Microbac

Laboratory Report Number: L13111086

Mark Lyon
Environmental Waste Solutions
2440 Louisiana Blvd
Albuquerque, NM 87110

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Stephanie Mossburg – Team Chemist/Data Specialist
(740) 373-4071
Stephanie.Mossburg@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on December 03 2013

David Vandenberg – Managing Director

State of Origin: NM
Accrediting Authority: N/A ID:N/A
QAPP: DOD Ver 4.1 without flagging

Microbac

Lab Report #: L13111086
Lab Project #: 3005.011
Project Name: White Sands MR
Lab Contact: Stephanie Mossburg

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

The following discrepancies were noted:

Discrepancy	Resolution
The sample(s) were out of the acceptable pH range: SMW1-113-1 For Metals and CN, SMW4-1113-1 for Metals and CN. RS Added 5ml HNO3 Lot#: RGT 28681 11/18/13 @ 1620. PH did adjust. CLS Added 3ml NAOH Lot#: 2211493 11/18/13 @ 1620. PH did adjust. CLS	Please adjust.

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00110908	H	0.0		1001846922260004575000803738596986	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	Were correct preservatives used? (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	No
12	Were VOA samples free of headspace (less than 6mm)?	NA

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www.microbac.com

Microbac

Lab Report #: L13111086
Lab Project #: 3005.011
Project Name: White Sands MR
Lab Contact: Stephanie Mossburg

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
SMW 1-1113-1	L13111086-01	11/15/2013 10:00	11/16/2013 09:57
SMW 4-1113-1	L13111086-02	11/15/2013 11:50	11/16/2013 09:57

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Microbac REPORT L13111086
PREPARED FOR Environmental Waste Solutions
WORK ID:

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1.0 Summary Data

1.1 Narratives

Login Number: L13111086
Department: Conventionals
Analyst: Tammy Morris

METHOD

Analysis SW846 9040C,9045D/EPA 150.1/SM4500-H B (pH)

HOLDING TIMES

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Matrix Spikes: All acceptance criteria were met.

Duplicates: All acceptance criteria were met.

SAMPLES

Samples: All acceptance criteria were met.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Microbac Laboratories Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Narrative ID: 75486
Approved By: Deanna Hesson

Login Number: L13111086
Department: Metals
Analyst: Ji Hu

METHOD

Preparation: SW-846 3015

Analysis: SW-846 6010

HOLDING TIMES

Sample Preparation: All holding times were met.

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

CALIBRATION

Initial Calibration: All acceptance criteria were met.

Alternate Source Standards: All acceptance criteria were met.

Interference Check Standards: All acceptance criteria were met.

Continuing Calibration Verification: All acceptance criteria were met.

Continuing Calibration Blank: All acceptance criteria were met.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Serial Dilution/Post Digestion Spikes: WG454446 - All acceptance criteria were met.

Matrix Spikes: All acceptance criteria were met.

SAMPLES

Samples: WG454399 - Client samples 01 and 02 required dilution analyses in order to obtain results for calcium within the calibration range.

Narrative ID: 75443
Approved By: Sheri Pfalzgraf

Login Number: L13111086
Department: Metals
Analyst: Ji Hu

METHOD

Preparation: SW-846 3015

Analysis: SW-846 6020

HOLDING TIMES

Sample Preparation: All holding times were met.

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

CALIBRATION

Initial Calibration: All acceptance criteria were met.

Alternate Source Standards: All acceptance criteria were met.

Interference Check Standards: All acceptance criteria were met.

Continuing Calibration: All acceptance criteria were met.

Continuing Calibration Blank: All acceptance criteria were met.

Low Level Check: All acceptance criteria were met.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Serial Dilution/Post Digestion Spikes: WG453994 - All acceptance criteria were met.

Matrix Spikes: All acceptance criteria were met.

SAMPLES

Samples: All acceptance criteria were met.

Narrative ID: 75147
Approved By: Sheri Pfalzgraf

Login Number: L13111086
Department: Metals - AA
Analyst: Pierce Morris

METHOD

Preparation: SW-846 7470

Analysis: SW-846 7470

HOLDING TIMES

Sample Preparation: All holding times were met.

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

CALIBRATION

Initial Calibration: All acceptance criteria were met.

Alternate Source Standards: All acceptance criteria were met.

Interference Check Standards: All acceptance criteria were met.

Continuing Calibration Verification: All acceptance criteria were met.

Continuing Calibration Blank: All acceptance criteria were met.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Serial Dilution/Post Digestion Spikes: WG453839 - All acceptance criteria were met.

Matrix Spikes: All acceptance criteria were met.

SAMPLES

Samples: All acceptance criteria were met.

Narrative ID: 75093
Approved By: Sheri Pfalzgraf

Login Number: L13111086
Department: General Chromatography
Analyst: Jeremy Kinney

METHOD

Analysis EPA300.0/SW846 9056

HOLDING TIMES

Sample Analysis: Hold times for NO2 and NO3 are 48 hours and the hold times for F, Cl, Br, and SO4 are 28 days. The hold time forms calculate the hold time based on 48 hours. All samples were analyzed in hold.

CALIBRATION

Initial Calibration: All acceptance criteria were met.

Alternate Source Standards: All acceptance criteria were met.

Continuing Calibration: All acceptance criteria were met.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Matrix Spikes: The client did not specify an MS/MSD for this sample delivery group. The laboratory selected sample 01 for MS/MSD analysis and recoveries out of range were observed for Fluoride, Sulfate. Please see the applicable QC report for a detailed presentation of the failures.

SAMPLES

Samples: All acceptance criteria were met.

MANUAL INTEGRATION: No manual integration required.

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verified by the following signature.

Narrative ID: 74995
Approved By: Eric Lawson

Login Number: L13111086
Department: Conventionals
Analyst: Brice Fenton

METHOD

Analysis EPA 310.2 (Alkalinity)

HOLDING TIMES

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Matrix Spikes: All acceptance criteria were met.

Duplicates: All acceptance criteria were met.

SAMPLES

Samples: All acceptance criteria were met.

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Narrative ID: 75484
Approved By: Deanna Hesson

Login Number: L13111086
Department: Conventionals
Analyst:

METHOD

Analysis SW846 9014/9010C/SM4500-CN-C,E-20th (Cyanide)

HOLDING TIMES

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: Cyanide-Ammenable is the difference between the total cyanide and the treated cyanide. The LCS is analyzed to show that all of the cyanide is ammenable (the treated portion is ND). The LCS forms cannot calculate cyanide ammenable. The LCS is acceptable.

Sample #	Analyte	Date	Result	Lower	Upper	Type
WG453588-02	Cyanide	2013-11-21 13:30:04	2.00	90	110	Recovery

Matrix Spikes: All acceptance criteria were met.

Duplicates: All acceptance criteria were met.

SAMPLES

Samples: All acceptance criteria were met.

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Narrative ID: 75109

Approved By: Deanna Hesson

Deanna Hesson

Login Number: L13111086
Department: Conventionals
Analyst: Deanna Hesson

METHOD

Analysis EPA 120.1/SM2510 B (Conductivity)

HOLDING TIMES

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Duplicates: All acceptance criteria were met.

Matrix Spikes: All acceptance criteria were met.

SAMPLES

Samples: All acceptance criteria were met.

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Narrative ID: 75485
Approved By: Deanna Hesson

Login Number: L13111086
Department: Conventionals
Analyst: Brice Fenton

METHOD

Analysis EPA 350.1/SM4500-NH3 B(NH3)

HOLDING TIMES

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Duplicates: All acceptance criteria were met.

Matrix Spikes: All acceptance criteria were met.

SAMPLES

Samples: All acceptance criteria were met.

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Narrative ID: 75487
Approved By: Deanna Hesson

Login Number: L13111086
Department: Conventionals
Analyst: Brice Fenton

METHOD

Analysis EPA 353.2/SM4500-NO3 F (Nitrate)

HOLDING TIMES

Sample Analysis: The instrument used for the analysis of nitrate only analyzes for nitrate-nitrite (NO3NO2) which is the amount of total nitrate (NO3) and nitrite (NO2) combined. The NO3 concentration is determined by analyzing for NO3NO2 and NO2 and calculating NO3 by the difference. An unpreserved bottle only has a 48 hour hold time for NO3 and NO2 separately. However if the bottle is preserved with sulfuric acid, the hold time for NO3NO2 is 28 days. The NO2 was analyzed within 48 hours. The NO3NO2 was analyzed from a preserved container within 28 days..

PREPARATION

Sample preparation proceeded normally.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Matrix Spikes: All acceptance criteria were met.

Duplicates: All acceptance criteria were met.

SAMPLES

Samples: All acceptance criteria were met.

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Narrative ID: 75488
Approved By: Deanna Hesson

Dannat/Esson

Login Number: L13111086
Department: Conventionals
Analyst: Tammy Morris

METHOD

Analysis EPA 365.2/SM4500-P E (Orthophosphate)

HOLDING TIMES

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Matrix Spikes: All acceptance criteria were met.

Duplicates: All acceptance criteria were met.

SAMPLES

Samples: All acceptance criteria were met.

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Narrative ID: 75489
Approved By: Deanna Hesson

Login Number: L13111086
Department: Conventionals
Analyst: April Greene

METHOD

Analysis EPA 160.1/SM2540 C(Total Dissolved Solids)

HOLDING TIMES

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: Recoveries out of range were observed for the following analytes: Total Dissolved Solids. Please see the applicable QC report for a detailed presentation of the failures.

Sample #	Analyte	Date	Result	Lower	Upper	Type
WG453716-03	Total Dissolved Solids	2013-11-21 07:42:03	13.9		10	RPD

Duplicates: All acceptance criteria were met.

Matrix Spikes: All acceptance criteria were met.

SAMPLES

Samples: All acceptance criteria were met.

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Narrative ID: 75492
Approved By: Deanna Hesson

Dannadsson

Login Number: L13111086
Department: Conventionals
Analyst: Deanna Hesson

METHOD

Analysis Water: EPA 415.1/SM5310C/SW846 9060 (Total Organic Carbon)
Soil: Lloyd-Khan Methodology

HOLDING TIMES

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Duplicates: All acceptance criteria were met.

Matrix Spikes: All acceptance criteria were met.

SAMPLES

Samples: All acceptance criteria were met.

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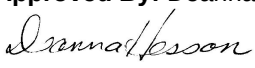
Narrative ID: 75490
Approved By: Deanna Hesson



Login Number: L13111086
Department: Conventionals
Analyst: April Greene

METHOD

Analysis EPA 160.2/SM2540 D (Total Suspended Solids)

HOLDING TIMES

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Duplicates: All acceptance criteria were met.

Matrix Spikes: All acceptance criteria were met.

SAMPLES

Samples: All acceptance criteria were met.

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Narrative ID: 75491
Approved By: Deanna Hesson

1.2 Certificate of Analysis

Microbac

Lab Report #: L13111086
Lab Project #: 3005.011
Project Name: White Sands MR
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L13111086-01	**PrePrep Method:**	N/A	**Instrument:**	PE-ICP2
Client ID:	SMW 1-1113-1	**Prep Method:**	3015	**Prep Date:**	11/25/2013 14:18
Matrix:	Water	**Analytical Method:**	6010B	**Cal Date:**	11/26/2013 11:28
Workgroup #:	WG454446	**Analyst:**	JYH	**Run Date:**	11/26/2013 16:50
Collect Date:	11/15/2013 10:00	**Dilution:**	1	**File ID:**	P2.112613.165034
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Beryllium, Total	7440-41-7		U	0.00200	0.00100
Magnesium, Total	7439-95-4	8.23		0.500	0.250
Potassium, Total	7440-09-7	1.95		1.00	0.500
Sodium, Total	7440-23-5	24.9		0.500	0.250
Tin, Total	7440-31-5		U	0.500	0.250
Vanadium, Total	7440-62-2		U	0.0100	0.00500
Zinc, Total	7440-66-6	0.0238		0.0200	0.0100

U	Analyte was not detected. The concentration is below the reported LOD.

Certificate of Analysis

Sample #:	L13111086-01	**PrePrep Method:**	N/A	**Instrument:**	PE-ICP2
Client ID:	SMW 1-1113-1	**Prep Method:**	3015	**Prep Date:**	11/25/2013 14:18
Matrix:	Water	**Analytical Method:**	6010B	**Cal Date:**	11/27/2013 13:58
Workgroup #:	WG454446	**Analyst:**	JYH	**Run Date:**	11/27/2013 16:31
Collect Date:	11/15/2013 10:00	**Dilution:**	10	**File ID:**	P2.112713.163135
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Calcium, Total	7440-70-2	29.6		5.00	2.50

U	Analyte was not detected. The concentration is below the reported LOD.

Certificate of Analysis

Sample #:	L13111086-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	SMW 1-1113-1	**Prep Method:**	3015	**Prep Date:**	11/22/2013 10:20
Matrix:	Water	**Analytical Method:**	6020	**Cal Date:**	11/22/2013 09:47
Workgroup #:	WG453994	**Analyst:**	JYH	**Run Date:**	11/22/2013 15:10
Collect Date:	11/15/2013 10:00	**Dilution:**	1	**File ID:**	NI.112213.151013
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Antimony, Total	7440-36-0		U	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00282		0.00100	0.000500
Barium, Total	7440-39-3	0.0704		0.00300	0.00150
Cadmium, Total	7440-43-9		U	0.000600	0.000300
Chromium, Total	7440-47-3		U	0.00200	0.00100
Cobalt, Total	7440-48-4		U	0.00100	0.000500
Copper, Total	7440-50-8		U	0.00200	0.00100
Lead, Total	7439-92-1		U	0.00100	0.000500
Manganese, Total	7439-96-5	0.00467		0.00200	0.00100
Nickel, Total	7440-02-0		U	0.00400	0.00200
Selenium, Total	7782-49-2	0.0113		0.00100	0.000500
Silver, Total	7440-22-4		U	0.00100	0.000500
Thallium, Total	7440-28-0		U	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Certificate of Analysis

Sample #:	L13111086-01	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	SMW 1-1113-1	**Prep Method:**	7470A	**Prep Date:**	11/21/2013 10:05
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	11/22/2013 09:05
Workgroup #:	WG453839	**Analyst:**	PDM	**Run Date:**	11/22/2013 09:28
Collect Date:	11/15/2013 10:00	**Dilution:**	1	**File ID:**	M7.112213.092821
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Mercury	7439-97-6		U	0.000200	0.000100
U	Analyte was not detected. The concentration is below the reported LOD.				

Certificate of Analysis

Sample #:	L13111086-01	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	SMW 1-1113-1	**Prep Method:**	300.0	**Prep Date:**	11/21/2013 09:20
Matrix:	Water	**Analytical Method:**	300.0	**Cal Date:**	11/06/2013 10:26
Workgroup #:	WG453893	**Analyst:**	JBK	**Run Date:**	11/21/2013 13:55
Collect Date:	11/15/2013 10:00	**Dilution:**	1	**File ID:**	I1_112113-19
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Chloride	16887-00-6	18.5		0.200	0.100
Fluoride	16984-48-8	0.293		0.200	0.100
Sulfate	14808-79-8	62.7		1.00	0.500

Sample #:	L13111086-01	**PrePrep Method:**	N/A	**Instrument:**	ORION-4STAR
Client ID:	SMW 1-1113-1	**Prep Method:**	9040C	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	9040C	**Cal Date:**	
Workgroup #:	WG453150	**Analyst:**	TMM	**Run Date:**	11/16/2013 13:08
Collect Date:	11/15/2013 10:00	**Dilution:**	1	**File ID:**	OS13112114431301
Sample Tag:		**Units:**	UNITS		

Analyte	CAS #	Result	Qual	LOQ	LOD
Corrosivity pH	10-29-7	6.62		0.000	0.000
Temperature At Determination (C)		18.7		0.000	0.000

Sample #:	L13111086-01	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	SMW 1-1113-1	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	11/25/2013 10:41
Workgroup #:	WG454148	**Analyst:**	BAF	**Run Date:**	11/25/2013 10:48
Collect Date:	11/15/2013 10:00	**Dilution:**	1	**File ID:**	S2131125002.019
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Alkalinity, Bicarbonate (as CaCO3)	13-00-3	84.9		20.0	10.0

Sample #:	L13111086-01	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	SMW 1-1113-1	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	11/25/2013 10:41
Workgroup #:	WG454148	**Analyst:**	BAF	**Run Date:**	11/25/2013 10:48
Collect Date:	11/15/2013 10:00	**Dilution:**	1	**File ID:**	S2131125002.019
Sample Tag:	01	**Units:**	mg/L		

Certificate of Analysis

Analyte	CAS #	Result	Qual	LOQ	LOD
Alkalinity, Total (as CaCO3)	11-43-8	84.9		20.0	10.0

Sample #:	L13111086-01	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	SMW 1-1113-1	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	11/25/2013 10:41
Workgroup #:	WG454148	**Analyst:**	BAF	**Run Date:**	11/25/2013 10:48
Collect Date:	11/15/2013 10:00	**Dilution:**	1	**File ID:**	S2131125002.019
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Alkalinity, Carbonate (as CaCO3)	13-01-4		U	20.0	10.0

U	Analyte was not detected. The concentration is below the reported LOD.

Certificate of Analysis

Sample #:	L13111086-01	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	SMW 1-1113-1	**Prep Method:**	SM4500-CN-I	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-CN-I	**Cal Date:**	11/21/2013 10:20
Workgroup #:	WG453794	**Analyst:**	DCM	**Run Date:**	11/21/2013 13:10
Collect Date:	11/15/2013 10:00	**Dilution:**	1	**File ID:**	1V.1311211310-16
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Cyanide, Weak/Dissociable	57-12-5		U	0.0100	0.00500

U	Analyte was not detected. The concentration is below the reported LOD.

Certificate of Analysis

Sample #:	L13111086-01	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	SMW 1-1113-1	**Prep Method:**	9014-9010C	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	9014-9010C	**Cal Date:**	11/21/2013 10:20
Workgroup #:	WG453554	**Analyst:**	DCM	**Run Date:**	11/21/2013 11:30
Collect Date:	11/15/2013 10:00	**Dilution:**	1	**File ID:**	1V.1311211130-16
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Cyanide	57-12-5		U	0.0100	0.00500

U	Analyte was not detected. The concentration is below the reported LOD.

Certificate of Analysis

Sample #:	L13111086-01	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	SMW 1-1113-1	**Prep Method:**	SM4500-CN-C,G-1999	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-CN-C,G-1999	**Cal Date:**	11/21/2013 10:20
Workgroup #:	WG453588	**Analyst:**	DCM	**Run Date:**	11/21/2013 13:30
Collect Date:	11/15/2013 10:00	**Dilution:**	1	**File ID:**	1V.1311211330-12
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Cyanide, Amenable to Chlor.	57-12-5		U	0.0100	0.00500

U	Analyte was not detected. The concentration is below the reported LOD.

Certificate of Analysis

Sample #:	L13111086-01	**PrePrep Method:**	N/A	**Instrument:**	TIAMO1
Client ID:	SMW 1-1113-1	**Prep Method:**	120.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	120.1	**Cal Date:**	
Workgroup #:	WG453304	**Analyst:**	DIH	**Run Date:**	11/19/2013 00:52
Collect Date:	11/15/2013 10:00	**Dilution:**	1	**File ID:**	TI.111913.0052CO
Sample Tag:	01	**Units:**	umhos/cm		

Analyte	CAS #	Result	Qual	LOQ	LOD
Conductivity		360		50.0	10.0

Sample #:	L13111086-01	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	SMW 1-1113-1	**Prep Method:**	350.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	350.1	**Cal Date:**	11/26/2013 13:04
Workgroup #:	WG454400	**Analyst:**	BAF	**Run Date:**	11/26/2013 13:23
Collect Date:	11/15/2013 10:00	**Dilution:**	1	**File ID:**	SC131126003.032
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Nitrogen, Ammonia	7664-41-7		U	0.100	0.0500
U	Analyte was not detected. The concentration is below the reported LOD.				

Certificate of Analysis

Sample #:	L13111086-01	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	SMW 1-1113-1	**Prep Method:**	353.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	353.2	**Cal Date:**	11/18/2013 10:58
Workgroup #:	WG453286	**Analyst:**	BAF	**Run Date:**	11/18/2013 17:46
Collect Date:	11/15/2013 10:00	**Dilution:**	4	**File ID:**	SC13112213194201
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Nitrate-Nitrite (as N)		2.86		0.200	0.100

Sample #:	L13111086-01	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	SMW 1-1113-1	**Prep Method:**	SM4500-P-E-1999	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-P-E-1999	**Cal Date:**	10/30/2013 09:00
Workgroup #:	WG453085	**Analyst:**	TMM	**Run Date:**	11/16/2013 13:00
Collect Date:	11/15/2013 10:00	**Dilution:**	1	**File ID:**	1V.1311161300-07
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Orthophosphate	14265-44-2	0.0481	J	0.0500	0.0250
J	Estimated value ; the analyte concentration was less than the LOQ.				

Certificate of Analysis

Sample #:	L13111086-01	**PrePrep Method:**	N/A	**Instrument:**	OVEN
Client ID:	SMW 1-1113-1	**Prep Method:**	160.1/SM2540C	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM2540-C-1997	**Cal Date:**	
Workgroup #:	WG453716	**Analyst:**	ADG	**Run Date:**	11/21/2013 07:42
Collect Date:	11/15/2013 10:00	**Dilution:**	1	**File ID:**	EN.1311210742-16
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Total Dissolved Solids		238		20.0	10.0

Sample #:	L13111086-01	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	SMW 1-1113-1	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/09/2013 14:51
Workgroup #:	WG454385	**Analyst:**	DIH	**Run Date:**	11/26/2013 21:34
Collect Date:	11/15/2013 10:00	**Dilution:**	1	**File ID:**	TC11262013.046
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Total Organic Carbon	TOC	0.775	J	1.00	0.500
J	Estimated value ; the analyte concentration was less than the LOQ.				

Certificate of Analysis

Sample #:	L13111086-01	**PrePrep Method:**	N/A	**Instrument:**	OVEN
Client ID:	SMW 1-1113-1	**Prep Method:**	160.2/SM2540D	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM2540-D-1997	**Cal Date:**	
Workgroup #:	WG453718	**Analyst:**	ADG	**Run Date:**	11/21/2013 07:17
Collect Date:	11/15/2013 10:00	**Dilution:**	1	**File ID:**	EN.1311210717-12
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Total Suspended Solids			U	5.00	2.50

U	Analyte was not detected. The concentration is below the reported LOD.

Certificate of Analysis

Sample #:	L13111086-02	**PrePrep Method:**	N/A	**Instrument:**	PE-ICP2
Client ID:	SMW 4-1113-1	**Prep Method:**	3015	**Prep Date:**	11/25/2013 14:18
Matrix:	Water	**Analytical Method:**	6010B	**Cal Date:**	11/26/2013 11:28
Workgroup #:	WG454446	**Analyst:**	JYH	**Run Date:**	11/26/2013 16:53
Collect Date:	11/15/2013 11:50	**Dilution:**	1	**File ID:**	P2.112613.165337
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Beryllium, Total	7440-41-7		U	0.00200	0.00100
Magnesium, Total	7439-95-4	8.34		0.500	0.250
Potassium, Total	7440-09-7	1.96		1.00	0.500
Sodium, Total	7440-23-5	25.5		0.500	0.250
Tin, Total	7440-31-5		U	0.500	0.250
Vanadium, Total	7440-62-2		U	0.0100	0.00500
Zinc, Total	7440-66-6	0.0274		0.0200	0.0100

U	Analyte was not detected. The concentration is below the reported LOD.

Certificate of Analysis

Sample #:	L13111086-02	**PrePrep Method:**	N/A	**Instrument:**	PE-ICP2
Client ID:	SMW 4-1113-1	**Prep Method:**	3015	**Prep Date:**	11/25/2013 14:18
Matrix:	Water	**Analytical Method:**	6010B	**Cal Date:**	11/27/2013 13:58
Workgroup #:	WG454446	**Analyst:**	JYH	**Run Date:**	11/27/2013 16:35
Collect Date:	11/15/2013 11:50	**Dilution:**	10	**File ID:**	P2.112713.163518
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Calcium, Total	7440-70-2	38.0		5.00	2.50

U	Analyte was not detected. The concentration is below the reported LOD.

Certificate of Analysis

Sample #:	L13111086-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	SMW 4-1113-1	**Prep Method:**	3015	**Prep Date:**	11/22/2013 10:20
Matrix:	Water	**Analytical Method:**	6020	**Cal Date:**	11/22/2013 09:47
Workgroup #:	WG453994	**Analyst:**	JYH	**Run Date:**	11/22/2013 15:13
Collect Date:	11/15/2013 11:50	**Dilution:**	1	**File ID:**	NI.112213.151318
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Antimony, Total	7440-36-0		U	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00106		0.00100	0.000500
Barium, Total	7440-39-3	0.0708		0.00300	0.00150
Cadmium, Total	7440-43-9		U	0.000600	0.000300
Chromium, Total	7440-47-3	0.00620		0.00200	0.00100
Cobalt, Total	7440-48-4		U	0.00100	0.000500
Copper, Total	7440-50-8	0.00233		0.00200	0.00100
Lead, Total	7439-92-1		U	0.00100	0.000500
Manganese, Total	7439-96-5	0.00765		0.00200	0.00100
Nickel, Total	7440-02-0	0.0343		0.00400	0.00200
Selenium, Total	7782-49-2	0.00435		0.00100	0.000500
Silver, Total	7440-22-4		U	0.00100	0.000500
Thallium, Total	7440-28-0		U	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Certificate of Analysis

Sample #:	L13111086-02	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	SMW 4-1113-1	**Prep Method:**	7470A	**Prep Date:**	11/21/2013 10:05
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	11/22/2013 09:05
Workgroup #:	WG453839	**Analyst:**	PDM	**Run Date:**	11/22/2013 09:33
Collect Date:	11/15/2013 11:50	**Dilution:**	1	**File ID:**	M7.112213.093325
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Mercury	7439-97-6		U	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Certificate of Analysis

Sample #:	L13111086-02	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	SMW 4-1113-1	**Prep Method:**	300.0	**Prep Date:**	11/21/2013 09:20
Matrix:	Water	**Analytical Method:**	300.0	**Cal Date:**	11/06/2013 10:26
Workgroup #:	WG453893	**Analyst:**	JBK	**Run Date:**	11/21/2013 15:05
Collect Date:	11/15/2013 11:50	**Dilution:**	1	**File ID:**	I1_112113-23
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Chloride	16887-00-6	23.8		0.200	0.100
Fluoride	16984-48-8	0.276		0.200	0.100
Sulfate	14808-79-8	58.2		1.00	0.500

Sample #:	L13111086-02	**PrePrep Method:**	N/A	**Instrument:**	ORION-4STAR
Client ID:	SMW 4-1113-1	**Prep Method:**	9040C	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	9040C	**Cal Date:**	
Workgroup #:	WG453150	**Analyst:**	TMM	**Run Date:**	11/16/2013 13:09
Collect Date:	11/15/2013 11:50	**Dilution:**	1	**File ID:**	OS13112114431601
Sample Tag:		**Units:**	UNITS		

Analyte	CAS #	Result	Qual	LOQ	LOD
Corrosivity pH	10-29-7	7.12		0.000	0.000
Temperature At Determination (C)		18.9		0.000	0.000

Sample #:	L13111086-02	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	SMW 4-1113-1	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	11/25/2013 10:41
Workgroup #:	WG454148	**Analyst:**	BAF	**Run Date:**	11/25/2013 10:48
Collect Date:	11/15/2013 11:50	**Dilution:**	1	**File ID:**	S2131125002.020
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Alkalinity, Carbonate (as CaCO3)	13-01-4		U	20.0	10.0

U	Analyte was not detected. The concentration is below the reported LOD.

Certificate of Analysis

Sample #:	L13111086-02	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	SMW 4-1113-1	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	11/25/2013 10:41
Workgroup #:	WG454148	**Analyst:**	BAF	**Run Date:**	11/25/2013 10:48
Collect Date:	11/15/2013 11:50	**Dilution:**	1	**File ID:**	S2131125002.020
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Alkalinity, Total (as CaCO3)	11-43-8	88.2		20.0	10.0

Sample #:	L13111086-02	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	SMW 4-1113-1	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	11/25/2013 10:41
Workgroup #:	WG454148	**Analyst:**	BAF	**Run Date:**	11/25/2013 10:48
Collect Date:	11/15/2013 11:50	**Dilution:**	1	**File ID:**	S2131125002.020
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Alkalinity, Bicarbonate (as CaCO3)	13-00-3	88.2		20.0	10.0

Sample #:	L13111086-02	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	SMW 4-1113-1	**Prep Method:**	9014-9010C	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	9014-9010C	**Cal Date:**	11/21/2013 10:20
Workgroup #:	WG453554	**Analyst:**	DCM	**Run Date:**	11/21/2013 11:30
Collect Date:	11/15/2013 11:50	**Dilution:**	1	**File ID:**	1V.1311211130-17
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Cyanide	57-12-5		U	0.0100	0.00500
U	Analyte was not detected. The concentration is below the reported LOD.				

Certificate of Analysis

Sample #:	L13111086-02	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	SMW 4-1113-1	**Prep Method:**	SM4500-CN-I	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-CN-I	**Cal Date:**	11/21/2013 10:20
Workgroup #:	WG453794	**Analyst:**	DCM	**Run Date:**	11/21/2013 13:10
Collect Date:	11/15/2013 11:50	**Dilution:**	1	**File ID:**	1V.1311211310-17
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Cyanide, Weak/Dissociable	57-12-5		U	0.0100	0.00500

U	Analyte was not detected. The concentration is below the reported LOD.

Certificate of Analysis

Sample #:	L13111086-02	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	SMW 4-1113-1	**Prep Method:**	SM4500-CN-C,G-1999	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-CN-C,G-1999	**Cal Date:**	11/21/2013 10:20
Workgroup #:	WG453588	**Analyst:**	DCM	**Run Date:**	11/21/2013 13:30
Collect Date:	11/15/2013 11:50	**Dilution:**	1	**File ID:**	1V.1311211330-13
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Cyanide, Amenable to Chlor.	57-12-5		U	0.0100	0.00500

U	Analyte was not detected. The concentration is below the reported LOD.

Certificate of Analysis

Sample #:	L13111086-02	**PrePrep Method:**	N/A	**Instrument:**	TIAMO1
Client ID:	SMW 4-1113-1	**Prep Method:**	120.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	120.1	**Cal Date:**	
Workgroup #:	WG453304	**Analyst:**	DIH	**Run Date:**	11/19/2013 00:54
Collect Date:	11/15/2013 11:50	**Dilution:**	1	**File ID:**	TI.111913.0054CO
Sample Tag:	01	**Units:**	umhos/cm		

Analyte	CAS #	Result	Qual	LOQ	LOD
Conductivity		373		50.0	10.0

Sample #:	L13111086-02	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	SMW 4-1113-1	**Prep Method:**	350.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	350.1	**Cal Date:**	11/26/2013 13:04
Workgroup #:	WG454400	**Analyst:**	BAF	**Run Date:**	11/26/2013 13:24
Collect Date:	11/15/2013 11:50	**Dilution:**	1	**File ID:**	SC131126003.033
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Nitrogen, Ammonia	7664-41-7	0.0634	J	0.100	0.0500
J	Estimated value ; the analyte concentration was less than the LOQ.				

Certificate of Analysis

Sample #:	L13111086-02	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	SMW 4-1113-1	**Prep Method:**	353.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	353.2	**Cal Date:**	11/18/2013 10:58
Workgroup #:	WG453287	**Analyst:**	BAF	**Run Date:**	11/18/2013 18:25
Collect Date:	11/15/2013 11:50	**Dilution:**	4	**File ID:**	SC13112213251801
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Nitrate-Nitrite (as N)		3.08		0.200	0.100

Sample #:	L13111086-02	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	SMW 4-1113-1	**Prep Method:**	SM4500-P-E-1999	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-P-E-1999	**Cal Date:**	10/30/2013 09:00
Workgroup #:	WG453085	**Analyst:**	TMM	**Run Date:**	11/16/2013 13:00
Collect Date:	11/15/2013 11:50	**Dilution:**	1	**File ID:**	1V.1311161300-08
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Orthophosphate	14265-44-2	0.0334	J	0.0500	0.0250
J	Estimated value ; the analyte concentration was less than the LOQ.				

Certificate of Analysis

Sample #:	L13111086-02	**PrePrep Method:**	N/A	**Instrument:**	OVEN
Client ID:	SMW 4-1113-1	**Prep Method:**	160.1/SM2540C	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM2540-C-1997	**Cal Date:**	
Workgroup #:	WG453716	**Analyst:**	ADG	**Run Date:**	11/21/2013 07:42
Collect Date:	11/15/2013 11:50	**Dilution:**	1	**File ID:**	EN.1311210742-17
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Total Dissolved Solids		212		20.0	10.0

Sample #:	L13111086-02	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	SMW 4-1113-1	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/09/2013 14:51
Workgroup #:	WG454385	**Analyst:**	DIH	**Run Date:**	11/26/2013 21:46
Collect Date:	11/15/2013 11:50	**Dilution:**	1	**File ID:**	TC11262013.047
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Total Organic Carbon	TOC	0.788	J	1.00	0.500
J	Estimated value ; the analyte concentration was less than the LOQ.				

Certificate of Analysis

Sample #:	L13111086-02	**PrePrep Method:**	N/A	**Instrument:**	OVEN
Client ID:	SMW 4-1113-1	**Prep Method:**	160.2/SM2540D	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM2540-D-1997	**Cal Date:**	
Workgroup #:	WG453718	**Analyst:**	ADG	**Run Date:**	11/21/2013 07:17
Collect Date:	11/15/2013 11:50	**Dilution:**	1	**File ID:**	EN.1311210717-13
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Total Suspended Solids			U	5.00	2.50

U	Analyte was not detected. The concentration is below the reported LOD.

Certificate of Analysis

Certificate of Analysis

2.0 Full Sample Data Package

2.1 Metals Data

2.1.1 Metals I C P Data

2.1.1.1 Summary Data

Login Number: L13111086
Department: Metals
Analyst: Ji Hu

METHOD

Preparation: SW-846 3015

Analysis: SW-846 6010

HOLDING TIMES

Sample Preparation: All holding times were met.

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

CALIBRATION

Initial Calibration: All acceptance criteria were met.

Alternate Source Standards: All acceptance criteria were met.

Interference Check Standards: All acceptance criteria were met.

Continuing Calibration Verification: All acceptance criteria were met.

Continuing Calibration Blank: All acceptance criteria were met.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Serial Dilution/Post Digestion Spikes: WG454446 - All acceptance criteria were met.

Matrix Spikes: All acceptance criteria were met.

SAMPLES

Samples: WG454399 - Client samples 01 and 02 required dilution analyses in order to obtain results for calcium within the calibration range.

Narrative ID: 75443
Approved By: Sheri Pfalzgraf

Microbac

Lab Report #: L13111086
Lab Project #: 3005.011
Project Name: White Sands MR
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L13111086-01	**PrePrep Method:**	N/A	**Instrument:**	PE-ICP2
Client ID:	SMW 1-1113-1	**Prep Method:**	3015	**Prep Date:**	11/25/2013 14:18
Matrix:	Water	**Analytical Method:**	6010B	**Cal Date:**	11/26/2013 11:28
Workgroup #:	WG454446	**Analyst:**	JYH	**Run Date:**	11/26/2013 16:50
Collect Date:	11/15/2013 10:00	**Dilution:**	1	**File ID:**	P2.112613.165034
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Beryllium, Total	7440-41-7		U	0.00200	0.00100
Magnesium, Total	7439-95-4	8.23		0.500	0.250
Potassium, Total	7440-09-7	1.95		1.00	0.500
Sodium, Total	7440-23-5	24.9		0.500	0.250
Tin, Total	7440-31-5		U	0.500	0.250
Vanadium, Total	7440-62-2		U	0.0100	0.00500
Zinc, Total	7440-66-6	0.0238		0.0200	0.0100

U	Analyte was not detected. The concentration is below the reported LOD.

Certificate of Analysis

Sample #:	L13111086-01	**PrePrep Method:**	N/A	**Instrument:**	PE-ICP2
Client ID:	SMW 1-1113-1	**Prep Method:**	3015	**Prep Date:**	11/25/2013 14:18
Matrix:	Water	**Analytical Method:**	6010B	**Cal Date:**	11/27/2013 13:58
Workgroup #:	WG454446	**Analyst:**	JYH	**Run Date:**	11/27/2013 16:31
Collect Date:	11/15/2013 10:00	**Dilution:**	10	**File ID:**	P2.112713.163135
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Calcium, Total	7440-70-2	29.6		5.00	2.50

U	Analyte was not detected. The concentration is below the reported LOD.

Certificate of Analysis

Sample #:	L13111086-02	**PrePrep Method:**	N/A	**Instrument:**	PE-ICP2
Client ID:	SMW 4-1113-1	**Prep Method:**	3015	**Prep Date:**	11/25/2013 14:18
Matrix:	Water	**Analytical Method:**	6010B	**Cal Date:**	11/26/2013 11:28
Workgroup #:	WG454446	**Analyst:**	JYH	**Run Date:**	11/26/2013 16:53
Collect Date:	11/15/2013 11:50	**Dilution:**	1	**File ID:**	P2.112613.165337
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Beryllium, Total	7440-41-7		U	0.00200	0.00100
Magnesium, Total	7439-95-4	8.34		0.500	0.250
Potassium, Total	7440-09-7	1.96		1.00	0.500
Sodium, Total	7440-23-5	25.5		0.500	0.250
Tin, Total	7440-31-5		U	0.500	0.250
Vanadium, Total	7440-62-2		U	0.0100	0.00500
Zinc, Total	7440-66-6	0.0274		0.0200	0.0100

U	Analyte was not detected. The concentration is below the reported LOD.

Certificate of Analysis

Sample #:	L13111086-02	**PrePrep Method:**	N/A	**Instrument:**	PE-ICP2
Client ID:	SMW 4-1113-1	**Prep Method:**	3015	**Prep Date:**	11/25/2013 14:18
Matrix:	Water	**Analytical Method:**	6010B	**Cal Date:**	11/27/2013 13:58
Workgroup #:	WG454446	**Analyst:**	JYH	**Run Date:**	11/27/2013 16:35
Collect Date:	11/15/2013 11:50	**Dilution:**	10	**File ID:**	P2.112713.163518
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Calcium, Total	7440-70-2	38.0		5.00	2.50

U	Analyte was not detected. The concentration is below the reported LOD.

Certificate of Analysis

2.1.1.2 QC Summary Data

Example 6010 Calculations
Perkin Elmer Optima 4300 DV

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and three standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system in ug/mL (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial volume (mL)	50
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/mL (mg/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (mg/L) (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial weight (g)	1
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/g (mg/kg)	5

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	5
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (mg/kg)	6.25

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG454260
Analyst: REK
Spike Analyst: REK
Run Date: 11/25/2013 14:18
Method: 3015
Balance: BAL002
Instrument: MW-2
Instrument Start: 11/25/2013 14:23

SOP: ME407 Revison 14
Spike Solution: STD61373
Spike Witness: ERP
HNO3 Lot #: COA16631
HCL Lot #: COA17104
ICP Filters- fisher-Lot# RGT26836
40 &50 ML. DIGESTION TUB RGT28799

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG454260-03	BLANK	1	40 mL	50 mL	204.938 g	204.92 g		
2	WG454260-04	LCS	1	40 mL	50 mL	209.588 g	209.571 g	5 mL	
3	L13111064-02	SAMP	1	40 mL	50 mL	203.525 g	203.499 g		12/02/13
4	L13111064-03	SAMP	1	40 mL	50 mL	203.914 g	203.889 g		12/02/13
5	L13111064-04	SAMP	1	40 mL	50 mL	204.662 g	204.633 g		12/02/13
6	L13111064-05	SAMP	1	40 mL	50 mL	203.49 g	203.475 g		12/02/13
7	WG454260-01	REF	1	40 mL	50 mL	204.68 g	204.67 g		
8	L13111064-06	RS01	1	40 mL	50 mL	204.68 g	204.67 g		12/02/13
9	WG454260-02	REF	1	40 mL	50 mL	206.698 g	206.679 g		
10	L13111064-07	RS02	1	40 mL	50 mL	206.698 g	206.679 g		12/02/13
11	L13111064-08	SAMP	1	40 mL	50 mL	206.607 g	206.587 g		12/02/13
12	L13111064-09	SAMP	1	40 mL	50 mL	208.189 g	208.16 g		12/02/13
13	WG454260-05	MS	1	40 mL	50 mL	210.546 g	210.518 g	5 mL	
14	L13111064-10	MS01	1	40 mL	50 mL	210.546 g	210.518 g	5 mL	12/02/13
15	WG454260-07	MS	1	40 mL	50 mL	208.094 g	208.084 g	5 mL	
16	L13111064-11	MS02	1	40 mL	50 mL	208.094 g	208.084 g	5 mL	12/02/13
17	WG454260-06	MSD	1	40 mL	50 mL	209.35 g	209.321 g	5 mL	
18	L13111064-12	SD01	1	40 mL	50 mL	209.35 g	209.321 g	5 mL	12/02/13
19	WG454260-08	MSD	1	40 mL	50 mL	210.392 g	210.357 g	5 mL	
20	L13111064-13	SD02	1	40 mL	50 mL	210.392 g	210.357 g	5 mL	12/02/13
21	L13111064-14	SAMP	1	40 mL	50 mL	204.532 g	204.5 g		12/02/13
22	L13111064-15	SAMP	1	40 mL	50 mL	204.332 g	204.301 g		12/02/13
23	L13111064-16	SAMP	1	40 mL	50 mL	203.687 g	203.672 g		12/02/13
24	L13111064-17	SAMP	1	40 mL	50 mL	203.999 g	203.979 g		12/02/13
25	L13111064-18	SAMP	1	40 mL	50 mL	206.434 g	206.411 g		12/02/13
26	L13111064-19	SAMP	1	40 mL	50 mL	203.666 g	203.652 g		12/02/13
27	L13111086-01	SAMP	1	40 mL	50 mL	205.968 g	205.945 g		11/29/13
28	L13111086-02	SAMP	1	40 mL	50 mL	206.131 g	206.113 g		11/29/13
29	L13111397-01	SAMP	1	40 mL	50 mL	204.163 g	204.129 g		11/29/13
30	L13111397-02	SAMP	1	40 mL	50 mL	204.055 g	204.043 g		11/29/13

L13111064-10	FILTERED DIGESTATE
L13111064-12	FILTERED DIGESTATE
L13111064-06	FILTERED DIGESTATE
WG454260-01	FILTERED DIGESTATE
L13111064-08	FILTERED DIGESTATE
WG454260-05	FILTERED DIGESTATE

MW_DIG - Modified 09/30/2009
PDF ID: 3226838
Report generated: 11/25/2013 15:17

Microbac Laboratories Inc.
Microwave Digestion Log

WG454260-06	FILTERED DIGESTATE	SOP:
L13111064-14	FILTERED DIGESTATE	Spike Solution:
L13111064-16	FILTERED DIGESTATE	Spike Witness:

Method:
Balance:
Analyst:
Instrument:
Instrument Start:

Reviewer: Brenda Gregory

MW_DIG - Modified 09/30/2009
PDF ID: 3226838
Report generated: 11/25/2013 15:17

Microbac Laboratories Inc.

Instrument Run Log

Instrument: PE-ICP2 Dataset: 112613H2R.CSV
Analyst1: JYH Analyst2: N/A
Method: 6010/200.7 SOP: ME600E Rev: 14
Maintenance Log ID: 48334

Calibration Std: STD61325 ICV Std: STD61061 Post Spike: STD61080
ICSA: STD61374 ICSAB: STD61198 Int. Std: RGT17684
CCV: STD61324 LLCCV: STD61325 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 454243,454399,454190,454290,454446,454451,454461

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	P2.112613.111717	WG454527-01	Calibration Point		1		11/26/13 11:17
2	P2.112613.112019	WG454527-02	Calibration Point		1		11/26/13 11:20
3	P2.112613.112321	WG454527-03	Calibration Point		1		11/26/13 11:23
4	P2.112613.112623	WG454527-04	Calibration Point		1		11/26/13 11:26
5	P2.112613.112830	WG454527-05	Calibration Point		1		11/26/13 11:28
6	P2.112613.113038	WG454527-06	Initial Calibration Verification		1		11/26/13 11:30
7	P2.112613.113244	WG454527-07	Initial Calib Blank		1		11/26/13 11:32
8	P2.112613.113546	WG454527-08	Interference Check		1		11/26/13 11:35
9	P2.112613.113751	WG454527-09	Interference Check		1		11/26/13 11:37
10	P2.112613.113954	WG454527-10	CCV		1		11/26/13 11:39
11	P2.112613.114201	WG454527-11	CCB		1		11/26/13 11:42
12	P2.112613.114503	WG454162-02	Method/Prep Blank	5/50	1		11/26/13 11:45
13	P2.112613.120031	WG453882-01	Fluid Blank		1		11/26/13 12:00
14	P2.112613.120338	WG454137-01	Fluid Blank		1		11/26/13 12:03
15	P2.112613.120644	WG454162-03	Laboratory Control S	5/50	1		11/26/13 12:06
16	P2.112613.120850	WG454162-01	Reference Sample		1	L13111290-01	11/26/13 12:08
17	P2.112613.121156	WG454162-04	Matrix Spike	5/50	1	L13111290-01	11/26/13 12:11
18	P2.112613.121404	WG454162-05	Matrix Spike Duplica	5/50	1	L13111290-01	11/26/13 12:14
19	P2.112613.121612	L13111203-01	3111085-01	5/50	1		11/26/13 12:16
20	P2.112613.121919	WG454243-01	Post Digestion Spike		1	L13111203-01	11/26/13 12:19
21	P2.112613.122128	WG454243-02	Serial Dilution		5	L13111203-01	11/26/13 12:21
22	P2.112613.122431	WG454527-12	CCV		1		11/26/13 12:24
23	P2.112613.122638	WG454527-13	CCB		1		11/26/13 12:26
24	P2.112613.122945	L13111279-01	\#11/12 SLAB GRINDING DU	5/50	1		11/26/13 12:29
25	P2.112613.123252	L13111310-02	AS01-WC11-112013-C	5/50	1		11/26/13 12:32
26	P2.112613.123558	L13111415-01	003 FILTERS	5/50	1		11/26/13 12:35
27	P2.112613.123808	WG454527-14	CCV		1		11/26/13 12:38
28	P2.112613.124015	WG454527-15	CCB		1		11/26/13 12:40
29	P2.112613.124317	WG454211-03	Method/Prep Blank	40/50	1		11/26/13 12:43
30	P2.112613.124619	WG454211-04	Laboratory Control S	40/50	1		11/26/13 12:46
31	P2.112613.124824	WG454211-01	Reference Sample		1	L13110864-09	11/26/13 12:48
32	P2.112613.125031	WG454527-16	CCV		1		11/26/13 12:50
33	P2.112613.125238	WG454527-17	CCB		1		11/26/13 12:52
34	P2.112613.125540	WG454211-05	Matrix Spike	40/50	1	L13110864-09	11/26/13 12:55

Page: 1 Approved: November 27, 2013

Marcia Berry

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: PE-ICP2 Dataset: 112613H2R.CSV
Analyst1: JYH Analyst2: N/A
Method: 6010/200.7 SOP: ME600E Rev: 14
Maintenance Log ID: 48334

Calibration Std: STD61325 ICV Std: STD61061 Post Spike: STD61080
ICSA: STD61374 ICSAB: STD61198 Int. Std: RGT17684
CCV: STD61324 LLCCV: STD61325 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 454243,454399,454190,454290,454446,454451,454461

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	P2.112613.125746	WG454211-06	Matrix Spike Duplica	40/50	1	L13110864-09	11/26/13 12:57
36	P2.112613.125952	L13110842-01	LF5MW05R14	40/50	1		11/26/13 12:59
37	P2.112613.130300	L13110843-01	B122MW2LS16	40/50	1		11/26/13 13:03
38	P2.112613.130508	WG454399-01	Post Digestion Spike		1	L13110843-01	11/26/13 13:05
39	P2.112613.130715	L13110843-01	B122MW2LS16		5		11/26/13 13:07
40	P2.112613.130921	WG454399-02	Serial Dilution		25	L13110843-01	11/26/13 13:09
41	P2.112613.131300	L13110864-01	TW-11D	40/50	1		11/26/13 13:13
42	P2.112613.131604	L13110864-02	TW-11D	40/50	1		11/26/13 13:16
43	P2.112613.131908	L13110864-03	TW-11S	40/50	1		11/26/13 13:19
44	P2.112613.132114	WG454527-18	CCV		1		11/26/13 13:21
45	P2.112613.132321	WG454527-19	CCB		1		11/26/13 13:23
46	P2.112613.132623	L13110864-04	TW-11S	40/50	1		11/26/13 13:26
47	P2.112613.132929	L13110864-05	TW-78	40/50	1		11/26/13 13:29
48	P2.112613.133137	L13110864-06	TW-78	40/50	1		11/26/13 13:31
49	P2.112613.133345	WG454527-20	CCV		1		11/26/13 13:33
50	P2.112613.133552	WG454527-21	CCB		1		11/26/13 13:35
51	P2.112613.140436	L13110864-07	TW-59D	40/50	1		11/26/13 14:04
52	P2.112613.140744	L13110864-08	TW-59D	40/50	1		11/26/13 14:07
53	P2.112613.141051	WG454211-02	Reference Sample		1	L13110864-10	11/26/13 14:10
54	P2.112613.141358	WG454211-07	Matrix Spike	40/50	1	L13110864-10	11/26/13 14:13
55	P2.112613.141607	WG454211-08	Matrix Spike Duplica	40/50	1	L13110864-10	11/26/13 14:16
56	P2.112613.141816	L13110864-15	SL-21	40/50	1		11/26/13 14:18
57	P2.112613.142124	L13110864-16	SL-21	40/50	1		11/26/13 14:21
58	P2.112613.142431	L13110864-17	EQ RINSE 2	40/50	1		11/26/13 14:24
59	P2.112613.142733	L13110864-18	EQ RINSE 2	40/50	1		11/26/13 14:27
60	P2.112613.143035	WG454527-22	CCV		1		11/26/13 14:30
61	P2.112613.143242	WG454527-23	CCB		1		11/26/13 14:32
62	P2.112613.143544	L13110864-19	TW-60D	40/50	1		11/26/13 14:35
63	P2.112613.143851	L13110864-20	TW-60D	40/50	1		11/26/13 14:38
64	P2.112613.144158	L13110855-08	TW-57S	40/50	2		11/26/13 14:41
65	P2.112613.144504	WG454170-02	Reference Sample		100	L13111212-02	11/26/13 14:45
66	P2.112613.144807	WG454170-07	Matrix Spike	40/50	100	L13111212-02	11/26/13 14:48
67	P2.112613.145110	L13111212-04	BOOTH PUMP RAW	40/50	100		11/26/13 14:51
68	P2.112613.145413	L13111212-09	CORE PUMP \#3 RAW H2O	40/50	100		11/26/13 14:54

Page: 2 Approved: November 27, 2013

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: PE-ICP2 Dataset: 112613H2R.CSV
Analyst1: JYH Analyst2: N/A
Method: 6010/200.7 SOP: ME600E Rev: 14
Maintenance Log ID: 48334

Calibration Std: STD61325 ICV Std: STD61061 Post Spike: STD61080
ICSA: STD61374 ICSAB: STD61198 Int. Std: RGT17684
CCV: STD61324 LLCCV: STD61325 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 454243,454399,454190,454290,454446,454451,454461

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	P2.112613.145716	WG454527-24	CCV		1		11/26/13 14:57
70	P2.112613.145923	WG454527-25	CCB		1		11/26/13 14:59
71	P2.112613.153259	WG454260-03	Method/Prep Blank	40/50	1		11/26/13 15:32
72	P2.112613.153601	WG454260-04	Laboratory Control S	40/50	1		11/26/13 15:36
73	P2.112613.153808	WG454260-01	Reference Sample		1	L13111064-06	11/26/13 15:38
74	P2.112613.154015	WG454260-05	Matrix Spike	40/50	1	L13111064-06	11/26/13 15:40
75	P2.112613.154222	WG454260-06	Matrix Spike Duplica	40/50	1	L13111064-06	11/26/13 15:42
76	P2.112613.154429	L13111397-01	WOOD W1	40/50	1		11/26/13 15:44
77	P2.112613.154732	L13111397-02	WOOD W2	40/50	1		11/26/13 15:47
78	P2.112613.155035	WG454446-01	Post Digestion Spike		1	L13111397-02	11/26/13 15:50
79	P2.112613.155242	WG454446-02	Serial Dilution		5	L13111397-02	11/26/13 15:52
80	P2.112613.155545	WG454446-02	Serial Dilution		25	L13111397-02	11/26/13 15:55
81	P2.112613.155846	WG454527-26	CCV		1		11/26/13 15:58
82	P2.112613.160053	WG454527-27	CCB		1		11/26/13 16:00
83	P2.112613.160355	L13111064-02	TW15D	40/50	1		11/26/13 16:03
84	P2.112613.160701	L13111064-03	TW15D	40/50	1		11/26/13 16:07
85	P2.112613.161007	L13111064-04	TW15S	40/50	1		11/26/13 16:10
86	P2.112613.161313	L13111064-05	TW15S	40/50	1		11/26/13 16:13
87	P2.112613.161744	WG454260-02	Reference Sample		1	L13111064-07	11/26/13 16:17
88	P2.112613.161952	L13111064-08	SL22	40/50	1		11/26/13 16:19
89	P2.112613.162229	L13111064-09	SL22	40/50	1		11/26/13 16:22
90	P2.112613.162436	WG454260-07	Matrix Spike	40/50	1	L13111064-07	11/26/13 16:24
91	P2.112613.162643	WG454260-08	Matrix Spike Duplica	40/50	1	L13111064-07	11/26/13 16:26
92	P2.112613.162850	L13111064-14	PZ-89-1	40/50	1		11/26/13 16:28
93	P2.112613.163101	WG454527-28	CCV		1		11/26/13 16:31
94	P2.112613.163308	WG454527-29	CCB		1		11/26/13 16:33
95	P2.112613.163610	L13111064-15	PZ-89-1	40/50	1		11/26/13 16:36
96	P2.112613.163817	L13111064-16	TW62S	40/50	1		11/26/13 16:38
97	P2.112613.164123	L13111064-17	TW62S	40/50	1		11/26/13 16:41
98	P2.112613.164430	L13111064-18	EQ RINSE 3	40/50	1		11/26/13 16:44
99	P2.112613.164732	L13111064-19	EQ RINSE 3	40/50	1		11/26/13 16:47
100	P2.112613.165034	L13111086-01	SMW 1-1113-1	40/50	1		11/26/13 16:50
101	P2.112613.165337	L13111086-02	SMW 4-1113-1	40/50	1		11/26/13 16:53
102	P2.112613.165640	WG454527-30	CCV		1		11/26/13 16:56

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: PE-ICP2 Dataset: 112613H2R.CSV
Analyst1: JYH Analyst2: N/A
Method: 6010/200.7 SOP: ME600E Rev: 14
Maintenance Log ID: 48334

Calibration Std: STD61325 ICV Std: STD61061 Post Spike: STD61080
ICSA: STD61374 ICSAB: STD61198 Int. Std: RGT17684
CCV: STD61324 LLCCV: STD61325 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 454243,454399,454190,454290,454446,454451,454461

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	P2.112613.165847	WG454527-31	CCB		1		11/26/13 16:58
104	P2.112613.170149	WG453770-02	Method/Prep Blank	5/50	1		11/26/13 17:01
105	P2.112613.170451	WG453770-03	Laboratory Control S	5/50	1		11/26/13 17:04
106	P2.112613.170657	WG453698-03	Fluid Blank 2		1		11/26/13 17:06
107	P2.112613.171003	L13111224-01	526 NW	5/50	1		11/26/13 17:10
108	P2.112613.171310	L13111224-02	526 WW	5/50	1		11/26/13 17:13
109	P2.112613.171617	L13111224-03	526 SW	5/50	1		11/26/13 17:16
110	P2.112613.171924	L13111224-04	526 EW	5/50	1		11/26/13 17:19
111	P2.112613.172232	L13111224-05	526 WOOD DOOR EW	5/50	1		11/26/13 17:22
112	P2.112613.172538	WG454451-01	Post Digestion Spike		1	L13111224-05	11/26/13 17:25
113	P2.112613.172745	WG454451-02	Serial Dilution		5	L13111224-05	11/26/13 17:27
114	P2.112613.173050	WG454527-32	CCV		1		11/26/13 17:30
115	P2.112613.173257	WG454527-33	CCB		1		11/26/13 17:32
116	P2.112613.173559	L13111224-06	508 SW (METAL \& GLAZIN(	5/50	1		11/26/13 17:35
117	P2.112613.173905	L13111224-07	525 WW	5/50	1		11/26/13 17:39
118	P2.112613.174211	L13111224-08	525 EW	5/50	1		11/26/13 17:42
119	P2.112613.174518	L13111224-09	525 SW	5/50	1		11/26/13 17:45
120	P2.112613.174822	L13111224-10	525 NW	5/50	1		11/26/13 17:48
121	P2.112613.175126	L13111224-11	525 WOOD WIND 2ND ST. E	5/50	1		11/26/13 17:51
122	P2.112613.175433	WG453770-01	Reference Sample		1	L13111224-13	11/26/13 17:54
123	P2.112613.175740	WG453770-04	Matrix Spike	5/50	1	L13111224-13	11/26/13 17:57
124	P2.112613.175949	WG453770-05	Matrix Spike Duplica	5/50	1	L13111224-13	11/26/13 17:59
125	P2.112613.180157	L13111224-14	502 SW	5/50	1		11/26/13 18:01
126	P2.112613.180503	WG454527-34	CCV		1		11/26/13 18:05
127	P2.112613.180710	WG454527-35	CCB		1		11/26/13 18:07
128	P2.112613.181012	L13111224-15	502 EW	5/50	1		11/26/13 18:10
129	P2.112613.181318	L13111224-16	502 NW	5/50	1		11/26/13 18:13
130	P2.112613.181624	L13111224-17	502 WW	5/50	1		11/26/13 18:16
131	P2.112613.181930	L13111224-18	BATHROOM (WW)	5/50	1		11/26/13 18:19
132	P2.112613.182236	L13111224-19	FILTER HOUSE (METAL \& (	5/50	1		11/26/13 18:22
133	P2.112613.182539	L13111224-20	SAMPLE ROOM (DOOR/ME	5/50	1		11/26/13 18:25
134	P2.112613.182846	WG454527-36	CCV		1		11/26/13 18:28
135	P2.112613.183053	WG454527-37	CCB		1		11/26/13 18:30
136	P2.112613.183355	WG454360-03	Method/Prep Blank	40/50	1		11/26/13 18:33

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Maren Berry

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: PE-ICP2 Dataset: 112613H2R.CSV
Analyst1: JYH Analyst2: N/A
Method: 6010/200.7 SOP: ME600E Rev: 14
Maintenance Log ID: 48334

Calibration Std: STD61325 ICV Std: STD61061 Post Spike: STD61080
ICSA: STD61374 ICSAB: STD61198 Int. Std: RGT17684
CCV: STD61324 LLCCV: STD61325 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 454243,454399,454190,454290,454446,454451,454461

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
137	P2.112613.183657	WG454360-04	Laboratory Control S	40/50	1		11/26/13 18:36
138	P2.112613.183903	WG454360-01	Reference Sample		1	L13111270-02	11/26/13 18:39
139	P2.112613.184209	WG454360-05	Duplicate	40/50	1	L13111270-02	11/26/13 18:42
140	P2.112613.184516	WG454360-06	Matrix Spike	40/50	1	L13111270-02	11/26/13 18:45
141	P2.112613.184722	L13111274-02	TE-63	40/50	1		11/26/13 18:47
142	P2.112613.185025	L13111274-04	TE-64	40/50	1		11/26/13 18:50
143	P2.112613.185331	L13111274-06	TE-65	40/50	1		11/26/13 18:53
144	P2.112613.185637	WG454461-01	Post Digestion Spike		1	L13111274-06	11/26/13 18:56
145	P2.112613.185844	WG454461-02	Serial Dilution		5	L13111274-06	11/26/13 18:58
146	P2.112613.190146	WG454527-38	CCV		1		11/26/13 19:01
147	P2.112613.190354	WG454527-39	CCB		1		11/26/13 19:03
148	P2.112613.190658	L13111274-08	TE-67	40/50	1		11/26/13 19:06
149	P2.112613.191004	L13111274-10	TE-69	40/50	1		11/26/13 19:10
150	P2.112613.191307	L13111282-05	019	40/50	1		11/26/13 19:13
151	P2.112613.191614	L13111282-10	GRD	40/50	1		11/26/13 19:16
152	P2.112613.191920	WG454360-02	Reference Sample		1	L13111282-12	11/26/13 19:19
153	P2.112613.192223	WG454360-07	Matrix Spike	40/50	1	L13111282-12	11/26/13 19:22
154	P2.112613.192430	L13111326-02	002	40/50	1		11/26/13 19:24
155	P2.112613.192736	L13111326-08	095	40/50	1		11/26/13 19:27
156	P2.112613.193042	WG454527-40	CCV		1		11/26/13 19:30
157	P2.112613.193250	WG454527-41	CCB		1		11/26/13 19:32
158	P2.112613.193554	L13111330-02	010	40/50	1		11/26/13 19:35
159	P2.112613.193857	L13111330-05	012	40/50	1		11/26/13 19:38
160	P2.112613.194203	L13111330-07	DJCSW5	40/50	1		11/26/13 19:42
161	P2.112613.194505	L13111330-09	DUHB-1	40/50	1		11/26/13 19:45
162	P2.112613.194807	L13111330-11	UUHB-1	40/50	1		11/26/13 19:48
163	P2.112613.195109	L13111332-02	001	40/50	1		11/26/13 19:51
164	P2.112613.195415	L13111332-05	DLRB	40/50	1		11/26/13 19:54
165	P2.112613.195722	L13111332-07	DRTB	40/50	1		11/26/13 19:57
166	P2.112613.200029	WG454527-42	CCV		1		11/26/13 20:00
167	P2.112613.200237	WG454527-43	CCB		1		11/26/13 20:02
168	P2.112613.200541	Sample093	Sample093		1		11/26/13 20:05
169	P2.112613.200844	Sample094	Sample094		1		11/26/13 20:08
170	P2.112613.201147	Sample095	Sample095		1		11/26/13 20:11

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Marcu Berry

Microbac Laboratories Inc.

Instrument Run Log

Instrument: PE-ICP2 Dataset: 112613H2R.CSV
Analyst1: JYH Analyst2: N/A
Method: 6010/200.7 SOP: ME600E Rev: 14
Maintenance Log ID: 48334

Calibration Std: STD61325 ICV Std: STD61061 Post Spike: STD61080
ICSA: STD61374 ICSAB: STD61198 Int. Std: RGT17684
CCV: STD61324 LLCCV: STD61325 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 454243,454399,454190,454290,454446,454451,454461

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
171	P2.112613.201449	Sample096	Sample096		1		11/26/13 20:14
172	P2.112613.201751	Sample097	Sample097		1		11/26/13 20:17
173	P2.112613.202053	Sample098	Sample098		1		11/26/13 20:20

Comments

Seq.	Rerun	Dil.	Reason	Analytes
29			Wrong sample labels for sample seq 29-31, 34-43, and 46-48.JYH	
57			Wrong sample label.JYH	
105			Wrong sample label.JYH	
106			Wrong sample label.JYH	
122			Wrong sample labels for sample seq 122-124. JYH	

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: PE-ICP2 Dataset: 112713H4R.CSV
Analyst1: JYH Analyst2: N/A
Method: 6010/200.7 SOP: ME600E Rev: 14
Maintenance Log ID: 48342

Calibration Std: STD61325 ICV Std: STD61061 Post Spike: STD61080
ICSA: STD61374 ICSAB: STD61198 Int. Std: RGT17684
CCV: STD61324 LLCCV: STD61325 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 454243,454456,454446,454399,454634,454636

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	P2.112713.134640	WG454646-01	Calibration Point		1		11/27/13 13:46
2	P2.112713.134945	WG454646-02	Calibration Point		1		11/27/13 13:49
3	P2.112713.135251	WG454646-03	Calibration Point		1		11/27/13 13:52
4	P2.112713.135557	WG454646-04	Calibration Point		1		11/27/13 13:55
5	P2.112713.135804	WG454646-05	Calibration Point		1		11/27/13 13:58
6	P2.112713.140016	WG454646-06	Initial Calibration Verification		1		11/27/13 14:00
7	P2.112713.140226	WG454646-07	Initial Calib Blank		1		11/27/13 14:02
8	P2.112713.140532	WG454646-08	Interference Check		1		11/27/13 14:05
9	P2.112713.140741	WG454646-09	Interference Check		1		11/27/13 14:07
10	P2.112713.140948	WG454646-10	CCV		1		11/27/13 14:09
11	P2.112713.141159	WG454646-11	CCB		1		11/27/13 14:11
12	P2.112713.141505	WG454162-02	Method/Prep Blank	5/50	1		11/27/13 14:15
13	P2.112713.142607	WG453882-01	Fluid Blank		1		11/27/13 14:26
14	P2.112713.142918	WG454137-01	Fluid Blank		1		11/27/13 14:29
15	P2.112713.143228	WG454162-03	Laboratory Control S	5/50	1		11/27/13 14:32
16	P2.112713.143438	WG454162-01	Reference Sample		1	L13111290-01	11/27/13 14:34
17	P2.112713.143745	WG454162-04	Matrix Spike	5/50	1	L13111290-01	11/27/13 14:37
18	P2.112713.143956	WG454162-05	Matrix Spike Duplica	5/50	1	L13111290-01	11/27/13 14:39
19	P2.112713.144204	L13111310-02	AS01-WC11-112013-C	5/50	1		11/27/13 14:42
20	P2.112713.144515	WG454243-03	Post Digestion Spike		1	L13111310-02	11/27/13 14:45
21	P2.112713.144727	WG454243-04	Serial Dilution		5	L13111310-02	11/27/13 14:47
22	P2.112713.145036	WG454646-12	CCV		1		11/27/13 14:50
23	P2.112713.145247	WG454646-13	CCB		1		11/27/13 14:52
24	P2.112713.145552	WG454646-14	Low Level Initial Calibration V		1		11/27/13 14:55
25	P2.112713.145858	WG454282-02	Method/Prep Blank	40/50	1		11/27/13 14:58
26	P2.112713.150204	WG454282-03	Laboratory Control S	40/50	1		11/27/13 15:02
27	P2.112713.150414	WG454282-01	Reference Sample		1	L13111460-04	11/27/13 15:04
28	P2.112713.150624	WG454282-04	Matrix Spike	40/50	1	L13111460-04	11/27/13 15:06
29	P2.112713.150835	WG454282-05	Matrix Spike Duplica	40/50	1	L13111460-04	11/27/13 15:08
30	P2.112713.151046	L13111304-02	LF5MW0214	40/50	1		11/27/13 15:10
31	P2.112713.151401	WG454456-01	Post Digestion Spike		1	L13111304-02	11/27/13 15:14
32	P2.112713.151616	WG454456-02	Serial Dilution		5	L13111304-02	11/27/13 15:16
33	P2.112713.151927	WG454456-02	Serial Dilution		25	L13111304-02	11/27/13 15:19
34	P2.112713.152233	WG454646-15	CCV		1		11/27/13 15:22

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: PE-ICP2 Dataset: 112713H4R.CSV
Analyst1: JYH Analyst2: N/A
Method: 6010/200.7 SOP: ME600E Rev: 14
Maintenance Log ID: 48342

Calibration Std: STD61325 ICV Std: STD61061 Post Spike: STD61080
ICSA: STD61374 ICSAB: STD61198 Int. Std: RGT17684
CCV: STD61324 LLCCV: STD61325 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 454243,454456,454446,454399,454634,454636

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	P2.112713.152444	WG454646-16	CCB		1		11/27/13 15:24
36	P2.112713.152750	L13111206-01	STP-WC-1113	40/50	1		11/27/13 15:27
37	P2.112713.152959	L13111222-02	LEACHATE QSP 111913-A	40/50	10		11/27/13 15:29
38	P2.112713.153208	L13111295-02	JD3190	40/50	1		11/27/13 15:32
39	P2.112713.153519	L13111295-04	JD3193	40/50	1		11/27/13 15:35
40	P2.112713.153830	L13111295-08	JD3194		50		11/27/13 15:38
41	P2.112713.154140	L13111390-02	JD3191	40/50	1		11/27/13 15:41
42	P2.112713.154615	L13111295-08	JD3194	40/50	5		11/27/13 15:46
43	P2.112713.154922	L13111390-05	JD3196	40/50	1		11/27/13 15:49
44	P2.112713.155230	L13111391-01	LF7MW10213	40/50	1		11/27/13 15:52
45	P2.112713.155541	WG454646-17	CCV		1		11/27/13 15:55
46	P2.112713.155749	WG454646-18	CCB		1		11/27/13 15:57
47	P2.112713.160055	L13111460-01	MW-28S-112213	40/50	1		11/27/13 16:00
48	P2.112713.160402	L13111460-02	MW-16-112213		1		11/27/13 16:04
49	P2.112713.160612	L13111460-03	MW-42S-112213	40/50	1		11/27/13 16:06
50	P2.112713.160823	WG454646-19	CCV		1		11/27/13 16:08
51	P2.112713.161034	WG454646-20	CCB		1		11/27/13 16:10
52	P2.112713.161340	WG454646-21	Low Level Continuing Calibra		1		11/27/13 16:13
53	P2.112713.161646	L13110864-05	TW-78	40/50	2		11/27/13 16:16
54	P2.112713.161856	L13110864-07	TW-59D	40/50	2		11/27/13 16:18
55	P2.112713.162206	L13111064-04	TW15S	40/50	2		11/27/13 16:22
56	P2.112713.162515	L13111064-05	TW15S	40/50	2		11/27/13 16:25
57	P2.112713.162825	L13111064-17	TW62S	40/50	2		11/27/13 16:28
58	P2.112713.163135	L13111086-01	SMW 1-1113-1	40/50	10		11/27/13 16:31
59	P2.112713.163518	L13111086-02	SMW 4-1113-1	40/50	10		11/27/13 16:35
60	P2.112713.163824	WG454646-22	CCV		1		11/27/13 16:38
61	P2.112713.164032	WG454646-23	CCB		1		11/27/13 16:40
62	P2.112713.164338	WG454374-04	Method/Prep Blank	40/50	1		11/27/13 16:43
63	P2.112713.164644	WG454374-05	Laboratory Control S	40/50	1		11/27/13 16:46
64	P2.112713.164854	WG454374-01	Reference Sample		1	L13111331-02	11/27/13 16:48
65	P2.112713.165632	WG454374-06	Duplicate	40/50	1	L13111331-02	11/27/13 16:56
66	P2.112713.165944	WG454374-02	Reference Sample		1	L13111334-02	11/27/13 16:59
67	P2.112713.170250	WG454374-07	Matrix Spike	40/50	1	L13111334-02	11/27/13 17:02
68	P2.112713.170500	L13111334-06	006	40/50	1		11/27/13 17:05

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: PE-ICP2 Dataset: 112713H4R.CSV
Analyst1: JYH Analyst2: N/A
Method: 6010/200.7 SOP: ME600E Rev: 14
Maintenance Log ID: 48342

Calibration Std: STD61325 ICV Std: STD61061 Post Spike: STD61080
ICSA: STD61374 ICSAB: STD61198 Int. Std: RGT17684
CCV: STD61324 LLCCV: STD61325 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 454243,454456,454446,454399,454634,454636

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	P2.112713.170810	L13111334-10	023	40/50	1		11/27/13 17:08
70	P2.112713.171120	WG454634-01	Post Digestion Spike		1	L13111334-10	11/27/13 17:11
71	P2.112713.171330	WG454634-02	Serial Dilution		5	L13111334-10	11/27/13 17:13
72	P2.112713.171636	WG454646-24	CCV		1		11/27/13 17:16
73	P2.112713.171847	WG454646-25	CCB		1		11/27/13 17:18
74	P2.112713.172153	L13111334-12	DLRB	40/50	1		11/27/13 17:21
75	P2.112713.172503	L13111334-14	DRB	40/50	1		11/27/13 17:25
76	P2.112713.172813	L13111334-16	DRTB	40/50	1		11/27/13 17:28
77	P2.112713.173123	L13111334-18	URB	40/50	1		11/27/13 17:31
78	P2.112713.173434	L13111343-03	CKCRB1	40/50	1		11/27/13 17:34
79	P2.112713.173741	L13111345-04	022	40/50	1		11/27/13 17:37
80	P2.112713.174052	WG454374-03	Reference Sample		1	L13111347-20	11/27/13 17:40
81	P2.112713.174358	WG454374-08	Matrix Spike	40/50	1	L13111347-20	11/27/13 17:43
82	P2.112713.174607	L13111347-22	DJCSW3	40/50	1		11/27/13 17:46
83	P2.112713.174913	WG454646-26	CCV		1		11/27/13 17:49
84	P2.112713.175124	WG454646-27	CCB		1		11/27/13 17:51
85	P2.112713.175430	L13111347-24	DJCSW4	40/50	1		11/27/13 17:54
86	P2.112713.175736	L13111347-26	DJCSW5	40/50	1		11/27/13 17:57
87	P2.112713.180042	L13111347-28	UBC	40/50	1		11/27/13 18:00
88	P2.112713.180348	L13111347-30	BASDJC1	40/50	1		11/27/13 18:03
89	P2.112713.180654	L13111373-02	FC-80	40/50	1		11/27/13 18:06
90	P2.112713.181004	L13111373-04	FC-83	40/50	1		11/27/13 18:10
91	P2.112713.181314	L13111381-10	AMO-IS-01	40/50	1		11/27/13 18:13
92	P2.112713.181625	WG454646-28	CCV		1		11/27/13 18:16
93	P2.112713.181836	WG454646-29	CCB		1		11/27/13 18:18
94	P2.112713.182142	WG454415-03	Method/Prep Blank	40/50	1		11/27/13 18:21
95	P2.112713.182449	WG454415-04	Laboratory Control S	40/50	1		11/27/13 18:24
96	P2.112713.182700	WG454415-01	Reference Sample		1	L13111376-02	11/27/13 18:27
97	P2.112713.183010	WG454415-05	Duplicate	40/50	1	L13111376-02	11/27/13 18:30
98	P2.112713.183316	WG454415-06	Matrix Spike	40/50	1	L13111376-02	11/27/13 18:33
99	P2.112713.183526	L13111376-04	FC-82	40/50	1		11/27/13 18:35
100	P2.112713.183836	L13111376-06	FC-83	40/50	1		11/27/13 18:38
101	P2.112713.184146	L13111377-02	FC-117	40/50	1		11/27/13 18:41
102	P2.112713.184456	WG454636-01	Post Digestion Spike		1	L13111377-02	11/27/13 18:44

Page: 3 Approved: December 03, 2013

Microbac Laboratories Inc.

Instrument Run Log

Instrument: PE-ICP2 Dataset: 112713H4R.CSV
Analyst1: JYH Analyst2: N/A
Method: 6010/200.7 SOP: ME600E Rev: 14
Maintenance Log ID: 48342

Calibration Std: STD61325 ICV Std: STD61061 Post Spike: STD61080
ICSA: STD61374 ICSAB: STD61198 Int. Std: RGT17684
CCV: STD61324 LLCCV: STD61325 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 454243,454456,454446,454399,454634,454636

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	P2.112713.184704	WG454636-02	Serial Dilution		5	L13111377-02	11/27/13 18:47
104	P2.112713.185011	WG454646-30	CCV		1		11/27/13 18:50
105	P2.112713.185222	WG454646-31	CCB		1		11/27/13 18:52
106	P2.112713.185528	L13111377-04	FC-80	40/50	1		11/27/13 18:55
107	P2.112713.185838	L13111377-06	FC-82	40/50	1		11/27/13 18:58
108	P2.112713.190145	L13111377-08	FC-132	40/50	1		11/27/13 19:01
109	P2.112713.190456	L13111377-10	FC-83	40/50	1		11/27/13 19:04
110	P2.112713.190807	L13111387-02	TUR-03	40/50	1		11/27/13 19:08
111	P2.112713.191117	L13111387-04	TUR-04	40/50	1		11/27/13 19:11
112	P2.112713.191427	WG454415-02	Reference Sample		1	L13111387-06	11/27/13 19:14
113	P2.112713.191737	WG454415-07	Matrix Spike	40/50	1	L13111387-06	11/27/13 19:17
114	P2.112713.191948	L13111387-08	TUR-11	40/50	1		11/27/13 19:19
115	P2.112713.192258	WG454646-32	CCV		1		11/27/13 19:22
116	P2.112713.192509	WG454646-33	CCB		1		11/27/13 19:25
117	P2.112713.192817	L13111387-13	TUR-IS-02	40/50	1		11/27/13 19:28
118	P2.112713.193127	L13111387-15	TUR-IS-06	40/50	1		11/27/13 19:31
119	P2.112713.193437	L13111387-17	TUR-IS-09	40/50	1		11/27/13 19:34
120	P2.112713.193747	L13111387-19	TUR-IS-01	40/50	1		11/27/13 19:37
121	P2.112713.194057	L13111416-02	001	40/50	1		11/27/13 19:40
122	P2.112713.194408	L13111467-02	S200995-AL SITE \#1	40/50	1		11/27/13 19:44
123	P2.112713.194718	L13111468-02	FC-193	40/50	1		11/27/13 19:47
124	P2.112713.195144	WG454646-34	CCV		1		11/27/13 19:51
125	P2.112713.195352	WG454646-35	CCB		1		11/27/13 19:53

Comments

Seq.	Rerun	Dil.	Reason	Analytes
19			Wrong sample label.JYH	
71			Wrong dilution factor.JYH	
74			Wrong dilution factor.JYH	

Page: 4 Approved: December 03, 2013

Microbac Laboratories Inc.

Data Checklist

Date: 26-NOV-2013
Analyst: JYH
Analyst: NA
Method: 6010B/6010C/200.7
Instrument: PE-ICP2
Curve Workgroup: 454527
Runlog ID: 57428
Analytical Workgroups: 454243,454399,454190,454290,454446,454451,454461

Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	X
ICB/CCB	X
ICSA/ICSAB	X
CRI	X
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	
Level 4	1310,842,843,864,855,1064,1086
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	MMB
Comments	

Primary Reviewer: Secondary Reviewer:
27-NOV-2013

CHECKLIST1 - Modified 03/05/2008
Generated: NOV-27-2013 13:14:46

Microbac Laboratories Inc.

Data Checklist

Date: 27-NOV-2013
Analyst: JYH
Analyst: NA
Method: 6010B/6010C/200.7
Instrument: PE-ICP2
Curve Workgroup: 454646
Runlog ID: 57458
Analytical Workgroups: 454243,454456,454446,454399,454634,454636

Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	X
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	
MS/MSD	
Post Spike/Serial Dilution	
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	
Level 4	864,1064,1086,1206,1295,1304
	1390,1391,1460
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	SLP
Comments	

Primary Reviewer:

Secondary Reviewer:
03-DEC-2013

CHECKLIST1 - Modified 03/05/2008
Generated: DEC-03-2013 10:39:04

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6010B

AAB#: WG454446

Login Number: L13111086

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
SMW 1-1113-1	01	11/15/13					11/25/2013	10.2	180		11/26/13	11.3	180	
SMW 1-1113-1	01	11/15/13					11/25/2013	10.2	180		11/27/13	12.3	180	
SMW 4-1113-1	02	11/15/13					11/25/2013	10.1	180		11/26/13	11.2	180	
SMW 4-1113-1	02	11/15/13					11/25/2013	10.1	180		11/27/13	12.2	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 3232039
Report generated 12/02/2013 12:44

Microbac Laboratories Inc.

METHOD BLANK SUMMARY

Login Number: L13111086
Blank File ID: P2.112613.153259
Prep Date: 11/25/13 14:18
Analyzed Date: 11/26/13 15:32
Analyst: JYH

Work Group: WG454446
Blank Sample ID: WG454260-03
Instrument ID: PE-ICP2
Method: 6010B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG454260-04	P2.112613.153601	11/26/13 15:36	01
SMW 1-1113-1	L13111086-01	P2.112613.165034	11/26/13 16:50	01
SMW 4-1113-1	L13111086-02	P2.112613.165337	11/26/13 16:53	01
SMW 1-1113-1	L13111086-01	P2.112713.163135	11/27/13 16:31	DL01
SMW 4-1113-1	L13111086-02	P2.112713.163518	11/27/13 16:35	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 3232040
Report generated 12/02/2013 12:44

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L13111086 Prep Date: 11/25/13 14:18 Sample ID: WG454260-03
Instrument ID: PE-ICP2 Run Date: 11/26/13 15:32 Prep Method: 3015
File ID: P2.112613.153259 Analyst: JYH Method: 6010B
Workgroup (AAB#): WG454446 Matrix: Water Units: mg/L
Contract #: Cal ID: PE-ICP-26-NOV-13

Analytes	LOD	LOQ	Concentration	Dilution	Qualifier
Beryllium, Total	0.00100	0.00200	0.00100	1	U
Calcium, Total	0.250	0.500	0.250	1	U
Magnesium, Total	0.250	0.500	0.250	1	U
Potassium, Total	0.500	1.00	0.500	1	U
Sodium, Total	0.250	0.500	0.250	1	U
Tin, Total	0.250	0.500	0.250	1	U
Vanadium, Total	0.00500	0.0100	0.00500	1	U
Zinc, Total	0.0100	0.0200	0.0100	1	U

LOD Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 3232041
02-DEC-2013 12:44

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L13111086 Run Date: 11/26/2013 Sample ID: WG454260-04
Instrument ID: PE-ICP2 Run Time: 15:36 Prep Method: 3015
File ID: P2.112613.153601 Analyst: JYH Method: 6010B
Workgroup (AAB#): WG454446 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD61373 Cal ID: PE-ICP-26-NOV-13

Analytes	Expected	Found	% Rec	LCS Limits	Q
Beryllium, Total	0.0313	0.0292	93.4	80 - 120	
Calcium, Total	6.25	6.37	102	80 - 120	
Magnesium, Total	6.25	6.37	102	80 - 120	
Potassium, Total	31.3	30.8	98.7	80 - 120	
Sodium, Total	31.3	30.7	98.4	80 - 120	
Tin, Total	0.625	0.652	104	80 - 120	
Vanadium, Total	0.625	0.612	97.8	80 - 120	
Zinc, Total	0.625	0.610	97.7	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 3232042
Report generated: 12/02/2013 12:44

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L13111086 Cal ID: PE-ICP2- Worknum: WG454446
Instrument ID: PE-ICP2 Contract #: Method: 6010B
Parent ID: WG454260-01 File ID: P2.112613.153808 Dil: 1 Matrix: WATER
Sample ID: WG454260-05 MS File ID: P2.112613.154015 Dil: 1 Units: mg/L
Sample ID: WG454260-06 MSD File ID: P2.112613.154222 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Beryllium, Total	ND	0.0313	0.0275	88.0	0.0313	0.0285	91.2	3.58	80 - 120	20	
Calcium, Total	195	6.25	203	130	6.25	211	265	4.09	80 - 120	20	*
Magnesium, Total	43.3	6.25	49.1	92.3	6.25	52.6	150	7.04	80 - 120	20	*
Potassium, Total	2.13	31.3	29.6	88.1	31.3	31.2	93.0	5.08	80 - 120	20	
Tin, Total	ND	0.625	0.520	83.1	0.625	0.541	86.6	4.06	80 - 120	20	
Vanadium, Total	0.0185	0.625	0.567	87.8	0.625	0.596	92.5	5.01	80 - 120	20	
Zinc, Total	0.100	0.625	0.631	84.9	0.625	0.655	88.8	3.83	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 3238632
Report generated 12/03/2013 11:45

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L13111086 Cal ID: PE-ICP2- Worknum: WG454446
Instrument ID: PE-ICP2 Contract #: Method: 6010B
Parent ID: WG454260-02 File ID: P2.112613.161744 Dil: 1 Matrix: WATER
Sample ID: WG454260-07 MS File ID: P2.112613.162436 Dil: 1 Units: mg/L
Sample ID: WG454260-08 MSD File ID: P2.112613.162643 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Beryllium, Dissolved	ND	0.0313	0.0296	94.7	0.0313	0.0288	92.1	2.86	80 - 120	20	
Calcium, Dissolved	190	6.25	200	174	6.25	200	161	0.377	80 - 120	20	*
Magnesium, Dissolved	42.4	6.25	48.0	89.0	6.25	48.8	102	1.69	80 - 120	20	
Potassium, Dissolved	0.795	31.3	31.3	97.7	31.3	31.0	96.6	1.11	80 - 120	20	
Tin, Dissolved	ND	0.625	0.577	92.2	0.625	0.552	88.3	4.31	80 - 120	20	
Vanadium, Dissolved	ND	0.625	0.627	100	0.625	0.605	96.8	3.58	80 - 120	20	
Zinc, Dissolved	ND	0.625	0.595	95.3	0.625	0.572	91.6	3.94	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 3238632
Report generated 12/03/2013 11:45

Microbac Laboratories Inc.
Serial Dilution Report

Login: L13111086 **Worknum:** WG454446
Instrument: PE-ICP2 **Method:** 6010B
Serial Dil: WG454446-02 **File ID:** P2.112613.155242 **Dil:** 5 **Units:** mg/L
Sample: L13111397-02 **File ID:** P2.112613.154732 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Beryllium	ND	U	ND	U		
Calcium	45.4		46.0		1.24	
Magnesium	14.9		15.1		1.19	
Potassium	1.30	X	ND	U		
Sodium	3.95	X	4.32	X	9.49	
Tin	ND	U	ND	U		
Vanadium	ND	U	ND	U		
Zinc	ND	U	ND	U		

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 50 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 50 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 3232036
12/02/2013 12:44

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L13111086 **Worknum:** WG454446
Instrument ID: PE-ICP2 **Method:** 6010B
Post Spike ID: WG454446-01 **File ID:** P2.112613.155035 **Dil:** 1 **Units:** mg/L
Sample ID: L13111397-02 **File ID:** P2.112613.154732 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
BERYLLIUM	0.0225		0	U	.025	89.9	75 - 125	
CALCIUM	47.6		45.4		5	133.9	75 - 125	N
MAGNESIUM	18.5		14.9		5	100.7	75 - 125	
POTASSIUM	25.5		1.30		25	97.2	75 - 125	
SODIUM	27.8		3.95		25	96.8	75 - 125	
TIN	0.495		0	U	.5	98.9	75 - 125	
VANADIUM	0.471		0	U	.5	94.2	75 - 125	
ZINC	0.478		0	U	.5	95.6	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 3232038
Report generated: 12/02/2013 12:44

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	**L13111086**	Workgroup (AAB#):	**WG454446**
Analytical Method:	**6010B**	Instrument ID:	**PE-ICP2**
ICAL Worknum:	**WG454527**	Initial Calibration Date:	**26-NOV-2013 11:28**

	WG454527-01		WG454527-02		WG454527-03		WG454527-04		WG454527-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
BERYLLIUM	0	-1520	.0005	280	.001	537	.05	33300	.1	65200	.999944	
CALCIUM	0	-58.4	NA	NA	.2	22.8	10	1920	20	3940	.999898	
MAGNESIUM	0	13.2	.1	88.5	.2	177	10	11100	20	21600	.999921	
POTASSIUM	0	235	.5	612	1	1320	50	81600	100	161000	1	
SODIUM	0	492	.5	4480	1	8930	50	530000	100	1020000	1	
TIN	0	14.8	.01	50.8	.02	99.7	1	5920	1	11700	.999977	
VANADIUM	0	8530	.01	1970	.02	3260	1	187000	2	365000	.999932	
ZINC	0	-24.7	.01	216	.02	422	1	27400	2	52600	.999812	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 3232045
Report generated: 02-DEC-2013 12:44

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	**L13111086**	Workgroup (AAB#):	**WG454446**
Analytical Method:	**6010B**	Instrument ID:	**PE-ICP2**
ICAL Worknum:	**WG454646**	Initial Calibration Date:	**27-NOV-2013 13:58**

	WG454646-01		WG454646-02		WG454646-03		WG454646-04		WG454646-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
BERYLLIUM	0	-1430	.0005	289	.001	465	.05	24800	.1	47600	.999803	
CALCIUM	0	-60.9	NA	NA	.2	25.4	10	1400	20	2580	.999113	
MAGNESIUM	0	25.6	.1	56.2	.2	123	10	8860	20	17700	.999999	
POTASSIUM	0	217	.5	594	1	1130	50	69000	100	138000	1	
SODIUM	0	541	.5	3770	1	7340	50	455000	100	916000	1	
TIN	0	14.7	.01	40.7	.02	76.6	1	4400	1	8190	.999364	
VANADIUM	0	7280	.01	815	.02	2220	1	133000	2	270000	.999964	
ZINC	0	-15.0	.01	168	.02	442	1	20400	2	40100	.99997	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 3232045
Report generated: 02-DEC-2013 12:44

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L13111086
Run Date: 11/26/2013
Sample ID: WG454527-07
Instrument ID: PE-ICP2
Run Time: 11:32
Method: 6010B
File ID: P2.112613.113244
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG454446
Cal ID: PE-ICP2 - 26-NOV-13
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
BERYLLIUM	.0008	.0016	.0008	U
CALCIUM	.2	.4	.2	U
MAGNESIUM	.2	.4	.2	U
POTASSIUM	.4	.8	.4	U
SODIUM	.2	.4	.2	U
TIN	.2	.4	.2	U
VANADIUM	.004	.008	.004	U
ZINC	.008	.016	.008	U

U = Result is less than 2 x MDL
F = Result is between MDL and 2 x MDL
* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 3232048
Report generated 12/02/2013 12:44

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L13111086
Instrument ID: PE-ICP2
File ID: P2.112713.140226
Workgroup (AAB#): WG454446
Matrix: WATER

Run Date: 11/27/2013
Run Time: 14:02
Analyst: JYH
Cal ID: PE-ICP2 - 27-NOV-13

Sample ID: WG454646-07
Method: 6010B
Units: mg/L

Analytes	MDL	RDL	Concentration	Qualifier
BERYLLIUM	.0008	.0016	.0008	U
CALCIUM	.2	.4	.2	U
MAGNESIUM	.2	.4	.2	U
POTASSIUM	.4	.8	.4	U
SODIUM	.2	.4	.2	U
TIN	.2	.4	.2	U
VANADIUM	.004	.008	-.00443	F
ZINC	.008	.016	.008	U

U = Result is less than 2 x MDL
F = Result is between MDL and 2 x MDL
* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 3232048
Report generated 12/02/2013 12:44

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L13111086 Run Date: 11/26/2013 Sample ID: WG454527-11
Instrument ID: PE-ICP2 Run Time: 11:42 Method: 6010B
File ID: P2.112613.114201 Analyst: JYH Units: mg/L
Workgroup (AAB#): WG454446 Cal ID: PE-ICP - 26-NOV-13
Matrix: WATER QAPP: DOD4_NOFLAG

Analytes	MDL	RDL	Concentration	Qualifier
Beryllium	0.000800	0.00160	0.000800	U
Calcium	0.200	0.400	0.200	U
Magnesium	0.200	0.400	0.200	U
Potassium	0.400	0.800	0.400	U
Sodium	0.200	0.400	0.200	U
Tin	0.200	0.400	0.200	U
Vanadium	0.00400	0.00800	0.00400	U
Zinc	0.00800	0.0160	0.00800	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 3232051
Report generated 12/02/2013 12:44

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L13111086
Run Date: 11/26/2013
Sample ID: WG454527-25
Instrument ID: PE-ICP2
Run Time: 14:59
Method: 6010B
File ID: P2.112613.145923
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG454446
Cal ID: PE-ICP - 26-NOV-13
Matrix: WATER
QAPP: DOD4_NOFLAG

Analytes	MDL	RDL	Concentration	Qualifier
Beryllium	0.000800	0.00160	0.000800	U
Calcium	0.200	0.400	0.200	U
Magnesium	0.200	0.400	0.200	U
Potassium	0.400	0.800	0.400	U
Sodium	0.200	0.400	0.200	U
Tin	0.200	0.400	0.200	U
Vanadium	0.00400	0.00800	0.00400	U
Zinc	0.00800	0.0160	0.00800	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 3232051
Report generated 12/02/2013 12:44

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L13111086 Run Date: 11/26/2013 Sample ID: WG454527-27
Instrument ID: PE-ICP2 Run Time: 16:00 Method: 6010B
File ID: P2.112613.160053 Analyst: JYH Units: mg/L
Workgroup (AAB#): WG454446 Cal ID: PE-ICP - 26-NOV-13
Matrix: WATER QAPP: DOD4_NOFLAG

Analytes	MDL	RDL	Concentration	Qualifier
Beryllium	0.000800	0.00160	0.000800	U
Calcium	0.200	0.400	0.200	U
Magnesium	0.200	0.400	0.200	U
Potassium	0.400	0.800	0.400	U
Sodium	0.200	0.400	0.200	U
Tin	0.200	0.400	0.200	U
Vanadium	0.00400	0.00800	0.00400	U
Zinc	0.00800	0.0160	0.00800	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 3232051
Report generated 12/02/2013 12:44

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L13111086 Run Date: 11/26/2013 Sample ID: WG454527-29
Instrument ID: PE-ICP2 Run Time: 16:33 Method: 6010B
File ID: P2.112613.163308 Analyst: JYH Units: mg/L
Workgroup (AAB#): WG454446 Cal ID: PE-ICP - 26-NOV-13
Matrix: WATER QAPP: DOD4_NOFLAG

Analytes	MDL	RDL	Concentration	Qualifier
Beryllium	0.000800	0.00160	0.000800	U
Calcium	0.200	0.400	0.200	U
Magnesium	0.200	0.400	0.200	U
Potassium	0.400	0.800	0.400	U
Sodium	0.200	0.400	0.200	U
Tin	0.200	0.400	0.200	U
Vanadium	0.00400	0.00800	0.00400	U
Zinc	0.00800	0.0160	0.00800	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 3232051
Report generated 12/02/2013 12:44

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L13111086 Run Date: 11/26/2013 Sample ID: WG454527-31
Instrument ID: PE-ICP2 Run Time: 16:58 Method: 6010B
File ID: P2.112613.165847 Analyst: JYH Units: mg/L
Workgroup (AAB#): WG454446 Cal ID: PE-ICP - 26-NOV-13
Matrix: WATER QAPP: DOD4_NOFLAG

Analytes	MDL	RDL	Concentration	Qualifier
Beryllium	0.000800	0.00160	0.000800	U
Calcium	0.200	0.400	0.200	U
Magnesium	0.200	0.400	0.200	U
Potassium	0.400	0.800	0.400	U
Sodium	0.200	0.400	0.200	U
Tin	0.200	0.400	0.200	U
Vanadium	0.00400	0.00800	0.00400	U
Zinc	0.00800	0.0160	0.00800	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 3232051
Report generated 12/02/2013 12:44

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L13111086
Run Date: 11/27/2013
Sample ID: WG454646-11
Instrument ID: PE-ICP2
Run Time: 14:11
Method: 6010B
File ID: P2.112713.141159
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG454446
Cal ID: PE-ICP - 27-NOV-13
Matrix: WATER
QAPP: DOD4_NOFLAG

Analytes	MDL	RDL	Concentration	Qualifier
Beryllium	0.000800	0.00160	0.000800	U
Calcium	0.200	0.400	0.200	U
Magnesium	0.200	0.400	0.200	U
Potassium	0.400	0.800	0.400	U
Sodium	0.200	0.400	0.200	U
Tin	0.200	0.400	0.200	U
Vanadium	0.00400	0.00800	0.00400	U
Zinc	0.00800	0.0160	0.00800	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 3232051
Report generated 12/02/2013 12:44

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L13111086 Run Date: 11/27/2013 Sample ID: WG454646-20
Instrument ID: PE-ICP2 Run Time: 16:10 Method: 6010B
File ID: P2.112713.161034 Analyst: JYH Units: mg/L
Workgroup (AAB#): WG454446 Cal ID: PE-ICP - 27-NOV-13
Matrix: WATER QAPP: DOD4_NOFLAG

Analytes	MDL	RDL	Concentration	Qualifier
Beryllium	0.000800	0.00160	0.000800	U
Calcium	0.200	0.400	0.200	U
Magnesium	0.200	0.400	0.200	U
Potassium	0.400	0.800	0.400	U
Sodium	0.200	0.400	0.200	U
Tin	0.200	0.400	0.200	U
Vanadium	0.00400	0.00800	0.00400	U
Zinc	0.00800	0.0160	0.00800	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 3232051
Report generated 12/02/2013 12:44

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L13111086 Run Date: 11/27/2013 Sample ID: WG454646-23
Instrument ID: PE-ICP2 Run Time: 16:40 Method: 6010B
File ID: P2.112713.164032 Analyst: JYH Units: mg/L
Workgroup (AAB#): WG454446 Cal ID: PE-ICP - 27-NOV-13
Matrix: WATER QAPP: DOD4_NOFLAG

Analytes	MDL	RDL	Concentration	Qualifier
Beryllium	0.000800	0.00160	0.000800	U
Calcium	0.200	0.400	0.200	U
Magnesium	0.200	0.400	0.200	U
Potassium	0.400	0.800	0.400	U
Sodium	0.200	0.400	0.200	U
Tin	0.200	0.400	0.200	U
Vanadium	0.00400	0.00800	0.00400	U
Zinc	0.00800	0.0160	0.00800	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 3232051
Report generated 12/02/2013 12:44

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L13111086 Run Date: 11/27/2013 Sample ID: WG454646-06
Instrument ID: PE-ICP2 Run Time: 14:00 Method: 6010B
File ID: P2.112713.140016 Analyst: JYH Units: mg/L
Workgroup (AAB#): WG454446 Cal ID: PE-ICP - 27-NOV-13
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Beryllium		.05	0.0464	92.8	90 - 110	
Calcium		10	10.7	107	90 - 110	
Magnesium		10	9.49	94.9	90 - 110	
Potassium		50	50.2	100	90 - 110	
Sodium		50	49.0	98.0	90 - 110	
Tin		1	1.10	110	90 - 110	
Vanadium		1	0.979	97.9	90 - 110	
Zinc		1	0.985	98.5	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 3232046
Report generated 12/02/2013 12:44

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L13111086 Run Date: 11/26/2013 Sample ID: WG454527-06
Instrument ID: PE-ICP2 Run Time: 11:30 Method: 6010B
File ID: P2.112613.113038 Analyst: JYH Units: mg/L
Workgroup (AAB#): WG454446 Cal ID: PE-ICP - 26-NOV-13
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Beryllium		.05	0.0502	100	90 - 110	
Calcium		10	10.5	105	90 - 110	
Magnesium		10	10.5	105	90 - 110	
Potassium		50	51.5	103	90 - 110	
Sodium		50	51.8	104	90 - 110	
Tin		1	1.04	104	90 - 110	
Vanadium		1	1.02	102	90 - 110	
Zinc		1	1.03	103	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 3232046
Report generated 12/02/2013 12:44

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L13111086
Instrument ID: PE-ICP2
File ID: P2.112613.113954
Workgroup (AAB#): WG454446
Matrix: WATER

Run Date: 11/26/2013
Run Time: 11:39
Analyst: JYH
Cal ID: PE-ICP - 26-NOV-13

Sample ID: WG454527-10
Method: 6010B
QC Key: DOD4

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Beryllium		0.0500	0.0488	mg/L	97.6	90 - 110		
Calcium		10.0	10.5	mg/L	105	90 - 110		
Magnesium		10.0	11.0	mg/L	110	90 - 110		
Potassium		50.0	51.0	mg/L	102	90 - 110		
Sodium		50.0	52.1	mg/L	104	90 - 110		
Tin		1.00	0.996	mg/L	99.6	90 - 110		
Vanadium		1.00	0.978	mg/L	97.8	90 - 110		
Zinc		1.00	1.00	mg/L	100	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 3232050
Report generated 12/02/2013 12:44

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L13111086
Instrument ID: PE-ICP2
File ID: P2.112613.145716
Workgroup (AAB#): WG454446
Matrix: WATER

Run Date: 11/26/2013
Run Time: 14:57
Analyst: JYH
Cal ID: PE-ICP - 26-NOV-13

Sample ID: WG454527-24
Method: 6010B
QC Key: DOD4

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Beryllium		0.0500	0.0474	mg/L	94.8	90 - 110		
Calcium		10.0	10.1	mg/L	101	90 - 110		
Magnesium		10.0	9.57	mg/L	95.7	90 - 110		
Potassium		50.0	48.9	mg/L	97.9	90 - 110		
Sodium		50.0	51.3	mg/L	103	90 - 110		
Tin		1.00	0.981	mg/L	98.1	90 - 110		
Vanadium		1.00	0.963	mg/L	96.3	90 - 110		
Zinc		1.00	0.976	mg/L	97.6	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 3232050
Report generated 12/02/2013 12:44

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L13111086
Run Date: 11/26/2013
Sample ID: WG454527-26
Instrument ID: PE-ICP2
Run Time: 15:58
Method: 6010B
File ID: P2.112613.155846
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG454446
Cal ID: PE-ICP - 26-NOV-13
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Beryllium		0.0500	0.0495	mg/L	99.1	90 - 110		
Calcium		10.0	10.0	mg/L	100	90 - 110		
Magnesium		10.0	9.78	mg/L	97.8	90 - 110		
Potassium		50.0	48.7	mg/L	97.4	90 - 110		
Sodium		50.0	50.2	mg/L	100	90 - 110		
Tin		1.00	0.979	mg/L	97.9	90 - 110		
Vanadium		1.00	0.972	mg/L	97.2	90 - 110		
Zinc		1.00	0.979	mg/L	97.9	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 3232050
Report generated 12/02/2013 12:44

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L13111086
Run Date: 11/26/2013
Sample ID: WG454527-28
Instrument ID: PE-ICP2
Run Time: 16:31
Method: 6010B
File ID: P2.112613.163101
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG454446
Cal ID: PE-ICP - 26-NOV-13
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Beryllium		0.0500	0.0489	mg/L	97.9	90 - 110		
Calcium		10.0	10.1	mg/L	101	90 - 110		
Magnesium		10.0	9.95	mg/L	99.5	90 - 110		
Potassium		50.0	49.0	mg/L	98.1	90 - 110		
Sodium		50.0	50.3	mg/L	101	90 - 110		
Tin		1.00	0.978	mg/L	97.8	90 - 110		
Vanadium		1.00	0.957	mg/L	95.7	90 - 110		
Zinc		1.00	0.966	mg/L	96.6	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 3232050
Report generated 12/02/2013 12:44

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L13111086
Run Date: 11/26/2013
Sample ID: WG454527-30
Instrument ID: PE-ICP2
Run Time: 16:56
Method: 6010B
File ID: P2.112613.165640
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG454446
Cal ID: PE-ICP - 26-NOV-13
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Beryllium		0.0500	0.0507	mg/L	101	90 - 110		
Calcium		10.0	10.5	mg/L	105	90 - 110		
Magnesium		10.0	10.0	mg/L	100	90 - 110		
Potassium		50.0	50.2	mg/L	100	90 - 110		
Sodium		50.0	52.0	mg/L	104	90 - 110		
Tin		1.00	1.03	mg/L	103	90 - 110		
Vanadium		1.00	1.01	mg/L	101	90 - 110		
Zinc		1.00	1.01	mg/L	101	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 3232050
Report generated 12/02/2013 12:44

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L13111086
Run Date: 11/27/2013
Sample ID: WG454646-10
Instrument ID: PE-ICP2
Run Time: 14:09
Method: 6010B
File ID: P2.112713.140948
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG454446
Cal ID: PE-ICP - 27-NOV-13
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Beryllium		0.0500	0.0499	mg/L	99.8	90 - 110		
Calcium		10.0	10.5	mg/L	105	90 - 110		
Magnesium		10.0	10.2	mg/L	102	90 - 110		
Potassium		50.0	50.1	mg/L	100	90 - 110		
Sodium		50.0	48.9	mg/L	97.8	90 - 110		
Tin		1.00	1.01	mg/L	101	90 - 110		
Vanadium		1.00	1.01	mg/L	101	90 - 110		
Zinc		1.00	1.02	mg/L	102	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 3232050
Report generated 12/02/2013 12:44

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L13111086
Run Date: 11/27/2013
Sample ID: WG454646-19
Instrument ID: PE-ICP2
Run Time: 16:08
Method: 6010B
File ID: P2.112713.160823
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG454446
Cal ID: PE-ICP - 27-NOV-13
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Beryllium		0.0500	0.0522	mg/L	104	90 - 110		
Calcium		10.0	11.0	mg/L	110	90 - 110		
Magnesium		10.0	10.2	mg/L	102	90 - 110		
Potassium		50.0	50.3	mg/L	101	90 - 110		
Sodium		50.0	50.0	mg/L	99.9	90 - 110		
Tin		1.00	1.07	mg/L	107	90 - 110		
Vanadium		1.00	1.00	mg/L	100	90 - 110		
Zinc		1.00	1.05	mg/L	105	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 3232050
Report generated 12/02/2013 12:44

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L13111086
Run Date: 11/27/2013
Sample ID: WG454646-22
Instrument ID: PE-ICP2
Run Time: 16:38
Method: 6010B
File ID: P2.112713.163824
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG454446
Cal ID: PE-ICP - 27-NOV-13
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Beryllium		0.0500	0.0524	mg/L	105	90 - 110		
Calcium		10.0	10.8	mg/L	108	90 - 110		
Magnesium		10.0	10.1	mg/L	101	90 - 110		
Potassium		50.0	50.2	mg/L	100	90 - 110		
Sodium		50.0	49.4	mg/L	98.7	90 - 110		
Tin		1.00	1.04	mg/L	104	90 - 110		
Vanadium		1.00	0.979	mg/L	97.9	90 - 110		
Zinc		1.00	1.03	mg/L	103	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 3232050
Report generated 12/02/2013 12:44

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L13111086 **Workgroup (AAB#):** WG454446
Instrument ID: PE-ICP2 **Method:** 6010B
Sol. A : WG454527-08 **File ID:** P2.112613.113546 **Units:** mg/L
Sol. AB : WG454527-09 **File ID:** P2.112613.113751 **Matrix:** Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Beryllium	NS	-0.000210	NS	0.250	0.249	99.6	
Calcium	250	261	104	250	263	105	
Magnesium	250	248	99.2	250	255	102	
Potassium	NS	0.00891	NS	5.00	5.12	102	
Sodium	NS	0.0470	NS	5.00	5.10	102	
Tin	NS	-0.0546	NS	NS	-0.0565	NS	
Vanadium	NS	-0.000550	NS	0.250	0.243	97.2	
Zinc	NS	-0.00339	NS	0.500	0.464	92.8	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 3232049
Report generated 12/02/2013 12:44

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L13111086 **Workgroup (AAB#):** WG454446
Instrument ID: PE-ICP2 **Method:** 6010B
Sol. A : WG454646-08 **File ID:** P2.112713.140532 **Units:** mg/L
Sol. AB : WG454646-09 **File ID:** P2.112713.140741 **Matrix:** Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Beryllium	NS	0.0000900	NS	0.250	0.243	97.2	
Calcium	250	275	110	250	275	110	
Magnesium	250	241	96.4	250	247	98.8	
Potassium	NS	-0.0441	NS	5.00	5.04	101	
Sodium	NS	0.0207	NS	5.00	5.04	101	
Tin	NS	-0.0753	NS	NS	-0.0758	NS	
Vanadium	NS	0.00177	NS	0.250	0.248	99.2	
Zinc	NS	-0.00243	NS	0.500	0.446	89.2	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 3232049
Report generated 12/02/2013 12:44

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L13111086 **Date:** 12/29/2012
Insturment ID: PE-ICP2 **Method:** 6010B

Analyte	Wave Length	AG	AL	AS	B	BA
ALUMINUM	396.15	0	0	0.0681	0	0
ANTIMONY	206.84	0	0	0	0	0
ARSENIC	188.98	0	0.206	0	0	0
BARIUM	233.53	0	0	0	0	0
BERYLLIUM	234.86	0	0	0	0	0
BORON	249.68	0	0	0	0	0
CADMIUM	228.80	0	0	0	24.1	0
CALCIUM	227.55	0	0	0	0	0
CHROMIUM	267.72	0	0	-0.490	1.50	0
COBALT	228.62	0	0	0	5.90	-0.192
COPPER	327.39	0.0717	0	0	0	0
IRON	239.56	-0.460	-0.119	-0.241	0.430	0.0546
LEAD	220.35	0	0	0	0	0
LITHIUM	670.78	0	0	0	0	0
MAGNESIUM	279.08	0	0	0	0	0
MANGANESE	257.61	0.130	0	0	0	0
MOLYBDENUM	202.03	0	69.0	5.34	-1.00	-0.750
NICKEL	231.60	0	0	0	0	0
POTASSIUM	766.49	0	0	0	0	0
SELENIUM	196.03	0	0	0	0	0
SILICON	251.61	0	0	0	0	0
SILVER	328.07	0	0	0	0	0
SODIUM	589.59	0	0	0	0	0
STRONTIUM	407.77	0.200	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.93	0	0	0	0	0
TITANIUM	334.94	0	0	0	0	0
VANADIUM	290.88	-2.05	0	0.0990	0	0.360
ZINC	206.20	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 3232044
Report generated: 12/02/2013 12:44

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L13111086 **Date:** 12/29/2012
Insturment ID: PE-ICP2 **Method:** 6010B

Analyte	Wave Length	BE	CA	CD	CO	CR
ALUMINUM	396.15	0	-0.158	0	0	-0.0238
ANTIMONY	206.84	0	0	0	0	0
ARSENIC	188.98	0	10.0	0	5.00	0
BARIUM	233.53	0	0	0	0.337	0
BERYLLIUM	234.86	0	0	0	0	0
BORON	249.68	0	0	0	0	0
CADMIUM	228.80	0	0	0	0	0
CALCIUM	227.55	0	0	0	0	0
CHROMIUM	267.72	-0.0220	0	0	-0.200	0
COBALT	228.62	0	180	-3.64	0	0
COPPER	327.39	0	0	0	0	0
IRON	239.56	0.215	-24.0	0.000840	0.0262	0.0722
LEAD	220.35	0	0	0	0	0
LITHIUM	670.78	0	0	0	0	0
MAGNESIUM	279.08	0	0.104	0	0	0
MANGANESE	257.61	-0.100	0	0	0	0
MOLYBDENUM	202.03	-0.376	10.6	0.0420	-1.80	0.170
NICKEL	231.60	-0.00974	-831	-0.0400	0.129	0
POTASSIUM	766.49	0	0	0	0	0
SELENIUM	196.03	0	0	0	0	0
SILICON	251.61	0	0	0	0	0
SILVER	328.07	0	0	0	0	0
SODIUM	589.59	0	0	0	0	0
STRONTIUM	407.77	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.93	0	0	0	0	0
TITANIUM	334.94	0	3.00	0	2.21	0
VANADIUM	290.88	0	0	0.0800	0	-0.567
ZINC	206.20	0	0	0	0	-0.0400

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 3232044
Report generated: 12/02/2013 12:44

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L13111086 **Date:** 12/29/2012
Insturment ID: PE-ICP2 **Method:** 6010B

Analyte	Wave Length	CU	FE	K	LI	MG
ALUMINUM	396.15	0	0	0	0	0
ANTIMONY	206.84	0	0	0	0	0
ARSENIC	188.98	0	0	0	0	0
BARIUM	233.53	0	0	0	0	0
BERYLLIUM	234.86	0	0	0	0	0
BORON	249.68	0	0	0	0	0
CADMIUM	228.80	0	0	0	0	0
CALCIUM	227.55	0	0	0	0	0
CHROMIUM	267.72	-0.0400	0	0	0	0
COBALT	228.62	0.280	2.77	0	0	0
COPPER	327.39	0	0	0	0	0
IRON	239.56	-0.0800	0	0	0	0.540
LEAD	220.35	0	0	0	0	0
LITHIUM	670.78	0.154	0	0	0	0
MAGNESIUM	279.08	0	0.0200	0	0	0
MANGANESE	257.61	0	0	0	0	0
MOLYBDENUM	202.03	-0.0774	0	0	0	-18.0
NICKEL	231.60	0.150	0	0	0	0
POTASSIUM	766.49	0	0	0	0	0
SELENIUM	196.03	0.0700	0	0	0	0
SILICON	251.61	0	0	0	0	0
SILVER	328.07	0	0	0	0	0
SODIUM	589.59	0	0	1.00	0	0
STRONTIUM	407.77	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.93	0	0	0	0	0
TITANIUM	334.94	-1.05	0	0	0	0
VANADIUM	290.88	-0.440	0	0	0	0
ZINC	206.20	-0.0613	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 3232044
Report generated: 12/02/2013 12:44

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L13111086 **Date:** 12/29/2012
Insturment ID: PE-ICP2 **Method:** 6010B

Analyte	Wave Length	MN	MO	NA	NI	PB
ALUMINUM	396.15	0	0	0	0	-0.166
ANTIMONY	206.84	0	0	0	-0.0500	-0.0100
ARSENIC	188.98	0	0	0	0	0
BARIUM	233.53	0	0	0	0	0
BERYLLIUM	234.86	0	0	0	0	0
BORON	249.68	0	0	0	0	0
CADMIUM	228.80	0	0	0	0	0
CALCIUM	227.55	0	0	0	0	0
CHROMIUM	267.72	-0.110	0	0	0	0.0550
COBALT	228.62	0	0	0	1.05	0.462
COPPER	327.39	0	0	0	0	1.00
IRON	239.56	-0.0445	-0.0490	0	0	0.0327
LEAD	220.35	0	0	0	0	0
LITHIUM	670.78	0	0	0	0	0
MAGNESIUM	279.08	0	0	0	0	0
MANGANESE	257.61	0	-0.209	0	0	0.600
MOLYBDENUM	202.03	-0.197	0	0	0	-0.500
NICKEL	231.60	0	0	0	0	-0.190
POTASSIUM	766.49	0	0	0	0	0
SELENIUM	196.03	0	0	0	0	0
SILICON	251.61	0	0	0	0	0
SILVER	328.07	0	0	0	0	0
SODIUM	589.59	0	0	0	0	0
STRONTIUM	407.77	0	0	0	0	0
THALLIUM	190.80	0	0	0	0.400	0
TIN	189.93	0	0	0	0	0
TITANIUM	334.94	0	0	0	0	0
VANADIUM	290.88	-0.200	-0.480	0	0	-0.224
ZINC	206.20	-0.0553	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 3232044
Report generated: 12/02/2013 12:44

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L13111086 **Date:** 12/29/2012
Insturment ID: PE-ICP2 **Method:** 6010B

Analyte	Wave Length	SB	SE	SI	SN	SR
ALUMINUM	396.15	0	0.000612	0	0	0
ANTIMONY	206.84	0	0	0	0	0
ARSENIC	188.98	-0.740	0	0	0	0
BARIUM	233.53	0	0	0	0	0
BERYLLIUM	234.86	0	0	0	0	0
BORON	249.68	0	0	0	0	0
CADMIUM	228.80	0	0	0	0	0
CALCIUM	227.55	0	0	0	0	0.0223
CHROMIUM	267.72	8.46	0	0	0	0
COBALT	228.62	0.730	-0.250	0	0	0
COPPER	327.39	0	0	0	0	0
IRON	239.56	-0.0366	-0.210	0	0	0
LEAD	220.35	0	0	0	0	0
LITHIUM	670.78	0	0	0	0	0
MAGNESIUM	279.08	0	0	0	0	0
MANGANESE	257.61	0	0.300	0	0	0
MOLYBDENUM	202.03	-1.46	0	11.1	0	0
NICKEL	231.60	-0.745	-0.376	0	0	0
POTASSIUM	766.49	0	0	0	0	0
SELENIUM	196.03	0	0	0	0	0
SILICON	251.61	0	0	0	0	0
SILVER	328.07	0	0	0	0	0
SODIUM	589.59	0	0	0	0	0
STRONTIUM	407.77	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.93	0	0	0	0	0
TITANIUM	334.94	0	-0.220	0	0	0
VANADIUM	290.88	-0.920	-0.100	0	0	0
ZINC	206.20	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 3232044
Report generated: 12/02/2013 12:44

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L13111086 **Date:** 12/29/2012
Insturment ID: PE-ICP2 **Method:** 6010B

Analyte	Wave Length	TI	TL	V	ZN
ALUMINUM	396.15	0	-0.0270	0	0
ANTIMONY	206.84	0	0	0	-0.300
ARSENIC	188.98	0	0	0.200	0
BARIUM	233.53	0	0	0.0400	0
BERYLLIUM	234.86	0	0	0	0
BORON	249.68	0	0	0	0
CADMIUM	228.80	0	0	0	0
CALCIUM	227.55	-0.150	0	0	0
CHROMIUM	267.72	0.297	0	0	-8.16
COBALT	228.62	0	1.00	0	0
COPPER	327.39	0	0	0	-0.200
IRON	239.56	0	0	-0.00351	0.000100
LEAD	220.35	0	0	0	-0.100
LITHIUM	670.78	0	0	0	0
MAGNESIUM	279.08	0	0	0.0260	0
MANGANESE	257.61	0	1.00	0	0
MOLYBDENUM	202.03	0	-0.120	0.178	0
NICKEL	231.60	0	0	0	-0.200
POTASSIUM	766.49	0	0	0	0
SELENIUM	196.03	0	0	0	0
SILICON	251.61	0	0	0	0
SILVER	328.07	0	0	0	0
SODIUM	589.59	0	0	0	0
STRONTIUM	407.77	0	0	0	0
THALLIUM	190.80	0	0	0	0
TIN	189.93	0	0	0	0
TITANIUM	334.94	0	-12.0	0	0
VANADIUM	290.88	0	-2.76	0	-0.100
ZINC	206.20	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 3232044
Report generated: 12/02/2013 12:44

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L13111086 **Date:** 11/13/2013
Insturment ID: PE-ICP2 **Method:** 6010B

Analyte	Integration Time (Sec.)	Concentration (mg/L)
Aluminum	10.00	450.0
Antimony	10.00	45.0
Arsenic	10.00	9.0
Barium	10.00	9.0
Beryllium	10.00	4.5
Boron	10.00	45.0
Cadmium	10.00	4.5
Calcium	10.00	450.0
Chromium	10.00	45.0
Cobalt	10.00	45.0
Copper	10.00	45.0
Iron	10.00	450.0
Lead	10.00	90.0
Lithium	10.00	0.9
Magnesium	10.00	450.0
Manganese	10.00	27.0
Molybdenum	10.00	45.0
Nickel	10.00	45.0
Phosphorus	10.00	72.0
Potassium	10.00	90.0
Selenium	10.00	45.0
Silicon	10.00	31.5
Silver	10.00	4.5
Sodium	10.00	180.0
Strontium	10.00	2.7
Thallium	10.00	45.0
Tin	10.00	45.0
Titanium	10.00	18.0
Vanadium	10.00	45.0
Zinc	10.00	45.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 3232043
Report generated: 12/02/2013 12:44

2.1.1.3 Raw Data

Reprocessing Begun
Logged In Analyst: peicp2 Technique: ICP Continuous

Results Data Set (original): 112613H2
Results Library (original): C:\pe\peicp2\Results\results1.mdb
Results Data Set (reprocessed): 112613H2R
Results Library (reprocessed): C:\pe\peicp2\Results\results1.mdb

Sequence No.: 1 Autosampler Location: 1
Sample ID: S0 Date Collected: 11/26/2013 11:17:17 AM
Analyst: Data Type: Reprocessed on 11/26/2013 11:59:41 AM
Logged In Analyst (Original) : peicp2
Initial Sample Wt: Initial Sample Vol:
Dilution: Sample Prep Vol:

Nebulizer Parameters: S0

Analyte	Back Pressure	Flow
All	175.0 kPa	0.45 L/min

Mean Data: S0

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Calib Conc.	Units
Y 371.029	2697382.9	58319.43	2.16%		
YRADIAL	192792.3	4602.23	2.39%		
Ga 417.206	855751.8	23824.94	2.78%		
GaRADIAL	39202.4	1483.50	3.78%		
Ag 328.068†	-363.8	41.02	11.28%	[0.00]	mg/L
Al 396.153†	50.5	8.91	17.63%	[0.00]	mg/L
As 188.979†	-11.1	4.07	36.64%	[0.00]	mg/L
Ba 233.527†	-161.0	13.52	8.40%	[0.00]	mg/L
Be 234.861†	-1519.8	35.95	2.37%	[0.00]	mg/L
B 249.677†	352.1	19.88	5.65%	[0.00]	mg/L
Ca 227.546†	-58.4	20.06	34.35%	[0.00]	mg/L
Cd 228.802†	33.6	6.34	18.85%	[0.00]	mg/L
Co 228.616†	-8.7	6.27	71.62%	[0.00]	mg/L
Cr 267.716†	-80.0	25.63	32.03%	[0.00]	mg/L
Cu 327.393†	797.8	201.99	25.32%	[0.00]	mg/L
Fe 239.562†	1.4	3.31	230.84%	[0.00]	mg/L
Mg 279.077†	13.2	5.13	38.89%	[0.00]	mg/L
Mn 257.610†	301.7	16.51	5.47%	[0.00]	mg/L
Mo 202.031†	54.2	7.47	13.78%	[0.00]	mg/L
Ni 231.604†	-200.3	12.62	6.30%	[0.00]	mg/L
Pb 220.353†	-78.0	4.24	5.44%	[0.00]	mg/L
Sb 206.836†	11.1	0.34	3.08%	[0.00]	mg/L
Se 196.026†	24.3	3.57	14.66%	[0.00]	mg/L
Si 251.611†	769.3	245.65	31.93%	[0.00]	mg/L
Sn 189.927†	14.8	5.54	37.57%	[0.00]	mg/L
Ti 334.940†	886.3	45.17	5.10%	[0.00]	mg/L
Tl 190.801†	-65.5	6.05	9.23%	[0.00]	mg/L
V 290.880†	8529.2	386.91	4.54%	[0.00]	mg/L
Zn 206.200†	-24.7	4.65	18.79%	[0.00]	mg/L
K 766.490†	235.2	49.16	20.90%	[0.00]	mg/L
Na 589.592†	492.4	93.54	19.00%	[0.00]	mg/L
Sr 407.771†	-680.5	61.50	9.04%	[0.00]	mg/L
Li 670.784†	179.3	49.35	27.52%	[0.00]	mg/L
P 214.914†	-482.8	13.49	2.79%	[0.00]	mg/L

Sequence No.: 2 Autosampler Location: 2
Sample ID: S1 Date Collected: 11/26/2013 11:20:19 AM
Analyst: Data Type: Reprocessed on 11/26/2013 11:59:43 AM
Logged In Analyst (Original) : peicp2
Initial Sample Wt: Initial Sample Vol:
Dilution: Sample Prep Vol:

Nebulizer Parameters: S1

Approved: November 27, 2013

Analyte	Back Pressure	Flow
All	175.0 kPa	0.45 L/min

Mean Data: S1

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc.	Calib Units
Y 371.029	2799793.3	57718.48	2.06%		
YRADIAL	197907.8	12835.11	6.49%		
Ga 417.206	876914.7	28404.39	3.24%		
GaRADIAL	42028.2	2104.31	5.01%		
Ag 328.068†	582.2	72.37	12.43%	[0.0032]	mg/L
Al 396.153†	226.5	23.89	10.55%	[0.08]	mg/L
Ba 233.527†	603.9	12.54	2.08%	[0.008]	mg/L
Be 234.861†	279.7	59.15	21.15%	[0.0004]	mg/L
Cd 228.802†	5.2	2.58	50.11%	[0.0004]	mg/L
Co 228.616†	22.8	5.20	22.76%	[0.0016]	mg/L
Cr 267.716†	467.5	10.91	2.33%	[0.004]	mg/L
Cu 327.393†	646.2	63.05	9.76%	[0.004]	mg/L
Fe 239.562†	87.1	5.19	5.96%	[0.032]	mg/L
Mg 279.077†	88.5	6.04	6.83%	[0.08]	mg/L
Mn 257.610†	2413.3	13.89	0.58%	[0.004]	mg/L
Mo 202.031†	126.0	2.61	2.07%	[0.008]	mg/L
Ni 231.604†	145.1	10.66	7.35%	[0.004]	mg/L
Pb 220.353†	37.1	2.56	6.91%	[0.004]	mg/L
Sb 206.836†	14.0	2.59	18.47%	[0.0096]	mg/L
Si 251.611†	1165.0	34.32	2.95%	[0.04]	mg/L
Sn 189.927†	50.8	7.03	13.86%	[0.008]	mg/L
Ti 334.940†	6482.3	93.16	1.44%	[0.008]	mg/L
V 290.880†	1972.9	280.98	14.24%	[0.008]	mg/L
Zn 206.200†	215.5	3.86	1.79%	[0.008]	mg/L
K 766.490†	611.7	63.05	10.31%	[0.4]	mg/L
Na 589.592†	4477.7	9.43	0.21%	[0.4]	mg/L
Sr 407.771†	8247.4	55.14	0.67%	[0.008]	mg/L
Li 670.784†	645.3	37.69	5.84%	[0.008]	mg/L
P 214.914†	112.0	5.07	4.53%	[0.08]	mg/L

Sequence No.: 3 **Autosampler Location: 3**
Sample ID: S2 **Date Collected: 11/26/2013 11:23:21 AM**
Analyst: **Data Type: Reprocessed on 11/26/2013 11:59:44 AM**
Logged In Analyst (Original) : peicp2
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: S2

Analyte	Back Pressure	Flow
All	175.0 kPa	0.45 L/min

Mean Data: S2

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc.	Calib Units
Y 371.029	2785543.8	5886.15	0.21%		
YRADIAL	205339.4	13019.20	6.34%		
Ga 417.206	874860.7	6498.09	0.74%		
GaRADIAL	43410.5	1756.74	4.05%		
Ag 328.068†	1472.1	46.32	3.15%	[0.0064]	mg/L
Al 396.153†	463.8	29.05	6.26%	[0.16]	mg/L
As 188.979†	10.9	0.65	5.94%	[0.0064]	mg/L
Ba 233.527†	1221.6	46.08	3.77%	[0.016]	mg/L
Be 234.861†	536.9	22.55	4.20%	[0.0008]	mg/L
B 249.677†	543.8	19.50	3.59%	[0.008]	mg/L
Ca 227.546†	22.8	7.31	32.12%	[0.16]	mg/L
Cd 228.802†	14.8	2.69	18.18%	[0.0008]	mg/L
Co 228.616†	59.0	3.90	6.61%	[0.0032]	mg/L
Cr 267.716†	943.7	44.48	4.71%	[0.008]	mg/L
Cu 327.393†	1372.7	142.81	10.40%	[0.008]	mg/L
Fe 239.562†	173.6	8.74	5.04%	[0.064]	mg/L
Mg 279.077†	176.8	10.52	5.95%	[0.16]	mg/L
Mn 257.610†	4546.2	171.01	3.76%	[0.008]	mg/L

Approved: November 27, 2013

Mo 202.031†	246.6	9.38	3.80%	[0.016]	mg/L
Ni 231.604†	289.4	15.74	5.44%	[0.008]	mg/L
Pb 220.353†	61.3	5.50	8.96%	[0.008]	mg/L
Sb 206.836†	34.0	8.06	23.74%	[0.0192]	mg/L
Se 196.026†	3.7	4.48	122.57%	[0.0062]	mg/L
Si 251.611†	2542.1	103.75	4.08%	[0.08]	mg/L
Sn 189.927†	99.7	11.02	11.05%	[0.016]	mg/L
Ti 334.940†	12623.6	349.57	2.77%	[0.016]	mg/L
Tl 190.801†	16.8	4.88	29.06%	[0.008]	mg/L
V 290.880†	3256.1	292.32	8.98%	[0.016]	mg/L
Zn 206.200†	422.2	16.65	3.94%	[0.016]	mg/L
K 766.490†	1318.4	27.91	2.12%	[0.8]	mg/L
Na 589.592†	8929.1	11.59	0.13%	[0.8]	mg/L
Sr 407.771†	16458.0	158.99	0.97%	[0.016]	mg/L
Li 670.784†	1152.1	37.38	3.24%	[0.016]	mg/L
P 214.914†	183.2	6.12	3.34%	[0.16]	mg/L

Sequence No.: 4 **Autosampler Location: 4**
Sample ID: S3 **Date Collected: 11/26/2013 11:26:23 AM**
Analyst: **Data Type: Reprocessed on 11/26/2013 11:59:45 AM**
Logged In Analyst (Original) : peicp2
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: S3

Analyte	Back Pressure	Flow
All	175.0 kPa	0.45 L/min

Mean Data: S3

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc.	Calib Units
Y 371.029	2818183.4	105445.88	3.74%		
YRADIAL	211862.0	4535.34	2.14%		
Ga 417.206	910508.1	52249.46	5.74%		
GaRADIAL	46714.6	484.00	1.04%		
Ag 328.068†	99979.2	4381.91	4.38%	[0.40]	mg/L
Al 396.153†	29499.6	208.58	0.71%	[10.00]	mg/L
As 188.979†	651.1	35.98	5.53%	[0.40]	mg/L
Ba 233.527†	79205.5	2621.30	3.31%	[1.00]	mg/L
Be 234.861†	33303.3	1427.93	4.29%	[0.05]	mg/L
B 249.677†	34307.6	2091.45	6.10%	[0.50]	mg/L
Ca 227.546†	1915.7	120.78	6.30%	[10.00]	mg/L
Cd 228.802†	1237.4	61.78	4.99%	[0.05]	mg/L
Co 228.616†	4224.9	174.27	4.12%	[0.20]	mg/L
Cr 267.716†	57354.8	1996.63	3.48%	[0.50]	mg/L
Cu 327.393†	106197.3	5359.52	5.05%	[0.50]	mg/L
Fe 239.562†	11675.3	216.12	1.85%	[4.00]	mg/L
Mg 279.077†	11086.4	243.26	2.19%	[10.00]	mg/L
Mn 257.610†	299356.5	10318.76	3.45%	[0.50]	mg/L
Mo 202.031†	16682.8	558.51	3.35%	[1.00]	mg/L
Ni 231.604†	18007.0	563.29	3.13%	[0.50]	mg/L
Pb 220.353†	2968.6	111.54	3.76%	[0.50]	mg/L
Sb 206.836†	2223.6	120.22	5.41%	[1.20]	mg/L
Se 196.026†	325.4	21.46	6.60%	[0.40]	mg/L
Si 251.611†	170744.3	8258.68	4.84%	[5.00]	mg/L
Sn 189.927†	5915.7	262.73	4.44%	[1.00]	mg/L
Ti 334.940†	815208.7	2351.60	0.29%	[1.00]	mg/L
Tl 190.801†	868.9	31.90	3.67%	[0.50]	mg/L
V 290.880†	186761.1	7280.24	3.90%	[1.00]	mg/L
Zn 206.200†	27352.4	770.92	2.82%	[1.00]	mg/L
K 766.490†	81589.4	541.94	0.66%	[50.00]	mg/L
Na 589.592†	529937.5	10212.71	1.93%	[50.00]	mg/L
Sr 407.771†	1032603.9	13139.19	1.27%	[1.00]	mg/L
Li 670.784†	68386.2	1274.16	1.86%	[1.00]	mg/L
P 214.914†	9804.2	411.82	4.20%	[10]	mg/L

Sequence No.: 5 **Autosampler Location: 5**
Sample ID: S4 **Date Collected: 11/26/2013 11:28:30 AM**

Approved: November 27, 2013

Analyst:
Logged In Analyst (Original) : peicp2
Initial Sample Wt:
Dilution:

Data Type: Reprocessed on 11/26/2013 11:59:46 AM
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: S4

Analyte	Back Pressure	Flow
All	176.0 kPa	0.45 L/min

Mean Data: S4

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc.	Calib Units
Y 371.029	2758783.3	75455.28	2.74%		
YRADIAL	198386.0	3429.41	1.73%		
Ga 417.206	880586.2	42777.24	4.86%		
GaRADIAL	43386.5	781.16	1.80%		
Ag 328.068†	197208.3	6603.54	3.35%	[0.80]	mg/L
Al 396.153†	58113.8	464.13	0.80%	[20.00]	mg/L
As 188.979†	1310.3	43.82	3.34%	[0.80]	mg/L
Ba 233.527†	153415.6	2231.54	1.45%	[2.00]	mg/L
Be 234.861†	65170.9	1781.21	2.73%	[0.10]	mg/L
B 249.677†	67771.0	1409.75	2.08%	[1.00]	mg/L
Ca 227.546†	3943.6	111.85	2.84%	[20.00]	mg/L
Cd 228.802†	2496.4	131.17	5.25%	[0.10]	mg/L
Co 228.616†	8323.5	103.90	1.25%	[0.40]	mg/L
Cr 267.716†	111180.7	1779.24	1.60%	[1.00]	mg/L
Cu 327.393†	209758.4	4956.44	2.36%	[1.00]	mg/L
Fe 239.562†	22611.8	264.02	1.17%	[8.00]	mg/L
Mg 279.077†	21609.7	222.83	1.03%	[20.00]	mg/L
Mn 257.610†	560529.3	6301.81	1.12%	[1.00]	mg/L
Mo 202.031†	31887.0	529.62	1.66%	[2.00]	mg/L
Ni 231.604†	34427.8	415.69	1.21%	[1.00]	mg/L
Pb 220.353†	5841.5	93.82	1.61%	[1.00]	mg/L
Sb 206.836†	4483.8	192.47	4.29%	[2.40]	mg/L
Se 196.026†	647.8	23.50	3.63%	[0.80]	mg/L
Si 251.611†	333852.1	8465.78	2.54%	[10.00]	mg/L
Sn 189.927†	11665.6	143.86	1.23%	[2.00]	mg/L
Ti 334.940†	1606286.6	18105.10	1.13%	[2.00]	mg/L
Tl 190.801†	1688.2	20.36	1.21%	[1.00]	mg/L
V 290.880†	364516.2	4417.37	1.21%	[2.00]	mg/L
Zn 206.200†	52598.3	808.62	1.54%	[2.00]	mg/L
K 766.490†	160933.6	1168.90	0.73%	[100.00]	mg/L
Na 589.592†	1021716.4	38345.63	3.75%	[100.00]	mg/L
Sr 407.771†	1985988.8	84883.68	4.27%	[2.00]	mg/L
Li 670.784†	134023.7	1016.65	0.76%	[2.00]	mg/L
P 214.914†	19096.8	223.76	1.17%	[20]	mg/L

Calibration Summary

Analyte	Stds.	Equation	Intercept	Slope	Curvature	Corr. Coef.	Reslope
Ag 328.068	4	Lin, Calc Int	73.6	247100	0.00000	0.999975	
Al 396.153	4	Lin, Calc Int	53.0	2911	0.00000	0.999972	
As 188.979	3	Wt. Lin	0.4	1632	0.00000	0.999995	
Ba 233.527	4	Lin, Calc Int	306.5	77020	0.00000	0.999875	
Be 234.861	4	Lin, Calc Int	100.3	653400	0.00000	0.999944	
B 249.677	3	Lin, Calc Int	77.6	67850	0.00000	0.999979	
Ca 227.546	3	Lin, Calc Int	-14.2	196.9	0.00000	0.999898	
Cd 228.802	4	Lin, Calc Int	-4.5	24970	0.00000	0.999992	
Co 228.616	4	Lin, Calc Int	2.2	20870	0.00000	0.999970	
Cr 267.716	4	Lin, Calc Int	244.0	111600	0.00000	0.999883	
Cu 327.393	4	Lin, Calc Int	8.4	210300	0.00000	0.999978	
Fe 239.562	4	Lin, Calc Int	42.7	2838	0.00000	0.999873	
Mg 279.077	4	Lin, Calc Int	37.0	1084	0.00000	0.999921	
Mn 257.610	4	Lin, Calc Int	2452.6	565200	0.00000	0.999462	
Mo 202.031	4	Lin, Calc Int	89.0	16040	0.00000	0.999747	
Ni 231.604	4	Lin, Calc Int	105.5	34620	0.00000	0.999754	
Pb 220.353	4	Lin, Calc Int	14.8	5843	0.00000	0.999972	
Sb 206.836	4	Lin, Calc Int	-4.1	1867	0.00000	0.999993	
Se 196.026	3	Wt. Lin	-1.4	814.2	0.00000	0.999994	

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Si 251.611	4	Lin, Calc Int	382.2	33490	0.00000	0.999937
Sn 189.927	4	Lin, Calc Int	13.6	5841	0.00000	0.999977
Ti 334.940	4	Lin, Calc Int	1450.9	804700	0.00000	0.999973
Tl 190.801	3	Lin, Calc Int	6.0	1691	0.00000	0.999892
V 290.880	4	Lin, Calc Int	828.9	182700	0.00000	0.999932
Zn 206.200	4	Lin, Calc Int	133.3	26430	0.00000	0.999812
K 766.490	4	Non Lin, Calc Int	-18.4	1655	-0.45267	1.000000
Na 589.592	4	Non Lin, Calc Int	79.1	10980	-7.61699	1.000000
Sr 407.771	4	Lin, Calc Int	5209.9	997800	0.00000	0.999815
Li 670.784	4	Lin, Calc Int	230.5	67150	0.00000	0.999952
P 214.914	4	Lin, Calc Int	52.5	956.8	0.00000	0.999921

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Sequence No.: 6 **Autosampler Location: 11**
Sample ID: ICV 2nd Vendor **Date Collected: 11/26/2013 11:30:38 AM**
Analyst: **Data Type: Reprocessed on 11/26/2013 11:59:47 AM**
Logged In Analyst (Original) : peicp2
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: ICV 2nd Vendor

Analyte	Back Pressure	Flow
All	176.0 kPa	0.45 L/min

Mean Data: ICV 2nd Vendor

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2738321.1						70674.45	2.58%
YRADIAL	207206.5						2493.84	1.20%
Ga 417.206	881112.2						21097.46	2.39%
GaRADIAL	45261.8						285.88	0.63%
Ag 328.068†	100452.8	0.410	mg/L	0.0015	0.410	mg/L	0.0015	0.36%
QC value within limits for Ag 328.068 Recovery = 102.49%								
Al 396.153†	30454.0	10.4	mg/L	0.03	10.4	mg/L	0.03	0.25%
QC value within limits for Al 396.153 Recovery = 103.71%								
As 188.979†	668.9	0.405	mg/L	0.0045	0.405	mg/L	0.0045	1.11%
QC value within limits for As 188.979 Recovery = 101.15%								
Ba 233.527†	78967.6	1.02	mg/L	0.011	1.02	mg/L	0.011	1.07%
QC value within limits for Ba 233.527 Recovery = 102.15%								
Be 234.861†	33282.2	0.0502	mg/L	0.00013	0.0502	mg/L	0.00013	0.25%
QC value within limits for Be 234.861 Recovery = 100.42%								
B 249.677†	34865.3	0.509	mg/L	0.0008	0.509	mg/L	0.0008	0.15%
QC value within limits for B 249.677 Recovery = 101.75%								
Ca 227.546†	1967.4	10.5	mg/L	0.22	10.5	mg/L	0.22	2.11%
QC value greater than the upper limit for Ca 227.546 Recovery = 105.36%								
Cd 228.802†	1258.7	0.0492	mg/L	0.00056	0.0492	mg/L	0.00056	1.15%
QC value within limits for Cd 228.802 Recovery = 98.35%								
Co 228.616†	4319.6	0.206	mg/L	0.0036	0.206	mg/L	0.0036	1.73%
QC value within limits for Co 228.616 Recovery = 103.05%								
Cr 267.716†	57331.1	0.512	mg/L	0.0034	0.512	mg/L	0.0034	0.66%
QC value within limits for Cr 267.716 Recovery = 102.39%								
Cu 327.393†	106899.7	0.510	mg/L	0.0028	0.510	mg/L	0.0028	0.54%
QC value within limits for Cu 327.393 Recovery = 101.99%								
Fe 239.562†	11918.8	4.18	mg/L	0.044	4.18	mg/L	0.044	1.05%
QC value within limits for Fe 239.562 Recovery = 104.58%								
Mg 279.077†	11415.7	10.5	mg/L	0.13	10.5	mg/L	0.13	1.20%
QC value greater than the upper limit for Mg 279.077 Recovery = 105.14%								
Mn 257.610†	298595.9	0.525	mg/L	0.0037	0.525	mg/L	0.0037	0.71%
QC value within limits for Mn 257.610 Recovery = 104.94%								
Mo 202.031†	16674.4	1.03	mg/L	0.004	1.03	mg/L	0.004	0.40%
QC value within limits for Mo 202.031 Recovery = 103.48%								
Ni 231.604†	17919.4	0.514	mg/L	0.0029	0.514	mg/L	0.0029	0.57%
QC value within limits for Ni 231.604 Recovery = 102.85%								
Pb 220.353†	3024.8	0.517	mg/L	0.0089	0.517	mg/L	0.0089	1.72%
QC value within limits for Pb 220.353 Recovery = 103.38%								
Sb 206.836†	2289.0	1.23	mg/L	0.019	1.23	mg/L	0.019	1.56%
QC value within limits for Sb 206.836 Recovery = 102.24%								
Se 196.026†	322.7	0.399	mg/L	0.0023	0.399	mg/L	0.0023	0.57%
QC value within limits for Se 196.026 Recovery = 99.83%								
Si 251.611†	170230.4	5.06	mg/L	0.010	5.06	mg/L	0.010	0.20%

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   QC value within limits for Si 251.611  Recovery = 101.20%
Sn 189.927†            6091.7        1.04 mg/L        0.018        1.04 mg/L        0.018   1.71%
   QC value within limits for Sn 189.927  Recovery = 104.06%
Ti 334.940†          828552.3        1.03 mg/L        0.004        1.03 mg/L        0.004   0.36%
   QC value within limits for Ti 334.940  Recovery = 102.92%
Tl 190.801†             875.8       0.529 mg/L       0.0074       0.529 mg/L       0.0074   1.40%
   QC value greater than the upper limit for Tl 190.801  Recovery = 105.85%
V 290.880†           186678.9        1.02 mg/L        0.010        1.02 mg/L        0.010   1.02%
   QC value within limits for V 290.880  Recovery = 101.65%
Zn 206.200†           27220.0        1.03 mg/L        0.008        1.03 mg/L        0.008   0.82%
   QC value within limits for Zn 206.200  Recovery = 102.98%
K 766.490†            84092.2        51.5 mg/L         0.14        51.5 mg/L         0.14   0.27%
   QC value within limits for K 766.490  Recovery = 103.01%
Na 589.592†          548115.8        51.8 mg/L         0.91        51.8 mg/L         0.91   1.76%
   QC value within limits for Na 589.592  Recovery = 103.56%
Sr 407.771†         1057787.1        1.05 mg/L        0.006        1.05 mg/L        0.006   0.55%
   QC value greater than the upper limit for Sr 407.771  Recovery = 105.46%
Li 670.784†           71182.3        1.06 mg/L        0.008        1.06 mg/L        0.008   0.74%
   QC value greater than the upper limit for Li 670.784  Recovery = 105.67%
P 214.914†             9985.7        10.4 mg/L         0.21        10.4 mg/L         0.21   1.98%
   QC value within limits for P 214.914  Recovery = 103.82%
QC Failed.  Continue with analysis.

