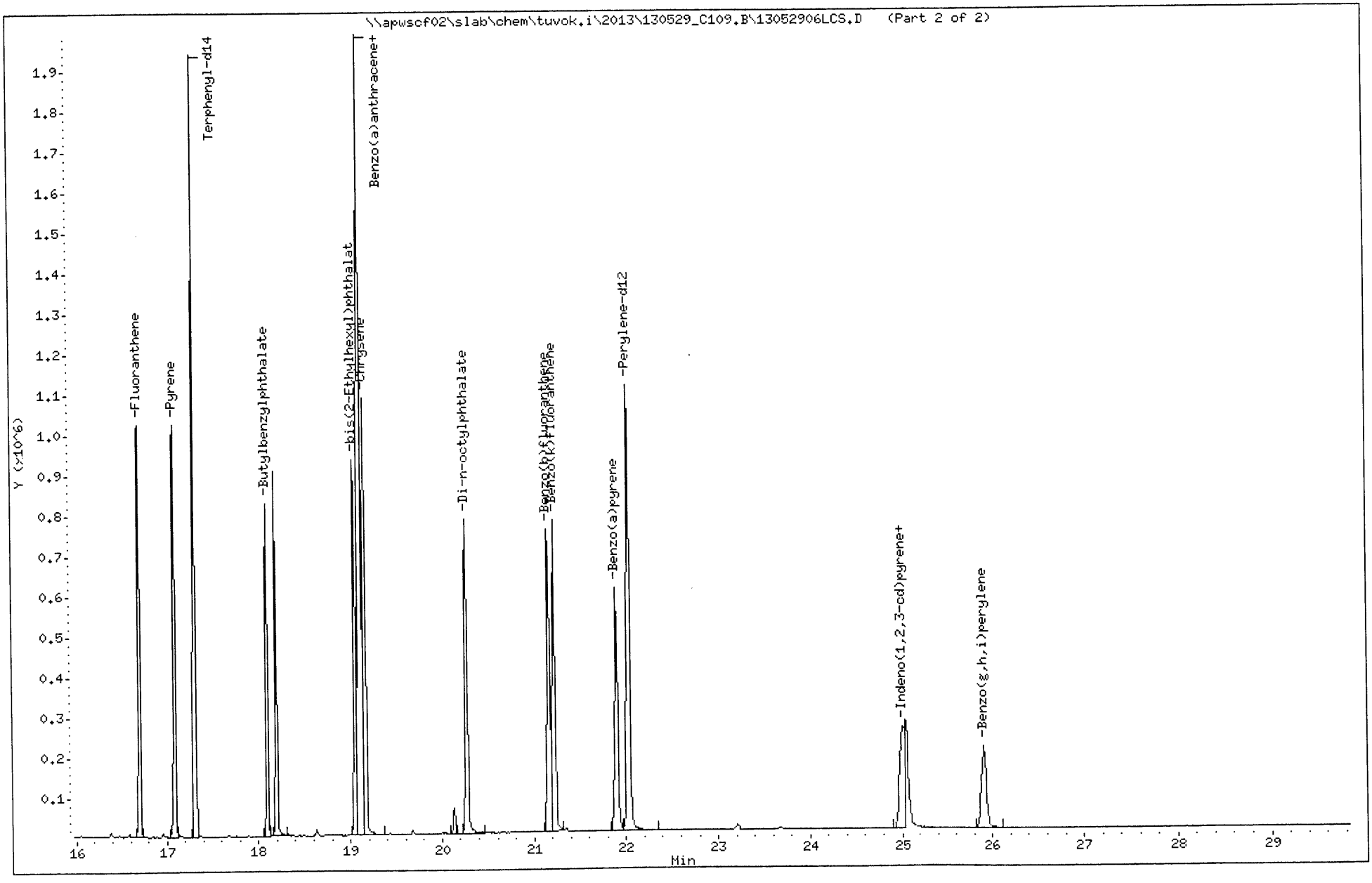
Column diameter: 0.25



Data File: \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\13052906LCS.D
Date : 29-MAY-2013 11:23
Client ID: LCS
Sample Info: 3238 LCS
Volume Injected (uL): 1.0
Column phase: DB-5MS

Instrument: tuvok.i

Operator: cjo
Column diameter: 0.25



Data File: 13052908_4247.D
Report Date: 30-May-2013 14:17

WSCF

BASE NEUTRAL QUANT AND RATIO REPORT

Data file : \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\13052908_4247.D
Lab Smp Id: S13T004247 Client Smp ID: S13T004247
Inj Date : 29-MAY-2013 12:21
Operator : cjo Inst ID: tuvok.i
Smp Info : 3239 S13T004247-SAM
Misc Info : Added 2.25ul Int.Std. HNF-N-1896-146.01
Comment :
Method : \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\TCNTC130523.m
Meth Date : 30-May-2013 14:16 lpm Quant Type: ISTD
Cal Date : 23-MAY-2013 14:01 Cal File: 13052307Cal3.D
Als bottle: 8
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: NTC+TC.sub
Target Version: 4.14

Concentration Formula: Amt * DF * Uf * Vt/(Vi * Ws * (100 - M)/100) * CpndVa

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vt	2000.000	Volume of final extract (uL)(1000 low, 2
Vi	1.000	Volume injected (uL)
Ws	3.103	Weight of sample extracted (g)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (NG)	CONCENTRATIONS FINAL (ug/Kg)
$	7 2-Fluorophenol	112	5.572	5.573	(0.755)	399738	24.4864	15782
$	10 Phenol-d6	99	6.773	6.773	(0.917)	514397	29.9479	19302
*	15 1,4-Dichlorobenzene-d4	152	7.384	7.384	(1.000)	261223	20.0000	
$	24 Nitrobenzene-d5	82	8.201	8.212	(0.877)	233503	14.4915	9340.3
*	32 Naphthalene-d8	136	9.350	9.351	(1.000)	982136	20.0000	
$	41 2-Fluorobiphenyl	172	11.079	11.079	(0.907)	648889	15.4221	9940.1
*	50 Acenaphthene-d10	164	12.217	12.228	(1.000)	567092	20.0000	
$	62 2,4,6-Tribromophenol	330	13.521	13.522	(1.107)	147107	26.1686	16867
*	66 Phenanthrene-d10	188	14.691	14.691	(1.000)	996449	20.0000	
$	73 Terphenyl-d14	244	17.309	17.309	(0.906)	973996	19.9532	12860
*	77 Chrysene-d12	240	19.110	19.121	(1.000)	1268450	20.0000	
*	83 Perylene-d12	264	22.029	22.040	(1.000)	990883	20.0000	

Data File: 13052908_4247.D
Report Date: 30-May-2013 14:17

WSCF

BASE NEUTRAL QUANT AND RATIO REPORT

Data file : \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\13052908_4247.D
Lab Smp Id: S13T004247 Client Smp ID: S13T004247
Inj Date : 29-MAY-2013 12:21
Operator : cjo Inst ID: tuvok.i
Smp Info : 3239 S13T004247-SAM
Misc Info : Added 2.25ul Int.Std. HNF-N-1896-146.01
Comment :
Method : \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\TCNTC130523.m
Meth Date : 30-May-2013 14:16 lpm Quant Type: ISTD
Cal Date : 23-MAY-2013 14:01 Cal File: 13052307Cal3.D
Als bottle: 8
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: NTC+TC.sub
Target Version: 4.14

Concentration Formula: Amt * DF * Uf * Vt/(Vi * Ws * (100 - M)/100) * CpndVa

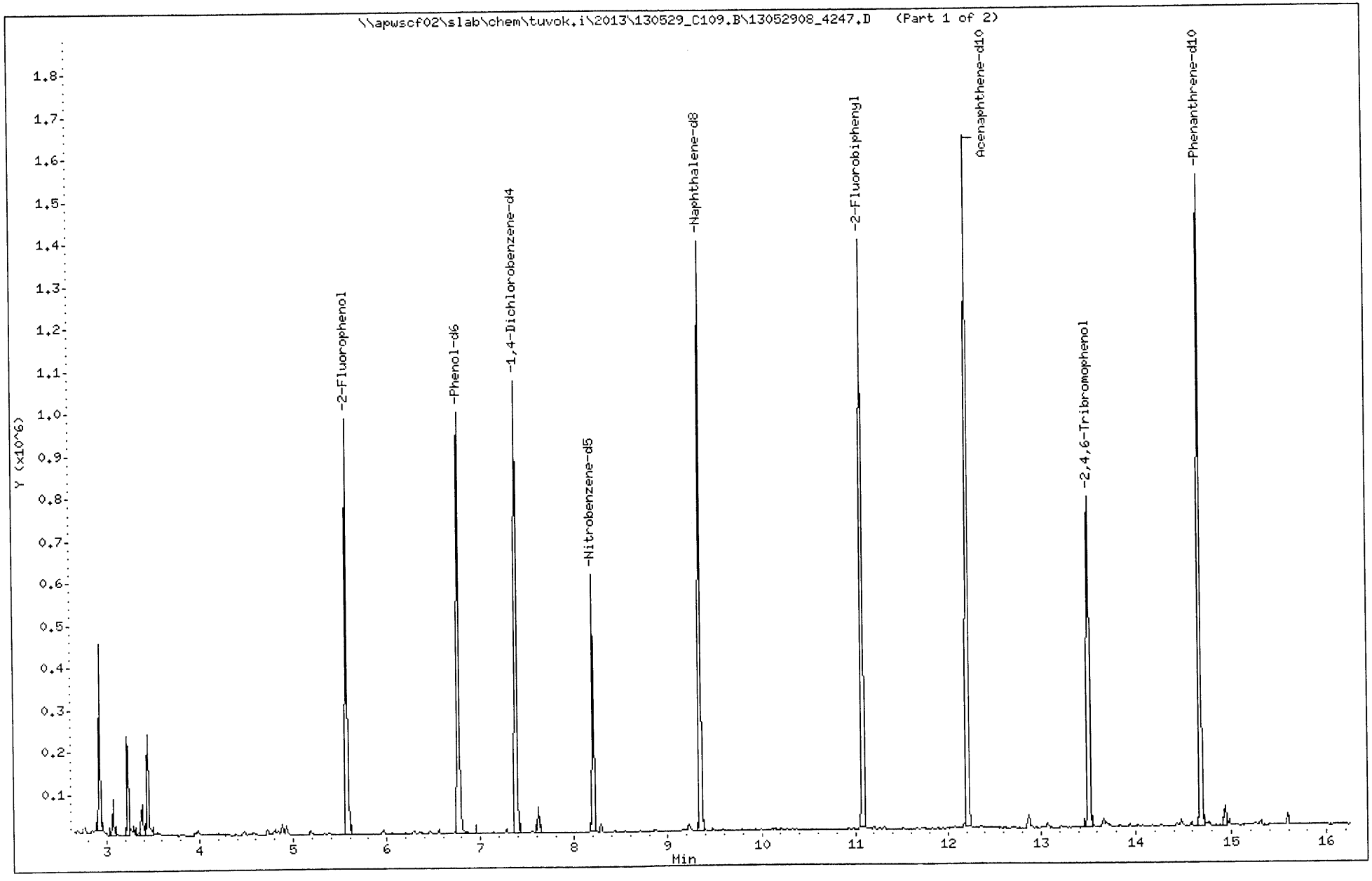
Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vt	2000.000	Volume of final extract (uL)(1000 low, 2
Vi	1.000	Volume injected (uL)
Ws	3.103	Weight of sample extracted (g)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

ISTD	RT	AREA	AMOUNT
* 15 1,4-Dichlorobenzene-d4	7.384	1450944	20.000

		CONCENTRATIONS			QUANT		
RT	AREA	ON-COL(NG)	FINAL(ug/Kg)	QUAL	LIBRARY	LIB ENTRY	CPND #
Trichloromethane				CAS #: 67-66-3			
2.923	482076	6.64499860	4283.0	87	NIST02.L	8712	15
3-methyl-2-Butanone				CAS #: 563-80-4			
3.223	316241	4.35909990	2809.6	83	SVHANFORD.L	3	15
3-Penten-2-ol				CAS #: 1569-50-2			
3.451	327487	4.51412048	2909.5	83	NIST02.L	1704	15

Data File: \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\13052908_4247.D
Date : 29-MAY-2013 12:21
Client ID: S13T004247
Sample Info: 3239 S13T004247-SAM
Volume Injected (uL): 1.0
Column phase: DB-5MS

Instrument: tuvok.i
Operator: cjo
Column diameter: 0.25



Data File: \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\13052908_4247.D

Date : 29-MAY-2013 12:21

Client ID: S13T004247

Sample Info: 3239 S13T004247-SAM

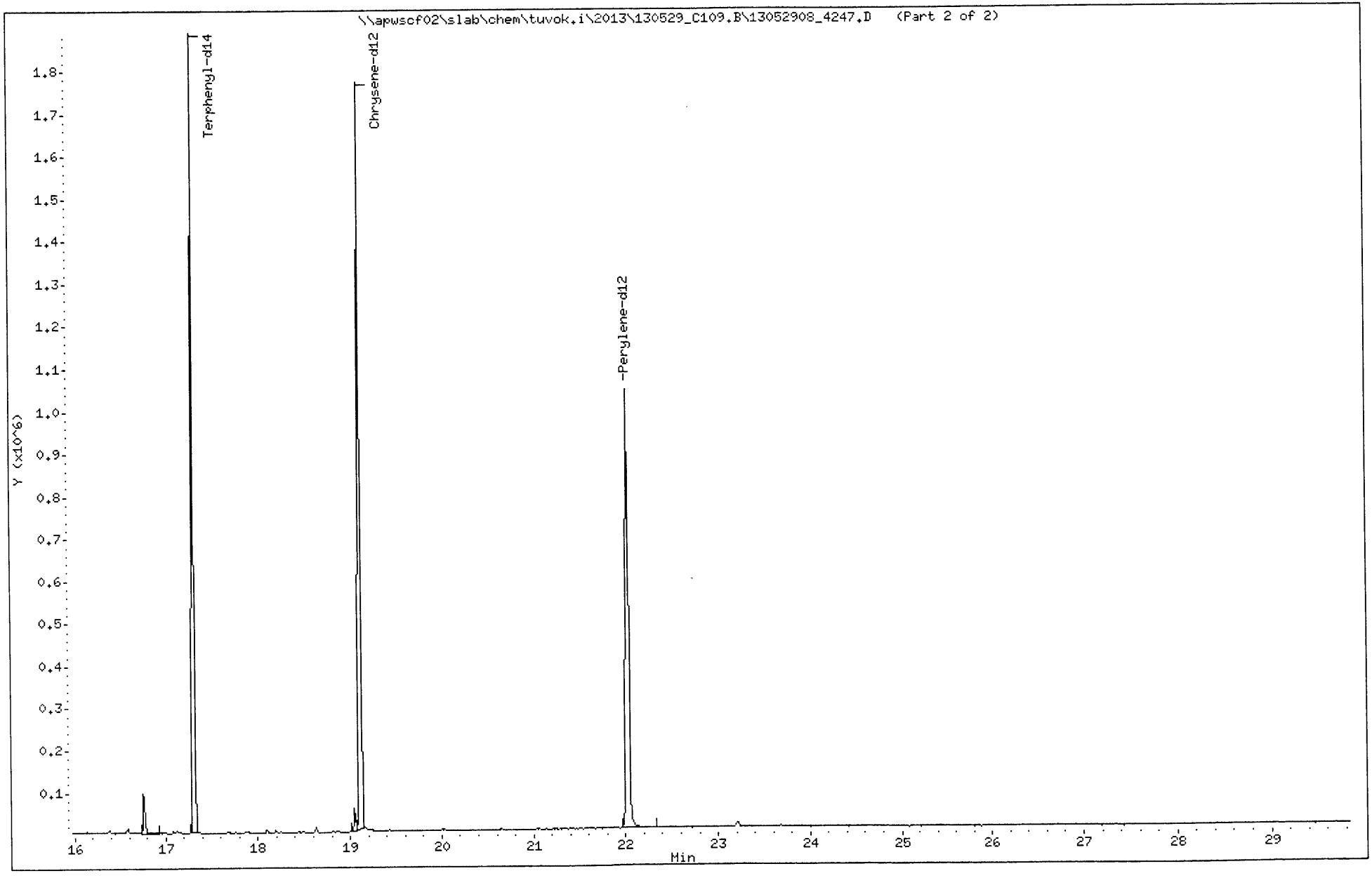
Volume Injected (uL): 1.0

Column phase: DB-5MS

Instrument: tuvok.i

Operator: cjo

Column diameter: 0.25



Data File: 13052909_4247Dup.d
Report Date: 30-May-2013 14:17

WSCF

BASE NEUTRAL QUANT AND RATIO REPORT

Data file : \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\13052909_4247Dup
Lab Smp Id: S13T004247DUP Client Smp ID: S13T004247DUP
Inj Date : 29-MAY-2013 13:04
Operator : cjo Inst ID: tuvok.i
Smp Info : 3240 S13T004247-DUP
Misc Info : Added 2.25ul Int.Std. HNF-N-1896-146.01
Comment :
Method : \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\TCNTC130523.m
Meth Date : 30-May-2013 14:16 lpm Quant Type: ISTD
Cal Date : 23-MAY-2013 14:01 Cal File: 13052307Cal3.D
Als bottle: 9
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: NTC+TC.sub
Target Version: 4.14

Concentration Formula: Amt * DF * Uf * Vt/(Vi * Ws * (100 - M)/100) * CpndVa

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vt	2000.000	Volume of final extract (uL)(1000 low, 2
Vi	1.000	Volume injected (uL)
Ws	3.127	Weight of sample extracted (g)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (NG)	CONCENTRATIONS FINAL (ug/Kg)
$	7 2-Fluorophenol	112	5.572	5.573	(0.755)	331138	20.5020	13113
$	10 Phenol-d6	99	6.773	6.773	(0.917)	513799	30.2342	19337
*	15 1,4-Dichlorobenzene-d4	152	7.384	7.384	(1.000)	258449	20.0000	
$	24 Nitrobenzene-d5	82	8.201	8.212	(0.877)	238575	14.8205	9479.1
*	32 Naphthalene-d8	136	9.350	9.351	(1.000)	981189	20.0000	
$	41 2-Fluorobiphenyl	172	11.079	11.079	(0.907)	671962	15.6459	10007
*	50 Acenaphthene-d10	164	12.217	12.228	(1.000)	578855	20.0000	
$	62 2,4,6-Tribromophenol	330	13.521	13.522	(1.107)	112115	19.5387	12497(R)
*	66 Phenanthrene-d10	188	14.691	14.691	(1.000)	1017232	20.0000	
$	73 Terphenyl-d14	244	17.309	17.309	(0.906)	1000091	20.9706	13412
*	77 Chrysene-d12	240	19.110	19.121	(1.000)	1239245	20.0000	
*	83 Perylene-d12	264	22.029	22.040	(1.000)	982379	20.0000	

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

Data File: 13052909_4247Dup.d
Report Date: 30-May-2013 14:17

WSCF

BASE NEUTRAL QUANT AND RATIO REPORT

Data file : \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\13052909_4247Dup
Lab Smp Id: S13T004247DUP Client Smp ID: S13T004247DUP
Inj Date : 29-MAY-2013 13:04
Operator : cjo Inst ID: tuvok.i
Smp Info : 3240 S13T004247-DUP
Misc Info : Added 2.25ul Int.Std. HNF-N-1896-146.01
Comment :
Method : \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\TCNTC130523.m
Meth Date : 30-May-2013 14:16 lpm Quant Type: ISTD
Cal Date : 23-MAY-2013 14:01 Cal File: 13052307Cal3.D
Als bottle: 9
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: NTC+TC.sub
Target Version: 4.14

Concentration Formula: Amt * DF * Uf * Vt/(Vi * Ws * (100 - M)/100) * CpndVa

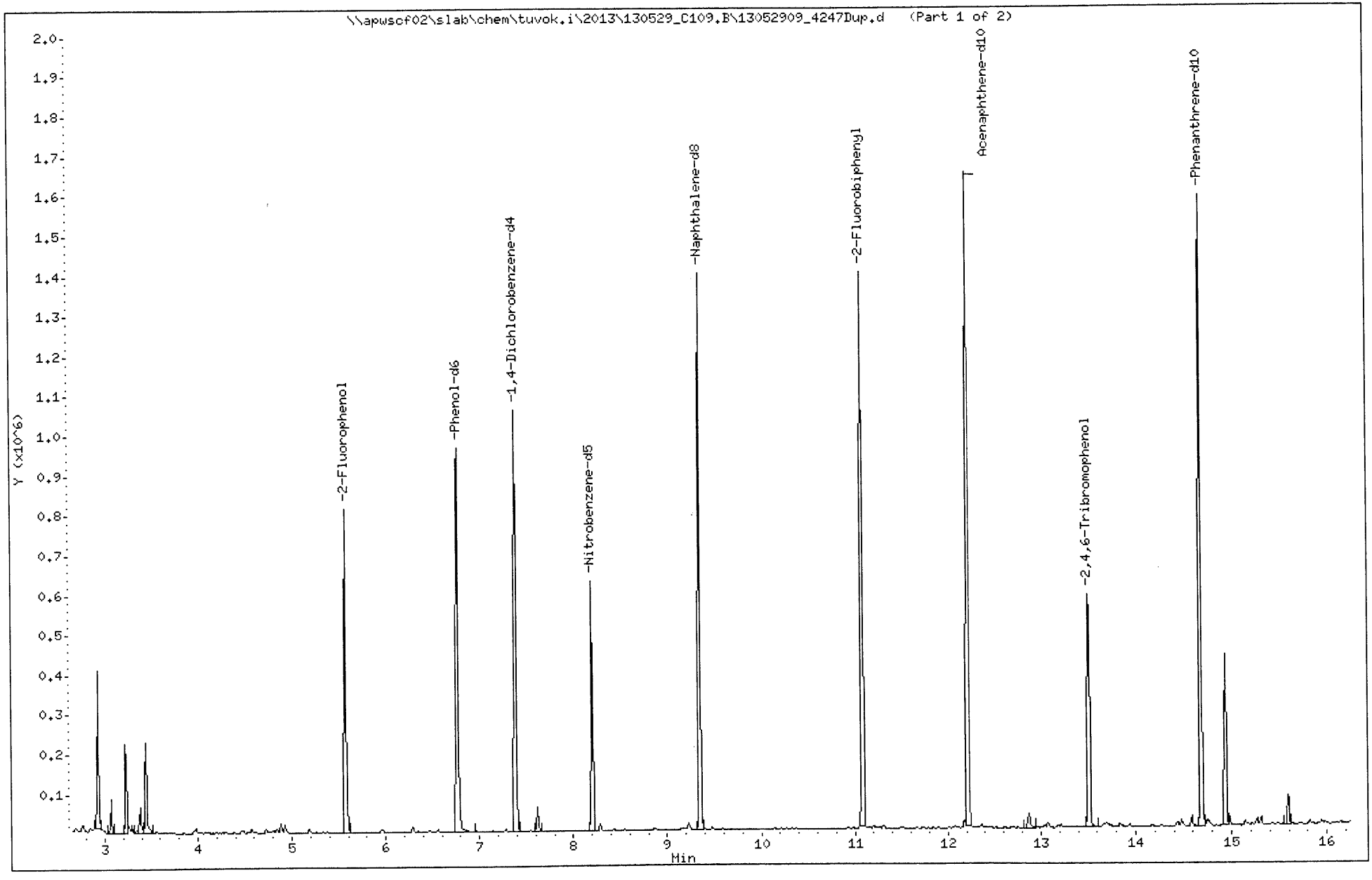
Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vt	2000.000	Volume of final extract (uL)(1000 low, 2
Vi	1.000	Volume injected (uL)
Ws	3.127	Weight of sample extracted (g)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

ISTD	RT	AREA	AMOUNT
* 15 1,4-Dichlorobenzene-d4	7.384	1448439	20.000
* 66 Phenanthrene-d10	14.691	2383859	20.000

		CONCENTRATIONS			QUANT		
RT	AREA	ON-COL(NG)	FINAL(ug/Kg)	QUAL	LIBRARY	LIB ENTRY	CPND #
Trichloromethane				CAS #: 67-66-3			
2.923	459328	6.34238970	4056.5	92	NIST02.L	8712	15
3-methyl-2-Butanone				CAS #: 563-80-4			
3.223	297553	4.10860776	2627.8	83	SVHANFORD.L	3	15
Unknown				CAS #:			
3.451	310020	4.28074154	2737.9	0		0	15
1,2-Benzenedicarboxylic acid, bis(2-meth				CAS #: 84-69-5			
14.940	532261	4.46553989	2856.1	86	NIST02.L	105074	66

Data File: \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\13052909_4247Dup.d
Date : 29-MAY-2013 13:04
Client ID: S13T004247DUP
Sample Info: 3240 S13T004247-DUP
Volume Injected (uL): 1.0
Column phase: DB-5MS

Instrument: tuvok.i
Operator: cjo
Column diameter: 0.25



Data File: \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\13052909_4247Dup.d

Date : 29-MAY-2013 13:04

Client ID: S13T004247DUP

Instrument: tuvok.i

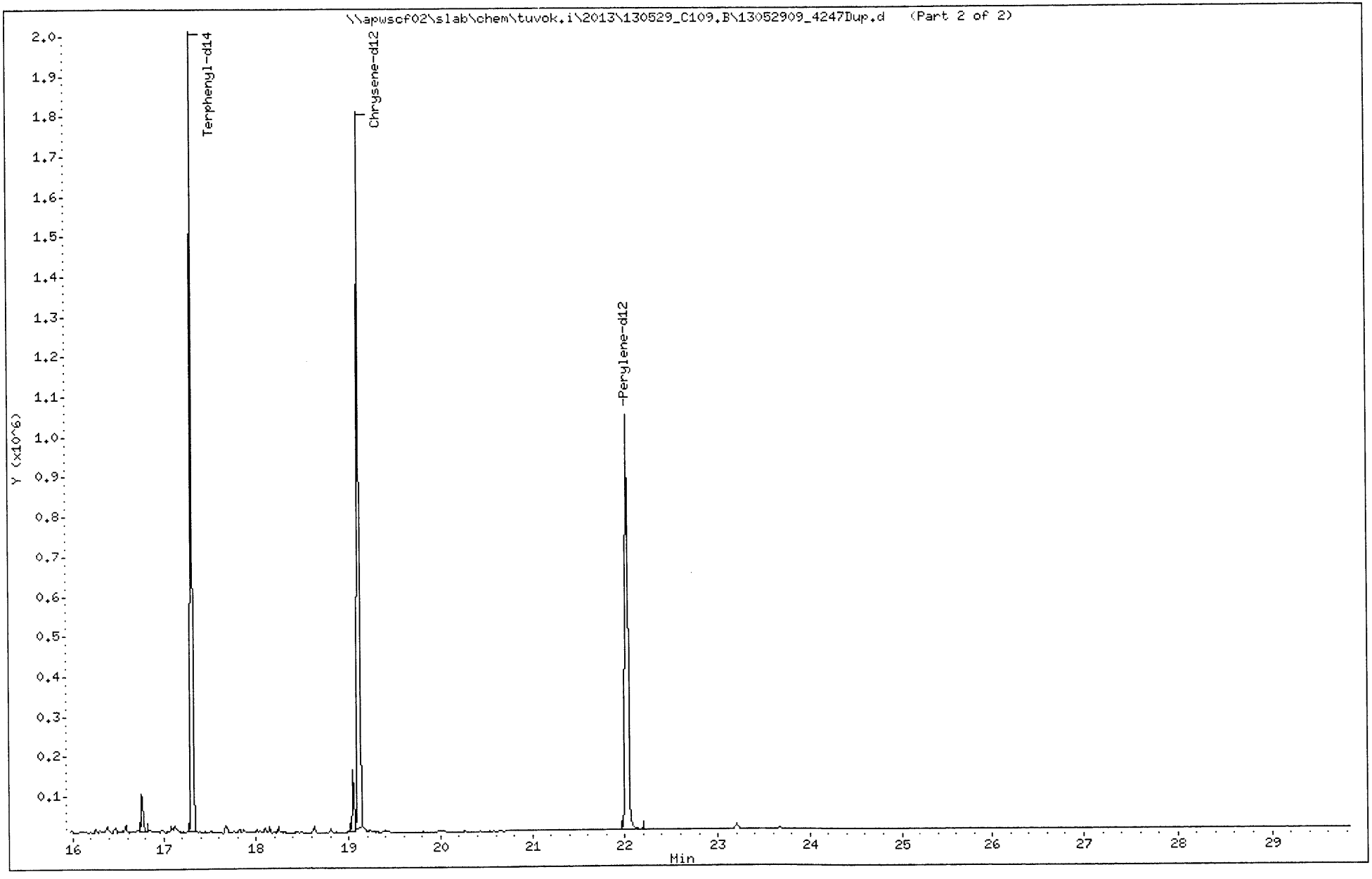
Sample Info: 3240 S13T004247-DUP

Volume Injected (uL): 1.0

Operator: cjo

Column phase: DB-5MS

Column diameter: 0.25



Data File: 13052910MS.D
Report Date: 10-Jun-2013 11:15

WSCF

BASE NEUTRAL QUANT AND RATIO REPORT

Data file : \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\13052910MS.D
Lab Smp Id: S13T004247MS Client Smp ID: S13T004247MS
Inj Date : 29-MAY-2013 13:48
Operator : cjo Inst ID: tuvok.i
Smp Info : 3241 S13T004247-MS
Misc Info : Added 2.25ul Int.Std. HNF-N-1896-146.01
Comment :
Method : \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\TCNTC130523.m
Meth Date : 03-Jun-2013 07:17 lpm Quant Type: ISTD
Cal Date : 23-MAY-2013 14:01 Cal File: 13052307Cal3.D
Als bottle: 10 QC Sample: MS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: NTC+TC.sub
Target Version: 4.14
Processing Host: WF21223

Concentration Formula: Amt * DF * Uf * Vt/(Vi * Ws * (100 - M)/100) * CpndVa

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vt	2000.000	Volume of final extract (uL)(1000 low, 2
Vi	1.000	Volume injected (uL)
Ws	3.181	Weight of sample extracted (g)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (NG)	CONCENTRATIONS FINAL (ug/Kg)
M	1 Methylphenol (total)	108				241613	16.6239	10452
	2 Isobutylalcohol	43	2.944	2.944	(0.399)	165122	13.7240	8628.7(aR)
	3 1-Butanol	56	3.233	3.244	(0.438)	254174	26.9201	16926(aR)
	4 2-Ethoxyethanol	59	3.699	3.699	(0.501)	73265	8.26280	5195.1(a)
	5 n-Nitrosodimethylamine	42	4.030	4.030	(0.546)	83991	8.32198	5232.3
	6 Pyridine	79	4.093	4.093	(0.554)	126993	8.06034	5067.8
$	7 2-Fluorophenol	112	5.573	5.573	(0.755)	366250	23.1640	14564
	8 Cyclohexanone	55	5.945	5.945	(0.805)	139871	9.08425	5711.6(a)
	9 2-Butoxyethanol	87	5.966	5.976	(0.808)	48442	19.0113	11953(a)
$	10 Phenol-d6	99	6.773	6.773	(0.917)	526538	31.6507	19900
	11 Phenol	94	6.794	6.794	(0.920)	147744	8.62322	5421.7
	13 bis(-2-Chloroethyl)Ether	93	6.960	6.960	(0.943)	122613	8.71630	5480.2
	14 2-Chlorophenol	128	7.073	7.084	(0.958)	149095	8.49653	5342.0
*	15 1,4-Dichlorobenzene-d4	152	7.384	7.384	(1.000)	253003	20.0000	
	16 1,4-Dichlorobenzene	146	7.415	7.415	(1.004)	181425	8.72705	5487.0(a)
	17 1,2-Dichlorobenzene	146	7.643	7.643	(1.035)	175066	8.82413	5548.0(a)
	18 2-Methylphenol	108	7.684	7.684	(1.041)	114698	8.04560	5058.5
	19 bis(2-chloroisopropyl)ether	45	7.746	7.746	(1.049)	234032	9.20381	5786.7
	20 3- and 4-Methylphenol (total)	108	7.912	7.922	(1.071)	126915	8.57825	5393.4

Data File: 13052910MS.D
Report Date: 10-Jun-2013 11:15

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (NG)	CONCENTRATIONS FINAL (ug/Kg)
	21 N-Nitroso-di-n-propylamine	70	7.943	7.964	(1.076)	78968	8.50620	5348.1
	22 n-Nitrosomorpholine	56	7.974	7.995	(1.080)	84031	8.00674	5034.1(a)
	23 Hexachloroethane	117	8.160	8.160	(1.105)	60698	8.51772	5355.4(a)
$	24 Nitrobenzene-d5	82	8.202	8.212	(0.877)	250742	15.8741	9980.6
	25 Nitrobenzene	77	8.233	8.243	(0.880)	131382	9.12091	5734.6
	26 Isophorone	82	8.585	8.605	(0.918)	218474	8.99305	5654.2
	27 2-Nitrophenol	139	8.728	8.730	(0.934)	47220	5.12780	3224.0(aR)
	28 2,4-Dimethylphenol	107	8.740	8.750	(0.935)	64357	4.17534	2625.2(R)
	29 bis(-2-Chloroethoxy)methane	93	8.905	8.905	(0.952)	139491	9.35072	5879.1
	30 2,4-Dichlorophenol	162	9.092	9.102	(0.972)	124416	8.00157	5030.8
	31 1,2,4-Trichlorobenzene	180	9.247	9.247	(0.989)	162791	9.31921	5859.3
*	32 Naphthalene-d8	136	9.350	9.351	(1.000)	962785	20.0000	
	33 Naphthalene	128	9.382	9.392	(1.003)	434626	9.24504	5812.7
	34 4-Chloroaniline	127	9.433	9.444	(1.009)	162021	8.64443	5435.0
	35 Hexachlorobutadiene	225	9.557	9.568	(1.022)	96142	9.14184	5747.8
	36 4-Chloro-3-Methylphenol	107	10.189	10.189	(1.090)	121296	9.32981	5866.0
	37 2-Methylnaphthalene	142	10.499	10.499	(1.123)	327570	9.47720	5958.6
	39 2,4,6-Trichlorophenol	196	10.934	10.944	(0.895)	74906	6.21870	3909.9(R)
	40 2,4,5-Trichlorphenol	196	10.996	11.006	(0.900)	70555	5.50379	3460.4(R)
$	41 2-Fluorobiphenyl	172	11.079	11.079	(0.907)	693340	16.9175	10637
	42 2-Chloronaphthalene	162	11.296	11.306	(0.925)	321874	9.26834	5827.3
	43 2-Nitroaniline	65	11.441	11.441	(0.936)	71687	8.86988	5576.8
	44 Dimethylphthalate	163	11.731	11.741	(0.960)	386721	9.53415	5994.4
	45 2,6-Dinitrotoluene	165	11.835	11.844	(0.969)	95712	9.68371	6088.5
	46 Acenaphthylene	152	11.990	11.989	(0.981)	485428	9.08506	5712.1
	48 3-Nitroaniline	138	12.114	12.124	(0.992)	84520	8.56079	5382.4
	49 2,6-Bis(tertbutyl)-4-methylph	205	12.207	12.207	(0.999)	112306	3.65824	2300.0(aR)
*	50 Acenaphthene-d10	164	12.218	12.228	(1.000)	552377	20.0000	
	47 Acenaphthene	153	12.269	12.280	(1.004)	296467	9.26171	5823.1
	51 2,4-Dinitrophenol	184	12.290	12.300	(1.006)	2917	2.91734	1834.2(aRM)
	52 4-Nitrophenol	109	12.362	12.362	(1.012)	17135	3.79231	2384.4(aR)
	53 2,4-Dinitrotoluene	165	12.497	12.507	(1.023)	125846	9.74233	6125.3
	54 Dibenzofuran	168	12.559	12.559	(1.028)	456127	9.25708	5820.2
	55 Diethylphthalate	149	12.890	12.901	(1.055)	381483	10.2389	6437.5
	56 4-Chlorophenyl-phenylether	204	13.108	13.108	(1.073)	192338	9.73515	6120.8
	57 Fluorene	166	13.128	13.128	(1.075)	381421	9.82445	6177.0
	58 4-Nitroaniline	138	13.118	13.139	(1.074)	70017	8.19741	5154.0
	59 4,6-Dinitro-2-methylphenol	198	13.170	13.190	(0.896)	30487	4.35933	2740.8(aR)
	60 Tributyl Phosphate	99	13.221	13.232	(0.900)	322648	11.7229	7370.6
	61 Diphenylamine (Nnitrosodiphen	169	13.294	13.304	(0.905)	335805	10.2515	6445.5
$	62 2,4,6-Tribromophenol	330	13.522	13.522	(1.107)	161253	29.4492	18516
	63 4-Bromophenyl-phenylether	248	13.925	13.925	(0.948)	122619	10.2957	6473.2
	64 Hexachlorobenzene	284	14.039	14.050	(0.956)	125563	10.4383	6562.9
	65 Pentachlorophenol	266	14.350	14.360	(0.977)	36609	5.45698	3431.0
*	66 Phenanthrene-d10	188	14.691	14.691	(1.000)	1022169	20.0000	
	67 Phenanthrene	178	14.733	14.733	(1.003)	593435	10.5016	6602.7
	68 Anthracene	178	14.815	14.815	(1.008)	600628	10.4733	6584.9
	70 Di-n-butylphthalate	149	15.602	15.602	(1.062)	710987	12.0307	7564.1(a)
	71 Fluoranthene	202	16.699	16.710	(1.137)	749179	10.7800	6777.7
	72 Pyrene	202	17.082	17.093	(0.893)	764642	10.3613	6514.5
$	73 Terphenyl-d14	244	17.309	17.309	(0.905)	960690	20.4496	12857
	74 Butylbenzylphthalate	149	18.096	18.097	(0.946)	317529	11.2383	7065.9
	75 bis(2-Ethylhexyl)phthalate	149	19.049	19.059	(0.996)	509004	12.6498	7953.3(a)
	76 Benzo(a)anthracene	228	19.100	19.100	(0.999)	704261	10.1299	6369.0

Data File: 13052910MS.D
Report Date: 10-Jun-2013 11:15

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (NG)	CONCENTRATIONS FINAL (ug/Kg)
* 77 Chrysene-d12	240	19.121	19.121	(1.000)	1220748	20.0000	
78 Chrysene	228	19.163	19.173	(1.002)	647851	10.2301	6432.0
79 Di-n-octylphthalate	149	20.270	20.270	(0.920)	737276	11.7708	7400.7
80 Benzo(b)fluoranthene	252	21.160	21.181	(0.961)	654665	10.3970	6537.0
81 Benzo(k)fluoranthene	252	21.222	21.243	(0.963)	698818	10.9242	6868.4
82 Benzo(a)pyrene	252	21.895	21.916	(0.994)	557602	9.98215	6276.1
* 83 Perylene-d12	264	22.030	22.040	(1.000)	1049369	20.0000	
84 Indeno(1,2,3-cd)pyrene	276	25.000	25.021	(1.135)	426322	10.0903	6344.1
85 Dibenzo(a,h)anthracene	278	25.052	25.073	(1.137)	341815	10.0674	6329.7
86 Benzo(g,h,i)perylene	276	25.911	25.932	(1.176)	322458	10.2158	6423.0

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
R - Spike/Surrogate failed recovery limits.
M - Compound response manually integrated.

WSCF

BASE NEUTRAL QUANT AND RATIO REPORT

Data file : \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\13052910MS.D
Lab Smp Id: S13T004247MS Client Smp ID: S13T004247MS
Inj Date : 29-MAY-2013 13:48
Operator : cjo Inst ID: tuvok.i
Smp Info : 3241 S13T004247-MS
Misc Info : Added 2.25ul Int.Std. HNF-N-1896-146.01
Comment   :
Method   : \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\TCNTC130523.m
Meth Date : 30-May-2013 14:16 lpm Quant Type: ISTD
Cal Date : 23-MAY-2013 14:01 Cal File: 13052307Cal3.D
Als bottle: 10 QC Sample: MS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: NTC+TC.sub
Target Version: 4.14
Processing Host: WF21223

- NO TENTATIVELY IDENTIFIED COMPOUNDS -

Data File: \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\13052910MS.D

Page 5

Date : 29-MAY-2013 13:48

Client ID: S13T004247MS

Instrument: tuvok.i

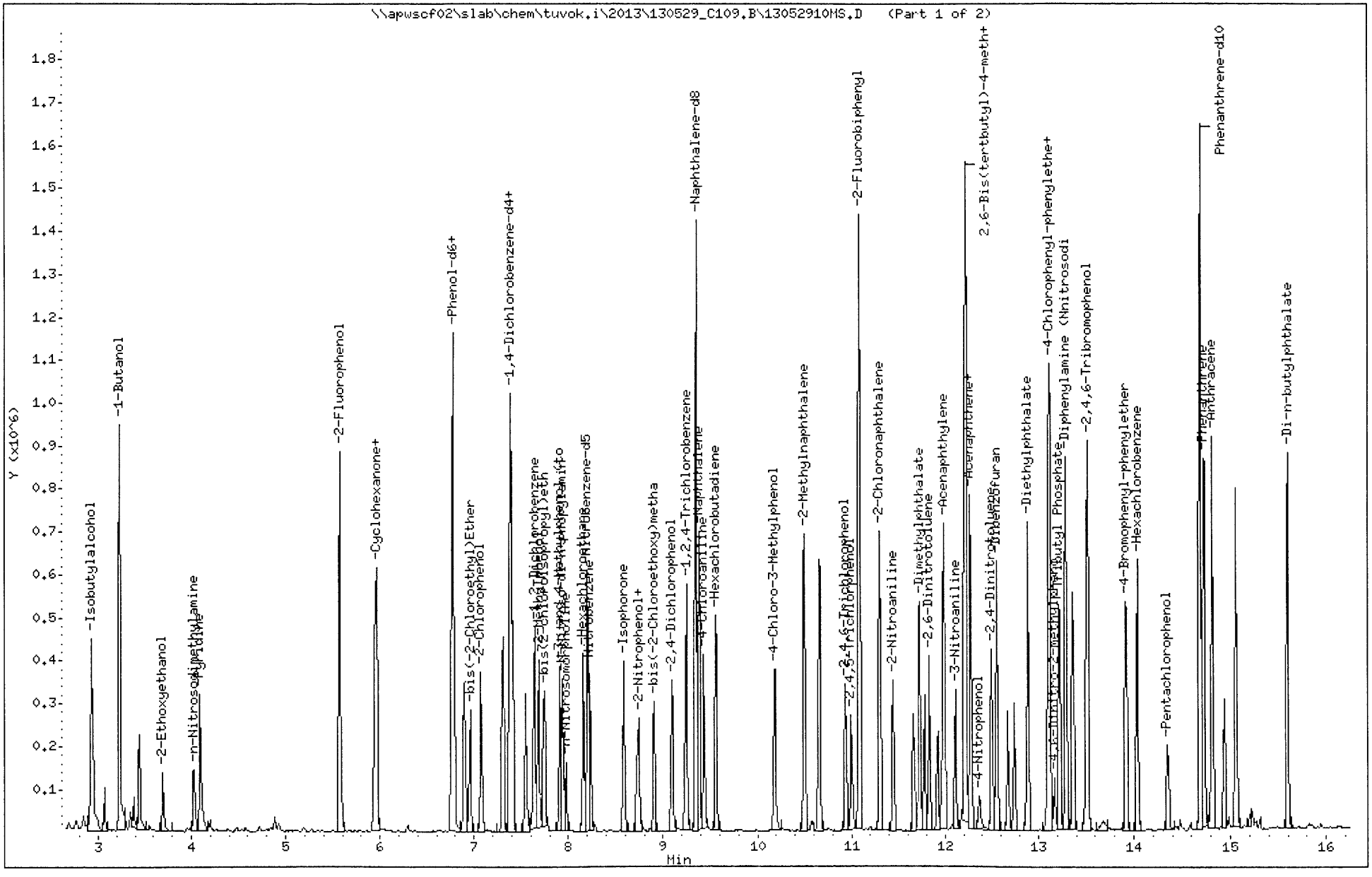
Sample Info: 3241 S13T004247-MS

Volume Injected (uL): 1.0

Operator: cjo

Column phase: DB-5MS

Column diameter: 0.25



Data File: \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\13052910MS.D

Date : 29-MAY-2013 13:48

Client ID: S13T004247MS

Instrument: tuvok.i

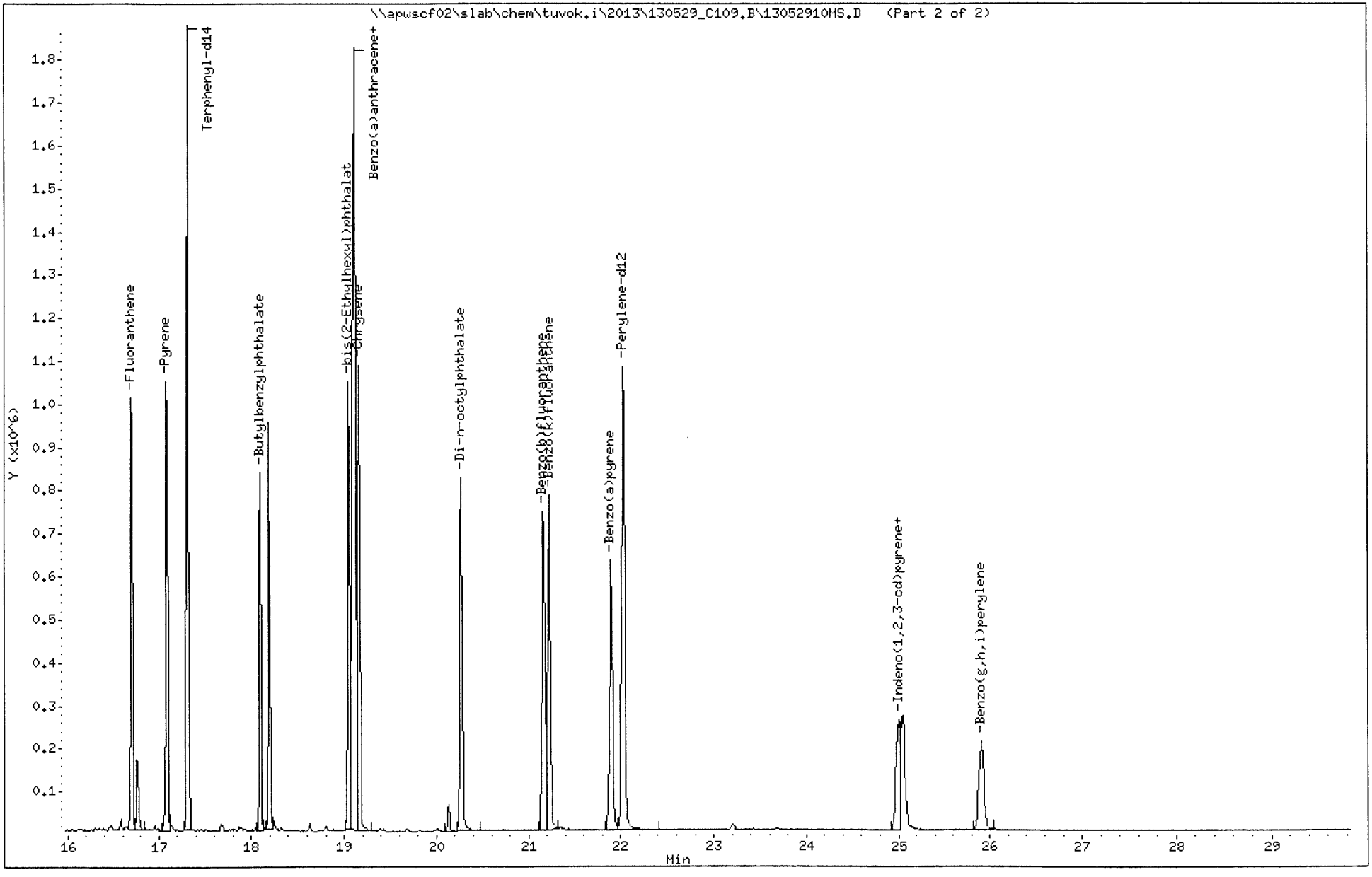
Sample Info: 3241 S13T004247-MS

Volume Injected (uL): 1.0

Operator: cjo

Column phase: DB-5MS

Column diameter: 0.25



Data File: 13052911MSD.D
Report Date: 10-Jun-2013 11:15

WSCF

BASE NEUTRAL QUANT AND RATIO REPORT

Data file : \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\13052911MSD.D
Lab Smp Id: S13T004247MSD Client Smp ID: S13T004247MSD
Inj Date : 29-MAY-2013 14:32
Operator : cjo Inst ID: tuvok.i
Smp Info : 3242 S13T004247-MSD
Misc Info : Added 2.25ul Int.Std. HNF-N-1896-146.01
Comment :
Method : \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\TCNTC130523.m
Meth Date : 03-Jun-2013 07:17 lpm Quant Type: ISTD
Cal Date : 23-MAY-2013 14:01 Cal File: 13052307Cal3.D
Als bottle: 11 QC Sample: MSD
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: NTC+TC.sub
Target Version: 4.14
Processing Host: WF21223

Concentration Formula: Amt * DF * Uf * Vt/(Vi * Ws * (100 - M)/100) * CpndVa

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vt	2000.000	Volume of final extract (uL)(1000 low, 2
Vi	1.000	Volume injected (uL)
Ws	3.503	Weight of sample extracted (g)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (NG)	CONCENTRATIONS FINAL (ug/Kg)
M	1 Methylphenol (total)	108				245985	16.2877	9299.3
	2 Isobutylalcohol	43	2.944	2.944	(0.399)	172523	13.7945	7875.8(aR)
	3 1-Butanol	56	3.234	3.244	(0.438)	246371	25.1027	14332(aR)
	4 2-Ethoxyethanol	59	3.699	3.699	(0.501)	73507	7.97524	4553.4(a)
	5 n-Nitrosodimethylamine	42	4.019	4.030	(0.544)	84004	8.00717	4571.6
	6 Pyridine	79	4.093	4.093	(0.554)	124064	7.57538	4325.1
$	7 2-Fluorophenol	112	5.573	5.573	(0.755)	402085	24.4646	13968
	8 Cyclohexanone	55	5.945	5.945	(0.805)	140418	8.77342	5009.1(a)
	9 2-Butoxyethanol	87	5.966	5.976	(0.808)	49376	18.6419	10643(a)
$	10 Phenol-d6	99	6.773	6.773	(0.917)	521829	30.1764	17229
	11 Phenol	94	6.794	6.794	(0.920)	148904	8.36085	4773.5
	13 bis(-2-Chloroethyl)Ether	93	6.960	6.960	(0.943)	123544	8.44894	4823.8
	14 2-Chlorophenol	128	7.073	7.084	(0.958)	155077	8.50179	4854.0
*	15 1,4-Dichlorobenzene-d4	152	7.384	7.384	(1.000)	262991	20.0000	
	16 1,4-Dichlorobenzene	146	7.415	7.415	(1.004)	179865	8.32342	4752.2(a)
	17 1,2-Dichlorobenzene	146	7.643	7.643	(1.035)	175973	8.53298	4871.8(a)
	18 2-Methylphenol	108	7.684	7.684	(1.041)	119133	8.03932	4590.0
	19 bis(2-chloroisopropyl)ether	45	7.746	7.746	(1.049)	234326	8.86538	5061.6
	20 3- and 4-Methylphenol (total)	108	7.912	7.922	(1.071)	126852	8.24836	4709.3

Data File: 13052911MSD.D
Report Date: 10-Jun-2013 11:15

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (NG)	CONCENTRATIONS FINAL (ug/Kg)
	21 N-Nitroso-di-n-propylamine	70	7.943	7.964	(1.076)	79977	8.28771	4731.8
	22 n-Nitrosomorpholine	56	7.974	7.995	(1.080)	85056	7.79661	4451.4(a)
	23 Hexachloroethane	117	8.160	8.160	(1.105)	59848	8.07948	4612.9(a)
$	24 Nitrobenzene-d5	82	8.202	8.212	(0.877)	251192	15.4671	8830.8
	25 Nitrobenzene	77	8.233	8.243	(0.880)	127447	8.60544	4913.2
	26 Isophorone	82	8.585	8.605	(0.918)	218978	8.76695	5005.4
	27 2-Nitrophenol	139	8.728	8.730	(0.934)	65361	6.90343	3941.4(R)
	28 2,4-Dimethylphenol	107	8.740	8.750	(0.935)	65567	4.13735	2362.2(R)
	29 bis(-2-Chloroethoxy)methane	93	8.905	8.905	(0.952)	138442	9.02626	5153.4
	30 2,4-Dichlorophenol	162	9.092	9.102	(0.972)	143757	8.99227	5134.0
	31 1,2,4-Trichlorobenzene	180	9.247	9.247	(0.989)	162387	9.04151	5162.2
*	32 Naphthalene-d8	136	9.351	9.351	(1.000)	989893	20.0000	
	33 Naphthalene	128	9.382	9.392	(1.003)	433301	8.96446	5118.2
	34 4-Chloroaniline	127	9.433	9.444	(1.009)	163886	8.50449	4855.5
	35 Hexachlorobutadiene	225	9.568	9.568	(1.023)	97675	9.03327	5157.4
	36 4-Chloro-3-Methylphenol	107	10.189	10.189	(1.090)	121816	9.11322	5203.1
	37 2-Methylnaphthalene	142	10.499	10.499	(1.123)	328403	9.24111	5276.1
	39 2,4,6-Trichlorophenol	196	10.934	10.944	(0.895)	88050	7.15558	4085.4
	40 2,4,5-Trichlorphenol	196	10.996	11.006	(0.900)	79669	6.08353	3473.3(R)
$	41 2-Fluorobiphenyl	172	11.079	11.079	(0.907)	694238	16.5818	9467.2
	42 2-Chloronaphthalene	162	11.296	11.306	(0.925)	319194	8.99711	5136.8
	43 2-Nitroaniline	65	11.441	11.441	(0.936)	75312	9.12166	5207.9
	44 Dimethylphthalate	163	11.731	11.741	(0.960)	392945	9.48306	5414.2
	45 2,6-Dinitrotoluene	165	11.835	11.844	(0.969)	95211	9.42963	5383.7
	46 Acenaphthylene	152	11.990	11.989	(0.981)	485892	8.90174	5082.4
	48 3-Nitroaniline	138	12.114	12.124	(0.992)	82477	8.17748	4668.8
	49 2,6-Bis(tertbutyl)-4-methylph	205	12.207	12.207	(0.999)	107282	3.42081	1953.1(aR)
*	50 Acenaphthene-d10	164	12.218	12.228	(1.000)	564291	20.0000	
	47 Acenaphthene	153	12.269	12.280	(1.004)	301330	9.21487	5261.1
	51 2,4-Dinitrophenol	184	12.290	12.300	(1.006)	5678	3.37703	1928.1(aRM)
	52 4-Nitrophenol	109	12.373	12.362	(1.013)	7764	1.68205	960.35(aR)
	53 2,4-Dinitrotoluene	165	12.497	12.507	(1.023)	129148	9.78686	5587.7
	54 Dibenzofuran	168	12.559	12.559	(1.028)	467866	9.29484	5306.8
	55 Diethylphthalate	149	12.890	12.901	(1.055)	389984	10.2461	5849.9
	56 4-Chlorophenyl-phenylether	204	13.108	13.108	(1.073)	193290	9.57677	5467.8
	57 Fluorene	166	13.128	13.128	(1.075)	384312	9.68992	5532.4
	58 4-Nitroaniline	138	13.118	13.139	(1.074)	70049	8.02800	4583.5
	59 4,6-Dinitro-2-methylphenol	198	13.170	13.190	(0.896)	37637	5.30225	3027.3(aR)
	60 Tributyl Phosphate	99	13.222	13.232	(0.900)	329612	11.7991	6736.6
	61 Diphenylamine (Nnitrosodiphen	169	13.294	13.304	(0.905)	344084	10.3492	5908.8
$	62 2,4,6-Tribromophenol	330	13.522	13.522	(1.107)	177248	31.6869	18091
	63 4-Bromophenyl-phenylether	248	13.925	13.925	(0.948)	124570	10.3051	5883.6
	64 Hexachlorobenzene	284	14.039	14.050	(0.956)	128122	10.4937	5991.3
	65 Pentachlorophenol	266	14.350	14.360	(0.977)	48208	7.07985	4042.2
*	66 Phenanthrene-d10	188	14.691	14.691	(1.000)	1037486	20.0000	
	67 Phenanthrene	178	14.722	14.733	(1.002)	605923	10.5643	6031.6
	68 Anthracene	178	14.815	14.815	(1.008)	616156	10.5855	6043.7
	70 Di-n-butylphthalate	149	15.602	15.602	(1.062)	696372	11.6095	6628.3(a)
	71 Fluoranthene	202	16.699	16.710	(1.137)	770497	10.9231	6236.4
	72 Pyrene	202	17.082	17.093	(0.893)	786100	10.5425	6019.1
$	73 Terphenyl-d14	244	17.309	17.309	(0.905)	962903	20.2858	11582
	74 Butylbenzylphthalate	149	18.096	18.097	(0.946)	329189	11.5311	6583.5
	75 bis(2-Ethylhexyl)phthalate	149	19.049	19.059	(0.996)	493074	12.1278	6924.2(a)
	76 Benzo(a)anthracene	228	19.090	19.100	(0.998)	711344	10.1265	5781.6

Data File: 13052911MSD.D
Report Date: 10-Jun-2013 11:15

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (NG)	CONCENTRATIONS FINAL (ug/Kg)
* 77 Chrysene-d12	240	19.121	19.121	(1.000)	1233440	20.0000	
78 Chrysene	228	19.163	19.173	(1.002)	662288	10.3505	5909.5
79 Di-n-octylphthalate	149	20.270	20.270	(0.920)	776121	12.2432	6990.1
80 Benzo(b)fluoranthene	252	21.160	21.181	(0.961)	677124	10.6255	6066.5
81 Benzo(k)fluoranthene	252	21.222	21.243	(0.963)	715886	11.0576	6313.2
82 Benzo(a)pyrene	252	21.895	21.916	(0.994)	577643	10.2177	5833.6
* 83 Perylene-d12	264	22.030	22.040	(1.000)	1062029	20.0000	
84 Indeno(1,2,3-cd)pyrene	276	25.000	25.021	(1.135)	469057	10.9695	6262.9
85 Dibenzo(a,h)anthracene	278	25.052	25.073	(1.137)	383409	11.1579	6370.5
86 Benzo(g,h,i)perylene	276	25.911	25.932	(1.176)	361863	11.3275	6467.3

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
R - Spike/Surrogate failed recovery limits.
M - Compound response manually integrated.