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Sequence No.: 7                                    Autosampler Location: 1
Sample ID: ICB                                     Date Collected: 11/26/2013 11:32:44 AM
Analyst:                                           Data Type: Reprocessed on 11/26/2013 11:59:48 AM
Logged In Analyst (Original) : peicp2
Initial Sample Wt:                                 Initial Sample Vol:
Dilution:                                          Sample Prep Vol:

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Nebulizer Parameters: ICB
Analyte                 Back Pressure    Flow
All                    175.0 kPa        0.45 L/min

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Mean Data: ICB
                   Mean Corrected         Calib.                          Sample
Analyte               Intensity     Conc. Units      Std.Dev.      Conc. Units      Std.Dev.   RSD
Y 371.029           2836552.9                                                     88274.37   3.11%
YRADIAL              197223.8                                                      3887.32   1.97%
Ga 417.206           910533.0                                                     40654.79   4.46%
GaRADIAL              41764.8                                                       193.43   0.46%
Ag 328.068†              95.6     0.00009 mg/L      0.000275     0.00009 mg/L      0.000275 314.02%
   QC value within limits for Ag 328.068  Recovery = Not calculated
Al 396.153†              67.6     0.00534 mg/L      0.008150     0.00534 mg/L      0.008150 152.72%
   QC value within limits for Al 396.153  Recovery = Not calculated
As 188.979†               4.0     0.00224 mg/L      0.002465     0.00224 mg/L      0.002465 110.23%
   QC value within limits for As 188.979  Recovery = Not calculated
Ba 233.527†              39.6    -0.00347 mg/L      0.000153    -0.00347 mg/L      0.000153   4.42%
   QC value within limits for Ba 233.527  Recovery = Not calculated
Be 234.861†              96.0    -0.00001 mg/L      0.000126    -0.00001 mg/L      0.000126 >999.9%
   QC value within limits for Be 234.861  Recovery = Not calculated
B 249.677†              271.2     0.00286 mg/L      0.000905     0.00286 mg/L      0.000905  31.68%
   QC value within limits for B 249.677  Recovery = Not calculated
Ca 227.546†               2.3      0.0815 mg/L       0.02242      0.0815 mg/L       0.02242  27.51%
   QC value within limits for Ca 227.546  Recovery = Not calculated
Cd 228.802†              -4.1     0.00000 mg/L      0.000180     0.00000 mg/L      0.000180 >999.9%
   QC value within limits for Cd 228.802  Recovery = Not calculated
Co 228.616†              -7.4    -0.00046 mg/L      0.000356    -0.00046 mg/L      0.000356  76.82%
   QC value within limits for Co 228.616  Recovery = Not calculated
Cr 267.716†              71.9    -0.00154 mg/L      0.000151    -0.00154 mg/L      0.000151   9.81%
   QC value within limits for Cr 267.716  Recovery = Not calculated
Cu 327.393†              52.5     0.00021 mg/L      0.000473     0.00021 mg/L      0.000473 227.67%
   QC value within limits for Cu 327.393  Recovery = Not calculated
Fe 239.562†              29.0    -0.00481 mg/L      0.004699    -0.00481 mg/L      0.004699  97.62%
   QC value within limits for Fe 239.562  Recovery = Not calculated
Mg 279.077†              33.7    -0.00310 mg/L      0.006313    -0.00310 mg/L      0.006313 203.65%
   QC value within limits for Mg 279.077  Recovery = Not calculated
Mn 257.610†             229.7    -0.00393 mg/L      0.000082    -0.00393 mg/L      0.000082   2.07%
   QC value within limits for Mn 257.610  Recovery = Not calculated
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Mo 202.031†              18.7    -0.00438 mg/L      0.000415    -0.00438 mg/L      0.000415   9.48%
   QC value within limits for Mo 202.031  Recovery = Not calculated
Ni 231.604†              18.3    -0.00252 mg/L      0.000337    -0.00252 mg/L      0.000337  13.39%
   QC value within limits for Ni 231.604  Recovery = Not calculated
Pb 220.353†              15.7     0.00015 mg/L      0.001423     0.00015 mg/L      0.001423 946.58%
   QC value within limits for Pb 220.353  Recovery = Not calculated
Sb 206.836†               0.4     0.00244 mg/L      0.002172     0.00244 mg/L      0.002172  88.93%
   QC value within limits for Sb 206.836  Recovery = Not calculated
Se 196.026†               0.1     0.00179 mg/L      0.004319     0.00179 mg/L      0.004319 241.72%
   QC value within limits for Se 196.026  Recovery = Not calculated
Si 251.611†              83.3    -0.00888 mg/L      0.002017    -0.00888 mg/L      0.002017  22.73%
   QC value within limits for Si 251.611  Recovery = Not calculated
Sn 189.927†              40.1     0.00453 mg/L      0.001762     0.00453 mg/L      0.001762  38.90%
   QC value within limits for Sn 189.927  Recovery = Not calculated
Ti 334.940†             457.0    -0.00122 mg/L      0.000057    -0.00122 mg/L      0.000057   4.63%
   QC value within limits for Ti 334.940  Recovery = Not calculated
Tl 190.801†               0.2    -0.00346 mg/L      0.006127    -0.00346 mg/L      0.006127 176.86%
   QC value within limits for Tl 190.801  Recovery = Not calculated
V 290.880†               791.2    -0.00021 mg/L      0.001197    -0.00021 mg/L      0.001197 582.04%
   QC value within limits for V 290.880  Recovery = Not calculated
Zn 206.200†              24.9    -0.00411 mg/L      0.000408    -0.00411 mg/L      0.000408   9.91%
   QC value within limits for Zn 206.200  Recovery = Not calculated
K 766.490†               166.5       0.112 mg/L        0.1251       0.112 mg/L        0.1251 112.03%
   QC value within limits for K 766.490  Recovery = Not calculated
Na 589.592†             1414.5       0.122 mg/L        0.0640       0.122 mg/L        0.0640  52.58%
   QC value within limits for Na 589.592  Recovery = Not calculated
Sr 407.771†             2014.8    -0.00320 mg/L      0.001164    -0.00320 mg/L      0.001164  36.33%
   QC value within limits for Sr 407.771  Recovery = Not calculated
Li 670.784†              354.6     0.00185 mg/L      0.002182     0.00185 mg/L      0.002182 118.02%
   QC value within limits for Li 670.784  Recovery = Not calculated
P 214.914†               54.7     0.00222 mg/L      0.012523     0.00222 mg/L      0.012523 564.87%
   QC value within limits for P 214.914  Recovery = Not calculated
All analyte(s) passed QC.

==========================================================================================
Sequence No.: 8                                    Autosampler Location: 12
Sample ID: ICSA                                    Date Collected: 11/26/2013 11:35:46 AM
Analyst:                                           Data Type: Reprocessed on 11/26/2013 11:59:49 AM
Logged In Analyst (Original) : peicp2
Initial Sample Wt:                                 Initial Sample Vol:
Dilution:                                          Sample Prep Vol:

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Nebulizer Parameters: ICSA
Analyte                  Back Pressure    Flow
All                     175.0 kPa         0.45 L/min

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Mean Data: ICSA
                   Mean Corrected         Calib.                          Sample
Analyte               Intensity     Conc. Units      Std.Dev.      Conc. Units      Std.Dev.   RSD
Y 371.029            2658369.1                                                    62801.62   2.36%
YRADIAL               207007.3                                                     7635.62   3.69%
Ga 417.206            880527.3                                                    12789.61   1.45%
GaRADIAL               45225.1                                                     1498.33   3.31%
Ag 328.068†           -11256.1    -0.00234 mg/L      0.000698    -0.00234 mg/L      0.000698  29.82%
   QC value within limits for Ag 328.068  Recovery = Not calculated
Al 396.153†           700382.2         241 mg/L          13.9         241 mg/L          13.9   5.76%
   QC value within limits for Al 396.153  Recovery = 96.23%
As 188.979†              -22.0    -0.00531 mg/L      0.007211    -0.00531 mg/L      0.007211 135.69%
   QC value within limits for As 188.979  Recovery = Not calculated
Ba 233.527†              412.2    -0.00335 mg/L      0.000239    -0.00335 mg/L      0.000239   7.13%
   QC value within limits for Ba 233.527  Recovery = Not calculated
Be 234.861†            15086.2    -0.00021 mg/L      0.000627    -0.00021 mg/L      0.000627 294.94%
   QC value within limits for Be 234.861  Recovery = Not calculated
B 249.677†              2153.2    -0.00971 mg/L      0.001628    -0.00971 mg/L      0.001628  16.76%
   QC value within limits for B 249.677  Recovery = Not calculated
Ca 227.546†            50959.3         261 mg/L           6.4         261 mg/L           6.4   2.44%
   QC value within limits for Ca 227.546  Recovery = 104.45%
Cd 228.802†               -2.6    -0.00004 mg/L      0.000379    -0.00004 mg/L      0.000379 919.19%
   QC value within limits for Cd 228.802  Recovery = Not calculated
Co 228.616†               19.7    -0.00154 mg/L      0.000215    -0.00154 mg/L      0.000215  13.95%
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   QC value within limits for Co 228.616  Recovery = Not calculated
Cr 267.716†              24.9    -0.00374 mg/L      0.000182    -0.00374 mg/L      0.000182   4.86%
   QC value within limits for Cr 267.716  Recovery = Not calculated
Cu 327.393†           -1907.5    -0.00365 mg/L      0.000808    -0.00365 mg/L      0.000808  22.16%
   QC value within limits for Cu 327.393  Recovery = Not calculated
Fe 239.562†          266030.9        93.7 mg/L          0.43        93.7 mg/L          0.43   0.46%
   QC value within limits for Fe 239.562  Recovery = 93.70%
Mg 279.077†          269062.8         248 mg/L           1.2         248 mg/L           1.2   0.50%
   QC value within limits for Mg 279.077  Recovery = 99.26%
Mn 257.610†           -1602.6    -0.00189 mg/L      0.000197    -0.00189 mg/L      0.000197  10.44%
   QC value within limits for Mn 257.610  Recovery = Not calculated
Mo 202.031†             -12.4    -0.00485 mg/L      0.000748    -0.00485 mg/L      0.000748  15.42%
   QC value within limits for Mo 202.031  Recovery = Not calculated
Ni 231.604†             -15.4    -0.00349 mg/L      0.000049    -0.00349 mg/L      0.000049   1.40%
   QC value within limits for Ni 231.604  Recovery = Not calculated
Pb 220.353†            -168.6    -0.00053 mg/L      0.001404    -0.00053 mg/L      0.001404 263.33%
   QC value within limits for Pb 220.353  Recovery = Not calculated
Sb 206.836†             -12.9    -0.00127 mg/L      0.001148    -0.00127 mg/L      0.001148  90.25%
   QC value within limits for Sb 206.836  Recovery = Not calculated
Se 196.026†             -19.2    -0.00275 mg/L      0.012622    -0.00275 mg/L      0.012622 459.75%
   QC value within limits for Se 196.026  Recovery = Not calculated
Si 251.611†            9325.6       0.267 mg/L        0.0092       0.267 mg/L        0.0092   3.46%
   QC value within limits for Si 251.611  Recovery = Not calculated
Sn 189.927†            -305.6     -0.0546 mg/L       0.00366     -0.0546 mg/L       0.00366   6.69%
   QC value within limits for Sn 189.927  Recovery = Not calculated
Ti 334.940†          -31115.2    -0.00164 mg/L      0.000544    -0.00164 mg/L      0.000544  33.15%
   QC value within limits for Ti 334.940  Recovery = Not calculated
Tl 190.801†             -25.2     -0.0124 mg/L       0.01080     -0.0124 mg/L       0.01080  87.07%
   QC value within limits for Tl 190.801  Recovery = Not calculated
V 290.880†             3618.1    -0.00055 mg/L      0.003219    -0.00055 mg/L      0.003219 584.53%
   QC value within limits for V 290.880  Recovery = Not calculated
Zn 206.200†              56.6    -0.00339 mg/L      0.000516    -0.00339 mg/L      0.000516  15.21%
   QC value within limits for Zn 206.200  Recovery = Not calculated
K 766.490†               -3.6     0.00891 mg/L      0.010527     0.00891 mg/L      0.010527 118.15%
   QC value within limits for K 766.490  Recovery = Not calculated
Na 589.592†             594.5      0.0470 mg/L       0.00496      0.0470 mg/L       0.00496  10.57%
   QC value within limits for Na 589.592  Recovery = Not calculated
Sr 407.771†            8032.8    -0.00543 mg/L      0.000230    -0.00543 mg/L      0.000230   4.24%
   QC value within limits for Sr 407.771  Recovery = Not calculated
Li 670.784†             156.6    -0.00110 mg/L      0.000492    -0.00110 mg/L      0.000492  44.68%
   QC value within limits for Li 670.784  Recovery = Not calculated
P 214.914†              144.4      0.0960 mg/L       0.01637      0.0960 mg/L       0.01637  17.05%
   QC value within limits for P 214.914  Recovery = Not calculated
All analyte(s) passed QC.

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Sequence No.: 9                                   Autosampler Location: 13
Sample ID: ICSAB                                  Date Collected: 11/26/2013 11:37:51 AM
Analyst:                                          Data Type: Reprocessed on 11/26/2013 11:59:51 AM
Logged In Analyst (Original) : peicp2
Initial Sample Wt:                                Initial Sample Vol:
Dilution:                                         Sample Prep Vol:

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Nebulizer Parameters: ICSAB
Analyte                 Back Pressure    Flow
All                    175.0 kPa         0.45 L/min

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Mean Data: ICSAB
                   Mean Corrected         Calib.                          Sample
Analyte               Intensity     Conc. Units      Std.Dev.      Conc. Units      Std.Dev.   RSD
Y 371.029            2715268.5                                                     23934.81   0.88%
YRADIAL               210936.9                                                      5255.31   2.49%
Ga 417.206            906469.4                                                     13954.02   1.54%
GaRADIAL               45494.8                                                       925.51   2.03%
Ag 328.068†           110879.3       0.494 mg/L        0.0029       0.494 mg/L        0.0029   0.59%
   QC value within limits for Ag 328.068  Recovery = 98.75%
Al 396.153†           763739.6         262 mg/L           6.0         262 mg/L           6.0   2.28%
   QC value within limits for Al 396.153  Recovery = 104.93%
As 188.979†              388.3       0.245 mg/L        0.0051       0.245 mg/L        0.0051   2.07%
   QC value within limits for As 188.979  Recovery = 98.06%
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Ba 233.527†            19384.5       0.243 mg/L        0.0019       0.243 mg/L        0.0019   0.79%
   QC value within limits for Ba 233.527  Recovery = 97.11%
Be 234.861†           178079.0       0.249 mg/L        0.0029       0.249 mg/L        0.0029   1.19%
   QC value within limits for Be 234.861  Recovery = 99.43%
B 249.677†                33.7     -0.0555 mg/L       0.00189     -0.0555 mg/L       0.00189   3.41%
   QC value within limits for B 249.677  Recovery = Not calculated
Ca 227.546†            51340.9         263 mg/L           1.4          263 mg/L           1.4   0.54%
   QC value within limits for Ca 227.546  Recovery = 105.39%
Cd 228.802†            11983.7       0.479 mg/L        0.0051       0.479 mg/L        0.0051   1.07%
   QC value within limits for Cd 228.802  Recovery = 95.90%
Co 228.616†             4865.7       0.231 mg/L        0.0024       0.231 mg/L        0.0024   1.05%
   QC value within limits for Co 228.616  Recovery = 92.22%
Cr 267.716†            28022.8       0.248 mg/L        0.0020       0.248 mg/L        0.0020   0.81%
   QC value within limits for Cr 267.716  Recovery = 99.04%
Cu 327.393†            48480.9       0.236 mg/L        0.0010       0.236 mg/L        0.0010   0.44%
   QC value within limits for Cu 327.393  Recovery = 94.46%
Fe 239.562†           274091.0        96.5 mg/L          0.30        96.5 mg/L          0.30   0.31%
   QC value within limits for Fe 239.562  Recovery = 96.54%
Mg 279.077†           277025.0         255 mg/L           1.4         255 mg/L           1.4   0.56%
   QC value within limits for Mg 279.077  Recovery = 102.20%
Mn 257.610†           137791.8       0.245 mg/L        0.0015       0.245 mg/L        0.0015   0.61%
   QC value within limits for Mn 257.610  Recovery = 98.00%
Mo 202.031†              -14.9    -0.00480 mg/L      0.000644    -0.00480 mg/L      0.000644  13.43%
   QC value within limits for Mo 202.031  Recovery = Not calculated
Ni 231.604†            16313.1       0.468 mg/L        0.0033       0.468 mg/L        0.0033   0.69%
   QC value within limits for Ni 231.604  Recovery = 93.56%
Pb 220.353†             2613.9       0.479 mg/L        0.0075       0.479 mg/L        0.0075   1.58%
   QC value within limits for Pb 220.353  Recovery = 95.71%
Sb 206.836†              895.0       0.484 mg/L        0.0033       0.484 mg/L        0.0033   0.68%
   QC value within limits for Sb 206.836  Recovery = 96.70%
Se 196.026†              172.5       0.233 mg/L        0.0012       0.233 mg/L        0.0012   0.53%
   QC value within limits for Se 196.026  Recovery = 93.39%
Si 251.611†              -71.8     -0.0135 mg/L       0.00023     -0.0135 mg/L       0.00023   1.68%
   QC value within limits for Si 251.611  Recovery = Not calculated
Sn 189.927†             -316.3     -0.0565 mg/L       0.00064     -0.0565 mg/L       0.00064   1.13%
   QC value within limits for Sn 189.927  Recovery = Not calculated
Ti 334.940†           -31616.9    -0.00205 mg/L      0.000395    -0.00205 mg/L      0.000395  19.27%
   QC value within limits for Ti 334.940  Recovery = Not calculated
Tl 190.801†              813.5       0.484 mg/L        0.0062       0.484 mg/L        0.0062   1.29%
   QC value within limits for Tl 190.801  Recovery = 96.88%
V 290.880†             48206.3       0.243 mg/L        0.0022       0.243 mg/L        0.0022   0.90%
   QC value within limits for V 290.880  Recovery = 97.21%
Zn 206.200†            12346.9       0.464 mg/L        0.0036       0.464 mg/L        0.0036   0.77%
   QC value within limits for Zn 206.200  Recovery = 92.81%
K 766.490†              8457.5        5.12 mg/L         0.037        5.12 mg/L         0.037   0.71%
   QC value within limits for K 766.490  Recovery = 102.48%
Na 589.592†            55829.0        5.10 mg/L         0.004        5.10 mg/L         0.004   0.07%
   QC value within limits for Na 589.592  Recovery = 101.93%
Sr 407.771†             8061.7    -0.00546 mg/L      0.000054    -0.00546 mg/L      0.000054   1.00%
   QC value within limits for Sr 407.771  Recovery = Not calculated
Li 670.784†              133.1    -0.00145 mg/L      0.000430    -0.00145 mg/L      0.000430  29.64%
   QC value within limits for Li 670.784  Recovery = Not calculated
P 214.914†               -12.3     -0.0678 mg/L       0.02114     -0.0678 mg/L       0.02114  31.20%
   QC value within limits for P 214.914  Recovery = Not calculated
All analyte(s) passed QC.

==========================================================================================
Sequence No.: 10                                    Autosampler Location: 6
Sample ID: CCV                                      Date Collected: 11/26/2013 11:39:54 AM
Analyst:                                            Data Type: Reprocessed on 11/26/2013 11:59:52 AM
Logged In Analyst (Original) : peicp2
Initial Sample Wt:                                  Initial Sample Vol:
Dilution:                                           Sample Prep Vol:

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Nebulizer Parameters: CCV
Analyte                 Back Pressure    Flow
All                   176.0 kPa         0.45 L/min

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Mean Data: CCV
                  Mean Corrected         Calib.                        Sample
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Approved: November 27, 2013

Analyte	Intensity	Conc. Units	Std.Dev.	Conc. Units	Std.Dev.	RSD
Y 371.029	2905355.2				22952.34	0.79%
YRADIAL	216431.3				3939.98	1.82%
Ga 417.206	938888.2				8909.96	0.95%
GaRADIAL	46192.2				527.56	1.14%
Ag 328.068†	96667.1	0.395 mg/L	0.0039	0.395 mg/L	0.0039	1.00%
QC value within limits for Ag 328.068 Recovery = 98.67%						
Al 396.153†	32198.2	11.0 mg/L	0.13	11.0 mg/L	0.13	1.23%
QC value within limits for Al 396.153 Recovery = 109.73%						
As 188.979†	649.3	0.393 mg/L	0.0098	0.393 mg/L	0.0098	2.50%
QC value within limits for As 188.979 Recovery = 98.18%						
Ba 233.527†	76716.8	0.992 mg/L	0.0071	0.992 mg/L	0.0071	0.72%
QC value within limits for Ba 233.527 Recovery = 99.23%						
Be 234.861†	32388.1	0.0488 mg/L	0.00049	0.0488 mg/L	0.00049	1.00%
QC value within limits for Be 234.861 Recovery = 97.56%						
B 249.677†	32571.4	0.475 mg/L	0.0021	0.475 mg/L	0.0021	0.45%
QC value within limits for B 249.677 Recovery = 94.99%						
Ca 227.546†	1961.7	10.5 mg/L	0.23	10.5 mg/L	0.23	2.23%
QC value within limits for Ca 227.546 Recovery = 105.01%						
Cd 228.802†	1232.9	0.0482 mg/L	0.00135	0.0482 mg/L	0.00135	2.81%
QC value within limits for Cd 228.802 Recovery = 96.35%						
Co 228.616†	4178.0	0.199 mg/L	0.0022	0.199 mg/L	0.0022	1.11%
QC value within limits for Co 228.616 Recovery = 99.64%						
Cr 267.716†	55494.4	0.495 mg/L	0.0033	0.495 mg/L	0.0033	0.66%
QC value within limits for Cr 267.716 Recovery = 99.09%						
Cu 327.393†	102352.3	0.488 mg/L	0.0041	0.488 mg/L	0.0041	0.85%
QC value within limits for Cu 327.393 Recovery = 97.66%						
Fe 239.562†	12457.1	4.37 mg/L	0.078	4.37 mg/L	0.078	1.79%
QC value within limits for Fe 239.562 Recovery = 109.32%						
Mg 279.077†	11982.4	11.0 mg/L	0.17	11.0 mg/L	0.17	1.55%
QC value greater than the upper limit for Mg 279.077 Recovery = 110.37%						
Mn 257.610†	289033.8	0.508 mg/L	0.0041	0.508 mg/L	0.0041	0.81%
QC value within limits for Mn 257.610 Recovery = 101.56%						
Mo 202.031†	16108.0	0.999 mg/L	0.0061	0.999 mg/L	0.0061	0.61%
QC value within limits for Mo 202.031 Recovery = 99.95%						
Ni 231.604†	17387.7	0.499 mg/L	0.0065	0.499 mg/L	0.0065	1.31%
QC value within limits for Ni 231.604 Recovery = 99.78%						
Pb 220.353†	2946.7	0.504 mg/L	0.0037	0.504 mg/L	0.0037	0.73%
QC value within limits for Pb 220.353 Recovery = 100.72%						
Sb 206.836†	2196.1	1.18 mg/L	0.014	1.18 mg/L	0.014	1.21%
QC value within limits for Sb 206.836 Recovery = 98.10%						
Se 196.026†	322.1	0.399 mg/L	0.0106	0.399 mg/L	0.0106	2.65%
QC value within limits for Se 196.026 Recovery = 99.67%						
Si 251.611†	164076.8	4.88 mg/L	0.042	4.88 mg/L	0.042	0.85%
QC value within limits for Si 251.611 Recovery = 97.53%						
Sn 189.927†	5829.8	0.996 mg/L	0.0091	0.996 mg/L	0.0091	0.92%
QC value within limits for Sn 189.927 Recovery = 99.57%						
Ti 334.940†	816233.3	1.01 mg/L	0.011	1.01 mg/L	0.011	1.07%
QC value within limits for Ti 334.940 Recovery = 101.39%						
Tl 190.801†	845.5	0.511 mg/L	0.0096	0.511 mg/L	0.0096	1.88%
QC value within limits for Tl 190.801 Recovery = 102.21%						
V 290.880†	179723.3	0.978 mg/L	0.0070	0.978 mg/L	0.0070	0.71%
QC value within limits for V 290.880 Recovery = 97.84%						
Zn 206.200†	26538.6	1.00 mg/L	0.006	1.00 mg/L	0.006	0.59%
QC value within limits for Zn 206.200 Recovery = 100.38%						
K 766.490†	83335.5	51.0 mg/L	0.25	51.0 mg/L	0.25	0.50%
QC value within limits for K 766.490 Recovery = 102.07%						
Na 589.592†	550917.3	52.1 mg/L	1.38	52.1 mg/L	1.38	2.64%
QC value within limits for Na 589.592 Recovery = 104.11%						
Sr 407.771†	1037357.0	1.03 mg/L	0.003	1.03 mg/L	0.003	0.27%
QC value within limits for Sr 407.771 Recovery = 103.41%						
Li 670.784†	70876.5	1.05 mg/L	0.027	1.05 mg/L	0.027	2.56%
QC value within limits for Li 670.784 Recovery = 105.21%						
P 214.914†	9684.9	10.1 mg/L	0.11	10.1 mg/L	0.11	1.09%
QC value within limits for P 214.914 Recovery = 100.67%						

QC Failed. Continue with analysis.

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Sequence No.: 11 **Autosampler Location: 1**
Sample ID: CCB **Date Collected: 11/26/2013 11:42:01 AM**
Analyst: **Data Type: Reprocessed on 11/26/2013 11:59:53 AM**
Logged In Analyst (Original) : peicp2

Approved: November 27, 2013

Initial Sample Wt: Initial Sample Vol:
Dilution: Sample Prep Vol:

Nebulizer Parameters: CCB

Analyte	Back Pressure	Flow
All	175.0 kPa	0.45 L/min

Mean Data: CCB

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2925698.4						8842.96	0.30%
YRADIAL	210607.4						4690.50	2.23%
Ga 417.206	926463.9						2832.95	0.31%
GaRADIAL	44249.0						698.20	1.58%
Ag 328.068†	68.1	-0.00002	mg/L	0.000107	-0.00002	mg/L	0.000107	568.28%
QC value within limits for Ag 328.068 Recovery = Not calculated								
Al 396.153†	154.6	0.0352	mg/L	0.02015	0.0352	mg/L	0.02015	57.18%
QC value within limits for Al 396.153 Recovery = Not calculated								
As 188.979†	0.8	0.00028	mg/L	0.002224	0.00028	mg/L	0.002224	800.92%
QC value within limits for As 188.979 Recovery = Not calculated								
Ba 233.527†	43.7	-0.00342	mg/L	0.000130	-0.00342	mg/L	0.000130	3.79%
QC value within limits for Ba 233.527 Recovery = Not calculated								
Be 234.861†	135.8	0.00005	mg/L	0.000032	0.00005	mg/L	0.000032	64.34%
QC value within limits for Be 234.861 Recovery = Not calculated								
B 249.677†	248.5	0.00251	mg/L	0.000733	0.00251	mg/L	0.000733	29.18%
QC value within limits for B 249.677 Recovery = Not calculated								
Ca 227.546†	9.3	0.117	mg/L	0.0200	0.117	mg/L	0.0200	16.99%
QC value within limits for Ca 227.546 Recovery = Not calculated								
Cd 228.802†	-2.5	0.00008	mg/L	0.000077	0.00008	mg/L	0.000077	97.80%
QC value within limits for Cd 228.802 Recovery = Not calculated								
Co 228.616†	-2.0	-0.00020	mg/L	0.000248	-0.00020	mg/L	0.000248	121.51%
QC value within limits for Co 228.616 Recovery = Not calculated								
Cr 267.716†	62.7	-0.00162	mg/L	0.000091	-0.00162	mg/L	0.000091	5.62%
QC value within limits for Cr 267.716 Recovery = Not calculated								
Cu 327.393†	91.0	0.00039	mg/L	0.000194	0.00039	mg/L	0.000194	49.61%
QC value within limits for Cu 327.393 Recovery = Not calculated								
Fe 239.562†	75.2	0.0114	mg/L	0.01036	0.0114	mg/L	0.01036	90.56%
QC value within limits for Fe 239.562 Recovery = Not calculated								
Mg 279.077†	130.7	0.0864	mg/L	0.02263	0.0864	mg/L	0.02263	26.19%
QC value within limits for Mg 279.077 Recovery = Not calculated								
Mn 257.610†	201.5	-0.00398	mg/L	0.000046	-0.00398	mg/L	0.000046	1.14%
QC value within limits for Mn 257.610 Recovery = Not calculated								
Mo 202.031†	12.9	-0.00474	mg/L	0.000132	-0.00474	mg/L	0.000132	2.78%
QC value within limits for Mo 202.031 Recovery = Not calculated								
Ni 231.604†	18.7	-0.00251	mg/L	0.000257	-0.00251	mg/L	0.000257	10.24%
QC value within limits for Ni 231.604 Recovery = Not calculated								
Pb 220.353†	17.2	0.00041	mg/L	0.000647	0.00041	mg/L	0.000647	156.48%
QC value within limits for Pb 220.353 Recovery = Not calculated								
Sb 206.836†	-2.1	0.00109	mg/L	0.001908	0.00109	mg/L	0.001908	175.47%
QC value within limits for Sb 206.836 Recovery = Not calculated								
Se 196.026†	-3.6	-0.00274	mg/L	0.001566	-0.00274	mg/L	0.001566	57.13%
QC value within limits for Se 196.026 Recovery = Not calculated								
Si 251.611†	-76.0	-0.0136	mg/L	0.00042	-0.0136	mg/L	0.00042	3.06%
QC value within limits for Si 251.611 Recovery = Not calculated								
Sn 189.927†	22.2	0.00148	mg/L	0.001601	0.00148	mg/L	0.001601	108.49%
QC value within limits for Sn 189.927 Recovery = Not calculated								
Ti 334.940†	393.6	-0.00130	mg/L	0.000143	-0.00130	mg/L	0.000143	11.03%
QC value within limits for Ti 334.940 Recovery = Not calculated								
Tl 190.801†	-0.7	-0.00396	mg/L	0.005334	-0.00396	mg/L	0.005334	134.59%
QC value within limits for Tl 190.801 Recovery = Not calculated								
V 290.880†	554.7	-0.00150	mg/L	0.000238	-0.00150	mg/L	0.000238	15.82%
QC value within limits for V 290.880 Recovery = Not calculated								
Zn 206.200†	25.0	-0.00411	mg/L	0.000374	-0.00411	mg/L	0.000374	9.09%
QC value within limits for Zn 206.200 Recovery = Not calculated								
K 766.490†	118.7	0.0828	mg/L	0.05058	0.0828	mg/L	0.05058	61.10%
QC value within limits for K 766.490 Recovery = Not calculated								
Na 589.592†	1001.7	0.0840	mg/L	0.04610	0.0840	mg/L	0.04610	54.86%
QC value within limits for Na 589.592 Recovery = Not calculated								
Sr 407.771†	1404.7	-0.00382	mg/L	0.000889	-0.00382	mg/L	0.000889	23.30%
QC value within limits for Sr 407.771 Recovery = Not calculated								

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Li 670.784†	178.3	-0.00078 mg/L	0.002353	-0.00078 mg/L	0.002353	302.82%
QC value within limits for Li 670.784 Recovery = Not calculated							
P 214.914†	65.0	0.0130 mg/L	0.00700	0.0130 mg/L	0.00700	53.81%
QC value within limits for P 214.914 Recovery = Not calculated							

All analyte(s) passed QC.

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Sequence No.: 12 **Autosampler Location: 24**
Sample ID: PBW 98 WG454162-02 **Date Collected: 11/26/2013 11:45:03 AM**
Analyst: JYH **Data Type: Reprocessed on 11/26/2013 11:59:54 AM**
Logged In Analyst (Original) : peicp2
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: PBW 98 WG454162-02

Analyte	Back Pressure	Flow
All	176.0 kPa	0.45 L/min

Mean Data: PBW 98 WG454162-02

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2861147.8						65982.17	2.31%
YRADIAL	189330.6						2229.40	1.18%
Ga 417.206	876943.0						22693.68	2.59%
GaRADIAL	40701.0						919.61	2.26%
Ag 328.068†	598.3	0.00213	mg/L	0.004589	0.00213	mg/L	0.004589	215.66%
Al 396.153†	71.6	0.00676	mg/L	0.010932	0.00676	mg/L	0.010932	161.62%
As 188.979†	-1.8	-0.00134	mg/L	0.003716	-0.00134	mg/L	0.003716	277.72%
Ba 233.527†	-15.2	-0.00418	mg/L	0.000088	-0.00418	mg/L	0.000088	2.11%
Be 234.861†	-133.9	-0.00036	mg/L	0.000027	-0.00036	mg/L	0.000027	7.62%
B 249.677†	89.2	0.00017	mg/L	0.000482	0.00017	mg/L	0.000482	281.72%
Ca 227.546†	-8.9	0.0242	mg/L	0.01397	0.0242	mg/L	0.01397	57.60%
Cd 228.802†	-2.6	0.00008	mg/L	0.000128	0.00008	mg/L	0.000128	163.41%
Co 228.616†	-11.8	-0.00068	mg/L	0.000236	-0.00068	mg/L	0.000236	34.44%
Cr 267.716†	36.0	-0.00186	mg/L	0.000117	-0.00186	mg/L	0.000117	6.29%
Cu 327.393†	495.4	0.00232	mg/L	0.004685	0.00232	mg/L	0.004685	201.93%
Fe 239.562†	39.3	-0.00121	mg/L	0.004196	-0.00121	mg/L	0.004196	345.89%
Mg 279.077†	82.7	0.0421	mg/L	0.01151	0.0421	mg/L	0.01151	27.34%
Mn 257.610†	190.0	-0.00400	mg/L	0.000105	-0.00400	mg/L	0.000105	2.63%
Mo 202.031†	3.2	-0.00535	mg/L	0.000106	-0.00535	mg/L	0.000106	1.98%
Ni 231.604†	-18.2	-0.00357	mg/L	0.000188	-0.00357	mg/L	0.000188	5.26%
Pb 220.353†	6.4	-0.00144	mg/L	0.001361	-0.00144	mg/L	0.001361	94.60%
Sb 206.836†	3.8	0.00424	mg/L	0.001259	0.00424	mg/L	0.001259	29.71%
Se 196.026†	0.7	0.00257	mg/L	0.004414	0.00257	mg/L	0.004414	171.55%
Si 251.611†	-52.1	-0.0129	mg/L	0.00100	-0.0129	mg/L	0.00100	7.72%
Sn 189.927†	14.4	0.00013	mg/L	0.000732	0.00013	mg/L	0.000732	569.06%
Ti 334.940†	3754.3	0.00287	mg/L	0.007751	0.00287	mg/L	0.007751	270.35%
Tl 190.801†	-5.4	-0.00668	mg/L	0.001191	-0.00668	mg/L	0.001191	17.84%
V 290.880†	1137.9	0.00169	mg/L	0.011099	0.00169	mg/L	0.011099	656.01%
Zn 206.200†	85.4	-0.00183	mg/L	0.000204	-0.00183	mg/L	0.000204	11.18%
K 766.490†	-58.2	-0.0241	mg/L	0.05363	-0.0241	mg/L	0.05363	222.46%
Na 589.592†	428.5	0.0318	mg/L	0.02061	0.0318	mg/L	0.02061	64.77%
Sr 407.771†	169.2	-0.00505	mg/L	0.000143	-0.00505	mg/L	0.000143	2.82%
Li 670.784†	43.0	-0.00279	mg/L	0.001045	-0.00279	mg/L	0.001045	37.44%
P 214.914†	11.8	-0.0426	mg/L	0.01390	-0.0426	mg/L	0.01390	32.64%

Approved: November 27, 2013

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Analysis Begun

Start Time: 11/26/2013 12:00:30 PM **Plasma On Time: 11/26/2013 7:51:24 AM**
Logged In Analyst: peicp2 **Technique: ICP Continuous**
Spectrometer Model: Optima 4300 DV, S/N 077N4011401 **Autosampler Model: Cetac**

Sample Information File: C:\pe\peicp2\Sample Information\Batch 2.sif
Batch ID:
Results Data Set: 112613H2R
Results Library: C:\pe\peicp2\Results\results1.mdb

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Sequence No.: 1 **Autosampler Location: 25**
Sample ID: F BLANK WG453882-01 **Date Collected: 11/26/2013 12:00:31 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: F BLANK WG453882-01

Analyte	Back Pressure	Flow
All	176.0 kPa	0.45 L/min

Mean Data: F BLANK WG453882-01

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2942881.1						34704.88	1.18%
YRADIAL	217111.3						2904.65	1.34%
Ga 417.206	941857.3						24552.00	2.61%
GaRADIAL	43719.2						652.26	1.49%
Ag 328.068†	-89.2	-0.00066	mg/L	0.000170	-0.00066	mg/L	0.000170	25.74%
Al 396.153†	50.2	-0.00059	mg/L	0.003248	-0.00059	mg/L	0.003248	554.49%
As 188.979†	-0.5	-0.00053	mg/L	0.001956	-0.00053	mg/L	0.001956	368.37%
Ba 233.527†	7.0	-0.00389	mg/L	0.000148	-0.00389	mg/L	0.000148	3.79%
Be 234.861†	-7.0	-0.00017	mg/L	0.000073	-0.00017	mg/L	0.000073	43.25%
B 249.677†	2.8	-0.00111	mg/L	0.000482	-0.00111	mg/L	0.000482	43.48%
Ca 227.546†	5.8	0.0994	mg/L	0.01957	0.0994	mg/L	0.01957	19.70%
Cd 228.802†	-2.3	0.00009	mg/L	0.000165	0.00009	mg/L	0.000165	185.24%
Co 228.616†	-2.2	-0.00022	mg/L	0.000145	-0.00022	mg/L	0.000145	66.27%
Cr 267.716†	10.8	-0.00209	mg/L	0.000100	-0.00209	mg/L	0.000100	4.77%
Cu 327.393†	63.6	0.00026	mg/L	0.000403	0.00026	mg/L	0.000403	154.43%
Fe 239.562†	71.8	0.0103	mg/L	0.00187	0.0103	mg/L	0.00187	18.18%
Mg 279.077†	31.4	-0.00523	mg/L	0.001736	-0.00523	mg/L	0.001736	33.22%
Mn 257.610†	479.0	-0.00349	mg/L	0.000031	-0.00349	mg/L	0.000031	0.88%
Mo 202.031†	7.0	-0.00512	mg/L	0.000255	-0.00512	mg/L	0.000255	4.99%
Ni 231.604†	-5.7	-0.00321	mg/L	0.000510	-0.00321	mg/L	0.000510	15.89%
Pb 220.353†	5.1	-0.00168	mg/L	0.001511	-0.00168	mg/L	0.001511	90.16%
Sb 206.836†	1.1	0.00280	mg/L	0.001482	0.00280	mg/L	0.001482	52.88%
Se 196.026†	0.2	0.00193	mg/L	0.005374	0.00193	mg/L	0.005374	279.16%
Si 251.611†	1004.7	0.0186	mg/L	0.00125	0.0186	mg/L	0.00125	6.69%
Sn 189.927†	6.5	-0.00123	mg/L	0.000467	-0.00123	mg/L	0.000467	38.11%
Ti 334.940†	776.6	-0.00082	mg/L	0.000124	-0.00082	mg/L	0.000124	15.03%
Tl 190.801†	-4.7	-0.00635	mg/L	0.002177	-0.00635	mg/L	0.002177	34.27%
V 290.880†	144.3	-0.00375	mg/L	0.002113	-0.00375	mg/L	0.002113	56.39%
Zn 206.200†	110.3	-0.00089	mg/L	0.000163	-0.00089	mg/L	0.000163	18.43%
K 766.490†	71.2	-0.123	mg/L	0.0049	-0.123	mg/L	0.0049	3.97%
Na 589.592†	1704147.6	177	mg/L	3.2	177	mg/L	3.2	1.83%
Sr 407.771†	320.8	-0.00490	mg/L	0.000033	-0.00490	mg/L	0.000033	0.68%
Li 670.784†	4.0	-0.00337	mg/L	0.001152	-0.00337	mg/L	0.001152	34.13%
P 214.914†	6.6	-0.0480	mg/L	0.01864	-0.0480	mg/L	0.01864	38.83%

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Sequence No.: 2 **Autosampler Location: 26**
Sample ID: F BLANK WG454137-01 **Date Collected: 11/26/2013 12:03:38 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Approved: November 27, 2013

Nebulizer Parameters: F BLANK WG454137-01

Analyte	Back Pressure	Flow
All	176.0 kPa	0.45 L/min

Mean Data: F BLANK WG454137-01

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2830742.4						5743.93	0.20%
YRADIAL	210749.8						14065.92	6.67%
Ga 417.206	894728.8						6562.56	0.73%
GaRADIAL	44057.3						2072.64	4.70%
Ag 328.068†	-79.1	-0.00059	mg/L	0.000433	-0.00059	mg/L	0.000433	73.55%
Al 396.153†	55.1	0.00111	mg/L	0.004401	0.00111	mg/L	0.004401	397.74%
As 188.979†	-2.7	-0.00190	mg/L	0.000887	-0.00190	mg/L	0.000887	46.75%
Ba 233.527†	113.5	-0.00251	mg/L	0.000169	-0.00251	mg/L	0.000169	6.71%
Be 234.861†	-82.5	-0.00030	mg/L	0.000009	-0.00030	mg/L	0.000009	2.89%
B 249.677†	4.2	-0.00111	mg/L	0.000236	-0.00111	mg/L	0.000236	21.28%
Ca 227.546†	-5.1	0.0448	mg/L	0.03414	0.0448	mg/L	0.03414	76.27%
Cd 228.802†	-2.8	0.00007	mg/L	0.000202	0.00007	mg/L	0.000202	275.42%
Co 228.616†	-11.3	-0.00065	mg/L	0.000168	-0.00065	mg/L	0.000168	25.61%
Cr 267.716†	19.3	-0.00202	mg/L	0.000108	-0.00202	mg/L	0.000108	5.35%
Cu 327.393†	-111.3	-0.00057	mg/L	0.000345	-0.00057	mg/L	0.000345	60.88%
Fe 239.562†	225.9	0.0645	mg/L	0.00539	0.0645	mg/L	0.00539	8.35%
Mg 279.077†	26.7	-0.00958	mg/L	0.003918	-0.00958	mg/L	0.003918	40.89%
Mn 257.610†	553.0	-0.00336	mg/L	0.000024	-0.00336	mg/L	0.000024	0.70%
Mo 202.031†	2.4	-0.00540	mg/L	0.000410	-0.00540	mg/L	0.000410	7.59%
Ni 231.604†	-17.5	-0.00355	mg/L	0.000388	-0.00355	mg/L	0.000388	10.94%
Pb 220.353†	8.1	-0.00115	mg/L	0.000320	-0.00115	mg/L	0.000320	27.82%
Sb 206.836†	5.7	0.00528	mg/L	0.001020	0.00528	mg/L	0.001020	19.34%
Se 196.026†	2.1	0.00425	mg/L	0.010322	0.00425	mg/L	0.010322	242.92%
Si 251.611†	1715.7	0.0399	mg/L	0.00085	0.0399	mg/L	0.00085	2.12%
Sn 189.927†	12.3	-0.00022	mg/L	0.001219	-0.00022	mg/L	0.001219	553.58%
Ti 334.940†	745.1	-0.00087	mg/L	0.000002	-0.00087	mg/L	0.000002	0.23%
Tl 190.801†	-11.5	-0.0104	mg/L	0.00086	-0.0104	mg/L	0.00086	8.27%
V 290.880†	640.6	-0.00104	mg/L	0.000764	-0.00104	mg/L	0.000764	73.79%
Zn 206.200†	202.2	0.00259	mg/L	0.000265	0.00259	mg/L	0.000265	10.23%
K 766.490†	2.1	-0.175	mg/L	0.0235	-0.175	mg/L	0.0235	13.41%
Na 589.592†	1793449.2	188	mg/L	4.4	188	mg/L	4.4	2.33%
Sr 407.771†	1917.9	-0.00330	mg/L	0.000011	-0.00330	mg/L	0.000011	0.33%
Li 670.784†	28.6	-0.00301	mg/L	0.000505	-0.00301	mg/L	0.000505	16.79%
P 214.914†	6.5	-0.0482	mg/L	0.00978	-0.0482	mg/L	0.00978	20.30%

Sequence No.: 3 **Autosampler Location: 27**
Sample ID: LCSW 98 WG454162-03 **Date Collected: 11/26/2013 12:06:44 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: LCSW 98 WG454162-03

Analyte	Back Pressure	Flow
All	176.0 kPa	0.45 L/min

Mean Data: LCSW 98 WG454162-03

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2908067.3						28188.63	0.97%
YRADIAL	202776.9						4049.81	2.00%
Ga 417.206	916090.9						13537.59	1.48%
GaRADIAL	43393.6						857.80	1.98%
Ag 328.068†	46827.4	0.191	mg/L	0.0016	0.191	mg/L	0.0016	0.84%
Al 396.153†	14229.9	4.84	mg/L	0.092	4.84	mg/L	0.092	1.90%
As 188.979†	293.6	0.177	mg/L	0.0015	0.177	mg/L	0.0015	0.83%
Ba 233.527†	35955.9	0.463	mg/L	0.0044	0.463	mg/L	0.0044	0.94%
Be 234.861†	14651.7	0.0220	mg/L	0.00017	0.0220	mg/L	0.00017	0.76%
B 249.677†	61623.2	0.905	mg/L	0.0149	0.905	mg/L	0.0149	1.64%
Ca 227.546†	866.7	4.69	mg/L	0.090	4.69	mg/L	0.090	1.92%
Cd 228.802†	570.1	0.0224	mg/L	0.00050	0.0224	mg/L	0.00050	2.25%
Co 228.616†	1956.8	0.0933	mg/L	0.00137	0.0933	mg/L	0.00137	1.47%

Approved: November 27, 2013

Cr 267.716†	26267.7	0.233 mg/L	0.0036	0.233 mg/L	0.0036	1.54%
Cu 327.393†	49727.9	0.237 mg/L	0.0026	0.237 mg/L	0.0026	1.08%
Fe 239.562†	5445.9	1.90 mg/L	0.071	1.90 mg/L	0.071	3.73%
Mg 279.077†	5182.8	4.76 mg/L	0.065	4.76 mg/L	0.065	1.37%
Mn 257.610†	137026.0	0.238 mg/L	0.0030	0.238 mg/L	0.0030	1.28%
Mo 202.031†	7632.6	0.471 mg/L	0.0035	0.471 mg/L	0.0035	0.75%
Ni 231.604†	8153.6	0.232 mg/L	0.0020	0.232 mg/L	0.0020	0.86%
Pb 220.353†	1358.1	0.231 mg/L	0.0043	0.231 mg/L	0.0043	1.86%
Sb 206.836†	1032.7	0.555 mg/L	0.0058	0.555 mg/L	0.0058	1.05%
Se 196.026†	146.6	0.182 mg/L	0.0044	0.182 mg/L	0.0044	2.41%
Si 251.611†	79189.0	2.35 mg/L	0.030	2.35 mg/L	0.030	1.29%
Sn 189.927†	0.8	-0.00220 mg/L	0.001086	-0.00220 mg/L	0.001086	49.37%
Ti 334.940†	382784.3	0.474 mg/L	0.0064	0.474 mg/L	0.0064	1.36%
Tl 190.801†	381.5	0.229 mg/L	0.0033	0.229 mg/L	0.0033	1.46%
V 290.880†	85660.1	0.464 mg/L	0.0088	0.464 mg/L	0.0088	1.91%
Zn 206.200†	12114.3	0.456 mg/L	0.0055	0.456 mg/L	0.0055	1.21%
K 766.490†	38616.9	23.5 mg/L	0.40	23.5 mg/L	0.40	1.69%
Na 589.592†	263570.5	24.4 mg/L	0.32	24.4 mg/L	0.32	1.31%
Sr 407.771†	472115.2	0.468 mg/L	0.0041	0.468 mg/L	0.0041	0.88%
Li 670.784†	32972.5	0.488 mg/L	0.0064	0.488 mg/L	0.0064	1.31%
P 214.914†	-169.0	-0.232 mg/L	0.0084	-0.232 mg/L	0.0084	3.63%

Sequence No.: 4 **Autosampler Location: 28**
Sample ID: L1311129001 WG454162-01 **Date Collected: 11/26/2013 12:08:50 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1311129001 WG454162-01

Analyte	Back Pressure	Flow
All	175.0 kPa	0.45 L/min

Mean Data: L1311129001 WG454162-01

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2736020.1						40366.67	1.48%
YRADIAL	198286.0						1482.65	0.75%
Ga 417.206	877361.9						18182.82	2.07%
GaRADIAL	42131.3						836.11	1.98%
Ag 328.068†	-137.0	-0.00041	mg/L	0.000124	-0.00041	mg/L	0.000124	30.41%
Al 396.153†	720.0	0.230	mg/L	0.0074	0.230	mg/L	0.0074	3.22%
As 188.979†	-13.0	-0.00781	mg/L	0.002920	-0.00781	mg/L	0.002920	37.40%
Ba 233.527†	7113.2	0.0883	mg/L	0.00175	0.0883	mg/L	0.00175	1.98%
Be 234.861†	73.2	-0.00028	mg/L	0.000040	-0.00028	mg/L	0.000040	14.15%
B 249.677†	1977.5	0.0275	mg/L	0.00202	0.0275	mg/L	0.00202	7.33%
Ca 227.546†	1727.2	8.87	mg/L	0.168	8.87	mg/L	0.168	1.90%
Cd 228.802†	32.3	0.00151	mg/L	0.000042	0.00151	mg/L	0.000042	2.75%
Co 228.616†	3.5	0.00000	mg/L	0.000144	0.00000	mg/L	0.000144	>999.9%
Cr 267.716†	782.6	0.00483	mg/L	0.000167	0.00483	mg/L	0.000167	3.46%
Cu 327.393†	2848.5	0.0137	mg/L	0.00055	0.0137	mg/L	0.00055	4.02%
Fe 239.562†	2818.1	0.978	mg/L	0.0139	0.978	mg/L	0.0139	1.42%
Mg 279.077†	477.9	0.406	mg/L	0.0061	0.406	mg/L	0.0061	1.50%
Mn 257.610†	25516.8	0.0410	mg/L	0.00108	0.0410	mg/L	0.00108	2.63%
Mo 202.031†	15.6	-0.00455	mg/L	0.000283	-0.00455	mg/L	0.000283	6.22%
Ni 231.604†	145.5	0.00116	mg/L	0.000346	0.00116	mg/L	0.000346	29.85%
Pb 220.353†	68.9	0.00923	mg/L	0.002033	0.00923	mg/L	0.002033	22.03%
Sb 206.836†	3.3	0.00394	mg/L	0.001292	0.00394	mg/L	0.001292	32.81%
Se 196.026†	-2.8	-0.00151	mg/L	0.007995	-0.00151	mg/L	0.007995	529.72%
Si 251.611†	23468.8	0.689	mg/L	0.0265	0.689	mg/L	0.0265	3.85%
Sn 189.927†	-60.7	-0.0127	mg/L	0.00079	-0.0127	mg/L	0.00079	6.25%
Ti 334.940†	484.0	0.00012	mg/L	0.000294	0.00012	mg/L	0.000294	238.06%
Tl 190.801†	-15.9	-0.0130	mg/L	0.00407	-0.0130	mg/L	0.00407	31.36%
V 290.880†	924.3	0.00041	mg/L	0.001251	0.00041	mg/L	0.001251	303.29%
Zn 206.200†	50906.0	1.92	mg/L	0.037	1.92	mg/L	0.037	1.92%
K 766.490†	313.7	0.0186	mg/L	0.02831	0.0186	mg/L	0.02831	151.85%
Na 589.592†	1746049.6	182	mg/L	4.7	182	mg/L	4.7	2.60%
Sr 407.771†	22974.0	0.0175	mg/L	0.00021	0.0175	mg/L	0.00021	1.18%
Li 670.784†	57.4	-0.00258	mg/L	0.000790	-0.00258	mg/L	0.000790	30.65%
P 214.914†	-4.6	-0.0598	mg/L	0.01468	-0.0598	mg/L	0.01468	24.57%

Approved: November 27, 2013

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Sequence No.: 5 **Autosampler Location: 29**
Sample ID: L1311129001S WG454162-04 **Date Collected: 11/26/2013 12:11:56 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1311129001S WG454162-04

Analyte	Back Pressure	Flow
All	176.0 kPa	0.45 L/min

Mean Data: L1311129001S WG454162-04

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2741412.7						31177.93	1.14%
YRADIAL	197102.5						891.59	0.45%
Ga 417.206	875315.5						9810.45	1.12%
GaRADIAL	43013.2						406.00	0.94%
Ag 328.068†	48690.9	0.199	mg/L	0.0007	0.199	mg/L	0.0007	0.37%
Al 396.153†	14801.1	5.03	mg/L	0.154	5.03	mg/L	0.154	3.06%
As 188.979†	306.9	0.186	mg/L	0.0031	0.186	mg/L	0.0031	1.68%
Ba 233.527†	44972.0	0.580	mg/L	0.0109	0.580	mg/L	0.0109	1.87%
Be 234.861†	15604.9	0.0233	mg/L	0.00012	0.0233	mg/L	0.00012	0.52%
B 249.677†	66336.9	0.974	mg/L	0.0077	0.974	mg/L	0.0077	0.79%
Ca 227.546†	2748.5	14.3	mg/L	0.14	14.3	mg/L	0.14	0.99%
Cd 228.802†	636.1	0.0250	mg/L	0.00035	0.0250	mg/L	0.00035	1.38%
Co 228.616†	2056.7	0.0980	mg/L	0.00178	0.0980	mg/L	0.00178	1.81%
Cr 267.716†	28117.5	0.250	mg/L	0.0028	0.250	mg/L	0.0028	1.12%
Cu 327.393†	55594.6	0.265	mg/L	0.0003	0.265	mg/L	0.0003	0.13%
Fe 239.562†	7778.2	2.72	mg/L	0.101	2.72	mg/L	0.101	3.71%
Mg 279.077†	5652.6	5.19	mg/L	0.155	5.19	mg/L	0.155	2.99%
Mn 257.610†	161036.0	0.281	mg/L	0.0031	0.281	mg/L	0.0031	1.10%
Mo 202.031†	8024.2	0.495	mg/L	0.0092	0.495	mg/L	0.0092	1.87%
Ni 231.604†	8617.0	0.246	mg/L	0.0031	0.246	mg/L	0.0031	1.25%
Pb 220.353†	1473.4	0.250	mg/L	0.0050	0.250	mg/L	0.0050	2.00%
Sb 206.836†	1084.8	0.583	mg/L	0.0055	0.583	mg/L	0.0055	0.94%
Se 196.026†	152.0	0.189	mg/L	0.0086	0.189	mg/L	0.0086	4.55%
Si 251.611†	106187.7	3.15	mg/L	0.013	3.15	mg/L	0.013	0.42%
Sn 189.927†	-77.8	-0.0156	mg/L	0.00093	-0.0156	mg/L	0.00093	5.97%
Ti 334.940†	399530.4	0.497	mg/L	0.0029	0.497	mg/L	0.0029	0.59%
Tl 190.801†	381.9	0.229	mg/L	0.0055	0.229	mg/L	0.0055	2.41%
V 290.880†	90913.1	0.493	mg/L	0.0098	0.493	mg/L	0.0098	1.99%
Zn 206.200†	64448.0	2.44	mg/L	0.026	2.44	mg/L	0.026	1.06%
K 766.490†	39252.6	23.7	mg/L	0.74	23.7	mg/L	0.74	3.15%
Na 589.592†	1985125.9	212	mg/L	2.8	212	mg/L	2.8	1.33%
Sr 407.771†	517023.3	0.513	mg/L	0.0033	0.513	mg/L	0.0033	0.65%
Li 670.784†	33217.7	0.491	mg/L	0.0053	0.491	mg/L	0.0053	1.09%
P 214.914†	-208.0	-0.272	mg/L	0.0055	-0.272	mg/L	0.0055	2.02%

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Sequence No.: 6 **Autosampler Location: 30**
Sample ID: L1311129001SD WG454162-05 **Date Collected: 11/26/2013 12:14:04 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1311129001SD WG454162-05

Analyte	Back Pressure	Flow
All	176.0 kPa	0.45 L/min

Mean Data: L1311129001SD WG454162-05

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2753499.3						79353.56	2.88%
YRADIAL	193522.6						2880.41	1.49%
Ga 417.206	881487.4						25695.52	2.92%
GaRADIAL	42342.2						829.54	1.96%

Approved: November 27, 2013

Ag 328.068†	47821.0	0.195 mg/L	0.0009	0.195 mg/L	0.0009	0.48%
Al 396.153†	14631.1	4.97 mg/L	0.208	4.97 mg/L	0.208	4.17%
As 188.979†	305.0	0.185 mg/L	0.0061	0.185 mg/L	0.0061	3.28%
Ba 233.527†	43764.8	0.564 mg/L	0.0033	0.564 mg/L	0.0033	0.58%
Be 234.861†	15235.4	0.0227 mg/L	0.00008	0.0227 mg/L	0.00008	0.37%
B 249.677†	65435.4	0.961 mg/L	0.0117	0.961 mg/L	0.0117	1.22%
Ca 227.546†	2669.1	13.9 mg/L	0.20	13.9 mg/L	0.20	1.47%
Cd 228.802†	616.0	0.0242 mg/L	0.00108	0.0242 mg/L	0.00108	4.45%
Co 228.616†	2015.8	0.0961 mg/L	0.00136	0.0961 mg/L	0.00136	1.41%
Cr 267.716†	27579.6	0.245 mg/L	0.0005	0.245 mg/L	0.0005	0.22%
Cu 327.393†	54447.7	0.260 mg/L	0.0031	0.260 mg/L	0.0031	1.20%
Fe 239.562†	8019.8	2.81 mg/L	0.141	2.81 mg/L	0.141	5.02%
Mg 279.077†	5634.2	5.17 mg/L	0.158	5.17 mg/L	0.158	3.06%
Mn 257.610†	157953.3	0.276 mg/L	0.0022	0.276 mg/L	0.0022	0.79%
Mo 202.031†	7928.0	0.489 mg/L	0.0021	0.489 mg/L	0.0021	0.42%
Ni 231.604†	8434.9	0.240 mg/L	0.0021	0.240 mg/L	0.0021	0.86%
Pb 220.353†	1452.9	0.247 mg/L	0.0054	0.247 mg/L	0.0054	2.18%
Sb 206.836†	1062.3	0.571 mg/L	0.0137	0.571 mg/L	0.0137	2.40%
Se 196.026†	155.3	0.193 mg/L	0.0044	0.193 mg/L	0.0044	2.27%
Si 251.611†	100311.3	2.98 mg/L	0.034	2.98 mg/L	0.034	1.14%
Sn 189.927†	-80.3	-0.0161 mg/L	0.00066	-0.0161 mg/L	0.00066	4.12%
Ti 334.940†	388745.0	0.483 mg/L	0.0027	0.483 mg/L	0.0027	0.56%
Tl 190.801†	377.0	0.226 mg/L	0.0031	0.226 mg/L	0.0031	1.38%
V 290.880†	88589.2	0.480 mg/L	0.0077	0.480 mg/L	0.0077	1.61%
Zn 206.200†	62618.8	2.37 mg/L	0.008	2.37 mg/L	0.008	0.33%
K 766.490†	38894.4	23.5 mg/L	1.06	23.5 mg/L	1.06	4.53%
Na 589.592†	1920348.7	204 mg/L	1.4	204 mg/L	1.4	0.68%
Sr 407.771†	509169.5	0.505 mg/L	0.0017	0.505 mg/L	0.0017	0.34%
Li 670.784†	32642.5	0.483 mg/L	0.0037	0.483 mg/L	0.0037	0.77%
P 214.914†	-200.6	-0.265 mg/L	0.0287	-0.265 mg/L	0.0287	10.85%

Sequence No.: 7 **Autosampler Location: 31**
Sample ID: L1311120301 **Date Collected: 11/26/2013 12:16:12 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1311120301

Analyte	Back Pressure	Flow
All	177.0 kPa	0.45 L/min

Mean Data: L1311120301

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2802324.4						21446.01	0.77%
YRADIAL	197441.8						1106.22	0.56%
Ga 417.206	877886.0						5236.08	0.60%
GaRADIAL	41620.9						729.80	1.75%
Ag 328.068†	-220.1	-0.00079	mg/L	0.000438	-0.00079	mg/L	0.000438	55.47%
Al 396.153†	59.0	0.00249	mg/L	0.005565	0.00249	mg/L	0.005565	223.65%
As 188.979†	-6.7	-0.00413	mg/L	0.001553	-0.00413	mg/L	0.001553	37.58%
Ba 233.527†	44.5	-0.00345	mg/L	0.000189	-0.00345	mg/L	0.000189	5.49%
Be 234.861†	26.5	-0.00033	mg/L	0.000108	-0.00033	mg/L	0.000108	32.96%
B 249.677†	171258.0	2.52	mg/L	0.017	2.52	mg/L	0.017	0.67%
Ca 227.546†	6.1	0.122	mg/L	0.0227	0.122	mg/L	0.0227	18.67%
Cd 228.802†	1.4	0.00025	mg/L	0.000179	0.00025	mg/L	0.000179	70.77%
Co 228.616†	-17.6	-0.00097	mg/L	0.000162	-0.00097	mg/L	0.000162	16.65%
Cr 267.716†	112.4	-0.00125	mg/L	0.000061	-0.00125	mg/L	0.000061	4.90%
Cu 327.393†	92.4	0.00045	mg/L	0.000062	0.00045	mg/L	0.000062	13.90%
Fe 239.562†	2499.3	0.865	mg/L	0.0095	0.865	mg/L	0.0095	1.10%
Mg 279.077†	43.7	0.00567	mg/L	0.009996	0.00567	mg/L	0.009996	176.37%
Mn 257.610†	4431.1	0.00355	mg/L	0.000204	0.00355	mg/L	0.000204	5.76%
Mo 202.031†	16.5	-0.00450	mg/L	0.000294	-0.00450	mg/L	0.000294	6.54%
Ni 231.604†	13.8	-0.00264	mg/L	0.000233	-0.00264	mg/L	0.000233	8.80%
Pb 220.353†	16.4	0.00024	mg/L	0.000636	0.00024	mg/L	0.000636	268.22%
Sb 206.836†	5.9	0.00539	mg/L	0.000608	0.00539	mg/L	0.000608	11.29%
Se 196.026†	0.2	0.00219	mg/L	0.000472	0.00219	mg/L	0.000472	21.60%
Si 251.611†	948.5	0.0170	mg/L	0.00107	0.0170	mg/L	0.00107	6.34%
Sn 189.927†	5.3	-0.00142	mg/L	0.000326	-0.00142	mg/L	0.000326	23.02%

Approved: November 27, 2013

Ti 334.940†	224.7	-0.00151 mg/L	0.000101	-0.00151 mg/L	0.000101	6.72%
Tl 190.801†	-7.2	-0.00784 mg/L	0.002863	-0.00784 mg/L	0.002863	36.52%
V 290.880†	511.2	-0.00182 mg/L	0.000557	-0.00182 mg/L	0.000557	30.53%
Zn 206.200†	186.8	0.00201 mg/L	0.000270	0.00201 mg/L	0.000270	13.44%
K 766.490†	132.0	-0.0914 mg/L	0.02614	-0.0914 mg/L	0.02614	28.59%
Na 589.592†	1748609.0	182 mg/L	0.8	182 mg/L	0.8	0.42%
Sr 407.771†	1630.1	-0.00359 mg/L	0.000475	-0.00359 mg/L	0.000475	13.22%
Li 670.784†	120.8	-0.00163 mg/L	0.000974	-0.00163 mg/L	0.000974	59.65%
P 214.914†	1.4	-0.0535 mg/L	0.00776	-0.0535 mg/L	0.00776	14.51%

Sequence No.: 8 **Autosampler Location: 32**
Sample ID: L1311120301PS WG454243-01 **Date Collected: 11/26/2013 12:19:19 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1311120301PS WG454243-01

Analyte	Back Pressure	Flow
All	176.0 kPa	0.45 L/min

Mean Data: L1311120301PS WG454243-01

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2836958.1						4268.96	0.15%
YRADIAL	210878.5						1674.14	0.79%
Ga 417.206	906356.1						8324.22	0.92%
GaRADIAL	45423.7						350.57	0.77%
Ag 328.068†	49022.5	0.200	mg/L	0.0045	0.200	mg/L	0.0045	2.25%
Al 396.153†	14532.0	4.94	mg/L	0.042	4.94	mg/L	0.042	0.85%
As 188.979†	309.6	0.187	mg/L	0.0053	0.187	mg/L	0.0053	2.85%
Ba 233.527†	37948.8	0.489	mg/L	0.0085	0.489	mg/L	0.0085	1.74%
Be 234.861†	15705.1	0.0234	mg/L	0.00050	0.0234	mg/L	0.00050	2.14%
B 249.677†	219964.8	3.24	mg/L	0.026	3.24	mg/L	0.026	0.79%
Ca 227.546†	964.1	5.21	mg/L	0.043	5.21	mg/L	0.043	0.83%
Cd 228.802†	595.5	0.0234	mg/L	0.00046	0.0234	mg/L	0.00046	1.97%
Co 228.616†	2034.8	0.0970	mg/L	0.00100	0.0970	mg/L	0.00100	1.03%
Cr 267.716†	27739.7	0.247	mg/L	0.0051	0.247	mg/L	0.0051	2.05%
Cu 327.393†	52973.7	0.253	mg/L	0.0061	0.253	mg/L	0.0061	2.42%
Fe 239.562†	7755.9	2.72	mg/L	0.027	2.72	mg/L	0.027	0.98%
Mg 279.077†	5323.7	4.89	mg/L	0.051	4.89	mg/L	0.051	1.05%
Mn 257.610†	142893.3	0.249	mg/L	0.0005	0.249	mg/L	0.0005	0.20%
Mo 202.031†	8116.3	0.501	mg/L	0.0073	0.501	mg/L	0.0073	1.46%
Ni 231.604†	8584.4	0.245	mg/L	0.0049	0.245	mg/L	0.0049	2.00%
Pb 220.353†	1433.5	0.244	mg/L	0.0030	0.244	mg/L	0.0030	1.23%
Sb 206.836†	1078.6	0.579	mg/L	0.0066	0.579	mg/L	0.0066	1.14%
Se 196.026†	156.5	0.195	mg/L	0.0062	0.195	mg/L	0.0062	3.18%
Si 251.611†	82340.7	2.44	mg/L	0.055	2.44	mg/L	0.055	2.24%
Sn 189.927†	-15.3	-0.00494	mg/L	0.000034	-0.00494	mg/L	0.000034	0.69%
Ti 334.940†	404328.4	0.501	mg/L	0.0028	0.501	mg/L	0.0028	0.55%
Tl 190.801†	393.9	0.237	mg/L	0.0040	0.237	mg/L	0.0040	1.71%
V 290.880†	90935.4	0.493	mg/L	0.0120	0.493	mg/L	0.0120	2.43%
Zn 206.200†	13196.4	0.497	mg/L	0.0077	0.497	mg/L	0.0077	1.55%
K 766.490†	41142.9	24.9	mg/L	0.11	24.9	mg/L	0.11	0.45%
Na 589.592†	1788896.3	187	mg/L	1.3	187	mg/L	1.3	0.67%
Sr 407.771†	511532.9	0.507	mg/L	0.0006	0.507	mg/L	0.0006	0.12%
Li 670.784†	34553.7	0.511	mg/L	0.0013	0.511	mg/L	0.0013	0.26%
P 214.914†	-176.6	-0.239	mg/L	0.0037	-0.239	mg/L	0.0037	1.53%

Sequence No.: 9 **Autosampler Location: 33**
Sample ID: L1311120301DL WG454243-02 **Date Collected: 11/26/2013 12:21:28 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1311120301DL WG454243-02

Analyte	Back Pressure	Flow
All	176.0 kPa	0.45 L/min

Approved: November 27, 2013

Mean Data: L1311120301DL WG454243-02

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2867385.9						23626.16	0.82%
YRADIAL	196051.8						9783.63	4.99%
Ga 417.206	927685.6						15288.73	1.65%
GaRADIAL	42028.1						1270.38	3.02%
Ag 328.068†	-74.6	-0.00052	mg/L	0.000374	-0.00052	mg/L	0.000374	71.79%
Al 396.153†	47.1	-0.00162	mg/L	0.006824	-0.00162	mg/L	0.006824	420.86%
As 188.979†	-0.8	-0.00067	mg/L	0.000605	-0.00067	mg/L	0.000605	90.74%
Ba 233.527†	16.5	-0.00378	mg/L	0.000070	-0.00378	mg/L	0.000070	1.85%
Be 234.861†	173.4	0.00007	mg/L	0.000060	0.00007	mg/L	0.000060	91.58%
B 249.677†	37344.7	0.549	mg/L	0.0075	0.549	mg/L	0.0075	1.36%
Ca 227.546†	3.2	0.0908	mg/L	0.00827	0.0908	mg/L	0.00827	9.11%
Cd 228.802†	-7.1	-0.00010	mg/L	0.000094	-0.00010	mg/L	0.000094	90.81%
Co 228.616†	-9.8	-0.00058	mg/L	0.000278	-0.00058	mg/L	0.000278	47.50%
Cr 267.716†	47.1	-0.00178	mg/L	0.000025	-0.00178	mg/L	0.000025	1.42%
Cu 327.393†	-91.6	-0.00047	mg/L	0.000389	-0.00047	mg/L	0.000389	83.25%
Fe 239.562†	544.7	0.177	mg/L	0.0064	0.177	mg/L	0.0064	3.61%
Mg 279.077†	36.8	-0.00032	mg/L	0.011570	-0.00032	mg/L	0.011570	>999.9%
Mn 257.610†	993.0	-0.00257	mg/L	0.000031	-0.00257	mg/L	0.000031	1.19%
Mo 202.031†	0.7	-0.00550	mg/L	0.000207	-0.00550	mg/L	0.000207	3.76%
Ni 231.604†	15.2	-0.00261	mg/L	0.000330	-0.00261	mg/L	0.000330	12.67%
Pb 220.353†	20.6	0.00098	mg/L	0.001295	0.00098	mg/L	0.001295	132.50%
Sb 206.836†	2.1	0.00332	mg/L	0.002164	0.00332	mg/L	0.002164	65.26%
Se 196.026†	-0.5	0.00110	mg/L	0.003360	0.00110	mg/L	0.003360	304.94%
Si 251.611†	30.0	-0.0105	mg/L	0.00033	-0.0105	mg/L	0.00033	3.20%
Sn 189.927†	5.9	-0.00133	mg/L	0.000555	-0.00133	mg/L	0.000555	41.81%
Ti 334.940†	104.6	-0.00166	mg/L	0.000137	-0.00166	mg/L	0.000137	8.24%
Tl 190.801†	-0.4	-0.00379	mg/L	0.003770	-0.00379	mg/L	0.003770	99.48%
V 290.880†	491.8	-0.00186	mg/L	0.000859	-0.00186	mg/L	0.000859	46.15%
Zn 206.200†	78.2	-0.00210	mg/L	0.000177	-0.00210	mg/L	0.000177	8.44%
K 766.490†	82.0	0.0274	mg/L	0.06567	0.0274	mg/L	0.06567	239.73%
Na 589.592†	356945.0	33.3	mg/L	0.19	33.3	mg/L	0.19	0.58%
Sr 407.771†	1147.9	-0.00407	mg/L	0.000497	-0.00407	mg/L	0.000497	12.21%
Li 670.784†	23.1	-0.00309	mg/L	0.000871	-0.00309	mg/L	0.000871	28.18%
P 214.914†	72.3	0.0206	mg/L	0.00203	0.0206	mg/L	0.00203	9.87%

Sequence No.: 10 **Autosampler Location: 6**
Sample ID: CCV **Date Collected: 11/26/2013 12:24:31 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	176.0 kPa	0.45 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2789189.8						10680.38	0.38%
YRADIAL	201806.0						7582.32	3.76%
Ga 417.206	887996.4						2142.89	0.24%
GaRADIAL	43945.9						1517.89	3.45%
Ag 328.068†	97184.3	0.397	mg/L	0.0050	0.397	mg/L	0.0050	1.26%
QC value within limits for Ag 328.068 Recovery = 99.14%								
Al 396.153†	29243.5	9.96	mg/L	0.138	9.96	mg/L	0.138	1.38%
QC value within limits for Al 396.153 Recovery = 99.59%								
As 188.979†	654.6	0.396	mg/L	0.0045	0.396	mg/L	0.0045	1.13%
QC value within limits for As 188.979 Recovery = 99.01%								
Ba 233.527†	75614.8	0.978	mg/L	0.0127	0.978	mg/L	0.0127	1.30%
QC value within limits for Ba 233.527 Recovery = 97.80%								
Be 234.861†	32295.9	0.0487	mg/L	0.00073	0.0487	mg/L	0.00073	1.49%
QC value within limits for Be 234.861 Recovery = 97.46%								
B 249.677†	34554.3	0.504	mg/L	0.0082	0.504	mg/L	0.0082	1.63%
QC value within limits for B 249.677 Recovery = 100.86%								

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Ca 227.546†	1900.9	10.2 mg/L	0.05	10.2 mg/L	0.05	0.46%
QC value within limits for Ca 227.546 Recovery = 101.79%						
Cd 228.802†	1231.1	0.0481 mg/L	0.00099	0.0481 mg/L	0.00099	2.05%
QC value within limits for Cd 228.802 Recovery = 96.18%						
Co 228.616†	4190.3	0.200 mg/L	0.0007	0.200 mg/L	0.0007	0.33%
QC value within limits for Co 228.616 Recovery = 99.95%						
Cr 267.716†	54831.7	0.490 mg/L	0.0051	0.490 mg/L	0.0051	1.03%
QC value within limits for Cr 267.716 Recovery = 97.90%						
Cu 327.393†	102505.2	0.489 mg/L	0.0043	0.489 mg/L	0.0043	0.87%
QC value within limits for Cu 327.393 Recovery = 97.80%						
Fe 239.562†	11339.2	3.98 mg/L	0.057	3.98 mg/L	0.057	1.44%
QC value within limits for Fe 239.562 Recovery = 99.47%						
Mg 279.077†	10844.2	9.99 mg/L	0.088	9.99 mg/L	0.088	0.88%
QC value within limits for Mg 279.077 Recovery = 99.86%						
Mn 257.610†	285675.9	0.502 mg/L	0.0054	0.502 mg/L	0.0054	1.08%
QC value within limits for Mn 257.610 Recovery = 100.36%						
Mo 202.031†	15899.6	0.986 mg/L	0.0126	0.986 mg/L	0.0126	1.27%
QC value within limits for Mo 202.031 Recovery = 98.65%						
Ni 231.604†	17205.7	0.494 mg/L	0.0065	0.494 mg/L	0.0065	1.32%
QC value within limits for Ni 231.604 Recovery = 98.72%						
Pb 220.353†	2959.4	0.506 mg/L	0.0017	0.506 mg/L	0.0017	0.34%
QC value within limits for Pb 220.353 Recovery = 101.13%						
Sb 206.836†	2230.0	1.20 mg/L	0.004	1.20 mg/L	0.004	0.34%
QC value within limits for Sb 206.836 Recovery = 99.61%						
Se 196.026†	326.6	0.404 mg/L	0.0018	0.404 mg/L	0.0018	0.45%
QC value within limits for Se 196.026 Recovery = 101.02%						
Si 251.611†	164431.7	4.89 mg/L	0.068	4.89 mg/L	0.068	1.39%
QC value within limits for Si 251.611 Recovery = 97.75%						
Sn 189.927†	5878.4	1.00 mg/L	0.003	1.00 mg/L	0.003	0.34%
QC value within limits for Sn 189.927 Recovery = 100.40%						
Ti 334.940†	799270.0	0.993 mg/L	0.0034	0.993 mg/L	0.0034	0.34%
QC value within limits for Ti 334.940 Recovery = 99.28%						
Tl 190.801†	856.6	0.517 mg/L	0.0037	0.517 mg/L	0.0037	0.71%
QC value within limits for Tl 190.801 Recovery = 103.46%						
V 290.880†	178506.2	0.972 mg/L	0.0073	0.972 mg/L	0.0073	0.76%
QC value within limits for V 290.880 Recovery = 97.18%						
Zn 206.200†	26168.9	0.990 mg/L	0.0197	0.990 mg/L	0.0197	1.99%
QC value within limits for Zn 206.200 Recovery = 98.98%						
K 766.490†	80749.5	49.4 mg/L	0.60	49.4 mg/L	0.60	1.21%
QC value within limits for K 766.490 Recovery = 98.86%						
Na 589.592†	528553.4	49.9 mg/L	0.35	49.9 mg/L	0.35	0.71%
QC value within limits for Na 589.592 Recovery = 99.73%						
Sr 407.771†	996241.3	0.993 mg/L	0.0089	0.993 mg/L	0.0089	0.89%
QC value within limits for Sr 407.771 Recovery = 99.29%						
Li 670.784†	67409.1	1.00 mg/L	0.012	1.00 mg/L	0.012	1.21%
QC value within limits for Li 670.784 Recovery = 100.05%						
P 214.914†	9729.7	10.1 mg/L	0.06	10.1 mg/L	0.06	0.64%
QC value within limits for P 214.914 Recovery = 101.14%						

All analyte(s) passed QC.

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Sequence No.: 11 **Autosampler Location: 1**
Sample ID: CCB **Date Collected: 11/26/2013 12:26:38 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCB

Analyte	Back Pressure	Flow
All	176.0 kPa	0.45 L/min

Mean Data: CCB

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2826510.0						22591.67	0.80%
YRADIAL	197303.7						1184.00	0.60%
Ga 417.206	902955.9						6172.82	0.68%
GaRADIAL	41863.6						814.16	1.94%
Ag 328.068†	83.9	0.00004	mg/L	0.000283	0.00004	mg/L	0.000283	763.52%
QC value within limits for Ag 328.068 Recovery = Not calculated								

Approved: November 27, 2013

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Al 396.153†              41.0    -0.00380 mg/L      0.006832    -0.00380 mg/L      0.006832 179.93%
   QC value within limits for Al 396.153  Recovery = Not calculated
As 188.979†               1.1     0.00043 mg/L      0.001649     0.00043 mg/L      0.001649 382.83%
   QC value within limits for As 188.979  Recovery = Not calculated
Ba 233.527†              37.1    -0.00350 mg/L      0.000214    -0.00350 mg/L      0.000214   6.11%
   QC value within limits for Ba 233.527  Recovery = Not calculated
Be 234.861†              96.4    -0.00001 mg/L      0.000035    -0.00001 mg/L      0.000035 542.12%
   QC value within limits for Be 234.861  Recovery = Not calculated
B 249.677†              797.2      0.0106 mg/L       0.00106      0.0106 mg/L       0.00106  10.00%
   QC value within limits for B 249.677  Recovery = Not calculated
Ca 227.546†              -5.5      0.0417 mg/L       0.02841      0.0417 mg/L       0.02841  68.17%
   QC value within limits for Ca 227.546  Recovery = Not calculated
Cd 228.802†              -8.0    -0.00014 mg/L      0.000168    -0.00014 mg/L      0.000168 117.20%
   QC value within limits for Cd 228.802  Recovery = Not calculated
Co 228.616†              -9.3    -0.00056 mg/L      0.000277    -0.00056 mg/L      0.000277  49.61%
   QC value within limits for Co 228.616  Recovery = Not calculated
Cr 267.716†              69.1    -0.00157 mg/L      0.000037    -0.00157 mg/L      0.000037   2.38%
   QC value within limits for Cr 267.716  Recovery = Not calculated
Cu 327.393†              33.0     0.00011 mg/L      0.001002     0.00011 mg/L      0.001002 878.06%
   QC value within limits for Cu 327.393  Recovery = Not calculated
Fe 239.562†              23.5    -0.00676 mg/L      0.003546    -0.00676 mg/L      0.003546  52.45%
   QC value within limits for Fe 239.562  Recovery = Not calculated
Mg 279.077†              23.1     -0.0129 mg/L       0.00697     -0.0129 mg/L       0.00697  54.16%
   QC value within limits for Mg 279.077  Recovery = Not calculated
Mn 257.610†             230.3    -0.00393 mg/L      0.000153    -0.00393 mg/L      0.000153   3.90%
   QC value within limits for Mn 257.610  Recovery = Not calculated
Mo 202.031†              13.0    -0.00474 mg/L      0.000396    -0.00474 mg/L      0.000396   8.36%
   QC value within limits for Mo 202.031  Recovery = Not calculated
Ni 231.604†              13.2    -0.00266 mg/L      0.000286    -0.00266 mg/L      0.000286  10.73%
   QC value within limits for Ni 231.604  Recovery = Not calculated
Pb 220.353†              13.9    -0.00016 mg/L      0.001763    -0.00016 mg/L      0.001763 >999.9%
   QC value within limits for Pb 220.353  Recovery = Not calculated
Sb 206.836†               7.7     0.00634 mg/L      0.001135     0.00634 mg/L      0.001135  17.91%
   QC value within limits for Sb 206.836  Recovery = Not calculated
Se 196.026†              -1.9    -0.00063 mg/L      0.002527    -0.00063 mg/L      0.002527 399.31%
   QC value within limits for Se 196.026  Recovery = Not calculated
Si 251.611†             111.1    -0.00804 mg/L      0.007711    -0.00804 mg/L      0.007711  95.87%
   QC value within limits for Si 251.611  Recovery = Not calculated
Sn 189.927†              23.3     0.00166 mg/L      0.000526     0.00166 mg/L      0.000526  31.72%
   QC value within limits for Sn 189.927  Recovery = Not calculated
Ti 334.940†             347.3    -0.00136 mg/L      0.000046    -0.00136 mg/L      0.000046   3.38%
   QC value within limits for Ti 334.940  Recovery = Not calculated
Tl 190.801†               3.3    -0.00159 mg/L      0.004077    -0.00159 mg/L      0.004077 256.50%
   QC value within limits for Tl 190.801  Recovery = Not calculated
V 290.880†              577.9    -0.00137 mg/L      0.000573    -0.00137 mg/L      0.000573  41.75%
   QC value within limits for V 290.880  Recovery = Not calculated
Zn 206.200†              34.6    -0.00375 mg/L      0.000747    -0.00375 mg/L      0.000747  19.93%
   QC value within limits for Zn 206.200  Recovery = Not calculated
K 766.490†              101.7      0.0725 mg/L       0.04211      0.0725 mg/L       0.04211  58.12%
   QC value within limits for K 766.490  Recovery = Not calculated
Na 589.592†            1510.9       0.130 mg/L        0.0596       0.130 mg/L        0.0596  45.71%
   QC value within limits for Na 589.592  Recovery = Not calculated
Sr 407.771†            1374.6    -0.00385 mg/L      0.000944    -0.00385 mg/L      0.000944  24.56%
   QC value within limits for Sr 407.771  Recovery = Not calculated
Li 670.784†             289.8     0.00088 mg/L      0.001974     0.00088 mg/L      0.001974 223.69%
   QC value within limits for Li 670.784  Recovery = Not calculated
P 214.914†               64.1      0.0121 mg/L       0.00231      0.0121 mg/L       0.00231  19.12%
   QC value within limits for P 214.914  Recovery = Not calculated
All analyte(s) passed QC.

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Sequence No.: 12                                    Autosampler Location: 34
Sample ID: L1311127901                              Date Collected: 11/26/2013 12:29:45 PM
Analyst: JYH                                        Data Type: Original
Initial Sample Wt:                                  Initial Sample Vol:
Dilution:                                           Sample Prep Vol:

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Nebulizer Parameters: L1311127901
Analyte                 Back Pressure    Flow
All                   176.0 kPa        0.45 L/min
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Approved: November 27, 2013

Mean Data: L1311127901

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2806180.1						19470.79	0.69%
YRADIAL	200695.0						3297.54	1.64%
Ga 417.206	921921.7						10843.59	1.18%
GaRADIAL	43813.6						944.08	2.15%
Ag 328.068†	212.1	-0.00002	mg/L	0.000391	-0.00002	mg/L	0.000391	>999.9%
Al 396.153†	2265.1	0.748	mg/L	0.0048	0.748	mg/L	0.0048	0.64%
As 188.979†	-15.7	-0.00938	mg/L	0.001576	-0.00938	mg/L	0.001576	16.81%
Ba 233.527†	2750.8	0.0319	mg/L	0.00058	0.0319	mg/L	0.00058	1.83%
Be 234.861†	-56.3	-0.00014	mg/L	0.000037	-0.00014	mg/L	0.000037	27.50%
B 249.677†	17519.6	0.256	mg/L	0.0061	0.256	mg/L	0.0061	2.38%
Ca 227.546†	9392.7	49.6	mg/L	1.22	49.6	mg/L	1.22	2.45%
Cd 228.802†	0.4	0.00039	mg/L	0.000299	0.00039	mg/L	0.000299	77.08%
Co 228.616†	379.4	0.0183	mg/L	0.00051	0.0183	mg/L	0.00051	2.80%
Cr 267.716†	84068.6	0.751	mg/L	0.0155	0.751	mg/L	0.0155	2.06%
Cu 327.393†	1780017.5	8.46	mg/L	0.033	8.46	mg/L	0.033	0.40%
Fe 239.562†	610.1	0.200	mg/L	0.0021	0.200	mg/L	0.0021	1.05%
Mg 279.077†	1204.1	1.08	mg/L	0.018	1.08	mg/L	0.018	1.70%
Mn 257.610†	301087.3	0.529	mg/L	0.0029	0.529	mg/L	0.0029	0.55%
Mo 202.031†	2775.8	0.168	mg/L	0.0034	0.168	mg/L	0.0034	2.04%
Ni 231.604†	74395.6	2.15	mg/L	0.046	2.15	mg/L	0.046	2.13%
Pb 220.353†	75.0	0.0105	mg/L	0.00177	0.0105	mg/L	0.00177	16.78%
Sb 206.836†	5.4	0.00055	mg/L	0.000457	0.00055	mg/L	0.000457	82.76%
Se 196.026†	1.6	0.00441	mg/L	0.002103	0.00441	mg/L	0.002103	47.63%
Si 251.611†	218112.7	6.50	mg/L	0.021	6.50	mg/L	0.021	0.32%
Sn 189.927†	-195.6	-0.0358	mg/L	0.00088	-0.0358	mg/L	0.00088	2.46%
Ti 334.940†	-3726.4	0.00051	mg/L	0.000159	0.00051	mg/L	0.000159	31.24%
Tl 190.801†	-20.9	-0.0165	mg/L	0.00222	-0.0165	mg/L	0.00222	13.42%
V 290.880†	718.7	-0.00068	mg/L	0.000648	-0.00068	mg/L	0.000648	95.26%
Zn 206.200†	2030.6	0.0800	mg/L	0.00170	0.0800	mg/L	0.00170	2.13%
K 766.490†	59112.7	35.9	mg/L	0.70	35.9	mg/L	0.70	1.95%
Na 589.592†	1763822.0	184	mg/L	5.7	184	mg/L	5.7	3.12%
Sr 407.771†	42804.1	0.0362	mg/L	0.00064	0.0362	mg/L	0.00064	1.76%
Li 670.784†	566.9	0.00501	mg/L	0.000973	0.00501	mg/L	0.000973	19.43%
P 214.914†	-6482.2	-6.83	mg/L	0.139	-6.83	mg/L	0.139	2.03%

Sequence No.: 13 **Autosampler Location: 35**
Sample ID: L1311131002 **Date Collected: 11/26/2013 12:32:52 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1311131002

Analyte	Back Pressure	Flow
All	176.0 kPa	0.45 L/min

Mean Data: L1311131002

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2843877.4						53707.15	1.89%
YRADIAL	204885.6						4725.55	2.31%
Ga 417.206	904769.5						16895.22	1.87%
GaRADIAL	43187.9						298.76	0.69%
Ag 328.068†	-20.5	-0.00036	mg/L	0.000195	-0.00036	mg/L	0.000195	54.88%
Al 396.153†	231.0	0.0615	mg/L	0.00135	0.0615	mg/L	0.00135	2.19%
As 188.979†	-7.2	-0.00457	mg/L	0.001494	-0.00457	mg/L	0.001494	32.69%
Ba 233.527†	4135.6	0.0497	mg/L	0.00118	0.0497	mg/L	0.00118	2.36%
Be 234.861†	-67.9	-0.00028	mg/L	0.000024	-0.00028	mg/L	0.000024	8.68%
B 249.677†	2796.6	0.0401	mg/L	0.00183	0.0401	mg/L	0.00183	4.57%
Ca 227.546†	823.9	4.26	mg/L	0.079	4.26	mg/L	0.079	1.84%
Cd 228.802†	-7.0	-0.00008	mg/L	0.000178	-0.00008	mg/L	0.000178	220.01%
Co 228.616†	-16.3	-0.00091	mg/L	0.000431	-0.00091	mg/L	0.000431	47.16%
Cr 267.716†	139.7	-0.00094	mg/L	0.000530	-0.00094	mg/L	0.000530	56.57%
Cu 327.393†	3657.4	0.0174	mg/L	0.00300	0.0174	mg/L	0.00300	17.28%
Fe 239.562†	238.1	0.0688	mg/L	0.00075	0.0688	mg/L	0.00075	1.10%
Mg 279.077†	368.6	0.306	mg/L	0.0051	0.306	mg/L	0.0051	1.66%

Approved: November 27, 2013

Mn 257.610†	3675.0	0.00217 mg/L	0.000205	0.00217 mg/L	0.000205	9.49%
Mo 202.031†	14.2	-0.00466 mg/L	0.000412	-0.00466 mg/L	0.000412	8.84%
Ni 231.604†	54.4	-0.00147 mg/L	0.001399	-0.00147 mg/L	0.001399	95.00%
Pb 220.353†	5.3	-0.00162 mg/L	0.000037	-0.00162 mg/L	0.000037	2.29%
Sb 206.836†	3.8	0.00425 mg/L	0.002505	0.00425 mg/L	0.002505	58.89%
Se 196.026†	1.0	0.00296 mg/L	0.004586	0.00296 mg/L	0.004586	154.84%
Si 251.611†	7707.0	0.219 mg/L	0.0069	0.219 mg/L	0.0069	3.17%
Sn 189.927†	-24.3	-0.00649 mg/L	0.000652	-0.00649 mg/L	0.000652	10.05%
Ti 334.940†	1167.8	0.00029 mg/L	0.000787	0.00029 mg/L	0.000787	274.17%
Tl 190.801†	-11.8	-0.0105 mg/L	0.00488	-0.0105 mg/L	0.00488	46.34%
V 290.880†	857.5	0.00014 mg/L	0.001865	0.00014 mg/L	0.001865	>999.9%
Zn 206.200†	184.1	0.00192 mg/L	0.000273	0.00192 mg/L	0.000273	14.22%
K 766.490†	525.6	0.152 mg/L	0.0116	0.152 mg/L	0.0116	7.63%
Na 589.592†	1704861.9	177 mg/L	1.6	177 mg/L	1.6	0.88%
Sr 407.771†	32068.1	0.0268 mg/L	0.00022	0.0268 mg/L	0.00022	0.83%
Li 670.784†	64.7	-0.00247 mg/L	0.000819	-0.00247 mg/L	0.000819	33.15%
P 214.914†	-8.2	-0.0635 mg/L	0.00614	-0.0635 mg/L	0.00614	9.67%

Sequence No.: 14 **Autosampler Location: 36**
Sample ID: L1311141501 **Date Collected: 11/26/2013 12:35:58 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1311141501

Analyte	Back Pressure	Flow
All	176.0 kPa	0.45 L/min

Mean Data: L1311141501

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2797018.6						37090.15	1.33%
YRADIAL	201635.9						4609.81	2.29%
Ga 417.206	919145.3						18088.99	1.97%
GaRADIAL	42541.5						743.94	1.75%
Ag 328.068†	-87.0	-0.00094	mg/L	0.000168	-0.00094	mg/L	0.000168	17.75%
Al 396.153†	167.4	0.0396	mg/L	0.00538	0.0396	mg/L	0.00538	13.60%
As 188.979†	23.6	0.0152	mg/L	0.00372	0.0152	mg/L	0.00372	24.50%
Ba 233.527†	342092.4	4.44	mg/L	0.057	4.44	mg/L	0.057	1.28%
Be 234.861†	198.3	-0.00015	mg/L	0.000069	-0.00015	mg/L	0.000069	44.97%
B 249.677†	23449.1	0.344	mg/L	0.0010	0.344	mg/L	0.0010	0.28%
Ca 227.546†	6231.2	31.7	mg/L	0.29	31.7	mg/L	0.29	0.93%
Cd 228.802†	-2.7	-0.00002	mg/L	0.000149	-0.00002	mg/L	0.000149	682.94%
Co 228.616†	-105.3	-0.00667	mg/L	0.000176	-0.00667	mg/L	0.000176	2.64%
Cr 267.716†	155.7	-0.00089	mg/L	0.000126	-0.00089	mg/L	0.000126	14.11%
Cu 327.393†	1581.3	0.00754	mg/L	0.001048	0.00754	mg/L	0.001048	13.91%
Fe 239.562†	3618.0	1.26	mg/L	0.016	1.26	mg/L	0.016	1.28%
Mg 279.077†	3311.6	3.02	mg/L	0.059	3.02	mg/L	0.059	1.95%
Mn 257.610†	54569.3	0.0923	mg/L	0.00085	0.0923	mg/L	0.00085	0.92%
Mo 202.031†	61.0	-0.00171	mg/L	0.000290	-0.00171	mg/L	0.000290	16.97%
Ni 231.604†	57.2	-0.00139	mg/L	0.000251	-0.00139	mg/L	0.000251	18.12%
Pb 220.353†	23.0	0.00130	mg/L	0.002186	0.00130	mg/L	0.002186	168.13%
Sb 206.836†	-0.5	0.00199	mg/L	0.002172	0.00199	mg/L	0.002172	109.29%
Se 196.026†	-1.0	0.00072	mg/L	0.007214	0.00072	mg/L	0.007214	>999.9%
Si 251.611†	43092.9	1.28	mg/L	0.009	1.28	mg/L	0.009	0.67%
Sn 189.927†	-152.5	-0.0284	mg/L	0.00081	-0.0284	mg/L	0.00081	2.85%
Ti 334.940†	-3355.1	-0.00121	mg/L	0.000135	-0.00121	mg/L	0.000135	11.07%
Tl 190.801†	-12.7	-0.0112	mg/L	0.00840	-0.0112	mg/L	0.00840	75.08%
V 290.880†	485.6	-0.00226	mg/L	0.000860	-0.00226	mg/L	0.000860	37.97%
Zn 206.200†	1434.6	0.0492	mg/L	0.00086	0.0492	mg/L	0.00086	1.74%
K 766.490†	2058.9	1.01	mg/L	0.008	1.01	mg/L	0.008	0.78%
Na 589.592†	2261753.1	249	mg/L	6.4	249	mg/L	6.4	2.56%
Sr 407.771†	4310392.6	4.31	mg/L	0.089	4.31	mg/L	0.089	2.07%
Li 670.784†	5627.3	0.0804	mg/L	0.00044	0.0804	mg/L	0.00044	0.55%
P 214.914†	172.2	0.125	mg/L	0.0183	0.125	mg/L	0.0183	14.59%

Sequence No.: 15 **Autosampler Location: 6**
Sample ID: CCV **Date Collected: 11/26/2013 12:38:08 PM**

Approved: November 27, 2013

Analyst: Data Type: Original
Initial Sample Wt: Initial Sample Vol:
Dilution: Sample Prep Vol:

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	176.0 kPa	0.45 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Y 371.029	2855298.7				47496.40	1.66%
YRADIAL	197445.5				2553.39	1.29%
Ga 417.206	909042.5				19994.93	2.20%
GaRADIAL	43524.5				282.29	0.65%
Ag 328.068†	96924.8	0.396 mg/L	0.0110	0.396 mg/L	0.0110	2.77%
QC value within limits for Ag 328.068 Recovery = 98.89%						
Al 396.153†	29922.7	10.2 mg/L	0.13	10.2 mg/L	0.13	1.28%
QC value within limits for Al 396.153 Recovery = 101.92%						
As 188.979†	641.9	0.388 mg/L	0.0089	0.388 mg/L	0.0089	2.28%
QC value within limits for As 188.979 Recovery = 97.07%						
Ba 233.527†	75957.9	0.982 mg/L	0.0341	0.982 mg/L	0.0341	3.47%
QC value within limits for Ba 233.527 Recovery = 98.24%						
Be 234.861†	32181.8	0.0485 mg/L	0.00123	0.0485 mg/L	0.00123	2.53%
QC value within limits for Be 234.861 Recovery = 97.03%						
B 249.677†	33158.9	0.484 mg/L	0.0143	0.484 mg/L	0.0143	2.95%
QC value within limits for B 249.677 Recovery = 96.74%						
Ca 227.546†	1896.1	10.2 mg/L	0.18	10.2 mg/L	0.18	1.74%
QC value within limits for Ca 227.546 Recovery = 101.58%						
Cd 228.802†	1222.7	0.0478 mg/L	0.00175	0.0478 mg/L	0.00175	3.67%
QC value within limits for Cd 228.802 Recovery = 95.57%						
Co 228.616†	4147.0	0.198 mg/L	0.0039	0.198 mg/L	0.0039	1.97%
QC value within limits for Co 228.616 Recovery = 98.90%						
Cr 267.716†	54867.0	0.490 mg/L	0.0173	0.490 mg/L	0.0173	3.53%
QC value within limits for Cr 267.716 Recovery = 97.96%						
Cu 327.393†	103633.5	0.494 mg/L	0.0141	0.494 mg/L	0.0141	2.85%
QC value within limits for Cu 327.393 Recovery = 98.87%						
Fe 239.562†	11802.6	4.14 mg/L	0.108	4.14 mg/L	0.108	2.60%
QC value within limits for Fe 239.562 Recovery = 103.56%						
Mg 279.077†	11247.0	10.4 mg/L	0.26	10.4 mg/L	0.26	2.52%
QC value within limits for Mg 279.077 Recovery = 103.58%						
Mn 257.610†	285327.8	0.501 mg/L	0.0184	0.501 mg/L	0.0184	3.66%
QC value within limits for Mn 257.610 Recovery = 100.24%						
Mo 202.031†	15948.4	0.990 mg/L	0.0358	0.990 mg/L	0.0358	3.62%
QC value within limits for Mo 202.031 Recovery = 98.95%						
Ni 231.604†	17168.8	0.493 mg/L	0.0162	0.493 mg/L	0.0162	3.29%
QC value within limits for Ni 231.604 Recovery = 98.51%						
Pb 220.353†	2928.9	0.500 mg/L	0.0106	0.500 mg/L	0.0106	2.12%
QC value within limits for Pb 220.353 Recovery = 100.09%						
Sb 206.836†	2207.9	1.18 mg/L	0.029	1.18 mg/L	0.029	2.41%
QC value within limits for Sb 206.836 Recovery = 98.63%						
Se 196.026†	319.9	0.396 mg/L	0.0106	0.396 mg/L	0.0106	2.69%
QC value within limits for Se 196.026 Recovery = 98.97%						
Si 251.611†	164394.3	4.89 mg/L	0.149	4.89 mg/L	0.149	3.05%
QC value within limits for Si 251.611 Recovery = 97.72%						
Sn 189.927†	5833.0	0.996 mg/L	0.0170	0.996 mg/L	0.0170	1.71%
QC value within limits for Sn 189.927 Recovery = 99.63%						
Ti 334.940†	807906.5	1.00 mg/L	0.002	1.00 mg/L	0.002	0.15%
QC value within limits for Ti 334.940 Recovery = 100.35%						
Tl 190.801†	850.1	0.514 mg/L	0.0113	0.514 mg/L	0.0113	2.20%
QC value within limits for Tl 190.801 Recovery = 102.72%						
V 290.880†	177631.0	0.967 mg/L	0.0369	0.967 mg/L	0.0369	3.81%
QC value within limits for V 290.880 Recovery = 96.70%						
Zn 206.200†	26323.7	0.996 mg/L	0.0320	0.996 mg/L	0.0320	3.21%
QC value within limits for Zn 206.200 Recovery = 99.56%						
K 766.490†	82665.7	50.6 mg/L	0.61	50.6 mg/L	0.61	1.20%
QC value within limits for K 766.490 Recovery = 101.24%						
Na 589.592†	543937.9	51.4 mg/L	0.85	51.4 mg/L	0.85	1.65%
QC value within limits for Na 589.592 Recovery = 102.74%						
Sr 407.771†	1029994.3	1.03 mg/L	0.004	1.03 mg/L	0.004	0.37%