WSCF

BASE NEUTRAL QUANT AND RATIO REPORT

Data file : \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\13052911MSD.D
Lab Smp Id: S13T004247MSD Client Smp ID: S13T004247MSD
Inj Date : 29-MAY-2013 14:32
Operator : cjo Inst ID: tuvok.i
Smp Info : 3242 S13T004247-MSD
Misc Info : Added 2.25ul Int.Std. HNF-N-1896-146.01
Comment :
Method : \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\TCNTC130523.m
Meth Date : 30-May-2013 14:16 lpm Quant Type: ISTD
Cal Date : 23-MAY-2013 14:01 Cal File: 13052307Cal3.D
Als bottle: 11 QC Sample: MSD
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: NTC+TC.sub
Target Version: 4.14
Processing Host: WF21223

- NO TENTATIVELY IDENTIFIED COMPOUNDS -

Data File: \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\13052911MSD.D

Page 5

Date : 29-MAY-2013 14:32

Client ID: S13T004247MSD

Instrument: tuvok.i

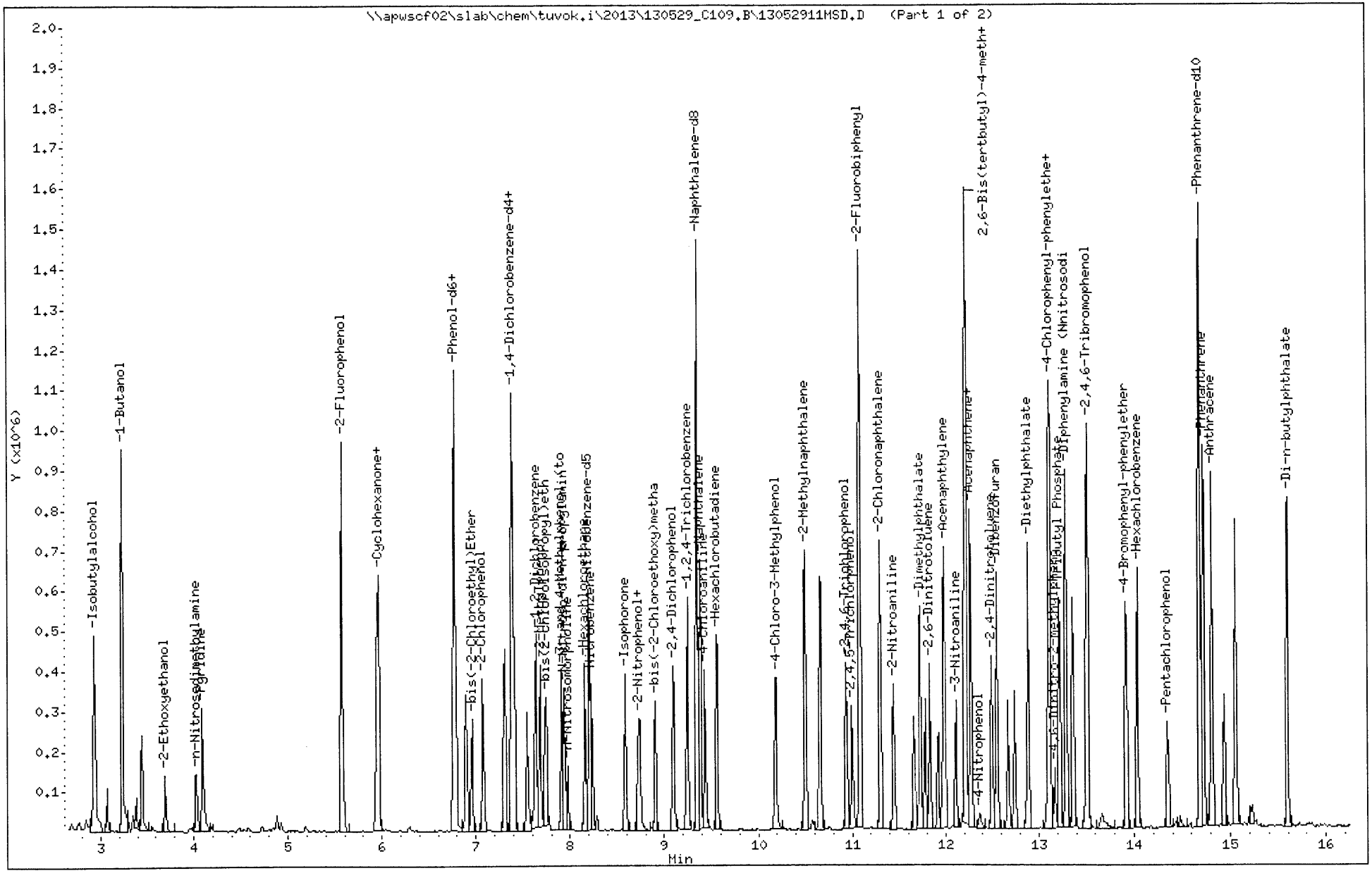
Sample Info: 3242 S13T004247-MSD

Volume Injected (uL): 1.0

Operator: cjo

Column phase: DB-5MS

Column diameter: 0.25



Data File: \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\13052911MSD.D

Date : 29-MAY-2013 14:32

Client ID: S13T004247MSD

Instrument: tuvok.i

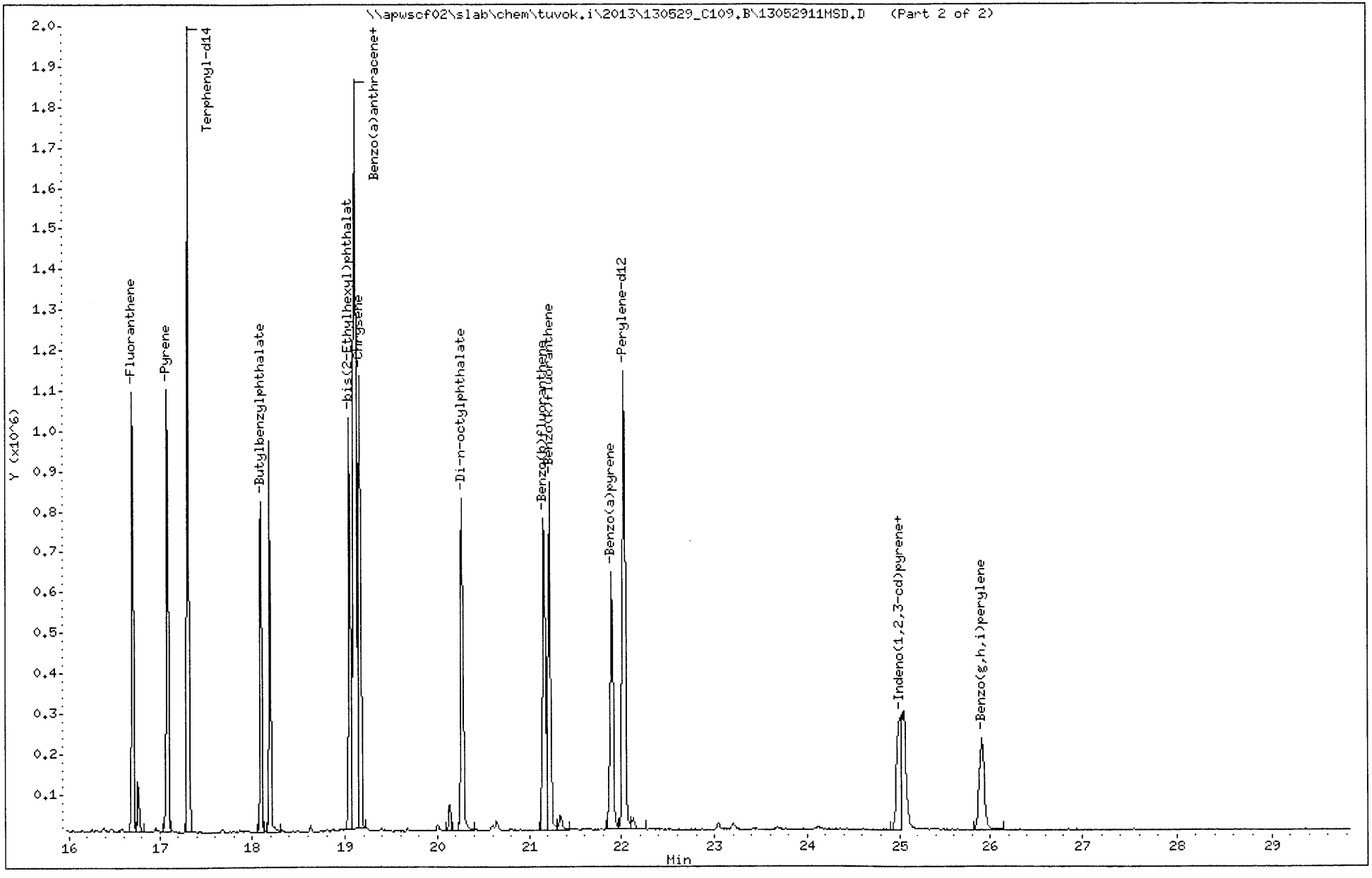
Sample Info: 3242 S13T004247-MSD

Volume Injected (uL): 1.0

Operator: cjo

Column phase: DB-5MS

Column diameter: 0.25



Data File: 13052913_4275.D Page 1
Report Date: 30-May-2013 14:17

WSCF

BASE NEUTRAL QUANT AND RATIO REPORT

Data file : \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\13052913_4275.D
Lab Smp Id: S13T004275 Client Smp ID: S13T004275
Inj Date : 29-MAY-2013 15:59
Operator : cjo Inst ID: tuvok.i
Smp Info : 3243 S13T004275-SAM
Misc Info : Added 2.25ul Int.Std. HNF-N-1896-146.01
Comment :
Method : \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\TCNTC130523.m
Meth Date : 30-May-2013 14:16 lpm Quant Type: ISTD
Cal Date : 23-MAY-2013 14:01 Cal File: 13052307Cal3.D
Als bottle: 13
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: NTC+TC.sub
Target Version: 4.14
Processing Host: WF21223

Concentration Formula: Amt * DF * Uf * Vt/(Vi * Ws * (100 - M)/100) * CpndVa

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vt	2000.000	Volume of final extract (uL)(1000 low, 2
Vi	1.000	Volume injected (uL)
Ws	3.445	Weight of sample extracted (g)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (NG)	FINAL (ug/Kg)
$ 7 2-Fluorophenol	112	5.572	5.573	(0.755)	205290	12.7969	7429.2(R)
$ 10 Phenol-d6	99	6.773	6.773	(0.917)	464884	27.5422	15990
* 15 1,4-Dichlorobenzene-d4	152	7.383	7.384	(1.000)	256700	20.0000	
$ 24 Nitrobenzene-d5	82	8.201	8.212	(0.877)	216689	13.4457	7805.9
* 32 Naphthalene-d8	136	9.350	9.351	(1.000)	982305	20.0000	
$ 41 2-Fluorobiphenyl	172	11.079	11.079	(0.907)	645250	15.3215	8894.9
* 50 Acenaphthene-d10	164	12.217	12.228	(1.000)	567612	20.0000	
$ 62 2,4,6-Tribromophenol	330	13.521	13.522	(1.107)	46343	8.23633	4781.6(R)
* 66 Phenanthrene-d10	188	14.691	14.691	(1.000)	1023168	20.0000	
$ 73 Terphenyl-d14	244	17.309	17.309	(0.906)	994068	20.3405	11809
* 77 Chrysene-d12	240	19.110	19.121	(1.000)	1269938	20.0000	
* 83 Perylene-d12	264	22.029	22.040	(1.000)	993298	20.0000	

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

Data File: 13052913_4275.D Page 2
Report Date: 30-May-2013 14:17

WSCF

BASE NEUTRAL QUANT AND RATIO REPORT

Data file : \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\13052913_4275.D
Lab Smp Id: S13T004275 Client Smp ID: S13T004275
Inj Date : 29-MAY-2013 15:59
Operator : cjo Inst ID: tuvok.i
Smp Info : 3243 S13T004275-SAM
Misc Info : Added 2.25ul Int.Std. HNF-N-1896-146.01
Comment :
Method : \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\TCNTC130523.m
Meth Date : 30-May-2013 14:16 lpm Quant Type: ISTD
Cal Date : 23-MAY-2013 14:01 Cal File: 13052307Cal3.D
Als bottle: 13
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: NTC+TC.sub
Target Version: 4.14
Processing Host: WF21223

Concentration Formula: Amt * DF * Uf * Vt/(Vi * Ws * (100 - M)/100) * CpndVa

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vt	2000.000	Volume of final extract (uL)(1000 low, 2
Vi	1.000	Volume injected (uL)
Ws	3.445	Weight of sample extracted (g)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

ISTD	RT	AREA	AMOUNT
* 15 1,4-Dichlorobenzene-d4	7.384	1559748	20.000

		CONCENTRATIONS			QUANT		
RT	AREA	ON-COL(NG)	FINAL(ug/Kg)	QUAL	LIBRARY	LIB ENTRY	CPND #
Trichloromethane				CAS #: 67-66-3			
2.933	506142	6.49004866	3767.8	96	NIST02.L	8712	15
Unknown				CAS #:			
3.234	332988	4.26975964	2478.8	0		0	15
Unknown				CAS #:			
3.451	308444	3.95504908	2296.1	0		0	15

Data File: \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\13052913_4275.D

Date : 29-MAY-2013 15:59

Client ID: S13T004275

Instrument: tuvok.i

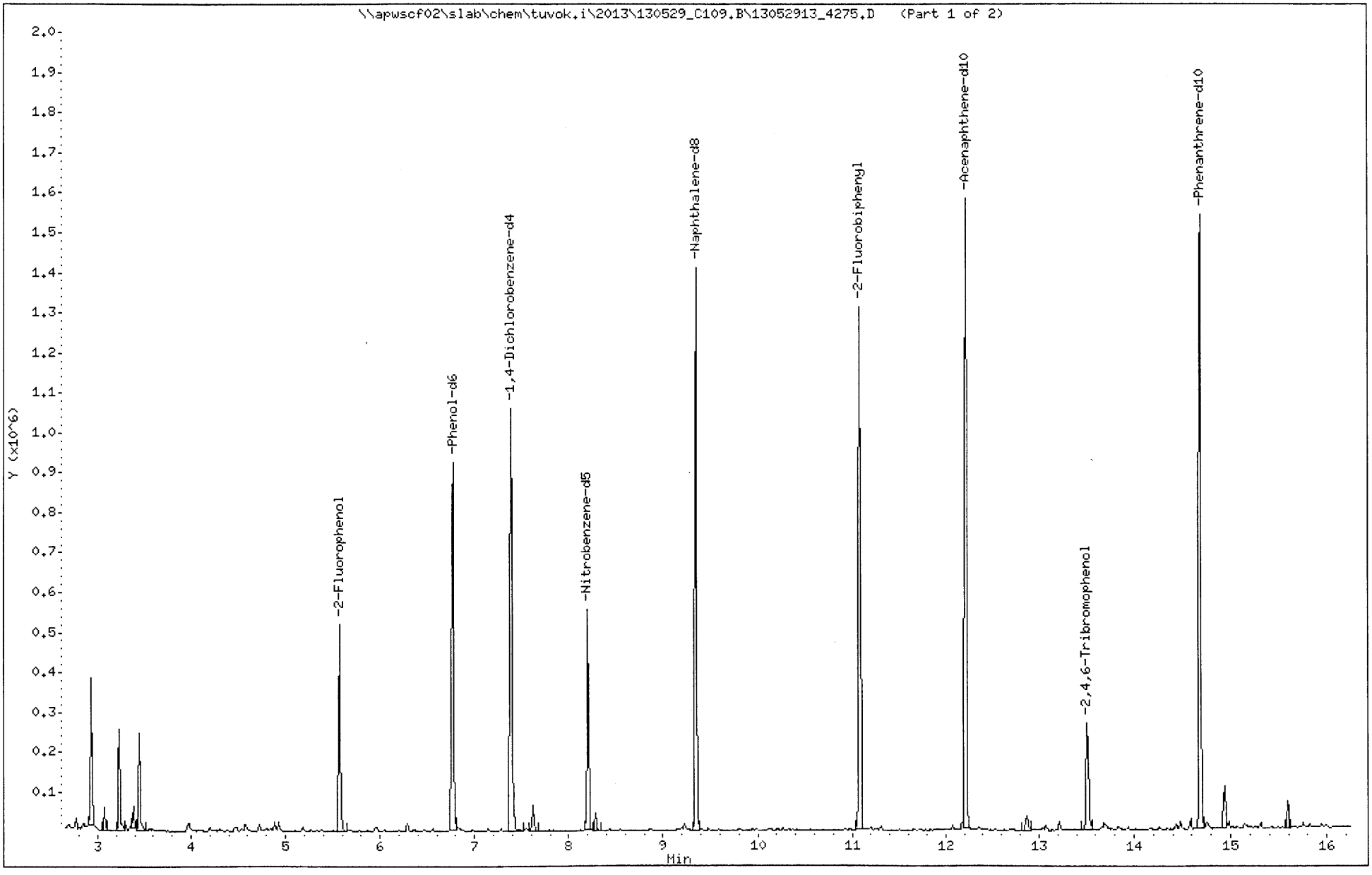
Sample Info: 3243 S13T004275-SAM

Volume Injected (uL): 1.0

Operator: cjo

Column phase: DB-5MS

Column diameter: 0.25



Data File: \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\13052913_4275.D

Date : 29-MAY-2013 15:59

Client ID: S13T004275

Instrument: tuvok.i

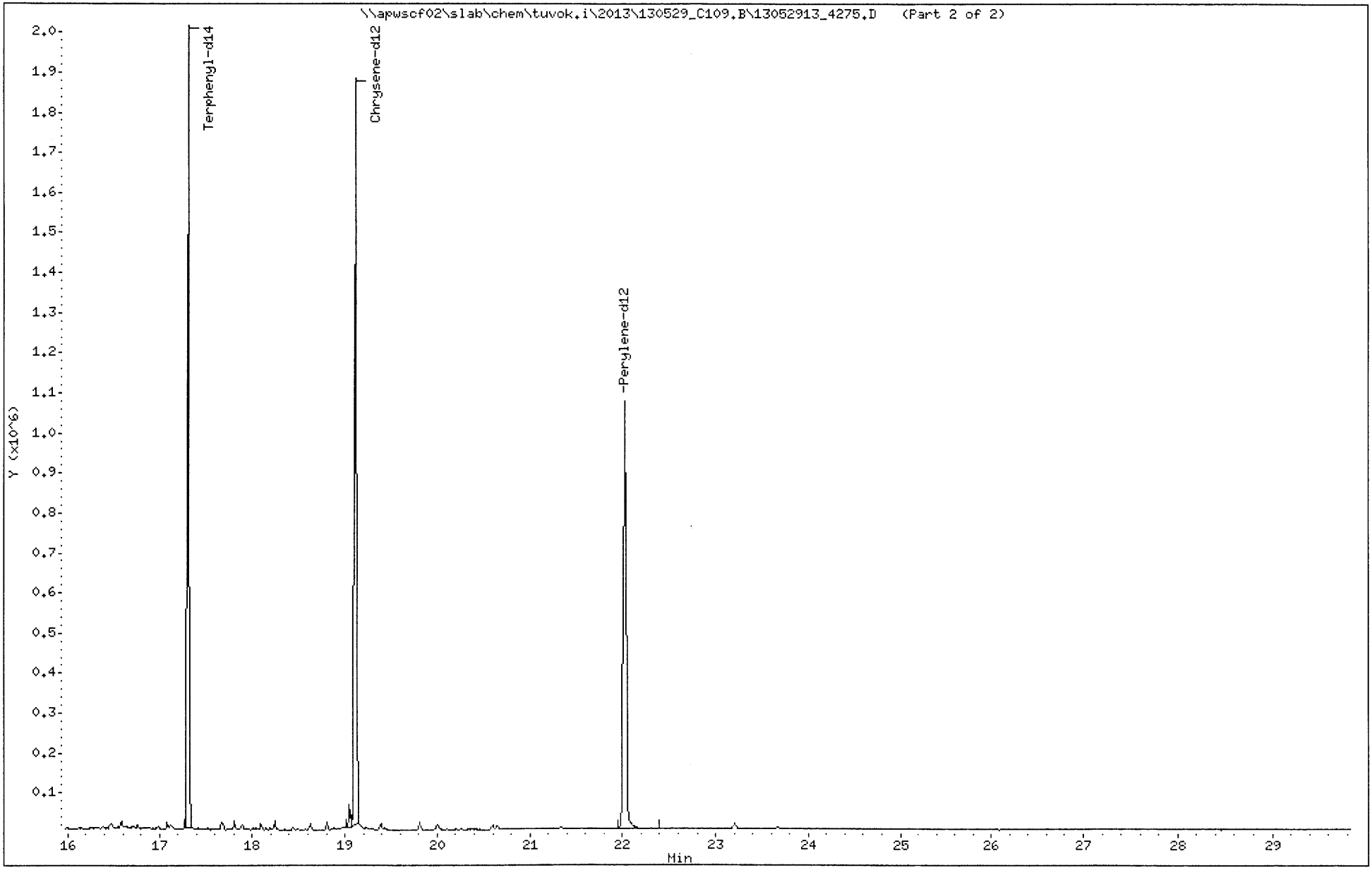
Sample Info: 3243 S13T004275-SAM

Volume Injected (uL): 1.0

Operator: cjo

Column phase: DB-5MS

Column diameter: 0.25



Data File: 13052915_4302.D Page 1
Report Date: 30-May-2013 14:17

WSCF

BASE NEUTRAL QUANT AND RATIO REPORT

Data file : \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\13052915_4302.D
Lab Smp Id: S13T004302 Client Smp ID: S13T004302
Inj Date : 29-MAY-2013 16:57
Operator : cjo Inst ID: tuvok.i
Smp Info : 3244 S13T004302-SAM
Misc Info : Added 2.25ul Int.Std. HNF-N-1896-146.01
Comment :
Method : \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\TCNTC130523.m
Meth Date : 30-May-2013 14:16 lpm Quant Type: ISTD
Cal Date : 23-MAY-2013 14:01 Cal File: 13052307Cal3.D
Als bottle: 15
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: NTC+TC.sub
Target Version: 4.14
Processing Host: WF21223

Concentration Formula: Amt * DF * Uf * Vt/(Vi * Ws * (100 - M)/100) * CpndVa

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vt	2000.000	Volume of final extract (uL)(1000 low, 2
Vi	1.000	Volume injected (uL)
Ws	3.338	Weight of sample extracted (g)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (NG)	FINAL (ug/Kg)
$ 7	2-Fluorophenol	112	5.572	5.573	(0.755)	265389	16.2958	9763.8(R)
$ 10	Phenol-d6	99	6.773	6.773	(0.917)	513698	29.9791	17962
* 15	1,4-Dichlorobenzene-d4	152	7.383	7.384	(1.000)	260597	20.0000	
$ 24	Nitrobenzene-d5	82	8.201	8.212	(0.877)	229709	14.0118	8395.4
* 32	Naphthalene-d8	136	9.350	9.351	(1.000)	999251	20.0000	
$ 41	2-Fluorobiphenyl	172	11.078	11.079	(0.907)	673918	15.8252	9481.8
* 50	Acenaphthene-d10	164	12.217	12.228	(1.000)	573962	20.0000	
$ 62	2,4,6-Tribromophenol	330	13.521	13.522	(1.107)	108399	19.0521	11415(R)
* 66	Phenanthrene-d10	188	14.680	14.691	(1.000)	1028932	20.0000	
$ 73	Terphenyl-d14	244	17.309	17.309	(0.906)	957555	19.6080	11748
* 77	Chrysene-d12	240	19.110	19.121	(1.000)	1268991	20.0000	
* 83	Perylene-d12	264	22.029	22.040	(1.000)	1000780	20.0000	

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

Data File: 13052915_4302.D
Report Date: 30-May-2013 14:17

WSCF

BASE NEUTRAL QUANT AND RATIO REPORT

Data file : \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\13052915_4302.D
Lab Smp Id: S13T004302 Client Smp ID: S13T004302
Inj Date : 29-MAY-2013 16:57
Operator : cjo Inst ID: tuvok.i
Smp Info : 3244 S13T004302-SAM
Misc Info : Added 2.25ul Int.Std. HNF-N-1896-146.01
Comment :
Method : \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\TCNTC130523.m
Meth Date : 30-May-2013 14:16 lpm Quant Type: ISTD
Cal Date : 23-MAY-2013 14:01 Cal File: 13052307Cal3.D
Als bottle: 15
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: NTC+TC.sub
Target Version: 4.14
Processing Host: WF21223

Concentration Formula: Amt * DF * Uf * Vt/(Vi * Ws * (100 - M)/100) * CpndVa

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vt	2000.000	Volume of final extract (uL)(1000 low, 2
Vi	1.000	Volume injected (uL)
Ws	3.338	Weight of sample extracted (g)
M	0.00000	% Moisture
Cpnd Variable		Local Compound Variable

ISTD	RT	AREA	AMOUNT
* 15 1,4-Dichlorobenzene-d4	7.384	1467281	20.000

		CONCENTRATIONS			QUANT		
RT	AREA	ON-COL(NG)	FINAL(ug/Kg)	QUAL	LIBRARY	LIB ENTRY	CPND #
Trichloromethane				CAS #: 67-66-3			
2.923	428174	5.83628467	3496.9	97	NIST02.L	8712	15
Unknown				CAS #:			
3.223	342272	4.66538456	2795.3	0		0	15
3-Penten-2-ol				CAS #: 1569-50-2			
3.451	346078	4.71727018	2826.4	80	NIST02.L	1694	15

Data File: \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\13052915_4302.D

Date : 29-MAY-2013 16:57

Client ID: S13T004302

Instrument: tuvok.i

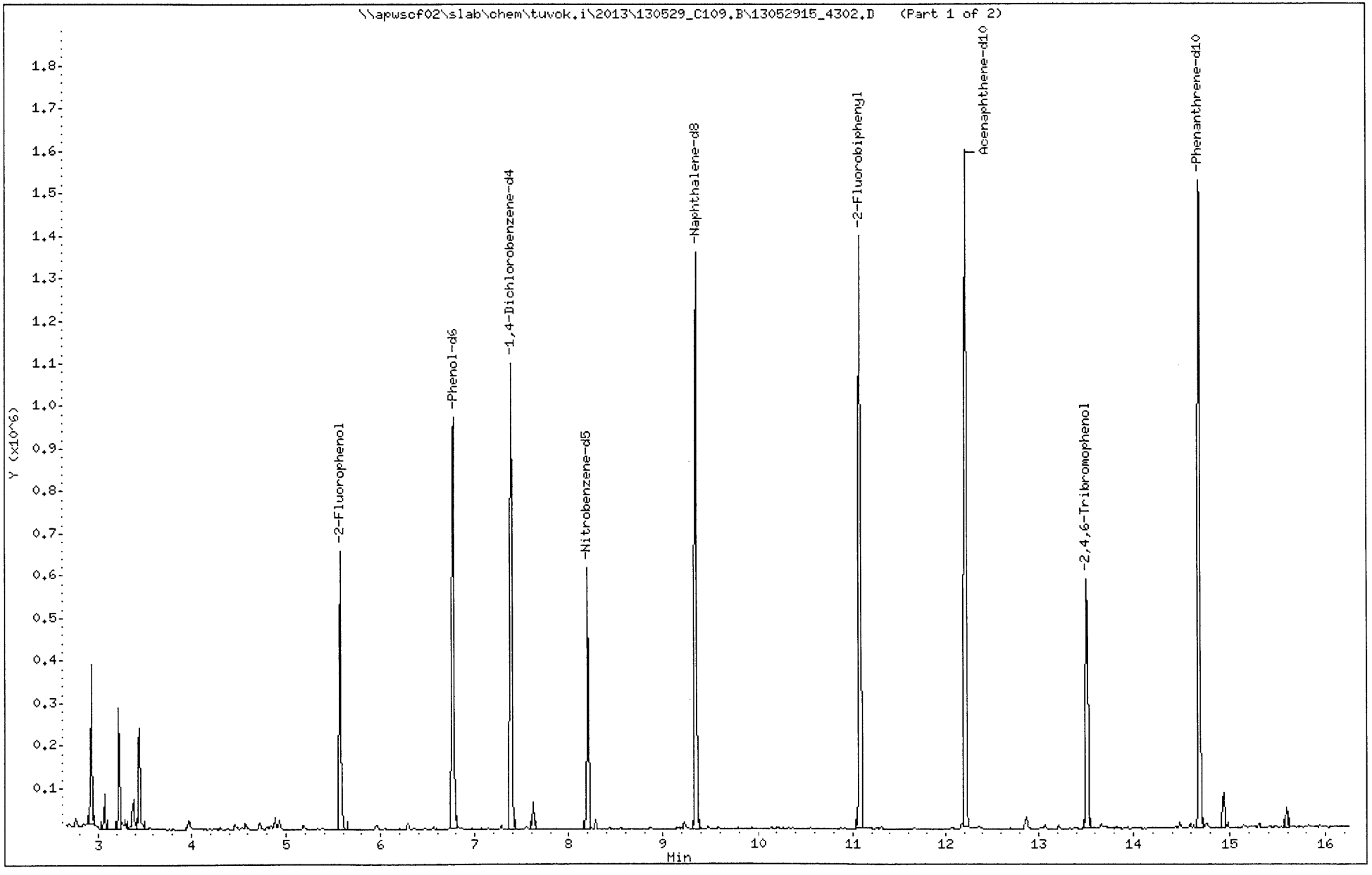
Sample Info: 3244 S13T004302-SAM

Volume Injected (uL): 1.0

Operator: cjo

Column phase: DB-5MS

Column diameter: 0.25



Data File: \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B\13052915_4302.D

Date : 29-MAY-2013 16:57

Client ID: S13T004302

Instrument: tuvok.i

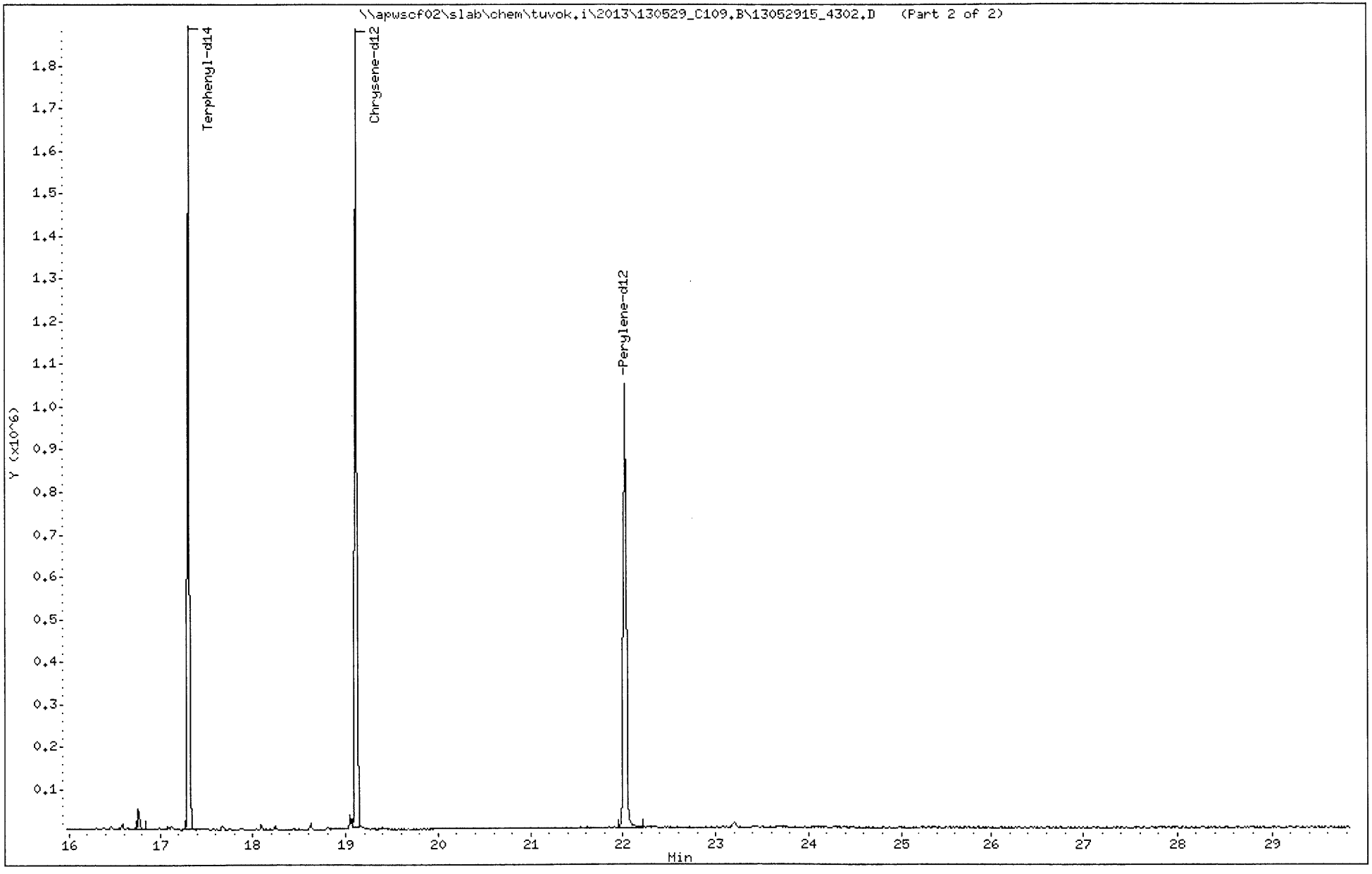
Sample Info: 3244 S13T004302-SAM

Volume Injected (uL): 1.0

Operator: cjo

Column phase: DB-5MS

Column diameter: 0.25



```
   Sequence Name: C:\msdchem\1\sequence\130529.S
         Comment: C109 CLO, SVOA, SOL ,prep #41251
        Operator: CJO
       Data Path: C:\MSDCHEM\1\DATA\130529.B\
Instrument Control  Pre-Seq Cmd:
Data Analysis       Pre-Seq Cmd:

Instrument Control Post-Seq Cmd:
Data Analysis      Post-Seq Cmd:

   Method Sections To Run      On A Barcode Mismatch
    (X) Full Method              (X) Inject Anyway
    ( ) Reprocessing Only        ( ) Don't Inject

   ------------------------------------------------------------------------
   Line                  Sample Name/Misc Info
 1)  Sample        1  13052901 DFTPKIM  blank
 2)  Sample        2  13052902 DFTPKIM  DFTPP HNF-N-1896-146.02
 3)  Sample        3  13052903 SVOAK60  CCV 4,HNF-N-1896-152.02
 4)  Sample        4  13052904 DFTPKIM  blank
 5)  Sample        5  13052905 SVOAK60  3237 Blank
 6)  Sample        6  13052906 SVOAK60  3238 LCS
 7)  Sample        7  13052907 DFTPKIM  blank
 8)  Sample        8  13052908 SVOAK60  3239 S13T004247-SAM
 9)  Sample        9  13052909 SVOAK60  3240 S13T004247-DUP
10)  Sample       10  13052910 SVOAK60  3241 S13T004247-MS
11)  Sample       11  13052911 SVOAK60  3242 S13T004247-MSD
12)  Sample       12  13052912 SVOAK60  blank
13)  Sample       13  13052913 SVOAK60  3243 S13T004275-SAM
14)  Sample       14  13052914 DFTPKIM  blank
15)  Sample       15  13052915 SVOAK60  3244 S13T004302-SAM
16)  Sample       16  13052916 DFTPKIM  blank
17)  Sample       17  13052917 SVOAK60  3245 Check Std
18)  Sample       16  13052918 SVOAK60  blank
19)  Sample       16  13052919 SVOAK60  blank
```

```
   Last Modified: Wed May 15 10:02:36 2013                Page: 1
```

```
   Sequence Name: C:\msdchem\1\sequence\130529.S
         Comment: C109 CLO, SVOA, SOL ,prep #41251
        Operator: CJO
       Data Path: C:\MSDCHEM\1\DATA\130529.B\
Instrument Control  Pre-Seq Cmd:
Data Analysis       Pre-Seq Cmd:

Instrument Control Post-Seq Cmd:
Data Analysis      Post-Seq Cmd:

   Method Sections To Run     On A Barcode Mismatch
    (X) Full Method             (X) Inject Anyway
    ( ) Reprocessing Only       ( ) Don't Inject

   ------------------------------------------------------------------------
   Line                  Sample Name/Misc Info
   ------------------------------------------------------------------------
   1   Type: Sample      blank
       Vial: 1           solvent blank
       Method  : DFTPKIM.M
       Datafile: 13052901.D
       Bar Code:                   Samp Amt: 0          Multiplr: 0
       Area% Report    :per Method       Lib. Search Rep :per Method
       Quant Report    :per Method       Post-Quant Macro:per Method
       CR Database     :per Method       CR Spreadsheet  :per Method
   ------------------------------------------------------------------------
   2   Type: Sample      DFTPP HNF-N-1896-146.02
       Vial: 2           DFTPP HNF-N-1896-146.02
       Method  : DFTPKIM.M
       Datafile: 13052902.D
       Bar Code:                   Samp Amt: 0          Multiplr: 0
       Area% Report    :per Method       Lib. Search Rep :per Method
       Quant Report    :per Method       Post-Quant Macro:per Method
       CR Database     :per Method       CR Spreadsheet  :per Method
   ------------------------------------------------------------------------
   3   Type: Sample      CCV 4,HNF-N-1896-152.02
       Vial: 3           Added 2.5ul Int.Std. HNF-N-1896-146.01
       Method  : SVOAK60.M
       Datafile: 13052903.D
       Bar Code:                   Samp Amt: 0          Multiplr: 0
       Area% Report    :per Method       Lib. Search Rep :per Method
       Quant Report    :per Method       Post-Quant Macro:per Method
       CR Database     :per Method       CR Spreadsheet  :per Method
   ------------------------------------------------------------------------
   4   Type: Sample      blank
       Vial: 4           solvent blank
       Method  : DFTPKIM.M
       Datafile: 13052904.D
       Bar Code:                   Samp Amt: 0          Multiplr: 0
       Area% Report    :per Method       Lib. Search Rep :per Method
       Quant Report    :per Method       Post-Quant Macro:per Method
       CR Database     :per Method       CR Spreadsheet  :per Method
   ------------------------------------------------------------------------
   5   Type: Sample      3237 Blank
       Vial: 5           Added 2.5ul Int.Std. HNF-N-1896-146.01
       Method  : SVOAK60.M
       Datafile: 13052905.D
       Bar Code:                   Samp Amt: 0          Multiplr: 0
       Area% Report    :per Method       Lib. Search Rep :per Method
       Quant Report    :per Method       Post-Quant Macro:per Method
       CR Database     :per Method       CR Spreadsheet  :per Method
   ------------------------------------------------------------------------
   6   Type: Sample      3238 LCS
       Vial: 6           Added 2.5ul Int.Std. HNF-N-1896-146.01
       Method  : SVOAK60.M
       Datafile: 13052906.D
       Bar Code:                   Samp Amt: 0          Multiplr: 0
       Area% Report    :per Method       Lib. Search Rep :per Method
       Quant Report    :per Method       Post-Quant Macro:per Method
       CR Database     :per Method       CR Spreadsheet  :per Method
   ------------------------------------------------------------------------
   7   Type: Sample      blank
       Vial: 7           solvent blank
       Method  : DFTPKIM.M
       Datafile: 13052907.D
       Bar Code:                   Samp Amt: 0          Multiplr: 0
       Area% Report    :per Method       Lib. Search Rep :per Method

   Sequence Last Modified  Wed May 15 10:02:36 2013        Page: 1
```

```
    Quant Report     :per Method       Post-Quant Macro:per Method
    CR Database      :per Method       CR Spreadsheet  :per Method
-------------------------------------------------------------------------
8   Type: Sample       3239 S13T004247-SAM
    Vial: 8            Added 2.25ul Int.Std. HNF-N-1896-146.01
    Method  : SVOAK60.M
    Datafile: 13052908.D
    Bar Code:                    Samp Amt: 0          Multiplr: 0
    Area% Report     :per Method       Lib. Search Rep :per Method
    Quant Report     :per Method       Post-Quant Macro:per Method
    CR Database      :per Method       CR Spreadsheet  :per Method
-------------------------------------------------------------------------
9   Type: Sample       3240 S13T004247-DUP
    Vial: 9            Added 2.25ul Int.Std. HNF-N-1896-146.01
    Method  : SVOAK60.M
    Datafile: 13052909.D
    Bar Code:                    Samp Amt: 0          Multiplr: 0
    Area% Report     :per Method       Lib. Search Rep :per Method
    Quant Report     :per Method       Post-Quant Macro:per Method
    CR Database      :per Method       CR Spreadsheet  :per Method
-------------------------------------------------------------------------
10  Type: Sample       3241 S13T004247-MS
    Vial: 10           Added 2.25ul Int.Std. HNF-N-1896-146.01
    Method  : SVOAK60.M
    Datafile: 13052910.D
    Bar Code:                    Samp Amt: 0          Multiplr: 0
    Area% Report     :per Method       Lib. Search Rep :per Method
    Quant Report     :per Method       Post-Quant Macro:per Method
    CR Database      :per Method       CR Spreadsheet  :per Method
-------------------------------------------------------------------------
11  Type: Sample       3242 S13T004247-MSD
    Vial: 11           Added 2.25ul Int.Std. HNF-N-1896-146.01
    Method  : SVOAK60.M
    Datafile: 13052911.D
    Bar Code:                    Samp Amt: 0          Multiplr: 0
    Area% Report     :per Method       Lib. Search Rep :per Method
    Quant Report     :per Method       Post-Quant Macro:per Method
    CR Database      :per Method       CR Spreadsheet  :per Method
-------------------------------------------------------------------------
12  Type: Sample       blank
    Vial: 12           solvent blank
    Method  : SVOAK60.M
    Datafile: 13052912.D
    Bar Code:                    Samp Amt: 0          Multiplr: 0
    Area% Report     :per Method       Lib. Search Rep :per Method
    Quant Report     :per Method       Post-Quant Macro:per Method
    CR Database      :per Method       CR Spreadsheet  :per Method
-------------------------------------------------------------------------
13  Type: Sample       3243 S13T004275-SAM
    Vial: 13           Added 2.25ul Int.Std. HNF-N-1896-146.01
    Method  : SVOAK60.M
    Datafile: 13052913.D
    Bar Code:                    Samp Amt: 0          Multiplr: 0
    Area% Report     :per Method       Lib. Search Rep :per Method
    Quant Report     :per Method       Post-Quant Macro:per Method
    CR Database      :per Method       CR Spreadsheet  :per Method
-------------------------------------------------------------------------
14  Type: Sample       blank
    Vial: 14           solvent blank
    Method  : DFTPKIM.M
    Datafile: 13052914.D
    Bar Code:                    Samp Amt: 0          Multiplr: 0
    Area% Report     :per Method       Lib. Search Rep :per Method
    Quant Report     :per Method       Post-Quant Macro:per Method
    CR Database      :per Method       CR Spreadsheet  :per Method
-------------------------------------------------------------------------
15  Type: Sample       3244 S13T004302-SAM
    Vial: 15           Added 2.25ul Int.Std. HNF-N-1896-146.01
    Method  : SVOAK60.M
    Datafile: 13052915.D
    Bar Code:                    Samp Amt: 0          Multiplr: 0
    Area% Report     :per Method       Lib. Search Rep :per Method
    Quant Report     :per Method       Post-Quant Macro:per Method
    CR Database      :per Method       CR Spreadsheet  :per Method
-------------------------------------------------------------------------
16  Type: Sample       blank
    Vial: 16           solvent blank

Sequence Last Modified  Wed May 15 10:02:36 2013        Page: 2
```

```
    Method   : DFTPKIM.M
    Datafile: 13052916.D
    Bar Code:                    Samp Amt: 0          Multiplr: 0
    Area% Report     :per Method       Lib. Search Rep :per Method
    Quant Report     :per Method       Post-Quant Macro:per Method
    CR Database      :per Method       CR Spreadsheet  :per Method
-------------------------------------------------------------------------
17  Type: Sample       3245 Check Std
    Vial: 17           Added 2.25ul Int.Std. HNF-N-1896-146.01
    Method   : SVOAK60.M
    Datafile: 13052917.D
    Bar Code:                    Samp Amt: 0          Multiplr: 0
    Area% Report     :per Method       Lib. Search Rep :per Method
    Quant Report     :per Method       Post-Quant Macro:per Method
    CR Database      :per Method       CR Spreadsheet  :per Method
-------------------------------------------------------------------------
18  Type: Sample       blank
    Vial: 16           solvent blank
    Method   : SVOAK60.M
    Datafile: 13052918.D
    Bar Code:                    Samp Amt: 0          Multiplr: 0
    Area% Report     :per Method       Lib. Search Rep :per Method
    Quant Report     :per Method       Post-Quant Macro:per Method
    CR Database      :per Method       CR Spreadsheet  :per Method
-------------------------------------------------------------------------
19  Type: Sample       blank
    Vial: 16           solvent blank
    Method   : SVOAK60.M
    Datafile: 13052919.D
    Bar Code:                    Samp Amt: 0          Multiplr: 0
    Area% Report     :per Method       Lib. Search Rep :per Method
    Quant Report     :per Method       Post-Quant Macro:per Method
    CR Database      :per Method       CR Spreadsheet  :per Method
-------------------------------------------------------------------------
```

SAMPLE INFORMATION SUMMARY

BATCH: \\apwscf02\slab\chem\tuvok.i\2013\130529_C109.B

Data File	Injection Date	Sample Type	Dil Factor	Inst ID	Method	Method Batch
13052902_dftpp.D	29-MAY-2013 09:19	DFTPP	1.00	tuvok	dftppk.m	130529_C109.B
13052903_ccv4.D	29-MAY-2013 09:41	Continuing Cal	1.00	tuvok	TCNTC130523.m	130529_C109.B
13052905BLANK.D	29-MAY-2013 10:39	BLANK	1.00	tuvok	TCNTC130523.m	130529_C109.B
13052906LCS.D	29-MAY-2013 11:23	LCS	1.00	tuvok	TCNTC130523.m	130529_C109.B
13052908_4247.D	29-MAY-2013 12:21	Unknown	1.00	tuvok	TCNTC130523.m	130529_C109.B
13052909_4247Dup.d	29-MAY-2013 13:04	Unknown	1.00	tuvok	TCNTC130523.m	130529_C109.B
13052910MS.D	29-MAY-2013 13:48	MS	1.00	tuvok	TCNTC130523.m	130529_C109.B
13052911MSD.D	29-MAY-2013 14:32	MSD	1.00	tuvok	TCNTC130523.m	130529_C109.B
13052913_4275.D	29-MAY-2013 15:59	Unknown	1.00	tuvok	TCNTC130523.m	130529_C109.B
13052915_4302.D	29-MAY-2013 16:57	Unknown	1.00	tuvok	TCNTC130523.m	130529_C109.B
13052917CkStd.D	29-MAY-2013 17:55	QCCHECK	1.00	tuvok	TCNTC130523.m	130529_C109.B

Data File	Matrix	Fraction	Lab Sample ID	Lab Prep Batch	Client Sample ID	Client Sample Group
13052902_dftpp.D	LIQUID	SV	DFTPP	41251	DFTPP	C109 CLO
13052903_ccv4.D	SOLID	SV	ccv4	41251	ccv4	C109 CLO
13052905BLANK.D	SOLID	SV	BLANK	41251	BLANK	C109 CLO
13052906LCS.D	SOLID	SV	LCS	41251	LCS	C109 CLO
13052908_4247.D	SOLID	SV	S13T004247	41251	S13T004247	C109 CLO
13052909_4247Dup.d	SOLID	SV	S13T004247DUP	41251	S13T004247DUP	C109 CLO
13052910MS.D	SOLID	SV	S13T004247MS	41251	S13T004247MS	C109 CLO
13052911MSD.D	SOLID	SV	S13T004247MSD	41251	S13T004247MSD	C109 CLO
13052913_4275.D	SOLID	SV	S13T004275	41251	S13T004275	C109 CLO
13052915_4302.D	SOLID	SV	S13T004302	41251	S13T004302	C109 CLO
13052917CkStd.D	SOLID	SV	Check Std	41251	Check Std	C109 CLO

Data File	Compound Sublist	Spike List File	Sample Ref #	QC Group Ref #	Init Cal Ref #	Batch Ref #
13052902_dftpp.D	all.sub		6000821	6000822	367179	21007572
13052903_ccv4.D	NTC+TC.sub	Full_Sol.spk	6000826	6000822	6000793	164501081
13052905BLANK.D	NTC+TC.sub	Full_Sol.spk	6000835	6000822	6000793	164501081
13052906LCS.D	NTC+TC.sub	Full_SolLCS.spk	6000836	6000822	6000793	164501081
13052908_4247.D	NTC+TC.sub	Full_Sol.spk	6000837	6000822	6000793	164501081
13052909_4247Dup.d	NTC+TC.sub	Full_Sol.spk	6000838	6000822	6000793	164501081
13052910MS.D	NTC+TC.sub	Full_Sol.spk	6000840	6000822	6000793	164501081
13052911MSD.D	NTC+TC.sub	Full_Sol.spk	6000842	6000822	6000793	164501081
13052913_4275.D	NTC+TC.sub	Full_Sol.spk	6000846	6000822	6000793	164501081
13052915_4302.D	NTC+TC.sub	Full_Sol.spk	6000847	6000822	6000793	164501081
13052917CkStd.D	NTC+TC.sub	Full_SolLCS.spk	6000848	6000822	6000793	164501081

LABCORE Completed Batch Report for Batch# 00041632

Analyst: Getz, Andrew

Book#: see Bench Sheet

Instrument: GCMSD2 (NELIX) for VOA

Method: VOA-SOL-TANK, LA-523-118 Rev/Mod H-0-B

Specification: C109 CLO

Prep Batch: 00041245

Batch Comment:

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
Sample Sequence 1																	
1	BLNK	S1305150015		0 0			1,1,1-Trichloroethane	SOLID		<9.2000E-01			0.92	ug/Kg			U
1	BLNK	S1305150015		0 0			1,1,2,2-Tetrachloroethane	SOLID		<2.1160E+00			2.116	ug/Kg			U
1	BLNK	S1305150015		0 0			1,1,2-Trichloroethane	SOLID		<1.6580E+00			1.658	ug/Kg			U
1	BLNK	S1305150015		0 0			1,1-Dichloroethane	SOLID		<9.7200E-01			0.972	ug/Kg			U
1	BLNK	S1305150015		0 0			1,1-Dichloroethene	SOLID		<4.2320E+00			4.232	ug/Kg			U
1	BLNK	S1305150015		0 0			1,2,4-Trichlorobenzene	SOLID		<1.9360E+00			1.936	ug/Kg			U
1	BLNK	S1305150015		0 0			1,2-Dibromo-3-Chloropropane	SOLID		<6.2800E+00			6.28	ug/Kg			U
1	BLNK	S1305150015		0 0			1,2-Dibromoethane	SOLID		<9.6400E-01			0.964	ug/Kg			U
1	BLNK	S1305150015		0 0			1,2-Dichlorobenzene	SOLID		<1.2180E+00			1.218	ug/Kg			U
1	BLNK	S1305150015		0 0			1,2-Dichloroethane	SOLID		<5.3800E-01			0.538	ug/Kg			U
1	BLNK	S1305150015		0 0			1,2-Dichloropropane	SOLID		<2.3080E+00			2.308	ug/Kg			U
1	BLNK	S1305150015		0 0			1,3-Dichlorobenzene	SOLID		<9.0800E-01			0.908	ug/Kg			U
1	BLNK	S1305150015		0 0			1,4-Dichlorobenzene	SOLID		<8.9600E-01			0.896	ug/Kg			U
1	BLNK	S1305150015		0 0			2-Butanone	SOLID		<1.9644E+01			19.644	ug/Kg			U
1	BLNK	S1305150015		0 0			2-Hexanone	SOLID		<2.3642E+01			23.642	ug/Kg			U
1	BLNK	S1305150015		0 0			2-Nitropropane	SOLID		<5.8800E+00			5.88	ug/Kg			U
1	BLNK	S1305150015		0 0			2-Pentanone	SOLID		<2.4352E+01			24.352	ug/Kg			U
1	BLNK	S1305150015		0 0			Acetone	SOLID		<2.1996E+01			21.996	ug/Kg			U
1	BLNK	S1305150015		0 0			Benzene	SOLID		<1.4740E+00			1.474	ug/Kg			U
1	BLNK	S1305150015		0 0			Bromodichloromethane	SOLID		<6.9600E-01			0.696	ug/Kg			U
1	BLNK	S1305150015		0 0			Bromoform	SOLID		<1.9500E+00			1.95	ug/Kg			U
1	BLNK	S1305150015		0 0			Bromomethane	SOLID		<4.9460E+00			4.946	ug/Kg			U
1	BLNK	S1305150015		0 0			Carbon Disulfide	SOLID		<1.6080E+00			1.608	ug/Kg			U
1	BLNK	S1305150015		0 0			Carbon Tetrachloride	SOLID		<9.3400E-01			0.934	ug/Kg			U
1	BLNK	S1305150015		0 0			Chlorobenzene	SOLID		<8.6400E-01			0.864	ug/Kg			U
1	BLNK	S1305150015		0 0			Chloroethane	SOLID		<5.1400E+00			5.14	ug/Kg			U
1	BLNK	S1305150015		0 0			Chloroform	SOLID		<1.3080E+00			1.308	ug/Kg			U
1	BLNK	S1305150015		0 0			Chloromethane	SOLID		<1.2700E+00			1.27	ug/Kg			U
1	BLNK	S1305150015		0 0			cis-Dichloroethylene	SOLID		<1.8160E+00			1.816	ug/Kg			U
1	BLNK	S1305150015		0 0			cis-1,3-Dichloropropene	SOLID		<1.4820E+00			1.482	ug/Kg			U

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041632

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
1	BLNK	S1305150015		0 0			Cyclohexane	SOLID		<8.1800E-01			0.818	ug/Kg			U
1	BLNK	S1305150015		0 0			Dibromochloromethane	SOLID		<8.5800E-01			0.858	ug/Kg			U
1	BLNK	S1305150015		0 0			Dichlorodifluoromethane	SOLID		<1.6540E+00			1.654	ug/Kg			U
1	BLNK	S1305150015		0 0			Diethyl ether	SOLID		<2.5620E+00			2.562	ug/Kg			U
1	BLNK	S1305150015		0 0			Ethyl acetate	SOLID		<5.8720E+00			5.872	ug/Kg			U
1	BLNK	S1305150015		0 0			Ethylbenzene	SOLID		<1.0720E+00			1.072	ug/Kg			U
1	BLNK	S1305150015		0 0			112Trichloro-122Trifluoroethan	SOLID		<1.1620E+00			1.162	ug/Kg			U
1	BLNK	S1305150015		0 0			Hexachloroethane	SOLID		<1.4060E+00			1.406	ug/Kg			U
1	BLNK	S1305150015		0 0			Hexane	SOLID		<2.5680E+00			2.568	ug/Kg			U
1	BLNK	S1305150015		0 0			Isopropyl Benzene	SOLID		<1.4420E+00			1.442	ug/Kg			U
1	BLNK	S1305150015		0 0			m,p-Xylene	SOLID		<1.6740E+00			1.674	ug/Kg			U
1	BLNK	S1305150015		0 0			Methyl Acetate	SOLID		<5.9020E+00			5.902	ug/Kg			U
1	BLNK	S1305150015		0 0			4-Methyl-2-pentanone	SOLID		<1.7080E+01			17.08	ug/Kg			U
1	BLNK	S1305150015		0 0			Methylcyclohexane	SOLID		<1.2900E+00			1.29	ug/Kg			U
1	BLNK	S1305150015		0 0			Methylene Chloride	SOLID		1.2460E+00			0.64	ug/Kg			J
1	BLNK	S1305150015		0 0			1-Butanol	SOLID		<1.0292E+02			102.92	ug/Kg			U
1	BLNK	S1305150015		0 0			N-Butylbenzene	SOLID		<1.7800E+00			1.78	ug/Kg			U
1	BLNK	S1305150015		0 0			o-Xylene	SOLID		<9.2000E-01			0.92	ug/Kg			U
1	BLNK	S1305150015		0 0			Styrene	SOLID		<1.2660E+00			1.266	ug/Kg			U
1	BLNK	S1305150015		0 0			tert-butyl methyl ether	SOLID		<2.0620E+00			2.062	ug/Kg			U
1	BLNK	S1305150015		0 0			Tetrachloroethene	SOLID		<1.0980E+00			1.098	ug/Kg			U
1	BLNK	S1305150015		0 0			Tetrahydrofuran	SOLID		<6.4900E+00			6.49	ug/Kg			U
1	BLNK	S1305150015		0 0			Toluene	SOLID		5.9040E+00			0.802	ug/Kg			J
1	BLNK	S1305150015		0 0			1,2-Dichloroethene	SOLID		<4.2100E+00			4.21	ug/Kg			U
1	BLNK	S1305150015		0 0			Total Trihalomethanes	SOLID		<2.9860E+00			2.986	ug/Kg			U
1	BLNK	S1305150015		0 0			Xylenes (total)	SOLID		<2.0320E+00			2.032	ug/Kg			U
1	BLNK	S1305150015		0 0			trans-Dichloroethylene	SOLID		<3.0300E+00			3.03	ug/Kg			U
1	BLNK	S1305150015		0 0			trans-1,3-Dichloropropene	SOLID		<2.7100E+00			2.71	ug/Kg			U
1	BLNK	S1305150015		0 0			Trichloroethene	SOLID		<1.2100E+00			1.21	ug/Kg			U
1	BLNK	S1305150015		0 0			Trichlorofluoromethane	SOLID		<9.4000E-01			0.94	ug/Kg			U
1	BLNK	S1305150015		0 0			Vinyl Chloride	SOLID		<1.7340E+00			1.734	ug/Kg			U
1	BLNK	S1305150015		0 0			1,2-Dichloroethane-d4	SOLID	200	2.0178E+02			1.916	ug/Kg	101	% Recovery	
1	BLNK	S1305150015		0 0			4-Bromofluorobenzene	SOLID	200	2.0499E+02			1.328	ug/Kg	102	% Recovery	
1	BLNK	S1305150015		0 0			Toluene-d8	SOLID	200	1.9237E+02			1.714	ug/Kg	96.2	% Recovery	
1	BLNK	S1305150015		0 0			Methane, dibromofluoro	SOLID		208.94517				ug/Kg			JNT
Sample Sequence 2																	
2	LCS	S1305150016		0 0			1,1,1-Trichloroethane	SOLID	201.6	2.3133E+02			0.92	ug/Kg	114.75	% Recovery	
2	LCS	S1305150016		0 0			1,1,2,2-Tetrachloroethane	SOLID	201.6	2.1615E+02			2.116	ug/Kg	107.22	% Recovery	
2	LCS	S1305150016		0 0			1,1,2-Trichloroethane	SOLID	201.6	2.1356E+02			1.658	ug/Kg	105.93	% Recovery	

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041632

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
2	LCS	S1305150016		0 0			1,1-Dichloroethane	SOLID	201.6	2.2329E+02			0.972	ug/Kg	110.76	% Recovery	
2	LCS	S1305150016		0 0			1,1-Dichloroethene	SOLID	201.6	2.1573E+02			4.232	ug/Kg	107.01	% Recovery	
2	LCS	S1305150016		0 0			1,2,4-Trichlorobenzene	SOLID	201.6	2.5003E+02			1.936	ug/Kg	124.02	% Recovery	
2	LCS	S1305150016		0 0			1,2-Dibromo-3-Chloropropane	SOLID	201.6	2.0245E+02			6.28	ug/Kg	100.42	% Recovery	
2	LCS	S1305150016		0 0			1,2-Dibromoethane	SOLID	201.6	2.1189E+02			0.964	ug/Kg	105.1	% Recovery	
2	LCS	S1305150016		0 0			1,2-Dichlorobenzene	SOLID	201.6	2.1211E+02			1.218	ug/Kg	105.21	% Recovery	
2	LCS	S1305150016		0 0			1,2-Dichloroethane	SOLID	201.6	2.1897E+02			0.538	ug/Kg	108.62	% Recovery	
2	LCS	S1305150016		0 0			1,2-Dichloropropane	SOLID	201.6	2.2095E+02			2.308	ug/Kg	109.6	% Recovery	
2	LCS	S1305150016		0 0			1,3-Dichlorobenzene	SOLID	201.6	2.1516E+02			0.908	ug/Kg	106.73	% Recovery	
2	LCS	S1305150016		0 0			1,4-Dichlorobenzene	SOLID	201.6	2.1831E+02			0.896	ug/Kg	108.29	% Recovery	
2	LCS	S1305150016		0 0			2-Butanone	SOLID	504	5.3843E+02			19.644	ug/Kg	106.83	% Recovery	
2	LCS	S1305150016		0 0			2-Hexanone	SOLID	504	5.7853E+02			23.642	ug/Kg	114.79	% Recovery	
2	LCS	S1305150016		0 0			2-Nitropropane	SOLID	504	5.0930E+02			5.88	ug/Kg	101.05	% Recovery	
2	LCS	S1305150016		0 0			2-Pentanone	SOLID	504	5.3005E+02			24.352	ug/Kg	105.17	% Recovery	
2	LCS	S1305150016		0 0			Acetone	SOLID	504	5.3794E+02			21.996	ug/Kg	106.73	% Recovery	
2	LCS	S1305150016		0 0			Benzene	SOLID	201.6	2.0797E+02			1.474	ug/Kg	103.16	% Recovery	
2	LCS	S1305150016		0 0			Bromodichloromethane	SOLID	201.6	2.2808E+02			0.696	ug/Kg	113.13	% Recovery	
2	LCS	S1305150016		0 0			Bromoform	SOLID	201.6	2.1086E+02			1.95	ug/Kg	104.59	% Recovery	
2	LCS	S1305150016		0 0			Bromomethane	SOLID	200	1.8911E+02			4.946	ug/Kg	94.555	% Recovery	
2	LCS	S1305150016		0 0			Carbon Disulfide	SOLID	201.6	2.0159E+02			1.608	ug/Kg	99.995	% Recovery	
2	LCS	S1305150016		0 0			Carbon Tetrachloride	SOLID	201.6	2.3166E+02			0.934	ug/Kg	114.91	% Recovery	
2	LCS	S1305150016		0 0			Chlorobenzene	SOLID	201.6	2.0363E+02			0.864	ug/Kg	101.01	% Recovery	
2	LCS	S1305150016		0 0			Chloroethane	SOLID	200	2.0543E+02			5.14	ug/Kg	102.72	% Recovery	
2	LCS	S1305150016		0 0			Chloroform	SOLID	201.6	2.2192E+02			1.308	ug/Kg	110.08	% Recovery	
2	LCS	S1305150016		0 0			Chloromethane	SOLID	200	1.3810E+02			1.27	ug/Kg	69.05	% Recovery	
2	LCS	S1305150016		0 0			cis-Dichloroethylene	SOLID	201.6	2.1454E+02			1.816	ug/Kg	106.42	% Recovery	
2	LCS	S1305150016		0 0			cis-1,3-Dichloropropene	SOLID	201.6	2.1993E+02			1.482	ug/Kg	109.09	% Recovery	
2	LCS	S1305150016		0 0			Cyclohexane	SOLID	201.6	2.3219E+02			0.818	ug/Kg	115.17	% Recovery	
2	LCS	S1305150016		0 0			Dibromochloromethane	SOLID	201.6	2.1118E+02			0.858	ug/Kg	104.75	% Recovery	
2	LCS	S1305150016		0 0			Dichlorodifluoromethane	SOLID	200	8.4599E+01			1.654	ug/Kg	42.3	% Recovery	
2	LCS	S1305150016		0 0			Diethyl ether	SOLID	201.6	1.9408E+02			2.562	ug/Kg	96.27	% Recovery	
2	LCS	S1305150016		0 0			Ethyl acetate	SOLID	504	5.7732E+02			5.872	ug/Kg	114.55	% Recovery	
2	LCS	S1305150016		0 0			Ethylbenzene	SOLID	201.6	2.0706E+02			1.072	ug/Kg	102.71	% Recovery	
2	LCS	S1305150016		0 0			112Trichloro-122Trifluoroethan	SOLID	201.6	2.1932E+02			1.162	ug/Kg	108.79	% Recovery	
2	LCS	S1305150016		0 0			Hexachloroethane	SOLID	201.6	2.3521E+02			1.406	ug/Kg	116.67	% Recovery	
2	LCS	S1305150016		0 0			Hexane	SOLID	201.6	2.0506E+02			2.568	ug/Kg	101.72	% Recovery	
2	LCS	S1305150016		0 0			Isopropyl Benzene	SOLID	201.6	2.0963E+02			1.442	ug/Kg	103.98	% Recovery	
2	LCS	S1305150016		0 0			m,p-Xylene	SOLID	403.2	4.1310E+02			1.674	ug/Kg	102.46	% Recovery	
2	LCS	S1305150016		0 0			Methyl Acetate	SOLID	201.6	2.1318E+02			5.902	ug/Kg	105.74	% Recovery	
2	LCS	S1305150016		0 0			4-Methyl-2-pentanone	SOLID	504	5.8553E+02			17.08	ug/Kg	116.18	% Recovery	

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041632

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
2	LCS	S1305150016		0 0			Methylcyclohexane	SOLID	201.6	2.3491E+02			1.29	ug/Kg	116.52	% Recovery	
2	LCS	S1305150016		0 0			Methylene Chloride	SOLID	201.6	2.1347E+02			0.64	ug/Kg	105.89	% Recovery	
2	LCS	S1305150016		0 0			1-Butanol	SOLID	1040	1.0260E+03			102.92	ug/Kg	98.654	% Recovery	
2	LCS	S1305150016		0 0			N-Butylbenzene	SOLID	201.6	2.1588E+02			1.78	ug/Kg	107.08	% Recovery	
2	LCS	S1305150016		0 0			o-Xylene	SOLID	201.6	2.1650E+02			0.92	ug/Kg	107.39	% Recovery	
2	LCS	S1305150016		0 0			Styrene	SOLID	201.6	2.2767E+02			1.266	ug/Kg	112.93	% Recovery	
2	LCS	S1305150016		0 0			tert-butyl methyl ether	SOLID	201.6	2.1823E+02			2.062	ug/Kg	108.25	% Recovery	
2	LCS	S1305150016		0 0			Tetrachloroethene	SOLID	201.6	2.2743E+02			1.098	ug/Kg	112.81	% Recovery	
2	LCS	S1305150016		0 0			Tetrahydrofuran	SOLID	201.6	2.1008E+02			6.49	ug/Kg	104.21	% Recovery	
2	LCS	S1305150016		0 0			Toluene	SOLID	201.6	2.1420E+02			0.802	ug/Kg	106.25	% Recovery	
2	LCS	S1305150016		0 0			1,2-Dichloroethene	SOLID	403.2	4.3563E+02			4.21	ug/Kg	108.04	% Recovery	
2	LCS	S1305150016		0 0			Total Trihalomethanes	SOLID	806.4	8.7204E+02			2.986	ug/Kg	108.14	% Recovery	
2	LCS	S1305150016		0 0			Xylenes (total)	SOLID	604.8	6.2960E+02			2.032	ug/Kg	104.1	% Recovery	
2	LCS	S1305150016		0 0			trans-Dichloroethylene	SOLID	201.6	2.2109E+02			3.03	ug/Kg	109.67	% Recovery	
2	LCS	S1305150016		0 0			trans-1,3-Dichloropropene	SOLID	201.6	2.2541E+02			2.71	ug/Kg	111.81	% Recovery	
2	LCS	S1305150016		0 0			Trichloroethene	SOLID	201.6	2.2928E+02			1.21	ug/Kg	113.73	% Recovery	
2	LCS	S1305150016		0 0			Trichlorofluoromethane	SOLID	200	1.9189E+02			0.94	ug/Kg	95.945	% Recovery	
2	LCS	S1305150016		0 0			Vinyl Chloride	SOLID	200	1.5480E+02			1.734	ug/Kg	77.4	% Recovery	
2	LCS	S1305150016		0 0			1,2-Dichloroethane-d4	SOLID	200	1.9380E+02			1.916	ug/Kg	96.9	% Recovery	
2	LCS	S1305150016		0 0			4-Bromofluorobenzene	SOLID	200	1.8537E+02			1.328	ug/Kg	92.7	% Recovery	
2	LCS	S1305150016		0 0			Toluene-d8	SOLID	200	1.8965E+02			1.714	ug/Kg	94.8	% Recovery	
Sample Sequence 3																	
3	SAMPLE	S13T004239		0 0			1,1,1-Trichloroethane	SOLID	N/A	<8.1996E-01			0.81996	ug/Kg			U
3	SAMPLE	S13T004239		0 0			1,1,2,2-Tetrachloroethane	SOLID	N/A	<1.8859E+00			1.8859	ug/Kg			Ub
3	SAMPLE	S13T004239		0 0			1,1,2-Trichloroethane	SOLID	N/A	<1.4777E+00			1.4777	ug/Kg			U
3	SAMPLE	S13T004239		0 0			1,1-Dichloroethane	SOLID	N/A	<8.6631E-01			0.86631	ug/Kg			U
3	SAMPLE	S13T004239		0 0			1,1-Dichloroethene	SOLID	N/A	<3.7718E+00			3.7718	ug/Kg			Ub
3	SAMPLE	S13T004239		0 0			1,2,4-Trichlorobenzene	SOLID	N/A	<1.7255E+00			1.7255	ug/Kg			U
3	SAMPLE	S13T004239		0 0			1,2-Dibromo-3-Chloropropane	SOLID	N/A	<5.5971E+00			5.5971	ug/Kg			U
3	SAMPLE	S13T004239		0 0			1,2-Dibromoethane	SOLID	N/A	<8.5918E-01			0.85918	ug/Kg			U
3	SAMPLE	S13T004239		0 0			1,2-Dichlorobenzene	SOLID	N/A	<1.0856E+00			1.0856	ug/Kg			U
3	SAMPLE	S13T004239		0 0			1,2-Dichloroethane	SOLID	N/A	<4.7950E-01			0.4795	ug/Kg			U
3	SAMPLE	S13T004239		0 0			1,2-Dichloropropane	SOLID	N/A	<2.0570E+00			2.057	ug/Kg			U
3	SAMPLE	S13T004239		0 0			1,3-Dichlorobenzene	SOLID	N/A	<8.0927E-01			0.80927	ug/Kg			U
3	SAMPLE	S13T004239		0 0			1,4-Dichlorobenzene	SOLID	N/A	<7.9857E-01			0.79857	ug/Kg			U
3	SAMPLE	S13T004239		0 0			2-Butanone	SOLID	N/A	<1.7508E+01			17.508	ug/Kg			U
3	SAMPLE	S13T004239		0 0			2-Hexanone	SOLID	N/A	<2.1071E+01			21.071	ug/Kg			U
3	SAMPLE	S13T004239		0 0			2-Nitropropane	SOLID	N/A	<5.2406E+00			5.2406	ug/Kg			Ub
3	SAMPLE	S13T004239		0 0			2-Pentanone	SOLID	N/A	<2.1704E+01			21.704	ug/Kg			Ub
3	SAMPLE	S13T004239		0 0			Acetone	SOLID	N/A	1.9965E+02			19.604	ug/Kg			

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041632

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
3	SAMPLE	S13T004239		0 0			Benzene	SOLID	N/A	<1.3137E+00			1.3137	ug/Kg			U
3	SAMPLE	S13T004239		0 0			Bromodichloromethane	SOLID	N/A	<6.2032E-01			0.62032	ug/Kg			U
3	SAMPLE	S13T004239		0 0			Bromoform	SOLID	N/A	<1.7380E+00			1.738	ug/Kg			U
3	SAMPLE	S13T004239		0 0			Bromomethane	SOLID	N/A	<4.4082E+00			4.4082	ug/Kg			U
3	SAMPLE	S13T004239		0 0			Carbon Disulfide	SOLID	N/A	<1.4332E+00			1.4332	ug/Kg			U
3	SAMPLE	S13T004239		0 0			Carbon Tetrachloride	SOLID	N/A	<8.3244E-01			0.83244	ug/Kg			U
3	SAMPLE	S13T004239		0 0			Chlorobenzene	SOLID	N/A	<7.7005E-01			0.77005	ug/Kg			U
3	SAMPLE	S13T004239		0 0			Chloroethane	SOLID	N/A	<4.5811E+00			4.5811	ug/Kg			U
3	SAMPLE	S13T004239		0 0			Chloroform	SOLID	N/A	<1.1658E+00			1.1658	ug/Kg			U
3	SAMPLE	S13T004239		0 0			Chloromethane	SOLID	N/A	<1.1319E+00			1.1319	ug/Kg			Uab
3	SAMPLE	S13T004239		0 0			cis-Dichloroethylene	SOLID	N/A	<1.6185E+00			1.6185	ug/Kg			U
3	SAMPLE	S13T004239		0 0			cis-1,3-Dichloropropene	SOLID	N/A	<1.3209E+00			1.3209	ug/Kg			U
3	SAMPLE	S13T004239		0 0			Cyclohexane	SOLID	N/A	<7.2906E-01			0.72906	ug/Kg			U
3	SAMPLE	S13T004239		0 0			Dibromochloromethane	SOLID	N/A	<7.6470E-01			0.7647	ug/Kg			U
3	SAMPLE	S13T004239		0 0			Dichlorodifluoromethane	SOLID	N/A	<1.4742E+00			1.4742	ug/Kg			Uab
3	SAMPLE	S13T004239		0 0			Diethyl ether	SOLID	N/A	<2.2834E+00			2.2834	ug/Kg			U
3	SAMPLE	S13T004239		0 0			Ethyl acetate	SOLID	N/A	<5.2335E+00			5.2335	ug/Kg			Ub
3	SAMPLE	S13T004239		0 0			Ethylbenzene	SOLID	N/A	<9.5544E-01			0.95544	ug/Kg			U
3	SAMPLE	S13T004239		0 0			112Trichloro-122Trifluoroethan	SOLID	N/A	<1.0356E+00			1.0356	ug/Kg			U
3	SAMPLE	S13T004239		0 0			Hexachloroethane	SOLID	N/A	<1.2531E+00			1.2531	ug/Kg			U
3	SAMPLE	S13T004239		0 0			Hexane	SOLID	N/A	4.4265E+01			2.2888	ug/Kg			
3	SAMPLE	S13T004239		0 0			Isopropyl Benzene	SOLID	N/A	<1.2852E+00			1.2852	ug/Kg			U
3	SAMPLE	S13T004239		0 0			m,p-Xylene	SOLID	N/A	<1.4920E+00			1.492	ug/Kg			U
3	SAMPLE	S13T004239		0 0			Methyl Acetate	SOLID	N/A	<5.2602E+00			5.2602	ug/Kg			Ub
3	SAMPLE	S13T004239		0 0			4-Methyl-2-pentanone	SOLID	N/A	<1.5223E+01			15.223	ug/Kg			U
3	SAMPLE	S13T004239		0 0			Methylcyclohexane	SOLID	N/A	<1.1497E+00			1.1497	ug/Kg			U
3	SAMPLE	S13T004239		0 0			Methylene Chloride	SOLID	N/A	<5.7041E-01			0.57041	ug/Kg			U
3	SAMPLE	S13T004239		0 0			1-Butanol	SOLID	N/A	<9.1729E+01			91.729	ug/Kg			U
3	SAMPLE	S13T004239		0 0			N-Butylbenzene	SOLID	N/A	<1.5865E+00			1.5865	ug/Kg			U
3	SAMPLE	S13T004239		0 0			o-Xylene	SOLID	N/A	<8.1996E-01			0.81996	ug/Kg			U
3	SAMPLE	S13T004239		0 0			Styrene	SOLID	N/A	1.3570E+00			1.1283	ug/Kg			J
3	SAMPLE	S13T004239		0 0			tert-butyl methyl ether	SOLID	N/A	<1.8378E+00			1.8378	ug/Kg			U
3	SAMPLE	S13T004239		0 0			Tetrachloroethene	SOLID	N/A	<9.7861E-01			0.97861	ug/Kg			U
3	SAMPLE	S13T004239		0 0			Tetrahydrofuran	SOLID	N/A	<5.7843E+00			5.7843	ug/Kg			U
3	SAMPLE	S13T004239		0 0			Toluene	SOLID	N/A	5.0000E+00			0.71479	ug/Kg			BJ
3	SAMPLE	S13T004239		0 0			1,2-Dichloroethene	SOLID	N/A	<3.7522E+00			3.7522	ug/Kg			U
3	SAMPLE	S13T004239		0 0			Total Trihalomethanes	SOLID	N/A	<2.6613E+00			2.6613	ug/Kg			U
3	SAMPLE	S13T004239		0 0			Xylenes (total)	SOLID	N/A	<1.8111E+00			1.8111	ug/Kg			U
3	SAMPLE	S13T004239		0 0			trans-Dichloroethylene	SOLID	N/A	<2.7005E+00			2.7005	ug/Kg			U
3	SAMPLE	S13T004239		0 0			trans-1,3-Dichloropropene	SOLID	N/A	<2.4153E+00			2.4153	ug/Kg			U

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041632

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
3	SAMPLE	S13T004239		0 0			Trichloroethene	SOLID	N/A	<1.0784E+00			1.0784	ug/Kg			Ub
3	SAMPLE	S13T004239		0 0			Trichlorofluoromethane	SOLID	N/A	<8.3779E-01			0.83779	ug/Kg			U
3	SAMPLE	S13T004239		0 0			Vinyl Chloride	SOLID	N/A	<1.5455E+00			1.5455	ug/Kg			U
3	SAMPLE	S13T004239		0 0			1,2-Dichloroethane-d4	SOLID	178.2531	1.7900E+02			1.7077	ug/Kg	100	% Recovery	
3	SAMPLE	S13T004239		0 0			4-Bromofluorobenzene	SOLID	178.2531	1.7405E+02			1.1836	ug/Kg	97.6	% Recovery	
3	SAMPLE	S13T004239		0 0			Toluene-d8	SOLID	178.2531	1.7072E+02			1.5276	ug/Kg	95.8	% Recovery	
Sample Sequence 4																	
4	DUP	S1305150017	S13T004239	0 0			1,1,1-Trichloroethane	SOLID	<8.1996E-01	<9.4456E-01			0.94456	ug/Kg			
4	DUP	S1305150017	S13T004239	0 0			1,1,2,2-Tetrachloroethane	SOLID	<1.8859E+00	<2.1725E+00			2.1725	ug/Kg			
4	DUP	S1305150017	S13T004239	0 0			1,1,2-Trichloroethane	SOLID	<1.4777E+00	<1.7023E+00			1.7023	ug/Kg			
4	DUP	S1305150017	S13T004239	0 0			1,1-Dichloroethane	SOLID	<8.6631E-01	<9.9795E-01			0.99795	ug/Kg			
4	DUP	S1305150017	S13T004239	0 0			1,1-Dichloroethene	SOLID	<3.7718E+00	<4.3450E+00			4.345	ug/Kg			
4	DUP	S1305150017	S13T004239	0 0			1,2,4-Trichlorobenzene	SOLID	<1.7255E+00	<1.9877E+00			1.9877	ug/Kg			
4	DUP	S1305150017	S13T004239	0 0			1,2-Dibromo-3-Chloropropane	SOLID	<5.5971E+00	<6.4476E+00			6.4476	ug/Kg			
4	DUP	S1305150017	S13T004239	0 0			1,2-Dibromoethane	SOLID	<8.5918E-01	<9.8973E-01			0.98973	ug/Kg			
4	DUP	S1305150017	S13T004239	0 0			1,2-Dichlorobenzene	SOLID	<1.0856E+00	<1.2505E+00			1.2505	ug/Kg			
4	DUP	S1305150017	S13T004239	0 0			1,2-Dichloroethane	SOLID	<4.7950E-01	<5.5236E-01			0.55236	ug/Kg			
4	DUP	S1305150017	S13T004239	0 0			1,2-Dichloropropane	SOLID	<2.0570E+00	<2.3696E+00			2.3696	ug/Kg			
4	DUP	S1305150017	S13T004239	0 0			1,3-Dichlorobenzene	SOLID	<8.0927E-01	<9.3224E-01			0.93224	ug/Kg			
4	DUP	S1305150017	S13T004239	0 0			1,4-Dichlorobenzene	SOLID	<7.9857E-01	<9.1992E-01			0.91992	ug/Kg			
4	DUP	S1305150017	S13T004239	0 0			2-Butanone	SOLID	<1.7508E+01	<2.0168E+01			20.168	ug/Kg			
4	DUP	S1305150017	S13T004239	0 0			2-Hexanone	SOLID	<2.1071E+01	<2.4273E+01			24.273	ug/Kg			
4	DUP	S1305150017	S13T004239	0 0			2-Nitropropane	SOLID	<5.2406E+00	<6.0370E+00			6.037	ug/Kg			
4	DUP	S1305150017	S13T004239	0 0			2-Pentanone	SOLID	<2.1704E+01	<2.5002E+01			25.002	ug/Kg			
4	DUP	S1305150017	S13T004239	0 0			Acetone	SOLID	1.9965E+02	2.7796E+01			22.583	ug/Kg	151.12	% RPD	
4	DUP	S1305150017	S13T004239	0 0			Benzene	SOLID	<1.3137E+00	<1.5133E+00			1.5133	ug/Kg			
4	DUP	S1305150017	S13T004239	0 0			Bromodichloromethane	SOLID	<6.2032E-01	<7.1458E-01			0.71458	ug/Kg			
4	DUP	S1305150017	S13T004239	0 0			Bromoform	SOLID	<1.7380E+00	<2.0021E+00			2.0021	ug/Kg			
4	DUP	S1305150017	S13T004239	0 0			Bromomethane	SOLID	<4.4082E+00	<5.0780E+00			5.078	ug/Kg			
4	DUP	S1305150017	S13T004239	0 0			Carbon Disulfide	SOLID	<1.4332E+00	<1.6509E+00			1.6509	ug/Kg			
4	DUP	S1305150017	S13T004239	0 0			Carbon Tetrachloride	SOLID	<8.3244E-01	<9.5893E-01			0.95893	ug/Kg			
4	DUP	S1305150017	S13T004239	0 0			Chlorobenzene	SOLID	<7.7005E-01	<8.8706E-01			0.88706	ug/Kg			
4	DUP	S1305150017	S13T004239	0 0			Chloroethane	SOLID	<4.5811E+00	<5.2772E+00			5.2772	ug/Kg			
4	DUP	S1305150017	S13T004239	0 0			Chloroform	SOLID	<1.1658E+00	<1.3429E+00			1.3429	ug/Kg			
4	DUP	S1305150017	S13T004239	0 0			Chloromethane	SOLID	<1.1319E+00	<1.3039E+00			1.3039	ug/Kg			
4	DUP	S1305150017	S13T004239	0 0			cis-Dichloroethylene	SOLID	<1.6185E+00	<1.8645E+00			1.8645	ug/Kg			
4	DUP	S1305150017	S13T004239	0 0			cis-1,3-Dichloropropene	SOLID	<1.3209E+00	<1.5216E+00			1.5216	ug/Kg			
4	DUP	S1305150017	S13T004239	0 0			Cyclohexane	SOLID	<7.2906E-01	<8.3984E-01			0.83984	ug/Kg			
4	DUP	S1305150017	S13T004239	0 0			Dibromochloromethane	SOLID	<7.6470E-01	<8.8090E-01			0.8809	ug/Kg			
4	DUP	S1305150017	S13T004239	0 0			Dichlorodifluoromethane	SOLID	<1.4742E+00	<1.6982E+00			1.6982	ug/Kg			

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041632

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
4	DUP	S1305150017	S13T004239	0 0			Diethyl ether	SOLID	<2.2834E+00	<2.6304E+00			2.6304	ug/Kg			
4	DUP	S1305150017	S13T004239	0 0			Ethyl acetate	SOLID	<5.2335E+00	<6.0287E+00			6.0287	ug/Kg			
4	DUP	S1305150017	S13T004239	0 0			Ethylbenzene	SOLID	<9.5544E-01	<1.1006E+00			1.1006	ug/Kg			
4	DUP	S1305150017	S13T004239	0 0			112Trichloro-122Trifluoroethan	SOLID	<1.0356E+00	<1.1930E+00			1.193	ug/Kg			
4	DUP	S1305150017	S13T004239	0 0			Hexachloroethane	SOLID	<1.2531E+00	<1.4435E+00			1.4435	ug/Kg			
4	DUP	S1305150017	S13T004239	0 0			Hexane	SOLID	4.4265E+01	<2.6366E+00			2.6366	ug/Kg			
4	DUP	S1305150017	S13T004239	0 0			Isopropyl Benzene	SOLID	<1.2852E+00	<1.4805E+00			1.4805	ug/Kg			
4	DUP	S1305150017	S13T004239	0 0			m,p-Xylene	SOLID	<1.4920E+00	<1.7187E+00			1.7187	ug/Kg			
4	DUP	S1305150017	S13T004239	0 0			Methyl Acetate	SOLID	<5.2602E+00	<6.0595E+00			6.0595	ug/Kg			
4	DUP	S1305150017	S13T004239	0 0			4-Methyl-2-pentanone	SOLID	<1.5223E+01	<1.7536E+01			17.536	ug/Kg			
4	DUP	S1305150017	S13T004239	0 0			Methylcyclohexane	SOLID	<1.1497E+00	<1.3244E+00			1.3244	ug/Kg			
4	DUP	S1305150017	S13T004239	0 0			Methylene Chloride	SOLID	<5.7041E-01	<6.5708E-01			0.65708	ug/Kg			
4	DUP	S1305150017	S13T004239	0 0			1-Butanol	SOLID	<9.1729E+01	<1.0567E+02			105.67	ug/Kg			
4	DUP	S1305150017	S13T004239	0 0			N-Butylbenzene	SOLID	<1.5865E+00	<1.8275E+00			1.8275	ug/Kg			
4	DUP	S1305150017	S13T004239	0 0			o-Xylene	SOLID	<8.1996E-01	<9.4456E-01			0.94456	ug/Kg			
4	DUP	S1305150017	S13T004239	0 0			Styrene	SOLID	1.3570E+00	<1.2998E+00			1.2998	ug/Kg			
4	DUP	S1305150017	S13T004239	0 0			tert-butyl methyl ether	SOLID	<1.8378E+00	<2.1170E+00			2.117	ug/Kg			
4	DUP	S1305150017	S13T004239	0 0			Tetrachloroethene	SOLID	<9.7861E-01	<1.1273E+00			1.1273	ug/Kg			
4	DUP	S1305150017	S13T004239	0 0			Tetrahydrofuran	SOLID	<5.7843E+00	<6.6632E+00			6.6632	ug/Kg			
4	DUP	S1305150017	S13T004239	0 0			Toluene	SOLID	5.0000E+00	2.8590E+00			0.82341	ug/Kg	54.485	% RPD	
4	DUP	S1305150017	S13T004239	0 0			1,2-Dichloroethene	SOLID	<3.7522E+00	<4.3224E+00			4.3224	ug/Kg			
4	DUP	S1305150017	S13T004239	0 0			Total Trihalomethanes	SOLID	<2.6613E+00	<3.0657E+00			3.0657	ug/Kg			
4	DUP	S1305150017	S13T004239	0 0			Xylenes (total)	SOLID	<1.8111E+00	<2.0862E+00			2.0862	ug/Kg			
4	DUP	S1305150017	S13T004239	0 0			trans-Dichloroethylene	SOLID	<2.7005E+00	<3.1109E+00			3.1109	ug/Kg			
4	DUP	S1305150017	S13T004239	0 0			trans-1,3-Dichloropropene	SOLID	<2.4153E+00	<2.7823E+00			2.7823	ug/Kg			
4	DUP	S1305150017	S13T004239	0 0			Trichloroethene	SOLID	<1.0784E+00	<1.2423E+00			1.2423	ug/Kg			
4	DUP	S1305150017	S13T004239	0 0			Trichlorofluoromethane	SOLID	<8.3779E-01	<9.6509E-01			0.96509	ug/Kg			
4	DUP	S1305150017	S13T004239	0 0			Vinyl Chloride	SOLID	<1.5455E+00	<1.7803E+00			1.7803	ug/Kg			
4	DUP	S1305150017	S13T004239	0 0			1,2-Dichloroethane-d4	SOLID	1.7900E+02	2.0833E+02			1.9671	ug/Kg	0.995	% RPD	
4	DUP	S1305150017	S13T004239	0 0			4-Bromofluorobenzene	SOLID	1.7405E+02	1.9926E+02			1.3634	ug/Kg	0.617	% RPD	
4	DUP	S1305150017	S13T004239	0 0			Toluene-d8	SOLID	1.7072E+02	1.9360E+02			1.7598	ug/Kg	1.58	% RPD	
Sample Sequence 5																	
5	MS	S1305150018	S13T004239	0 0			1,1,1-Trichloroethane	SOLID	204.878	2.3224E+02			0.93496	ug/Kg	113.36	% Recovery	
5	MS	S1305150018	S13T004239	0 0			1,1,2,2-Tetrachloroethane	SOLID	204.878	<2.1504E+00			2.1504	ug/Kg	0	% Recovery	
5	MS	S1305150018	S13T004239	0 0			1,1,2-Trichloroethane	SOLID	204.878	1.9884E+02			1.685	ug/Kg	97.053	% Recovery	
5	MS	S1305150018	S13T004239	0 0			1,1-Dichloroethane	SOLID	204.878	2.3223E+02			0.9878	ug/Kg	113.35	% Recovery	
5	MS	S1305150018	S13T004239	0 0			1,1-Dichloroethene	SOLID	204.878	2.5094E+02			4.3008	ug/Kg	122.48	% Recovery	
5	MS	S1305150018	S13T004239	0 0			1,2,4-Trichlorobenzene	SOLID	204.878	2.5607E+02			1.9675	ug/Kg	124.99	% Recovery	
5	MS	S1305150018	S13T004239	0 0			1,2-Dibromo-3-Chloropropane	SOLID	204.878	2.1967E+02			6.3821	ug/Kg	107.22	% Recovery	

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041632

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
5	MS	S1305150018	S13T004239	0 0			1,2-Dibromoethane	SOLID	204.878	2.3680E+02			0.97967	ug/Kg	115.58	% Recovery	
5	MS	S1305150018	S13T004239	0 0			1,2-Dichlorobenzene	SOLID	204.878	2.2539E+02			1.2378	ug/Kg	110.01	% Recovery	
5	MS	S1305150018	S13T004239	0 0			1,2-Dichloroethane	SOLID	204.878	2.3531E+02			0.54675	ug/Kg	114.85	% Recovery	
5	MS	S1305150018	S13T004239	0 0			1,2-Dichloropropane	SOLID	204.878	2.2938E+02			2.3455	ug/Kg	111.96	% Recovery	
5	MS	S1305150018	S13T004239	0 0			1,3-Dichlorobenzene	SOLID	204.878	2.2278E+02			0.92276	ug/Kg	108.74	% Recovery	
5	MS	S1305150018	S13T004239	0 0			1,4-Dichlorobenzene	SOLID	204.878	2.2434E+02			0.91057	ug/Kg	109.5	% Recovery	
5	MS	S1305150018	S13T004239	0 0			2-Butanone	SOLID	512.1951	6.7384E+02			19.963	ug/Kg	131.56	% Recovery	
5	MS	S1305150018	S13T004239	0 0			2-Hexanone	SOLID	512.1951	7.3564E+02			24.026	ug/Kg	143.62	% Recovery	
5	MS	S1305150018	S13T004239	0 0			2-Nitropropane	SOLID	512.1951	<5.9756E+00			5.9756	ug/Kg	0	% Recovery	
5	MS	S1305150018	S13T004239	0 0			2-Pentanone	SOLID	512.1951	6.7851E+02			24.748	ug/Kg	132.47	% Recovery	
5	MS	S1305150018	S13T004239	0 0			Acetone	SOLID	512.1951	7.3271E+02			22.354	ug/Kg	104.07	% Recovery	
5	MS	S1305150018	S13T004239	0 0			Benzene	SOLID	204.878	2.1399E+02			1.498	ug/Kg	104.45	% Recovery	
5	MS	S1305150018	S13T004239	0 0			Bromodichloromethane	SOLID	204.878	2.2767E+02			0.70732	ug/Kg	111.12	% Recovery	
5	MS	S1305150018	S13T004239	0 0			Bromoform	SOLID	204.878	2.3083E+02			1.9817	ug/Kg	112.67	% Recovery	
5	MS	S1305150018	S13T004239	0 0			Bromomethane	SOLID	203.252	1.9002E+02			5.0264	ug/Kg	93.49	% Recovery	
5	MS	S1305150018	S13T004239	0 0			Carbon Disulfide	SOLID	204.878	1.9171E+02			1.6341	ug/Kg	93.573	% Recovery	
5	MS	S1305150018	S13T004239	0 0			Carbon Tetrachloride	SOLID	204.878	2.3076E+02			0.94919	ug/Kg	112.63	% Recovery	
5	MS	S1305150018	S13T004239	0 0			Chlorobenzene	SOLID	204.878	2.0930E+02			0.87805	ug/Kg	102.16	% Recovery	
5	MS	S1305150018	S13T004239	0 0			Chloroethane	SOLID	203.252	1.9664E+02			5.2236	ug/Kg	96.747	% Recovery	
5	MS	S1305150018	S13T004239	0 0			Chloroform	SOLID	204.878	2.2925E+02			1.3293	ug/Kg	111.9	% Recovery	
5	MS	S1305150018	S13T004239	0 0			Chloromethane	SOLID	203.252	1.3729E+02			1.2906	ug/Kg	67.547	% Recovery	
5	MS	S1305150018	S13T004239	0 0			cis-Dichloroethylene	SOLID	204.878	2.2184E+02			1.8455	ug/Kg	108.28	% Recovery	
5	MS	S1305150018	S13T004239	0 0			cis-1,3-Dichloropropene	SOLID	204.878	2.3456E+02			1.5061	ug/Kg	114.49	% Recovery	
5	MS	S1305150018	S13T004239	0 0			Cyclohexane	SOLID	204.878	2.3526E+02			0.8313	ug/Kg	114.83	% Recovery	
5	MS	S1305150018	S13T004239	0 0			Dibromochloromethane	SOLID	204.878	2.2016E+02			0.87195	ug/Kg	107.46	% Recovery	
5	MS	S1305150018	S13T004239	0 0			Dichlorodifluoromethane	SOLID	203.252	8.1052E+01			1.6809	ug/Kg	39.878	% Recovery	
5	MS	S1305150018	S13T004239	0 0			Diethyl ether	SOLID	204.878	2.1272E+02			2.6037	ug/Kg	103.83	% Recovery	
5	MS	S1305150018	S13T004239	0 0			Ethyl acetate	SOLID	512.1951	<5.9675E+00			5.9675	ug/Kg	0	% Recovery	
5	MS	S1305150018	S13T004239	0 0			Ethylbenzene	SOLID	204.878	2.1105E+02			1.0894	ug/Kg	103.01	% Recovery	
5	MS	S1305150018	S13T004239	0 0			112Trichloro-122Trifluoroethan	SOLID	204.878	2.2154E+02			1.1809	ug/Kg	108.13	% Recovery	
5	MS	S1305150018	S13T004239	0 0			Hexachloroethane	SOLID	204.878	2.2510E+02			1.4289	ug/Kg	109.87	% Recovery	
5	MS	S1305150018	S13T004239	0 0			Hexane	SOLID	204.878	2.3709E+02			2.6098	ug/Kg	94.117	% Recovery	
5	MS	S1305150018	S13T004239	0 0			Isopropyl Benzene	SOLID	204.878	2.1130E+02			1.4654	ug/Kg	103.13	% Recovery	
5	MS	S1305150018	S13T004239	0 0			m,p-Xylene	SOLID	409.756	4.1873E+02			1.7012	ug/Kg	102.19	% Recovery	
5	MS	S1305150018	S13T004239	0 0			Methyl Acetate	SOLID	204.878	<5.9980E+00			5.998	ug/Kg	0	% Recovery	
5	MS	S1305150018	S13T004239	0 0			4-Methyl-2-pentanone	SOLID	512.1951	7.0280E+02			17.358	ug/Kg	137.21	% Recovery	
5	MS	S1305150018	S13T004239	0 0			Methylcyclohexane	SOLID	204.878	2.3625E+02			1.311	ug/Kg	115.31	% Recovery	
5	MS	S1305150018	S13T004239	0 0			Methylene Chloride	SOLID	204.878	2.2640E+02			0.65041	ug/Kg	110.5	% Recovery	
5	MS	S1305150018	S13T004239	0 0			1-Butanol	SOLID	1056.91	1.2584E+03			104.59	ug/Kg	119.06	% Recovery	
5	MS	S1305150018	S13T004239	0 0			N-Butylbenzene	SOLID	204.878	2.1503E+02			1.8089	ug/Kg	104.96	% Recovery	
5	MS	S1305150018	S13T004239	0 0			o-Xylene	SOLID	204.878	2.1854E+02			0.93496	ug/Kg	106.67	% Recovery	

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041632

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
5	MS	S1305150018	S13T004239	0 0			Styrene	SOLID	204.878	2.3063E+02			1.2866	ug/Kg	111.91	% Recovery	
5	MS	S1305150018	S13T004239	0 0			tert-butyl methyl ether	SOLID	204.878	2.4470E+02			2.0955	ug/Kg	119.44	% Recovery	
5	MS	S1305150018	S13T004239	0 0			Tetrachloroethene	SOLID	204.878	2.3022E+02			1.1159	ug/Kg	112.37	% Recovery	
5	MS	S1305150018	S13T004239	0 0			Tetrahydrofuran	SOLID	204.878	2.4083E+02			6.5955	ug/Kg	117.55	% Recovery	
5	MS	S1305150018	S13T004239	0 0			Toluene	SOLID	204.878	2.2018E+02			0.81504	ug/Kg	105.03	% Recovery	
5	MS	S1305150018	S13T004239	0 0			1,2-Dichloroethene	SOLID	409.756	4.4507E+02			4.2785	ug/Kg	108.62	% Recovery	
5	MS	S1305150018	S13T004239	0 0			Total Trihalomethanes	SOLID	819.5121	9.0790E+02			3.0346	ug/Kg	110.79	% Recovery	
5	MS	S1305150018	S13T004239	0 0			Xylenes (total)	SOLID	614.6341	6.3727E+02			2.065	ug/Kg	103.68	% Recovery	
5	MS	S1305150018	S13T004239	0 0			trans-Dichloroethylene	SOLID	204.878	2.2323E+02			3.0793	ug/Kg	108.96	% Recovery	
5	MS	S1305150018	S13T004239	0 0			trans-1,3-Dichloropropene	SOLID	204.878	2.3701E+02			2.7541	ug/Kg	115.68	% Recovery	
5	MS	S1305150018	S13T004239	0 0			Trichloroethene	SOLID	204.878	4.1395E+02			1.2297	ug/Kg	202.05	% Recovery	
5	MS	S1305150018	S13T004239	0 0			Trichlorofluoromethane	SOLID	203.252	1.9578E+02			0.95528	ug/Kg	96.324	% Recovery	
5	MS	S1305150018	S13T004239	0 0			Vinyl Chloride	SOLID	203.252	1.5443E+02			1.7622	ug/Kg	75.98	% Recovery	
5	MS	S1305150018	S13T004239	0 0			1,2-Dichloroethane-d4	SOLID	203.252	2.0374E+02			1.9472	ug/Kg	100	% Recovery	
5	MS	S1305150018	S13T004239	0 0			4-Bromofluorobenzene	SOLID	203.252	1.9926E+02			1.3496	ug/Kg	98	% Recovery	
5	MS	S1305150018	S13T004239	0 0			Toluene-d8	SOLID	203.252	1.9994E+02			1.7419	ug/Kg	98.4	% Recovery	
Sample Sequence 6																	
6	MSD	S1305150019	S13T004239	0 0			1,1,1-Trichloroethane	SOLID	192	2.2285E+02			0.87619	ug/Kg	116.07	% Recovery	
															2.3624	% RPD	
6	MSD	S1305150019	S13T004239	0 0			1,1,2,2-Tetrachloroethane	SOLID	192	<2.0152E+00			2.0152	ug/Kg	0	% Recovery	
															0	% RPD	
6	MSD	S1305150019	S13T004239	0 0			1,1,2-Trichloroethane	SOLID	192	1.7114E+02			1.579	ug/Kg	89.135	% Recovery	
															8.5054	% RPD	
6	MSD	S1305150019	S13T004239	0 0			1,1-Dichloroethane	SOLID	192	2.2105E+02			0.92571	ug/Kg	115.13	% Recovery	
															1.5581	% RPD	
6	MSD	S1305150019	S13T004239	0 0			1,1-Dichloroethene	SOLID	192	2.5864E+02			4.0305	ug/Kg	134.71	% Recovery	
															9.5105	% RPD	
6	MSD	S1305150019	S13T004239	0 0			1,2,4-Trichlorobenzene	SOLID	192	2.3061E+02			1.8438	ug/Kg	120.11	% Recovery	
															3.9820	% RPD	
6	MSD	S1305150019	S13T004239	0 0			1,2-Dibromo-3-Chloropropane	SOLID	192	1.7945E+02			5.981	ug/Kg	93.464	% Recovery	
															13.709	% RPD	
6	MSD	S1305150019	S13T004239	0 0			1,2-Dibromoethane	SOLID	192	2.1653E+02			0.9181	ug/Kg	112.78	% Recovery	
															2.4523	% RPD	
6	MSD	S1305150019	S13T004239	0 0			1,2-Dichlorobenzene	SOLID	192	2.0689E+02			1.16	ug/Kg	107.76	% Recovery	
															2.0664	% RPD	
6	MSD	S1305150019	S13T004239	0 0			1,2-Dichloroethane	SOLID	192	2.1650E+02			0.51238	ug/Kg	112.76	% Recovery	
															1.8365	% RPD	
6	MSD	S1305150019	S13T004239	0 0			1,2-Dichloropropane	SOLID	192	2.1785E+02			2.1981	ug/Kg	113.46	% Recovery	
															1.3308	% RPD	
6	MSD	S1305150019	S13T004239	0 0			1,3-Dichlorobenzene	SOLID	192	2.0507E+02			0.86476	ug/Kg	106.81	% Recovery	

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041632

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
															1.7908	% RPD	
6	MSD	S1305150019	S13T004239	0 0			1,4-Dichlorobenzene	SOLID	192	2.0902E+02			0.85333	ug/Kg	108.86	% Recovery	
															0.58619	% RPD	
6	MSD	S1305150019	S13T004239	0 0			2-Butanone	SOLID	480	5.6792E+02			18.709	ug/Kg	118.32	% Recovery	
															10.597	% RPD	
6	MSD	S1305150019	S13T004239	0 0			2-Hexanone	SOLID	480	6.4256E+02			22.516	ug/Kg	133.87	% Recovery	
															7.0273	% RPD	
6	MSD	S1305150019	S13T004239	0 0			2-Nitropropane	SOLID	480	<5.6000E+00			5.6	ug/Kg	0	% Recovery	
															0	% RPD	
6	MSD	S1305150019	S13T004239	0 0			2-Pentanone	SOLID	480	5.7476E+02			23.192	ug/Kg	119.74	% Recovery	
															10.095	% RPD	
6	MSD	S1305150019	S13T004239	0 0			Acetone	SOLID	480	6.1729E+02			20.949	ug/Kg	87.008	% Recovery	
															17.859	% RPD	
6	MSD	S1305150019	S13T004239	0 0			Benzene	SOLID	192	2.0242E+02			1.4038	ug/Kg	105.43	% Recovery	
															0.93387	% RPD	
6	MSD	S1305150019	S13T004239	0 0			Bromodichloromethane	SOLID	192	2.0703E+02			0.66286	ug/Kg	107.83	% Recovery	
															3.0053	% RPD	
6	MSD	S1305150019	S13T004239	0 0			Bromoform	SOLID	192	2.1369E+02			1.8571	ug/Kg	111.3	% Recovery	
															1.2234	% RPD	
6	MSD	S1305150019	S13T004239	0 0			Bromomethane	SOLID	190.4761	1.7531E+02			4.7105	ug/Kg	92.038	% Recovery	
															1.5653	% RPD	
6	MSD	S1305150019	S13T004239	0 0			Carbon Disulfide	SOLID	192	1.7400E+02			1.5314	ug/Kg	90.625	% Recovery	
															3.2009	% RPD	
6	MSD	S1305150019	S13T004239	0 0			Carbon Tetrachloride	SOLID	192	2.2047E+02			0.88952	ug/Kg	114.83	% Recovery	
															1.9344	% RPD	
6	MSD	S1305150019	S13T004239	0 0			Chlorobenzene	SOLID	192	1.9676E+02			0.82286	ug/Kg	102.48	% Recovery	
															0.31274	% RPD	
6	MSD	S1305150019	S13T004239	0 0			Chloroethane	SOLID	190.4761	2.0443E+02			4.8952	ug/Kg	107.33	% Recovery	
															10.372	% RPD	
6	MSD	S1305150019	S13T004239	0 0			Chloroform	SOLID	192	2.1717E+02			1.2457	ug/Kg	113.11	% Recovery	
															1.0755	% RPD	
6	MSD	S1305150019	S13T004239	0 0			Chloromethane	SOLID	190.4761	1.2823E+02			1.2095	ug/Kg	67.321	% Recovery	
															0.33514	% RPD	
6	MSD	S1305150019	S13T004239	0 0			cis-Dichloroethylene	SOLID	192	2.1433E+02			1.7295	ug/Kg	111.63	% Recovery	
															3.0467	% RPD	
6	MSD	S1305150019	S13T004239	0 0			cis-1,3-Dichloropropene	SOLID	192	2.1960E+02			1.4114	ug/Kg	114.38	% Recovery	
															0.096124	% RPD	
6	MSD	S1305150019	S13T004239	0 0			Cyclohexane	SOLID	192	2.1996E+02			0.77905	ug/Kg	114.56	% Recovery	
															0.23541	% RPD	
6	MSD	S1305150019	S13T004239	0 0			Dibromochloromethane	SOLID	192	2.0492E+02			0.81714	ug/Kg	106.73	% Recovery	
															0.68164	% RPD	

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041632

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
6	MSD	S1305150019	S13T004239	0 0			Dichlorodifluoromethane	SOLID	190.4761	7.0222E+01			1.5752	ug/Kg	36.867	% Recovery	
															7.8468	% RPD	
6	MSD	S1305150019	S13T004239	0 0			Diethyl ether	SOLID	192	2.0089E+02			2.44	ug/Kg	104.63	% Recovery	
															0.76753	% RPD	
6	MSD	S1305150019	S13T004239	0 0			Ethyl acetate	SOLID	480	<5.5924E+00			5.5924	ug/Kg	0	% Recovery	
															0	% RPD	
6	MSD	S1305150019	S13T004239	0 0			Ethylbenzene	SOLID	192	2.0012E+02			1.021	ug/Kg	104.23	% Recovery	
															1.1774	% RPD	
6	MSD	S1305150019	S13T004239	0 0			112Trichloro-122Trifluoroethan	SOLID	192	2.1198E+02			1.1067	ug/Kg	110.41	% Recovery	
															2.0866	% RPD	
6	MSD	S1305150019	S13T004239	0 0			Hexachloroethane	SOLID	192	2.0184E+02			1.339	ug/Kg	105.12	% Recovery	
															4.4188	% RPD	
6	MSD	S1305150019	S13T004239	0 0			Hexane	SOLID	192	2.2167E+02			2.4457	ug/Kg	92.398	% Recovery	
															1.8433	% RPD	
6	MSD	S1305150019	S13T004239	0 0			Isopropyl Benzene	SOLID	192	1.9914E+02			1.3733	ug/Kg	103.72	% Recovery	
															0.57046	% RPD	
6	MSD	S1305150019	S13T004239	0 0			m,p-Xylene	SOLID	384	3.9595E+02			1.5943	ug/Kg	103.11	% Recovery	
															0.89625	% RPD	
6	MSD	S1305150019	S13T004239	0 0			Methyl Acetate	SOLID	192	<5.6210E+00			5.621	ug/Kg	0	% Recovery	
															0	% RPD	
6	MSD	S1305150019	S13T004239	0 0			4-Methyl-2-pentanone	SOLID	480	6.1976E+02			16.267	ug/Kg	129.12	% Recovery	
															6.0752	% RPD	
6	MSD	S1305150019	S13T004239	0 0			Methylcyclohexane	SOLID	192	2.1940E+02			1.2286	ug/Kg	114.27	% Recovery	
															0.90600	% RPD	
6	MSD	S1305150019	S13T004239	0 0			Methylene Chloride	SOLID	192	2.1109E+02			0.60952	ug/Kg	109.94	% Recovery	
															0.50807	% RPD	
6	MSD	S1305150019	S13T004239	0 0			1-Butanol	SOLID	990.4761	1.0804E+03			98.019	ug/Kg	109.08	% Recovery	
															8.7490	% RPD	
6	MSD	S1305150019	S13T004239	0 0			N-Butylbenzene	SOLID	192	1.9675E+02			1.6952	ug/Kg	102.47	% Recovery	
															2.4008	% RPD	
6	MSD	S1305150019	S13T004239	0 0			o-Xylene	SOLID	192	2.0768E+02			0.87619	ug/Kg	108.17	% Recovery	
															1.3964	% RPD	
6	MSD	S1305150019	S13T004239	0 0			Styrene	SOLID	192	2.1518E+02			1.2057	ug/Kg	111.37	% Recovery	
															0.48370	% RPD	
6	MSD	S1305150019	S13T004239	0 0			tert-butyl methyl ether	SOLID	192	2.2017E+02			1.9638	ug/Kg	114.67	% Recovery	
															4.0750	% RPD	
6	MSD	S1305150019	S13T004239	0 0			Tetrachloroethene	SOLID	192	2.2129E+02			1.0457	ug/Kg	115.26	% Recovery	
															2.5392	% RPD	
6	MSD	S1305150019	S13T004239	0 0			Tetrahydrofuran	SOLID	192	2.1605E+02			6.181	ug/Kg	112.53	% Recovery	
															4.3637	% RPD	
6	MSD	S1305150019	S13T004239	0 0			Toluene	SOLID	192	2.1449E+02			0.76381	ug/Kg	109.11	% Recovery	

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041632

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
															3.8106	% RPD	
6	MSD	S1305150019	S13T004239	0 0			1,2-Dichloroethene	SOLID	384	4.2559E+02			4.0095	ug/Kg	110.83	% Recovery	
															2.0141	% RPD	
6	MSD	S1305150019	S13T004239	0 0			Total Trihalomethanes	SOLID	768	8.4281E+02			2.8438	ug/Kg	109.74	% Recovery	
															0.95225	% RPD	
6	MSD	S1305150019	S13T004239	0 0			Xylenes (total)	SOLID	576	6.0363E+02			1.9352	ug/Kg	104.8	% Recovery	
															1.0744	% RPD	
6	MSD	S1305150019	S13T004239	0 0			trans-Dichloroethylene	SOLID	192	2.1126E+02			2.8857	ug/Kg	110.03	% Recovery	
															0.97721	% RPD	
6	MSD	S1305150019	S13T004239	0 0			trans-1,3-Dichloropropene	SOLID	192	2.2325E+02			2.581	ug/Kg	116.28	% Recovery	
															0.51733	% RPD	
6	MSD	S1305150019	S13T004239	0 0			Trichloroethene	SOLID	192	3.9468E+02			1.1524	ug/Kg	205.56	% Recovery	
															1.7222	% RPD	
6	MSD	S1305150019	S13T004239	0 0			Trichlorofluoromethane	SOLID	190.4761	1.8539E+02			0.89524	ug/Kg	97.33	% Recovery	
															1.0390	% RPD	
6	MSD	S1305150019	S13T004239	0 0			Vinyl Chloride	SOLID	190.4761	1.4672E+02			1.6514	ug/Kg	77.028	% Recovery	
															1.3699	% RPD	
6	MSD	S1305150019	S13T004239	0 0			1,2-Dichloroethane-d4	SOLID	190.4761	1.8257E+02			1.8248	ug/Kg	95.8	% Recovery	
															4.29	% RPD	
6	MSD	S1305150019	S13T004239	0 0			4-Bromofluorobenzene	SOLID	190.4761	1.8374E+02			1.2648	ug/Kg	96.5	% Recovery	
															1.54	% RPD	
6	MSD	S1305150019	S13T004239	0 0			Toluene-d8	SOLID	190.4761	1.8941E+02			1.6324	ug/Kg	99.4	% Recovery	
															1.01	% RPD	
Sample Sequence 7																	
7	SAMPLE	S13T004266		0 0			1,1,1-Trichloroethane	SOLID	N/A	<8.5661E-01			0.85661	ug/Kg			U
7	SAMPLE	S13T004266		0 0			1,1,2,2-Tetrachloroethane	SOLID	N/A	<1.9702E+00			1.9702	ug/Kg			Ub
7	SAMPLE	S13T004266		0 0			1,1,2-Trichloroethane	SOLID	N/A	<1.5438E+00			1.5438	ug/Kg			U
7	SAMPLE	S13T004266		0 0			1,1-Dichloroethane	SOLID	N/A	<9.0503E-01			0.90503	ug/Kg			U
7	SAMPLE	S13T004266		0 0			1,1-Dichloroethene	SOLID	N/A	<3.9404E+00			3.9404	ug/Kg			Ub
7	SAMPLE	S13T004266		0 0			1,2,4-Trichlorobenzene	SOLID	N/A	3.7560E+00			1.8026	ug/Kg			J
7	SAMPLE	S13T004266		0 0			1,2-Dibromo-3-Chloropropane	SOLID	N/A	<5.8473E+00			5.8473	ug/Kg			U
7	SAMPLE	S13T004266		0 0			1,2-Dibromoethane	SOLID	N/A	<8.9758E-01			0.89758	ug/Kg			U
7	SAMPLE	S13T004266		0 0			1,2-Dichlorobenzene	SOLID	N/A	<1.1341E+00			1.1341	ug/Kg			U
7	SAMPLE	S13T004266		0 0			1,2-Dichloroethane	SOLID	N/A	<5.0093E-01			0.50093	ug/Kg			U
7	SAMPLE	S13T004266		0 0			1,2-Dichloropropane	SOLID	N/A	<2.1490E+00			2.149	ug/Kg			U
7	SAMPLE	S13T004266		0 0			1,3-Dichlorobenzene	SOLID	N/A	1.2050E+00			0.84544	ug/Kg			J
7	SAMPLE	S13T004266		0 0			1,4-Dichlorobenzene	SOLID	N/A	1.6360E+00			0.83426	ug/Kg			J
7	SAMPLE	S13T004266		0 0			2-Butanone	SOLID	N/A	<1.8290E+01			18.29	ug/Kg			U
7	SAMPLE	S13T004266		0 0			2-Hexanone	SOLID	N/A	<2.2013E+01			22.013	ug/Kg			U
7	SAMPLE	S13T004266		0 0			2-Nitropropane	SOLID	N/A	<5.4749E+00			5.4749	ug/Kg			Ub