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```
   QC value within limits for Sr 407.771  Recovery = 102.68%
Li 670.784†            69174.9        1.03 mg/L        0.009        1.03 mg/L        0.009   0.90%
   QC value within limits for Li 670.784  Recovery = 102.68%
P 214.914†              9616.1       10.00 mg/L        0.215       10.00 mg/L        0.215   2.15%
   QC value within limits for P 214.914  Recovery = 99.95%
All analyte(s) passed QC.
```

Sequence No.: 16 **Autosampler Location: 1**
Sample ID: CCB **Date Collected: 11/26/2013 12:40:15 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCB

Analyte	Back Pressure	Flow
All	176.0 kPa	0.45 L/min

Mean Data: CCB

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2795268.9						28358.08	1.01%
YRADIAL	190749.7						3021.06	1.58%
Ga 417.206	877318.9						15545.27	1.77%
GaRADIAL	40649.5						147.76	0.36%
Ag 328.068†	14.3	-0.00025	mg/L	0.000572	-0.00025	mg/L	0.000572	232.86%
QC value within limits for Ag 328.068 Recovery = Not calculated								
Al 396.153†	23.6	-0.00977	mg/L	0.003183	-0.00977	mg/L	0.003183	32.58%
QC value within limits for Al 396.153 Recovery = Not calculated								
As 188.979†	2.6	0.00137	mg/L	0.002268	0.00137	mg/L	0.002268	164.95%
QC value within limits for As 188.979 Recovery = Not calculated								
Ba 233.527†	161.5	-0.00189	mg/L	0.001360	-0.00189	mg/L	0.001360	72.14%
QC value within limits for Ba 233.527 Recovery = Not calculated								
Be 234.861†	46.1	-0.00008	mg/L	0.000012	-0.00008	mg/L	0.000012	14.77%
QC value within limits for Be 234.861 Recovery = Not calculated								
B 249.677†	471.3	0.00581	mg/L	0.000962	0.00581	mg/L	0.000962	16.56%
QC value within limits for B 249.677 Recovery = Not calculated								
Ca 227.546†	-4.7	0.0463	mg/L	0.06742	0.0463	mg/L	0.06742	145.53%
QC value within limits for Ca 227.546 Recovery = Not calculated								
Cd 228.802†	-6.1	-0.00007	mg/L	0.000076	-0.00007	mg/L	0.000076	104.88%
QC value within limits for Cd 228.802 Recovery = Not calculated								
Co 228.616†	-13.2	-0.00074	mg/L	0.000231	-0.00074	mg/L	0.000231	31.20%
QC value within limits for Co 228.616 Recovery = Not calculated								
Cr 267.716†	81.8	-0.00145	mg/L	0.000426	-0.00145	mg/L	0.000426	29.35%
QC value within limits for Cr 267.716 Recovery = Not calculated								
Cu 327.393†	1141.9	0.00539	mg/L	0.000362	0.00539	mg/L	0.000362	6.73%
QC value greater than the upper limit for Cu 327.393 Recovery = Not calculated								
Fe 239.562†	13.7	-0.0102	mg/L	0.00083	-0.0102	mg/L	0.00083	8.14%
QC value within limits for Fe 239.562 Recovery = Not calculated								
Mg 279.077†	17.5	-0.0180	mg/L	0.00312	-0.0180	mg/L	0.00312	17.30%
QC value within limits for Mg 279.077 Recovery = Not calculated								
Mn 257.610†	321.6	-0.00377	mg/L	0.000370	-0.00377	mg/L	0.000370	9.82%
QC value within limits for Mn 257.610 Recovery = Not calculated								
Mo 202.031†	15.5	-0.00458	mg/L	0.000401	-0.00458	mg/L	0.000401	8.74%
QC value within limits for Mo 202.031 Recovery = Not calculated								
Ni 231.604†	30.7	-0.00216	mg/L	0.000897	-0.00216	mg/L	0.000897	41.55%
QC value within limits for Ni 231.604 Recovery = Not calculated								
Pb 220.353†	12.3	-0.00044	mg/L	0.000627	-0.00044	mg/L	0.000627	143.29%
QC value within limits for Pb 220.353 Recovery = Not calculated								
Sb 206.836†	3.5	0.00408	mg/L	0.001829	0.00408	mg/L	0.001829	44.77%
QC value within limits for Sb 206.836 Recovery = Not calculated								
Se 196.026†	-5.1	-0.00458	mg/L	0.004262	-0.00458	mg/L	0.004262	93.03%
QC value within limits for Se 196.026 Recovery = Not calculated								
Si 251.611†	125.5	-0.00761	mg/L	0.005108	-0.00761	mg/L	0.005108	67.10%
QC value within limits for Si 251.611 Recovery = Not calculated								
Sn 189.927†	25.4	0.00201	mg/L	0.001396	0.00201	mg/L	0.001396	69.30%
QC value within limits for Sn 189.927 Recovery = Not calculated								
Ti 334.940†	351.0	-0.00136	mg/L	0.000091	-0.00136	mg/L	0.000091	6.68%
QC value within limits for Ti 334.940 Recovery = Not calculated								
Tl 190.801†	-5.8	-0.00697	mg/L	0.005465	-0.00697	mg/L	0.005465	78.37%

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QC value within limits for Tl 190.801 Recovery = Not calculated

V 290.880†	672.2	-0.00086	mg/L	0.001073	-0.00086	mg/L	0.001073 125.30%

QC value within limits for V 290.880 Recovery = Not calculated

Zn 206.200†	23.7	-0.00416	mg/L	0.000289	-0.00416	mg/L	0.000289 6.94%

QC value within limits for Zn 206.200 Recovery = Not calculated

K 766.490†	125.0	0.0864	mg/L	0.08049	0.0864	mg/L	0.08049 93.16%

QC value within limits for K 766.490 Recovery = Not calculated

Na 589.592†	2592.1	0.229	mg/L	0.0588	0.229	mg/L	0.0588 25.66%

QC value within limits for Na 589.592 Recovery = Not calculated

Sr 407.771†	3163.4	-0.00205	mg/L	0.001005	-0.00205	mg/L	0.001005 48.96%

QC value within limits for Sr 407.771 Recovery = Not calculated

Li 670.784†	311.7	0.00121	mg/L	0.001165	0.00121	mg/L	0.001165 96.35%

QC value within limits for Li 670.784 Recovery = Not calculated

P 214.914†	49.6	-0.00303	mg/L	0.009256	-0.00303	mg/L	0.009256 305.70%

QC value within limits for P 214.914 Recovery = Not calculated

QC Failed. Continue with analysis.

Sequence No.: 17 **Autosampler Location: 37**
Sample ID: ~~1~~ **Date Collected: 11/26/2013 12:43:17 PM**
Analyst: JYH PBW 48 WG454211-03 **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: ~~1~~

Analyte	Back Pressure	Flow
All	176.0 kPa	0.45 L/min

Mean Data: ~~1~~

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2862976.1						44475.89	1.55%
YRADIAL	202159.0						7338.34	3.63%
Ga 417.206	928970.4						14331.38	1.54%
GaRADIAL	43733.8						895.67	2.05%
Ag 328.068†	87.1	0.00005	mg/L	0.000395	0.00005	mg/L	0.000395	821.11%
Al 396.153†	8.3	-0.0149	mg/L	0.00141	-0.0149	mg/L	0.00141	9.47%
As 188.979†	3.6	0.00200	mg/L	0.001254	0.00200	mg/L	0.001254	62.82%
Ba 233.527†	23.5	-0.00368	mg/L	0.000171	-0.00368	mg/L	0.000171	4.65%
Be 234.861†	205.5	0.00016	mg/L	0.000008	0.00016	mg/L	0.000008	4.85%
B 249.677†	171.4	0.00139	mg/L	0.000242	0.00139	mg/L	0.000242	17.42%
Ca 227.546†	7.5	0.108	mg/L	0.0248	0.108	mg/L	0.0248	23.06%
Cd 228.802†	-9.5	-0.00021	mg/L	0.000111	-0.00021	mg/L	0.000111	52.60%
Co 228.616†	-3.2	-0.00026	mg/L	0.000115	-0.00026	mg/L	0.000115	43.86%
Cr 267.716†	47.3	-0.00176	mg/L	0.000017	-0.00176	mg/L	0.000017	0.97%
Cu 327.393†	352.1	0.00163	mg/L	0.000175	0.00163	mg/L	0.000175	10.70%
Fe 239.562†	11.0	-0.0112	mg/L	0.00015	-0.0112	mg/L	0.00015	1.32%
Mg 279.077†	16.5	-0.0190	mg/L	0.00268	-0.0190	mg/L	0.00268	14.11%
Mn 257.610†	78.4	-0.00420	mg/L	0.000030	-0.00420	mg/L	0.000030	0.71%
Mo 202.031†	-7.7	-0.00603	mg/L	0.000305	-0.00603	mg/L	0.000305	5.06%
Ni 231.604†	16.0	-0.00259	mg/L	0.000076	-0.00259	mg/L	0.000076	2.96%
Pb 220.353†	21.7	0.00117	mg/L	0.001101	0.00117	mg/L	0.001101	93.79%
Sb 206.836†	-2.2	0.00103	mg/L	0.001157	0.00103	mg/L	0.001157	112.21%
Se 196.026†	-6.6	-0.00639	mg/L	0.001105	-0.00639	mg/L	0.001105	17.28%
Si 251.611†	-121.4	-0.0150	mg/L	0.00069	-0.0150	mg/L	0.00069	4.60%
Sn 189.927†	0.5	-0.00224	mg/L	0.000137	-0.00224	mg/L	0.000137	6.10%
Ti 334.940†	72.7	-0.00170	mg/L	0.000193	-0.00170	mg/L	0.000193	11.35%
Tl 190.801†	5.6	-0.00027	mg/L	0.001909	-0.00027	mg/L	0.001909	695.34%
V 290.880†	559.7	-0.00147	mg/L	0.001966	-0.00147	mg/L	0.001966	133.63%
Zn 206.200†	15.9	-0.00446	mg/L	0.000066	-0.00446	mg/L	0.000066	1.48%
K 766.490†	54.0	0.0437	mg/L	0.01718	0.0437	mg/L	0.01718	39.31%
Na 589.592†	952.6	0.0796	mg/L	0.02384	0.0796	mg/L	0.02384	29.96%
Sr 407.771†	644.8	-0.00458	mg/L	0.000391	-0.00458	mg/L	0.000391	8.53%
Li 670.784†	64.6	-0.00247	mg/L	0.000618	-0.00247	mg/L	0.000618	25.03%
P 214.914†	86.5	0.0355	mg/L	0.00469	0.0355	mg/L	0.00469	13.21%

Sequence No.: 18 **Autosampler Location: 38**
Sample ID: ~~1~~ **Date Collected: 11/26/2013 12:46:19 PM**
Analyst: JYH LCSW 48 WG454211-04 **Data Type: Original**

Approved: November 27, 2013

Initial Sample Wt: Initial Sample Vol:
Dilution: Sample Prep Vol:

Nebulizer Parameters: 1

Analyte	Back Pressure	Flow
All	175.0 kPa	0.45 L/min

Mean Data: 1

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	2842741.1						21587.57	0.76%
YRADIAL	200610.8						1701.46	0.85%
Ga 417.206	920145.9						15992.48	1.74%
GaRADIAL	43202.1						315.83	0.73%
Ag 328.068†	46549.0	0.190	mg/L	0.0050	0.190	mg/L	0.0050	2.63%
Al 396.153†	14342.3	4.88	mg/L	0.053	4.88	mg/L	0.053	1.10%
As 188.979†	304.0	0.184	mg/L	0.0044	0.184	mg/L	0.0044	2.39%
Ba 233.527†	36217.1	0.466	mg/L	0.0050	0.466	mg/L	0.0050	1.07%
Be 234.861†	15002.3	0.0225	mg/L	0.00052	0.0225	mg/L	0.00052	2.31%
B 249.677†	62751.6	0.922	mg/L	0.0194	0.922	mg/L	0.0194	2.10%
Ca 227.546†	874.7	4.73	mg/L	0.086	4.73	mg/L	0.086	1.82%
Cd 228.802†	571.0	0.0224	mg/L	0.00057	0.0224	mg/L	0.00057	2.53%
Co 228.616†	2004.7	0.0956	mg/L	0.00047	0.0956	mg/L	0.00047	0.49%
Cr 267.716†	26363.2	0.234	mg/L	0.0018	0.234	mg/L	0.0018	0.78%
Cu 327.393†	49565.1	0.236	mg/L	0.0071	0.236	mg/L	0.0071	2.98%
Fe 239.562†	5531.7	1.93	mg/L	0.013	1.93	mg/L	0.013	0.66%
Mg 279.077†	5240.1	4.81	mg/L	0.046	4.81	mg/L	0.046	0.96%
Mn 257.610†	137844.1	0.240	mg/L	0.0022	0.240	mg/L	0.0022	0.93%
Mo 202.031†	7629.4	0.470	mg/L	0.0075	0.470	mg/L	0.0075	1.60%
Ni 231.604†	8430.9	0.240	mg/L	0.0024	0.240	mg/L	0.0024	0.99%
Pb 220.353†	1415.7	0.241	mg/L	0.0028	0.241	mg/L	0.0028	1.15%
Sb 206.836†	1043.5	0.560	mg/L	0.0112	0.560	mg/L	0.0112	1.99%
Se 196.026†	147.0	0.183	mg/L	0.0005	0.183	mg/L	0.0005	0.28%
Si 251.611†	77710.5	2.30	mg/L	0.062	2.30	mg/L	0.062	2.67%
Sn 189.927†	2974.9	0.507	mg/L	0.0020	0.507	mg/L	0.0020	0.39%
Ti 334.940†	383172.2	0.475	mg/L	0.0066	0.475	mg/L	0.0066	1.38%
Tl 190.801†	410.6	0.246	mg/L	0.0052	0.246	mg/L	0.0052	2.12%
V 290.880†	85689.4	0.464	mg/L	0.0012	0.464	mg/L	0.0012	0.27%
Zn 206.200†	12595.2	0.474	mg/L	0.0043	0.474	mg/L	0.0043	0.90%
K 766.490†	39548.0	24.0	mg/L	0.21	24.0	mg/L	0.21	0.89%
Na 589.592†	258304.1	23.9	mg/L	0.19	23.9	mg/L	0.19	0.80%
Sr 407.771†	478210.7	0.474	mg/L	0.0019	0.474	mg/L	0.0019	0.39%
Li 670.784†	33229.4	0.491	mg/L	0.0065	0.491	mg/L	0.0065	1.33%
P 214.914†	-139.7	-0.201	mg/L	0.0040	-0.201	mg/L	0.0040	1.99%

Sequence No.: 19 Autosampler Location: 39
Sample ID: ~~L1311085516~~ Date Collected: 11/26/2013 12:48:24 PM
Analyst: JYH Data Type: Original
Initial Sample Wt: L1311086409 WG454211-01 Initial Sample Vol:
Dilution: Sample Prep Vol:

Nebulizer Parameters: ~~L1311085516~~

Analyte	Back Pressure	Flow
All	176.0 kPa	0.45 L/min

Mean Data: ~~L1311085516~~

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	2720449.2						36833.93	1.35%
YRADIAL	199997.8						2157.96	1.08%
Ga 417.206	907528.4						11611.10	1.28%
GaRADIAL	43660.0						455.60	1.04%
Ag 328.068†	-9359.8	0.00179	mg/L	0.001233	0.00179	mg/L	0.001233	69.06%
Al 396.153†	98838.1	33.9	mg/L	0.04	33.9	mg/L	0.04	0.12%
As 188.979†	52.7	0.0584	mg/L	0.00473	0.0584	mg/L	0.00473	8.09%
Ba 233.527†	18868.8	0.237	mg/L	0.0024	0.237	mg/L	0.0024	1.01%
Be 234.861†	14983.5	0.00164	mg/L	0.000536	0.00164	mg/L	0.000536	32.62%

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B 249.677†	132297.6	1.91	mg/L	0.028	1.91	mg/L	0.028	1.46%
Ca 227.546†	77051.9	394	mg/L	6.5	394	mg/L	6.5	1.65%
Cd 228.802†	29.1	0.00113	mg/L	0.000461	0.00113	mg/L	0.000461	40.92%
Co 228.616†	688.6	0.0299	mg/L	0.00032	0.0299	mg/L	0.00032	1.09%
Cr 267.716†	5983.6	0.0453	mg/L	0.00038	0.0453	mg/L	0.00038	0.83%
Cu 327.393†	12922.1	0.0668	mg/L	0.00053	0.0668	mg/L	0.00053	0.80%
Fe 239.562†	248317.8	87.5	mg/L	0.37	87.5	mg/L	0.37	0.42%
Mg 279.077†	216046.1	199	mg/L	0.5	199	mg/L	0.5	0.25%
Mn 257.610†	2640507.8	4.67	mg/L	0.042	4.67	mg/L	0.042	0.90%
Mo 202.031†	89.9	0.00244	mg/L	0.000273	0.00244	mg/L	0.000273	11.16%
Ni 231.604†	3748.1	0.105	mg/L	0.0010	0.105	mg/L	0.0010	0.97%
Pb 220.353†	419.1	0.0683	mg/L	0.00176	0.0683	mg/L	0.00176	2.57%
Sb 206.836†	-16.0	-0.00342	mg/L	0.002887	-0.00342	mg/L	0.002887	84.44%
Se 196.026†	-16.4	-0.00216	mg/L	0.004893	-0.00216	mg/L	0.004893	226.53%
Si 251.611†	1715765.4	51.2	mg/L	0.27	51.2	mg/L	0.27	0.52%
Sn 189.927†	-323.9	-0.0578	mg/L	0.00140	-0.0578	mg/L	0.00140	2.43%
Ti 334.940†	243795.0	0.360	mg/L	0.0003	0.360	mg/L	0.0003	0.09%
Tl 190.801†	-30.5	-0.0215	mg/L	0.00266	-0.0215	mg/L	0.00266	12.40%
V 290.880†	17277.8	0.0761	mg/L	0.00361	0.0761	mg/L	0.00361	4.74%
Zn 206.200†	7454.4	0.277	mg/L	0.0031	0.277	mg/L	0.0031	1.12%
K 766.490†	13263.2	7.84	mg/L	0.043	7.84	mg/L	0.043	0.55%
Na 589.592†	1903905.0	202	mg/L	5.9	202	mg/L	5.9	2.90%
Sr 407.771†	981166.9	0.966	mg/L	0.0283	0.966	mg/L	0.0283	2.93%
Li 670.784†	51977.9	0.771	mg/L	0.0047	0.771	mg/L	0.0047	0.60%
P 214.914†	1967.9	2.00	mg/L	0.039	2.00	mg/L	0.039	1.97%

Sequence No.: 20 **Autosampler Location: 6**
Sample ID: CCV **Date Collected: 11/26/2013 12:50:31 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	176.0 kPa	0.45 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2827742.2						55528.82	1.96%
YRADIAL	200623.9						2719.55	1.36%
Ga 417.206	910825.7						23743.59	2.61%
GaRADIAL	44196.5						1396.62	3.16%
Ag 328.068†	96213.6	0.393	mg/L	0.0166	0.393	mg/L	0.0166	4.22%
QC value within limits for Ag 328.068 Recovery = 98.19%								
Al 396.153†	29804.6	10.2	mg/L	0.13	10.2	mg/L	0.13	1.30%
QC value within limits for Al 396.153 Recovery = 101.52%								
As 188.979†	646.6	0.391	mg/L	0.0077	0.391	mg/L	0.0077	1.98%
QC value within limits for As 188.979 Recovery = 97.81%								
Ba 233.527†	75601.3	0.978	mg/L	0.0329	0.978	mg/L	0.0329	3.36%
QC value within limits for Ba 233.527 Recovery = 97.78%								
Be 234.861†	31937.2	0.0481	mg/L	0.00188	0.0481	mg/L	0.00188	3.91%
QC value within limits for Be 234.861 Recovery = 96.23%								
B 249.677†	34387.2	0.502	mg/L	0.0249	0.502	mg/L	0.0249	4.96%
QC value within limits for B 249.677 Recovery = 100.36%								
Ca 227.546†	1942.7	10.4	mg/L	0.34	10.4	mg/L	0.34	3.32%
QC value within limits for Ca 227.546 Recovery = 103.95%								
Cd 228.802†	1211.8	0.0473	mg/L	0.00178	0.0473	mg/L	0.00178	3.76%
QC value within limits for Cd 228.802 Recovery = 94.67%								
Co 228.616†	4134.5	0.197	mg/L	0.0041	0.197	mg/L	0.0041	2.10%
QC value within limits for Co 228.616 Recovery = 98.61%								
Cr 267.716†	54872.3	0.490	mg/L	0.0170	0.490	mg/L	0.0170	3.47%
QC value within limits for Cr 267.716 Recovery = 97.97%								
Cu 327.393†	101964.8	0.486	mg/L	0.0186	0.486	mg/L	0.0186	3.83%
QC value within limits for Cu 327.393 Recovery = 97.29%								
Fe 239.562†	12114.1	4.25	mg/L	0.098	4.25	mg/L	0.098	2.30%
QC value within limits for Fe 239.562 Recovery = 106.30%								
Mg 279.077†	11510.9	10.6	mg/L	0.26	10.6	mg/L	0.26	2.47%
QC value within limits for Mg 279.077 Recovery = 106.01%								

Approved: November 27, 2013

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Mn 257.610†          288640.7       0.507 mg/L        0.0184       0.507 mg/L        0.0184   3.64%
   QC value within limits for Mn 257.610  Recovery = 101.42%
Mo 202.031†           15909.1       0.987 mg/L        0.0384       0.987 mg/L        0.0384   3.89%
   QC value within limits for Mo 202.031  Recovery = 98.71%
Ni 231.604†           17097.6       0.491 mg/L        0.0175       0.491 mg/L        0.0175   3.56%
   QC value within limits for Ni 231.604  Recovery = 98.10%
Pb 220.353†            2904.4       0.496 mg/L        0.0100       0.496 mg/L        0.0100   2.01%
   QC value within limits for Pb 220.353  Recovery = 99.25%
Sb 206.836†            2187.2        1.17 mg/L         0.037        1.17 mg/L         0.037   3.13%
   QC value within limits for Sb 206.836  Recovery = 97.70%
Se 196.026†             318.1       0.394 mg/L        0.0182       0.394 mg/L        0.0182   4.63%
   QC value within limits for Se 196.026  Recovery = 98.43%
Si 251.611†          164786.2        4.90 mg/L         0.220        4.90 mg/L         0.220   4.49%
   QC value within limits for Si 251.611  Recovery = 97.96%
Sn 189.927†            5832.3       0.996 mg/L        0.0183       0.996 mg/L        0.0183   1.84%
   QC value within limits for Sn 189.927  Recovery = 99.61%
Ti 334.940†          804822.2       1.000 mg/L        0.0027       1.000 mg/L        0.0027   0.27%
   QC value within limits for Ti 334.940  Recovery = 99.97%
Tl 190.801†             849.5       0.513 mg/L        0.0122       0.513 mg/L        0.0122   2.37%
   QC value within limits for Tl 190.801  Recovery = 102.64%
V 290.880†           177991.8       0.969 mg/L        0.0321       0.969 mg/L        0.0321   3.31%
   QC value within limits for V 290.880  Recovery = 96.89%
Zn 206.200†           26140.1       0.989 mg/L        0.0389       0.989 mg/L        0.0389   3.94%
   QC value within limits for Zn 206.200  Recovery = 98.87%
K 766.490†            81582.4        49.9 mg/L          0.51        49.9 mg/L          0.51   1.03%
   QC value within limits for K 766.490  Recovery = 99.89%
Na 589.592†          538333.3        50.8 mg/L          2.03        50.8 mg/L          2.03   4.00%
   QC value within limits for Na 589.592  Recovery = 101.65%
Sr 407.771†         1019994.0        1.02 mg/L         0.005        1.02 mg/L         0.005   0.52%
   QC value within limits for Sr 407.771  Recovery = 101.67%
Li 670.784†           68612.6        1.02 mg/L         0.012        1.02 mg/L         0.012   1.15%
   QC value within limits for Li 670.784  Recovery = 101.84%
P 214.914†             9621.0        10.0 mg/L          0.21        10.0 mg/L          0.21   2.06%
   QC value within limits for P 214.914  Recovery = 100.01%
All analyte(s) passed QC.

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Sequence No.: 21                                    Autosampler Location: 1
Sample ID: CCB                                      Date Collected: 11/26/2013 12:52:38 PM
Analyst:                                            Data Type: Original
Initial Sample Wt:                                  Initial Sample Vol:
Dilution:                                           Sample Prep Vol:

------------------------------------------------------------------------------------------
Nebulizer Parameters: CCB
Analyte                  Back Pressure    Flow
All                     176.0 kPa         0.45 L/min

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Mean Data: CCB
                   Mean Corrected         Calib.                          Sample
Analyte               Intensity     Conc. Units      Std.Dev.      Conc. Units      Std.Dev.   RSD
Y 371.029            2832004.5                                                    55463.75   1.96%
YRADIAL               196202.8                                                     3720.88   1.90%
Ga 417.206            880843.1                                                    18136.72   2.06%
GaRADIAL               41891.0                                                     1108.47   2.65%
Ag 328.068†               46.6    -0.00010 mg/L      0.000672    -0.00010 mg/L      0.000672 667.80%
   QC value within limits for Ag 328.068  Recovery = Not calculated
Al 396.153†               79.1     0.00929 mg/L      0.005959     0.00929 mg/L      0.005959  64.11%
   QC value within limits for Al 396.153  Recovery = Not calculated
As 188.979†                0.5     0.00009 mg/L      0.002070     0.00009 mg/L      0.002070 >999.9%
   QC value within limits for As 188.979  Recovery = Not calculated
Ba 233.527†               29.2    -0.00360 mg/L      0.000129    -0.00360 mg/L      0.000129   3.59%
   QC value within limits for Ba 233.527  Recovery = Not calculated
Be 234.861†               36.3    -0.00011 mg/L      0.000030    -0.00011 mg/L      0.000030  28.37%
   QC value within limits for Be 234.861  Recovery = Not calculated
B 249.677†               688.3     0.00900 mg/L      0.001779     0.00900 mg/L      0.001779  19.78%
   QC value within limits for B 249.677  Recovery = Not calculated
Ca 227.546†               -5.0      0.0451 mg/L       0.02810      0.0451 mg/L       0.02810  62.34%
   QC value within limits for Ca 227.546  Recovery = Not calculated
Cd 228.802†               -9.5    -0.00020 mg/L      0.000083    -0.00020 mg/L      0.000083  40.71%
   QC value within limits for Cd 228.802  Recovery = Not calculated
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Co 228.616†              -7.7    -0.00048 mg/L      0.000547    -0.00048 mg/L      0.000547 113.74%
   QC value within limits for Co 228.616  Recovery = Not calculated
Cr 267.716†              60.7    -0.00164 mg/L      0.000061    -0.00164 mg/L      0.000061   3.71%
   QC value within limits for Cr 267.716  Recovery = Not calculated
Cu 327.393†             323.5     0.00150 mg/L      0.000469     0.00150 mg/L      0.000469  31.34%
   QC value within limits for Cu 327.393  Recovery = Not calculated
Fe 239.562†             103.2      0.0213 mg/L       0.01805      0.0213 mg/L       0.01805  84.71%
   QC value within limits for Fe 239.562  Recovery = Not calculated
Mg 279.077†             108.2      0.0656 mg/L       0.04170      0.0656 mg/L       0.04170  63.55%
   QC value within limits for Mg 279.077  Recovery = Not calculated
Mn 257.610†             526.2    -0.00341 mg/L      0.000182    -0.00341 mg/L      0.000182   5.34%
   QC value within limits for Mn 257.610  Recovery = Not calculated
Mo 202.031†              15.3    -0.00459 mg/L      0.000314    -0.00459 mg/L      0.000314   6.83%
   QC value within limits for Mo 202.031  Recovery = Not calculated
Ni 231.604†               7.0    -0.00284 mg/L      0.000050    -0.00284 mg/L      0.000050   1.76%
   QC value within limits for Ni 231.604  Recovery = Not calculated
Pb 220.353†              13.2    -0.00028 mg/L      0.001324    -0.00028 mg/L      0.001324 468.30%
   QC value within limits for Pb 220.353  Recovery = Not calculated
Sb 206.836†              -0.0     0.00219 mg/L      0.004351     0.00219 mg/L      0.004351 198.61%
   QC value within limits for Sb 206.836  Recovery = Not calculated
Se 196.026†              -2.1    -0.00092 mg/L      0.003246    -0.00092 mg/L      0.003246 353.70%
   QC value within limits for Se 196.026  Recovery = Not calculated
Si 251.611†             200.0    -0.00539 mg/L      0.002638    -0.00539 mg/L      0.002638  48.96%
   QC value within limits for Si 251.611  Recovery = Not calculated
Sn 189.927†              25.7     0.00208 mg/L      0.000938     0.00208 mg/L      0.000938  45.21%
   QC value within limits for Sn 189.927  Recovery = Not calculated
Ti 334.940†             265.9    -0.00147 mg/L      0.000123    -0.00147 mg/L      0.000123   8.41%
   QC value within limits for Ti 334.940  Recovery = Not calculated
Tl 190.801†              -0.7    -0.00396 mg/L      0.001718    -0.00396 mg/L      0.001718  43.34%
   QC value within limits for Tl 190.801  Recovery = Not calculated
V 290.880†               622.5    -0.00113 mg/L      0.000569    -0.00113 mg/L      0.000569  50.23%
   QC value within limits for V 290.880  Recovery = Not calculated
Zn 206.200†              15.7    -0.00446 mg/L      0.000348    -0.00446 mg/L      0.000348   7.80%
   QC value within limits for Zn 206.200  Recovery = Not calculated
K 766.490†              161.1       0.108 mg/L        0.0684       0.108 mg/L        0.0684  63.15%
   QC value within limits for K 766.490  Recovery = Not calculated
Na 589.592†            1725.7       0.150 mg/L        0.0687       0.150 mg/L        0.0687  45.77%
   QC value within limits for Na 589.592  Recovery = Not calculated
Sr 407.771†            1591.7    -0.00363 mg/L      0.001013    -0.00363 mg/L      0.001013  27.93%
   QC value within limits for Sr 407.771  Recovery = Not calculated
Li 670.784†             247.1     0.00025 mg/L      0.000688     0.00025 mg/L      0.000688 279.35%
   QC value within limits for Li 670.784  Recovery = Not calculated
P 214.914†               55.7     0.00327 mg/L      0.014326     0.00327 mg/L      0.014326 438.41%
   QC value within limits for P 214.914  Recovery = Not calculated
All analyte(s) passed QC.

==========================================================================================
Sequence No.: 22                                    Autosampler Location: 40
Sample ID: ~~PBW 98 WG454162-02~~                   Date Collected: 11/26/2013 12:55:40 PM
Analyst: JYH                                        Data Type: Original
Initial Sample Wt:                                  Initial Sample Vol:
Dilution:                                           Sample Prep Vol:
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L1311086411S
WG454211-05

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Nebulizer Parameters: ~~PBW 98 WG454162-02~~
Analyte                  Back Pressure     Flow
All                     175.0 kPa         0.45 L/min

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Mean Data: ~~PBW 98 WG454162-02~~
                   Mean Corrected          Calib.                          Sample
Analyte               Intensity      Conc. Units      Std.Dev.      Conc. Units      Std.Dev.   RSD
Y 371.029            2721608.6                                                      19673.23   0.72%
YRADIAL               200055.6                                                       1564.25   0.78%
Ga 417.206            895465.1                                                      11769.45   1.31%
GaRADIAL               44085.7                                                        284.46   0.65%
Ag 328.068†            33980.7       0.178 mg/L        0.0009       0.178 mg/L        0.0009   0.48%
Al 396.153†           106458.8        36.5 mg/L          0.10        36.5 mg/L          0.10   0.28%
As 188.979†              346.1       0.237 mg/L        0.0039       0.237 mg/L        0.0039   1.67%
Ba 233.527†            52413.1       0.672 mg/L        0.0073       0.672 mg/L        0.0073   1.08%
Be 234.861†            29489.2      0.0238 mg/L       0.00053      0.0238 mg/L       0.00053   2.25%
B 249.677†            197779.3        2.87 mg/L         0.036        2.87 mg/L         0.036   1.24%
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Approved: November 27, 2013

Ca 227.546†	82421.7	421 mg/L	3.5	421 mg/L	3.5	0.84%
Cd 228.802†	571.3	0.0222 mg/L	0.00066	0.0222 mg/L	0.00066	2.95%
Co 228.616†	2445.6	0.114 mg/L	0.0009	0.114 mg/L	0.0009	0.81%
Cr 267.716†	30210.0	0.263 mg/L	0.0008	0.263 mg/L	0.0008	0.32%
Cu 327.393†	59028.4	0.287 mg/L	0.0028	0.287 mg/L	0.0028	0.99%
Fe 239.562†	252253.6	88.8 mg/L	0.20	88.8 mg/L	0.20	0.23%
Mg 279.077†	229156.1	211 mg/L	0.3	211 mg/L	0.3	0.15%
Mn 257.610†	3112162.8	5.51 mg/L	0.060	5.51 mg/L	0.060	1.09%
Mo 202.031†	7001.1	0.434 mg/L	0.0022	0.434 mg/L	0.0022	0.51%
Ni 231.604†	11301.2	0.323 mg/L	0.0012	0.323 mg/L	0.0012	0.38%
Pb 220.353†	1630.3	0.276 mg/L	0.0038	0.276 mg/L	0.0038	1.39%
Sb 206.836†	842.1	0.456 mg/L	0.0045	0.456 mg/L	0.0045	0.98%
Se 196.026†	129.3	0.177 mg/L	0.0101	0.177 mg/L	0.0101	5.70%
Si 251.611†	1396703.8	41.7 mg/L	0.30	41.7 mg/L	0.30	0.72%
Sn 189.927†	2320.1	0.395 mg/L	0.0021	0.395 mg/L	0.0021	0.54%
Ti 334.940†	448518.0	0.618 mg/L	0.0065	0.618 mg/L	0.0065	1.06%
Tl 190.801†	300.7	0.178 mg/L	0.0020	0.178 mg/L	0.0020	1.11%
V 290.880†	93828.4	0.495 mg/L	0.0066	0.495 mg/L	0.0066	1.33%
Zn 206.200†	19275.1	0.726 mg/L	0.0039	0.726 mg/L	0.0039	0.54%
K 766.490†	47973.9	29.0 mg/L	0.06	29.0 mg/L	0.06	0.21%
Na 589.592†	2218171.6	243 mg/L	4.7	243 mg/L	4.7	1.95%
Sr 407.771†	1474746.7	1.46 mg/L	0.033	1.46 mg/L	0.033	2.24%
Li 670.784†	84297.4	1.25 mg/L	0.002	1.25 mg/L	0.002	0.19%
P 214.914†	2044.1	2.08 mg/L	0.015	2.08 mg/L	0.015	0.74%

Sequence No.: 23
Sample ID: F ~~BLANK WG453882-01~~
Analyst: JYH
Initial Sample Wt:
Dilution: L1311086413SD WG454211-06

Autosampler Location: 41
Date Collected: 11/26/2013 12:57:46 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: F ~~BLANK WG453882-01~~

Analyte	Back Pressure	Flow
All	177.0 kPa	0.45 L/min

Mean Data: ~~F BLANK WG453882-01~~

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2727804.9						13181.31	0.48%
YRADIAL	202311.2						2161.66	1.07%
Ga 417.206	898919.5						7211.89	0.80%
GaRADIAL	44533.6						367.36	0.82%
Ag 328.068†	35214.7	0.181	mg/L	0.0025	0.181	mg/L	0.0025	1.38%
Al 396.153†	97573.6	33.5	mg/L	0.30	33.5	mg/L	0.30	0.90%
As 188.979†	346.0	0.235	mg/L	0.0020	0.235	mg/L	0.0020	0.84%
Ba 233.527†	51347.6	0.659	mg/L	0.0027	0.659	mg/L	0.0027	0.40%
Be 234.861†	28514.5	0.0236	mg/L	0.00044	0.0236	mg/L	0.00044	1.86%
B 249.677†	196751.4	2.86	mg/L	0.010	2.86	mg/L	0.010	0.35%
Ca 227.546†	80012.8	409	mg/L	1.4	409	mg/L	1.4	0.35%
Cd 228.802†	579.6	0.0225	mg/L	0.00064	0.0225	mg/L	0.00064	2.83%
Co 228.616†	2438.2	0.114	mg/L	0.0008	0.114	mg/L	0.0008	0.68%
Cr 267.716†	30175.0	0.263	mg/L	0.0013	0.263	mg/L	0.0013	0.50%
Cu 327.393†	58573.6	0.284	mg/L	0.0005	0.284	mg/L	0.0005	0.17%
Fe 239.562†	236532.4	83.3	mg/L	0.94	83.3	mg/L	0.94	1.12%
Mg 279.077†	223870.3	206	mg/L	1.9	206	mg/L	1.9	0.92%
Mn 257.610†	2926082.6	5.18	mg/L	0.030	5.18	mg/L	0.030	0.58%
Mo 202.031†	7129.0	0.442	mg/L	0.0021	0.442	mg/L	0.0021	0.47%
Ni 231.604†	11169.6	0.319	mg/L	0.0018	0.319	mg/L	0.0018	0.58%
Pb 220.353†	1624.4	0.275	mg/L	0.0041	0.275	mg/L	0.0041	1.48%
Sb 206.836†	861.9	0.466	mg/L	0.0060	0.466	mg/L	0.0060	1.28%
Se 196.026†	138.1	0.187	mg/L	0.0104	0.187	mg/L	0.0104	5.57%
Si 251.611†	1299114.2	38.8	mg/L	0.15	38.8	mg/L	0.15	0.39%
Sn 189.927†	2432.0	0.414	mg/L	0.0040	0.414	mg/L	0.0040	0.97%
Ti 334.940†	452705.8	0.622	mg/L	0.0008	0.622	mg/L	0.0008	0.13%
Tl 190.801†	304.6	0.180	mg/L	0.0028	0.180	mg/L	0.0028	1.55%
V 290.880†	93922.3	0.496	mg/L	0.0073	0.496	mg/L	0.0073	1.47%
Zn 206.200†	18012.6	0.679	mg/L	0.0028	0.679	mg/L	0.0028	0.42%
K 766.490†	47777.9	28.9	mg/L	0.31	28.9	mg/L	0.31	1.08%
Na 589.592†	2165581.8	236	mg/L	5.6	236	mg/L	5.6	2.39%

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Sr 407.771†	1450617.0	1.44 mg/L	0.039	1.44 mg/L	0.039	2.73%
Li 670.784†	83570.3	1.24 mg/L	0.015	1.24 mg/L	0.015	1.23%
P 214.914†	1908.1	1.94 mg/L	0.039	1.94 mg/L	0.039	2.01%

Sequence No.: 24 — **Autosampler Location: 42**
Sample ID: ~~F BLANK WG454137-01~~ — **Date Collected: 11/26/2013 12:59:52 PM**
Analyst: JYH — **Data Type: Original**
Initial Sample Wt: L1311084201 — **Initial Sample Vol:**
Dilution: — **Sample Prep Vol:**

Nebulizer Parameters: ~~F BLANK WG454137-01~~

Analyte	Back Pressure	Flow
All	178.0 kPa	0.45 L/min

Mean Data: ~~F BLANK WG454137-01~~

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2796928.4						23965.16	0.86%
YRADIAL	200358.4						7027.94	3.51%
Ga 417.206	946860.2						15073.86	1.59%
GaRADIAL	44757.7						994.50	2.22%
Ag 328.068†	269.4	0.00022	mg/L	0.000285	0.00022	mg/L	0.000285	128.72%
Al 396.153†	320.7	0.0871	mg/L	0.04189	0.0871	mg/L	0.04189	48.07%
As 188.979†	-7.3	-0.00337	mg/L	0.001490	-0.00337	mg/L	0.001490	44.24%
Ba 233.527†	1982.8	0.0218	mg/L	0.00132	0.0218	mg/L	0.00132	6.05%
Be 234.861†	217.6	0.00003	mg/L	0.000014	0.00003	mg/L	0.000014	46.84%
B 249.677†	38757.2	0.570	mg/L	0.0052	0.570	mg/L	0.0052	0.91%
Ca 227.546†	14246.3	72.4	mg/L	4.20	72.4	mg/L	4.20	5.80%
Cd 228.802†	-8.8	-0.00015	mg/L	0.000032	-0.00015	mg/L	0.000032	21.81%
Co 228.616†	42.0	0.00204	mg/L	0.000185	0.00204	mg/L	0.000185	9.07%
Cr 267.716†	238.0	-0.00012	mg/L	0.000139	-0.00012	mg/L	0.000139	117.91%
Cu 327.393†	599.3	0.00284	mg/L	0.000499	0.00284	mg/L	0.000499	17.56%
Fe 239.562†	2163.5	0.746	mg/L	0.0898	0.746	mg/L	0.0898	12.04%
Mg 279.077†	68707.3	63.4	mg/L	0.30	63.4	mg/L	0.30	0.47%
Mn 257.610†	44441.8	0.0743	mg/L	0.00109	0.0743	mg/L	0.00109	1.47%
Mo 202.031†	1233.1	0.0714	mg/L	0.00462	0.0714	mg/L	0.00462	6.48%
Ni 231.604†	545.7	0.0127	mg/L	0.00115	0.0127	mg/L	0.00115	9.07%
Pb 220.353†	55.3	0.00690	mg/L	0.000803	0.00690	mg/L	0.000803	11.63%
Sb 206.836†	2.8	0.00385	mg/L	0.002455	0.00385	mg/L	0.002455	63.73%
Se 196.026†	-3.7	-0.00271	mg/L	0.007966	-0.00271	mg/L	0.007966	294.38%
Si 251.611†	136318.2	4.06	mg/L	0.028	4.06	mg/L	0.028	0.69%
Sn 189.927†	-212.9	-0.0388	mg/L	0.00101	-0.0388	mg/L	0.00101	2.61%
Ti 334.940†	-9136.1	-0.00229	mg/L	0.000586	-0.00229	mg/L	0.000586	25.57%
Tl 190.801†	-16.8	-0.0137	mg/L	0.00462	-0.0137	mg/L	0.00462	33.86%
V 290.880†	2476.4	0.00728	mg/L	0.001816	0.00728	mg/L	0.001816	24.94%
Zn 206.200†	162.2	0.00109	mg/L	0.000291	0.00109	mg/L	0.000291	26.56%
K 766.490†	3758.0	2.21	mg/L	0.009	2.21	mg/L	0.009	0.41%
Na 589.592†	717027.8	68.6	mg/L	1.05	68.6	mg/L	1.05	1.54%
Sr 407.771†	4629112.7	4.63	mg/L	0.041	4.63	mg/L	0.041	0.88%
Li 670.784†	3177.9	0.0439	mg/L	0.00082	0.0439	mg/L	0.00082	1.87%
P 214.914†	73.8	0.0222	mg/L	0.01148	0.0222	mg/L	0.01148	51.77%

Sequence No.: 25 — **Autosampler Location: 43**
Sample ID: ~~LCSW 98 WG454162-03~~ — **Date Collected: 11/26/2013 1:03:00 PM**
Analyst: JYH — **Data Type: Original**
Initial Sample Wt: — **Initial Sample Vol:**
Dilution: L1311084301 — **Sample Prep Vol:**

Nebulizer Parameters: ~~LCSW 98 WG454162-03~~

Analyte	Back Pressure	Flow
All	178.0 kPa	0.45 L/min

Mean Data: ~~LCSW 98 WG454162-03~~

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2719039.6						25741.30	0.95%

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YRADIAL	195423.1					984.34	0.50%
Ga 417.206	904775.3					9382.36	1.04%
GaRADIAL	43312.8					373.77	0.86%
Ag 328.068†	-1421.5	0.00157	mg/L	0.000303	0.00157 mg/L	0.000303	19.27%
Al 396.153†	77.5	0.0104	mg/L	0.01368	0.0104 mg/L	0.01368	130.95%
As 188.979†	-19.9	-0.00567	mg/L	0.003898	-0.00567 mg/L	0.003898	68.74%
Ba 233.527†	12110.4	0.152	mg/L	0.0020	0.152 mg/L	0.0020	1.29%
Be 234.861†	2968.4	0.00032	mg/L	0.000089	0.00032 mg/L	0.000089	27.82%
B 249.677†	22738.7	0.327	mg/L	0.0085	0.327 mg/L	0.0085	2.61%
Ca 227.546†	25229.2	129	mg/L	2.4	129 mg/L	2.4	1.87%
Cd 228.802†	0.0	0.00021	mg/L	0.000206	0.00021 mg/L	0.000206	99.32%
Co 228.616†	-4.5	-0.00077	mg/L	0.000692	-0.00077 mg/L	0.000692	89.67%
Cr 267.716†	197.8	-0.00177	mg/L	0.000226	-0.00177 mg/L	0.000226	12.75%
Cu 327.393†	7493.1	0.0366	mg/L	0.00124	0.0366 mg/L	0.00124	3.38%
Fe 239.562†	48291.3	17.0	mg/L	0.21	17.0 mg/L	0.21	1.24%
Mg 279.077†	78599.9	72.5	mg/L	0.55	72.5 mg/L	0.55	0.76%
Mn 257.610†	736428.0	1.30	mg/L	0.005	1.30 mg/L	0.005	0.40%
Mo 202.031†	86.8	0.00040	mg/L	0.000371	0.00040 mg/L	0.000371	91.93%
Ni 231.604†	39.5	-0.00190	mg/L	0.000099	-0.00190 mg/L	0.000099	5.22%
Pb 220.353†	51.3	0.00491	mg/L	0.001888	0.00491 mg/L	0.001888	38.45%
Sb 206.836†	-8.9	-0.00196	mg/L	0.001295	-0.00196 mg/L	0.001295	66.05%
Se 196.026†	0.0	0.00477	mg/L	0.003299	0.00477 mg/L	0.003299	69.10%
Si 251.611†	322665.6	9.62	mg/L	0.151	9.62 mg/L	0.151	1.57%
Sn 189.927†	-246.4	-0.0445	mg/L	0.00067	-0.0445 mg/L	0.00067	1.50%
Ti 334.940†	-15868.2	-0.00229	mg/L	0.000469	-0.00229 mg/L	0.000469	20.46%
Tl 190.801†	-26.1	-0.0205	mg/L	0.00578	-0.0205 mg/L	0.00578	28.18%
V 290.880†	2399.2	0.00501	mg/L	0.002854	0.00501 mg/L	0.002854	56.98%
Zn 206.200†	157.7	0.00084	mg/L	0.000405	0.00084 mg/L	0.000405	48.20%
K 766.490†	16684.4	9.81	mg/L	0.147	9.81 mg/L	0.147	1.50%
Na 589.592†	2692503.2	313	mg/L	3.5	313 mg/L	3.5	1.10%
Sr 407.771†	558467.7	0.550	mg/L	0.0030	0.550 mg/L	0.0030	0.54%
Li 670.784†	1697.0	0.0218	mg/L	0.00074	0.0218 mg/L	0.00074	3.38%
P 214.914†	674.4	0.650	mg/L	0.0206	0.650 mg/L	0.0206	3.18%

Sequence No.: 26 **Autosampler Location: 44**
Sample ID: ~~L1311129001 WG454162-01~~ **Date Collected: 11/26/2013 1:05:08 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: L1311084301PS WG454399-01 **Sample Prep Vol:**

Nebulizer Parameters: ~~L1311129001 WG454162-01~~

Analyte	Back Pressure	Flow
All	178.0 kPa	0.45 L/min

Mean Data: ~~L1311129001 WG454162-01~~

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2673636.2						22752.28	0.85%
YRADIAL	200716.7						3813.75	1.90%
Ga 417.206	870638.6						5342.14	0.61%
GaRADIAL	43588.9						665.51	1.53%
Ag 328.068†	49062.2	0.207	mg/L	0.0012	0.207	mg/L	0.0012	0.56%
Al 396.153†	15264.9	5.19	mg/L	0.050	5.19	mg/L	0.050	0.97%
As 188.979†	318.7	0.198	mg/L	0.0060	0.198	mg/L	0.0060	3.03%
Ba 233.527†	49235.8	0.635	mg/L	0.0112	0.635	mg/L	0.0112	1.77%
Be 234.861†	19315.5	0.0256	mg/L	0.00030	0.0256	mg/L	0.00030	1.17%
B 249.677†	89686.9	1.31	mg/L	0.023	1.31	mg/L	0.023	1.76%
Ca 227.546†	24203.4	124	mg/L	3.7	124	mg/L	3.7	3.00%
Cd 228.802†	611.5	0.0240	mg/L	0.00068	0.0240	mg/L	0.00068	2.83%
Co 228.616†	2066.5	0.0981	mg/L	0.00096	0.0981	mg/L	0.00096	0.98%
Cr 267.716†	28249.3	0.250	mg/L	0.0039	0.250	mg/L	0.0039	1.58%
Cu 327.393†	59263.1	0.283	mg/L	0.0028	0.283	mg/L	0.0028	0.99%
Fe 239.562†	47679.8	16.8	mg/L	0.17	16.8	mg/L	0.17	0.98%
Mg 279.077†	74074.3	68.3	mg/L	0.83	68.3	mg/L	0.83	1.22%
Mn 257.610†	793328.3	1.40	mg/L	0.005	1.40	mg/L	0.005	0.37%
Mo 202.031†	8603.0	0.532	mg/L	0.0070	0.532	mg/L	0.0070	1.31%
Ni 231.604†	8815.2	0.251	mg/L	0.0036	0.251	mg/L	0.0036	1.45%
Pb 220.353†	1479.4	0.250	mg/L	0.0039	0.250	mg/L	0.0039	1.55%
Sb 206.836†	1139.4	0.612	mg/L	0.0122	0.612	mg/L	0.0122	1.99%

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Se 196.026†	172.3	0.217	mg/L	0.0097	0.217	mg/L	0.0097	4.46%
Si 251.611†	384776.2	11.5	mg/L	0.26	11.5	mg/L	0.26	2.25%
Sn 189.927†	-227.4	-0.0413	mg/L	0.00070	-0.0413	mg/L	0.00070	1.70%
Ti 334.940†	412738.0	0.529	mg/L	0.0067	0.529	mg/L	0.0067	1.26%
Tl 190.801†	384.2	0.230	mg/L	0.0101	0.230	mg/L	0.0101	4.40%
V 290.880†	94731.5	0.510	mg/L	0.0101	0.510	mg/L	0.0101	1.98%
Zn 206.200†	12999.5	0.489	mg/L	0.0098	0.489	mg/L	0.0098	2.00%
K 766.490†	58108.2	35.2	mg/L	0.40	35.2	mg/L	0.40	1.13%
Na 589.592†	2669378.2	310	mg/L	3.1	310	mg/L	3.1	1.00%
Sr 407.771†	995599.2	0.989	mg/L	0.0066	0.989	mg/L	0.0066	0.66%
Li 670.784†	36646.7	0.542	mg/L	0.0067	0.542	mg/L	0.0067	1.24%
P 214.914†	439.5	0.404	mg/L	0.0139	0.404	mg/L	0.0139	3.42%

Sequence No.: 27 **Autosampler Location: 45**
Sample ID: ~~L1311129001S WG454162-04~~ **Date Collected: 11/26/2013 1:07:15 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: L1311084301DL WG454399-02 **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: ~~L1311129001S WG454162-04~~

Analyte	Back Pressure	Flow
All	178.0 kPa	0.45 L/min

Mean Data: ~~L1311129001S WG454162-04~~

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2872489.6						63578.12	2.21%
YRADIAL	206723.3						2981.39	1.44%
Ga 417.206	934268.6						23512.02	2.52%
GaRADIAL	44483.8						478.41	1.08%
Ag 328.068†	-271.1	0.00014	mg/L	0.000287	0.00014	mg/L	0.000287	202.17%
Al 396.153†	105.1	0.0186	mg/L	0.00747	0.0186	mg/L	0.00747	40.24%
As 188.979†	-4.7	-0.00177	mg/L	0.002504	-0.00177	mg/L	0.002504	141.47%
Ba 233.527†	2597.5	0.0296	mg/L	0.00051	0.0296	mg/L	0.00051	1.72%
Be 234.861†	844.6	0.00032	mg/L	0.000191	0.00032	mg/L	0.000191	60.46%
B 249.677†	6031.1	0.0863	mg/L	0.00524	0.0863	mg/L	0.00524	6.07%
Ca 227.546†	5118.0	26.1	mg/L	0.50	26.1	mg/L	0.50	1.91%
Cd 228.802†	-1.2	0.00014	mg/L	0.000243	0.00014	mg/L	0.000243	173.26%
Co 228.616†	-4.5	-0.00042	mg/L	0.000103	-0.00042	mg/L	0.000103	24.53%
Cr 267.716†	96.1	-0.00160	mg/L	0.000188	-0.00160	mg/L	0.000188	11.74%
Cu 327.393†	1711.3	0.00829	mg/L	0.000449	0.00829	mg/L	0.000449	5.42%
Fe 239.562†	9794.8	3.44	mg/L	0.051	3.44	mg/L	0.051	1.49%
Mg 279.077†	16015.5	14.7	mg/L	0.18	14.7	mg/L	0.18	1.24%
Mn 257.610†	151420.7	0.264	mg/L	0.0013	0.264	mg/L	0.0013	0.51%
Mo 202.031†	28.2	-0.00368	mg/L	0.000525	-0.00368	mg/L	0.000525	14.26%
Ni 231.604†	42.5	-0.00182	mg/L	0.000246	-0.00182	mg/L	0.000246	13.54%
Pb 220.353†	27.5	0.00190	mg/L	0.000270	0.00190	mg/L	0.000270	14.20%
Sb 206.836†	-2.0	0.00125	mg/L	0.002635	0.00125	mg/L	0.002635	210.43%
Se 196.026†	-6.6	-0.00581	mg/L	0.004825	-0.00581	mg/L	0.004825	83.06%
Si 251.611†	66056.0	1.96	mg/L	0.050	1.96	mg/L	0.050	2.57%
Sn 189.927†	-134.5	-0.0254	mg/L	0.00131	-0.0254	mg/L	0.00131	5.17%
Ti 334.940†	-2978.3	-0.00159	mg/L	0.000522	-0.00159	mg/L	0.000522	32.76%
Tl 190.801†	-0.9	-0.00439	mg/L	0.003573	-0.00439	mg/L	0.003573	81.32%
V 290.880†	767.2	-0.00106	mg/L	0.001538	-0.00106	mg/L	0.001538	144.46%
Zn 206.200†	68.2	-0.00249	mg/L	0.000644	-0.00249	mg/L	0.000644	25.87%
K 766.490†	3552.3	2.11	mg/L	0.039	2.11	mg/L	0.039	1.86%
Na 589.592†	560314.2	53.0	mg/L	0.25	53.0	mg/L	0.25	0.47%
Sr 407.771†	113389.9	0.108	mg/L	0.0007	0.108	mg/L	0.0007	0.68%
Li 670.784†	417.3	0.00278	mg/L	0.000957	0.00278	mg/L	0.000957	34.40%
P 214.914†	192.3	0.146	mg/L	0.0110	0.146	mg/L	0.0110	7.56%

Sequence No.: 28 **Autosampler Location: 46**
Sample ID: ~~L1311129001SD WG454162-05~~ **Date Collected: 11/26/2013 1:09:21 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: L1311084301DL WG454399-02 **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Approved: November 27, 2013

Nebulizer Parameters: ~~L1311129001SD WG454162-05~~

Analyte	Back Pressure	Flow
All	177.0 kPa	0.45 L/min

Mean Data: ~~L1311129001SD WG454162-05~~

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2792779.6						26247.12	0.94%
YRADIAL	200175.4						4211.94	2.10%
Ga 417.206	901801.0						13288.47	1.47%
GaRADIAL	42635.7						277.44	0.65%
Ag 328.068†	-81.4	-0.00032	mg/L	0.000179	-0.00032	mg/L	0.000179	56.38%
Al 396.153†	28.7	-0.00786	mg/L	0.004102	-0.00786	mg/L	0.004102	52.22%
As 188.979†	1.1	0.00075	mg/L	0.001749	0.00075	mg/L	0.001749	234.70%
Ba 233.527†	514.6	0.00266	mg/L	0.000083	0.00266	mg/L	0.000083	3.13%
Be 234.861†	326.6	0.00018	mg/L	0.000156	0.00018	mg/L	0.000156	88.80%
B 249.677†	1425.1	0.0196	mg/L	0.00084	0.0196	mg/L	0.00084	4.31%
Ca 227.546†	991.9	5.12	mg/L	0.096	5.12	mg/L	0.096	1.87%
Cd 228.802†	-9.3	-0.00020	mg/L	0.000257	-0.00020	mg/L	0.000257	130.81%
Co 228.616†	-3.4	-0.00029	mg/L	0.000250	-0.00029	mg/L	0.000250	85.95%
Cr 267.716†	28.9	-0.00198	mg/L	0.000180	-0.00198	mg/L	0.000180	9.05%
Cu 327.393†	250.9	0.00119	mg/L	0.000552	0.00119	mg/L	0.000552	46.33%
Fe 239.562†	2031.2	0.700	mg/L	0.0328	0.700	mg/L	0.0328	4.69%
Mg 279.077†	3333.2	3.04	mg/L	0.119	3.04	mg/L	0.119	3.90%
Mn 257.610†	30667.3	0.0500	mg/L	0.00042	0.0500	mg/L	0.00042	0.84%
Mo 202.031†	-2.5	-0.00569	mg/L	0.000118	-0.00569	mg/L	0.000118	2.08%
Ni 231.604†	15.8	-0.00259	mg/L	0.000083	-0.00259	mg/L	0.000083	3.21%
Pb 220.353†	20.4	0.00089	mg/L	0.000334	0.00089	mg/L	0.000334	37.32%
Sb 206.836†	-0.5	0.00196	mg/L	0.000975	0.00196	mg/L	0.000975	49.67%
Se 196.026†	-4.3	-0.00350	mg/L	0.000756	-0.00350	mg/L	0.000756	21.58%
Si 251.611†	12884.6	0.373	mg/L	0.0095	0.373	mg/L	0.0095	2.56%
Sn 189.927†	-38.6	-0.00895	mg/L	0.000525	-0.00895	mg/L	0.000525	5.87%
Ti 334.940†	-722.9	-0.00193	mg/L	0.000172	-0.00193	mg/L	0.000172	8.90%
Tl 190.801†	-1.0	-0.00423	mg/L	0.003107	-0.00423	mg/L	0.003107	73.38%
V 290.880†	355.5	-0.00274	mg/L	0.001981	-0.00274	mg/L	0.001981	72.31%
Zn 206.200†	18.9	-0.00435	mg/L	0.000057	-0.00435	mg/L	0.000057	1.30%
K 766.490†	670.6	0.406	mg/L	0.0349	0.406	mg/L	0.0349	8.61%
Na 589.592†	117296.4	10.8	mg/L	0.40	10.8	mg/L	0.40	3.72%
Sr 407.771†	23499.3	0.0182	mg/L	0.00148	0.0182	mg/L	0.00148	8.14%
Li 670.784†	50.9	-0.00267	mg/L	0.000366	-0.00267	mg/L	0.000366	13.68%
P 214.914†	90.3	0.0395	mg/L	0.01010	0.0395	mg/L	0.01010	25.58%

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Sequence No.: 29
Sample ID: ~~L1311120301~~
Analyst: JYH
Initial Sample Wt: L1311086401
Dilution:

Autosampler Location: 47
Date Collected: 11/26/2013 1:13:00 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: ~~L1311120301~~

Analyte	Back Pressure	Flow
All	177.0 kPa	0.45 L/min

Mean Data: ~~L1311120301~~

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2726276.3						29618.78	1.09%
YRADIAL	191220.1						3228.22	1.69%
Ga 417.206	923521.0						9601.33	1.04%
GaRADIAL	43478.6						870.56	2.00%
Ag 328.068†	1082.3	0.00420	mg/L	0.000316	0.00420	mg/L	0.000316	7.53%
Al 396.153†	232.5	0.0618	mg/L	0.00040	0.0618	mg/L	0.00040	0.65%
As 188.979†	-10.1	-0.00098	mg/L	0.000894	-0.00098	mg/L	0.000894	91.23%
Ba 233.527†	1384.0	0.0140	mg/L	0.00067	0.0140	mg/L	0.00067	4.81%
Be 234.861†	169.7	0.00005	mg/L	0.000019	0.00005	mg/L	0.000019	40.89%
B 249.677†	301459.7	4.44	mg/L	0.013	4.44	mg/L	0.013	0.30%
Ca 227.546†	47507.6	241	mg/L	3.9	241	mg/L	3.9	1.63%
Cd 228.802†	-0.6	0.00019	mg/L	0.000189	0.00019	mg/L	0.000189	98.29%
Co 228.616†	33.4	0.00156	mg/L	0.000066	0.00156	mg/L	0.000066	4.23%

Approved: November 27, 2013

Cr 267.716†	288.6	0.00036	mg/L	0.000153	0.00036	mg/L	0.000153	42.40%
Cu 327.393†	-161.1	-0.00087	mg/L	0.000687	-0.00087	mg/L	0.000687	79.14%
Fe 239.562†	1702.3	0.583	mg/L	0.0100	0.583	mg/L	0.0100	1.71%
Mg 279.077†	98159.7	90.5	mg/L	1.25	90.5	mg/L	1.25	1.38%
Mn 257.610†	491357.6	0.865	mg/L	0.0036	0.865	mg/L	0.0036	0.42%
Mo 202.031†	61.9	-0.00149	mg/L	0.000793	-0.00149	mg/L	0.000793	53.09%
Ni 231.604†	27.2	-0.00225	mg/L	0.000066	-0.00225	mg/L	0.000066	2.95%
Pb 220.353†	33.0	0.00258	mg/L	0.001135	0.00258	mg/L	0.001135	43.96%
Sb 206.836†	-1.8	0.00125	mg/L	0.002168	0.00125	mg/L	0.002168	173.38%
Se 196.026†	-3.6	-0.00292	mg/L	0.006095	-0.00292	mg/L	0.006095	208.61%
Si 251.611†	226004.6	6.74	mg/L	0.089	6.74	mg/L	0.089	1.32%
Sn 189.927†	-281.1	-0.0505	mg/L	0.00038	-0.0505	mg/L	0.00038	0.76%
Ti 334.940†	-29623.4	-0.00242	mg/L	0.000710	-0.00242	mg/L	0.000710	29.36%
Tl 190.801†	-34.4	-0.0252	mg/L	0.00027	-0.0252	mg/L	0.00027	1.06%
V 290.880†	2809.5	0.00843	mg/L	0.001627	0.00843	mg/L	0.001627	19.30%
Zn 206.200†	90.2	-0.00163	mg/L	0.000371	-0.00163	mg/L	0.000371	22.75%
K 766.490†	3518.8	2.01	mg/L	0.037	2.01	mg/L	0.037	1.82%
Na 589.592†	1306484.9	131	mg/L	0.1	131	mg/L	0.1	0.10%
Sr 407.771†	310409.0	0.298	mg/L	0.0039	0.298	mg/L	0.0039	1.32%
Li 670.784†	26776.1	0.395	mg/L	0.0027	0.395	mg/L	0.0027	0.67%
P 214.914†	87.6	0.0366	mg/L	0.00933	0.0366	mg/L	0.00933	25.45%

Sequence No.: 30
Sample ID: ~~L1311120301PS WG454243-01~~
Analyst: JYH
Initial Sample Wt: L1311086402
Dilution:

Autosampler Location: 48
Date Collected: 11/26/2013 1:16:04 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: ~~L1311120301PS WG454243-01~~

Analyte	Back Pressure	Flow
All	178.0 kPa	0.45 L/min

Mean Data: ~~L1311120301PS WG454243-01~~

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2740567.7						14717.49	0.54%
YRADIAL	197120.6						3850.57	1.95%
Ga 417.206	924799.7						4075.13	0.44%
GaRADIAL	44755.4						1145.56	2.56%
Ag 328.068†	1056.9	0.00403	mg/L	0.000160	0.00403	mg/L	0.000160	3.98%
Al 396.153†	19.8	-0.0112	mg/L	0.00756	-0.0112	mg/L	0.00756	67.27%
As 188.979†	-9.6	-0.00080	mg/L	0.002333	-0.00080	mg/L	0.002333	290.69%
Ba 233.527†	964.3	0.00852	mg/L	0.000358	0.00852	mg/L	0.000358	4.20%
Be 234.861†	169.0	0.00008	mg/L	0.000016	0.00008	mg/L	0.000016	19.18%
B 249.677†	310027.2	4.57	mg/L	0.057	4.57	mg/L	0.057	1.24%
Ca 227.546†	47084.1	239	mg/L	5.6	239	mg/L	5.6	2.35%
Cd 228.802†	-6.8	-0.00006	mg/L	0.000099	-0.00006	mg/L	0.000099	164.04%
Co 228.616†	30.3	0.00142	mg/L	0.000270	0.00142	mg/L	0.000270	19.02%
Cr 267.716†	252.3	0.00005	mg/L	0.000098	0.00005	mg/L	0.000098	210.31%
Cu 327.393†	-379.6	-0.00192	mg/L	0.000517	-0.00192	mg/L	0.000517	26.90%
Fe 239.562†	1208.5	0.409	mg/L	0.0209	0.409	mg/L	0.0209	5.10%
Mg 279.077†	98686.6	91.0	mg/L	0.67	91.0	mg/L	0.67	0.74%
Mn 257.610†	443405.0	0.780	mg/L	0.0064	0.780	mg/L	0.0064	0.82%
Mo 202.031†	60.8	-0.00158	mg/L	0.000461	-0.00158	mg/L	0.000461	29.14%
Ni 231.604†	6.7	-0.00285	mg/L	0.000385	-0.00285	mg/L	0.000385	13.53%
Pb 220.353†	28.5	0.00186	mg/L	0.003046	0.00186	mg/L	0.003046	163.82%
Sb 206.836†	-2.9	0.00065	mg/L	0.001794	0.00065	mg/L	0.001794	274.22%
Se 196.026†	-0.8	0.00053	mg/L	0.005415	0.00053	mg/L	0.005415	>999.9%
Si 251.611†	222036.5	6.62	mg/L	0.167	6.62	mg/L	0.167	2.52%
Sn 189.927†	-302.6	-0.0541	mg/L	0.00125	-0.0541	mg/L	0.00125	2.31%
Ti 334.940†	-30799.4	-0.00420	mg/L	0.000385	-0.00420	mg/L	0.000385	9.15%
Tl 190.801†	-31.0	-0.0231	mg/L	0.00269	-0.0231	mg/L	0.00269	11.63%
V 290.880†	2605.1	0.00732	mg/L	0.000951	0.00732	mg/L	0.000951	12.99%
Zn 206.200†	34.0	-0.00376	mg/L	0.000263	-0.00376	mg/L	0.000263	6.99%
K 766.490†	3477.7	1.98	mg/L	0.019	1.98	mg/L	0.019	0.96%
Na 589.592†	1318352.0	132	mg/L	0.2	132	mg/L	0.2	0.16%
Sr 407.771†	312293.8	0.300	mg/L	0.0004	0.300	mg/L	0.0004	0.15%
Li 670.784†	26944.4	0.398	mg/L	0.0019	0.398	mg/L	0.0019	0.47%
P 214.914†	90.2	0.0393	mg/L	0.01208	0.0393	mg/L	0.01208	30.73%

Approved: November 27, 2013

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Sequence No.: 31 **Autosampler Location: 49**
Sample ID: ~~L1311120301DL WG454243-02~~ **Date Collected: 11/26/2013 1:19:08 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: L1311086403 **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: ~~L1311120301DL WG454243-02~~

Analyte	Back Pressure	Flow
All	179.0 kPa	0.45 L/min

Mean Data: ~~L1311120301DL WG454243-02~~

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2796498.6						14476.73	0.52%
YRADIAL	205528.4						5115.28	2.49%
Ga 417.206	913922.2						4235.20	0.46%
GaRADIAL	43926.0						965.09	2.20%
Ag 328.068†	-1912.3	0.00070	mg/L	0.000721	0.00070	mg/L	0.000721	103.15%
Al 396.153†	29011.3	9.95	mg/L	0.108	9.95	mg/L	0.108	1.09%
As 188.979†	0.6	0.00655	mg/L	0.002669	0.00655	mg/L	0.002669	40.75%
Ba 233.527†	21039.4	0.268	mg/L	0.0046	0.268	mg/L	0.0046	1.73%
Be 234.861†	3515.4	0.00063	mg/L	0.000198	0.00063	mg/L	0.000198	31.49%
B 249.677†	58492.0	0.852	mg/L	0.0395	0.852	mg/L	0.0395	4.64%
Ca 227.546†	23565.8	120	mg/L	3.5	120	mg/L	3.5	2.93%
Cd 228.802†	6.0	0.00041	mg/L	0.000080	0.00041	mg/L	0.000080	19.48%
Co 228.616†	166.0	0.00704	mg/L	0.000203	0.00704	mg/L	0.000203	2.88%
Cr 267.716†	11849.2	0.103	mg/L	0.0012	0.103	mg/L	0.0012	1.22%
Cu 327.393†	4389.5	0.0221	mg/L	0.00085	0.0221	mg/L	0.00085	3.85%
Fe 239.562†	54954.3	19.3	mg/L	0.17	19.3	mg/L	0.17	0.89%
Mg 279.077†	32962.9	30.4	mg/L	0.25	30.4	mg/L	0.25	0.81%
Mn 257.610†	1005502.1	1.78	mg/L	0.012	1.78	mg/L	0.012	0.67%
Mo 202.031†	58.3	-0.00123	mg/L	0.000964	-0.00123	mg/L	0.000964	78.37%
Ni 231.604†	620.7	0.0149	mg/L	0.00051	0.0149	mg/L	0.00051	3.42%
Pb 220.353†	94.0	0.0133	mg/L	0.00103	0.0133	mg/L	0.00103	7.73%
Sb 206.836†	-6.3	-0.00133	mg/L	0.000993	-0.00133	mg/L	0.000993	74.43%
Se 196.026†	-5.9	-0.00210	mg/L	0.003753	-0.00210	mg/L	0.003753	178.37%
Si 251.611†	610448.5	18.2	mg/L	0.09	18.2	mg/L	0.09	0.52%
Sn 189.927†	-266.6	-0.0480	mg/L	0.00157	-0.0480	mg/L	0.00157	3.26%
Ti 334.940†	84098.3	0.121	mg/L	0.0032	0.121	mg/L	0.0032	2.69%
Tl 190.801†	-19.6	-0.0153	mg/L	0.00454	-0.0153	mg/L	0.00454	29.60%
V 290.880†	5181.5	0.0211	mg/L	0.00114	0.0211	mg/L	0.00114	5.40%
Zn 206.200†	2244.1	0.0806	mg/L	0.00083	0.0806	mg/L	0.00083	1.03%
K 766.490†	7075.2	4.23	mg/L	0.085	4.23	mg/L	0.085	2.00%
Na 589.592†	667416.4	63.6	mg/L	1.23	63.6	mg/L	1.23	1.94%
Sr 407.771†	291430.7	0.283	mg/L	0.0043	0.283	mg/L	0.0043	1.53%
Li 670.784†	1226.5	0.0148	mg/L	0.00093	0.0148	mg/L	0.00093	6.26%
P 214.914†	537.4	0.507	mg/L	0.0114	0.507	mg/L	0.0114	2.26%

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Sequence No.: 32 **Autosampler Location: 6**
Sample ID: CCV **Date Collected: 11/26/2013 1:21:14 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	179.0 kPa	0.45 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2921861.5						15179.89	0.52%
YRADIAL	199859.2						2899.47	1.45%
Ga 417.206	930628.4						9783.12	1.05%
GaRADIAL	43715.1						341.63	0.78%

Approved: November 27, 2013

Ag 328.068†	95159.2	0.388 mg/L	0.0031	0.388 mg/L	0.0031	0.79%
QC value within limits for Ag 328.068 Recovery = 97.10%						
Al 396.153†	29708.2	10.1 mg/L	0.03	10.1 mg/L	0.03	0.25%
QC value within limits for Al 396.153 Recovery = 101.19%						
As 188.979†	633.9	0.383 mg/L	0.0048	0.383 mg/L	0.0048	1.24%
QC value within limits for As 188.979 Recovery = 95.86%						
Ba 233.527†	74633.3	0.965 mg/L	0.0066	0.965 mg/L	0.0066	0.68%
QC value within limits for Ba 233.527 Recovery = 96.52%						
Be 234.861†	31818.5	0.0480 mg/L	0.00030	0.0480 mg/L	0.00030	0.63%
QC value within limits for Be 234.861 Recovery = 95.94%						
B 249.677†	35172.4	0.513 mg/L	0.0031	0.513 mg/L	0.0031	0.60%
QC value within limits for B 249.677 Recovery = 102.69%						
Ca 227.546†	1891.6	10.1 mg/L	0.08	10.1 mg/L	0.08	0.76%
QC value within limits for Ca 227.546 Recovery = 101.31%						
Cd 228.802†	1196.3	0.0467 mg/L	0.00072	0.0467 mg/L	0.00072	1.55%
QC value within limits for Cd 228.802 Recovery = 93.49%						
Co 228.616†	4068.0	0.194 mg/L	0.0019	0.194 mg/L	0.0019	0.99%
QC value within limits for Co 228.616 Recovery = 97.01%						
Cr 267.716†	54087.3	0.483 mg/L	0.0053	0.483 mg/L	0.0053	1.11%
QC value within limits for Cr 267.716 Recovery = 96.57%						
Cu 327.393†	100637.6	0.480 mg/L	0.0039	0.480 mg/L	0.0039	0.82%
QC value within limits for Cu 327.393 Recovery = 96.02%						
Fe 239.562†	11618.4	4.08 mg/L	0.099	4.08 mg/L	0.099	2.42%
QC value within limits for Fe 239.562 Recovery = 101.93%						
Mg 279.077†	11204.8	10.3 mg/L	0.22	10.3 mg/L	0.22	2.12%
QC value within limits for Mg 279.077 Recovery = 103.19%						
Mn 257.610†	283316.3	0.498 mg/L	0.0050	0.498 mg/L	0.0050	1.01%
QC value within limits for Mn 257.610 Recovery = 99.53%						
Mo 202.031†	15699.5	0.974 mg/L	0.0058	0.974 mg/L	0.0058	0.59%
QC value within limits for Mo 202.031 Recovery = 97.40%						
Ni 231.604†	17026.5	0.488 mg/L	0.0069	0.488 mg/L	0.0069	1.41%
QC value within limits for Ni 231.604 Recovery = 97.69%						
Pb 220.353†	2867.0	0.490 mg/L	0.0039	0.490 mg/L	0.0039	0.80%
QC value within limits for Pb 220.353 Recovery = 97.97%						
Sb 206.836†	2158.1	1.16 mg/L	0.019	1.16 mg/L	0.019	1.63%
QC value within limits for Sb 206.836 Recovery = 96.40%						
Se 196.026†	316.9	0.392 mg/L	0.0061	0.392 mg/L	0.0061	1.55%
QC value within limits for Se 196.026 Recovery = 98.03%						
Si 251.611†	163098.9	4.85 mg/L	0.042	4.85 mg/L	0.042	0.87%
QC value within limits for Si 251.611 Recovery = 96.95%						
Sn 189.927†	5724.2	0.978 mg/L	0.0088	0.978 mg/L	0.0088	0.90%
QC value within limits for Sn 189.927 Recovery = 97.77%						
Ti 334.940†	801102.9	0.995 mg/L	0.0076	0.995 mg/L	0.0076	0.76%
QC value within limits for Ti 334.940 Recovery = 99.51%						
Tl 190.801†	834.9	0.504 mg/L	0.0068	0.504 mg/L	0.0068	1.34%
QC value within limits for Tl 190.801 Recovery = 100.89%						
V 290.880†	175621.0	0.956 mg/L	0.0159	0.956 mg/L	0.0159	1.67%
QC value within limits for V 290.880 Recovery = 95.60%						
Zn 206.200†	25860.1	0.978 mg/L	0.0075	0.978 mg/L	0.0075	0.77%
QC value within limits for Zn 206.200 Recovery = 97.80%						
K 766.490†	81739.0	50.0 mg/L	0.22	50.0 mg/L	0.22	0.44%
QC value within limits for K 766.490 Recovery = 100.08%						
Na 589.592†	536164.8	50.6 mg/L	1.25	50.6 mg/L	1.25	2.47%
QC value within limits for Na 589.592 Recovery = 101.22%						
Sr 407.771†	1012678.8	1.01 mg/L	0.006	1.01 mg/L	0.006	0.63%
QC value within limits for Sr 407.771 Recovery = 100.94%						
Li 670.784†	68271.8	1.01 mg/L	0.006	1.01 mg/L	0.006	0.62%
QC value within limits for Li 670.784 Recovery = 101.33%						
P 214.914†	9488.4	9.86 mg/L	0.110	9.86 mg/L	0.110	1.12%
QC value within limits for P 214.914 Recovery = 98.62%						

All analyte(s) passed QC.

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Sequence No.: 33 **Autosampler Location: 1**
Sample ID: CCB **Date Collected: 11/26/2013 1:23:21 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCB

Analyte	Back Pressure	Flow

Approved: November 27, 2013

All 178.0 kPa 0.45 L/min

Mean Data: CCB

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2867775.5						48109.72	1.68%
YRADIAL	198831.7						2225.97	1.12%
Ga 417.206	902269.8						18843.23	2.09%
GaRADIAL	42335.1						772.01	1.82%
Ag 328.068†	-18.0	-0.00037	mg/L	0.000497	-0.00037	mg/L	0.000497	132.95%
QC value within limits for Ag 328.068 Recovery = Not calculated								
Al 396.153†	39.7	-0.00421	mg/L	0.005402	-0.00421	mg/L	0.005402	128.21%
QC value within limits for Al 396.153 Recovery = Not calculated								
As 188.979†	3.5	0.00189	mg/L	0.001401	0.00189	mg/L	0.001401	73.94%
QC value within limits for As 188.979 Recovery = Not calculated								
Ba 233.527†	37.0	-0.00350	mg/L	0.000282	-0.00350	mg/L	0.000282	8.06%
QC value within limits for Ba 233.527 Recovery = Not calculated								
Be 234.861†	78.5	-0.00003	mg/L	0.000054	-0.00003	mg/L	0.000054	156.39%
QC value within limits for Be 234.861 Recovery = Not calculated								
B 249.677†	1388.1	0.0193	mg/L	0.00215	0.0193	mg/L	0.00215	11.14%
QC value within limits for B 249.677 Recovery = Not calculated								
Ca 227.546†	5.5	0.0979	mg/L	0.03562	0.0979	mg/L	0.03562	36.39%
QC value within limits for Ca 227.546 Recovery = Not calculated								
Cd 228.802†	-7.9	-0.00015	mg/L	0.000097	-0.00015	mg/L	0.000097	66.40%
QC value within limits for Cd 228.802 Recovery = Not calculated								
Co 228.616†	-10.4	-0.00061	mg/L	0.000458	-0.00061	mg/L	0.000458	75.19%
QC value within limits for Co 228.616 Recovery = Not calculated								
Cr 267.716†	60.3	-0.00165	mg/L	0.000125	-0.00165	mg/L	0.000125	7.62%
QC value within limits for Cr 267.716 Recovery = Not calculated								
Cu 327.393†	40.4	0.00015	mg/L	0.000682	0.00015	mg/L	0.000682	454.08%
QC value within limits for Cu 327.393 Recovery = Not calculated								
Fe 239.562†	30.5	-0.00429	mg/L	0.002377	-0.00429	mg/L	0.002377	55.45%
QC value within limits for Fe 239.562 Recovery = Not calculated								
Mg 279.077†	59.8	0.0209	mg/L	0.00855	0.0209	mg/L	0.00855	40.83%
QC value within limits for Mg 279.077 Recovery = Not calculated								
Mn 257.610†	412.8	-0.00361	mg/L	0.000074	-0.00361	mg/L	0.000074	2.05%
QC value within limits for Mn 257.610 Recovery = Not calculated								
Mo 202.031†	6.6	-0.00514	mg/L	0.000102	-0.00514	mg/L	0.000102	1.99%
QC value within limits for Mo 202.031 Recovery = Not calculated								
Ni 231.604†	13.2	-0.00266	mg/L	0.000295	-0.00266	mg/L	0.000295	11.08%
QC value within limits for Ni 231.604 Recovery = Not calculated								
Pb 220.353†	19.3	0.00077	mg/L	0.000949	0.00077	mg/L	0.000949	123.42%
QC value within limits for Pb 220.353 Recovery = Not calculated								
Sb 206.836†	1.3	0.00293	mg/L	0.001596	0.00293	mg/L	0.001596	54.57%
QC value within limits for Sb 206.836 Recovery = Not calculated								
Se 196.026†	-6.1	-0.00574	mg/L	0.002841	-0.00574	mg/L	0.002841	49.50%
QC value within limits for Se 196.026 Recovery = Not calculated								
Si 251.611†	145.1	-0.00702	mg/L	0.001020	-0.00702	mg/L	0.001020	14.52%
QC value within limits for Si 251.611 Recovery = Not calculated								
Sn 189.927†	21.7	0.00138	mg/L	0.000922	0.00138	mg/L	0.000922	66.77%
QC value within limits for Sn 189.927 Recovery = Not calculated								
Ti 334.940†	348.8	-0.00135	mg/L	0.000011	-0.00135	mg/L	0.000011	0.83%
QC value within limits for Ti 334.940 Recovery = Not calculated								
Tl 190.801†	-5.1	-0.00660	mg/L	0.003630	-0.00660	mg/L	0.003630	55.02%
QC value within limits for Tl 190.801 Recovery = Not calculated								
V 290.880†	636.8	-0.00105	mg/L	0.001671	-0.00105	mg/L	0.001671	158.96%
QC value within limits for V 290.880 Recovery = Not calculated								
Zn 206.200†	26.3	-0.00406	mg/L	0.000075	-0.00406	mg/L	0.000075	1.86%
QC value within limits for Zn 206.200 Recovery = Not calculated								
K 766.490†	176.5	0.118	mg/L	0.0549	0.118	mg/L	0.0549	46.66%
QC value within limits for K 766.490 Recovery = Not calculated								
Na 589.592†	1706.9	0.148	mg/L	0.0570	0.148	mg/L	0.0570	38.44%
QC value within limits for Na 589.592 Recovery = Not calculated								
Sr 407.771†	1535.6	-0.00369	mg/L	0.000948	-0.00369	mg/L	0.000948	25.72%
QC value within limits for Sr 407.771 Recovery = Not calculated								
Li 670.784†	297.3	0.00099	mg/L	0.001191	0.00099	mg/L	0.001191	119.75%
QC value within limits for Li 670.784 Recovery = Not calculated								
P 214.914†	68.6	0.0168	mg/L	0.00511	0.0168	mg/L	0.00511	30.44%
QC value within limits for P 214.914 Recovery = Not calculated								

All analyte(s) passed QC.

Approved: November 27, 2013

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Sequence No.: 34
Sample ID: ~~L1311127901~~
Analyst: JYH
Initial Sample Wt: L1311086404
Dilution:

Autosampler Location: 50
Date Collected: 11/26/2013 1:26:23 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: ~~L1311127901~~

Analyte	Back Pressure	Flow
All	179.0 kPa	0.45 L/min

Mean Data: ~~L1311127901~~

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2850279.2						10734.18	0.38%
YRADIAL	201142.4						4379.35	2.18%
Ga 417.206	958118.6						4016.80	0.42%
GaRADIAL	44304.8						1475.97	3.33%
Ag 328.068†	528.1	0.00179	mg/L	0.000686	0.00179	mg/L	0.000686	38.30%
Al 396.153†	64.0	0.00396	mg/L	0.001492	0.00396	mg/L	0.001492	37.69%
As 188.979†	-14.0	-0.00610	mg/L	0.001237	-0.00610	mg/L	0.001237	20.27%
Ba 233.527†	5430.0	0.0665	mg/L	0.00158	0.0665	mg/L	0.00158	2.37%
Be 234.861†	139.3	0.00006	mg/L	0.000006	0.00006	mg/L	0.000006	10.46%
B 249.677†	56255.2	0.828	mg/L	0.0090	0.828	mg/L	0.0090	1.09%
Ca 227.546†	23943.8	122	mg/L	1.0	122	mg/L	1.0	0.80%
Cd 228.802†	-7.5	-0.00008	mg/L	0.000137	-0.00008	mg/L	0.000137	176.94%
Co 228.616†	-5.4	-0.00032	mg/L	0.000253	-0.00032	mg/L	0.000253	78.02%
Cr 267.716†	9623.8	0.0841	mg/L	0.00092	0.0841	mg/L	0.00092	1.09%
Cu 327.393†	-269.8	-0.00134	mg/L	0.000754	-0.00134	mg/L	0.000754	56.27%
Fe 239.562†	45.2	0.00029	mg/L	0.002167	0.00029	mg/L	0.002167	744.53%
Mg 279.077†	32170.7	29.6	mg/L	0.85	29.6	mg/L	0.85	2.88%
Mn 257.610†	1200.8	-0.00221	mg/L	0.000095	-0.00221	mg/L	0.000095	4.30%
Mo 202.031†	52.1	-0.00230	mg/L	0.000732	-0.00230	mg/L	0.000732	31.84%
Ni 231.604†	-6.0	-0.00321	mg/L	0.000244	-0.00321	mg/L	0.000244	7.60%
Pb 220.353†	36.4	0.00368	mg/L	0.001974	0.00368	mg/L	0.001974	53.58%
Sb 206.836†	-1.6	0.00063	mg/L	0.002295	0.00063	mg/L	0.002295	366.79%
Se 196.026†	2.7	0.00500	mg/L	0.003056	0.00500	mg/L	0.003056	61.11%
Si 251.611†	157356.1	4.69	mg/L	0.043	4.69	mg/L	0.043	0.93%
Sn 189.927†	-257.4	-0.0464	mg/L	0.00105	-0.0464	mg/L	0.00105	2.27%
Ti 334.940†	-16124.3	-0.00362	mg/L	0.000303	-0.00362	mg/L	0.000303	8.38%
Tl 190.801†	-30.1	-0.0216	mg/L	0.00431	-0.0216	mg/L	0.00431	19.96%
V 290.880†	1682.3	0.00390	mg/L	0.002228	0.00390	mg/L	0.002228	57.13%
Zn 206.200†	28.6	-0.00328	mg/L	0.000220	-0.00328	mg/L	0.000220	6.71%
K 766.490†	4058.8	2.40	mg/L	0.024	2.40	mg/L	0.024	0.99%
Na 589.592†	689214.5	65.8	mg/L	1.26	65.8	mg/L	1.26	1.91%
Sr 407.771†	293381.8	0.285	mg/L	0.0024	0.285	mg/L	0.0024	0.85%
Li 670.784†	341.2	0.00165	mg/L	0.000691	0.00165	mg/L	0.000691	41.91%
P 214.914†	88.7	0.0378	mg/L	0.01172	0.0378	mg/L	0.01172	31.01%

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Sequence No.: 35
Sample ID: ~~L1311131002~~
Analyst: JYH
Initial Sample Wt: L1311086405
Dilution:

Autosampler Location: 51
Date Collected: 11/26/2013 1:29:29 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: ~~L1311131002~~

Analyte	Back Pressure	Flow
All	179.0 kPa	0.45 L/min

Mean Data: ~~L1311131002~~

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2739225.3						15194.24	0.55%
YRADIAL	197551.1						3019.82	1.53%
Ga 417.206	893812.6						4536.27	0.51%
GaRADIAL	41974.3						714.69	1.70%
Ag 328.068†	-6967.5	-0.00002	mg/L	0.000957	-0.00002	mg/L	0.000957	>999.9%

Approved: November 27, 2013

Al 396.153†	6698.7	2.29	mg/L	0.016	2.29	mg/L	0.016	0.69%
As 188.979†	8.6	0.0289	mg/L	0.00545	0.0289	mg/L	0.00545	18.85%
Ba 233.527†	22833.6	0.289	mg/L	0.0038	0.289	mg/L	0.0038	1.30%
Be 234.861†	11133.5	0.00192	mg/L	0.000178	0.00192	mg/L	0.000178	9.26%
B 249.677†	846121.8	12.4	mg/L	0.16	12.4	mg/L	0.16	1.32%
Ca 227.546†	71712.8	366	mg/L	5.3	366	mg/L	5.3	1.46%
Cd 228.802†	493.8	0.0198	mg/L	0.00009	0.0198	mg/L	0.00009	0.47%
Co 228.616†	120.0	0.00413	mg/L	0.000040	0.00413	mg/L	0.000040	0.97%
Cr 267.716†	154908.7	1.38	mg/L	0.015	1.38	mg/L	0.015	1.10%
Cu 327.393†	868.3	0.00784	mg/L	0.000370	0.00784	mg/L	0.000370	4.72%
Fe 239.562†	186531.5	65.7	mg/L	0.38	65.7	mg/L	0.38	0.58%
Mg 279.077†	178509.3	165	mg/L	0.8	165	mg/L	0.8	0.47%
Mn 257.610†	6959444.1	12.3	mg/L	0.18	12.3	mg/L	0.18	1.48%
Mo 202.031†	27.6	-0.00022	mg/L	0.000471	-0.00022	mg/L	0.000471	212.11%
Ni 231.604†	2056.7	0.0564	mg/L	0.00126	0.0564	mg/L	0.00126	2.24%
Pb 220.353†	108.3	0.00672	mg/L	0.001813	0.00672	mg/L	0.001813	27.00%
Sb 206.836†	7.5	-0.00306	mg/L	0.004145	-0.00306	mg/L	0.004145	135.56%
Se 196.026†	-24.5	-0.0189	mg/L	0.00597	-0.0189	mg/L	0.00597	31.57%
Si 251.611†	390446.0	11.6	mg/L	0.26	11.6	mg/L	0.26	2.22%
Sn 189.927†	-337.2	-0.0601	mg/L	0.00231	-0.0601	mg/L	0.00231	3.85%
Ti 334.940†	-14949.0	0.0338	mg/L	0.00189	0.0338	mg/L	0.00189	5.59%
Tl 190.801†	-0.3	-0.0161	mg/L	0.00546	-0.0161	mg/L	0.00546	33.86%
V 290.880†	4263.4	0.00794	mg/L	0.001321	0.00794	mg/L	0.001321	16.64%
Zn 206.200†	2067.2	0.0842	mg/L	0.00089	0.0842	mg/L	0.00089	1.06%
K 766.490†	53389.2	32.5	mg/L	0.18	32.5	mg/L	0.18	0.54%
Na 589.592†	591938.9	56.1	mg/L	1.86	56.1	mg/L	1.86	3.31%
Sr 407.771†	2258077.8	2.25	mg/L	0.036	2.25	mg/L	0.036	1.58%
Li 670.784†	63451.9	0.942	mg/L	0.0047	0.942	mg/L	0.0047	0.50%
P 214.914†	4083.4	4.21	mg/L	0.090	4.21	mg/L	0.090	2.14%

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Sequence No.: 36
Sample ID: L~~1311141501~~
Analyst: JYH
Initial Sample Wt: L1311086406
Dilution:

Autosampler Location: 52
Date Collected: 11/26/2013 1:31:37 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: ~~L1311141501~~

Analyte	Back Pressure	Flow
All	178.0 kPa	0.45 L/min

Mean Data: ~~L1311141501~~

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2637320.2						22325.75	0.85%
YRADIAL	193318.3						1272.03	0.66%
Ga 417.206	913276.3						6917.52	0.76%
GaRADIAL	42977.3						488.46	1.14%
Ag 328.068†	1108.7	0.00597	mg/L	0.000458	0.00597	mg/L	0.000458	7.68%
Al 396.153†	79.4	0.0102	mg/L	0.00215	0.0102	mg/L	0.00215	20.97%
As 188.979†	-12.0	0.00249	mg/L	0.000880	0.00249	mg/L	0.000880	35.26%
Ba 233.527†	1480.6	0.0148	mg/L	0.00007	0.0148	mg/L	0.00007	0.47%
Be 234.861†	1091.6	0.00073	mg/L	0.000088	0.00073	mg/L	0.000088	12.10%
B 249.677†	879084.5	13.0	mg/L	0.08	13.0	mg/L	0.08	0.61%
Ca 227.546†	72216.0	367	mg/L	6.4	367	mg/L	6.4	1.75%
Cd 228.802†	33.3	0.00155	mg/L	0.000081	0.00155	mg/L	0.000081	5.25%
Co 228.616†	60.8	0.00270	mg/L	0.000672	0.00270	mg/L	0.000672	24.89%
Cr 267.716†	895.1	0.00515	mg/L	0.000770	0.00515	mg/L	0.000770	14.94%
Cu 327.393†	-444.2	-0.00187	mg/L	0.000520	-0.00187	mg/L	0.000520	27.85%
Fe 239.562†	24355.3	8.56	mg/L	0.096	8.56	mg/L	0.096	1.12%
Mg 279.077†	196326.0	181	mg/L	0.4	181	mg/L	0.4	0.22%
Mn 257.610†	7518317.0	13.3	mg/L	0.07	13.3	mg/L	0.07	0.51%
Mo 202.031†	56.0	0.00086	mg/L	0.000040	0.00086	mg/L	0.000040	4.66%
Ni 231.604†	1677.4	0.0454	mg/L	0.00091	0.0454	mg/L	0.00091	2.00%
Pb 220.353†	35.5	-0.00472	mg/L	0.002357	-0.00472	mg/L	0.002357	49.93%
Sb 206.836†	-6.8	-0.00115	mg/L	0.001464	-0.00115	mg/L	0.001464	127.56%
Se 196.026†	-4.2	-0.00573	mg/L	0.007644	-0.00573	mg/L	0.007644	133.37%
Si 251.611†	227357.8	6.78	mg/L	0.076	6.78	mg/L	0.076	1.13%
Sn 189.927†	-333.8	-0.0595	mg/L	0.00205	-0.0595	mg/L	0.00205	3.45%
Ti 334.940†	-47016.7	-0.00521	mg/L	0.001452	-0.00521	mg/L	0.001452	27.85%

Approved: November 27, 2013

Tl 190.801†	-4.7	-0.0203 mg/L	0.00197	-0.0203 mg/L	0.00197	9.67%
V 290.880†	2407.0	0.00308 mg/L	0.002958	0.00308 mg/L	0.002958	96.17%
Zn 206.200†	483.7	0.0133 mg/L	0.00004	0.0133 mg/L	0.00004	0.31%
K 766.490†	55225.0	33.6 mg/L	0.28	33.6 mg/L	0.28	0.83%
Na 589.592†	606313.0	57.5 mg/L	1.11	57.5 mg/L	1.11	1.93%
Sr 407.771†	2434865.4	2.42 mg/L	0.010	2.42 mg/L	0.010	0.42%
Li 670.784†	66293.1	0.984 mg/L	0.0076	0.984 mg/L	0.0076	0.77%
P 214.914†	154.8	0.107 mg/L	0.0066	0.107 mg/L	0.0066	6.19%

Sequence No.: 37 **Autosampler Location: 6**
Sample ID: CCV **Date Collected: 11/26/2013 1:33:45 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	179.0 kPa	0.45 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2777934.3						75718.78	2.73%
YRADIAL	196621.5						2473.69	1.26%
Ga 417.206	892272.2						22557.93	2.53%
GaRADIAL	44205.9						630.42	1.43%
Ag 328.068†	97648.6	0.399	mg/L	0.0125	0.399	mg/L	0.0125	3.14%
QC value within limits for Ag 328.068 Recovery = 99.64%								
Al 396.153†	29259.3	9.96	mg/L	0.038	9.96	mg/L	0.038	0.38%
QC value within limits for Al 396.153 Recovery = 99.63%								
As 188.979†	640.5	0.387	mg/L	0.0097	0.387	mg/L	0.0097	2.51%
QC value within limits for As 188.979 Recovery = 96.84%								
Ba 233.527†	76812.4	0.994	mg/L	0.0344	0.994	mg/L	0.0344	3.46%
QC value within limits for Ba 233.527 Recovery = 99.35%								
Be 234.861†	32475.7	0.0490	mg/L	0.00158	0.0490	mg/L	0.00158	3.22%
QC value within limits for Be 234.861 Recovery = 97.96%								
B 249.677†	48731.3	0.713	mg/L	0.0553	0.713	mg/L	0.0553	7.75%
QC value greater than the upper limit for B 249.677 Recovery = 142.65%								
Ca 227.546†	1993.4	10.7	mg/L	0.13	10.7	mg/L	0.13	1.24%
QC value within limits for Ca 227.546 Recovery = 106.58%								
Cd 228.802†	1217.4	0.0476	mg/L	0.00135	0.0476	mg/L	0.00135	2.85%
QC value within limits for Cd 228.802 Recovery = 95.17%								
Co 228.616†	4180.7	0.199	mg/L	0.0047	0.199	mg/L	0.0047	2.34%
QC value within limits for Co 228.616 Recovery = 99.73%								
Cr 267.716†	55802.2	0.498	mg/L	0.0170	0.498	mg/L	0.0170	3.41%
QC value within limits for Cr 267.716 Recovery = 99.64%								
Cu 327.393†	103491.5	0.494	mg/L	0.0176	0.494	mg/L	0.0176	3.56%
QC value within limits for Cu 327.393 Recovery = 98.74%								
Fe 239.562†	11746.8	4.12	mg/L	0.059	4.12	mg/L	0.059	1.43%
QC value within limits for Fe 239.562 Recovery = 103.07%								
Mg 279.077†	11770.3	10.8	mg/L	0.21	10.8	mg/L	0.21	1.91%
QC value within limits for Mg 279.077 Recovery = 108.41%								
Mn 257.610†	301485.5	0.530	mg/L	0.0136	0.530	mg/L	0.0136	2.56%
QC value within limits for Mn 257.610 Recovery = 105.96%								
Mo 202.031†	16191.5	1.00	mg/L	0.035	1.00	mg/L	0.035	3.49%
QC value within limits for Mo 202.031 Recovery = 100.47%								
Ni 231.604†	17485.8	0.502	mg/L	0.0151	0.502	mg/L	0.0151	3.02%
QC value within limits for Ni 231.604 Recovery = 100.34%								
Pb 220.353†	2935.0	0.501	mg/L	0.0099	0.501	mg/L	0.0099	1.97%
QC value within limits for Pb 220.353 Recovery = 100.29%								
Sb 206.836†	2191.3	1.17	mg/L	0.024	1.17	mg/L	0.024	2.08%
QC value within limits for Sb 206.836 Recovery = 97.88%								
Se 196.026†	324.6	0.402	mg/L	0.0119	0.402	mg/L	0.0119	2.97%
QC value within limits for Se 196.026 Recovery = 100.42%								
Si 251.611†	166829.1	4.96	mg/L	0.175	4.96	mg/L	0.175	3.53%
QC value within limits for Si 251.611 Recovery = 99.17%								
Sn 189.927†	5866.3	1.00	mg/L	0.025	1.00	mg/L	0.025	2.45%
QC value within limits for Sn 189.927 Recovery = 100.20%								
Ti 334.940†	803729.3	0.998	mg/L	0.0086	0.998	mg/L	0.0086	0.86%

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   QC value within limits for Ti 334.940  Recovery = 99.84%
Tl 190.801†            852.5       0.515 mg/L        0.0142       0.515 mg/L        0.0142   2.77%
   QC value within limits for Tl 190.801  Recovery = 103.00%
V 290.880†           181843.9       0.990 mg/L        0.0390       0.990 mg/L        0.0390   3.94%
   QC value within limits for V 290.880  Recovery = 99.00%
Zn 206.200†           26578.2        1.01 mg/L         0.033        1.01 mg/L         0.033   3.31%
   QC value within limits for Zn 206.200  Recovery = 100.53%
K 766.490†            80841.3        49.5 mg/L          0.17        49.5 mg/L          0.17   0.35%
   QC value within limits for K 766.490  Recovery = 98.97%
Na 589.592†          522111.6        49.2 mg/L          0.92        49.2 mg/L          0.92   1.86%
   QC value within limits for Na 589.592  Recovery = 98.47%
Sr 407.771†         1009562.5        1.01 mg/L         0.003        1.01 mg/L         0.003   0.34%
   QC value within limits for Sr 407.771  Recovery = 100.63%
Li 670.784†           67704.2        1.00 mg/L         0.001        1.00 mg/L         0.001   0.07%
   QC value within limits for Li 670.784  Recovery = 100.49%
P 214.914†             9686.2        10.1 mg/L          0.23        10.1 mg/L          0.23   2.25%
   QC value within limits for P 214.914  Recovery = 100.69%
QC Failed.  Continue with analysis.

==========================================================================================
Sequence No.: 38                                    Autosampler Location: 1
Sample ID: CCB                                      Date Collected: 11/26/2013 1:35:52 PM
Analyst:                                            Data Type: Original
Initial Sample Wt:                                  Initial Sample Vol:
Dilution:                                           Sample Prep Vol:

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Nebulizer Parameters: CCB
Analyte                 Back Pressure    Flow
All                    179.0 kPa         0.45 L/min

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Mean Data: CCB
                  Mean Corrected         Calib.                          Sample
Analyte              Intensity     Conc. Units      Std.Dev.      Conc. Units      Std.Dev.   RSD
Y 371.029           2826885.2                                                    44785.90   1.58%
YRADIAL              192987.2                                                     4291.89   2.22%
Ga 417.206           886800.6                                                    16552.19   1.87%
GaRADIAL              41211.6                                                      757.21   1.84%
Ag 328.068†             -35.2    -0.00044 mg/L      0.000446    -0.00044 mg/L      0.000446 100.67%
   QC value within limits for Ag 328.068  Recovery = Not calculated
Al 396.153†              36.6    -0.00531 mg/L      0.004672    -0.00531 mg/L      0.004672  88.03%
   QC value within limits for Al 396.153  Recovery = Not calculated
As 188.979†              -4.3    -0.00284 mg/L      0.001253    -0.00284 mg/L      0.001253  44.14%
   QC value within limits for As 188.979  Recovery = Not calculated
Ba 233.527†              37.6    -0.00349 mg/L      0.000151    -0.00349 mg/L      0.000151   4.33%
   QC value within limits for Ba 233.527  Recovery = Not calculated
Be 234.861†              63.8    -0.00006 mg/L      0.000019    -0.00006 mg/L      0.000019  31.80%
   QC value within limits for Be 234.861  Recovery = Not calculated
B 249.677†             4019.1     0.0581 mg/L       0.00990     0.0581 mg/L       0.00990  17.04%
   QC value within limits for B 249.677  Recovery = Not calculated
Ca 227.546†              13.8      0.140 mg/L        0.0145      0.140 mg/L        0.0145  10.36%
   QC value within limits for Ca 227.546  Recovery = Not calculated
Cd 228.802†              -1.7     0.00013 mg/L      0.000135     0.00013 mg/L      0.000135 107.67%
   QC value within limits for Cd 228.802  Recovery = Not calculated
Co 228.616†             -10.7    -0.00062 mg/L      0.000128    -0.00062 mg/L      0.000128  20.52%
   QC value within limits for Co 228.616  Recovery = Not calculated
Cr 267.716†              85.1    -0.00143 mg/L      0.000291    -0.00143 mg/L      0.000291  20.45%
   QC value within limits for Cr 267.716  Recovery = Not calculated
Cu 327.393†              49.6     0.00019 mg/L      0.000280     0.00019 mg/L      0.000280 144.95%
   QC value within limits for Cu 327.393  Recovery = Not calculated
Fe 239.562†              49.0     0.00220 mg/L      0.010219     0.00220 mg/L      0.010219 463.94%
   QC value within limits for Fe 239.562  Recovery = Not calculated
Mg 279.077†             122.5     0.0788 mg/L       0.05481      0.0788 mg/L       0.05481  69.52%
   QC value within limits for Mg 279.077  Recovery = Not calculated
Mn 257.610†            2108.4    -0.00061 mg/L      0.001412    -0.00061 mg/L      0.001412 231.19%
   QC value within limits for Mn 257.610  Recovery = Not calculated
Mo 202.031†              12.2    -0.00479 mg/L      0.000422    -0.00479 mg/L      0.000422   8.82%
   QC value within limits for Mo 202.031  Recovery = Not calculated
Ni 231.604†               2.5    -0.00297 mg/L      0.000303    -0.00297 mg/L      0.000303  10.18%
   QC value within limits for Ni 231.604  Recovery = Not calculated
Pb 220.353†              23.9     0.00156 mg/L      0.000726     0.00156 mg/L      0.000726  46.69%
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   QC value within limits for Pb 220.353  Recovery = Not calculated
Sb 206.836†                3.3     0.00397 mg/L      0.002186     0.00397 mg/L      0.002186  54.99%
   QC value within limits for Sb 206.836  Recovery = Not calculated
Se 196.026†               -1.8    -0.00054 mg/L      0.001819    -0.00054 mg/L      0.001819 339.00%
   QC value within limits for Se 196.026  Recovery = Not calculated
Si 251.611†              188.1    -0.00574 mg/L      0.003131    -0.00574 mg/L      0.003131  54.54%
   QC value within limits for Si 251.611  Recovery = Not calculated
Sn 189.927†               22.0     0.00144 mg/L      0.001125     0.00144 mg/L      0.001125  78.03%
   QC value within limits for Sn 189.927  Recovery = Not calculated
Ti 334.940†              299.5    -0.00141 mg/L      0.000017    -0.00141 mg/L      0.000017   1.21%
   QC value within limits for Ti 334.940  Recovery = Not calculated
Tl 190.801†               -2.9    -0.00527 mg/L      0.001168    -0.00527 mg/L      0.001168  22.15%
   QC value within limits for Tl 190.801  Recovery = Not calculated
V 290.880†               459.7    -0.00202 mg/L      0.000212    -0.00202 mg/L      0.000212  10.49%
   QC value within limits for V 290.880  Recovery = Not calculated
Zn 206.200†               23.8    -0.00415 mg/L      0.000222    -0.00415 mg/L      0.000222   5.34%
   QC value within limits for Zn 206.200  Recovery = Not calculated
K 766.490†               200.3       0.132 mg/L        0.0411       0.132 mg/L        0.0411  31.16%
   QC value within limits for K 766.490  Recovery = Not calculated
Na 589.592†             1590.8       0.138 mg/L        0.0623       0.138 mg/L        0.0623  45.20%
   QC value within limits for Na 589.592  Recovery = Not calculated
Sr 407.771†             2134.2    -0.00309 mg/L      0.001164    -0.00309 mg/L      0.001164  37.71%
   QC value within limits for Sr 407.771  Recovery = Not calculated
Li 670.784†              280.6     0.00075 mg/L      0.001723     0.00075 mg/L      0.001723 230.83%
   QC value within limits for Li 670.784  Recovery = Not calculated
P 214.914†                64.3      0.0123 mg/L       0.01336      0.0123 mg/L       0.01336 108.56%
   QC value within limits for P 214.914  Recovery = Not calculated
All analyte(s) passed QC.
```

Approved: November 27, 2013

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Analysis Begun

Start Time: 11/26/2013 2:04:34 PM **Plasma On Time: 11/26/2013 7:51:24 AM**
Logged In Analyst: peicp2 **Technique: ICP Continuous**
Spectrometer Model: Optima 4300 DV, S/N 077N4011401 **Autosampler Model: Cetac**

Sample Information File: C:\pe\peicp2\Sample Information\Batch 2.sif
Batch ID:
Results Data Set: 112613H2R
Results Library: C:\pe\peicp2\Results\results1.mdb

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Sequence No.: 1 **Autosampler Location: 53**
Sample ID: L1311086407 **Date Collected: 11/26/2013 2:04:36 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1311086407

Analyte	Back Pressure	Flow
All	179.0 kPa	0.45 L/min

Mean Data: L1311086407

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2703558.1						75259.06	2.78%
YRADIAL	199019.0						2052.28	1.03%
Ga 417.206	895153.5						28270.92	3.16%
GaRADIAL	42492.9						1241.29	2.92%
Ag 328.068†	353.9	0.00103	mg/L	0.000342	0.00103	mg/L	0.000342	33.26%
Al 396.153†	377.2	0.112	mg/L	0.0039	0.112	mg/L	0.0039	3.45%
As 188.979†	-15.6	-0.00812	mg/L	0.003124	-0.00812	mg/L	0.003124	38.45%
Ba 233.527†	16322.3	0.208	mg/L	0.0084	0.208	mg/L	0.0084	4.03%
Be 234.861†	78.1	0.00005	mg/L	0.000067	0.00005	mg/L	0.000067	133.44%
B 249.677†	8650.2	0.126	mg/L	0.0062	0.126	mg/L	0.0062	4.88%
Ca 227.546†	14469.9	73.6	mg/L	2.99	73.6	mg/L	2.99	4.07%
Cd 228.802†	2.1	0.00032	mg/L	0.000191	0.00032	mg/L	0.000191	59.93%
Co 228.616†	52.0	0.00232	mg/L	0.000283	0.00232	mg/L	0.000283	12.18%
Cr 267.716†	224.1	-0.00020	mg/L	0.000101	-0.00020	mg/L	0.000101	50.98%
Cu 327.393†	-14.9	-0.00010	mg/L	0.000918	-0.00010	mg/L	0.000918	899.51%
Fe 239.562†	904.9	0.303	mg/L	0.0029	0.303	mg/L	0.0029	0.94%
Mg 279.077†	23549.6	21.7	mg/L	0.13	21.7	mg/L	0.13	0.59%
Mn 257.610†	907405.1	1.60	mg/L	0.011	1.60	mg/L	0.011	0.71%
Mo 202.031†	57.6	-0.00162	mg/L	0.000659	-0.00162	mg/L	0.000659	40.73%
Ni 231.604†	61.0	-0.00128	mg/L	0.000421	-0.00128	mg/L	0.000421	32.87%
Pb 220.353†	37.6	0.00294	mg/L	0.002374	0.00294	mg/L	0.002374	80.88%
Sb 206.836†	-2.4	0.00089	mg/L	0.001354	0.00089	mg/L	0.001354	151.88%
Se 196.026†	-1.7	-0.00081	mg/L	0.005954	-0.00081	mg/L	0.005954	736.93%
Si 251.611†	213233.2	6.36	mg/L	0.054	6.36	mg/L	0.054	0.85%
Sn 189.927†	-232.3	-0.0421	mg/L	0.00116	-0.0421	mg/L	0.00116	2.76%
Ti 334.940†	-5373.3	0.00255	mg/L	0.002856	0.00255	mg/L	0.002856	111.89%
Tl 190.801†	-16.7	-0.0151	mg/L	0.00428	-0.0151	mg/L	0.00428	28.27%
V 290.880†	1188.2	0.00137	mg/L	0.001721	0.00137	mg/L	0.001721	125.97%
Zn 206.200†	91.2	-0.00160	mg/L	0.000198	-0.00160	mg/L	0.000198	12.39%
K 766.490†	3524.0	1.95	mg/L	0.026	1.95	mg/L	0.026	1.34%
Na 589.592†	1864439.5	197	mg/L	1.7	197	mg/L	1.7	0.89%
Sr 407.771†	229119.4	0.222	mg/L	0.0065	0.222	mg/L	0.0065	2.91%
Li 670.784†	297.3	0.00099	mg/L	0.001615	0.00099	mg/L	0.001615	162.34%
P 214.914†	48.6	-0.00410	mg/L	0.027236	-0.00410	mg/L	0.027236	664.77%

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Sequence No.: 2 **Autosampler Location: 54**
Sample ID: L1311086408 **Date Collected: 11/26/2013 2:07:44 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Approved: November 27, 2013

Nebulizer Parameters: L1311086408

Analyte	Back Pressure	Flow
All	178.0 kPa	0.45 L/min

Mean Data: L1311086408

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2728881.7						9108.43	0.33%
YRADIAL	200208.1						3998.95	2.00%
Ga 417.206	904730.3						2582.76	0.29%
GaRADIAL	44126.2						411.33	0.93%
Ag 328.068†	339.4	0.00084	mg/L	0.000371	0.00084	mg/L	0.000371	43.98%
Al 396.153†	10.1	-0.0146	mg/L	0.00131	-0.0146	mg/L	0.00131	8.96%
As 188.979†	-10.6	-0.00510	mg/L	0.002693	-0.00510	mg/L	0.002693	52.82%
Ba 233.527†	15545.4	0.198	mg/L	0.0040	0.198	mg/L	0.0040	2.03%
Be 234.861†	28.2	0.00004	mg/L	0.000016	0.00004	mg/L	0.000016	37.45%
B 249.677†	8553.6	0.125	mg/L	0.0024	0.125	mg/L	0.0024	1.95%
Ca 227.546†	14642.2	74.4	mg/L	0.39	74.4	mg/L	0.39	0.53%
Cd 228.802†	-6.1	-0.00002	mg/L	0.000152	-0.00002	mg/L	0.000152	639.71%
Co 228.616†	35.2	0.00154	mg/L	0.000204	0.00154	mg/L	0.000204	13.21%
Cr 267.716†	174.0	-0.00063	mg/L	0.000199	-0.00063	mg/L	0.000199	31.85%
Cu 327.393†	-361.6	-0.00177	mg/L	0.000449	-0.00177	mg/L	0.000449	25.35%
Fe 239.562†	44.4	0.00017	mg/L	0.001720	0.00017	mg/L	0.001720	>999.9%
Mg 279.077†	23338.7	21.5	mg/L	0.06	21.5	mg/L	0.06	0.26%
Mn 257.610†	865113.6	1.53	mg/L	0.018	1.53	mg/L	0.018	1.20%
Mo 202.031†	60.0	-0.00149	mg/L	0.000305	-0.00149	mg/L	0.000305	20.52%
Ni 231.604†	36.8	-0.00198	mg/L	0.000122	-0.00198	mg/L	0.000122	6.15%
Pb 220.353†	26.5	0.00108	mg/L	0.000852	0.00108	mg/L	0.000852	79.21%
Sb 206.836†	-0.0	0.00219	mg/L	0.002546	0.00219	mg/L	0.002546	116.20%
Se 196.026†	-2.9	-0.00234	mg/L	0.009349	-0.00234	mg/L	0.009349	400.11%
Si 251.611†	209467.1	6.24	mg/L	0.110	6.24	mg/L	0.110	1.76%
Sn 189.927†	-239.8	-0.0434	mg/L	0.00055	-0.0434	mg/L	0.00055	1.27%
Ti 334.940†	-9790.1	-0.00280	mg/L	0.000351	-0.00280	mg/L	0.000351	12.51%
Tl 190.801†	-17.2	-0.0154	mg/L	0.00295	-0.0154	mg/L	0.00295	19.16%
V 290.880†	1626.4	0.00380	mg/L	0.000596	0.00380	mg/L	0.000596	15.68%
Zn 206.200†	51.0	-0.00312	mg/L	0.000136	-0.00312	mg/L	0.000136	4.36%
K 766.490†	3423.8	1.89	mg/L	0.025	1.89	mg/L	0.025	1.30%
Na 589.592†	1805337.0	189	mg/L	5.2	189	mg/L	5.2	2.73%
Sr 407.771†	220802.9	0.214	mg/L	0.0069	0.214	mg/L	0.0069	3.25%
Li 670.784†	356.0	0.00187	mg/L	0.001066	0.00187	mg/L	0.001066	57.07%
P 214.914†	62.3	0.0102	mg/L	0.00262	0.0102	mg/L	0.00262	25.61%

Sequence No.: 3 **Autosampler Location: 55**
Sample ID: L1311086410 WG454211-02 **Date Collected: 11/26/2013 2:10:51 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1311086410 WG454211-02

Analyte	Back Pressure	Flow
All	178.0 kPa	0.45 L/min

Mean Data: L1311086410 WG454211-02

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2566634.7						27757.29	1.08%
YRADIAL	186375.1						4194.61	2.25%
Ga 417.206	884628.6						18851.36	2.13%
GaRADIAL	42636.1						248.18	0.58%
Ag 328.068†	1777.1	0.00669	mg/L	0.000454	0.00669	mg/L	0.000454	6.79%
Al 396.153†	26.4	-0.00901	mg/L	0.003391	-0.00901	mg/L	0.003391	37.65%
As 188.979†	-12.9	0.00066	mg/L	0.004339	0.00066	mg/L	0.004339	656.97%
Ba 233.527†	686.9	0.00493	mg/L	0.000079	0.00493	mg/L	0.000079	1.61%
Be 234.861†	90.6	0.00001	mg/L	0.000040	0.00001	mg/L	0.000040	300.02%
B 249.677†	136157.8	2.01	mg/L	0.029	2.01	mg/L	0.029	1.42%
Ca 227.546†	78899.8	401	mg/L	5.3	401	mg/L	5.3	1.31%
Cd 228.802†	7.7	0.00053	mg/L	0.000437	0.00053	mg/L	0.000437	82.96%
Co 228.616†	-4.1	-0.00016	mg/L	0.000255	-0.00016	mg/L	0.000255	157.91%

Approved: November 27, 2013

Cr 267.716†	377.9	0.00121	mg/L	0.000162	0.00121	mg/L	0.000162	13.39%
Cu 327.393†	-676.0	-0.00343	mg/L	0.000587	-0.00343	mg/L	0.000587	17.10%
Fe 239.562†	35.8	-0.00641	mg/L	0.005198	-0.00641	mg/L	0.005198	81.05%
Mg 279.077†	216856.3	200	mg/L	2.3	200	mg/L	2.3	1.13%
Mn 257.610†	160257.5	0.279	mg/L	0.0011	0.279	mg/L	0.0011	0.39%
Mo 202.031†	58.5	-0.00184	mg/L	0.000429	-0.00184	mg/L	0.000429	23.37%
Ni 231.604†	760.9	0.0189	mg/L	0.00067	0.0189	mg/L	0.00067	3.53%
Pb 220.353†	22.1	0.00109	mg/L	0.003085	0.00109	mg/L	0.003085	283.57%
Sb 206.836†	-2.9	0.00066	mg/L	0.000292	0.00066	mg/L	0.000292	44.19%
Se 196.026†	-1.9	-0.00076	mg/L	0.001135	-0.00076	mg/L	0.001135	149.71%
Si 251.611†	350212.4	10.4	mg/L	0.13	10.4	mg/L	0.13	1.21%
Sn 189.927†	-348.7	-0.0620	mg/L	0.00322	-0.0620	mg/L	0.00322	5.19%
Ti 334.940†	-52847.2	-0.00736	mg/L	0.000321	-0.00736	mg/L	0.000321	4.36%
Tl 190.801†	-36.9	-0.0264	mg/L	0.00647	-0.0264	mg/L	0.00647	24.50%
V 290.880†	3296.9	0.00831	mg/L	0.003126	0.00831	mg/L	0.003126	37.60%
Zn 206.200†	244.9	0.00424	mg/L	0.000387	0.00424	mg/L	0.000387	9.13%
K 766.490†	4790.8	2.71	mg/L	0.046	2.71	mg/L	0.046	1.71%
Na 589.592†	1912585.4	203	mg/L	1.4	203	mg/L	1.4	0.70%
Sr 407.771†	973068.8	0.957	mg/L	0.0025	0.957	mg/L	0.0025	0.26%
Li 670.784†	47939.2	0.711	mg/L	0.0042	0.711	mg/L	0.0042	0.59%
P 214.914†	136.5	0.0878	mg/L	0.01043	0.0878	mg/L	0.01043	11.88%

Sequence No.: 4
Sample ID: L1311086412S WG454211-07
Analyst: JYH
Initial Sample Wt:
Dilution:

Autosampler Location: 56
Date Collected: 11/26/2013 2:13:58 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1311086412S WG454211-07

Analyte	Back Pressure	Flow
All	179.0 kPa	0.45 L/min

Mean Data: L1311086412S WG454211-07

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	2610352.0						56270.53	2.16%
YRADIAL	190078.6						4952.44	2.61%
Ga 417.206	888820.6						28489.10	3.21%
GaRADIAL	43807.8						785.70	1.79%
Ag 328.068†	47253.7	0.192	mg/L	0.0042	0.192	mg/L	0.0042	2.20%
Al 396.153†	13923.0	4.73	mg/L	0.123	4.73	mg/L	0.123	2.59%
As 188.979†	292.9	0.186	mg/L	0.0084	0.186	mg/L	0.0084	4.54%
Ba 233.527†	36056.4	0.464	mg/L	0.0046	0.464	mg/L	0.0046	1.00%
Be 234.861†	14829.2	0.0223	mg/L	0.00046	0.0223	mg/L	0.00046	2.07%
B 249.677†	196580.1	2.89	mg/L	0.018	2.89	mg/L	0.018	0.63%
Ca 227.546†	80079.1	407	mg/L	8.3	407	mg/L	8.3	2.03%
Cd 228.802†	553.8	0.0217	mg/L	0.00102	0.0217	mg/L	0.00102	4.69%
Co 228.616†	1855.6	0.0886	mg/L	0.00189	0.0886	mg/L	0.00189	2.14%
Cr 267.716†	25916.0	0.230	mg/L	0.0031	0.230	mg/L	0.0031	1.34%
Cu 327.393†	47011.7	0.224	mg/L	0.0048	0.224	mg/L	0.0048	2.13%
Fe 239.562†	5275.3	1.84	mg/L	0.063	1.84	mg/L	0.063	3.43%
Mg 279.077†	221826.7	205	mg/L	0.8	205	mg/L	0.8	0.41%
Mn 257.610†	288883.8	0.507	mg/L	0.0044	0.507	mg/L	0.0044	0.87%
Mo 202.031†	7914.0	0.488	mg/L	0.0114	0.488	mg/L	0.0114	2.34%
Ni 231.604†	8617.3	0.246	mg/L	0.0061	0.246	mg/L	0.0061	2.48%
Pb 220.353†	1322.9	0.225	mg/L	0.0044	0.225	mg/L	0.0044	1.95%
Sb 206.836†	1012.9	0.544	mg/L	0.0186	0.544	mg/L	0.0186	3.43%
Se 196.026†	154.3	0.192	mg/L	0.0152	0.192	mg/L	0.0152	7.93%
Si 251.611†	419088.7	12.5	mg/L	0.12	12.5	mg/L	0.12	0.97%
Sn 189.927†	2588.7	0.441	mg/L	0.0094	0.441	mg/L	0.0094	2.13%
Ti 334.940†	346706.4	0.490	mg/L	0.0061	0.490	mg/L	0.0061	1.24%
Tl 190.801†	332.6	0.199	mg/L	0.0072	0.199	mg/L	0.0072	3.59%
V 290.880†	89362.1	0.479	mg/L	0.0054	0.479	mg/L	0.0054	1.12%
Zn 206.200†	11945.5	0.449	mg/L	0.0093	0.449	mg/L	0.0093	2.08%
K 766.490†	43773.4	26.4	mg/L	0.38	26.4	mg/L	0.38	1.45%
Na 589.592†	2133969.8	232	mg/L	3.2	232	mg/L	3.2	1.40%
Sr 407.771†	1447268.2	1.43	mg/L	0.020	1.43	mg/L	0.020	1.37%
Li 670.784†	79976.8	1.19	mg/L	0.018	1.19	mg/L	0.018	1.56%
P 214.914†	-35.1	-0.0916	mg/L	0.02622	-0.0916	mg/L	0.02622	28.63%

Approved: November 27, 2013

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Sequence No.: 5 **Autosampler Location: 57**
Sample ID: L1311086414SD WG454211-08 **Date Collected: 11/26/2013 2:16:07 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1311086414SD WG454211-08

Analyte	Back Pressure	Flow
All	180.0 kPa	0.45 L/min

Mean Data: L1311086414SD WG454211-08

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2653459.8						33519.89	1.26%
YRADIAL	192538.2						2005.18	1.04%
Ga 417.206	902774.4						18339.62	2.03%
GaRADIAL	44570.9						530.02	1.19%
Ag 328.068†	47216.8	0.192	mg/L	0.0032	0.192	mg/L	0.0032	1.67%
Al 396.153†	14198.2	4.83	mg/L	0.040	4.83	mg/L	0.040	0.83%
As 188.979†	296.9	0.188	mg/L	0.0016	0.188	mg/L	0.0016	0.86%
Ba 233.527†	36067.5	0.464	mg/L	0.0022	0.464	mg/L	0.0022	0.47%
Be 234.861†	14890.4	0.0224	mg/L	0.00010	0.0224	mg/L	0.00010	0.46%
B 249.677†	202283.9	2.98	mg/L	0.009	2.98	mg/L	0.009	0.32%
Ca 227.546†	82249.7	418	mg/L	4.9	418	mg/L	4.9	1.17%
Cd 228.802†	549.5	0.0215	mg/L	0.00094	0.0215	mg/L	0.00094	4.34%
Co 228.616†	1839.4	0.0878	mg/L	0.00117	0.0878	mg/L	0.00117	1.33%
Cr 267.716†	25912.5	0.230	mg/L	0.0016	0.230	mg/L	0.0016	0.69%
Cu 327.393†	47123.0	0.225	mg/L	0.0032	0.225	mg/L	0.0032	1.42%
Fe 239.562†	5689.6	1.98	mg/L	0.023	1.98	mg/L	0.023	1.17%
Mg 279.077†	230319.7	212	mg/L	1.6	212	mg/L	1.6	0.73%
Mn 257.610†	282846.7	0.496	mg/L	0.0006	0.496	mg/L	0.0006	0.12%
Mo 202.031†	7849.4	0.484	mg/L	0.0068	0.484	mg/L	0.0068	1.40%
Ni 231.604†	8579.3	0.245	mg/L	0.0038	0.245	mg/L	0.0038	1.56%
Pb 220.353†	1322.0	0.224	mg/L	0.0018	0.224	mg/L	0.0018	0.78%
Sb 206.836†	1007.9	0.542	mg/L	0.0149	0.542	mg/L	0.0149	2.74%
Se 196.026†	148.4	0.184	mg/L	0.0065	0.184	mg/L	0.0065	3.53%
Si 251.611†	437663.7	13.1	mg/L	0.06	13.1	mg/L	0.06	0.47%
Sn 189.927†	2615.2	0.445	mg/L	0.0066	0.445	mg/L	0.0066	1.48%
Ti 334.940†	347080.3	0.492	mg/L	0.0040	0.492	mg/L	0.0040	0.81%
Tl 190.801†	324.8	0.195	mg/L	0.0122	0.195	mg/L	0.0122	6.28%
V 290.880†	89349.6	0.479	mg/L	0.0009	0.479	mg/L	0.0009	0.20%
Zn 206.200†	11921.4	0.448	mg/L	0.0068	0.448	mg/L	0.0068	1.52%
K 766.490†	44621.8	26.9	mg/L	0.19	26.9	mg/L	0.19	0.71%
Na 589.592†	2203893.1	241	mg/L	1.8	241	mg/L	1.8	0.76%
Sr 407.771†	1493711.1	1.48	mg/L	0.021	1.48	mg/L	0.021	1.39%
Li 670.784†	81675.2	1.21	mg/L	0.008	1.21	mg/L	0.008	0.66%
P 214.914†	-29.4	-0.0857	mg/L	0.02624	-0.0857	mg/L	0.02624	30.62%

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Sequence No.: 6 **Autosampler Location: 58**
Sample ID: L1311086415 **Date Collected: 11/26/2013 2:18:16 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1311086415

Analyte	Back Pressure	Flow
All	180.0 kPa	0.45 L/min

Mean Data: L1311086415

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2676407.4						9954.86	0.37%
YRADIAL	192802.7						700.68	0.36%
Ga 417.206	908884.0						2604.72	0.29%
GaRADIAL	43413.4						456.30	1.05%

Approved: November 27, 2013

Ag 328.068†	1183.5	0.00467 mg/L	0.000731	0.00467 mg/L	0.000731	15.66%
Al 396.153†	1066.8	0.348 mg/L	0.0060	0.348 mg/L	0.0060	1.73%
As 188.979†	-19.0	-0.00537 mg/L	0.003228	-0.00537 mg/L	0.003228	60.13%
Ba 233.527†	3014.0	0.0351 mg/L	0.00009	0.0351 mg/L	0.00009	0.26%
Be 234.861†	242.3	0.00011 mg/L	0.000019	0.00011 mg/L	0.000019	17.23%
B 249.677†	257398.2	3.79 mg/L	0.013	3.79 mg/L	0.013	0.34%
Ca 227.546†	56791.2	288 mg/L	2.7	288 mg/L	2.7	0.95%
Cd 228.802†	-7.3	-0.00005 mg/L	0.000202	-0.00005 mg/L	0.000202	400.27%
Co 228.616†	23.7	0.00107 mg/L	0.000143	0.00107 mg/L	0.000143	13.28%
Cr 267.716†	335.8	0.00077 mg/L	0.000179	0.00077 mg/L	0.000179	23.38%
Cu 327.393†	-213.2	-0.00110 mg/L	0.000787	-0.00110 mg/L	0.000787	71.55%
Fe 239.562†	2571.8	0.890 mg/L	0.0051	0.890 mg/L	0.0051	0.58%
Mg 279.077†	75407.6	69.5 mg/L	0.33	69.5 mg/L	0.33	0.47%
Mn 257.610†	633971.3	1.12 mg/L	0.001	1.12 mg/L	0.001	0.08%
Mo 202.031†	61.8	-0.00144 mg/L	0.000926	-0.00144 mg/L	0.000926	64.18%
Ni 231.604†	26.4	-0.00228 mg/L	0.000293	-0.00228 mg/L	0.000293	12.86%
Pb 220.353†	16.9	-0.00029 mg/L	0.001626	-0.00029 mg/L	0.001626	554.37%
Sb 206.836†	-6.0	-0.00098 mg/L	0.001350	-0.00098 mg/L	0.001350	138.00%
Se 196.026†	-2.8	-0.00192 mg/L	0.002578	-0.00192 mg/L	0.002578	134.21%
Si 251.611†	259061.5	7.72 mg/L	0.038	7.72 mg/L	0.038	0.49%
Sn 189.927†	-328.6	-0.0586 mg/L	0.00128	-0.0586 mg/L	0.00128	2.18%
Ti 334.940†	-28371.1	0.00621 mg/L	0.002669	0.00621 mg/L	0.002669	42.96%
Tl 190.801†	-32.4	-0.0242 mg/L	0.00441	-0.0242 mg/L	0.00441	18.19%
V 290.880†	2792.5	0.00885 mg/L	0.003091	0.00885 mg/L	0.003091	34.91%
Zn 206.200†	117.7	-0.00059 mg/L	0.000446	-0.00059 mg/L	0.000446	75.68%
K 766.490†	4031.5	2.20 mg/L	0.029	2.20 mg/L	0.029	1.34%
Na 589.592†	2259333.5	249 mg/L	4.1	249 mg/L	4.1	1.66%
Sr 407.771†	588178.8	0.575 mg/L	0.0090	0.575 mg/L	0.0090	1.57%
Li 670.784†	28162.4	0.416 mg/L	0.0029	0.416 mg/L	0.0029	0.70%
P 214.914†	100.9	0.0505 mg/L	0.01125	0.0505 mg/L	0.01125	22.25%

Sequence No.: 7
Sample ID: ~~L1311086406~~ L1311086416
Analyst: JYH
Initial Sample Wt:
Dilution:

Autosampler Location: 59
Date Collected: 11/26/2013 2:21:24 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: ~~L1311086406~~

Analyte	Back Pressure	Flow
All	180.0 kPa	0.45 L/min

Mean Data: ~~L1311086406~~

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2673875.3						23384.71	0.87%
YRADIAL	192794.8						1580.19	0.82%
Ga 417.206	902961.0						5669.89	0.63%
GaRADIAL	43398.0						352.45	0.81%
Ag 328.068†	1282.9	0.00475	mg/L	0.000706	0.00475	mg/L	0.000706	14.86%
Al 396.153†	2.5	-0.0172	mg/L	0.00286	-0.0172	mg/L	0.00286	16.67%
As 188.979†	-16.0	-0.00402	mg/L	0.001094	-0.00402	mg/L	0.001094	27.20%
Ba 233.527†	1331.8	0.0133	mg/L	0.00022	0.0133	mg/L	0.00022	1.67%
Be 234.861†	100.7	0.00006	mg/L	0.000019	0.00006	mg/L	0.000019	29.34%
B 249.677†	243807.5	3.59	mg/L	0.026	3.59	mg/L	0.026	0.73%
Ca 227.546†	53366.2	271	mg/L	5.4	271	mg/L	5.4	1.99%
Cd 228.802†	-10.9	-0.00021	mg/L	0.000262	-0.00021	mg/L	0.000262	125.10%
Co 228.616†	2.0	0.00008	mg/L	0.000249	0.00008	mg/L	0.000249	306.20%
Cr 267.716†	241.7	-0.00003	mg/L	0.000082	-0.00003	mg/L	0.000082	295.91%
Cu 327.393†	-561.7	-0.00280	mg/L	0.000321	-0.00280	mg/L	0.000321	11.46%
Fe 239.562†	494.2	0.158	mg/L	0.0055	0.158	mg/L	0.0055	3.47%
Mg 279.077†	68598.1	63.3	mg/L	1.11	63.3	mg/L	1.11	1.76%
Mn 257.610†	590774.5	1.04	mg/L	0.008	1.04	mg/L	0.008	0.73%
Mo 202.031†	54.4	-0.00193	mg/L	0.001176	-0.00193	mg/L	0.001176	60.97%
Ni 231.604†	3.9	-0.00293	mg/L	0.000476	-0.00293	mg/L	0.000476	16.25%
Pb 220.353†	10.5	-0.00137	mg/L	0.000682	-0.00137	mg/L	0.000682	49.71%
Sb 206.836†	-4.3	-0.00010	mg/L	0.000795	-0.00010	mg/L	0.000795	797.52%
Se 196.026†	-4.0	-0.00344	mg/L	0.011373	-0.00344	mg/L	0.011373	330.45%
Si 251.611†	230776.5	6.88	mg/L	0.102	6.88	mg/L	0.102	1.48%
Sn 189.927†	-329.3	-0.0587	mg/L	0.00133	-0.0587	mg/L	0.00133	2.27%

Approved: November 27, 2013

Ti 334.940†	-35444.2	-0.00519	mg/L	0.000237	-0.00519	mg/L	0.000237	4.57%
Tl 190.801†	-27.0	-0.0211	mg/L	0.00272	-0.0211	mg/L	0.00272	12.87%
V 290.880†	2684.6	0.00850	mg/L	0.002228	0.00850	mg/L	0.002228	26.21%
Zn 206.200†	51.6	-0.00309	mg/L	0.000112	-0.00309	mg/L	0.000112	3.63%
K 766.490†	3539.4	1.93	mg/L	0.018	1.93	mg/L	0.018	0.93%
Na 589.592†	2055310.4	221	mg/L	5.4	221	mg/L	5.4	2.43%
Sr 407.771†	524675.7	0.512	mg/L	0.0120	0.512	mg/L	0.0120	2.35%
Li 670.784†	26005.9	0.384	mg/L	0.0063	0.384	mg/L	0.0063	1.65%
P 214.914†	85.0	0.0340	mg/L	0.01534	0.0340	mg/L	0.01534	45.16%

Sequence No.: 8 **Autosampler Location: 60**
Sample ID: L1311086417 **Date Collected: 11/26/2013 2:24:31 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1311086417

Analyte	Back Pressure	Flow
All	180.0 kPa	0.45 L/min

Mean Data: L1311086417

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2828273.4						28649.17	1.01%
YRADIAL	195681.6						11286.84	5.77%
Ga 417.206	901707.6						13627.21	1.51%
GaRADIAL	42065.1						1394.54	3.32%
Ag 328.068†	-104.1	-0.00072	mg/L	0.000265	-0.00072	mg/L	0.000265	36.65%
Al 396.153†	4.0	-0.0164	mg/L	0.00126	-0.0164	mg/L	0.00126	7.68%
As 188.979†	-1.7	-0.00124	mg/L	0.001588	-0.00124	mg/L	0.001588	128.13%
Ba 233.527†	-8.3	-0.00409	mg/L	0.000025	-0.00409	mg/L	0.000025	0.62%
Be 234.861†	42.5	-0.00009	mg/L	0.000047	-0.00009	mg/L	0.000047	52.87%
B 249.677†	3080.5	0.0443	mg/L	0.00907	0.0443	mg/L	0.00907	20.48%
Ca 227.546†	45.5	0.301	mg/L	0.1113	0.301	mg/L	0.1113	37.02%
Cd 228.802†	-6.9	-0.00009	mg/L	0.000211	-0.00009	mg/L	0.000211	221.94%
Co 228.616†	-15.2	-0.00084	mg/L	0.000192	-0.00084	mg/L	0.000192	22.86%
Cr 267.716†	35.8	-0.00186	mg/L	0.000111	-0.00186	mg/L	0.000111	5.94%
Cu 327.393†	-208.1	-0.00103	mg/L	0.000101	-0.00103	mg/L	0.000101	9.76%
Fe 239.562†	12.4	-0.0107	mg/L	0.00027	-0.0107	mg/L	0.00027	2.57%
Mg 279.077†	188.4	0.140	mg/L	0.0466	0.140	mg/L	0.0466	33.41%
Mn 257.610†	946.4	-0.00267	mg/L	0.000393	-0.00267	mg/L	0.000393	14.72%
Mo 202.031†	-10.7	-0.00621	mg/L	0.000512	-0.00621	mg/L	0.000512	8.24%
Ni 231.604†	-6.7	-0.00324	mg/L	0.000177	-0.00324	mg/L	0.000177	5.47%
Pb 220.353†	22.4	0.00130	mg/L	0.000376	0.00130	mg/L	0.000376	29.00%
Sb 206.836†	1.6	0.00304	mg/L	0.001109	0.00304	mg/L	0.001109	36.43%
Se 196.026†	0.1	0.00184	mg/L	0.003426	0.00184	mg/L	0.003426	186.15%
Si 251.611†	662.7	0.00844	mg/L	0.002386	0.00844	mg/L	0.002386	28.26%
Sn 189.927†	2.3	-0.00193	mg/L	0.000231	-0.00193	mg/L	0.000231	11.95%
Ti 334.940†	-84.6	-0.00186	mg/L	0.000042	-0.00186	mg/L	0.000042	2.23%
Tl 190.801†	-4.2	-0.00603	mg/L	0.001841	-0.00603	mg/L	0.001841	30.51%
V 290.880†	691.6	-0.00075	mg/L	0.001482	-0.00075	mg/L	0.001482	196.86%
Zn 206.200†	58.6	-0.00284	mg/L	0.000080	-0.00284	mg/L	0.000080	2.80%
K 766.490†	3.3	0.0126	mg/L	0.03308	0.0126	mg/L	0.03308	262.39%
Na 589.592†	5948.3	0.535	mg/L	0.2573	0.535	mg/L	0.2573	48.11%
Sr 407.771†	1163.5	-0.00407	mg/L	0.000629	-0.00407	mg/L	0.000629	15.47%
Li 670.784†	187.2	-0.00064	mg/L	0.001343	-0.00064	mg/L	0.001343	208.48%
P 214.914†	69.7	0.0179	mg/L	0.00890	0.0179	mg/L	0.00890	49.63%

Sequence No.: 9 **Autosampler Location: 61**
Sample ID: L1311086418 **Date Collected: 11/26/2013 2:27:33 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1311086418

Analyte	Back Pressure	Flow
All	180.0 kPa	0.45 L/min

Approved: November 27, 2013

Mean Data: L1311086418

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2783418.7						71029.61	2.55%
YRADIAL	190945.7						1816.60	0.95%
Ga 417.206	875003.4						30859.55	3.53%
GaRADIAL	41473.5						931.48	2.25%
Ag 328.068†	-56.2	-0.00053	mg/L	0.000584	-0.00053	mg/L	0.000584	110.64%
Al 396.153†	7.5	-0.0152	mg/L	0.00157	-0.0152	mg/L	0.00157	10.31%
As 188.979†	-3.3	-0.00223	mg/L	0.002546	-0.00223	mg/L	0.002546	114.12%
Ba 233.527†	-21.5	-0.00426	mg/L	0.000042	-0.00426	mg/L	0.000042	0.99%
Be 234.861†	-8.7	-0.00017	mg/L	0.000068	-0.00017	mg/L	0.000068	40.80%
B 249.677†	1184.5	0.0163	mg/L	0.00218	0.0163	mg/L	0.00218	13.34%
Ca 227.546†	3.3	0.0863	mg/L	0.02005	0.0863	mg/L	0.02005	23.22%
Cd 228.802†	-8.5	-0.00015	mg/L	0.000177	-0.00015	mg/L	0.000177	117.01%
Co 228.616†	-12.0	-0.00069	mg/L	0.000466	-0.00069	mg/L	0.000466	67.80%
Cr 267.716†	44.3	-0.00179	mg/L	0.000244	-0.00179	mg/L	0.000244	13.65%
Cu 327.393†	-180.1	-0.00090	mg/L	0.000678	-0.00090	mg/L	0.000678	75.45%
Fe 239.562†	16.6	-0.00918	mg/L	0.000964	-0.00918	mg/L	0.000964	10.50%
Mg 279.077†	67.3	0.0278	mg/L	0.00644	0.0278	mg/L	0.00644	23.14%
Mn 257.610†	502.0	-0.00345	mg/L	0.000070	-0.00345	mg/L	0.000070	2.03%
Mo 202.031†	-4.0	-0.00580	mg/L	0.000024	-0.00580	mg/L	0.000024	0.42%
Ni 231.604†	-1.5	-0.00309	mg/L	0.000346	-0.00309	mg/L	0.000346	11.19%
Pb 220.353†	18.2	0.00058	mg/L	0.000750	0.00058	mg/L	0.000750	129.79%
Sb 206.836†	2.9	0.00376	mg/L	0.001857	0.00376	mg/L	0.001857	49.38%
Se 196.026†	0.3	0.00214	mg/L	0.002831	0.00214	mg/L	0.002831	132.51%
Si 251.611†	1136.7	0.0226	mg/L	0.00214	0.0226	mg/L	0.00214	9.45%
Sn 189.927†	8.4	-0.00089	mg/L	0.000711	-0.00089	mg/L	0.000711	79.43%
Ti 334.940†	-97.5	-0.00191	mg/L	0.000074	-0.00191	mg/L	0.000074	3.88%
Tl 190.801†	-1.7	-0.00459	mg/L	0.001013	-0.00459	mg/L	0.001013	22.08%
V 290.880†	857.4	0.00016	mg/L	0.001943	0.00016	mg/L	0.001943	>999.9%
Zn 206.200†	71.8	-0.00234	mg/L	0.000376	-0.00234	mg/L	0.000376	16.05%
K 766.490†	17.5	0.0216	mg/L	0.01648	0.0216	mg/L	0.01648	76.34%
Na 589.592†	1520.5	0.131	mg/L	0.0125	0.131	mg/L	0.0125	9.56%
Sr 407.771†	209.0	-0.00501	mg/L	0.000028	-0.00501	mg/L	0.000028	0.55%
Li 670.784†	44.7	-0.00277	mg/L	0.000421	-0.00277	mg/L	0.000421	15.21%
P 214.914†	62.0	0.00986	mg/L	0.020183	0.00986	mg/L	0.020183	204.73%

Sequence No.: 10 **Autosampler Location: 6**
Sample ID: CCV **Date Collected: 11/26/2013 2:30:35 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	181.0 kPa	0.45 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2865659.4						16971.89	0.59%
YRADIAL	199757.0						1578.80	0.79%
Ga 417.206	923227.3						12363.86	1.34%
GaRADIAL	43246.0						768.07	1.78%
Ag 328.068†	93618.1	0.382	mg/L	0.0055	0.382	mg/L	0.0055	1.44%
QC value within limits for Ag 328.068 Recovery = 95.50%								
Al 396.153†	28741.8	9.79	mg/L	0.054	9.79	mg/L	0.054	0.55%
QC value within limits for Al 396.153 Recovery = 97.88%								
As 188.979†	618.4	0.374	mg/L	0.0069	0.374	mg/L	0.0069	1.84%
QC value within limits for As 188.979 Recovery = 93.49%								
Ba 233.527†	74111.5	0.958	mg/L	0.0276	0.958	mg/L	0.0276	2.87%
QC value within limits for Ba 233.527 Recovery = 95.85%								
Be 234.861†	31103.0	0.0469	mg/L	0.00056	0.0469	mg/L	0.00056	1.19%
QC value within limits for Be 234.861 Recovery = 93.89%								
B 249.677†	32428.9	0.473	mg/L	0.0146	0.473	mg/L	0.0146	3.08%
QC value within limits for B 249.677 Recovery = 94.64%								

Approved: November 27, 2013

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Ca 227.546†            1818.3        9.75 mg/L        0.079        9.75 mg/L        0.079   0.81%
   QC value within limits for Ca 227.546  Recovery = 97.46%
Cd 228.802†            1145.5      0.0447 mg/L      0.00085      0.0447 mg/L      0.00085   1.89%
   QC value less than the lower limit for Cd 228.802  Recovery = 89.50%
Co 228.616†            4025.8       0.192 mg/L       0.0009       0.192 mg/L       0.0009   0.47%
   QC value within limits for Co 228.616  Recovery = 96.02%
Cr 267.716†           53608.5       0.479 mg/L       0.0135       0.479 mg/L       0.0135   2.81%
   QC value within limits for Cr 267.716  Recovery = 95.71%
Cu 327.393†           99231.0       0.473 mg/L       0.0120       0.473 mg/L       0.0120   2.55%
   QC value within limits for Cu 327.393  Recovery = 94.68%
Fe 239.562†           10746.3        3.77 mg/L        0.071        3.77 mg/L        0.071   1.89%
   QC value within limits for Fe 239.562  Recovery = 94.25%
Mg 279.077†           10458.0        9.63 mg/L        0.148        9.63 mg/L        0.148   1.53%
   QC value within limits for Mg 279.077  Recovery = 96.30%
Mn 257.610†          280019.5       0.492 mg/L       0.0149       0.492 mg/L       0.0149   3.02%
   QC value within limits for Mn 257.610  Recovery = 98.36%
Mo 202.031†           15560.8       0.965 mg/L       0.0239       0.965 mg/L       0.0239   2.48%
   QC value within limits for Mo 202.031  Recovery = 96.53%
Ni 231.604†           16768.0       0.481 mg/L       0.0127       0.481 mg/L       0.0127   2.65%
   QC value within limits for Ni 231.604  Recovery = 96.20%
Pb 220.353†            2819.4       0.482 mg/L       0.0010       0.482 mg/L       0.0010   0.21%
   QC value within limits for Pb 220.353  Recovery = 96.33%
Sb 206.836†            2091.3        1.12 mg/L        0.021        1.12 mg/L        0.021   1.90%
   QC value within limits for Sb 206.836  Recovery = 93.42%
Se 196.026†             307.1       0.380 mg/L       0.0075       0.380 mg/L       0.0075   1.98%
   QC value within limits for Se 196.026  Recovery = 95.02%
Si 251.611†          159526.1        4.74 mg/L        0.092        4.74 mg/L        0.092   1.93%
   QC value within limits for Si 251.611  Recovery = 94.82%
Sn 189.927†            5640.6       0.963 mg/L       0.0070       0.963 mg/L       0.0070   0.72%
   QC value within limits for Sn 189.927  Recovery = 96.33%
Ti 334.940†          782807.0       0.972 mg/L       0.0107       0.972 mg/L       0.0107   1.10%
   QC value within limits for Ti 334.940  Recovery = 97.23%
Tl 190.801†             817.5       0.494 mg/L       0.0009       0.494 mg/L       0.0009   0.18%
   QC value within limits for Tl 190.801  Recovery = 98.79%
V 290.880†           175455.1       0.955 mg/L       0.0327       0.955 mg/L       0.0327   3.43%
   QC value within limits for V 290.880  Recovery = 95.51%
Zn 206.200†           25651.8       0.970 mg/L       0.0219       0.970 mg/L       0.0219   2.26%
   QC value within limits for Zn 206.200  Recovery = 97.01%
K 766.490†            79009.9        48.3 mg/L         0.49        48.3 mg/L         0.49   1.01%
   QC value within limits for K 766.490  Recovery = 96.70%
Na 589.592†          527245.8        49.7 mg/L         0.85        49.7 mg/L         0.85   1.71%
   QC value within limits for Na 589.592  Recovery = 99.47%
Sr 407.771†          961350.1       0.958 mg/L       0.0040       0.958 mg/L       0.0040   0.42%
   QC value within limits for Sr 407.771  Recovery = 95.80%
Li 670.784†           65799.9       0.976 mg/L       0.0082       0.976 mg/L       0.0082   0.84%
   QC value within limits for Li 670.784  Recovery = 97.65%
P 214.914†             9335.0        9.70 mg/L        0.090        9.70 mg/L        0.090   0.93%
   QC value within limits for P 214.914  Recovery = 97.02%
QC Failed.  Continue with analysis.