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041632

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
7	SAMPLE	S13T004266		0 0			2-Pentanone	SOLID	N/A	<2.2674E+01			22.674	ug/Kg			Ub
7	SAMPLE	S13T004266		0 0			Acetone	SOLID	N/A	9.4469E+01			20.48	ug/Kg			J
7	SAMPLE	S13T004266		0 0			Benzene	SOLID	N/A	<1.3724E+00			1.3724	ug/Kg			U
7	SAMPLE	S13T004266		0 0			Bromodichloromethane	SOLID	N/A	<6.4804E-01			0.64804	ug/Kg			U
7	SAMPLE	S13T004266		0 0			Bromoform	SOLID	N/A	<1.8156E+00			1.8156	ug/Kg			U
7	SAMPLE	S13T004266		0 0			Bromomethane	SOLID	N/A	<4.6052E+00			4.6052	ug/Kg			U
7	SAMPLE	S13T004266		0 0			Carbon Disulfide	SOLID	N/A	<1.4972E+00			1.4972	ug/Kg			U
7	SAMPLE	S13T004266		0 0			Carbon Tetrachloride	SOLID	N/A	<8.6965E-01			0.86965	ug/Kg			U
7	SAMPLE	S13T004266		0 0			Chlorobenzene	SOLID	N/A	<8.0447E-01			0.80447	ug/Kg			U
7	SAMPLE	S13T004266		0 0			Chloroethane	SOLID	N/A	<4.7858E+00			4.7858	ug/Kg			U
7	SAMPLE	S13T004266		0 0			Chloroform	SOLID	N/A	<1.2179E+00			1.2179	ug/Kg			U
7	SAMPLE	S13T004266		0 0			Chloromethane	SOLID	N/A	<1.1825E+00			1.1825	ug/Kg			Uab
7	SAMPLE	S13T004266		0 0			cis-Dichloroethylene	SOLID	N/A	<1.6909E+00			1.6909	ug/Kg			U
7	SAMPLE	S13T004266		0 0			cis-1,3-Dichloropropene	SOLID	N/A	<1.3799E+00			1.3799	ug/Kg			U
7	SAMPLE	S13T004266		0 0			Cyclohexane	SOLID	N/A	<7.6164E-01			0.76164	ug/Kg			U
7	SAMPLE	S13T004266		0 0			Dibromochloromethane	SOLID	N/A	<7.9888E-01			0.79888	ug/Kg			U
7	SAMPLE	S13T004266		0 0			Dichlorodifluoromethane	SOLID	N/A	<1.5400E+00			1.54	ug/Kg			Uab
7	SAMPLE	S13T004266		0 0			Diethyl ether	SOLID	N/A	<2.3855E+00			2.3855	ug/Kg			U
7	SAMPLE	S13T004266		0 0			Ethyl acetate	SOLID	N/A	<5.4674E+00			5.4674	ug/Kg			Ub
7	SAMPLE	S13T004266		0 0			Ethylbenzene	SOLID	N/A	<9.9814E-01			0.99814	ug/Kg			U
7	SAMPLE	S13T004266		0 0			112Trichloro-122Trifluoroethan	SOLID	N/A	<1.0819E+00			1.0819	ug/Kg			U
7	SAMPLE	S13T004266		0 0			Hexachloroethane	SOLID	N/A	<1.3091E+00			1.3091	ug/Kg			U
7	SAMPLE	S13T004266		0 0			Hexane	SOLID	N/A	1.6044E+01			2.3911	ug/Kg			J
7	SAMPLE	S13T004266		0 0			Isopropyl Benzene	SOLID	N/A	<1.3426E+00			1.3426	ug/Kg			U
7	SAMPLE	S13T004266		0 0			m,p-Xylene	SOLID	N/A	<1.5587E+00			1.5587	ug/Kg			U
7	SAMPLE	S13T004266		0 0			Methyl Acetate	SOLID	N/A	<5.4953E+00			5.4953	ug/Kg			Ub
7	SAMPLE	S13T004266		0 0			4-Methyl-2-pentanone	SOLID	N/A	<1.5903E+01			15.903	ug/Kg			U
7	SAMPLE	S13T004266		0 0			Methylcyclohexane	SOLID	N/A	<1.2011E+00			1.2011	ug/Kg			U
7	SAMPLE	S13T004266		0 0			Methylene Chloride	SOLID	N/A	<5.9590E-01			0.5959	ug/Kg			U
7	SAMPLE	S13T004266		0 0			1-Butanol	SOLID	N/A	<9.5829E+01			95.829	ug/Kg			U
7	SAMPLE	S13T004266		0 0			N-Butylbenzene	SOLID	N/A	<1.6574E+00			1.6574	ug/Kg			U
7	SAMPLE	S13T004266		0 0			o-Xylene	SOLID	N/A	<8.5661E-01			0.85661	ug/Kg			U
7	SAMPLE	S13T004266		0 0			Styrene	SOLID	N/A	1.7910E+00			1.1788	ug/Kg			J
7	SAMPLE	S13T004266		0 0			tert-butyl methyl ether	SOLID	N/A	<1.9199E+00			1.9199	ug/Kg			U
7	SAMPLE	S13T004266		0 0			Tetrachloroethene	SOLID	N/A	<1.0223E+00			1.0223	ug/Kg			U
7	SAMPLE	S13T004266		0 0			Tetrahydrofuran	SOLID	N/A	<6.0428E+00			6.0428	ug/Kg			U
7	SAMPLE	S13T004266		0 0			Toluene	SOLID	N/A	4.6200E+00			0.74674	ug/Kg			BJ
7	SAMPLE	S13T004266		0 0			1,2-Dichloroethene	SOLID	N/A	<3.9199E+00			3.9199	ug/Kg			U
7	SAMPLE	S13T004266		0 0			Total Trihalomethanes	SOLID	N/A	<2.7803E+00			2.7803	ug/Kg			U
7	SAMPLE	S13T004266		0 0			Xylenes (total)	SOLID	N/A	<1.8920E+00			1.892	ug/Kg			U
7	SAMPLE	S13T004266		0 0			trans-Dichloroethylene	SOLID	N/A	<2.8212E+00			2.8212	ug/Kg			U

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041632

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
7	SAMPLE	S13T004266		0 0			trans-1,3-Dichloropropene	SOLID	N/A	<2.5233E+00			2.5233	ug/Kg			U
7	SAMPLE	S13T004266		0 0			Trichloroethene	SOLID	N/A	<1.1266E+00			1.1266	ug/Kg			Ub
7	SAMPLE	S13T004266		0 0			Trichlorofluoromethane	SOLID	N/A	<8.7523E-01			0.87523	ug/Kg			U
7	SAMPLE	S13T004266		0 0			Vinyl Chloride	SOLID	N/A	<1.6145E+00			1.6145	ug/Kg			U
7	SAMPLE	S13T004266		0 0			1,2-Dichloroethane-d4	SOLID	186.2197	2.0264E+02			1.784	ug/Kg	109	% Recovery	
7	SAMPLE	S13T004266		0 0			4-Bromofluorobenzene	SOLID	186.2197	1.8884E+02			1.2365	ug/Kg	101	% Recovery	
7	SAMPLE	S13T004266		0 0			Toluene-d8	SOLID	186.2197	1.7874E+02			1.5959	ug/Kg	96	% Recovery	
7	SAMPLE	S13T004266		0 0			1-Hexanol, 2-ethyl-	SOLID		97.274089				ug/Kg			JNT
Sample Sequence 8																	
8	SAMPLE	S13T004293		0 0			1,1,1-Trichloroethane	SOLID	N/A	<8.7619E-01			0.87619	ug/Kg			U
8	SAMPLE	S13T004293		0 0			1,1,2,2-Tetrachloroethane	SOLID	N/A	<2.0152E+00			2.0152	ug/Kg			Ub
8	SAMPLE	S13T004293		0 0			1,1,2-Trichloroethane	SOLID	N/A	<1.5790E+00			1.579	ug/Kg			U
8	SAMPLE	S13T004293		0 0			1,1-Dichloroethane	SOLID	N/A	<9.2571E-01			0.92571	ug/Kg			U
8	SAMPLE	S13T004293		0 0			1,1-Dichloroethene	SOLID	N/A	<4.0305E+00			4.0305	ug/Kg			Ub
8	SAMPLE	S13T004293		0 0			1,2,4-Trichlorobenzene	SOLID	N/A	<1.8438E+00			1.8438	ug/Kg			U
8	SAMPLE	S13T004293		0 0			1,2-Dibromo-3-Chloropropane	SOLID	N/A	<5.9810E+00			5.981	ug/Kg			U
8	SAMPLE	S13T004293		0 0			1,2-Dibromoethane	SOLID	N/A	<9.1810E-01			0.9181	ug/Kg			U
8	SAMPLE	S13T004293		0 0			1,2-Dichlorobenzene	SOLID	N/A	<1.1600E+00			1.16	ug/Kg			U
8	SAMPLE	S13T004293		0 0			1,2-Dichloroethane	SOLID	N/A	<5.1238E-01			0.51238	ug/Kg			U
8	SAMPLE	S13T004293		0 0			1,2-Dichloropropane	SOLID	N/A	<2.1981E+00			2.1981	ug/Kg			U
8	SAMPLE	S13T004293		0 0			1,3-Dichlorobenzene	SOLID	N/A	<8.6476E-01			0.86476	ug/Kg			U
8	SAMPLE	S13T004293		0 0			1,4-Dichlorobenzene	SOLID	N/A	<8.5333E-01			0.85333	ug/Kg			U
8	SAMPLE	S13T004293		0 0			2-Butanone	SOLID	N/A	<1.8709E+01			18.709	ug/Kg			U
8	SAMPLE	S13T004293		0 0			2-Hexanone	SOLID	N/A	<2.2516E+01			22.516	ug/Kg			U
8	SAMPLE	S13T004293		0 0			2-Nitropropane	SOLID	N/A	<5.6000E+00			5.6	ug/Kg			Ub
8	SAMPLE	S13T004293		0 0			2-Pentanone	SOLID	N/A	<2.3192E+01			23.192	ug/Kg			Ub
8	SAMPLE	S13T004293		0 0			Acetone	SOLID	N/A	8.4068E+01			20.949	ug/Kg			J
8	SAMPLE	S13T004293		0 0			Benzene	SOLID	N/A	<1.4038E+00			1.4038	ug/Kg			U
8	SAMPLE	S13T004293		0 0			Bromodichloromethane	SOLID	N/A	<6.6286E-01			0.66286	ug/Kg			U
8	SAMPLE	S13T004293		0 0			Bromoform	SOLID	N/A	<1.8571E+00			1.8571	ug/Kg			U
8	SAMPLE	S13T004293		0 0			Bromomethane	SOLID	N/A	<4.7105E+00			4.7105	ug/Kg			U
8	SAMPLE	S13T004293		0 0			Carbon Disulfide	SOLID	N/A	<1.5314E+00			1.5314	ug/Kg			U
8	SAMPLE	S13T004293		0 0			Carbon Tetrachloride	SOLID	N/A	<8.8952E-01			0.88952	ug/Kg			U
8	SAMPLE	S13T004293		0 0			Chlorobenzene	SOLID	N/A	<8.2286E-01			0.82286	ug/Kg			U
8	SAMPLE	S13T004293		0 0			Chloroethane	SOLID	N/A	<4.8952E+00			4.8952	ug/Kg			U
8	SAMPLE	S13T004293		0 0			Chloroform	SOLID	N/A	<1.2457E+00			1.2457	ug/Kg			U
8	SAMPLE	S13T004293		0 0			Chloromethane	SOLID	N/A	<1.2095E+00			1.2095	ug/Kg			Uab
8	SAMPLE	S13T004293		0 0			cis-Dichloroethylene	SOLID	N/A	<1.7295E+00			1.7295	ug/Kg			U
8	SAMPLE	S13T004293		0 0			cis-1,3-Dichloropropene	SOLID	N/A	<1.4114E+00			1.4114	ug/Kg			U
8	SAMPLE	S13T004293		0 0			Cyclohexane	SOLID	N/A	<7.7905E-01			0.77905	ug/Kg			U

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041632

Seq	Type	Sample#	Assoc. Sample	RepR	A	*	Test	Matrix	Actual	Found	Blank	CTR	Limit (DL/RL/UL)	Unit	Yield	Yield Unit	Flags
8	SAMPLE	S13T004293		0 0			Dibromochloromethane	SOLID	N/A	<8.1714E-01			0.81714	ug/Kg			U
8	SAMPLE	S13T004293		0 0			Dichlorodifluoromethane	SOLID	N/A	<1.5752E+00			1.5752	ug/Kg			Uab
8	SAMPLE	S13T004293		0 0			Diethyl ether	SOLID	N/A	<2.4400E+00			2.44	ug/Kg			U
8	SAMPLE	S13T004293		0 0			Ethyl acetate	SOLID	N/A	<5.5924E+00			5.5924	ug/Kg			Ub
8	SAMPLE	S13T004293		0 0			Ethylbenzene	SOLID	N/A	<1.0210E+00			1.021	ug/Kg			U
8	SAMPLE	S13T004293		0 0			112Trichloro-122Trifluoroethan	SOLID	N/A	<1.1067E+00			1.1067	ug/Kg			U
8	SAMPLE	S13T004293		0 0			Hexachloroethane	SOLID	N/A	<1.3390E+00			1.339	ug/Kg			U
8	SAMPLE	S13T004293		0 0			Hexane	SOLID	N/A	2.0187E+01			2.4457	ug/Kg			J
8	SAMPLE	S13T004293		0 0			Isopropyl Benzene	SOLID	N/A	<1.3733E+00			1.3733	ug/Kg			U
8	SAMPLE	S13T004293		0 0			m,p-Xylene	SOLID	N/A	<1.5943E+00			1.5943	ug/Kg			U
8	SAMPLE	S13T004293		0 0			Methyl Acetate	SOLID	N/A	<5.6210E+00			5.621	ug/Kg			Ub
8	SAMPLE	S13T004293		0 0			4-Methyl-2-pentanone	SOLID	N/A	<1.6267E+01			16.267	ug/Kg			U
8	SAMPLE	S13T004293		0 0			Methylcyclohexane	SOLID	N/A	<1.2286E+00			1.2286	ug/Kg			U
8	SAMPLE	S13T004293		0 0			Methylene Chloride	SOLID	N/A	<6.0952E-01			0.60952	ug/Kg			U
8	SAMPLE	S13T004293		0 0			1-Butanol	SOLID	N/A	<9.8019E+01			98.019	ug/Kg			U
8	SAMPLE	S13T004293		0 0			N-Butylbenzene	SOLID	N/A	<1.6952E+00			1.6952	ug/Kg			U
8	SAMPLE	S13T004293		0 0			o-Xylene	SOLID	N/A	<8.7619E-01			0.87619	ug/Kg			U
8	SAMPLE	S13T004293		0 0			Styrene	SOLID	N/A	<1.2057E+00			1.2057	ug/Kg			U
8	SAMPLE	S13T004293		0 0			tert-butyl methyl ether	SOLID	N/A	<1.9638E+00			1.9638	ug/Kg			U
8	SAMPLE	S13T004293		0 0			Tetrachloroethene	SOLID	N/A	<1.0457E+00			1.0457	ug/Kg			U
8	SAMPLE	S13T004293		0 0			Tetrahydrofuran	SOLID	N/A	<6.1810E+00			6.181	ug/Kg			U
8	SAMPLE	S13T004293		0 0			Toluene	SOLID	N/A	3.5840E+00			0.76381	ug/Kg			BJ
8	SAMPLE	S13T004293		0 0			1,2-Dichloroethene	SOLID	N/A	<4.0095E+00			4.0095	ug/Kg			U
8	SAMPLE	S13T004293		0 0			Total Trihalomethanes	SOLID	N/A	<2.8438E+00			2.8438	ug/Kg			U
8	SAMPLE	S13T004293		0 0			Xylenes (total)	SOLID	N/A	<1.9352E+00			1.9352	ug/Kg			U
8	SAMPLE	S13T004293		0 0			trans-Dichloroethylene	SOLID	N/A	<2.8857E+00			2.8857	ug/Kg			U
8	SAMPLE	S13T004293		0 0			trans-1,3-Dichloropropene	SOLID	N/A	<2.5810E+00			2.581	ug/Kg			U
8	SAMPLE	S13T004293		0 0			Trichloroethene	SOLID	N/A	<1.1524E+00			1.1524	ug/Kg			Ub
8	SAMPLE	S13T004293		0 0			Trichlorofluoromethane	SOLID	N/A	<8.9524E-01			0.89524	ug/Kg			U
8	SAMPLE	S13T004293		0 0			Vinyl Chloride	SOLID	N/A	<1.6514E+00			1.6514	ug/Kg			U
8	SAMPLE	S13T004293		0 0			1,2-Dichloroethane-d4	SOLID	190.4761	1.9827E+02			1.8248	ug/Kg	104	% Recovery	
8	SAMPLE	S13T004293		0 0			4-Bromofluorobenzene	SOLID	190.4761	1.9960E+02			1.2648	ug/Kg	105	% Recovery	
8	SAMPLE	S13T004293		0 0			Toluene-d8	SOLID	190.4761	1.8802E+02			1.6324	ug/Kg	98.7	% Recovery	

Comments Section:

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041632

Data Flagger Status:
Flagging Completed

Final Page for Batch# 00041632

07/23/13
Analyst Signature **Date**

07/23/13
Data Entry Signature **Date**

7/23/13
Reviewer Signature **Date**

PC: Julie Osborn 7/23/13

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

* = Rejected Analyte
N, A = Non-reported Analyte

LABCORE Completed Batch Report for Batch# 00041632

Seq	Sample#	QC Type	Assoc. Sample	Sample Group	Method	Customer Id	Specification
1	S1305150015	BLNK			VOA-SOL-TANK		
2	S1305150016	LCS			VOA-SOL-TANK		
3	S13T004239	SAMPLE		20130402	VOA-SOL-TANK	9C-13-Comp A	C109 CLO
4	S1305150017	DUP	S13T004239		VOA-SOL-TANK		
5	S1305150018	MS	S13T004239		VOA-SOL-TANK		
6	S1305150019	MSD	S13T004239		VOA-SOL-TANK		
7	S13T004266	SAMPLE		20130402	VOA-SOL-TANK	9C-13-Comp B	C109 CLO
8	S13T004293	SAMPLE		20130402	VOA-SOL-TANK	9C-13-Comp C	C109 CLO

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

* = Rejected Analyte
N, A = Non-reported Analyte

Batch: 41632 **C109 CLO** **Group: 20130402**

Exception Report/Narrative

Sample Delivery and Analysis:

One C109 CLO sample was taken on May 8, 2013, and two C109 CLO samples were taken on May 7, 2013. These were delivered to the laboratory on May 7, 8 and 9, 2013. The samples' hold-times expired on May 22 and 21, 2013. The analysis was performed on May 15. There was a CCV failure for 4-methyl-2-pentanone. This failure had a positive bias, and the compound was not seen in any sample, so the results were reported. Analysis proceeded after the QC passed for all other target analytes. See further discussion below. The sample duplicate analysis did not execute properly, and was repeated on May 16. The 4-methyl-2-pentanone passed the CCV for this rerun. This compound was again not detected in the sample duplicate.
Only target analytes; detected secondary and non-requested analytes; and surrogates were reported.

Client Designated Analytes and QC Requirements:

- LCS and Spike Recovery range: 70-130%
- RPD maximum: 30%

CAS	VOA Compound	Target Detection Limits (mg/kg)	Target Detection Limits (µg/kg)
79-01-6	1,1,2-Trichloroethylene	0.026	26
78-93-3	2-Butanone	21.8	21800
67-64-1	Acetone	3.21	3210
108-10-1	4-methyl-2-pentanone	12.8	12800
1330-20-7	Xylenes	91.4	91400
95-47-6	*o*-Xylene	91.9	91900
108-38-3	*m*-Xylene	84.4	84400
106-42-3	*p*-Xylene	172	172000

Our chromatograph does not resolve *m*- & *p*-xylenes. These compounds have a single detection limit assigned. All detection limits for primary analytes were easily met.

ICAL EXCEPTIONS:

Data Points Removed From Curves:

Dichlorodifluoromethane, Chloromethane, Vinyl Chloride, Bromomethane, and Chloroethane: CAL-8 (1000 ng) was removed to meet linearity requirements. The maximum on column amount was adjusted for correct flagging to occur. MDL not modified.

Hexane, chloroform, methylcyclohexane and 1,1,2,2-tetrachloroethane: CAL-8 (1008 ng) removed to meet linearity requirements. The maximum on column amount was adjusted for correct flagging to occur. MDL not modified.

Carbon Disulfide, Toluene, *o*-Xylene, Styrene, and 1,2-; 1,3-; and 1,4-Dichlorobenzene: CAL-7 (806 ng) and CAL-8 (1008 ng) removed to meet linearity requirements. The maximum on column amount was adjusted for correct flagging to occur. MDL not modified.

Benzene, Ethyl benzene, Chlorobenzene, and Isopropylbenzene: CAL-6 (403 ng), CAL-7 (806 ng) and CAL-8 (1008 ng) removed to meet linearity requirements. The maximum on column amount was adjusted for correct flagging to occur. MDL not modified.

n-Butylbenzene: CAL-6 (400 ng), CAL-7 (800ng) and CAL-8 (1000 ng) removed to meet linearity requirements. The maximum on column amount was adjusted for correct flagging to occur. MDL not modified.

m,p-Xylene: CAL-6 (806 ng), CAL-7 (1613 ng) and CAL-8 (2016 ng) removed to meet linearity requirements. The maximum on column amount was adjusted for correct flagging to occur. MDL not modified.

Linearity: All compounds passed linearity requirements.

Minimum Quantitation Check (MQC): No compounds were calibrated using linear regression, so the MQC was not required.

ICV:
All compounds passed ICV 70%-130% recovery limit.

Batch: 41632 **C109 CLO** **Group: 20130402**

SAMPLE DETAIL REPORT

Note: all concentrations in µg/kg, and all recoveries in %.

13051502BFB.D BFB BFB

Comment: Passed. Samples were run within the 12 hour clock.

13051504CCV.D CCALIB_4 CCV
%D Failure:
Dichlorodifluoromethane
%D: -48.92977, Maximum %D: 20.000000
Chloromethane
%D: -27.80071, Maximum %D: 20.00000
Ethyl Acetate Mass: 43.00
%D: 28.300990, Maximum %D: 20.000000
Methyl Isobutyl Ketone Mass: 43.00
%D: 29.296726, Maximum %D: 20.000000
2-Hexanone Mass: 43.00
%D: 27.452941, Maximum %D: 20.000000
1,2,4-Trichlorobenzene Mass: 180.00
%D: 21.619298, Maximum %D: 20.000000

COMMENT: Methyl Isobutyl Ketone is a target analyte. It is called 4-methyl-2-pentanone in the RPP. The CCV failure is a positive bias (overestimation of concentration). This high bias failure did not adversely affect the ability to detect this compound at the established detection limit. It was not detected in any sample. The LCS, MS, and MSD passed for this compound. All other CCV failures were on non-target analytes, and the analysis proceeded. Samples were run within the 12 hour clock.

13051505CCB.D BLANK CCB
Below the Limits of Quantitation:
Methylene Chloride, Concentration: 1.246, LOQ: 6.400
Toluene, Concentration: 5.904, LOQ: 8.020

Comment: Both analytes in the blank were below LOQ, and non-target analytes. Blank was accepted based on the ATL QAPP - which specifies that compounds in the blank be below the LOQ. Toluene was seen and "B" flagged in the samples, when detected.
Dibromofluoromethane was seen in the blank. This is an unused and unreported surrogate that is in the surrogate spiking mixture. It is not a contaminant in the blank. Its recovery from tank sample matrix has been historically very poor. It is seen, but not reported, in the samples.

Batch: 41632 **C109 CLO** **Group: 20130402**

13051506LCS.D LCS LCS
Spike Compounds Out of Recovery Limits:
Dichlorodifluoromethane, Recovery: 42.30
Range: 70.00-130.00
Chloromethane, Recovery: 69.05
Range: 70.00-130.00

Comment: The full spike was used at the Cal4 level. All surrogates and IS were within acceptance criteria. All primary target analytes were recovered within acceptance criteria, so the LCS was accepted. The two compounds that failed the LCS low are also the ones that failed low on the CCV.

130515074239.D SAMPLE S13T004239
Target Analytes detected:
Acetone, Concentration: 199.65, LOQ: 196.65
Non-target Analytes detected above Limits of Quantitation:
Hexane, Concentration: 44.265, LOQ: 22.89
Below the Limits of Quantitation:
Toluene, Concentration: 5.000, LOQ: 7.148
Styrene, Concentration: 1.357, LOQ: 11.283
Identified TICs detected: None

Comment: Composite A. All surrogates and IS were within acceptance criteria. Target analyte acetone was seen in this sample above the LOQ. Hexane and styrene are on the secondary target list.

130515084239Dx.D Duplicate S13T004239DUP

Comment: This sample failed to inject for unknown reasons. It is not reported. After consulting with the PC, it was decided to rerun this sample duplicate the following day. See results of the rerun below.

Batch: 41632 **C109 CLO** **Group: 20130402**

13051509239MS.D MS S13T004239MS
Below the Limits of Quantitation:
Dichlorodifluoromethane, Concentration: 81.052, LOQ: 101.63
Spike Compounds Out of Recovery Limits:
Dichlorodifluoromethane, Recovery: 39.88
Range: 70.00-130.00
Chloromethane, Recovery: 67.55
Range: 70.00-130.00
1,1-Dichloroethene, Recovery: 122.48
Range: 75.00-121.00
Trichloroethene, Recovery: 202.05
Range: 70.00-130.00
2-Pentanone, Recovery: 132.47
Range: 70.00-130.00
1,1,2,2-Tetrachloroethane, Recovery: 0
Range: 70.00-130.00
Ethyl acetate, Recovery: 0
Range: 70.00-130.00
Methyl acetate, Recovery: 0
Range: 70.00-130.00
2-Nitropropane, Recovery: 0
Range: 70.00-130.00

Comment: Composite A. All surrogates and IS were within acceptance criteria. The full spike was used at the Cal4 level. Of the compounds that failed recovery criteria, only trichloroethene (1,1,2-trichloroethylene) is a target analyte. This compound will be "b" flagged in the results. This compound passed recovery criteria in the LCS and has a high recovery bias in the MS. It was not seen in the sample. The MS/MSD RPD was 2 %. This indicates matrix interference, so these results were reported.
These failures are quite similar to the failures seen in the C104 Closure results. See the comments after the MSD discussion.

13051510239MSD.D MSD S13T004239MSD
Below the Limits of Quantitation:
Dichlorodifluoromethane, Concentration: 70.222, LOQ: 95.238
Spike Compounds Out of Recovery Limits:
Dichlorodifluoromethane, Recovery: 36.87
Range: 70.00-130.00
Chloromethane, Recovery: 67.32
Range: 70.00-130.00
1,1-Dichloroethene, Recovery: 134.71
Range: 75.00-121.00
Trichloroethene, Recovery: 205.56
Range: 70.00-130.00
1,1,2,2-Tetrachloroethane, Recovery: 0
Range: 70.00-130.00
Ethyl acetate, Recovery: 0
Range: 70.00-130.00
Methyl acetate, Recovery: 0
Range: 70.00-130.00
2-Nitropropane, Recovery: 0
Range: 70.00-130.00

Comment: Composite A. All surrogates and IS were within acceptance criteria. The full spike was used at the Cal4 level.
All RPD results were within acceptance criteria of ≤30%.

Batch: 41632 **C109 CLO** **Group: 20130402**

Commentary on MS recovery failures: ***Emphasizing that is only speculation***, but it is possible that the basic conditions of sample matrix could cause dehydrohalogenation of the 1,1,2,2-tetrachloroethane and the product of such a reaction would be trichloroethene. This accounts for the dearth of 1,1,2,2-tetrachloroethane and the excess of trichloroethene in the matrix spikes. A similar effect may be causing the excess 1,1-dichloroethene, which would derive from the dehydrohalogenation of the 1,1,2-trichloroethane, which has acceptable, but low recoveries. The loss of methyl and ethyl acetate could be due to base catalyzed hydrolysis of these esters.

130515114266.D SAMPLE S13T004266
Below the Limits of Quantitation:
Target Analytes detected:
Acetone, Concentration: 94.469, LOQ: 204.80
Non-target Analytes:
Hexane, Concentration: 16.04, LOQ: 23.91
Toluene, Concentration: 4.620, LOQ: 7.467
Styrene, Concentration: 1.791, LOQ: 11.788
1,3-Dichlorobenzene, Concentration: 1.205, LOQ: 8.454
1,4-Dichlorobenzene, Concentration: 1.636, LOQ: 8.343
1,2,4-Trichlorobenzene, Concentration: 3.756, LOQ: 18.026
TIC detected:
2-Ethyl-1-hexanol, Concentration: 94.27

Comment: Composite B. All surrogates and IS were within acceptance criteria. No primary target analyte was seen in this sample above the LOQ. Target acetone was seen below the LOQ. Hexane and styrene are on the secondary target list. The TIC 1-ethyl-1-hexanol may be a hydrolysis product from bis(2-ethylhexyl)phthalate, but this is just speculation.

130515124293.D SAMPLE S13T004293
Below the Limits of Quantitation:
Acetone, Concentration: 84.068, LOQ: 209.48
Toluene, Concentration: 3.584, LOQ: 7.638
Hexane, Concentration: 20.19, LOQ: 24.46

Comment: Composite C. All surrogates and IS were within acceptance criteria. No primary target analyte was seen in this sample above the LOQ. Target acetone was seen below the LOQ. Hexane is on the secondary target list. The TIC 1-ethyl-1-hexanol, which was seen in S13T004266, may be a present in this sample as well, but the spectral quality match was below the TIC criteria, so it was not reported.

Batch: 41632 **C109 CLO** **Group: 20130402**

Rerun of the Duplicate May 16, 2013

13051602BFB.D BFB BFB

Comment: Passed. Samples were run within the 12 hour clock.

13051603CCV.D CCALIB_4 CCV
%D Failure:
Dichlorodifluoromethane
%D: -71.57895, Maximum %D: 20.000000
Chloromethane
%D: -41.91245, Maximum %D: 20.00000
Vinyl Chloride
%D: -31.36252, Maximum %D: 20.000000
1,2,4-Trichlorobenzene Mass: 180.00
%D: 22.545426, Maximum %D: 20.000000

COMMENT: CCV failures were on non-target analytes, and the analysis proceeded. Samples were run within the 12 hour clock.

13051604CCB.D BLANK CCB
Below the Limits of Quantitation:
Toluene, Concentration: 5.192, LOQ: 8.020
Styrene, Concentration: 1.728, LOQ: 12.660

Comment: Both analytes in the blank were below LOQ, and non-target analytes. Blank was accepted based on the ATL QAPP – which specifies that compounds in the blank be below the LOQ. Toluene was seen and "B" flagged in the sample

130516054239D.D SAMPLE S13T004239DUP
Below the Limits of Quantitation:
Target Analytes detected:
Acetone, Concentration: 27.796, LOQ: 225.83
Non-target Analytes detected:
Toluene, Concentration: 2.859, LOQ: 8.234

Comment: The RPD for acetone was 151 %.
The RPD for toluene was 54.5 %.
These RPDs are above the acceptance criteria. Toluene is not a target analyte. The concentration of acetone, which is a target analyte, is just above the LOQ in the sample, and well below the LOQ in the duplicate. This could affect the precision of the results. The sample was not homogenized to prevent VOC loss, and there were large chunks in the sample. This could have affected subsampling consistency. The determined concentration for acetone was over 15 times lower than the client requested target detection limit. Because of these factors, the duplicate was not rerun.

VOC GC/MS Technical Data Review Checklist

Project Code: C109 CLO, Batch 41632, Group 20130402

Method: LA-523-118 Rev./Mod.: H-0-B

Review Items	Level 1 Yes	Level 1 No	Level 1 N/A	Level 2	Comments & Samples Affected
Tune					
1. Did BFB meet tune criteria?	X			X	
2. Were all samples injected within 12 hours of the tune?	X			X	
Initial Calibration					
1. Is completed ICAL checklist attached?	X			X	
Continuing Calibration					
1. Do the target compounds %D meet method criteria?		X		X	See Narrative for CCV comments
2. Was elution order checked for isomeric pairs?	X			X	
3. Traceability of standards properly documented?	X			X	
4. Manual integrations/ratio failures checked?	X			X	
5. Do the Internal Stds meet criteria against the ICAL?	X			X	
Client Samples & QC Sample Results					
1. Is the automated formula shown on the printout correct?	X			X	
2. MDL values checked for correctness?	X			X	
3. Were spectra for positive results evaluated?	X			X	
4. Are positive results within calibration range?	X			X	
5. Dilutions due to target cpds? N Dilutions due to non-targets? N			X	X	
6. Data checked for detector saturation?	X			X	
7. Do internal standards (IS) meet criteria?	X			X	
8. Are target constituents in LCS within control limits?	X			X	See Narrative for LCS comments
9. All target cpds in MB < method criteria?	X			X	See Narrative for compounds found in blank
10. Are surrogate recoveries for MB and LCS within control limits?	X			X	
11. Are MS/MSD recoveries and RPDs within control limits?		X		X	See Narrative for MS comments
12. Are surrogate recoveries for samples within control limits?	X			X	
13. Manual integrations checked?	X			X	
14. TIC's/Unknowns evaluated?	X			X	
15. Internal Stds used to quantitate TICs free from coelution?	X			X	
16. Chromatogram TIC/Unknown/I.S. peaks integrated properly?	X			X	
17. Is appropriate raw data included?	X			X	
18. Are all manually entered data verified?	X			X	
19. Are all flags present (B, J etc.)?	X			X	
20. Is the order of the analysis correct (Tune/CCV/Blank, etc.)?	X			X	
21. Is the data package complete – all required bench sheets, forms, etc.?	X			X	

1st Level Data Reduction: [signature] Date: 6/17/13

2nd Level Data Reviewer: Terri P. Mattes Date: 6/14/13

ATL	DATA REVIEW CHECKLIST CONTINUATION

○ LA-523-118 (*) Rev H-0-B ○ _____ (*) Rev _____
(Other)

Peer Reviewed By: Les Miller

Project: C109 CLO Worklist No.: 41632

Item	Review Comment	Resolution
1	Narrative typo for the CCV recovery for Dichlorodifluoromethane. Listed as -71.57343; actual is -71.57895.	FIXED
2	Narrative typo: In comments under sample duplicate the RPD for toluene is listed twice. the first listing of 151% should be for Acetone.	FIXED REPRINTED
3	There appears to be a TIC in both S13T004266 and S13T004293 at 16.409 minutes based on the peak being >10% of the nearest internal standard. please verify and add TICs as necessary.	Added this ~~unknown to~~ TIC to 4266 SC 6/14/13 did not meet Quality match on 4293. Reprinted appropriate forms

Scott Clarke — Resolved By: Name — Signature — 6/14/13 Date

3pm 6/14/13 Les Miller — Peer Reviewer Concurrence: Name — Signature — 6/14/13 Date

(*) This form is not used by the subject procedure; rather, it is used to assist in verifying the data produced during the performance of the procedure.

ATL	VOA ANALYSIS BENCH SHEET

(●) LA-523-118 Rev H-0-B ( ) LA-523- N/A Rev N/A

Project: C109 CLO Batch #: 00041245

Analysis Date: 05/15/2013 Balance ID: LE-BAL-016 ☒ Verified

Instrument ID	Analysis Mode	Purge Volume
NEELIX	LIQUID	10 mL

Standards, Reagents & Matrix Modifiers

STD.	Book ID	Expires	STD.	Book ID	Expires
BFB	HNF-N-362-6-5.05	6/10/13	SURR	HNF-N-362-6-26.04	6/09/13
I.S.	HNF-N-362-6-26.03	6/09/13	Cal4	HNF-N-362-6-27.04	5/20/13
SAND	SL005781	01/27/14	n/a	n/a	n/a

High-Level Sample Prep

Sample ID	Amt	Std 1 ID	Vol	Std 2 ID	Vol	Matrix ID	Amt	Reagent ID	Vol
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Preparation of Purge Samples and Standards

Sample ID	Amt (g)	Std ID	Vol (uL)	Matrix ID	Amt (g)	Reagent ID	Vol (mL)	DF	pH
PRERUN (empty Vial)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
BFB	n/a	BFB	2	n/a	n/a	H2O	10	n/a	n/a
CCV	n/a	Cal4	10	n/a	n/a	H2O	10	n/a	n/a
CCV	n/a	~~Cal n/a~~ 05/15/13 AW 10 ~~n/a~~		n/a	n/a	H2O	10	n/a	n/a
CCB	n/a	n/a	n/a	SAND	5	H2O	10	n/a	n/a
LCS	n/a	Cal4	10	SAND	5	H2O	10	n/a	n/a
S13T004239-SAM	.561	n/a	n/a	n/a	n/a	H2O	10	n/a	n/a
S13T004239-DUP	.511	n/a	n/a	n/a	n/a	H2O	10	n/a	n/a
S13T004239-MS	.492	Cal4	10	n/a	n/a	H2O	10	n/a	n/a
S13T004239-MSD	.525	Cal4	10	n/a	n/a	H2O	10	n/a	n/a
S13T004266-SAM	.537	n/a	n/a	n/a	n/a	H2O	10	n/a	n/a
S13T004293-SAM	.525	n/a	n/a	n/a	n/a	H2O	10	n/a	n/a

Stds. Added to All Purge Samples*	
I.S.	10 µL
SURR	10 µL

* Surrogate amounts added to high-level samples will differ from amounts listed in table. Surrogate additions for high level samples will be documented in the high-level sample preparation table.

Comments:
- Only Filled 20% Xe 05/15/13 AW full. All were a slight reddish brown
- S13T004239 consistancy of damp, hardend sand.
- S13T004266 consistancy of slightly damp mud or clay.
- S13T004293 consistancy of very wet mud, very runny.

Analyst: Andrew W. Getz Analyst Signature 05/15/13 Date

A-6005-520 (REV 0)

Macro: upload2lims.mac, Revision: 0.2 Data File: //APWSCF02/SLab/chem/neelix.i/Data/2013/V130515C109.b/1305150
Report Date: 06/10/2013 Method File: \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130515C109.b\8260S13

LIMS Upload Report

Lab Sample ID:	CCB	Instrument ID:	neelix.i
Client Sample ID:	CCB	Analyst:	awg
SDG:	V130515C109	Analysis Date:	15-MAY-2013 11:44
Lab Prep Batch:	130515n	ALS Bottle:	5
Protocol:	@222VOA	Replicate:	0
Sample Fraction:	VOA	Dilution Factor:	1
Sample Type:	BLANK	Final Concentration Units:	ug/Kg
Matrix:	SOIL	Matrix Type:	SOLID
Actual Sample Size:	0.5	Expected Sample Size:	0.5
Actual Units:	g	Expected Units:	g

For a VOA, LOW Conc., SOLID sample,
the Method formula used was: Conc. = Amount * DF * Uf * 1/(Ws * (100 - M)/100).

The Macro formula used was: Conc. = Amount * DF * Uf * 1/(Ws * (100 - M)/100),
where DF = 1, UF = 1, Ws = 0.5, and M = 0.

-	CAS Number	Compound Name	RT	Spike	Adj. MDL	LOQ	Final Conc	Flag	Pct. Rec.
M	540-59-0	Total 1,2-Dichloroethe			4.210000	42.1	ND	U	
M	1330-20-7	Total Xylenes			2.032000	20.32	ND	U	
M	THM	Total Trihalomethanes			2.986000	29.86	ND	U	
	74-87-3	Chloromethane			1.269999	12.7	ND	U	
	75-01-4	Vinyl Chloride			1.733999	17.34	ND	U	
	74-83-9	Bromomethane			4.946000	49.46	ND	U	
	75-00-3	Chloroethane			5.139999	51.4	ND	U	
	75-35-4	1,1-Dichloroethene			4.231999	42.32	ND	U	
	67-64-1	Acetone			21.99600	219.96	ND	U	
	75-15-0	Carbon Disulfide			1.608000	16.08	ND	U	
	75-09-2	Methylene Chloride	7.994133		0.639999	6.4	1.246	J	
	75-34-3	1,1-Dichloroethane			0.972000	9.72	ND	U	
	78-93-3	2-Butanone			19.64399	196.44	ND	U	
	67-66-3	Chloroform			1.307999	13.08	ND	U	
	56-23-5	Carbon Tetrachloride			0.934000	9.34	ND	U	
	109-99-9	Tetrahydrofuran			6.489999	64.9	ND	U	
	71-55-6	1,1,1-Trichloroethane			0.920000	9.2	ND	U	
	71-36-3	n-Butanol			102.9199	1029.199	ND	U	
	71-43-2	Benzene			1.473999	14.74	ND	U	
	107-06-2	1,2-Dichloroethane			0.537999	5.38	ND	U	
	79-01-6	Trichloroethene			1.210000	12.1	ND	U	
	107-87-9	2-Pentanone			24.35199	243.52	ND	U	
	78-87-5	1,2-Dichloropropane			2.308000	23.08	ND	U	
	75-27-4	Bromodichloromethane			0.695999	6.96	ND	U	
	108-10-1	Methyl Isobutyl Ketone			17.07999	170.8	ND	U	
	10061-01-5	cis-1,3-dichloropropen			1.481999	14.82	ND	U	
	108-88-3	Toluene	12.73321		0.801999	8.02	5.904	J	
	591-78-6	2-Hexanone			23.64200	236.42	ND	U	
	10061-02-6	trans-1,3-Dichloroprop			2.710000	27.1	ND	U	
	127-18-4	Tetrachloroethene			1.098000	10.98	ND	U	
	79-00-5	1,1,2-Trichloroethane			1.657999	16.58	ND	U	
	124-48-1	Dibromochloromethane			0.857999	8.58	ND	U	
	100-41-4	Ethylbenzene			1.072000	10.72	ND	U	
	108-90-7	Chlorobenzene			0.864000	8.64	ND	U	
	100-42-5	Styrene			1.266000	12.66	ND	U	
	75-25-2	Bromoform			1.950000	19.5	ND	U	

	79-34-5	1,1,2,2-Tetrachloroeth			2.115999	21.16	ND	U		
	541-73-1	1,3-Dichlorobenzene			0.907999	9.08	ND	U		
	106-46-7	1,4-Dichlorobenzene			0.896000	8.96	ND	U		
	95-50-1	1,2-Dichlorobenzene			1.218000	12.18	ND	U		
	110-54-3	Hexane			2.568000	25.68	ND	U		
	141-78-6	Ethyl Acetate			5.872000	58.72	ND	U		
	67-72-1	Hexachloroethane			1.406000	14.06	ND	U		
	75-71-8	Dichlorodifluoromethan			1.654000	100	ND	U		
	75-69-4	Trichlorofluoromethane			0.939999	9.4	ND	U		
	60-29-7	Diethyl ether			2.562000	25.62	ND	U		
	76-13-1	Freon 113			1.161999	11.62	ND	U		
	79-20-9	Methyl Acetate			5.901999	59.02	ND	U		
	1634-04-4	tert-Butyl-Methyl Ethe			2.062000	20.62	ND	U		
	156-60-5	trans-1,2-Dichloroethe			3.029999	30.3	ND	U		
	110-82-7	Cyclohexane			0.818000	8.18	ND	U		
	156-59-2	cis-1,2-Dichloroethene			1.815999	18.16	ND	U		
	108-87-2	Methylcyclohexane			1.289999	12.9	ND	U		
	79-46-9	2-Nitropropane			5.880000	58.8	ND	U		
	106-93-4	1,2-Dibromoethane			0.963999	9.64	ND	U		
	108-38-3	m,p-Xylene			1.674000	16.74	ND	U		
	98-82-8	Isopropylbenzene			1.442000	14.42	ND	U		
	104-51-8	n-Butylbenzene			1.779999	17.8	ND	U		
	96-12-8	1,2-Dibromo-3-Chloropr			6.280000	62.8	ND	U		
	120-82-1	1,2,4-Trichlorobenzene			1.935999	19.36	ND	U		
	95-47-6	o-Xylene			0.920000	9.2	ND	U		
$	17060-07-0	1,2-Dichloroethane-d4	10.77885	200	1.916000	19.16	201.78		100.8883	
$	2037-26-5	Toluene-d8	12.67246	200	1.713999	17.14	192.37		96.18380	
$	460-00-4	Bromofluorobenzene	15.2749	200	1.327999	13.28	204.99		102.4963	
T	1868-53-7	Methane, dibromofluoro	10.15103				208.94517	NJ		

Key: $ = Surrogate, T = TIC, K = Spike, and M = Summary

Macro: upload2lims.mac, Revision: 0.2 Data File: //APWSCF02/SLab/chem/neelix.i/Data/2013/V130515C109.b/1305150
Report Date: 06/10/2013 Method File: \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130515C109.b\8260S13

LIMS Upload Report

Lab Sample ID:	LCS	Instrument ID:	neelix.i
Client Sample ID:	LCS	Analyst:	awg
SDG:	V130515C109	Analysis Date:	15-MAY-2013 12:15
Lab Prep Batch:	130515n	ALS Bottle:	6
Protocol:	@222VOA	Replicate:	0
Sample Fraction:	VOA	Dilution Factor:	1
Sample Type:	LCS	Final Concentration Units:	ug/Kg
Matrix:	SOIL	Matrix Type:	SOLID
Actual Sample Size:	0.5	Expected Sample Size:	0.5
Actual Units:	g	Expected Units:	g

For a VOA, LOW Conc., SOLID sample,
the Method formula used was: Conc. = Amount * DF * Uf * 1/(Ws * (100 - M)/100).

The Macro formula used was: Conc. = Amount * DF * Uf * 1/(Ws * (100 - M)/100),
where DF = 1, UF = 1, Ws = 0.5, and M = 0.

-	CAS Number	Compound Name	RT	Spike	Adj. MDL	LOQ	Final Conc	Flag	Pct. Rec.
K	540-59-0	Total 1,2-Dichloroethe	0.937	403.2	4.210000	42.1	435.63		108.0437
K	1330-20-7	Total Xylenes	0.937	604.8	2.032000	20.32	629.6		104.0999
K	THM	Total Trihalomethanes	0.937	806.4	2.986000	29.86	872.04		108.1404
K	74-87-3	Chloromethane	4.854833	200	1.269999	12.7	138.1		69.05272
K	75-01-4	Vinyl Chloride	5.067483	200	1.733999	17.34	154.8		77.39919
K	74-83-9	Bromomethane	5.735816	200	4.946000	49.46	189.11		94.55587
K	75-00-3	Chloroethane	5.97885	200	5.139999	51.4	205.43		102.7157
K	75-35-4	1,1-Dichloroethene	7.112983	201.6	4.231999	42.32	215.73		107.0084
K	67-64-1	Acetone	8.02435	504	21.99600	219.96	537.94		106.7351
K	75-15-0	Carbon Disulfide	7.224366	201.6	1.608000	16.08	201.59		99.99347
K	75-09-2	Methylene Chloride	7.974	201.6	0.639999	6.4	213.47		105.8888
K	75-34-3	1,1-Dichloroethane	9.0066	201.6	0.972000	9.72	223.29		110.7613
K	78-93-3	2-Butanone	10.26225	504	19.64399	196.44	538.43		106.8312
K	67-66-3	Chloroform	9.9382	201.6	1.307999	13.08	221.92		110.0797
K	56-23-5	Carbon Tetrachloride	10.15085	201.6	0.934000	9.34	231.66		114.9124
K	109-99-9	Tetrahydrofuran	10.15085	201.6	6.489999	64.9	210.08		104.2052
K	71-55-6	1,1,1-Trichloroethane	10.22173	201.6	0.920000	9.2	231.33		114.7456
K	71-36-3	n-Butanol	11.417	1040	102.9199	1029.199	1026		98.65305
K	71-43-2	Benzene	10.62678	201.6	1.473999	14.74	207.97		103.1605
K	107-06-2	1,2-Dichloroethane	10.84956	201.6	0.537999	5.38	218.97		108.6181
K	79-01-6	Trichloroethene	11.23436	201.6	1.210000	12.1	229.28		113.7298
K	107-87-9	2-Pentanone	12.10521	504	24.35199	243.52	530.05		105.1679
K	78-87-5	1,2-Dichloropropane	11.81156	201.6	2.308000	23.08	220.95		109.6000
K	75-27-4	Bromodichloromethane	11.83181	201.6	0.695999	6.96	228.08		113.1327
K	108-10-1	Methyl Isobutyl Ketone	13.04696	504	17.07999	170.8	585.53		116.1769
K	10061-01-5	cis-1,3-dichloropropen	12.4799	201.6	1.481999	14.82	219.93		109.0923
K	108-88-3	Toluene	12.733	201.6	0.801999	8.02	214.2		106.2506
K	591-78-6	2-Hexanone	13.8368	504	23.64200	236.42	578.53		114.7875
K	10061-02-6	trans-1,3-Dichloroprop	13.11785	201.6	2.710000	27.1	225.41		111.8112
K	127-18-4	Tetrachloroethene	13.1381	201.6	1.098000	10.98	227.43		112.8139
K	79-00-5	1,1,2-Trichloroethane	13.28998	201.6	1.657999	16.58	213.56		105.9310
K	124-48-1	Dibromochloromethane	13.49251	201.6	0.857999	8.58	211.18		104.7549
K	100-41-4	Ethylbenzene	14.19123	201.6	1.072000	10.72	207.06		102.7091
K	108-90-7	Chlorobenzene	14.2216	201.6	0.864000	8.64	203.63		101.0052
K	100-42-5	Styrene	14.74816	201.6	1.266000	12.66	227.67		112.9302
K	75-25-2	Bromoform	14.8393	201.6	1.950000	19.5	210.86		104.5943

K	79-34-5	1,1,2,2-Tetrachloroeth	15.39625	201.6	2.115999	21.16	216.15	107.2184
K	541-73-1	1,3-Dichlorobenzene	16.2266	201.6	0.907999	9.08	215.16	106.7281
K	106-46-7	1,4-Dichlorobenzene	16.30761	201.6	0.896000	8.96	218.31	108.2899
K	95-50-1	1,2-Dichlorobenzene	16.72278	201.6	1.218000	12.18	212.11	105.2115
K	110-54-3	Hexane	8.247116	201.6	2.568000	25.68	205.06	101.7156
K	141-78-6	Ethyl Acetate	9.988833	504	5.872000	58.72	577.32	114.5480
K	67-72-1	Hexachloroethane	16.70253	201.6	1.406000	14.06	235.21	116.6726
K	75-71-8	Dichlorodifluoromethan	4.49	200	1.654000	100	84.599	42.29944
K	75-69-4	Trichlorofluoromethane	6.232	200	0.939999	9.4	191.89	95.94571
K	60-29-7	Diethyl ether	6.718066	201.6	2.562000	25.62	194.08	96.27106
K	76-13-1	Freon 113	7.163616	201.6	1.161999	11.62	219.32	108.7901
K	79-20-9	Methyl Acetate	8.155983	201.6	5.901999	59.02	213.18	105.7423
K	1634-04-4	tert-Butyl-Methyl Ethe	8.307883	201.6	2.062000	20.62	218.23	108.2488
K	156-60-5	trans-1,2-Dichloroethe	8.1965	201.6	3.029999	30.3	221.09	109.6690
K	110-82-7	Cyclohexane	9.91795	201.6	0.818000	8.18	232.19	115.1753
K	156-59-2	cis-1,2-Dichloroethene	9.654666	201.6	1.815999	18.16	214.54	106.4183
K	108-87-2	Methylcyclohexane	11.24448	201.6	1.289999	12.9	234.91	116.5250
K	79-46-9	2-Nitropropane	12.97608	504	5.880000	58.8	509.3	101.0524
K	106-93-4	1,2-Dibromoethane	13.77605	201.6	0.963999	9.64	211.89	105.1040
K	108-38-3	m,p-Xylene	14.30261	403.2	1.674000	16.74	413.1	102.4554
K	98-82-8	Isopropylbenzene	14.96081	201.6	1.442000	14.42	209.63	103.9823
K	104-51-8	n-Butylbenzene	16.44938	201.6	1.779999	17.8	215.88	107.0824
K	96-12-8	1,2-Dibromo-3-Chloropr	17.53288	201.6	6.280000	62.8	202.45	100.4229
K	120-82-1	1,2,4-Trichlorobenzene	18.2721	201.6	1.935999	19.36	250.03	124.0223
K	95-47-6	o-Xylene	14.70766	201.6	0.920000	9.2	216.5	107.3891
$	17060-07-0	1,2-Dichloroethane-d4	10.76855	200	1.916000	19.16	193.8	96.89943
$	2037-26-5	Toluene-d8	12.67228	200	1.713999	17.14	189.65	94.82354
$	460-00-4	Bromofluorobenzene	15.2646	200	1.327999	13.28	185.37	92.68589

Key: $ = Surrogate, T = TIC, K = Spike, and M = Summary

Macro: upload2lims.mac, Revision: 0.2 Data File: //APWSCF02/SLab/chem/neelix.i/Data/2013/V130515C109.b/1305150
Report Date: 06/10/2013 Method File: \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130515C109.b\8260S13

LIMS Upload Report

Lab Sample ID:	S13T004239	Instrument ID:	neelix.i
Client Sample ID:	S13T004239	Analyst:	awg
SDG:	V130515C109	Analysis Date:	15-MAY-2013 15:13
Lab Prep Batch:	130515n	ALS Bottle:	10
Protocol:	@222VOA	Replicate:	0
Sample Fraction:	VOA	Dilution Factor:	1
Sample Type:	SAMPLE	Final Concentration Units:	ug/Kg
Matrix:	SOIL	Matrix Type:	SOLID
Actual Sample Size:	0.561	Expected Sample Size:	0.5
Actual Units:	g	Expected Units:	g

For a VOA, LOW Conc., SOLID sample,
the Method formula used was: Conc. = Amount * DF * Uf * 1/(Ws * (100 - M)/100).

The Macro formula used was: Conc. = Amount * DF * Uf * 1/(Ws * (100 - M)/100),
where DF = 1, UF = 1, Ws = 0.561, and M = 0.

-	CAS Number	Compound Name	RT	Spike	Adj. MDL	LOQ	Final Conc	Flag	Pct. Rec.
M	540-59-0	Total 1,2-Dichloroethe			3.752228	37.52228	ND	U	
M	1330-20-7	Total Xylenes			1.811051	18.11051	ND	U	
M	THM	Total Trihalomethanes			2.661319	26.61319	ND	U	
	74-87-3	Chloromethane			1.131907	11.31907	ND	U	
	75-01-4	Vinyl Chloride			1.545454	15.45454	ND	U	
	74-83-9	Bromomethane			4.408199	44.08199	ND	U	
	75-00-3	Chloroethane			4.581105	45.81105	ND	U	
	75-35-4	1,1-Dichloroethene			3.771835	37.71836	ND	U	
	67-64-1	Acetone	8.034633		19.60427	196.0427	199.65		
	75-15-0	Carbon Disulfide			1.433155	14.33155	ND	U	
	75-09-2	Methylene Chloride			0.570409	5.704099	ND	U	
	75-34-3	1,1-Dichloroethane			0.866310	8.663101	ND	U	
	78-93-3	2-Butanone			17.50802	175.0802	ND	U	
	67-66-3	Chloroform			1.165775	11.65775	ND	U	
	56-23-5	Carbon Tetrachloride			0.832442	8.324420	ND	U	
	109-99-9	Tetrahydrofuran			5.784313	57.84313	ND	U	
	71-55-6	1,1,1-Trichloroethane			0.819964	8.199643	ND	U	
	71-36-3	n-Butanol			91.72905	917.2905	ND	U	
	71-43-2	Benzene			1.313725	13.13725	ND	U	
	107-06-2	1,2-Dichloroethane			0.479500	4.795008	ND	U	
	79-01-6	Trichloroethene			1.078431	10.78431	ND	U	
	107-87-9	2-Pentanone			21.70409	217.0409	ND	U	
	78-87-5	1,2-Dichloropropane			2.057041	20.57040	ND	U	
	75-27-4	Bromodichloromethane			0.620320	6.203208	ND	U	
	108-10-1	Methyl Isobutyl Ketone			15.22281	152.2281	ND	U	
	10061-01-5	cis-1,3-dichloropropen			1.320855	13.20855	ND	U	
	108-88-3	Toluene	12.7332		0.714794	7.147950	5	BJ	
	591-78-6	2-Hexanone			21.07130	210.7130	ND	U	
	10061-02-6	trans-1,3-Dichloroprop			2.415329	24.15329	ND	U	
	127-18-4	Tetrachloroethene			0.978609	9.786096	ND	U	
	79-00-5	1,1,2-Trichloroethane			1.477718	14.77718	ND	U	
	124-48-1	Dibromochloromethane			0.764705	7.647058	ND	U	
	100-41-4	Ethylbenzene			0.955436	9.554367	ND	U	
	108-90-7	Chlorobenzene			0.770053	7.700534	ND	U	
	100-42-5	Styrene	14.75845		1.128342	11.28342	1.357	J	
	75-25-2	Bromoform			1.737967	17.37967	ND	U	

	79-34-5	1,1,2,2-Tetrachloroeth			1.885917	18.85918	ND	U	
	541-73-1	1,3-Dichlorobenzene			0.809269	8.092691	ND	U	
	106-46-7	1,4-Dichlorobenzene			0.798573	7.985739	ND	U	
	95-50-1	1,2-Dichlorobenzene			1.085561	10.85561	ND	U	
	110-54-3	Hexane	8.2574		2.288770	22.88770	44.265		
	141-78-6	Ethyl Acetate			5.233511	52.33511	ND	U	
	67-72-1	Hexachloroethane			1.253119	12.53119	ND	U	
	75-71-8	Dichlorodifluoromethan			1.474153	89.12655	ND	U	
	75-69-4	Trichlorofluoromethane			0.837789	8.377896	ND	U	
	60-29-7	Diethyl ether			2.283422	22.83422	ND	U	
	76-13-1	Freon 113			1.035650	10.35650	ND	U	
	79-20-9	Methyl Acetate			5.260249	52.60249	ND	U	
	1634-04-4	tert-Butyl-Methyl Ethe			1.837789	18.37789	ND	U	
	156-60-5	trans-1,2-Dichloroethe			2.700534	27.00534	ND	U	
	110-82-7	Cyclohexane			0.729055	7.290552	ND	U	
	156-59-2	cis-1,2-Dichloroethene			1.618538	16.18538	ND	U	
	108-87-2	Methylcyclohexane			1.149732	11.49732	ND	U	
	79-46-9	2-Nitropropane			5.240641	52.40641	ND	U	
	106-93-4	1,2-Dibromoethane			0.859180	8.591800	ND	U	
	108-38-3	m,p-Xylene			1.491978	14.91978	ND	U	
	98-82-8	Isopropylbenzene			1.285205	12.85204	ND	U	
	104-51-8	n-Butylbenzene			1.586452	15.86452	ND	U	
	96-12-8	1,2-Dibromo-3-Chloropr			5.597148	55.97147	ND	U	
	120-82-1	1,2,4-Trichlorobenzene			1.725490	17.25490	ND	U	
	95-47-6	o-Xylene			0.819964	8.199643	ND	U	
$	17060-07-0	1,2-Dichloroethane-d4	10.77883	178.2531	1.707664	17.07664	179		100.4208
$	2037-26-5	Toluene-d8	12.68256	178.2531	1.527629	15.27629	170.72		95.77543
$	460-00-4	Bromofluorobenzene	15.27488	178.2531	1.183600	11.83600	174.05		97.64123

Key: $ = Surrogate, T = TIC, K = Spike, and M = Summary

Macro: upload2lims.mac, Revision: 0.2 Data File: //APWSCF02/SLab/chem/neelix.i/Data/2013/V130515C109.b/1305150
Report Date: 06/10/2013 Method File: \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130515C109.b\8260S13

LIMS Upload Report

Lab Sample ID:	S13T004239MS	Instrument ID:	neelix.i
Client Sample ID:	S13T004239MS	Analyst:	awg
SDG:	V130515C109	Analysis Date:	15-MAY-2013 16:16
Lab Prep Batch:	130515n	ALS Bottle:	12
Protocol:	@222VOA	Replicate:	0
Sample Fraction:	VOA	Dilution Factor:	1
Sample Type:	MS	Final Concentration Units:	ug/Kg
Matrix:	SOIL	Matrix Type:	SOLID
Actual Sample Size:	0.492	Expected Sample Size:	0.5
Actual Units:	g	Expected Units:	g

For a VOA, LOW Conc., SOLID sample,
the Method formula used was: Conc. = Amount * DF * Uf * 1/(Ws * (100 - M)/100).