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Sequence No.: 11                                  Autosampler Location: 1
Sample ID: CCB                                    Date Collected: 11/26/2013 2:32:42 PM
Analyst:                                          Data Type: Original
Initial Sample Wt:                                Initial Sample Vol:
Dilution:                                         Sample Prep Vol:

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Nebulizer Parameters: CCB
Analyte                 Back Pressure    Flow
All                    180.0 kPa         0.45 L/min

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Mean Data: CCB
                   Mean Corrected         Calib.                          Sample
Analyte               Intensity     Conc. Units      Std.Dev.      Conc. Units      Std.Dev.   RSD
Y 371.029           2804328.8                                                     38862.56   1.39%
YRADIAL              193506.1                                                      5495.30   2.84%
Ga 417.206           898433.9                                                     18358.31   2.04%
GaRADIAL              41170.0                                                       333.38   0.81%
Ag 328.068†              70.4    -0.00001 mg/L      0.001281    -0.00001 mg/L      0.001281 >999.9%
   QC value within limits for Ag 328.068  Recovery = Not calculated
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Approved: November 27, 2013

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Al 396.153†              31.0    -0.00719 mg/L      0.003331    -0.00719 mg/L      0.003331  46.36%
   QC value within limits for Al 396.153  Recovery = Not calculated
As 188.979†              -1.2    -0.00094 mg/L      0.002097    -0.00094 mg/L      0.002097 222.73%
   QC value within limits for As 188.979  Recovery = Not calculated
Ba 233.527†              17.4    -0.00376 mg/L      0.000147    -0.00376 mg/L      0.000147   3.90%
   QC value within limits for Ba 233.527  Recovery = Not calculated
Be 234.861†              72.9    -0.00004 mg/L      0.000024    -0.00004 mg/L      0.000024  57.64%
   QC value within limits for Be 234.861  Recovery = Not calculated
B 249.677†              823.4      0.0110 mg/L       0.00152      0.0110 mg/L       0.00152  13.80%
   QC value within limits for B 249.677  Recovery = Not calculated
Ca 227.546†               2.9      0.0844 mg/L       0.02499      0.0844 mg/L       0.02499  29.60%
   QC value within limits for Ca 227.546  Recovery = Not calculated
Cd 228.802†             -10.2    -0.00022 mg/L      0.000222    -0.00022 mg/L      0.000222  98.78%
   QC value within limits for Cd 228.802  Recovery = Not calculated
Co 228.616†             -12.4    -0.00071 mg/L      0.000121    -0.00071 mg/L      0.000121  17.11%
   QC value within limits for Co 228.616  Recovery = Not calculated
Cr 267.716†              59.9    -0.00165 mg/L      0.000093    -0.00165 mg/L      0.000093   5.65%
   QC value within limits for Cr 267.716  Recovery = Not calculated
Cu 327.393†              -6.4    -0.00007 mg/L      0.001095    -0.00007 mg/L      0.001095 >999.9%
   QC value within limits for Cu 327.393  Recovery = Not calculated
Fe 239.562†              18.2    -0.00863 mg/L      0.002752    -0.00863 mg/L      0.002752  31.90%
   QC value within limits for Fe 239.562  Recovery = Not calculated
Mg 279.077†              44.5     0.00681 mg/L      0.010267     0.00681 mg/L      0.010267 150.69%
   QC value within limits for Mg 279.077  Recovery = Not calculated
Mn 257.610†             337.4    -0.00374 mg/L      0.000111    -0.00374 mg/L      0.000111   2.96%
   QC value within limits for Mn 257.610  Recovery = Not calculated
Mo 202.031†               1.5    -0.00546 mg/L      0.000121    -0.00546 mg/L      0.000121   2.21%
   QC value within limits for Mo 202.031  Recovery = Not calculated
Ni 231.604†               1.6    -0.00300 mg/L      0.000219    -0.00300 mg/L      0.000219   7.30%
   QC value within limits for Ni 231.604  Recovery = Not calculated
Pb 220.353†              21.8     0.00119 mg/L      0.001402     0.00119 mg/L      0.001402 117.56%
   QC value within limits for Pb 220.353  Recovery = Not calculated
Sb 206.836†               1.3     0.00291 mg/L      0.000715     0.00291 mg/L      0.000715  24.54%
   QC value within limits for Sb 206.836  Recovery = Not calculated
Se 196.026†              -3.1    -0.00214 mg/L      0.004475    -0.00214 mg/L      0.004475 208.97%
   QC value within limits for Se 196.026  Recovery = Not calculated
Si 251.611†             101.5    -0.00832 mg/L      0.001702    -0.00832 mg/L      0.001702  20.46%
   QC value within limits for Si 251.611  Recovery = Not calculated
Sn 189.927†              20.3     0.00115 mg/L      0.000710     0.00115 mg/L      0.000710  61.91%
   QC value within limits for Sn 189.927  Recovery = Not calculated
Ti 334.940†            1043.0    -0.00049 mg/L      0.001875    -0.00049 mg/L      0.001875 380.08%
   QC value within limits for Ti 334.940  Recovery = Not calculated
Tl 190.801†              -3.5    -0.00563 mg/L      0.000577    -0.00563 mg/L      0.000577  10.24%
   QC value within limits for Tl 190.801  Recovery = Not calculated
V 290.880†              985.7     0.00086 mg/L      0.003110     0.00086 mg/L      0.003110 361.62%
   QC value within limits for V 290.880  Recovery = Not calculated
Zn 206.200†              24.5    -0.00413 mg/L      0.000280    -0.00413 mg/L      0.000280   6.78%
   QC value within limits for Zn 206.200  Recovery = Not calculated
K 766.490†               82.3      0.0607 mg/L       0.00882      0.0607 mg/L       0.00882  14.51%
   QC value within limits for K 766.490  Recovery = Not calculated
Na 589.592†            1339.4       0.115 mg/L        0.0624       0.115 mg/L        0.0624  54.37%
   QC value within limits for Na 589.592  Recovery = Not calculated
Sr 407.771†            1208.2    -0.00401 mg/L      0.000938    -0.00401 mg/L      0.000938  23.36%
   QC value within limits for Sr 407.771  Recovery = Not calculated
Li 670.784†             150.7    -0.00119 mg/L      0.001416    -0.00119 mg/L      0.001416 119.19%
   QC value within limits for Li 670.784  Recovery = Not calculated
P 214.914†               71.1      0.0194 mg/L       0.02101      0.0194 mg/L       0.02101 108.16%
   QC value within limits for P 214.914  Recovery = Not calculated
All analyte(s) passed QC.

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Sequence No.: 12                                    Autosampler Location: 62
Sample ID: L1311086419                              Date Collected: 11/26/2013 2:35:44 PM
Analyst: JYH                                        Data Type: Original
Initial Sample Wt:                                  Initial Sample Vol:
Dilution:                                           Sample Prep Vol:

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Nebulizer Parameters: L1311086419
Analyte                 Back Pressure    Flow
All                   181.0 kPa        0.45 L/min
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Approved: November 27, 2013

Mean Data: L1311086419

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2677492.7						26072.27	0.97%
YRADIAL	194338.0						2104.49	1.08%
Ga 417.206	909643.1						13291.75	1.46%
GaRADIAL	44045.9						120.44	0.27%
Ag 328.068†	1076.2	0.00423	mg/L	0.000270	0.00423	mg/L	0.000270	6.38%
Al 396.153†	1199.3	0.394	mg/L	0.0084	0.394	mg/L	0.0084	2.12%
As 188.979†	-18.7	-0.00567	mg/L	0.002031	-0.00567	mg/L	0.002031	35.84%
Ba 233.527†	2656.7	0.0305	mg/L	0.00050	0.0305	mg/L	0.00050	1.63%
Be 234.861†	260.0	0.00014	mg/L	0.000006	0.00014	mg/L	0.000006	4.54%
B 249.677†	237190.2	3.49	mg/L	0.052	3.49	mg/L	0.052	1.47%
Ca 227.546†	52597.3	267	mg/L	5.4	267	mg/L	5.4	2.04%
Cd 228.802†	-8.6	-0.00011	mg/L	0.000043	-0.00011	mg/L	0.000043	40.23%
Co 228.616†	20.4	0.00091	mg/L	0.000366	0.00091	mg/L	0.000366	40.30%
Cr 267.716†	306.9	0.00051	mg/L	0.000156	0.00051	mg/L	0.000156	30.52%
Cu 327.393†	-175.3	-0.00091	mg/L	0.000302	-0.00091	mg/L	0.000302	33.09%
Fe 239.562†	2392.9	0.827	mg/L	0.0205	0.827	mg/L	0.0205	2.48%
Mg 279.077†	68988.7	63.6	mg/L	1.25	63.6	mg/L	1.25	1.97%
Mn 257.610†	587186.6	1.03	mg/L	0.012	1.03	mg/L	0.012	1.21%
Mo 202.031†	55.9	-0.00183	mg/L	0.000809	-0.00183	mg/L	0.000809	44.28%
Ni 231.604†	39.4	-0.00190	mg/L	0.000433	-0.00190	mg/L	0.000433	22.73%
Pb 220.353†	26.5	0.00141	mg/L	0.000853	0.00141	mg/L	0.000853	60.62%
Sb 206.836†	-7.5	-0.00181	mg/L	0.003582	-0.00181	mg/L	0.003582	198.13%
Se 196.026†	-2.0	-0.00084	mg/L	0.010086	-0.00084	mg/L	0.010086	>999.9%
Si 251.611†	245076.1	7.31	mg/L	0.138	7.31	mg/L	0.138	1.88%
Sn 189.927†	-326.1	-0.0582	mg/L	0.00134	-0.0582	mg/L	0.00134	2.30%
Ti 334.940†	-24096.2	0.00833	mg/L	0.003139	0.00833	mg/L	0.003139	37.68%
Tl 190.801†	-27.0	-0.0209	mg/L	0.00199	-0.0209	mg/L	0.00199	9.55%
V 290.880†	2801.8	0.00907	mg/L	0.003105	0.00907	mg/L	0.003105	34.25%
Zn 206.200†	80.5	-0.00200	mg/L	0.000149	-0.00200	mg/L	0.000149	7.45%
K 766.490†	3624.0	1.99	mg/L	0.027	1.99	mg/L	0.027	1.34%
Na 589.592†	2025813.9	217	mg/L	4.9	217	mg/L	4.9	2.27%
Sr 407.771†	521065.5	0.508	mg/L	0.0144	0.508	mg/L	0.0144	2.83%
Li 670.784†	25859.9	0.382	mg/L	0.0067	0.382	mg/L	0.0067	1.76%
P 214.914†	110.7	0.0608	mg/L	0.01014	0.0608	mg/L	0.01014	16.67%

Sequence No.: 13 **Autosampler Location: 63**
Sample ID: L1311086420 **Date Collected: 11/26/2013 2:38:51 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1311086420

Analyte	Back Pressure	Flow
All	181.0 kPa	0.45 L/min

Mean Data: L1311086420

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2639364.1						42048.03	1.59%
YRADIAL	193744.6						7658.65	3.95%
Ga 417.206	902430.9						13320.72	1.48%
GaRADIAL	43566.2						1258.28	2.89%
Ag 328.068†	1341.3	0.00500	mg/L	0.000407	0.00500	mg/L	0.000407	8.14%
Al 396.153†	2.9	-0.0170	mg/L	0.00173	-0.0170	mg/L	0.00173	10.17%
As 188.979†	-21.0	-0.00727	mg/L	0.005111	-0.00727	mg/L	0.005111	70.31%
Ba 233.527†	1271.1	0.0125	mg/L	0.00020	0.0125	mg/L	0.00020	1.63%
Be 234.861†	112.6	0.00008	mg/L	0.000031	0.00008	mg/L	0.000031	38.76%
B 249.677†	231986.9	3.42	mg/L	0.011	3.42	mg/L	0.011	0.32%
Ca 227.546†	52244.2	265	mg/L	1.2	265	mg/L	1.2	0.45%
Cd 228.802†	-11.9	-0.00023	mg/L	0.000226	-0.00023	mg/L	0.000226	96.64%
Co 228.616†	3.0	0.00013	mg/L	0.000400	0.00013	mg/L	0.000400	313.65%
Cr 267.716†	249.9	0.00005	mg/L	0.000303	0.00005	mg/L	0.000303	643.62%
Cu 327.393†	-520.6	-0.00261	mg/L	0.000342	-0.00261	mg/L	0.000342	13.10%
Fe 239.562†	468.3	0.149	mg/L	0.0064	0.149	mg/L	0.0064	4.28%
Mg 279.077†	66174.1	61.0	mg/L	0.95	61.0	mg/L	0.95	1.56%

Approved: November 27, 2013

Mn 257.610†	566435.9	0.998	mg/L	0.0075	0.998	mg/L	0.0075	0.75%
Mo 202.031†	56.1	-0.00183	mg/L	0.000290	-0.00183	mg/L	0.000290	15.85%
Ni 231.604†	-2.7	-0.00312	mg/L	0.000376	-0.00312	mg/L	0.000376	12.05%
Pb 220.353†	28.3	0.00170	mg/L	0.001217	0.00170	mg/L	0.001217	71.50%
Sb 206.836†	-1.7	0.00130	mg/L	0.001799	0.00130	mg/L	0.001799	138.72%
Se 196.026†	-1.3	-0.00019	mg/L	0.007754	-0.00019	mg/L	0.007754	>999.9%
Si 251.611†	224418.2	6.69	mg/L	0.025	6.69	mg/L	0.025	0.38%
Sn 189.927†	-326.2	-0.0582	mg/L	0.00129	-0.0582	mg/L	0.00129	2.21%
Ti 334.940†	-35127.3	-0.00565	mg/L	0.000202	-0.00565	mg/L	0.000202	3.58%
Tl 190.801†	-26.5	-0.0207	mg/L	0.00859	-0.0207	mg/L	0.00859	41.48%
V 290.880†	2930.3	0.00991	mg/L	0.000398	0.00991	mg/L	0.000398	4.01%
Zn 206.200†	43.6	-0.00339	mg/L	0.000093	-0.00339	mg/L	0.000093	2.73%
K 766.490†	3398.4	1.86	mg/L	0.015	1.86	mg/L	0.015	0.81%
Na 589.592†	1971949.8	210	mg/L	2.9	210	mg/L	2.9	1.37%
Sr 407.771†	501845.6	0.489	mg/L	0.0075	0.489	mg/L	0.0075	1.53%
Li 670.784†	25206.5	0.372	mg/L	0.0033	0.372	mg/L	0.0033	0.89%
P 214.914†	95.8	0.0452	mg/L	0.00609	0.0452	mg/L	0.00609	13.46%

Sequence No.: 14 **Autosampler Location: 64**
Sample ID: L1311085508 **Date Collected: 11/26/2013 2:41:58 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1311085508

Analyte	Back Pressure	Flow
All	181.0 kPa	0.45 L/min

Mean Data: L1311085508

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2722057.2						27351.94	1.00%
YRADIAL	200545.1						15585.65	7.77%
Ga 417.206	911370.3						8213.76	0.90%
GaRADIAL	44235.7						2847.97	6.44%
Ag 328.068†	139.8	0.00026	mg/L	0.000323	0.00026	mg/L	0.000323	122.30%
Al 396.153†	78.9	0.00920	mg/L	0.003615	0.00920	mg/L	0.003615	39.30%
As 188.979†	-10.0	-0.00544	mg/L	0.006067	-0.00544	mg/L	0.006067	111.61%
Ba 233.527†	2923.6	0.0340	mg/L	0.00033	0.0340	mg/L	0.00033	0.97%
Be 234.861†	121.9	0.00003	mg/L	0.000041	0.00003	mg/L	0.000041	142.14%
B 249.677†	27231.3	0.400	mg/L	0.0088	0.400	mg/L	0.0088	2.21%
Ca 227.546†	8046.9	40.9	mg/L	1.41	40.9	mg/L	1.41	3.45%
Cd 228.802†	-7.5	-0.00009	mg/L	0.000137	-0.00009	mg/L	0.000137	146.58%
Co 228.616†	-10.7	-0.00062	mg/L	0.000104	-0.00062	mg/L	0.000104	16.86%
Cr 267.716†	115.0	-0.00115	mg/L	0.000173	-0.00115	mg/L	0.000173	15.01%
Cu 327.393†	-331.0	-0.00162	mg/L	0.000763	-0.00162	mg/L	0.000763	46.93%
Fe 239.562†	87.0	0.0153	mg/L	0.00097	0.0153	mg/L	0.00097	6.30%
Mg 279.077†	14894.6	13.7	mg/L	0.37	13.7	mg/L	0.37	2.70%
Mn 257.610†	10242.6	0.0138	mg/L	0.00059	0.0138	mg/L	0.00059	4.25%
Mo 202.031†	18.5	-0.00439	mg/L	0.000511	-0.00439	mg/L	0.000511	11.66%
Ni 231.604†	6.8	-0.00285	mg/L	0.000187	-0.00285	mg/L	0.000187	6.57%
Pb 220.353†	35.5	0.00353	mg/L	0.000903	0.00353	mg/L	0.000903	25.60%
Sb 206.836†	-1.6	0.00134	mg/L	0.001872	0.00134	mg/L	0.001872	140.02%
Se 196.026†	-7.2	-0.00710	mg/L	0.005727	-0.00710	mg/L	0.005727	80.63%
Si 251.611†	135875.2	4.05	mg/L	0.108	4.05	mg/L	0.108	2.67%
Sn 189.927†	-185.3	-0.0341	mg/L	0.00267	-0.0341	mg/L	0.00267	7.83%
Ti 334.940†	-5422.5	-0.00240	mg/L	0.000177	-0.00240	mg/L	0.000177	7.36%
Tl 190.801†	-17.5	-0.0140	mg/L	0.00204	-0.0140	mg/L	0.00204	14.58%
V 290.880†	1476.5	0.00319	mg/L	0.001798	0.00319	mg/L	0.001798	56.41%
Zn 206.200†	249.1	0.00437	mg/L	0.000202	0.00437	mg/L	0.000202	4.63%
K 766.490†	907.9	0.525	mg/L	0.0317	0.525	mg/L	0.0317	6.03%
Na 589.592†	376195.1	35.1	mg/L	1.25	35.1	mg/L	1.25	3.57%
Sr 407.771†	88847.9	0.0825	mg/L	0.00180	0.0825	mg/L	0.00180	2.18%
Li 670.784†	2505.8	0.0339	mg/L	0.00105	0.0339	mg/L	0.00105	3.11%
P 214.914†	93.1	0.0424	mg/L	0.00587	0.0424	mg/L	0.00587	13.83%

Sequence No.: 15 **Autosampler Location: 65**
Sample ID: L1311121202 WG454170-02 **Date Collected: 11/26/2013 2:45:04 PM**

Approved: November 27, 2013

Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1311121202 WG454170-02

Analyte	Back Pressure	Flow
All	181.0 kPa	0.45 L/min

Mean Data: L1311121202 WG454170-02

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2848862.0						28210.83	0.99%
YRADIAL	194323.3						3076.66	1.58%
Ga 417.206	938681.7						13580.31	1.45%
GaRADIAL	43229.8						572.82	1.33%
Ag 328.068†	-246.1	-0.00054	mg/L	0.000274	-0.00054	mg/L	0.000274	50.62%
Al 396.153†	27.6	-0.00810	mg/L	0.002581	-0.00810	mg/L	0.002581	31.85%
As 188.979†	0.6	0.00061	mg/L	0.001998	0.00061	mg/L	0.001998	329.86%
Ba 233.527†	1.5	-0.00405	mg/L	0.000105	-0.00405	mg/L	0.000105	2.59%
Be 234.861†	423.0	0.00009	mg/L	0.000056	0.00009	mg/L	0.000056	65.31%
B 249.677†	1552.9	0.0210	mg/L	0.00184	0.0210	mg/L	0.00184	8.72%
Ca 227.546†	578.6	3.05	mg/L	0.039	3.05	mg/L	0.039	1.28%
Cd 228.802†	-14.5	-0.00041	mg/L	0.000179	-0.00041	mg/L	0.000179	43.87%
Co 228.616†	-14.7	-0.00086	mg/L	0.000138	-0.00086	mg/L	0.000138	16.07%
Cr 267.716†	36.2	-0.00199	mg/L	0.000074	-0.00199	mg/L	0.000074	3.69%
Cu 327.393†	-406.8	-0.00188	mg/L	0.000903	-0.00188	mg/L	0.000903	48.02%
Fe 239.562†	4719.4	1.65	mg/L	0.033	1.65	mg/L	0.033	2.02%
Mg 279.077†	2053.2	1.86	mg/L	0.050	1.86	mg/L	0.050	2.68%
Mn 257.610†	10620.8	0.0145	mg/L	0.00068	0.0145	mg/L	0.00068	4.70%
Mo 202.031†	-4.4	-0.00579	mg/L	0.000254	-0.00579	mg/L	0.000254	4.39%
Ni 231.604†	8.5	-0.00280	mg/L	0.000313	-0.00280	mg/L	0.000313	11.17%
Pb 220.353†	26.4	0.00191	mg/L	0.001912	0.00191	mg/L	0.001912	100.13%
Sb 206.836†	-4.7	-0.00025	mg/L	0.001590	-0.00025	mg/L	0.001590	638.26%
Se 196.026†	-8.4	-0.00830	mg/L	0.003488	-0.00830	mg/L	0.003488	42.02%
Si 251.611†	3979.9	0.107	mg/L	0.0037	0.107	mg/L	0.0037	3.46%
Sn 189.927†	-12.1	-0.00440	mg/L	0.000278	-0.00440	mg/L	0.000278	6.33%
Ti 334.940†	-496.1	-0.00197	mg/L	0.000096	-0.00197	mg/L	0.000096	4.89%
Tl 190.801†	6.2	0.00010	mg/L	0.003284	0.00010	mg/L	0.003284	>999.9%
V 290.880†	839.8	-0.00015	mg/L	0.000833	-0.00015	mg/L	0.000833	546.60%
Zn 206.200†	33.8	-0.00379	mg/L	0.000317	-0.00379	mg/L	0.000317	8.36%
K 766.490†	145.0	0.0821	mg/L	0.00979	0.0821	mg/L	0.00979	11.92%
Na 589.592†	180465.7	16.6	mg/L	0.43	16.6	mg/L	0.43	2.56%
Sr 407.771†	55859.7	0.0507	mg/L	0.00083	0.0507	mg/L	0.00083	1.65%
Li 670.784†	2.4	-0.00340	mg/L	0.000283	-0.00340	mg/L	0.000283	8.32%
P 214.914†	105.9	0.0557	mg/L	0.01303	0.0557	mg/L	0.01303	23.38%

Sequence No.: 16 **Autosampler Location: 66**
Sample ID: L1311121202S WG454170-07 **Date Collected: 11/26/2013 2:48:07 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1311121202S WG454170-07

Analyte	Back Pressure	Flow
All	181.0 kPa	0.45 L/min

Mean Data: L1311121202S WG454170-07

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2881478.1						50735.03	1.76%
YRADIAL	199300.0						3757.21	1.89%
Ga 417.206	940368.0						24585.50	2.61%
GaRADIAL	44118.5						659.68	1.50%
Ag 328.068†	169.7	0.00121	mg/L	0.000304	0.00121	mg/L	0.000304	25.23%
Al 396.153†	192.3	0.0482	mg/L	0.00351	0.0482	mg/L	0.00351	7.28%
As 188.979†	8.1	0.00519	mg/L	0.003924	0.00519	mg/L	0.003924	75.55%
Ba 233.527†	359.4	0.00060	mg/L	0.000231	0.00060	mg/L	0.000231	38.80%

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Be 234.861†	621.9	0.00036	mg/L	0.000087	0.00036	mg/L	0.000087	24.08%
B 249.677†	1534.8	0.0207	mg/L	0.00242	0.0207	mg/L	0.00242	11.66%
Ca 227.546†	577.5	3.05	mg/L	0.115	3.05	mg/L	0.115	3.76%
Cd 228.802†	-12.3	-0.00034	mg/L	0.000022	-0.00034	mg/L	0.000022	6.44%
Co 228.616†	6.7	0.00016	mg/L	0.000187	0.00016	mg/L	0.000187	115.41%
Cr 267.716†	304.2	0.00040	mg/L	0.000056	0.00040	mg/L	0.000056	13.87%
Cu 327.393†	21.1	0.00017	mg/L	0.000100	0.00017	mg/L	0.000100	59.09%
Fe 239.562†	5067.0	1.77	mg/L	0.097	1.77	mg/L	0.097	5.47%
Mg 279.077†	2180.4	1.98	mg/L	0.107	1.98	mg/L	0.107	5.43%
Mn 257.610†	11866.1	0.0168	mg/L	0.00083	0.0168	mg/L	0.00083	4.94%
Mo 202.031†	58.2	-0.00189	mg/L	0.000096	-0.00189	mg/L	0.000096	5.11%
Ni 231.604†	96.3	-0.00026	mg/L	0.000223	-0.00026	mg/L	0.000223	84.24%
Pb 220.353†	39.0	0.00408	mg/L	0.000537	0.00408	mg/L	0.000537	13.15%
Sb 206.836†	9.9	0.00757	mg/L	0.002897	0.00757	mg/L	0.002897	38.26%
Se 196.026†	-5.1	-0.00425	mg/L	0.002507	-0.00425	mg/L	0.002507	59.03%
Si 251.611†	4656.1	0.128	mg/L	0.0057	0.128	mg/L	0.0057	4.44%
Sn 189.927†	-22.9	-0.00626	mg/L	0.000742	-0.00626	mg/L	0.000742	11.86%
Ti 334.940†	3226.6	0.00266	mg/L	0.000237	0.00266	mg/L	0.000237	8.92%
Tl 190.801†	3.7	-0.00135	mg/L	0.001508	-0.00135	mg/L	0.001508	111.45%
V 290.880†	1695.3	0.00451	mg/L	0.000579	0.00451	mg/L	0.000579	12.83%
Zn 206.200†	169.1	0.00135	mg/L	0.000316	0.00135	mg/L	0.000316	23.37%
K 766.490†	598.0	0.354	mg/L	0.0306	0.354	mg/L	0.0306	8.66%
Na 589.592†	201318.2	18.6	mg/L	1.35	18.6	mg/L	1.35	7.25%
Sr 407.771†	67125.9	0.0620	mg/L	0.00444	0.0620	mg/L	0.00444	7.17%
Li 670.784†	353.5	0.00183	mg/L	0.000283	0.00183	mg/L	0.000283	15.47%
P 214.914†	109.2	0.0593	mg/L	0.01535	0.0593	mg/L	0.01535	25.90%

Sequence No.: 17 **Autosampler Location: 67**
Sample ID: L1311121204 **Date Collected: 11/26/2013 2:51:10 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1311121204

Analyte	Back Pressure	Flow
All	181.0 kPa	0.45 L/min

Mean Data: L1311121204

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2879358.2						67130.58	2.33%
YRADIAL	196622.8						5491.46	2.79%
Ga 417.206	929636.3						25298.38	2.72%
GaRADIAL	43262.9						1138.02	2.63%
Ag 328.068†	-317.7	-0.00053	mg/L	0.000409	-0.00053	mg/L	0.000409	77.16%
Al 396.153†	49.5	-0.00049	mg/L	0.002062	-0.00049	mg/L	0.002062	419.78%
As 188.979†	3.4	0.00244	mg/L	0.002733	0.00244	mg/L	0.002733	111.90%
Ba 233.527†	0.7	-0.00409	mg/L	0.000055	-0.00409	mg/L	0.000055	1.34%
Be 234.861†	550.4	0.00012	mg/L	0.000017	0.00012	mg/L	0.000017	14.32%
B 249.677†	631.5	0.00718	mg/L	0.000429	0.00718	mg/L	0.000429	5.97%
Ca 227.546†	601.4	3.18	mg/L	0.080	3.18	mg/L	0.080	2.52%
Cd 228.802†	-12.6	-0.00034	mg/L	0.000045	-0.00034	mg/L	0.000045	13.35%
Co 228.616†	-15.1	-0.00089	mg/L	0.000148	-0.00089	mg/L	0.000148	16.58%
Cr 267.716†	44.8	-0.00197	mg/L	0.000163	-0.00197	mg/L	0.000163	8.28%
Cu 327.393†	-394.7	-0.00178	mg/L	0.000379	-0.00178	mg/L	0.000379	21.23%
Fe 239.562†	6581.4	2.30	mg/L	0.130	2.30	mg/L	0.130	5.65%
Mg 279.077†	1343.6	1.20	mg/L	0.066	1.20	mg/L	0.066	5.49%
Mn 257.610†	17096.8	0.0260	mg/L	0.00084	0.0260	mg/L	0.00084	3.24%
Mo 202.031†	-8.6	-0.00604	mg/L	0.000344	-0.00604	mg/L	0.000344	5.69%
Ni 231.604†	10.0	-0.00276	mg/L	0.000055	-0.00276	mg/L	0.000055	2.01%
Pb 220.353†	21.4	0.00102	mg/L	0.001213	0.00102	mg/L	0.001213	118.49%
Sb 206.836†	-2.1	0.00116	mg/L	0.002012	0.00116	mg/L	0.002012	174.01%
Se 196.026†	-5.9	-0.00504	mg/L	0.001686	-0.00504	mg/L	0.001686	33.48%
Si 251.611†	1345.8	0.0288	mg/L	0.00181	0.0288	mg/L	0.00181	6.27%
Sn 189.927†	-22.8	-0.00624	mg/L	0.000447	-0.00624	mg/L	0.000447	7.17%
Ti 334.940†	-613.7	-0.00210	mg/L	0.000169	-0.00210	mg/L	0.000169	8.05%
Tl 190.801†	2.2	-0.00228	mg/L	0.004036	-0.00228	mg/L	0.004036	176.64%
V 290.880†	677.8	-0.00109	mg/L	0.001262	-0.00109	mg/L	0.001262	115.95%
Zn 206.200†	34.7	-0.00376	mg/L	0.000194	-0.00376	mg/L	0.000194	5.17%

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K 766.490†	68.2	0.0484	mg/L	0.01734	0.0484	mg/L	0.01734	35.85%
Na 589.592†	43506.8	3.97	mg/L	0.304	3.97	mg/L	0.304	7.66%
Sr 407.771†	60652.6	0.0555	mg/L	0.00450	0.0555	mg/L	0.00450	8.12%
Li 670.784†	0.6	-0.00342	mg/L	0.000230	-0.00342	mg/L	0.000230	6.73%
P 214.914†	114.1	0.0643	mg/L	0.00764	0.0643	mg/L	0.00764	11.88%

Sequence No.: 18 **Autosampler Location: 68**
Sample ID: L1311121209 **Date Collected: 11/26/2013 2:54:13 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1311121209

Analyte	Back Pressure	Flow
All	181.0 kPa	0.45 L/min

Mean Data: L1311121209

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2792533.6						57042.26	2.04%
YRADIAL	193286.4						5035.20	2.61%
Ga 417.206	909417.6						14701.63	1.62%
GaRADIAL	42753.6						790.40	1.85%
Ag 328.068†	-379.8	-0.00089	mg/L	0.000176	-0.00089	mg/L	0.000176	19.74%
Al 396.153†	59.0	0.00274	mg/L	0.002373	0.00274	mg/L	0.002373	86.60%
As 188.979†	2.2	0.00168	mg/L	0.004456	0.00168	mg/L	0.004456	265.14%
Ba 233.527†	-4.8	-0.00415	mg/L	0.000015	-0.00415	mg/L	0.000015	0.37%
Be 234.861†	498.1	0.00010	mg/L	0.000165	0.00010	mg/L	0.000165	163.30%
B 249.677†	881.0	0.0110	mg/L	0.00039	0.0110	mg/L	0.00039	3.55%
Ca 227.546†	614.9	3.24	mg/L	0.092	3.24	mg/L	0.092	2.82%
Cd 228.802†	-9.0	-0.00019	mg/L	0.000149	-0.00019	mg/L	0.000149	76.64%
Co 228.616†	-13.6	-0.00082	mg/L	0.000178	-0.00082	mg/L	0.000178	21.86%
Cr 267.716†	31.2	-0.00207	mg/L	0.000088	-0.00207	mg/L	0.000088	4.23%
Cu 327.393†	-354.0	-0.00160	mg/L	0.000598	-0.00160	mg/L	0.000598	37.26%
Fe 239.562†	5887.1	2.06	mg/L	0.024	2.06	mg/L	0.024	1.18%
Mg 279.077†	2165.7	1.96	mg/L	0.028	1.96	mg/L	0.028	1.42%
Mn 257.610†	19606.4	0.0305	mg/L	0.00034	0.0305	mg/L	0.00034	1.12%
Mo 202.031†	-13.2	-0.00634	mg/L	0.000238	-0.00634	mg/L	0.000238	3.75%
Ni 231.604†	6.9	-0.00285	mg/L	0.000163	-0.00285	mg/L	0.000163	5.71%
Pb 220.353†	9.8	-0.00095	mg/L	0.001275	-0.00095	mg/L	0.001275	134.97%
Sb 206.836†	-1.9	0.00126	mg/L	0.001318	0.00126	mg/L	0.001318	104.89%
Se 196.026†	-4.9	-0.00389	mg/L	0.002041	-0.00389	mg/L	0.002041	52.45%
Si 251.611†	1235.5	0.0255	mg/L	0.00068	0.0255	mg/L	0.00068	2.65%
Sn 189.927†	-23.5	-0.00635	mg/L	0.000840	-0.00635	mg/L	0.000840	13.23%
Ti 334.940†	-539.7	-0.00199	mg/L	0.000075	-0.00199	mg/L	0.000075	3.78%
Tl 190.801†	3.1	-0.00175	mg/L	0.001663	-0.00175	mg/L	0.001663	94.91%
V 290.880†	988.5	0.00062	mg/L	0.000828	0.00062	mg/L	0.000828	134.08%
Zn 206.200†	40.1	-0.00355	mg/L	0.000124	-0.00355	mg/L	0.000124	3.49%
K 766.490†	73.5	0.0401	mg/L	0.00873	0.0401	mg/L	0.00873	21.74%
Na 589.592†	167190.5	15.4	mg/L	0.31	15.4	mg/L	0.31	2.03%
Sr 407.771†	59076.9	0.0539	mg/L	0.00165	0.0539	mg/L	0.00165	3.07%
Li 670.784†	-16.8	-0.00368	mg/L	0.000348	-0.00368	mg/L	0.000348	9.45%
P 214.914†	99.3	0.0488	mg/L	0.00978	0.0488	mg/L	0.00978	20.02%

Sequence No.: 19 **Autosampler Location: 6**
Sample ID: CCV **Date Collected: 11/26/2013 2:57:16 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	180.0 kPa	0.45 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD

Approved: November 27, 2013

Analyte	Intensity	Conc. Units	Std.Dev.	Conc. Units	Std.Dev.	RSD
Y 371.029	2852080.4				33726.69	1.18%
YRADIAL	204827.2				1325.52	0.65%
Ga 417.206	914962.4				13578.12	1.48%
GaRADIAL	43421.5				649.28	1.50%
Ag 328.068†	94193.1	0.384 mg/L	0.0086	0.384 mg/L	0.0086	2.25%
QC value within limits for Ag 328.068 Recovery = 96.09%						
Al 396.153†	29160.0	9.93 mg/L	0.095	9.93 mg/L	0.095	0.95%
QC value within limits for Al 396.153 Recovery = 99.31%						
As 188.979†	638.1	0.386 mg/L	0.0043	0.386 mg/L	0.0043	1.13%
QC value within limits for As 188.979 Recovery = 96.50%						
Ba 233.527†	74509.1	0.964 mg/L	0.0318	0.964 mg/L	0.0318	3.30%
QC value within limits for Ba 233.527 Recovery = 96.36%						
Be 234.861†	31402.0	0.0474 mg/L	0.00117	0.0474 mg/L	0.00117	2.47%
QC value within limits for Be 234.861 Recovery = 94.80%						
B 249.677†	32516.2	0.474 mg/L	0.0118	0.474 mg/L	0.0118	2.49%
QC value within limits for B 249.677 Recovery = 94.89%						
Ca 227.546†	1878.2	10.1 mg/L	0.09	10.1 mg/L	0.09	0.90%
QC value within limits for Ca 227.546 Recovery = 100.53%						
Cd 228.802†	1164.5	0.0455 mg/L	0.00126	0.0455 mg/L	0.00126	2.78%
QC value within limits for Cd 228.802 Recovery = 90.93%						
Co 228.616†	4103.6	0.196 mg/L	0.0041	0.196 mg/L	0.0041	2.08%
QC value within limits for Co 228.616 Recovery = 97.89%						
Cr 267.716†	54016.9	0.482 mg/L	0.0148	0.482 mg/L	0.0148	3.07%
QC value within limits for Cr 267.716 Recovery = 96.45%						
Cu 327.393†	100583.1	0.480 mg/L	0.0117	0.480 mg/L	0.0117	2.45%
QC value within limits for Cu 327.393 Recovery = 95.96%						
Fe 239.562†	10805.5	3.79 mg/L	0.072	3.79 mg/L	0.072	1.89%
QC value within limits for Fe 239.562 Recovery = 94.78%						
Mg 279.077†	10390.4	9.57 mg/L	0.082	9.57 mg/L	0.082	0.86%
QC value within limits for Mg 279.077 Recovery = 95.68%						
Mn 257.610†	282280.0	0.496 mg/L	0.0174	0.496 mg/L	0.0174	3.52%
QC value within limits for Mn 257.610 Recovery = 99.16%						
Mo 202.031†	15646.2	0.971 mg/L	0.0388	0.971 mg/L	0.0388	3.99%
QC value within limits for Mo 202.031 Recovery = 97.07%						
Ni 231.604†	16921.8	0.485 mg/L	0.0160	0.485 mg/L	0.0160	3.30%
QC value within limits for Ni 231.604 Recovery = 97.09%						
Pb 220.353†	2878.3	0.492 mg/L	0.0105	0.492 mg/L	0.0105	2.13%
QC value within limits for Pb 220.353 Recovery = 98.35%						
Sb 206.836†	2136.0	1.15 mg/L	0.021	1.15 mg/L	0.021	1.81%
QC value within limits for Sb 206.836 Recovery = 95.42%						
Se 196.026†	312.4	0.387 mg/L	0.0046	0.387 mg/L	0.0046	1.19%
QC value within limits for Se 196.026 Recovery = 96.65%						
Si 251.611†	161414.1	4.80 mg/L	0.132	4.80 mg/L	0.132	2.74%
QC value within limits for Si 251.611 Recovery = 95.95%						
Sn 189.927†	5744.3	0.981 mg/L	0.0181	0.981 mg/L	0.0181	1.85%
QC value within limits for Sn 189.927 Recovery = 98.11%						
Ti 334.940†	785601.1	0.976 mg/L	0.0113	0.976 mg/L	0.0113	1.16%
QC value within limits for Ti 334.940 Recovery = 97.58%						
Tl 190.801†	829.5	0.501 mg/L	0.0060	0.501 mg/L	0.0060	1.20%
QC value within limits for Tl 190.801 Recovery = 100.22%						
V 290.880†	176835.4	0.963 mg/L	0.0385	0.963 mg/L	0.0385	4.00%
QC value within limits for V 290.880 Recovery = 96.27%						
Zn 206.200†	25814.0	0.976 mg/L	0.0304	0.976 mg/L	0.0304	3.11%
QC value within limits for Zn 206.200 Recovery = 97.63%						
K 766.490†	79948.7	48.9 mg/L	0.39	48.9 mg/L	0.39	0.80%
QC value within limits for K 766.490 Recovery = 97.86%						
Na 589.592†	543215.6	51.3 mg/L	1.03	51.3 mg/L	1.03	2.00%
QC value within limits for Na 589.592 Recovery = 102.60%						
Sr 407.771†	970679.5	0.967 mg/L	0.0064	0.967 mg/L	0.0064	0.66%
QC value within limits for Sr 407.771 Recovery = 96.73%						
Li 670.784†	66442.0	0.986 mg/L	0.0073	0.986 mg/L	0.0073	0.74%
QC value within limits for Li 670.784 Recovery = 98.61%						
P 214.914†	9547.5	9.92 mg/L	0.195	9.92 mg/L	0.195	1.96%
QC value within limits for P 214.914 Recovery = 99.24%						

All analyte(s) passed QC.

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Sequence No.: 20 **Autosampler Location: 1**
Sample ID: CCB **Date Collected: 11/26/2013 2:59:23 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**

Approved: November 27, 2013

Dilution: Sample Prep Vol:

Nebulizer Parameters: CCB

Analyte	Back Pressure	Flow
All	180.0 kPa	0.45 L/min

Mean Data: CCB

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2910900.5						16196.93	0.56%
YRADIAL	198435.1						5091.22	2.57%
Ga 417.206	936510.0						15407.20	1.65%
GaRADIAL	42717.5						407.60	0.95%
Ag 328.068†	5.2	-0.00028	mg/L	0.000127	-0.00028	mg/L	0.000127	45.16%
QC value within limits for Ag 328.068 Recovery = Not calculated								
Al 396.153†	36.9	-0.00510	mg/L	0.006603	-0.00510	mg/L	0.006603	129.44%
QC value within limits for Al 396.153 Recovery = Not calculated								
As 188.979†	-4.1	-0.00272	mg/L	0.001779	-0.00272	mg/L	0.001779	65.49%
QC value within limits for As 188.979 Recovery = Not calculated								
Ba 233.527†	2.3	-0.00395	mg/L	0.000075	-0.00395	mg/L	0.000075	1.89%
QC value within limits for Ba 233.527 Recovery = Not calculated								
Be 234.861†	140.2	0.00006	mg/L	0.000057	0.00006	mg/L	0.000057	93.72%
QC value within limits for Be 234.861 Recovery = Not calculated								
B 249.677†	488.5	0.00606	mg/L	0.001006	0.00606	mg/L	0.001006	16.59%
QC value within limits for B 249.677 Recovery = Not calculated								
Ca 227.546†	2.6	0.0828	mg/L	0.03183	0.0828	mg/L	0.03183	38.44%
QC value within limits for Ca 227.546 Recovery = Not calculated								
Cd 228.802†	-6.9	-0.00008	mg/L	0.000121	-0.00008	mg/L	0.000121	143.33%
QC value within limits for Cd 228.802 Recovery = Not calculated								
Co 228.616†	-8.1	-0.00050	mg/L	0.000195	-0.00050	mg/L	0.000195	39.02%
QC value within limits for Co 228.616 Recovery = Not calculated								
Cr 267.716†	56.2	-0.00168	mg/L	0.000046	-0.00168	mg/L	0.000046	2.73%
QC value within limits for Cr 267.716 Recovery = Not calculated								
Cu 327.393†	-311.0	-0.00152	mg/L	0.000069	-0.00152	mg/L	0.000069	4.53%
QC value within limits for Cu 327.393 Recovery = Not calculated								
Fe 239.562†	20.3	-0.00790	mg/L	0.002262	-0.00790	mg/L	0.002262	28.62%
QC value within limits for Fe 239.562 Recovery = Not calculated								
Mg 279.077†	29.8	-0.00671	mg/L	0.001824	-0.00671	mg/L	0.001824	27.17%
QC value within limits for Mg 279.077 Recovery = Not calculated								
Mn 257.610†	187.0	-0.00401	mg/L	0.000064	-0.00401	mg/L	0.000064	1.59%
QC value within limits for Mn 257.610 Recovery = Not calculated								
Mo 202.031†	-5.7	-0.00590	mg/L	0.000398	-0.00590	mg/L	0.000398	6.73%
QC value within limits for Mo 202.031 Recovery = Not calculated								
Ni 231.604†	6.6	-0.00285	mg/L	0.000109	-0.00285	mg/L	0.000109	3.82%
QC value within limits for Ni 231.604 Recovery = Not calculated								
Pb 220.353†	28.5	0.00233	mg/L	0.001372	0.00233	mg/L	0.001372	58.86%
QC value within limits for Pb 220.353 Recovery = Not calculated								
Sb 206.836†	5.3	0.00505	mg/L	0.000593	0.00505	mg/L	0.000593	11.75%
QC value within limits for Sb 206.836 Recovery = Not calculated								
Se 196.026†	-4.5	-0.00379	mg/L	0.003326	-0.00379	mg/L	0.003326	87.73%
QC value within limits for Se 196.026 Recovery = Not calculated								
Si 251.611†	-50.5	-0.0129	mg/L	0.00152	-0.0129	mg/L	0.00152	11.85%
QC value within limits for Si 251.611 Recovery = Not calculated								
Sn 189.927†	15.7	0.00036	mg/L	0.000817	0.00036	mg/L	0.000817	229.27%
QC value within limits for Sn 189.927 Recovery = Not calculated								
Ti 334.940†	41.9	-0.00174	mg/L	0.000273	-0.00174	mg/L	0.000273	15.70%
QC value within limits for Ti 334.940 Recovery = Not calculated								
Tl 190.801†	-1.1	-0.00419	mg/L	0.004007	-0.00419	mg/L	0.004007	95.66%
QC value within limits for Tl 190.801 Recovery = Not calculated								
V 290.880†	526.5	-0.00165	mg/L	0.000654	-0.00165	mg/L	0.000654	39.58%
QC value within limits for V 290.880 Recovery = Not calculated								
Zn 206.200†	17.9	-0.00438	mg/L	0.000153	-0.00438	mg/L	0.000153	3.50%
QC value within limits for Zn 206.200 Recovery = Not calculated								
K 766.490†	71.4	0.0542	mg/L	0.04387	0.0542	mg/L	0.04387	81.01%
QC value within limits for K 766.490 Recovery = Not calculated								
Na 589.592†	1280.6	0.109	mg/L	0.0529	0.109	mg/L	0.0529	48.37%
QC value within limits for Na 589.592 Recovery = Not calculated								
Sr 407.771†	1344.2	-0.00388	mg/L	0.000954	-0.00388	mg/L	0.000954	24.59%
QC value within limits for Sr 407.771 Recovery = Not calculated								
Li 670.784†	210.1	-0.00030	mg/L	0.001009	-0.00030	mg/L	0.001009	332.17%

Approved: November 27, 2013

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   QC value within limits for Li 670.784  Recovery = Not calculated
P 214.914†                93.2      0.0425 mg/L       0.00553      0.0425 mg/L       0.00553  13.02%
   QC value within limits for P 214.914  Recovery = Not calculated
All analyte(s) passed QC.
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Approved: November 27, 2013

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Analysis Begun

Start Time: 11/26/2013 3:32:57 PM **Plasma On Time: 11/26/2013 7:51:24 AM**
Logged In Analyst: peicp2 **Technique: ICP Continuous**
Spectrometer Model: Optima 4300 DV, S/N 077N4011401 Autosampler Model: Cetac

Sample Information File: C:\pe\peicp2\Sample Information\Batch 1.sif
Batch ID:
Results Data Set: 112613H2R
Results Library: C:\pe\peicp2\Results\results1.mdb

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Sequence No.: 1 **Autosampler Location: 14**
Sample ID: PBW 42 WG454260-03 **Date Collected: 11/26/2013 3:32:59 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: PBW 42 WG454260-03

Analyte	Back Pressure	Flow
All	180.0 kPa	0.45 L/min

Mean Data: PBW 42 WG454260-03

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2878837.3						33846.56	1.18%
YRADIAL	199467.1						3322.02	1.67%
Ga 417.206	926276.8						12299.89	1.33%
GaRADIAL	41884.0						1218.06	2.91%
Ag 328.068†	118.5	0.00017	mg/L	0.000342	0.00017	mg/L	0.000342	202.66%
Al 396.153†	-2.1	-0.0185	mg/L	0.00052	-0.0185	mg/L	0.00052	2.79%
As 188.979†	0.2	-0.00011	mg/L	0.003534	-0.00011	mg/L	0.003534	>999.9%
Ba 233.527†	9.2	-0.00386	mg/L	0.000187	-0.00386	mg/L	0.000187	4.85%
Be 234.861†	208.0	0.00017	mg/L	0.000038	0.00017	mg/L	0.000038	22.73%
B 249.677†	104.6	0.00041	mg/L	0.000255	0.00041	mg/L	0.000255	62.84%
Ca 227.546†	8.2	0.111	mg/L	0.0369	0.111	mg/L	0.0369	33.15%
Cd 228.802†	-6.3	-0.00007	mg/L	0.000138	-0.00007	mg/L	0.000138	187.62%
Co 228.616†	-9.4	-0.00056	mg/L	0.000307	-0.00056	mg/L	0.000307	54.47%
Cr 267.716†	14.9	-0.00205	mg/L	0.000038	-0.00205	mg/L	0.000038	1.85%
Cu 327.393†	-147.9	-0.00075	mg/L	0.000582	-0.00075	mg/L	0.000582	77.84%
Fe 239.562†	0.2	-0.0150	mg/L	0.00125	-0.0150	mg/L	0.00125	8.35%
Mg 279.077†	20.1	-0.0156	mg/L	0.00570	-0.0156	mg/L	0.00570	36.43%
Mn 257.610†	119.5	-0.00413	mg/L	0.000027	-0.00413	mg/L	0.000027	0.65%
Mo 202.031†	-8.4	-0.00608	mg/L	0.000200	-0.00608	mg/L	0.000200	3.30%
Ni 231.604†	16.3	-0.00258	mg/L	0.000299	-0.00258	mg/L	0.000299	11.63%
Pb 220.353†	12.8	-0.00035	mg/L	0.000728	-0.00035	mg/L	0.000728	208.59%
Sb 206.836†	-4.4	-0.00015	mg/L	0.000531	-0.00015	mg/L	0.000531	350.20%
Se 196.026†	-3.8	-0.00297	mg/L	0.004367	-0.00297	mg/L	0.004367	147.24%
Si 251.611†	-186.1	-0.0169	mg/L	0.00062	-0.0169	mg/L	0.00062	3.66%
Sn 189.927†	4.2	-0.00161	mg/L	0.000773	-0.00161	mg/L	0.000773	48.04%
Ti 334.940†	-117.5	-0.00193	mg/L	0.000204	-0.00193	mg/L	0.000204	10.54%
Tl 190.801†	1.7	-0.00258	mg/L	0.002511	-0.00258	mg/L	0.002511	97.38%
V 290.880†	140.8	-0.00376	mg/L	0.002819	-0.00376	mg/L	0.002819	74.88%
Zn 206.200†	22.6	-0.00421	mg/L	0.000098	-0.00421	mg/L	0.000098	2.33%
K 766.490†	-32.4	-0.00849	mg/L	0.020376	-0.00849	mg/L	0.020376	239.94%
Na 589.592†	374.9	0.0269	mg/L	0.01220	0.0269	mg/L	0.01220	45.27%
Sr 407.771†	81.0	-0.00514	mg/L	0.000047	-0.00514	mg/L	0.000047	0.92%
Li 670.784†	42.0	-0.00281	mg/L	0.000091	-0.00281	mg/L	0.000091	3.23%
P 214.914†	77.8	0.0264	mg/L	0.00614	0.0264	mg/L	0.00614	23.25%

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Sequence No.: 2 **Autosampler Location: 15**
Sample ID: LCSW 42 WG454260-04 **Date Collected: 11/26/2013 3:36:01 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Approved: November 27, 2013

Nebulizer Parameters: LCSW 42 WG454260-04

Analyte	Back Pressure	Flow
All	180.0 kPa	0.45 L/min

Mean Data: LCSW 42 WG454260-04

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2798640.7						40782.09	1.46%
YRADIAL	196883.9						2141.87	1.09%
Ga 417.206	908350.6						13076.44	1.44%
GaRADIAL	43386.5						316.89	0.73%
Ag 328.068†	48825.6	0.199	mg/L	0.0053	0.199	mg/L	0.0053	2.64%
Al 396.153†	14942.2	5.08	mg/L	0.081	5.08	mg/L	0.081	1.60%
As 188.979†	320.9	0.194	mg/L	0.0037	0.194	mg/L	0.0037	1.93%
Ba 233.527†	37797.7	0.487	mg/L	0.0163	0.487	mg/L	0.0163	3.36%
Be 234.861†	15539.7	0.0233	mg/L	0.00075	0.0233	mg/L	0.00075	3.22%
B 249.677†	65849.0	0.968	mg/L	0.0373	0.968	mg/L	0.0373	3.86%
Ca 227.546†	945.0	5.10	mg/L	0.065	5.10	mg/L	0.065	1.28%
Cd 228.802†	590.0	0.0231	mg/L	0.00048	0.0231	mg/L	0.00048	2.05%
Co 228.616†	2105.6	0.100	mg/L	0.0019	0.100	mg/L	0.0019	1.86%
Cr 267.716†	27529.6	0.245	mg/L	0.0079	0.245	mg/L	0.0079	3.24%
Cu 327.393†	51838.8	0.247	mg/L	0.0090	0.247	mg/L	0.0090	3.62%
Fe 239.562†	5783.9	2.02	mg/L	0.034	2.02	mg/L	0.034	1.69%
Mg 279.077†	5554.5	5.10	mg/L	0.078	5.10	mg/L	0.078	1.54%
Mn 257.610†	144194.1	0.251	mg/L	0.0092	0.251	mg/L	0.0092	3.66%
Mo 202.031†	8001.2	0.494	mg/L	0.0157	0.494	mg/L	0.0157	3.17%
Ni 231.604†	8639.5	0.246	mg/L	0.0060	0.246	mg/L	0.0060	2.45%
Pb 220.353†	1481.2	0.252	mg/L	0.0039	0.252	mg/L	0.0039	1.54%
Sb 206.836†	1079.4	0.580	mg/L	0.0066	0.580	mg/L	0.0066	1.14%
Se 196.026†	156.0	0.194	mg/L	0.0060	0.194	mg/L	0.0060	3.07%
Si 251.611†	81431.6	2.41	mg/L	0.079	2.41	mg/L	0.079	3.26%
Sn 189.927†	3059.2	0.521	mg/L	0.0125	0.521	mg/L	0.0125	2.40%
Ti 334.940†	398530.2	0.494	mg/L	0.0022	0.494	mg/L	0.0022	0.45%
Tl 190.801†	431.4	0.259	mg/L	0.0044	0.259	mg/L	0.0044	1.69%
V 290.880†	90280.2	0.489	mg/L	0.0200	0.489	mg/L	0.0200	4.09%
Zn 206.200†	12976.6	0.488	mg/L	0.0149	0.488	mg/L	0.0149	3.06%
K 766.490†	40565.7	24.7	mg/L	0.06	24.7	mg/L	0.06	0.22%
Na 589.592†	265428.3	24.6	mg/L	0.13	24.6	mg/L	0.13	0.51%
Sr 407.771†	497147.5	0.493	mg/L	0.0038	0.493	mg/L	0.0038	0.76%
Li 670.784†	34287.7	0.507	mg/L	0.0014	0.507	mg/L	0.0014	0.28%
P 214.914†	-146.4	-0.208	mg/L	0.0039	-0.208	mg/L	0.0039	1.89%

Sequence No.: 3 **Autosampler Location: 16**
Sample ID: L1311106406 WG454260-01 **Date Collected: 11/26/2013 3:38:08 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1311106406 WG454260-01

Analyte	Back Pressure	Flow
All	180.0 kPa	0.45 L/min

Mean Data: L1311106406 WG454260-01

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2667914.4						36078.44	1.35%
YRADIAL	192046.0						4741.17	2.47%
Ga 417.206	883401.0						14248.97	1.61%
GaRADIAL	42112.4						1069.36	2.54%
Ag 328.068†	-2655.4	0.00096	mg/L	0.000171	0.00096	mg/L	0.000171	17.73%
Al 396.153†	14421.8	4.94	mg/L	0.065	4.94	mg/L	0.065	1.31%
As 188.979†	79.9	0.0579	mg/L	0.00137	0.0579	mg/L	0.00137	2.37%
Ba 233.527†	39302.9	0.505	mg/L	0.0051	0.505	mg/L	0.0051	1.00%
Be 234.861†	4457.6	0.00031	mg/L	0.000066	0.00031	mg/L	0.000066	21.44%
B 249.677†	35623.7	0.513	mg/L	0.0100	0.513	mg/L	0.0100	1.96%
Ca 227.546†	30527.8	156	mg/L	2.6	156	mg/L	2.6	1.69%
Cd 228.802†	0.6	-0.00008	mg/L	0.000193	-0.00008	mg/L	0.000193	254.72%
Co 228.616†	107.4	0.00407	mg/L	0.000345	0.00407	mg/L	0.000345	8.50%

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Cr 267.716†	1013.6	0.00492 mg/L	0.000110	0.00492 mg/L	0.000110	2.24%
Cu 327.393†	2381.7	0.0129 mg/L	0.00020	0.0129 mg/L	0.00020	1.55%
Fe 239.562†	74600.7	26.3 mg/L	0.27	26.3 mg/L	0.27	1.02%
Mg 279.077†	37599.1	34.6 mg/L	0.38	34.6 mg/L	0.38	1.11%
Mn 257.610†	716835.5	1.27 mg/L	0.006	1.27 mg/L	0.006	0.50%
Mo 202.031†	83.4	0.00034 mg/L	0.000418	0.00034 mg/L	0.000418	124.04%
Ni 231.604†	394.1	0.00834 mg/L	0.000560	0.00834 mg/L	0.000560	6.72%
Pb 220.353†	95.5	0.0129 mg/L	0.00057	0.0129 mg/L	0.00057	4.39%
Sb 206.836†	-2.7	0.00170 mg/L	0.002708	0.00170 mg/L	0.002708	159.27%
Se 196.026†	-5.2	0.00022 mg/L	0.005861	0.00022 mg/L	0.005861	>999.9%
Si 251.611†	492965.3	14.7 mg/L	0.01	14.7 mg/L	0.01	0.09%
Sn 189.927†	-287.6	-0.0516 mg/L	0.00152	-0.0516 mg/L	0.00152	2.95%
Ti 334.940†	43389.8	0.0754 mg/L	0.00172	0.0754 mg/L	0.00172	2.28%
Tl 190.801†	-31.2	-0.0224 mg/L	0.00228	-0.0224 mg/L	0.00228	10.18%
V 290.880†	4175.3	0.0148 mg/L	0.00119	0.0148 mg/L	0.00119	8.05%
Zn 206.200†	2257.0	0.0803 mg/L	0.00067	0.0803 mg/L	0.00067	0.83%
K 766.490†	3111.3	1.70 mg/L	0.010	1.70 mg/L	0.010	0.62%
Na 589.592†	1805133.3	189 mg/L	4.7	189 mg/L	4.7	2.49%
Sr 407.771†	260405.7	0.251 mg/L	0.0058	0.251 mg/L	0.0058	2.32%
Li 670.784†	1013.5	0.0117 mg/L	0.00098	0.0117 mg/L	0.00098	8.43%
P 214.914†	1045.1	1.04 mg/L	0.014	1.04 mg/L	0.014	1.38%

Sequence No.: 4 **Autosampler Location: 17**
Sample ID: L1311106410S WG454260-05 **Date Collected: 11/26/2013 3:40:15 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1311106410S WG454260-05

Analyte	Back Pressure	Flow
All	180.0 kPa	0.45 L/min

Mean Data: L1311106410S WG454260-05

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	2742074.8						53275.12	1.94%
YRADIAL	193006.4						3353.33	1.74%
Ga 417.206	908671.4						21529.57	2.37%
GaRADIAL	42580.2						816.51	1.92%
Ag 328.068†	41253.8	0.180	mg/L	0.0014	0.180	mg/L	0.0014	0.79%
Al 396.153†	25755.2	8.80	mg/L	0.053	8.80	mg/L	0.053	0.60%
As 188.979†	374.8	0.236	mg/L	0.0038	0.236	mg/L	0.0038	1.61%
Ba 233.527†	74025.2	0.956	mg/L	0.0161	0.956	mg/L	0.0161	1.69%
Be 234.861†	18728.8	0.0220	mg/L	0.00032	0.0220	mg/L	0.00032	1.45%
B 249.677†	95837.1	1.40	mg/L	0.019	1.40	mg/L	0.019	1.36%
Ca 227.546†	31769.3	162	mg/L	2.0	162	mg/L	2.0	1.23%
Cd 228.802†	524.4	0.0203	mg/L	0.00095	0.0203	mg/L	0.00095	4.67%
Co 228.616†	1906.8	0.0900	mg/L	0.00135	0.0900	mg/L	0.00135	1.50%
Cr 267.716†	25241.3	0.222	mg/L	0.0045	0.222	mg/L	0.0045	2.01%
Cu 327.393†	47862.9	0.230	mg/L	0.0021	0.230	mg/L	0.0021	0.93%
Fe 239.562†	78692.0	27.7	mg/L	0.05	27.7	mg/L	0.05	0.18%
Mg 279.077†	42590.9	39.3	mg/L	0.04	39.3	mg/L	0.04	0.11%
Mn 257.610†	853413.5	1.51	mg/L	0.010	1.51	mg/L	0.010	0.65%
Mo 202.031†	7445.4	0.460	mg/L	0.0085	0.460	mg/L	0.0085	1.86%
Ni 231.604†	8052.3	0.229	mg/L	0.0040	0.229	mg/L	0.0040	1.74%
Pb 220.353†	1338.2	0.226	mg/L	0.0066	0.226	mg/L	0.0066	2.92%
Sb 206.836†	940.3	0.506	mg/L	0.0119	0.506	mg/L	0.0119	2.35%
Se 196.026†	141.9	0.181	mg/L	0.0060	0.181	mg/L	0.0060	3.30%
Si 251.611†	536680.5	16.0	mg/L	0.07	16.0	mg/L	0.07	0.47%
Sn 189.927†	2441.9	0.416	mg/L	0.0089	0.416	mg/L	0.0089	2.14%
Ti 334.940†	401948.4	0.522	mg/L	0.0087	0.522	mg/L	0.0087	1.66%
Tl 190.801†	324.5	0.194	mg/L	0.0055	0.194	mg/L	0.0055	2.85%
V 290.880†	84457.8	0.454	mg/L	0.0105	0.454	mg/L	0.0105	2.30%
Zn 206.200†	13417.8	0.505	mg/L	0.0087	0.505	mg/L	0.0087	1.73%
K 766.490†	39322.1	23.7	mg/L	0.24	23.7	mg/L	0.24	1.00%
Na 589.592†	1977539.5	211	mg/L	2.4	211	mg/L	2.4	1.14%
Sr 407.771†	697870.8	0.689	mg/L	0.0046	0.689	mg/L	0.0046	0.67%
Li 670.784†	31316.6	0.463	mg/L	0.0021	0.463	mg/L	0.0021	0.45%
P 214.914†	911.6	0.898	mg/L	0.0174	0.898	mg/L	0.0174	1.94%

Approved: November 27, 2013

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Sequence No.: 5 **Autosampler Location: 18**
Sample ID: L1311106412SD WG454260-06 **Date Collected: 11/26/2013 3:42:22 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1311106412SD WG454260-06

Analyte	Back Pressure	Flow
All	180.0 kPa	0.45 L/min

Mean Data: L1311106412SD WG454260-06

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2677738.0						17109.69	0.64%
YRADIAL	191069.4						5130.46	2.69%
Ga 417.206	882323.9						5717.13	0.65%
GaRADIAL	42378.5						1006.12	2.37%
Ag 328.068†	42389.2	0.187	mg/L	0.0004	0.187	mg/L	0.0004	0.21%
Al 396.153†	30272.3	10.4	mg/L	0.03	10.4	mg/L	0.03	0.24%
As 188.979†	398.4	0.252	mg/L	0.0057	0.252	mg/L	0.0057	2.28%
Ba 233.527†	77784.0	1.00	mg/L	0.013	1.00	mg/L	0.013	1.30%
Be 234.861†	20100.0	0.0228	mg/L	0.00022	0.0228	mg/L	0.00022	0.97%
B 249.677†	98781.1	1.44	mg/L	0.012	1.44	mg/L	0.012	0.86%
Ca 227.546†	33074.8	169	mg/L	1.3	169	mg/L	1.3	0.77%
Cd 228.802†	556.5	0.0215	mg/L	0.00059	0.0215	mg/L	0.00059	2.75%
Co 228.616†	2018.0	0.0951	mg/L	0.00101	0.0951	mg/L	0.00101	1.06%
Cr 267.716†	26591.7	0.234	mg/L	0.0034	0.234	mg/L	0.0034	1.44%
Cu 327.393†	50215.4	0.241	mg/L	0.0008	0.241	mg/L	0.0008	0.34%
Fe 239.562†	93859.5	33.1	mg/L	0.07	33.1	mg/L	0.07	0.21%
Mg 279.077†	45699.2	42.1	mg/L	0.31	42.1	mg/L	0.31	0.74%
Mn 257.610†	933834.1	1.65	mg/L	0.013	1.65	mg/L	0.013	0.77%
Mo 202.031†	7768.5	0.480	mg/L	0.0058	0.480	mg/L	0.0058	1.20%
Ni 231.604†	8472.3	0.242	mg/L	0.0027	0.242	mg/L	0.0027	1.12%
Pb 220.353†	1413.0	0.239	mg/L	0.0056	0.239	mg/L	0.0056	2.34%
Sb 206.836†	980.4	0.528	mg/L	0.0069	0.528	mg/L	0.0069	1.31%
Se 196.026†	153.0	0.196	mg/L	0.0085	0.196	mg/L	0.0085	4.33%
Si 251.611†	604010.2	18.0	mg/L	0.04	18.0	mg/L	0.04	0.21%
Sn 189.927†	2542.5	0.433	mg/L	0.0057	0.433	mg/L	0.0057	1.32%
Ti 334.940†	439200.8	0.569	mg/L	0.0048	0.569	mg/L	0.0048	0.85%
Tl 190.801†	334.0	0.200	mg/L	0.0061	0.200	mg/L	0.0061	3.03%
V 290.880†	88828.6	0.477	mg/L	0.0090	0.477	mg/L	0.0090	1.88%
Zn 206.200†	13936.7	0.524	mg/L	0.0070	0.524	mg/L	0.0070	1.34%
K 766.490†	41350.9	25.0	mg/L	0.08	25.0	mg/L	0.08	0.32%
Na 589.592†	2022029.2	217	mg/L	6.4	217	mg/L	6.4	2.96%
Sr 407.771†	738470.3	0.730	mg/L	0.0265	0.730	mg/L	0.0265	3.63%
Li 670.784†	33107.7	0.490	mg/L	0.0015	0.490	mg/L	0.0015	0.31%
P 214.914†	1062.0	1.06	mg/L	0.018	1.06	mg/L	0.018	1.74%

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Sequence No.: 6 **Autosampler Location: 19**
Sample ID: L1311139701 **Date Collected: 11/26/2013 3:44:29 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1311139701

Analyte	Back Pressure	Flow
All	180.0 kPa	0.45 L/min

Mean Data: L1311139701

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2879391.0						18293.92	0.64%
YRADIAL	190537.8						662.26	0.35%
Ga 417.206	965125.2						14409.09	1.49%
GaRADIAL	42776.0						551.03	1.29%

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Ag 328.068†	267.3	0.00075 mg/L	0.000270	0.00075 mg/L	0.000270	35.93%
Al 396.153†	43.7	-0.00300 mg/L	0.004507	-0.00300 mg/L	0.004507	150.19%
As 188.979†	-16.9	-0.00903 mg/L	0.001912	-0.00903 mg/L	0.001912	21.17%
Ba 233.527†	5182.6	0.0633 mg/L	0.00064	0.0633 mg/L	0.00064	1.01%
Be 234.861†	160.8	0.00009 mg/L	0.000031	0.00009 mg/L	0.000031	35.58%
B 249.677†	1757.7	0.0248 mg/L	0.00283	0.0248 mg/L	0.00283	11.45%
Ca 227.546†	13900.9	70.7 mg/L	2.17	70.7 mg/L	2.17	3.07%
Cd 228.802†	-8.3	-0.00010 mg/L	0.000032	-0.00010 mg/L	0.000032	30.69%
Co 228.616†	-18.1	-0.00097 mg/L	0.000185	-0.00097 mg/L	0.000185	19.06%
Cr 267.716†	158.7	-0.00076 mg/L	0.000191	-0.00076 mg/L	0.000191	25.00%
Cu 327.393†	-50.6	-0.00029 mg/L	0.000513	-0.00029 mg/L	0.000513	175.31%
Fe 239.562†	124.4	0.0285 mg/L	0.02039	0.0285 mg/L	0.02039	71.65%
Mg 279.077†	17804.0	16.4 mg/L	0.06	16.4 mg/L	0.06	0.37%
Mn 257.610†	12157.8	0.0172 mg/L	0.00047	0.0172 mg/L	0.00047	2.72%
Mo 202.031†	50.9	-0.00237 mg/L	0.000504	-0.00237 mg/L	0.000504	21.24%
Ni 231.604†	-7.4	-0.00325 mg/L	0.000315	-0.00325 mg/L	0.000315	9.67%
Pb 220.353†	27.4	0.00214 mg/L	0.001001	0.00214 mg/L	0.001001	46.71%
Sb 206.836†	-1.3	0.00148 mg/L	0.001127	0.00148 mg/L	0.001127	76.00%
Se 196.026†	-0.2	0.00152 mg/L	0.007329	0.00152 mg/L	0.007329	481.28%
Si 251.611†	118861.8	3.54 mg/L	0.114	3.54 mg/L	0.114	3.21%
Sn 189.927†	-216.2	-0.0393 mg/L	0.00049	-0.0393 mg/L	0.00049	1.26%
Ti 334.940†	-9739.0	-0.00331 mg/L	0.000349	-0.00331 mg/L	0.000349	10.55%
Tl 190.801†	-24.2	-0.0180 mg/L	0.00180	-0.0180 mg/L	0.00180	10.01%
V 290.880†	1345.1	0.00240 mg/L	0.001894	0.00240 mg/L	0.001894	79.03%
Zn 206.200†	43.8	-0.00339 mg/L	0.000196	-0.00339 mg/L	0.000196	5.78%
K 766.490†	2001.9	1.21 mg/L	0.044	1.21 mg/L	0.044	3.66%
Na 589.592†	97681.2	8.95 mg/L	0.215	8.95 mg/L	0.215	2.41%
Sr 407.771†	258303.9	0.251 mg/L	0.0007	0.251 mg/L	0.0007	0.27%
Li 670.784†	408.7	0.00265 mg/L	0.001031	0.00265 mg/L	0.001031	38.86%
P 214.914†	74.5	0.0229 mg/L	0.01782	0.0229 mg/L	0.01782	77.72%

Sequence No.: 7 **Autosampler Location: 20**
Sample ID: L1311139702 **Date Collected: 11/26/2013 3:47:32 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1311139702

Analyte	Back Pressure	Flow
All	180.0 kPa	0.45 L/min

Mean Data: L1311139702

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2814076.8						10421.21	0.37%
YRADIAL	202332.2						3679.83	1.82%
Ga 417.206	933394.2						8757.09	0.94%
GaRADIAL	44857.0						916.10	2.04%
Ag 328.068†	129.2	0.00037	mg/L	0.000266	0.00037	mg/L	0.000266	72.56%
Al 396.153†	1451.9	0.481	mg/L	0.0085	0.481	mg/L	0.0085	1.77%
As 188.979†	-10.7	-0.00573	mg/L	0.001964	-0.00573	mg/L	0.001964	34.29%
Ba 233.527†	6480.8	0.0801	mg/L	0.00086	0.0801	mg/L	0.00086	1.08%
Be 234.861†	206.1	0.00007	mg/L	0.000078	0.00007	mg/L	0.000078	115.33%
B 249.677†	1605.0	0.0223	mg/L	0.00087	0.0223	mg/L	0.00087	3.92%
Ca 227.546†	8932.2	45.4	mg/L	0.36	45.4	mg/L	0.36	0.79%
Cd 228.802†	-8.1	-0.00011	mg/L	0.000083	-0.00011	mg/L	0.000083	73.97%
Co 228.616†	1.9	-0.00006	mg/L	0.000170	-0.00006	mg/L	0.000170	300.43%
Cr 267.716†	167.8	-0.00070	mg/L	0.000144	-0.00070	mg/L	0.000144	20.42%
Cu 327.393†	793.3	0.00376	mg/L	0.000265	0.00376	mg/L	0.000265	7.05%
Fe 239.562†	1253.8	0.426	mg/L	0.0087	0.426	mg/L	0.0087	2.04%
Mg 279.077†	16230.2	14.9	mg/L	0.26	14.9	mg/L	0.26	1.73%
Mn 257.610†	73489.1	0.126	mg/L	0.0007	0.126	mg/L	0.0007	0.53%
Mo 202.031†	37.8	-0.00316	mg/L	0.000522	-0.00316	mg/L	0.000522	16.53%
Ni 231.604†	42.4	-0.00182	mg/L	0.000253	-0.00182	mg/L	0.000253	13.94%
Pb 220.353†	39.6	0.00421	mg/L	0.001749	0.00421	mg/L	0.001749	41.55%
Sb 206.836†	-0.8	0.00177	mg/L	0.000834	0.00177	mg/L	0.000834	47.16%
Se 196.026†	-5.5	-0.00504	mg/L	0.005491	-0.00504	mg/L	0.005491	109.01%
Si 251.611†	144630.1	4.31	mg/L	0.056	4.31	mg/L	0.056	1.31%
Sn 189.927†	-193.0	-0.0354	mg/L	0.00091	-0.0354	mg/L	0.00091	2.57%

Approved: November 27, 2013

Ti 334.940†	747.8	0.00594 mg/L	0.000987	0.00594 mg/L	0.000987	16.62%
Tl 190.801†	-21.4	-0.0163 mg/L	0.00180	-0.0163 mg/L	0.00180	11.04%
V 290.880†	1294.7	0.00212 mg/L	0.000678	0.00212 mg/L	0.000678	32.04%
Zn 206.200†	202.5	0.00261 mg/L	0.000299	0.00261 mg/L	0.000299	11.46%
K 766.490†	2136.0	1.30 mg/L	0.017	1.30 mg/L	0.017	1.34%
Na 589.592†	43280.2	3.95 mg/L	0.028	3.95 mg/L	0.028	0.72%
Sr 407.771†	228597.7	0.222 mg/L	0.0027	0.222 mg/L	0.0027	1.20%
Li 670.784†	237.6	0.00010 mg/L	0.000095	0.00010 mg/L	0.000095	90.36%
P 214.914†	106.6	0.0565 mg/L	0.00716	0.0565 mg/L	0.00716	12.68%

Sequence No.: 8 **Autosampler Location: 21**
Sample ID: L1311139702PS WG454446-01 **Date Collected: 11/26/2013 3:50:35 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1311139702PS WG454446-01

Analyte	Back Pressure	Flow
All	180.0 kPa	0.45 L/min

Mean Data: L1311139702PS WG454446-01

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2767761.7						65311.45	2.36%
YRADIAL	199819.2						3784.36	1.89%
Ga 417.206	908456.0						17280.44	1.90%
GaRADIAL	44467.5						889.55	2.00%
Ag 328.068†	45949.3	0.188	mg/L	0.0020	0.188	mg/L	0.0020	1.07%
Al 396.153†	15997.0	5.44	mg/L	0.140	5.44	mg/L	0.140	2.57%
As 188.979†	297.3	0.181	mg/L	0.0037	0.181	mg/L	0.0037	2.06%
Ba 233.527†	41508.1	0.535	mg/L	0.0121	0.535	mg/L	0.0121	2.27%
Be 234.861†	15015.2	0.0225	mg/L	0.00038	0.0225	mg/L	0.00038	1.67%
B 249.677†	63894.6	0.939	mg/L	0.0247	0.939	mg/L	0.0247	2.63%
Ca 227.546†	9312.5	47.6	mg/L	1.39	47.6	mg/L	1.39	2.92%
Cd 228.802†	552.6	0.0217	mg/L	0.00023	0.0217	mg/L	0.00023	1.05%
Co 228.616†	1961.3	0.0935	mg/L	0.00226	0.0935	mg/L	0.00226	2.42%
Cr 267.716†	26310.6	0.234	mg/L	0.0058	0.234	mg/L	0.0058	2.50%
Cu 327.393†	47575.6	0.227	mg/L	0.0046	0.227	mg/L	0.0046	2.02%
Fe 239.562†	6738.2	2.36	mg/L	0.065	2.36	mg/L	0.065	2.77%
Mg 279.077†	20058.1	18.5	mg/L	0.58	18.5	mg/L	0.58	3.13%
Mn 257.610†	199471.5	0.349	mg/L	0.0087	0.349	mg/L	0.0087	2.49%
Mo 202.031†	8037.3	0.496	mg/L	0.0129	0.496	mg/L	0.0129	2.60%
Ni 231.604†	8323.7	0.237	mg/L	0.0067	0.237	mg/L	0.0067	2.82%
Pb 220.353†	1423.8	0.242	mg/L	0.0086	0.242	mg/L	0.0086	3.56%
Sb 206.836†	1035.3	0.556	mg/L	0.0086	0.556	mg/L	0.0086	1.56%
Se 196.026†	151.4	0.188	mg/L	0.0112	0.188	mg/L	0.0112	5.93%
Si 251.611†	211653.5	6.30	mg/L	0.161	6.30	mg/L	0.161	2.56%
Sn 189.927†	2902.2	0.495	mg/L	0.0197	0.495	mg/L	0.0197	3.99%
Ti 334.940†	396536.7	0.498	mg/L	0.0150	0.498	mg/L	0.0150	3.00%
Tl 190.801†	386.2	0.232	mg/L	0.0050	0.232	mg/L	0.0050	2.17%
V 290.880†	86979.3	0.471	mg/L	0.0146	0.471	mg/L	0.0146	3.11%
Zn 206.200†	12702.3	0.478	mg/L	0.0128	0.478	mg/L	0.0128	2.69%
K 766.490†	41856.9	25.5	mg/L	0.11	25.5	mg/L	0.11	0.43%
Na 589.592†	298965.3	27.8	mg/L	0.09	27.8	mg/L	0.09	0.33%
Sr 407.771†	689238.1	0.684	mg/L	0.0078	0.684	mg/L	0.0078	1.14%
Li 670.784†	33879.6	0.501	mg/L	0.0022	0.501	mg/L	0.0022	0.43%
P 214.914†	4974.2	5.14	mg/L	0.180	5.14	mg/L	0.180	3.49%

Sequence No.: 9 **Autosampler Location: 22**
Sample ID: L1311139702DL WG454446-02 **Date Collected: 11/26/2013 3:52:42 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1311139702DL WG454446-02

Analyte	Back Pressure	Flow
All	180.0 kPa	0.45 L/min

Approved: November 27, 2013

Mean Data: L1311139702DL WG454446-02

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2804382.9						18880.51	0.67%
YRADIAL	196935.4						6757.64	3.43%
Ga 417.206	912627.2						3857.37	0.42%
GaRADIAL	43222.5						1333.22	3.08%
Ag 328.068†	-47.4	-0.00046	mg/L	0.000435	-0.00046	mg/L	0.000435	93.98%
Al 396.153†	323.9	0.0934	mg/L	0.00306	0.0934	mg/L	0.00306	3.28%
As 188.979†	-3.5	-0.00217	mg/L	0.002194	-0.00217	mg/L	0.002194	101.06%
Ba 233.527†	1306.6	0.0130	mg/L	0.00027	0.0130	mg/L	0.00027	2.11%
Be 234.861†	163.9	0.00008	mg/L	0.000006	0.00008	mg/L	0.000006	7.29%
B 249.677†	790.5	0.0105	mg/L	0.00129	0.0105	mg/L	0.00129	12.31%
Ca 227.546†	1797.6	9.20	mg/L	0.057	9.20	mg/L	0.057	0.62%
Cd 228.802†	-9.9	-0.00021	mg/L	0.000078	-0.00021	mg/L	0.000078	37.63%
Co 228.616†	-7.3	-0.00047	mg/L	0.000212	-0.00047	mg/L	0.000212	45.31%
Cr 267.716†	79.8	-0.00147	mg/L	0.000024	-0.00147	mg/L	0.000024	1.65%
Cu 327.393†	-19.4	-0.00013	mg/L	0.000184	-0.00013	mg/L	0.000184	143.00%
Fe 239.562†	270.0	0.0800	mg/L	0.00293	0.0800	mg/L	0.00293	3.65%
Mg 279.077†	3314.4	3.02	mg/L	0.111	3.02	mg/L	0.111	3.67%
Mn 257.610†	14492.1	0.0213	mg/L	0.00052	0.0213	mg/L	0.00052	2.44%
Mo 202.031†	8.4	-0.00502	mg/L	0.000224	-0.00502	mg/L	0.000224	4.47%
Ni 231.604†	1.3	-0.00301	mg/L	0.000170	-0.00301	mg/L	0.000170	5.65%
Pb 220.353†	29.7	0.00254	mg/L	0.001239	0.00254	mg/L	0.001239	48.76%
Sb 206.836†	0.6	0.00252	mg/L	0.000740	0.00252	mg/L	0.000740	29.41%
Se 196.026†	-5.4	-0.00496	mg/L	0.003900	-0.00496	mg/L	0.003900	78.56%
Si 251.611†	30499.7	0.899	mg/L	0.0052	0.899	mg/L	0.0052	0.58%
Sn 189.927†	-62.5	-0.0130	mg/L	0.00081	-0.0130	mg/L	0.00081	6.24%
Ti 334.940†	161.7	-0.00022	mg/L	0.000168	-0.00022	mg/L	0.000168	75.80%
Tl 190.801†	-0.7	-0.00401	mg/L	0.003290	-0.00401	mg/L	0.003290	81.93%
V 290.880†	895.1	0.00028	mg/L	0.001027	0.00028	mg/L	0.001027	371.51%
Zn 206.200†	78.1	-0.00210	mg/L	0.000219	-0.00210	mg/L	0.000219	10.43%
K 766.490†	496.0	0.310	mg/L	0.0273	0.310	mg/L	0.0273	8.81%
Na 589.592†	9559.3	0.864	mg/L	0.0422	0.864	mg/L	0.0422	4.88%
Sr 407.771†	46456.8	0.0410	mg/L	0.00108	0.0410	mg/L	0.00108	2.64%
Li 670.784†	141.4	-0.00133	mg/L	0.000480	-0.00133	mg/L	0.000480	36.17%
P 214.914†	103.7	0.0535	mg/L	0.00520	0.0535	mg/L	0.00520	9.72%

Sequence No.: 10 **Autosampler Location: 23**
Sample ID: L1311139702DL WG454446-02 **Date Collected: 11/26/2013 3:55:45 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1311139702DL WG454446-02

Analyte	Back Pressure	Flow
All	180.0 kPa	0.45 L/min

Mean Data: L1311139702DL WG454446-02

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2788871.5						66184.72	2.37%
YRADIAL	195727.7						1354.68	0.69%
Ga 417.206	893664.2						30086.36	3.37%
GaRADIAL	42297.6						469.70	1.11%
Ag 328.068†	43.8	-0.00012	mg/L	0.000270	-0.00012	mg/L	0.000270	227.39%
Al 396.153†	68.4	0.00578	mg/L	0.001389	0.00578	mg/L	0.001389	24.03%
As 188.979†	1.8	0.00092	mg/L	0.000663	0.00092	mg/L	0.000663	72.18%
Ba 233.527†	252.5	-0.00071	mg/L	0.000197	-0.00071	mg/L	0.000197	27.97%
Be 234.861†	141.0	0.00006	mg/L	0.000089	0.00006	mg/L	0.000089	151.95%
B 249.677†	290.2	0.00314	mg/L	0.000094	0.00314	mg/L	0.000094	3.00%
Ca 227.546†	368.3	1.94	mg/L	0.052	1.94	mg/L	0.052	2.69%
Cd 228.802†	-9.5	-0.00021	mg/L	0.000194	-0.00021	mg/L	0.000194	93.49%
Co 228.616†	-16.1	-0.00089	mg/L	0.000236	-0.00089	mg/L	0.000236	26.59%
Cr 267.716†	46.5	-0.00177	mg/L	0.000182	-0.00177	mg/L	0.000182	10.29%
Cu 327.393†	-317.1	-0.00155	mg/L	0.000308	-0.00155	mg/L	0.000308	19.86%
Fe 239.562†	56.9	0.00499	mg/L	0.000061	0.00499	mg/L	0.000061	1.22%

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Mg 279.077†	679.3	0.592 mg/L	0.0094	0.592 mg/L	0.0094	1.59%
Mn 257.610†	3168.0	0.00126 mg/L	0.000165	0.00126 mg/L	0.000165	13.07%
Mo 202.031†	-18.6	-0.00671 mg/L	0.000401	-0.00671 mg/L	0.000401	5.97%
Ni 231.604†	2.5	-0.00297 mg/L	0.000405	-0.00297 mg/L	0.000405	13.63%
Pb 220.353†	30.0	0.00259 mg/L	0.000650	0.00259 mg/L	0.000650	25.15%
Sb 206.836†	-2.7	0.00078 mg/L	0.002232	0.00078 mg/L	0.002232	286.98%
Se 196.026†	-6.1	-0.00576 mg/L	0.002920	-0.00576 mg/L	0.002920	50.69%
Si 251.611†	5995.2	0.168 mg/L	0.0079	0.168 mg/L	0.0079	4.74%
Sn 189.927†	-12.6	-0.00448 mg/L	0.001228	-0.00448 mg/L	0.001228	27.39%
Ti 334.940†	-121.5	-0.00166 mg/L	0.000130	-0.00166 mg/L	0.000130	7.84%
Tl 190.801†	1.4	-0.00274 mg/L	0.001403	-0.00274 mg/L	0.001403	51.22%
V 290.880†	867.1	0.00019 mg/L	0.001710	0.00019 mg/L	0.001710	879.87%
Zn 206.200†	33.5	-0.00379 mg/L	0.000139	-0.00379 mg/L	0.000139	3.65%
K 766.490†	37.0	0.0333 mg/L	0.02467	0.0333 mg/L	0.02467	74.04%
Na 589.592†	2056.8	0.180 mg/L	0.0121	0.180 mg/L	0.0121	6.70%
Sr 407.771†	9178.9	0.00392 mg/L	0.000265	0.00392 mg/L	0.000265	6.77%
Li 670.784†	-22.7	-0.00377 mg/L	0.000343	-0.00377 mg/L	0.000343	9.11%
P 214.914†	103.1	0.0529 mg/L	0.01056	0.0529 mg/L	0.01056	19.99%

Sequence No.: 11 **Autosampler Location: 6**
Sample ID: CCV **Date Collected: 11/26/2013 3:58:46 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	180.0 kPa	0.45 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2743627.9						55130.54	2.01%
YRADIAL	193345.1						4281.89	2.21%
Ga 417.206	885201.4						16949.76	1.91%
GaRADIAL	42144.2						1137.84	2.70%
Ag 328.068†	95400.5	0.389	mg/L	0.0046	0.389	mg/L	0.0046	1.17%
QC value within limits for Ag 328.068 Recovery = 97.32%								
Al 396.153†	29163.3	9.93	mg/L	0.065	9.93	mg/L	0.065	0.65%
QC value within limits for Al 396.153 Recovery = 99.33%								
As 188.979†	629.0	0.380	mg/L	0.0069	0.380	mg/L	0.0069	1.80%
QC value within limits for As 188.979 Recovery = 95.11%								
Ba 233.527†	75024.9	0.970	mg/L	0.0170	0.970	mg/L	0.0170	1.75%
QC value within limits for Ba 233.527 Recovery = 97.03%								
Be 234.861†	32800.3	0.0495	mg/L	0.00057	0.0495	mg/L	0.00057	1.16%
QC value within limits for Be 234.861 Recovery = 99.06%								
B 249.677†	32212.6	0.470	mg/L	0.0074	0.470	mg/L	0.0074	1.57%
QC value within limits for B 249.677 Recovery = 93.98%								
Ca 227.546†	1866.1	10.00	mg/L	0.174	10.00	mg/L	0.174	1.74%
QC value within limits for Ca 227.546 Recovery = 99.97%								
Cd 228.802†	1223.6	0.0479	mg/L	0.00102	0.0479	mg/L	0.00102	2.13%
QC value within limits for Cd 228.802 Recovery = 95.72%								
Co 228.616†	4135.2	0.197	mg/L	0.0037	0.197	mg/L	0.0037	1.87%
QC value within limits for Co 228.616 Recovery = 98.64%								
Cr 267.716†	54685.9	0.488	mg/L	0.0080	0.488	mg/L	0.0080	1.64%
QC value within limits for Cr 267.716 Recovery = 97.64%								
Cu 327.393†	101340.3	0.483	mg/L	0.0084	0.483	mg/L	0.0084	1.74%
QC value within limits for Cu 327.393 Recovery = 96.69%								
Fe 239.562†	10935.9	3.84	mg/L	0.207	3.84	mg/L	0.207	5.39%
QC value within limits for Fe 239.562 Recovery = 95.92%								
Mg 279.077†	10625.7	9.78	mg/L	0.512	9.78	mg/L	0.512	5.23%
QC value within limits for Mg 279.077 Recovery = 97.85%								
Mn 257.610†	284494.9	0.500	mg/L	0.0092	0.500	mg/L	0.0092	1.83%
QC value within limits for Mn 257.610 Recovery = 99.94%								
Mo 202.031†	15606.8	0.968	mg/L	0.0149	0.968	mg/L	0.0149	1.53%
QC value within limits for Mo 202.031 Recovery = 96.82%								
Ni 231.604†	17131.3	0.491	mg/L	0.0105	0.491	mg/L	0.0105	2.14%
QC value within limits for Ni 231.604 Recovery = 98.30%								
Pb 220.353†	2863.8	0.489	mg/L	0.0083	0.489	mg/L	0.0083	1.70%

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QC value within limits for Pb 220.353 Recovery = 97.85%
Sb 206.836† 2121.3 1.14 mg/L 0.026 1.14 mg/L 0.026 2.31%
QC value within limits for Sb 206.836 Recovery = 94.76%
Se 196.026† 310.8 0.385 mg/L 0.0062 0.385 mg/L 0.0062 1.62%
QC value within limits for Se 196.026 Recovery = 96.16%
Si 251.611† 160834.2 4.78 mg/L 0.069 4.78 mg/L 0.069 1.45%
QC value within limits for Si 251.611 Recovery = 95.60%
Sn 189.927† 5731.1 0.979 mg/L 0.0207 0.979 mg/L 0.0207 2.11%
QC value within limits for Sn 189.927 Recovery = 97.88%
Ti 334.940† 783576.9 0.973 mg/L 0.0036 0.973 mg/L 0.0036 0.37%
QC value within limits for Ti 334.940 Recovery = 97.33%
Tl 190.801† 832.1 0.503 mg/L 0.0077 0.503 mg/L 0.0077 1.53%
QC value within limits for Tl 190.801 Recovery = 100.51%
V 290.880† 178485.0 0.972 mg/L 0.0214 0.972 mg/L 0.0214 2.21%
QC value within limits for V 290.880 Recovery = 97.17%
Zn 206.200† 25886.4 0.979 mg/L 0.0143 0.979 mg/L 0.0143 1.46%
QC value within limits for Zn 206.200 Recovery = 97.91%
K 766.490† 79591.5 48.7 mg/L 0.18 48.7 mg/L 0.18 0.37%
QC value within limits for K 766.490 Recovery = 97.42%
Na 589.592† 531688.4 50.2 mg/L 2.27 50.2 mg/L 2.27 4.53%
QC value within limits for Na 589.592 Recovery = 100.35%
Sr 407.771† 963421.5 0.960 mg/L 0.0030 0.960 mg/L 0.0030 0.31%
QC value within limits for Sr 407.771 Recovery = 96.01%
Li 670.784† 66506.2 0.987 mg/L 0.0022 0.987 mg/L 0.0022 0.22%
QC value within limits for Li 670.784 Recovery = 98.70%
P 214.914† 9489.0 9.86 mg/L 0.204 9.86 mg/L 0.204 2.07%
QC value within limits for P 214.914 Recovery = 98.63%
All analyte(s) passed QC.

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Sequence No.: 12 **Autosampler Location: 1**
Sample ID: CCB **Date Collected: 11/26/2013 4:00:53 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCB

Analyte	Back Pressure	Flow
All	180.0 kPa	0.45 L/min

Mean Data: CCB

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2764273.7						22106.32	0.80%
YRADIAL	186427.0						4716.60	2.53%
Ga 417.206	880660.4						15677.72	1.78%
GaRADIAL	40068.8						1084.77	2.71%
Ag 328.068†	-30.3	-0.00042	mg/L	0.000208	-0.00042	mg/L	0.000208	49.29%
QC value within limits for Ag 328.068 Recovery = Not calculated								
Al 396.153†	43.9	-0.00271	mg/L	0.005252	-0.00271	mg/L	0.005252	194.00%
QC value within limits for Al 396.153 Recovery = Not calculated								
As 188.979†	-2.5	-0.00174	mg/L	0.004253	-0.00174	mg/L	0.004253	243.88%
QC value within limits for As 188.979 Recovery = Not calculated								
Ba 233.527†	-3.0	-0.00402	mg/L	0.000165	-0.00402	mg/L	0.000165	4.10%
QC value less than the lower limit for Ba 233.527 Recovery = Not calculated								
Be 234.861†	36.1	-0.00010	mg/L	0.000031	-0.00010	mg/L	0.000031	31.41%
QC value within limits for Be 234.861 Recovery = Not calculated								
B 249.677†	326.5	0.00368	mg/L	0.001165	0.00368	mg/L	0.001165	31.63%
QC value within limits for B 249.677 Recovery = Not calculated								
Ca 227.546†	-10.5	0.0158	mg/L	0.00997	0.0158	mg/L	0.00997	62.90%
QC value within limits for Ca 227.546 Recovery = Not calculated								
Cd 228.802†	-13.9	-0.00037	mg/L	0.000107	-0.00037	mg/L	0.000107	28.70%
QC value within limits for Cd 228.802 Recovery = Not calculated								
Co 228.616†	-14.7	-0.00082	mg/L	0.000262	-0.00082	mg/L	0.000262	32.16%
QC value within limits for Co 228.616 Recovery = Not calculated								
Cr 267.716†	52.2	-0.00172	mg/L	0.000068	-0.00172	mg/L	0.000068	3.94%
QC value within limits for Cr 267.716 Recovery = Not calculated								
Cu 327.393†	-114.4	-0.00059	mg/L	0.000517	-0.00059	mg/L	0.000517	88.28%
QC value within limits for Cu 327.393 Recovery = Not calculated								
Fe 239.562†	16.6	-0.00919	mg/L	0.006191	-0.00919	mg/L	0.006191	67.33%

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   QC value within limits for Fe 239.562  Recovery = Not calculated
Mg 279.077†              27.3    -0.00904 mg/L      0.006910    -0.00904 mg/L      0.006910  76.41%
   QC value within limits for Mg 279.077  Recovery = Not calculated
Mn 257.610†             169.7    -0.00404 mg/L      0.000075    -0.00404 mg/L      0.000075   1.85%
   QC value within limits for Mn 257.610  Recovery = Not calculated
Mo 202.031†              -7.7    -0.00603 mg/L      0.000246    -0.00603 mg/L      0.000246   4.07%
   QC value within limits for Mo 202.031  Recovery = Not calculated
Ni 231.604†              -6.1    -0.00322 mg/L      0.000216    -0.00322 mg/L      0.000216   6.72%
   QC value within limits for Ni 231.604  Recovery = Not calculated
Pb 220.353†              23.6     0.00149 mg/L      0.001087     0.00149 mg/L      0.001087  72.81%
   QC value within limits for Pb 220.353  Recovery = Not calculated
Sb 206.836†               2.6     0.00357 mg/L      0.002099     0.00357 mg/L      0.002099  58.81%
   QC value within limits for Sb 206.836  Recovery = Not calculated
Se 196.026†              -2.2    -0.00098 mg/L      0.004196    -0.00098 mg/L      0.004196 426.61%
   QC value within limits for Se 196.026  Recovery = Not calculated
Si 251.611†             -40.2     -0.0125 mg/L       0.00104     -0.0125 mg/L       0.00104   8.33%
   QC value within limits for Si 251.611  Recovery = Not calculated
Sn 189.927†              23.5     0.00170 mg/L      0.001499     0.00170 mg/L      0.001499  88.32%
   QC value within limits for Sn 189.927  Recovery = Not calculated
Ti 334.940†             145.1    -0.00162 mg/L      0.000196    -0.00162 mg/L      0.000196  12.09%
   QC value within limits for Ti 334.940  Recovery = Not calculated
Tl 190.801†              -2.2    -0.00484 mg/L      0.003053    -0.00484 mg/L      0.003053  63.07%
   QC value within limits for Tl 190.801  Recovery = Not calculated
V 290.880†               902.7     0.00041 mg/L      0.000876     0.00041 mg/L      0.000876 215.52%
   QC value within limits for V 290.880  Recovery = Not calculated
Zn 206.200†              17.9    -0.00438 mg/L      0.000235    -0.00438 mg/L      0.000235   5.37%
   QC value within limits for Zn 206.200  Recovery = Not calculated
K 766.490†              117.2      0.0818 mg/L       0.07109      0.0818 mg/L       0.07109  86.86%
   QC value within limits for K 766.490  Recovery = Not calculated
Na 589.592†             954.4      0.0797 mg/L       0.04997      0.0797 mg/L       0.04997  62.67%
   QC value within limits for Na 589.592  Recovery = Not calculated
Sr 407.771†            1183.8    -0.00404 mg/L      0.000748    -0.00404 mg/L      0.000748  18.55%
   QC value within limits for Sr 407.771  Recovery = Not calculated
Li 670.784†             247.4     0.00025 mg/L      0.001850     0.00025 mg/L      0.001850 737.11%
   QC value within limits for Li 670.784  Recovery = Not calculated
P 214.914†               77.5      0.0261 mg/L       0.01622      0.0261 mg/L       0.01622  62.12%
   QC value within limits for P 214.914  Recovery = Not calculated
QC Failed.  Continue with analysis.

==========================================================================================
Sequence No.: 13                                   Autosampler Location: 24
Sample ID: L1311106402                             Date Collected: 11/26/2013 4:03:55 PM
Analyst: JYH                                       Data Type: Original
Initial Sample Wt:                                 Initial Sample Vol:
Dilution:                                          Sample Prep Vol:

------------------------------------------------------------------------------------------
Nebulizer Parameters: L1311106402
Analyte                 Back Pressure     Flow
All                     180.0 kPa         0.45 L/min

------------------------------------------------------------------------------------------
Mean Data: L1311106402
                   Mean Corrected          Calib.                          Sample
Analyte               Intensity      Conc. Units      Std.Dev.      Conc. Units      Std.Dev.   RSD
Y 371.029            2667086.0                                                      21984.91   0.82%
YRADIAL               187423.5                                                       2754.55   1.47%
Ga 417.206            913426.6                                                       6769.04   0.74%
GaRADIAL               42852.0                                                        249.76   0.58%
Ag 328.068†             1449.2     0.00493 mg/L      0.000161     0.00493 mg/L      0.000161   3.28%
Al 396.153†               71.8     0.00653 mg/L      0.000961     0.00653 mg/L      0.000961  14.72%
As 188.979†              -12.4    -0.00138 mg/L      0.003487    -0.00138 mg/L      0.003487 251.92%
Ba 233.527†             1132.5      0.0107 mg/L       0.00006      0.0107 mg/L       0.00006   0.59%
Be 234.861†                4.0     0.00024 mg/L      0.000017     0.00024 mg/L      0.000017   6.96%
B 249.677†            508690.6        7.50 mg/L         0.093        7.50 mg/L         0.093   1.25%
Ca 227.546†            57613.5         293 mg/L           8.1         293 mg/L           8.1   2.77%
Cd 228.802†               -5.2     0.00003 mg/L      0.000196     0.00003 mg/L      0.000196 611.41%
Co 228.616†              132.0     0.00632 mg/L      0.000055     0.00632 mg/L      0.000055   0.87%
Cr 267.716†              453.4     0.00188 mg/L      0.000015     0.00188 mg/L      0.000015   0.81%
Cu 327.393†             -508.6    -0.00259 mg/L      0.000323    -0.00259 mg/L      0.000323  12.49%
Fe 239.562†              291.1      0.0845 mg/L       0.00399      0.0845 mg/L       0.00399   4.73%
Mg 279.077†           162872.5         150 mg/L           1.0         150 mg/L           1.0   0.66%
```

Approved: November 27, 2013

Mn 257.610†	2303712.6	4.07	mg/L	0.029	4.07	mg/L	0.029	0.71%
Mo 202.031†	77.1	0.00012	mg/L	0.000164	0.00012	mg/L	0.000164	142.08%
Ni 231.604†	139.9	0.00099	mg/L	0.000470	0.00099	mg/L	0.000470	47.36%
Pb 220.353†	36.0	0.00117	mg/L	0.002140	0.00117	mg/L	0.002140	182.16%
Sb 206.836†	-6.0	-0.00100	mg/L	0.001860	-0.00100	mg/L	0.001860	185.89%
Se 196.026†	-3.7	-0.00400	mg/L	0.005369	-0.00400	mg/L	0.005369	134.27%
Si 251.611†	221100.3	6.59	mg/L	0.162	6.59	mg/L	0.162	2.45%
Sn 189.927†	-322.9	-0.0576	mg/L	0.00087	-0.0576	mg/L	0.00087	1.50%
Ti 334.940†	-37739.2	-0.00480	mg/L	0.000712	-0.00480	mg/L	0.000712	14.83%
Tl 190.801†	-22.5	-0.0214	mg/L	0.00522	-0.0214	mg/L	0.00522	24.34%
V 290.880†	3224.0	0.00920	mg/L	0.001846	0.00920	mg/L	0.001846	20.06%
Zn 206.200†	171.1	0.00145	mg/L	0.000371	0.00145	mg/L	0.000371	25.67%
K 766.490†	49339.6	29.9	mg/L	0.25	29.9	mg/L	0.25	0.82%
Na 589.592†	1292956.5	129	mg/L	2.4	129	mg/L	2.4	1.86%
Sr 407.771†	890061.9	0.877	mg/L	0.0225	0.877	mg/L	0.0225	2.57%
Li 670.784†	37763.8	0.559	mg/L	0.0030	0.559	mg/L	0.0030	0.53%
P 214.914†	149.7	0.102	mg/L	0.0109	0.102	mg/L	0.0109	10.70%

Sequence No.: 14 **Autosampler Location: 25**
Sample ID: L1311106403 **Date Collected: 11/26/2013 4:07:01 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1311106403

Analyte	Back Pressure	Flow
All	180.0 kPa	0.45 L/min

Mean Data: L1311106403

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	2638770.8						24346.63	0.92%
YRADIAL	192014.1						4365.26	2.27%
Ga 417.206	913889.5						12539.36	1.37%
GaRADIAL	43806.1						525.53	1.20%
Ag 328.068†	1373.9	0.00466	mg/L	0.000330	0.00466	mg/L	0.000330	7.08%
Al 396.153†	6.4	-0.0159	mg/L	0.00068	-0.0159	mg/L	0.00068	4.27%
As 188.979†	-11.1	-0.00092	mg/L	0.007087	-0.00092	mg/L	0.007087	769.10%
Ba 233.527†	887.3	0.00754	mg/L	0.000133	0.00754	mg/L	0.000133	1.76%
Be 234.861†	14.7	0.00022	mg/L	0.000044	0.00022	mg/L	0.000044	19.73%
B 249.677†	488496.2	7.20	mg/L	0.033	7.20	mg/L	0.033	0.46%
Ca 227.546†	55024.7	279	mg/L	1.9	279	mg/L	1.9	0.67%
Cd 228.802†	-5.9	0.00000	mg/L	0.000135	0.00000	mg/L	0.000135	>999.9%
Co 228.616†	128.8	0.00617	mg/L	0.000404	0.00617	mg/L	0.000404	6.55%
Cr 267.716†	427.5	0.00165	mg/L	0.000051	0.00165	mg/L	0.000051	3.07%
Cu 327.393†	-616.0	-0.00310	mg/L	0.000819	-0.00310	mg/L	0.000819	26.43%
Fe 239.562†	5.1	-0.0162	mg/L	0.00173	-0.0162	mg/L	0.00173	10.71%
Mg 279.077†	157495.2	145	mg/L	1.1	145	mg/L	1.1	0.74%
Mn 257.610†	1978620.6	3.50	mg/L	0.008	3.50	mg/L	0.008	0.23%
Mo 202.031†	68.0	-0.00057	mg/L	0.000494	-0.00057	mg/L	0.000494	86.83%
Ni 231.604†	113.2	0.00022	mg/L	0.000178	0.00022	mg/L	0.000178	80.09%
Pb 220.353†	28.2	0.00019	mg/L	0.002334	0.00019	mg/L	0.002334	>999.9%
Sb 206.836†	-5.2	-0.00059	mg/L	0.001546	-0.00059	mg/L	0.001546	263.80%
Se 196.026†	-3.1	-0.00317	mg/L	0.001820	-0.00317	mg/L	0.001820	57.42%
Si 251.611†	209787.2	6.25	mg/L	0.045	6.25	mg/L	0.045	0.72%
Sn 189.927†	-325.2	-0.0580	mg/L	0.00204	-0.0580	mg/L	0.00204	3.51%
Ti 334.940†	-37985.0	-0.00708	mg/L	0.000356	-0.00708	mg/L	0.000356	5.03%
Tl 190.801†	-27.3	-0.0237	mg/L	0.00318	-0.0237	mg/L	0.00318	13.39%
V 290.880†	3478.9	0.0107	mg/L	0.00087	0.0107	mg/L	0.00087	8.13%
Zn 206.200†	80.1	-0.00200	mg/L	0.000506	-0.00200	mg/L	0.000506	25.34%
K 766.490†	47678.2	28.9	mg/L	0.15	28.9	mg/L	0.15	0.53%
Na 589.592†	1233239.2	123	mg/L	2.1	123	mg/L	2.1	1.72%
Sr 407.771†	851616.4	0.839	mg/L	0.0164	0.839	mg/L	0.0164	1.96%
Li 670.784†	36530.4	0.541	mg/L	0.0034	0.541	mg/L	0.0034	0.62%
P 214.914†	141.2	0.0926	mg/L	0.01440	0.0926	mg/L	0.01440	15.55%

Sequence No.: 15 **Autosampler Location: 26**
Sample ID: L1311106404 **Date Collected: 11/26/2013 4:10:07 PM**

Approved: November 27, 2013

Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1311106404

Analyte	Back Pressure	Flow
All	181.0 kPa	0.45 L/min

Mean Data: L1311106404

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2680152.4						16565.44	0.62%
YRADIAL	191167.2						2265.13	1.18%
Ga 417.206	931908.4						7785.12	0.84%
GaRADIAL	43371.0						652.01	1.50%
Ag 328.068†	770.5	0.00271	mg/L	0.000514	0.00271	mg/L	0.000514	18.99%
Al 396.153†	113.3	0.0209	mg/L	0.00959	0.0209	mg/L	0.00959	45.96%
As 188.979†	-23.4	-0.0108	mg/L	0.00242	-0.0108	mg/L	0.00242	22.27%
Ba 233.527†	4060.0	0.0487	mg/L	0.00027	0.0487	mg/L	0.00027	0.56%
Be 234.861†	125.7	0.00009	mg/L	0.000035	0.00009	mg/L	0.000035	38.40%
B 249.677†	101271.9	1.49	mg/L	0.008	1.49	mg/L	0.008	0.55%
Ca 227.546†	31662.7	161	mg/L	1.2	161	mg/L	1.2	0.74%
Cd 228.802†	-8.9	-0.00011	mg/L	0.000226	-0.00011	mg/L	0.000226	210.95%
Co 228.616†	-9.0	-0.00040	mg/L	0.000315	-0.00040	mg/L	0.000315	78.57%
Cr 267.716†	51240.3	0.457	mg/L	0.0061	0.457	mg/L	0.0061	1.34%
Cu 327.393†	-301.7	-0.00150	mg/L	0.000583	-0.00150	mg/L	0.000583	38.85%
Fe 239.562†	127.2	0.0287	mg/L	0.00365	0.0287	mg/L	0.00365	12.70%
Mg 279.077†	56298.1	51.9	mg/L	0.89	51.9	mg/L	0.89	1.71%
Mn 257.610†	291832.0	0.512	mg/L	0.0063	0.512	mg/L	0.0063	1.22%
Mo 202.031†	59.3	-0.00174	mg/L	0.000503	-0.00174	mg/L	0.000503	28.92%
Ni 231.604†	14.3	-0.00263	mg/L	0.000307	-0.00263	mg/L	0.000307	11.71%
Pb 220.353†	35.6	0.00323	mg/L	0.002130	0.00323	mg/L	0.002130	65.97%
Sb 206.836†	-2.8	-0.00319	mg/L	0.001942	-0.00319	mg/L	0.001942	60.95%
Se 196.026†	3.7	0.00613	mg/L	0.003989	0.00613	mg/L	0.003989	65.06%
Si 251.611†	174469.7	5.20	mg/L	0.054	5.20	mg/L	0.054	1.04%
Sn 189.927†	-286.4	-0.0514	mg/L	0.00220	-0.0514	mg/L	0.00220	4.28%
Ti 334.940†	-21830.0	-0.00494	mg/L	0.000360	-0.00494	mg/L	0.000360	7.29%
Tl 190.801†	-32.4	-0.0236	mg/L	0.00566	-0.0236	mg/L	0.00566	24.01%
V 290.880†	2493.7	0.00776	mg/L	0.002078	0.00776	mg/L	0.002078	26.76%
Zn 206.200†	82.6	0.00181	mg/L	0.000131	0.00181	mg/L	0.000131	7.25%
K 766.490†	9593.1	5.74	mg/L	0.021	5.74	mg/L	0.021	0.37%
Na 589.592†	845552.5	81.6	mg/L	0.94	81.6	mg/L	0.94	1.16%
Sr 407.771†	404517.0	0.395	mg/L	0.0057	0.395	mg/L	0.0057	1.45%
Li 670.784†	8240.8	0.119	mg/L	0.0023	0.119	mg/L	0.0023	1.91%
P 214.914†	105.2	0.0550	mg/L	0.00703	0.0550	mg/L	0.00703	12.79%

Sequence No.: 16 **Autosampler Location: 27**
Sample ID: L1311106405 **Date Collected: 11/26/2013 4:13:13 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1311106405

Analyte	Back Pressure	Flow
All	180.0 kPa	0.45 L/min

Mean Data: L1311106405

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2678163.7						13492.53	0.50%
YRADIAL	192217.8						2747.40	1.43%
Ga 417.206	902046.3						8886.45	0.99%
GaRADIAL	43539.1						389.69	0.90%
Ag 328.068†	710.6	0.00251	mg/L	0.000243	0.00251	mg/L	0.000243	9.68%
Al 396.153†	36.8	-0.00537	mg/L	0.016367	-0.00537	mg/L	0.016367	304.75%
As 188.979†	-21.1	-0.00924	mg/L	0.003170	-0.00924	mg/L	0.003170	34.30%
Ba 233.527†	3534.0	0.0419	mg/L	0.00028	0.0419	mg/L	0.00028	0.67%

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Be 234.861†	84.4	-0.00001	mg/L	0.000032	-0.00001	mg/L	0.000032	270.47%
B 249.677†	100706.2	1.48	mg/L	0.007	1.48	mg/L	0.007	0.45%
Ca 227.546†	33152.4	168	mg/L	1.0	168	mg/L	1.0	0.62%
Cd 228.802†	-7.8	-0.00007	mg/L	0.000149	-0.00007	mg/L	0.000149	215.07%
Co 228.616†	-6.5	-0.00027	mg/L	0.000119	-0.00027	mg/L	0.000119	43.96%
Cr 267.716†	54617.4	0.487	mg/L	0.0036	0.487	mg/L	0.0036	0.74%
Cu 327.393†	-441.8	-0.00217	mg/L	0.000267	-0.00217	mg/L	0.000267	12.33%
Fe 239.562†	12.9	-0.0116	mg/L	0.00156	-0.0116	mg/L	0.00156	13.46%
Mg 279.077†	56516.6	52.1	mg/L	1.13	52.1	mg/L	1.13	2.17%
Mn 257.610†	4060.9	0.00290	mg/L	0.000119	0.00290	mg/L	0.000119	4.10%
Mo 202.031†	47.2	-0.00260	mg/L	0.000187	-0.00260	mg/L	0.000187	7.19%
Ni 231.604†	-15.4	-0.00348	mg/L	0.000361	-0.00348	mg/L	0.000361	10.36%
Pb 220.353†	33.8	0.00322	mg/L	0.002579	0.00322	mg/L	0.002579	80.03%
Sb 206.836†	2.1	-0.00082	mg/L	0.002553	-0.00082	mg/L	0.002553	309.90%
Se 196.026†	-2.3	-0.00113	mg/L	0.002923	-0.00113	mg/L	0.002923	257.65%
Si 251.611†	182696.7	5.44	mg/L	0.027	5.44	mg/L	0.027	0.50%
Sn 189.927†	-298.4	-0.0534	mg/L	0.00031	-0.0534	mg/L	0.00031	0.58%
Ti 334.940†	-22560.3	-0.00472	mg/L	0.000519	-0.00472	mg/L	0.000519	10.99%
Tl 190.801†	-34.6	-0.0244	mg/L	0.00322	-0.0244	mg/L	0.00322	13.22%
V 290.880†	2443.0	0.00748	mg/L	0.000917	0.00748	mg/L	0.000917	12.25%
Zn 206.200†	-62.4	-0.00343	mg/L	0.000222	-0.00343	mg/L	0.000222	6.48%
K 766.490†	9382.0	5.61	mg/L	0.067	5.61	mg/L	0.067	1.19%
Na 589.592†	838615.1	80.9	mg/L	0.77	80.9	mg/L	0.77	0.95%
Sr 407.771†	405952.0	0.396	mg/L	0.0040	0.396	mg/L	0.0040	1.01%
Li 670.784†	7958.4	0.115	mg/L	0.0016	0.115	mg/L	0.0016	1.36%
P 214.914†	97.3	0.0468	mg/L	0.01249	0.0468	mg/L	0.01249	26.68%

User canceled analysis.

Approved: November 27, 2013

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Analysis Begun

Start Time: 11/26/2013 4:17:42 PM **Plasma On Time: 11/26/2013 7:51:24 AM**
Logged In Analyst: peicp2 **Technique: ICP Continuous**
Spectrometer Model: Optima 4300 DV, S/N 077N4011401 **Autosampler Model: Cetac**

Sample Information File: C:\pe\peicp2\Sample Information\Batch 1.sif
Batch ID:
Results Data Set: 112613H2R
Results Library: C:\pe\peicp2\Results\results1.mdb

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Method Loaded
Method Name: 200.7-6010-3015 ASX **Method Last Saved: 11/26/2013 4:17:33 PM**
IEC File: PLUS-P.iec **SMT File:**
Method Description: STANDARD

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Sequence No.: 1 **Autosampler Location: 28**
Sample ID: L1311106407 WG454260-02 **Date Collected: 11/26/2013 4:17:44 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1311106407 WG454260-02

Analyte	Back Pressure	Flow
All	181.0 kPa	0.45 L/min

Mean Data: L1311106407 WG454260-02

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	2643594.3						29009.48	1.10%
YRADIAL	194696.3						3706.62	1.90%
Ga 417.206	875101.0						20138.34	2.30%
GaRADIAL	41715.9						729.80	1.75%
Ag 328.068†	-34.3	0.00235	mg/L	0.000319	0.00235	mg/L	0.000319	13.57%
Al 396.153†	63.3	0.00437	mg/L	0.011310	0.00437	mg/L	0.011310	258.71%
As 188.979†	7.7	0.00929	mg/L	0.002523	0.00929	mg/L	0.002523	27.16%
Ba 233.527†	20873.0	0.267	mg/L	0.0052	0.267	mg/L	0.0052	1.97%
Be 234.861†	1066.9	0.00000	mg/L	0.000028	0.00000	mg/L	0.000028	>999.9%
B 249.677†	38126.8	0.558	mg/L	0.0141	0.558	mg/L	0.0141	2.53%
Ca 227.546†	29827.9	152	mg/L	4.1	152	mg/L	4.1	2.68%
Cd 228.802†	-0.0	0.00014	mg/L	0.000250	0.00014	mg/L	0.000250	173.78%
Co 228.616†	4.6	-0.00009	mg/L	0.000449	-0.00009	mg/L	0.000449	496.06%
Cr 267.716†	449.8	0.00133	mg/L	0.000474	0.00133	mg/L	0.000474	35.58%
Cu 327.393†	-162.3	-0.00046	mg/L	0.001166	-0.00046	mg/L	0.001166	251.72%
Fe 239.562†	18214.4	6.40	mg/L	0.071	6.40	mg/L	0.071	1.12%
Mg 279.077†	36842.7	34.0	mg/L	0.39	34.0	mg/L	0.39	1.15%
Mn 257.610†	586882.7	1.03	mg/L	0.011	1.03	mg/L	0.011	1.02%
Mo 202.031†	72.7	-0.00070	mg/L	0.000097	-0.00070	mg/L	0.000097	13.84%
Ni 231.604†	17.9	-0.00252	mg/L	0.000384	-0.00252	mg/L	0.000384	15.21%
Pb 220.353†	35.4	0.00269	mg/L	0.001370	0.00269	mg/L	0.001370	50.95%
Sb 206.836†	-3.9	0.00031	mg/L	0.001059	0.00031	mg/L	0.001059	346.98%
Se 196.026†	6.9	0.0112	mg/L	0.00235	0.0112	mg/L	0.00235	21.05%
Si 251.611†	263999.3	7.87	mg/L	0.181	7.87	mg/L	0.181	2.30%
Sn 189.927†	-284.5	-0.0510	mg/L	0.00083	-0.0510	mg/L	0.00083	1.62%
Ti 334.940†	-18665.4	-0.00227	mg/L	0.000955	-0.00227	mg/L	0.000955	42.13%
Tl 190.801†	-23.5	-0.0188	mg/L	0.00093	-0.0188	mg/L	0.00093	4.97%
V 290.880†	1001.5	-0.00059	mg/L	0.003898	-0.00059	mg/L	0.003898	661.30%
Zn 206.200†	37.0	-0.00366	mg/L	0.000373	-0.00366	mg/L	0.000373	10.20%
K 766.490†	1360.3	0.636	mg/L	0.0328	0.636	mg/L	0.0328	5.16%
Na 589.592†	1871875.5	198	mg/L	6.7	198	mg/L	6.7	3.39%
Sr 407.771†	247957.2	0.238	mg/L	0.0040	0.238	mg/L	0.0040	1.70%
Li 670.784†	522.7	0.00435	mg/L	0.001671	0.00435	mg/L	0.001671	38.41%
P 214.914†	260.0	0.217	mg/L	0.0428	0.217	mg/L	0.0428	19.74%

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Sequence No.: 2 **Autosampler Location: 29**

Approved: November 27, 2013

Sample ID: L1311106408
Analyst: JYH
Initial Sample Wt:
Dilution:

Date Collected: 11/26/2013 4:19:52 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1311106408

Analyte	Back Pressure	Flow
All	181.0 kPa	0.45 L/min

Mean Data: L1311106408

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2690966.7						45338.41	1.68%
YRADIAL	188354.9						8507.77	4.52%
Ga 417.206	888061.8						25182.20	2.84%
GaRADIAL	41031.4						1666.79	4.06%
Ag 328.068†	-3131.5	0.00134	mg/L	0.001052	0.00134	mg/L	0.001052	78.58%
Al 396.153†	14446.8	4.95	mg/L	0.043	4.95	mg/L	0.043	0.87%
As 188.979†	95.3	0.0687	mg/L	0.00415	0.0687	mg/L	0.00415	6.05%
Ba 233.527†	44486.2	0.572	mg/L	0.0129	0.572	mg/L	0.0129	2.26%
Be 234.861†	5164.1	0.00016	mg/L	0.000366	0.00016	mg/L	0.000366	222.44%
B 249.677†	36766.0	0.527	mg/L	0.0134	0.527	mg/L	0.0134	2.54%
Ca 227.546†	32294.4	165	mg/L	4.1	165	mg/L	4.1	2.47%
Cd 228.802†	2.5	-0.00005	mg/L	0.000380	-0.00005	mg/L	0.000380	723.89%
Co 228.616†	136.6	0.00530	mg/L	0.000372	0.00530	mg/L	0.000372	7.02%
Cr 267.716†	1215.3	0.00633	mg/L	0.000153	0.00633	mg/L	0.000153	2.42%
Cu 327.393†	2905.9	0.0157	mg/L	0.00088	0.0157	mg/L	0.00088	5.63%
Fe 239.562†	88847.5	31.3	mg/L	0.34	31.3	mg/L	0.34	1.08%
Mg 279.077†	41281.4	38.0	mg/L	0.49	38.0	mg/L	0.49	1.29%
Mn 257.610†	804279.7	1.42	mg/L	0.006	1.42	mg/L	0.006	0.43%
Mo 202.031†	78.5	0.00014	mg/L	0.000397	0.00014	mg/L	0.000397	280.01%
Ni 231.604†	477.2	0.0107	mg/L	0.00061	0.0107	mg/L	0.00061	5.67%
Pb 220.353†	79.8	0.00995	mg/L	0.001145	0.00995	mg/L	0.001145	11.51%
Sb 206.836†	-4.8	0.00074	mg/L	0.003622	0.00074	mg/L	0.003622	486.38%
Se 196.026†	-4.7	0.00186	mg/L	0.007290	0.00186	mg/L	0.007290	392.96%
Si 251.611†	488151.3	14.6	mg/L	0.09	14.6	mg/L	0.09	0.61%
Sn 189.927†	-289.4	-0.0519	mg/L	0.00283	-0.0519	mg/L	0.00283	5.45%
Ti 334.940†	48224.4	0.0827	mg/L	0.00182	0.0827	mg/L	0.00182	2.20%
Tl 190.801†	-27.9	-0.0206	mg/L	0.00065	-0.0206	mg/L	0.00065	3.17%
V 290.880†	3839.1	0.0123	mg/L	0.00347	0.0123	mg/L	0.00347	28.18%
Zn 206.200†	2137.5	0.0758	mg/L	0.00118	0.0758	mg/L	0.00118	1.56%
K 766.490†	2801.5	1.50	mg/L	0.026	1.50	mg/L	0.026	1.76%
Na 589.592†	1912469.7	203	mg/L	13.6	203	mg/L	13.6	6.70%
Sr 407.771†	278166.6	0.268	mg/L	0.0180	0.268	mg/L	0.0180	6.72%
Li 670.784†	908.9	0.0101	mg/L	0.00087	0.0101	mg/L	0.00087	8.57%
P 214.914†	1242.7	1.24	mg/L	0.022	1.24	mg/L	0.022	1.80%

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Sequence No.: 3
Sample ID: L1311106409
Analyst: JYH
Initial Sample Wt:
Dilution:

Autosampler Location: 30
Date Collected: 11/26/2013 4:22:29 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1311106409

Analyte	Back Pressure	Flow
All	181.0 kPa	0.45 L/min

Mean Data: L1311106409

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2673924.1						37240.35	1.39%
YRADIAL	187666.6						3836.80	2.04%
Ga 417.206	894611.3						14286.17	1.60%
GaRADIAL	41638.6						352.35	0.85%
Ag 328.068†	-150.1	0.00194	mg/L	0.000956	0.00194	mg/L	0.000956	49.30%
Al 396.153†	100.5	0.0172	mg/L	0.01560	0.0172	mg/L	0.01560	90.90%
As 188.979†	6.3	0.00852	mg/L	0.003311	0.00852	mg/L	0.003311	38.85%

Approved: November 27, 2013

Ba 233.527†	21434.0	0.274	mg/L	0.0011	0.274	mg/L	0.0011	0.39%
Be 234.861†	1158.8	0.00012	mg/L	0.000102	0.00012	mg/L	0.000102	86.74%
B 249.677†	38106.0	0.558	mg/L	0.0079	0.558	mg/L	0.0079	1.41%
Ca 227.546†	30548.3	155	mg/L	1.3	155	mg/L	1.3	0.82%
Cd 228.802†	-10.5	-0.00027	mg/L	0.000260	-0.00027	mg/L	0.000260	94.95%
Co 228.616†	-0.1	-0.00032	mg/L	0.000498	-0.00032	mg/L	0.000498	157.67%
Cr 267.716†	255.6	-0.00041	mg/L	0.000097	-0.00041	mg/L	0.000097	23.47%
Cu 327.393†	-438.4	-0.00177	mg/L	0.000305	-0.00177	mg/L	0.000305	17.23%
Fe 239.562†	18513.8	6.51	mg/L	0.183	6.51	mg/L	0.183	2.81%
Mg 279.077†	38082.1	35.1	mg/L	0.84	35.1	mg/L	0.84	2.40%
Mn 257.610†	594042.1	1.05	mg/L	0.006	1.05	mg/L	0.006	0.57%
Mo 202.031†	73.6	-0.00063	mg/L	0.000326	-0.00063	mg/L	0.000326	51.39%
Ni 231.604†	28.0	-0.00223	mg/L	0.000660	-0.00223	mg/L	0.000660	29.57%
Pb 220.353†	35.3	0.00266	mg/L	0.000516	0.00266	mg/L	0.000516	19.41%
Sb 206.836†	-6.3	-0.00092	mg/L	0.002555	-0.00092	mg/L	0.002555	277.94%
Se 196.026†	-5.9	-0.00454	mg/L	0.002735	-0.00454	mg/L	0.002735	60.22%
Si 251.611†	267645.4	7.98	mg/L	0.070	7.98	mg/L	0.070	0.88%
Sn 189.927†	-291.3	-0.0522	mg/L	0.00226	-0.0522	mg/L	0.00226	4.33%
Ti 334.940†	-19991.2	-0.00337	mg/L	0.000722	-0.00337	mg/L	0.000722	21.46%
Tl 190.801†	-24.8	-0.0196	mg/L	0.00807	-0.0196	mg/L	0.00807	41.19%
V 290.880†	1804.7	0.00377	mg/L	0.001747	0.00377	mg/L	0.001747	46.38%
Zn 206.200†	33.1	-0.00382	mg/L	0.000275	-0.00382	mg/L	0.000275	7.20%
K 766.490†	1415.3	0.664	mg/L	0.0203	0.664	mg/L	0.0203	3.06%
Na 589.592†	1908549.5	202	mg/L	6.1	202	mg/L	6.1	3.03%
Sr 407.771†	252453.8	0.243	mg/L	0.0020	0.243	mg/L	0.0020	0.81%
Li 670.784†	487.1	0.00382	mg/L	0.000935	0.00382	mg/L	0.000935	24.48%
P 214.914†	277.6	0.235	mg/L	0.0244	0.235	mg/L	0.0244	10.40%

Sequence No.: 4 **Autosampler Location: 31**
Sample ID: L1311106411S WG454260-07 **Date Collected: 11/26/2013 4:24:36 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1311106411S WG454260-07

Analyte	Back Pressure	Flow
All	181.0 kPa	0.45 L/min

Mean Data: L1311106411S WG454260-07

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2638771.5						40024.96	1.52%
YRADIAL	196277.9						5120.45	2.61%
Ga 417.206	882293.6						15062.24	1.71%
GaRADIAL	43420.8						1069.56	2.46%
Ag 328.068†	47738.2	0.197	mg/L	0.0046	0.197	mg/L	0.0046	2.31%
Al 396.153†	14480.3	4.92	mg/L	0.014	4.92	mg/L	0.014	0.27%
As 188.979†	327.7	0.203	mg/L	0.0051	0.203	mg/L	0.0051	2.51%
Ba 233.527†	58540.6	0.756	mg/L	0.0123	0.756	mg/L	0.0123	1.63%
Be 234.861†	16650.7	0.0237	mg/L	0.00053	0.0237	mg/L	0.00053	2.22%
B 249.677†	103922.2	1.53	mg/L	0.035	1.53	mg/L	0.035	2.28%
Ca 227.546†	31493.9	160	mg/L	3.2	160	mg/L	3.2	1.99%
Cd 228.802†	557.5	0.0218	mg/L	0.00053	0.0218	mg/L	0.00053	2.44%
Co 228.616†	1992.3	0.0948	mg/L	0.00135	0.0948	mg/L	0.00135	1.43%
Cr 267.716†	27433.4	0.243	mg/L	0.0035	0.243	mg/L	0.0035	1.42%
Cu 327.393†	49266.2	0.235	mg/L	0.0065	0.235	mg/L	0.0065	2.75%
Fe 239.562†	22721.2	7.99	mg/L	0.035	7.99	mg/L	0.035	0.44%
Mg 279.077†	41657.5	38.4	mg/L	0.17	38.4	mg/L	0.17	0.45%
Mn 257.610†	717909.5	1.27	mg/L	0.010	1.27	mg/L	0.010	0.79%
Mo 202.031†	8281.2	0.511	mg/L	0.0052	0.511	mg/L	0.0052	1.01%
Ni 231.604†	8445.8	0.241	mg/L	0.0033	0.241	mg/L	0.0033	1.38%
Pb 220.353†	1419.1	0.240	mg/L	0.0016	0.240	mg/L	0.0016	0.67%
Sb 206.836†	1050.8	0.565	mg/L	0.0085	0.565	mg/L	0.0085	1.50%
Se 196.026†	157.3	0.196	mg/L	0.0049	0.196	mg/L	0.0049	2.48%
Si 251.611†	349423.0	10.4	mg/L	0.24	10.4	mg/L	0.24	2.28%
Sn 189.927†	2707.6	0.461	mg/L	0.0069	0.461	mg/L	0.0069	1.49%
Ti 334.940†	393978.0	0.512	mg/L	0.0109	0.512	mg/L	0.0109	2.14%
Tl 190.801†	364.8	0.218	mg/L	0.0029	0.218	mg/L	0.0029	1.31%
V 290.880†	92823.0	0.502	mg/L	0.0114	0.502	mg/L	0.0114	2.27%

Approved: November 27, 2013

Zn 206.200†	12662.8	0.476 mg/L	0.0056	0.476 mg/L	0.0056	1.17%
K 766.490†	41529.3	25.1 mg/L	0.13	25.1 mg/L	0.13	0.52%
Na 589.592†	2076731.1	224 mg/L	7.9	224 mg/L	7.9	3.53%
Sr 407.771†	724705.2	0.716 mg/L	0.0197	0.716 mg/L	0.0197	2.75%
Li 670.784†	33636.3	0.497 mg/L	0.0007	0.497 mg/L	0.0007	0.15%
P 214.914†	85.3	0.0343 mg/L	0.01868	0.0343 mg/L	0.01868	54.50%

Sequence No.: 5 **Autosampler Location: 32**
Sample ID: L1311106413SD WG454260-08 **Date Collected: 11/26/2013 4:26:43 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1311106413SD WG454260-08

Analyte	Back Pressure	Flow
All	181.0 kPa	0.45 L/min

Mean Data: L1311106413SD WG454260-08

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2695062.6						24922.65	0.92%
YRADIAL	192901.2						3425.30	1.78%
Ga 417.206	898919.6						5811.32	0.65%
GaRADIAL	42644.2						578.58	1.36%
Ag 328.068†	46008.3	0.190	mg/L	0.0009	0.190	mg/L	0.0009	0.46%
Al 396.153†	14421.2	4.90	mg/L	0.031	4.90	mg/L	0.031	0.64%
As 188.979†	317.4	0.197	mg/L	0.0042	0.197	mg/L	0.0042	2.12%
Ba 233.527†	57040.9	0.736	mg/L	0.0072	0.736	mg/L	0.0072	0.97%
Be 234.861†	16231.9	0.0230	mg/L	0.00020	0.0230	mg/L	0.00020	0.88%
B 249.677†	102471.4	1.50	mg/L	0.006	1.50	mg/L	0.006	0.37%
Ca 227.546†	31375.8	160	mg/L	0.9	160	mg/L	0.9	0.56%
Cd 228.802†	546.8	0.0214	mg/L	0.00047	0.0214	mg/L	0.00047	2.21%
Co 228.616†	1920.5	0.0913	mg/L	0.00057	0.0913	mg/L	0.00057	0.62%
Cr 267.716†	26629.2	0.236	mg/L	0.0027	0.236	mg/L	0.0027	1.14%
Cu 327.393†	47752.2	0.228	mg/L	0.0015	0.228	mg/L	0.0015	0.65%
Fe 239.562†	22958.9	8.07	mg/L	0.040	8.07	mg/L	0.040	0.49%
Mg 279.077†	42367.3	39.1	mg/L	0.34	39.1	mg/L	0.34	0.88%
Mn 257.610†	718374.3	1.27	mg/L	0.003	1.27	mg/L	0.003	0.22%
Mo 202.031†	7984.9	0.493	mg/L	0.0044	0.493	mg/L	0.0044	0.89%
Ni 231.604†	8150.5	0.232	mg/L	0.0019	0.232	mg/L	0.0019	0.80%
Pb 220.353†	1376.9	0.233	mg/L	0.0015	0.233	mg/L	0.0015	0.64%
Sb 206.836†	1008.6	0.542	mg/L	0.0123	0.542	mg/L	0.0123	2.26%
Se 196.026†	151.7	0.190	mg/L	0.0027	0.190	mg/L	0.0027	1.42%
Si 251.611†	344779.2	10.3	mg/L	0.01	10.3	mg/L	0.01	0.12%
Sn 189.927†	2593.9	0.442	mg/L	0.0033	0.442	mg/L	0.0033	0.74%
Ti 334.940†	381490.9	0.496	mg/L	0.0007	0.496	mg/L	0.0007	0.15%
Tl 190.801†	351.2	0.210	mg/L	0.0008	0.210	mg/L	0.0008	0.39%
V 290.880†	89602.2	0.484	mg/L	0.0073	0.484	mg/L	0.0073	1.50%
Zn 206.200†	12178.3	0.458	mg/L	0.0026	0.458	mg/L	0.0026	0.56%
K 766.490†	41082.6	24.8	mg/L	0.21	24.8	mg/L	0.21	0.84%
Na 589.592†	2107022.0	228	mg/L	7.3	228	mg/L	7.3	3.20%
Sr 407.771†	724899.9	0.716	mg/L	0.0259	0.716	mg/L	0.0259	3.61%
Li 670.784†	33461.9	0.495	mg/L	0.0039	0.495	mg/L	0.0039	0.79%
P 214.914†	86.4	0.0353	mg/L	0.00824	0.0353	mg/L	0.00824	23.32%

Sequence No.: 6 **Autosampler Location: 33**
Sample ID: L1311106414 **Date Collected: 11/26/2013 4:28:50 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1311106414

Analyte	Back Pressure	Flow
All	181.0 kPa	0.45 L/min

Mean Data: L1311106414

Approved: November 27, 2013

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2758053.3						41683.56	1.51%
YRADIAL	199481.3						5383.63	2.70%
Ga 417.206	907539.4						12599.53	1.39%
GaRADIAL	43152.0						1050.67	2.43%
Ag 328.068†	-1994.6	0.00030	mg/L	0.000663	0.00030	mg/L	0.000663	221.46%
Al 396.153†	16235.3	5.56	mg/L	0.052	5.56	mg/L	0.052	0.94%
As 188.979†	4.0	0.00882	mg/L	0.002319	0.00882	mg/L	0.002319	26.30%
Ba 233.527†	14551.0	0.184	mg/L	0.0013	0.184	mg/L	0.0013	0.72%
Be 234.861†	3758.1	0.00150	mg/L	0.000251	0.00150	mg/L	0.000251	16.66%
B 249.677†	5738.4	0.0733	mg/L	0.00695	0.0733	mg/L	0.00695	9.49%
Ca 227.546†	14360.4	73.6	mg/L	0.99	73.6	mg/L	0.99	1.35%
Cd 228.802†	11.2	0.00062	mg/L	0.000253	0.00062	mg/L	0.000253	40.87%
Co 228.616†	280.7	0.0126	mg/L	0.00043	0.0126	mg/L	0.00043	3.40%
Cr 267.716†	1714.5	0.0114	mg/L	0.00013	0.0114	mg/L	0.00013	1.14%
Cu 327.393†	3050.7	0.0159	mg/L	0.00090	0.0159	mg/L	0.00090	5.68%
Fe 239.562†	66473.0	23.4	mg/L	0.23	23.4	mg/L	0.23	1.00%
Mg 279.077†	27007.7	24.9	mg/L	0.28	24.9	mg/L	0.28	1.14%
Mn 257.610†	9532226.6	16.9	mg/L	0.27	16.9	mg/L	0.27	1.57%
Mo 202.031†	50.0	0.00147	mg/L	0.000928	0.00147	mg/L	0.000928	63.19%
Ni 231.604†	629.9	0.0151	mg/L	0.00005	0.0151	mg/L	0.00005	0.36%
Pb 220.353†	122.0	0.00824	mg/L	0.002210	0.00824	mg/L	0.002210	26.83%
Sb 206.836†	-4.8	0.00041	mg/L	0.001609	0.00041	mg/L	0.001609	394.12%
Se 196.026†	2.3	0.00423	mg/L	0.003327	0.00423	mg/L	0.003327	78.60%
Si 251.611†	395296.7	11.8	mg/L	0.09	11.8	mg/L	0.09	0.80%
Sn 189.927†	-217.5	-0.0396	mg/L	0.00088	-0.0396	mg/L	0.00088	2.22%
Ti 334.940†	31038.3	0.0477	mg/L	0.00062	0.0477	mg/L	0.00062	1.31%
Tl 190.801†	17.6	-0.00938	mg/L	0.001040	-0.00938	mg/L	0.001040	11.09%
V 290.880†	4250.1	0.0157	mg/L	0.00166	0.0157	mg/L	0.00166	10.54%
Zn 206.200†	2300.9	0.0820	mg/L	0.00096	0.0820	mg/L	0.00096	1.18%
K 766.490†	1843.9	1.10	mg/L	0.011	1.10	mg/L	0.011	0.96%
Na 589.592†	277054.8	25.7	mg/L	0.98	25.7	mg/L	0.98	3.83%
Sr 407.771†	207263.4	0.200	mg/L	0.0099	0.200	mg/L	0.0099	4.93%
Li 670.784†	848.0	0.00920	mg/L	0.000482	0.00920	mg/L	0.000482	5.24%
P 214.914†	493.6	0.461	mg/L	0.0259	0.461	mg/L	0.0259	5.62%

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Sequence No.: 7 **Autosampler Location: 6**
Sample ID: CCV **Date Collected: 11/26/2013 4:31:01 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	180.0 kPa	0.45 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2755498.7						7650.61	0.28%
YRADIAL	190264.9						2783.79	1.46%
Ga 417.206	889105.7						17220.28	1.94%
GaRADIAL	42042.9						416.52	0.99%
Ag 328.068†	93844.2	0.383	mg/L	0.0107	0.383	mg/L	0.0107	2.78%
QC value within limits for Ag 328.068 Recovery = 95.75%								
Al 396.153†	29364.5	10.0	mg/L	0.05	10.0	mg/L	0.05	0.50%
QC value within limits for Al 396.153 Recovery = 100.02%								
As 188.979†	624.6	0.378	mg/L	0.0038	0.378	mg/L	0.0038	1.01%
QC value within limits for As 188.979 Recovery = 94.44%								
Ba 233.527†	74070.1	0.958	mg/L	0.0179	0.958	mg/L	0.0179	1.86%
QC value within limits for Ba 233.527 Recovery = 95.79%								
Be 234.861†	32428.8	0.0489	mg/L	0.00162	0.0489	mg/L	0.00162	3.32%
QC value within limits for Be 234.861 Recovery = 97.87%								
B 249.677†	32294.6	0.471	mg/L	0.0120	0.471	mg/L	0.0120	2.54%
QC value within limits for B 249.677 Recovery = 94.21%								
Ca 227.546†	1879.5	10.1	mg/L	0.18	10.1	mg/L	0.18	1.82%
QC value within limits for Ca 227.546 Recovery = 100.62%								
Cd 228.802†	1215.2	0.0475	mg/L	0.00153	0.0475	mg/L	0.00153	3.21%

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   QC value within limits for Cd 228.802  Recovery = 95.08%
Co 228.616†            4131.0       0.197 mg/L        0.0003       0.197 mg/L        0.0003   0.17%
   QC value within limits for Co 228.616  Recovery = 98.54%
Cr 267.716†           53940.2       0.482 mg/L        0.0088       0.482 mg/L        0.0088   1.82%
   QC value within limits for Cr 267.716  Recovery = 96.30%
Cu 327.393†           99345.6       0.474 mg/L        0.0125       0.474 mg/L        0.0125   2.63%
   QC value within limits for Cu 327.393  Recovery = 94.79%
Fe 239.562†           11273.5        3.96 mg/L         0.091        3.96 mg/L         0.091   2.29%
   QC value within limits for Fe 239.562  Recovery = 98.90%
Mg 279.077†           10810.0        9.95 mg/L         0.191        9.95 mg/L         0.191   1.92%
   QC value within limits for Mg 279.077  Recovery = 99.55%
Mn 257.610†          295940.7       0.520 mg/L        0.0158       0.520 mg/L        0.0158   3.03%
   QC value within limits for Mn 257.610  Recovery = 104.00%
Mo 202.031†           15607.4       0.968 mg/L        0.0219       0.968 mg/L        0.0219   2.27%
   QC value within limits for Mo 202.031  Recovery = 96.83%
Ni 231.604†           16873.3       0.484 mg/L        0.0076       0.484 mg/L        0.0076   1.56%
   QC value within limits for Ni 231.604  Recovery = 96.81%
Pb 220.353†            2883.1       0.493 mg/L        0.0011       0.493 mg/L        0.0011   0.22%
   QC value within limits for Pb 220.353  Recovery = 98.51%
Sb 206.836†            2113.8        1.13 mg/L         0.025        1.13 mg/L         0.025   2.18%
   QC value within limits for Sb 206.836  Recovery = 94.43%
Se 196.026†             306.5       0.379 mg/L        0.0014       0.379 mg/L        0.0014   0.36%
   QC value within limits for Se 196.026  Recovery = 94.85%
Si 251.611†          159490.0        4.74 mg/L         0.126        4.74 mg/L         0.126   2.66%
   QC value within limits for Si 251.611  Recovery = 94.80%
Sn 189.927†            5724.1       0.978 mg/L        0.0041       0.978 mg/L        0.0041   0.42%
   QC value within limits for Sn 189.927  Recovery = 97.76%
Ti 334.940†          787004.6       0.978 mg/L        0.0049       0.978 mg/L        0.0049   0.50%
   QC value within limits for Ti 334.940  Recovery = 97.75%
Tl 190.801†             823.3       0.497 mg/L        0.0039       0.497 mg/L        0.0039   0.78%
   QC value within limits for Tl 190.801  Recovery = 99.48%
V 290.880†           175867.3       0.957 mg/L        0.0146       0.957 mg/L        0.0146   1.52%
   QC value within limits for V 290.880  Recovery = 95.73%
Zn 206.200†           25552.1       0.966 mg/L        0.0207       0.966 mg/L        0.0207   2.14%
   QC value within limits for Zn 206.200  Recovery = 96.64%
K 766.490†            80104.8        49.0 mg/L          0.03        49.0 mg/L          0.03   0.06%
   QC value within limits for K 766.490  Recovery = 98.06%
Na 589.592†          533170.1        50.3 mg/L          1.03        50.3 mg/L          1.03   2.04%
   QC value within limits for Na 589.592  Recovery = 100.63%
Sr 407.771†          983045.2       0.980 mg/L        0.0049       0.980 mg/L        0.0049   0.50%
   QC value within limits for Sr 407.771  Recovery = 97.97%
Li 670.784†           66754.0       0.991 mg/L        0.0016       0.991 mg/L        0.0016   0.16%
   QC value within limits for Li 670.784  Recovery = 99.07%
P 214.914†             9463.3        9.84 mg/L         0.054        9.84 mg/L         0.054   0.55%
   QC value within limits for P 214.914  Recovery = 98.36%
All analyte(s) passed QC.

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Sequence No.: 8                                    Autosampler Location: 1
Sample ID: CCB                                     Date Collected: 11/26/2013 4:33:08 PM
Analyst:                                           Data Type: Original
Initial Sample Wt:                                 Initial Sample Vol:
Dilution:                                          Sample Prep Vol:

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Nebulizer Parameters: CCB
Analyte                 Back Pressure    Flow
All                    181.0 kPa        0.45 L/min

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Mean Data: CCB
                   Mean Corrected        Calib.                          Sample
Analyte               Intensity     Conc. Units      Std.Dev.     Conc. Units      Std.Dev.   RSD
Y 371.029            2737050.3                                                    50073.21   1.83%
YRADIAL               189404.3                                                     2838.18   1.50%
Ga 417.206            861590.2                                                    16138.71   1.87%
GaRADIAL               41181.2                                                      966.72   2.35%
Ag 328.068†              -59.3    -0.00054 mg/L      0.000565    -0.00054 mg/L      0.000565 105.61%
   QC value within limits for Ag 328.068  Recovery = Not calculated
Al 396.153†               37.9    -0.00480 mg/L      0.007495    -0.00480 mg/L      0.007495 156.31%
   QC value within limits for Al 396.153  Recovery = Not calculated
As 188.979†               -4.1    -0.00275 mg/L      0.005060    -0.00275 mg/L      0.005060 184.21%
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Approved: November 27, 2013

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   QC value within limits for As 188.979  Recovery = Not calculated
Ba 233.527†              13.6    -0.00381 mg/L      0.000095    -0.00381 mg/L      0.000095   2.49%
   QC value within limits for Ba 233.527  Recovery = Not calculated
Be 234.861†              16.4    -0.00013 mg/L      0.000071    -0.00013 mg/L      0.000071  54.70%
   QC value within limits for Be 234.861  Recovery = Not calculated
B 249.677†               805.7      0.0107 mg/L       0.00094      0.0107 mg/L       0.00094   8.72%
   QC value within limits for B 249.677  Recovery = Not calculated
Ca 227.546†              -5.2      0.0433 mg/L       0.03365      0.0433 mg/L       0.03365  77.79%
   QC value within limits for Ca 227.546  Recovery = Not calculated
Cd 228.802†              -8.7    -0.00016 mg/L      0.000079    -0.00016 mg/L      0.000079  49.82%
   QC value within limits for Cd 228.802  Recovery = Not calculated
Co 228.616†             -18.5    -0.00100 mg/L      0.000356    -0.00100 mg/L      0.000356  35.58%
   QC value within limits for Co 228.616  Recovery = Not calculated
Cr 267.716†              99.1    -0.00130 mg/L      0.000152    -0.00130 mg/L      0.000152  11.75%
   QC value within limits for Cr 267.716  Recovery = Not calculated
Cu 327.393†               5.7    -0.00001 mg/L      0.000432    -0.00001 mg/L      0.000432 >999.9%
   QC value within limits for Cu 327.393  Recovery = Not calculated
Fe 239.562†              37.0    -0.00199 mg/L      0.007124    -0.00199 mg/L      0.007124 358.05%
   QC value within limits for Fe 239.562  Recovery = Not calculated
Mg 279.077†              55.2      0.0167 mg/L       0.01839      0.0167 mg/L       0.01839 110.12%
   QC value within limits for Mg 279.077  Recovery = Not calculated
Mn 257.610†            1719.1    -0.00130 mg/L      0.000339    -0.00130 mg/L      0.000339  26.06%
   QC value within limits for Mn 257.610  Recovery = Not calculated
Mo 202.031†               1.0    -0.00549 mg/L      0.000280    -0.00549 mg/L      0.000280   5.10%
   QC value within limits for Mo 202.031  Recovery = Not calculated
Ni 231.604†               5.8    -0.00288 mg/L      0.000102    -0.00288 mg/L      0.000102   3.54%
   QC value within limits for Ni 231.604  Recovery = Not calculated
Pb 220.353†              18.3     0.00059 mg/L      0.000851     0.00059 mg/L      0.000851 144.83%
   QC value within limits for Pb 220.353  Recovery = Not calculated
Sb 206.836†               0.6     0.00252 mg/L      0.003347     0.00252 mg/L      0.003347 132.56%
   QC value within limits for Sb 206.836  Recovery = Not calculated
Se 196.026†               0.8     0.00265 mg/L      0.000568     0.00265 mg/L      0.000568  21.46%
   QC value within limits for Se 196.026  Recovery = Not calculated
Si 251.611†             191.9    -0.00562 mg/L      0.000972    -0.00562 mg/L      0.000972  17.29%
   QC value within limits for Si 251.611  Recovery = Not calculated
Sn 189.927†              20.1     0.00110 mg/L      0.001209     0.00110 mg/L      0.001209 109.55%
   QC value within limits for Sn 189.927  Recovery = Not calculated
Ti 334.940†             557.8    -0.00110 mg/L      0.000609    -0.00110 mg/L      0.000609  55.20%
   QC value within limits for Ti 334.940  Recovery = Not calculated
Tl 190.801†              -5.3    -0.00666 mg/L      0.002937    -0.00666 mg/L      0.002937  44.07%
   QC value within limits for Tl 190.801  Recovery = Not calculated
V 290.880†              1043.5     0.00118 mg/L      0.001845     0.00118 mg/L      0.001845 156.85%
   QC value within limits for V 290.880  Recovery = Not calculated
Zn 206.200†              19.1    -0.00433 mg/L      0.000180    -0.00433 mg/L      0.000180   4.15%
   QC value within limits for Zn 206.200  Recovery = Not calculated
K 766.490†              115.0      0.0804 mg/L       0.03553      0.0804 mg/L       0.03553  44.17%
   QC value within limits for K 766.490  Recovery = Not calculated
Na 589.592†            1818.8       0.158 mg/L        0.0785       0.158 mg/L        0.0785  49.53%
   QC value within limits for Na 589.592  Recovery = Not calculated
Sr 407.771†            1401.1    -0.00382 mg/L      0.000982    -0.00382 mg/L      0.000982  25.71%
   QC value within limits for Sr 407.771  Recovery = Not calculated
Li 670.784†             221.8    -0.00013 mg/L      0.000057    -0.00013 mg/L      0.000057  43.52%
   QC value within limits for Li 670.784  Recovery = Not calculated
P 214.914†               74.9      0.0234 mg/L       0.01013      0.0234 mg/L       0.01013  43.32%
   QC value within limits for P 214.914  Recovery = Not calculated
All analyte(s) passed QC.

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Sequence No.: 9                                    Autosampler Location: 34
Sample ID: L1311106415                             Date Collected: 11/26/2013 4:36:10 PM
Analyst: JYH                                       Data Type: Original
Initial Sample Wt:                                 Initial Sample Vol:
Dilution:                                          Sample Prep Vol:

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Nebulizer Parameters: L1311106415
Analyte                 Back Pressure    Flow
All                    181.0 kPa         0.45 L/min

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Mean Data: L1311106415
                  Mean Corrected         Calib.                        Sample
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Approved: November 27, 2013

Analyte	Intensity	Conc.	Units	Std.Dev.	Conc.	Units	Std.Dev.	RSD
Y 371.029	2794099.0						62376.87	2.23%
YRADIAL	187572.2						6619.25	3.53%
Ga 417.206	942041.6						26991.08	2.87%
GaRADIAL	41401.7						1184.28	2.86%
Ag 328.068†	-172.1	0.00138	mg/L	0.000250	0.00138	mg/L	0.000250	18.14%
Al 396.153†	174.8	0.0429	mg/L	0.01360	0.0429	mg/L	0.01360	31.72%
As 188.979†	0.6	0.00339	mg/L	0.001078	0.00339	mg/L	0.001078	31.83%
Ba 233.527†	9507.0	0.119	mg/L	0.0026	0.119	mg/L	0.0026	2.18%
Be 234.861†	1083.7	0.00045	mg/L	0.000153	0.00045	mg/L	0.000153	33.72%
B 249.677†	4263.7	0.0586	mg/L	0.00157	0.0586	mg/L	0.00157	2.69%
Ca 227.546†	13902.2	70.8	mg/L	1.08	70.8	mg/L	1.08	1.53%
Cd 228.802†	-10.9	-0.00026	mg/L	0.000115	-0.00026	mg/L	0.000115	44.92%
Co 228.616†	93.9	0.00419	mg/L	0.000194	0.00419	mg/L	0.000194	4.63%
Cr 267.716†	383.7	0.00067	mg/L	0.000069	0.00067	mg/L	0.000069	10.29%
Cu 327.393†	-332.6	-0.00121	mg/L	0.000922	-0.00121	mg/L	0.000922	76.23%
Fe 239.562†	20573.8	7.23	mg/L	0.348	7.23	mg/L	0.348	4.81%
Mg 279.077†	26105.4	24.0	mg/L	1.26	24.0	mg/L	1.26	5.25%
Mn 257.610†	4156449.8	7.35	mg/L	0.080	7.35	mg/L	0.080	1.09%
Mo 202.031†	51.0	-0.00072	mg/L	0.000579	-0.00072	mg/L	0.000579	80.93%
Ni 231.604†	59.1	-0.00134	mg/L	0.000242	-0.00134	mg/L	0.000242	18.02%
Pb 220.353†	37.6	-0.00075	mg/L	0.001406	-0.00075	mg/L	0.001406	187.62%
Sb 206.836†	-3.5	0.00056	mg/L	0.001250	0.00056	mg/L	0.001250	223.79%
Se 196.026†	-3.3	-0.00310	mg/L	0.004852	-0.00310	mg/L	0.004852	156.57%
Si 251.611†	235400.4	7.02	mg/L	0.138	7.02	mg/L	0.138	1.96%
Sn 189.927†	-219.0	-0.0398	mg/L	0.00135	-0.0398	mg/L	0.00135	3.39%
Ti 334.940†	-8804.4	-0.00214	mg/L	0.000427	-0.00214	mg/L	0.000427	19.91%
Tl 190.801†	-3.6	-0.0132	mg/L	0.00446	-0.0132	mg/L	0.00446	33.86%
V 290.880†	1405.6	0.00180	mg/L	0.001789	0.00180	mg/L	0.001789	99.15%
Zn 206.200†	151.2	0.00065	mg/L	0.000159	0.00065	mg/L	0.000159	24.55%
K 766.490†	849.0	0.498	mg/L	0.0053	0.498	mg/L	0.0053	1.07%
Na 589.592†	278245.8	25.8	mg/L	0.24	25.8	mg/L	0.24	0.92%
Sr 407.771†	204920.1	0.198	mg/L	0.0020	0.198	mg/L	0.0020	1.03%
Li 670.784†	123.8	-0.00159	mg/L	0.000413	-0.00159	mg/L	0.000413	25.97%
P 214.914†	183.4	0.137	mg/L	0.0346	0.137	mg/L	0.0346	25.28%

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Sequence No.: 10 **Autosampler Location: 35**
Sample ID: L1311106416 **Date Collected: 11/26/2013 4:38:17 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1311106416

Analyte	Back Pressure	Flow
All	181.0 kPa	0.45 L/min

Mean Data: L1311106416

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2736725.8						43280.51	1.58%
YRADIAL	194672.6						2113.19	1.09%
Ga 417.206	914774.7						15415.26	1.69%
GaRADIAL	42842.8						585.08	1.37%
Ag 328.068†	-1383.3	0.00132	mg/L	0.000427	0.00132	mg/L	0.000427	32.35%
Al 396.153†	20443.3	7.01	mg/L	0.048	7.01	mg/L	0.048	0.69%
As 188.979†	-3.1	0.00439	mg/L	0.001955	0.00439	mg/L	0.001955	44.54%
Ba 233.527†	18338.9	0.233	mg/L	0.0017	0.233	mg/L	0.0017	0.72%
Be 234.861†	2985.1	0.00066	mg/L	0.000173	0.00066	mg/L	0.000173	26.04%
B 249.677†	86974.6	1.27	mg/L	0.013	1.27	mg/L	0.013	1.04%
Ca 227.546†	28079.0	143	mg/L	0.9	143	mg/L	0.9	0.60%
Cd 228.802†	-1.9	0.00011	mg/L	0.000365	0.00011	mg/L	0.000365	332.41%
Co 228.616†	167.7	0.00729	mg/L	0.000452	0.00729	mg/L	0.000452	6.20%
Cr 267.716†	17991.6	0.158	mg/L	0.0003	0.158	mg/L	0.0003	0.18%
Cu 327.393†	3269.5	0.0165	mg/L	0.00027	0.0165	mg/L	0.00027	1.62%
Fe 239.562†	46961.7	16.5	mg/L	0.12	16.5	mg/L	0.12	0.72%
Mg 279.077†	50159.6	46.2	mg/L	0.34	46.2	mg/L	0.34	0.73%
Mn 257.610†	1865272.6	3.30	mg/L	0.010	3.30	mg/L	0.010	0.32%
Mo 202.031†	49.4	-0.00151	mg/L	0.000392	-0.00151	mg/L	0.000392	25.91%
Ni 231.604†	692.0	0.0169	mg/L	0.00026	0.0169	mg/L	0.00026	1.54%

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Pb 220.353†	105.3	0.0139	mg/L	0.00024	0.0139	mg/L	0.00024	1.71%
Sb 206.836†	-8.1	-0.00285	mg/L	0.000898	-0.00285	mg/L	0.000898	31.49%
Se 196.026†	-5.8	-0.00302	mg/L	0.004467	-0.00302	mg/L	0.004467	147.99%
Si 251.611†	514965.5	15.4	mg/L	0.04	15.4	mg/L	0.04	0.24%
Sn 189.927†	-272.7	-0.0490	mg/L	0.00185	-0.0490	mg/L	0.00185	3.78%
Ti 334.940†	59799.3	0.0939	mg/L	0.00056	0.0939	mg/L	0.00056	0.60%
Tl 190.801†	-24.9	-0.0205	mg/L	0.00331	-0.0205	mg/L	0.00331	16.17%
V 290.880†	4606.8	0.0178	mg/L	0.00236	0.0178	mg/L	0.00236	13.22%
Zn 206.200†	2283.4	0.0826	mg/L	0.00157	0.0826	mg/L	0.00157	1.90%
K 766.490†	9791.2	5.80	mg/L	0.018	5.80	mg/L	0.018	0.30%
Na 589.592†	1387157.6	140	mg/L	0.3	140	mg/L	0.3	0.20%
Sr 407.771†	343300.6	0.334	mg/L	0.0042	0.334	mg/L	0.0042	1.25%
Li 670.784†	10181.7	0.148	mg/L	0.0011	0.148	mg/L	0.0011	0.74%
P 214.914†	449.7	0.415	mg/L	0.0168	0.415	mg/L	0.0168	4.05%

User canceled analysis.

Approved: November 27, 2013

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Analysis Begun

Start Time: 11/26/2013 4:41:20 PM **Plasma On Time: 11/26/2013 7:51:24 AM**
Logged In Analyst: peicp2 **Technique: ICP Continuous**
Spectrometer Model: Optima 4300 DV, S/N 077N4011401 **Autosampler Model: Cetac**

Sample Information File: C:\pe\peicp2\Sample Information\Batch 1.sif
Batch ID:
Results Data Set: 112613H2R
Results Library: C:\pe\peicp2\Results\results1.mdb

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Sequence No.: 1 **Autosampler Location: 36**
Sample ID: L1311106417 **Date Collected: 11/26/2013 4:41:23 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1311106417

Analyte	Back Pressure	Flow
All	181.0 kPa	0.45 L/min

Mean Data: L1311106417

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2639483.3						51684.10	1.96%
YRADIAL	190271.4						1347.22	0.71%
Ga 417.206	885001.0						24125.03	2.73%
GaRADIAL	42148.1						1221.35	2.90%
Ag 328.068†	547.3	0.00168	mg/L	0.000229	0.00168	mg/L	0.000229	13.60%
Al 396.153†	78.3	0.00882	mg/L	0.003617	0.00882	mg/L	0.003617	41.01%
As 188.979†	-19.9	-0.00912	mg/L	0.002617	-0.00912	mg/L	0.002617	28.68%
Ba 233.527†	2027.6	0.0223	mg/L	0.00105	0.0223	mg/L	0.00105	4.69%
Be 234.861†	26.0	0.00004	mg/L	0.000053	0.00004	mg/L	0.000053	145.11%
B 249.677†	98628.4	1.45	mg/L	0.057	1.45	mg/L	0.057	3.92%
Ca 227.546†	28817.8	146	mg/L	6.0	146	mg/L	6.0	4.10%
Cd 228.802†	-0.7	0.00021	mg/L	0.000036	0.00021	mg/L	0.000036	16.81%
Co 228.616†	5.1	0.00021	mg/L	0.000371	0.00021	mg/L	0.000371	172.80%
Cr 267.716†	17904.8	0.158	mg/L	0.0062	0.158	mg/L	0.0062	3.94%
Cu 327.393†	-278.9	-0.00140	mg/L	0.000566	-0.00140	mg/L	0.000566	40.30%
Fe 239.562†	126.1	0.0285	mg/L	0.01314	0.0285	mg/L	0.01314	46.03%
Mg 279.077†	46217.0	42.6	mg/L	0.51	42.6	mg/L	0.51	1.20%
Mn 257.610†	877058.5	1.55	mg/L	0.003	1.55	mg/L	0.003	0.17%
Mo 202.031†	60.9	-0.00142	mg/L	0.000881	-0.00142	mg/L	0.000881	61.90%
Ni 231.604†	96.0	-0.00027	mg/L	0.000402	-0.00027	mg/L	0.000402	150.53%
Pb 220.353†	35.4	0.00258	mg/L	0.001053	0.00258	mg/L	0.001053	40.83%
Sb 206.836†	-1.5	0.00005	mg/L	0.001156	0.00005	mg/L	0.001156	>999.9%
Se 196.026†	-2.9	-0.00228	mg/L	0.001533	-0.00228	mg/L	0.001533	67.19%
Si 251.611†	224330.5	6.69	mg/L	0.248	6.69	mg/L	0.248	3.72%
Sn 189.927†	-289.8	-0.0519	mg/L	0.00131	-0.0519	mg/L	0.00131	2.53%
Ti 334.940†	-19286.4	-0.00385	mg/L	0.000687	-0.00385	mg/L	0.000687	17.83%
Tl 190.801†	-31.1	-0.0238	mg/L	0.00194	-0.0238	mg/L	0.00194	8.17%
V 290.880†	2483.1	0.00795	mg/L	0.001335	0.00795	mg/L	0.001335	16.80%
Zn 206.200†	24.2	-0.00284	mg/L	0.000153	-0.00284	mg/L	0.000153	5.40%
K 766.490†	8260.6	4.86	mg/L	0.093	4.86	mg/L	0.093	1.91%
Na 589.592†	1469816.7	149	mg/L	2.1	149	mg/L	2.1	1.40%
Sr 407.771†	343895.8	0.335	mg/L	0.0108	0.335	mg/L	0.0108	3.24%
Li 670.784†	10088.3	0.147	mg/L	0.0008	0.147	mg/L	0.0008	0.57%
P 214.914†	76.0	0.0245	mg/L	0.01743	0.0245	mg/L	0.01743	71.22%

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Sequence No.: 2 **Autosampler Location: 37**
Sample ID: L1311106418 **Date Collected: 11/26/2013 4:44:30 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Approved: November 27, 2013

Nebulizer Parameters: L1311106418

Analyte	Back Pressure	Flow
All	180.0 kPa	0.45 L/min

Mean Data: L1311106418

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2770669.0						32656.30	1.18%
YRADIAL	186975.4						5326.21	2.85%
Ga 417.206	881580.2						19448.23	2.21%
GaRADIAL	40656.1						1522.86	3.75%
Ag 328.068†	-87.3	-0.00065	mg/L	0.000286	-0.00065	mg/L	0.000286	43.70%
Al 396.153†	1.7	-0.0172	mg/L	0.00289	-0.0172	mg/L	0.00289	16.82%
As 188.979†	-2.6	-0.00180	mg/L	0.001575	-0.00180	mg/L	0.001575	87.40%
Ba 233.527†	-15.4	-0.00418	mg/L	0.000071	-0.00418	mg/L	0.000071	1.69%
Be 234.861†	8.8	-0.00014	mg/L	0.000066	-0.00014	mg/L	0.000066	47.36%
B 249.677†	1155.9	0.0159	mg/L	0.00216	0.0159	mg/L	0.00216	13.59%
Ca 227.546†	14.1	0.141	mg/L	0.0375	0.141	mg/L	0.0375	26.58%
Cd 228.802†	-13.2	-0.00034	mg/L	0.000217	-0.00034	mg/L	0.000217	63.19%
Co 228.616†	-19.8	-0.00106	mg/L	0.000272	-0.00106	mg/L	0.000272	25.68%
Cr 267.716†	113.1	-0.00117	mg/L	0.000119	-0.00117	mg/L	0.000119	10.18%
Cu 327.393†	-405.9	-0.00197	mg/L	0.000949	-0.00197	mg/L	0.000949	48.13%
Fe 239.562†	14.4	-0.00998	mg/L	0.001879	-0.00998	mg/L	0.001879	18.82%
Mg 279.077†	135.5	0.0908	mg/L	0.04294	0.0908	mg/L	0.04294	47.27%
Mn 257.610†	1419.3	-0.00183	mg/L	0.000248	-0.00183	mg/L	0.000248	13.54%
Mo 202.031†	-10.4	-0.00620	mg/L	0.000132	-0.00620	mg/L	0.000132	2.12%
Ni 231.604†	-6.0	-0.00322	mg/L	0.000109	-0.00322	mg/L	0.000109	3.38%
Pb 220.353†	16.4	0.00026	mg/L	0.002035	0.00026	mg/L	0.002035	772.07%
Sb 206.836†	2.5	0.00352	mg/L	0.001168	0.00352	mg/L	0.001168	33.19%
Se 196.026†	-4.5	-0.00378	mg/L	0.002846	-0.00378	mg/L	0.002846	75.32%
Si 251.611†	281.7	-0.00293	mg/L	0.001360	-0.00293	mg/L	0.001360	46.37%
Sn 189.927†	12.9	-0.00012	mg/L	0.000903	-0.00012	mg/L	0.000903	776.33%
Ti 334.940†	-24.7	-0.00181	mg/L	0.000190	-0.00181	mg/L	0.000190	10.47%
Tl 190.801†	-3.9	-0.00586	mg/L	0.001757	-0.00586	mg/L	0.001757	30.00%
V 290.880†	922.8	0.00051	mg/L	0.001607	0.00051	mg/L	0.001607	312.80%
Zn 206.200†	63.7	-0.00265	mg/L	0.000368	-0.00265	mg/L	0.000368	13.90%
K 766.490†	-8.4	0.00567	mg/L	0.012368	0.00567	mg/L	0.012368	218.27%
Na 589.592†	4321.3	0.387	mg/L	0.1672	0.387	mg/L	0.1672	43.24%
Sr 407.771†	801.6	-0.00442	mg/L	0.000386	-0.00442	mg/L	0.000386	8.73%
Li 670.784†	88.8	-0.00211	mg/L	0.001482	-0.00211	mg/L	0.001482	70.20%
P 214.914†	61.1	0.00892	mg/L	0.009147	0.00892	mg/L	0.009147	102.59%

Sequence No.: 3 **Autosampler Location: 38**
Sample ID: L1311106419 **Date Collected: 11/26/2013 4:47:32 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1311106419

Analyte	Back Pressure	Flow
All	180.0 kPa	0.45 L/min

Mean Data: L1311106419

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2698642.5						34717.49	1.29%
YRADIAL	184935.0						1708.77	0.92%
Ga 417.206	857678.0						7289.65	0.85%
GaRADIAL	40447.4						213.89	0.53%
Ag 328.068†	-190.8	-0.00107	mg/L	0.000588	-0.00107	mg/L	0.000588	54.92%
Al 396.153†	8.6	-0.0148	mg/L	0.00200	-0.0148	mg/L	0.00200	13.50%
As 188.979†	-3.5	-0.00235	mg/L	0.003702	-0.00235	mg/L	0.003702	157.19%
Ba 233.527†	-32.8	-0.00441	mg/L	0.000088	-0.00441	mg/L	0.000088	1.99%
Be 234.861†	-41.1	-0.00022	mg/L	0.000031	-0.00022	mg/L	0.000031	14.30%
B 249.677†	536.9	0.00678	mg/L	0.000493	0.00678	mg/L	0.000493	7.26%
Ca 227.546†	-0.2	0.0679	mg/L	0.02861	0.0679	mg/L	0.02861	42.15%
Cd 228.802†	-10.0	-0.00021	mg/L	0.000227	-0.00021	mg/L	0.000227	107.11%
Co 228.616†	-15.9	-0.00087	mg/L	0.000115	-0.00087	mg/L	0.000115	13.20%

Approved: November 27, 2013

Cr 267.716†	82.3	-0.00145	mg/L	0.000234	-0.00145	mg/L	0.000234	16.18%
Cu 327.393†	-418.3	-0.00203	mg/L	0.000947	-0.00203	mg/L	0.000947	46.66%
Fe 239.562†	8.3	-0.0121	mg/L	0.00178	-0.0121	mg/L	0.00178	14.73%
Mg 279.077†	35.2	-0.00171	mg/L	0.001520	-0.00171	mg/L	0.001520	88.70%
Mn 257.610†	613.1	-0.00326	mg/L	0.000044	-0.00326	mg/L	0.000044	1.35%
Mo 202.031†	-7.5	-0.00602	mg/L	0.000194	-0.00602	mg/L	0.000194	3.22%
Ni 231.604†	-21.6	-0.00367	mg/L	0.000168	-0.00367	mg/L	0.000168	4.58%
Pb 220.353†	17.1	0.00039	mg/L	0.000797	0.00039	mg/L	0.000797	204.26%
Sb 206.836†	3.3	0.00399	mg/L	0.001941	0.00399	mg/L	0.001941	48.62%
Se 196.026†	-4.2	-0.00348	mg/L	0.002263	-0.00348	mg/L	0.002263	65.07%
Si 251.611†	105.1	-0.00821	mg/L	0.000861	-0.00821	mg/L	0.000861	10.49%
Sn 189.927†	6.9	-0.00114	mg/L	0.001211	-0.00114	mg/L	0.001211	106.08%
Ti 334.940†	-91.8	-0.00191	mg/L	0.000051	-0.00191	mg/L	0.000051	2.67%
Tl 190.801†	-7.4	-0.00793	mg/L	0.004716	-0.00793	mg/L	0.004716	59.44%
V 290.880†	1210.0	0.00209	mg/L	0.000481	0.00209	mg/L	0.000481	23.01%
Zn 206.200†	55.5	-0.00296	mg/L	0.000277	-0.00296	mg/L	0.000277	9.38%
K 766.490†	-22.2	-0.00236	mg/L	0.009853	-0.00236	mg/L	0.009853	417.37%
Na 589.592†	920.2	0.0766	mg/L	0.01203	0.0766	mg/L	0.01203	15.70%
Sr 407.771†	84.8	-0.00514	mg/L	0.000042	-0.00514	mg/L	0.000042	0.83%
Li 670.784†	54.7	-0.00262	mg/L	0.001122	-0.00262	mg/L	0.001122	42.87%
P 214.914†	50.7	-0.00192	mg/L	0.005002	-0.00192	mg/L	0.005002	260.36%

Sequence No.: 4
Sample ID: L1311108601
Analyst: JYH
Initial Sample Wt:
Dilution:

Autosampler Location: 39
Date Collected: 11/26/2013 4:50:34 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1311108601

Analyte	Back Pressure	Flow
All	180.0 kPa	0.45 L/min

Mean Data: L1311108601

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	2813377.6						12675.76	0.45%
YRADIAL	190632.6						2399.35	1.26%
Ga 417.206	933944.3						3023.36	0.32%
GaRADIAL	42787.1						676.60	1.58%
Ag 328.068†	61.1	-0.00008	mg/L	0.000477	-0.00008	mg/L	0.000477	562.41%
Al 396.153†	49.7	-0.00112	mg/L	0.002207	-0.00112	mg/L	0.002207	196.49%
As 188.979†	-6.6	-0.00371	mg/L	0.001732	-0.00371	mg/L	0.001732	46.70%
Ba 233.527†	4436.5	0.0536	mg/L	0.00063	0.0536	mg/L	0.00063	1.17%
Be 234.861†	97.7	0.00000	mg/L	0.000026	0.00000	mg/L	0.000026	554.05%
B 249.677†	1023.2	0.0139	mg/L	0.00044	0.0139	mg/L	0.00044	3.19%
Ca 227.546†	5100.1	26.0	mg/L	0.26	26.0	mg/L	0.26	1.00%
Cd 228.802†	-10.0	-0.00020	mg/L	0.000272	-0.00020	mg/L	0.000272	133.91%
Co 228.616†	-17.7	-0.00096	mg/L	0.000303	-0.00096	mg/L	0.000303	31.58%
Cr 267.716†	118.7	-0.00112	mg/L	0.000159	-0.00112	mg/L	0.000159	14.15%
Cu 327.393†	-424.0	-0.00206	mg/L	0.000087	-0.00206	mg/L	0.000087	4.22%
Fe 239.562†	50.7	0.00269	mg/L	0.002296	0.00269	mg/L	0.002296	85.42%
Mg 279.077†	7170.3	6.58	mg/L	0.019	6.58	mg/L	0.019	0.28%
Mn 257.610†	2435.5	-0.00003	mg/L	0.000095	-0.00003	mg/L	0.000095	331.68%
Mo 202.031†	87.9	-0.00007	mg/L	0.000605	-0.00007	mg/L	0.000605	921.99%
Ni 231.604†	-9.4	-0.00331	mg/L	0.000312	-0.00331	mg/L	0.000312	9.41%
Pb 220.353†	33.1	0.00313	mg/L	0.001336	0.00313	mg/L	0.001336	42.63%
Sb 206.836†	-1.8	0.00125	mg/L	0.001244	0.00125	mg/L	0.001244	99.23%
Se 196.026†	-2.9	-0.00185	mg/L	0.006718	-0.00185	mg/L	0.006718	364.03%
Si 251.611†	513417.8	15.3	mg/L	0.23	15.3	mg/L	0.23	1.49%
Sn 189.927†	-144.3	-0.0270	mg/L	0.00243	-0.0270	mg/L	0.00243	8.97%
Ti 334.940†	-3386.1	-0.00211	mg/L	0.000147	-0.00211	mg/L	0.000147	6.93%
Tl 190.801†	-11.7	-0.0105	mg/L	0.00389	-0.0105	mg/L	0.00389	36.94%
V 290.880†	1371.5	0.00280	mg/L	0.001396	0.00280	mg/L	0.001396	49.92%
Zn 206.200†	637.2	0.0191	mg/L	0.00061	0.0191	mg/L	0.00061	3.18%
K 766.490†	2598.8	1.56	mg/L	0.018	1.56	mg/L	0.018	1.18%
Na 589.592†	215838.1	19.9	mg/L	0.15	19.9	mg/L	0.15	0.73%
Sr 407.771†	213076.4	0.208	mg/L	0.0026	0.208	mg/L	0.0026	1.27%
Li 670.784†	258.3	0.00041	mg/L	0.001176	0.00041	mg/L	0.001176	283.61%
P 214.914†	98.0	0.0475	mg/L	0.00988	0.0475	mg/L	0.00988	20.79%

Approved: November 27, 2013

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Sequence No.: 5 **Autosampler Location: 40**
Sample ID: L1311108602 **Date Collected: 11/26/2013 4:53:37 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1311108602

Analyte	Back Pressure	Flow
All	180.0 kPa	0.45 L/min

Mean Data: L1311108602

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2781204.3						41432.17	1.49%
YRADIAL	188986.2						1263.91	0.67%
Ga 417.206	927486.0						9436.49	1.02%
GaRADIAL	42497.0						766.82	1.80%
Ag 328.068†	83.8	0.00006	mg/L	0.000567	0.00006	mg/L	0.000567	988.26%
Al 396.153†	63.9	0.00384	mg/L	0.002686	0.00384	mg/L	0.002686	69.94%
As 188.979†	-10.7	-0.00615	mg/L	0.002790	-0.00615	mg/L	0.002790	45.36%
Ba 233.527†	4588.4	0.0556	mg/L	0.00067	0.0556	mg/L	0.00067	1.20%
Be 234.861†	94.5	-0.00004	mg/L	0.000039	-0.00004	mg/L	0.000039	107.45%
B 249.677†	938.0	0.0126	mg/L	0.00031	0.0126	mg/L	0.00031	2.45%
Ca 227.546†	5506.3	28.1	mg/L	0.19	28.1	mg/L	0.19	0.69%
Cd 228.802†	-12.4	-0.00029	mg/L	0.000120	-0.00029	mg/L	0.000120	41.95%
Co 228.616†	-20.4	-0.00109	mg/L	0.000342	-0.00109	mg/L	0.000342	31.21%
Cr 267.716†	764.5	0.00466	mg/L	0.000080	0.00466	mg/L	0.000080	1.71%
Cu 327.393†	-209.1	-0.00103	mg/L	0.000100	-0.00103	mg/L	0.000100	9.62%
Fe 239.562†	361.7	0.112	mg/L	0.0028	0.112	mg/L	0.0028	2.53%
Mg 279.077†	7265.8	6.67	mg/L	0.088	6.67	mg/L	0.088	1.32%
Mn 257.610†	3574.4	0.00199	mg/L	0.000070	0.00199	mg/L	0.000070	3.51%
Mo 202.031†	75.1	-0.00086	mg/L	0.000662	-0.00086	mg/L	0.000662	77.10%
Ni 231.604†	980.3	0.0253	mg/L	0.00052	0.0253	mg/L	0.00052	2.07%
Pb 220.353†	29.8	0.00257	mg/L	0.001103	0.00257	mg/L	0.001103	42.97%
Sb 206.836†	0.6	0.00248	mg/L	0.001374	0.00248	mg/L	0.001374	55.34%
Se 196.026†	-6.9	-0.00668	mg/L	0.002349	-0.00668	mg/L	0.002349	35.18%
Si 251.611†	502054.1	15.0	mg/L	0.18	15.0	mg/L	0.18	1.22%
Sn 189.927†	-145.9	-0.0273	mg/L	0.00143	-0.0273	mg/L	0.00143	5.22%
Ti 334.940†	-3564.4	-0.00203	mg/L	0.000119	-0.00203	mg/L	0.000119	5.86%
Tl 190.801†	-12.6	-0.0111	mg/L	0.00191	-0.0111	mg/L	0.00191	17.22%
V 290.880†	1520.7	0.00360	mg/L	0.000311	0.00360	mg/L	0.000311	8.64%
Zn 206.200†	711.1	0.0219	mg/L	0.00059	0.0219	mg/L	0.00059	2.70%
K 766.490†	2603.4	1.56	mg/L	0.033	1.56	mg/L	0.033	2.10%
Na 589.592†	220901.1	20.4	mg/L	0.15	20.4	mg/L	0.15	0.73%
Sr 407.771†	223023.5	0.217	mg/L	0.0019	0.217	mg/L	0.0019	0.89%
Li 670.784†	312.4	0.00122	mg/L	0.000342	0.00122	mg/L	0.000342	28.02%
P 214.914†	89.9	0.0391	mg/L	0.01042	0.0391	mg/L	0.01042	26.68%

==========

Sequence No.: 6 **Autosampler Location: 6**
Sample ID: CCV **Date Collected: 11/26/2013 4:56:40 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	181.0 kPa	0.45 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2661240.9						61067.81	2.29%
YRADIAL	188594.7						859.06	0.46%
Ga 417.206	855625.3						19170.74	2.24%
GaRADIAL	41261.7						804.43	1.95%

Approved: November 27, 2013

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Ag 328.068†            99181.9       0.405 mg/L        0.0111       0.405 mg/L        0.0111   2.73%
   QC value within limits for Ag 328.068  Recovery = 101.17%
Al 396.153†            29924.0        10.2 mg/L          0.13        10.2 mg/L          0.13   1.24%
   QC value within limits for Al 396.153  Recovery = 101.91%
As 188.979†              663.4       0.401 mg/L        0.0070       0.401 mg/L        0.0070   1.74%
   QC value within limits for As 188.979  Recovery = 100.31%
Ba 233.527†            77811.6        1.01 mg/L         0.036        1.01 mg/L         0.036   3.56%
   QC value within limits for Ba 233.527  Recovery = 100.65%
Be 234.861†            33566.7      0.0507 mg/L       0.00142      0.0507 mg/L       0.00142   2.81%
   QC value within limits for Be 234.861  Recovery = 101.41%
B 249.677†             33673.7       0.491 mg/L        0.0135       0.491 mg/L        0.0135   2.75%
   QC value within limits for B 249.677  Recovery = 98.26%
Ca 227.546†             1955.8        10.5 mg/L          0.21        10.5 mg/L          0.21   1.99%
   QC value within limits for Ca 227.546  Recovery = 104.67%
Cd 228.802†             1257.7      0.0492 mg/L       0.00200      0.0492 mg/L       0.00200   4.07%
   QC value within limits for Cd 228.802  Recovery = 98.31%
Co 228.616†             4331.1       0.207 mg/L        0.0043       0.207 mg/L        0.0043   2.06%
   QC value within limits for Co 228.616  Recovery = 103.35%
Cr 267.716†            56776.7       0.507 mg/L        0.0166       0.507 mg/L        0.0166   3.28%
   QC value within limits for Cr 267.716  Recovery = 101.39%
Cu 327.393†           105412.6       0.503 mg/L        0.0142       0.503 mg/L        0.0142   2.81%
   QC value within limits for Cu 327.393  Recovery = 100.57%
Fe 239.562†            11155.6        3.91 mg/L         0.097        3.91 mg/L         0.097   2.47%
   QC value within limits for Fe 239.562  Recovery = 97.86%
Mg 279.077†            10907.5        10.0 mg/L          0.23        10.0 mg/L          0.23   2.28%
   QC value within limits for Mg 279.077  Recovery = 100.45%
Mn 257.610†           295127.2       0.519 mg/L        0.0195       0.519 mg/L        0.0195   3.77%
   QC value within limits for Mn 257.610  Recovery = 103.71%
Mo 202.031†            16367.7        1.02 mg/L         0.037        1.02 mg/L         0.037   3.64%
   QC value within limits for Mo 202.031  Recovery = 101.57%
Ni 231.604†            17731.3       0.509 mg/L        0.0201       0.509 mg/L        0.0201   3.95%
   QC value within limits for Ni 231.604  Recovery = 101.76%
Pb 220.353†             3020.2       0.516 mg/L        0.0076       0.516 mg/L        0.0076   1.48%
   QC value within limits for Pb 220.353  Recovery = 103.22%
Sb 206.836†             2228.9        1.19 mg/L         0.037        1.19 mg/L         0.037   3.10%
   QC value within limits for Sb 206.836  Recovery = 99.56%
Se 196.026†              328.1       0.406 mg/L        0.0063       0.406 mg/L        0.0063   1.55%
   QC value within limits for Se 196.026  Recovery = 101.48%
Si 251.611†           169023.7        5.02 mg/L         0.147        5.02 mg/L         0.147   2.93%
   QC value within limits for Si 251.611  Recovery = 100.48%
Sn 189.927†             6043.7        1.03 mg/L         0.022        1.03 mg/L         0.022   2.18%
   QC value within limits for Sn 189.927  Recovery = 103.23%
Ti 334.940†           801994.6       0.996 mg/L        0.0051       0.996 mg/L        0.0051   0.51%
   QC value within limits for Ti 334.940  Recovery = 99.62%
Tl 190.801†              866.0       0.523 mg/L        0.0149       0.523 mg/L        0.0149   2.84%
   QC value within limits for Tl 190.801  Recovery = 104.60%
V 290.880†            185472.1        1.01 mg/L         0.039        1.01 mg/L         0.039   3.83%
   QC value within limits for V 290.880  Recovery = 100.99%
Zn 206.200†            26814.2        1.01 mg/L         0.034        1.01 mg/L         0.034   3.31%
   QC value within limits for Zn 206.200  Recovery = 101.44%
K 766.490†             81998.9        50.2 mg/L          0.58        50.2 mg/L          0.58   1.15%
   QC value within limits for K 766.490  Recovery = 100.41%
Na 589.592†           550350.6        52.0 mg/L          1.04        52.0 mg/L          1.04   2.00%
   QC value within limits for Na 589.592  Recovery = 104.00%
Sr 407.771†           996801.1       0.993 mg/L        0.0100       0.993 mg/L        0.0100   1.00%
   QC value within limits for Sr 407.771  Recovery = 99.35%
Li 670.784†            68528.9        1.02 mg/L         0.010        1.02 mg/L         0.010   0.97%
   QC value within limits for Li 670.784  Recovery = 101.71%
P 214.914†              9958.5        10.4 mg/L          0.19        10.4 mg/L          0.19   1.83%
   QC value within limits for P 214.914  Recovery = 103.53%
All analyte(s) passed QC.

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Sequence No.: 7                                   Autosampler Location: 1
Sample ID: CCB                                    Date Collected: 11/26/2013 4:58:47 PM
Analyst:                                          Data Type: Original
Initial Sample Wt:                                Initial Sample Vol:
Dilution:                                         Sample Prep Vol:

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Nebulizer Parameters: CCB
Analyte                 Back Pressure    Flow
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Approved: November 27, 2013

All 181.0 kPa 0.45 L/min

Mean Data: CCB

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2764039.2						63199.31	2.29%
YRADIAL	185929.3						3170.80	1.71%
Ga 417.206	871369.2						22507.49	2.58%
GaRADIAL	40460.0						1110.67	2.75%
Ag 328.068†	-205.2	-0.00113	mg/L	0.000078	-0.00113	mg/L	0.000078	6.86%
QC value within limits for Ag 328.068 Recovery = Not calculated								
Al 396.153†	44.7	-0.00248	mg/L	0.007666	-0.00248	mg/L	0.007666	309.57%
QC value within limits for Al 396.153 Recovery = Not calculated								
As 188.979†	4.1	0.00226	mg/L	0.001655	0.00226	mg/L	0.001655	73.24%
QC value within limits for As 188.979 Recovery = Not calculated								
Ba 233.527†	-2.7	-0.00402	mg/L	0.000088	-0.00402	mg/L	0.000088	2.18%
QC value less than the lower limit for Ba 233.527 Recovery = Not calculated								
Be 234.861†	30.6	-0.00011	mg/L	0.000073	-0.00011	mg/L	0.000073	68.20%
QC value within limits for Be 234.861 Recovery = Not calculated								
B 249.677†	481.3	0.00596	mg/L	0.000408	0.00596	mg/L	0.000408	6.84%
QC value within limits for B 249.677 Recovery = Not calculated								
Ca 227.546†	-0.6	0.0667	mg/L	0.01358	0.0667	mg/L	0.01358	20.36%
QC value within limits for Ca 227.546 Recovery = Not calculated								
Cd 228.802†	-12.1	-0.00032	mg/L	0.000156	-0.00032	mg/L	0.000156	48.99%
QC value within limits for Cd 228.802 Recovery = Not calculated								
Co 228.616†	-12.3	-0.00070	mg/L	0.000181	-0.00070	mg/L	0.000181	25.92%
QC value within limits for Co 228.616 Recovery = Not calculated								
Cr 267.716†	64.3	-0.00161	mg/L	0.000080	-0.00161	mg/L	0.000080	4.99%
QC value within limits for Cr 267.716 Recovery = Not calculated								
Cu 327.393†	-258.6	-0.00127	mg/L	0.000569	-0.00127	mg/L	0.000569	44.72%
QC value within limits for Cu 327.393 Recovery = Not calculated								
Fe 239.562†	19.6	-0.00815	mg/L	0.004489	-0.00815	mg/L	0.004489	55.11%
QC value within limits for Fe 239.562 Recovery = Not calculated								
Mg 279.077†	43.9	0.00630	mg/L	0.011308	0.00630	mg/L	0.011308	179.53%
QC value within limits for Mg 279.077 Recovery = Not calculated								
Mn 257.610†	468.9	-0.00351	mg/L	0.000040	-0.00351	mg/L	0.000040	1.14%
QC value within limits for Mn 257.610 Recovery = Not calculated								
Mo 202.031†	-0.1	-0.00556	mg/L	0.000179	-0.00556	mg/L	0.000179	3.23%
QC value within limits for Mo 202.031 Recovery = Not calculated								
Ni 231.604†	4.4	-0.00292	mg/L	0.000266	-0.00292	mg/L	0.000266	9.10%
QC value within limits for Ni 231.604 Recovery = Not calculated								
Pb 220.353†	13.4	-0.00024	mg/L	0.000502	-0.00024	mg/L	0.000502	207.61%
QC value within limits for Pb 220.353 Recovery = Not calculated								
Sb 206.836†	0.1	0.00227	mg/L	0.003337	0.00227	mg/L	0.003337	146.73%
QC value within limits for Sb 206.836 Recovery = Not calculated								
Se 196.026†	-3.6	-0.00268	mg/L	0.002627	-0.00268	mg/L	0.002627	97.89%
QC value within limits for Se 196.026 Recovery = Not calculated								
Si 251.611†	234.0	-0.00436	mg/L	0.000742	-0.00436	mg/L	0.000742	17.01%
QC value within limits for Si 251.611 Recovery = Not calculated								
Sn 189.927†	24.9	0.00193	mg/L	0.000779	0.00193	mg/L	0.000779	40.42%
QC value within limits for Sn 189.927 Recovery = Not calculated								
Ti 334.940†	230.6	-0.00151	mg/L	0.000063	-0.00151	mg/L	0.000063	4.20%
QC value within limits for Ti 334.940 Recovery = Not calculated								
Tl 190.801†	-2.1	-0.00479	mg/L	0.001248	-0.00479	mg/L	0.001248	26.08%
QC value within limits for Tl 190.801 Recovery = Not calculated								
V 290.880†	875.7	0.00026	mg/L	0.001898	0.00026	mg/L	0.001898	737.27%
QC value within limits for V 290.880 Recovery = Not calculated								
Zn 206.200†	31.8	-0.00386	mg/L	0.000108	-0.00386	mg/L	0.000108	2.80%
QC value within limits for Zn 206.200 Recovery = Not calculated								
K 766.490†	74.4	0.0559	mg/L	0.06525	0.0559	mg/L	0.06525	116.69%
QC value within limits for K 766.490 Recovery = Not calculated								
Na 589.592†	1570.7	0.136	mg/L	0.0684	0.136	mg/L	0.0684	50.34%
QC value within limits for Na 589.592 Recovery = Not calculated								
Sr 407.771†	1424.2	-0.00380	mg/L	0.001009	-0.00380	mg/L	0.001009	26.59%
QC value within limits for Sr 407.771 Recovery = Not calculated								
Li 670.784†	234.8	0.00006	mg/L	0.001058	0.00006	mg/L	0.001058	>999.9%
QC value within limits for Li 670.784 Recovery = Not calculated								
P 214.914†	81.2	0.0299	mg/L	0.00463	0.0299	mg/L	0.00463	15.49%
QC value within limits for P 214.914 Recovery = Not calculated								

QC Failed. Continue with analysis.

Approved: November 27, 2013

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Sequence No.: 8 Autosampler Location: 41
Sample ID: PBW 44 ~~WG45377-02~~ Date Collected: 11/26/2013 5:01:49 PM
Analyst: JYH Data Type: Original
Initial Sample Wt: Initial Sample Vol:
Dilution: WG453770-02 Sample Prep Vol:

Nebulizer Parameters: PBW 44 ~~WG45377-02~~

Analyte	Back Pressure	Flow
All	182.0 kPa	0.45 L/min

Mean Data: PBW 44 ~~WG45377-02~~

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2884785.9						20071.71	0.70%
YRADIAL	195482.9						3135.84	1.60%
Ga 417.206	888700.7						6758.82	0.76%
GaRADIAL	41897.5						966.94	2.31%
Ag 328.068†	-62.3	-0.00056	mg/L	0.000110	-0.00056	mg/L	0.000110	19.73%
Al 396.153†	8.2	-0.0150	mg/L	0.00256	-0.0150	mg/L	0.00256	17.07%
As 188.979†	-1.7	-0.00130	mg/L	0.000803	-0.00130	mg/L	0.000803	61.63%
Ba 233.527†	-33.1	-0.00441	mg/L	0.000126	-0.00441	mg/L	0.000126	2.87%
Be 234.861†	-129.0	-0.00035	mg/L	0.000029	-0.00035	mg/L	0.000029	8.29%
B 249.677†	236.7	0.00236	mg/L	0.000101	0.00236	mg/L	0.000101	4.26%
Ca 227.546†	-9.8	0.0194	mg/L	0.03799	0.0194	mg/L	0.03799	195.78%
Cd 228.802†	-9.0	-0.00018	mg/L	0.000327	-0.00018	mg/L	0.000327	182.71%
Co 228.616†	-25.0	-0.00131	mg/L	0.000195	-0.00131	mg/L	0.000195	14.88%
Cr 267.716†	80.3	-0.00147	mg/L	0.000042	-0.00147	mg/L	0.000042	2.90%
Cu 327.393†	-287.5	-0.00141	mg/L	0.000342	-0.00141	mg/L	0.000342	24.25%
Fe 239.562†	5.5	-0.0131	mg/L	0.00076	-0.0131	mg/L	0.00076	5.78%
Mg 279.077†	36.4	-0.00059	mg/L	0.002203	-0.00059	mg/L	0.002203	376.25%
Mn 257.610†	321.3	-0.00377	mg/L	0.000034	-0.00377	mg/L	0.000034	0.89%
Mo 202.031†	-4.7	-0.00585	mg/L	0.000190	-0.00585	mg/L	0.000190	3.24%
Ni 231.604†	-15.9	-0.00350	mg/L	0.000299	-0.00350	mg/L	0.000299	8.53%
Pb 220.353†	18.8	0.00067	mg/L	0.002247	0.00067	mg/L	0.002247	335.84%
Sb 206.836†	4.1	0.00439	mg/L	0.000797	0.00439	mg/L	0.000797	18.14%
Se 196.026†	0.1	0.00185	mg/L	0.005676	0.00185	mg/L	0.005676	306.25%
Si 251.611†	73.7	-0.00915	mg/L	0.000423	-0.00915	mg/L	0.000423	4.62%
Sn 189.927†	9.3	-0.00075	mg/L	0.000748	-0.00075	mg/L	0.000748	100.18%
Ti 334.940†	4.4	-0.00179	mg/L	0.000130	-0.00179	mg/L	0.000130	7.26%
Tl 190.801†	-8.6	-0.00865	mg/L	0.004017	-0.00865	mg/L	0.004017	46.45%
V 290.880†	661.5	-0.00091	mg/L	0.000700	-0.00091	mg/L	0.000700	76.53%
Zn 206.200†	65.7	-0.00257	mg/L	0.000252	-0.00257	mg/L	0.000252	9.82%
K 766.490†	3.3	0.0131	mg/L	0.02359	0.0131	mg/L	0.02359	180.40%
Na 589.592†	564.0	0.0442	mg/L	0.02202	0.0442	mg/L	0.02202	49.86%
Sr 407.771†	270.7	-0.00495	mg/L	0.000157	-0.00495	mg/L	0.000157	3.17%
Li 670.784†	-12.2	-0.00361	mg/L	0.000370	-0.00361	mg/L	0.000370	10.23%
P 214.914†	42.6	-0.0104	mg/L	0.00404	-0.0104	mg/L	0.00404	38.99%

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Sequence No.: 9 Autosampler Location: 42
Sample ID: F BLANK WG453698-03 Date Collected: 11/26/2013 5:04:51 PM
Analyst: JYH Data Type: Original
Initial Sample Wt: Initial Sample Vol:
Dilution: Sample Prep Vol:

Nebulizer Parameters: F BLANK WG453698-03

Analyte	Back Pressure	Flow
All	181.0 kPa	0.45 L/min

Mean Data: F BLANK WG453698-03

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2798416.4						32008.21	1.14%
YRADIAL	195121.9						4242.61	2.17%
Ga 417.206	901584.4						6268.32	0.70%
GaRADIAL	42567.5						861.86	2.02%
Ag 328.068†	45862.9	0.187	mg/L	0.0034	0.187	mg/L	0.0034	1.81%

Approved: November 27, 2013

Al 396.153†	14605.6	4.97	mg/L	0.088	4.97	mg/L	0.088	1.77%
As 188.979†	285.8	0.173	mg/L	0.0013	0.173	mg/L	0.0013	0.73%
Ba 233.527†	35789.7	0.461	mg/L	0.0095	0.461	mg/L	0.0095	2.07%
Be 234.861†	14269.2	0.0214	mg/L	0.00038	0.0214	mg/L	0.00038	1.78%
B 249.677†	60520.2	0.889	mg/L	0.0251	0.889	mg/L	0.0251	2.82%
Ca 227.546†	877.8	4.74	mg/L	0.076	4.74	mg/L	0.076	1.60%
Cd 228.802†	539.9	0.0212	mg/L	0.00041	0.0212	mg/L	0.00041	1.92%
Co 228.616†	1985.1	0.0946	mg/L	0.00174	0.0946	mg/L	0.00174	1.84%
Cr 267.716†	26191.3	0.233	mg/L	0.0036	0.233	mg/L	0.0036	1.54%
Cu 327.393†	49006.5	0.234	mg/L	0.0056	0.234	mg/L	0.0056	2.39%
Fe 239.562†	5464.8	1.91	mg/L	0.033	1.91	mg/L	0.033	1.71%
Mg 279.077†	5323.4	4.88	mg/L	0.127	4.88	mg/L	0.127	2.61%
Mn 257.610†	136590.7	0.238	mg/L	0.0044	0.238	mg/L	0.0044	1.85%
Mo 202.031†	7630.8	0.471	mg/L	0.0067	0.471	mg/L	0.0067	1.43%
Ni 231.604†	8118.1	0.231	mg/L	0.0035	0.231	mg/L	0.0035	1.51%
Pb 220.353†	1384.5	0.235	mg/L	0.0033	0.235	mg/L	0.0033	1.41%
Sb 206.836†	1010.7	0.543	mg/L	0.0084	0.543	mg/L	0.0084	1.55%
Se 196.026†	143.6	0.179	mg/L	0.0031	0.179	mg/L	0.0031	1.74%
Si 251.611†	76801.7	2.28	mg/L	0.053	2.28	mg/L	0.053	2.31%
Sn 189.927†	-10.5	-0.00412	mg/L	0.001011	-0.00412	mg/L	0.001011	24.52%
Ti 334.940†	384437.2	0.477	mg/L	0.0010	0.477	mg/L	0.0010	0.20%
Tl 190.801†	392.7	0.236	mg/L	0.0097	0.236	mg/L	0.0097	4.10%
V 290.880†	86201.3	0.467	mg/L	0.0105	0.467	mg/L	0.0105	2.25%
Zn 206.200†	12001.6	0.451	mg/L	0.0073	0.451	mg/L	0.0073	1.61%
K 766.490†	39209.2	23.8	mg/L	0.45	23.8	mg/L	0.45	1.90%
Na 589.592†	261878.5	24.3	mg/L	0.12	24.3	mg/L	0.12	0.48%
Sr 407.771†	474970.8	0.471	mg/L	0.0034	0.471	mg/L	0.0034	0.72%
Li 670.784†	33693.5	0.498	mg/L	0.0023	0.498	mg/L	0.0023	0.47%
P 214.914†	-168.1	-0.231	mg/L	0.0318	-0.231	mg/L	0.0318	13.77%

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Sequence No.: 10
Sample ID: LCSW 44 ~~WG45377-03~~ WG453770-03
Analyst: JYH
Initial Sample Wt:
Dilution:

Autosampler Location: 43
Date Collected: 11/26/2013 5:06:57 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: LCSW 44 ~~WG45377-03~~

Analyte	Back Pressure	Flow
All	181.0 kPa	0.45 L/min

Mean Data: LCSW 44 ~~WG45377-03~~

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2838722.0						11023.52	0.39%
YRADIAL	200302.0						862.60	0.43%
Ga 417.206	914575.9						9537.66	1.04%
GaRADIAL	43005.8						332.88	0.77%
Ag 328.068†	-199.4	-0.00100	mg/L	0.000096	-0.00100	mg/L	0.000096	9.58%
Al 396.153†	510.8	0.158	mg/L	0.0023	0.158	mg/L	0.0023	1.43%
As 188.979†	-2.5	-0.00170	mg/L	0.002526	-0.00170	mg/L	0.002526	148.30%
Ba 233.527†	53.9	-0.00329	mg/L	0.000121	-0.00329	mg/L	0.000121	3.68%
Be 234.861†	-14.2	-0.00023	mg/L	0.000038	-0.00023	mg/L	0.000038	16.44%
B 249.677†	543.2	0.00678	mg/L	0.000960	0.00678	mg/L	0.000960	14.16%
Ca 227.546†	13.9	0.145	mg/L	0.0279	0.145	mg/L	0.0279	19.16%
Cd 228.802†	-11.9	-0.00029	mg/L	0.000196	-0.00029	mg/L	0.000196	67.28%
Co 228.616†	-17.1	-0.00094	mg/L	0.000405	-0.00094	mg/L	0.000405	43.04%
Cr 267.716†	101.4	-0.00129	mg/L	0.000063	-0.00129	mg/L	0.000063	4.90%
Cu 327.393†	-120.3	-0.00060	mg/L	0.000197	-0.00060	mg/L	0.000197	32.92%
Fe 239.562†	650.5	0.214	mg/L	0.0030	0.214	mg/L	0.0030	1.39%
Mg 279.077†	68.9	0.0292	mg/L	0.00196	0.0292	mg/L	0.00196	6.70%
Mn 257.610†	1865.9	-0.00103	mg/L	0.000029	-0.00103	mg/L	0.000029	2.82%
Mo 202.031†	4.8	-0.00525	mg/L	0.000149	-0.00525	mg/L	0.000149	2.84%
Ni 231.604†	-2.9	-0.00313	mg/L	0.000206	-0.00313	mg/L	0.000206	6.58%
Pb 220.353†	22.7	0.00136	mg/L	0.001411	0.00136	mg/L	0.001411	103.51%
Sb 206.836†	5.4	0.00508	mg/L	0.002034	0.00508	mg/L	0.002034	40.05%
Se 196.026†	-4.4	-0.00360	mg/L	0.001973	-0.00360	mg/L	0.001973	54.75%
Si 251.611†	7146.6	0.202	mg/L	0.0038	0.202	mg/L	0.0038	1.87%
Sn 189.927†	9.2	-0.00076	mg/L	0.000661	-0.00076	mg/L	0.000661	86.76%
Ti 334.940†	2140.1	0.00088	mg/L	0.000046	0.00088	mg/L	0.000046	5.26%

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Tl 190.801†	-14.4	-0.0121	mg/L	0.00052	-0.0121	mg/L	0.00052 4.33%
V 290.880†	1051.4	0.00120	mg/L	0.001387	0.00120	mg/L	0.001387 115.89%
Zn 206.200†	115.3	-0.00069	mg/L	0.000066	-0.00069	mg/L	0.000066 9.50%
K 766.490†	193.3	-0.0252	mg/L	0.02566	-0.0252	mg/L	0.02566 101.77%
Na 589.592†	1502733.0	153	mg/L	2.1	153	mg/L	2.1 1.38%
Sr 407.771†	1358.4	-0.00386	mg/L	0.000256	-0.00386	mg/L	0.000256 6.63%
Li 670.784†	128.6	-0.00152	mg/L	0.000761	-0.00152	mg/L	0.000761 50.13%
P 214.914†	46.5	-0.00629	mg/L	0.012857	-0.00629	mg/L	0.012857 204.49%

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Sequence No.: 11 **Autosampler Location: 44**
Sample ID: L1311122401 **Date Collected: 11/26/2013 5:10:03 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1311122401

Analyte	Back Pressure	Flow
All	181.0 kPa	0.45 L/min

Mean Data: L1311122401

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2835786.6						49377.65	1.74%
YRADIAL	198307.4						2138.42	1.08%
Ga 417.206	942307.0						14240.88	1.51%
GaRADIAL	43119.1						282.91	0.66%
Ag 328.068†	-145.0	0.00094	mg/L	0.000352	0.00094	mg/L	0.000352	37.33%
Al 396.153†	40.0	-0.00371	mg/L	0.002823	-0.00371	mg/L	0.002823	76.01%
As 188.979†	-27.4	-0.0146	mg/L	0.00299	-0.0146	mg/L	0.00299	20.43%
Ba 233.527†	3052.9	0.0355	mg/L	0.00050	0.0355	mg/L	0.00050	1.42%
Be 234.861†	693.9	-0.00007	mg/L	0.000085	-0.00007	mg/L	0.000085	126.23%
B 249.677†	1873.1	0.0247	mg/L	0.00029	0.0247	mg/L	0.00029	1.18%
Ca 227.546†	13166.8	67.0	mg/L	2.31	67.0	mg/L	2.31	3.45%
Cd 228.802†	-0.5	0.00024	mg/L	0.000194	0.00024	mg/L	0.000194	80.50%
Co 228.616†	26.5	0.00107	mg/L	0.000285	0.00107	mg/L	0.000285	26.64%
Cr 267.716†	93.0	-0.00167	mg/L	0.000074	-0.00167	mg/L	0.000074	4.42%
Cu 327.393†	-458.4	-0.00200	mg/L	0.000116	-0.00200	mg/L	0.000116	5.82%
Fe 239.562†	11365.1	3.99	mg/L	0.043	3.99	mg/L	0.043	1.09%
Mg 279.077†	404.3	0.337	mg/L	0.0058	0.337	mg/L	0.0058	1.71%
Mn 257.610†	65639.1	0.112	mg/L	0.0040	0.112	mg/L	0.0040	3.56%
Mo 202.031†	30.8	-0.00354	mg/L	0.000525	-0.00354	mg/L	0.000525	14.81%
Ni 231.604†	92.0	-0.00038	mg/L	0.000191	-0.00038	mg/L	0.000191	49.83%
Pb 220.353†	45.1	0.00498	mg/L	0.001212	0.00498	mg/L	0.001212	24.33%
Sb 206.836†	-0.5	0.00207	mg/L	0.003427	0.00207	mg/L	0.003427	165.62%
Se 196.026†	1.3	0.00413	mg/L	0.005282	0.00413	mg/L	0.005282	128.05%
Si 251.611†	1691.9	0.0391	mg/L	0.00051	0.0391	mg/L	0.00051	1.31%
Sn 189.927†	-223.7	-0.0406	mg/L	0.00030	-0.0406	mg/L	0.00030	0.73%
Ti 334.940†	-9155.1	-0.00314	mg/L	0.000310	-0.00314	mg/L	0.000310	9.88%
Tl 190.801†	-29.2	-0.0211	mg/L	0.00516	-0.0211	mg/L	0.00516	24.47%
V 290.880†	1132.1	0.00125	mg/L	0.002371	0.00125	mg/L	0.002371	188.97%
Zn 206.200†	1028.7	0.0338	mg/L	0.00028	0.0338	mg/L	0.00028	0.84%
K 766.490†	129.7	-0.0816	mg/L	0.00626	-0.0816	mg/L	0.00626	7.67%
Na 589.592†	1655611.3	171	mg/L	3.7	171	mg/L	3.7	2.18%
Sr 407.771†	64649.5	0.0574	mg/L	0.00040	0.0574	mg/L	0.00040	0.69%
Li 670.784†	-40.1	-0.00403	mg/L	0.000190	-0.00403	mg/L	0.000190	4.71%
P 214.914†	53.6	0.00114	mg/L	0.003765	0.00114	mg/L	0.003765	330.62%

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Sequence No.: 12 **Autosampler Location: 45**
Sample ID: L1311122402 **Date Collected: 11/26/2013 5:13:10 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1311122402

Analyte	Back Pressure	Flow
All	181.0 kPa	0.45 L/min

Approved: November 27, 2013

Mean Data: L1311122402

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2817471.1						6982.45	0.25%
YRADIAL	193297.0						1493.52	0.77%
Ga 417.206	921213.4						7559.53	0.82%
GaRADIAL	42001.3						680.51	1.62%
Ag 328.068†	-588.5	0.00004	mg/L	0.000125	0.00004	mg/L	0.000125	328.30%
Al 396.153†	362.0	0.107	mg/L	0.0021	0.107	mg/L	0.0021	1.95%
As 188.979†	-17.8	-0.00842	mg/L	0.001485	-0.00842	mg/L	0.001485	17.64%
Ba 233.527†	4060.2	0.0484	mg/L	0.00027	0.0484	mg/L	0.00027	0.57%
Be 234.861†	995.3	-0.00008	mg/L	0.000086	-0.00008	mg/L	0.000086	107.34%
B 249.677†	2175.0	0.0284	mg/L	0.00105	0.0284	mg/L	0.00105	3.69%
Ca 227.546†	11981.2	61.1	mg/L	1.13	61.1	mg/L	1.13	1.86%
Cd 228.802†	-2.6	0.00012	mg/L	0.000042	0.00012	mg/L	0.000042	34.27%
Co 228.616†	31.2	0.00124	mg/L	0.000205	0.00124	mg/L	0.000205	16.61%
Cr 267.716†	95.6	-0.00180	mg/L	0.000126	-0.00180	mg/L	0.000126	7.02%
Cu 327.393†	-324.2	-0.00124	mg/L	0.000410	-0.00124	mg/L	0.000410	32.95%
Fe 239.562†	16802.5	5.90	mg/L	0.054	5.90	mg/L	0.054	0.92%
Mg 279.077†	410.3	0.341	mg/L	0.0022	0.341	mg/L	0.0022	0.63%
Mn 257.610†	58525.5	0.0995	mg/L	0.00152	0.0995	mg/L	0.00152	1.53%
Mo 202.031†	28.6	-0.00365	mg/L	0.000432	-0.00365	mg/L	0.000432	11.83%
Ni 231.604†	88.3	-0.00049	mg/L	0.000184	-0.00049	mg/L	0.000184	37.35%
Pb 220.353†	40.2	0.00409	mg/L	0.001129	0.00409	mg/L	0.001129	27.58%
Sb 206.836†	-3.5	0.00051	mg/L	0.001349	0.00051	mg/L	0.001349	261.93%
Se 196.026†	-2.5	-0.00015	mg/L	0.008874	-0.00015	mg/L	0.008874	>999.9%
Si 251.611†	2615.8	0.0667	mg/L	0.00043	0.0667	mg/L	0.00043	0.65%
Sn 189.927†	-216.1	-0.0393	mg/L	0.00132	-0.0393	mg/L	0.00132	3.35%
Ti 334.940†	-7942.9	-0.00254	mg/L	0.000138	-0.00254	mg/L	0.000138	5.46%
Tl 190.801†	-29.0	-0.0210	mg/L	0.00454	-0.0210	mg/L	0.00454	21.65%
V 290.880†	979.1	0.00022	mg/L	0.001139	0.00022	mg/L	0.001139	509.61%
Zn 206.200†	1063.1	0.0351	mg/L	0.00036	0.0351	mg/L	0.00036	1.03%
K 766.490†	119.3	-0.0840	mg/L	0.01007	-0.0840	mg/L	0.01007	11.99%
Na 589.592†	1622120.2	167	mg/L	3.9	167	mg/L	3.9	2.36%
Sr 407.771†	61303.6	0.0543	mg/L	0.00042	0.0543	mg/L	0.00042	0.77%
Li 670.784†	-40.0	-0.00403	mg/L	0.000135	-0.00403	mg/L	0.000135	3.36%
P 214.914†	62.4	0.0103	mg/L	0.00848	0.0103	mg/L	0.00848	81.97%

Sequence No.: 13 **Autosampler Location: 46**
Sample ID: L1311122403 **Date Collected: 11/26/2013 5:16:17 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1311122403

Analyte	Back Pressure	Flow
All	182.0 kPa	0.45 L/min

Mean Data: L1311122403

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2825617.9						31412.68	1.11%
YRADIAL	201187.9						1962.99	0.98%
Ga 417.206	920856.9						16929.76	1.84%
GaRADIAL	43476.1						694.05	1.60%
Ag 328.068†	-756.2	-0.00017	mg/L	0.000793	-0.00017	mg/L	0.000793	479.09%
Al 396.153†	62.5	0.00432	mg/L	0.000621	0.00432	mg/L	0.000621	14.37%
As 188.979†	-28.8	-0.0150	mg/L	0.00517	-0.0150	mg/L	0.00517	34.45%
Ba 233.527†	3681.0	0.0435	mg/L	0.00043	0.0435	mg/L	0.00043	0.99%
Be 234.861†	1154.6	-0.00009	mg/L	0.000063	-0.00009	mg/L	0.000063	73.97%
B 249.677†	1987.1	0.0252	mg/L	0.00097	0.0252	mg/L	0.00097	3.84%
Ca 227.546†	11384.2	58.1	mg/L	1.43	58.1	mg/L	1.43	2.46%
Cd 228.802†	-8.0	-0.00006	mg/L	0.000055	-0.00006	mg/L	0.000055	86.39%
Co 228.616†	18.0	0.00058	mg/L	0.000495	0.00058	mg/L	0.000495	85.46%
Cr 267.716†	77.9	-0.00204	mg/L	0.000244	-0.00204	mg/L	0.000244	11.94%
Cu 327.393†	-310.6	-0.00112	mg/L	0.000240	-0.00112	mg/L	0.000240	21.35%
Fe 239.562†	19671.8	6.92	mg/L	0.062	6.92	mg/L	0.062	0.90%
Mg 279.077†	459.2	0.386	mg/L	0.0026	0.386	mg/L	0.0026	0.68%

Approved: November 27, 2013

Mn 257.610†	60271.9	0.103 mg/L	0.0017	0.103 mg/L	0.0017	1.65%
Mo 202.031†	34.4	-0.00328 mg/L	0.000572	-0.00328 mg/L	0.000572	17.47%
Ni 231.604†	45.5	-0.00173 mg/L	0.000350	-0.00173 mg/L	0.000350	20.28%
Pb 220.353†	43.6	0.00464 mg/L	0.002108	0.00464 mg/L	0.002108	45.40%
Sb 206.836†	-2.0	0.00137 mg/L	0.001269	0.00137 mg/L	0.001269	92.39%
Se 196.026†	2.8	0.00649 mg/L	0.003938	0.00649 mg/L	0.003938	60.68%
Si 251.611†	2208.2	0.0546 mg/L	0.00201	0.0546 mg/L	0.00201	3.68%
Sn 189.927†	-213.4	-0.0389 mg/L	0.00109	-0.0389 mg/L	0.00109	2.80%
Ti 334.940†	-7506.5	-0.00245 mg/L	0.000128	-0.00245 mg/L	0.000128	5.22%
Tl 190.801†	-21.2	-0.0163 mg/L	0.00577	-0.0163 mg/L	0.00577	35.34%
V 290.880†	1065.5	0.00060 mg/L	0.000865	0.00060 mg/L	0.000865	145.21%
Zn 206.200†	394.9	0.00985 mg/L	0.000143	0.00985 mg/L	0.000143	1.46%
K 766.490†	86.2	-0.0967 mg/L	0.02018	-0.0967 mg/L	0.02018	20.88%
Na 589.592†	1560262.2	160 mg/L	4.5	160 mg/L	4.5	2.81%
Sr 407.771†	33300.8	0.0263 mg/L	0.00045	0.0263 mg/L	0.00045	1.70%
Li 670.784†	-37.1	-0.00399 mg/L	0.000275	-0.00399 mg/L	0.000275	6.90%
P 214.914†	58.9	0.00663 mg/L	0.016605	0.00663 mg/L	0.016605	250.35%

Sequence No.: 14 **Autosampler Location: 47**
Sample ID: L1311122404 **Date Collected: 11/26/2013 5:19:24 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1311122404

Analyte	Back Pressure	Flow
All	182.0 kPa	0.45 L/min

Mean Data: L1311122404

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2768006.9						51583.67	1.86%
YRADIAL	197641.6						5697.83	2.88%
Ga 417.206	912091.2						27939.04	3.06%
GaRADIAL	42794.8						1347.73	3.15%
Ag 328.068†	-1187.4	-0.00027	mg/L	0.000124	-0.00027	mg/L	0.000124	45.38%
Al 396.153†	4409.8	1.50	mg/L	0.033	1.50	mg/L	0.033	2.18%
As 188.979†	-18.1	-0.00755	mg/L	0.005411	-0.00755	mg/L	0.005411	71.64%
Ba 233.527†	2878.0	0.0329	mg/L	0.00046	0.0329	mg/L	0.00046	1.40%
Be 234.861†	1734.3	-0.00007	mg/L	0.000139	-0.00007	mg/L	0.000139	207.76%
B 249.677†	2204.6	0.0269	mg/L	0.00099	0.0269	mg/L	0.00099	3.69%
Ca 227.546†	13180.5	67.3	mg/L	1.58	67.3	mg/L	1.58	2.35%
Cd 228.802†	-5.0	0.00002	mg/L	0.000042	0.00002	mg/L	0.000042	229.62%
Co 228.616†	24.3	0.00078	mg/L	0.000131	0.00078	mg/L	0.000131	16.79%
Cr 267.716†	319.1	-0.00012	mg/L	0.000198	-0.00012	mg/L	0.000198	162.68%
Cu 327.393†	1032.1	0.00548	mg/L	0.000483	0.00548	mg/L	0.000483	8.81%
Fe 239.562†	29671.8	10.4	mg/L	0.32	10.4	mg/L	0.32	3.09%
Mg 279.077†	887.8	0.779	mg/L	0.0230	0.779	mg/L	0.0230	2.95%
Mn 257.610†	69856.5	0.120	mg/L	0.0033	0.120	mg/L	0.0033	2.79%
Mo 202.031†	35.3	-0.00315	mg/L	0.000206	-0.00315	mg/L	0.000206	6.54%
Ni 231.604†	160.6	0.00160	mg/L	0.000067	0.00160	mg/L	0.000067	4.18%
Pb 220.353†	77.6	0.0105	mg/L	0.00163	0.0105	mg/L	0.00163	15.49%
Sb 206.836†	-3.6	0.00064	mg/L	0.001677	0.00064	mg/L	0.001677	263.67%
Se 196.026†	1.7	0.00584	mg/L	0.002737	0.00584	mg/L	0.002737	46.91%
Si 251.611†	5906.5	0.165	mg/L	0.0052	0.165	mg/L	0.0052	3.14%
Sn 189.927†	-214.3	-0.0390	mg/L	0.00126	-0.0390	mg/L	0.00126	3.22%
Ti 334.940†	-1233.4	0.00672	mg/L	0.000506	0.00672	mg/L	0.000506	7.53%
Tl 190.801†	-31.5	-0.0223	mg/L	0.00236	-0.0223	mg/L	0.00236	10.60%
V 290.880†	1756.2	0.00401	mg/L	0.000896	0.00401	mg/L	0.000896	22.31%
Zn 206.200†	2624.3	0.0942	mg/L	0.00117	0.0942	mg/L	0.00117	1.24%
K 766.490†	516.1	0.156	mg/L	0.0138	0.156	mg/L	0.0138	8.85%
Na 589.592†	1621267.9	167	mg/L	4.2	167	mg/L	4.2	2.51%
Sr 407.771†	39903.1	0.0326	mg/L	0.00053	0.0326	mg/L	0.00053	1.63%
Li 670.784†	123.9	-0.00159	mg/L	0.000146	-0.00159	mg/L	0.000146	9.22%
P 214.914†	73.8	0.0223	mg/L	0.01606	0.0223	mg/L	0.01606	72.15%

Sequence No.: 15 **Autosampler Location: 48**
Sample ID: L1311122405 **Date Collected: 11/26/2013 5:22:32 PM**

Approved: November 27, 2013

Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1311122405

Analyte	Back Pressure	Flow
All	182.0 kPa	0.45 L/min

Mean Data: L1311122405

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2786194.4						3643.88	0.13%
YRADIAL	195952.6						6591.39	3.36%
Ga 417.206	899796.0						6757.11	0.75%
GaRADIAL	42975.6						1054.60	2.45%
Ag 328.068†	-249.5	-0.00108	mg/L	0.000780	-0.00108	mg/L	0.000780	72.46%
Al 396.153†	601.8	0.189	mg/L	0.0087	0.189	mg/L	0.0087	4.63%
As 188.979†	-5.5	-0.00344	mg/L	0.005699	-0.00344	mg/L	0.005699	165.78%
Ba 233.527†	1295.8	0.0128	mg/L	0.00020	0.0128	mg/L	0.00020	1.54%
Be 234.861†	34.9	-0.00022	mg/L	0.000037	-0.00022	mg/L	0.000037	16.69%
B 249.677†	4728.3	0.0683	mg/L	0.00105	0.0683	mg/L	0.00105	1.53%
Ca 227.546†	401.1	2.12	mg/L	0.021	2.12	mg/L	0.021	0.97%
Cd 228.802†	1.2	0.00025	mg/L	0.000059	0.00025	mg/L	0.000059	24.05%
Co 228.616†	18.7	0.00072	mg/L	0.000404	0.00072	mg/L	0.000404	56.05%
Cr 267.716†	1470.5	0.0110	mg/L	0.00011	0.0110	mg/L	0.00011	0.98%
Cu 327.393†	-92.4	-0.00042	mg/L	0.000427	-0.00042	mg/L	0.000427	100.72%
Fe 239.562†	1464.8	0.501	mg/L	0.0131	0.501	mg/L	0.0131	2.61%
Mg 279.077†	393.1	0.328	mg/L	0.0076	0.328	mg/L	0.0076	2.33%
Mn 257.610†	12272.6	0.0174	mg/L	0.00037	0.0174	mg/L	0.00037	2.12%
Mo 202.031†	-3.8	-0.00578	mg/L	0.000336	-0.00578	mg/L	0.000336	5.81%
Ni 231.604†	23.0	-0.00238	mg/L	0.000359	-0.00238	mg/L	0.000359	15.10%
Pb 220.353†	57.9	0.00736	mg/L	0.000850	0.00736	mg/L	0.000850	11.55%
Sb 206.836†	2.2	0.00327	mg/L	0.002431	0.00327	mg/L	0.002431	74.28%
Se 196.026†	1.8	0.00397	mg/L	0.002979	0.00397	mg/L	0.002979	75.02%
Si 251.611†	4341.1	0.118	mg/L	0.0031	0.118	mg/L	0.0031	2.66%
Sn 189.927†	-8.8	-0.00384	mg/L	0.000430	-0.00384	mg/L	0.000430	11.19%
Ti 334.940†	18305.7	0.0213	mg/L	0.00212	0.0213	mg/L	0.00212	9.96%
Tl 190.801†	-16.6	-0.0131	mg/L	0.00183	-0.0131	mg/L	0.00183	13.89%
V 290.880†	950.2	0.00061	mg/L	0.000455	0.00061	mg/L	0.000455	75.04%
Zn 206.200†	1688.0	0.0589	mg/L	0.00090	0.0589	mg/L	0.00090	1.53%
K 766.490†	2356.4	1.28	mg/L	0.009	1.28	mg/L	0.009	0.71%
Na 589.592†	1554948.0	159	mg/L	5.5	159	mg/L	5.5	3.44%
Sr 407.771†	6410.2	0.00114	mg/L	0.000075	0.00114	mg/L	0.000075	6.61%
Li 670.784†	32.8	-0.00294	mg/L	0.000342	-0.00294	mg/L	0.000342	11.61%
P 214.914†	1071.6	1.07	mg/L	0.022	1.07	mg/L	0.022	2.10%

Sequence No.: 16 **Autosampler Location: 49**
Sample ID: L1311122405PS WG454451-01 **Date Collected: 11/26/2013 5:25:38 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1311122405PS WG454451-01

Analyte	Back Pressure	Flow
All	181.0 kPa	0.45 L/min

Mean Data: L1311122405PS WG454451-01

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2743297.2						34567.90	1.26%
YRADIAL	193733.3						3586.50	1.85%
Ga 417.206	878793.6						7805.79	0.89%
GaRADIAL	43114.8						798.58	1.85%
Ag 328.068†	47519.4	0.194	mg/L	0.0032	0.194	mg/L	0.0032	1.63%
Al 396.153†	14862.8	5.05	mg/L	0.064	5.05	mg/L	0.064	1.27%
As 188.979†	311.3	0.188	mg/L	0.0025	0.188	mg/L	0.0025	1.32%
Ba 233.527†	37887.9	0.488	mg/L	0.0105	0.488	mg/L	0.0105	2.14%

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Be 234.861†	15139.6	0.0227 mg/L	0.00031	0.0227 mg/L	0.00031	1.38%
B 249.677†	66968.2	0.984 mg/L	0.0095	0.984 mg/L	0.0095	0.97%
Ca 227.546†	1328.7	7.05 mg/L	0.092	7.05 mg/L	0.092	1.31%
Cd 228.802†	580.7	0.0228 mg/L	0.00060	0.0228 mg/L	0.00060	2.63%
Co 228.616†	2077.5	0.0990 mg/L	0.00098	0.0990 mg/L	0.00098	0.99%
Cr 267.716†	27987.0	0.249 mg/L	0.0054	0.249 mg/L	0.0054	2.17%
Cu 327.393†	51897.7	0.248 mg/L	0.0036	0.248 mg/L	0.0036	1.46%
Fe 239.562†	6646.2	2.33 mg/L	0.013	2.33 mg/L	0.013	0.56%
Mg 279.077†	5546.5	5.09 mg/L	0.053	5.09 mg/L	0.053	1.04%
Mn 257.610†	146933.1	0.256 mg/L	0.0005	0.256 mg/L	0.0005	0.19%
Mo 202.031†	7855.1	0.485 mg/L	0.0104	0.485 mg/L	0.0104	2.16%
Ni 231.604†	8418.8	0.240 mg/L	0.0053	0.240 mg/L	0.0053	2.21%
Pb 220.353†	1464.8	0.249 mg/L	0.0035	0.249 mg/L	0.0035	1.39%
Sb 206.836†	1060.7	0.570 mg/L	0.0090	0.570 mg/L	0.0090	1.57%
Se 196.026†	157.4	0.196 mg/L	0.0016	0.196 mg/L	0.0016	0.83%
Si 251.611†	83821.0	2.49 mg/L	0.044	2.49 mg/L	0.044	1.79%
Sn 189.927†	-33.2	-0.00802 mg/L	0.000536	-0.00802 mg/L	0.000536	6.69%
Ti 334.940†	409342.7	0.508 mg/L	0.0009	0.508 mg/L	0.0009	0.17%
Tl 190.801†	390.6	0.235 mg/L	0.0027	0.235 mg/L	0.0027	1.13%
V 290.880†	89238.4	0.484 mg/L	0.0076	0.484 mg/L	0.0076	1.57%
Zn 206.200†	14119.2	0.532 mg/L	0.0096	0.532 mg/L	0.0096	1.81%
K 766.490†	40684.4	24.6 mg/L	0.18	24.6 mg/L	0.18	0.74%
Na 589.592†	1619419.5	167 mg/L	0.1	167 mg/L	0.1	0.06%
Sr 407.771†	490167.1	0.486 mg/L	0.0021	0.486 mg/L	0.0021	0.42%
Li 670.784†	33210.6	0.491 mg/L	0.0013	0.491 mg/L	0.0013	0.27%
P 214.914†	751.2	0.730 mg/L	0.0179	0.730 mg/L	0.0179	2.46%

Sequence No.: 17 **Autosampler Location: 50**
Sample ID: L1311122405DL WG454451-02 **Date Collected: 11/26/2013 5:27:45 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1311122405DL WG454451-02

Analyte	Back Pressure	Flow
All	181.0 kPa	0.45 L/min

Mean Data: L1311122405DL WG454451-02

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2848077.2						8148.66	0.29%
YRADIAL	195321.9						1735.39	0.89%
Ga 417.206	940729.3						1404.89	0.15%
GaRADIAL	42934.7						1209.50	2.82%
Ag 328.068†	-51.3	-0.00046	mg/L	0.000253	-0.00046	mg/L	0.000253	54.66%
Al 396.153†	141.4	0.0308	mg/L	0.00271	0.0308	mg/L	0.00271	8.80%
As 188.979†	3.8	0.00212	mg/L	0.002710	0.00212	mg/L	0.002710	128.08%
Ba 233.527†	252.9	-0.00070	mg/L	0.000057	-0.00070	mg/L	0.000057	8.10%
Be 234.861†	174.0	0.00009	mg/L	0.000015	0.00009	mg/L	0.000015	17.55%
B 249.677†	1425.6	0.0198	mg/L	0.00071	0.0198	mg/L	0.00071	3.57%
Ca 227.546†	78.5	0.471	mg/L	0.0523	0.471	mg/L	0.0523	11.12%
Cd 228.802†	-8.0	-0.00015	mg/L	0.000050	-0.00015	mg/L	0.000050	32.15%
Co 228.616†	-12.1	-0.00070	mg/L	0.000086	-0.00070	mg/L	0.000086	12.30%
Cr 267.716†	334.6	0.00081	mg/L	0.000174	0.00081	mg/L	0.000174	21.62%
Cu 327.393†	-292.0	-0.00142	mg/L	0.000859	-0.00142	mg/L	0.000859	60.53%
Fe 239.562†	301.6	0.0912	mg/L	0.00204	0.0912	mg/L	0.00204	2.24%
Mg 279.077†	102.2	0.0600	mg/L	0.00431	0.0600	mg/L	0.00431	7.19%
Mn 257.610†	2826.4	0.00067	mg/L	0.000074	0.00067	mg/L	0.000074	11.16%
Mo 202.031†	-9.5	-0.00614	mg/L	0.000357	-0.00614	mg/L	0.000357	5.81%
Ni 231.604†	11.2	-0.00272	mg/L	0.000139	-0.00272	mg/L	0.000139	5.11%
Pb 220.353†	34.8	0.00342	mg/L	0.000988	0.00342	mg/L	0.000988	28.86%
Sb 206.836†	1.0	0.00270	mg/L	0.001408	0.00270	mg/L	0.001408	52.11%
Se 196.026†	-3.6	-0.00267	mg/L	0.004079	-0.00267	mg/L	0.004079	152.52%
Si 251.611†	852.2	0.0141	mg/L	0.00099	0.0141	mg/L	0.00099	6.99%
Sn 189.927†	4.3	-0.00160	mg/L	0.000521	-0.00160	mg/L	0.000521	32.58%
Ti 334.940†	3693.1	0.00286	mg/L	0.000237	0.00286	mg/L	0.000237	8.30%
Tl 190.801†	-5.7	-0.00690	mg/L	0.002239	-0.00690	mg/L	0.002239	32.44%
V 290.880†	837.7	0.00004	mg/L	0.000675	0.00004	mg/L	0.000675	>999.9%
Zn 206.200†	368.8	0.00891	mg/L	0.000351	0.00891	mg/L	0.000351	3.94%

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K 766.490†	573.5	0.328 mg/L	0.0651	0.328 mg/L	0.0651	19.87%
Na 589.592†	323089.3	30.0 mg/L	0.25	30.0 mg/L	0.25	0.83%
Sr 407.771†	1947.0	-0.00329 mg/L	0.000398	-0.00329 mg/L	0.000398	12.13%
Li 670.784†	73.7	-0.00234 mg/L	0.000350	-0.00234 mg/L	0.000350	14.99%
P 214.914†	303.1	0.262 mg/L	0.0088	0.262 mg/L	0.0088	3.36%

Sequence No.: 18 **Autosampler Location: 6**
Sample ID: CCV **Date Collected: 11/26/2013 5:30:50 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	181.0 kPa	0.45 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2763247.4						32793.25	1.19%
YRADIAL	195371.8						1720.02	0.88%
Ga 417.206	895830.6						16334.18	1.82%
GaRADIAL	43192.8						701.19	1.62%
Ag 328.068†	96246.4	0.393	mg/L	0.0069	0.393	mg/L	0.0069	1.75%
QC value within limits for Ag 328.068 Recovery = 98.21%								
Al 396.153†	29817.9	10.2	mg/L	0.03	10.2	mg/L	0.03	0.29%
QC value within limits for Al 396.153 Recovery = 101.56%								
As 188.979†	634.0	0.383	mg/L	0.0098	0.383	mg/L	0.0098	2.56%
QC value within limits for As 188.979 Recovery = 95.85%								
Ba 233.527†	76445.3	0.989	mg/L	0.0100	0.989	mg/L	0.0100	1.01%
QC value within limits for Ba 233.527 Recovery = 98.88%								
Be 234.861†	32595.9	0.0492	mg/L	0.00063	0.0492	mg/L	0.00063	1.29%
QC value within limits for Be 234.861 Recovery = 98.38%								
B 249.677†	32852.7	0.479	mg/L	0.0079	0.479	mg/L	0.0079	1.65%
QC value within limits for B 249.677 Recovery = 95.86%								
Ca 227.546†	1885.0	10.1	mg/L	0.26	10.1	mg/L	0.26	2.58%
QC value within limits for Ca 227.546 Recovery = 101.02%								
Cd 228.802†	1183.2	0.0462	mg/L	0.00073	0.0462	mg/L	0.00073	1.58%
QC value within limits for Cd 228.802 Recovery = 92.46%								
Co 228.616†	4145.1	0.198	mg/L	0.0033	0.198	mg/L	0.0033	1.66%
QC value within limits for Co 228.616 Recovery = 98.88%								
Cr 267.716†	55417.8	0.495	mg/L	0.0067	0.495	mg/L	0.0067	1.36%
QC value within limits for Cr 267.716 Recovery = 98.96%								
Cu 327.393†	103310.5	0.493	mg/L	0.0098	0.493	mg/L	0.0098	2.00%
QC value within limits for Cu 327.393 Recovery = 98.56%								
Fe 239.562†	11352.9	3.98	mg/L	0.044	3.98	mg/L	0.044	1.11%
QC value within limits for Fe 239.562 Recovery = 99.60%								
Mg 279.077†	10862.8	10.0	mg/L	0.09	10.0	mg/L	0.09	0.91%
QC value within limits for Mg 279.077 Recovery = 100.04%								
Mn 257.610†	289867.5	0.509	mg/L	0.0050	0.509	mg/L	0.0050	0.98%
QC value within limits for Mn 257.610 Recovery = 101.85%								
Mo 202.031†	15979.6	0.991	mg/L	0.0154	0.991	mg/L	0.0154	1.55%
QC value within limits for Mo 202.031 Recovery = 99.15%								
Ni 231.604†	17350.4	0.498	mg/L	0.0041	0.498	mg/L	0.0041	0.83%
QC value within limits for Ni 231.604 Recovery = 99.56%								
Pb 220.353†	2893.9	0.494	mg/L	0.0086	0.494	mg/L	0.0086	1.74%
QC value within limits for Pb 220.353 Recovery = 98.89%								
Sb 206.836†	2122.9	1.14	mg/L	0.024	1.14	mg/L	0.024	2.10%
QC value within limits for Sb 206.836 Recovery = 94.83%								
Se 196.026†	310.7	0.385	mg/L	0.0128	0.385	mg/L	0.0128	3.32%
QC value within limits for Se 196.026 Recovery = 96.13%								
Si 251.611†	163913.8	4.87	mg/L	0.075	4.87	mg/L	0.075	1.54%
QC value within limits for Si 251.611 Recovery = 97.44%								
Sn 189.927†	5771.4	0.986	mg/L	0.0141	0.986	mg/L	0.0141	1.43%
QC value within limits for Sn 189.927 Recovery = 98.57%								
Ti 334.940†	792283.9	0.984	mg/L	0.0067	0.984	mg/L	0.0067	0.68%
QC value within limits for Ti 334.940 Recovery = 98.41%								
Tl 190.801†	840.0	0.507	mg/L	0.0046	0.507	mg/L	0.0046	0.91%
QC value within limits for Tl 190.801 Recovery = 101.49%								

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V 290.880†            182645.6       0.994 mg/L        0.0122       0.994 mg/L        0.0122   1.23%
   QC value within limits for V 290.880  Recovery = 99.44%
Zn 206.200†            26163.6       0.990 mg/L        0.0103       0.990 mg/L        0.0103   1.04%
   QC value within limits for Zn 206.200  Recovery = 98.96%
K 766.490†             81124.0        49.7 mg/L          0.11        49.7 mg/L          0.11   0.22%
   QC value within limits for K 766.490  Recovery = 99.32%
Na 589.592†           535775.6        50.6 mg/L          0.78        50.6 mg/L          0.78   1.53%
   QC value within limits for Na 589.592  Recovery = 101.14%
Sr 407.771†           986748.1       0.983 mg/L        0.0060       0.983 mg/L        0.0060   0.61%
   QC value within limits for Sr 407.771  Recovery = 98.34%
Li 670.784†            68161.4        1.01 mg/L         0.005        1.01 mg/L         0.005   0.52%
   QC value within limits for Li 670.784  Recovery = 101.17%
P 214.914†              9600.3        9.98 mg/L         0.190        9.98 mg/L         0.190   1.91%
   QC value within limits for P 214.914  Recovery = 99.79%
All analyte(s) passed QC.

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Sequence No.: 19                                    Autosampler Location: 1
Sample ID: CCB                                      Date Collected: 11/26/2013 5:32:57 PM
Analyst:                                            Data Type: Original
Initial Sample Wt:                                  Initial Sample Vol:
Dilution:                                           Sample Prep Vol:

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Nebulizer Parameters: CCB
Analyte                  Back Pressure     Flow
All                      182.0 kPa         0.45 L/min

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Mean Data: CCB
                    Mean Corrected          Calib.                          Sample
Analyte                Intensity      Conc. Units      Std.Dev.      Conc. Units      Std.Dev.   RSD
Y 371.029            2761290.6                                                       37732.92   1.37%
YRADIAL               185848.5                                                        3143.61   1.69%
Ga 417.206            884676.5                                                        9892.37   1.12%
GaRADIAL               40563.6                                                         675.87   1.67%
Ag 328.068†              -26.2    -0.00040 mg/L      0.000276    -0.00040 mg/L      0.000276  68.47%
   QC value within limits for Ag 328.068  Recovery = Not calculated
Al 396.153†               49.0    -0.00096 mg/L      0.008836    -0.00096 mg/L      0.008836 924.86%
   QC value within limits for Al 396.153  Recovery = Not calculated
As 188.979†                3.6     0.00195 mg/L      0.002461     0.00195 mg/L      0.002461 126.50%
   QC value within limits for As 188.979  Recovery = Not calculated
Ba 233.527†               -1.4    -0.00400 mg/L      0.000113    -0.00400 mg/L      0.000113   2.82%
   QC value less than the lower limit for Ba 233.527  Recovery = Not calculated
Be 234.861†               54.2    -0.00007 mg/L      0.000021    -0.00007 mg/L      0.000021  29.53%
   QC value within limits for Be 234.861  Recovery = Not calculated
B 249.677†               395.5     0.00469 mg/L      0.000776     0.00469 mg/L      0.000776  16.53%
   QC value within limits for B 249.677  Recovery = Not calculated
Ca 227.546†               -8.2      0.0280 mg/L       0.03098      0.0280 mg/L       0.03098 110.59%
   QC value within limits for Ca 227.546  Recovery = Not calculated
Cd 228.802†               -8.8    -0.00018 mg/L      0.000209    -0.00018 mg/L      0.000209 114.42%
   QC value within limits for Cd 228.802  Recovery = Not calculated
Co 228.616†              -11.6    -0.00066 mg/L      0.000028    -0.00066 mg/L      0.000028   4.17%
   QC value within limits for Co 228.616  Recovery = Not calculated
Cr 267.716†               73.6    -0.00153 mg/L      0.000068    -0.00153 mg/L      0.000068   4.49%
   QC value within limits for Cr 267.716  Recovery = Not calculated
Cu 327.393†             -213.0    -0.00105 mg/L      0.000824    -0.00105 mg/L      0.000824  78.08%
   QC value within limits for Cu 327.393  Recovery = Not calculated
Fe 239.562†               33.9    -0.00308 mg/L      0.010721    -0.00308 mg/L      0.010721 347.56%
   QC value within limits for Fe 239.562  Recovery = Not calculated
Mg 279.077†               29.9    -0.00662 mg/L      0.009877    -0.00662 mg/L      0.009877 149.25%
   QC value within limits for Mg 279.077  Recovery = Not calculated
Mn 257.610†              341.0    -0.00374 mg/L      0.000025    -0.00374 mg/L      0.000025   0.66%
   QC value within limits for Mn 257.610  Recovery = Not calculated
Mo 202.031†               -3.8    -0.00579 mg/L      0.000467    -0.00579 mg/L      0.000467   8.07%
   QC value within limits for Mo 202.031  Recovery = Not calculated
Ni 231.604†               -1.3    -0.00308 mg/L      0.000215    -0.00308 mg/L      0.000215   6.96%
   QC value within limits for Ni 231.604  Recovery = Not calculated
Pb 220.353†               17.2     0.00041 mg/L      0.000947     0.00041 mg/L      0.000947 233.56%
   QC value within limits for Pb 220.353  Recovery = Not calculated
Sb 206.836†                3.5     0.00409 mg/L      0.002593     0.00409 mg/L      0.002593  63.36%
   QC value within limits for Sb 206.836  Recovery = Not calculated
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Se 196.026†	-3.9	-0.00309 mg/L	0.009732	-0.00309 mg/L	0.009732	315.34%
QC value within limits for Se 196.026 Recovery = Not calculated						
Si 251.611†	-20.5	-0.0120 mg/L	0.00087	-0.0120 mg/L	0.00087	7.31%
QC value within limits for Si 251.611 Recovery = Not calculated						
Sn 189.927†	27.6	0.00239 mg/L	0.000742	0.00239 mg/L	0.000742	31.04%
QC value within limits for Sn 189.927 Recovery = Not calculated						
Ti 334.940†	136.2	-0.00163 mg/L	0.000150	-0.00163 mg/L	0.000150	9.21%
QC value within limits for Ti 334.940 Recovery = Not calculated						
Tl 190.801†	-4.1	-0.00597 mg/L	0.001061	-0.00597 mg/L	0.001061	17.76%
QC value within limits for Tl 190.801 Recovery = Not calculated						
V 290.880†	821.5	-0.00004 mg/L	0.001174	-0.00004 mg/L	0.001174	>999.9%
QC value within limits for V 290.880 Recovery = Not calculated						
Zn 206.200†	29.9	-0.00393 mg/L	0.000220	-0.00393 mg/L	0.000220	5.59%
QC value within limits for Zn 206.200 Recovery = Not calculated						
K 766.490†	128.4	0.0886 mg/L	0.05192	0.0886 mg/L	0.05192	58.62%
QC value within limits for K 766.490 Recovery = Not calculated						
Na 589.592†	1872.6	0.163 mg/L	0.0399	0.163 mg/L	0.0399	24.45%
QC value within limits for Na 589.592 Recovery = Not calculated						
Sr 407.771†	1273.3	-0.00395 mg/L	0.000717	-0.00395 mg/L	0.000717	18.17%
QC value within limits for Sr 407.771 Recovery = Not calculated						
Li 670.784†	266.6	0.00054 mg/L	0.001714	0.00054 mg/L	0.001714	318.43%
QC value within limits for Li 670.784 Recovery = Not calculated						
P 214.914†	87.1	0.0361 mg/L	0.00845	0.0361 mg/L	0.00845	23.40%
QC value within limits for P 214.914 Recovery = Not calculated						

QC Failed. Continue with analysis.

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Sequence No.: 20 **Autosampler Location: 51**
Sample ID: L1311122406 **Date Collected: 11/26/2013 5:35:59 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1311122406

Analyte	Back Pressure	Flow
All	182.0 kPa	0.45 L/min

Mean Data: L1311122406

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2768680.4						28374.28	1.02%
YRADIAL	198877.5						8086.89	4.07%
Ga 417.206	897546.7						12216.82	1.36%
GaRADIAL	42997.6						1143.14	2.66%
Ag 328.068†	-310.5	0.00044	mg/L	0.000513	0.00044	mg/L	0.000513	115.52%
Al 396.153†	1943.7	0.650	mg/L	0.0251	0.650	mg/L	0.0251	3.86%
As 188.979†	-20.8	-0.0105	mg/L	0.00174	-0.0105	mg/L	0.00174	16.59%
Ba 233.527†	584.6	0.00339	mg/L	0.000051	0.00339	mg/L	0.000051	1.49%
Be 234.861†	731.5	-0.00009	mg/L	0.000093	-0.00009	mg/L	0.000093	99.90%
B 249.677†	2183.1	0.0291	mg/L	0.00059	0.0291	mg/L	0.00059	2.01%
Ca 227.546†	13550.6	69.0	mg/L	0.76	69.0	mg/L	0.76	1.10%
Cd 228.802†	-8.8	-0.00011	mg/L	0.000065	-0.00011	mg/L	0.000065	59.89%
Co 228.616†	51.2	0.00225	mg/L	0.000328	0.00225	mg/L	0.000328	14.57%
Cr 267.716†	396.5	0.00103	mg/L	0.000242	0.00103	mg/L	0.000242	23.44%
Cu 327.393†	871.4	0.00435	mg/L	0.000786	0.00435	mg/L	0.000786	18.08%
Fe 239.562†	12461.3	4.38	mg/L	0.141	4.38	mg/L	0.141	3.21%
Mg 279.077†	710.1	0.619	mg/L	0.0271	0.619	mg/L	0.0271	4.39%
Mn 257.610†	129995.6	0.226	mg/L	0.0012	0.226	mg/L	0.0012	0.55%
Mo 202.031†	37.2	-0.00311	mg/L	0.000508	-0.00311	mg/L	0.000508	16.33%
Ni 231.604†	355.1	0.00721	mg/L	0.000269	0.00721	mg/L	0.000269	3.72%
Pb 220.353†	130.7	0.0196	mg/L	0.00120	0.0196	mg/L	0.00120	6.10%
Sb 206.836†	2.9	0.00388	mg/L	0.000699	0.00388	mg/L	0.000699	18.00%
Se 196.026†	4.5	0.00800	mg/L	0.003366	0.00800	mg/L	0.003366	42.05%
Si 251.611†	2315.8	0.0578	mg/L	0.00097	0.0578	mg/L	0.00097	1.68%
Sn 189.927†	-226.6	-0.0411	mg/L	0.00059	-0.0411	mg/L	0.00059	1.44%
Ti 334.940†	-7543.3	-0.00084	mg/L	0.000181	-0.00084	mg/L	0.000181	21.39%
Tl 190.801†	-28.1	-0.0205	mg/L	0.00324	-0.0205	mg/L	0.00324	15.84%
V 290.880†	1359.7	0.00245	mg/L	0.000654	0.00245	mg/L	0.000654	26.64%
Zn 206.200†	524.5	0.0148	mg/L	0.00043	0.0148	mg/L	0.00043	2.89%
K 766.490†	199.5	-0.0369	mg/L	0.01677	-0.0369	mg/L	0.01677	45.45%

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Na 589.592†	1633400.7	169	mg/L	11.4	169	mg/L	11.4	6.79%
Sr 407.771†	45648.0	0.0383	mg/L	0.00092	0.0383	mg/L	0.00092	2.40%
Li 670.784†	33.6	-0.00293	mg/L	0.000350	-0.00293	mg/L	0.000350	11.93%
P 214.914†	57.6	0.00529	mg/L	0.004646	0.00529	mg/L	0.004646	87.77%

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Sequence No.: 21 **Autosampler Location: 52**
Sample ID: L1311122407 **Date Collected: 11/26/2013 5:39:05 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1311122407

Analyte	Back Pressure	Flow
All	182.0 kPa	0.45 L/min

Mean Data: L1311122407

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2777255.3						20157.00	0.73%
YRADIAL	190515.7						2805.76	1.47%
Ga 417.206	887736.9						7439.48	0.84%
GaRADIAL	41187.4						927.03	2.25%
Ag 328.068†	-4785.6	-0.00362	mg/L	0.000724	-0.00362	mg/L	0.000724	20.03%
Al 396.153†	1358.3	0.453	mg/L	0.0005	0.453	mg/L	0.0005	0.10%
As 188.979†	-13.0	0.00004	mg/L	0.001540	0.00004	mg/L	0.001540	>999.9%
Ba 233.527†	3188.3	0.0357	mg/L	0.00032	0.0357	mg/L	0.00032	0.90%
Be 234.861†	5835.1	0.00024	mg/L	0.000226	0.00024	mg/L	0.000226	94.92%
B 249.677†	3798.8	0.0400	mg/L	0.00125	0.0400	mg/L	0.00125	3.12%
Ca 227.546†	1628.1	9.17	mg/L	0.063	9.17	mg/L	0.063	0.68%
Cd 228.802†	-7.4	-0.00014	mg/L	0.000329	-0.00014	mg/L	0.000329	236.04%
Co 228.616†	31.9	0.00050	mg/L	0.000086	0.00050	mg/L	0.000086	17.34%
Cr 267.716†	492.2	-0.00053	mg/L	0.000159	-0.00053	mg/L	0.000159	29.75%
Cu 327.393†	-731.3	-0.00148	mg/L	0.000672	-0.00148	mg/L	0.000672	45.37%
Fe 239.562†	98282.0	34.6	mg/L	0.19	34.6	mg/L	0.19	0.54%
Mg 279.077†	269.3	0.196	mg/L	0.0066	0.196	mg/L	0.0066	3.37%
Mn 257.610†	71308.0	0.124	mg/L	0.0015	0.124	mg/L	0.0015	1.19%
Mo 202.031†	-16.8	-0.00603	mg/L	0.000407	-0.00603	mg/L	0.000407	6.75%
Ni 231.604†	134.7	0.00085	mg/L	0.000263	0.00085	mg/L	0.000263	31.02%
Pb 220.353†	1495.8	0.252	mg/L	0.0024	0.252	mg/L	0.0024	0.95%
Sb 206.836†	1.7	0.00436	mg/L	0.000912	0.00436	mg/L	0.000912	20.90%
Se 196.026†	-5.5	0.00182	mg/L	0.007464	0.00182	mg/L	0.007464	409.90%
Si 251.611†	4245.9	0.115	mg/L	0.0104	0.115	mg/L	0.0104	9.00%
Sn 189.927†	-54.7	-0.0117	mg/L	0.00064	-0.0117	mg/L	0.00064	5.50%
Ti 334.940†	149.5	-0.00037	mg/L	0.000235	-0.00037	mg/L	0.000235	63.92%
Tl 190.801†	-24.6	-0.0182	mg/L	0.00470	-0.0182	mg/L	0.00470	25.75%
V 290.880†	1447.8	-0.00008	mg/L	0.001336	-0.00008	mg/L	0.001336	>999.9%
Zn 206.200†	2250.3	0.0800	mg/L	0.00075	0.0800	mg/L	0.00075	0.93%
K 766.490†	207.0	-0.0312	mg/L	0.00737	-0.0312	mg/L	0.00737	23.64%
Na 589.592†	1624046.2	167	mg/L	5.3	167	mg/L	5.3	3.18%
Sr 407.771†	6263.4	0.00079	mg/L	0.000045	0.00079	mg/L	0.000045	5.71%
Li 670.784†	71.4	-0.00237	mg/L	0.000601	-0.00237	mg/L	0.000601	25.35%
P 214.914†	94.3	0.0436	mg/L	0.00544	0.0436	mg/L	0.00544	12.46%

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Sequence No.: 22 **Autosampler Location: 53**
Sample ID: L1311122408 **Date Collected: 11/26/2013 5:42:11 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1311122408

Analyte	Back Pressure	Flow
All	182.0 kPa	0.45 L/min

Mean Data: L1311122408

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD

Approved: November 27, 2013

Y 371.029	2754070.3				11121.32	0.40%
YRADIAL	188334.3				1359.43	0.72%
Ga 417.206	897762.7				6251.25	0.70%
GaRADIAL	40950.4				144.50	0.35%
Ag 328.068†	-1126.8	0.00017 mg/L	0.000420	0.00017 mg/L	0.000420	243.90%
Al 396.153†	32.5	-0.00550 mg/L	0.000664	-0.00550 mg/L	0.000664	12.07%
As 188.979†	-18.8	-0.00779 mg/L	0.007793	-0.00779 mg/L	0.007793	99.99%
Ba 233.527†	2424.1	0.0269 mg/L	0.00013	0.0269 mg/L	0.00013	0.48%
Be 234.861†	1797.3	-0.00008 mg/L	0.000092	-0.00008 mg/L	0.000092	111.56%
B 249.677†	2347.4	0.0287 mg/L	0.00014	0.0287 mg/L	0.00014	0.47%
Ca 227.546†	12556.8	64.1 mg/L	0.12	64.1 mg/L	0.12	0.19%
Cd 228.802†	8.7	0.00057 mg/L	0.000224	0.00057 mg/L	0.000224	38.97%
Co 228.616†	50.3	0.00203 mg/L	0.000175	0.00203 mg/L	0.000175	8.61%
Cr 267.716†	49.1	-0.00261 mg/L	0.000023	-0.00261 mg/L	0.000023	0.88%
Cu 327.393†	-443.8	-0.00151 mg/L	0.000177	-0.00151 mg/L	0.000177	11.70%
Fe 239.562†	30952.5	10.9 mg/L	0.06	10.9 mg/L	0.06	0.54%
Mg 279.077†	692.2	0.599 mg/L	0.0029	0.599 mg/L	0.0029	0.48%
Mn 257.610†	65919.6	0.113 mg/L	0.0007	0.113 mg/L	0.0007	0.60%
Mo 202.031†	32.0	-0.00336 mg/L	0.000324	-0.00336 mg/L	0.000324	9.65%
Ni 231.604†	433.3	0.00948 mg/L	0.000262	0.00948 mg/L	0.000262	2.76%
Pb 220.353†	207.7	0.0326 mg/L	0.00171	0.0326 mg/L	0.00171	5.24%
Sb 206.836†	1.4	0.00335 mg/L	0.002279	0.00335 mg/L	0.002279	68.09%
Se 196.026†	0.4	0.00435 mg/L	0.005515	0.00435 mg/L	0.005515	126.84%
Si 251.611†	1114.0	0.0219 mg/L	0.00081	0.0219 mg/L	0.00081	3.72%
Sn 189.927†	-222.5	-0.0404 mg/L	0.00057	-0.0404 mg/L	0.00057	1.40%
Ti 334.940†	-8406.7	-0.00267 mg/L	0.000026	-0.00267 mg/L	0.000026	0.98%
Tl 190.801†	-30.8	-0.0220 mg/L	0.00283	-0.0220 mg/L	0.00283	12.87%
V 290.880†	1081.4	0.00028 mg/L	0.000611	0.00028 mg/L	0.000611	219.04%
Zn 206.200†	7368.3	0.274 mg/L	0.0007	0.274 mg/L	0.0007	0.24%
K 766.490†	366.7	0.0607 mg/L	0.01108	0.0607 mg/L	0.01108	18.25%
Na 589.592†	1663332.0	172 mg/L	3.8	172 mg/L	3.8	2.19%
Sr 407.771†	60231.9	0.0531 mg/L	0.00038	0.0531 mg/L	0.00038	0.72%
Li 670.784†	-17.5	-0.00369 mg/L	0.000184	-0.00369 mg/L	0.000184	4.98%
P 214.914†	59.2	0.00694 mg/L	0.008076	0.00694 mg/L	0.008076	116.36%

Sequence No.: 23 **Autosampler Location: 54**
Sample ID: L1311122409 **Date Collected: 11/26/2013 5:45:18 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1311122409

Analyte	Back Pressure	Flow
All	181.0 kPa	0.45 L/min

Mean Data: L1311122409

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2739434.9						34980.04	1.28%
YRADIAL	192735.1						1100.51	0.57%
Ga 417.206	882944.8						12244.52	1.39%
GaRADIAL	42484.0						484.56	1.14%
Ag 328.068†	-2092.4	-0.00083	mg/L	0.000313	-0.00083	mg/L	0.000313	37.73%
Al 396.153†	330.4	0.0976	mg/L	0.00282	0.0976	mg/L	0.00282	2.89%
As 188.979†	-24.5	-0.0100	mg/L	0.00160	-0.0100	mg/L	0.00160	15.92%
Ba 233.527†	11307.9	0.142	mg/L	0.0012	0.142	mg/L	0.0012	0.82%
Be 234.861†	2787.9	-0.00011	mg/L	0.000124	-0.00011	mg/L	0.000124	115.43%
B 249.677†	3062.0	0.0366	mg/L	0.00157	0.0366	mg/L	0.00157	4.28%
Ca 227.546†	11011.0	56.4	mg/L	0.11	56.4	mg/L	0.11	0.20%
Cd 228.802†	-4.7	0.00004	mg/L	0.000183	0.00004	mg/L	0.000183	490.85%
Co 228.616†	21.6	0.00044	mg/L	0.000277	0.00044	mg/L	0.000277	62.66%
Cr 267.716†	51.1	-0.00309	mg/L	0.000078	-0.00309	mg/L	0.000078	2.54%
Cu 327.393†	-408.1	-0.00097	mg/L	0.000381	-0.00097	mg/L	0.000381	39.08%
Fe 239.562†	48677.3	17.1	mg/L	0.23	17.1	mg/L	0.23	1.36%
Mg 279.077†	565.3	0.478	mg/L	0.0089	0.478	mg/L	0.0089	1.86%
Mn 257.610†	73957.1	0.127	mg/L	0.0005	0.127	mg/L	0.0005	0.36%
Mo 202.031†	23.1	-0.00381	mg/L	0.000255	-0.00381	mg/L	0.000255	6.68%
Ni 231.604†	228.6	0.00356	mg/L	0.000363	0.00356	mg/L	0.000363	10.19%
Pb 220.353†	50.5	0.00549	mg/L	0.001519	0.00549	mg/L	0.001519	27.70%

Approved: November 27, 2013

Sb 206.836†	0.7	0.00321	mg/L	0.002447	0.00321	mg/L	0.002447	76.19%
Se 196.026†	-1.1	0.00375	mg/L	0.007711	0.00375	mg/L	0.007711	205.47%
Si 251.611†	3820.2	0.103	mg/L	0.0019	0.103	mg/L	0.0019	1.84%
Sn 189.927†	-213.1	-0.0388	mg/L	0.00148	-0.0388	mg/L	0.00148	3.81%
Ti 334.940†	-5615.0	-0.00038	mg/L	0.000339	-0.00038	mg/L	0.000339	88.69%
Tl 190.801†	-21.9	-0.0167	mg/L	0.00199	-0.0167	mg/L	0.00199	11.88%
V 290.880†	1443.6	0.00164	mg/L	0.000579	0.00164	mg/L	0.000579	35.37%
Zn 206.200†	3923.1	0.143	mg/L	0.0022	0.143	mg/L	0.0022	1.54%
K 766.490†	129.9	-0.0737	mg/L	0.00669	-0.0737	mg/L	0.00669	9.07%
Na 589.592†	1590274.3	163	mg/L	2.4	163	mg/L	2.4	1.48%
Sr 407.771†	33353.6	0.0264	mg/L	0.00038	0.0264	mg/L	0.00038	1.42%
Li 670.784†	-45.9	-0.00412	mg/L	0.000164	-0.00412	mg/L	0.000164	3.98%
P 214.914†	58.2	0.00588	mg/L	0.009729	0.00588	mg/L	0.009729	165.33%

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Sequence No.: 24 **Autosampler Location: 55**
Sample ID: L1311122410 **Date Collected: 11/26/2013 5:48:22 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1311122410

Analyte	Back Pressure	Flow
All	182.0 kPa	0.45 L/min

Mean Data: L1311122410

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2797409.6						38241.32	1.37%
YRADIAL	196878.2						3611.11	1.83%
Ga 417.206	910662.4						17687.67	1.94%
GaRADIAL	43138.7						226.97	0.53%
Ag 328.068†	-1885.2	-0.00093	mg/L	0.000377	-0.00093	mg/L	0.000377	40.47%
Al 396.153†	105.6	0.0202	mg/L	0.00230	0.0202	mg/L	0.00230	11.37%
As 188.979†	-20.2	-0.00790	mg/L	0.003048	-0.00790	mg/L	0.003048	38.56%
Ba 233.527†	5399.4	0.0654	mg/L	0.00077	0.0654	mg/L	0.00077	1.18%
Be 234.861†	2469.6	-0.00010	mg/L	0.000147	-0.00010	mg/L	0.000147	150.16%
B 249.677†	2480.4	0.0289	mg/L	0.00086	0.0289	mg/L	0.00086	2.97%
Ca 227.546†	10782.4	55.2	mg/L	0.15	55.2	mg/L	0.15	0.27%
Cd 228.802†	5.8	0.00045	mg/L	0.000062	0.00045	mg/L	0.000062	13.67%
Co 228.616†	24.5	0.00066	mg/L	0.000157	0.00066	mg/L	0.000157	23.81%
Cr 267.716†	24.3	-0.00318	mg/L	0.000046	-0.00318	mg/L	0.000046	1.43%
Cu 327.393†	-638.1	-0.00219	mg/L	0.000796	-0.00219	mg/L	0.000796	36.31%
Fe 239.562†	42919.8	15.1	mg/L	0.21	15.1	mg/L	0.21	1.38%
Mg 279.077†	488.7	0.409	mg/L	0.0070	0.409	mg/L	0.0070	1.71%
Mn 257.610†	52256.7	0.0890	mg/L	0.00098	0.0890	mg/L	0.00098	1.10%
Mo 202.031†	18.7	-0.00413	mg/L	0.000107	-0.00413	mg/L	0.000107	2.59%
Ni 231.604†	95.5	-0.00028	mg/L	0.000156	-0.00028	mg/L	0.000156	55.34%
Pb 220.353†	60.5	0.00727	mg/L	0.000609	0.00727	mg/L	0.000609	8.37%
Sb 206.836†	-0.2	0.00263	mg/L	0.000225	0.00263	mg/L	0.000225	8.57%
Se 196.026†	-4.2	-0.00042	mg/L	0.004979	-0.00042	mg/L	0.004979	>999.9%
Si 251.611†	3520.3	0.0937	mg/L	0.00529	0.0937	mg/L	0.00529	5.64%
Sn 189.927†	-216.8	-0.0395	mg/L	0.00098	-0.0395	mg/L	0.00098	2.49%
Ti 334.940†	-5668.5	-0.00062	mg/L	0.000592	-0.00062	mg/L	0.000592	95.13%
Tl 190.801†	-26.5	-0.0194	mg/L	0.00507	-0.0194	mg/L	0.00507	26.11%
V 290.880†	1143.2	0.00020	mg/L	0.000739	0.00020	mg/L	0.000739	370.59%
Zn 206.200†	1900.1	0.0668	mg/L	0.00080	0.0668	mg/L	0.00080	1.20%
K 766.490†	103.6	-0.0897	mg/L	0.00651	-0.0897	mg/L	0.00651	7.27%
Na 589.592†	1590524.6	163	mg/L	1.3	163	mg/L	1.3	0.79%
Sr 407.771†	33426.6	0.0265	mg/L	0.00081	0.0265	mg/L	0.00081	3.03%
Li 670.784†	-51.0	-0.00419	mg/L	0.000172	-0.00419	mg/L	0.000172	4.10%
P 214.914†	66.3	0.0144	mg/L	0.01344	0.0144	mg/L	0.01344	93.23%

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Sequence No.: 25 **Autosampler Location: 56**
Sample ID: L1311122411 **Date Collected: 11/26/2013 5:51:26 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Approved: November 27, 2013

Nebulizer Parameters: L1311122411

Analyte	Back Pressure	Flow
All	182.0 kPa	0.45 L/min

Mean Data: L1311122411

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2826545.5						51267.54	1.81%
YRADIAL	196890.1						3814.35	1.94%
Ga 417.206	930111.7						18182.21	1.95%
GaRADIAL	43395.3						528.82	1.22%
Ag 328.068†	-81.7	-0.00060	mg/L	0.000460	-0.00060	mg/L	0.000460	76.41%
Al 396.153†	123.3	0.0245	mg/L	0.00219	0.0245	mg/L	0.00219	8.92%
As 188.979†	-4.7	-0.00301	mg/L	0.002605	-0.00301	mg/L	0.002605	86.46%
Ba 233.527†	1142.0	0.0108	mg/L	0.00025	0.0108	mg/L	0.00025	2.31%
Be 234.861†	-40.1	-0.00023	mg/L	0.000044	-0.00023	mg/L	0.000044	19.19%
B 249.677†	5298.5	0.0769	mg/L	0.00121	0.0769	mg/L	0.00121	1.57%
Ca 227.546†	937.7	4.84	mg/L	0.084	4.84	mg/L	0.084	1.73%
Cd 228.802†	-1.3	0.00014	mg/L	0.000130	0.00014	mg/L	0.000130	91.40%
Co 228.616†	2.3	-0.00001	mg/L	0.000243	-0.00001	mg/L	0.000243	>999.9%
Cr 267.716†	272.9	0.00026	mg/L	0.000023	0.00026	mg/L	0.000023	8.62%
Cu 327.393†	989.5	0.00468	mg/L	0.000590	0.00468	mg/L	0.000590	12.61%
Fe 239.562†	212.5	0.0598	mg/L	0.00951	0.0598	mg/L	0.00951	15.90%
Mg 279.077†	1059.9	0.944	mg/L	0.0154	0.944	mg/L	0.0154	1.63%
Mn 257.610†	11544.0	0.0161	mg/L	0.00018	0.0161	mg/L	0.00018	1.13%
Mo 202.031†	6.3	-0.00515	mg/L	0.000266	-0.00515	mg/L	0.000266	5.16%
Ni 231.604†	84.0	-0.00061	mg/L	0.000307	-0.00061	mg/L	0.000307	49.95%
Pb 220.353†	1734.2	0.294	mg/L	0.0054	0.294	mg/L	0.0054	1.82%
Sb 206.836†	3.0	0.00378	mg/L	0.001231	0.00378	mg/L	0.001231	32.57%
Se 196.026†	1.1	0.00309	mg/L	0.001188	0.00309	mg/L	0.001188	38.49%
Si 251.611†	2382.1	0.0598	mg/L	0.00230	0.0598	mg/L	0.00230	3.85%
Sn 189.927†	-29.2	-0.00734	mg/L	0.000544	-0.00734	mg/L	0.000544	7.41%
Ti 334.940†	1057.0	0.00024	mg/L	0.000264	0.00024	mg/L	0.000264	112.18%
Tl 190.801†	-19.4	-0.0151	mg/L	0.00438	-0.0151	mg/L	0.00438	29.09%
V 290.880†	991.9	0.00086	mg/L	0.000351	0.00086	mg/L	0.000351	40.64%
Zn 206.200†	3291.1	0.120	mg/L	0.0024	0.120	mg/L	0.0024	2.03%
K 766.490†	1470.1	0.745	mg/L	0.0199	0.745	mg/L	0.0199	2.68%
Na 589.592†	1514430.8	155	mg/L	2.3	155	mg/L	2.3	1.52%
Sr 407.771†	8885.9	0.00353	mg/L	0.000098	0.00353	mg/L	0.000098	2.78%
Li 670.784†	0.4	-0.00343	mg/L	0.000514	-0.00343	mg/L	0.000514	15.01%
P 214.914†	120.3	0.0708	mg/L	0.00724	0.0708	mg/L	0.00724	10.22%

Sequence No.: 26 — **Autosampler Location: 57**
Sample ID: L1311122413 ~~WG454770-01~~ — **Date Collected: 11/26/2013 5:54:33 PM**
Analyst: JYH — **Data Type: Original**
Initial Sample Wt: WG453770-01 — **Initial Sample Vol:**
Dilution: — **Sample Prep Vol:**

Nebulizer Parameters: L1311122413 ~~WG454770-01~~

Analyte	Back Pressure	Flow
All	183.0 kPa	0.45 L/min

Mean Data: L1311122413 ~~WG454770-01~~

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2763031.4						13785.00	0.50%
YRADIAL	199416.4						6432.15	3.23%
Ga 417.206	879370.4						3727.12	0.42%
GaRADIAL	43012.0						1194.17	2.78%
Ag 328.068†	-132.6	-0.00072	mg/L	0.000209	-0.00072	mg/L	0.000209	29.21%
Al 396.153†	165.0	0.0388	mg/L	0.00253	0.0388	mg/L	0.00253	6.51%
As 188.979†	-8.8	-0.00555	mg/L	0.001720	-0.00555	mg/L	0.001720	30.96%
Ba 233.527†	273.4	-0.00045	mg/L	0.000016	-0.00045	mg/L	0.000016	3.68%
Be 234.861†	-124.7	-0.00041	mg/L	0.000020	-0.00041	mg/L	0.000020	4.80%
B 249.677†	877.9	0.0116	mg/L	0.00030	0.0116	mg/L	0.00030	2.61%
Ca 227.546†	137.6	0.788	mg/L	0.0316	0.788	mg/L	0.0316	4.01%
Cd 228.802†	40.2	0.00182	mg/L	0.000262	0.00182	mg/L	0.000262	14.45%

Approved: November 27, 2013

Co 228.616†	-11.7	-0.00070 mg/L	0.000234	-0.00070 mg/L	0.000234	33.51%
Cr 267.716†	88.6	0.00212 mg/L	0.000023	0.00212 mg/L	0.000023	1.07%
Cu 327.393†	-160.5	0.00451 mg/L	0.000552	0.00451 mg/L	0.000552	12.24%
Fe 239.562†	757.9	0.252 mg/L	0.0152	0.252 mg/L	0.0152	6.03%
Mg 279.077†	87.5	0.0464 mg/L	0.00581	0.0464 mg/L	0.00581	12.53%
Mn 257.610†	11047.2	0.0201 mg/L	0.00032	0.0201 mg/L	0.00032	1.62%
Mo 202.031†	13.3	-0.00471 mg/L	0.000339	-0.00471 mg/L	0.000339	7.19%
Ni 231.604†	555.9	0.0130 mg/L	0.00013	0.0130 mg/L	0.00013	1.00%
Pb 220.353†	23.7	0.00151 mg/L	0.000440	0.00151 mg/L	0.000440	29.17%
Sb 206.836†	0.6	0.00255 mg/L	0.003490	0.00255 mg/L	0.003490	137.09%
Se 196.026†	2.7	0.00509 mg/L	0.004936	0.00509 mg/L	0.004936	97.02%
Si 251.611†	2135.7	0.0524 mg/L	0.00062	0.0524 mg/L	0.00062	1.18%
Sn 189.927†	-0.9	-0.00248 mg/L	0.000598	-0.00248 mg/L	0.000598	24.16%
Ti 334.940†	6503.4	0.00639 mg/L	0.001003	0.00639 mg/L	0.001003	15.68%
Tl 190.801†	-15.2	-0.0125 mg/L	0.00042	-0.0125 mg/L	0.00042	3.39%
V 290.880†	982.7	0.00082 mg/L	0.000770	0.00082 mg/L	0.000770	94.24%
Zn 206.200†	2333115.6	88.3 mg/L	0.50	88.3 mg/L	0.50	0.57%
K 766.490†	136.7	-0.0747 mg/L	0.02969	-0.0747 mg/L	0.02969	39.75%
Na 589.592†	1632920.9	168 mg/L	1.7	168 mg/L	1.7	0.99%
Sr 407.771†	911.9	-0.00433 mg/L	0.000026	-0.00433 mg/L	0.000026	0.60%
Li 670.784†	-27.0	-0.00383 mg/L	0.000366	-0.00383 mg/L	0.000366	9.54%
P 214.914†	164.0	0.116 mg/L	0.0054	0.116 mg/L	0.0054	4.60%

Sequence No.: 27
Sample ID: L1311122413S WG454770-04
Analyst: JYH
Initial Sample Wt: WG453770-04
Dilution:

Autosampler Location: 58
Date Collected: 11/26/2013 5:57:40 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1311122413S WG454770-04

Analyte	Back Pressure	Flow
All	183.0 kPa	0.45 L/min

Mean Data: L1311122413S WG454770-04

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	2793283.6						38842.50	1.39%
YRADIAL	200945.0						3896.07	1.94%
Ga 417.206	895466.9						20258.19	2.26%
GaRADIAL	44532.1						641.63	1.44%
Ag 328.068†	45296.8	0.185	mg/L	0.0069	0.185	mg/L	0.0069	3.75%
Al 396.153†	14351.6	4.88	mg/L	0.091	4.88	mg/L	0.091	1.86%
As 188.979†	291.1	0.176	mg/L	0.0029	0.176	mg/L	0.0029	1.62%
Ba 233.527†	35404.5	0.456	mg/L	0.0092	0.456	mg/L	0.0092	2.02%
Be 234.861†	14462.9	0.0215	mg/L	0.00083	0.0215	mg/L	0.00083	3.88%
B 249.677†	60300.9	0.885	mg/L	0.0259	0.885	mg/L	0.0259	2.92%
Ca 227.546†	1065.0	5.72	mg/L	0.096	5.72	mg/L	0.096	1.68%
Cd 228.802†	583.6	0.0229	mg/L	0.00103	0.0229	mg/L	0.00103	4.47%
Co 228.616†	1944.7	0.0927	mg/L	0.00118	0.0927	mg/L	0.00118	1.27%
Cr 267.716†	25758.3	0.232	mg/L	0.0049	0.232	mg/L	0.0049	2.09%
Cu 327.393†	48510.2	0.236	mg/L	0.0089	0.236	mg/L	0.0089	3.74%
Fe 239.562†	7780.1	2.73	mg/L	0.058	2.73	mg/L	0.058	2.14%
Mg 279.077†	5112.1	4.69	mg/L	0.085	4.69	mg/L	0.085	1.80%
Mn 257.610†	140155.9	0.249	mg/L	0.0015	0.249	mg/L	0.0015	0.59%
Mo 202.031†	7465.0	0.460	mg/L	0.0102	0.460	mg/L	0.0102	2.22%
Ni 231.604†	8465.3	0.241	mg/L	0.0041	0.241	mg/L	0.0041	1.70%
Pb 220.353†	1345.8	0.229	mg/L	0.0016	0.229	mg/L	0.0016	0.69%
Sb 206.836†	996.8	0.536	mg/L	0.0154	0.536	mg/L	0.0154	2.87%
Se 196.026†	146.5	0.182	mg/L	0.0040	0.182	mg/L	0.0040	2.22%
Si 251.611†	79266.6	2.35	mg/L	0.081	2.35	mg/L	0.081	3.43%
Sn 189.927†	-32.8	-0.00794	mg/L	0.000904	-0.00794	mg/L	0.000904	11.38%
Ti 334.940†	377254.5	0.468	mg/L	0.0022	0.468	mg/L	0.0022	0.48%
Tl 190.801†	360.2	0.216	mg/L	0.0075	0.216	mg/L	0.0075	3.46%
V 290.880†	85447.0	0.463	mg/L	0.0098	0.463	mg/L	0.0098	2.11%
Zn 206.200†	2200239.0	83.2	mg/L	0.65	83.2	mg/L	0.65	0.78%
K 766.490†	37150.7	22.4	mg/L	0.46	22.4	mg/L	0.46	2.05%
Na 589.592†	1742350.3	182	mg/L	1.1	182	mg/L	1.1	0.61%
Sr 407.771†	465659.1	0.461	mg/L	0.0011	0.461	mg/L	0.0011	0.24%
Li 670.784†	31766.2	0.470	mg/L	0.0020	0.470	mg/L	0.0020	0.43%

Approved: November 27, 2013

P 214.914†	-16.0	-0.0716 mg/L	0.01857	-0.0716 mg/L	0.01857	25.93%

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Sequence No.: 28 **Autosampler Location: 59**
Sample ID: L1311122413SD ~~WG454770-05~~ **Date Collected: 11/26/2013 5:59:49 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: WG453770-05 **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1311122413SD ~~WG454770-05~~

Analyte	Back Pressure	Flow
All	183.0 kPa	0.45 L/min

Mean Data: L1311122413SD ~~WG454770-05~~

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2804649.2						19860.18	0.71%
YRADIAL	200765.4						3704.50	1.85%
Ga 417.206	914668.9						14003.53	1.53%
GaRADIAL	44283.8						690.35	1.56%
Ag 328.068†	44210.9	0.181	mg/L	0.0067	0.181	mg/L	0.0067	3.71%
Al 396.153†	14328.6	4.87	mg/L	0.070	4.87	mg/L	0.070	1.44%
As 188.979†	285.1	0.172	mg/L	0.0047	0.172	mg/L	0.0047	2.73%
Ba 233.527†	35319.5	0.455	mg/L	0.0144	0.455	mg/L	0.0144	3.17%
Be 234.861†	14167.2	0.0211	mg/L	0.00068	0.0211	mg/L	0.00068	3.22%
B 249.677†	59473.2	0.873	mg/L	0.0311	0.873	mg/L	0.0311	3.56%
Ca 227.546†	1028.4	5.53	mg/L	0.095	5.53	mg/L	0.095	1.73%
Cd 228.802†	575.7	0.0226	mg/L	0.00072	0.0226	mg/L	0.00072	3.18%
Co 228.616†	1911.7	0.0911	mg/L	0.00034	0.0911	mg/L	0.00034	0.37%
Cr 267.716†	25634.3	0.231	mg/L	0.0054	0.231	mg/L	0.0054	2.34%
Cu 327.393†	47229.7	0.231	mg/L	0.0087	0.231	mg/L	0.0087	3.75%
Fe 239.562†	7092.8	2.48	mg/L	0.029	2.48	mg/L	0.029	1.17%
Mg 279.077†	5062.3	4.64	mg/L	0.056	4.64	mg/L	0.056	1.21%
Mn 257.610†	144416.7	0.256	mg/L	0.0041	0.256	mg/L	0.0041	1.62%
Mo 202.031†	7524.0	0.464	mg/L	0.0118	0.464	mg/L	0.0118	2.54%
Ni 231.604†	8420.3	0.240	mg/L	0.0075	0.240	mg/L	0.0075	3.13%
Pb 220.353†	1336.8	0.227	mg/L	0.0026	0.227	mg/L	0.0026	1.13%
Sb 206.836†	966.6	0.519	mg/L	0.0145	0.519	mg/L	0.0145	2.80%
Se 196.026†	142.3	0.177	mg/L	0.0102	0.177	mg/L	0.0102	5.78%
Si 251.611†	77062.4	2.28	mg/L	0.082	2.28	mg/L	0.082	3.59%
Sn 189.927†	-23.7	-0.00639	mg/L	0.000711	-0.00639	mg/L	0.000711	11.13%
Ti 334.940†	388019.5	0.481	mg/L	0.0094	0.481	mg/L	0.0094	1.95%
Tl 190.801†	361.8	0.217	mg/L	0.0067	0.217	mg/L	0.0067	3.09%
V 290.880†	84871.2	0.460	mg/L	0.0113	0.460	mg/L	0.0113	2.46%
Zn 206.200†	2287960.3	86.6	mg/L	1.49	86.6	mg/L	1.49	1.72%
K 766.490†	37244.4	22.5	mg/L	0.22	22.5	mg/L	0.22	0.99%
Na 589.592†	1788345.6	187	mg/L	1.4	187	mg/L	1.4	0.72%
Sr 407.771†	466083.2	0.462	mg/L	0.0013	0.462	mg/L	0.0013	0.28%
Li 670.784†	31962.8	0.473	mg/L	0.0025	0.473	mg/L	0.0025	0.53%
P 214.914†	-17.8	-0.0735	mg/L	0.01881	-0.0735	mg/L	0.01881	25.60%

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Sequence No.: 29 **Autosampler Location: 60**
Sample ID: L1311122414 **Date Collected: 11/26/2013 6:01:57 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1311122414

Analyte	Back Pressure	Flow
All	183.0 kPa	0.45 L/min

Mean Data: L1311122414

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2751212.4						63495.79	2.31%
YRADIAL	199105.2						1469.42	0.74%
Ga 417.206	891431.4						23621.43	2.65%

Approved: November 27, 2013

GaRADIAL	43044.9				193.69	0.45%
Ag 328.068†	-1032.9	0.00027 mg/L	0.000507	0.00027 mg/L	0.000507	186.22%
Al 396.153†	117.8	0.0237 mg/L	0.00451	0.0237 mg/L	0.00451	19.01%
As 188.979†	-22.0	-0.00998 mg/L	0.001480	-0.00998 mg/L	0.001480	14.84%
Ba 233.527†	10343.9	0.130 mg/L	0.0039	0.130 mg/L	0.0039	3.02%
Be 234.861†	1735.5	-0.00002 mg/L	0.000092	-0.00002 mg/L	0.000092	402.68%
B 249.677†	3215.1	0.0418 mg/L	0.00036	0.0418 mg/L	0.00036	0.87%
Ca 227.546†	11997.0	61.3 mg/L	3.17	61.3 mg/L	3.17	5.18%
Cd 228.802†	-1.3	0.00019 mg/L	0.000165	0.00019 mg/L	0.000165	87.35%
Co 228.616†	67.6	0.00284 mg/L	0.000281	0.00284 mg/L	0.000281	9.91%
Cr 267.716†	115.3	-0.00193 mg/L	0.000171	-0.00193 mg/L	0.000171	8.85%
Cu 327.393†	-367.6	-0.00114 mg/L	0.000090	-0.00114 mg/L	0.000090	7.88%
Fe 239.562†	29154.4	10.3 mg/L	0.05	10.3 mg/L	0.05	0.51%
Mg 279.077†	305.9	0.243 mg/L	0.0021	0.243 mg/L	0.0021	0.88%
Mn 257.610†	53315.7	0.0906 mg/L	0.00335	0.0906 mg/L	0.00335	3.69%
Mo 202.031†	31.9	-0.00338 mg/L	0.000446	-0.00338 mg/L	0.000446	13.19%
Ni 231.604†	465.1	0.0104 mg/L	0.00011	0.0104 mg/L	0.00011	1.08%
Pb 220.353†	135.4	0.0203 mg/L	0.00292	0.0203 mg/L	0.00292	14.41%
Sb 206.836†	-0.7	0.00218 mg/L	0.000938	0.00218 mg/L	0.000938	43.09%
Se 196.026†	-2.4	0.00081 mg/L	0.004185	0.00081 mg/L	0.004185	518.07%
Si 251.611†	3149.6	0.0827 mg/L	0.00282	0.0827 mg/L	0.00282	3.41%
Sn 189.927†	-214.8	-0.0391 mg/L	0.00121	-0.0391 mg/L	0.00121	3.09%
Ti 334.940†	-7056.7	-0.00142 mg/L	0.000104	-0.00142 mg/L	0.000104	7.31%
Tl 190.801†	-27.5	-0.0200 mg/L	0.00051	-0.0200 mg/L	0.00051	2.53%
V 290.880†	1427.5	0.00224 mg/L	0.002097	0.00224 mg/L	0.002097	93.48%
Zn 206.200†	25451.9	0.958 mg/L	0.0137	0.958 mg/L	0.0137	1.43%
K 766.490†	274.2	-0.00151 mg/L	0.032249	-0.00151 mg/L	0.032249	>999.9%
Na 589.592†	1715684.3	178 mg/L	3.5	178 mg/L	3.5	1.98%
Sr 407.771†	22972.3	0.0159 mg/L	0.00031	0.0159 mg/L	0.00031	1.96%
Li 670.784†	26.6	-0.00304 mg/L	0.000535	-0.00304 mg/L	0.000535	17.60%
P 214.914†	62.4	0.0103 mg/L	0.00391	0.0103 mg/L	0.00391	37.87%

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Sequence No.: 30 **Autosampler Location: 6**
Sample ID: CCV **Date Collected: 11/26/2013 6:05:03 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	182.0 kPa	0.45 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2798299.2						20203.57	0.72%
YRADIAL	191537.1						1608.54	0.84%
Ga 417.206	910251.2						10112.98	1.11%
GaRADIAL	42414.5						972.86	2.29%
Ag 328.068†	95412.0	0.389	mg/L	0.0016	0.389	mg/L	0.0016	0.41%
QC value within limits for Ag 328.068 Recovery = 97.35%								
Al 396.153†	29503.7	10.0	mg/L	0.07	10.0	mg/L	0.07	0.74%
QC value within limits for Al 396.153 Recovery = 100.48%								
As 188.979†	628.2	0.380	mg/L	0.0019	0.380	mg/L	0.0019	0.49%
QC value within limits for As 188.979 Recovery = 94.96%								
Ba 233.527†	76233.9	0.986	mg/L	0.0160	0.986	mg/L	0.0160	1.63%
QC value within limits for Ba 233.527 Recovery = 98.60%								
Be 234.861†	32308.0	0.0488	mg/L	0.00041	0.0488	mg/L	0.00041	0.84%
QC value within limits for Be 234.861 Recovery = 97.54%								
B 249.677†	32693.7	0.477	mg/L	0.0027	0.477	mg/L	0.0027	0.57%
QC value within limits for B 249.677 Recovery = 95.40%								
Ca 227.546†	1882.1	10.1	mg/L	0.03	10.1	mg/L	0.03	0.34%
QC value within limits for Ca 227.546 Recovery = 100.85%								
Cd 228.802†	1181.9	0.0462	mg/L	0.00095	0.0462	mg/L	0.00095	2.06%
QC value within limits for Cd 228.802 Recovery = 92.40%								
Co 228.616†	4171.1	0.199	mg/L	0.0031	0.199	mg/L	0.0031	1.57%
QC value within limits for Co 228.616 Recovery = 99.51%								
Cr 267.716†	55303.2	0.494	mg/L	0.0051	0.494	mg/L	0.0051	1.04%
QC value within limits for Cr 267.716 Recovery = 98.75%								

Approved: November 27, 2013

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Cu 327.393†          102380.5       0.488 mg/L        0.0013       0.488 mg/L        0.0013   0.26%
   QC value within limits for Cu 327.393  Recovery = 97.68%
Fe 239.562†           11103.2        3.90 mg/L         0.088        3.90 mg/L         0.088   2.25%
   QC value within limits for Fe 239.562  Recovery = 97.40%
Mg 279.077†           10669.1        9.83 mg/L         0.316        9.83 mg/L         0.316   3.22%
   QC value within limits for Mg 279.077  Recovery = 98.25%
Mn 257.610†          289179.0       0.508 mg/L        0.0081       0.508 mg/L        0.0081   1.60%
   QC value within limits for Mn 257.610  Recovery = 101.60%
Mo 202.031†           15942.5       0.989 mg/L        0.0115       0.989 mg/L        0.0115   1.16%
   QC value within limits for Mo 202.031  Recovery = 98.92%
Ni 231.604†           17361.9       0.498 mg/L        0.0099       0.498 mg/L        0.0099   1.99%
   QC value within limits for Ni 231.604  Recovery = 99.63%
Pb 220.353†            2900.3       0.496 mg/L        0.0078       0.496 mg/L        0.0078   1.58%
   QC value within limits for Pb 220.353  Recovery = 99.11%
Sb 206.836†            2114.2        1.13 mg/L         0.012        1.13 mg/L         0.012   1.03%
   QC value within limits for Sb 206.836  Recovery = 94.44%
Se 196.026†             315.7       0.391 mg/L        0.0065       0.391 mg/L        0.0065   1.67%
   QC value within limits for Se 196.026  Recovery = 97.66%
Si 251.611†          162833.4        4.84 mg/L         0.025        4.84 mg/L         0.025   0.51%
   QC value within limits for Si 251.611  Recovery = 96.79%
Sn 189.927†            5789.5       0.989 mg/L        0.0143       0.989 mg/L        0.0143   1.44%
   QC value within limits for Sn 189.927  Recovery = 98.88%
Ti 334.940†          786542.4       0.977 mg/L        0.0109       0.977 mg/L        0.0109   1.11%
   QC value within limits for Ti 334.940  Recovery = 97.70%
Tl 190.801†             842.2       0.509 mg/L        0.0017       0.509 mg/L        0.0017   0.34%
   QC value within limits for Tl 190.801  Recovery = 101.73%
V 290.880†           181875.1       0.990 mg/L        0.0198       0.990 mg/L        0.0198   2.00%
   QC value within limits for V 290.880  Recovery = 99.02%
Zn 206.200†           26848.9        1.02 mg/L         0.007        1.02 mg/L         0.007   0.73%
   QC value within limits for Zn 206.200  Recovery = 101.55%
K 766.490†            79909.7        48.9 mg/L          0.33        48.9 mg/L          0.33   0.68%
   QC value within limits for K 766.490  Recovery = 97.81%
Na 589.592†          531950.8        50.2 mg/L          1.09        50.2 mg/L          1.09   2.17%
   QC value within limits for Na 589.592  Recovery = 100.39%
Sr 407.771†          968888.6       0.966 mg/L        0.0041       0.966 mg/L        0.0041   0.42%
   QC value within limits for Sr 407.771  Recovery = 96.55%
Li 670.784†           66939.5       0.993 mg/L        0.0046       0.993 mg/L        0.0046   0.46%
   QC value within limits for Li 670.784  Recovery = 99.35%
P 214.914†             9652.0        10.0 mg/L          0.18        10.0 mg/L          0.18   1.83%
   QC value within limits for P 214.914  Recovery = 100.33%
All analyte(s) passed QC.

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Sequence No.: 31                                  Autosampler Location: 1
Sample ID: CCB                                    Date Collected: 11/26/2013 6:07:10 PM
Analyst:                                          Data Type: Original
Initial Sample Wt:                                Initial Sample Vol:
Dilution:                                         Sample Prep Vol:

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Nebulizer Parameters: CCB
Analyte                 Back Pressure    Flow
All                    182.0 kPa        0.45 L/min

------------------------------------------------------------------------------------------
Mean Data: CCB
                   Mean Corrected         Calib.                          Sample
Analyte               Intensity     Conc. Units      Std.Dev.      Conc. Units      Std.Dev.   RSD
Y 371.029            2674905.4                                                     32103.42   1.20%
YRADIAL               190812.9                                                      5462.77   2.86%
Ga 417.206            849828.7                                                     10486.61   1.23%
GaRADIAL               41618.5                                                       993.55   2.39%
Ag 328.068†                8.7    -0.00026 mg/L      0.000712    -0.00026 mg/L      0.000712 277.02%
   QC value within limits for Ag 328.068  Recovery = Not calculated
Al 396.153†               36.1    -0.00539 mg/L      0.002439    -0.00539 mg/L      0.002439  45.22%
   QC value within limits for Al 396.153  Recovery = Not calculated
As 188.979†               -5.2    -0.00342 mg/L      0.000826    -0.00342 mg/L      0.000826  24.20%
   QC value within limits for As 188.979  Recovery = Not calculated
Ba 233.527†               -0.0    -0.00398 mg/L      0.000096    -0.00398 mg/L      0.000096   2.40%
   QC value within limits for Ba 233.527  Recovery = Not calculated
Be 234.861†                8.6    -0.00014 mg/L      0.000034    -0.00014 mg/L      0.000034  23.77%
   QC value within limits for Be 234.861  Recovery = Not calculated
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B 249.677†              413.7     0.00496 mg/L      0.000997     0.00496 mg/L      0.000997  20.09%
   QC value within limits for B 249.677  Recovery = Not calculated
Ca 227.546†              -2.8      0.0555 mg/L       0.01255      0.0555 mg/L       0.01255  22.62%
   QC value within limits for Ca 227.546  Recovery = Not calculated
Cd 228.802†             -11.7    -0.00028 mg/L      0.000158    -0.00028 mg/L      0.000158  57.44%
   QC value within limits for Cd 228.802  Recovery = Not calculated
Co 228.616†             -19.4    -0.00104 mg/L      0.000276    -0.00104 mg/L      0.000276  26.52%
   QC value within limits for Co 228.616  Recovery = Not calculated
Cr 267.716†              66.3    -0.00159 mg/L      0.000023    -0.00159 mg/L      0.000023   1.48%
   QC value within limits for Cr 267.716  Recovery = Not calculated
Cu 327.393†            -123.8    -0.00063 mg/L      0.000508    -0.00063 mg/L      0.000508  80.82%
   QC value within limits for Cu 327.393  Recovery = Not calculated
Fe 239.562†              40.3    -0.00084 mg/L      0.004312    -0.00084 mg/L      0.004312 512.47%
   QC value within limits for Fe 239.562  Recovery = Not calculated
Mg 279.077†              13.2     -0.0220 mg/L       0.00551     -0.0220 mg/L       0.00551  25.04%
   QC value within limits for Mg 279.077  Recovery = Not calculated
Mn 257.610†             372.9    -0.00368 mg/L      0.000056    -0.00368 mg/L      0.000056   1.52%
   QC value within limits for Mn 257.610  Recovery = Not calculated
Mo 202.031†              -3.0    -0.00574 mg/L      0.000392    -0.00574 mg/L      0.000392   6.84%
   QC value within limits for Mo 202.031  Recovery = Not calculated
Ni 231.604†              -7.6    -0.00326 mg/L      0.000352    -0.00326 mg/L      0.000352  10.79%
   QC value within limits for Ni 231.604  Recovery = Not calculated
Pb 220.353†              21.8     0.00120 mg/L      0.001102     0.00120 mg/L      0.001102  92.24%
   QC value within limits for Pb 220.353  Recovery = Not calculated
Sb 206.836†               7.2     0.00606 mg/L      0.001525     0.00606 mg/L      0.001525  25.18%
   QC value within limits for Sb 206.836  Recovery = Not calculated
Se 196.026†              -0.6     0.00097 mg/L      0.007195     0.00097 mg/L      0.007195 743.92%
   QC value within limits for Se 196.026  Recovery = Not calculated
Si 251.611†               2.7     -0.0113 mg/L       0.00165     -0.0113 mg/L       0.00165  14.65%
   QC value within limits for Si 251.611  Recovery = Not calculated
Sn 189.927†              28.4     0.00253 mg/L      0.001604     0.00253 mg/L      0.001604  63.45%
   QC value within limits for Sn 189.927  Recovery = Not calculated
Ti 334.940†             348.1    -0.00136 mg/L      0.000055    -0.00136 mg/L      0.000055   4.07%
   QC value within limits for Ti 334.940  Recovery = Not calculated
Tl 190.801†              -2.8    -0.00524 mg/L      0.003569    -0.00524 mg/L      0.003569  68.17%
   QC value within limits for Tl 190.801  Recovery = Not calculated
V 290.880†             1221.3     0.00215 mg/L      0.001480     0.00215 mg/L      0.001480  68.80%
   QC value within limits for V 290.880  Recovery = Not calculated
Zn 206.200†              543.9      0.0155 mg/L       0.00132      0.0155 mg/L       0.00132   8.49%
   QC value greater than the upper limit for Zn 206.200  Recovery = Not calculated
K 766.490†                57.3      0.0455 mg/L       0.02191      0.0455 mg/L       0.02191  48.14%
   QC value within limits for K 766.490  Recovery = Not calculated
Na 589.592†             2544.2       0.225 mg/L        0.0643       0.225 mg/L        0.0643  28.61%
   QC value within limits for Na 589.592  Recovery = Not calculated
Sr 407.771†              990.0    -0.00423 mg/L      0.000459    -0.00423 mg/L      0.000459  10.84%
   QC value within limits for Sr 407.771  Recovery = Not calculated
Li 670.784†              182.7    -0.00071 mg/L      0.001376    -0.00071 mg/L      0.001376 193.18%
   QC value within limits for Li 670.784  Recovery = Not calculated
P 214.914†                72.4      0.0207 mg/L       0.00851      0.0207 mg/L       0.00851  41.09%
   QC value within limits for P 214.914  Recovery = Not calculated
QC Failed.  Continue with analysis.

==========================================================================================
Sequence No.: 32                                    Autosampler Location: 61
Sample ID: L1311122415                              Date Collected: 11/26/2013 6:10:12 PM
Analyst: JYH                                        Data Type: Original
Initial Sample Wt:                                  Initial Sample Vol:
Dilution:                                           Sample Prep Vol:

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Nebulizer Parameters: L1311122415
Analyte                  Back Pressure     Flow
All                     183.0 kPa         0.45 L/min

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Mean Data: L1311122415
                   Mean Corrected          Calib.                          Sample
Analyte               Intensity      Conc. Units      Std.Dev.      Conc. Units      Std.Dev.   RSD
Y 371.029            2764240.3                                                      39199.52   1.42%
YRADIAL               193322.1                                                       5593.99   2.89%
Ga 417.206            923368.8                                                      12392.53   1.34%
GaRADIAL               42291.4                                                       1357.69   3.21%
```