The Macro formula used was: Conc. = Amount * DF * Uf * 1/(Ws * (100 - M)/100),
where DF = 1, UF = 1, Ws = 0.492, and M = 0.

Recovery not adjusted for sample contribution see form 3 SC 6/12/13

-	CAS Number	Compound Name	RT	Spike	Adj. MDL	LOQ	Final Conc	Flag	Pct. Rec.
K	540-59-0	Total 1,2-Dichloroethe	0.937	409.7560	4.278455	42.78455	445.07		108.6187
K	1330-20-7	Total Xylenes	0.937	614.6341	2.065040	20.65040	637.27		103.6828
K	THM	Total Trihalomethanes	0.937	819.5121	3.034552	30.34552	907.9		110.7852
K	74-87-3	Chloromethane	4.855016	203.2520	1.290650	12.90650	137.29		67.54598
K	75-01-4	Vinyl Chloride	5.067666	203.2520	1.762195	17.62195	154.43		75.98140
K	74-83-9	Bromomethane	5.736	203.2520	5.026422	50.26422	190.02		93.48847
K	75-00-3	Chloroethane	5.979016	203.2520	5.223577	52.23577	196.64		96.74756
K	75-35-4	1,1-Dichloroethene	7.123283	204.8780	4.300812	43.00813	250.94		122.4829
K	67-64-1	Acetone	8.024516	512.1951	22.35365	223.5365	732.71		143.0535
K	75-15-0	Carbon Disulfide	7.234683	204.8780	1.634146	16.34146	191.71		93.57415
K	75-09-2	Methylene Chloride	7.984016	204.8780	0.650406	6.504065	226.4		110.5056
K	75-34-3	1,1-Dichloroethane	9.006766	204.8780	0.987804	9.878048	232.23		113.3517
K	78-93-3	2-Butanone	10.26241	512.1951	19.96341	199.6341	673.84		131.5603
K	67-66-3	Chloroform	9.92825	204.8780	1.329268	13.29268	229.25		111.8956
K	56-23-5	Carbon Tetrachloride	10.15103	204.8780	0.949187	9.491869	230.76		112.6344
K	109-99-9	Tetrahydrofuran	10.15103	204.8780	6.595528	65.95528	240.83		117.5487
K	71-55-6	1,1,1-Trichloroethane	10.22191	204.8780	0.934959	9.349593	232.24		113.3542
K	71-36-3	n-Butanol	11.41681	1056.910	104.5934	1045.934	1258.4		119.0631
K	71-43-2	Benzene	10.62696	204.8780	1.497967	14.97967	213.99		104.4470
K	107-06-2	1,2-Dichloroethane	10.84973	204.8780	0.546747	5.467479	235.31		114.8519
K	79-01-6	Trichloroethene	11.23453	204.8780	1.229674	12.29674	413.95		202.0462
K	107-87-9	2-Pentanone	12.1054	512.1951	24.74796	247.4796	678.51		132.4702
K	78-87-5	1,2-Dichloropropane	11.81173	204.8780	2.345528	23.45528	229.38		111.9569
K	75-27-4	Bromodichloromethane	11.83198	204.8780	0.707317	7.073170	227.67		111.1235
K	108-10-1	Methyl Isobutyl Ketone	13.04713	512.1951	17.35772	173.5772	702.8		137.2138
K	10061-01-5	cis-1,3-dichloropropen	12.48006	204.8780	1.506097	15.06097	234.56		114.4872
K	108-88-3	Toluene	12.73321	204.8780	0.815040	8.150406	220.18		107.4701
K	591-78-6	2-Hexanone	13.83698	512.1951	24.02642	240.2642	735.64		143.6256
K	10061-02-6	trans-1,3-Dichloroprop	13.11801	204.8780	2.754065	27.54065	237.01		115.6821
K	127-18-4	Tetrachloroethene	13.13826	204.8780	1.115853	11.15853	230.22		112.3685
K	79-00-5	1,1,2-Trichloroethane	13.29016	204.8780	1.684959	16.84959	198.84		97.05291
K	124-48-1	Dibromochloromethane	13.49268	204.8780	0.871951	8.719512	220.16		107.4568
K	100-41-4	Ethylbenzene	14.1914	204.8780	1.089430	10.89430	211.05		103.0120
K	108-90-7	Chlorobenzene	14.22178	204.8780	0.878048	8.780487	209.3		102.1599
K	100-42-5	Styrene	14.75846	204.8780	1.286585	12.86585	230.63		112.5680
K	75-25-2	Bromoform	14.8496	204.8780	1.981707	19.81707	230.83		112.6650

K	79-34-5	1,1,2,2-Tetrachloroeth		204.8780	2.150406	21.50406	ND	U	
K	541-73-1	1,3-Dichlorobenzene	16.22676	204.8780	0.922764	9.227642	222.78		108.7367
K	106-46-7	1,4-Dichlorobenzene	16.30778	204.8780	0.910569	9.105691	224.34		109.4980
K	95-50-1	1,2-Dichlorobenzene	16.73308	204.8780	1.237804	12.37804	225.39		110.0125
K	110-54-3	Hexane	8.257416	204.8780	2.609756	26.09756	237.09		115.7209
K	141-78-6	Ethyl Acetate		512.1951	5.967479	59.67479	ND	U	
K	67-72-1	Hexachloroethane	16.7027	204.8780	1.428861	14.28861	225.1		109.8693
K	75-71-8	Dichlorodifluoromethan	4.501	203.2520	1.680894	101.6260	81.052		39.87749
K	75-69-4	Trichlorofluoromethane	6.232183	203.2520	0.955284	9.552845	195.78		96.32292
K	60-29-7	Diethyl ether	6.718233	204.8780	2.603658	26.03658	212.72		103.8267
K	76-13-1	Freon 113	7.163783	204.8780	1.180894	11.80894	221.54		108.1347
K	79-20-9	Methyl Acetate		204.8780	5.997967	59.97967	ND	U	
K	1634-04-4	tert-Butyl-Methyl Ethe	8.30805	204.8780	2.095528	20.95528	244.7		119.4356
K	156-60-5	trans-1,2-Dichloroethe	8.196666	204.8780	3.079268	30.79268	223.23		108.9559
K	110-82-7	Cyclohexane	9.918133	204.8780	0.831300	8.313008	235.26		114.8287
K	156-59-2	cis-1,2-Dichloroethene	9.65485	204.8780	1.845528	18.45528	221.84		108.2814
K	108-87-2	Methylcyclohexane	11.24466	204.8780	1.310975	13.10975	236.25		115.3139
K	79-46-9	2-Nitropropane		512.1951	5.975609	59.75609	ND	U	
K	106-93-4	1,2-Dibromoethane	13.77621	204.8780	0.979674	9.796747	236.8		115.5829
K	108-38-3	m,p-Xylene	14.30278	409.7560	1.701219	17.01219	418.73		102.1903
K	98-82-8	Isopropylbenzene	14.961	204.8780	1.465447	14.65447	211.3		103.1349
K	104-51-8	n-Butylbenzene	16.44955	204.8780	1.808943	18.08943	215.03		104.9544
K	96-12-8	1,2-Dibromo-3-Chloropr	17.53305	204.8780	6.382114	63.82113	219.67		107.2189
K	120-82-1	1,2,4-Trichlorobenzene	18.27226	204.8780	1.967479	19.67479	256.07		124.9853
K	95-47-6	o-Xylene	14.70783	204.8780	0.934959	9.349593	218.54		106.6679
$	17060-07-0	1,2-Dichloroethane-d4	10.77885	203.2520	1.947154	19.47154	203.74		100.2401
$	2037-26-5	Toluene-d8	12.67246	203.2520	1.741869	17.41869	199.94		98.37140
$	460-00-4	Bromofluorobenzene	15.26478	203.2520	1.349593	13.49593	199.26		98.03425

Key: $ = Surrogate, T = TIC, K = Spike, and M = Summary

Macro: upload2lims.mac, Revision: 0.2 Data File: //APWSCF02/SLab/chem/neelix.i/Data/2013/V130515C109.b/1305151
Report Date: 06/10/2013 Method File: \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130515C109.b\8260S13

LIMS Upload Report

Lab Sample ID:	S13T004239MSD	Instrument ID:	neelix.i
Client Sample ID:	S13T004239MSD	Analyst:	awg
SDG:	V130515C109	Analysis Date:	15-MAY-2013 16:47
Lab Prep Batch:	130515n	ALS Bottle:	13
Protocol:	@222VOA	Replicate:	0
Sample Fraction:	VOA	Dilution Factor:	1
Sample Type:	MSD	Final Concentration Units:	ug/Kg
Matrix:	SOIL	Matrix Type:	SOLID
Actual Sample Size:	0.525	Expected Sample Size:	0.5
Actual Units:	g	Expected Units:	g

For a VOA, LOW Conc., SOLID sample,
the Method formula used was: Conc. = Amount * DF * Uf * 1/(Ws * (100 - M)/100).

The Macro formula used was: Conc. = Amount * DF * Uf * 1/(Ws * (100 - M)/100),
where DF = 1, UF = 1, Ws = 0.525, and M = 0.

Recovery not adjusted for sample concentration see form 3 6/12/13

-	CAS Number	Compound Name	RT	Spike	Adj. MDL	LOQ	Final Conc	Flag	Pct. Rec.
K	540-59-0	Total 1,2-Dichloroethe	0.937	384	4.009523	40.09523	425.59		110.8298
K	1330-20-7	Total Xylenes	0.937	576	1.935238	19.35238	603.63		104.7962
K	THM	Total Trihalomethanes	0.937	768	2.843809	28.43809	842.81		109.7404
K	74-87-3	Chloromethane	4.85495	190.4761	1.209523	12.09523	128.23		67.32211
K	75-01-4	Vinyl Chloride	5.0676	190.4761	1.651428	16.51428	146.72		77.02630
K	74-83-9	Bromomethane	5.735933	190.4761	4.710476	47.10476	175.31		92.04032
K	75-00-3	Chloroethane	5.9891	190.4761	4.895237	48.95238	204.43		107.3266
K	75-35-4	1,1-Dichloroethene	7.123233	192	4.030476	40.30476	258.64		134.7097
K	67-64-1	Acetone	8.024466	480	20.94857	209.4857	617.29		128.6014
K	75-15-0	Carbon Disulfide	7.234616	192	1.531428	15.31428	174		90.62557
K	75-09-2	Methylene Chloride	7.983966	192	0.609523	6.095238	211.09		109.9410
K	75-34-3	1,1-Dichloroethane	9.006716	192	0.925714	9.257142	221.05		115.1291
K	78-93-3	2-Butanone	10.26236	480	18.70857	187.0857	567.92		118.3156
K	67-66-3	Chloroform	9.938333	192	1.245714	12.45714	217.17		113.1105
K	56-23-5	Carbon Tetrachloride	10.15098	192	0.889523	8.895238	220.47		114.8294
K	109-99-9	Tetrahydrofuran	10.15098	192	6.180952	61.80952	216.05		112.5273
K	71-55-6	1,1,1-Trichloroethane	10.22186	192	0.876190	8.761904	222.85		116.0669
K	71-36-3	n-Butanol	11.41675	990.4761	98.01904	980.1904	1080.4		109.0846
K	71-43-2	Benzene	10.62691	192	1.403809	14.03809	202.42		105.4299
K	107-06-2	1,2-Dichloroethane	10.84968	192	0.512380	5.123809	216.5		112.7586
K	79-01-6	Trichloroethene	11.23448	192	1.152380	11.52380	394.68		205.5621
K	107-87-9	2-Pentanone	12.10535	480	23.19238	231.9238	574.76		119.7426
K	78-87-5	1,2-Dichloropropane	11.81168	192	2.198095	21.98095	217.85		113.4644
K	75-27-4	Bromodichloromethane	11.83193	192	0.662857	6.628571	207.03		107.8266
K	108-10-1	Methyl Isobutyl Ketone	13.04708	480	16.26666	162.6666	619.76		129.1163
K	10061-01-5	cis-1,3-dichloropropen	12.48001	192	1.411428	14.11428	219.6		114.3779
K	108-88-3	Toluene	12.73316	192	0.763809	7.638095	214.49		111.7128
K	591-78-6	2-Hexanone	13.83693	480	22.51619	225.1619	642.56		133.8670
K	10061-02-6	trans-1,3-Dichloroprop	13.11796	192	2.580952	25.80952	223.25		116.2759
K	127-18-4	Tetrachloroethene	13.13821	192	1.045714	10.45714	221.29		115.2550
K	79-00-5	1,1,2-Trichloroethane	13.29011	192	1.579047	15.79047	171.14		89.13819
K	124-48-1	Dibromochloromethane	13.49263	192	0.817142	8.171428	204.92		106.7272
K	100-41-4	Ethylbenzene	14.19135	192	1.020952	10.20952	200.12		104.2266
K	108-90-7	Chlorobenzene	14.22173	192	0.822857	8.228571	196.76		102.4780
K	100-42-5	Styrene	14.74828	192	1.205714	12.05714	215.18		112.0752
K	75-25-2	Bromoform	14.84955	192	1.857142	18.57142	213.69		111.2973

K	79-34-5	1,1,2,2-Tetrachloroeth		192	2.015238	20.15238	ND	U	
K	541-73-1	1,3-Dichlorobenzene	16.22671	192	0.864761	8.647619	205.07		106.8060
K	106-46-7	1,4-Dichlorobenzene	16.30773	192	0.853333	8.533333	209.02		108.8663
K	95-50-1	1,2-Dichlorobenzene	16.7229	192	1.160000	11.6	206.89		107.7550
K	110-54-3	Hexane	8.257366	192	2.445714	24.45714	221.67		115.4533
K	141-78-6	Ethyl Acetate		480	5.592381	55.92380	ND	U	
K	67-72-1	Hexachloroethane	16.70265	192	1.339047	13.39047	201.84		105.1231
K	75-71-8	Dichlorodifluoromethan	4.49	190.4761	1.575238	95.23809	70.222		36.86630
K	75-69-4	Trichlorofluoromethane	6.24225	190.4761	0.895238	8.952380	185.39		97.33025
K	60-29-7	Diethyl ether	6.718183	192	2.440000	24.4	200.89		104.6310
K	76-13-1	Freon 113	7.163733	192	1.106666	11.06666	211.98		110.4044
K	79-20-9	Methyl Acetate		192	5.620952	56.20952	ND	U	
K	1634-04-4	tert-Butyl-Methyl Ethe	8.297883	192	1.963809	19.63809	220.17		114.6715
K	156-60-5	trans-1,2-Dichloroethe	8.196616	192	2.885714	28.85714	211.26		110.0311
K	110-82-7	Cyclohexane	9.918066	192	0.779047	7.790476	219.96		114.5654
K	156-59-2	cis-1,2-Dichloroethene	9.6548	192	1.729523	17.29523	214.33		111.6285
K	108-87-2	Methylcyclohexane	11.24461	192	1.228571	12.28571	219.4		114.2733
K	79-46-9	2-Nitropropane		480	5.600000	56	ND	U	
K	106-93-4	1,2-Dibromoethane	13.77616	192	0.918095	9.180952	216.53		112.7768
K	108-38-3	m,p-Xylene	14.30273	384	1.594285	15.94285	395.95		103.1119
K	98-82-8	Isopropylbenzene	14.96093	192	1.373333	13.73333	199.14		103.7198
K	104-51-8	n-Butylbenzene	16.4495	192	1.695238	16.95238	196.75		102.4724
K	96-12-8	1,2-Dibromo-3-Chloropr	17.533	192	5.980952	59.80952	179.45		93.46237
K	120-82-1	1,2,4-Trichlorobenzene	18.27221	192	1.843809	18.43809	230.61		120.1109
K	95-47-6	o-Xylene	14.70778	192	0.876190	8.761904	207.68		108.1649
$	17060-07-0	1,2-Dichloroethane-d4	10.7788	190.4761	1.824761	18.24761	182.57		95.84793
$	2037-26-5	Toluene-d8	12.67241	190.4761	1.632380	16.32380	189.41		99.43943
$	460-00-4	Bromofluorobenzene	15.26473	190.4761	1.264761	12.64761	183.74		96.46273

Key: $ = Surrogate, T = TIC, K = Spike, and M = Summary

Macro: upload2lims.mac, Revision: 0.2 Data File: //APWSCF02/SLab/chem/neelix.i/Data/2013/V130515C109.b/1305151
Report Date: 06/10/2013 Method File: \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130515C109.b\8260S13

LIMS Upload Report

Lab Sample ID:	S13T004266	Instrument ID:	neelix.i
Client Sample ID:	S13T004266	Analyst:	awg
SDG:	V130515C109	Analysis Date:	15-MAY-2013 17:18
Lab Prep Batch:	130515n	ALS Bottle:	14
Protocol:	@222VOA	Replicate:	0
Sample Fraction:	VOA	Dilution Factor:	1
Sample Type:	SAMPLE	Final Concentration Units:	ug/Kg
Matrix:	SOIL	Matrix Type:	SOLID
Actual Sample Size:	0.537	Expected Sample Size:	0.5
Actual Units:	g	Expected Units:	g

For a VOA, LOW Conc., SOLID sample,
the Method formula used was: Conc. = Amount * DF * Uf * 1/(Ws * (100 - M)/100).

The Macro formula used was: Conc. = Amount * DF * Uf * 1/(Ws * (100 - M)/100),
where DF = 1, UF = 1, Ws = 0.537, and M = 0.

-	CAS Number	Compound Name	RT	Spike	Adj. MDL	LOQ	Final Conc	Flag	Pct. Rec.
M	540-59-0	Total 1,2-Dichloroethe			3.919925	39.19925	ND	U	
M	1330-20-7	Total Xylenes			1.891992	18.91992	ND	U	
M	THM	Total Trihalomethanes			2.780260	27.80260	ND	U	
	74-87-3	Chloromethane			1.182495	11.82495	ND	U	
	75-01-4	Vinyl Chloride			1.614525	16.14525	ND	U	
	74-83-9	Bromomethane			4.605214	46.05214	ND	U	
	75-00-3	Chloroethane			4.785847	47.85847	ND	U	
	75-35-4	1,1-Dichloroethene			3.940409	39.40409	ND	U	
	67-64-1	Acetone	8.034516		20.48044	204.8044	94.469	J	
	75-15-0	Carbon Disulfide			1.497206	14.97206	ND	U	
	75-09-2	Methylene Chloride			0.595903	5.959031	ND	U	
	75-34-3	1,1-Dichloroethane			0.905027	9.050279	ND	U	
	78-93-3	2-Butanone			18.29050	182.9050	ND	U	
	67-66-3	Chloroform			1.217877	12.17877	ND	U	
	56-23-5	Carbon Tetrachloride			0.869646	8.696461	ND	U	
	109-99-9	Tetrahydrofuran			6.042830	60.42830	ND	U	
	71-55-6	1,1,1-Trichloroethane			0.856610	8.566108	ND	U	
	71-36-3	n-Butanol			95.82867	958.2867	ND	U	
	71-43-2	Benzene			1.372439	13.72439	ND	U	
	107-06-2	1,2-Dichloroethane			0.500931	5.009310	ND	U	
	79-01-6	Trichloroethene			1.126629	11.26629	ND	U	
	107-87-9	2-Pentanone			22.67411	226.7411	ND	U	
	78-87-5	1,2-Dichloropropane			2.148975	21.48975	ND	U	
	75-27-4	Bromodichloromethane			0.648044	6.480446	ND	U	
	108-10-1	Methyl Isobutyl Ketone			15.90316	159.0316	ND	U	
	10061-01-5	cis-1,3-dichloropropen			1.379888	13.79888	ND	U	
	108-88-3	Toluene	12.7331		0.746741	7.467411	4.62	BJ	
	591-78-6	2-Hexanone			22.01303	220.1303	ND	U	
	10061-02-6	trans-1,3-Dichloroprop			2.523277	25.23277	ND	U	
	127-18-4	Tetrachloroethene			1.022346	10.22346	ND	U	
	79-00-5	1,1,2-Trichloroethane			1.543761	15.43761	ND	U	
	124-48-1	Dibromochloromethane			0.798882	7.988826	ND	U	
	100-41-4	Ethylbenzene			0.998137	9.981378	ND	U	
	108-90-7	Chlorobenzene			0.804469	8.044692	ND	U	
	100-42-5	Styrene	14.74821		1.178770	11.78770	1.791	J	
	75-25-2	Bromoform			1.815642	18.15642	ND	U	

	79-34-5	1,1,2,2-Tetrachloroeth			1.970204	19.70204	ND	U	
	541-73-1	1,3-Dichlorobenzene	16.23676		0.845437	8.454376	1.205	J	
	106-46-7	1,4-Dichlorobenzene	16.30766		0.834264	8.342644	1.636	J	
	95-50-1	1,2-Dichlorobenzene			1.134078	11.34078	ND	U	
	110-54-3	Hexane	8.247166		2.391061	23.91061	16.044	J	
	141-78-6	Ethyl Acetate			5.467411	54.67411	ND	U	
	67-72-1	Hexachloroethane			1.309124	13.09124	ND	U	
	75-71-8	Dichlorodifluoromethan			1.540037	93.10986	ND	U	
	75-69-4	Trichlorofluoromethane			0.875232	8.752327	ND	U	
	60-29-7	Diethyl ether			2.385474	23.85474	ND	U	
	76-13-1	Freon 113			1.081936	10.81936	ND	U	
	79-20-9	Methyl Acetate			5.495344	54.95344	ND	U	
	1634-04-4	tert-Butyl-Methyl Ethe			1.919925	19.19925	ND	U	
	156-60-5	trans-1,2-Dichloroethe			2.821229	28.21229	ND	U	
	110-82-7	Cyclohexane			0.761638	7.616387	ND	U	
	156-59-2	cis-1,2-Dichloroethene			1.690875	16.90875	ND	U	
	108-87-2	Methylcyclohexane			1.201117	12.01117	ND	U	
	79-46-9	2-Nitropropane			5.474860	54.74860	ND	U	
	106-93-4	1,2-Dibromoethane			0.897579	8.975791	ND	U	
	108-38-3	m,p-Xylene			1.558659	15.58659	ND	U	
	98-82-8	Isopropylbenzene			1.342644	13.42644	ND	U	
	104-51-8	n-Butylbenzene			1.657355	16.57355	ND	U	
	96-12-8	1,2-Dibromo-3-Chloropr			5.847300	58.47299	ND	U	
	120-82-1	1,2,4-Trichlorobenzene	18.27215		1.802607	18.02607	3.756	J	
	95-47-6	o-Xylene			0.856610	8.566108	ND	U	
$	17060-07-0	1,2-Dichloroethane-d4	10.77873	186.2197	1.783985	17.83985	202.64		108.8197
$	2037-26-5	Toluene-d8	12.67233	186.2197	1.595903	15.95903	178.74		95.98572
$	460-00-4	Bromofluorobenzene	15.26465	186.2197	1.236499	12.36499	188.84		101.4062
T	104-76-7	1-Hexanol, 2-ethyl-	16.40891				97.274089	NJ	

Key: $ = Surrogate, T = TIC, K = Spike, and M = Summary

Macro: upload2lims.mac, Revision: 0.2 Data File: //APWSCF02/SLab/chem/neelix.i/Data/2013/V130515C109.b/1305151
Report Date: 06/10/2013 Method File: \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130515C109.b\8260S13

LIMS Upload Report

Lab Sample ID:	S13T004293	Instrument ID:	neelix.i
Client Sample ID:	S13T004293	Analyst:	awg
SDG:	V130515C109	Analysis Date:	15-MAY-2013 17:49
Lab Prep Batch:	130515n	ALS Bottle:	15
Protocol:	@222VOA	Replicate:	0
Sample Fraction:	VOA	Dilution Factor:	1
Sample Type:	SAMPLE	Final Concentration Units:	ug/Kg
Matrix:	SOIL	Matrix Type:	SOLID
Actual Sample Size:	0.525	Expected Sample Size:	0.5
Actual Units:	g	Expected Units:	g

For a VOA, LOW Conc., SOLID sample,
the Method formula used was: Conc. = Amount * DF * Uf * 1/(Ws * (100 - M)/100).

The Macro formula used was: Conc. = Amount * DF * Uf * 1/(Ws * (100 - M)/100),
where DF = 1, UF = 1, Ws = 0.525, and M = 0.

-	CAS Number	Compound Name	RT	Spike	Adj. MDL	LOQ	Final Conc	Flag	Pct. Rec.
M	540-59-0	Total 1,2-Dichloroethe			4.009523	40.09523	ND	U	
M	1330-20-7	Total Xylenes			1.935238	19.35238	ND	U	
M	THM	Total Trihalomethanes			2.843809	28.43809	ND	U	
	74-87-3	Chloromethane			1.209523	12.09523	ND	U	
	75-01-4	Vinyl Chloride			1.651428	16.51428	ND	U	
	74-83-9	Bromomethane			4.710476	47.10476	ND	U	
	75-00-3	Chloroethane			4.895237	48.95238	ND	U	
	75-35-4	1,1-Dichloroethene			4.030476	40.30476	ND	U	
	67-64-1	Acetone	8.024416		20.94857	209.4857	84.068	J	
	75-15-0	Carbon Disulfide			1.531428	15.31428	ND	U	
	75-09-2	Methylene Chloride			0.609523	6.095238	ND	U	
	75-34-3	1,1-Dichloroethane			0.925714	9.257142	ND	U	
	78-93-3	2-Butanone			18.70857	187.0857	ND	U	
	67-66-3	Chloroform			1.245714	12.45714	ND	U	
	56-23-5	Carbon Tetrachloride			0.889523	8.895238	ND	U	
	109-99-9	Tetrahydrofuran			6.180952	61.80952	ND	U	
	71-55-6	1,1,1-Trichloroethane			0.876190	8.761904	ND	U	
	71-36-3	n-Butanol			98.01904	980.1904	ND	U	
	71-43-2	Benzene			1.403809	14.03809	ND	U	
	107-06-2	1,2-Dichloroethane			0.512380	5.123809	ND	U	
	79-01-6	Trichloroethene			1.152380	11.52380	ND	U	
	107-87-9	2-Pentanone			23.19238	231.9238	ND	U	
	78-87-5	1,2-Dichloropropane			2.198095	21.98095	ND	U	
	75-27-4	Bromodichloromethane			0.662857	6.628571	ND	U	
	108-10-1	Methyl Isobutyl Ketone			16.26666	162.6666	ND	U	
	10061-01-5	cis-1,3-dichloropropen			1.411428	14.11428	ND	U	
	108-88-3	Toluene	12.73311		0.763809	7.638095	3.584	BJ	
	591-78-6	2-Hexanone			22.51619	225.1619	ND	U	
	10061-02-6	trans-1,3-Dichloroprop			2.580952	25.80952	ND	U	
	127-18-4	Tetrachloroethene			1.045714	10.45714	ND	U	
	79-00-5	1,1,2-Trichloroethane			1.579047	15.79047	ND	U	
	124-48-1	Dibromochloromethane			0.817142	8.171428	ND	U	
	100-41-4	Ethylbenzene			1.020952	10.20952	ND	U	
	108-90-7	Chlorobenzene			0.822857	8.228571	ND	U	
	100-42-5	Styrene			1.205714	12.05714	ND	U	
	75-25-2	Bromoform			1.857142	18.57142	ND	U	

	79-34-5	1,1,2,2-Tetrachloroeth			2.015238	20.15238	ND	U	
	541-73-1	1,3-Dichlorobenzene			0.864761	8.647619	ND	U	
	106-46-7	1,4-Dichlorobenzene			0.853333	8.533333	ND	U	
	95-50-1	1,2-Dichlorobenzene			1.160000	11.6	ND	U	
	110-54-3	Hexane	8.257316		2.445714	24.45714	20.187	J	
	141-78-6	Ethyl Acetate			5.592381	55.92380	ND	U	
	67-72-1	Hexachloroethane			1.339047	13.39047	ND	U	
	75-71-8	Dichlorodifluoromethan			1.575238	95.23809	ND	U	
	75-69-4	Trichlorofluoromethane			0.895238	8.952380	ND	U	
	60-29-7	Diethyl ether			2.440000	24.4	ND	U	
	76-13-1	Freon 113			1.106666	11.06666	ND	U	
	79-20-9	Methyl Acetate			5.620952	56.20952	ND	U	
	1634-04-4	tert-Butyl-Methyl Ethe			1.963809	19.63809	ND	U	
	156-60-5	trans-1,2-Dichloroethe			2.885714	28.85714	ND	U	
	110-82-7	Cyclohexane			0.779047	7.790476	ND	U	
	156-59-2	cis-1,2-Dichloroethene			1.729523	17.29523	ND	U	
	108-87-2	Methylcyclohexane			1.228571	12.28571	ND	U	
	79-46-9	2-Nitropropane			5.600000	56	ND	U	
	106-93-4	1,2-Dibromoethane			0.918095	9.180952	ND	U	
	108-38-3	m,p-Xylene			1.594285	15.94285	ND	U	
	98-82-8	Isopropylbenzene			1.373333	13.73333	ND	U	
	104-51-8	n-Butylbenzene			1.695238	16.95238	ND	U	
	96-12-8	1,2-Dibromo-3-Chloropr			5.980952	59.80952	ND	U	
	120-82-1	1,2,4-Trichlorobenzene			1.843809	18.43809	ND	U	
	95-47-6	o-Xylene			0.876190	8.761904	ND	U	
$	17060-07-0	1,2-Dichloroethane-d4	10.77875	190.4761	1.824761	18.24761	198.27		104.0905
$	2037-26-5	Toluene-d8	12.67236	190.4761	1.632380	16.32380	188.02		98.71075
$	460-00-4	Bromofluorobenzene	15.26468	190.4761	1.264761	12.64761	199.6		104.7925

Key: $ = Surrogate, T = TIC, K = Spike, and M = Summary

Macro: upload2lims.mac, Revision: 0.2 Data File: //APWSCF02/SLab/chem/neelix.i/Data/2013/V130516C109.b/1305160
Report Date: 06/10/2013 Method File: \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130516C109.b\8260S13

LIMS Upload Report

Lab Sample ID:	S13T004239DUP	Instrument ID:	neelix.i
Client Sample ID:	S13T004239DUP	Analyst:	awg
SDG:	V130516C109	Analysis Date:	16-MAY-2013 11:39
Lab Prep Batch:	130516n	ALS Bottle:	10
Protocol:	@222VOA	Replicate:	0
Sample Fraction:	VOA	Dilution Factor:	1
Sample Type:	SAMPLE	Final Concentration Units:	ug/Kg
Matrix:	SOIL	Matrix Type:	SOLID
Actual Sample Size:	0.487	Expected Sample Size:	0.5
Actual Units:	g	Expected Units:	g

For a VOA, LOW Conc., SOLID sample,
the Method formula used was: Conc. = Amount * DF * Uf * 1/(Ws * (100 - M)/100).

The Macro formula used was: Conc. = Amount * DF * Uf * 1/(Ws * (100 - M)/100),
where DF = 1, UF = 1, Ws = 0.487, and M = 0.

-	CAS Number	Compound Name	RT	Spike	Adj. MDL	LOQ	Final Conc	Flag	Pct. Rec.
M	540-59-0	Total 1,2-Dichloroethe			4.322381	43.22381	ND	U	
M	1330-20-7	Total Xylenes			2.086242	20.86242	ND	U	
M	THM	Total Trihalomethanes			3.065708	30.65708	ND	U	
	74-87-3	Chloromethane			1.303901	13.03901	ND	U	
	75-01-4	Vinyl Chloride			1.780287	17.80287	ND	U	
	74-83-9	Bromomethane			5.078028	50.78028	ND	U	
	75-00-3	Chloroethane			5.277207	52.77207	ND	U	
	75-35-4	1,1-Dichloroethene			4.344969	43.44969	ND	U	
	67-64-1	Acetone	8.024516		22.58316	225.8316	27.796	J	
	75-15-0	Carbon Disulfide			1.650924	16.50924	ND	U	
	75-09-2	Methylene Chloride			0.657084	6.570841	ND	U	
	75-34-3	1,1-Dichloroethane			0.997946	9.979466	ND	U	
	78-93-3	2-Butanone			20.16837	201.6837	ND	U	
	67-66-3	Chloroform			1.342915	13.42915	ND	U	
	56-23-5	Carbon Tetrachloride			0.958932	9.589322	ND	U	
	109-99-9	Tetrahydrofuran			6.663244	66.63244	ND	U	
	71-55-6	1,1,1-Trichloroethane			0.944558	9.445585	ND	U	
	71-36-3	n-Butanol			105.6673	1056.673	ND	U	
	71-43-2	Benzene			1.513346	15.13347	ND	U	
	107-06-2	1,2-Dichloroethane			0.552361	5.523613	ND	U	
	79-01-6	Trichloroethene			1.242299	12.42299	ND	U	
	107-87-9	2-Pentanone			25.00205	250.0205	ND	U	
	78-87-5	1,2-Dichloropropane			2.369609	23.69609	ND	U	
	75-27-4	Bromodichloromethane			0.714579	7.145790	ND	U	
	108-10-1	Methyl Isobutyl Ketone			17.53593	175.3593	ND	U	
	10061-01-5	cis-1,3-dichloropropen			1.521560	15.21560	ND	U	
	108-88-3	Toluene	12.73321		0.823408	8.234086	2.859	J	
	591-78-6	2-Hexanone			24.27310	242.7310	ND	U	
	10061-02-6	trans-1,3-Dichloroprop			2.782340	27.82340	ND	U	
	127-18-4	Tetrachloroethene			1.127310	11.27310	ND	U	
	79-00-5	1,1,2-Trichloroethane			1.702258	17.02258	ND	U	
	124-48-1	Dibromochloromethane			0.880903	8.809034	ND	U	
	100-41-4	Ethylbenzene			1.100616	11.00616	ND	U	
	108-90-7	Chlorobenzene			0.887063	8.870636	ND	U	
	100-42-5	Styrene			1.299794	12.99794	ND	U	
	75-25-2	Bromoform			2.002053	20.02053	ND	U	

	79-34-5	1,1,2,2-Tetrachloroeth			2.172484	21.72484	ND	U	
	541-73-1	1,3-Dichlorobenzene			0.932238	9.322381	ND	U	
	106-46-7	1,4-Dichlorobenzene			0.919917	9.199178	ND	U	
	95-50-1	1,2-Dichlorobenzene			1.250513	12.50513	ND	U	
	110-54-3	Hexane			2.636550	26.36550	ND	U	
	141-78-6	Ethyl Acetate			6.028747	60.28747	ND	U	
	67-72-1	Hexachloroethane			1.443531	14.43531	ND	U	
	75-71-8	Dichlorodifluoromethan			1.698151	102.6694	ND	U	
	75-69-4	Trichlorofluoromethane			0.965092	9.650924	ND	U	
	60-29-7	Diethyl ether			2.630390	26.30390	ND	U	
	76-13-1	Freon 113			1.193018	11.93018	ND	U	
	79-20-9	Methyl Acetate			6.059548	60.59548	ND	U	
	1634-04-4	tert-Butyl-Methyl Ethe			2.117043	21.17043	ND	U	
	156-60-5	trans-1,2-Dichloroethe			3.110882	31.10882	ND	U	
	110-82-7	Cyclohexane			0.839835	8.398357	ND	U	
	156-59-2	cis-1,2-Dichloroethene			1.864476	18.64476	ND	U	
	108-87-2	Methylcyclohexane			1.324435	13.24435	ND	U	
	79-46-9	2-Nitropropane			6.036961	60.36960	ND	U	
	106-93-4	1,2-Dibromoethane			0.989733	9.897330	ND	U	
	108-38-3	m,p-Xylene			1.718685	17.18685	ND	U	
	98-82-8	Isopropylbenzene			1.480492	14.80492	ND	U	
	104-51-8	n-Butylbenzene			1.827515	18.27515	ND	U	
	96-12-8	1,2-Dibromo-3-Chloropr			6.447638	64.47638	ND	U	
	120-82-1	1,2,4-Trichlorobenzene			1.987679	19.87679	ND	U	
	95-47-6	o-Xylene			0.944558	9.445585	ND	U	
$	17060-07-0	1,2-Dichloroethane-d4	10.77886	205.3388	1.967145	19.67145	208.33		101.4582
$	2037-26-5	Toluene-d8	12.67246	205.3388	1.759753	17.59753	193.6		94.28470
$	460-00-4	Bromofluorobenzene	15.26478	205.3388	1.363449	13.63449	199.26		97.03948

Key: $ = Surrogate, T = TIC, K = Spike, and M = Summary

FORM 2
SOIL VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: V130515C109

Level: (low/med) LOW

	CLIENT SAMPLE NO.	SMC1 (DCE)#	SMC2 (TOL)#	SMC3 (BFB)#	OTHER	TOT OUT
01	CCB	101	96	102		0
02	LCS	97	95	93		0
03	S13T004239	100	96	98		0
04	S13T004239MS	100	98	98		0
05	S13T004239MS	96	99	96		0
06	S13T004266	109	96	101		0
07	S13T004293	104	99	105		0
08						
09						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						

	QC LIMITS
SMC1 (DCE) = 1,2-Dichloroethane-d4	(78-148)
SMC2 (TOL) = Toluene-d8	(77-127)
SMC3 (BFB) = Bromofluorobenzene	(73-153)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

FORM 2
SOIL VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: V130516C109

Level:(low/med) LOW

	CLIENT SAMPLE NO.	SMC1 (DCE)#	SMC2 (TOL)#	SMC3 (BFB)#	OTHER	TOT OUT
01	CCB	95	95	98		0
02	S13T004239DU	101	94	97		0
03						
04						
05						
06						
07						
08						
09						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						

	QC LIMITS
SMC1 (DCE) = 1,2-Dichloroethane-d4	(78-148)
SMC2 (TOL) = Toluene-d8	(77-127)
SMC3 (BFB) = Bromofluorobenzene	(73-153)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

Duplicate Rerun 6/11/13

page 1 of 1 FORM II VOA

FORM 3
SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: V130515C109

Matrix Spike - Sample No.: S13T004239 Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Total 1,2-Dichloroethen	409.76	0.0000	445.07	109	70-130
Total Xylenes	614.63	0.0000	637.27	104	70-130
Total Trihalomethanes	819.51	0.0000	907.90	111	70-130
Chloromethane	203.25	0.0000	137.29	68*	70-130
Vinyl Chloride	203.25	0.0000	154.43	76	70-130
Bromomethane	203.25	0.0000	190.02	93	70-130
Chloroethane	203.25	0.0000	196.64	97	70-130
1,1-Dichloroethene	204.88	0.0000	250.94	122*	75-121
* Acetone	512.20	199.65	732.71	104	50-180
Carbon Disulfide	204.88	0.0000	191.71	94	70-130
Methylene Chloride	204.88	0.0000	226.40	110	70-130
1,1-Dichloroethane	204.88	0.0000	232.23	113	70-130
* 2-Butanone	512.20	0.0000	673.84	132	70-156
Chloroform	204.88	0.0000	229.25	112	70-130
Carbon Tetrachloride	204.88	0.0000	230.76	113	70-130
Tetrahydrofuran	204.88	0.0000	240.83	118	70-130
1,1,1-Trichloroethane	204.88	0.0000	232.24	113	70-130
n-Butanol	1056.9	0.0000	1258.4	119	46-151
Benzene	204.88	0.0000	213.99	104	69-120
1,2-Dichloroethane	204.88	0.0000	235.31	115	70-130
* Trichloroethene	204.88	0.0000	413.95	202*	70-130
2-Pentanone	512.20	0.0000	678.51	132*	70-130
1,2-Dichloropropane	204.88	0.0000	229.38	112	70-130
Bromodichloromethane	204.88	0.0000	227.67	111	70-130
* Methyl Isobutyl Ketone	512.20	0.0000	702.80	137	70-168
cis-1,3-dichloropropene	204.88	0.0000	234.56	114	70-130
Toluene	204.88	5.000	220.18	105	78-127
2-Hexanone	512.20	0.0000	735.64	144	70-172

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: * TARGET Compounds [signature] 6/11/13

FORM 3
SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: V130515C109

Matrix Spike - Sample No.: S13T004239 Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
trans-1,3-Dichloroprope	204.88	0.0000	237.01	116	70-130
Tetrachloroethene	204.88	0.0000	230.22	112	70-130
1,1,2-Trichloroethane	204.88	0.0000	198.84	97	70-130
Dibromochloromethane	204.88	0.0000	220.16	107	70-130
Ethylbenzene	204.88	0.0000	211.05	103	70-130
Chlorobenzene	204.88	0.0000	209.30	102	80-117
Styrene	204.88	1.357	230.63	112	70-130
Bromoform	204.88	0.0000	230.83	113	70-130
1,1,2,2-Tetrachloroetha	204.88	0.0000	0.0000	0*	70-130
1,3-Dichlorobenzene	204.88	0.0000	222.78	109	70-130
1,4-Dichlorobenzene	204.88	0.0000	224.34	109	70-130
1,2-Dichlorobenzene	204.88	0.0000	225.39	110	70-130
Hexane	204.88	44.265	237.09	94	70-130
Ethyl Acetate	512.20	0.0000	0.0000	0*	70-130
Hexachloroethane	204.88	0.0000	225.10	110	70-130
Dichlorodifluoromethane	203.25	0.0000	81.052	40*	70-130
Trichlorofluoromethane	203.25	0.0000	195.78	96	70-130
Diethyl ether	204.88	0.0000	212.72	104	70-130
Freon 113	204.88	0.0000	221.54	108	70-130
Methyl Acetate	204.88	0.0000	0.0000	0*	70-130
tert-Butyl-Methyl Ether	204.88	0.0000	244.70	119	70-130
trans-1,2-Dichloroethen	204.88	0.0000	223.23	109	70-130
Cyclohexane	204.88	0.0000	235.26	115	70-130
cis-1,2-Dichloroethene	204.88	0.0000	221.84	108	70-130
Methylcyclohexane	204.88	0.0000	236.25	115	70-130
2-Nitropropane	512.20	0.0000	0.0000	0*	70-130
1,2-Dibromoethane	204.88	0.0000	236.80	116	70-130
* m,p-Xylene	409.76	0.0000	418.73	102	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: * TARGET compound SE 6/11/11

FORM 3
SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: V130515C109

Matrix Spike - Sample No.: S13T004239 Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Isopropylbenzene	204.88	0.0000	211.30	103	70-130
n-Butylbenzene	204.88	0.0000	215.03	105	70-130
1,2-Dibromo-3-Chloropro	204.88	0.0000	219.67	107	70-130
1,2,4-Trichlorobenzene	204.88	0.0000	256.07	125	70-130
* o-Xylene	204.88	0.0000	218.54	107	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: * TARGET COMPOUND SC 6/11/13

FORM 3
SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: V130515C109

Matrix Spike - Sample No.: S13T004239 Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Total 1,2-Dichloroethen	384.00	425.59	111	2	30	70-130
Total Xylenes	576.00	603.63	105	1	30	70-130
Total Trihalomethanes	768.00	842.81	110	1	30	70-130
Chloromethane	190.48	128.23	67*	1	30	70-130
Vinyl Chloride	190.48	146.72	77	1	30	70-130
Bromomethane	190.48	175.31	92	1	30	70-130
Chloroethane	190.48	204.43	107	10	30	70-130
1,1-Dichloroethene	192.00	258.64	135*	10	30	75-121
Acetone	480.00	617.29	87	18	30	50-180
Carbon Disulfide	192.00	174.00	91	3	30	70-130
Methylene Chloride	192.00	211.09	110	0	30	70-130
1,1-Dichloroethane	192.00	221.05	115	2	30	70-130
2-Butanone	480.00	567.92	118	11	30	70-156
Chloroform	192.00	217.17	113	1	30	70-130
Carbon Tetrachloride	192.00	220.47	115	2	30	70-130
Tetrahydrofuran	192.00	216.05	112	5	30	70-130
1,1,1-Trichloroethane	192.00	222.85	116	3	30	70-130
n-Butanol	990.48	1080.4	109	9	30	46-151
Benzene	192.00	202.42	105	1	30	69-120
1,2-Dichloroethane	192.00	216.50	113	2	30	70-130
Trichloroethene	192.00	394.68	206*	2	30	70-130
2-Pentanone	480.00	574.76	120	10	30	70-130
1,2-Dichloropropane	192.00	217.85	113	1	30	70-130
Bromodichloromethane	192.00	207.03	108	3	30	70-130
Methyl Isobutyl Ketone	480.00	619.76	129	6	30	70-168
cis-1,3-dichloropropene	192.00	219.60	114	0	30	70-130
Toluene	192.00	214.49	109	4	30	78-127
2-Hexanone	480.00	642.56	134	7	30	70-172

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: * TARGET COMPOUNDS 6/11/13

FORM 3
SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: V130515C109

Matrix Spike - Sample No.: S13T004239 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
trans-1,3-Dichloroprope	192.00	223.25	116	0	30	70-130
Tetrachloroethene	192.00	221.29	115	3	30	70-130
1,1,2-Trichloroethane	192.00	171.14	89	9	30	70-130
Dibromochloromethane	192.00	204.92	107	0	30	70-130
Ethylbenzene	192.00	200.12	104	1	30	70-130
Chlorobenzene	192.00	196.76	102	0	30	80-117
Styrene	192.00	215.18	111	1	30	70-130
Bromoform	192.00	213.69	111	2	30	70-130
1,1,2,2-Tetrachloroetha	192.00	0.0000	0*		30	70-130
1,3-Dichlorobenzene	192.00	205.07	107	2	30	70-130
1,4-Dichlorobenzene	192.00	209.02	109	0	30	70-130
1,2-Dichlorobenzene	192.00	206.89	108	2	30	70-130
Hexane	192.00	221.67	92	2	30	70-130
Ethyl Acetate	480.00	0.0000	0*		30	70-130
Hexachloroethane	192.00	201.84	105	5	30	70-130
Dichlorodifluoromethane	190.48	70.222	37*	8	30	70-130
Trichlorofluoromethane	190.48	185.39	97	1	30	70-130
Diethyl ether	192.00	200.89	105	1	30	70-130
Freon 113	192.00	211.98	110	2	30	70-130
Methyl Acetate	192.00	0.0000	0*		30	70-130
tert-Butyl-Methyl Ether	192.00	220.17	115	3	30	70-130
trans-1,2-Dichloroethen	192.00	211.26	110	1	30	70-130
Cyclohexane	192.00	219.96	114	1	30	70-130
cis-1,2-Dichloroethene	192.00	214.33	112	4	30	70-130
Methylcyclohexane	192.00	219.40	114	1	30	70-130
2-Nitropropane	480.00	0.0000	0*		30	70-130
1,2-Dibromoethane	192.00	216.53	113	3	30	70-130
✱ m,p-Xylene	384.00	395.95	103	1	30	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: ✱ TARGET COMPOUND 6/11/13

FORM 3
SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: V130515C109

Matrix Spike - Sample No.: S13T004239 Level:(low/med) LOW

	COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
	Isopropylbenzene	192.00	199.14	104	1	30	70-130
	n-Butylbenzene	192.00	196.75	102	3	30	70-130
	1,2-Dibromo-3-Chloropro	192.00	179.45	93	14	30	70-130
	1,2,4-Trichlorobenzene	192.00	230.61	120	4	30	70-130
*	o-Xylene	192.00	207.68	108	1	30	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 61 outside limits
Spike Recovery: 17 out of 122 outside limits

COMMENTS: * TARGET COMPOUND 6/11/13

Data File: 13051506LCS.D
Report Date: 10-Jun-2013 14:11

WSCF

RECOVERY REPORT

Client Name:
Sample Matrix: SOLID
Lab Smp Id: LCS
Level: LOW
Data Type: MS DATA
SpikeList File: FullSolLCS.spk
Sublist File: 10Tank.sub
Method File: \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130515C109.b\8260S1304
Misc Info: VOA

Client SDG: V130515C109
Fraction: VOA
Client Smp ID: LCS
Operator: awg
SampleType: LCS
Quant Type: ISTD

	SPIKE COMPOUND	CONC ADDED ug/Kg	CONC RECOVERED ug/Kg	% RECOVERED	LIMITS
M	1 Total 1,2-Dichloro	403.20	435.63	108.04	70-130
M	2 Total Xylenes	604.80	629.60	104.10	70-130
M	3 Total Trihalometha	806.40	872.04	108.14	70-130
	7 Dichlorodifluorome	200.00	84.599	42.30*	70-130
	8 Chloromethane	200.00	138.10	69.05*	70-130
	9 Vinyl Chloride	200.00	154.80	77.40	70-130
	10 Bromomethane	200.00	189.11	94.56	70-130
	11 Chloroethane	200.00	205.43	102.72	70-130
	12 Trichlorofluoromet	200.00	191.89	95.95	70-130
	13 Diethyl ether	201.60	194.08	96.27	70-130
	14 1,1-Dichloroethene	201.60	215.73	107.01	63-143
	15 Freon 113	201.60	219.32	108.79	70-130
	16 Carbon Disulfide	201.60	201.59	99.99	70-130
	18 Methylene Chloride	201.60	213.47	105.89	70-130
	19 Acetone	504.00	537.94	106.74	58-157
	20 Methyl Acetate	201.60	213.18	105.74	70-130
	21 trans-1,2-Dichloro	201.60	221.09	109.67	70-130
	23 Hexane	201.60	205.06	101.72	70-130
	24 tert-Butyl-Methyl	201.60	218.23	108.25	70-130
	25 1,1-Dichloroethane	201.60	223.29	110.76	70-130
	29 cis-1,2-Dichloroet	201.60	214.54	106.42	70-130
	30 Cyclohexane	201.60	232.19	115.18	70-130
	31 Chloroform	201.60	221.92	110.08	70-130
	32 Ethyl Acetate	504.00	577.32	114.55	70-130
	33 Carbon Tetrachlori	201.60	231.66	114.91	70-130
	34 Tetrahydrofuran	201.60	210.08	104.21	70-130
	37 1,1,1-Trichloroeth	201.60	231.33	114.75	70-130
	38 2-Butanone	504.00	538.43	106.83	66-150
	41 Benzene	201.60	207.97	103.16	70-129
	44 1,2-Dichloroethane	201.60	218.97	108.62	70-130
	47 Trichloroethene	201.60	229.28	113.73	70-130
	48 Methylcyclohexane	201.60	234.91	116.53	70-130
	49 n-Butanol	1040.0	1026.0	98.65	60-149
	50 1,2-Dichloropropan	201.60	220.95	109.60	70-130
	51 Bromodichlorometha	201.60	228.08	113.13	70-130
	53 2-Pentanone	504.00	530.05	105.17	70-130
	56 cis-1,3-dichloropr	201.60	219.93	109.09	70-130
	59 Toluene	201.60	214.20	106.25	72-130
	60 Methyl Isobutyl Ke	504.00	585.53	116.18	70-155
	61 trans-1,3-Dichloro	201.60	225.41	111.81	70-130

* TARGET COMPOUNDS 6/11/13

Data File: 13051506LCS.D
Report Date: 10-Jun-2013 14:11

	SPIKE COMPOUND	CONC ADDED ug/Kg	CONC RECOVERED ug/Kg	% RECOVERED	LIMITS
	62 Tetrachloroethene	201.60	227.43	112.81	70-130
	63 1,1,2-Trichloroeth	201.60	213.56	105.93	70-130
	64 2-Nitropropane	504.00	509.30	101.05	70-130
	66 Dibromochlorometha	201.60	211.18	104.75	70-130
	67 1,2-Dibromoethane	201.60	211.89	105.10	70-130
	68 2-Hexanone	504.00	578.53	114.79	72-158
	70 Ethylbenzene	201.60	207.06	102.71	70-130
	72 Chlorobenzene	201.60	203.63	101.01	76-126
*	73 m,p-Xylene	403.20	413.10	102.46	70-130
*	75 o-Xylene	201.60	216.50	107.39	70-130
	76 Styrene	201.60	227.67	112.93	70-130
	77 Bromoform	201.60	210.86	104.59	70-130
	78 Isopropylbenzene	201.60	209.63	103.98	70-130
	80 1,1,2,2-Tetrachlor	201.60	216.15	107.22	70-130
	92 1,3-Dichlorobenzen	201.60	215.16	106.73	70-130
	95 1,4-Dichlorobenzen	201.60	218.31	108.29	70-130
	97 1,2-Dichlorobenzen	201.60	212.11	105.21	70-130
	98 n-Butylbenzene	201.60	215.88	107.08	70-130
	99 1,2-Dibromo-3-Chlo	201.60	202.45	100.42	70-130
	100 Hexachloroethane	201.60	235.21	116.67	70-130
	101 1,2,4-Trichloroben	201.60	250.03	124.02	70-130

	SURROGATE COMPOUND	CONC ADDED ug/Kg	CONC RECOVERED ug/Kg	% RECOVERED	LIMITS
$	43 1,2-Dichloroethane	200.00	193.80	96.90	78-148
$	57 Toluene-d8	200.00	189.65	94.82	77-127
$	79 Bromofluorobenzene	200.00	185.37	92.69	73-153

* TARGET COMPOUNDS SK 6/11/13

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

CCB

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: V130515C109

Lab File ID: 13051505CCB Lab Sample ID: CCB

Date Analyzed: 05/15/13 Time Analyzed: 1144

GC Column: RESTEK RTX-VMSID: 0.25 (mm) Heated Purge: (Y/N) Y

Instrument ID: NEELIX

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	LCS	LCS	13051506LCS	1215
02	S13T004239	S13T004239	130515074239	1513
03	S13T004239MS	S13T004239MS	13051509239M	1616
04	S13T004239MS	S13T004239MSD	13051510239M	1647
05	S13T004266	S13T004266	130515114266	1718
06	S13T004293	S13T004293	130515124293	1749
07				
08				
09				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				

COMMENTS:

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

CCB

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: V130516C109

Lab File ID: 13051604CCB Lab Sample ID: CCB

Date Analyzed: 05/16/13 Time Analyzed: 1105

GC Column: RESTEK RTX-VMSID: 0.25 (mm) Heated Purge: (Y/N) Y

Instrument ID: NEELIX

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	S13T004239DU	S13T004239DUP	130516054239	1139
02				
03				
04				
05				
06				
07				
08				
09				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				

COMMENTS: Duplicate Rerun 6/11/13

FORM IV VOA

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: V130515C109

Lab File ID: 13051502BFB BFB Injection Date: 05/15/13

Instrument ID: NEELIX BFB Injection Time: 0942

GC Column: ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	8.0 - 40.0% of mass 95	14.8
75	30.0 - 66.0% of mass 95	48.0
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.1
173	Less than 2.0% of mass 174	0.2 (0.3)1
174	50.0 - 120.0% of mass 95	79.3
175	4.0 - 9.0% of mass 174	6.2 (7.8)1
176	93.0 - 101.0% of mass 174	77.1 (97.3)1
177	5.0 - 9.0% of mass 176	5.0 (6.5)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	CCV	CCV	13051504CCV	05/15/13	1057
02	CCB	CCB	13051505CCB	05/15/13	1144
03	LCS	LCS	13051506LCS	05/15/13	1215
04	S13T004239	S13T004239	130515074239	05/15/13	1513
05	S13T004239MS	S13T004239MS	13051509239MS	05/15/13	1616
06	S13T004239MS	S13T004239MSD	13051510239MSD	05/15/13	1647
07	S13T004266	S13T004266	130515114266	05/15/13	1718
08	S13T004293	S13T004293	130515124293	05/15/13	1749
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: V130516C109

Lab File ID: 13051602BFB BFB Injection Date: 05/16/13

Instrument ID: NEELIX BFB Injection Time: 0949

GC Column: ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	8.0 - 40.0% of mass 95	14.5
75	30.0 - 66.0% of mass 95	48.1
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.1
173	Less than 2.0% of mass 174	0.7 (0.9)1
174	50.0 - 120.0% of mass 95	80.6
175	4.0 - 9.0% of mass 174	6.0 (7.4)1
176	93.0 - 101.0% of mass 174	78.0 (96.7)1
177	5.0 - 9.0% of mass 176	5.2 (6.7)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	CCV	CCV	13051603CCV	05/16/13	1020
02	CCB	CCB	13051604CCB	05/16/13	1105
03	S13T004239DU	S13T004239DUP	130516054239D	05/16/13	1139
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

Sample Dup Rerun

6/11/13

FORM V VOA

Report Date : 10-Jun-2013 14:17 Page 1

WSCF

INITIAL CALIBRATION DATA

Start Cal Date : 25-APR-2013 11:01
End Cal Date : 25-APR-2013 14:40
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP RTE
Method file : \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130515C109.b\8260
Last Edit : 10-Jun-2013 14:11 neelix.i
Curve Type : Average

Calibration File Names:
Level 1: \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130425CAL.b\13042504CAL1.D
Level 2: \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130425CAL.b\13042505CAL2.D
Level 3: \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130425CAL.b\13042506CAL3.D
Level 4: \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130425CAL.b\13042507CAL4.D
Level 5: \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130425CAL.b\13042508CAL5.D
Level 6: \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130425CAL.b\13042509CAL6.D
Level 7: \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130425CAL.b\13042510CAL7.D
Level 8: \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130425CAL.b\13042511CAL8.D

Compound	10.080 Level 1	20.160 Level 2	50.400 Level 3	100.800 Level 4	201.600 Level 5	403.200 Level 6	806.400 Level 7	1008.000 Level 8	RRF	% RSD
M 1 Total 1,2-Dichloroethene	0.35236	0.34792	0.34811	0.35378	0.35107	0.33831	0.30595	0.29807	0.33695	6.579
M 2 Total Xylenes	0.54963	0.59313	0.59676	0.58309	0.53419	0.43805	+++++	+++++	0.54914	10.902
M 3 Total Trihalomethanes	0.31888	0.31577	0.32605	0.33014	0.33158	0.31740	0.27764	0.26308	0.31007	8.218
4 2-Chloroethanol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
5 Isobutyl alcohol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
6 Propionitrile	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
7 Dichlorodifluoromethane	0.10861	0.11771	0.13563	0.13911	0.13775	0.14055	0.14111	+++++	0.13150	9.830
8 Chloromethane	0.33708	0.34821	0.37059	0.38077	0.37034	0.35853	0.33550	+++++	0.35729	4.936