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Ag 328.068†	-935.9	-0.00007	mg/L	0.000326	-0.00007	mg/L	0.000326	463.03%
Al 396.153†	51.1	0.00060	mg/L	0.000537	0.00060	mg/L	0.000537	89.88%
As 188.979†	-19.6	-0.00880	mg/L	0.001879	-0.00880	mg/L	0.001879	21.37%
Ba 233.527†	3061.0	0.0353	mg/L	0.00055	0.0353	mg/L	0.00055	1.57%
Be 234.861†	1438.9	-0.00009	mg/L	0.000155	-0.00009	mg/L	0.000155	170.26%
B 249.677†	2448.8	0.0311	mg/L	0.00171	0.0311	mg/L	0.00171	5.51%
Ca 227.546†	12701.9	64.8	mg/L	1.32	64.8	mg/L	1.32	2.03%
Cd 228.802†	45.8	0.00208	mg/L	0.000016	0.00208	mg/L	0.000016	0.78%
Co 228.616†	151.2	0.00692	mg/L	0.000554	0.00692	mg/L	0.000554	8.00%
Cr 267.716†	65.3	-0.00220	mg/L	0.000312	-0.00220	mg/L	0.000312	14.19%
Cu 327.393†	-436.1	-0.00147	mg/L	0.000445	-0.00147	mg/L	0.000445	30.31%
Fe 239.562†	24717.1	8.69	mg/L	0.170	8.69	mg/L	0.170	1.96%
Mg 279.077†	681.4	0.590	mg/L	0.0183	0.590	mg/L	0.0183	3.10%
Mn 257.610†	50903.9	0.0864	mg/L	0.00124	0.0864	mg/L	0.00124	1.43%
Mo 202.031†	43.5	-0.00268	mg/L	0.000234	-0.00268	mg/L	0.000234	8.73%
Ni 231.604†	431.4	0.00942	mg/L	0.000115	0.00942	mg/L	0.000115	1.22%
Pb 220.353†	37.9	0.00361	mg/L	0.000765	0.00361	mg/L	0.000765	21.18%
Sb 206.836†	1.2	0.00318	mg/L	0.002916	0.00318	mg/L	0.002916	91.56%
Se 196.026†	-1.0	0.00225	mg/L	0.009185	0.00225	mg/L	0.009185	408.57%
Si 251.611†	2356.5	0.0590	mg/L	0.00123	0.0590	mg/L	0.00123	2.08%
Sn 189.927†	-215.5	-0.0392	mg/L	0.00173	-0.0392	mg/L	0.00173	4.41%
Ti 334.940†	-8144.6	-0.00224	mg/L	0.000016	-0.00224	mg/L	0.000016	0.70%
Tl 190.801†	-32.5	-0.0230	mg/L	0.00541	-0.0230	mg/L	0.00541	23.53%
V 290.880†	1340.7	0.00192	mg/L	0.001141	0.00192	mg/L	0.001141	59.45%
Zn 206.200†	66385.0	2.51	mg/L	0.040	2.51	mg/L	0.040	1.59%
K 766.490†	270.2	-0.00666	mg/L	0.009752	-0.00666	mg/L	0.009752	146.34%
Na 589.592†	1738247.4	181	mg/L	5.3	181	mg/L	5.3	2.95%
Sr 407.771†	69564.1	0.0624	mg/L	0.00062	0.0624	mg/L	0.00062	1.00%
Li 670.784†	5.0	-0.00336	mg/L	0.000047	-0.00336	mg/L	0.000047	1.39%
P 214.914†	71.1	0.0194	mg/L	0.00371	0.0194	mg/L	0.00371	19.11%

Sequence No.: 33 **Autosampler Location: 62**
Sample ID: L1311122416 **Date Collected: 11/26/2013 6:13:18 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1311122416

Analyte	Back Pressure	Flow
All	184.0 kPa	0.45 L/min

Mean Data: L1311122416

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2765407.7						46680.54	1.69%
YRADIAL	198606.0						6235.00	3.14%
Ga 417.206	893793.1						17236.07	1.93%
GaRADIAL	43050.4						727.62	1.69%
Ag 328.068†	-1937.2	-0.00094	mg/L	0.000121	-0.00094	mg/L	0.000121	12.86%
Al 396.153†	126.0	0.0272	mg/L	0.00349	0.0272	mg/L	0.00349	12.83%
As 188.979†	-18.9	-0.00705	mg/L	0.000089	-0.00705	mg/L	0.000089	1.27%
Ba 233.527†	4520.3	0.0539	mg/L	0.00087	0.0539	mg/L	0.00087	1.62%
Be 234.861†	2689.3	0.00013	mg/L	0.000203	0.00013	mg/L	0.000203	153.48%
B 249.677†	2740.8	0.0325	mg/L	0.00156	0.0325	mg/L	0.00156	4.79%
Ca 227.546†	10202.8	52.3	mg/L	1.20	52.3	mg/L	1.20	2.29%
Cd 228.802†	17.3	0.00092	mg/L	0.000015	0.00092	mg/L	0.000015	1.60%
Co 228.616†	82.0	0.00341	mg/L	0.000345	0.00341	mg/L	0.000345	10.13%
Cr 267.716†	36.0	-0.00304	mg/L	0.000064	-0.00304	mg/L	0.000064	2.11%
Cu 327.393†	-380.8	-0.00084	mg/L	0.001069	-0.00084	mg/L	0.001069	126.57%
Fe 239.562†	44205.7	15.6	mg/L	0.64	15.6	mg/L	0.64	4.11%
Mg 279.077†	413.7	0.339	mg/L	0.0171	0.339	mg/L	0.0171	5.03%
Mn 257.610†	83186.3	0.144	mg/L	0.0020	0.144	mg/L	0.0020	1.42%
Mo 202.031†	24.2	-0.00376	mg/L	0.000254	-0.00376	mg/L	0.000254	6.74%
Ni 231.604†	767.0	0.0191	mg/L	0.00039	0.0191	mg/L	0.00039	2.03%
Pb 220.353†	63.8	0.00778	mg/L	0.000725	0.00778	mg/L	0.000725	9.31%
Sb 206.836†	-0.3	0.00261	mg/L	0.000223	0.00261	mg/L	0.000223	8.55%
Se 196.026†	-3.6	0.00034	mg/L	0.009338	0.00034	mg/L	0.009338	>999.9%
Si 251.611†	2191.4	0.0541	mg/L	0.00101	0.0541	mg/L	0.00101	1.87%
Sn 189.927†	-205.7	-0.0375	mg/L	0.00102	-0.0375	mg/L	0.00102	2.73%

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Ti 334.940†	-6436.5	-0.00202 mg/L	0.000216	-0.00202 mg/L	0.000216	10.70%
Tl 190.801†	-27.7	-0.0202 mg/L	0.00527	-0.0202 mg/L	0.00527	26.13%
V 290.880†	1334.1	0.00120 mg/L	0.001265	0.00120 mg/L	0.001265	105.26%
Zn 206.200†	46461.5	1.75 mg/L	0.023	1.75 mg/L	0.023	1.32%
K 766.490†	140.3	-0.0849 mg/L	0.00371	-0.0849 mg/L	0.00371	4.36%
Na 589.592†	1735768.9	181 mg/L	7.5	181 mg/L	7.5	4.13%
Sr 407.771†	47539.1	0.0408 mg/L	0.00061	0.0408 mg/L	0.00061	1.50%
Li 670.784†	-40.4	-0.00403 mg/L	0.000311	-0.00403 mg/L	0.000311	7.72%
P 214.914†	65.3	0.0133 mg/L	0.00502	0.0133 mg/L	0.00502	37.61%

Sequence No.: 34 **Autosampler Location: 63**
Sample ID: L1311122417 **Date Collected: 11/26/2013 6:16:24 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1311122417

Analyte	Back Pressure	Flow
All	184.0 kPa	0.45 L/min

Mean Data: L1311122417

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2638591.5						19339.23	0.73%
YRADIAL	192502.6						4964.22	2.58%
Ga 417.206	865121.6						8728.28	1.01%
GaRADIAL	41745.6						1022.95	2.45%
Ag 328.068†	-1881.6	-0.00067	mg/L	0.000105	-0.00067	mg/L	0.000105	15.82%
Al 396.153†	223.0	0.0605	mg/L	0.00221	0.0605	mg/L	0.00221	3.64%
As 188.979†	-27.6	-0.0122	mg/L	0.00091	-0.0122	mg/L	0.00091	7.45%
Ba 233.527†	6852.3	0.0842	mg/L	0.00079	0.0842	mg/L	0.00079	0.94%
Be 234.861†	2596.5	-0.00004	mg/L	0.000063	-0.00004	mg/L	0.000063	176.02%
B 249.677†	2451.5	0.0282	mg/L	0.00092	0.0282	mg/L	0.00092	3.26%
Ca 227.546†	10989.7	56.3	mg/L	0.58	56.3	mg/L	0.58	1.02%
Cd 228.802†	41.3	0.00190	mg/L	0.000163	0.00190	mg/L	0.000163	8.59%
Co 228.616†	63.2	0.00250	mg/L	0.000339	0.00250	mg/L	0.000339	13.56%
Cr 267.716†	81.2	-0.00265	mg/L	0.000190	-0.00265	mg/L	0.000190	7.19%
Cu 327.393†	-472.1	-0.00128	mg/L	0.000160	-0.00128	mg/L	0.000160	12.50%
Fe 239.562†	44457.5	15.6	mg/L	0.53	15.6	mg/L	0.53	3.36%
Mg 279.077†	474.6	0.395	mg/L	0.0214	0.395	mg/L	0.0214	5.41%
Mn 257.610†	59153.3	0.101	mg/L	0.0006	0.101	mg/L	0.0006	0.61%
Mo 202.031†	34.2	-0.00315	mg/L	0.000533	-0.00315	mg/L	0.000533	16.92%
Ni 231.604†	441.5	0.00971	mg/L	0.000275	0.00971	mg/L	0.000275	2.83%
Pb 220.353†	67.4	0.00843	mg/L	0.002004	0.00843	mg/L	0.002004	23.78%
Sb 206.836†	0.3	0.00293	mg/L	0.002265	0.00293	mg/L	0.002265	77.32%
Se 196.026†	-4.8	-0.00113	mg/L	0.006425	-0.00113	mg/L	0.006425	567.44%
Si 251.611†	4153.9	0.113	mg/L	0.0014	0.113	mg/L	0.0014	1.20%
Sn 189.927†	-217.6	-0.0396	mg/L	0.00062	-0.0396	mg/L	0.00062	1.56%
Ti 334.940†	-5447.6	-0.00019	mg/L	0.000041	-0.00019	mg/L	0.000041	21.40%
Tl 190.801†	-37.7	-0.0260	mg/L	0.00105	-0.0260	mg/L	0.00105	4.03%
V 290.880†	1651.2	0.00293	mg/L	0.000645	0.00293	mg/L	0.000645	22.03%
Zn 206.200†	41985.0	1.58	mg/L	0.006	1.58	mg/L	0.006	0.38%
K 766.490†	178.1	-0.0639	mg/L	0.00429	-0.0639	mg/L	0.00429	6.72%
Na 589.592†	1750700.2	183	mg/L	5.3	183	mg/L	5.3	2.90%
Sr 407.771†	50150.7	0.0433	mg/L	0.00076	0.0433	mg/L	0.00076	1.76%
Li 670.784†	-36.1	-0.00397	mg/L	0.000281	-0.00397	mg/L	0.000281	7.08%
P 214.914†	48.8	-0.00392	mg/L	0.008795	-0.00392	mg/L	0.008795	224.57%

Sequence No.: 35 **Autosampler Location: 64**
Sample ID: L1311122418 **Date Collected: 11/26/2013 6:19:30 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1311122418

Analyte	Back Pressure	Flow
All	184.0 kPa	0.45 L/min

Approved: November 27, 2013

Mean Data: L1311122418

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2790628.1						19078.62	0.68%
YRADIAL	197050.5						4812.25	2.44%
Ga 417.206	897366.1						13885.64	1.55%
GaRADIAL	42414.9						765.40	1.80%
Ag 328.068†	-6020.1	-0.00376	mg/L	0.000910	-0.00376	mg/L	0.000910	24.21%
Al 396.153†	26.0	-0.00341	mg/L	0.004097	-0.00341	mg/L	0.004097	120.04%
As 188.979†	-14.6	0.00160	mg/L	0.001744	0.00160	mg/L	0.001744	108.79%
Ba 233.527†	5257.1	0.0620	mg/L	0.00068	0.0620	mg/L	0.00068	1.09%
Be 234.861†	7798.2	0.00066	mg/L	0.000316	0.00066	mg/L	0.000316	47.50%
B 249.677†	3063.6	0.0246	mg/L	0.00379	0.0246	mg/L	0.00379	15.41%
Ca 227.546†	1811.7	10.4	mg/L	0.12	10.4	mg/L	0.12	1.20%
Cd 228.802†	1.3	0.00020	mg/L	0.000042	0.00020	mg/L	0.000042	20.94%
Co 228.616†	66.9	0.00189	mg/L	0.000139	0.00189	mg/L	0.000139	7.36%
Cr 267.716†	2493.2	0.0166	mg/L	0.00017	0.0166	mg/L	0.00017	1.05%
Cu 327.393†	-28.0	0.00250	mg/L	0.000063	0.00250	mg/L	0.000063	2.52%
Fe 239.562†	128041.7	45.1	mg/L	0.02	45.1	mg/L	0.02	0.04%
Mg 279.077†	143.1	0.0734	mg/L	0.00397	0.0734	mg/L	0.00397	5.41%
Mn 257.610†	130744.5	0.230	mg/L	0.0068	0.230	mg/L	0.0068	2.97%
Mo 202.031†	-20.6	-0.00608	mg/L	0.000338	-0.00608	mg/L	0.000338	5.56%
Ni 231.604†	533.2	0.0124	mg/L	0.00012	0.0124	mg/L	0.00012	0.99%
Pb 220.353†	85.3	0.0105	mg/L	0.00132	0.0105	mg/L	0.00132	12.64%
Sb 206.836†	0.6	0.00401	mg/L	0.000759	0.00401	mg/L	0.000759	18.92%
Se 196.026†	-14.5	-0.00720	mg/L	0.002061	-0.00720	mg/L	0.002061	28.62%
Si 251.611†	1019.4	0.0191	mg/L	0.00035	0.0191	mg/L	0.00035	1.81%
Sn 189.927†	-63.3	-0.0132	mg/L	0.00153	-0.0132	mg/L	0.00153	11.62%
Ti 334.940†	773.1	0.00054	mg/L	0.001580	0.00054	mg/L	0.001580	291.12%
Tl 190.801†	-15.5	-0.0130	mg/L	0.00298	-0.0130	mg/L	0.00298	22.99%
V 290.880†	1612.4	-0.00022	mg/L	0.002210	-0.00022	mg/L	0.002210	994.29%
Zn 206.200†	9705.9	0.362	mg/L	0.0089	0.362	mg/L	0.0089	2.45%
K 766.490†	190.9	-0.0377	mg/L	0.01666	-0.0377	mg/L	0.01666	44.23%
Na 589.592†	1596972.5	164	mg/L	2.8	164	mg/L	2.8	1.68%
Sr 407.771†	6875.2	0.00137	mg/L	0.000120	0.00137	mg/L	0.000120	8.76%
Li 670.784†	-51.1	-0.00419	mg/L	0.000525	-0.00419	mg/L	0.000525	12.52%
P 214.914†	106.5	0.0564	mg/L	0.00784	0.0564	mg/L	0.00784	13.90%

Sequence No.: 36 **Autosampler Location: 65**
Sample ID: L1311122419 **Date Collected: 11/26/2013 6:22:36 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1311122419

Analyte	Back Pressure	Flow
All	183.0 kPa	0.45 L/min

Mean Data: L1311122419

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2750754.9						49117.62	1.79%
YRADIAL	190182.6						361.03	0.19%
Ga 417.206	906537.5						18135.21	2.00%
GaRADIAL	42168.4						737.32	1.75%
Ag 328.068†	88.6	0.00064	mg/L	0.000151	0.00064	mg/L	0.000151	23.70%
Al 396.153†	313.2	0.0897	mg/L	0.00165	0.0897	mg/L	0.00165	1.84%
As 188.979†	-19.8	-0.0105	mg/L	0.00207	-0.0105	mg/L	0.00207	19.63%
Ba 233.527†	20020.5	0.256	mg/L	0.0073	0.256	mg/L	0.0073	2.87%
Be 234.861†	190.6	-0.00017	mg/L	0.000092	-0.00017	mg/L	0.000092	55.52%
B 249.677†	2538.8	0.0357	mg/L	0.00117	0.0357	mg/L	0.00117	3.27%
Ca 227.546†	13980.1	71.1	mg/L	2.54	71.1	mg/L	2.54	3.57%
Cd 228.802†	-8.4	-0.00009	mg/L	0.000204	-0.00009	mg/L	0.000204	222.69%
Co 228.616†	30.9	0.00128	mg/L	0.000384	0.00128	mg/L	0.000384	30.07%
Cr 267.716†	199.3	-0.00050	mg/L	0.000016	-0.00050	mg/L	0.000016	3.18%
Cu 327.393†	-390.8	-0.00183	mg/L	0.000656	-0.00183	mg/L	0.000656	35.74%
Fe 239.562†	3626.5	1.26	mg/L	0.021	1.26	mg/L	0.021	1.67%

Approved: November 27, 2013

Mg 279.077†	696.7	0.608	mg/L	0.0172	0.608	mg/L	0.0172	2.82%
Mn 257.610†	48551.1	0.0816	mg/L	0.00197	0.0816	mg/L	0.00197	2.41%
Mo 202.031†	42.4	-0.00287	mg/L	0.000362	-0.00287	mg/L	0.000362	12.62%
Ni 231.604†	265.9	0.00464	mg/L	0.000157	0.00464	mg/L	0.000157	3.37%
Pb 220.353†	40.0	0.00423	mg/L	0.000675	0.00423	mg/L	0.000675	15.97%
Sb 206.836†	-0.6	0.00192	mg/L	0.001341	0.00192	mg/L	0.001341	69.85%
Se 196.026†	-3.6	-0.00244	mg/L	0.006461	-0.00244	mg/L	0.006461	265.10%
Si 251.611†	2996.0	0.0781	mg/L	0.00181	0.0781	mg/L	0.00181	2.32%
Sn 189.927†	-230.9	-0.0419	mg/L	0.00192	-0.0419	mg/L	0.00192	4.59%
Ti 334.940†	-8354.0	-0.00152	mg/L	0.000589	-0.00152	mg/L	0.000589	38.64%
Tl 190.801†	-39.9	-0.0273	mg/L	0.00845	-0.0273	mg/L	0.00845	30.92%
V 290.880†	1385.2	0.00290	mg/L	0.001056	0.00290	mg/L	0.001056	36.45%
Zn 206.200†	699.9	0.0214	mg/L	0.00036	0.0214	mg/L	0.00036	1.66%
K 766.490†	126.3	-0.0854	mg/L	0.00761	-0.0854	mg/L	0.00761	8.91%
Na 589.592†	1670103.0	173	mg/L	1.6	173	mg/L	1.6	0.90%
Sr 407.771†	40464.2	0.0331	mg/L	0.00012	0.0331	mg/L	0.00012	0.36%
Li 670.784†	-42.6	-0.00407	mg/L	0.000416	-0.00407	mg/L	0.000416	10.22%
P 214.914†	48.9	-0.00385	mg/L	0.004743	-0.00385	mg/L	0.004743	123.34%

Sequence No.: 37 **Autosampler Location: 66**
Sample ID: L1311122420 **Date Collected: 11/26/2013 6:25:39 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1311122420

Analyte	Back Pressure	Flow
All	183.0 kPa	0.45 L/min

Mean Data: L1311122420

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2778571.7						31623.22	1.14%
YRADIAL	189762.7						5590.98	2.95%
Ga 417.206	911988.5						6409.78	0.70%
GaRADIAL	41460.0						1047.50	2.53%
Ag 328.068†	-128.0	-0.00043	mg/L	0.000415	-0.00043	mg/L	0.000415	96.29%
Al 396.153†	1073.9	0.351	mg/L	0.0088	0.351	mg/L	0.0088	2.51%
As 188.979†	-11.2	-0.00645	mg/L	0.003395	-0.00645	mg/L	0.003395	52.67%
Ba 233.527†	3141.0	0.0368	mg/L	0.00028	0.0368	mg/L	0.00028	0.76%
Be 234.861†	82.5	-0.00023	mg/L	0.000084	-0.00023	mg/L	0.000084	36.48%
B 249.677†	4390.4	0.0631	mg/L	0.00010	0.0631	mg/L	0.00010	0.16%
Ca 227.546†	4044.1	20.6	mg/L	0.04	20.6	mg/L	0.04	0.21%
Cd 228.802†	13.9	0.00080	mg/L	0.000130	0.00080	mg/L	0.000130	16.34%
Co 228.616†	159.2	0.00750	mg/L	0.000254	0.00750	mg/L	0.000254	3.38%
Cr 267.716†	7273.1	0.0630	mg/L	0.00121	0.0630	mg/L	0.00121	1.93%
Cu 327.393†	-159.1	-0.00072	mg/L	0.000348	-0.00072	mg/L	0.000348	48.18%
Fe 239.562†	2394.1	0.828	mg/L	0.0294	0.828	mg/L	0.0294	3.55%
Mg 279.077†	438.2	0.370	mg/L	0.0256	0.370	mg/L	0.0256	6.92%
Mn 257.610†	11479.8	0.0160	mg/L	0.00030	0.0160	mg/L	0.00030	1.84%
Mo 202.031†	19.9	-0.00429	mg/L	0.000298	-0.00429	mg/L	0.000298	6.94%
Ni 231.604†	18.8	-0.00251	mg/L	0.000210	-0.00251	mg/L	0.000210	8.39%
Pb 220.353†	10690.0	1.83	mg/L	0.029	1.83	mg/L	0.029	1.56%
Sb 206.836†	1.8	0.00265	mg/L	0.000876	0.00265	mg/L	0.000876	33.06%
Se 196.026†	-4.7	-0.00393	mg/L	0.004457	-0.00393	mg/L	0.004457	113.37%
Si 251.611†	5269.6	0.146	mg/L	0.0055	0.146	mg/L	0.0055	3.78%
Sn 189.927†	-119.0	-0.0227	mg/L	0.00055	-0.0227	mg/L	0.00055	2.44%
Ti 334.940†	-739.8	0.00035	mg/L	0.000116	0.00035	mg/L	0.000116	33.16%
Tl 190.801†	-18.9	-0.0148	mg/L	0.00244	-0.0148	mg/L	0.00244	16.49%
V 290.880†	1276.2	0.00236	mg/L	0.000446	0.00236	mg/L	0.000446	18.93%
Zn 206.200†	11848.6	0.444	mg/L	0.0076	0.444	mg/L	0.0076	1.70%
K 766.490†	170.2	-0.0643	mg/L	0.00870	-0.0643	mg/L	0.00870	13.52%
Na 589.592†	1715619.3	178	mg/L	1.1	178	mg/L	1.1	0.64%
Sr 407.771†	15698.4	0.00985	mg/L	0.000250	0.00985	mg/L	0.000250	2.54%
Li 670.784†	-23.8	-0.00379	mg/L	0.000047	-0.00379	mg/L	0.000047	1.25%
P 214.914†	69.6	0.0178	mg/L	0.00919	0.0178	mg/L	0.00919	51.50%

Sequence No.: 38 **Autosampler Location: 6**

Approved: November 27, 2013

Sample ID: CCV
Analyst:
Initial Sample Wt:
Dilution:

Date Collected: 11/26/2013 6:28:46 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	183.0 kPa	0.45 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2648037.2						52899.73	2.00%
YRADIAL	184009.1						5117.36	2.78%
Ga 417.206	861282.4						26786.44	3.11%
GaRADIAL	40904.3						809.83	1.98%
Ag 328.068†	93283.5	0.381	mg/L	0.0011	0.381	mg/L	0.0011	0.29%
QC value within limits for Ag 328.068 Recovery = 95.17%								
Al 396.153†	28946.7	9.86	mg/L	0.107	9.86	mg/L	0.107	1.08%
QC value within limits for Al 396.153 Recovery = 98.59%								
As 188.979†	628.1	0.380	mg/L	0.0039	0.380	mg/L	0.0039	1.03%
QC value within limits for As 188.979 Recovery = 94.99%								
Ba 233.527†	73565.1	0.951	mg/L	0.0178	0.951	mg/L	0.0178	1.87%
QC value within limits for Ba 233.527 Recovery = 95.14%								
Be 234.861†	31243.0	0.0471	mg/L	0.00017	0.0471	mg/L	0.00017	0.36%
QC value within limits for Be 234.861 Recovery = 94.29%								
B 249.677†	31254.9	0.456	mg/L	0.0066	0.456	mg/L	0.0066	1.45%
QC value within limits for B 249.677 Recovery = 91.16%								
Ca 227.546†	1846.5	9.89	mg/L	0.136	9.89	mg/L	0.136	1.38%
QC value within limits for Ca 227.546 Recovery = 98.90%								
Cd 228.802†	1191.9	0.0466	mg/L	0.00146	0.0466	mg/L	0.00146	3.13%
QC value within limits for Cd 228.802 Recovery = 93.20%								
Co 228.616†	4152.2	0.198	mg/L	0.0021	0.198	mg/L	0.0021	1.06%
QC value within limits for Co 228.616 Recovery = 99.05%								
Cr 267.716†	53568.4	0.478	mg/L	0.0051	0.478	mg/L	0.0051	1.07%
QC value within limits for Cr 267.716 Recovery = 95.64%								
Cu 327.393†	98610.1	0.470	mg/L	0.0023	0.470	mg/L	0.0023	0.50%
QC value within limits for Cu 327.393 Recovery = 94.09%								
Fe 239.562†	10900.6	3.82	mg/L	0.097	3.82	mg/L	0.097	2.54%
QC value within limits for Fe 239.562 Recovery = 95.61%								
Mg 279.077†	10463.1	9.63	mg/L	0.199	9.63	mg/L	0.199	2.07%
QC value within limits for Mg 279.077 Recovery = 96.34%								
Mn 257.610†	278509.9	0.489	mg/L	0.0081	0.489	mg/L	0.0081	1.66%
QC value within limits for Mn 257.610 Recovery = 97.83%								
Mo 202.031†	15406.9	0.956	mg/L	0.0113	0.956	mg/L	0.0113	1.18%
QC value within limits for Mo 202.031 Recovery = 95.57%								
Ni 231.604†	16809.9	0.482	mg/L	0.0083	0.482	mg/L	0.0083	1.72%
QC value within limits for Ni 231.604 Recovery = 96.44%								
Pb 220.353†	2919.8	0.499	mg/L	0.0076	0.499	mg/L	0.0076	1.52%
QC value within limits for Pb 220.353 Recovery = 99.77%								
Sb 206.836†	2112.3	1.13	mg/L	0.026	1.13	mg/L	0.026	2.28%
QC value within limits for Sb 206.836 Recovery = 94.36%								
Se 196.026†	313.3	0.388	mg/L	0.0075	0.388	mg/L	0.0075	1.94%
QC value within limits for Se 196.026 Recovery = 96.92%								
Si 251.611†	156616.9	4.65	mg/L	0.023	4.65	mg/L	0.023	0.49%
QC value within limits for Si 251.611 Recovery = 93.09%								
Sn 189.927†	5751.4	0.982	mg/L	0.0126	0.982	mg/L	0.0126	1.28%
QC value within limits for Sn 189.927 Recovery = 98.23%								
Ti 334.940†	778672.0	0.967	mg/L	0.0138	0.967	mg/L	0.0138	1.43%
QC value within limits for Ti 334.940 Recovery = 96.72%								
Tl 190.801†	838.8	0.506	mg/L	0.0094	0.506	mg/L	0.0094	1.86%
QC value within limits for Tl 190.801 Recovery = 101.29%								
V 290.880†	175508.2	0.955	mg/L	0.0180	0.955	mg/L	0.0180	1.88%
QC value within limits for V 290.880 Recovery = 95.54%								
Zn 206.200†	25737.6	0.973	mg/L	0.0096	0.973	mg/L	0.0096	0.99%
QC value within limits for Zn 206.200 Recovery = 97.33%								
K 766.490†	78612.8	48.1	mg/L	0.52	48.1	mg/L	0.52	1.08%
QC value within limits for K 766.490 Recovery = 96.20%								
Na 589.592†	526081.1	49.6	mg/L	1.29	49.6	mg/L	1.29	2.60%
QC value within limits for Na 589.592 Recovery = 99.25%								