Report Date : 10-Jun-2013 14:17 Page 2

WSCF

INITIAL CALIBRATION DATA

Start Cal Date : 25-APR-2013 11:01
End Cal Date : 25-APR-2013 14:40
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP RTE
Method file : \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130515C109.b\8260
Last Edit : 10-Jun-2013 14:11 neelix.i
Curve Type : Average

Compound	10.080 Level 1	20.160 Level 2	50.400 Level 3	100.800 Level 4	201.600 Level 5	403.200 Level 6	RRF	% RSD
	806.400 Level 7	1008.000 Level 8						
9 Vinyl Chloride	0.35534	0.37810	0.39920	0.40523	0.39462	0.38300		
	0.35533	+++++					0.38155	5.277
10 Bromomethane	0.10443	0.11092	0.11402	0.11625	0.11011	0.10260		
	0.10294	+++++					0.10876	5.047
11 Chloroethane	0.12887	0.17741	0.16808	0.16878	0.16584	0.15140		
	0.15021	+++++					0.15865	10.313
12 Trichlorofluoromethane	0.46857	0.47162	0.49705	0.49526	0.47672	0.45508		
	0.42126	0.36739					0.45662	9.479
13 Diethyl ether	0.15719	0.14283	0.13856	0.14035	0.14209	0.14368		
	0.13431	0.12732					0.14079	6.073
14 1,1-Dichloroethene	0.22061	0.20895	0.21843	0.21585	0.21445	0.20750		
	0.19772	0.18662					0.20877	5.522
15 Freon 113	0.27011	0.26129	0.26360	0.26747	0.26291	0.25602		
	0.24941	0.23383					0.25808	4.549
16 Carbon Disulfide	0.78690	0.74821	0.77975	0.76660	0.74798	0.67809		
	+++++	+++++					0.75126	5.221
17 Iodomethane	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++
18 Methylene Chloride	0.31629	0.30193	0.30868	0.30241	0.30023	0.28687		
	0.25788	0.24472					0.28988	8.778
19 Acetone	0.03160	0.02622	0.02600	0.02332	0.02383	0.02556		
	0.02424	0.02558					0.02579	9.980

Report Date : 10-Jun-2013 14:17 Page 3

WSCF

INITIAL CALIBRATION DATA

Start Cal Date : 25-APR-2013 11:01
End Cal Date : 25-APR-2013 14:40
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP RTE
Method file : \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130515C109.b\8260
Last Edit : 10-Jun-2013 14:11 neelix.i
Curve Type : Average

Compound	10.080 Level 1	20.160 Level 2	50.400 Level 3	100.800 Level 4	201.600 Level 5	403.200 Level 6	806.400 Level 7	1008.000 Level 8	RRF	% RSD
20 Methyl Acetate	0.15041	0.12064	0.12932	0.11830	0.12327	0.13029	0.11925	0.11640	0.12598	8.790
21 trans-1,2-Dichloroethene	0.28582	0.27929	0.28294	0.28566	0.28366	0.26869	0.24368	0.23187	0.27020	7.768
22 Allyl chloride	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
23 Hexane	0.05214	0.06041	0.06471	0.06789	0.06957	0.06905	0.07036	+++++	0.06487	10.166
24 tert-Butyl-Methyl Ether	0.66291	0.66610	0.70923	0.72053	0.71862	0.70271	0.60236	0.56383	0.66829	8.654
25 1,1-Dichloroethane	0.50730	0.50155	0.50295	0.49465	0.48619	0.44845	0.38693	0.35944	0.46093	12.510
26 Acetonitrile	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
27 Chloroprene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
28 Acrylonitrile	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
29 cis-1,2-Dichloroethene	0.29127	0.28864	0.28806	0.28904	0.29317	0.28372	0.25365	0.24262	0.27877	6.934
30 Cyclohexane	0.39511	0.39542	0.43442	0.44523	0.43913	0.41819	0.38499	0.35757	0.40876	7.483

Report Date : 10-Jun-2013 14:17 Page 4

WSCF

INITIAL CALIBRATION DATA

Start Cal Date : 25-APR-2013 11:01
End Cal Date : 25-APR-2013 14:40
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP RTE
Method file : \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130515C109.b\8260
Last Edit : 10-Jun-2013 14:11 neelix.i
Curve Type : Average

Compound	10.080 Level 1	20.160 Level 2	50.400 Level 3	100.800 Level 4	201.600 Level 5	403.200 Level 6	RRF	% RSD	
	806.400 Level 7	1008.000 Level 8							
31 Chloroform	0.53505	0.52585	0.52927	0.52094	0.50628	0.46002			
	0.38786	+++++					0.49504	10.826	
32 Ethyl Acetate	0.13405	0.13381	0.14900	0.14652	0.14837	0.15133			
	0.12885	0.12150					0.13918	7.949	
33 Carbon Tetrachloride	0.38950	0.39689	0.38731	0.39147	0.38584	0.36221			
	0.33043	0.31423					0.36974	8.461	
34 Tetrahydrofuran	0.02952	0.02200	0.02843	0.02655	0.02911	0.03220			
	0.03093	0.03177					0.02881	11.506	
35 Dibromofluoromethane	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++					+++++	+++++	<-
36 2,2-Dichloropropane	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++					+++++	+++++	
37 1,1,1-Trichloroethane	0.47061	0.46294	0.45220	0.46147	0.44547	0.41821			
	0.37365	0.35366					0.42978	10.255	
38 2-Butanone	0.07584	0.07505	0.08155	0.07508	0.07934	0.08554			
	0.07788	0.07715					0.07843	4.634	
39 Bromochloromethane	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++					+++++	+++++	
40 Methyl acrylate	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++					+++++	+++++	
41 Benzene	1.22522	1.16708	1.15627	1.12203	1.03236	+++++			
	+++++	+++++					1.14059	6.225	

Report Date : 10-Jun-2013 14:17 Page 5

WSCF

INITIAL CALIBRATION DATA

Start Cal Date : 25-APR-2013 11:01
End Cal Date : 25-APR-2013 14:40
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP RTE
Method file : \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130515C109.b\8260
Last Edit : 10-Jun-2013 14:11 neelix.i
Curve Type : Average

Compound	10.080 Level 1	20.160 Level 2	50.400 Level 3	100.800 Level 4	201.600 Level 5	403.200 Level 6	806.400 Level 7	1008.000 Level 8	RRF	% RSD
42 1,1-Dichloropropene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
44 1,2-Dichloroethane	0.31712	0.29872	0.30124	0.30758	0.30533	0.29510	0.26177	0.24929	0.29202	8.113
45 Methacrylonitrile	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
47 Trichloroethene	0.28094	0.29340	0.29090	0.29307	0.29016	0.26973	0.24133	0.22988	0.27368	9.126
48 Methylcyclohexane	0.51452	0.53834	0.55388	0.55712	0.54190	0.49637	0.43236	+++++	0.51921	8.471
49 n-Butanol	0.00362	0.00370	0.00395	0.00381	0.00414	0.00517	0.00525	0.00573	0.00442	18.766
50 1,2-Dichloropropane	0.27739	0.25976	0.27523	0.27946	0.28006	0.26772	0.24004	0.22655	0.26328	7.605
51 Bromodichloromethane	0.33874	0.33400	0.34581	0.35615	0.35572	0.34075	0.29556	0.27959	0.33079	8.494
52 Dibromomethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
53 2-Pentanone	0.02457	0.02429	0.02714	0.02853	0.03130	0.03553	0.03342	0.03389	0.02983	14.520
54 Methyl methacrylate	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++

Report Date : 10-Jun-2013 14:17 Page 6

WSCF

INITIAL CALIBRATION DATA

Start Cal Date : 25-APR-2013 11:01
End Cal Date : 25-APR-2013 14:40
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP RTE
Method file : \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130515C109.b\8260
Last Edit : 10-Jun-2013 14:11 neelix.i
Curve Type : Average

Compound	10.080 Level 1	20.160 Level 2	50.400 Level 3	100.800 Level 4	201.600 Level 5	403.200 Level 6	RRF	% RSD
	806.400 Level 7	1008.000 Level 8						
55 1,4-dioxane	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++
56 cis-1,3-dichloropropene	0.44272	0.45006	0.48275	0.50588	0.50893	0.48351		
	0.41504	0.39251					0.46018	9.199
58 2-Chloroethyl vinyl ether	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++
59 Toluene	0.93453	0.91104	0.89451	0.88715	0.82755	0.72283		
	+++++	+++++					0.86293	8.962
60 Methyl Isobutyl Ketone	0.16419	0.16359	0.18814	0.18831	0.19492	0.19476		
	0.15983	0.15329					0.17588	9.799
61 trans-1,3-Dichloropropene	0.47356	0.46945	0.49935	0.51579	0.50464	0.47285		
	0.39892	0.37818					0.46409	10.738
62 Tetrachloroethene	0.31396	0.30412	0.31134	0.31096	0.29782	0.27729		
	0.25374	0.24771					0.28962	9.222
63 1,1,2-Trichloroethane	0.24359	0.23739	0.24794	0.24175	0.24648	0.24249		
	0.22225	0.21785					0.23747	4.744
64 2-Nitropropane	0.04060	0.03830	0.04571	0.04637	0.04989	0.05671		
	0.05458	0.05519					0.04842	14.175
65 Ethyl methacrylate	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++
66 Dibromochloromethane	0.27550	0.27817	0.29380	0.30644	0.31170	0.31016		
	0.28103	0.27724					0.29176	5.390

Report Date : 10-Jun-2013 14:17 Page 7

WSCF

INITIAL CALIBRATION DATA

Start Cal Date : 25-APR-2013 11:01
End Cal Date : 25-APR-2013 14:40
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP RTE
Method file : \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130515C109.b\8260
Last Edit : 10-Jun-2013 14:11 neelix.i
Curve Type : Average

Compound	10.080 Level 1	20.160 Level 2	50.400 Level 3	100.800 Level 4	201.600 Level 5	403.200 Level 6	RRF	% RSD
	806.400 Level 7	1008.000 Level 8						
67 1,2-Dibromoethane	0.26379	0.26730	0.27225	0.27270	0.28026	0.27697		
	0.25096	0.24717					0.26642	4.471
68 2-Hexanone	0.12529	0.12143	0.14079	0.14138	0.15087	0.15246		
	0.12906	0.12469					0.13575	9.007
69 1,3-Dichloropropane	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++
70 Ethylbenzene	1.75956	1.74108	1.70105	1.61400	1.40428	+++++		
	+++++	+++++					1.64399	8.836
72 Chlorobenzene	1.10128	1.08531	1.05987	1.02392	0.94005	+++++		
	+++++	+++++					1.04209	6.150
73 m,p-Xylene	0.71799	0.73039	0.71915	0.69736	0.61176	+++++		
	+++++	+++++					0.69533	6.934
74 1,1,1,2-Tetrachloroethane	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++
75 o-Xylene	0.72138	0.71935	0.74463	0.75895	0.72713	0.64313		
	+++++	+++++					0.71910	5.591
76 Styrene	0.97150	1.03483	1.08666	1.11142	1.04655	0.88522		
	+++++	+++++					1.02270	8.087
77 Bromoform	0.21505	0.21586	0.22941	0.23956	0.25347	0.26409		
	0.24450	0.24222					0.23802	7.230
78 Isopropylbenzene	1.90702	1.89939	1.88608	1.78001	1.53501	+++++		
	+++++	+++++					1.80150	8.748

Report Date : 10-Jun-2013 14:17 Page 8

WSCF

INITIAL CALIBRATION DATA

Start Cal Date : 25-APR-2013 11:01
End Cal Date : 25-APR-2013 14:40
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP RTE
Method file : \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130515C109.b\8260
Last Edit : 10-Jun-2013 14:11 neelix.i
Curve Type : Average

Compound	10.080 Level 1	20.160 Level 2	50.400 Level 3	100.800 Level 4	201.600 Level 5	403.200 Level 6	806.400 Level 7	1008.000 Level 8	RRF	% RSD
80 1,1,2,2-Tetrachloroethane	0.72451	0.72597	0.73921	0.70833	0.68172	0.66453	0.55757	+++++	0.68598	9.101
81 trans-1,4-Dichloro-2-butene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
82 n-Propylbenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
83 Bromobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
84 1,3,5-Trimethylbenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
85 cis-1,4-Dichloro-2-butene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
86 2-Chlorotoluene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
87 1,2,3-Trichloropropane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
88 4-Chlorotoluene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
89 tert-Butylbenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
90 Pentachloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++

Report Date : 10-Jun-2013 14:17 Page 9

WSCF

INITIAL CALIBRATION DATA

Start Cal Date : 25-APR-2013 11:01
End Cal Date : 25-APR-2013 14:40
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP RTE
Method file : \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130515C109.b\8260
Last Edit : 10-Jun-2013 14:11 neelix.i
Curve Type : Average

Compound	10.080 Level 1	20.160 Level 2	50.400 Level 3	100.800 Level 4	201.600 Level 5	403.200 Level 6	806.400 Level 7	1008.000 Level 8	RRF	% RSD
91 1,2,4-Trimethylbenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
92 1,3-Dichlorobenzene	1.62087	1.55575	1.52538	1.49740	1.35558	1.15610	+++++	+++++	1.45185	11.672
94 sec-Butylbenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
95 1,4-Dichlorobenzene	1.59933	1.56874	1.54581	1.49000	1.37662	1.17484	+++++	+++++	1.45922	10.955
96 p-Isopropyltoluene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
97 1,2-Dichlorobenzene	1.42990	1.39645	1.39209	1.34898	1.26154	1.10077	+++++	+++++	1.32162	9.293
98 n-Butylbenzene	2.69883	2.64471	2.69519	2.52994	2.18633	+++++	+++++	+++++	2.55100	8.427
99 1,2-Dibromo-3-Chloropropane	0.14563	0.09775	0.10419	0.10213	0.11084	0.11596	0.11065	0.10912	0.11203	13.152
100 Hexachloroethane	0.27348	0.26011	0.27435	0.26739	0.27908	0.25736	0.23080	0.21856	0.25764	8.477
101 1,2,4-Trichlorobenzene	0.60973	0.56184	0.71274	0.72972	0.83245	0.75007	0.64503	0.60050	0.68026	13.397
102 Hexachlorobutadiene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++

Report Date : 10-Jun-2013 14:17 Page 10

WSCF

INITIAL CALIBRATION DATA

Start Cal Date : 25-APR-2013 11:01
End Cal Date : 25-APR-2013 14:40
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP RTE
Method file : \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130515C109.b\8260
Last Edit : 10-Jun-2013 14:11 neelix.i
Curve Type : Average

Compound	10.080 Level 1	20.160 Level 2	50.400 Level 3	100.800 Level 4	201.600 Level 5	403.200 Level 6	RRF	% RSD
	806.400 Level 7	1008.000 Level 8						
103 Nitrobenzene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++
104 Napthalene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++
105 1,2,3-Trichlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++					+++++	+++++
$ 43 1,2-Dichloroethane-d4	0.06178	0.06180	0.06312	0.06242	0.06288	0.06420		
	0.06486	0.06414					0.06315	1.828
$ 57 Toluene-d8	1.20065	1.20177	1.21906	1.22884	1.22835	1.23422		
	1.25614	1.26127					1.22879	1.807
$ 79 Bromofluorobenzene	1.02327	1.02854	0.99763	1.03759	1.00760	1.03126		
	1.04338	1.03590					1.02565	1.528

Report Date : 10-Jun-2013 14:17 Page 11

WSCF

INITIAL CALIBRATION DATA

Start Cal Date : 25-APR-2013 11:01
End Cal Date : 25-APR-2013 14:40
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP RTE
Method file : \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130515C109.b\8260
Last Edit : 10-Jun-2013 14:11 neelix.i
Curve Type : Average

Average %RSD Results.
Calculated Average %RSD = 8.35743
Maximun Average %RSD = 15.00000
* Passed Average %RSD Test.

Data File: 13051504CCV.D
Report Date: 10-Jun-2013 14:11

WSCF

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: neelix.i
Lab File ID: 13051504CCV.D
Analysis Type: WATER
Lab Sample ID: CCV
Method: \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130515C109.b\8260S130425.m

Injection Date: 15-MAY-2013 10:57
Init. Cal. Date(s): 25-APR-2013 25-APR-2013
Init. Cal. Times: 11:01 14:40
Quant Type: ISTD

COMPOUND	RRF / AMOUNT	RF101	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE	
M 1 Total 1,2-Dichloroethene	0.33695	0.35596	0.010	5.64227	20.00000	Averaged	
M 2 Total Xylenes	0.54914	0.62287	0.010	13.42503	20.00000	Averaged	
M 3 Total Trihalomethanes	0.31007	0.34580	0.010	11.52271	20.00000	Averaged	
7 Dichlorodifluoromethane	0.13150	0.06716	0.010	-48.92977	20.00000	Averaged	<-
8 Chloromethane	0.35729	0.25796	0.100	-27.80071	20.00000	Averaged	<-
9 Vinyl Chloride	0.38155	0.30634	0.010	-19.71029	20.00000	Averaged	
10 Bromomethane	0.10876	0.10175	0.010	-6.43822	20.00000	Averaged	
11 Chloroethane	0.15865	0.16286	0.010	2.64821	20.00000	Averaged	
12 Trichlorofluoromethane	0.45662	0.44563	0.010	-2.40645	20.00000	Averaged	
13 Diethyl ether	0.14079	0.13866	0.050	-1.51560	20.00000	Averaged	
14 1,1-Dichloroethene	0.20877	0.22843	0.010	9.41620	20.00000	Averaged	
15 Freon 113	0.25808	0.28488	0.010	10.38282	20.00000	Averaged	
16 Carbon Disulfide	0.75126	0.77289	0.010	2.87989	20.00000	Averaged	
18 Methylene Chloride	0.28988	0.31192	0.010	7.60440	20.00000	Averaged	
19 Acetone	0.02579	0.02958	0.010	14.66745	20.00000	Averaged	
20 Methyl Acetate	0.12598	0.14591	0.010	15.81774	20.00000	Averaged	
21 trans-1,2-Dichloroethene	0.27020	0.29450	0.010	8.99302	20.00000	Averaged	
23 Hexane	0.06487	0.07079	0.010	9.12345	20.00000	Averaged	
24 tert-Butyl-Methyl Ether	0.66829	0.74049	0.010	10.80357	20.00000	Averaged	
25 1,1-Dichloroethane	0.46093	0.51871	0.100	12.53411	20.00000	Averaged	
29 cis-1,2-Dichloroethene	0.27877	0.29717	0.010	6.59981	20.00000	Averaged	
30 Cyclohexane	0.40876	0.47767	0.010	16.86004	20.00000	Averaged	
31 Chloroform	0.49504	0.54459	0.010	10.00991	20.00000	Averaged	
32 Ethyl Acetate	0.13918	0.17857	0.050	28.30099	20.00000	Averaged	<-
33 Carbon Tetrachloride	0.36974	0.42608	0.010	15.24042	20.00000	Averaged	
34 Tetrahydrofuran	0.02881	0.03426	0.010	18.89897	20.00000	Averaged	
37 1,1,1-Trichloroethane	0.42978	0.49505	0.010	15.18596	20.00000	Averaged	
38 2-Butanone	0.07843	0.09357	0.010	19.30102	20.00000	Averaged	
41 Benzene	1.14059	1.18719	0.010	4.08560	20.00000	Averaged	
$ 43 1,2-Dichloroethane-d4	0.06315	0.06281	0.010	-0.54524	20.00000	Averaged	
44 1,2-Dichloroethane	0.29202	0.32055	0.010	9.76961	20.00000	Averaged	
47 Trichloroethene	0.27368	0.30981	0.010	13.20287	20.00000	Averaged	
48 Methylcyclohexane	0.51921	0.61341	0.010	18.14315	20.00000	Averaged	
49 n-Butanol	0.00442	0.00470	0.001	6.24826	20.00000	Averaged	
50 1,2-Dichloropropane	0.26328	0.28858	0.010	9.61233	20.00000	Averaged	
51 Bromodichloromethane	0.33079	0.36561	0.010	10.52499	20.00000	Averaged	
53 2-Pentanone	0.02983	0.03508	0.010	17.60305	20.00000	Averaged	
56 cis-1,3-dichloropropene	0.46018	0.51107	0.010	11.05905	20.00000	Averaged	
$ 57 Toluene-d8	1.22879	1.21634	0.010	-1.01271	20.00000	Averaged	
59 Toluene	0.86293	0.93108	0.010	7.89648	20.00000	Averaged	
64 2-Nitropropane	0.04842	0.05599	0.030	15.64381	20.00000	Averaged	
60 Methyl Isobutyl Ketone	0.17588	0.22740	0.010	29.29673	20.00000	Averaged	<-
61 trans-1,3-Dichloropropene	0.46409	0.53222	0.010	14.68054	20.00000	Averaged	

Data File: 13051504CCV.D
Report Date: 10-Jun-2013 14:11

WSCF

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: neelix.i
Lab File ID: 13051504CCV.D
Analysis Type: WATER
Lab Sample ID: CCV
Method: \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130515C109.b\8260S130425.m

Injection Date: 15-MAY-2013 10:57
Init. Cal. Date(s): 25-APR-2013 25-APR-2013
Init. Cal. Times: 11:01 14:40
Quant Type: ISTD

COMPOUND	RRF / AMOUNT	RF101	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE	
62 Tetrachloroethene	0.28962	0.33178	0.010	14.55872	20.00000	Averaged	
63 1,1,2-Trichloroethane	0.23747	0.25633	0.010	7.94229	20.00000	Averaged	
66 Dibromochloromethane	0.29176	0.31161	0.010	6.80370	20.00000	Averaged	
67 1,2-Dibromoethane	0.26642	0.29444	0.010	10.51395	20.00000	Averaged	
68 2-Hexanone	0.13575	0.17301	0.010	27.45294	20.00000	Averaged	<-
70 Ethylbenzene	1.64399	1.72917	0.010	5.18087	20.00000	Averaged	
72 Chlorobenzene	1.04209	1.06309	0.300	2.01511	20.00000	Averaged	
73 m,p-Xylene	0.69533	0.73100	0.010	5.12929	20.00000	Averaged	
75 o-Xylene	0.71910	0.78636	0.010	9.35338	20.00000	Averaged	
76 Styrene	1.02270	1.13248	0.010	10.73451	20.00000	Averaged	
77 Bromoform	0.23802	0.25750	0.100	8.18389	20.00000	Averaged	
78 Isopropylbenzene	1.80150	1.92598	0.010	6.90950	20.00000	Averaged	
$ 79 Bromofluorobenzene	1.02565	0.97265	0.010	-5.16749	20.00000	Averaged	
80 1,1,2,2-Tetrachloroethane	0.68598	0.77884	0.300	13.53727	20.00000	Averaged	
92 1,3-Dichlorobenzene	1.45185	1.55777	0.010	7.29599	20.00000	Averaged	
95 1,4-Dichlorobenzene	1.45922	1.57295	0.010	7.79364	20.00000	Averaged	
98 n-Butylbenzene	2.55100	2.77985	0.050	8.97104	20.00000	Averaged	
100 Hexachloroethane	0.25764	0.30128	0.050	16.93756	20.00000	Averaged	
97 1,2-Dichlorobenzene	1.32162	1.41145	0.010	6.79699	20.00000	Averaged	
99 1,2-Dibromo-3-Chloropropane	0.11203	0.12906	0.010	15.19549	20.00000	Averaged	
101 1,2,4-Trichlorobenzene	0.68026	0.82733	0.010	21.61930	20.00000	Averaged	<-

Average %D / Drift Results.

Calculated Average %D/Drift = 11.87619
Maximun Average %D/Drift = 15.00000
* Passed Average %D/Drift Test.

Data File: 13051603CCV.D
Report Date: 10-Jun-2013 14:32

WSCF

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: neelix.i
Lab File ID: 13051603CCV.D
Analysis Type: SOIL
Lab Sample ID: CCV
Method: \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130516C109.b\8260S130425.m

Injection Date: 16-MAY-2013 10:20
Init. Cal. Date(s): 25-APR-2013 25-APR-2013
Init. Cal. Times: 11:01 14:40
Quant Type: ISTD

COMPOUND	RRF / AMOUNT	RF101	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE	
M 1 Total 1,2-Dichloroethene	0.33695	0.34516	0.010	2.43737	20.00000	Averaged	
M 2 Total Xylenes	0.54914	0.62382	0.010	13.59882	20.00000	Averaged	
M 3 Total Trihalomethanes	0.31007	0.35271	0.010	13.75343	20.00000	Averaged	
7 Dichlorodifluoromethane	0.13150	0.03737	0.010	-71.57895	20.00000	Averaged	<-
8 Chloromethane	0.35729	0.20754	0.100	-41.91245	20.00000	Averaged	<-
9 Vinyl Chloride	0.38155	0.26188	0.010	-31.36252	20.00000	Averaged	<-
10 Bromomethane	0.10876	0.09158	0.010	-15.79418	20.00000	Averaged	
11 Chloroethane	0.15865	0.15497	0.010	-2.32099	20.00000	Averaged	
12 Trichlorofluoromethane	0.45662	0.42527	0.010	-6.86519	20.00000	Averaged	
13 Diethyl ether	0.14079	0.14205	0.050	0.89410	20.00000	Averaged	
14 1,1-Dichloroethene	0.20877	0.21735	0.010	4.11256	20.00000	Averaged	
15 Freon 113	0.25808	0.27223	0.010	5.48281	20.00000	Averaged	
16 Carbon Disulfide	0.75126	0.73352	0.010	-2.36056	20.00000	Averaged	
18 Methylene Chloride	0.28988	0.30988	0.010	6.89959	20.00000	Averaged	
19 Acetone	0.02579	0.02686	0.010	4.15226	20.00000	Averaged	
20 Methyl Acetate	0.12598	0.13419	0.010	6.51109	20.00000	Averaged	
21 trans-1,2-Dichloroethene	0.27020	0.28883	0.010	6.89596	20.00000	Averaged	
23 Hexane	0.06487	0.06664	0.010	2.72503	20.00000	Averaged	
24 tert-Butyl-Methyl Ether	0.66829	0.73354	0.010	9.76492	20.00000	Averaged	
25 1,1-Dichloroethane	0.46093	0.51825	0.100	12.43550	20.00000	Averaged	
29 cis-1,2-Dichloroethene	0.27877	0.29778	0.010	6.81989	20.00000	Averaged	
30 Cyclohexane	0.40876	0.45356	0.010	10.96051	20.00000	Averaged	
31 Chloroform	0.49504	0.55248	0.010	11.60251	20.00000	Averaged	
32 Ethyl Acetate	0.13918	0.16499	0.050	18.54788	20.00000	Averaged	
33 Carbon Tetrachloride	0.36974	0.41825	0.010	13.12133	20.00000	Averaged	
34 Tetrahydrofuran	0.02881	0.02967	0.010	2.95794	20.00000	Averaged	
37 1,1,1-Trichloroethane	0.42978	0.48182	0.010	12.10919	20.00000	Averaged	
38 2-Butanone	0.07843	0.08560	0.010	9.13766	20.00000	Averaged	
41 Benzene	1.14059	1.18012	0.010	3.46558	20.00000	Averaged	
$ 43 1,2-Dichloroethane-d4	0.06315	0.06062	0.010	-4.00245	20.00000	Averaged	
44 1,2-Dichloroethane	0.29202	0.32133	0.010	10.03664	20.00000	Averaged	
47 Trichloroethene	0.27368	0.31700	0.010	15.83142	20.00000	Averaged	
48 Methylcyclohexane	0.51921	0.59506	0.010	14.60842	20.00000	Averaged	
49 n-Butanol	0.00442	0.00435	0.001	-1.57150	20.00000	Averaged	
50 1,2-Dichloropropane	0.26328	0.29392	0.010	11.63867	20.00000	Averaged	
51 Bromodichloromethane	0.33079	0.38049	0.010	15.02351	20.00000	Averaged	
53 2-Pentanone	0.02983	0.03156	0.010	5.79316	20.00000	Averaged	
56 cis-1,3-dichloropropene	0.46018	0.50420	0.010	9.56660	20.00000	Averaged	
$ 57 Toluene-d8	1.22879	1.18329	0.010	-3.70282	20.00000	Averaged	
59 Toluene	0.86293	0.92376	0.010	7.04841	20.00000	Averaged	
64 2-Nitropropane	0.04842	0.05084	0.030	4.99579	20.00000	Averaged	
60 Methyl Isobutyl Ketone	0.17588	0.20597	0.010	17.11185	20.00000	Averaged	
61 trans-1,3-Dichloropropene	0.46409	0.53288	0.010	14.82175	20.00000	Averaged	

Data File: 13051603CCV.D Page 2
Report Date: 10-Jun-2013 14:32

WSCF

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: neelix.i Injection Date: 16-MAY-2013 10:20
Lab File ID: 13051603CCV.D Init. Cal. Date(s): 25-APR-2013 25-APR-2013
Analysis Type: SOIL Init. Cal. Times: 11:01 14:40
Lab Sample ID: CCV Quant Type: ISTD
Method: \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130516C109.b\8260S130425.m

COMPOUND	RRF / AMOUNT	RF101	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE	
62 Tetrachloroethene	0.28962	0.32283	0.010	11.46703	20.00000	Averaged	
63 1,1,2-Trichloroethane	0.23747	0.25390	0.010	6.91954	20.00000	Averaged	
66 Dibromochloromethane	0.29176	0.31066	0.010	6.47815	20.00000	Averaged	
67 1,2-Dibromoethane	0.26642	0.28523	0.010	7.05882	20.00000	Averaged	
68 2-Hexanone	0.13575	0.15516	0.010	14.30440	20.00000	Averaged	
70 Ethylbenzene	1.64399	1.69483	0.010	3.09245	20.00000	Averaged	
72 Chlorobenzene	1.04209	1.05827	0.300	1.55320	20.00000	Averaged	
73 m,p-Xylene	0.69533	0.71748	0.010	3.18605	20.00000	Averaged	
75 o-Xylene	0.71910	0.76732	0.010	6.70596	20.00000	Averaged	
76 Styrene	1.02270	1.13806	0.010	11.28026	20.00000	Averaged	
77 Bromoform	0.23802	0.25171	0.100	5.74996	20.00000	Averaged	
78 Isopropylbenzene	1.80150	1.88016	0.010	4.36618	20.00000	Averaged	
$ 79 Bromofluorobenzene	1.02565	0.95608	0.010	-6.78256	20.00000	Averaged	
80 1,1,2,2-Tetrachloroethane	0.68598	0.73534	0.300	7.19606	20.00000	Averaged	
92 1,3-Dichlorobenzene	1.45185	1.55123	0.010	6.84542	20.00000	Averaged	
95 1,4-Dichlorobenzene	1.45922	1.54764	0.010	6.05931	20.00000	Averaged	
98 n-Butylbenzene	2.55100	2.75319	0.050	7.92603	20.00000	Averaged	
100 Hexachloroethane	0.25764	0.30446	0.050	18.17282	20.00000	Averaged	
97 1,2-Dichlorobenzene	1.32162	1.40024	0.010	5.94882	20.00000	Averaged	
99 1,2-Dibromo-3-Chloropropane	0.11203	0.11464	0.010	2.32868	20.00000	Averaged	
101 1,2,4-Trichlorobenzene	0.68026	0.83363	0.010	22.54543	20.00000	Averaged	<-

Average %D / Drift Results.

Calculated Average %D/Drift = 10.19220
Maximun Average %D/Drift = 15.00000
* Passed Average %D/Drift Test.

FORM 8
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: V130515C109

Lab File ID (Standard): 13051504CCV Date Analyzed: 05/15/13

Instrument ID: NEELIX Time Analyzed: 1057

GC Column: RESTEK RTX-VMS ID: 0.25 (mm) Heated Purge: (Y/N) Y

		IS1 AREA #	IS1 RT #	IS2 (CBZ) AREA #	IS2 (CBZ) RT #	IS3 (DCB) AREA #	IS3 (DCB) RT #
	12 HOUR STD	1047157	11.05	870289	14.20	538274	16.29
	UPPER LIMIT	2094314	11.55	1740578	14.70	1076548	16.79
	LOWER LIMIT	523579	10.55	435145	13.70	269137	15.79
	CLIENT SAMPLE NO.						
01	CCB	1053670	11.05	894520	14.20	501270	16.30
02	LCS	1126983	11.05	958491	14.20	592537	16.29
03	S13T004239	1101845	11.05	909416	14.20	534600	16.30
04	S13T004239MS	1018590	11.05	852247	14.20	505609	16.29
05	S13T004239MS	1076435	11.05	873614	14.20	520416	16.29
06	S13T004266	809050	11.05	645720	14.20	345926	16.29
07	S13T004293	937829	11.05	747700	14.20	395799	16.29
08							
09							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

IS1 = Fluorobenzene
IS2 (CBZ) = Chlorobenzene-d5
IS3 (DCB) = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

Data File: 13051504CCV.D
Report Date: 10-Jun-2013 14:11

WSCF

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: neelix.i
Lab File ID: 13051504CCV.D
Lab Smp Id: CCV
Analysis Type: VOA
Quant Type: ISTD
Operator: awg
Method File: \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130515C109.b\8260S1304
Misc Info: VOA

Calibration Date: 15-MAY-2013
Calibration Time: 17:49
Client Smp ID: CCV
Level: LOW
Sample Type: WATER

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
46 Fluorobenzene	1290004	645002	2580008	1047157	-18.83
71 Chlorobenzene-d5	1047770	523885	2095540	870289	-16.94
93 1,4-Dichlorobenze	626997	313499	1253994	538274	-14.15

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
46 Fluorobenzene	11.05	10.55	11.55	11.05	-0.00
71 Chlorobenzene-d5	14.20	13.70	14.70	14.20	-0.00
93 1,4-Dichlorobenze	16.29	15.79	16.79	16.29	-0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

FORM 8
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: V130516C109

Lab File ID (Standard): 13051603CCV Date Analyzed: 05/16/13

Instrument ID: NEELIX Time Analyzed: 1020

GC Column: RESTEK RTX-VMS ID: 0.25 (mm) Heated Purge: (Y/N) Y

		IS1 AREA #	IS1 RT #	IS2(CBZ) AREA #	IS2(CBZ) RT #	IS3(DCB) AREA #	IS3(DCB) RT #
	12 HOUR STD	1097867	11.06	932945	14.20	584098	16.30
	UPPER LIMIT	2195734	11.56	1865890	14.70	1168196	16.80
	LOWER LIMIT	548934	10.56	466473	13.70	292049	15.80
	CLIENT SAMPLE NO.						
01	CCB	1077586	11.05	918534	14.20	528339	16.30
02	S13T004239DU	904492	11.05	768632	14.20	447613	16.30
03							
04							
05							
06							
07							
08							
09							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

IS1 = Fluorobenzene
IS2 (CBZ) = Chlorobenzene-d5
IS3 (DCB) = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

Data File: 13051603CCV.D
Report Date: 10-Jun-2013 14:32

WSCF

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: neelix.i
Lab File ID: 13051603CCV.D
Lab Smp Id: CCV
Analysis Type: VOA
Quant Type: ISTD
Operator: awg
Method File: \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130516C109.b\8260S1304
Misc Info: VOA

Calibration Date: 16-MAY-2013
Calibration Time: 10:20
Client Smp ID: CCV
Level: LOW
Sample Type: SOIL

Test Mode:
Use Initial Calibration Level 4.

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	%DIFF
46 Fluorobenzene	1290004	645002	2580008	1097867	-14.89
71 Chlorobenzene-d5	1047770	523885	2095540	932945	-10.96
93 1,4-Dichlorobenze	626997	313499	1253994	584098	-6.84

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	%DIFF
46 Fluorobenzene	11.05	10.55	11.55	11.06	0.09
71 Chlorobenzene-d5	14.20	13.70	14.70	14.20	0.00
93 1,4-Dichlorobenze	16.29	15.79	16.79	16.30	0.06

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: 13051502BFB.D Page 1
Report Date: 11-Jun-2013 16:04

WSCF

Data file : \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130515C109.b\13051502BF
Lab Smp Id: BFB Client Smp ID: BFB
Inj Date : 15-MAY-2013 09:42
Operator : awg Inst ID: neelix.i
Smp Info : BFB
Misc Info :
Comment :
Method : \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130515C109.b\BFBCLP.m
Meth Date : 25-Oct-2012 15:58 sac Quant Type: ISTD
Cal Date : 04-MAY-2006 10:07 Cal File: 6050403.D
Als bottle: 2 QC Sample: BFB
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.14 Sample Matrix: WATER

Concentration Formula: Amt * DF * Uf * Vf * VI * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vf	1.000	Volumetric correction factor
VI	1.000	Injection Volume
Cpnd Variable		Local Compound Variable

RT	EXP RT	REL RT	MASS	RESPONSE	CONCENTRATIONS ON-COL (ug/L)	CONCENTRATIONS FINAL (ug/L)	TARGET RANGE	RATIO	SIMILARITY
1 bfb						CAS #: 460-00-4			
9.095	9.104	(0.000)	95	81272			100.00- 100.00	100.00	
9.095	9.104	(0.000)	50	12032			8.00- 40.00	14.80	
9.095	9.104	(0.000)	75	39024			30.00- 66.00	48.02	
9.095	9.104	(0.000)	96	5806			5.00- 9.00	7.14	
9.095	9.104	(0.000)	173	170			0.00- 2.00	0.26	
9.095	9.104	(0.000)	174	64416			50.00- 120.00	79.26	
9.095	9.104	(0.000)	175	5044			4.00- 9.00	7.83	
9.095	9.104	(0.000)	176	62656			93.00- 101.00	97.27	
9.095	9.104	(0.000)	177	4085			5.00- 9.00	6.52	

Data File: \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130515C109.b\13051502BFB.D Page 2

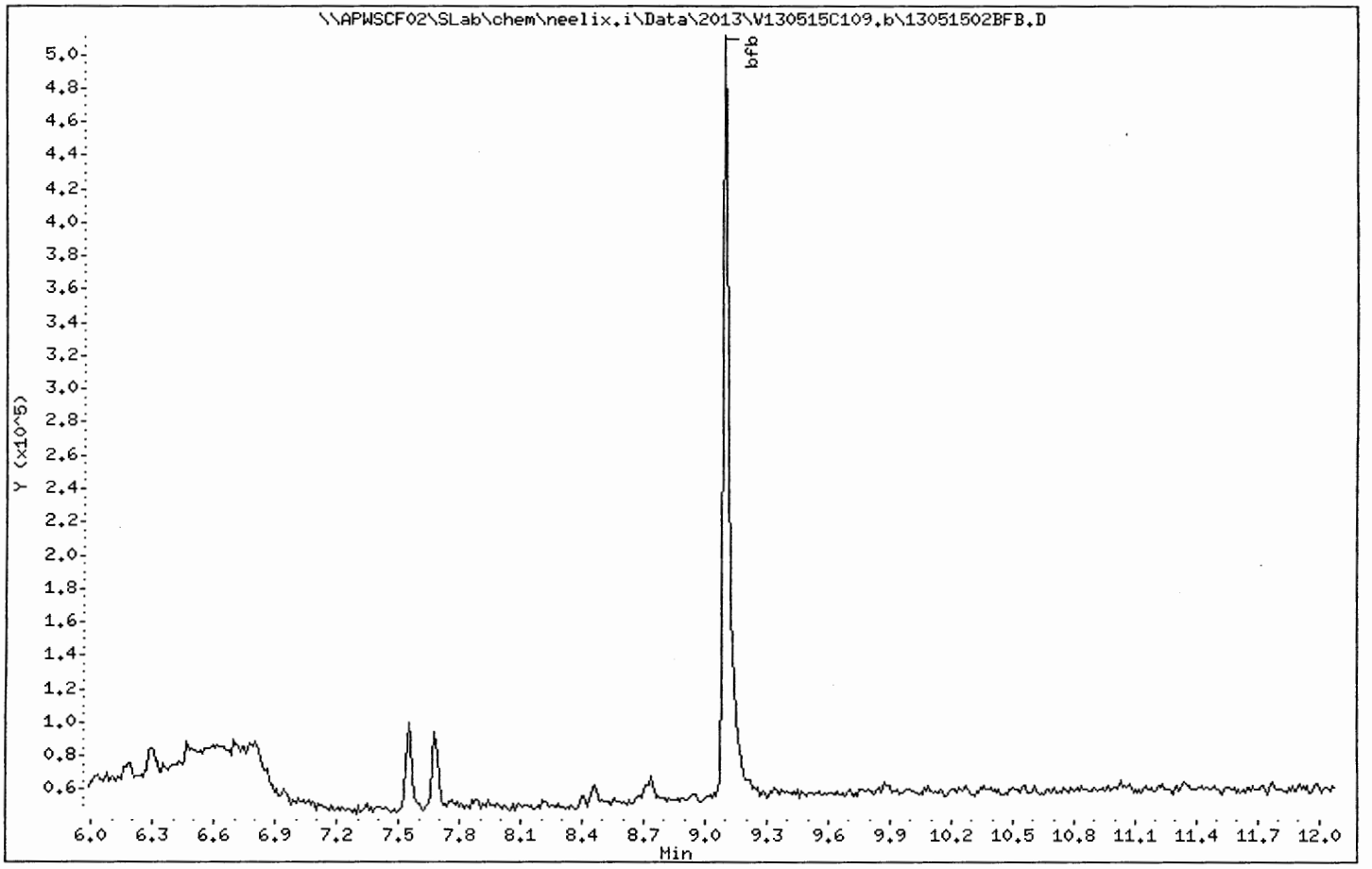
Date : 15-MAY-2013 09:42

Client ID: BFB Instrument: neelix.i

Sample Info: BFB

Operator: awg

Column phase: Column diameter: 0.25



Data File: \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130515C109.b\13051502BFB.D Page 3

Date : 15-MAY-2013 09:42

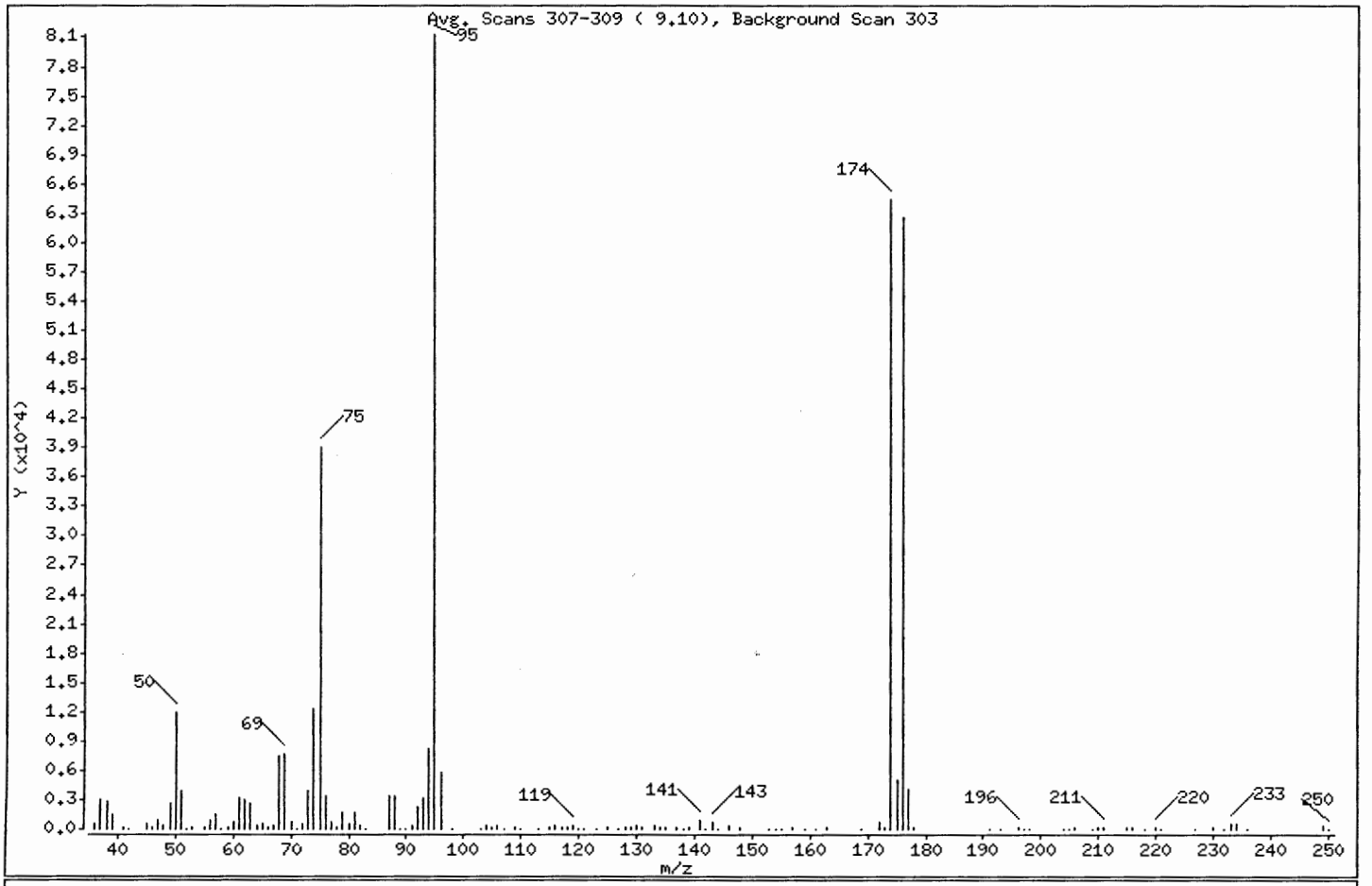
Client ID: BFB Instrument: neelix.i

Sample Info: BFB

Operator: awg

Column phase: Column diameter: 0.25

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	8.00 - 40.00% of mass 95	14.80
75	30.00 - 66.00% of mass 95	48.02
96	5.00 - 9.00% of mass 95	7.14
173	Less than 2.00% of mass 174	0.21 (0.26)
174	50.00 - 120.00% of mass 95	79.26
175	4.00 - 9.00% of mass 174	6.21 (7.83)
176	93.00 - 101.00% of mass 174	77.09 (97.27)
177	5.00 - 9.00% of mass 176	5.03 (6.52)

Data File: \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130515C109.b\13051502BFB.D

Date : 15-MAY-2013 09:42

Client ID: BFB

Instrument: neelix.i

Sample Info: BFB

Operator: awg

Column phase:

Column diameter: 0.25

Data File: 13051502BFB.D
Spectrum: Avg. Scans 307-309 (9.10), Background Scan 303
Location of Maximum: 95.00
Number of points: 128

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	583	73.00	3875	118.00	226	174.00	64416
37.00	2961	74.00	12357	119.00	434	175.00	5044
38.00	2725	75.00	39024	120.00	62	176.00	62656
39.00	1440	76.00	3425	121.00	57	177.00	4085
41.00	123	77.00	669	123.00	50	178.00	152
42.00	11	78.00	272	125.00	131	191.00	63
45.00	572	79.00	1592	127.00	72	193.00	38
46.00	116	80.00	546	128.00	273	196.00	111
47.00	1027	81.00	1683	129.00	128	197.00	51
48.00	345	82.00	322	130.00	343	198.00	66
49.00	2586	83.00	57	131.00	138	204.00	54
50.00	12032	87.00	3360	133.00	465	205.00	59
51.00	3945	88.00	3314	134.00	181	206.00	105
52.00	57	89.00	44	135.00	94	209.00	72
53.00	143	90.00	57	137.00	156	210.00	95
55.00	128	91.00	399	138.00	30	211.00	212
56.00	1021	92.00	2211	139.00	125	215.00	130
57.00	1562	93.00	3256	141.00	898	216.00	149
58.00	71	94.00	8200	142.00	86	218.00	73
59.00	134	95.00	81272	143.00	799	220.00	171
60.00	741	96.00	5806	144.00	50	221.00	62
61.00	3168	98.00	68	146.00	297	227.00	84
62.00	3010	103.00	17	148.00	251	230.00	113
63.00	2699	104.00	457	153.00	25	232.00	61
64.00	391	105.00	249	154.00	73	233.00	535
65.00	509	106.00	395	155.00	90	234.00	469
66.00	103	107.00	40	157.00	144	236.00	71
67.00	390	109.00	161	159.00	88	249.00	385
68.00	7491	110.00	57	161.00	35	250.00	67
69.00	7616	113.00	50	163.00	96		
70.00	664	115.00	254	169.00	60		
71.00	57	116.00	334	172.00	718		
72.00	482	117.00	222	173.00	170		

Data File: 13051504CCV.D
Report Date: 11-Jun-2013 16:04

WSCF

Data file : \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130515C109.b\13051504CC
Lab Smp Id: CCV Client Smp ID: CCV
Inj Date : 15-MAY-2013 10:57
Operator : awg Inst ID: neelix.i
Smp Info : CCV
Misc Info : VOA
Comment :
Method : \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130515C109.b\8260S13042
Meth Date : 11-Jun-2013 16:03 sac Quant Type: ISTD
Cal Date : 25-APR-2013 14:40 Cal File: 13042511CAL8.D
Als bottle: 4 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 10Tank.sub
Target Version: 4.14

Concentration Formula: Amt * DF * Uf * 1/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Unit correction factor
Vo	10.000	Sample Volume purged (mL)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)
7 Dichlorodifluoromethane	87	4.500	4.490	(0.407)	70322	100.000	51.070(M)
8 Chloromethane	50	4.864	4.865	(0.440)	270125	100.000	72.199
9 Vinyl Chloride	62	5.067	5.067	(0.459)	320788	100.000	80.290
10 Bromomethane	94	5.735	5.736	(0.519)	106552	100.000	93.562
11 Chloroethane	64	5.978	5.979	(0.541)	170536	100.000	102.65
12 Trichlorofluoromethane	101	6.231	6.222	(0.564)	466643	100.000	97.594
13 Diethyl ether	74	6.718	6.718	(0.608)	146357	100.800	99.272
14 1,1-Dichloroethene	96	7.123	7.113	(0.645)	241111	100.800	110.29
15 Freon 113	101	7.163	7.164	(0.648)	300696	100.800	111.26
16 Carbon Disulfide	76	7.234	7.224	(0.655)	815813	100.800	103.70
18 Methylene Chloride	84	7.983	7.974	(0.722)	329241	100.800	108.46
19 Acetone	58	8.034	8.034	(0.727)	78045	252.000	288.96
20 Methyl Acetate	43	8.155	8.156	(0.738)	154016	100.800	116.74
21 trans-1,2-Dichloroethene	96	8.196	8.196	(0.742)	310855	100.800	109.86
23 Hexane	86	8.257	8.247	(0.747)	74725	100.800	110.00
24 tert-Butyl-Methyl Ether	73	8.307	8.308	(0.752)	781608	100.800	111.69
25 1,1-Dichloroethane	63	9.006	9.007	(0.815)	547512	100.800	113.43
29 cis-1,2-Dichloroethene	96	9.654	9.655	(0.874)	313673	100.800	107.45
30 Cyclohexane	56	9.928	9.918	(0.898)	504200	100.800	117.79
31 Chloroform	83	9.938	9.938	(0.899)	574835	100.800	110.89
32 Ethyl Acetate	43	9.998	9.989	(0.905)	471215	252.000	323.32
33 Carbon Tetrachloride	117	10.150	10.151	(0.918)	449747	100.800	116.16
34 Tetrahydrofuran	72	10.150	10.140	(0.918)	36163	100.800	119.85

Data File: 13051504CCV.D
Report Date: 11-Jun-2013 16:04

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)
	37 1,1,1-Trichloroethane	97	10.231	10.222	(0.926)	522537	100.800	116.11
	38 2-Butanone	43	10.272	10.272	(0.929)	246906	252.000	300.64
	41 Benzene	78	10.626	10.627	(0.962)	1253123	100.800	104.92
$	43 1,2-Dichloroethane-d4	102	10.778	10.779	(0.975)	65769	100.000	99.455
	44 1,2-Dichloroethane	62	10.849	10.849	(0.982)	338350	100.800	110.65
*	46 Fluorobenzene	96	11.052	11.052	(1.000)	1047157	100.000	
	47 Trichloroethene	95	11.234	11.234	(1.016)	327014	100.800	114.11
	48 Methylcyclohexane	83	11.244	11.244	(1.017)	647480	100.800	119.09
	49 n-Butanol	56	11.416	11.417	(1.033)	25577	520.000	552.49
	50 1,2-Dichloropropane	63	11.811	11.812	(1.069)	304610	100.800	110.49
	51 Bromodichloromethane	83	11.831	11.832	(1.071)	385911	100.800	111.41
	53 2-Pentanone	86	12.105	12.105	(1.095)	92581	252.000	296.36
	56 cis-1,3-dichloropropene	75	12.479	12.480	(0.879)	448335	100.800	111.95
$	57 Toluene-d8	98	12.672	12.672	(0.892)	1058570	100.000	98.987
	59 Toluene	92	12.733	12.733	(0.897)	816787	100.800	108.76
	64 2-Nitropropane	41	12.976	12.976	(0.914)	122798	252.000	291.42
	60 Methyl Isobutyl Ketone	43	13.057	13.047	(0.919)	498728	252.000	325.83
	61 trans-1,3-Dichloropropene	75	13.117	13.118	(0.924)	466893	100.800	115.60
	62 Tetrachloroethene	164	13.138	13.138	(0.925)	291057	100.800	115.48
	63 1,1,2-Trichloroethane	83	13.300	13.290	(0.937)	224864	100.800	108.80
	66 Dibromochloromethane	129	13.502	13.493	(0.951)	273357	100.800	107.66
	67 1,2-Dibromoethane	107	13.776	13.776	(0.970)	258294	100.800	111.40
	68 2-Hexanone	43	13.836	13.837	(0.974)	379437	252.000	321.18
	70 Ethylbenzene	91	14.191	14.191	(0.999)	1516914	100.800	106.02
*	71 Chlorobenzene-d5	117	14.201	14.201	(1.000)	870289	100.000	
	72 Chlorobenzene	112	14.221	14.222	(1.001)	932594	100.800	102.83
	73 m,p-Xylene	106	14.312	14.303	(1.008)	1282536	201.600	211.94
	75 o-Xylene	106	14.707	14.708	(1.036)	689831	100.800	110.23
	76 Styrene	104	14.758	14.758	(1.039)	993468	100.800	111.62
	77 Bromoform	173	14.849	14.849	(1.046)	225893	100.800	109.05
	78 Isopropylbenzene	105	14.970	14.971	(1.054)	1689567	100.800	107.76
$	79 Bromofluorobenzene	95	15.264	15.265	(0.937)	523550	100.000	94.832
	80 1,1,2,2-Tetrachloroethane	83	15.396	15.396	(0.945)	422584	100.800	114.44
	92 1,3-Dichlorobenzene	146	16.236	16.227	(0.997)	845217	100.800	108.15
*	93 1,4-Dichlorobenzene-d4	152	16.287	16.287	(1.000)	538274	100.000	
	95 1,4-Dichlorobenzene	146	16.307	16.308	(1.001)	853451	100.800	108.66
	98 n-Butylbenzene	91	16.449	16.449	(1.010)	1496322	100.000	108.97
	100 Hexachloroethane	117	16.702	16.703	(1.511)	318010	100.800	117.87
	97 1,2-Dichlorobenzene	146	16.732	16.733	(1.027)	765827	100.800	107.65
	99 1,2-Dibromo-3-Chloropropane	75	17.532	17.533	(1.076)	70025	100.800	116.12
	101 1,2,4-Trichlorobenzene	180	18.272	18.272	(1.122)	448891	100.800	122.59

QC Flag Legend

M - Compound response manually integrated.

Data File: \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130515C109.b\13051504CCV.D

Date : 15-MAY-2013 10:57

Client ID: CCV

Instrument: neelix.i

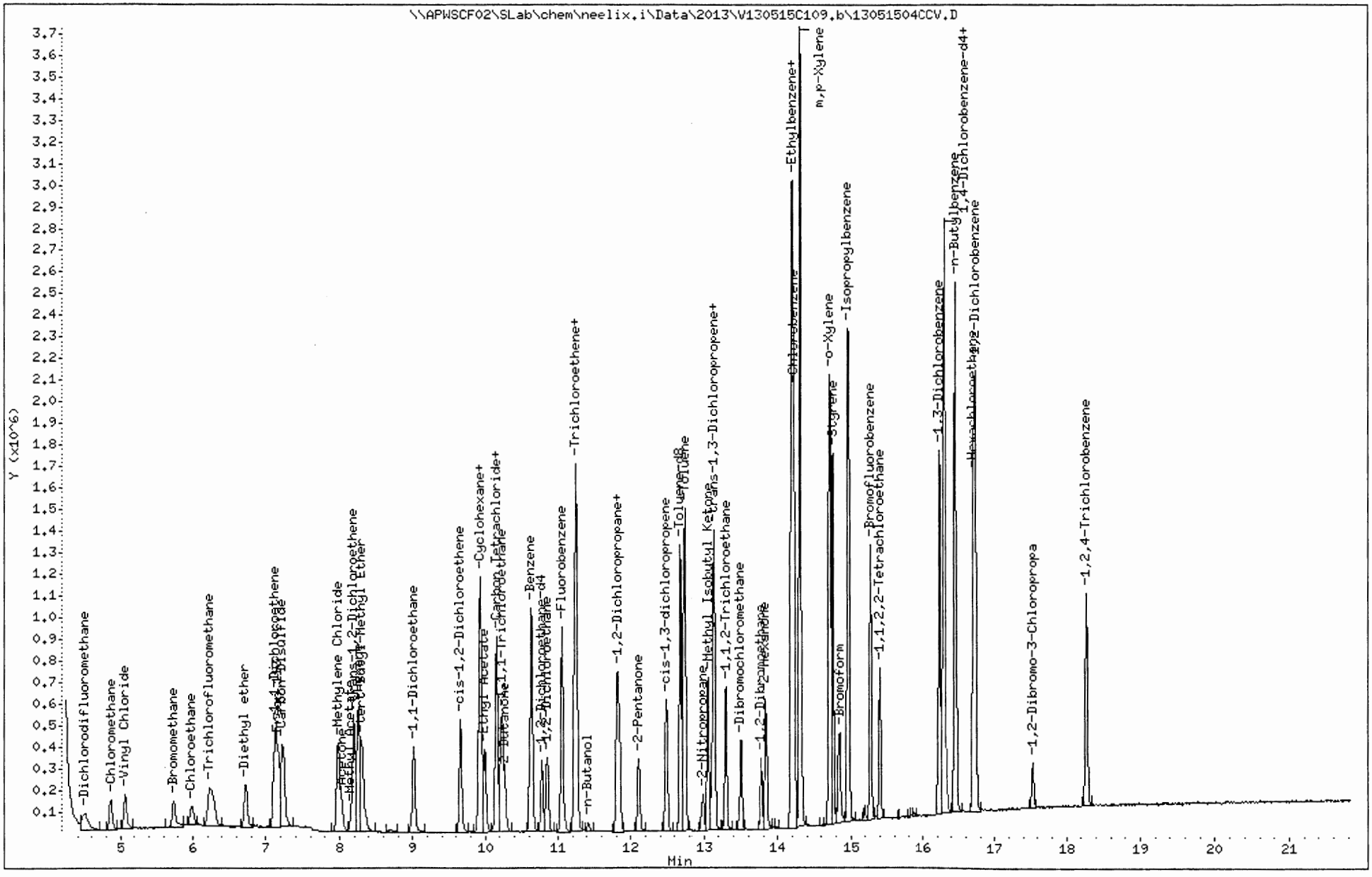
Sample Info: CCV

Purge Volume: 10.0

Operator: awg

Column phase: Restek Rtx-VMS

Column diameter: 0.25



Data File: 13051505CCB.D
Report Date: 11-Jun-2013 16:04

WSCF

Data file : \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130515C109.b\13051505CC
Lab Smp Id: CCB Client Smp ID: CCB
Inj Date : 15-MAY-2013 11:44
Operator : awg Inst ID: neelix.i
Smp Info : CCB
Misc Info : VOA
Comment :
Method : \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130515C109.b\8260S13042
Meth Date : 11-Jun-2013 16:03 sac Quant Type: ISTD
Cal Date : 25-APR-2013 14:40 Cal File: 13042511CAL8.D
Als bottle: 5 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 10Tank.sub
Target Version: 4.14

Concentration Formula: Amt * DF * Uf * 1/(Ws * (100 - M)/100) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Unit correction factor
Ws	0.50000	Weight of sample extracted (g)
M	0.00000	% Moisture (not decanted)
Va	0.00000	Volume of aliquot extract added (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/Kg)
	18 Methylene Chloride	84	7.994	7.974	(0.723)	1903	0.62305	1.246(a)
$	43 1,2-Dichloroethane-d4	102	10.778	10.779	(0.975)	67132	100.888	201.78
*	46 Fluorobenzene	96	11.052	11.052	(1.000)	1053670	100.000	
$	57 Toluene-d8	98	12.672	12.672	(0.892)	1057228	96.1838	192.37
	59 Toluene	92	12.733	12.733	(0.897)	22788	2.95215	5.904(a)
*	71 Chlorobenzene-d5	117	14.201	14.201	(1.000)	894520	100.000	
$	79 Bromofluorobenzene	95	15.274	15.265	(0.937)	526960	102.496	204.99
*	93 1,4-Dichlorobenzene-d4	152	16.297	16.287	(1.000)	501270	100.000	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Data File: 13051505CCB.D Page 2
Report Date: 11-Jun-2013 16:04

WSCF

Data file : \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130515C109.b\13051505CC
Lab Smp Id: CCB Client Smp ID: CCB
Inj Date : 15-MAY-2013 11:44
Operator : awg Inst ID: neelix.i
Smp Info : CCB
Misc Info : VOA
Comment :
Method : \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130515C109.b\8260S13042
Meth Date : 11-Jun-2013 16:03 sac Quant Type: ISTD
Cal Date : 25-APR-2013 14:40 Cal File: 13042511CAL8.D
Als bottle: 5 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 10Tank.sub
Target Version: 4.14

Concentration Formula: Amt * DF * Uf * 1/(Ws * (100 - M)/100) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Unit correction factor
Ws	0.50000	Weight of sample extracted (g)
M	0.00000	% Moisture (not decanted)
Va	0.00000	Volume of aliquot extract added (uL)
Cpnd Variable		Local Compound Variable

COMPOUND	RT	AREA	AMOUNT
$ 43 1,2-Dichloroethane-d4	10.779	838019	100.888

	CONCENTRATIONS				QUANT		
RT	AREA	ON-COL(ng)	FINAL(ug/Kg)	QUAL	LIBRARY	LIB ENTRY	CPND #
Methane, dibromofluoro-				CAS #: 1868-53-7			
10.151	867792	104.472589	208.94	95	NIST02.L	49673	43

Data File: \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130515C109.b\13051505CCB.D

Date : 15-MAY-2013 11:44

Client ID: CCB

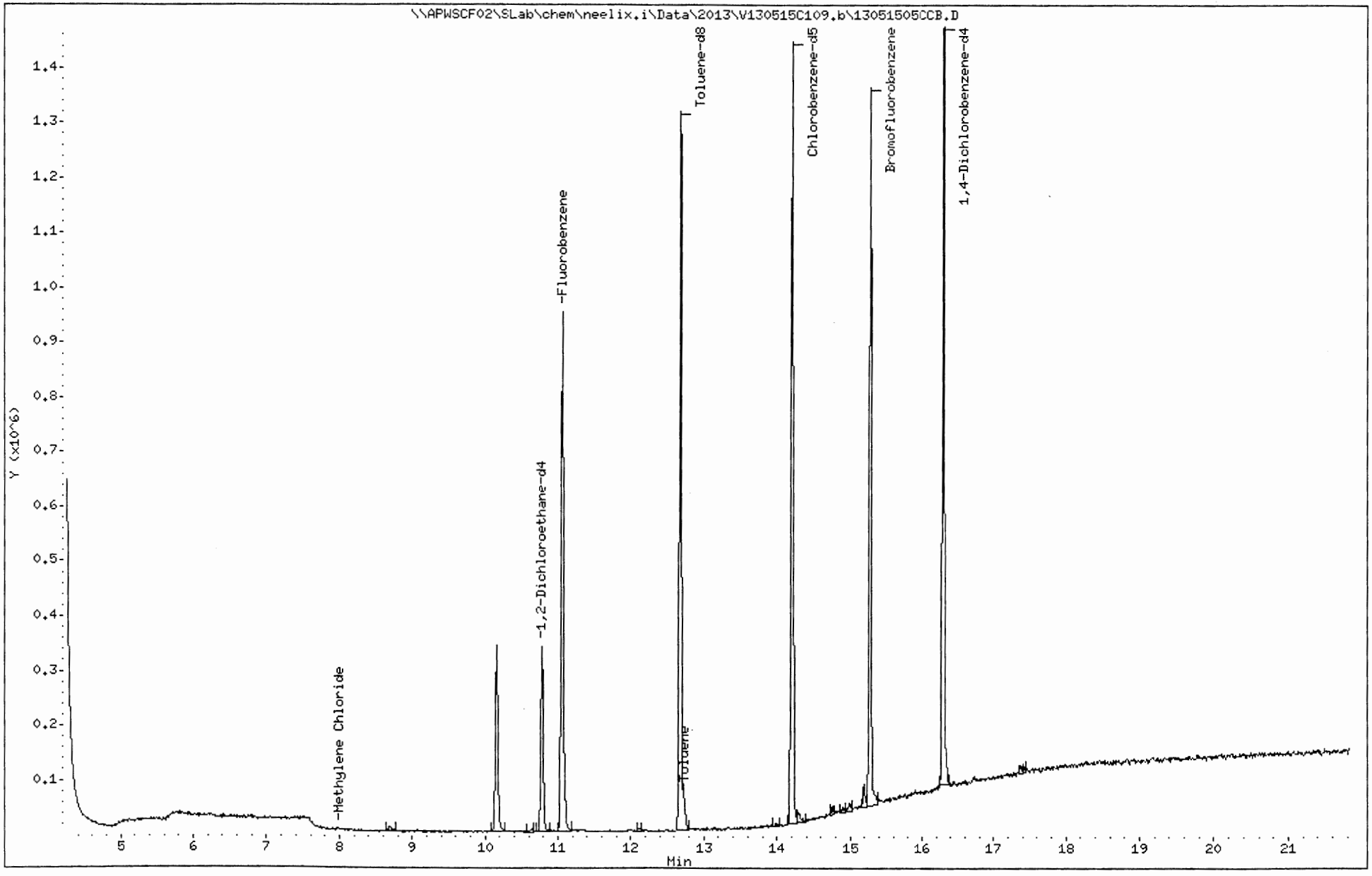
Instrument: neelix.i

Sample Info: CCB

Operator: awg

Column phase: Restek Rtx-VMS

Column diameter: 0.25



Data File: 13051506LCS.D Page 1
Report Date: 11-Jun-2013 16:04

WSCF

Data file : \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130515C109.b\13051506LC
Lab Smp Id: LCS Client Smp ID: LCS
Inj Date : 15-MAY-2013 12:15
Operator : awg Inst ID: neelix.i
Smp Info : LCS
Misc Info : VOA
Comment :
Method : \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130515C109.b\8260S13042
Meth Date : 11-Jun-2013 16:03 sac Quant Type: ISTD
Cal Date : 25-APR-2013 14:40 Cal File: 13042511CAL8.D
Als bottle: 6 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 10Tank.sub
Target Version: 4.14

Concentration Formula: Amt * DF * Uf * 1/(Ws * (100 - M)/100) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Unit correction factor
Ws	0.50000	Weight of sample extracted (g)
M	0.00000	% Moisture (not decanted)
Va	0.00000	Volume of aliquot extract added (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/Kg)
M	1 Total 1,2-Dichloroethene	100				673637	217.816	435.63
M	2 Total Xylenes	100				2122689	314.798	629.60
M	3 Total Trihalomethanes	100				1579995	436.022	872.04
	7 Dichlorodifluoromethane	87	4.490	4.490	(0.406)	62685	42.2994	84.599(aR)
	8 Chloromethane	50	4.854	4.865	(0.439)	278047	69.0527	138.10(R)
	9 Vinyl Chloride	62	5.067	5.067	(0.459)	332813	77.3992	154.80
	10 Bromomethane	94	5.735	5.736	(0.519)	115893	94.5559	189.11
	11 Chloroethane	64	5.978	5.979	(0.541)	183657	102.716	205.43
	12 Trichlorofluoromethane	101	6.232	6.222	(0.564)	493736	95.9457	191.89
	13 Diethyl ether	74	6.718	6.718	(0.608)	153974	97.0412	194.08
	14 1,1-Dichloroethene	96	7.112	7.113	(0.644)	253781	107.865	215.73
	15 Freon 113	101	7.163	7.164	(0.648)	318949	109.660	219.32
	16 Carbon Disulfide	76	7.224	7.224	(0.654)	853370	100.793	201.59
	18 Methylene Chloride	84	7.974	7.974	(0.721)	348690	106.736	213.47
	19 Acetone	58	8.024	8.034	(0.726)	78184	268.973	537.94
	20 Methyl Acetate	43	8.155	8.156	(0.738)	151337	106.588	213.18
	21 trans-1,2-Dichloroethene	96	8.196	8.196	(0.742)	336627	110.546	221.09
	23 Hexane	86	8.247	8.247	(0.746)	74962	102.529	205.06
	24 tert-Butyl-Methyl Ether	73	8.307	8.308	(0.752)	821796	109.115	218.23
	25 1,1-Dichloroethane	63	9.006	9.007	(0.815)	579967	111.647	223.29
	29 cis-1,2-Dichloroethene	96	9.654	9.655	(0.874)	337010	107.270	214.54

Data File: 13051506LCS.D
Report Date: 11-Jun-2013 16:04

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/Kg)
	30 Cyclohexane	56	9.917	9.918	(0.897)	534813	116.097	232.19
	31 Chloroform	83	9.938	9.938	(0.899)	619048	110.960	221.92
	32 Ethyl Acetate	43	9.988	9.989	(0.904)	452775	288.661	577.32
	33 Carbon Tetrachloride	117	10.150	10.151	(0.918)	482654	115.832	231.66
	34 Tetrahydrofuran	72	10.150	10.140	(0.918)	34110	105.039	210.08
	37 1,1,1-Trichloroethane	97	10.221	10.222	(0.925)	560221	115.664	231.33
	38 2-Butanone	43	10.262	10.272	(0.929)	237953	269.215	538.43
	41 Benzene	78	10.626	10.627	(0.962)	1336664	103.986	207.97
$	43 1,2-Dichloroethane-d4	102	10.768	10.779	(0.974)	68964	96.8994	193.80
	44 1,2-Dichloroethane	62	10.849	10.849	(0.982)	360323	109.487	218.97
*	46 Fluorobenzene	96	11.052	11.052	(1.000)	1126983	100.000	
	47 Trichloroethene	95	11.234	11.234	(1.016)	353581	114.640	229.28
	48 Methylcyclohexane	83	11.244	11.244	(1.017)	687294	117.457	234.91
	49 n-Butanol	56	11.417	11.417	(1.033)	25559	512.996	1026.0(a)
	50 1,2-Dichloropropane	63	11.811	11.812	(1.069)	327794	110.477	220.95
	51 Bromodichloromethane	83	11.831	11.832	(1.071)	425129	114.038	228.08
	53 2-Pentanone	86	12.105	12.105	(1.095)	89103	265.023	530.05
	56 cis-1,3-dichloropropene	75	12.479	12.480	(0.879)	485029	109.965	219.93
$	57 Toluene-d8	98	12.672	12.672	(0.892)	1116814	94.8235	189.65
	59 Toluene	92	12.733	12.733	(0.897)	885845	107.101	214.20
	64 2-Nitropropane	41	12.976	12.976	(0.914)	118179	254.652	509.30
	60 Methyl Isobutyl Ketone	43	13.046	13.047	(0.919)	493538	292.766	585.53
	61 trans-1,3-Dichloropropene	75	13.117	13.118	(0.924)	501346	112.706	225.41
	62 Tetrachloroethene	164	13.138	13.138	(0.925)	315673	113.717	227.43
	63 1,1,2-Trichloroethane	83	13.289	13.290	(0.936)	243039	106.778	213.56
	66 Dibromochloromethane	129	13.492	13.493	(0.950)	295286	105.593	211.18
	67 1,2-Dibromoethane	107	13.776	13.776	(0.970)	270546	105.945	211.89
	68 2-Hexanone	43	13.836	13.837	(0.974)	376365	289.265	578.53
	70 Ethylbenzene	91	14.191	14.191	(0.999)	1631390	103.531	207.06
*	71 Chlorobenzene-d5	117	14.201	14.201	(1.000)	958491	100.000	
	72 Chlorobenzene	112	14.221	14.222	(1.001)	1016943	101.813	203.63
	73 m,p-Xylene	106	14.302	14.303	(1.007)	1376592	206.550	413.10
	75 o-Xylene	106	14.707	14.708	(1.036)	746097	108.248	216.50
	76 Styrene	104	14.748	14.758	(1.039)	1115850	113.834	227.67
	77 Bromoform	173	14.839	14.849	(1.045)	240532	105.431	210.86
	78 Isopropylbenzene	105	14.960	14.971	(1.053)	1809853	104.814	209.63
$	79 Bromofluorobenzene	95	15.264	15.265	(0.937)	563283	92.6859	185.37
	80 1,1,2,2-Tetrachloroethane	83	15.396	15.396	(0.945)	439295	108.076	216.15
	92 1,3-Dichlorobenzene	146	16.226	16.227	(0.996)	925499	107.582	215.16
*	93 1,4-Dichlorobenzene-d4	152	16.287	16.287	(1.000)	592537	100.000	
	95 1,4-Dichlorobenzene	146	16.307	16.308	(1.001)	943812	109.156	218.31
	98 n-Butylbenzene	91	16.449	16.449	(1.010)	1631567	107.939	215.88
	100 Hexachloroethane	117	16.702	16.703	(1.511)	341477	117.606	235.21
	97 1,2-Dichlorobenzene	146	16.722	16.733	(1.027)	830514	106.053	212.11
	99 1,2-Dibromo-3-Chloropropane	75	17.532	17.533	(1.076)	67199	101.226	202.45
	101 1,2,4-Trichlorobenzene	180	18.272	18.272	(1.122)	503907	125.015	250.03

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
R - Spike/Surrogate failed recovery limits.

Data File: 13051506LCS.D
Report Date: 11-Jun-2013 16:04

WSCF

Data file : \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130515C109.b\13051506LC
Lab Smp Id: LCS Client Smp ID: LCS
Inj Date : 15-MAY-2013 12:15
Operator : awg Inst ID: neelix.i
Smp Info : LCS
Misc Info : VOA
Comment :
Method : \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130515C109.b\8260S13042
Meth Date : 11-Jun-2013 16:03 sac Quant Type: ISTD
Cal Date : 25-APR-2013 14:40 Cal File: 13042511CAL8.D
Als bottle: 6 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 10Tank.sub
Target Version: 4.14

- NO TENTATIVELY IDENTIFIED COMPOUNDS -

Data File: \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130515C109.b\13051506LCS.D

Date : 15-MAY-2013 12:15

Client ID: LCS

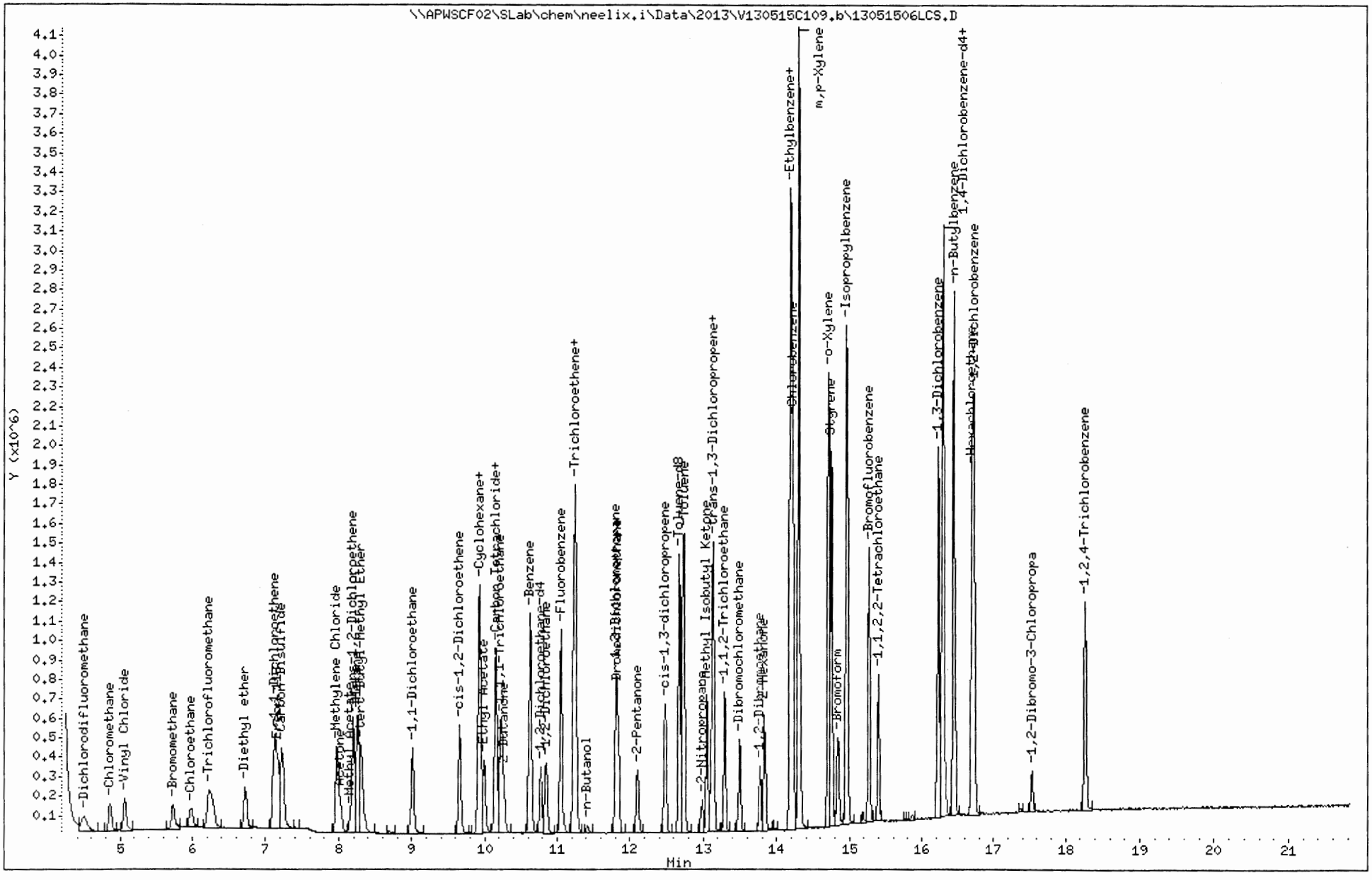
Instrument: neelix.i

Sample Info: LCS

Operator: awg

Column phase: Restek Rtx-VMS

Column diameter: 0.25



Data File: 130515074239.D
Report Date: 11-Jun-2013 16:04

WSCF

Data file : \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130515C109.b\1305150742
Lab Smp Id: S13T004239 Client Smp ID: S13T004239
Inj Date : 15-MAY-2013 15:13
Operator : awg Inst ID: neelix.i
Smp Info : S13004239
Misc Info : VOA
Comment :
Method : \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130515C109.b\8260S13042
Meth Date : 11-Jun-2013 16:03 sac Quant Type: ISTD
Cal Date : 25-APR-2013 14:40 Cal File: 13042511CAL8.D
Als bottle: 10
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 10Tank.sub
Target Version: 4.14

Concentration Formula: Amt * DF * Uf * 1/(Ws * (100 - M)/100) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Unit correction factor
Ws	0.56100	Weight of sample extracted (g)
M	0.00000	% Moisture (not decanted)
Va	0.00000	Volume of aliquot extract added (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug/Kg)
	19 Acetone	58	8.034	8.034	(0.727)	31831	112.005	199.65
	23 Hexane	86	8.257	8.247	(0.747)	17751	24.8329	44.265
$	43 1,2-Dichloroethane-d4	102	10.778	10.779	(0.975)	69876	100.421	179.00
*	46 Fluorobenzene	96	11.052	11.052	(1.000)	1101845	100.000	
$	57 Toluene-d8	98	12.682	12.672	(0.893)	1070270	95.7754	170.72
	59 Toluene	92	12.733	12.733	(0.897)	22015	2.80530	5.000(a)
*	71 Chlorobenzene-d5	117	14.201	14.201	(1.000)	909416	100.000	
	76 Styrene	104	14.758	14.758	(1.039)	7081	0.76135	1.357(a)
$	79 Bromofluorobenzene	95	15.274	15.265	(0.937)	535377	97.6412	174.05
*	93 1,4-Dichlorobenzene-d4	152	16.297	16.287	(1.000)	534600	100.000	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Data File: 130515074239.D
Report Date: 11-Jun-2013 16:04

WSCF

Data file : \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130515C109.b\1305150742
Lab Smp Id: S13T004239 Client Smp ID: S13T004239
Inj Date : 15-MAY-2013 15:13
Operator : awg Inst ID: neelix.i
Smp Info : S13004239
Misc Info : VOA
Comment :
Method : \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130515C109.b\8260S13042
Meth Date : 11-Jun-2013 16:03 sac Quant Type: ISTD
Cal Date : 25-APR-2013 14:40 Cal File: 13042511CAL8.D
Als bottle: 10
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 10Tank.sub
Target Version: 4.14

- NO TENTATIVELY IDENTIFIED COMPOUNDS -

Data File: \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130515C109.b\130515074239.D

Date : 15-MAY-2013 15:13

Client ID: S13T004239

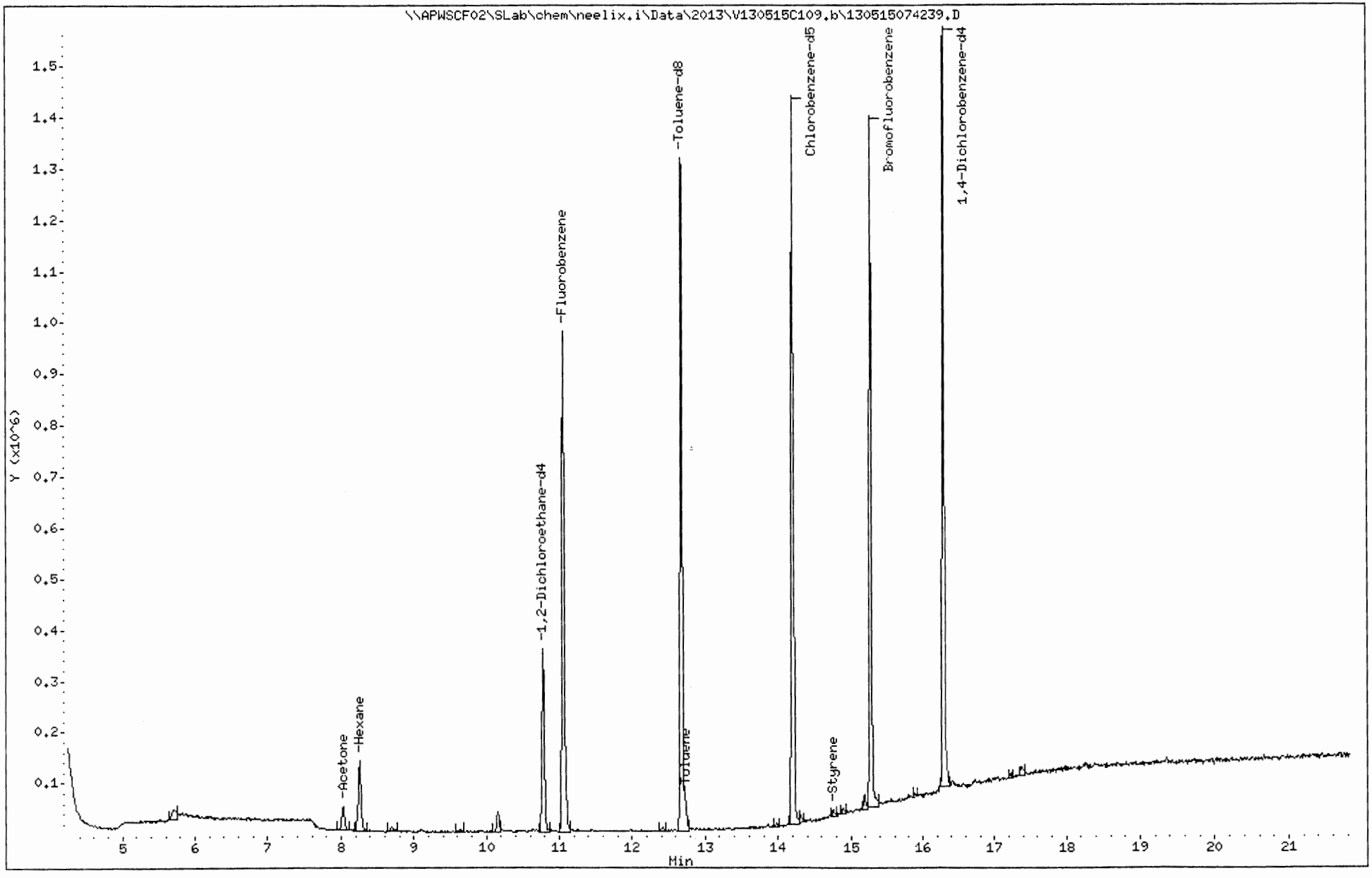
Instrument: neelix.i

Sample Info: S13004239

Operator: awg

Column phase: Restek Rtx-VMS

Column diameter: 0.25



Data File: 13051509239MS.D
Report Date: 11-Jun-2013 16:04

WSCF

Data file : \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130515C109.b\1305150923
Lab Smp Id: S13T004239MS Client Smp ID: S13T004239MS
Inj Date : 15-MAY-2013 16:16
Operator : awg Inst ID: neelix.i
Smp Info : S13004239 MS
Misc Info : VOA
Comment :
Method : \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130515C109.b\8260S13042
Meth Date : 11-Jun-2013 16:03 sac Quant Type: ISTD
Cal Date : 25-APR-2013 14:40 Cal File: 13042511CAL8.D
Als bottle: 12 QC Sample: MS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 10Tank.sub
Target Version: 4.14

Concentration Formula: Amt * DF * Uf * 1/(Ws * (100 - M)/100) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Unit correction factor
Ws	0.49200	Weight of sample extracted (g)
M	0.00000	% Moisture (not decanted)
Va	0.00000	Volume of aliquot extract added (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/Kg)
M	1 Total 1,2-Dichloroethene	100				612201	218.975	445.07
M	2 Total Xylenes	100				1879778	313.537	637.27
M	3 Total Trihalomethanes	100				1445854	446.686	907.90
	7 Dichlorodifluoromethane	87	4.501	4.490	(0.407)	53412	39.8775	81.052(aR)
	8 Chloromethane	50	4.855	4.865	(0.439)	245821	67.5460	137.29(R)
	9 Vinyl Chloride	62	5.067	5.067	(0.459)	295293	75.9814	154.43
	10 Bromomethane	94	5.736	5.736	(0.519)	103564	93.4885	190.02
	11 Chloroethane	64	5.979	5.979	(0.541)	156348	96.7476	196.64
	12 Trichlorofluoromethane	101	6.232	6.222	(0.564)	448003	96.3229	195.78
	13 Diethyl ether	74	6.718	6.718	(0.608)	150087	104.657	212.72
	14 1,1-Dichloroethene	96	7.123	7.113	(0.645)	262542	123.463	250.94(R)
	15 Freon 113	101	7.163	7.164	(0.648)	286536	109.000	221.54
	16 Carbon Disulfide	76	7.234	7.224	(0.655)	721778	94.3227	191.71
	18 Methylene Chloride	84	7.984	7.974	(0.722)	328894	111.390	226.40
	19 Acetone	58	8.024	8.034	(0.726)	94709	360.495	732.71
	21 trans-1,2-Dichloroethene	96	8.196	8.196	(0.742)	302272	109.828	223.23
	23 Hexane	86	8.257	8.247	(0.747)	77081	116.647	237.09
	24 tert-Butyl-Methyl Ether	73	8.308	8.308	(0.752)	819515	120.391	244.70
	25 1,1-Dichloroethane	63	9.006	9.007	(0.815)	536445	114.259	232.23
	29 cis-1,2-Dichloroethene	96	9.654	9.655	(0.874)	309929	109.148	221.84
	30 Cyclohexane	56	9.918	9.918	(0.897)	481920	115.747	235.26

Data File: 13051509239MS.D
Report Date: 11-Jun-2013 16:04

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/Kg)
	31 Chloroform	83	9.928	9.938	(0.898)	568738	112.791	229.25
	33 Carbon Tetrachloride	117	10.151	10.151	(0.918)	427585	113.536	230.76
	34 Tetrahydrofuran	72	10.151	10.140	(0.918)	34777	118.489	240.83
	37 1,1,1-Trichloroethane	97	10.221	10.222	(0.925)	500199	114.261	232.24
	38 2-Butanone	43	10.262	10.272	(0.929)	264850	331.532	673.84
	41 Benzene	78	10.626	10.627	(0.962)	1223170	105.283	213.99
$	43 1,2-Dichloroethane-d4	102	10.778	10.779	(0.975)	64480	100.240	203.74
	44 1,2-Dichloroethane	62	10.849	10.849	(0.982)	344358	115.771	235.31
*	46 Fluorobenzene	96	11.052	11.052	(1.000)	1018590	100.000	
	47 Trichloroethene	95	11.234	11.234	(1.016)	567737	203.663	413.95(R)
	48 Methylcyclohexane	83	11.244	11.244	(1.017)	614734	116.236	236.25
	49 n-Butanol	56	11.416	11.417	(1.033)	27880	619.128	1258.4
	50 1,2-Dichloropropane	63	11.811	11.812	(1.069)	302638	112.853	229.38
	51 Bromodichloromethane	83	11.831	11.832	(1.071)	377416	112.013	227.67
	53 2-Pentanone	86	12.105	12.105	(1.095)	101440	333.825	678.51(R)
	56 cis-1,3-dichloropropene	75	12.480	12.480	(0.879)	452593	115.403	234.56
$	57 Toluene-d8	98	12.672	12.672	(0.892)	1030175	98.3714	199.94
	59 Toluene	92	12.733	12.733	(0.897)	796694	108.330	220.18
	60 Methyl Isobutyl Ketone	43	13.047	13.047	(0.919)	518294	345.779	702.80
	61 trans-1,3-Dichloropropene	75	13.118	13.118	(0.924)	461207	116.608	237.01
	62 Tetrachloroethene	164	13.138	13.138	(0.925)	279574	113.268	230.22
	63 1,1,2-Trichloroethane	83	13.290	13.290	(0.936)	197988	97.8293	198.84
	66 Dibromochloromethane	129	13.492	13.493	(0.950)	269327	108.316	220.16
	67 1,2-Dibromoethane	107	13.776	13.776	(0.970)	264541	116.508	236.80
	68 2-Hexanone	43	13.836	13.837	(0.974)	418720	361.937	735.64
	70 Ethylbenzene	91	14.191	14.191	(0.999)	1454836	103.836	211.05
*	71 Chlorobenzene-d5	117	14.201	14.201	(1.000)	852247	100.000	
	72 Chlorobenzene	112	14.221	14.222	(1.001)	914557	102.977	209.30
	73 m,p-Xylene	106	14.302	14.303	(1.007)	1220837	206.016	418.73
	75 o-Xylene	106	14.707	14.708	(1.036)	658941	107.521	218.54
	76 Styrene	104	14.758	14.758	(1.039)	988981	113.469	230.63
	77 Bromoform	173	14.849	14.849	(1.046)	230373	113.566	230.83
	78 Isopropylbenzene	105	14.961	14.971	(1.053)	1596126	103.960	211.30
$	79 Bromofluorobenzene	95	15.264	15.265	(0.937)	508382	98.0343	199.26
	92 1,3-Dichlorobenzene	146	16.226	16.227	(0.996)	804586	109.607	222.78
*	93 1,4-Dichlorobenzene-d4	152	16.287	16.287	(1.000)	505609	100.000	
	95 1,4-Dichlorobenzene	146	16.307	16.308	(1.001)	814335	110.374	224.34
	98 n-Butylbenzene	91	16.449	16.449	(1.010)	1364541	105.794	215.03
	100 Hexachloroethane	117	16.702	16.703	(1.511)	290637	110.748	225.10
	97 1,2-Dichlorobenzene	146	16.733	16.733	(1.027)	741012	110.893	225.39
	99 1,2-Dibromo-3-Chloropropane	75	17.533	17.533	(1.076)	61221	108.077	219.67
	101 1,2,4-Trichlorobenzene	180	18.272	18.272	(1.122)	433320	125.985	256.07

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
R - Spike/Surrogate failed recovery limits.

Data File: 13051509239MS.D Page 3
Report Date: 11-Jun-2013 16:04

WSCF

Data file : \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130515C109.b\1305150923
Lab Smp Id: S13T004239MS Client Smp ID: S13T004239MS
Inj Date : 15-MAY-2013 16:16
Operator : awg Inst ID: neelix.i
Smp Info : S13004239 MS
Misc Info : VOA
Comment :
Method : \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130515C109.b\8260S13042
Meth Date : 11-Jun-2013 16:03 sac Quant Type: ISTD
Cal Date : 25-APR-2013 14:40 Cal File: 13042511CAL8.D
Als bottle: 12 QC Sample: MS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 10Tank.sub
Target Version: 4.14

- NO TENTATIVELY IDENTIFIED COMPOUNDS -

Data File: \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130515C109.b\13051509239MS.D

Date : 15-MAY-2013 16:16

Client ID: S13T004239MS

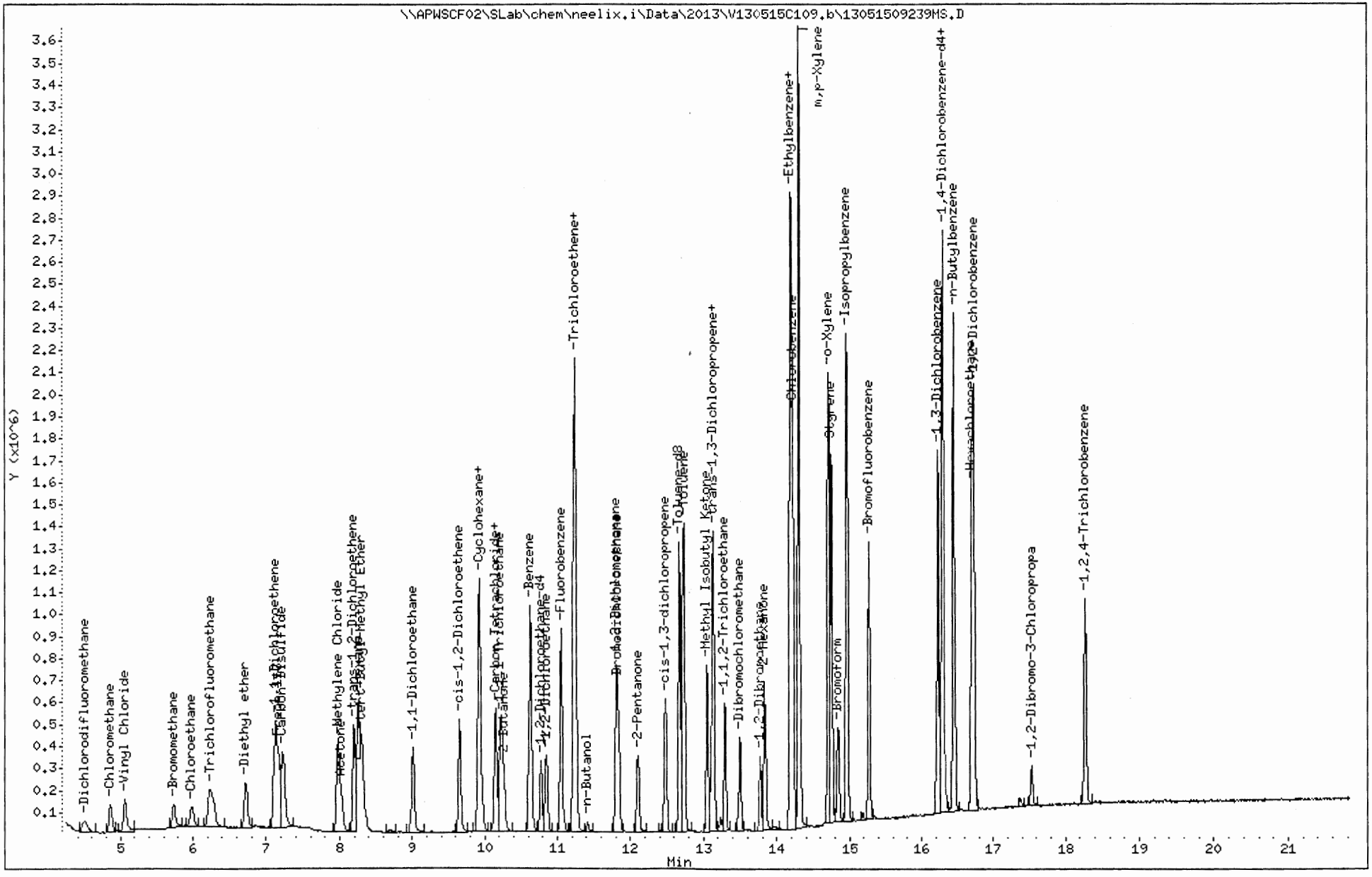
Instrument: neelix.i

Sample Info: S13004239 MS

Operator: awg

Column phase: Restek Rtx-VMS

Column diameter: 0.25



Data File: 130515102239MSD.D
Report Date: 11-Jun-2013 16:04

WSCF

Data file : \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130515C109.b\1305151023
Lab Smp Id: S13T004239MSD Client Smp ID: S13T004239MSD
Inj Date : 15-MAY-2013 16:47
Operator : awg Inst ID: neelix.i
Smp Info : S13004239 MSD
Misc Info : VOA
Comment :
Method : \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130515C109.b\8260S13042
Meth Date : 11-Jun-2013 16:03 sac Quant Type: ISTD
Cal Date : 25-APR-2013 14:40 Cal File: 13042511CAL8.D
Als bottle: 13 QC Sample: MSD
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 10Tank.sub
Target Version: 4.14

Concentration Formula: Amt * DF * Uf * 1/(Ws * (100 - M)/100) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Unit correction factor
Ws	0.52500	Weight of sample extracted (g)
M	0.00000	% Moisture (not decanted)
Va	0.00000	Volume of aliquot extract added (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/Kg)
M 1	Total 1,2-Dichloroethene	100				660244	223.433	425.59
M 2	Total Xylenes	100				1947672	316.904	603.63
M 3	Total Trihalomethanes	100				1502065	442.474	842.81
7	Dichlorodifluoromethane	87	4.490	4.490	(0.406)	52183	36.8663	70.222(aR)
8	Chloromethane	50	4.854	4.865	(0.439)	258920	67.3221	128.23(R)
9	Vinyl Chloride	62	5.067	5.067	(0.459)	316354	77.0263	146.72
10	Bromomethane	94	5.735	5.736	(0.519)	107750	92.0403	175.31
11	Chloroethane	64	5.989	5.979	(0.542)	183294	107.327	204.43
12	Trichlorofluoromethane	101	6.242	6.222	(0.565)	478396	97.3303	185.39
13	Diethyl ether	74	6.718	6.718	(0.608)	159839	105.468	200.89
14	1,1-Dichloroethene	96	7.123	7.113	(0.645)	305148	135.787	258.64(R)
15	Freon 113	101	7.163	7.164	(0.648)	309164	111.288	211.98
16	Carbon Disulfide	76	7.234	7.224	(0.655)	738732	91.3506	174.00
18	Methylene Chloride	84	7.983	7.974	(0.722)	345796	110.821	211.09
19	Acetone	58	8.024	8.034	(0.726)	89976	324.076	617.29
21	trans-1,2-Dichloroethene	96	8.196	8.196	(0.742)	322590	110.911	211.26
23	Hexane	86	8.257	8.247	(0.747)	81270	116.377	221.67
24	tert-Butyl-Methyl Ether	73	8.297	8.308	(0.751)	831509	115.589	220.17
25	1,1-Dichloroethane	63	9.006	9.007	(0.815)	575799	116.050	221.05
29	cis-1,2-Dichloroethene	96	9.654	9.655	(0.874)	337654	112.522	214.33
30	Cyclohexane	56	9.918	9.918	(0.897)	508120	115.482	219.96

Data File: 13051510239MSD.D
Report Date: 11-Jun-2013 16:04

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/Kg)
	31 Chloroform	83	9.938	9.938	(0.899)	607562	114.015	217.17
	33 Carbon Tetrachloride	117	10.150	10.151	(0.918)	460673	115.748	220.47
	34 Tetrahydrofuran	72	10.150	10.140	(0.918)	35182	113.428	216.05
	37 1,1,1-Trichloroethane	97	10.221	10.222	(0.925)	541255	116.995	222.85
	38 2-Butanone	43	10.262	10.272	(0.929)	251713	298.155	567.92
	41 Benzene	78	10.626	10.627	(0.962)	1304797	106.273	202.42
$	43 1,2-Dichloroethane-d4	102	10.778	10.779	(0.975)	65156	95.8479	182.57
	44 1,2-Dichloroethane	62	10.849	10.849	(0.982)	357281	113.661	216.50
*	46 Fluorobenzene	96	11.052	11.052	(1.000)	1076435	100.000	
	47 Trichloroethene	95	11.234	11.234	(1.016)	610419	207.207	394.68(R)
	48 Methylcyclohexane	83	11.244	11.244	(1.017)	643782	115.188	219.40
	49 n-Butanol	56	11.416	11.417	(1.033)	26994	567.240	1080.4
	50 1,2-Dichloropropane	63	11.811	11.812	(1.069)	324131	114.372	217.85
	51 Bromodichloromethane	83	11.831	11.832	(1.071)	387016	108.689	207.03
	53 2-Pentanone	86	12.105	12.105	(1.095)	96901	301.752	574.76
	56 cis-1,3-dichloropropene	75	12.480	12.480	(0.879)	463497	115.293	219.60
$	57 Toluene-d8	98	12.672	12.672	(0.892)	1067468	99.4394	189.41
	59 Toluene	92	12.733	12.733	(0.897)	848908	112.607	214.49
	60 Methyl Isobutyl Ketone	43	13.047	13.047	(0.919)	499935	325.373	619.76
	61 trans-1,3-Dichloropropene	75	13.117	13.118	(0.924)	475197	117.206	223.25
	62 Tetrachloroethene	164	13.138	13.138	(0.925)	293945	116.177	221.29
	63 1,1,2-Trichloroethane	83	13.290	13.290	(0.936)	186401	89.8513	171.14
	66 Dibromochloromethane	129	13.492	13.493	(0.950)	274205	107.581	204.92
	67 1,2-Dibromoethane	107	13.776	13.776	(0.970)	264590	113.679	216.53
	68 2-Hexanone	43	13.836	13.837	(0.974)	400055	337.345	642.56
	70 Ethylbenzene	91	14.191	14.191	(0.999)	1508895	105.060	200.12
*	71 Chlorobenzene-d5	117	14.201	14.201	(1.000)	873614	100.000	
	72 Chlorobenzene	112	14.221	14.222	(1.001)	940405	103.298	196.76
	73 m,p-Xylene	106	14.302	14.303	(1.007)	1262731	207.874	395.95
	75 o-Xylene	106	14.707	14.708	(1.036)	684941	109.030	207.68
	76 Styrene	104	14.748	14.758	(1.039)	1009338	112.972	215.18
	77 Bromoform	173	14.849	14.849	(1.046)	233282	112.188	213.69
	78 Isopropylbenzene	105	14.960	14.971	(1.053)	1645422	104.550	199.14
$	79 Bromofluorobenzene	95	15.264	15.265	(0.937)	514882	96.4627	183.74
	92 1,3-Dichlorobenzene	146	16.226	16.227	(0.996)	813444	107.660	205.07
*	93 1,4-Dichlorobenzene-d4	152	16.287	16.287	(1.000)	520416	100.000	
	95 1,4-Dichlorobenzene	146	16.307	16.308	(1.001)	833348	109.737	209.02
	98 n-Butylbenzene	91	16.449	16.449	(1.010)	1371288	103.292	196.75
	100 Hexachloroethane	117	16.702	16.703	(1.511)	293874	105.964	201.84
	97 1,2-Dichlorobenzene	146	16.722	16.733	(1.027)	747062	108.617	206.89
	99 1,2-Dibromo-3-Chloropropane	75	17.533	17.533	(1.076)	54929	94.2101	179.45
	101 1,2,4-Trichlorobenzene	180	18.272	18.272	(1.122)	428616	121.072	230.61

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
R - Spike/Surrogate failed recovery limits.

WSCF

Data file : \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130515C109.b\1305151023
Lab Smp Id: S13T004239MSD Client Smp ID: S13T004239MSD
Inj Date : 15-MAY-2013 16:47
Operator : awg Inst ID: neelix.i
Smp Info : S13004239 MSD
Misc Info : VOA
Comment :
Method : \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130515C109.b\8260S13042
Meth Date : 11-Jun-2013 16:03 sac Quant Type: ISTD
Cal Date : 25-APR-2013 14:40 Cal File: 13042511CAL8.D
Als bottle: 13 QC Sample: MSD
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 10Tank.sub
Target Version: 4.14

- NO TENTATIVELY IDENTIFIED COMPOUNDS -

Data File: \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130515C109.b\13051510239MSD.D

Date : 15-MAY-2013 16:47

Client ID: S13T004239MSD

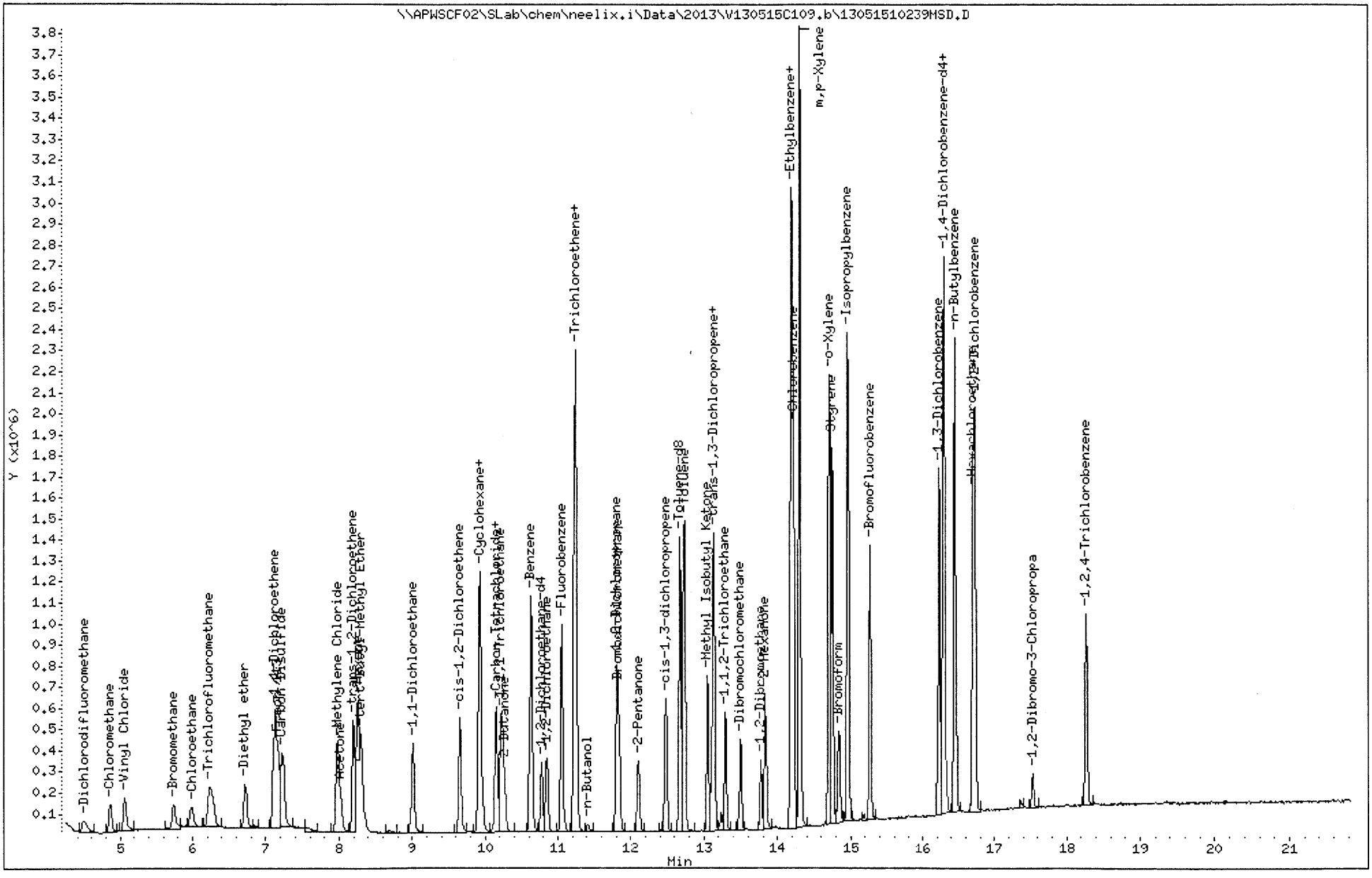
Instrument: neelix.i

Sample Info: S13004239 MSD

Operator: awg

Column phase: Restek Rtx-VMS

Column diameter: 0.25



Data File: 130515114266.D Page 1
Report Date: 11-Jun-2013 16:05

WSCF

Data file : \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130515C109.b\1305151142
Lab Smp Id: S13T004266 Client Smp ID: S13T004266
Inj Date : 15-MAY-2013 17:18
Operator : awg Inst ID: neelix.i
Smp Info : S13004266
Misc Info : VOA
Comment :
Method : \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130515C109.b\8260S13042
Meth Date : 11-Jun-2013 16:03 sac Quant Type: ISTD
Cal Date : 25-APR-2013 14:40 Cal File: 13042511CAL8.D
Als bottle: 14
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 10Tank.sub
Target Version: 4.14

Concentration Formula: Amt * DF * Uf * 1/(Ws * (100 - M)/100) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Unit correction factor
Ws	0.53700	Weight of sample extracted (g)
M	0.00000	% Moisture (not decanted)
Va	0.00000	Volume of aliquot extract added (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug/Kg)
	19 Acetone	58	8.034	8.034	(0.727)	10586	50.7299	94.469(a)
	23 Hexane	86	8.247	8.247	(0.746)	4522	8.61548	16.044(a)
$	43 1,2-Dichloroethane-d4	102	10.778	10.779	(0.975)	55599	108.820	202.64
*	46 Fluorobenzene	96	11.052	11.052	(1.000)	809050	100.000	
$	57 Toluene-d8	98	12.672	12.672	(0.892)	761601	95.9857	178.74
	59 Toluene	92	12.733	12.733	(0.897)	13823	2.48074	4.620(a)
*	71 Chlorobenzene-d5	117	14.201	14.201	(1.000)	645720	100.000	
	76 Styrene	104	14.748	14.758	(1.039)	6351	0.96173	1.791(a)
$	79 Bromofluorobenzene	95	15.264	15.265	(0.937)	359787	101.406	188.84
	92 1,3-Dichlorobenzene	146	16.236	16.227	(0.997)	3251	0.64731	1.205(a)
*	93 1,4-Dichlorobenzene-d4	152	16.287	16.287	(1.000)	345926	100.000	
	95 1,4-Dichlorobenzene	146	16.307	16.308	(1.001)	4436	0.87879	1.636(a)
	101 1,2,4-Trichlorobenzene	180	18.272	18.272	(1.122)	4747	2.01726	3.756(a)

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Data File: 130515114266.D
Report Date: 14-Jun-2013 14:13

WSCF

Data file : \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130515C109.b\1305151142
Lab Smp Id: S13T004266 Client Smp ID: S13T004266
Inj Date : 15-MAY-2013 17:18
Operator : awg Inst ID: neelix.i
Smp Info : S13004266
Misc Info : VOA
Comment :
Method : \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130515C109.b\8260S13042
Meth Date : 11-Jun-2013 16:03 sac Quant Type: ISTD
Cal Date : 25-APR-2013 14:40 Cal File: 13042511CAL8.D
Als bottle: 14
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 10Tank.sub
Target Version: 4.14

Concentration Formula: Amt * DF * Uf * 1/(Ws * (100 - M)/100) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Unit correction factor
Ws	0.53700	Weight of sample extracted (g)
M	0.00000	% Moisture (not decanted)
Va	0.00000	Volume of aliquot extract added (uL)
Cpnd Variable		Local Compound Variable

COMPOUND	RT	AREA	AMOUNT
* 93 1,4-Dichlorobenzene-d4	16.287	2157528	100.000

		CONCENTRATIONS			QUANT		
RT	AREA	ON-COL(ng)	FINAL(ug/Kg)	QUAL	LIBRARY	LIB ENTRY	CPND #
1-Hexanol, 2-ethyl-			CAS #: 104-76-7				
16.409	1127011	52.2361863	97.274	78	NIST02.L	13219	93(L)

QC Flag Legend

L - Operator selected an alternate library search match.