Approved: November 27, 2013

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Sr 407.771†          954324.7       0.951 mg/L        0.0129       0.951 mg/L        0.0129   1.36%
   QC value within limits for Sr 407.771  Recovery = 95.09%
Li 670.784†           65636.9       0.974 mg/L        0.0089       0.974 mg/L        0.0089   0.91%
   QC value within limits for Li 670.784  Recovery = 97.41%
P 214.914†             9586.4        9.96 mg/L         0.190        9.96 mg/L         0.190   1.90%
   QC value within limits for P 214.914  Recovery = 99.64%
All analyte(s) passed QC.
```

Sequence No.: 39 | **Autosampler Location: 1**
Sample ID: CCB | **Date Collected: 11/26/2013 6:30:53 PM**
Analyst: | **Data Type: Original**
Initial Sample Wt: | **Initial Sample Vol:**
Dilution: | **Sample Prep Vol:**

Nebulizer Parameters: CCB

Analyte	Back Pressure	Flow
All	184.0 kPa	0.45 L/min

Mean Data: CCB

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2739871.6						8335.86	0.30%
YRADIAL	185357.3						2197.32	1.19%
Ga 417.206	873933.4						14344.41	1.64%
GaRADIAL	40507.9						1027.03	2.54%
Ag 328.068†	-103.4	-0.00072	mg/L	0.000018	-0.00072	mg/L	0.000018	2.54%
QC value within limits for Ag 328.068 Recovery = Not calculated								
Al 396.153†	24.6	-0.00936	mg/L	0.000730	-0.00936	mg/L	0.000730	7.80%
QC value within limits for Al 396.153 Recovery = Not calculated								
As 188.979†	-1.0	-0.00082	mg/L	0.002158	-0.00082	mg/L	0.002158	262.20%
QC value within limits for As 188.979 Recovery = Not calculated								
Ba 233.527†	25.6	-0.00365	mg/L	0.000329	-0.00365	mg/L	0.000329	9.01%
QC value within limits for Ba 233.527 Recovery = Not calculated								
Be 234.861†	41.4	-0.00009	mg/L	0.000037	-0.00009	mg/L	0.000037	40.43%
QC value within limits for Be 234.861 Recovery = Not calculated								
B 249.677†	293.7	0.00320	mg/L	0.000783	0.00320	mg/L	0.000783	24.49%
QC value within limits for B 249.677 Recovery = Not calculated								
Ca 227.546†	-0.9	0.0649	mg/L	0.04881	0.0649	mg/L	0.04881	75.21%
QC value within limits for Ca 227.546 Recovery = Not calculated								
Cd 228.802†	-10.3	-0.00023	mg/L	0.000151	-0.00023	mg/L	0.000151	64.72%
QC value within limits for Cd 228.802 Recovery = Not calculated								
Co 228.616†	-16.7	-0.00091	mg/L	0.000103	-0.00091	mg/L	0.000103	11.23%
QC value within limits for Co 228.616 Recovery = Not calculated								
Cr 267.716†	79.8	-0.00147	mg/L	0.000158	-0.00147	mg/L	0.000158	10.74%
QC value within limits for Cr 267.716 Recovery = Not calculated								
Cu 327.393†	-110.9	-0.00057	mg/L	0.000731	-0.00057	mg/L	0.000731	128.78%
QC value within limits for Cu 327.393 Recovery = Not calculated								
Fe 239.562†	18.8	-0.00841	mg/L	0.002274	-0.00841	mg/L	0.002274	27.02%
QC value within limits for Fe 239.562 Recovery = Not calculated								
Mg 279.077†	12.9	-0.0223	mg/L	0.00200	-0.0223	mg/L	0.00200	8.98%
QC value within limits for Mg 279.077 Recovery = Not calculated								
Mn 257.610†	425.0	-0.00359	mg/L	0.000188	-0.00359	mg/L	0.000188	5.25%
QC value within limits for Mn 257.610 Recovery = Not calculated								
Mo 202.031†	-0.8	-0.00560	mg/L	0.000590	-0.00560	mg/L	0.000590	10.54%
QC value within limits for Mo 202.031 Recovery = Not calculated								
Ni 231.604†	4.2	-0.00292	mg/L	0.000473	-0.00292	mg/L	0.000473	16.18%
QC value within limits for Ni 231.604 Recovery = Not calculated								
Pb 220.353†	31.1	0.00278	mg/L	0.000598	0.00278	mg/L	0.000598	21.49%
QC value within limits for Pb 220.353 Recovery = Not calculated								
Sb 206.836†	5.1	0.00493	mg/L	0.001351	0.00493	mg/L	0.001351	27.39%
QC value within limits for Sb 206.836 Recovery = Not calculated								
Se 196.026†	-5.6	-0.00511	mg/L	0.000412	-0.00511	mg/L	0.000412	8.07%
QC value within limits for Se 196.026 Recovery = Not calculated								
Si 251.611†	-41.7	-0.0126	mg/L	0.00154	-0.0126	mg/L	0.00154	12.26%
QC value within limits for Si 251.611 Recovery = Not calculated								
Sn 189.927†	29.8	0.00276	mg/L	0.000464	0.00276	mg/L	0.000464	16.79%
QC value within limits for Sn 189.927 Recovery = Not calculated								
Ti 334.940†	297.9	-0.00142	mg/L	0.000128	-0.00142	mg/L	0.000128	8.97%
QC value within limits for Ti 334.940 Recovery = Not calculated								

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Tl 190.801†	-0.2	-0.00365	mg/L	0.000347	-0.00365	mg/L	0.000347	9.51%
QC value within limits for Tl 190.801 Recovery = Not calculated								
V 290.880†	1103.1	0.00150	mg/L	0.000619	0.00150	mg/L	0.000619	41.14%
QC value within limits for V 290.880 Recovery = Not calculated								
Zn 206.200†	215.2	0.00309	mg/L	0.000407	0.00309	mg/L	0.000407	13.18%
QC value within limits for Zn 206.200 Recovery = Not calculated								
K 766.490†	65.5	0.0505	mg/L	0.01985	0.0505	mg/L	0.01985	39.34%
QC value within limits for K 766.490 Recovery = Not calculated								
Na 589.592†	2466.9	0.218	mg/L	0.0565	0.218	mg/L	0.0565	25.98%
QC value within limits for Na 589.592 Recovery = Not calculated								
Sr 407.771†	901.2	-0.00432	mg/L	0.000499	-0.00432	mg/L	0.000499	11.54%
QC value within limits for Sr 407.771 Recovery = Not calculated								
Li 670.784†	169.5	-0.00091	mg/L	0.001707	-0.00091	mg/L	0.001707	187.95%
QC value within limits for Li 670.784 Recovery = Not calculated								
P 214.914†	81.0	0.0297	mg/L	0.00505	0.0297	mg/L	0.00505	16.99%
QC value within limits for P 214.914 Recovery = Not calculated								

All analyte(s) passed QC.

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Sequence No.: 40 **Autosampler Location: 67**
Sample ID: PBW 02 WG454360-03 **Date Collected: 11/26/2013 6:33:55 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: PBW 02 WG454360-03

Analyte	Back Pressure	Flow
All	184.0 kPa	0.45 L/min

Mean Data: PBW 02 WG454360-03

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2735107.6						55546.79	2.03%
YRADIAL	188157.7						4061.20	2.16%
Ga 417.206	872604.2						11197.26	1.28%
GaRADIAL	41219.6						537.29	1.30%
Ag 328.068†	-132.1	-0.00083	mg/L	0.000234	-0.00083	mg/L	0.000234	28.11%
Al 396.153†	15.2	-0.0126	mg/L	0.00383	-0.0126	mg/L	0.00383	30.47%
As 188.979†	4.4	0.00248	mg/L	0.003981	0.00248	mg/L	0.003981	160.25%
Ba 233.527†	-22.5	-0.00428	mg/L	0.000050	-0.00428	mg/L	0.000050	1.16%
Be 234.861†	20.4	-0.00012	mg/L	0.000038	-0.00012	mg/L	0.000038	31.39%
B 249.677†	95.7	0.00028	mg/L	0.000405	0.00028	mg/L	0.000405	146.12%
Ca 227.546†	-8.7	0.0252	mg/L	0.04796	0.0252	mg/L	0.04796	190.17%
Cd 228.802†	-8.7	-0.00019	mg/L	0.000034	-0.00019	mg/L	0.000034	18.23%
Co 228.616†	-14.7	-0.00082	mg/L	0.000484	-0.00082	mg/L	0.000484	59.40%
Cr 267.716†	42.4	-0.00180	mg/L	0.000112	-0.00180	mg/L	0.000112	6.21%
Cu 327.393†	-346.8	-0.00169	mg/L	0.000378	-0.00169	mg/L	0.000378	22.38%
Fe 239.562†	11.3	-0.0111	mg/L	0.00208	-0.0111	mg/L	0.00208	18.83%
Mg 279.077†	11.2	-0.0239	mg/L	0.00578	-0.0239	mg/L	0.00578	24.22%
Mn 257.610†	168.1	-0.00404	mg/L	0.000016	-0.00404	mg/L	0.000016	0.40%
Mo 202.031†	-4.7	-0.00584	mg/L	0.000242	-0.00584	mg/L	0.000242	4.14%
Ni 231.604†	0.1	-0.00304	mg/L	0.000319	-0.00304	mg/L	0.000319	10.48%
Pb 220.353†	24.4	0.00164	mg/L	0.001452	0.00164	mg/L	0.001452	88.79%
Sb 206.836†	1.1	0.00282	mg/L	0.002586	0.00282	mg/L	0.002586	91.66%
Se 196.026†	-3.8	-0.00298	mg/L	0.004850	-0.00298	mg/L	0.004850	162.67%
Si 251.611†	-109.8	-0.0146	mg/L	0.00023	-0.0146	mg/L	0.00023	1.60%
Sn 189.927†	9.2	-0.00076	mg/L	0.000931	-0.00076	mg/L	0.000931	123.12%
Ti 334.940†	47.6	-0.00174	mg/L	0.000160	-0.00174	mg/L	0.000160	9.23%
Tl 190.801†	-7.4	-0.00795	mg/L	0.004995	-0.00795	mg/L	0.004995	62.82%
V 290.880†	1092.7	0.00145	mg/L	0.000769	0.00145	mg/L	0.000769	53.20%
Zn 206.200†	201.7	0.00257	mg/L	0.000170	0.00257	mg/L	0.000170	6.62%
K 766.490†	-56.4	-0.0231	mg/L	0.03247	-0.0231	mg/L	0.03247	140.78%
Na 589.592†	1090.3	0.0921	mg/L	0.05153	0.0921	mg/L	0.05153	55.94%
Sr 407.771†	242.5	-0.00498	mg/L	0.000269	-0.00498	mg/L	0.000269	5.40%
Li 670.784†	49.6	-0.00269	mg/L	0.000876	-0.00269	mg/L	0.000876	32.50%
P 214.914†	75.9	0.0245	mg/L	0.01294	0.0245	mg/L	0.01294	52.93%

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Sequence No.: 41 **Autosampler Location: 68**
Sample ID: LCSW 02 WG454360-04 **Date Collected: 11/26/2013 6:36:57 PM**

Approved: November 27, 2013

Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: LCSW 02 WG454360-04

Analyte	Back Pressure	Flow
All	184.0 kPa	0.45 L/min

Mean Data: LCSW 02 WG454360-04

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2654807.2						27387.03	1.03%
YRADIAL	185134.5						3034.75	1.64%
Ga 417.206	858217.6						9498.93	1.11%
GaRADIAL	41025.7						497.15	1.21%
Ag 328.068†	46424.6	0.189	mg/L	0.0040	0.189	mg/L	0.0040	2.13%
Al 396.153†	14344.9	4.88	mg/L	0.206	4.88	mg/L	0.206	4.22%
As 188.979†	292.1	0.176	mg/L	0.0010	0.176	mg/L	0.0010	0.58%
Ba 233.527†	35843.7	0.461	mg/L	0.0042	0.461	mg/L	0.0042	0.90%
Be 234.861†	14815.0	0.0223	mg/L	0.00032	0.0223	mg/L	0.00032	1.43%
B 249.677†	62075.9	0.912	mg/L	0.0156	0.912	mg/L	0.0156	1.71%
Ca 227.546†	883.0	4.77	mg/L	0.049	4.77	mg/L	0.049	1.02%
Cd 228.802†	549.6	0.0216	mg/L	0.00050	0.0216	mg/L	0.00050	2.33%
Co 228.616†	1982.0	0.0945	mg/L	0.00166	0.0945	mg/L	0.00166	1.76%
Cr 267.716†	26122.4	0.232	mg/L	0.0034	0.232	mg/L	0.0034	1.49%
Cu 327.393†	49146.7	0.234	mg/L	0.0043	0.234	mg/L	0.0043	1.85%
Fe 239.562†	5321.3	1.86	mg/L	0.086	1.86	mg/L	0.086	4.63%
Mg 279.077†	5157.7	4.73	mg/L	0.208	4.73	mg/L	0.208	4.40%
Mn 257.610†	136924.7	0.238	mg/L	0.0027	0.238	mg/L	0.0027	1.14%
Mo 202.031†	7615.7	0.470	mg/L	0.0083	0.470	mg/L	0.0083	1.77%
Ni 231.604†	8254.4	0.235	mg/L	0.0053	0.235	mg/L	0.0053	2.27%
Pb 220.353†	1408.6	0.239	mg/L	0.0035	0.239	mg/L	0.0035	1.45%
Sb 206.836†	1019.0	0.547	mg/L	0.0083	0.547	mg/L	0.0083	1.51%
Se 196.026†	148.6	0.185	mg/L	0.0049	0.185	mg/L	0.0049	2.63%
Si 251.611†	77467.1	2.30	mg/L	0.031	2.30	mg/L	0.031	1.33%
Sn 189.927†	-28.2	-0.00716	mg/L	0.000733	-0.00716	mg/L	0.000733	10.23%
Ti 334.940†	371359.2	0.460	mg/L	0.0042	0.460	mg/L	0.0042	0.92%
Tl 190.801†	400.7	0.240	mg/L	0.0054	0.240	mg/L	0.0054	2.25%
V 290.880†	86835.5	0.470	mg/L	0.0049	0.470	mg/L	0.0049	1.05%
Zn 206.200†	12481.2	0.469	mg/L	0.0057	0.469	mg/L	0.0057	1.22%
K 766.490†	38433.7	23.4	mg/L	0.94	23.4	mg/L	0.94	4.02%
Na 589.592†	252998.3	23.4	mg/L	0.14	23.4	mg/L	0.14	0.60%
Sr 407.771†	458646.4	0.454	mg/L	0.0033	0.454	mg/L	0.0033	0.74%
Li 670.784†	32521.0	0.481	mg/L	0.0188	0.481	mg/L	0.0188	3.91%
P 214.914†	-146.2	-0.208	mg/L	0.0129	-0.208	mg/L	0.0129	6.21%

Sequence No.: 42 **Autosampler Location: 69**
Sample ID: L1311127002 WG454360-01 **Date Collected: 11/26/2013 6:39:03 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1311127002 WG454360-01

Analyte	Back Pressure	Flow
All	184.0 kPa	0.45 L/min

Mean Data: L1311127002 WG454360-01

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2778985.8						28097.65	1.01%
YRADIAL	190137.2						4712.17	2.48%
Ga 417.206	912602.4						16375.61	1.79%
GaRADIAL	42118.5						613.14	1.46%
Ag 328.068†	-21.0	-0.00045	mg/L	0.000619	-0.00045	mg/L	0.000619	138.19%
Al 396.153†	39.4	-0.00437	mg/L	0.003846	-0.00437	mg/L	0.003846	88.09%
As 188.979†	-10.4	-0.00602	mg/L	0.004006	-0.00602	mg/L	0.004006	66.54%
Ba 233.527†	529.8	0.00289	mg/L	0.000134	0.00289	mg/L	0.000134	4.62%

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Be 234.861†	65.1	-0.00006	mg/L	0.000021	-0.00006	mg/L	0.000021	36.93%
B 249.677†	895.9	0.0121	mg/L	0.00162	0.0121	mg/L	0.00162	13.44%
Ca 227.546†	5122.5	26.1	mg/L	0.41	26.1	mg/L	0.41	1.59%
Cd 228.802†	-12.7	-0.00030	mg/L	0.000124	-0.00030	mg/L	0.000124	41.48%
Co 228.616†	-14.2	-0.00078	mg/L	0.000200	-0.00078	mg/L	0.000200	25.58%
Cr 267.716†	118.7	-0.00112	mg/L	0.000071	-0.00112	mg/L	0.000071	6.33%
Cu 327.393†	-129.8	-0.00066	mg/L	0.001015	-0.00066	mg/L	0.001015	153.25%
Fe 239.562†	58.2	0.00529	mg/L	0.001464	0.00529	mg/L	0.001464	27.69%
Mg 279.077†	10353.6	9.52	mg/L	0.312	9.52	mg/L	0.312	3.28%
Mn 257.610†	2617.3	0.00029	mg/L	0.000089	0.00029	mg/L	0.000089	30.59%
Mo 202.031†	24.2	-0.00404	mg/L	0.000150	-0.00404	mg/L	0.000150	3.73%
Ni 231.604†	0.1	-0.00304	mg/L	0.000056	-0.00304	mg/L	0.000056	1.83%
Pb 220.353†	29.2	0.00246	mg/L	0.001665	0.00246	mg/L	0.001665	67.76%
Sb 206.836†	4.9	0.00484	mg/L	0.000571	0.00484	mg/L	0.000571	11.81%
Se 196.026†	-4.1	-0.00333	mg/L	0.004187	-0.00333	mg/L	0.004187	125.78%
Si 251.611†	59362.0	1.76	mg/L	0.028	1.76	mg/L	0.028	1.56%
Sn 189.927†	-141.9	-0.0266	mg/L	0.00033	-0.0266	mg/L	0.00033	1.22%
Ti 334.940†	-3504.2	-0.00224	mg/L	0.000278	-0.00224	mg/L	0.000278	12.40%
Tl 190.801†	-8.8	-0.00882	mg/L	0.001267	-0.00882	mg/L	0.001267	14.37%
V 290.880†	1501.1	0.00343	mg/L	0.000917	0.00343	mg/L	0.000917	26.70%
Zn 206.200†	150.3	0.00063	mg/L	0.000234	0.00063	mg/L	0.000234	36.93%
K 766.490†	3574.6	2.16	mg/L	0.033	2.16	mg/L	0.033	1.50%
Na 589.592†	94225.8	8.63	mg/L	0.207	8.63	mg/L	0.207	2.39%
Sr 407.771†	379525.1	0.374	mg/L	0.0065	0.374	mg/L	0.0065	1.72%
Li 670.784†	725.1	0.00737	mg/L	0.001318	0.00737	mg/L	0.001318	17.89%
P 214.914†	80.8	0.0295	mg/L	0.00634	0.0295	mg/L	0.00634	21.51%

Sequence No.: 43 **Autosampler Location: 70**
Sample ID: L1311127002DP WG454360-05 **Date Collected: 11/26/2013 6:42:09 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1311127002DP WG454360-05

Analyte	Back Pressure	Flow
All	183.0 kPa	0.45 L/min

Mean Data: L1311127002DP WG454360-05

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2794224.3						39380.58	1.41%
YRADIAL	190692.2						4005.83	2.10%
Ga 417.206	924792.5						22102.40	2.39%
GaRADIAL	42333.9						997.86	2.36%
Ag 328.068†	44.0	-0.00019	mg/L	0.000234	-0.00019	mg/L	0.000234	126.29%
Al 396.153†	18.0	-0.0117	mg/L	0.00060	-0.0117	mg/L	0.00060	5.13%
As 188.979†	-13.6	-0.00799	mg/L	0.002710	-0.00799	mg/L	0.002710	33.93%
Ba 233.527†	517.3	0.00273	mg/L	0.000142	0.00273	mg/L	0.000142	5.19%
Be 234.861†	88.6	-0.00002	mg/L	0.000040	-0.00002	mg/L	0.000040	193.92%
B 249.677†	595.9	0.00765	mg/L	0.000276	0.00765	mg/L	0.000276	3.61%
Ca 227.546†	5061.0	25.8	mg/L	0.79	25.8	mg/L	0.79	3.07%
Cd 228.802†	-11.6	-0.00024	mg/L	0.000073	-0.00024	mg/L	0.000073	30.02%
Co 228.616†	-20.7	-0.00109	mg/L	0.000351	-0.00109	mg/L	0.000351	32.10%
Cr 267.716†	101.1	-0.00128	mg/L	0.000054	-0.00128	mg/L	0.000054	4.19%
Cu 327.393†	-205.3	-0.00102	mg/L	0.000518	-0.00102	mg/L	0.000518	50.77%
Fe 239.562†	56.0	0.00449	mg/L	0.002753	0.00449	mg/L	0.002753	61.37%
Mg 279.077†	10132.4	9.31	mg/L	0.283	9.31	mg/L	0.283	3.04%
Mn 257.610†	2550.1	0.00017	mg/L	0.000093	0.00017	mg/L	0.000093	53.87%
Mo 202.031†	20.8	-0.00425	mg/L	0.000480	-0.00425	mg/L	0.000480	11.29%
Ni 231.604†	0.7	-0.00302	mg/L	0.000061	-0.00302	mg/L	0.000061	2.02%
Pb 220.353†	27.5	0.00217	mg/L	0.001014	0.00217	mg/L	0.001014	46.66%
Sb 206.836†	2.3	0.00344	mg/L	0.001265	0.00344	mg/L	0.001265	36.76%
Se 196.026†	-7.3	-0.00723	mg/L	0.005309	-0.00723	mg/L	0.005309	73.47%
Si 251.611†	58683.1	1.74	mg/L	0.041	1.74	mg/L	0.041	2.34%
Sn 189.927†	-138.4	-0.0260	mg/L	0.00132	-0.0260	mg/L	0.00132	5.08%
Ti 334.940†	-3546.9	-0.00234	mg/L	0.000082	-0.00234	mg/L	0.000082	3.51%
Tl 190.801†	-13.4	-0.0115	mg/L	0.00266	-0.0115	mg/L	0.00266	23.10%
V 290.880†	1334.5	0.00253	mg/L	0.001264	0.00253	mg/L	0.001264	50.01%
Zn 206.200†	128.4	-0.00020	mg/L	0.000287	-0.00020	mg/L	0.000287	146.28%

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K 766.490†	3411.5	2.07 mg/L	0.039	2.07 mg/L	0.039	1.91%
Na 589.592†	91870.2	8.41 mg/L	0.174	8.41 mg/L	0.174	2.06%
Sr 407.771†	371758.7	0.367 mg/L	0.0017	0.367 mg/L	0.0017	0.46%
Li 670.784†	532.9	0.00450 mg/L	0.001196	0.00450 mg/L	0.001196	26.57%
P 214.914†	86.8	0.0358 mg/L	0.00507	0.0358 mg/L	0.00507	14.17%

Sequence No.: 44 **Autosampler Location: 71**
Sample ID: L1311127002S WG454360-06 **Date Collected: 11/26/2013 6:45:16 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1311127002S WG454360-06

Analyte	Back Pressure	Flow
All	183.0 kPa	0.45 L/min

Mean Data: L1311127002S WG454360-06

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2668272.7						42653.03	1.60%
YRADIAL	189293.4						1433.45	0.76%
Ga 417.206	880521.9						18239.49	2.07%
GaRADIAL	42675.1						215.83	0.51%
Ag 328.068†	45330.1	0.185	mg/L	0.0018	0.185	mg/L	0.0018	1.00%
Al 396.153†	13715.9	4.66	mg/L	0.036	4.66	mg/L	0.036	0.77%
As 188.979†	295.1	0.179	mg/L	0.0010	0.179	mg/L	0.0010	0.58%
Ba 233.527†	36377.3	0.468	mg/L	0.0081	0.468	mg/L	0.0081	1.74%
Be 234.861†	14648.3	0.0220	mg/L	0.00021	0.0220	mg/L	0.00021	0.93%
B 249.677†	62260.9	0.915	mg/L	0.0149	0.915	mg/L	0.0149	1.63%
Ca 227.546†	5923.1	30.4	mg/L	0.66	30.4	mg/L	0.66	2.17%
Cd 228.802†	535.0	0.0210	mg/L	0.00045	0.0210	mg/L	0.00045	2.13%
Co 228.616†	1939.0	0.0924	mg/L	0.00202	0.0924	mg/L	0.00202	2.19%
Cr 267.716†	26235.4	0.233	mg/L	0.0049	0.233	mg/L	0.0049	2.10%
Cu 327.393†	47516.0	0.227	mg/L	0.0022	0.227	mg/L	0.0022	0.98%
Fe 239.562†	5212.8	1.82	mg/L	0.030	1.82	mg/L	0.030	1.63%
Mg 279.077†	14844.9	13.7	mg/L	0.12	13.7	mg/L	0.12	0.90%
Mn 257.610†	137977.1	0.240	mg/L	0.0053	0.240	mg/L	0.0053	2.21%
Mo 202.031†	7874.6	0.486	mg/L	0.0120	0.486	mg/L	0.0120	2.47%
Ni 231.604†	8239.8	0.235	mg/L	0.0056	0.235	mg/L	0.0056	2.38%
Pb 220.353†	1383.7	0.235	mg/L	0.0052	0.235	mg/L	0.0052	2.20%
Sb 206.836†	1013.1	0.544	mg/L	0.0097	0.544	mg/L	0.0097	1.79%
Se 196.026†	146.3	0.182	mg/L	0.0096	0.182	mg/L	0.0096	5.30%
Si 251.611†	135121.2	4.02	mg/L	0.054	4.02	mg/L	0.054	1.33%
Sn 189.927†	-151.7	-0.0283	mg/L	0.00059	-0.0283	mg/L	0.00059	2.09%
Ti 334.940†	387608.2	0.484	mg/L	0.0094	0.484	mg/L	0.0094	1.94%
Tl 190.801†	383.6	0.230	mg/L	0.0082	0.230	mg/L	0.0082	3.58%
V 290.880†	87019.6	0.471	mg/L	0.0126	0.471	mg/L	0.0126	2.67%
Zn 206.200†	12437.5	0.468	mg/L	0.0106	0.468	mg/L	0.0106	2.27%
K 766.490†	40018.1	24.3	mg/L	0.36	24.3	mg/L	0.36	1.50%
Na 589.592†	332329.7	30.9	mg/L	0.16	30.9	mg/L	0.16	0.51%
Sr 407.771†	815035.0	0.811	mg/L	0.0053	0.811	mg/L	0.0053	0.66%
Li 670.784†	31594.7	0.467	mg/L	0.0075	0.467	mg/L	0.0075	1.60%
P 214.914†	-138.4	-0.200	mg/L	0.0174	-0.200	mg/L	0.0174	8.72%

Sequence No.: 45 **Autosampler Location: 72**
Sample ID: L1311127402 **Date Collected: 11/26/2013 6:47:22 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1311127402

Analyte	Back Pressure	Flow
All	184.0 kPa	0.45 L/min

Mean Data: L1311127402

Analyte	Mean Corrected	Calib.	Sample

Approved: November 27, 2013

Analyte	Intensity	Conc.	Units	Std.Dev.	Conc.	Units	Std.Dev.	RSD
Y 371.029	2758564.5						44145.11	1.60%
YRADIAL	184108.7						5818.93	3.16%
Ga 417.206	914842.1						19274.31	2.11%
GaRADIAL	41452.9						1052.95	2.54%
Ag 328.068†	78.2	-0.00013	mg/L	0.000367	-0.00013	mg/L	0.000367	276.09%
Al 396.153†	39.1	-0.00450	mg/L	0.002880	-0.00450	mg/L	0.002880	64.05%
As 188.979†	-15.9	-0.00923	mg/L	0.002979	-0.00923	mg/L	0.002979	32.27%
Ba 233.527†	2017.4	0.0222	mg/L	0.00057	0.0222	mg/L	0.00057	2.58%
Be 234.861†	52.2	0.00002	mg/L	0.000066	0.00002	mg/L	0.000066	379.66%
B 249.677†	1024.5	0.0139	mg/L	0.00079	0.0139	mg/L	0.00079	5.71%
Ca 227.546†	6251.2	31.8	mg/L	1.00	31.8	mg/L	1.00	3.15%
Cd 228.802†	-7.1	-0.00005	mg/L	0.000076	-0.00005	mg/L	0.000076	155.02%
Co 228.616†	42.6	0.00193	mg/L	0.000168	0.00193	mg/L	0.000168	8.67%
Cr 267.716†	162.1	-0.00074	mg/L	0.000131	-0.00074	mg/L	0.000131	17.54%
Cu 327.393†	-56.8	-0.00031	mg/L	0.000381	-0.00031	mg/L	0.000381	123.62%
Fe 239.562†	522.2	0.169	mg/L	0.0076	0.169	mg/L	0.0076	4.52%
Mg 279.077†	15569.1	14.3	mg/L	0.09	14.3	mg/L	0.09	0.65%
Mn 257.610†	760250.5	1.34	mg/L	0.005	1.34	mg/L	0.005	0.35%
Mo 202.031†	32.2	-0.00325	mg/L	0.000199	-0.00325	mg/L	0.000199	6.11%
Ni 231.604†	181.2	0.00219	mg/L	0.000114	0.00219	mg/L	0.000114	5.19%
Pb 220.353†	29.0	0.00161	mg/L	0.001370	0.00161	mg/L	0.001370	85.10%
Sb 206.836†	4.4	0.00455	mg/L	0.002301	0.00455	mg/L	0.002301	50.56%
Se 196.026†	2.7	0.00466	mg/L	0.004416	0.00466	mg/L	0.004416	94.73%
Si 251.611†	75572.9	2.25	mg/L	0.048	2.25	mg/L	0.048	2.13%
Sn 189.927†	-160.7	-0.0298	mg/L	0.00063	-0.0298	mg/L	0.00063	2.12%
Ti 334.940†	-4264.1	-0.00233	mg/L	0.000077	-0.00233	mg/L	0.000077	3.32%
Tl 190.801†	-15.6	-0.0142	mg/L	0.00248	-0.0142	mg/L	0.00248	17.45%
V 290.880†	1579.4	0.00372	mg/L	0.001178	0.00372	mg/L	0.001178	31.65%
Zn 206.200†	274.4	0.00533	mg/L	0.000436	0.00533	mg/L	0.000436	8.18%
K 766.490†	5260.1	3.19	mg/L	0.029	3.19	mg/L	0.029	0.91%
Na 589.592†	38543.8	3.51	mg/L	0.028	3.51	mg/L	0.028	0.79%
Sr 407.771†	328282.3	0.323	mg/L	0.0032	0.323	mg/L	0.0032	0.98%
Li 670.784†	518.0	0.00428	mg/L	0.001519	0.00428	mg/L	0.001519	35.49%
P 214.914†	164.1	0.117	mg/L	0.0082	0.117	mg/L	0.0082	7.07%

Sequence No.: 46 **Autosampler Location: 73**
Sample ID: L1311127404 **Date Collected: 11/26/2013 6:50:25 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1311127404

Analyte	Back Pressure	Flow
All	184.0 kPa	0.45 L/min

Mean Data: L1311127404

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2732625.3						49042.42	1.79%
YRADIAL	186591.0						3925.19	2.10%
Ga 417.206	911477.6						24908.95	2.73%
GaRADIAL	41242.4						546.16	1.32%
Ag 328.068†	357.8	0.00092	mg/L	0.000307	0.00092	mg/L	0.000307	33.27%
Al 396.153†	3.9	-0.0167	mg/L	0.00088	-0.0167	mg/L	0.00088	5.30%
As 188.979†	-12.3	-0.00654	mg/L	0.003699	-0.00654	mg/L	0.003699	56.56%
Ba 233.527†	1719.3	0.0183	mg/L	0.00042	0.0183	mg/L	0.00042	2.28%
Be 234.861†	61.5	-0.00004	mg/L	0.000071	-0.00004	mg/L	0.000071	184.38%
B 249.677†	1186.0	0.0164	mg/L	0.00189	0.0164	mg/L	0.00189	11.54%
Ca 227.546†	10976.3	55.8	mg/L	1.74	55.8	mg/L	1.74	3.11%
Cd 228.802†	-14.7	-0.00037	mg/L	0.000132	-0.00037	mg/L	0.000132	35.13%
Co 228.616†	-27.7	-0.00142	mg/L	0.000280	-0.00142	mg/L	0.000280	19.70%
Cr 267.716†	133.7	-0.00098	mg/L	0.000050	-0.00098	mg/L	0.000050	5.08%
Cu 327.393†	-329.2	-0.00162	mg/L	0.000911	-0.00162	mg/L	0.000911	56.30%
Fe 239.562†	5.4	-0.0135	mg/L	0.00112	-0.0135	mg/L	0.00112	8.25%
Mg 279.077†	21571.8	19.9	mg/L	0.27	19.9	mg/L	0.27	1.37%
Mn 257.610†	108633.4	0.188	mg/L	0.0043	0.188	mg/L	0.0043	2.31%
Mo 202.031†	43.9	-0.00277	mg/L	0.000403	-0.00277	mg/L	0.000403	14.55%
Ni 231.604†	-8.5	-0.00329	mg/L	0.000035	-0.00329	mg/L	0.000035	1.07%

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Pb 220.353†	27.1	0.00198	mg/L	0.000983	0.00198	mg/L	0.000983	49.54%
Sb 206.836†	2.3	0.00341	mg/L	0.001059	0.00341	mg/L	0.001059	31.05%
Se 196.026†	-6.3	-0.00610	mg/L	0.000120	-0.00610	mg/L	0.000120	1.97%
Si 251.611†	94489.1	2.81	mg/L	0.079	2.81	mg/L	0.079	2.83%
Sn 189.927†	-212.0	-0.0386	mg/L	0.00152	-0.0386	mg/L	0.00152	3.94%
Ti 334.940†	-7893.7	-0.00324	mg/L	0.000063	-0.00324	mg/L	0.000063	1.95%
Tl 190.801†	-17.0	-0.0139	mg/L	0.00485	-0.0139	mg/L	0.00485	34.92%
V 290.880†	1748.8	0.00452	mg/L	0.001338	0.00452	mg/L	0.001338	29.60%
Zn 206.200†	110.5	-0.00087	mg/L	0.000090	-0.00087	mg/L	0.000090	10.37%
K 766.490†	5818.6	3.50	mg/L	0.043	3.50	mg/L	0.043	1.23%
Na 589.592†	318895.4	29.7	mg/L	0.48	29.7	mg/L	0.48	1.62%
Sr 407.771†	1036967.2	1.03	mg/L	0.021	1.03	mg/L	0.021	2.01%
Li 670.784†	1557.0	0.0198	mg/L	0.00043	0.0198	mg/L	0.00043	2.19%
P 214.914†	162.2	0.115	mg/L	0.0082	0.115	mg/L	0.0082	7.18%

Sequence No.: 47 **Autosampler Location: 74**
Sample ID: L1311127406 **Date Collected: 11/26/2013 6:53:31 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1311127406

Analyte	Back Pressure	Flow
All	184.0 kPa	0.45 L/min

Mean Data: L1311127406

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2706388.6						39012.98	1.44%
YRADIAL	188473.6						6838.59	3.63%
Ga 417.206	900061.0						13049.41	1.45%
GaRADIAL	42858.6						1275.59	2.98%
Ag 328.068†	155.4	0.00023	mg/L	0.000305	0.00023	mg/L	0.000305	131.39%
Al 396.153†	18.2	-0.0117	mg/L	0.00315	-0.0117	mg/L	0.00315	27.02%
As 188.979†	-6.6	-0.00363	mg/L	0.002151	-0.00363	mg/L	0.002151	59.27%
Ba 233.527†	1736.4	0.0186	mg/L	0.00031	0.0186	mg/L	0.00031	1.69%
Be 234.861†	48.5	-0.00008	mg/L	0.000036	-0.00008	mg/L	0.000036	46.93%
B 249.677†	779.4	0.0104	mg/L	0.00043	0.0104	mg/L	0.00043	4.14%
Ca 227.546†	6091.7	31.0	mg/L	0.48	31.0	mg/L	0.48	1.55%
Cd 228.802†	-8.8	-0.00015	mg/L	0.000101	-0.00015	mg/L	0.000101	65.24%
Co 228.616†	-19.8	-0.00105	mg/L	0.000246	-0.00105	mg/L	0.000246	23.35%
Cr 267.716†	106.4	-0.00123	mg/L	0.000089	-0.00123	mg/L	0.000089	7.20%
Cu 327.393†	-389.3	-0.00190	mg/L	0.000187	-0.00190	mg/L	0.000187	9.85%
Fe 239.562†	53.0	0.00339	mg/L	0.001225	0.00339	mg/L	0.001225	36.15%
Mg 279.077†	13989.6	12.9	mg/L	0.70	12.9	mg/L	0.70	5.45%
Mn 257.610†	31899.9	0.0521	mg/L	0.00072	0.0521	mg/L	0.00072	1.39%
Mo 202.031†	23.2	-0.00409	mg/L	0.000205	-0.00409	mg/L	0.000205	5.01%
Ni 231.604†	-2.2	-0.00310	mg/L	0.000327	-0.00310	mg/L	0.000327	10.55%
Pb 220.353†	26.4	0.00194	mg/L	0.001336	0.00194	mg/L	0.001336	68.97%
Sb 206.836†	-2.3	0.00097	mg/L	0.000408	0.00097	mg/L	0.000408	42.05%
Se 196.026†	-2.3	-0.00111	mg/L	0.006357	-0.00111	mg/L	0.006357	573.76%
Si 251.611†	83973.8	2.50	mg/L	0.040	2.50	mg/L	0.040	1.60%
Sn 189.927†	-160.8	-0.0299	mg/L	0.00035	-0.0299	mg/L	0.00035	1.16%
Ti 334.940†	-4332.1	-0.00254	mg/L	0.000181	-0.00254	mg/L	0.000181	7.13%
Tl 190.801†	-16.5	-0.0134	mg/L	0.00108	-0.0134	mg/L	0.00108	8.02%
V 290.880†	1481.4	0.00324	mg/L	0.001029	0.00324	mg/L	0.001029	31.80%
Zn 206.200†	125.4	-0.00031	mg/L	0.000321	-0.00031	mg/L	0.000321	103.07%
K 766.490†	3579.5	2.16	mg/L	0.017	2.16	mg/L	0.017	0.81%
Na 589.592†	152832.9	14.1	mg/L	0.62	14.1	mg/L	0.62	4.43%
Sr 407.771†	511936.8	0.507	mg/L	0.0037	0.507	mg/L	0.0037	0.73%
Li 670.784†	712.6	0.00718	mg/L	0.000844	0.00718	mg/L	0.000844	11.75%
P 214.914†	72.5	0.0208	mg/L	0.01652	0.0208	mg/L	0.01652	79.40%

Sequence No.: 48 **Autosampler Location: 75**
Sample ID: L1311127406PS WG454461-01 **Date Collected: 11/26/2013 6:56:37 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Approved: November 27, 2013

Nebulizer Parameters: L1311127406PS WG454461-01

Analyte	Back Pressure	Flow
All	184.0 kPa	0.45 L/min

Mean Data: L1311127406PS WG454461-01

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2725441.3						21472.50	0.79%
YRADIAL	184272.5						2889.17	1.57%
Ga 417.206	892953.4						6328.00	0.71%
GaRADIAL	41440.1						648.92	1.57%
Ag 328.068†	46510.5	0.190	mg/L	0.0056	0.190	mg/L	0.0056	2.93%
Al 396.153†	14519.5	4.94	mg/L	0.143	4.94	mg/L	0.143	2.89%
As 188.979†	293.6	0.178	mg/L	0.0037	0.178	mg/L	0.0037	2.06%
Ba 233.527†	38041.5	0.490	mg/L	0.0228	0.490	mg/L	0.0228	4.65%
Be 234.861†	15186.9	0.0228	mg/L	0.00075	0.0228	mg/L	0.00075	3.29%
B 249.677†	64216.7	0.944	mg/L	0.0444	0.944	mg/L	0.0444	4.70%
Ca 227.546†	6466.2	33.1	mg/L	0.58	33.1	mg/L	0.58	1.76%
Cd 228.802†	545.6	0.0214	mg/L	0.00018	0.0214	mg/L	0.00018	0.86%
Co 228.616†	1966.7	0.0938	mg/L	0.00118	0.0938	mg/L	0.00118	1.26%
Cr 267.716†	26568.7	0.236	mg/L	0.0086	0.236	mg/L	0.0086	3.64%
Cu 327.393†	48424.6	0.231	mg/L	0.0078	0.231	mg/L	0.0078	3.37%
Fe 239.562†	5558.2	1.94	mg/L	0.055	1.94	mg/L	0.055	2.85%
Mg 279.077†	17814.6	16.4	mg/L	0.36	16.4	mg/L	0.36	2.21%
Mn 257.610†	163002.8	0.284	mg/L	0.0043	0.284	mg/L	0.0043	1.51%
Mo 202.031†	7871.6	0.486	mg/L	0.0212	0.486	mg/L	0.0212	4.36%
Ni 231.604†	8181.6	0.233	mg/L	0.0082	0.233	mg/L	0.0082	3.53%
Pb 220.353†	1406.3	0.239	mg/L	0.0025	0.239	mg/L	0.0025	1.05%
Sb 206.836†	1031.2	0.554	mg/L	0.0042	0.554	mg/L	0.0042	0.76%
Se 196.026†	147.4	0.183	mg/L	0.0059	0.183	mg/L	0.0059	3.24%
Si 251.611†	156277.4	4.65	mg/L	0.179	4.65	mg/L	0.179	3.84%
Sn 189.927†	-150.4	-0.0281	mg/L	0.00117	-0.0281	mg/L	0.00117	4.17%
Ti 334.940†	380780.2	0.476	mg/L	0.0041	0.476	mg/L	0.0041	0.86%
Tl 190.801†	389.2	0.233	mg/L	0.0074	0.233	mg/L	0.0074	3.18%
V 290.880†	89280.1	0.483	mg/L	0.0261	0.483	mg/L	0.0261	5.40%
Zn 206.200†	12368.7	0.465	mg/L	0.0218	0.465	mg/L	0.0218	4.69%
K 766.490†	42111.4	25.6	mg/L	0.78	25.6	mg/L	0.78	3.06%
Na 589.592†	392719.6	36.7	mg/L	0.14	36.7	mg/L	0.14	0.39%
Sr 407.771†	931406.2	0.927	mg/L	0.0083	0.927	mg/L	0.0083	0.90%
Li 670.784†	33860.1	0.501	mg/L	0.0017	0.501	mg/L	0.0017	0.35%
P 214.914†	-124.1	-0.185	mg/L	0.0073	-0.185	mg/L	0.0073	3.97%

Sequence No.: 49 — **Autosampler Location: 76**
Sample ID: L1311127406DL WG454461-02 — **Date Collected: 11/26/2013 6:58:44 PM**
Analyst: JYH — **Data Type: Original**
Initial Sample Wt: — **Initial Sample Vol:**
Dilution: — **Sample Prep Vol:**

Nebulizer Parameters: L1311127406DL WG454461-02

Analyte	Back Pressure	Flow
All	184.0 kPa	0.45 L/min

Mean Data: L1311127406DL WG454461-02

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2724726.5						33169.88	1.22%
YRADIAL	186229.7						2203.00	1.18%
Ga 417.206	882084.1						12244.19	1.39%
GaRADIAL	41245.3						744.65	1.81%
Ag 328.068†	58.6	-0.00008	mg/L	0.000246	-0.00008	mg/L	0.000246	301.60%
Al 396.153†	23.9	-0.00959	mg/L	0.003914	-0.00959	mg/L	0.003914	40.82%
As 188.979†	-1.5	-0.00102	mg/L	0.000505	-0.00102	mg/L	0.000505	49.50%
Ba 233.527†	365.7	0.00076	mg/L	0.000088	0.00076	mg/L	0.000088	11.50%
Be 234.861†	101.8	0.00000	mg/L	0.000031	0.00000	mg/L	0.000031	>999.9%
B 249.677†	571.6	0.00729	mg/L	0.001217	0.00729	mg/L	0.001217	16.69%
Ca 227.546†	1259.2	6.46	mg/L	0.158	6.46	mg/L	0.158	2.44%

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Cd 228.802†	-11.4	-0.00027 mg/L	0.000066	-0.00027 mg/L	0.000066	24.42%
Co 228.616†	-12.4	-0.00071 mg/L	0.000057	-0.00071 mg/L	0.000057	8.01%
Cr 267.716†	82.6	-0.00144 mg/L	0.000131	-0.00144 mg/L	0.000131	9.10%
Cu 327.393†	-206.8	-0.00103 mg/L	0.000108	-0.00103 mg/L	0.000108	10.48%
Fe 239.562†	26.5	-0.00577 mg/L	0.000315	-0.00577 mg/L	0.000315	5.46%
Mg 279.077†	2844.0	2.59 mg/L	0.046	2.59 mg/L	0.046	1.78%
Mn 257.610†	6600.3	0.00734 mg/L	0.000157	0.00734 mg/L	0.000157	2.13%
Mo 202.031†	-4.1	-0.00580 mg/L	0.000473	-0.00580 mg/L	0.000473	8.14%
Ni 231.604†	4.3	-0.00292 mg/L	0.000167	-0.00292 mg/L	0.000167	5.73%
Pb 220.353†	22.1	0.00124 mg/L	0.001179	0.00124 mg/L	0.001179	95.33%
Sb 206.836†	-0.7	0.00183 mg/L	0.001489	0.00183 mg/L	0.001489	81.33%
Se 196.026†	0.3	0.00209 mg/L	0.001696	0.00209 mg/L	0.001696	81.00%
Si 251.611†	17250.6	0.504 mg/L	0.0072	0.504 mg/L	0.0072	1.44%
Sn 189.927†	-44.8	-0.01000 mg/L	0.000783	-0.01000 mg/L	0.000783	7.83%
Ti 334.940†	-748.4	-0.00176 mg/L	0.000101	-0.00176 mg/L	0.000101	5.71%
Tl 190.801†	-7.9	-0.00828 mg/L	0.002512	-0.00828 mg/L	0.002512	30.34%
V 290.880†	1029.8	0.00103 mg/L	0.000732	0.00103 mg/L	0.000732	70.78%
Zn 206.200†	99.4	-0.00130 mg/L	0.000431	-0.00130 mg/L	0.000431	33.27%
K 766.490†	813.1	0.500 mg/L	0.0793	0.500 mg/L	0.0793	15.87%
Na 589.592†	32585.1	2.97 mg/L	0.013	2.97 mg/L	0.013	0.45%
Sr 407.771†	103982.2	0.0988 mg/L	0.00145	0.0988 mg/L	0.00145	1.46%
Li 670.784†	252.9	0.00033 mg/L	0.000881	0.00033 mg/L	0.000881	264.57%
P 214.914†	101.5	0.0511 mg/L	0.00517	0.0511 mg/L	0.00517	10.11%

Sequence No.: 50 **Autosampler Location: 7**
Sample ID: CCV **Date Collected: 11/26/2013 7:01:46 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	183.0 kPa	0.45 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2684787.7						70764.40	2.64%
YRADIAL	189354.1						4315.82	2.28%
Ga 417.206	878645.8						33474.52	3.81%
GaRADIAL	42074.7						399.23	0.95%
Ag 328.068†	94330.8	0.385	mg/L	0.0116	0.385	mg/L	0.0116	3.02%
QC value within limits for Ag 328.068 Recovery = 96.25%								
Al 396.153†	29493.9	10.0	mg/L	0.05	10.0	mg/L	0.05	0.51%
QC value within limits for Al 396.153 Recovery = 100.45%								
As 188.979†	611.9	0.370	mg/L	0.0097	0.370	mg/L	0.0097	2.63%
QC value within limits for As 188.979 Recovery = 92.47%								
Ba 233.527†	75061.0	0.971	mg/L	0.0233	0.971	mg/L	0.0233	2.40%
QC value within limits for Ba 233.527 Recovery = 97.08%								
Be 234.861†	31247.8	0.0472	mg/L	0.00157	0.0472	mg/L	0.00157	3.33%
QC value within limits for Be 234.861 Recovery = 94.30%								
B 249.677†	32059.4	0.468	mg/L	0.0113	0.468	mg/L	0.0113	2.41%
QC value within limits for B 249.677 Recovery = 93.54%								
Ca 227.546†	1842.8	9.88	mg/L	0.282	9.88	mg/L	0.282	2.86%
QC value within limits for Ca 227.546 Recovery = 98.80%								
Cd 228.802†	1133.6	0.0443	mg/L	0.00238	0.0443	mg/L	0.00238	5.37%
QC value less than the lower limit for Cd 228.802 Recovery = 88.60%								
Co 228.616†	4084.1	0.195	mg/L	0.0041	0.195	mg/L	0.0041	2.11%
QC value within limits for Co 228.616 Recovery = 97.44%								
Cr 267.716†	54568.9	0.487	mg/L	0.0126	0.487	mg/L	0.0126	2.59%
QC value within limits for Cr 267.716 Recovery = 97.44%								
Cu 327.393†	101293.3	0.483	mg/L	0.0139	0.483	mg/L	0.0139	2.88%
QC value within limits for Cu 327.393 Recovery = 96.64%								
Fe 239.562†	11021.9	3.87	mg/L	0.071	3.87	mg/L	0.071	1.83%
QC value within limits for Fe 239.562 Recovery = 96.68%								
Mg 279.077†	10621.7	9.78	mg/L	0.243	9.78	mg/L	0.243	2.48%
QC value within limits for Mg 279.077 Recovery = 97.81%								
Mn 257.610†	285059.9	0.501	mg/L	0.0115	0.501	mg/L	0.0115	2.31%
QC value within limits for Mn 257.610 Recovery = 100.15%								

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Mo 202.031†            15855.6       0.984 mg/L        0.0246       0.984 mg/L        0.0246   2.50%
   QC value within limits for Mo 202.031  Recovery = 98.37%
Ni 231.604†            17112.1       0.491 mg/L        0.0138       0.491 mg/L        0.0138   2.82%
   QC value within limits for Ni 231.604  Recovery = 98.19%
Pb 220.353†             2855.1       0.488 mg/L        0.0102       0.488 mg/L        0.0102   2.09%
   QC value within limits for Pb 220.353  Recovery = 97.56%
Sb 206.836†             2079.7        1.11 mg/L         0.043        1.11 mg/L         0.043   3.90%
   QC value within limits for Sb 206.836  Recovery = 92.90%
Se 196.026†              307.7       0.381 mg/L        0.0113       0.381 mg/L        0.0113   2.97%
   QC value within limits for Se 196.026  Recovery = 95.19%
Si 251.611†           160189.9        4.76 mg/L         0.143        4.76 mg/L         0.143   3.01%
   QC value within limits for Si 251.611  Recovery = 95.21%
Sn 189.927†             5699.8       0.973 mg/L        0.0228       0.973 mg/L        0.0228   2.34%
   QC value within limits for Sn 189.927  Recovery = 97.35%
Ti 334.940†           776217.9       0.964 mg/L        0.0053       0.964 mg/L        0.0053   0.55%
   QC value within limits for Ti 334.940  Recovery = 96.41%
Tl 190.801†              821.7       0.496 mg/L        0.0143       0.496 mg/L        0.0143   2.87%
   QC value within limits for Tl 190.801  Recovery = 99.27%
V 290.880†            179970.0       0.980 mg/L        0.0206       0.980 mg/L        0.0206   2.10%
   QC value within limits for V 290.880  Recovery = 97.98%
Zn 206.200†            25856.0       0.978 mg/L        0.0273       0.978 mg/L        0.0273   2.79%
   QC value within limits for Zn 206.200  Recovery = 97.79%
K 766.490†             79129.4        48.4 mg/L          0.50        48.4 mg/L          0.50   1.03%
   QC value within limits for K 766.490  Recovery = 96.85%
Na 589.592†           519853.8        49.0 mg/L          0.51        49.0 mg/L          0.51   1.04%
   QC value within limits for Na 589.592  Recovery = 98.03%
Sr 407.771†           960634.0       0.957 mg/L        0.0164       0.957 mg/L        0.0164   1.72%
   QC value within limits for Sr 407.771  Recovery = 95.73%
Li 670.784†            66969.6       0.994 mg/L        0.0063       0.994 mg/L        0.0063   0.63%
   QC value within limits for Li 670.784  Recovery = 99.39%
P 214.914†              9504.5        9.88 mg/L         0.152        9.88 mg/L         0.152   1.54%
   QC value within limits for P 214.914  Recovery = 98.79%
QC Failed.  Continue with analysis.

==========================================================================================
Sequence No.: 51                                    Autosampler Location: 8
Sample ID: CCB                                      Date Collected: 11/26/2013 7:03:54 PM
Analyst:                                            Data Type: Original
Initial Sample Wt:                                  Initial Sample Vol:
Dilution:                                           Sample Prep Vol:

------------------------------------------------------------------------------------------
Nebulizer Parameters: CCB
Analyte                 Back Pressure    Flow
All                    183.0 kPa        0.45 L/min

------------------------------------------------------------------------------------------
Mean Data: CCB
                   Mean Corrected         Calib.                          Sample
Analyte               Intensity      Conc. Units      Std.Dev.      Conc. Units      Std.Dev.   RSD
Y 371.029            2708947.5                                                      28560.48   1.05%
YRADIAL               188212.4                                                        610.98   0.32%
Ga 417.206            871953.2                                                       4860.17   0.56%
GaRADIAL               41120.9                                                        616.08   1.50%
Ag 328.068†               36.7    -0.00015 mg/L      0.000327    -0.00015 mg/L      0.000327 218.17%
   QC value within limits for Ag 328.068  Recovery = Not calculated
Al 396.153†               28.6    -0.00796 mg/L      0.004970    -0.00796 mg/L      0.004970  62.43%
   QC value within limits for Al 396.153  Recovery = Not calculated
As 188.979†                1.2     0.00049 mg/L      0.006157     0.00049 mg/L      0.006157 >999.9%
   QC value within limits for As 188.979  Recovery = Not calculated
Ba 233.527†               -1.7    -0.00401 mg/L      0.000215    -0.00401 mg/L      0.000215   5.37%
   QC value less than the lower limit for Ba 233.527  Recovery = Not calculated
Be 234.861†               61.1    -0.00006 mg/L      0.000027    -0.00006 mg/L      0.000027  45.28%
   QC value within limits for Be 234.861  Recovery = Not calculated
B 249.677†               304.8     0.00336 mg/L      0.000816     0.00336 mg/L      0.000816  24.25%
   QC value within limits for B 249.677  Recovery = Not calculated
Ca 227.546†               -1.9      0.0599 mg/L       0.04897      0.0599 mg/L       0.04897  81.69%
   QC value within limits for Ca 227.546  Recovery = Not calculated
Cd 228.802†              -10.3    -0.00024 mg/L      0.000170    -0.00024 mg/L      0.000170  71.27%
   QC value within limits for Cd 228.802  Recovery = Not calculated
Co 228.616†              -22.6    -0.00120 mg/L      0.000457    -0.00120 mg/L      0.000457  38.17%
   QC value within limits for Co 228.616  Recovery = Not calculated
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Cr 267.716†              60.3    -0.00164 mg/L      0.000215    -0.00164 mg/L      0.000215  13.07%
   QC value within limits for Cr 267.716  Recovery = Not calculated
Cu 327.393†            -234.6    -0.00116 mg/L      0.000541    -0.00116 mg/L      0.000541  46.81%
   QC value within limits for Cu 327.393  Recovery = Not calculated
Fe 239.562†               5.1     -0.0132 mg/L       0.00153     -0.0132 mg/L       0.00153  11.54%
   QC value within limits for Fe 239.562  Recovery = Not calculated
Mg 279.077†              11.3     -0.0238 mg/L       0.00240     -0.0238 mg/L       0.00240  10.09%
   QC value within limits for Mg 279.077  Recovery = Not calculated
Mn 257.610†             194.7    -0.00400 mg/L      0.000098    -0.00400 mg/L      0.000098   2.45%
   QC value within limits for Mn 257.610  Recovery = Not calculated
Mo 202.031†              -4.8    -0.00584 mg/L      0.000270    -0.00584 mg/L      0.000270   4.63%
   QC value within limits for Mo 202.031  Recovery = Not calculated
Ni 231.604†               4.2    -0.00292 mg/L      0.000351    -0.00292 mg/L      0.000351  12.00%
   QC value within limits for Ni 231.604  Recovery = Not calculated
Pb 220.353†              15.8     0.00016 mg/L      0.001168     0.00016 mg/L      0.001168 723.44%
   QC value within limits for Pb 220.353  Recovery = Not calculated
Sb 206.836†               3.4     0.00400 mg/L      0.002410     0.00400 mg/L      0.002410  60.23%
   QC value within limits for Sb 206.836  Recovery = Not calculated
Se 196.026†              -5.5    -0.00509 mg/L      0.002137    -0.00509 mg/L      0.002137  42.02%
   QC value within limits for Se 196.026  Recovery = Not calculated
Si 251.611†             -52.3     -0.0129 mg/L       0.00110     -0.0129 mg/L       0.00110   8.52%
   QC value within limits for Si 251.611  Recovery = Not calculated
Sn 189.927†              20.4     0.00116 mg/L      0.000629     0.00116 mg/L      0.000629  54.31%
   QC value within limits for Sn 189.927  Recovery = Not calculated
Ti 334.940†             210.9    -0.00153 mg/L      0.000158    -0.00153 mg/L      0.000158  10.31%
   QC value within limits for Ti 334.940  Recovery = Not calculated
Tl 190.801†              -4.5    -0.00619 mg/L      0.004502    -0.00619 mg/L      0.004502  72.75%
   QC value within limits for Tl 190.801  Recovery = Not calculated
V 290.880†              1201.9     0.00204 mg/L      0.000767     0.00204 mg/L      0.000767  37.53%
   QC value within limits for V 290.880  Recovery = Not calculated
Zn 206.200†              85.2    -0.00183 mg/L      0.000467    -0.00183 mg/L      0.000467  25.47%
   QC value within limits for Zn 206.200  Recovery = Not calculated
K 766.490†              104.0      0.0739 mg/L       0.05434      0.0739 mg/L       0.05434  73.52%
   QC value within limits for K 766.490  Recovery = Not calculated
Na 589.592†            1032.9      0.0869 mg/L       0.04319      0.0869 mg/L       0.04319  49.71%
   QC value within limits for Na 589.592  Recovery = Not calculated
Sr 407.771†            1097.6    -0.00412 mg/L      0.000795    -0.00412 mg/L      0.000795  19.27%
   QC value within limits for Sr 407.771  Recovery = Not calculated
Li 670.784†             194.6    -0.00053 mg/L      0.001344    -0.00053 mg/L      0.001344 251.32%
   QC value within limits for Li 670.784  Recovery = Not calculated
P 214.914†               81.4      0.0302 mg/L       0.00653      0.0302 mg/L       0.00653  21.65%
   QC value within limits for P 214.914  Recovery = Not calculated
QC Failed.  Continue with analysis.

==========================================================================================
Sequence No.: 52                                    Autosampler Location: 77
Sample ID: L1311127408                              Date Collected: 11/26/2013 7:06:58 PM
Analyst: JYH                                        Data Type: Original
Initial Sample Wt:                                  Initial Sample Vol:
Dilution:                                           Sample Prep Vol:

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Nebulizer Parameters: L1311127408
Analyte                  Back Pressure    Flow
All                    184.0 kPa         0.45 L/min

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Mean Data: L1311127408
                   Mean Corrected         Calib.                          Sample
Analyte               Intensity     Conc. Units      Std.Dev.      Conc. Units      Std.Dev.   RSD
Y 371.029            2794033.5                                                    55436.57   1.98%
YRADIAL               188417.0                                                     4537.30   2.41%
Ga 417.206            929772.3                                                    17432.86   1.87%
GaRADIAL               42575.5                                                      870.63   2.04%
Ag 328.068†              -20.8    -0.00043 mg/L      0.000407    -0.00043 mg/L      0.000407  93.92%
Al 396.153†               12.0     -0.0138 mg/L       0.00213     -0.0138 mg/L       0.00213  15.49%
As 188.979†               -9.8    -0.00578 mg/L      0.002623    -0.00578 mg/L      0.002623  45.39%
Ba 233.527†             1716.5      0.0183 mg/L       0.00025      0.0183 mg/L       0.00025   1.39%
Be 234.861†               78.2    -0.00003 mg/L      0.000033    -0.00003 mg/L      0.000033 100.10%
B 249.677†               542.8     0.00687 mg/L      0.000411     0.00687 mg/L      0.000411   5.98%
Ca 227.546†             4301.8        21.9 mg/L          0.23        21.9 mg/L          0.23   1.04%
Cd 228.802†               -9.8    -0.00019 mg/L      0.000109    -0.00019 mg/L      0.000109  58.59%
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Co 228.616†	-25.9	-0.00135 mg/L	0.000039	-0.00135 mg/L	0.000039	2.88%
Cr 267.716†	81.9	-0.00145 mg/L	0.000045	-0.00145 mg/L	0.000045	3.11%
Cu 327.393†	-269.4	-0.00133 mg/L	0.000286	-0.00133 mg/L	0.000286	21.62%
Fe 239.562†	36.5	-0.00240 mg/L	0.000576	-0.00240 mg/L	0.000576	24.00%
Mg 279.077†	11117.6	10.2 mg/L	0.09	10.2 mg/L	0.09	0.87%
Mn 257.610†	15315.8	0.0228 mg/L	0.00049	0.0228 mg/L	0.00049	2.16%
Mo 202.031†	15.1	-0.00460 mg/L	0.000216	-0.00460 mg/L	0.000216	4.70%
Ni 231.604†	-3.8	-0.00315 mg/L	0.000762	-0.00315 mg/L	0.000762	24.17%
Pb 220.353†	33.4	0.00317 mg/L	0.001595	0.00317 mg/L	0.001595	50.37%
Sb 206.836†	-0.4	0.00198 mg/L	0.000111	0.00198 mg/L	0.000111	5.59%
Se 196.026†	-3.6	-0.00274 mg/L	0.004012	-0.00274 mg/L	0.004012	146.54%
Si 251.611†	74653.7	2.22 mg/L	0.048	2.22 mg/L	0.048	2.14%
Sn 189.927†	-128.5	-0.0243 mg/L	0.00079	-0.0243 mg/L	0.00079	3.26%
Ti 334.940†	-3137.2	-0.00241 mg/L	0.000079	-0.00241 mg/L	0.000079	3.27%
Tl 190.801†	-18.1	-0.0143 mg/L	0.00257	-0.0143 mg/L	0.00257	17.96%
V 290.880†	1455.4	0.00317 mg/L	0.001035	0.00317 mg/L	0.001035	32.71%
Zn 206.200†	106.2	-0.00104 mg/L	0.000127	-0.00104 mg/L	0.000127	12.23%
K 766.490†	2609.4	1.58 mg/L	0.022	1.58 mg/L	0.022	1.38%
Na 589.592†	74545.9	6.82 mg/L	0.119	6.82 mg/L	0.119	1.74%
Sr 407.771†	275396.8	0.270 mg/L	0.0032	0.270 mg/L	0.0032	1.19%
Li 670.784†	335.8	0.00157 mg/L	0.000463	0.00157 mg/L	0.000463	29.56%
P 214.914†	84.5	0.0334 mg/L	0.01811	0.0334 mg/L	0.01811	54.26%

Sequence No.: 53 **Autosampler Location: 78**
Sample ID: L1311127410 **Date Collected: 11/26/2013 7:10:04 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1311127410

Analyte	Back Pressure	Flow
All	184.0 kPa	0.45 L/min

Mean Data: L1311127410

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2759458.7						29694.33	1.08%
YRADIAL	193033.2						7826.18	4.05%
Ga 417.206	922062.7						2321.29	0.25%
GaRADIAL	43126.7						962.67	2.23%
Ag 328.068†	69.8	-0.00002	mg/L	0.000141	-0.00002	mg/L	0.000141	820.99%
Al 396.153†	13.3	-0.0133	mg/L	0.00134	-0.0133	mg/L	0.00134	10.10%
As 188.979†	-8.5	-0.00492	mg/L	0.003110	-0.00492	mg/L	0.003110	63.19%
Ba 233.527†	2385.8	0.0270	mg/L	0.00043	0.0270	mg/L	0.00043	1.60%
Be 234.861†	94.9	-0.00002	mg/L	0.000024	-0.00002	mg/L	0.000024	109.43%
B 249.677†	413.1	0.00493	mg/L	0.000161	0.00493	mg/L	0.000161	3.28%
Ca 227.546†	4423.6	22.5	mg/L	0.09	22.5	mg/L	0.09	0.39%
Cd 228.802†	-11.2	-0.00025	mg/L	0.000128	-0.00025	mg/L	0.000128	51.76%
Co 228.616†	-21.8	-0.00116	mg/L	0.000386	-0.00116	mg/L	0.000386	33.45%
Cr 267.716†	91.1	-0.00137	mg/L	0.000038	-0.00137	mg/L	0.000038	2.74%
Cu 327.393†	-310.8	-0.00152	mg/L	0.000064	-0.00152	mg/L	0.000064	4.21%
Fe 239.562†	228.6	0.0652	mg/L	0.00321	0.0652	mg/L	0.00321	4.91%
Mg 279.077†	13468.2	12.4	mg/L	0.26	12.4	mg/L	0.26	2.13%
Mn 257.610†	25218.9	0.0403	mg/L	0.00021	0.0403	mg/L	0.00021	0.52%
Mo 202.031†	16.1	-0.00453	mg/L	0.000270	-0.00453	mg/L	0.000270	5.95%
Ni 231.604†	20.5	-0.00245	mg/L	0.000439	-0.00245	mg/L	0.000439	17.92%
Pb 220.353†	26.7	0.00200	mg/L	0.000869	0.00200	mg/L	0.000869	43.57%
Sb 206.836†	2.4	0.00348	mg/L	0.000794	0.00348	mg/L	0.000794	22.78%
Se 196.026†	-1.2	0.00029	mg/L	0.009029	0.00029	mg/L	0.009029	>999.9%
Si 251.611†	73268.9	2.18	mg/L	0.021	2.18	mg/L	0.021	0.96%
Sn 189.927†	-126.8	-0.0240	mg/L	0.00117	-0.0240	mg/L	0.00117	4.87%
Ti 334.940†	-3229.5	-0.00244	mg/L	0.000137	-0.00244	mg/L	0.000137	5.63%
Tl 190.801†	-15.2	-0.0126	mg/L	0.00320	-0.0126	mg/L	0.00320	25.33%
V 290.880†	1485.9	0.00327	mg/L	0.000800	0.00327	mg/L	0.000800	24.48%
Zn 206.200†	142.6	0.00034	mg/L	0.000265	0.00034	mg/L	0.000265	77.93%
K 766.490†	2516.9	1.53	mg/L	0.039	1.53	mg/L	0.039	2.56%
Na 589.592†	33979.8	3.09	mg/L	0.016	3.09	mg/L	0.016	0.51%
Sr 407.771†	177829.9	0.172	mg/L	0.0016	0.172	mg/L	0.0016	0.95%
Li 670.784†	22.0	-0.00311	mg/L	0.001053	-0.00311	mg/L	0.001053	33.90%

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P 214.914†	67.6	0.0157 mg/L	0.01086	0.0157 mg/L	0.01086	69.24%

Sequence No.: 54 **Autosampler Location: 79**
Sample ID: L1311128205 **Date Collected: 11/26/2013 7:13:07 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1311128205

Analyte	Back Pressure	Flow
All	184.0 kPa	0.45 L/min

Mean Data: L1311128205

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2692388.8						9485.88	0.35%
YRADIAL	188150.2						743.83	0.40%
Ga 417.206	920438.5						4213.10	0.46%
GaRADIAL	42907.7						847.26	1.97%
Ag 328.068†	197.8	0.00044	mg/L	0.000322	0.00044	mg/L	0.000322	72.93%
Al 396.153†	826.1	0.266	mg/L	0.0047	0.266	mg/L	0.0047	1.78%
As 188.979†	-11.9	-0.00630	mg/L	0.004939	-0.00630	mg/L	0.004939	78.38%
Ba 233.527†	835.2	0.00686	mg/L	0.000073	0.00686	mg/L	0.000073	1.06%
Be 234.861†	87.7	-0.00001	mg/L	0.000028	-0.00001	mg/L	0.000028	255.88%
B 249.677†	4054.6	0.0586	mg/L	0.00106	0.0586	mg/L	0.00106	1.81%
Ca 227.546†	11270.9	57.3	mg/L	0.95	57.3	mg/L	0.95	1.67%
Cd 228.802†	-14.3	-0.00034	mg/L	0.000307	-0.00034	mg/L	0.000307	89.47%
Co 228.616†	73.4	0.00343	mg/L	0.000048	0.00343	mg/L	0.000048	1.41%
Cr 267.716†	97.0	-0.00131	mg/L	0.000099	-0.00131	mg/L	0.000099	7.56%
Cu 327.393†	-215.0	-0.00108	mg/L	0.000144	-0.00108	mg/L	0.000144	13.35%
Fe 239.562†	51.2	0.00284	mg/L	0.001730	0.00284	mg/L	0.001730	60.84%
Mg 279.077†	7647.0	7.02	mg/L	0.164	7.02	mg/L	0.164	2.33%
Mn 257.610†	62250.2	0.106	mg/L	0.0017	0.106	mg/L	0.0017	1.56%
Mo 202.031†	32.2	-0.00352	mg/L	0.000222	-0.00352	mg/L	0.000222	6.31%
Ni 231.604†	296.6	0.00552	mg/L	0.000278	0.00552	mg/L	0.000278	5.03%
Pb 220.353†	29.2	0.00244	mg/L	0.001710	0.00244	mg/L	0.001710	70.16%
Sb 206.836†	-1.8	0.00124	mg/L	0.001011	0.00124	mg/L	0.001011	81.72%
Se 196.026†	-4.0	-0.00322	mg/L	0.002885	-0.00322	mg/L	0.002885	89.52%
Si 251.611†	12432.6	0.360	mg/L	0.0051	0.360	mg/L	0.0051	1.42%
Sn 189.927†	-215.1	-0.0391	mg/L	0.00102	-0.0391	mg/L	0.00102	2.61%
Ti 334.940†	-8328.3	-0.00356	mg/L	0.000152	-0.00356	mg/L	0.000152	4.27%
Tl 190.801†	-23.3	-0.0175	mg/L	0.00384	-0.0175	mg/L	0.00384	21.85%
V 290.880†	1621.9	0.00416	mg/L	0.000724	0.00416	mg/L	0.000724	17.41%
Zn 206.200†	148.9	0.00058	mg/L	0.000154	0.00058	mg/L	0.000154	26.56%
K 766.490†	4388.8	2.52	mg/L	0.064	2.52	mg/L	0.064	2.54%
Na 589.592†	1446492.1	147	mg/L	4.8	147	mg/L	4.8	3.25%
Sr 407.771†	290420.5	0.284	mg/L	0.0038	0.284	mg/L	0.0038	1.34%
Li 670.784†	1224.0	0.0148	mg/L	0.00085	0.0148	mg/L	0.00085	5.72%
P 214.914†	75.1	0.0236	mg/L	0.00652	0.0236	mg/L	0.00652	27.63%

Sequence No.: 55 **Autosampler Location: 80**
Sample ID: L1311128210 **Date Collected: 11/26/2013 7:16:14 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1311128210

Analyte	Back Pressure	Flow
All	184.0 kPa	0.45 L/min

Mean Data: L1311128210

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2710667.7						51532.34	1.90%
YRADIAL	192067.9						3171.46	1.65%
Ga 417.206	906365.9						17218.82	1.90%

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GaRADIAL	42288.3					302.78	0.72%
Ag 328.068†	152.4	0.00028	mg/L	0.000108	0.00028 mg/L	0.000108	38.80%
Al 396.153†	110.5	0.0200	mg/L	0.00075	0.0200 mg/L	0.00075	3.74%
As 188.979†	-11.9	-0.00672	mg/L	0.001346	-0.00672 mg/L	0.001346	20.03%
Ba 233.527†	1442.1	0.0147	mg/L	0.00035	0.0147 mg/L	0.00035	2.35%
Be 234.861†	57.3	-0.00007	mg/L	0.000043	-0.00007 mg/L	0.000043	58.33%
B 249.677†	2759.4	0.0395	mg/L	0.00191	0.0395 mg/L	0.00191	4.83%
Ca 227.546†	7348.0	37.4	mg/L	0.35	37.4 mg/L	0.35	0.94%
Cd 228.802†	-12.9	-0.00030	mg/L	0.000193	-0.00030 mg/L	0.000193	63.60%
Co 228.616†	-24.5	-0.00128	mg/L	0.000073	-0.00128 mg/L	0.000073	5.69%
Cr 267.716†	96.7	-0.00132	mg/L	0.000063	-0.00132 mg/L	0.000063	4.78%
Cu 327.393†	-178.5	-0.00089	mg/L	0.000495	-0.00089 mg/L	0.000495	55.45%
Fe 239.562†	109.6	0.0234	mg/L	0.00090	0.0234 mg/L	0.00090	3.83%
Mg 279.077†	8655.6	7.95	mg/L	0.129	7.95 mg/L	0.129	1.62%
Mn 257.610†	2480.1	0.00005	mg/L	0.000033	0.00005 mg/L	0.000033	66.75%
Mo 202.031†	32.4	-0.00353	mg/L	0.000490	-0.00353 mg/L	0.000490	13.90%
Ni 231.604†	16.5	-0.00257	mg/L	0.000304	-0.00257 mg/L	0.000304	11.84%
Pb 220.353†	25.4	0.00181	mg/L	0.000653	0.00181 mg/L	0.000653	36.09%
Sb 206.836†	-3.5	0.00032	mg/L	0.001616	0.00032 mg/L	0.001616	510.89%
Se 196.026†	-4.0	-0.00318	mg/L	0.003115	-0.00318 mg/L	0.003115	97.85%
Si 251.611†	78824.5	2.34	mg/L	0.029	2.34 mg/L	0.029	1.24%
Sn 189.927†	-180.5	-0.0332	mg/L	0.00106	-0.0332 mg/L	0.00106	3.18%
Ti 334.940†	-4493.8	-0.00178	mg/L	0.000070	-0.00178 mg/L	0.000070	3.95%
Tl 190.801†	-16.5	-0.0134	mg/L	0.00423	-0.0134 mg/L	0.00423	31.58%
V 290.880†	1688.6	0.00450	mg/L	0.000901	0.00450 mg/L	0.000901	20.03%
Zn 206.200†	124.6	-0.00034	mg/L	0.000266	-0.00034 mg/L	0.000266	77.83%
K 766.490†	4481.0	2.70	mg/L	0.022	2.70 mg/L	0.022	0.80%
Na 589.592†	246663.3	22.8	mg/L	0.61	22.8 mg/L	0.61	2.66%
Sr 407.771†	315798.7	0.310	mg/L	0.0037	0.310 mg/L	0.0037	1.21%
Li 670.784†	249.2	0.00028	mg/L	0.001043	0.00028 mg/L	0.001043	374.70%
P 214.914†	86.9	0.0359	mg/L	0.00981	0.0359 mg/L	0.00981	27.31%

Sequence No.: 56 **Autosampler Location: 81**
Sample ID: L1311128212 WG454360-02 **Date Collected: 11/26/2013 7:19:20 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1311128212 WG454360-02

Analyte	Back Pressure	Flow
All	184.0 kPa	0.45 L/min

Mean Data: L1311128212 WG454360-02

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2668382.2						30741.67	1.15%
YRADIAL	183561.6						7097.29	3.87%
Ga 417.206	881514.9						5547.53	0.63%
GaRADIAL	40876.0						964.02	2.36%
Ag 328.068†	-64.3	-0.00056	mg/L	0.000420	-0.00056	mg/L	0.000420	74.88%
Al 396.153†	94.2	0.0144	mg/L	0.00219	0.0144	mg/L	0.00219	15.18%
As 188.979†	-9.5	-0.00544	mg/L	0.001824	-0.00544	mg/L	0.001824	33.51%
Ba 233.527†	1924.4	0.0210	mg/L	0.00013	0.0210	mg/L	0.00013	0.63%
Be 234.861†	45.3	-0.00009	mg/L	0.000017	-0.00009	mg/L	0.000017	18.37%
B 249.677†	1989.2	0.0282	mg/L	0.00161	0.0282	mg/L	0.00161	5.71%
Ca 227.546†	5325.4	27.1	mg/L	0.12	27.1	mg/L	0.12	0.43%
Cd 228.802†	-9.2	-0.00016	mg/L	0.000084	-0.00016	mg/L	0.000084	51.83%
Co 228.616†	-17.7	-0.00096	mg/L	0.000299	-0.00096	mg/L	0.000299	31.18%
Cr 267.716†	95.8	-0.00133	mg/L	0.000156	-0.00133	mg/L	0.000156	11.70%
Cu 327.393†	-384.1	-0.00187	mg/L	0.000253	-0.00187	mg/L	0.000253	13.53%
Fe 239.562†	151.3	0.0381	mg/L	0.00214	0.0381	mg/L	0.00214	5.62%
Mg 279.077†	6617.1	6.07	mg/L	0.063	6.07	mg/L	0.063	1.04%
Mn 257.610†	6945.3	0.00795	mg/L	0.000159	0.00795	mg/L	0.000159	2.00%
Mo 202.031†	27.2	-0.00385	mg/L	0.000718	-0.00385	mg/L	0.000718	18.66%
Ni 231.604†	-2.9	-0.00313	mg/L	0.000098	-0.00313	mg/L	0.000098	3.15%
Pb 220.353†	33.2	0.00315	mg/L	0.002318	0.00315	mg/L	0.002318	73.67%
Sb 206.836†	-0.2	0.00209	mg/L	0.000446	0.00209	mg/L	0.000446	21.30%
Se 196.026†	-0.3	0.00135	mg/L	0.006492	0.00135	mg/L	0.006492	479.67%
Si 251.611†	69114.8	2.05	mg/L	0.048	2.05	mg/L	0.048	2.32%

Approved: November 27, 2013

Sn 189.927†	-146.7	-0.0274	mg/L	0.00045	-0.0274	mg/L	0.00045	1.66%
Ti 334.940†	-2722.2	-0.00112	mg/L	0.000106	-0.00112	mg/L	0.000106	9.50%
Tl 190.801†	-11.5	-0.0104	mg/L	0.00455	-0.0104	mg/L	0.00455	43.71%
V 290.880†	1376.2	0.00284	mg/L	0.000775	0.00284	mg/L	0.000775	27.34%
Zn 206.200†	90.4	-0.00163	mg/L	0.000185	-0.00163	mg/L	0.000185	11.35%
K 766.490†	4646.7	2.82	mg/L	0.019	2.82	mg/L	0.019	0.68%
Na 589.592†	49949.5	4.56	mg/L	0.013	4.56	mg/L	0.013	0.29%
Sr 407.771†	132201.1	0.126	mg/L	0.0007	0.126	mg/L	0.0007	0.52%
Li 670.784†	96.1	-0.00200	mg/L	0.001455	-0.00200	mg/L	0.001455	72.68%
P 214.914†	86.6	0.0356	mg/L	0.01357	0.0356	mg/L	0.01357	38.10%

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Sequence No.: 57 **Autosampler Location: 82**
Sample ID: L1311128212S WG454360-07 **Date Collected: 11/26/2013 7:22:23 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1311128212S WG454360-07

Analyte	Back Pressure	Flow
All	183.0 kPa	0.45 L/min

Mean Data: L1311128212S WG454360-07

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2691901.0						53417.40	1.98%
YRADIAL	183006.3						1775.11	0.97%
Ga 417.206	892705.7						17879.68	2.00%
GaRADIAL	41177.9						136.44	0.33%
Ag 328.068†	43883.4	0.179	mg/L	0.0020	0.179	mg/L	0.0020	1.14%
Al 396.153†	14285.2	4.86	mg/L	0.102	4.86	mg/L	0.102	2.10%
As 188.979†	282.2	0.171	mg/L	0.0011	0.171	mg/L	0.0011	0.65%
Ba 233.527†	36340.0	0.468	mg/L	0.0098	0.468	mg/L	0.0098	2.10%
Be 234.861†	14178.6	0.0213	mg/L	0.00015	0.0213	mg/L	0.00015	0.70%
B 249.677†	61203.0	0.899	mg/L	0.0188	0.899	mg/L	0.0188	2.09%
Ca 227.546†	6244.8	32.0	mg/L	0.42	32.0	mg/L	0.42	1.31%
Cd 228.802†	514.9	0.0202	mg/L	0.00029	0.0202	mg/L	0.00029	1.43%
Co 228.616†	1909.5	0.0910	mg/L	0.00149	0.0910	mg/L	0.00149	1.64%
Cr 267.716†	25213.6	0.224	mg/L	0.0049	0.224	mg/L	0.0049	2.19%
Cu 327.393†	45720.5	0.218	mg/L	0.0016	0.218	mg/L	0.0016	0.72%
Fe 239.562†	5488.6	1.92	mg/L	0.037	1.92	mg/L	0.037	1.94%
Mg 279.077†	11949.3	11.0	mg/L	0.19	11.0	mg/L	0.19	1.71%
Mn 257.610†	138341.4	0.241	mg/L	0.0044	0.241	mg/L	0.0044	1.84%
Mo 202.031†	7463.2	0.460	mg/L	0.0080	0.460	mg/L	0.0080	1.74%
Ni 231.604†	7759.0	0.221	mg/L	0.0050	0.221	mg/L	0.0050	2.26%
Pb 220.353†	1362.4	0.231	mg/L	0.0024	0.231	mg/L	0.0024	1.05%
Sb 206.836†	970.5	0.521	mg/L	0.0083	0.521	mg/L	0.0083	1.59%
Se 196.026†	139.9	0.174	mg/L	0.0054	0.174	mg/L	0.0054	3.09%
Si 251.611†	143357.9	4.26	mg/L	0.061	4.26	mg/L	0.061	1.44%
Sn 189.927†	-153.6	-0.0286	mg/L	0.00062	-0.0286	mg/L	0.00062	2.17%
Ti 334.940†	367705.9	0.460	mg/L	0.0022	0.460	mg/L	0.0022	0.49%
Tl 190.801†	366.1	0.220	mg/L	0.0039	0.220	mg/L	0.0039	1.77%
V 290.880†	84456.3	0.457	mg/L	0.0097	0.457	mg/L	0.0097	2.12%
Zn 206.200†	11612.1	0.436	mg/L	0.0062	0.436	mg/L	0.0062	1.42%
K 766.490†	42905.5	26.1	mg/L	0.67	26.1	mg/L	0.67	2.55%
Na 589.592†	297509.4	27.6	mg/L	0.39	27.6	mg/L	0.39	1.40%
Sr 407.771†	594066.2	0.589	mg/L	0.0083	0.589	mg/L	0.0083	1.41%
Li 670.784†	32443.3	0.480	mg/L	0.0138	0.480	mg/L	0.0138	2.87%
P 214.914†	-99.9	-0.159	mg/L	0.0208	-0.159	mg/L	0.0208	13.08%

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Sequence No.: 58 **Autosampler Location: 83**
Sample ID: L1311132602 **Date Collected: 11/26/2013 7:24:30 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1311132602

Analyte	Back Pressure	Flow

Approved: November 27, 2013

All	183.0 kPa	0.45 L/min

Mean Data: L1311132602

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2712825.4						54294.89	2.00%
YRADIAL	189743.2						5143.20	2.71%
Ga 417.206	912306.3						16146.64	1.77%
GaRADIAL	42267.0						1929.72	4.57%
Ag 328.068†	203.9	0.00041	mg/L	0.000276	0.00041	mg/L	0.000276	66.68%
Al 396.153†	68.1	0.00544	mg/L	0.001106	0.00544	mg/L	0.001106	20.34%
As 188.979†	-11.7	-0.00602	mg/L	0.004172	-0.00602	mg/L	0.004172	69.36%
Ba 233.527†	1257.3	0.0123	mg/L	0.00027	0.0123	mg/L	0.00027	2.17%
Be 234.861†	68.4	-0.00001	mg/L	0.000032	-0.00001	mg/L	0.000032	229.11%
B 249.677†	1543.7	0.0216	mg/L	0.00135	0.0216	mg/L	0.00135	6.23%
Ca 227.546†	12373.4	62.9	mg/L	0.79	62.9	mg/L	0.79	1.26%
Cd 228.802†	-11.9	-0.00026	mg/L	0.000238	-0.00026	mg/L	0.000238	90.88%
Co 228.616†	-2.2	-0.00019	mg/L	0.000059	-0.00019	mg/L	0.000059	30.88%
Cr 267.716†	224.8	-0.00016	mg/L	0.000109	-0.00016	mg/L	0.000109	66.40%
Cu 327.393†	-331.9	-0.00163	mg/L	0.000307	-0.00163	mg/L	0.000307	18.83%
Fe 239.562†	11.9	-0.0120	mg/L	0.00161	-0.0120	mg/L	0.00161	13.44%
Mg 279.077†	61282.9	56.5	mg/L	1.43	56.5	mg/L	1.43	2.54%
Mn 257.610†	190689.1	0.333	mg/L	0.0063	0.333	mg/L	0.0063	1.90%
Mo 202.031†	35.8	-0.00324	mg/L	0.000462	-0.00324	mg/L	0.000462	14.23%
Ni 231.604†	105.2	0.00000	mg/L	0.000570	0.00000	mg/L	0.000570	>999.9%
Pb 220.353†	36.4	0.00349	mg/L	0.002419	0.00349	mg/L	0.002419	69.23%
Sb 206.836†	0.4	0.00240	mg/L	0.002446	0.00240	mg/L	0.002446	101.89%
Se 196.026†	0.1	0.00175	mg/L	0.005910	0.00175	mg/L	0.005910	338.49%
Si 251.611†	51924.4	1.54	mg/L	0.029	1.54	mg/L	0.029	1.89%
Sn 189.927†	-215.1	-0.0392	mg/L	0.00134	-0.0392	mg/L	0.00134	3.42%
Ti 334.940†	-8668.0	-0.00314	mg/L	0.000276	-0.00314	mg/L	0.000276	8.78%
Tl 190.801†	-21.7	-0.0168	mg/L	0.00506	-0.0168	mg/L	0.00506	30.05%
V 290.880†	2706.0	0.00881	mg/L	0.002110	0.00881	mg/L	0.002110	23.95%
Zn 206.200†	102.0	-0.00119	mg/L	0.000441	-0.00119	mg/L	0.000441	37.23%
K 766.490†	11673.3	7.03	mg/L	0.091	7.03	mg/L	0.091	1.29%
Na 589.592†	479272.2	45.1	mg/L	1.22	45.1	mg/L	1.22	2.72%
Sr 407.771†	439463.5	0.433	mg/L	0.0047	0.433	mg/L	0.0047	1.09%
Li 670.784†	1557.4	0.0198	mg/L	0.00042	0.0198	mg/L	0.00042	2.13%
P 214.914†	84.0	0.0329	mg/L	0.01026	0.0329	mg/L	0.01026	31.19%

Sequence No.: 59 **Autosampler Location: 84**
Sample ID: L1311132608 **Date Collected: 11/26/2013 7:27:36 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1311132608

Analyte	Back Pressure	Flow
All	184.0 kPa	0.45 L/min

Mean Data: L1311132608

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2730780.1						27575.87	1.01%
YRADIAL	191283.1						1243.13	0.65%
Ga 417.206	928669.8						8020.03	0.86%
GaRADIAL	42694.1						1032.19	2.42%
Ag 328.068†	327.2	0.00091	mg/L	0.000398	0.00091	mg/L	0.000398	43.59%
Al 396.153†	2.2	-0.0172	mg/L	0.00115	-0.0172	mg/L	0.00115	6.69%
As 188.979†	-17.8	-0.00898	mg/L	0.001969	-0.00898	mg/L	0.001969	21.93%
Ba 233.527†	1721.2	0.0184	mg/L	0.00030	0.0184	mg/L	0.00030	1.65%
Be 234.861†	107.3	0.00001	mg/L	0.000016	0.00001	mg/L	0.000016	115.81%
B 249.677†	1277.8	0.0177	mg/L	0.00098	0.0177	mg/L	0.00098	5.56%
Ca 227.546†	19679.9	100	mg/L	2.5	100	mg/L	2.5	2.47%
Cd 228.802†	-11.1	-0.00021	mg/L	0.000180	-0.00021	mg/L	0.000180	83.96%
Co 228.616†	-16.5	-0.00087	mg/L	0.000107	-0.00087	mg/L	0.000107	12.38%
Cr 267.716†	188.6	-0.00049	mg/L	0.000163	-0.00049	mg/L	0.000163	33.22%
Cu 327.393†	-447.8	-0.00219	mg/L	0.000259	-0.00219	mg/L	0.000259	11.84%

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Fe 239.562†	3.9	-0.0146 mg/L	0.00090	-0.0146 mg/L	0.00090	6.15%
Mg 279.077†	50477.9	46.5 mg/L	1.21	46.5 mg/L	1.21	2.59%
Mn 257.610†	6715.2	0.00754 mg/L	0.000256	0.00754 mg/L	0.000256	3.39%
Mo 202.031†	43.3	-0.00284 mg/L	0.000570	-0.00284 mg/L	0.000570	20.06%
Ni 231.604†	463.3	0.0103 mg/L	0.00063	0.0103 mg/L	0.00063	6.11%
Pb 220.353†	41.2	0.00452 mg/L	0.001422	0.00452 mg/L	0.001422	31.50%
Sb 206.836†	-3.7	0.00023 mg/L	0.003313	0.00023 mg/L	0.003313	>999.9%
Se 196.026†	5.8	0.00884 mg/L	0.001621	0.00884 mg/L	0.001621	18.34%
Si 251.611†	26196.1	0.771 mg/L	0.0113	0.771 mg/L	0.0113	1.46%
Sn 189.927†	-253.4	-0.0457 mg/L	0.00055	-0.0457 mg/L	0.00055	1.21%
Ti 334.940†	-14087.6	-0.00431 mg/L	0.000243	-0.00431 mg/L	0.000243	5.64%
Tl 190.801†	-31.6	-0.0225 mg/L	0.00340	-0.0225 mg/L	0.00340	15.15%
V 290.880†	2425.7	0.00754 mg/L	0.000674	0.00754 mg/L	0.000674	8.94%
Zn 206.200†	258.1	0.00472 mg/L	0.000164	0.00472 mg/L	0.000164	3.47%
K 766.490†	15568.3	9.44 mg/L	0.073	9.44 mg/L	0.073	0.77%
Na 589.592†	25984.1	2.36 mg/L	0.069	2.36 mg/L	0.069	2.90%
Sr 407.771†	620553.0	0.614 mg/L	0.0055	0.614 mg/L	0.0055	0.90%
Li 670.784†	1006.6	0.0116 mg/L	0.00128	0.0116 mg/L	0.00128	11.04%
P 214.914†	108.0	0.0579 mg/L	0.01329	0.0579 mg/L	0.01329	22.95%

Sequence No.: 60 **Autosampler Location: 7**
Sample ID: CCV **Date Collected: 11/26/2013 7:30:42 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	184.0 kPa	0.45 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2722425.0						18101.15	0.66%
YRADIAL	187522.0						6421.97	3.42%
Ga 417.206	883130.8						9829.12	1.11%
GaRADIAL	42568.5						243.57	0.57%
Ag 328.068†	94313.8	0.385	mg/L	0.0023	0.385	mg/L	0.0023	0.59%
QC value within limits for Ag 328.068 Recovery = 96.24%								
Al 396.153†	29284.0	9.97	mg/L	0.029	9.97	mg/L	0.029	0.29%
QC value within limits for Al 396.153 Recovery = 99.74%								
As 188.979†	613.7	0.371	mg/L	0.0100	0.371	mg/L	0.0100	2.68%
QC value within limits for As 188.979 Recovery = 92.76%								
Ba 233.527†	74539.8	0.964	mg/L	0.0064	0.964	mg/L	0.0064	0.67%
QC value within limits for Ba 233.527 Recovery = 96.40%								
Be 234.861†	31278.9	0.0472	mg/L	0.00027	0.0472	mg/L	0.00027	0.58%
QC value within limits for Be 234.861 Recovery = 94.35%								
B 249.677†	32124.6	0.469	mg/L	0.0028	0.469	mg/L	0.0028	0.60%
QC value within limits for B 249.677 Recovery = 93.73%								
Ca 227.546†	1855.0	9.94	mg/L	0.140	9.94	mg/L	0.140	1.41%
QC value within limits for Ca 227.546 Recovery = 99.42%								
Cd 228.802†	1129.9	0.0441	mg/L	0.00024	0.0441	mg/L	0.00024	0.55%
QC value less than the lower limit for Cd 228.802 Recovery = 88.28%								
Co 228.616†	4038.5	0.193	mg/L	0.0020	0.193	mg/L	0.0020	1.05%
QC value within limits for Co 228.616 Recovery = 96.35%								
Cr 267.716†	54434.7	0.486	mg/L	0.0047	0.486	mg/L	0.0047	0.97%
QC value within limits for Cr 267.716 Recovery = 97.19%								
Cu 327.393†	101395.6	0.484	mg/L	0.0032	0.484	mg/L	0.0032	0.67%
QC value within limits for Cu 327.393 Recovery = 96.74%								
Fe 239.562†	11253.6	3.95	mg/L	0.085	3.95	mg/L	0.085	2.16%
QC value within limits for Fe 239.562 Recovery = 98.72%								
Mg 279.077†	11072.1	10.2	mg/L	0.33	10.2	mg/L	0.33	3.20%
QC value within limits for Mg 279.077 Recovery = 101.96%								
Mn 257.610†	282248.7	0.496	mg/L	0.0032	0.496	mg/L	0.0032	0.64%
QC value within limits for Mn 257.610 Recovery = 99.15%								
Mo 202.031†	15708.1	0.975	mg/L	0.0077	0.975	mg/L	0.0077	0.79%
QC value within limits for Mo 202.031 Recovery = 97.45%								
Ni 231.604†	17010.3	0.488	mg/L	0.0053	0.488	mg/L	0.0053	1.09%
QC value within limits for Ni 231.604 Recovery = 97.60%								

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Pb 220.353†            2839.1       0.485 mg/L        0.0060       0.485 mg/L        0.0060   1.24%
   QC value within limits for Pb 220.353  Recovery = 97.01%
Sb 206.836†            2065.1        1.11 mg/L         0.010        1.11 mg/L         0.010   0.92%
   QC value within limits for Sb 206.836  Recovery = 92.25%
Se 196.026†             302.8       0.375 mg/L        0.0112       0.375 mg/L        0.0112   2.98%
   QC value within limits for Se 196.026  Recovery = 93.71%
Si 251.611†          160506.2        4.77 mg/L         0.010        4.77 mg/L         0.010   0.21%
   QC value within limits for Si 251.611  Recovery = 95.40%
Sn 189.927†            5628.0       0.961 mg/L        0.0116       0.961 mg/L        0.0116   1.21%
   QC value within limits for Sn 189.927  Recovery = 96.12%
Ti 334.940†          771732.6       0.959 mg/L        0.0070       0.959 mg/L        0.0070   0.73%
   QC value within limits for Ti 334.940  Recovery = 95.85%
Tl 190.801†             813.6       0.492 mg/L        0.0100       0.492 mg/L        0.0100   2.03%
   QC value within limits for Tl 190.801  Recovery = 98.30%
V 290.880†           178568.8       0.972 mg/L        0.0050       0.972 mg/L        0.0050   0.51%
   QC value within limits for V 290.880  Recovery = 97.21%
Zn 206.200†           25577.3       0.967 mg/L        0.0025       0.967 mg/L        0.0025   0.26%
   QC value within limits for Zn 206.200  Recovery = 96.73%
K 766.490†            79309.5        48.5 mg/L          0.14        48.5 mg/L          0.14   0.28%
   QC value within limits for K 766.490  Recovery = 97.07%
Na 589.592†          515645.2        48.6 mg/L          1.07        48.6 mg/L          1.07   2.20%
   QC value within limits for Na 589.592  Recovery = 97.21%
Sr 407.771†          964418.4       0.961 mg/L        0.0073       0.961 mg/L        0.0073   0.76%
   QC value within limits for Sr 407.771  Recovery = 96.11%
Li 670.784†            66596.6       0.988 mg/L        0.0073       0.988 mg/L        0.0073   0.74%
   QC value within limits for Li 670.784  Recovery = 98.84%
P 214.914†             9439.6        9.81 mg/L         0.146        9.81 mg/L         0.146   1.49%
   QC value within limits for P 214.914  Recovery = 98.11%
QC Failed.  Continue with analysis.

==========================================================================================
Sequence No.: 61                                    Autosampler Location: 8
Sample ID: CCB                                      Date Collected: 11/26/2013 7:32:50 PM
Analyst:                                            Data Type: Original
Initial Sample Wt:                                  Initial Sample Vol:
Dilution:                                           Sample Prep Vol:

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Nebulizer Parameters: CCB
Analyte                 Back Pressure    Flow
All                     185.0 kPa        0.45 L/min

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Mean Data: CCB
                   Mean Corrected        Calib.                          Sample
Analyte               Intensity     Conc. Units      Std.Dev.      Conc. Units      Std.Dev.   RSD
Y 371.029            2660187.7                                                     32531.57   1.22%
YRADIAL               186476.8                                                      4261.87   2.29%
Ga 417.206            847472.4                                                     15291.26   1.80%
GaRADIAL               40709.5                                                       570.00   1.40%
Ag 328.068†             -160.2    -0.00094 mg/L      0.000458    -0.00094 mg/L      0.000458  48.49%
   QC value within limits for Ag 328.068  Recovery = Not calculated
Al 396.153†               38.8    -0.00449 mg/L      0.000775    -0.00449 mg/L      0.000775  17.28%
   QC value within limits for Al 396.153  Recovery = Not calculated
As 188.979†               -4.6    -0.00305 mg/L      0.002864    -0.00305 mg/L      0.002864  93.85%
   QC value within limits for As 188.979  Recovery = Not calculated
Ba 233.527†               -4.0    -0.00404 mg/L      0.000152    -0.00404 mg/L      0.000152   3.77%
   QC value less than the lower limit for Ba 233.527  Recovery = Not calculated
Be 234.861†                5.8    -0.00014 mg/L      0.000067    -0.00014 mg/L      0.000067  46.04%
   QC value within limits for Be 234.861  Recovery = Not calculated
B 249.677†               242.7     0.00245 mg/L      0.000640     0.00245 mg/L      0.000640  26.12%
   QC value within limits for B 249.677  Recovery = Not calculated
Ca 227.546†               -4.2      0.0479 mg/L       0.03857      0.0479 mg/L       0.03857  80.50%
   QC value within limits for Ca 227.546  Recovery = Not calculated
Cd 228.802†              -13.0    -0.00033 mg/L      0.000294    -0.00033 mg/L      0.000294  89.35%
   QC value within limits for Cd 228.802  Recovery = Not calculated
Co 228.616†              -19.0    -0.00102 mg/L      0.000162    -0.00102 mg/L      0.000162  15.90%
   QC value within limits for Co 228.616  Recovery = Not calculated
Cr 267.716†               64.1    -0.00161 mg/L      0.000103    -0.00161 mg/L      0.000103   6.43%
   QC value within limits for Cr 267.716  Recovery = Not calculated
Cu 327.393†             -122.7    -0.00062 mg/L      0.000768    -0.00062 mg/L      0.000768 123.04%
   QC value within limits for Cu 327.393  Recovery = Not calculated
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Fe 239.562†              12.3     -0.0107 mg/L      0.00071     -0.0107 mg/L      0.00071   6.66%
   QC value within limits for Fe 239.562  Recovery = Not calculated
Mg 279.077†              47.4     0.00953 mg/L     0.004294     0.00953 mg/L     0.004294  45.06%
   QC value within limits for Mg 279.077  Recovery = Not calculated
Mn 257.610†             221.3    -0.00395 mg/L     0.000081    -0.00395 mg/L     0.000081   2.05%
   QC value within limits for Mn 257.610  Recovery = Not calculated
Mo 202.031†              -4.2    -0.00581 mg/L     0.000176    -0.00581 mg/L     0.000176   3.02%
   QC value within limits for Mo 202.031  Recovery = Not calculated
Ni 231.604†              -3.6    -0.00315 mg/L     0.000142    -0.00315 mg/L     0.000142   4.52%
   QC value within limits for Ni 231.604  Recovery = Not calculated
Pb 220.353†              26.4     0.00199 mg/L     0.002577     0.00199 mg/L     0.002577 129.69%
   QC value within limits for Pb 220.353  Recovery = Not calculated
Sb 206.836†               2.2     0.00338 mg/L     0.002342     0.00338 mg/L     0.002342  69.24%
   QC value within limits for Sb 206.836  Recovery = Not calculated
Se 196.026†              -6.1    -0.00576 mg/L     0.002282    -0.00576 mg/L     0.002282  39.64%
   QC value within limits for Se 196.026  Recovery = Not calculated
Si 251.611†             -35.6     -0.0124 mg/L      0.00076     -0.0124 mg/L      0.00076   6.11%
   QC value within limits for Si 251.611  Recovery = Not calculated
Sn 189.927†              22.2     0.00147 mg/L     0.000442     0.00147 mg/L     0.000442  30.13%
   QC value within limits for Sn 189.927  Recovery = Not calculated
Ti 334.940†             263.0    -0.00147 mg/L     0.000056    -0.00147 mg/L     0.000056   3.80%
   QC value within limits for Ti 334.940  Recovery = Not calculated
Tl 190.801†              -2.8    -0.00520 mg/L     0.002251    -0.00520 mg/L     0.002251  43.27%
   QC value within limits for Tl 190.801  Recovery = Not calculated
V 290.880†             1289.5     0.00252 mg/L     0.000866     0.00252 mg/L     0.000866  34.31%
   QC value within limits for V 290.880  Recovery = Not calculated
Zn 206.200†              63.0    -0.00267 mg/L     0.000431    -0.00267 mg/L     0.000431  16.13%
   QC value within limits for Zn 206.200  Recovery = Not calculated
K 766.490†              174.8       0.117 mg/L       0.1010       0.117 mg/L       0.1010  86.59%
   QC value within limits for K 766.490  Recovery = Not calculated
Na 589.592†            1516.5       0.131 mg/L       0.0717       0.131 mg/L       0.0717  54.75%
   QC value within limits for Na 589.592  Recovery = Not calculated
Sr 407.771†            1999.6    -0.00322 mg/L     0.001604    -0.00322 mg/L     0.001604  49.83%
   QC value within limits for Sr 407.771  Recovery = Not calculated
Li 670.784†             319.9     0.00133 mg/L     0.002070     0.00133 mg/L     0.002070 155.43%
   QC value within limits for Li 670.784  Recovery = Not calculated
P 214.914†               78.1      0.0267 mg/L      0.01041      0.0267 mg/L      0.01041  38.95%
   QC value within limits for P 214.914  Recovery = Not calculated
QC Failed.  Continue with analysis.

==========================================================================================
Sequence No.: 62                                  Autosampler Location: 85
Sample ID: L1311133002                            Date Collected: 11/26/2013 7:35:54 PM
Analyst: JYH                                      Data Type: Original
Initial Sample Wt:                                Initial Sample Vol:
Dilution:                                         Sample Prep Vol:

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Nebulizer Parameters: L1311133002
Analyte                 Back Pressure    Flow
All                   184.0 kPa         0.45 L/min

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Mean Data: L1311133002
                   Mean Corrected         Calib.                          Sample
Analyte               Intensity     Conc. Units      Std.Dev.      Conc. Units      Std.Dev.   RSD
Y 371.029            2713963.1                                                    70445.31   2.60%
YRADIAL               186945.2                                                     3007.83   1.61%
Ga 417.206            899257.8                                                    32093.99   3.57%
GaRADIAL               41795.6                                                     1039.04   2.49%
Ag 328.068†              424.2     0.00143 mg/L      0.002500     0.00143 mg/L     0.002500 175.43%
Al 396.153†                9.0     -0.0148 mg/L       0.00257     -0.0148 mg/L      0.00257  17.42%
As 188.979†               -1.3    -0.00060 mg/L      0.003703    -0.00060 mg/L     0.003703 617.77%
Ba 233.527†             2097.3      0.0232 mg/L       0.00081      0.0232 mg/L      0.00081   3.48%
Be 234.861†               54.4    -0.00008 mg/L      0.000106    -0.00008 mg/L     0.000106 133.22%
B 249.677†              1006.1      0.0137 mg/L       0.00084      0.0137 mg/L      0.00084   6.14%
Ca 227.546†             3768.8        19.2 mg/L          0.74        19.2 mg/L         0.74   3.88%
Cd 228.802†              -13.3    -0.00035 mg/L      0.000160    -0.00035 mg/L     0.000160  45.51%
Co 228.616†              -26.6    -0.00139 mg/L      0.000120    -0.00139 mg/L     0.000120   8.63%
Cr 267.716†               93.6    -0.00134 mg/L      0.000211    -0.00134 mg/L     0.000211  15.72%
Cu 327.393†               47.1     0.00019 mg/L      0.003249     0.00019 mg/L     0.003249 >999.9%
Fe 239.562†              145.1      0.0358 mg/L       0.00112      0.0358 mg/L      0.00112   3.12%
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Mg 279.077†	15293.0	14.1	mg/L	0.41	14.1	mg/L	0.41	2.88%
Mn 257.610†	12667.1	0.0181	mg/L	0.00654	0.0181	mg/L	0.00654	36.21%
Mo 202.031†	7.3	-0.00509	mg/L	0.000443	-0.00509	mg/L	0.000443	8.71%
Ni 231.604†	-10.4	-0.00334	mg/L	0.000199	-0.00334	mg/L	0.000199	5.96%
Pb 220.353†	37.3	0.00384	mg/L	0.002518	0.00384	mg/L	0.002518	65.62%
Sb 206.836†	4.6	0.00466	mg/L	0.003598	0.00466	mg/L	0.003598	77.20%
Se 196.026†	-2.5	-0.00141	mg/L	0.004292	-0.00141	mg/L	0.004292	304.84%
Si 251.611†	40561.8	1.20	mg/L	0.048	1.20	mg/L	0.048	4.02%
Sn 189.927†	-108.8	-0.0210	mg/L	0.00192	-0.0210	mg/L	0.00192	9.18%
Ti 334.940†	300.3	0.00145	mg/L	0.006972	0.00145	mg/L	0.006972	480.07%
Tl 190.801†	-11.4	-0.0103	mg/L	0.00150	-0.0103	mg/L	0.00150	14.60%
V 290.880†	2518.7	0.00888	mg/L	0.008503	0.00888	mg/L	0.008503	95.74%
Zn 206.200†	147.1	0.00051	mg/L	0.000635	0.00051	mg/L	0.000635	123.88%
K 766.490†	3881.3	2.36	mg/L	0.046	2.36	mg/L	0.046	1.95%
Na 589.592†	18413.1	1.67	mg/L	0.004	1.67	mg/L	0.004	0.25%
Sr 407.771†	141369.5	0.136	mg/L	0.0022	0.136	mg/L	0.0022	1.64%
Li 670.784†	-31.1	-0.00390	mg/L	0.000369	-0.00390	mg/L	0.000369	9.46%
P 214.914†	81.7	0.0305	mg/L	0.01291	0.0305	mg/L	0.01291	42.29%

Sequence No.: 63 **Autosampler Location: 86**
Sample ID: L1311133005 **Date Collected: 11/26/2013 7:38:57 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1311133005

Analyte	Back Pressure	Flow
All	181.0 kPa	0.45 L/min

Mean Data: L1311133005

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2612633.0						26947.14	1.03%
YRADIAL	191252.7						4431.82	2.32%
Ga 417.206	892383.5						5464.07	0.61%
GaRADIAL	43152.4						930.03	2.16%
Ag 328.068†	362.4	0.00071	mg/L	0.000414	0.00071	mg/L	0.000414	58.02%
Al 396.153†	2.0	-0.0174	mg/L	0.00214	-0.0174	mg/L	0.00214	12.33%
As 188.979†	-18.1	-0.00910	mg/L	0.002691	-0.00910	mg/L	0.002691	29.57%
Ba 233.527†	2406.9	0.0273	mg/L	0.00027	0.0273	mg/L	0.00027	0.98%
Be 234.861†	38.3	-0.00008	mg/L	0.000016	-0.00008	mg/L	0.000016	20.73%
B 249.677†	5664.0	0.0823	mg/L	0.00057	0.0823	mg/L	0.00057	0.69%
Ca 227.546†	20064.0	102	mg/L	1.4	102	mg/L	1.4	1.40%
Cd 228.802†	-8.7	-0.00012	mg/L	0.000146	-0.00012	mg/L	0.000146	125.64%
Co 228.616†	-9.7	-0.00054	mg/L	0.000203	-0.00054	mg/L	0.000203	37.94%
Cr 267.716†	182.6	-0.00055	mg/L	0.000062	-0.00055	mg/L	0.000062	11.44%
Cu 327.393†	-568.2	-0.00276	mg/L	0.000226	-0.00276	mg/L	0.000226	8.19%
Fe 239.562†	36.2	-0.00309	mg/L	0.001584	-0.00309	mg/L	0.001584	51.26%
Mg 279.077†	42773.6	39.4	mg/L	0.08	39.4	mg/L	0.08	0.21%
Mn 257.610†	104001.5	0.180	mg/L	0.0041	0.180	mg/L	0.0041	2.27%
Mo 202.031†	62.7	-0.00160	mg/L	0.000507	-0.00160	mg/L	0.000507	31.77%
Ni 231.604†	7.9	-0.00281	mg/L	0.000168	-0.00281	mg/L	0.000168	5.97%
Pb 220.353†	34.3	0.00322	mg/L	0.001269	0.00322	mg/L	0.001269	39.35%
Sb 206.836†	-4.9	-0.00042	mg/L	0.001676	-0.00042	mg/L	0.001676	394.98%
Se 196.026†	0.4	0.00212	mg/L	0.002062	0.00212	mg/L	0.002062	97.35%
Si 251.611†	85550.2	2.54	mg/L	0.034	2.54	mg/L	0.034	1.33%
Sn 189.927†	-274.7	-0.0494	mg/L	0.00088	-0.0494	mg/L	0.00088	1.79%
Ti 334.940†	-14640.5	-0.00470	mg/L	0.000179	-0.00470	mg/L	0.000179	3.82%
Tl 190.801†	-31.6	-0.0226	mg/L	0.00335	-0.0226	mg/L	0.00335	14.84%
V 290.880†	2478.9	0.00801	mg/L	0.002815	0.00801	mg/L	0.002815	35.15%
Zn 206.200†	80.0	-0.00202	mg/L	0.000352	-0.00202	mg/L	0.000352	17.41%
K 766.490†	11779.7	7.14	mg/L	0.043	7.14	mg/L	0.043	0.60%
Na 589.592†	72543.6	6.63	mg/L	0.018	6.63	mg/L	0.018	0.27%
Sr 407.771†	2247923.9	2.24	mg/L	0.103	2.24	mg/L	0.103	4.58%
Li 670.784†	1914.7	0.0251	mg/L	0.00079	0.0251	mg/L	0.00079	3.14%
P 214.914†	77.9	0.0265	mg/L	0.01415	0.0265	mg/L	0.01415	53.40%

Sequence No.: 64 **Autosampler Location: 87**

Approved: November 27, 2013

Sample ID: L1311133007 **Date Collected: 11/26/2013 7:42:03 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1311133007

Analyte	Back Pressure	Flow
All	181.0 kPa	0.45 L/min

Mean Data: L1311133007

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2691255.1						29324.53	1.09%
YRADIAL	183086.4						2133.96	1.17%
Ga 417.206	896784.9						17810.88	1.99%
GaRADIAL	40713.1						632.24	1.55%
Ag 328.068†	-6.1	-0.00031	mg/L	0.000413	-0.00031	mg/L	0.000413	134.89%
Al 396.153†	24.6	-0.00936	mg/L	0.002040	-0.00936	mg/L	0.002040	21.79%
As 188.979†	-9.4	-0.00570	mg/L	0.003937	-0.00570	mg/L	0.003937	69.09%
Ba 233.527†	1467.0	0.0151	mg/L	0.00025	0.0151	mg/L	0.00025	1.67%
Be 234.861†	62.8	-0.00007	mg/L	0.000054	-0.00007	mg/L	0.000054	76.57%
B 249.677†	696.4	0.00911	mg/L	0.000651	0.00911	mg/L	0.000651	7.15%
Ca 227.546†	2556.3	13.1	mg/L	0.14	13.1	mg/L	0.14	1.05%
Cd 228.802†	-13.6	-0.00034	mg/L	0.000085	-0.00034	mg/L	0.000085	25.14%
Co 228.616†	-21.8	-0.00116	mg/L	0.000032	-0.00116	mg/L	0.000032	2.80%
Cr 267.716†	94.3	-0.00134	mg/L	0.000079	-0.00134	mg/L	0.000079	5.86%
Cu 327.393†	-253.3	-0.00124	mg/L	0.000338	-0.00124	mg/L	0.000338	27.16%
Fe 239.562†	203.2	0.0564	mg/L	0.00261	0.0564	mg/L	0.00261	4.63%
Mg 279.077†	7588.3	6.97	mg/L	0.074	6.97	mg/L	0.074	1.06%
Mn 257.610†	15179.4	0.0225	mg/L	0.00050	0.0225	mg/L	0.00050	2.23%
Mo 202.031†	3.8	-0.00531	mg/L	0.000448	-0.00531	mg/L	0.000448	8.44%
Ni 231.604†	-8.2	-0.00328	mg/L	0.000023	-0.00328	mg/L	0.000023	0.70%
Pb 220.353†	28.4	0.00230	mg/L	0.001727	0.00230	mg/L	0.001727	75.11%
Sb 206.836†	6.2	0.00552	mg/L	0.000832	0.00552	mg/L	0.000832	15.07%
Se 196.026†	-2.7	-0.00161	mg/L	0.003722	-0.00161	mg/L	0.003722	230.89%
Si 251.611†	67029.7	1.99	mg/L	0.034	1.99	mg/L	0.034	1.68%
Sn 189.927†	-80.0	-0.0160	mg/L	0.00168	-0.0160	mg/L	0.00168	10.50%
Ti 334.940†	-1571.2	-0.00180	mg/L	0.000093	-0.00180	mg/L	0.000093	5.18%
Tl 190.801†	-14.0	-0.0119	mg/L	0.00053	-0.0119	mg/L	0.00053	4.45%
V 290.880†	1581.2	0.00393	mg/L	0.000722	0.00393	mg/L	0.000722	18.36%
Zn 206.200†	92.1	-0.00157	mg/L	0.000100	-0.00157	mg/L	0.000100	6.35%
K 766.490†	2546.4	1.55	mg/L	0.031	1.55	mg/L	0.031	2.02%
Na 589.592†	19788.2	1.80	mg/L	0.028	1.80	mg/L	0.028	1.58%
Sr 407.771†	81310.0	0.0759	mg/L	0.00450	0.0759	mg/L	0.00450	5.93%
Li 670.784†	77.4	-0.00228	mg/L	0.000923	-0.00228	mg/L	0.000923	40.46%
P 214.914†	82.2	0.0310	mg/L	0.00800	0.0310	mg/L	0.00800	25.80%

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Sequence No.: 65 **Autosampler Location: 88**
Sample ID: L1311133009 **Date Collected: 11/26/2013 7:45:05 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1311133009

Analyte	Back Pressure	Flow
All	181.0 kPa	0.45 L/min

Mean Data: L1311133009

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2703089.4						27855.34	1.03%
YRADIAL	186009.4						1743.15	0.94%
Ga 417.206	881840.7						17579.79	1.99%
GaRADIAL	41537.2						436.85	1.05%
Ag 328.068†	-239.4	-0.00125	mg/L	0.000102	-0.00125	mg/L	0.000102	8.10%
Al 396.153†	37.8	-0.00480	mg/L	0.002225	-0.00480	mg/L	0.002225	46.35%
As 188.979†	-1.2	-0.00087	mg/L	0.003058	-0.00087	mg/L	0.003058	351.54%

Approved: November 27, 2013

Ba 233.527†	989.8	0.00886 mg/L	0.000029	0.00886 mg/L	0.000029	0.33%
Be 234.861†	29.1	-0.00012 mg/L	0.000041	-0.00012 mg/L	0.000041	34.83%
B 249.677†	659.2	0.00858 mg/L	0.000397	0.00858 mg/L	0.000397	4.63%
Ca 227.546†	730.3	3.78 mg/L	0.072	3.78 mg/L	0.072	1.89%
Cd 228.802†	-15.8	-0.00045 mg/L	0.000165	-0.00045 mg/L	0.000165	36.45%
Co 228.616†	-24.5	-0.00129 mg/L	0.000265	-0.00129 mg/L	0.000265	20.51%
Cr 267.716†	65.5	-0.00160 mg/L	0.000115	-0.00160 mg/L	0.000115	7.18%
Cu 327.393†	-344.0	-0.00167 mg/L	0.000302	-0.00167 mg/L	0.000302	18.03%
Fe 239.562†	121.8	0.0278 mg/L	0.00077	0.0278 mg/L	0.00077	2.78%
Mg 279.077†	2568.0	2.34 mg/L	0.004	2.34 mg/L	0.004	0.16%
Mn 257.610†	3636.1	0.00209 mg/L	0.000088	0.00209 mg/L	0.000088	4.19%
Mo 202.031†	-5.6	-0.00590 mg/L	0.000381	-0.00590 mg/L	0.000381	6.47%
Ni 231.604†	-12.0	-0.00339 mg/L	0.000471	-0.00339 mg/L	0.000471	13.88%
Pb 220.353†	19.9	0.00087 mg/L	0.001296	0.00087 mg/L	0.001296	149.34%
Sb 206.836†	2.3	0.00345 mg/L	0.001006	0.00345 mg/L	0.001006	29.19%
Se 196.026†	-3.0	-0.00193 mg/L	0.003421	-0.00193 mg/L	0.003421	177.35%
Si 251.611†	85279.4	2.53 mg/L	0.083	2.53 mg/L	0.083	3.28%
Sn 189.927†	-21.3	-0.00598 mg/L	0.000327	-0.00598 mg/L	0.000327	5.47%
Ti 334.940†	-146.9	-0.00142 mg/L	0.000055	-0.00142 mg/L	0.000055	3.89%
Tl 190.801†	-11.6	-0.0104 mg/L	0.00123	-0.0104 mg/L	0.00123	11.85%
V 290.880†	1132.6	0.00160 mg/L	0.000432	0.00160 mg/L	0.000432	26.98%
Zn 206.200†	100.9	-0.00124 mg/L	0.000285	-0.00124 mg/L	0.000285	22.96%
K 766.490†	1947.1	1.19 mg/L	0.021	1.19 mg/L	0.021	1.80%
Na 589.592†	16308.5	1.48 mg/L	0.017	1.48 mg/L	0.017	1.18%
Sr 407.771†	21776.7	0.0165 mg/L	0.00052	0.0165 mg/L	0.00052	3.15%
Li 670.784†	59.9	-0.00254 mg/L	0.000132	-0.00254 mg/L	0.000132	5.20%
P 214.914†	74.1	0.0226 mg/L	0.00452	0.0226 mg/L	0.00452	20.03%

Sequence No.: 66 **Autosampler Location: 89**
Sample ID: L1311133011 **Date Collected: 11/26/2013 7:48:07 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1311133011

Analyte	Back Pressure	Flow
All	181.0 kPa	0.45 L/min

Mean Data: L1311133011

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2717142.7						12838.24	0.47%
YRADIAL	188049.5						5730.14	3.05%
Ga 417.206	897382.6						8420.91	0.94%
GaRADIAL	41944.0						661.78	1.58%
Ag 328.068†	-144.1	-0.00087	mg/L	0.000669	-0.00087	mg/L	0.000669	77.18%
Al 396.153†	67.9	0.00552	mg/L	0.001675	0.00552	mg/L	0.001675	30.37%
As 188.979†	-4.1	-0.00263	mg/L	0.002779	-0.00263	mg/L	0.002779	105.56%
Ba 233.527†	1051.7	0.00967	mg/L	0.000061	0.00967	mg/L	0.000061	0.63%
Be 234.861†	38.6	-0.00010	mg/L	0.000031	-0.00010	mg/L	0.000031	29.81%
B 249.677†	660.8	0.00860	mg/L	0.000124	0.00860	mg/L	0.000124	1.44%
Ca 227.546†	696.3	3.61	mg/L	0.076	3.61	mg/L	0.076	2.11%
Cd 228.802†	-11.8	-0.00028	mg/L	0.000156	-0.00028	mg/L	0.000156	55.20%
Co 228.616†	-22.9	-0.00121	mg/L	0.000251	-0.00121	mg/L	0.000251	20.73%
Cr 267.716†	72.2	-0.00154	mg/L	0.000068	-0.00154	mg/L	0.000068	4.44%
Cu 327.393†	-227.3	-0.00112	mg/L	0.000121	-0.00112	mg/L	0.000121	10.79%
Fe 239.562†	119.2	0.0269	mg/L	0.00140	0.0269	mg/L	0.00140	5.21%
Mg 279.077†	2508.8	2.28	mg/L	0.071	2.28	mg/L	0.071	3.12%
Mn 257.610†	3969.2	0.00268	mg/L	0.000049	0.00268	mg/L	0.000049	1.81%
Mo 202.031†	-2.3	-0.00569	mg/L	0.000666	-0.00569	mg/L	0.000666	11.71%
Ni 231.604†	-1.9	-0.00310	mg/L	0.000130	-0.00310	mg/L	0.000130	4.18%
Pb 220.353†	30.8	0.00273	mg/L	0.000207	0.00273	mg/L	0.000207	7.57%
Sb 206.836†	1.3	0.00290	mg/L	0.003096	0.00290	mg/L	0.003096	106.69%
Se 196.026†	-2.4	-0.00129	mg/L	0.003874	-0.00129	mg/L	0.003874	300.24%
Si 251.611†	86899.3	2.58	mg/L	0.059	2.58	mg/L	0.059	2.27%
Sn 189.927†	-25.4	-0.00668	mg/L	0.000492	-0.00668	mg/L	0.000492	7.37%
Ti 334.940†	158.2	-0.00106	mg/L	0.000122	-0.00106	mg/L	0.000122	11.49%
Tl 190.801†	-7.9	-0.00826	mg/L	0.002864	-0.00826	mg/L	0.002864	34.69%
V 290.880†	1199.8	0.00197	mg/L	0.000677	0.00197	mg/L	0.000677	34.36%

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Zn 206.200†	112.1	-0.00082	mg/L	0.000145	-0.00082	mg/L	0.000145	17.80%
K 766.490†	1900.8	1.16	mg/L	0.021	1.16	mg/L	0.021	1.78%
Na 589.592†	16781.2	1.52	mg/L	0.027	1.52	mg/L	0.027	1.78%
Sr 407.771†	20353.7	0.0151	mg/L	0.00021	0.0151	mg/L	0.00021	1.41%
Li 670.784†	-32.5	-0.00392	mg/L	0.000622	-0.00392	mg/L	0.000622	15.87%
P 214.914†	73.0	0.0214	mg/L	0.00714	0.0214	mg/L	0.00714	33.43%

Sequence No.: 67 **Autosampler Location: 90**
Sample ID: L1311133202 **Date Collected: 11/26/2013 7:51:09 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1311133202

Analyte	Back Pressure	Flow
All	182.0 kPa	0.45 L/min

Mean Data: L1311133202

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2713486.2						9346.88	0.34%
YRADIAL	189431.0						3472.84	1.83%
Ga 417.206	905262.5						6770.37	0.75%
GaRADIAL	41551.5						760.55	1.83%
Ag 328.068†	4.1	-0.00034	mg/L	0.000019	-0.00034	mg/L	0.000019	5.61%
Al 396.153†	9.8	-0.0145	mg/L	0.00052	-0.0145	mg/L	0.00052	3.56%
As 188.979†	-16.8	-0.00979	mg/L	0.001924	-0.00979	mg/L	0.001924	19.66%
Ba 233.527†	2342.0	0.0264	mg/L	0.00009	0.0264	mg/L	0.00009	0.35%
Be 234.861†	46.0	-0.00006	mg/L	0.000015	-0.00006	mg/L	0.000015	26.47%
B 249.677†	701.5	0.00920	mg/L	0.000112	0.00920	mg/L	0.000112	1.22%
Ca 227.546†	6755.2	34.4	mg/L	0.25	34.4	mg/L	0.25	0.72%
Cd 228.802†	-12.0	-0.00025	mg/L	0.000219	-0.00025	mg/L	0.000219	86.04%
Co 228.616†	-22.1	-0.00117	mg/L	0.000224	-0.00117	mg/L	0.000224	19.25%
Cr 267.716†	183.9	-0.00054	mg/L	0.000061	-0.00054	mg/L	0.000061	11.32%
Cu 327.393†	-4.5	-0.00007	mg/L	0.000364	-0.00007	mg/L	0.000364	558.70%
Fe 239.562†	93.5	0.0175	mg/L	0.00009	0.0175	mg/L	0.00009	0.54%
Mg 279.077†	18461.2	17.0	mg/L	0.45	17.0	mg/L	0.45	2.64%
Mn 257.610†	188989.3	0.330	mg/L	0.0019	0.330	mg/L	0.0019	0.59%
Mo 202.031†	15.5	-0.00451	mg/L	0.000283	-0.00451	mg/L	0.000283	6.28%
Ni 231.604†	28.2	-0.00223	mg/L	0.000135	-0.00223	mg/L	0.000135	6.05%
Pb 220.353†	35.8	0.00339	mg/L	0.001653	0.00339	mg/L	0.001653	48.81%
Sb 206.836†	0.2	0.00231	mg/L	0.002054	0.00231	mg/L	0.002054	88.88%
Se 196.026†	1.9	0.00399	mg/L	0.002780	0.00399	mg/L	0.002780	69.68%
Si 251.611†	77003.8	2.29	mg/L	0.089	2.29	mg/L	0.089	3.90%
Sn 189.927†	-158.3	-0.0294	mg/L	0.00074	-0.0294	mg/L	0.00074	2.53%
Ti 334.940†	-4903.9	-0.00274	mg/L	0.000083	-0.00274	mg/L	0.000083	3.02%
Tl 190.801†	-7.8	-0.00854	mg/L	0.003100	-0.00854	mg/L	0.003100	36.30%
V 290.880†	1931.5	0.00559	mg/L	0.003130	0.00559	mg/L	0.003130	55.95%
Zn 206.200†	375.5	0.00916	mg/L	0.000170	0.00916	mg/L	0.000170	1.85%
K 766.490†	5845.5	3.51	mg/L	0.002	3.51	mg/L	0.002	0.06%
Na 589.592†	357380.5	33.3	mg/L	0.55	33.3	mg/L	0.55	1.65%
Sr 407.771†	194327.0	0.188	mg/L	0.0025	0.188	mg/L	0.0025	1.35%
Li 670.784†	144.9	-0.00127	mg/L	0.000345	-0.00127	mg/L	0.000345	27.10%
P 214.914†	82.0	0.0308	mg/L	0.00681	0.0308	mg/L	0.00681	22.08%

Sequence No.: 68 **Autosampler Location: 91**
Sample ID: L1311133205 **Date Collected: 11/26/2013 7:54:15 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1311133205

Analyte	Back Pressure	Flow
All	182.0 kPa	0.45 L/min

Mean Data: L1311133205

Approved: November 27, 2013

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2676836.5						37873.02	1.41%
YRADIAL	187287.3						3000.62	1.60%
Ga 417.206	903411.0						13405.44	1.48%
GaRADIAL	41790.4						915.81	2.19%
Ag 328.068†	-2.2	-0.00037	mg/L	0.000306	-0.00037	mg/L	0.000306	82.75%
Al 396.153†	10.1	-0.0144	mg/L	0.00259	-0.0144	mg/L	0.00259	17.99%
As 188.979†	-10.5	-0.00594	mg/L	0.003282	-0.00594	mg/L	0.003282	55.24%
Ba 233.527†	2261.2	0.0254	mg/L	0.00044	0.0254	mg/L	0.00044	1.72%
Be 234.861†	56.1	-0.00004	mg/L	0.000030	-0.00004	mg/L	0.000030	79.50%
B 249.677†	657.9	0.00856	mg/L	0.000345	0.00856	mg/L	0.000345	4.03%
Ca 227.546†	6427.6	32.7	mg/L	0.44	32.7	mg/L	0.44	1.36%
Cd 228.802†	-13.9	-0.00035	mg/L	0.000420	-0.00035	mg/L	0.000420	120.04%
Co 228.616†	-20.0	-0.00106	mg/L	0.000491	-0.00106	mg/L	0.000491	46.12%
Cr 267.716†	142.8	-0.00090	mg/L	0.000049	-0.00090	mg/L	0.000049	5.39%
Cu 327.393†	-134.1	-0.00068	mg/L	0.000501	-0.00068	mg/L	0.000501	73.36%
Fe 239.562†	52.1	0.00299	mg/L	0.000264	0.00299	mg/L	0.000264	8.81%
Mg 279.077†	17937.3	16.5	mg/L	0.37	16.5	mg/L	0.37	2.26%
Mn 257.610†	186218.7	0.325	mg/L	0.0022	0.325	mg/L	0.0022	0.68%
Mo 202.031†	20.0	-0.00423	mg/L	0.000280	-0.00423	mg/L	0.000280	6.63%
Ni 231.604†	11.1	-0.00272	mg/L	0.000185	-0.00272	mg/L	0.000185	6.79%
Pb 220.353†	22.3	0.00107	mg/L	0.001756	0.00107	mg/L	0.001756	163.50%
Sb 206.836†	-1.9	0.00121	mg/L	0.001659	0.00121	mg/L	0.001659	137.32%
Se 196.026†	-1.3	-0.00001	mg/L	0.002107	-0.00001	mg/L	0.002107	>999.9%
Si 251.611†	74473.9	2.21	mg/L	0.014	2.21	mg/L	0.014	0.65%
Sn 189.927†	-166.1	-0.0308	mg/L	0.00187	-0.0308	mg/L	0.00187	6.08%
Ti 334.940†	-4847.5	-0.00292	mg/L	0.000153	-0.00292	mg/L	0.000153	5.23%
Tl 190.801†	-12.4	-0.0113	mg/L	0.00046	-0.0113	mg/L	0.00046	4.10%
V 290.880†	2039.6	0.00620	mg/L	0.000296	0.00620	mg/L	0.000296	4.78%
Zn 206.200†	238.8	0.00399	mg/L	0.000329	0.00399	mg/L	0.000329	8.26%
K 766.490†	5012.9	3.01	mg/L	0.039	3.01	mg/L	0.039	1.30%
Na 589.592†	333539.8	31.0	mg/L	0.05	31.0	mg/L	0.05	0.15%
Sr 407.771†	185680.2	0.180	mg/L	0.0014	0.180	mg/L	0.0014	0.76%
Li 670.784†	187.8	-0.00064	mg/L	0.000730	-0.00064	mg/L	0.000730	114.78%
P 214.914†	86.1	0.0351	mg/L	0.01012	0.0351	mg/L	0.01012	28.85%

Sequence No.: 69 **Autosampler Location: 92**
Sample ID: L1311133207 **Date Collected: 11/26/2013 7:57:22 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1311133207

Analyte	Back Pressure	Flow
All	181.0 kPa	0.45 L/min

Mean Data: L1311133207

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2679474.6						12253.35	0.46%
YRADIAL	187928.0						1956.61	1.04%
Ga 417.206	902243.2						1901.37	0.21%
GaRADIAL	41380.3						666.17	1.61%
Ag 328.068†	151.2	0.00025	mg/L	0.000415	0.00025	mg/L	0.000415	166.08%
Al 396.153†	16.5	-0.0122	mg/L	0.00228	-0.0122	mg/L	0.00228	18.67%
As 188.979†	-8.6	-0.00477	mg/L	0.001504	-0.00477	mg/L	0.001504	31.51%
Ba 233.527†	2423.9	0.0275	mg/L	0.00038	0.0275	mg/L	0.00038	1.37%
Be 234.861†	66.3	-0.00002	mg/L	0.000008	-0.00002	mg/L	0.000008	34.86%
B 249.677†	667.7	0.00870	mg/L	0.000105	0.00870	mg/L	0.000105	1.21%
Ca 227.546†	6679.7	34.0	mg/L	0.87	34.0	mg/L	0.87	2.57%
Cd 228.802†	-13.8	-0.00035	mg/L	0.000149	-0.00035	mg/L	0.000149	42.63%
Co 228.616†	-19.2	-0.00102	mg/L	0.000135	-0.00102	mg/L	0.000135	13.19%
Cr 267.716†	138.0	-0.00095	mg/L	0.000084	-0.00095	mg/L	0.000084	8.86%
Cu 327.393†	-420.9	-0.00205	mg/L	0.000215	-0.00205	mg/L	0.000215	10.50%
Fe 239.562†	81.6	0.0133	mg/L	0.00093	0.0133	mg/L	0.00093	6.99%
Mg 279.077†	19448.2	17.9	mg/L	0.49	17.9	mg/L	0.49	2.75%
Mn 257.610†	197241.7	0.345	mg/L	0.0028	0.345	mg/L	0.0028	0.82%
Mo 202.031†	23.1	-0.00403	mg/L	0.000446	-0.00403	mg/L	0.000446	11.07%

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Ni 231.604†	-11.2	-0.00337 mg/L	0.000270	-0.00337 mg/L	0.000270	8.03%
Pb 220.353†	24.1	0.00138 mg/L	0.001015	0.00138 mg/L	0.001015	73.65%
Sb 206.836†	1.8	0.00317 mg/L	0.003253	0.00317 mg/L	0.003253	102.54%
Se 196.026†	-2.6	-0.00163 mg/L	0.008115	-0.00163 mg/L	0.008115	497.51%
Si 251.611†	79460.0	2.36 mg/L	0.070	2.36 mg/L	0.070	2.95%
Sn 189.927†	-170.7	-0.0315 mg/L	0.00096	-0.0315 mg/L	0.00096	3.03%
Ti 334.940†	-5116.0	-0.00306 mg/L	0.000215	-0.00306 mg/L	0.000215	7.02%
Tl 190.801†	-15.0	-0.0128 mg/L	0.00368	-0.0128 mg/L	0.00368	28.67%
V 290.880†	2001.5	0.00595 mg/L	0.000969	0.00595 mg/L	0.000969	16.27%
Zn 206.200†	120.3	-0.00050 mg/L	0.000266	-0.00050 mg/L	0.000266	53.26%
K 766.490†	4329.5	2.60 mg/L	0.055	2.60 mg/L	0.055	2.11%
Na 589.592†	361065.1	33.7 mg/L	0.54	33.7 mg/L	0.54	1.60%
Sr 407.771†	200862.5	0.195 mg/L	0.0024	0.195 mg/L	0.0024	1.22%
Li 670.784†	175.1	-0.00083 mg/L	0.000864	-0.00083 mg/L	0.000864	104.66%
P 214.914†	91.0	0.0402 mg/L	0.00452	0.0402 mg/L	0.00452	11.25%

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Sequence No.: 70 **Autosampler Location: 7**
Sample ID: CCV **Date Collected: 11/26/2013 8:00:29 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	182.0 kPa	0.45 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2616622.4						46494.49	1.78%
YRADIAL	185008.4						1300.48	0.70%
Ga 417.206	864419.2						22702.50	2.63%
GaRADIAL	41426.3						1171.01	2.83%
Ag 328.068†	91323.0	0.373	mg/L	0.0118	0.373	mg/L	0.0118	3.15%
QC value within limits for Ag 328.068 Recovery = 93.20%								
Al 396.153†	29370.4	10.0	mg/L	0.06	10.0	mg/L	0.06	0.56%
QC value within limits for Al 396.153 Recovery = 100.04%								
As 188.979†	607.2	0.367	mg/L	0.0131	0.367	mg/L	0.0131	3.58%
QC value within limits for As 188.979 Recovery = 91.78%								
Ba 233.527†	73493.2	0.950	mg/L	0.0276	0.950	mg/L	0.0276	2.91%
QC value within limits for Ba 233.527 Recovery = 95.04%								
Be 234.861†	30124.5	0.0454	mg/L	0.00180	0.0454	mg/L	0.00180	3.96%
QC value within limits for Be 234.861 Recovery = 90.84%								
B 249.677†	30798.9	0.449	mg/L	0.0153	0.449	mg/L	0.0153	3.40%
QC value less than the lower limit for B 249.677 Recovery = 89.83%								
Ca 227.546†	1845.7	9.89	mg/L	0.280	9.89	mg/L	0.280	2.84%
QC value within limits for Ca 227.546 Recovery = 98.87%								
Cd 228.802†	1118.1	0.0437	mg/L	0.00177	0.0437	mg/L	0.00177	4.05%
QC value less than the lower limit for Cd 228.802 Recovery = 87.39%								
Co 228.616†	4081.3	0.195	mg/L	0.0043	0.195	mg/L	0.0043	2.21%
QC value within limits for Co 228.616 Recovery = 97.36%								
Cr 267.716†	53232.9	0.475	mg/L	0.0140	0.475	mg/L	0.0140	2.95%
QC value within limits for Cr 267.716 Recovery = 95.04%								
Cu 327.393†	98048.5	0.468	mg/L	0.0169	0.468	mg/L	0.0169	3.61%
QC value within limits for Cu 327.393 Recovery = 93.55%								
Fe 239.562†	11030.9	3.87	mg/L	0.139	3.87	mg/L	0.139	3.60%
QC value within limits for Fe 239.562 Recovery = 96.76%								
Mg 279.077†	10705.7	9.86	mg/L	0.331	9.86	mg/L	0.331	3.36%
QC value within limits for Mg 279.077 Recovery = 98.58%								
Mn 257.610†	278647.0	0.489	mg/L	0.0132	0.489	mg/L	0.0132	2.69%
QC value within limits for Mn 257.610 Recovery = 97.87%								
Mo 202.031†	15445.4	0.958	mg/L	0.0263	0.958	mg/L	0.0263	2.75%
QC value within limits for Mo 202.031 Recovery = 95.82%								
Ni 231.604†	16766.0	0.481	mg/L	0.0132	0.481	mg/L	0.0132	2.74%
QC value within limits for Ni 231.604 Recovery = 96.19%								
Pb 220.353†	2857.2	0.488	mg/L	0.0124	0.488	mg/L	0.0124	2.55%
QC value within limits for Pb 220.353 Recovery = 97.63%								
Sb 206.836†	2052.8	1.10	mg/L	0.038	1.10	mg/L	0.038	3.45%
QC value within limits for Sb 206.836 Recovery = 91.71%								

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Se 196.026†              302.6       0.375 mg/L        0.0138       0.375 mg/L        0.0138   3.67%
   QC value within limits for Se 196.026  Recovery = 93.63%
Si 251.611†           155171.6        4.61 mg/L         0.158        4.61 mg/L         0.158   3.43%
   QC value within limits for Si 251.611  Recovery = 92.22%
Sn 189.927†             5699.2       0.973 mg/L        0.0214       0.973 mg/L        0.0214   2.20%
   QC value within limits for Sn 189.927  Recovery = 97.34%
Ti 334.940†           772602.6       0.960 mg/L        0.0031       0.960 mg/L        0.0031   0.32%
   QC value within limits for Ti 334.940  Recovery = 95.96%
Tl 190.801†              823.9       0.498 mg/L        0.0123       0.498 mg/L        0.0123   2.47%
   QC value within limits for Tl 190.801  Recovery = 99.51%
V 290.880†            176265.2       0.960 mg/L        0.0258       0.960 mg/L        0.0258   2.69%
   QC value within limits for V 290.880  Recovery = 95.95%
Zn 206.200†            25171.4       0.952 mg/L        0.0255       0.952 mg/L        0.0255   2.68%
   QC value within limits for Zn 206.200  Recovery = 95.19%
K 766.490†             78726.9        48.2 mg/L          0.40        48.2 mg/L          0.40   0.82%
   QC value within limits for K 766.490  Recovery = 96.35%
Na 589.592†           521753.3        49.2 mg/L          1.63        49.2 mg/L          1.63   3.32%
   QC value within limits for Na 589.592  Recovery = 98.40%
Sr 407.771†           960106.7       0.957 mg/L        0.0091       0.957 mg/L        0.0091   0.95%
   QC value within limits for Sr 407.771  Recovery = 95.67%
Li 670.784†            66752.9       0.991 mg/L        0.0080       0.991 mg/L        0.0080   0.81%
   QC value within limits for Li 670.784  Recovery = 99.07%
P 214.914†              9514.1        9.89 mg/L         0.201        9.89 mg/L         0.201   2.03%
   QC value within limits for P 214.914  Recovery = 98.89%
QC Failed.  Continue with analysis.

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Sequence No.: 71                                    Autosampler Location: 8
Sample ID: CCB                                      Date Collected: 11/26/2013 8:02:37 PM
Analyst:                                            Data Type: Original
Initial Sample Wt:                                  Initial Sample Vol:
Dilution:                                           Sample Prep Vol:

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Nebulizer Parameters: CCB
Analyte                 Back Pressure    Flow
All                    181.0 kPa        0.45 L/min

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Mean Data: CCB
                   Mean Corrected        Calib.                          Sample
Analyte               Intensity     Conc. Units      Std.Dev.      Conc. Units      Std.Dev.   RSD
Y 371.029           2634877.5                                                     41189.63   1.56%
YRADIAL              183289.6                                                      8373.50   4.57%
Ga 417.206           864204.8                                                     20312.24   2.35%
GaRADIAL              40289.0                                                      1253.24   3.11%
Ag 328.068†             -63.8    -0.00055 mg/L      0.000340    -0.00055 mg/L      0.000340  61.39%
   QC value within limits for Ag 328.068  Recovery = Not calculated
Al 396.153†              40.1    -0.00405 mg/L      0.004425    -0.00405 mg/L      0.004425 109.17%
   QC value within limits for Al 396.153  Recovery = Not calculated
As 188.979†              -2.2    -0.00157 mg/L      0.002572    -0.00157 mg/L      0.002572 163.86%
   QC value within limits for As 188.979  Recovery = Not calculated
Ba 233.527†               4.3    -0.00393 mg/L      0.000187    -0.00393 mg/L      0.000187   4.77%
   QC value within limits for Ba 233.527  Recovery = Not calculated
Be 234.861†              51.5    -0.00007 mg/L      0.000055    -0.00007 mg/L      0.000055  73.84%
   QC value within limits for Be 234.861  Recovery = Not calculated
B 249.677†              196.3     0.00177 mg/L      0.000870     0.00177 mg/L      0.000870  49.23%
   QC value within limits for B 249.677  Recovery = Not calculated
Ca 227.546†              -0.5      0.0671 mg/L       0.06920      0.0671 mg/L       0.06920 103.10%
   QC value within limits for Ca 227.546  Recovery = Not calculated
Cd 228.802†             -12.4    -0.00032 mg/L      0.000166    -0.00032 mg/L      0.000166  52.66%
   QC value within limits for Cd 228.802  Recovery = Not calculated
Co 228.616†             -25.6    -0.00134 mg/L      0.000168    -0.00134 mg/L      0.000168  12.51%
   QC value within limits for Co 228.616  Recovery = Not calculated
Cr 267.716†              82.8    -0.00144 mg/L      0.000090    -0.00144 mg/L      0.000090   6.27%
   QC value within limits for Cr 267.716  Recovery = Not calculated
Cu 327.393†            -284.6    -0.00139 mg/L      0.000899    -0.00139 mg/L      0.000899  64.46%
   QC value within limits for Cu 327.393  Recovery = Not calculated
Fe 239.562†               8.1     -0.0122 mg/L       0.00189     -0.0122 mg/L       0.00189  15.52%
   QC value within limits for Fe 239.562  Recovery = Not calculated
Mg 279.077†              30.7    -0.00591 mg/L      0.007367    -0.00591 mg/L      0.007367 124.73%
   QC value within limits for Mg 279.077  Recovery = Not calculated
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Mn 257.610†	336.5	-0.00375	mg/L	0.000148	-0.00375	mg/L	0.000148	3.95%
QC value within limits for Mn 257.610 Recovery = Not calculated								
Mo 202.031†	1.3	-0.00546	mg/L	0.000495	-0.00546	mg/L	0.000495	9.06%
QC value within limits for Mo 202.031 Recovery = Not calculated								
Ni 231.604†	2.4	-0.00297	mg/L	0.000252	-0.00297	mg/L	0.000252	8.46%
QC value within limits for Ni 231.604 Recovery = Not calculated								
Pb 220.353†	23.9	0.00155	mg/L	0.001070	0.00155	mg/L	0.001070	69.10%
QC value within limits for Pb 220.353 Recovery = Not calculated								
Sb 206.836†	5.1	0.00492	mg/L	0.001334	0.00492	mg/L	0.001334	27.10%
QC value within limits for Sb 206.836 Recovery = Not calculated								
Se 196.026†	-0.3	0.00139	mg/L	0.002224	0.00139	mg/L	0.002224	159.95%
QC value within limits for Se 196.026 Recovery = Not calculated								
Si 251.611†	11.6	-0.0110	mg/L	0.00207	-0.0110	mg/L	0.00207	18.82%
QC value within limits for Si 251.611 Recovery = Not calculated								
Sn 189.927†	20.5	0.00118	mg/L	0.001151	0.00118	mg/L	0.001151	97.17%
QC value within limits for Sn 189.927 Recovery = Not calculated								
Ti 334.940†	417.3	-0.00127	mg/L	0.000145	-0.00127	mg/L	0.000145	11.37%
QC value within limits for Ti 334.940 Recovery = Not calculated								
Tl 190.801†	-2.2	-0.00486	mg/L	0.001146	-0.00486	mg/L	0.001146	23.56%
QC value within limits for Tl 190.801 Recovery = Not calculated								
V 290.880†	1474.0	0.00353	mg/L	0.000928	0.00353	mg/L	0.000928	26.26%
QC value within limits for V 290.880 Recovery = Not calculated								
Zn 206.200†	53.1	-0.00304	mg/L	0.000298	-0.00304	mg/L	0.000298	9.80%
QC value within limits for Zn 206.200 Recovery = Not calculated								
K 766.490†	160.8	0.108	mg/L	0.0329	0.108	mg/L	0.0329	30.40%
QC value within limits for K 766.490 Recovery = Not calculated								
Na 589.592†	1400.5	0.120	mg/L	0.0512	0.120	mg/L	0.0512	42.54%
QC value within limits for Na 589.592 Recovery = Not calculated								
Sr 407.771†	1585.0	-0.00364	mg/L	0.000794	-0.00364	mg/L	0.000794	21.84%
QC value within limits for Sr 407.771 Recovery = Not calculated								
Li 670.784†	205.7	-0.00037	mg/L	0.001092	-0.00037	mg/L	0.001092	295.64%
QC value within limits for Li 670.784 Recovery = Not calculated								
P 214.914†	87.0	0.0360	mg/L	0.01180	0.0360	mg/L	0.01180	32.77%
QC value within limits for P 214.914 Recovery = Not calculated								

All analyte(s) passed QC.

Sequence No.: 72 **Autosampler Location: 93**
Sample ID: Sample093 **Date Collected: 11/26/2013 8:05:41 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: Sample093

Analyte	Back Pressure	Flow
All	181.0 kPa	0.45 L/min

Mean Data: Sample093

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3058376.7						46062.57	1.51%
YRADIAL	208307.8						2279.63	1.09%
Ga 417.206	989776.3						16723.61	1.69%
GaRADIAL	45664.1						447.68	0.98%
Ag 328.068†	-53.7	-0.00052	mg/L	0.000240	-0.00052	mg/L	0.000240	46.10%
Al 396.153†	8.3	-0.0150	mg/L	0.00250	-0.0150	mg/L	0.00250	16.66%
As 188.979†	-8.5	-0.00545	mg/L	0.003751	-0.00545	mg/L	0.003751	68.81%
Ba 233.527†	-10.8	-0.00412	mg/L	0.000128	-0.00412	mg/L	0.000128	3.12%
Be 234.861†	129.2	0.00004	mg/L	0.000081	0.00004	mg/L	0.000081	179.81%
B 249.677†	16.0	-0.00089	mg/L	0.000132	-0.00089	mg/L	0.000132	14.77%
Ca 227.546†	-2.8	0.0552	mg/L	0.00883	0.0552	mg/L	0.00883	16.00%
Cd 228.802†	-10.7	-0.00023	mg/L	0.000188	-0.00023	mg/L	0.000188	83.13%
Co 228.616†	-23.3	-0.00123	mg/L	0.000240	-0.00123	mg/L	0.000240	19.61%
Cr 267.716†	72.5	-0.00154	mg/L	0.000053	-0.00154	mg/L	0.000053	3.48%
Cu 327.393†	-393.3	-0.00191	mg/L	0.000594	-0.00191	mg/L	0.000594	31.07%
Fe 239.562†	10.1	-0.0115	mg/L	0.00148	-0.0115	mg/L	0.00148	12.83%
Mg 279.077†	16.5	-0.0190	mg/L	0.00649	-0.0190	mg/L	0.00649	34.16%
Mn 257.610†	216.8	-0.00396	mg/L	0.000144	-0.00396	mg/L	0.000144	3.64%
Mo 202.031†	17.4	-0.00447	mg/L	0.000518	-0.00447	mg/L	0.000518	11.60%
Ni 231.604†	-10.2	-0.00334	mg/L	0.000319	-0.00334	mg/L	0.000319	9.57%

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Pb 220.353†	25.9	0.00189 mg/L	0.001306	0.00189 mg/L	0.001306	69.01%
Sb 206.836†	3.6	0.00410 mg/L	0.001096	0.00410 mg/L	0.001096	26.72%
Se 196.026†	6.1	0.00923 mg/L	0.006101	0.00923 mg/L	0.006101	66.09%
Si 251.611†	1976.1	0.0476 mg/L	0.00071	0.0476 mg/L	0.00071	1.48%
Sn 189.927†	15.1	0.00026 mg/L	0.001163	0.00026 mg/L	0.001163	451.51%
Ti 334.940†	120.1	-0.00164 mg/L	0.000218	-0.00164 mg/L	0.000218	13.23%
Tl 190.801†	-14.4	-0.0121 mg/L	0.00252	-0.0121 mg/L	0.00252	20.85%
V 290.880†	717.9	-0.00060 mg/L	0.001201	-0.00060 mg/L	0.001201	198.81%
Zn 206.200†	65.7	-0.00257 mg/L	0.000154	-0.00257 mg/L	0.000154	6.00%
K 766.490†	-89.1	-0.0434 mg/L	0.02914	-0.0434 mg/L	0.02914	67.21%
Na 589.592†	7253.2	0.654 mg/L	0.0113	0.654 mg/L	0.0113	1.73%
Sr 407.771†	210.4	-0.00501 mg/L	0.000138	-0.00501 mg/L	0.000138	2.75%
Li 670.784†	-42.8	-0.00407 mg/L	0.000661	-0.00407 mg/L	0.000661	16.25%
P 214.914†	185.8	0.139 mg/L	0.0102	0.139 mg/L	0.0102	7.35%

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Sequence No.: 73 **Autosampler Location: 94**
Sample ID: Sample094 **Date Collected: 11/26/2013 8:08:44 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: Sample094

Analyte	Back Pressure	Flow
All	181.0 kPa	0.45 L/min

Mean Data: Sample094

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3118174.4						28901.05	0.93%
YRADIAL	209502.1						1943.03	0.93%
Ga 417.206	1003470.8						13977.44	1.39%
GaRADIAL	45531.0						227.41	0.50%
Ag 328.068†	-44.4	-0.00049	mg/L	0.000494	-0.00049	mg/L	0.000494	101.57%
Al 396.153†	23.6	-0.00974	mg/L	0.000944	-0.00974	mg/L	0.000944	9.69%
As 188.979†	-7.8	-0.00499	mg/L	0.002846	-0.00499	mg/L	0.002846	57.06%
Ba 233.527†	-23.5	-0.00429	mg/L	0.000037	-0.00429	mg/L	0.000037	0.87%
Be 234.861†	139.7	0.00006	mg/L	0.000028	0.00006	mg/L	0.000028	46.47%
B 249.677†	-17.0	-0.00137	mg/L	0.000316	-0.00137	mg/L	0.000316	23.06%
Ca 227.546†	0.5	0.0722	mg/L	0.03166	0.0722	mg/L	0.03166	43.84%
Cd 228.802†	-18.0	-0.00052	mg/L	0.000093	-0.00052	mg/L	0.000093	17.86%
Co 228.616†	-19.9	-0.00106	mg/L	0.000318	-0.00106	mg/L	0.000318	29.95%
Cr 267.716†	63.0	-0.00162	mg/L	0.000040	-0.00162	mg/L	0.000040	2.46%
Cu 327.393†	-467.3	-0.00227	mg/L	0.000527	-0.00227	mg/L	0.000527	23.28%
Fe 239.562†	6.5	-0.0128	mg/L	0.00055	-0.0128	mg/L	0.00055	4.30%
Mg 279.077†	10.8	-0.0243	mg/L	0.00429	-0.0243	mg/L	0.00429	17.67%
Mn 257.610†	161.2	-0.00406	mg/L	0.000009	-0.00406	mg/L	0.000009	0.22%
Mo 202.031†	10.4	-0.00490	mg/L	0.000149	-0.00490	mg/L	0.000149	3.03%
Ni 231.604†	1.0	-0.00301	mg/L	0.000189	-0.00301	mg/L	0.000189	6.29%
Pb 220.353†	20.3	0.00093	mg/L	0.001138	0.00093	mg/L	0.001138	122.78%
Sb 206.836†	2.1	0.00333	mg/L	0.001549	0.00333	mg/L	0.001549	46.56%
Se 196.026†	4.7	0.00751	mg/L	0.002718	0.00751	mg/L	0.002718	36.20%
Si 251.611†	1977.9	0.0477	mg/L	0.00139	0.0477	mg/L	0.00139	2.92%
Sn 189.927†	10.6	-0.00052	mg/L	0.000597	-0.00052	mg/L	0.000597	115.17%
Ti 334.940†	-136.7	-0.00196	mg/L	0.000083	-0.00196	mg/L	0.000083	4.22%
Tl 190.801†	-8.1	-0.00835	mg/L	0.003162	-0.00835	mg/L	0.003162	37.85%
V 290.880†	427.9	-0.00219	mg/L	0.000297	-0.00219	mg/L	0.000297	13.57%
Zn 206.200†	45.1	-0.00335	mg/L	0.000135	-0.00335	mg/L	0.000135	4.02%
K 766.490†	-46.5	-0.0176	mg/L	0.00207	-0.0176	mg/L	0.00207	11.76%
Na 589.592†	7241.8	0.653	mg/L	0.0120	0.653	mg/L	0.0120	1.84%
Sr 407.771†	-1.3	-0.00523	mg/L	0.000100	-0.00523	mg/L	0.000100	1.92%
Li 670.784†	-1.5	-0.00346	mg/L	0.000343	-0.00346	mg/L	0.000343	9.92%
P 214.914†	191.5	0.145	mg/L	0.0060	0.145	mg/L	0.0060	4.10%

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Sequence No.: 74 **Autosampler Location: 95**
Sample ID: Sample095 **Date Collected: 11/26/2013 8:11:47 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Approved: November 27, 2013

Nebulizer Parameters: Sample095

Analyte	Back Pressure	Flow
All	182.0 kPa	0.45 L/min

Mean Data: Sample095

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3072468.3						47560.36	1.55%
YRADIAL	214210.6						2006.12	0.94%
Ga 417.206	991858.3						20568.19	2.07%
GaRADIAL	46409.3						241.69	0.52%
Ag 328.068†	-89.5	-0.00067	mg/L	0.000306	-0.00067	mg/L	0.000306	45.91%
Al 396.153†	6.4	-0.0157	mg/L	0.00075	-0.0157	mg/L	0.00075	4.76%
As 188.979†	-12.2	-0.00771	mg/L	0.000885	-0.00771	mg/L	0.000885	11.48%
Ba 233.527†	-29.0	-0.00436	mg/L	0.000082	-0.00436	mg/L	0.000082	1.89%
Be 234.861†	112.7	0.00002	mg/L	0.000038	0.00002	mg/L	0.000038	193.75%
B 249.677†	-45.1	-0.00180	mg/L	0.000292	-0.00180	mg/L	0.000292	16.28%
Ca 227.546†	-2.3	0.0576	mg/L	0.01735	0.0576	mg/L	0.01735	30.13%
Cd 228.802†	-9.0	-0.00014	mg/L	0.000218	-0.00014	mg/L	0.000218	151.89%
Co 228.616†	-15.6	-0.00085	mg/L	0.000454	-0.00085	mg/L	0.000454	53.16%
Cr 267.716†	57.2	-0.00167	mg/L	0.000081	-0.00167	mg/L	0.000081	4.85%
Cu 327.393†	-375.5	-0.00183	mg/L	0.000651	-0.00183	mg/L	0.000651	35.60%
Fe 239.562†	8.9	-0.0119	mg/L	0.00142	-0.0119	mg/L	0.00142	11.96%
Mg 279.077†	5.6	-0.0290	mg/L	0.00412	-0.0290	mg/L	0.00412	14.23%
Mn 257.610†	60.8	-0.00423	mg/L	0.000025	-0.00423	mg/L	0.000025	0.59%
Mo 202.031†	13.9	-0.00469	mg/L	0.000227	-0.00469	mg/L	0.000227	4.85%
Ni 231.604†	-4.9	-0.00318	mg/L	0.000237	-0.00318	mg/L	0.000237	7.45%
Pb 220.353†	22.9	0.00139	mg/L	0.000439	0.00139	mg/L	0.000439	31.65%
Sb 206.836†	1.9	0.00320	mg/L	0.000636	0.00320	mg/L	0.000636	19.86%
Se 196.026†	5.9	0.00895	mg/L	0.002990	0.00895	mg/L	0.002990	33.41%
Si 251.611†	2016.3	0.0488	mg/L	0.00169	0.0488	mg/L	0.00169	3.47%
Sn 189.927†	11.8	-0.00030	mg/L	0.001737	-0.00030	mg/L	0.001737	574.38%
Ti 334.940†	-218.9	-0.00207	mg/L	0.000110	-0.00207	mg/L	0.000110	5.31%
Tl 190.801†	-23.2	-0.0173	mg/L	0.00135	-0.0173	mg/L	0.00135	7.80%
V 290.880†	491.8	-0.00184	mg/L	0.001546	-0.00184	mg/L	0.001546	83.98%
Zn 206.200†	46.8	-0.00329	mg/L	0.000276	-0.00329	mg/L	0.000276	8.39%
K 766.490†	-62.1	-0.0270	mg/L	0.02755	-0.0270	mg/L	0.02755	101.93%
Na 589.592†	7067.7	0.637	mg/L	0.0019	0.637	mg/L	0.0019	0.30%
Sr 407.771†	-52.6	-0.00528	mg/L	0.000071	-0.00528	mg/L	0.000071	1.34%
Li 670.784†	10.0	-0.00328	mg/L	0.000918	-0.00328	mg/L	0.000918	27.95%
P 214.914†	177.1	0.130	mg/L	0.0046	0.130	mg/L	0.0046	3.55%

Sequence No.: 75
Sample ID: Sample096
Analyst: JYH
Initial Sample Wt:
Dilution:

Autosampler Location: 96
Date Collected: 11/26/2013 8:14:49 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: Sample096

Analyte	Back Pressure	Flow
All	182.0 kPa	0.45 L/min

Mean Data: Sample096

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2704024.7						260613.63	9.64%
YRADIAL	216144.7						8644.54	4.00%
Ga 417.206	890534.5						112404.19	12.62%
GaRADIAL	47228.9						1121.61	2.37%
Ag 328.068†	-105.1	-0.00072	mg/L	0.000424	-0.00072	mg/L	0.000424	58.63%
Al 396.153†	0.8	-0.0175	mg/L	0.00195	-0.0175	mg/L	0.00195	11.16%
As 188.979†	-1.4	-0.00111	mg/L	0.001297	-0.00111	mg/L	0.001297	116.76%
Ba 233.527†	-29.3	-0.00436	mg/L	0.000387	-0.00436	mg/L	0.000387	8.86%
Be 234.861†	136.2	0.00006	mg/L	0.000236	0.00006	mg/L	0.000236	424.12%
B 249.677†	-12.2	-0.00130	mg/L	0.000619	-0.00130	mg/L	0.000619	47.43%
Ca 227.546†	8.5	0.113	mg/L	0.0535	0.113	mg/L	0.0535	47.47%

Approved: November 27, 2013

Cd 228.802†	-15.3	-0.00043 mg/L	0.000054	-0.00043 mg/L	0.000054	12.54%
Co 228.616†	-20.6	-0.00110 mg/L	0.000473	-0.00110 mg/L	0.000473	43.10%
Cr 267.716†	56.5	-0.00168 mg/L	0.000167	-0.00168 mg/L	0.000167	9.95%
Cu 327.393†	-540.8	-0.00261 mg/L	0.000634	-0.00261 mg/L	0.000634	24.28%
Fe 239.562†	2.5	-0.0142 mg/L	0.00058	-0.0142 mg/L	0.00058	4.10%
Mg 279.077†	19.6	-0.0162 mg/L	0.00262	-0.0162 mg/L	0.00262	16.19%
Mn 257.610†	181.2	-0.00402 mg/L	0.000062	-0.00402 mg/L	0.000062	1.54%
Mo 202.031†	-14.8	-0.00647 mg/L	0.000298	-0.00647 mg/L	0.000298	4.60%
Ni 231.604†	4.0	-0.00293 mg/L	0.000424	-0.00293 mg/L	0.000424	14.49%
Pb 220.353†	28.3	0.00230 mg/L	0.000628	0.00230 mg/L	0.000628	27.25%
Sb 206.836†	3.9	0.00431 mg/L	0.002050	0.00431 mg/L	0.002050	47.54%
Se 196.026†	-4.1	-0.00335 mg/L	0.005448	-0.00335 mg/L	0.005448	162.65%
Si 251.611†	-158.7	-0.0161 mg/L	0.00171	-0.0161 mg/L	0.00171	10.65%
Sn 189.927†	7.0	-0.00113 mg/L	0.000447	-0.00113 mg/L	0.000447	39.55%
Ti 334.940†	-15.1	-0.00180 mg/L	0.000048	-0.00180 mg/L	0.000048	2.67%
Tl 190.801†	-3.1	-0.00540 mg/L	0.005754	-0.00540 mg/L	0.005754	106.54%
V 290.880†	1200.6	0.00204 mg/L	0.002934	0.00204 mg/L	0.002934	143.96%
Zn 206.200†	47.4	-0.00326 mg/L	0.000297	-0.00326 mg/L	0.000297	9.09%
K 766.490†	-64.0	-0.0276 mg/L	0.01172	-0.0276 mg/L	0.01172	42.54%
Na 589.592†	325.5	0.0224 mg/L	0.01148	0.0224 mg/L	0.01148	51.18%
Sr 407.771†	181.6	-0.00504 mg/L	0.000091	-0.00504 mg/L	0.000091	1.80%
Li 670.784†	32.1	-0.00295 mg/L	0.000586	-0.00295 mg/L	0.000586	19.82%
P 214.914†	94.3	0.0437 mg/L	0.01989	0.0437 mg/L	0.01989	45.56%

Sequence No.: 76 **Autosampler Location: 97**
Sample ID: Sample097 **Date Collected: 11/26/2013 8:17:51 PM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: Sample097

Analyte	Back Pressure	Flow
All	181.0 kPa	0.45 L/min

Mean Data: Sample097

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2499215.1						27041.87	1.08%
YRADIAL	163917.3						2073.46	1.26%
Ga 417.206	783306.3						10013.37	1.28%
GaRADIAL	36160.1						502.05	1.39%
Ag 328.068†	-120.6	-0.00078	mg/L	0.000053	-0.00078	mg/L	0.000053	6.81%
Al 396.153†	11.6	-0.0138	mg/L	0.00194	-0.0138	mg/L	0.00194	14.07%
As 188.979†	1.4	0.00062	mg/L	0.001475	0.00062	mg/L	0.001475	239.55%
Ba 233.527†	-48.2	-0.00461	mg/L	0.000102	-0.00461	mg/L	0.000102	2.21%
Be 234.861†	-41.8	-0.00022	mg/L	0.000047	-0.00022	mg/L	0.000047	21.86%
B 249.677†	20.2	-0.00083	mg/L	0.000178	-0.00083	mg/L	0.000178	21.54%
Ca 227.546†	-10.9	0.0137	mg/L	0.03311	0.0137	mg/L	0.03311	242.48%
Cd 228.802†	-13.7	-0.00038	mg/L	0.000176	-0.00038	mg/L	0.000176	46.86%
Co 228.616†	-25.3	-0.00132	mg/L	0.000105	-0.00132	mg/L	0.000105	7.93%
Cr 267.716†	58.6	-0.00166	mg/L	0.000086	-0.00166	mg/L	0.000086	5.20%
Cu 327.393†	-443.2	-0.00215	mg/L	0.000562	-0.00215	mg/L	0.000562	26.15%
Fe 239.562†	-0.7	-0.0153	mg/L	0.00231	-0.0153	mg/L	0.00231	15.09%
Mg 279.077†	13.1	-0.0221	mg/L	0.00504	-0.0221	mg/L	0.00504	22.78%
Mn 257.610†	156.7	-0.00406	mg/L	0.000033	-0.00406	mg/L	0.000033	0.80%
Mo 202.031†	-8.5	-0.00608	mg/L	0.000146	-0.00608	mg/L	0.000146	2.40%
Ni 231.604†	-15.7	-0.00350	mg/L	0.000452	-0.00350	mg/L	0.000452	12.94%
Pb 220.353†	8.4	-0.00111	mg/L	0.001500	-0.00111	mg/L	0.001500	135.68%
Sb 206.836†	4.1	0.00441	mg/L	0.000507	0.00441	mg/L	0.000507	11.49%
Se 196.026†	-2.8	-0.00173	mg/L	0.002926	-0.00173	mg/L	0.002926	169.11%
Si 251.611†	-93.5	-0.0141	mg/L	0.00305	-0.0141	mg/L	0.00305	21.56%
Sn 189.927†	6.5	-0.00122	mg/L	0.001215	-0.00122	mg/L	0.001215	99.97%
Ti 334.940†	-86.1	-0.00191	mg/L	0.000058	-0.00191	mg/L	0.000058	3.02%
Tl 190.801†	-5.7	-0.00692	mg/L	0.000321	-0.00692	mg/L	0.000321	4.63%
V 290.880†	1447.4	0.00339	mg/L	0.000442	0.00339	mg/L	0.000442	13.03%
Zn 206.200†	46.6	-0.00330	mg/L	0.000123	-0.00330	mg/L	0.000123	3.73%
K 766.490†	-17.1	0.00076	mg/L	0.011723	0.00076	mg/L	0.011723	>999.9%
Na 589.592†	224.0	0.0132	mg/L	0.01579	0.0132	mg/L	0.01579	119.68%
Sr 407.771†	-48.4	-0.00527	mg/L	0.000092	-0.00527	mg/L	0.000092	1.75%

Approved: November 27, 2013

Nebulizer Parameters: Sample093

Analyte	Back Pressure	Flow
All	174.0 kPa	0.45 L/min

Mean Data: Sample093

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	1779027.9						86870.81	4.88%
YRADIAL	110817.9						4675.13	4.22%
Ga 417.206	529860.6						28587.77	5.40%
GaRADIAL	26184.4						802.78	3.07%
Ag 328.068†	-290.5	-0.00146	mg/L	0.000650	-0.00146	mg/L	0.000650	44.41%
Al 396.153†	25.9	-0.00892	mg/L	0.004125	-0.00892	mg/L	0.004125	46.22%
As 188.979†	4.4	0.00244	mg/L	0.002219	0.00244	mg/L	0.002219	91.00%
Ba 233.527†	-126.8	-0.00563	mg/L	0.000190	-0.00563	mg/L	0.000190	3.37%
Be 234.861†	-700.1	-0.00122	mg/L	0.000228	-0.00122	mg/L	0.000228	18.59%
B 249.677†	275.1	0.00293	mg/L	0.000463	0.00293	mg/L	0.000463	15.84%
Ca 227.546†	-36.0	-0.115	mg/L	0.1089	-0.115	mg/L	0.1089	94.67%
Cd 228.802†	-8.4	-0.00018	mg/L	0.000169	-0.00018	mg/L	0.000169	96.25%
Co 228.616†	-28.8	-0.00149	mg/L	0.000341	-0.00149	mg/L	0.000341	22.92%
Cr 267.716†	63.0	-0.00162	mg/L	0.000339	-0.00162	mg/L	0.000339	21.00%
Cu 327.393†	-308.5	-0.00151	mg/L	0.001198	-0.00151	mg/L	0.001198	79.55%
Fe 239.562†	10.9	-0.0112	mg/L	0.00229	-0.0112	mg/L	0.00229	20.46%
Mg 279.077†	16.4	-0.0191	mg/L	0.00754	-0.0191	mg/L	0.00754	39.54%
Mn 257.610†	301.0	-0.00381	mg/L	0.000036	-0.00381	mg/L	0.000036	0.93%
Mo 202.031†	0.6	-0.00551	mg/L	0.000061	-0.00551	mg/L	0.000061	1.10%
Ni 231.604†	-75.0	-0.00520	mg/L	0.000118	-0.00520	mg/L	0.000118	2.27%
Pb 220.353†	-1.2	-0.00274	mg/L	0.001855	-0.00274	mg/L	0.001855	67.61%
Sb 206.836†	5.6	0.00522	mg/L	0.001544	0.00522	mg/L	0.001544	29.58%
Se 196.026†	7.1	0.0105	mg/L	0.00185	0.0105	mg/L	0.00185	17.73%
Si 251.611†	141.7	-0.00712	mg/L	0.001139	-0.00712	mg/L	0.001139	16.00%
Sn 189.927†	11.5	-0.00035	mg/L	0.001738	-0.00035	mg/L	0.001738	491.19%
Ti 334.940†	155.4	-0.00163	mg/L	0.000212	-0.00163	mg/L	0.000212	13.02%
Tl 190.801†	-29.5	-0.0210	mg/L	0.00416	-0.0210	mg/L	0.00416	19.83%
V 290.880†	2115.9	0.00705	mg/L	0.001802	0.00705	mg/L	0.001802	25.57%
Zn 206.200†	57.3	-0.00289	mg/L	0.000156	-0.00289	mg/L	0.000156	5.41%
K 766.490†	71.0	0.0540	mg/L	0.01795	0.0540	mg/L	0.01795	33.25%
Na 589.592†	333.9	0.0232	mg/L	0.00731	0.0232	mg/L	0.00731	31.47%
Sr 407.771†	-146.9	-0.00537	mg/L	0.000033	-0.00537	mg/L	0.000033	0.61%
Li 670.784†	85.6	-0.00216	mg/L	0.001040	-0.00216	mg/L	0.001040	48.19%
P 214.914†	-54.9	-0.112	mg/L	0.0373	-0.112	mg/L	0.0373	33.19%

User canceled analysis.

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Analysis Begun

Start Time: 11/27/2013 8:05:37 AM **Plasma On Time: 11/27/2013 7:50:01 AM**
Logged In Analyst: peicp2 **Technique: ICP Continuous**
Spectrometer Model: Optima 4300 DV, S/N 077N4011401 **Autosampler Model: Cetac**

Sample Information File: C:\pe\peicp2\Sample Information\Batch 1.sif
Batch ID:
Results Data Set: 112613H2R
Results Library: C:\pe\peicp2\Results\results1.mdb

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Sequence No.: 3 **Autosampler Location: 94**
Sample ID: Sample094 **Date Collected: 11/27/2013 8:05:39 AM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**
User canceled analysis.

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Analysis Begun

Start Time: 11/27/2013 8:07:13 AM **Plasma On Time: 11/27/2013 7:50:01 AM**
Logged In Analyst: peicp2 **Technique: ICP Continuous**
Spectrometer Model: Optima 4300 DV, S/N 077N4011401 **Autosampler Model: Cetac**

Sample Information File: C:\pe\peicp2\Sample Information\Batch 1.sif

Approved: November 27, 2013

Batch ID:
Results Data Set: 112613H2R
Results Library: C:\pe\peicp2\Results\results1.mdb

Sequence No.: 4 **Autosampler Location: 95**
Sample ID: Sample095 **Date Collected: 11/27/2013 8:07:15 AM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: Sample095

Analyte	Back Pressure	Flow
All	175.0 kPa	0.45 L/min

Mean Data: Sample095

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	1741143.5						51689.45	2.97%
YRADIAL	109507.3						2717.05	2.48%
Ga 417.206	494121.0						17504.00	3.54%
GaRADIAL	25507.0						877.01	3.44%
Ag 328.068†	-340.7	-0.00166	mg/L	0.000905	-0.00166	mg/L	0.000905	54.34%
Al 396.153†	33.5	-0.00633	mg/L	0.003139	-0.00633	mg/L	0.003139	49.56%
As 188.979†	-7.4	-0.00476	mg/L	0.001965	-0.00476	mg/L	0.001965	41.33%
Ba 233.527†	-133.5	-0.00572	mg/L	0.000111	-0.00572	mg/L	0.000111	1.94%
Be 234.861†	-913.5	-0.00155	mg/L	0.000135	-0.00155	mg/L	0.000135	8.74%
B 249.677†	208.5	0.00194	mg/L	0.000534	0.00194	mg/L	0.000534	27.49%
Ca 227.546†	-43.4	-0.153	mg/L	0.1050	-0.153	mg/L	0.1050	68.50%
Cd 228.802†	-1.5	0.00013	mg/L	0.000419	0.00013	mg/L	0.000419	311.01%
Co 228.616†	-35.7	-0.00182	mg/L	0.000694	-0.00182	mg/L	0.000694	38.11%
Cr 267.716†	45.2	-0.00178	mg/L	0.000191	-0.00178	mg/L	0.000191	10.75%
Cu 327.393†	7.0	0.00000	mg/L	0.001516	0.00000	mg/L	0.001516	>999.9%
Fe 239.562†	-0.9	-0.0154	mg/L	0.00103	-0.0154	mg/L	0.00103	6.72%
Mg 279.077†	10.3	-0.0247	mg/L	0.00976	-0.0247	mg/L	0.00976	39.52%
Mn 257.610†	312.4	-0.00379	mg/L	0.000037	-0.00379	mg/L	0.000037	0.97%
Mo 202.031†	8.4	-0.00502	mg/L	0.000884	-0.00502	mg/L	0.000884	17.59%
Ni 231.604†	-107.2	-0.00613	mg/L	0.000536	-0.00613	mg/L	0.000536	8.74%
Pb 220.353†	12.5	-0.00040	mg/L	0.001613	-0.00040	mg/L	0.001613	402.99%
Sb 206.836†	16.8	0.0112	mg/L	0.00124	0.0112	mg/L	0.00124	11.07%
Se 196.026†	6.7	0.00994	mg/L	0.001227	0.00994	mg/L	0.001227	12.34%
Si 251.611†	260.9	-0.00357	mg/L	0.004800	-0.00357	mg/L	0.004800	134.65%
Sn 189.927†	17.9	0.00073	mg/L	0.000538	0.00073	mg/L	0.000538	73.22%
Ti 334.940†	272.8	-0.00149	mg/L	0.000170	-0.00149	mg/L	0.000170	11.42%
Tl 190.801†	-31.0	-0.0219	mg/L	0.00859	-0.0219	mg/L	0.00859	39.31%
V 290.880†	2375.8	0.00847	mg/L	0.000621	0.00847	mg/L	0.000621	7.33%
Zn 206.200†	89.7	-0.00166	mg/L	0.000201	-0.00166	mg/L	0.000201	12.09%
K 766.490†	76.5	0.0573	mg/L	0.07491	0.0573	mg/L	0.07491	130.65%
Na 589.592†	160.0	0.00736	mg/L	0.015094	0.00736	mg/L	0.015094	204.96%
Sr 407.771†	-136.3	-0.00535	mg/L	0.000054	-0.00535	mg/L	0.000054	1.01%
Li 670.784†	-6.1	-0.00352	mg/L	0.000795	-0.00352	mg/L	0.000795	22.58%
P 214.914†	-109.8	-0.170	mg/L	0.0299	-0.170	mg/L	0.0299	17.65%

Sequence No.: 5 **Autosampler Location: 96**
Sample ID: Sample096 **Date Collected: 11/27/2013 8:10:21 AM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: Sample096

Analyte	Back Pressure	Flow
All	175.0 kPa	0.45 L/min

Mean Data: Sample096

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	1833730.1						67069.06	3.66%

Approved: November 27, 2013

YRADIAL	114741.9				2913.38	2.54%
Ga 417.206	534735.5				21728.86	4.06%
GaRADIAL	26997.1				582.85	2.16%
Ag 328.068†	-444.0	-0.00209 mg/L	0.000341	-0.00209 mg/L	0.000341	16.31%
Al 396.153†	33.0	-0.00645 mg/L	0.004180	-0.00645 mg/L	0.004180	64.82%
As 188.979†	3.0	0.00159 mg/L	0.003444	0.00159 mg/L	0.003444	217.18%
Ba 233.527†	-121.5	-0.00556 mg/L	0.000230	-0.00556 mg/L	0.000230	4.13%
Be 234.861†	-661.4	-0.00116 mg/L	0.000109	-0.00116 mg/L	0.000109	9.35%
B 249.677†	157.7	0.00119 mg/L	0.000262	0.00119 mg/L	0.000262	22.00%
Ca 227.546†	-33.9	-0.105 mg/L	0.0350	-0.105 mg/L	0.0350	33.47%
Cd 228.802†	-2.4	0.00007 mg/L	0.000452	0.00007 mg/L	0.000452	659.35%
Co 228.616†	-29.0	-0.00150 mg/L	0.000231	-0.00150 mg/L	0.000231	15.38%
Cr 267.716†	49.9	-0.00173 mg/L	0.000122	-0.00173 mg/L	0.000122	7.06%
Cu 327.393†	-308.6	-0.00151 mg/L	0.001010	-0.00151 mg/L	0.001010	67.02%
Fe 239.562†	-12.7	-0.0195 mg/L	0.00181	-0.0195 mg/L	0.00181	9.25%
Mg 279.077†	1.2	-0.0331 mg/L	0.01027	-0.0331 mg/L	0.01027	30.99%
Mn 257.610†	182.5	-0.00402 mg/L	0.000006	-0.00402 mg/L	0.000006	0.16%
Mo 202.031†	-7.8	-0.00604 mg/L	0.000554	-0.00604 mg/L	0.000554	9.18%
Ni 231.604†	-80.6	-0.00537 mg/L	0.000924	-0.00537 mg/L	0.000924	17.23%
Pb 220.353†	3.4	-0.00195 mg/L	0.000553	-0.00195 mg/L	0.000553	28.30%
Sb 206.836†	13.0	0.00916 mg/L	0.001969	0.00916 mg/L	0.001969	21.49%
Se 196.026†	8.3	0.0119 mg/L	0.01126	0.0119 mg/L	0.01126	94.92%
Si 251.611†	769.7	0.0116 mg/L	0.01682	0.0116 mg/L	0.01682	144.52%
Sn 189.927†	4.9	-0.00150 mg/L	0.000968	-0.00150 mg/L	0.000968	64.61%
Ti 334.940†	245.0	-0.00151 mg/L	0.000184	-0.00151 mg/L	0.000184	12.17%
Tl 190.801†	-18.5	-0.0145 mg/L	0.00433	-0.0145 mg/L	0.00433	29.92%
V 290.880†	2030.0	0.00658 mg/L	0.002979	0.00658 mg/L	0.002979	45.29%
Zn 206.200†	62.3	-0.00270 mg/L	0.000153	-0.00270 mg/L	0.000153	5.65%
K 766.490†	83.2	0.0614 mg/L	0.05120	0.0614 mg/L	0.05120	83.39%
Na 589.592†	85.7	0.00060 mg/L	0.007110	0.00060 mg/L	0.007110	>999.9%
Sr 407.771†	-160.1	-0.00538 mg/L	0.000044	-0.00538 mg/L	0.000044	0.83%
Li 670.784†	8.6	-0.00330 mg/L	0.001226	-0.00330 mg/L	0.001226	37.09%
P 214.914†	-47.3	-0.104 mg/L	0.0052	-0.104 mg/L	0.0052	5.00%

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Sequence No.: 6 **Autosampler Location: 97**
Sample ID: Sample097 **Date Collected: 11/27/2013 8:13:27 AM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: Sample097

Analyte	Back Pressure	Flow
All	175.0 kPa	0.45 L/min

Mean Data: Sample097

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	1879383.3						65719.76	3.50%
YRADIAL	116437.7						1713.73	1.47%
Ga 417.206	552518.5						17533.52	3.17%
GaRADIAL	27136.4						600.50	2.21%
Ag 328.068†	-380.8	-0.00183	mg/L	0.000758	-0.00183	mg/L	0.000758	41.45%
Al 396.153†	26.8	-0.00860	mg/L	0.000841	-0.00860	mg/L	0.000841	9.78%
As 188.979†	-1.2	-0.00099	mg/L	0.005299	-0.00099	mg/L	0.005299	534.49%
Ba 233.527†	-113.4	-0.00546	mg/L	0.000206	-0.00546	mg/L	0.000206	3.77%
Be 234.861†	-613.9	-0.00109	mg/L	0.000132	-0.00109	mg/L	0.000132	12.05%
B 249.677†	127.3	0.00074	mg/L	0.000305	0.00074	mg/L	0.000305	41.02%
Ca 227.546†	-39.2	-0.131	mg/L	0.0897	-0.131	mg/L	0.0897	68.28%
Cd 228.802†	-1.5	0.00012	mg/L	0.000200	0.00012	mg/L	0.000200	167.04%
Co 228.616†	-26.9	-0.00140	mg/L	0.000701	-0.00140	mg/L	0.000701	50.12%
Cr 267.716†	39.6	-0.00183	mg/L	0.000134	-0.00183	mg/L	0.000134	7.32%
Cu 327.393†	-283.6	-0.00139	mg/L	0.000779	-0.00139	mg/L	0.000779	56.11%
Fe 239.562†	-5.2	-0.0169	mg/L	0.00144	-0.0169	mg/L	0.00144	8.53%
Mg 279.077†	5.5	-0.0291	mg/L	0.00745	-0.0291	mg/L	0.00745	25.56%
Mn 257.610†	167.8	-0.00404	mg/L	0.000040	-0.00404	mg/L	0.000040	0.99%
Mo 202.031†	-0.5	-0.00558	mg/L	0.000147	-0.00558	mg/L	0.000147	2.64%
Ni 231.604†	-80.0	-0.00535	mg/L	0.000189	-0.00535	mg/L	0.000189	3.53%
Pb 220.353†	19.5	0.00080	mg/L	0.001889	0.00080	mg/L	0.001889	235.07%
Sb 206.836†	13.0	0.00915	mg/L	0.001612	0.00915	mg/L	0.001612	17.62%

Approved: November 27, 2013

Se 196.026†	3.9	0.00654 mg/L	0.010615	0.00654 mg/L	0.010615	162.20%
Si 251.611†	457.5	0.00231 mg/L	0.005912	0.00231 mg/L	0.005912	255.74%
Sn 189.927†	7.1	-0.00111 mg/L	0.001584	-0.00111 mg/L	0.001584	143.12%
Ti 334.940†	145.5	-0.00164 mg/L	0.000211	-0.00164 mg/L	0.000211	12.85%
Tl 190.801†	-23.4	-0.0174 mg/L	0.00550	-0.0174 mg/L	0.00550	31.69%
V 290.880†	2216.4	0.00760 mg/L	0.003064	0.00760 mg/L	0.003064	40.31%
Zn 206.200†	55.9	-0.00294 mg/L	0.000111	-0.00294 mg/L	0.000111	3.78%
K 766.490†	45.5	0.0386 mg/L	0.03981	0.0386 mg/L	0.03981	103.10%
Na 589.592†	196.6	0.0107 mg/L	0.01013	0.0107 mg/L	0.01013	94.69%
Sr 407.771†	-136.6	-0.00535 mg/L	0.000066	-0.00535 mg/L	0.000066	1.24%
Li 670.784†	41.8	-0.00281 mg/L	0.001288	-0.00281 mg/L	0.001288	45.83%
P 214.914†	-44.0	-0.101 mg/L	0.0137	-0.101 mg/L	0.0137	13.56%

Sequence No.: 7 **Autosampler Location: 98**
Sample ID: Sample098 **Date Collected: 11/27/2013 8:16:33 AM**
Analyst: JYH **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: Sample098

Analyte	Back Pressure	Flow
All	170.0 kPa	0.45 L/min

Mean Data: Sample098

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	7056271.3						60536.86	0.86%
YRADIAL	423264.0						77096.47	18.21%
Ga 417.206	1869768.4						31104.78	1.66%
GaRADIAL	91074.2						15378.21	16.89%
Ag 328.068†	148.4	0.00023	mg/L	0.000273	0.00023	mg/L	0.000273	120.16%
Al 396.153†	-25.9	-0.0266	mg/L	0.00221	-0.0266	mg/L	0.00221	8.31%
As 188.979†	1.7	0.00085	mg/L	0.000659	0.00085	mg/L	0.000659	77.82%
Ba 233.527†	50.5	-0.00332	mg/L	0.000036	-0.00332	mg/L	0.000036	1.08%
Be 234.861†	556.1	0.00070	mg/L	0.000033	0.00070	mg/L	0.000033	4.70%
B 249.677†	-152.2	-0.00337	mg/L	0.000187	-0.00337	mg/L	0.000187	5.56%
Ca 227.546†	11.6	0.131	mg/L	0.0151	0.131	mg/L	0.0151	11.55%
Cd 228.802†	-18.6	-0.00057	mg/L	0.000029	-0.00057	mg/L	0.000029	5.20%
Co 228.616†	-9.5	-0.00057	mg/L	0.000015	-0.00057	mg/L	0.000015	2.66%
Cr 267.716†	72.5	-0.00155	mg/L	0.000029	-0.00155	mg/L	0.000029	1.87%
Cu 327.393†	-608.6	-0.00295	mg/L	0.000293	-0.00295	mg/L	0.000293	9.92%
Fe 239.562†	1.3	-0.0146	mg/L	0.00037	-0.0146	mg/L	0.00037	2.55%
Mg 279.077†	-8.4	-0.0420	mg/L	0.00198	-0.0420	mg/L	0.00198	4.72%
Mn 257.610†	-84.9	-0.00450	mg/L	0.000012	-0.00450	mg/L	0.000012	0.26%
Mo 202.031†	-30.5	-0.00747	mg/L	0.000008	-0.00747	mg/L	0.000008	0.11%
Ni 231.604†	92.6	-0.00038	mg/L	0.000086	-0.00038	mg/L	0.000086	22.72%
Pb 220.353†	57.4	0.00728	mg/L	0.000618	0.00728	mg/L	0.000618	8.50%
Sb 206.836†	0.1	0.00224	mg/L	0.000449	0.00224	mg/L	0.000449	20.07%
Se 196.026†	-9.1	-0.00946	mg/L	0.003447	-0.00946	mg/L	0.003447	36.45%
Si 251.611†	-343.3	-0.0216	mg/L	0.00534	-0.0216	mg/L	0.00534	24.74%
Sn 189.927†	-0.9	-0.00248	mg/L	0.000433	-0.00248	mg/L	0.000433	17.41%
Ti 334.940†	-391.3	-0.00227	mg/L	0.000020	-0.00227	mg/L	0.000020	0.88%
Tl 190.801†	28.2	0.0130	mg/L	0.00076	0.0130	mg/L	0.00076	5.82%
V 290.880†	-5482.8	-0.0346	mg/L	0.00034	-0.0346	mg/L	0.00034	0.98%
Zn 206.200†	37.7	-0.00363	mg/L	0.000087	-0.00363	mg/L	0.000087	2.38%
K 766.490†	-133.4	-0.0695	mg/L	0.02016	-0.0695	mg/L	0.02016	29.01%
Na 589.592†	-195.5	-0.0250	mg/L	0.00815	-0.0250	mg/L	0.00815	32.57%
Sr 407.771†	-168.9	-0.00540	mg/L	0.000006	-0.00540	mg/L	0.000006	0.11%
Li 670.784†	-92.5	-0.00481	mg/L	0.000860	-0.00481	mg/L	0.000860	17.88%
P 214.914†	266.3	0.223	mg/L	0.0065	0.223	mg/L	0.0065	2.91%

Approved: November 27, 2013

2.1.2 Metals ICP-MS Data

2.1.2.1 Summary Data

Login Number: L13111086
Department: Metals
Analyst: Ji Hu

METHOD

Preparation: SW-846 3015

Analysis: SW-846 6020

HOLDING TIMES

Sample Preparation: All holding times were met.

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

CALIBRATION

Initial Calibration: All acceptance criteria were met.

Alternate Source Standards: All acceptance criteria were met.

Interference Check Standards: All acceptance criteria were met.

Continuing Calibration: All acceptance criteria were met.

Continuing Calibration Blank: All acceptance criteria were met.

Low Level Check: All acceptance criteria were met.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Serial Dilution/Post Digestion Spikes: WG453994 - All acceptance criteria were met.

Matrix Spikes: All acceptance criteria were met.

SAMPLES

Samples: All acceptance criteria were met.

Narrative ID: 75147
Approved By: Sheri Pfalzgraf

Microbac

Lab Report #: L13111086
Lab Project #: 3005.011
Project Name: White Sands MR
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L13111086-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	SMW 1-1113-1	**Prep Method:**	3015	**Prep Date:**	11/22/2013 10:20
Matrix:	Water	**Analytical Method:**	6020	**Cal Date:**	11/22/2013 09:47
Workgroup #:	WG453994	**Analyst:**	JYH	**Run Date:**	11/22/2013 15:10
Collect Date:	11/15/2013 10:00	**Dilution:**	1	**File ID:**	NI.112213.151013
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Antimony, Total	7440-36-0		U	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00282		0.00100	0.000500
Barium, Total	7440-39-3	0.0704		0.00300	0.00150
Cadmium, Total	7440-43-9		U	0.000600	0.000300
Chromium, Total	7440-47-3		U	0.00200	0.00100
Cobalt, Total	7440-48-4		U	0.00100	0.000500
Copper, Total	7440-50-8		U	0.00200	0.00100
Lead, Total	7439-92-1		U	0.00100	0.000500
Manganese, Total	7439-96-5	0.00467		0.00200	0.00100
Nickel, Total	7440-02-0		U	0.00400	0.00200
Selenium, Total	7782-49-2	0.0113		0.00100	0.000500
Silver, Total	7440-22-4		U	0.00100	0.000500
Thallium, Total	7440-28-0		U	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Certificate of Analysis

Sample #:	L13111086-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	SMW 4-1113-1	**Prep Method:**	3015	**Prep Date:**	11/22/2013 10:20
Matrix:	Water	**Analytical Method:**	6020	**Cal Date:**	11/22/2013 09:47
Workgroup #:	WG453994	**Analyst:**	JYH	**Run Date:**	11/22/2013 15:13
Collect Date:	11/15/2013 11:50	**Dilution:**	1	**File ID:**	NI.112213.151318
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Antimony, Total	7440-36-0		U	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00106		0.00100	0.000500
Barium, Total	7440-39-3	0.0708		0.00300	0.00150
Cadmium, Total	7440-43-9		U	0.000600	0.000300
Chromium, Total	7440-47-3	0.00620		0.00200	0.00100
Cobalt, Total	7440-48-4		U	0.00100	0.000500
Copper, Total	7440-50-8	0.00233		0.00200	0.00100
Lead, Total	7439-92-1		U	0.00100	0.000500
Manganese, Total	7439-96-5	0.00765		0.00200	0.00100
Nickel, Total	7440-02-0	0.0343		0.00400	0.00200
Selenium, Total	7782-49-2	0.00435		0.00100	0.000500
Silver, Total	7440-22-4		U	0.00100	0.000500
Thallium, Total	7440-28-0		U	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Certificate of Analysis

2.1.2.2 QC Summary Data

Example 6020 Calculations
Perkin Elmer NexION 300X

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and three standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	100
Vi = Initial volume	40
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/L)	0.25

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	200
Vi = Initial volume	0.5
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/kg)	40

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	40
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	50

50 ug/kg = 0.050 mg/kg

Perkin Elmer NexION ICP/MS

STANDARDS KEY

QC Std 1 - ICV
QC Std 2 - ICB
QC Std 3 - LLICV
QC Std 4 - ICSA
QC Std 5 - ICSAB
QC Std 6 - CCV
QC Std 7 - CCB
QC Std 8 - LLCCV

Calibration Solutions

Analyte	Stock Conc. (mg/L)	S1 (mg/L)	S2 (mg/L)	S3 (mg/L)	S4 (mg/L)
Al	10	0	0.00005	0.05	0.1
Sb	10	0	0.00005	0.05	0.1
As	10	0	0.00005	0.05	0.1
Ba	10	0	0.00005	0.05	0.1
Be	10	0	0.00005	0.05	0.1
Ca	1000	0	0.005	5	10
Cd	10	0	0.0005	0.05	0.1
Cr	10	0	0.0005	0.05	0.1
Co	10	0	0.0005	0.05	0.1
Cu	10	0	0.0005	0.05	0.1
Fe	1000	0	0.005	5	10
Pb	10	0	0.00005	0.05	0.1
Mg	1000	0	0.005	5	10
Mn	10	0	0.00005	0.05	0.1
Ni	10	0	0.00005	0.05	0.1
K	1000	0	0.005	5	10
Se	10	0	0.00005	0.05	0.1
Ag	10	0	0.00005	0.05	0.1
Na	1000	0	0.005	5	10
Tl	10	0	0.00005	0.05	0.1
V	10	0	0.00005	0.05	0.1
U	1000	0	0.00005	0.05	0.1
Zn	10	0	0.00005	0.05	0.1

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG453975
Analyst: ERP
Spike Analyst: ERP
Run Date: 11/22/2013 10:20
Method: 3015
Balance: BAL016
Instrument: MW-3
Instrument Start: 11/22/2013 10:22

SOP: ME407 Revison 14
Spike Solution: STD60087
Spike Witness: BRG
HNO3 Lot #: COA16631
Digestion Tubes Lot #: COA16971
MS Filters- fisher-Lot#R RGT26840

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG453975-03	BLANK	1	40 mL	100 mL	208.435 g	208.422 g		
2	WG453975-04	LCS	1	40 mL	100 mL	206.258 g	206.22 g	.25 mL	
3	L13110951-03	SAMP	1	40 mL	100 mL	203.895 g	203.869 g		11/29/13
4	L13110951-04	SAMP	1	40 mL	100 mL	206.369 g	206.339 g		11/29/13
5	L13111010-02	SAMP	1	40 mL	100 mL	206.533 g	206.5 g		11/29/13
6	L13111010-04	SAMP	1	40 mL	100 mL	210.472 g	210.439 g		11/29/13
7	L13111010-06	SAMP	1	40 mL	100 mL	208.637 g	208.61 g		11/29/13
8	L13111010-08	SAMP	1	40 mL	100 mL	205.623 g	205.594 g		11/29/13
9	L13111010-10	SAMP	1	40 mL	100 mL	205.374 g	205.343 g		11/29/13
10	L13111086-01	SAMP	1	40 mL	100 mL	206.975 g	206.944 g		11/29/13
11	L13111086-02	SAMP	1	40 mL	100 mL	207.08 g	207.05 g		11/29/13
12	L13111205-02	SAMP	1	40 mL	100 mL	206.237 g	206.212 g		11/29/13
13	WG453975-01	REF	1	40 mL	100 mL	208.062 g	208.018 g		
14	L13111205-03	RS01	1	40 mL	100 mL	208.062 g	208.018 g		11/29/13
15	WG453975-05	MS	1	40 mL	100 mL	206.869 g	206.836 g	.25 mL	
16	L13111205-04	MS01	1	40 mL	100 mL	206.869 g	206.836 g	.25 mL	11/29/13
17	WG453975-06	MSD	1	40 mL	100 mL	207.164 g	207.137 g	.25 mL	
18	L13111205-05	SD01	1	40 mL	100 mL	207.164 g	207.137 g	.25 mL	11/29/13
19	L13111206-01	SAMP	1	40 mL	100 mL	205.496 g	205.455 g		11/29/13
20	L13111218-01	SAMP	2	40 mL	100 mL	203.27 g	203.234 g		11/25/13
21	L13111218-03	SAMP	2	40 mL	100 mL	206.125 g	206.094 g		11/25/13
22	L13111218-05	SAMP	2	40 mL	100 mL	206.528 g	206.504 g		11/25/13
23	L13111218-08	SAMP	2	40 mL	100 mL	207.364 g	207.335 g		11/25/13
24	L13111218-09	SAMP	2	40 mL	100 mL	207.747 g	207.718 g		11/25/13
25	WG453975-02	REF	2	40 mL	100 mL	205.807 g	205.781 g		
26	L13111218-13	SAMP	2	40 mL	100 mL	205.807 g	205.781 g		11/25/13
27	L13111228-01	SAMP	1	40 mL	100 mL	207.494 g	207.456 g		11/27/13
28	WG453975-07	DUP	1	40 mL	100 mL	206.561 g	206.534 g		

Analyst: Erin Potter

Reviewer: Brenda Gregory

MW_DIG - Modified 09/30/2009
PDF ID: 3220865
Report generated: 11/22/2013 11:08

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 112213A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 0
Maintenance Log ID: 48285

Calibration Std: STD61268 ICV Std: STD61269 Post Spike: STD60309
ICSA: STD61270 ICSAB: STD61271 Int. Std: RGT28155
CCV: STD61517 LLCCV: STD61224 Tuning Sol : STD61267
Stannous : Hydroxylamine :

Workgroups: 453895,453985,453986,453994

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	NI.112213.093455	Blank	Blank		1		11/22/13 09:34
2	NI.112213.093802	WG454009-01	Calibration Point		1		11/22/13 09:38
3	NI.112213.094107	WG454009-02	Calibration Point		1		11/22/13 09:41
4	NI.112213.094412	WG454009-03	Calibration Point		1		11/22/13 09:44
5	NI.112213.094717	WG454009-04	Calibration Point		1		11/22/13 09:47
6	NI.112213.095024	WG454009-05	Initial Calibration Verification		1		11/22/13 09:50
7	NI.112213.095331	WG454009-06	Initial Calib Blank		1		11/22/13 09:53
8	NI.112213.095637	WG454009-07	Low Level Initial Calibration V		1		11/22/13 09:56
9	NI.112213.095942	WG454009-08	Interference Check		1		11/22/13 09:59
10	NI.112213.100247	WG454009-09	Interference Check		1		11/22/13 10:02
11	NI.112213.100554	WG454009-10	CCV		1		11/22/13 10:05
12	NI.112213.100859	WG454009-11	CCB		1		11/22/13 10:08
13	NI.112213.101205	WG453567-03	Method/Prep Blank	40/100	1		11/22/13 10:12
14	NI.112213.101509	WG453567-04	Laboratory Control S	40/100	1		11/22/13 10:15
15	NI.112213.101814	L13110740-01	LF5MW0114	40/100	1		11/22/13 10:18
16	NI.112213.102119	L13110797-02	SW1A-291-14	40/100	1		11/22/13 10:21
17	NI.112213.102424	WG453567-01	Reference Sample		1	L13110797-05	11/22/13 10:24
18	NI.112213.102728	WG453567-05	Matrix Spike	40/100	1	L13110797-05	11/22/13 10:27
19	NI.112213.103033	WG453567-06	Matrix Spike Duplica	40/100	1	L13110797-05	11/22/13 10:30
20	NI.112213.103338	L13110797-08	SW3A-291-14	40/100	1		11/22/13 10:33
21	NI.112213.103643	WG453895-01	Post Digestion Spike		1	L13110797-08	11/22/13 10:36
22	NI.112213.103948	WG453895-02	Serial Dilution		5	L13110797-08	11/22/13 10:39
23	NI.112213.104255	WG454009-12	CCV		1		11/22/13 10:42
24	NI.112213.104600	WG454009-13	CCB		1		11/22/13 10:46
25	NI.112213.104907	L13110954-01	CLAMW26-131114	40/100	1		11/22/13 10:49
26	NI.112213.105212	L13110954-02	CLAOW02-131114	40/100	1		11/22/13 10:52
27	NI.112213.105516	L13110954-03	DUP-02-131114	40/100	1		11/22/13 10:55
28	NI.112213.105821	L13110969-03	W30B	40/100	1		11/22/13 10:58
29	NI.112213.110126	L13110969-04	W43WTR	40/100	1		11/22/13 11:01
30	NI.112213.110431	WG453567-02	Reference Sample		1	L13110969-06	11/22/13 11:04
31	NI.112213.110736	WG453567-07	Matrix Spike	40/100	1	L13110969-06	11/22/13 11:07
32	NI.112213.111040	WG453567-08	Matrix Spike Duplica	40/100	1	L13110969-06	11/22/13 11:10
33	NI.112213.111542	L13110797-11	SW4A-291-14	40/100	1		11/22/13 11:15
34	NI.112213.111847	L13110797-14	SW5A-291-14	40/100	1		11/22/13 11:18

Page: 1 Approved: November 25, 2013

Maren Berry

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 112213A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 0
Maintenance Log ID: 48285

Calibration Std: STD61268 ICV Std: STD61269 Post Spike: STD60309
ICSA: STD61270 ICSAB: STD61271 Int. Std: RGT28155
CCV: STD61517 LLCCV: STD61224 Tuning Sol : STD61267
Stannous : Hydroxylamine :

Workgroups: 453895,453985,453986,453994

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	NI.112213.112154	WG454009-14	CCV		1		11/22/13 11:21
36	NI.112213.112459	WG454009-15	CCB		1		11/22/13 11:24
37	NI.112213.112828	L13110969-12	W32WB	40/100	1		11/22/13 11:28
38	NI.112213.113133	L13110969-13	W32B	40/100	1		11/22/13 11:31
39	NI.112213.113458	L13110842-01	LF5MW05R14	40/100	1		11/22/13 11:34
40	NI.112213.113803	L13110843-01	B122MW2LS16	40/100	1		11/22/13 11:38
41	NI.112213.114107	L13110797-18	SW3B-291-14	40/100	1		11/22/13 11:41
42	NI.112213.114412	L13110969-13	W32B	40/100	50		11/22/13 11:44
43	NI.112213.114719	WG454009-16	CCV		1		11/22/13 11:47
44	NI.112213.115023	WG454009-17	CCB		1		11/22/13 11:50
45	NI.112213.115330	WG454009-18	Low Level Continuing Calibra		1		11/22/13 11:53
46	NI.112213.120421	WG453334-02	Method/Prep Blank	.5/200	1		11/22/13 12:04
47	NI.112213.120726	WG453334-03	Laboratory Control S	.5/200	1		11/22/13 12:07
48	NI.112213.121030	L13110887-01	PL08CSP-13-01NS	.519/200	1		11/22/13 12:10
49	NI.112213.121335	L13110887-02	PL08CSP-20-01NS	.518/200	1		11/22/13 12:13
50	NI.112213.121640	WG453334-01	Reference Sample		1	L13110887-03	11/22/13 12:16
51	NI.112213.121945	WG453334-04	Matrix Spike	.504/200	1	L13110887-03	11/22/13 12:19
52	NI.112213.122250	WG453334-05	Matrix Spike Duplica	.501/200	1	L13110887-03	11/22/13 12:22
53	NI.112213.122554	L13110887-05	PL08CSP-24-01NS	.51/200	1		11/22/13 12:25
54	NI.112213.122859	WG453986-01	Post Digestion Spike		1	L13110887-05	11/22/13 12:28
55	NI.112213.123204	WG453986-02	Serial Dilution		5	L13110887-05	11/22/13 12:32
56	NI.112213.123511	WG454009-19	CCV		1		11/22/13 12:35
57	NI.112213.123836	WG454009-20	CCB		1		11/22/13 12:38
58	NI.112213.124616	L13110887-06	PL08CSP-25-01NS	.512/200	1		11/22/13 12:46
59	NI.112213.124921	L13110887-07	PL08CSP-38-01NS	.51/200	1		11/22/13 12:49
60	NI.112213.125226	L13110887-08	PL08CSP-26-01NS	.505/200	1		11/22/13 12:52
61	NI.112213.125530	L13110887-09	PL08CSP-26-01FD	.516/200	1		11/22/13 12:55
62	NI.112213.125835	L13110887-10	PL08CSP-39-01NS	.5/200	1		11/22/13 12:58
63	NI.112213.130140	L13110887-11	PL08CSP-40-01NS	.507/200	1		11/22/13 13:01
64	NI.112213.130444	L13111067-01	PL08CSP-34-01NS	.518/200	1		11/22/13 13:04
65	NI.112213.130749	L13111067-02	PL08CSP-35-01NS	.502/200	1		11/22/13 13:07
66	NI.112213.131054	L13111067-03	PL08CSP-36-01NS	.509/200	1		11/22/13 13:10
67	NI.112213.131358	L13111067-04	PL08CSP-37-01NS	.516/200	1		11/22/13 13:13
68	NI.112213.131705	WG454009-21	CCV		1		11/22/13 13:17

Page: 2 Approved: November 25, 2013

Maren Berry

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 112213A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 0
Maintenance Log ID: 48285

Calibration Std: STD61268 ICV Std: STD61269 Post Spike: STD60309
ICSA: STD61270 ICSAB: STD61271 Int. Std: RGT28155
CCV: STD61517 LLCCV: STD61224 Tuning Sol : STD61267
Stannous : Hydroxylamine :

Workgroups: 453895,453985,453986,453994

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	NI.112213.132010	WG454009-22	CCB		1		11/22/13 13:20
70	NI.112213.132316	WG452890-02	Method/Prep Blank	.5/200	1		11/22/13 13:23
71	NI.112213.132621	WG452890-03	Laboratory Control S	.5/200	1		11/22/13 13:26
72	NI.112213.132926	WG452890-01	Reference Sample		1	L13110814-11	11/22/13 13:29
73	NI.112213.133231	WG452890-04	Matrix Spike	.521/200	1	L13110814-11	11/22/13 13:32
74	NI.112213.133536	WG452890-05	Matrix Spike Duplica	.51/200	1	L13110814-11	11/22/13 13:35
75	NI.112213.133840	L13110814-01	PL08CSP-07-01NS	.504/200	1		11/22/13 13:38
76	NI.112213.134145	L13110814-02	PL08CSP-08-01NS	.516/200	1		11/22/13 13:41
77	NI.112213.134450	L13110814-03	PL08CSP-09-01NS	.505/200	1		11/22/13 13:44
78	NI.112213.134755	WG453985-01	Post Digestion Spike		1	L13110814-03	11/22/13 13:47
79	NI.112213.135059	WG453985-02	Serial Dilution		5	L13110814-03	11/22/13 13:50
80	NI.112213.135406	WG454009-23	CCV		1		11/22/13 13:54
81	NI.112213.135711	WG454009-24	CCB		1		11/22/13 13:57
82	NI.112213.140017	L13110814-04	PL08CSP-10-01NS	.52/200	1		11/22/13 14:00
83	NI.112213.140322	L13110814-05	PL08CSP-11-01NS	.5/200	1		11/22/13 14:03
84	NI.112213.140627	L13110814-07	PL08CSP-12-01NS	.518/200	1		11/22/13 14:06
85	NI.112213.140931	L13110814-08	PL08CSP-12-01FD	.503/200	1		11/22/13 14:09
86	NI.112213.141236	L13110814-09	PL08CSP-22-01NS	.51/200	1		11/22/13 14:12
87	NI.112213.141541	L13110814-10	PL08CSP-22-01FD	.501/200	1		11/22/13 14:15
88	NI.112213.141846	WG454009-25	CCV		1		11/22/13 14:18
89	NI.112213.142151	WG454009-26	CCB		1		11/22/13 14:21
90	NI.112213.143006	WG453975-03	Method/Prep Blank	40/100	1		11/22/13 14:30
91	NI.112213.143311	WG453975-04	Laboratory Control S	40/100	1		11/22/13 14:33
92	NI.112213.143616	L13111205-03	LF1MW07-131119		1	WG453975-01	11/22/13 14:36
93	NI.112213.143920	L13111205-04	LF1MW07-131119	40/100	1	WG453975-05	11/22/13 14:39
94	NI.112213.144225	L13111205-05	LF1MW07-131119	40/100	1	WG453975-06	11/22/13 14:42
95	NI.112213.144530	L13110951-03	PZLF502LS16	40/100	1		11/22/13 14:45
96	NI.112213.144835	L13110951-04	LF5MW04R14	40/100	1		11/22/13 14:48
97	NI.112213.145140	WG453994-01	Post Digestion Spike		1	L13110951-04	11/22/13 14:51
98	NI.112213.145445	WG453994-02	Serial Dilution		5	L13110951-04	11/22/13 14:54
99	NI.112213.145749	WG453994-02	Serial Dilution		25	L13110951-04	11/22/13 14:57
100	NI.112213.150057	WG454009-27	CCV		1		11/22/13 15:00
101	NI.112213.150401	WG454009-28	CCB		1		11/22/13 15:04
102	NI.112213.150708	L13111205-02	MW95-2-131119	40/100	1		11/22/13 15:07

Page: 3 Approved: November 25, 2013

Maren Berry

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 112213A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 0
Maintenance Log ID: 48285

Calibration Std: STD61268 ICV Std: STD61269 Post Spike: STD60309
ICSA: STD61270 ICSAB: STD61271 Int. Std: RGT28155
CCV: STD61517 LLCCV: STD61224 Tuning Sol : STD61267
Stannous : Hydroxylamine :

Workgroups: 453895,453985,453986,453994

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	NI.112213.151013	L13111086-01	SMW 1-1113-1	40/100	1		11/22/13 15:10
104	NI.112213.151318	L13111086-02	SMW 4-1113-1	40/100	1		11/22/13 15:13
105	NI.112213.151625	L13111205-02	MW95-2-131119	40/100	25		11/22/13 15:16
106	NI.112213.151932	L13111010-02	LF30/31-ML6(21)-13NOV201	40/100	1		11/22/13 15:19
107	NI.112213.152237	L13111010-04	LF30/31-ML2S-13NOV2013	40/100	1		11/22/13 15:22
108	NI.112213.152545	L13111010-06	LF30/31-ML2M-13NOV2013	40/100	1		11/22/13 15:25
109	NI.112213.152850	L13111010-08	LF30/31-ML202(18)-14NOV2	40/100	1		11/22/13 15:28
110	NI.112213.153154	L13111010-10	LF31-MW2-14NOV2013	40/100	1		11/22/13 15:31
111	NI.112213.153501	WG454009-29	CCV		1		11/22/13 15:35
112	NI.112213.153806	WG454009-30	CCB		1		11/22/13 15:38
113	NI.112213.154112	WG454009-31	Low Level Continuing Calibra		1		11/22/13 15:41
114	NI.112213.154430	WG454009-32	Interference Check		1		11/22/13 15:44
115	NI.112213.154734	WG454009-33	Interference Check		1		11/22/13 15:47
116	NI.112213.155041	WG454009-34	CCV		1		11/22/13 15:50
117	NI.112213.155347	WG454009-35	CCB		1		11/22/13 15:53
118	NI.112213.155653	L13111206-01	STP-WC-1113	40/100	1		11/22/13 15:56
119	NI.112213.155958	L13111218-01	OUTFALL 002 COMP	40/100	1		11/22/13 15:59
120	NI.112213.160303	L13111218-03	OUTFALL 003 COMP	40/100	1		11/22/13 16:03
121	NI.112213.160608	L13111218-05	OUTFALL 004 COMP	40/100	1		11/22/13 16:06
122	NI.112213.160912	L13111218-08	OUTFALL 203 COMP	40/100	1		11/22/13 16:09
123	NI.112213.161217	L13111218-09	OUTFALL 103 COMP	40/100	1		11/22/13 16:12
124	NI.112213.161652	L13111218-13	POLICE PIT		1	WG453975-02	11/22/13 16:16
125	NI.112213.162041	WG453975-07	Duplicate	40/100	1	L13111218-13	11/22/13 16:20
126	NI.112213.162345	L13111228-01	SMITH W1	40/100	1		11/22/13 16:23
127	NI.112213.162650	L13111218-08	OUTFALL 203 COMP	40/100	5000		11/22/13 16:26
128	NI.112213.162957	WG454009-36	CCV		1		11/22/13 16:29
129	NI.112213.163302	WG454009-37	CCB		1		11/22/13 16:33
130	NI.112213.163607	L13111218-03	OUTFALL 003 COMP	40/100	10		11/22/13 16:36
131	NI.112213.163914	WG454009-38	CCV		1		11/22/13 16:39
132	NI.112213.164219	WG454009-39	CCB		1		11/22/13 16:42

Page: 4 Approved: November 25, 2013

Maren Berry

Microbac Laboratories Inc.

Data Checklist

Date: 22-NOV-2013
Analyst: JYH
Analyst: NA
Method: 6020/6020A/200.8
Instrument: ICP-MS2
Curve Workgroup: 454009
Runlog ID: 57312
Analytical Workgroups: 453895,453985,453986,453994

Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	X
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	740,842,843,954,969,951,1086
	1205,1206,1218
Client Forms	X
Level X	
Level 3	887,1067,814
Level 4	740,842,843,954,951,1086,1205
	1206
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	MMB
Comments	

Primary Reviewer: Secondary Reviewer:
25-NOV-2013

CHECKLIST1 - Modified 03/05/2008
Generated: NOV-25-2013 13:14:44

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6020 AAB#: WG453994

Login Number: L13111086

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
SMW 1-1113-1	01	11/15/13					11/22/2013	7	180		11/22/13	7.2	180	
SMW 4-1113-1	02	11/15/13					11/22/2013	6.9	180		11/22/13	7.1	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 3223479
Report generated 11/25/2013 08:42

Microbac Laboratories Inc.

METHOD BLANK SUMMARY

Login Number: L13111086
Blank File ID: NI.112213.143006
Prep Date: 11/22/13 10:20
Analyzed Date: 11/22/13 14:30
Analyst: JYH

Work Group: WG453994
Blank Sample ID: WG453975-03
Instrument ID: ICP-MS2
Method: 6020

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG453975-04	NI.112213.143311	11/22/13 14:33	01
SMW 1-1113-1	L13111086-01	NI.112213.151013	11/22/13 15:10	01
SMW 4-1113-1	L13111086-02	NI.112213.151318	11/22/13 15:13	01
DUP	WG453975-07	NI.112213.162041	11/22/13 16:20	01

Report Name: BLANK_SUMMARY
PDF File ID: 3223481
Report generated 11/25/2013 08:42

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L13111086 Prep Date: 11/22/13 10:20 Sample ID: WG453975-03
Instrument ID: ICP-MS2 Run Date: 11/22/13 14:30 Prep Method: 3015
File ID: NI.112213.143006 Analyst: JYH Method: 6020
Workgroup (AAB#): WG453994 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-MS-22-NOV-13

Analytes	LOD	LOQ	Concentration	Dilution	Qualifier
Antimony, Total	0.000500	0.00100	0.000500	1	U
Arsenic, Total	0.000500	0.00100	0.000500	1	U
Barium, Total	0.00150	0.00300	0.00150	1	U
Cadmium, Total	0.000300	0.000600	0.000300	1	U
Chromium, Total	0.00100	0.00200	0.00100	1	U
Cobalt, Total	0.000500	0.00100	0.000500	1	U
Copper, Total	0.00100	0.00200	0.00100	1	U
Lead, Total	0.000500	0.00100	0.000500	1	U
Manganese, Total	0.00100	0.00200	0.00100	1	U
Nickel, Total	0.00200	0.00400	0.00200	1	U
Selenium, Total	0.000500	0.00100	0.000500	1	U
Silver, Total	0.000500	0.00100	0.000500	1	U
Thallium, Total	0.000100	0.000200	0.000100	1	U

LOD Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 3223483
25-NOV-2013 08:42

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L13111086 Run Date: 11/22/2013 Sample ID: WG453975-04
Instrument ID: ICP-MS2 Run Time: 14:33 Prep Method: 3015
File ID: NI.112213.143311 Analyst: JYH Method: 6020
Workgroup (AAB#): WG453994 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD60087 Cal ID: ICP-MS-22-NOV-13

Analytes	Expected	Found	% Rec	LCS Limits	Q
Antimony, Total	0.0625	0.0568	90.8	80 - 120	
Arsenic, Total	0.0625	0.0563	90.1	80 - 120	
Barium, Total	0.0625	0.0582	93.2	80 - 120	
Cadmium, Total	0.0625	0.0562	90.0	80 - 120	
Chromium, Total	0.0625	0.0602	96.4	80 - 120	
Cobalt, Total	0.0625	0.0604	96.7	80 - 120	
Copper, Total	0.0625	0.0589	94.2	80 - 120	
Lead, Total	0.0625	0.0563	90.1	80 - 120	
Manganese, Total	0.0625	0.0601	96.2	80 - 120	
Nickel, Total	0.0625	0.0577	92.3	80 - 120	
Selenium, Total	0.0625	0.0548	87.7	80 - 120	
Silver, Total	0.0625	0.0610	97.5	80 - 120	
Thallium, Total	0.0625	0.0572	91.5	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 3223485
Report generated: 11/25/2013 08:42

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L13111086 Cal ID: ICP-MS2- Worknum: WG453994
Instrument ID: ICP-MS2 Contract #: Method: 6020
Parent ID: WG453975-01 File ID: NI.112213.143616 Dil: 1 Matrix: WATER
Sample ID: WG453975-05 MS File ID: NI.112213.143920 Dil: 1 Units: mg/L
Sample ID: WG453975-06 MSD File ID: NI.112213.144225 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Antimony, Dissolved	ND	0.0625	0.0589	94.2	0.0625	0.0586	93.8	0.455	80 - 120	20	
Arsenic, Dissolved	0.00355	0.0625	0.0645	97.5	0.0625	0.0630	95.2	2.28	80 - 120	20	
Barium, Dissolved	0.00732	0.0625	0.0628	88.7	0.0625	0.0630	89.1	0.349	80 - 120	20	
Cadmium, Dissolved	ND	0.0625	0.0538	86.1	0.0625	0.0542	86.7	0.717	80 - 120	20	
Chromium, Dissolved	0.00310	0.0625	0.0564	85.2	0.0625	0.0574	86.9	1.81	80 - 120	20	
Cobalt, Dissolved	0.000802	0.0625	0.0538	84.9	0.0625	0.0540	85.1	0.298	80 - 120	20	
Copper, Dissolved	0.00721	0.0625	0.0583	81.8	0.0625	0.0578	80.9	0.930	80 - 120	20	
Lead, Dissolved	ND	0.0625	0.0574	91.8	0.0625	0.0570	91.1	0.679	80 - 120	20	
Manganese, Dissolved	ND	0.0625	0.0579	92.6	0.0625	0.0568	91.0	1.81	80 - 120	20	
Nickel, Dissolved	0.0205	0.0625	0.0726	83.4	0.0625	0.0724	83.2	0.165	80 - 120	20	
Selenium, Dissolved	0.0526	0.0625	0.122	110	0.0625	0.122	111	0.200	80 - 120	20	
Silver, Dissolved	ND	0.0625	0.0501	80.2	0.0625	0.0497	79.5	0.780	80 - 120	20	*
Thallium, Dissolved	ND	0.0625	0.0589	94.2	0.0625	0.0578	92.4	1.90	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 3225822
Report generated 11/25/2013 13:56

Microbac Laboratories Inc.
Serial Dilution Report

Login: L13111086 **Worknum:** WG453994
Instrument: ICP-MS2 **Method:** 6020
Serial Dil: WG453994-02 **File ID:** NI.112213.145445 **Dil:** 5 **Units:** ug/L
Sample: L13110951-04 **File ID:** NI.112213.144835 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Antimony	ND	U	ND	U		
Arsenic	0.699	X	ND	U		
Barium	8.62	X	9.00	X	4.41	
Cadmium	ND	U	ND	U		
Chromium	ND	U	ND	U		
Cobalt	ND	U	ND	U		
Copper	2.65	X	3.32	F	25.50	
Lead	0.302	F	ND	U		
Manganese	31.9	X	31.5	X	1.42	
Nickel	1.56	F	ND	U		
Selenium	0.464	X	ND	U		
Silver	ND	U	ND	U		
Thallium	ND	U	ND	U		

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 100 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 100 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 3223475
11/25/2013 08:42

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L13111086 **Worknum:** WG453994
Instrument ID: ICP-MS2 **Method:** 6020
Post Spike ID: WG453994-01 **File ID:** NI.112213.145140 **Dil:** 1 **Units:** ug/L
Sample ID: L13110951-04 **File ID:** NI.112213.144835 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ANTIMONY	51.3		0	U	50	102.7	75 - 125	
ARSENIC	51.0		0.699		50	100.5	75 - 125	
BARIUM	59.4		8.62		50	101.6	75 - 125	
CADMIUM	50.8		0	U	50	101.5	75 - 125	
CHROMIUM	49.8		0	U	50	99.6	75 - 125	
COBALT	49.5		0	U	50	98.9	75 - 125	
COPPER	51.6		2.65		50	98.0	75 - 125	
LEAD	51.7		0.302	F	50	102.8	75 - 125	
MANGANESE	84.5		31.9		50	105.2	75 - 125	
NICKEL	50.9		1.56	F	50	98.6	75 - 125	
SELENIUM	50.5		0.464		50	100.0	75 - 125	
SILVER	49.7		0	U	50	99.3	75 - 125	
THALLIUM	51.6		0	U	50	103.2	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 3223477
Report generated: 11/25/2013 08:42

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	**L13111086**	Workgroup (AAB#):	**WG453994**
Analytical Method:	**6020**	Instrument ID:	**ICP-MS2**
ICAL Worknum:	**WG454009**	Initial Calibration Date:	**22-NOV-2013 09:47**

	WG454009-01		WG454009-02		WG454009-03		WG454009-04			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ANTIMONY	0	9.40	.4	153	50	137000	100	265000	.999979	
ARSENIC	0	-280	.4	-183	50	85900	100	166000	.999993	
BARIUM	0	4.30	.4	113	50	97400	100	189000	.99999	
CADMIUM	0	1.30	.4	138	50	114000	100	222000	.999995	
CHROMIUM	0	5760	.4	6360	50	401000	100	749000	.999872	
COBALT	0	80.3	.4	585	50	444000	100	847000	.999967	
COPPER	0	82.7	.4	269	50	147000	100	279000	.999945	
LEAD	0	222	.4	577	50	317000	100	616000	1	
MANGANESE	0	932	.4	1840	50	697000	100	1330000	.999951	
NICKEL	0	34.3	.4	217	50	148000	100	284000	.99998	
SELENIUM	0	-42.0	.4	-31.3	50	8490	100	16300	.999988	
SILVER	0	55.3	.4	487	50	371000	100	703000	.999877	
THALLIUM	0	2.70	.4	376	50	330000	100	636000	.999989	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 3223493
Report generated: 25-NOV-2013 08:42

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L13111086
Run Date: 11/22/2013
Sample ID: WG454009-06
Instrument ID: ICP-MS2
Run Time: 09:53
Method: 6020
File ID: NI.112213.095331
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG453994
Cal ID: ICP-MS2 - 22-NOV-13
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
SILVER	.2	.4	.2	U
ARSENIC	.2	.4	.2	U
BARIUM	.6	1.2	.6	U
CADMIUM	.12	.24	.12	U
COBALT	.2	.4	.2	U
CHROMIUM	.4	.8	.4	U
COPPER	.4	.8	.4	U
MANGANESE	.4	.8	.4	U
NICKEL	.8	1.6	.8	U
LEAD	.2	.4	.2	U
ANTIMONY	.2	.4	.2	U
SELENIUM	.2	.4	.2	U
THALLIUM	.04	.08	.04	U

U = Result is less than 2 x MDL
F = Result is between MDL and 2 x MDL
* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 3223498
Report generated 11/25/2013 08:42

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L13111086
Run Date: 11/22/2013
Sample ID: WG454009-11
Instrument ID: ICP-MS2
Run Time: 10:08
Method: 6020
File ID: NI.112213.100859
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG453994
Cal ID: ICP-MS - 22-NOV-13
Matrix: WATER
QAPP: DOD4_NOFLAG

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.400	0.200	U
Arsenic	0.200	0.400	0.200	U
Barium	0.600	1.20	0.600	U
Cadmium	0.120	0.240	0.120	U
Chromium	0.400	0.800	0.400	U
Cobalt	0.200	0.400	0.200	U
Copper	0.400	0.800	0.400	U
Lead	0.200	0.400	0.200	U
Manganese	0.400	0.800	0.400	U
Nickel	0.800	1.60	0.800	U
Selenium	0.200	0.400	0.200	U
Silver	0.200	0.400	0.200	U
Thallium	0.0400	0.0800	0.0400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 3223504
Report generated 11/25/2013 08:43

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L13111086
Run Date: 11/22/2013
Sample ID: WG454009-26
Instrument ID: ICP-MS2
Run Time: 14:21
Method: 6020
File ID: NI.112213.142151
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG453994
Cal ID: ICP-MS - 22-NOV-13
Matrix: WATER
QAPP: DOD4_NOFLAG

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.400	0.200	U
Arsenic	0.200	0.400	0.200	U
Barium	0.600	1.20	0.600	U
Cadmium	0.120	0.240	0.120	U
Chromium	0.400	0.800	0.400	U
Cobalt	0.200	0.400	0.200	U
Copper	0.400	0.800	0.400	U
Lead	0.200	0.400	0.200	U
Manganese	0.400	0.800	0.400	U
Nickel	0.800	1.60	0.800	U
Selenium	0.200	0.400	0.200	U
Silver	0.200	0.400	0.200	U
Thallium	0.0400	0.0800	0.0400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L13111086
Run Date: 11/22/2013
Sample ID: WG454009-28
Instrument ID: ICP-MS2
Run Time: 15:04
Method: 6020
File ID: NI.112213.150401
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG453994
Cal ID: ICP-MS - 22-NOV-13
Matrix: WATER
QAPP: DOD4_NOFLAG

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.400	0.200	U
Arsenic	0.200	0.400	0.200	U
Barium	0.600	1.20	0.600	U
Cadmium	0.120	0.240	0.120	U
Chromium	0.400	0.800	0.400	U
Cobalt	0.200	0.400	0.200	U
Copper	0.400	0.800	0.400	U
Lead	0.200	0.400	0.200	U
Manganese	0.400	0.800	0.400	U
Nickel	0.800	1.60	0.800	U
Selenium	0.200	0.400	0.200	U
Silver	0.200	0.400	0.200	U
Thallium	0.0400	0.0800	0.0400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 3223504
Report generated 11/25/2013 08:43

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L13111086
Run Date: 11/22/2013
Sample ID: WG454009-30
Instrument ID: ICP-MS2
Run Time: 15:38
Method: 6020
File ID: NI.112213.153806
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG453994
Cal ID: ICP-MS - 22-NOV-13
Matrix: WATER
QAPP: DOD4_NOFLAG

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.400	0.200	U
Arsenic	0.200	0.400	0.200	U
Barium	0.600	1.20	0.600	U
Cadmium	0.120	0.240	0.120	U
Chromium	0.400	0.800	0.400	U
Cobalt	0.200	0.400	0.200	U
Copper	0.400	0.800	0.400	U
Lead	0.200	0.400	0.200	U
Manganese	0.400	0.800	0.400	U
Nickel	0.800	1.60	0.800	U
Selenium	0.200	0.400	0.200	U
Silver	0.200	0.400	0.200	U
Thallium	0.0400	0.0800	0.0400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 3223504
Report generated 11/25/2013 08:43

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L13111086
Run Date: 11/22/2013
Sample ID: WG454009-35
Instrument ID: ICP-MS2
Run Time: 15:53
Method: 6020
File ID: NI.112213.155347
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG453994
Cal ID: ICP-MS - 22-NOV-13
Matrix: WATER
QAPP: DOD4_NOFLAG

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.400	0.200	U
Arsenic	0.200	0.400	0.200	U
Barium	0.600	1.20	0.600	U
Cadmium	0.120	0.240	0.120	U
Chromium	0.400	0.800	0.400	U
Cobalt	0.200	0.400	0.200	U
Copper	0.400	0.800	0.400	U
Lead	0.200	0.400	0.200	U
Manganese	0.400	0.800	0.400	U
Nickel	0.800	1.60	0.800	U
Selenium	0.200	0.400	0.200	U
Silver	0.200	0.400	0.200	U
Thallium	0.0400	0.0800	0.0400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 3223504
Report generated 11/25/2013 08:43

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L13111086
Run Date: 11/22/2013
Sample ID: WG454009-37
Instrument ID: ICP-MS2
Run Time: 16:33
Method: 6020
File ID: NI.112213.163302
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG453994
Cal ID: ICP-MS - 22-NOV-13
Matrix: WATER
QAPP: DOD4_NOFLAG

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.400	0.200	U
Arsenic	0.200	0.400	0.200	U
Barium	0.600	1.20	0.600	U
Cadmium	0.120	0.240	0.120	U
Chromium	0.400	0.800	0.400	U
Cobalt	0.200	0.400	0.200	U
Copper	0.400	0.800	0.400	U
Lead	0.200	0.400	0.200	U
Manganese	0.400	0.800	0.400	U
Nickel	0.800	1.60	0.800	U
Selenium	0.200	0.400	0.200	U
Silver	0.200	0.400	0.200	U
Thallium	0.0400	0.0800	0.0400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 3223504
Report generated 11/25/2013 08:43

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L13111086 Run Date: 11/22/2013 Sample ID: WG454009-05
Instrument ID: ICP-MS2 Run Time: 09:50 Method: 6020
File ID: NI.112213.095024 Analyst: JYH Units: ug/L
Workgroup (AAB#): WG453994 Cal ID: ICP-MS - 22-NOV-13
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Antimony		50	50.2	100	90 - 110	
Arsenic		50	50.1	100	90 - 110	
Barium		50	50.3	101	90 - 110	
Cadmium		50	50.2	100	90 - 110	
Chromium		50	50.4	101	90 - 110	
Cobalt		50	50.7	101	90 - 110	
Copper		50	50.4	101	90 - 110	
Lead		50	50.1	100	90 - 110	
Manganese		50	50.2	100	90 - 110	
Nickel		50	50.3	101	90 - 110	
Selenium		50	49.9	99.9	90 - 110	
Silver		50	50.8	102	90 - 110	
Thallium		50	50.0	99.9	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 3223496
Report generated 11/25/2013 08:42

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L13111086
Run Date: 11/22/2013
Sample ID: WG454009-10
Instrument ID: ICP-MS2
Run Time: 10:05
Method: 6020
File ID: NI.112213.100554
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG453994
Cal ID: ICP-MS - 22-NOV-13
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0504	mg/L	101	90 - 110		
Arsenic		0.0500	0.0505	mg/L	101	90 - 110		
Barium		0.0500	0.0502	mg/L	100	90 - 110		
Cadmium		0.0500	0.0501	mg/L	100	90 - 110		
Chromium		0.0500	0.0498	mg/L	99.5	90 - 110		
Cobalt		0.0500	0.0502	mg/L	100	90 - 110		
Copper		0.0500	0.0505	mg/L	101	90 - 110		
Lead		0.0500	0.0501	mg/L	100	90 - 110		
Manganese		0.0500	0.0509	mg/L	102	90 - 110		
Nickel		0.0500	0.0504	mg/L	101	90 - 110		
Selenium		0.0500	0.0507	mg/L	101	90 - 110		
Silver		0.0500	0.0510	mg/L	102	90 - 110		
Thallium		0.0500	0.0502	mg/L	100	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 3223502
Report generated 11/25/2013 08:42

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L13111086
Run Date: 11/22/2013
Sample ID: WG454009-25
Instrument ID: ICP-MS2
Run Time: 14:18
Method: 6020
File ID: NI.112213.141846
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG453994
Cal ID: ICP-MS - 22-NOV-13
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0497	mg/L	99.5	90 - 110		
Arsenic		0.0500	0.0499	mg/L	99.8	90 - 110		
Barium		0.0500	0.0508	mg/L	102	90 - 110		
Cadmium		0.0500	0.0507	mg/L	101	90 - 110		
Chromium		0.0500	0.0506	mg/L	101	90 - 110		
Cobalt		0.0500	0.0509	mg/L	102	90 - 110		
Copper		0.0500	0.0503	mg/L	101	90 - 110		
Lead		0.0500	0.0497	mg/L	99.4	90 - 110		
Manganese		0.0500	0.0509	mg/L	102	90 - 110		
Nickel		0.0500	0.0499	mg/L	99.9	90 - 110		
Selenium		0.0500	0.0494	mg/L	98.9	90 - 110		
Silver		0.0500	0.0526	mg/L	105	90 - 110		
Thallium		0.0500	0.0495	mg/L	99.1	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 3223502
Report generated 11/25/2013 08:42

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L13111086
Run Date: 11/22/2013
Sample ID: WG454009-27
Instrument ID: ICP-MS2
Run Time: 15:00
Method: 6020
File ID: NI.112213.150057
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG453994
Cal ID: ICP-MS - 22-NOV-13
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0505	mg/L	101	90 - 110		
Arsenic		0.0500	0.0497	mg/L	99.3	90 - 110		
Barium		0.0500	0.0503	mg/L	101	90 - 110		
Cadmium		0.0500	0.0505	mg/L	101	90 - 110		
Chromium		0.0500	0.0478	mg/L	95.6	90 - 110		
Cobalt		0.0500	0.0483	mg/L	96.6	90 - 110		
Copper		0.0500	0.0498	mg/L	99.5	90 - 110		
Lead		0.0500	0.0500	mg/L	100	90 - 110		
Manganese		0.0500	0.0499	mg/L	99.8	90 - 110		
Nickel		0.0500	0.0501	mg/L	100	90 - 110		
Selenium		0.0500	0.0497	mg/L	99.3	90 - 110		
Silver		0.0500	0.0513	mg/L	103	90 - 110		
Thallium		0.0500	0.0493	mg/L	98.7	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 3223502
Report generated 11/25/2013 08:42

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L13111086 Run Date: 11/22/2013 Sample ID: WG454009-29
Instrument ID: ICP-MS2 Run Time: 15:35 Method: 6020
File ID: NI.112213.153501 Analyst: JYH QC Key: DOD4
Workgroup (AAB#): WG453994 Cal ID: ICP-MS - 22-NOV-13
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0504	mg/L	101	90 - 110		
Arsenic		0.0500	0.0500	mg/L	100	90 - 110		
Barium		0.0500	0.0499	mg/L	99.9	90 - 110		
Cadmium		0.0500	0.0499	mg/L	99.7	90 - 110		
Chromium		0.0500	0.0477	mg/L	95.4	90 - 110		
Cobalt		0.0500	0.0478	mg/L	95.7	90 - 110		
Copper		0.0500	0.0497	mg/L	99.5	90 - 110		
Lead		0.0500	0.0502	mg/L	100	90 - 110		
Manganese		0.0500	0.0495	mg/L	99.1	90 - 110		
Nickel		0.0500	0.0494	mg/L	98.8	90 - 110		
Selenium		0.0500	0.0498	mg/L	99.6	90 - 110		
Silver		0.0500	0.0505	mg/L	101	90 - 110		
Thallium		0.0500	0.0496	mg/L	99.2	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 3223502
Report generated 11/25/2013 08:42

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L13111086
Run Date: 11/22/2013
Sample ID: WG454009-34
Instrument ID: ICP-MS2
Run Time: 15:50
Method: 6020
File ID: NI.112213.155041
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG453994
Cal ID: ICP-MS - 22-NOV-13
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0506	mg/L	101	90 - 110		
Arsenic		0.0500	0.0500	mg/L	100	90 - 110		
Barium		0.0500	0.0502	mg/L	100	90 - 110		
Cadmium		0.0500	0.0504	mg/L	101	90 - 110		
Chromium		0.0500	0.0482	mg/L	96.4	90 - 110		
Cobalt		0.0500	0.0482	mg/L	96.4	90 - 110		
Copper		0.0500	0.0499	mg/L	99.8	90 - 110		
Lead		0.0500	0.0505	mg/L	101	90 - 110		
Manganese		0.0500	0.0503	mg/L	101	90 - 110		
Nickel		0.0500	0.0502	mg/L	100	90 - 110		
Selenium		0.0500	0.0505	mg/L	101	90 - 110		
Silver		0.0500	0.0511	mg/L	102	90 - 110		
Thallium		0.0500	0.0497	mg/L	99.5	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 3223502
Report generated 11/25/2013 08:42

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L13111086 Run Date: 11/22/2013 Sample ID: WG454009-36
Instrument ID: ICP-MS2 Run Time: 16:29 Method: 6020
File ID: NI.112213.162957 Analyst: JYH QC Key: DOD4
Workgroup (AAB#): WG453994 Cal ID: ICP-MS - 22-NOV-13
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0496	mg/L	99.1	90 - 110		
Arsenic		0.0500	0.0498	mg/L	99.6	90 - 110		
Barium		0.0500	0.0496	mg/L	99.2	90 - 110		
Cadmium		0.0500	0.0501	mg/L	100	90 - 110		
Chromium		0.0500	0.0481	mg/L	96.2	90 - 110		
Cobalt		0.0500	0.0484	mg/L	96.8	90 - 110		
Copper		0.0500	0.0499	mg/L	99.9	90 - 110		
Lead		0.0500	0.0500	mg/L	100	90 - 110		
Manganese		0.0500	0.0500	mg/L	100	90 - 110		
Nickel		0.0500	0.0498	mg/L	99.6	90 - 110		
Selenium		0.0500	0.0497	mg/L	99.5	90 - 110		
Silver		0.0500	0.0506	mg/L	101	90 - 110		
Thallium		0.0500	0.0495	mg/L	98.9	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 3223502
Report generated 11/25/2013 08:42

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L13111086 **Workgroup (AAB#):** WG453994
Instrument ID: ICP-MS2 **Method:** 6020
Sol. A : WG454009-08 **File ID:** NI.112213.095942 **Units:** ug/L
Sol. AB : WG454009-09 **File ID:** NI.112213.100247 **Matrix:** Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Antimony	NS	0.0644	NS	100	101	101	
Arsenic	NS	-0.0151	NS	100	99.5	99.5	
Barium	NS	0.0384	NS	100	99.9	99.9	
Cadmium	NS	-0.0502	NS	100	100	100	
Chromium	NS	-0.0196	NS	100	97.1	97.1	
Cobalt	NS	0.0148	NS	100	96.8	96.8	
Copper	NS	0.197	NS	100	98.0	98.0	
Lead	NS	0.0213	NS	100	98.7	98.7	
Manganese	NS	0.0688	NS	100	97.6	97.6	
Nickel	NS	0.374	NS	100	98.0	98.0	
Selenium	NS	-0.0559	NS	100	99.2	99.2	
Silver	NS	-0.00260	NS	100	98.9	98.9	
Thallium	NS	0.00330	NS	100	98.2	98.2	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 3223500
Report generated 11/25/2013 08:42

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L13111086 **Workgroup (AAB#):** WG453994
Instrument ID: ICP-MS2 **Method:** 6020
Sol. A : WG454009-32 **File ID:** NI.112213.154430 **Units:** ug/L
Sol. AB : WG454009-33 **File ID:** NI.112213.154734 **Matrix:** Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Antimony	NS	0.0459	NS	100	101	101	
Arsenic	NS	-0.0285	NS	100	100	100	
Barium	NS	0.0481	NS	100	99.6	99.6	
Cadmium	NS	-0.0191	NS	100	99.6	99.6	
Chromium	NS	-0.0307	NS	100	94.4	94.4	
Cobalt	NS	0.0156	NS	100	94.3	94.3	
Copper	NS	0.216	NS	100	96.3	96.3	
Lead	NS	0.0142	NS	100	98.6	98.6	
Manganese	NS	0.0557	NS	100	98.2	98.2	
Nickel	NS	0.384	NS	100	95.8	95.8	
Selenium	NS	-0.0843	NS	100	99.0	99.0	
Silver	NS	-0.00230	NS	100	96.5	96.5	
Thallium	NS	0.00400	NS	100	97.9	97.9	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 3223500
Report generated 11/25/2013 08:42

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L13111086 **Analytical Method:** 6020
Analytical Workgroup: WG453994 **Matrix:** 1
Instrument: ICP-MS2 **Analyst:** JYH
ICAL Date: 22-NOV-2013 09:38

			BISMUTH	GERMANIUM	INDIUM	LITHIUM
Sample	**Type**	**Run Date**	**% Rec**	**% Rec**	**% Rec**	**% Rec**
L13110951-04	SAMP	22-NOV-2013 14:48	94.782	97.249	98.212	116.466
L13111086-01	SAMP	22-NOV-2013 15:10	95.346	95.284	94.817	100.025
L13111086-02	SAMP	22-NOV-2013 15:13	94.993	94.578	94.701	102.095
WG453975-01	REF	22-NOV-2013 14:36	73.83	82.853	78.805	**120.179**
WG453975-02	REF	22-NOV-2013 16:16	96.685	98.772	99.741	116.898
WG453975-03	BLANK	22-NOV-2013 14:30	82.719	82.207	78.486	75.408
WG453975-04	LCS	22-NOV-2013 14:33	85.671	85.2	81.172	77.275
WG453975-05	MS	22-NOV-2013 14:39	81.047	89.457	88.353	**143.228**
WG453975-06	MSD	22-NOV-2013 14:42	80.942	89.085	86.99	**143.785**
WG453975-07	DUP	22-NOV-2013 16:20	94.631	95.715	97.05	114.173
WG453994-01	PSPK	22-NOV-2013 14:51	98.763	102.97	104.282	**122.865**
WG453994-02	SERIAL	22-NOV-2013 14:54	96.65	93.675	97.215	110.709
WG454009-05	ICV	22-NOV-2013 09:50	99.498	97.998	98.754	98.111
WG454009-06	ICB	22-NOV-2013 09:53	101.234	98.674	98.878	98.63
WG454009-07	LLICV	22-NOV-2013 09:56	101.914	100.372	100.035	101.141
WG454009-08	ICS	22-NOV-2013 09:59	96.731	97.437	96.446	99.328
WG454009-09	ICS	22-NOV-2013 10:02	103.42	104.142	103.227	106.908
WG454009-10	CCV	22-NOV-2013 10:05	103.252	102.199	104.17	108.169
WG454009-11	CCB	22-NOV-2013 10:08	104.499	101.274	102.565	105.623
WG454009-18	LLCCV	22-NOV-2013 11:53	107.501	102.624	108.688	116.796
WG454009-25	CCV	22-NOV-2013 14:18	94.973	94.939	93.986	98.254
WG454009-26	CCB	22-NOV-2013 14:21	93.406	91.021	90.13	89.01
WG454009-27	CCV	22-NOV-2013 15:00	102.382	100.661	103.776	114.855
WG454009-28	CCB	22-NOV-2013 15:04	105.039	100.989	104.558	116.667
WG454009-29	CCV	22-NOV-2013 15:35	99.148	97.197	99.829	105.494
WG454009-30	CCB	22-NOV-2013 15:38	102.289	97.654	101.749	104.202
WG454009-31	LLCCV	22-NOV-2013 15:41	100.993	97.452	100.965	106.113
WG454009-32	ICS	22-NOV-2013 15:44	94.474	93.359	94.765	100.995
WG454009-33	ICS	22-NOV-2013 15:47	100.159	98.929	101.463	107.467
WG454009-34	CCV	22-NOV-2013 15:50	100.811	98.595	102.143	109.025
WG454009-35	CCB	22-NOV-2013 15:53	100.814	97.161	100.815	104.019
WG454009-36	CCV	22-NOV-2013 16:29	100.846	99.08	103.069	112.516
WG454009-37	CCB	22-NOV-2013 16:33	101.605	99.089	101.631	112.038

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 3223490
Report generated: 11/25/2013 08:42

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L13111086 **Date:** 07/25/2013
Insturment ID: ICP-MS2 **Method:** 6020

Analyte	Integration Time (Sec.)	Concentration (ug/L)
Antimony	1.00	100.0
Arsenic	1.00	100.0
Barium	1.00	100.0
Cadmium	1.00	100.0
Chromium	1.00	100.0
Cobalt	1.00	100.0
Copper	1.00	100.0
Lead	1.00	100.0
Manganese	1.00	100.0
Nickel	1.00	100.0
Selenium	1.00	100.0
Silver	1.00	100.0
Thallium	1.00	100.0
Uranium	1.00	100.0
Vanadium	1.00	100.0
Zinc	1.00	100.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 3223487
Report generated: 11/25/2013 08:42

2.1.2.3 Raw Data

MassCal File Name

Mass Calibration File Name default.tun
MassCal File Path C:\NexIONData\MassCal\default.tun
Peak Search Window: 1.00

Sample Information

Sample Date/Time: Friday, November 22, 2013 09:10:21

Mass Calibration and Resolution

Analyte	E Mass	Meas Mass	Mass C DAC Val	Res DAC Value	Meas Peak WCustom Res
Li	7.016	7.025	1323	2025	0.692
Mg	23.985	23.975	4501	2021	0.685
Co	58.933	58.975	11697	2020	0.707
In	114.904	114.875	22865	2026	0.699
U	238.050	238.025	47457	2040	0.689

Relative Std. Dev.

Mass	Meas. Intens. RSD
5.525	7.320
5.575	2.677
5.625	2.857
5.675	0.890
5.725	0.596
5.775	0.903
5.825	1.782
5.875	1.750
5.925	2.259
5.975	2.323
6.025	2.109
6.075	1.592
6.125	1.456
6.175	1.792
6.225	0.926
6.275	3.446
6.325	36.099
6.375	93.541
6.425	55.902
6.475	79.756
6.525	19.543
6.575	6.070
6.625	4.329
6.675	1.045
6.725	1.808
6.775	2.869
6.825	1.488

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6.875	0.830
6.925	1.254
6.975	1.566
7.025	1.973
7.075	1.509
7.125	0.874
7.175	1.112
7.225	0.849
7.275	1.570
7.325	4.290
7.375	52.928
7.425	37.268
7.475	38.030
7.525	99.381
7.575	70.711
7.625	60.111
7.675	55.902
7.725	129.603
7.775	108.521
7.825	34.233
7.875	69.722
7.925	149.071
7.975	61.237
8.025	70.711
8.075	21.066
8.125	35.355
8.175	91.287
8.225	91.287
8.275	136.931
8.325	149.071
8.375	91.287
8.425	113.537
8.475	94.786
22.525	91.287
22.575	50.047
22.625	74.536
22.675	33.164
22.725	44.721
22.775	31.044
22.825	40.819
22.875	24.845
22.925	32.785
22.975	27.721
23.025	34.233
23.075	20.192
23.125	24.203
23.175	30.453

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23.225	24.251
23.275	24.268
23.325	40.232
23.375	30.162
23.425	37.073
23.475	20.683
23.525	4.595
23.575	2.177
23.625	1.104
23.675	0.791
23.725	1.027
23.775	0.963
23.825	1.271
23.875	0.632
23.925	0.548
23.975	0.363
24.025	0.680
24.075	1.198
24.125	0.754
24.175	0.682
24.225	0.850
24.275	2.428
24.325	19.569
24.375	19.920
24.425	59.894
24.475	15.726
24.525	9.627
24.575	3.351
24.625	1.655
24.675	1.655
24.725	1.470
24.775	1.860
24.825	1.975
24.875	0.960
24.925	1.505
24.975	1.595
25.025	0.513
25.075	1.414
25.125	2.734
25.175	2.279
25.225	1.643
25.275	10.821
25.325	55.902
25.375	35.315
25.425	64.947
25.475	26.261
57.525	11.958

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57.575	5.125
57.625	5.333
57.675	2.927
57.725	2.715
57.775	2.362
57.825	1.709
57.875	1.116
57.925	3.829
57.975	1.561
58.025	1.787
58.075	2.044
58.125	1.567
58.175	1.277
58.225	2.238
58.275	8.481
58.325	22.720
58.375	60.858
58.425	39.510
58.475	25.254
58.525	5.540
58.575	5.837
58.625	1.238
58.675	2.083
58.725	2.644
58.775	1.756
58.825	1.332
58.875	1.117
58.925	2.745
58.975	1.850
59.025	0.898
59.075	1.425
59.125	2.894
59.175	1.922
59.225	5.063
59.275	13.343
59.325	40.745
59.375	82.402
59.425	39.033
59.475	32.475
59.525	8.439
59.575	6.372
59.625	7.850
59.675	4.738
59.725	4.974
59.775	2.882
59.825	2.165
59.875	1.346

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59.925	2.075
59.975	3.344
60.025	2.253
60.075	0.745
60.125	3.303
60.175	3.830
60.225	2.297
60.275	22.268
60.325	73.823
60.375	74.689
60.425	49.793
60.475	50.461
113.525	4.894
113.575	2.633
113.625	2.783
113.675	3.283
113.725	1.828
113.775	3.057
113.825	2.405
113.875	1.089
113.925	1.798
113.975	0.686
114.025	1.570
114.075	1.758
114.125	1.701
114.175	8.745
114.225	4.946
114.275	26.679
114.325	13.495
114.375	10.748
114.425	8.960
114.475	3.637
114.525	3.676
114.575	1.259
114.625	0.905
114.675	1.239
114.725	0.919
114.775	1.292
114.825	1.331
114.875	0.927
114.925	1.320
114.975	0.469
115.025	0.900
115.075	2.045
115.125	1.664
115.175	1.383
115.225	3.711

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115.275	8.701
115.325	32.545
115.375	37.268
115.425	21.936
115.475	12.194
115.525	8.404
115.575	2.651
115.625	5.376
115.675	0.785
115.725	6.525
115.775	3.861
115.825	1.827
115.875	3.724
115.925	2.807
115.975	5.884
116.025	3.165
116.075	4.731
116.125	6.504
116.175	4.037
116.225	13.413
116.275	52.355
116.325	39.529
116.375	21.066
116.425	72.940
116.475	25.951
236.525	
236.575	34.149
236.625	42.228
236.675	45.644
236.725	65.695
236.775	29.315
236.825	46.147
236.875	56.207
236.925	20.360
236.975	18.254
237.025	39.033
237.075	22.588
237.125	28.287
237.175	16.716
237.225	43.853
237.275	28.135
237.325	37.815
237.375	38.846
237.425	40.946
237.475	50.918
237.525	14.582
237.575	24.185

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237.625	5.653
237.675	3.528
237.725	2.781
237.775	2.227
237.825	2.540
237.875	2.183
237.925	0.731
237.975	0.797
238.025	1.197
238.075	1.320
238.125	1.214
238.175	1.359
238.225	1.040
238.275	1.949
238.325	2.850
238.375	2.579
238.425	2.741
238.475	7.991
238.525	22.574
238.575	25.495
238.625	30.162
238.675	40.620
238.725	46.481
238.775	36.487
238.825	50.047
238.875	37.769
238.925	30.822
238.975	13.975
239.025	27.065
239.075	17.175
239.125	63.246
239.175	57.198
239.225	21.601
239.275	35.334
239.325	48.364
239.375	28.464
239.425	31.417
239.475	22.017

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Daily Performance Report

Sample ID: Daily Performance Check
Sample Date/Time: Friday, November 22, 2013 09:15:06
Sample Description:
Method File: C:\NexION Data\Method\ESI Daily Performance.mth
Dataset File: C:\NexION Data\DataSet\112013\Daily Performance Check.320
MassCal File: C:\NexION Data\MassCal\Default.tun
Conditions File: C:\NexION Data\Conditions\Default.dac
Dual Detector Mode: Pulse

Acq. Dead Time (ns): 33
Current Dead Time (ns): 33

Torch Z position (mm): 0.50

Summary

	Analyte	Mass	Meas. Intens. Mean	Net Intens. Mean	Net Intens. SD	Net Intens. RSD	Mode
	Be	9.0	7167.0	7166.961	55.672	0.8	Standard
	Mg	24.0	319953.6	319953.562	2033.073	0.6	Standard
	In	114.9	101621.9	101621.860	559.933	0.6	Standard
	U	238.1	61515.4	61515.428	379.454	0.6	Standard
⌈	CeO	155.9	1308.3	0.015	0.000	1.6	Standard
| >	Ce	139.9	90068.9	90068.856	499.212	0.6	Standard
⌊	Ce++	70.0	1245.7	0.014	0.000	2.6	Standard
	Bkgd	220.0	0.0	0.000	0.000		Standard

Current Conditions File Data

Current Value	Description
0.94	Nebulizer Gas Flow STD/KED [NEB]
1.40	Auxiliary Gas Flow
18.00	Plasma Gas Flow
-8.25	Deflector Voltage
1600.00	ICP RF Power
-1712.00	Analog Stage Voltage
900.00	Pulse Stage Voltage
0.00	Quadrupole Rod Offset STD [QRO]
-15.00	Cell Rod Offset STD [CRO]
5.00	Discriminator Threshold
-2.00	Cell Entrance/Exit Voltage STD
0.00	RPa
0.45	RPq
1.01	DRC Mode NEB
-7.00	DRC Mode QRO
-1.50	DRC Mode CRO
-5.00	DRC Mode Cell Entrance/Exit Voltage
0.70	Cell Gas A
200.00	Axial Field Voltage
-17.00	KED Mode CRO
-12.00	KED Mode QRO
-5.00	KED Mode Cell Entrance Voltage
-23.00	KED Mode Cell Exit Voltage
3.00	KED Cell Gas A
0.00	KED RPa
0.25	KED RPq
475.00	KED Mode Axial Field Voltage

Sample ID: Daily Performance Check
Report Date/Time: Friday, November 22, 2013 09:17:09
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SmartTune Wizard - Summary