Data File: \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130515C109.b\130515114266.D

Date : 15-MAY-2013 17:18

Client ID: S13T004266

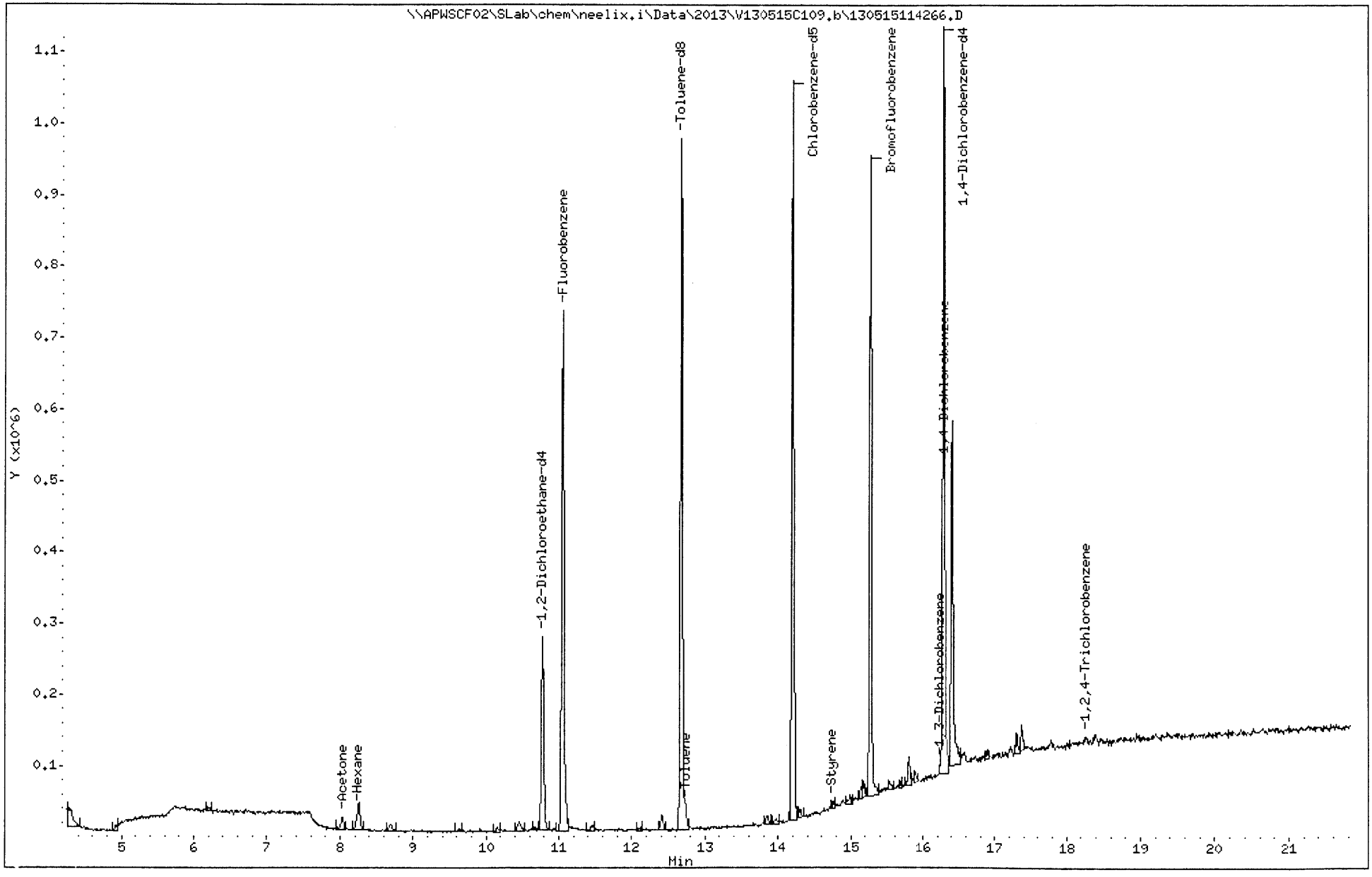
Instrument: neelix.i

Sample Info: S13004266

Operator: awg

Column phase: Restek Rtx-VMS

Column diameter: 0.25



Data File: 130515124293.D
Report Date: 11-Jun-2013 16:05

WSCF

Data file : \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130515C109.b\1305151242
Lab Smp Id: S13T004293 Client Smp ID: S13T004293
Inj Date : 15-MAY-2013 17:49
Operator : awg Inst ID: neelix.i
Smp Info : S13004293
Misc Info : VOA
Comment :
Method : \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130515C109.b\8260S13042
Meth Date : 11-Jun-2013 16:03 sac Quant Type: ISTD
Cal Date : 25-APR-2013 14:40 Cal File: 13042511CAL8.D
Als bottle: 15
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 10Tank.sub
Target Version: 4.14

Concentration Formula: Amt * DF * Uf * 1/(Ws * (100 - M)/100) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Unit correction factor
Ws	0.52500	Weight of sample extracted (g)
M	0.00000	% Moisture (not decanted)
Va	0.00000	Volume of aliquot extract added (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/Kg)
	19 Acetone	58	8.024	8.034	(0.726)	10676	44.1359	84.068(a)
	23 Hexane	86	8.257	8.247	(0.747)	6448	10.5980	20.187(a)
$	43 1,2-Dichloroethane-d4	102	10.778	10.779	(0.975)	61648	104.091	198.27
*	46 Fluorobenzene	96	11.052	11.052	(1.000)	937829	100.000	
$	57 Toluene-d8	98	12.672	12.672	(0.892)	906919	98.7108	188.02
	59 Toluene	92	12.733	12.733	(0.897)	12141	1.88170	3.584(a)
*	71 Chlorobenzene-d5	117	14.201	14.201	(1.000)	747700	100.000	
$	79 Bromofluorobenzene	95	15.264	15.265	(0.937)	425405	104.793	199.60
*	93 1,4-Dichlorobenzene-d4	152	16.287	16.287	(1.000)	395799	100.000	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Data File: 130515124293.D
Report Date: 11-Jun-2013 16:05

WSCF

Data file : \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130515C109.b\1305151242
Lab Smp Id: S13T004293 Client Smp ID: S13T004293
Inj Date : 15-MAY-2013 17:49
Operator : awg Inst ID: neelix.i
Smp Info : S13004293
Misc Info : VOA
Comment :
Method : \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130515C109.b\8260S13042
Meth Date : 11-Jun-2013 16:03 sac Quant Type: ISTD
Cal Date : 25-APR-2013 14:40 Cal File: 13042511CAL8.D
Als bottle: 15
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 10Tank.sub
Target Version: 4.14

- NO TENTATIVELY IDENTIFIED COMPOUNDS -

Data File: \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130515C109.b\130515124293.D

Date : 15-MAY-2013 17:49

Client ID: S13T004293

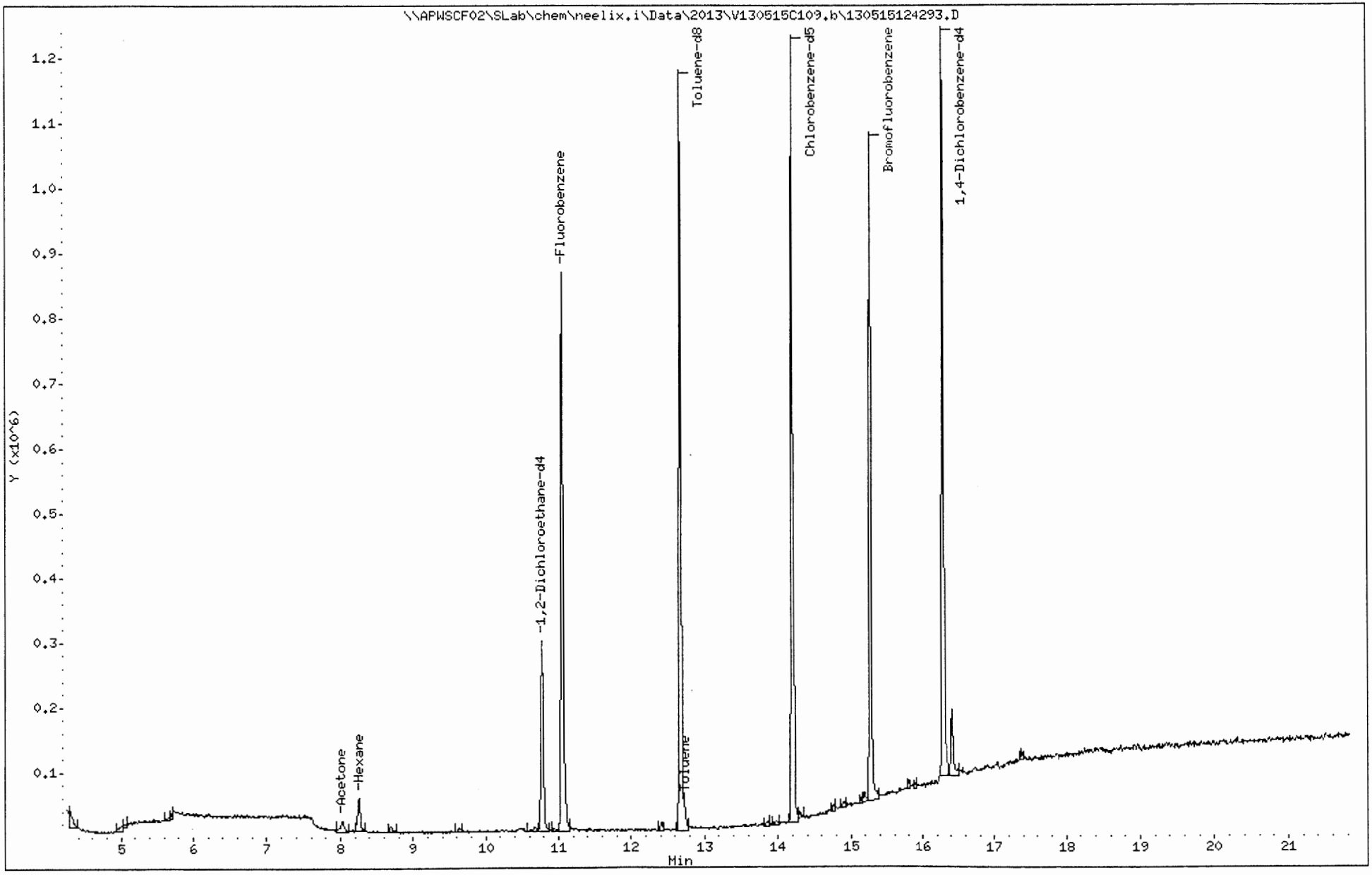
Instrument: neelix.i

Sample Info: S13004293

Operator: awg

Column phase: Restek Rtx-VMS

Column diameter: 0.25



Data File: 13051602BFB.D Page 1
Report Date: 11-Jun-2013 16:05

WSCF

Data file : \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130516C109.b\13051602BF
Lab Smp Id: BFB Client Smp ID: BFB
Inj Date : 16-MAY-2013 09:49
Operator : awg Inst ID: neelix.i
Smp Info : BFB
Misc Info : Neelix
Comment :
Method : \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130516C109.b\BFBCLP.m
Meth Date : 25-Oct-2012 15:58 sac Quant Type: ISTD
Cal Date : 04-MAY-2006 10:07 Cal File: 6050403.D
Als bottle: 2 QC Sample: BFB
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.14 Sample Matrix: WATER
Processing Host: WC95553

Concentration Formula: Amt * DF * Uf * Vf * VI * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vf	1.000	Volumetric correction factor
VI	1.000	Injection Volume
Cpnd Variable		Local Compound Variable

RT	EXP RT	REL RT	MASS	RESPONSE	CONCENTRATIONS ON-COL (ug/L)	CONCENTRATIONS FINAL (ug/L)	TARGET RANGE	RATIO	SIMILARITY
1 bfb						CAS #: 460-00-4			
9.095	9.104	(0.000)	95	87000			100.00- 100.00	100.00	
9.095	9.104	(0.000)	50	12648			8.00- 40.00	14.54	
9.095	9.104	(0.000)	75	41888			30.00- 66.00	48.15	
9.095	9.104	(0.000)	96	6175			5.00- 9.00	7.10	
9.095	9.104	(0.000)	173	607			0.00- 2.00	0.87	
9.095	9.104	(0.000)	174	70136			50.00- 120.00	80.62	
9.095	9.104	(0.000)	175	5180			4.00- 9.00	7.39	
9.095	9.104	(0.000)	176	67848			93.00- 101.00	96.74	
9.095	9.104	(0.000)	177	4523			5.00- 9.00	6.67	

Data File: \\APWSCF02\SLab\chem\neelix.i\Data\2013\W130516C109.b\13051602BFB.D Page 2

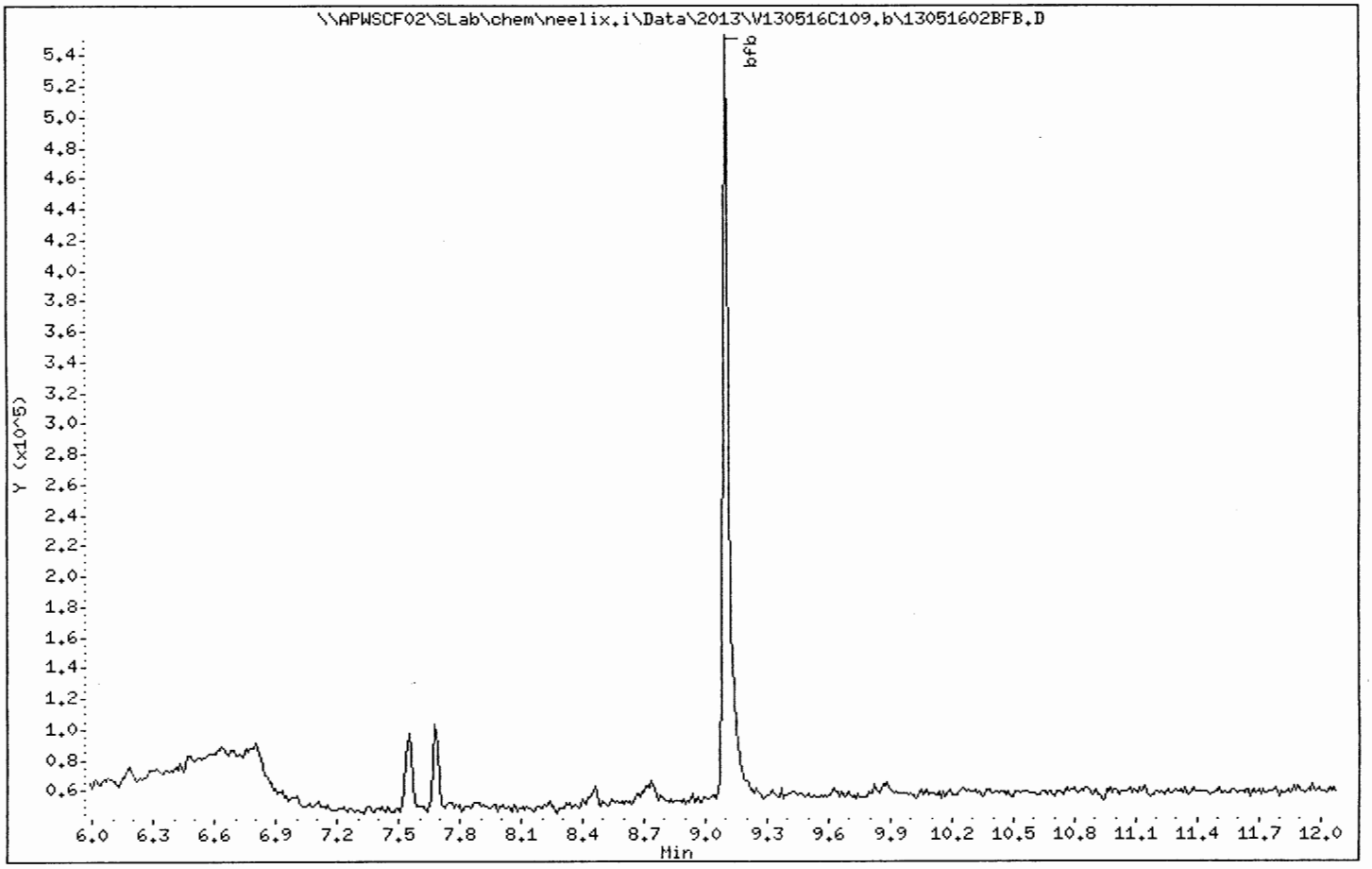
Date : 16-MAY-2013 09:49

Client ID: BFB Instrument: neelix.i

Sample Info: BFB

Operator: awg

Column phase: Column diameter: 0.25



Data File: \\APWSCF02\SLab\chem\neelix.i\Data\2013\W130516C109.b\13051602BFB.D Page 3

Date : 16-MAY-2013 09:49

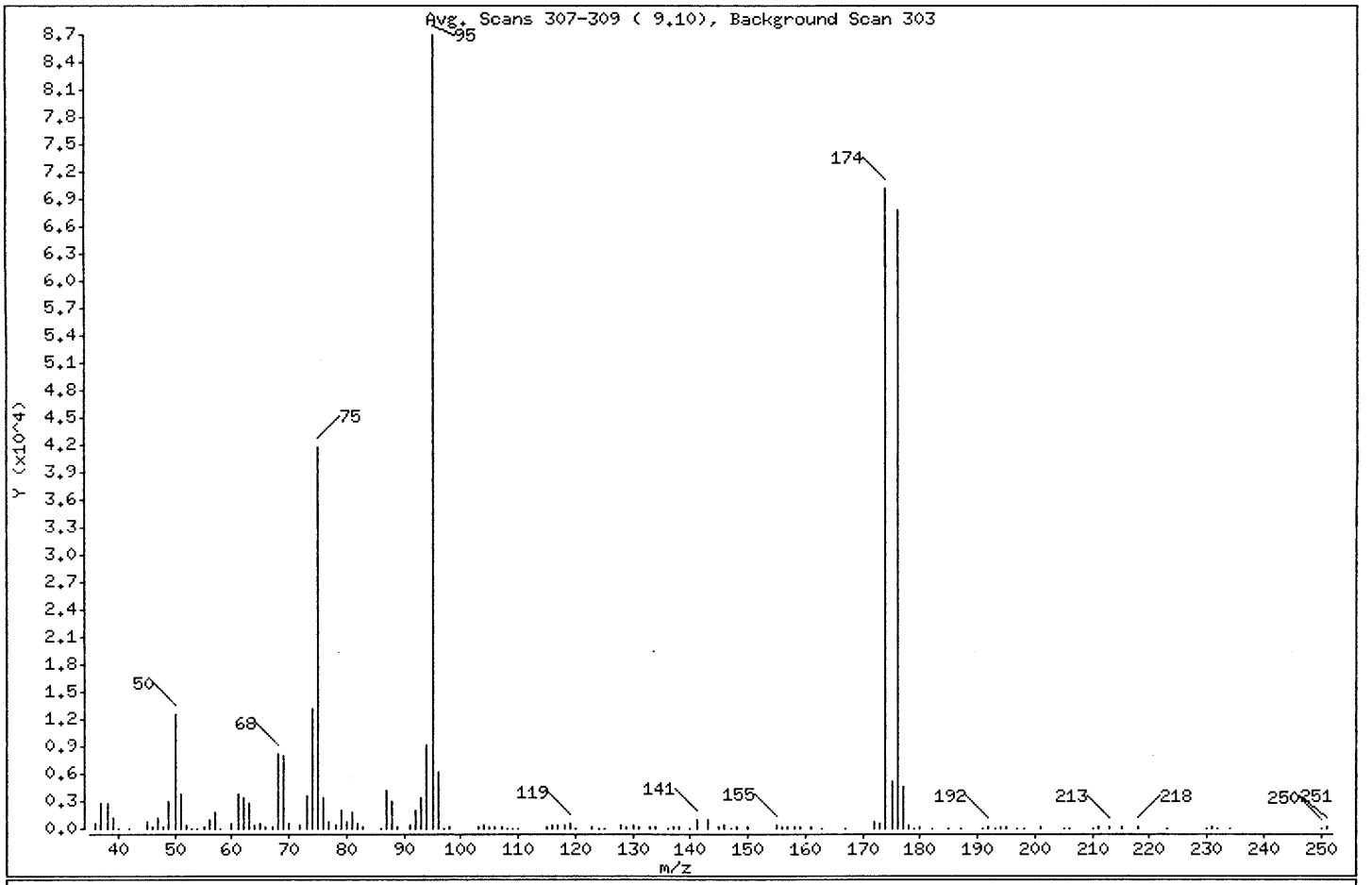
Client ID: BFB Instrument: neelix.i

Sample Info: BFB

Operator: awg

Column phase: Column diameter: 0.25

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	8.00 - 40.00% of mass 95	14.54
75	30.00 - 66.00% of mass 95	48.15
96	5.00 - 9.00% of mass 95	7.10
173	Less than 2.00% of mass 174	0.70 (0.87)
174	50.00 - 120.00% of mass 95	80.62
175	4.00 - 9.00% of mass 174	5.95 (7.39)
176	93.00 - 101.00% of mass 174	77.99 (96.74)
177	5.00 - 9.00% of mass 176	5.20 (6.67)

Data File: \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130516C109.b\13051602BFB.D Page 4

Date : 16-MAY-2013 09:49

Client ID: BFB Instrument: neelix.i

Sample Info: BFB

Operator: awg

Column phase: Column diameter: 0.25

Data File: 13051602BFB.D
Spectrum: Avg. Scans 307-309 (9.10), Background Scan 303
Location of Maximum: 95.00
Number of points: 131

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	589	74.00	13208	118.00	362	174.00	70136
37.00	2842	75.00	41888	119.00	619	175.00	5180
38.00	2758	76.00	3364	120.00	89	176.00	67848
39.00	1291	77.00	725	123.00	210	177.00	4523
40.00	11	78.00	454	124.00	58	178.00	361
42.00	26	79.00	2008	125.00	67	179.00	24
45.00	854	80.00	742	128.00	322	180.00	107
46.00	135	81.00	1755	129.00	217	182.00	59
47.00	1227	82.00	602	130.00	339	185.00	53
48.00	267	83.00	120	131.00	124	187.00	58
49.00	3027	86.00	73	133.00	111	191.00	66
50.00	12648	87.00	4267	134.00	187	192.00	184
51.00	3856	88.00	3071	136.00	51	193.00	14
52.00	320	89.00	169	137.00	134	194.00	143
53.00	4	91.00	493	138.00	129	195.00	130
54.00	84	92.00	2011	140.00	55	197.00	92
55.00	189	93.00	3407	141.00	1018	198.00	65
56.00	957	94.00	9217	143.00	932	201.00	105
57.00	1883	95.00	87000	145.00	259	205.00	83
58.00	63	96.00	6175	146.00	340	206.00	50
60.00	677	97.00	79	147.00	89	210.00	43
61.00	3781	98.00	161	148.00	207	211.00	149
62.00	3410	103.00	133	150.00	137	213.00	209
63.00	2900	104.00	370	155.00	426	215.00	143
64.00	414	105.00	207	156.00	130	218.00	114
65.00	531	106.00	287	157.00	173	223.00	51
66.00	183	107.00	108	158.00	140	230.00	86
67.00	106	108.00	75	159.00	225	231.00	103
68.00	8111	109.00	1	161.00	118	232.00	9
69.00	7917	110.00	84	163.00	18	234.00	29
70.00	618	115.00	271	167.00	55	250.00	53
72.00	490	116.00	304	172.00	862	251.00	104
73.00	3664	117.00	305	173.00	607		

Data File: 13051603CCV.D Page 1
Report Date: 11-Jun-2013 16:05

WSCF

Data file : \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130516C109.b\13051603CC
Lab Smp Id: CCV Client Smp ID: CCV
Inj Date : 16-MAY-2013 10:20
Operator : awg Inst ID: neelix.i
Smp Info : CCV
Misc Info : VOA
Comment :
Method : \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130516C109.b\8260S13042
Meth Date : 11-Jun-2013 15:59 sac Quant Type: ISTD
Cal Date : 25-APR-2013 14:40 Cal File: 13042511CAL8.D
Als bottle: 3 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 10Tank.sub
Target Version: 4.14

Concentration Formula: Amt * DF * Uf * 1/(Ws * (100 - M)/100) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Unit correction factor
Ws	0.50000	Weight of sample extracted (g)
M	0.00000	% Moisture (not decanted)
Va	0.00000	Volume of aliquot extract added (uL)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)
7 Dichlorodifluoromethane	87	4.500	4.490	(0.407)	41030	100.000	28.421(a)
8 Chloromethane	50	4.865	4.865	(0.440)	227852	100.000	58.088
9 Vinyl Chloride	62	5.067	5.067	(0.458)	287513	100.000	68.637
10 Bromomethane	94	5.736	5.736	(0.519)	100541	100.000	84.206
11 Chloroethane	64	5.989	5.979	(0.541)	170139	100.000	97.679
12 Trichlorofluoromethane	101	6.242	6.222	(0.564)	466889	100.000	93.135
13 Diethyl ether	74	6.728	6.718	(0.608)	157199	100.800	101.70
14 1,1-Dichloroethene	96	7.123	7.113	(0.644)	240534	100.800	104.94
15 Freon 113	101	7.163	7.164	(0.648)	301263	100.800	106.33
16 Carbon Disulfide	76	7.234	7.224	(0.654)	811752	100.800	98.420
18 Methylene Chloride	84	7.984	7.974	(0.722)	342924	100.800	107.75
19 Acetone	58	8.024	8.034	(0.725)	74321	252.000	262.46
20 Methyl Acetate	43	8.156	8.156	(0.737)	148499	100.800	107.36
21 trans-1,2-Dichloroethene	96	8.206	8.196	(0.742)	319638	100.800	107.75
23 Hexane	86	8.257	8.247	(0.746)	73750	100.800	103.55
24 tert-Butyl-Methyl Ether	73	8.308	8.308	(0.751)	811777	100.800	110.64
25 1,1-Dichloroethane	63	9.016	9.007	(0.815)	573523	100.800	113.33
29 cis-1,2-Dichloroethene	96	9.654	9.655	(0.873)	329542	100.800	107.67
30 Cyclohexane	56	9.928	9.918	(0.897)	501930	100.800	111.85
31 Chloroform	83	9.938	9.938	(0.898)	611397	100.800	112.50
32 Ethyl Acetate	43	9.999	9.989	(0.904)	456479	252.000	298.74

Data File: 13051603CCV.D
Report Date: 11-Jun-2013 16:05

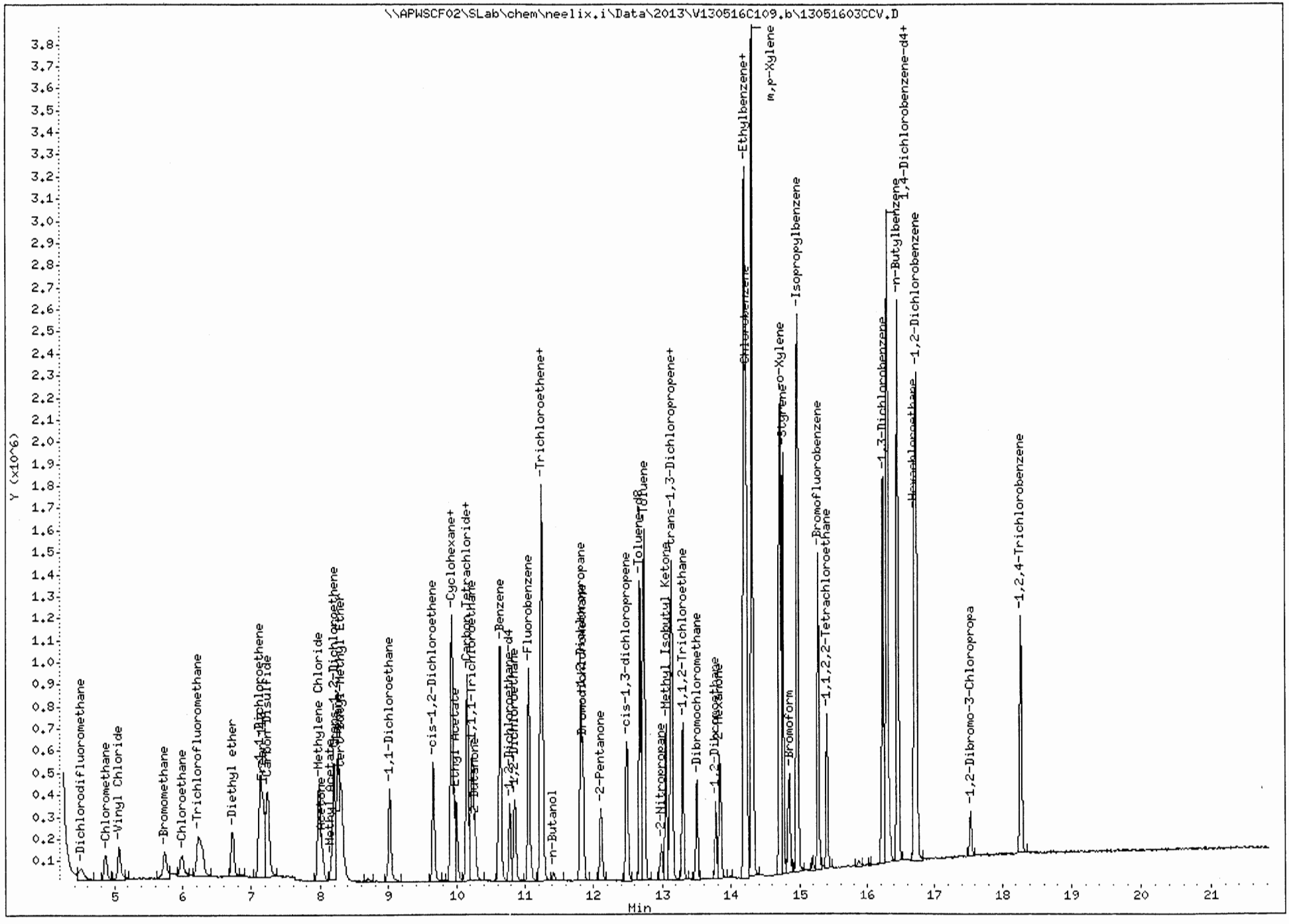
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)
	33 Carbon Tetrachloride	117	10.151	10.151	(0.918)	462856	100.800	114.03
	34 Tetrahydrofuran	72	10.151	10.140	(0.918)	32831	100.800	103.78
	37 1,1,1-Trichloroethane	97	10.232	10.222	(0.925)	533208	100.800	113.01
	38 2-Butanone	43	10.272	10.272	(0.929)	236810	252.000	275.03
	41 Benzene	78	10.637	10.627	(0.962)	1305981	100.800	104.29
$	43 1,2-Dichloroethane-d4	102	10.778	10.779	(0.974)	66557	100.000	95.998
	44 1,2-Dichloroethane	62	10.849	10.849	(0.981)	355598	100.800	110.92
*	46 Fluorobenzene	96	11.062	11.052	(1.000)	1097867	100.000	
	47 Trichloroethene	95	11.234	11.234	(1.016)	350811	100.800	116.76
	48 Methylcyclohexane	83	11.254	11.244	(1.017)	658525	100.800	115.52
	49 n-Butanol	56	11.426	11.417	(1.033)	24842	520.000	511.83(a)
	50 1,2-Dichloropropane	63	11.811	11.812	(1.068)	325265	100.800	112.53
	51 Bromodichloromethane	83	11.842	11.832	(1.070)	421067	100.800	115.94
	53 2-Pentanone	86	12.105	12.105	(1.094)	87317	252.000	266.60
	56 cis-1,3-dichloropropene	75	12.480	12.480	(0.879)	474154	100.800	110.44
$	57 Toluene-d8	98	12.672	12.672	(0.892)	1103942	100.000	96.297
	59 Toluene	92	12.733	12.733	(0.897)	868709	100.800	107.90
	64 2-Nitropropane	41	12.986	12.976	(0.914)	119518	252.000	264.59
	60 Methyl Isobutyl Ketone	43	13.057	13.047	(0.919)	484250	252.000	295.12
	61 trans-1,3-Dichloropropene	75	13.118	13.118	(0.924)	501123	100.800	115.74
	62 Tetrachloroethene	164	13.138	13.138	(0.925)	303591	100.800	112.36
	63 1,1,2-Trichloroethane	83	13.300	13.290	(0.937)	238769	100.800	107.77
	66 Dibromochloromethane	129	13.502	13.493	(0.951)	292144	100.800	107.33
	67 1,2-Dibromoethane	107	13.776	13.776	(0.970)	268233	100.800	107.92
	68 2-Hexanone	43	13.837	13.837	(0.974)	364792	252.000	288.05
	70 Ethylbenzene	91	14.191	14.191	(0.999)	1593836	100.800	103.92
*	71 Chlorobenzene-d5	117	14.201	14.201	(1.000)	932945	100.000	
	72 Chlorobenzene	112	14.221	14.222	(1.001)	995209	100.800	102.36
	73 m,p-Xylene	106	14.312	14.303	(1.008)	1349458	201.600	208.02
	75 o-Xylene	106	14.718	14.708	(1.036)	721592	100.800	107.56
	76 Styrene	104	14.758	14.758	(1.039)	1070241	100.800	112.17
	77 Bromoform	173	14.849	14.849	(1.046)	236708	100.800	106.60
	78 Isopropylbenzene	105	14.971	14.971	(1.054)	1768119	100.800	105.20
$	79 Bromofluorobenzene	95	15.274	15.265	(0.937)	558445	100.000	93.217
	80 1,1,2,2-Tetrachloroethane	83	15.396	15.396	(0.945)	432948	100.800	108.05
	92 1,3-Dichlorobenzene	146	16.236	16.227	(0.996)	913320	100.800	107.70
*	93 1,4-Dichlorobenzene-d4	152	16.297	16.287	(1.000)	584098	100.000	
	95 1,4-Dichlorobenzene	146	16.307	16.308	(1.001)	911206	100.800	106.91
	98 n-Butylbenzene	91	16.449	16.449	(1.009)	1608135	100.000	107.93
	100 Hexachloroethane	117	16.702	16.703	(1.510)	336932	100.800	119.12
	97 1,2-Dichlorobenzene	146	16.733	16.733	(1.027)	824423	100.800	106.80
	99 1,2-Dibromo-3-Chloropropane	75	17.533	17.533	(1.076)	67499	100.800	103.15
	101 1,2,4-Trichlorobenzene	180	18.272	18.272	(1.121)	490815	100.800	123.52

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).

Data File: \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130516C109.b\13051603CCV.D

Page 3



Data File: 13051604CCB.D Page 1
Report Date: 11-Jun-2013 16:05

WSCF

Data file : \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130516C109.b\13051604CC
Lab Smp Id: CCB Client Smp ID: CCB
Inj Date : 16-MAY-2013 11:05
Operator : awg Inst ID: neelix.i
Smp Info : CCB
Misc Info : VOA
Comment :
Method : \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130516C109.b\8260S13042
Meth Date : 11-Jun-2013 15:59 sac Quant Type: ISTD
Cal Date : 25-APR-2013 14:40 Cal File: 13042511CAL8.D
Als bottle: 4 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 10Tank.sub
Target Version: 4.14

Concentration Formula: Amt * DF * Uf * 1/(Ws * (100 - M)/100) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Unit correction factor
Ws	0.50000	Weight of sample extracted (g)
M	0.00000	% Moisture (not decanted)
Va	0.00000	Volume of aliquot extract added (uL)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/Kg)
$ 43 1,2-Dichloroethane-d4	102	10.778	10.779	(0.975)	64867	95.3209	190.64
* 46 Fluorobenzene	96	11.052	11.052	(1.000)	1077586	100.000	
$ 57 Toluene-d8	98	12.682	12.672	(0.893)	1074772	95.2236	190.45
59 Toluene	92	12.733	12.733	(0.897)	20575	2.59578	5.192(a)
* 71 Chlorobenzene-d5	117	14.201	14.201	(1.000)	918534	100.000	
76 Styrene	104	14.758	14.758	(1.039)	8118	0.86419	1.728(a)
$ 79 Bromofluorobenzene	95	15.274	15.265	(0.937)	532727	98.3093	196.62
* 93 1,4-Dichlorobenzene-d4	152	16.297	16.287	(1.000)	528339	100.000	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Data File: 13051604CCB.D Page 2
Report Date: 11-Jun-2013 16:05

WSCF

Data file : \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130516C109.b\13051604CC
Lab Smp Id: CCB Client Smp ID: CCB
Inj Date : 16-MAY-2013 11:05
Operator : awg Inst ID: neelix.i
Smp Info : CCB
Misc Info : VOA
Comment :
Method : \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130516C109.b\8260S13042
Meth Date : 11-Jun-2013 15:59 sac Quant Type: ISTD
Cal Date : 25-APR-2013 14:40 Cal File: 13042511CAL8.D
Als bottle: 4 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 10Tank.sub
Target Version: 4.14

Concentration Formula: Amt * DF * Uf * 1/(Ws * (100 - M)/100) * CpndVariable

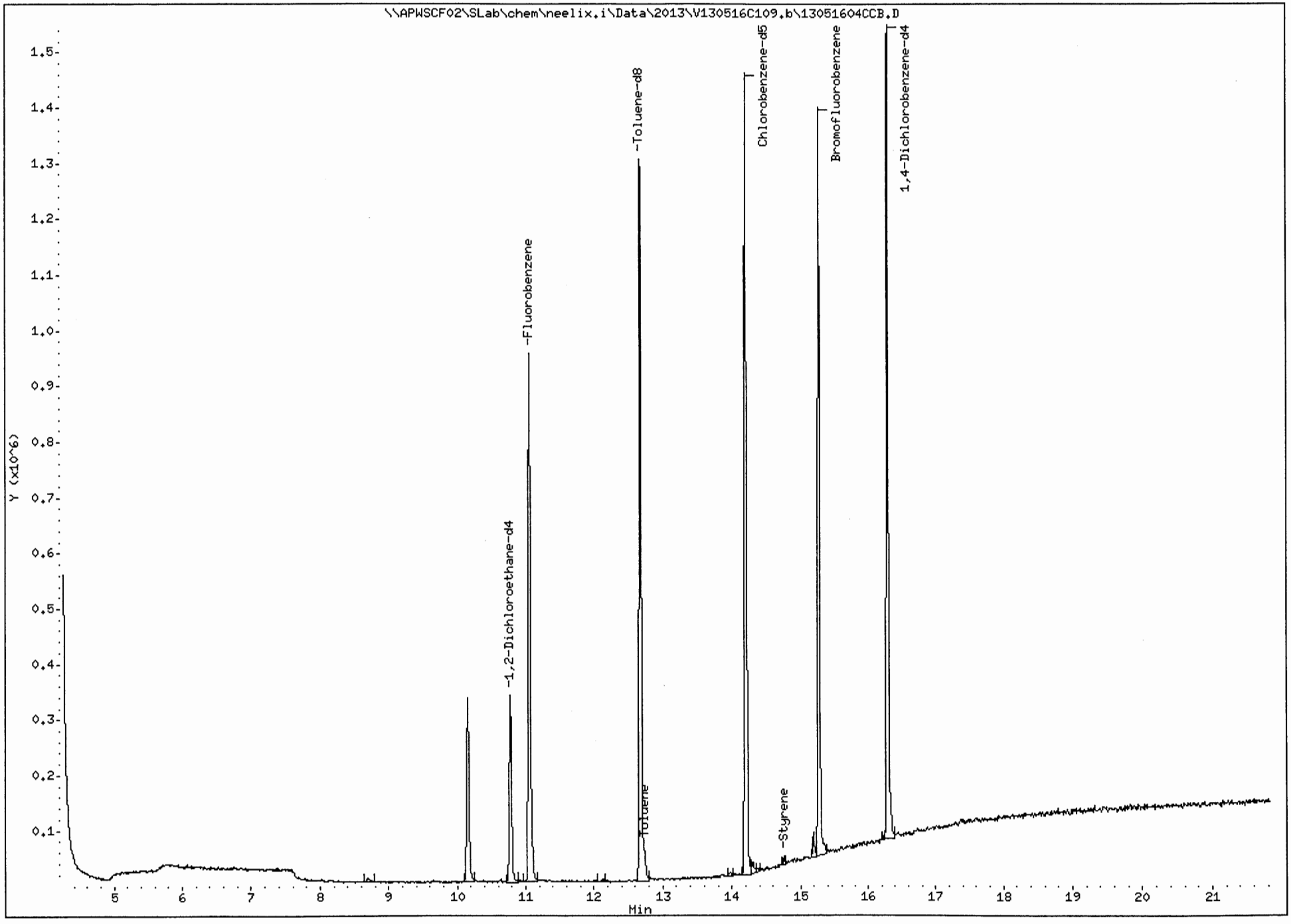
Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Unit correction factor
Ws	0.50000	Weight of sample extracted (g)
M	0.00000	% Moisture (not decanted)
Va	0.00000	Volume of aliquot extract added (uL)
Cpnd Variable		Local Compound Variable

COMPOUND	RT	AREA	AMOUNT
$ 43 1,2-Dichloroethane-d4	10.779	827109	95.321

	CONCENTRATIONS			QUANT		
RT	AREA	ON-COL(ng)	FINAL(ug/Kg)	QUAL	LIBRARY	LIB ENTRY	CPND #
Methane, dibromofluoro-				CAS #: 1868-53-7			
10.151	867908	100.022792	200.04	96	NIST02.L	49673	43

Data File: \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130516C109.b\13051604CCB.D

Page 3



Data File: 130516054239D.D Page 1
Report Date: 11-Jun-2013 16:06

WSCF

Data file : \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130516C109.b\1305160542
Lab Smp Id: S13T004239DUP Client Smp ID: S13T004239DUP
Inj Date : 16-MAY-2013 11:39
Operator : awg Inst ID: neelix.i
Smp Info : S13T004239DUP
Misc Info : VOA
Comment :
Method : \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130516C109.b\8260S13042
Meth Date : 11-Jun-2013 15:59 sac Quant Type: ISTD
Cal Date : 25-APR-2013 14:40 Cal File: 13042511CAL8.D
Als bottle: 10
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 10Tank.sub
Target Version: 4.14

Concentration Formula: Amt * DF * Uf * 1/(Ws * (100 - M)/100) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Unit correction factor
Ws	0.48700	Weight of sample extracted (g)
M	0.00000	% Moisture (not decanted)
Va	0.00000	Volume of aliquot extract added (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/Kg)
	19 Acetone	58	8.024	8.034	(0.726)	3158	13.5368	27.796(a)
$	43 1,2-Dichloroethane-d4	102	10.778	10.779	(0.975)	57953	101.458	208.33
*	46 Fluorobenzene	96	11.052	11.052	(1.000)	904492	100.000	
$	57 Toluene-d8	98	12.672	12.672	(0.892)	890505	94.2847	193.60
	59 Toluene	92	12.733	12.733	(0.897)	9234	1.39218	2.859(a)
*	71 Chlorobenzene-d5	117	14.201	14.201	(1.000)	768632	100.000	
$	79 Bromofluorobenzene	95	15.264	15.265	(0.937)	445501	97.0395	199.26
*	93 1,4-Dichlorobenzene-d4	152	16.297	16.287	(1.000)	447613	100.000	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Data File: 130516054239D.D Page 2
Report Date: 11-Jun-2013 16:06

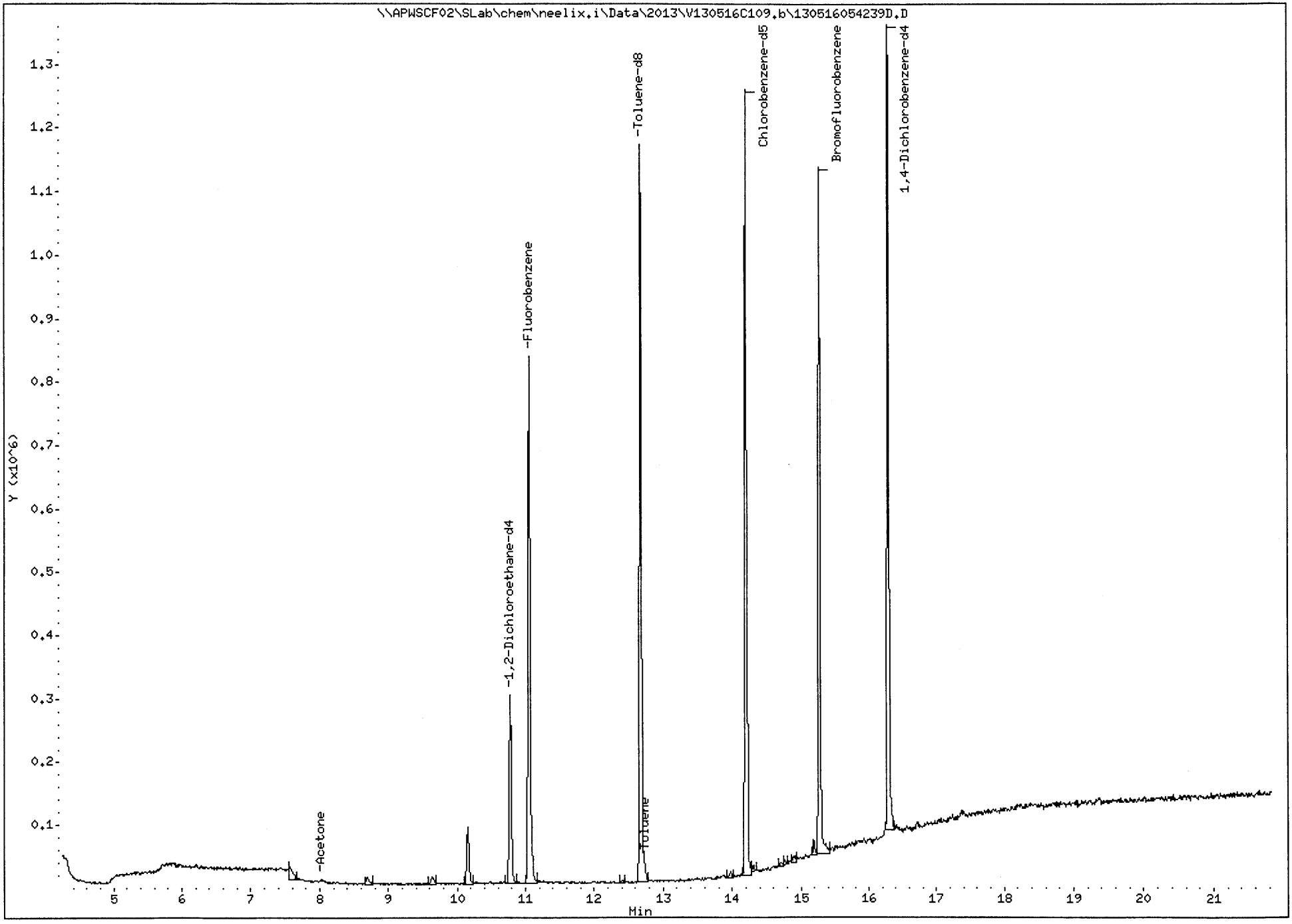
WSCF

Data file : \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130516C109.b\1305160542
Lab Smp Id: S13T004239DUP Client Smp ID: S13T004239DUP
Inj Date : 16-MAY-2013 11:39
Operator : awg Inst ID: neelix.i
Smp Info : S13T004239DUP
Misc Info : VOA
Comment :
Method : \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130516C109.b\8260S13042
Meth Date : 11-Jun-2013 15:59 sac Quant Type: ISTD
Cal Date : 25-APR-2013 14:40 Cal File: 13042511CAL8.D
Als bottle: 10
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 10Tank.sub
Target Version: 4.14

- NO TENTATIVELY IDENTIFIED COMPOUNDS -

Data File: \\APWSCF02\SLab\chem\neelix.i\Data\2013\W130516C109.b\130516054239D.D

Page 3



```
   Sequence Name: C:\msdchem\1\sequence\130515.S
         Comment: C109
        Operator: awg
       Data Path: C:\MSDCHEM\1\DATA\130515\
Instrument Control  Pre-Seq Cmd:
Data Analysis       Pre-Seq Cmd:

Instrument Control Post-Seq Cmd:
Data Analysis      Post-Seq Cmd:

   Method Sections To Run      On A Barcode Mismatch
     (X) Full Method             (X) Inject Anyway
     ( ) Reprocessing Only       ( ) Don't Inject

   ------------------------------------------------------------------------
   Line                    Sample Name/Misc Info
 1)   Sample         1   13051501 BFB       PRE
 2)   BFB            2   13051502 BFB       BFB
 3)   Sample         3   13051503 8260      CCV
 4)   Sample         4   13051504 8260      CCV
 5)   Sample         5   13051505 8260      CCB
 6)   Sample         6   13051506 8260      LCS
 7)   Sample        10   13051507 8260      S13004239
 8)   Sample        11   13051508 8260      S13004239 DUP
 9)   Sample        12   13051509 8260      S13004239 MS
10)   Sample        13   13051510 8260      S13004239 MSD
11)   Sample        14   13051511 8260      S13004266
12)   Sample        15   13051512 8260      S13004293
```

add "T" to all sample ID's

FE 6/10/13

```
   Last Modified: Mon Jan 28 09:16:37 2013                Page: 1
```

```
   Sequence Name: C:\msdchem\1\sequence\130515.S
         Comment: C109
        Operator: awg
       Data Path: C:\MSDCHEM\1\DATA\130515\
Instrument Control  Pre-Seq Cmd:
Data Analysis       Pre-Seq Cmd:

Instrument Control Post-Seq Cmd:
Data Analysis      Post-Seq Cmd:

   Method Sections To Run      On A Barcode Mismatch
    (X) Full Method              (X) Inject Anyway
    ( ) Reprocessing Only        ( ) Don't Inject

   ------------------------------------------------------------------------
   Line                    Sample Name/Misc Info
   ------------------------------------------------------------------------
   1    Type: Sample       PRE
        Vial: 1
        Method   : BFB.M
        Datafile: 13051501.D
        Bar Code:                    Samp Amt: 0          Multiplr: 0
        Area% Report     :per Method       Lib. Search Rep :per Method
        Quant Report     :per Method       Post-Quant Macro:per Method
        CR Database      :per Method       CR Spreadsheet  :per Method
   ------------------------------------------------------------------------
   2    Type: BFB          BFB
        Vial: 2            Neelix
        Method   : BFB.M
        Datafile: 13051502.D
        Bar Code:                    Samp Amt: 0          Multiplr: 0
        Area% Report     :per Method       Lib. Search Rep :per Method
        Quant Report     :per Method       Post-Quant Macro:per Method
        CR Database      :per Method       CR Spreadsheet  :per Method
   ------------------------------------------------------------------------
   3    Type: Sample       CCV
        Vial: 3
        Method   : 8260.M
        Datafile: 13051503.D
        Bar Code:                    Samp Amt: 0          Multiplr: 0
        Area% Report     :per Method       Lib. Search Rep :per Method
        Quant Report     :per Method       Post-Quant Macro:per Method
        CR Database      :per Method       CR Spreadsheet  :per Method
   ------------------------------------------------------------------------
   4    Type: Sample       CCV
        Vial: 4
        Method   : 8260.M
        Datafile: 13051504.D
        Bar Code:                    Samp Amt: 0          Multiplr: 0
        Area% Report     :per Method       Lib. Search Rep :per Method
        Quant Report     :per Method       Post-Quant Macro:per Method
        CR Database      :per Method       CR Spreadsheet  :per Method
   ------------------------------------------------------------------------
   5    Type: Sample       CCB
        Vial: 5
        Method   : 8260.M
        Datafile: 13051505.D
        Bar Code:                    Samp Amt: 0          Multiplr: 0
        Area% Report     :per Method       Lib. Search Rep :per Method
        Quant Report     :per Method       Post-Quant Macro:per Method
        CR Database      :per Method       CR Spreadsheet  :per Method
   ------------------------------------------------------------------------
   6    Type: Sample       LCS
        Vial: 6
        Method   : 8260.M
        Datafile: 13051506.D
        Bar Code:                    Samp Amt: 0          Multiplr: 0
        Area% Report     :per Method       Lib. Search Rep :per Method
        Quant Report     :per Method       Post-Quant Macro:per Method
        CR Database      :per Method       CR Spreadsheet  :per Method
   ------------------------------------------------------------------------
   7    Type: Sample       S13004239

   Sequence Last Modified  Mon Jan 28 09:16:37 2013        Page: 1
```

```
    Vial: 10          S13004239, .561g
    Method  : 8260.M
    Datafile: 13051507.D
    Bar Code:                    Samp Amt: 0          Multiplr: 0
    Area% Report    :per Method       Lib. Search Rep :per Method
    Quant Report    :per Method       Post-Quant Macro:per Method
    CR Database     :per Method       CR Spreadsheet  :per Method
-------------------------------------------------------------------------
8   Type: Sample      S13004239 DUP
    Vial: 11          S13004239 DUP, .511g
    Method  : 8260.M
    Datafile: 13051508.D
    Bar Code:                    Samp Amt: 0          Multiplr: 0
    Area% Report    :per Method       Lib. Search Rep :per Method
    Quant Report    :per Method       Post-Quant Macro:per Method
    CR Database     :per Method       CR Spreadsheet  :per Method
-------------------------------------------------------------------------
9   Type: Sample      S13004239 MS
    Vial: 12          S13004239 MS, .492g
    Method  : 8260.M
    Datafile: 13051509.D
    Bar Code:                    Samp Amt: 0          Multiplr: 0
    Area% Report    :per Method       Lib. Search Rep :per Method
    Quant Report    :per Method       Post-Quant Macro:per Method
    CR Database     :per Method       CR Spreadsheet  :per Method
-------------------------------------------------------------------------
10  Type: Sample      S13004239 MSD
    Vial: 13          S13004239 MSD, .525g
    Method  : 8260.M
    Datafile: 13051510.D
    Bar Code:                    Samp Amt: 0          Multiplr: 0
    Area% Report    :per Method       Lib. Search Rep :per Method
    Quant Report    :per Method       Post-Quant Macro:per Method
    CR Database     :per Method       CR Spreadsheet  :per Method
-------------------------------------------------------------------------
11  Type: Sample      S13004266
    Vial: 14          S13004266, .537g
    Method  : 8260.M
    Datafile: 13051511.D
    Bar Code:                    Samp Amt: 0          Multiplr: 0
    Area% Report    :per Method       Lib. Search Rep :per Method
    Quant Report    :per Method       Post-Quant Macro:per Method
    CR Database     :per Method       CR Spreadsheet  :per Method
-------------------------------------------------------------------------
12  Type: Sample      S13004293
    Vial: 15          S13004293, .525g
    Method  : 8260.M
    Datafile: 13051512.D
    Bar Code:                    Samp Amt: 0          Multiplr: 0
    Area% Report    :per Method       Lib. Search Rep :per Method
    Quant Report    :per Method       Post-Quant Macro:per Method
    CR Database     :per Method       CR Spreadsheet  :per Method
-------------------------------------------------------------------------
```

Sequence Log 2013 May 16 Complete

Instrument Name: Neelix
Sequence File: C:\msdchem\1\sequence\130516.S
Comment:
Operator: awg
Data Path: C:\MSDCHEM\1\DATA\130516\
Method Path: C:\MSDCHEM\1\METHODS\

Line	Type	Vial	DataFile	Method	Sample Name
1)	Sample	1	13051601	BFB	PRE
2)	BFB	2	13051602	BFB	BFB
3)	Sample	3	13051603	8260	CCV
4)	Sample	4	13051604	8260	CCB
5)	Sample	10	13051605	8260	S13T004239DUP

Sequence completed Thu May 16 12:00:57 2013

C:\MSDCHEM\1\DATA\130516\ Quality Log 2013 May 16 1049.LOG
C:\MSDCHEM\1\DATA\130516\Sequence Log 2013 May 16 1049.LOG

SAMPLE INFORMATION SUMMARY

BATCH: \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130515C109.b

Data File	Injection Date	Sample Type	Dil Factor	Inst ID	Method	Method Batch
13051502BFB.D	15-MAY-2013 09:42	BFB	1.00	neelix	BFBCLP.m	V130515C109.b
13051503CCVx.D	15-MAY-2013 10:13	Continuing Cal	1.00	neelix	8260S130425.m	V130515C109.b
13051504CCV.D	15-MAY-2013 10:57	Continuing Cal	1.00	neelix	8260S130425.m	V130515C109.b
13051505CCB.D	15-MAY-2013 11:44	BLANK	1.00	neelix	8260S130425.m	V130515C109.b
13051506LCS.D	15-MAY-2013 12:15	LCS	1.00	neelix	8260S130425.m	V130515C109.b
130515074239.D	15-MAY-2013 15:13	Unknown	1.00	neelix	8260S130425.m	V130515C109.b
130515084239Dx.D	15-MAY-2013 15:45	Unknown	1.00	neelix	8260S130425.m	V130515C109.b
13051509239MS.D	15-MAY-2013 16:16	MS	1.00	neelix	8260S130425.m	V130515C109.b
13051510239MSD.D	15-MAY-2013 16:47	MSD	1.00	neelix	8260S130425.m	V130515C109.b
130515114266.D	15-MAY-2013 17:18	Unknown	1.00	neelix	8260S130425.m	V130515C109.b
130515124293.D	15-MAY-2013 17:49	Unknown	1.00	neelix	8260S130425.m	V130515C109.b

Data File	Matrix	Fraction	Lab Sample ID	Lab Prep Batch	Client Sample ID	Client Sample Group
13051502BFB.D	LIQUID	VOA	BFB	130515n	BFB	V130515C109
13051503CCVx.D	LIQUID	VOA	CCV	130515n	CCV	V1300515C109
13051504CCV.D	LIQUID	VOA	CCV	130515n	CCV	V130515C109
13051505CCB.D	SOLID	VOA	CCB	130515n	CCB	V130515C109
13051506LCS.D	SOLID	VOA	LCS	130515n	LCS	V130515C109
130515074239.D	SOLID	VOA	S13T004239	130515n	S13T004239	V130515C109
130515084239Dx.D	SOLID	VOA	S13004239DUP	130515n	S13004239DUP	V130515C109
13051509239MS.D	SOLID	VOA	S13T004239MS	130515n	S13T004239MS	V130515C109
13051510239MSD.D	SOLID	VOA	S13T004239MSD	130515n	S13T004239MSD	V130515C109
130515114266.D	SOLID	VOA	S13T004266	130515n	S13T004266	V130515C109
130515124293.D	SOLID	VOA	S13T004293	130515n	S13T004293	V130515C109

Data File	Compound Sublist	Spike List File	Sample Ref #	QC Group Ref #	Init Cal Ref #	Batch Ref #
13051502BFB.D	all.sub		5400668	5400669	314	46000005
13051503CCVx.D	10Tank.sub	ICVserdil.spk	3100709	3100710	5400516	16025
13051504CCV.D	10Tank.sub	ICVserdil.spk	3100715	5400669	5400516	16025
13051505CCB.D	10Tank.sub	FullSolLCS.spk	3100722	5400669	5400516	16025
13051506LCS.D	10Tank.sub	FullSolLCS.spk	3100730	5400775	5400516	16025
130515074239.D	10Tank.sub	ICVserdil.spk	5400660	5400669	5400516	16025
130515084239Dx.D	10Tank.sub	ICVserdil.spk	5400773	5400669	5400516	16025
13051509239MS.D	10Tank.sub	FullTKSolMS.spk	5400662	5400775	5400516	16025
13051510239MSD.D	10Tank.sub	FullTKSolMS.spk	5400663	5400775	5400516	16025
130515114266.D	10Tank.sub	ICVserdil.spk	5400664	5400669	5400516	16025
130515124293.D	10Tank.sub	ICVserdil.spk	5400665	5400669	5400516	16025

Page 1

SAMPLE INFORMATION SUMMARY

BATCH: \\APWSCF02\SLab\chem\neelix.i\Data\2013\V130516C109.b

Data File	Injection Date	Sample Type	Dil Factor	Inst ID	Method	Method Batch
13051602BFB.D	16-MAY-2013 09:49	BFB	1.00	neelix	BFBCLP.m	V130516C109.b
13051603CCV.D	16-MAY-2013 10:20	Continuing Cal	1.00	neelix	8260S130425.m	V130516C109.b
13051604CCB.D	16-MAY-2013 11:05	BLANK	1.00	neelix	8260S130425.m	V130516C109.b
130516054239D.D	16-MAY-2013 11:39	Unknown	1.00	neelix	8260S130425.m	V130516C109.b

Data File	Matrix	Fraction	Lab Sample ID	Lab Prep Batch	Client Sample ID	Client Sample Group
13051602BFB.D	LIQUID	VOA	BFB	130516n	BFB	V130516C109
13051603CCV.D	SOLID	VOA	CCV	130516n	CCV	V130516C109
13051604CCB.D	SOLID	VOA	CCB	130516n	CCB	V130516C109
130516054239D.D	SOLID	VOA	S13T004239DUP	130516n	S13T004239DUP	V130516C109

Data File	Compound Sublist	Spike List File	Sample Ref #	QC Group Ref #	Init Cal Ref #	Batch Ref #
13051602BFB.D	all.sub		5400779	5400781	314	46000005
13051603CCV.D	10Tank.sub	ICVserdil.spk	5400780	5400781	5400516	16025
13051604CCB.D	10Tank.sub	FullSolLCS.spk	5400675	5400781	5400516	16025
130516054239D.D	10Tank.sub	ICVserdil.spk	5400683	5400781	5400516	16025

DISTRIBUTION SHEET

To	From	Page 1 Of 1
J. G. Reynolds	J. A. Osborn	Date
Project Title/Work Order		EDT No. N/A
Final Report for Tank 241-C-109 Waste Solid Samples in Support of Tank Closure		ECN No. N/A

Name	MSIN	Text With All Attach.	Text Only	Attach./ Appendix Only	EDT/ECN Only
J. A. Osborn		E			
M. P. Bergeron		E			
S. J. Eberlein		E			
J. G. Field		E			
L. A. Fort		E			
D. W. Hendrickson		E			
D. M. Nguyen		E			
J. G. Reynolds		E			
L. M. Sasaki		E			
A. M. Templeton		E			
W. B. Barton		E			
D. K. Smith		E			
R. J. Koll		E			
J. Y. Houchin		E			
J. M. Johnson		E			
L. A. Diaz		E			
DOE Reading Room		H			