```
Optimization Summary

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Start Time: 11/22/2013 9:15:06 AM
End Time: 11/22/2013 9:17:10 AM

Daily Performance Check - [Passed]  Optimum value(s): N/A
        Obtained Intensity (Be 9.0122): 7166.96
        Obtained Intensity (Mg 23.985): 319953.56
        Obtained Intensity (In 114.904): 101621.86
        Obtained Intensity (U 238.05): 61515.43
        Obtained Intensity (Bkgd 220): 0.00
        Obtained Formula (CeO 155.9 / Ce 139.905): 0.015 (=1308.32 / 90068.86)
        Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.014 (=1245.65 / 90068.86)
```

Report Date/Time: Friday, November 22, 2013 09:17:10
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SmartTune Wizard - Details

```
Optimization Details

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Optimization Status

Start Time: 11/22/2013 9:15:06 AM



Daily Performance Check
        Optimization Settings:
                Method: C:\NexIONData\Method\ESI Daily Performance.mth.
                Intensity Criterion: Be 9.0122 > 2000
                Intensity Criterion: Mg 23.985 > 15000
                Intensity Criterion: In 114.904 > 40000
                Intensity Criterion: U 238.05 > 30000
                Intensity Criterion: Bkgd 220 <= 5
                Formula Criterion: CeO 155.9 / Ce 139.905 <= 0.025
                Formula Criterion: Ce++ 69.9527 / Ce 139.905 <= 0.03

        Optimization Results:
        Initial Try
                Obtained Intensity (Be 9.0122): 7166.96
                Obtained Intensity (Mg 23.985): 319953.56
                Obtained Intensity (In 114.904): 101621.86
                Obtained Intensity (U 238.05): 61515.43
                Obtained Intensity (Bkgd 220): 0.00
                Obtained Formula (CeO 155.9 / Ce 139.905): 0.015 (=1308.32 / 90068.86)
                Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.014 (=1245.65 / 90068.86)
[Passed]  Optimum value(s): N/A

End Time: 11/22/2013 9:17:10 AM
```


Approved: November 24, 2013

Method 6020 - Summary Report

Sample ID: Blank
Sample Date/Time: Friday, November 22, 2013 09:34:55
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	231878.5	2.9				ug/L		Standard
	Be	9	6.7	114.6				ug/L		Standard
	Al	27	115.0	15.1				ug/L		Standard
	Sc	45	57580.9	0.7				ug/L		Standard
	Ti	47	16.7	24.2				ug/L		Standard
	V	51	1677.7	2.4				ug/L		Standard
	Cr	52	5719.1	2.9				ug/L		Standard
	Cr	53	131.7	23.2				ug/L		Standard
	Mn	55	927.4	5.8				ug/L		Standard
	Co	59	79.7	5.1				ug/L		Standard
	Ni	60	38.7	5.4				ug/L		Standard
	Cu	65	91.3	13.2				ug/L		Standard
	Zn	66	158.7	12.0				ug/L		Standard
>	**Ge**	72	504089.8	0.6				ug/L		Standard
	As	75	-260.7	6.3				ug/L		Standard
	Se	82	-42.7	12.7				ug/L		Standard
	Se-1	77	86.3	20.0				ug/L		Standard
>	**Ga**	71	35.0	28.6				mg/L		Standard
	Rb	85	20.0	43.3				ug/L		Standard
	Y	89	462193.8	0.5				ug/L		Standard
>	**Rh**	103	6.7	86.6				ug/L		Standard
	Mo	98	8.4	36.4				ug/L		Standard
	Ag	107	61.7	8.9				ug/L		Standard
	Cd	111	1.0	101.4				mg/L		Standard
	Cd	114	22.8	32.5				ug/L		Standard
>	**In**	115	502083.0	0.2				ug/L		Standard
	Sn	118	144.3	6.9				ug/L		Standard
	Sb	123	18.7	28.2				ug/L		Standard
	Ba	135	8.7	6.7				ug/L		Standard
	Ce	140	16.7	45.8				ug/L		Standard
>	**Tb**	159	490863.3	0.9				ug/L		Standard
	Ho	165	1.7	173.2				ug/L		Standard
	Tl	203	2.0	132.3				ug/L		Standard
	Tl	205	0.0					ug/L		Standard
	Pb	206	84.3	3.6				ug/L		Standard
	Pb	207	73.3	16.3				ug/L		Standard
	Pb	208	198.7	9.5				ug/L		Standard
	U	238	1.0	100.0				ug/L		Standard
>	**Bi**	209	281512.3	1.0				ug/L		Standard

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	Na	23	1.7	173.2	mg/L	Standard
	Mg	24	38.3	27.2	mg/L	Standard
	K	39	0.0		mg/L	Standard
	Ca	43	23.3	53.9	mg/L	Standard
	Fe	54	233.9	37.5	mg/L	Standard
	Fe	57	118.3	17.1	mg/L	Standard
>	**Sc-1**	45	57580.9	0.7	mg/L	Standard
	Cl	35	22826.5	2.0	ug/L	Standard
	Kr	83	89.7	5.0	ug/L	Standard
	Br	81	2286.8	3.5	ug/L	Standard
	P	31	215765.5	0.9	ug/L	Standard
	S	34	23459.8	0.8	ug/L	Standard
	Sr	88	48.3	15.8	ug/L	Standard
	C	12	3.3	173.2	mg/L	Standard
	N	14	0.0		mg/L	Standard
	Hg	202	0.0		mg/L	Standard
	Dy	164	6.3	173.2	mg/L	Standard
	Ho-1	165	1.7	173.2	mg/L	Standard
	Er	166	6.7	173.2	mg/L	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

Sample ID: Blank
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⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Report Date/Time: Friday, November 22, 2013 09:37:08
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Method 6020 - Summary Report

Sample ID: Standard 1
Sample Date/Time: Friday, November 22, 2013 09:38:02
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	240446.3	1.0				ug/L	231878	Standard
	Be	9	6.7	86.6				ug/L	7	Standard
	Al	27	125.0	24.3				ug/L	115	Standard
	Sc	45	58710.2	0.8				ug/L	57581	Standard
	Ti	47	16.0	21.7				ug/L	17	Standard
	V	51	1637.3	1.0				ug/L	1678	Standard
	Cr	52	5757.8	0.8				ug/L	5719	Standard
	Cr	53	128.3	9.0				ug/L	132	Standard
	Mn	55	932.4	4.7				ug/L	927	Standard
	Co	59	80.3	5.2				ug/L	80	Standard
	Ni	60	34.3	4.4				ug/L	39	Standard
	Cu	65	82.7	11.2				ug/L	91	Standard
	Zn	66	172.0	4.1				ug/L	159	Standard
>	**Ge**	72	515979.9	1.3				ug/L	504090	Standard
	As	75	-279.7	2.0				ug/L	-261	Standard
	Se	82	-42.0	7.7				ug/L	-43	Standard
	Se-1	77	93.3	8.6				ug/L	86	Standard
>	**Ga**	71	20.0	25.0				mg/L	35	Standard
	Rb	85	16.7	69.3				ug/L	20	Standard
	Y	89	475159.1	0.5				ug/L	462194	Standard
>	**Rh**	103	1.7	173.2				ug/L	7	Standard
	Mo	98	8.4	17.7				ug/L	8	Standard
	Ag	107	55.3	1.0				ug/L	62	Standard
	Cd	111	1.3	115.5				mg/L	1	Standard
	Cd	114	22.9	43.7				ug/L	23	Standard
>	**In**	115	511229.1	0.3				ug/L	502083	Standard
	Sn	118	140.7	13.0				ug/L	144	Standard
	Sb	123	9.4	54.3				ug/L	19	Standard
	Ba	135	4.3	48.0				ug/L	9	Standard
	Ce	140	6.7	43.3				ug/L	17	Standard
>	**Tb**	159	495297.5	1.0				ug/L	490863	Standard
	Ho	165	5.0	100.0				ug/L	2	Standard
	Tl	203	2.7	21.7				ug/L	2	Standard
	Tl	205	1.7	173.2				ug/L	0	Standard
	Pb	206	90.0	5.1				ug/L	84	Standard
	Pb	207	79.0	4.4				ug/L	73	Standard
	Pb	208	222.0	8.6				ug/L	199	Standard
	U	238	0.7	173.2				ug/L	1	Standard
>	**Bi**	209	287015.0	0.6				ug/L	281512	Standard

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Na	23	1.7	173.2	mg/L	2	Standard
Mg	24	38.3	52.7	mg/L	38	Standard
K	39	0.0		mg/L	0	Standard
Ca	43	20.0	25.0	mg/L	23	Standard
Fe	54	295.8	3.6	mg/L	234	Standard
Fe	57	98.3	33.9	mg/L	118	Standard
Sc-1	45	58710.2	0.8	mg/L	57581	Standard
Cl	35	23061.5	1.2	ug/L	22827	Standard
Kr	83	85.3	6.9	ug/L	90	Standard
Br	81	2540.2	4.4	ug/L	2287	Standard
P	31	221614.9	3.0	ug/L	215766	Standard
S	34	24020.7	0.8	ug/L	23460	Standard
Sr	88	61.7	49.5	ug/L	48	Standard
C	12	0.0		mg/L	3	Standard
N	14	0.0		mg/L	0	Standard
Hg	202	0.0		mg/L	0	Standard
Dy	164	5.9	108.1	mg/L	6	Standard
Ho-1	165	5.0	100.0	mg/L	2	Standard
Er	166	16.7	91.7	mg/L	7	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			
Rb	85			

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⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 2
Sample Date/Time: Friday, November 22, 2013 09:41:07
Number of Replicates: 3
Autosampler Position: 2
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	235767.7	2.6				ug/L	231878	Standard
	Be	9	156.7	15.1				ug/L	7	Standard
	Al	27	9004.3	2.5				ug/L	115	Standard
	Sc	45	59414.6	1.4				ug/L	57581	Standard
	Ti	47	75.0	30.5				ug/L	17	Standard
	V	51	2186.9	1.3				ug/L	1678	Standard
	Cr	52	6360.7	1.0				ug/L	5719	Standard
	Cr	53	186.7	29.5				ug/L	132	Standard
	Mn	55	1841.4	4.1				ug/L	927	Standard
	Co	59	585.0	7.6				ug/L	80	Standard
	Ni	60	217.3	3.0				ug/L	39	Standard
	Cu	65	268.7	7.5				ug/L	91	Standard
	Zn	66	533.7	2.7				ug/L	159	Standard
>	**Ge**	72	513291.4	0.5				ug/L	504090	Standard
	As	75	-182.5	14.4				ug/L	-261	Standard
	Se	82	-31.3	30.3				ug/L	-43	Standard
	Se-1	77	95.7	7.8				ug/L	86	Standard
>	**Ga**	71	31.7	9.1				mg/L	35	Standard
	Rb	85	28.3	27.0				ug/L	20	Standard
	Y	89	489674.4	1.3				ug/L	462194	Standard
>	**Rh**	103	1.7	173.2				ug/L	7	Standard
	Mo	98	431.5	3.0				ug/L	8	Standard
	Ag	107	487.3	2.1				ug/L	62	Standard
	Cd	111	137.6	14.2				mg/L	1	Standard
	Cd	114	342.9	4.4				ug/L	23	Standard
>	**In**	115	514719.8	0.8				ug/L	502083	Standard
	Sn	118	203.0	4.2				ug/L	144	Standard
	Sb	123	152.8	7.0				ug/L	19	Standard
	Ba	135	113.3	6.7				ug/L	9	Standard
	Ce	140	26.7	28.6				ug/L	17	Standard
>	**Tb**	159	498175.8	0.3				ug/L	490863	Standard
	Ho	165	6.7	43.3				ug/L	2	Standard
	Tl	203	376.0	5.6				ug/L	2	Standard
	Tl	205	388.3	7.3				ug/L	0	Standard
	Pb	206	235.0	3.9				ug/L	84	Standard
	Pb	207	205.0	5.3				ug/L	73	Standard
	Pb	208	577.0	0.3				ug/L	199	Standard
	U	238	223.3	9.1				ug/L	1	Standard
>	**Bi**	209	288331.6	0.5				ug/L	281512	Standard

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Na	23	1.7	173.2	mg/L	2	Standard
Mg	24	35.0	24.7	mg/L	38	Standard
K	39	3.3	173.2	mg/L	0	Standard
Ca	43	26.7	10.8	mg/L	23	Standard
Fe	54	256.1	11.1	mg/L	234	Standard
Fe	57	106.7	13.5	mg/L	118	Standard
> **Sc-1**	45	59414.6	1.4	mg/L	57581	Standard
Cl	35	23881.5	0.5	ug/L	22827	Standard
Kr	83	86.3	7.7	ug/L	90	Standard
Br	81	2610.2	11.6	ug/L	2287	Standard
P	31	223258.1	5.8	ug/L	215766	Standard
S	34	24980.6	2.2	ug/L	23460	Standard
Sr	88	60.0	22.0	ug/L	48	Standard
C	12	0.0		mg/L	3	Standard
N	14	0.0		mg/L	0	Standard
Hg	202	0.0		mg/L	0	Standard
Dy	164	-0.2	173.2	mg/L	6	Standard
Ho-1	165	6.7	43.3	mg/L	2	Standard
Er	166	3.3	173.2	mg/L	7	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			
Rb	85			

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⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 2
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Method 6020 - Summary Report

Sample ID: Standard 3
Sample Date/Time: Friday, November 22, 2013 09:44:12
Number of Replicates: 3
Autosampler Position: 3
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	227850.9	2.1				ug/L	231878	Standard
	Be	9	131732.1	2.5	**50.0000**	0.403	0.8	ug/L	7	Standard
	Al	27	8248238.4	0.8	**50.0000**	1.225	2.5	ug/L	115	Standard
	Sc	45	58860.9	3.4				ug/L	57581	Standard
	Ti	47	48394.5	1.6	**100.0000**	0.291	0.3	ug/L	17	Standard
	V	51	424461.0	2.7	**50.0000**	0.767	1.5	ug/L	1678	Standard
	Cr	52	401450.5	2.4	**50.0000**	0.692	1.4	ug/L	5719	Standard
	Cr	53	73494.6	2.6	**50.0000**	0.622	1.2	ug/L	132	Standard
	Mn	55	697402.7	1.1	**50.0000**	0.520	1.0	ug/L	927	Standard
	Co	59	443759.4	2.7	**50.0000**	0.703	1.4	ug/L	80	Standard
	Ni	60	148154.5	2.7	**50.0000**	0.955	1.9	ug/L	39	Standard
	Cu	65	147087.0	2.0	**50.0000**	0.921	1.8	ug/L	91	Standard
	Zn	66	80308.0	1.2	**50.0000**	0.724	1.4	ug/L	159	Standard
>	**Ge**	72	509541.2	1.4				ug/L	504090	Standard
	As	75	85856.5	2.0	**50.0000**	0.305	0.6	ug/L	-261	Standard
	Se	82	8486.8	2.2	**50.0000**	0.421	0.8	ug/L	-43	Standard
	Se-1	77	6096.2	2.5	**50.0000**	0.606	1.2	ug/L	86	Standard
>	**Ga**	71	41.7	6.9				mg/L	35	Standard
	Rb	85	1338.4	8.4				ug/L	20	Standard
	Y	89	467598.2	1.3				ug/L	462194	Standard
>	**Rh**	103	48.3	43.1				ug/L	7	Standard
	Mo	98	405318.7	1.2	**100.0000**	0.608	0.6	ug/L	8	Standard
	Ag	107	371089.4	1.2	**50.0000**	0.173	0.3	ug/L	62	Standard
	Cd	111	114381.0	0.6	**50.0000**	0.518	1.0	mg/L	1	Standard
	Cd	114	296454.4	2.1	**50.0000**	0.442	0.9	ug/L	23	Standard
>	**In**	115	504531.5	1.5				ug/L	502083	Standard
	Sn	118	71597.8	2.3	**50.0000**	0.540	1.1	ug/L	144	Standard
	Sb	123	137405.9	1.4	**50.0000**	0.443	0.9	ug/L	19	Standard
	Ba	135	97393.5	2.3	**50.0000**	0.442	0.9	ug/L	9	Standard
	Ce	140	61.7	12.4				ug/L	17	Standard
>	**Tb**	159	491307.8	1.3				ug/L	490863	Standard
	Ho	165	8.3	91.7				ug/L	2	Standard
	Tl	203	330176.2	0.6	**50.0000**	0.306	0.6	ug/L	2	Standard
	Tl	205	358221.0	1.8	**50.0000**	0.651	1.3	ug/L	0	Standard
	Pb	206	133067.1	0.1	**50.0000**	0.299	0.6	ug/L	84	Standard
	Pb	207	120444.8	0.5	**50.0000**	0.216	0.4	ug/L	73	Standard
	Pb	208	316969.9	0.6	**50.0000**	0.041	0.1	ug/L	199	Standard
	U	238	214067.6	0.4	**50.0000**	0.341	0.7	ug/L	1	Standard
>	**Bi**	209	282287.8	0.5				ug/L	281512	Standard

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	Na	23	16.7	45.8	**5.0000**	2.696	53.9	mg/L	2	Standard
	Mg	24	4172.2	2.8	**5.0000**	0.086	1.7	mg/L	38	Standard
	K	39	91.7	36.3	**5.0000**	1.698	34.0	mg/L	0	Standard
	Ca	43	75.0	46.7	**5.0000**	3.333	66.7	mg/L	23	Standard
	Fe	54	12248.4	3.1	**5.0000**	0.058	1.2	mg/L	234	Standard
	Fe	57	3355.4	5.9	**5.0000**	0.396	7.9	mg/L	118	Standard
>	**Sc-1**	45	58860.9	3.4				mg/L	57581	Standard
	Cl	35	26792.4	3.6				ug/L	22827	Standard
	Kr	83	80.7	24.8				ug/L	90	Standard
	Br	81	2433.5	9.5				ug/L	2287	Standard
	P	31	262728.5	1.1				ug/L	215766	Standard
	S	34	42207.1	1.8				ug/L	23460	Standard
	Sr	88	58.3	4.9				ug/L	48	Standard
	C	12	0.0					mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	0	Standard
	Dy	164	5.4	117.4				mg/L	6	Standard
	Ho-1	165	8.3	91.7				mg/L	2	Standard
	Er	166	26.7	43.3				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

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⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 4
Sample Date/Time: Friday, November 22, 2013 09:47:17
Number of Replicates: 3
Autosampler Position: 4
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	226118.5	1.8				ug/L	231878	Standard
	Be	9	255379.4	1.2	**98.8424**	2.405	2.4	ug/L	7	Standard
	Al	27	15587016.4	0.5	**97.5439**	1.867	1.9	ug/L	115	Standard
	Sc	45	54556.4	2.1				ug/L	57581	Standard
	Ti	47	91716.5	1.5	**197.6635**	1.288	0.7	ug/L	17	Standard
	V	51	799006.4	2.2	**98.5853**	1.803	1.8	ug/L	1678	Standard
	Cr	52	749054.3	1.9	**98.4027**	1.720	1.7	ug/L	5719	Standard
	Cr	53	140912.2	0.3	**99.4456**	0.975	1.0	ug/L	132	Standard
	Mn	55	1325678.1	0.9	**99.0093**	1.294	1.3	ug/L	927	Standard
	Co	59	846888.6	1.8	**99.1883**	2.507	2.5	ug/L	80	Standard
	Ni	60	283807.9	1.1	**99.3691**	0.417	0.4	ug/L	39	Standard
	Cu	65	279365.4	0.7	**98.9511**	1.566	1.6	ug/L	91	Standard
	Zn	66	154622.0	1.3	**99.7460**	1.314	1.3	ug/L	159	Standard
>	**Ge**	72	494376.7	0.9				ug/L	504090	Standard
	As	75	165570.8	0.9	**99.6161**	0.739	0.7	ug/L	-261	Standard
	Se	82	16344.9	1.4	**99.5130**	1.414	1.4	ug/L	-43	Standard
	Se-1	77	11850.0	1.5	**100.4585**	0.765	0.8	ug/L	86	Standard
>	**Ga**	71	83.3	15.1				mg/L	35	Standard
	Rb	85	2403.5	2.6				ug/L	20	Standard
	Y	89	453962.5	1.1				ug/L	462194	Standard
>	**Rh**	103	56.7	39.8				ug/L	7	Standard
	Mo	98	794010.6	1.1	**200.1987**	2.618	1.3	ug/L	8	Standard
	Ag	107	703012.9	1.1	**98.4309**	0.996	1.0	ug/L	62	Standard
	Cd	111	222170.3	1.3	**99.6709**	0.528	0.5	mg/L	1	Standard
	Cd	114	560075.2	0.5	**98.2937**	0.559	0.6	ug/L	23	Standard
>	**In**	115	493214.7	0.9				ug/L	502083	Standard
	Sn	118	139365.0	0.9	**99.8298**	1.492	1.5	ug/L	144	Standard
	Sb	123	265191.4	0.3	**99.3554**	0.677	0.7	ug/L	19	Standard
	Ba	135	188725.1	0.3	**99.5633**	0.826	0.8	ug/L	9	Standard
	Ce	140	66.7	11.5				ug/L	17	Standard
>	**Tb**	159	482413.6	1.3				ug/L	490863	Standard
	Ho	165	6.7	43.3				ug/L	2	Standard
	Tl	203	635654.3	0.9	**99.5257**	1.121	1.1	ug/L	2	Standard
	Tl	205	685668.2	0.4	**99.2371**	0.338	0.3	ug/L	0	Standard
	Pb	206	257714.0	0.4	**99.8384**	0.609	0.6	ug/L	84	Standard
	Pb	207	234068.6	1.1	**100.0093**	1.293	1.3	ug/L	73	Standard
	Pb	208	615818.7	0.0	**99.9980**	0.236	0.2	ug/L	199	Standard
	U	238	423268.1	1.7	**100.8547**	1.509	1.5	ug/L	1	Standard
>	**Bi**	209	274338.4	0.2				ug/L	281512	Standard

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	Na	23	45.0	38.5	**12.1135**	4.533	37.4	mg/L	2	Standard
	Mg	24	7767.0	2.9	**10.0393**	0.296	2.9	mg/L	38	Standard
	K	39	220.0	25.0	**11.4140**	2.674	23.4	mg/L	0	Standard
	Ca	43	133.3	2.2	**11.0147**	0.276	2.5	mg/L	23	Standard
	Fe	54	23088.2	3.8	**10.1328**	0.177	1.7	mg/L	234	Standard
	Fe	57	6366.3	1.1	**10.1921**	0.307	3.0	mg/L	118	Standard
>	**Sc-1**	45	54556.4	2.1				mg/L	57581	Standard
	Cl	35	23945.6	2.9				ug/L	22827	Standard
	Kr	83	88.3	6.9				ug/L	90	Standard
	Br	81	2490.2	7.1				ug/L	2287	Standard
	P	31	251350.4	2.8				ug/L	215766	Standard
	S	34	38649.3	3.1				ug/L	23460	Standard
	Sr	88	55.0	27.3				ug/L	48	Standard
	C	12	0.0					mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	0	Standard
	Dy	164	3.2	186.4				mg/L	6	Standard
	Ho-1	165	6.7	43.3				mg/L	2	Standard
	Er	166	3.3	173.2				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

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⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Corr. Coef.	Na	23	Correlation coefficient < 0.998
Corr. Coef.	K	39	Correlation coefficient < 0.998
Corr. Coef.	Ca	43	Correlation coefficient < 0.998

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Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Friday, November 22, 2013 09:50:24
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	227498.7	1.0				ug/L	231878	Standard
	Be	9	127959.7	0.5	**49.2116**	0.528	1.1	ug/L	7	Standard
	Al	27	8057506.6	1.1	**50.1051**	0.230	0.5	ug/L	115	Standard
	Sc	45	56327.9	2.8				ug/L	57581	Standard
	Ti	47	46619.6	0.4	**100.5279**	0.669	0.7	ug/L	17	Standard
	V	51	410204.5	1.3	**50.5531**	0.853	1.7	ug/L	1678	Standard
	Cr	52	386302.7	1.6	**50.4196**	0.877	1.7	ug/L	5719	Standard
	Cr	53	71138.3	2.1	**50.2012**	0.952	1.9	ug/L	132	Standard
	Mn	55	671543.8	1.4	**50.1512**	0.796	1.6	ug/L	927	Standard
	Co	59	432757.1	1.2	**50.7122**	0.882	1.7	ug/L	80	Standard
	Ni	60	143557.6	0.6	**50.2925**	0.459	0.9	ug/L	39	Standard
	Cu	65	142277.2	0.4	**50.4090**	0.286	0.6	ug/L	91	Standard
	Zn	66	77493.7	0.1	**49.8880**	0.311	0.6	ug/L	159	Standard
>	**Ge**	72	493997.0	0.5				ug/L	504090	Standard
	As	75	83025.2	0.4	**50.0685**	0.408	0.8	ug/L	-261	Standard
	Se	82	8177.9	1.0	**49.9424**	0.277	0.6	ug/L	-43	Standard
	Se-1	77	5910.2	0.4	**49.7748**	0.033	0.1	ug/L	86	Standard
>	**Ga**	71	43.3	29.0				mg/L	35	Standard
	Rb	85	1286.7	1.2				ug/L	20	Standard
	Y	89	457384.7	0.9				ug/L	462194	Standard
>	**Rh**	103	25.0	34.6				ug/L	7	Standard
	Mo	98	401175.0	1.1	**100.6153**	1.512	1.5	ug/L	8	Standard
	Ag	107	365115.9	0.3	**50.8446**	0.408	0.8	ug/L	62	Standard
	Cd	111	112545.5	1.3	**50.2198**	0.361	0.7	mg/L	1	Standard
	Cd	114	287144.2	1.1	**50.1223**	0.286	0.6	ug/L	23	Standard
>	**In**	115	495827.8	0.7				ug/L	502083	Standard
	Sn	118	70965.8	0.8	**50.5191**	0.447	0.9	ug/L	144	Standard
	Sb	123	134666.8	0.4	**50.1850**	0.438	0.9	ug/L	19	Standard
	Ba	135	95934.8	0.8	**50.3395**	0.485	1.0	ug/L	9	Standard
	Ce	140	46.7	50.6				ug/L	17	Standard
>	**Tb**	159	485791.6	0.4				ug/L	490863	Standard
	Ho	165	10.0	86.6				ug/L	2	Standard
	Tl	203	325823.4	0.5	**49.9645**	0.454	0.9	ug/L	2	Standard
	Tl	205	354248.5	0.6	**50.2169**	0.452	0.9	ug/L	0	Standard
	Pb	206	131803.2	1.2	**49.9913**	0.157	0.3	ug/L	84	Standard
	Pb	207	119212.8	0.2	**49.8731**	0.435	0.9	ug/L	73	Standard
	Pb	208	315021.6	0.9	**50.0832**	0.348	0.7	ug/L	199	Standard
	U	238	213770.9	1.1	**49.8894**	0.081	0.2	ug/L	1	Standard
>	**Bi**	209	280098.8	1.0				ug/L	281512	Standard

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	Na	23	10.0	86.6	**2.2747**	2.344	103.1	mg/L	2	Standard
	Mg	24	4013.9	6.0	**5.0117**	0.396	7.9	mg/L	38	Standard
	K	39	95.0	5.3	**4.6943**	0.187	4.0	mg/L	0	Standard
	Ca	43	66.7	8.7	**4.0608**	0.554	13.6	mg/L	23	Standard
	Fe	54	11957.2	2.7	**5.0386**	0.256	5.1	mg/L	234	Standard
	Fe	57	3297.0	4.3	**5.0402**	0.363	7.2	mg/L	118	Standard
>	**Sc-1**	45	56327.9	2.8				mg/L	57581	Standard
	Cl	35	24145.2	0.5				ug/L	22827	Standard
	Kr	83	88.7	17.9				ug/L	90	Standard
	Br	81	2470.2	6.9				ug/L	2287	Standard
	P	31	252239.8	2.4				ug/L	215766	Standard
	S	34	39051.9	1.9				ug/L	23460	Standard
	Sr	88	51.7	14.8				ug/L	48	Standard
	C	12	3.3	173.2				mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	6.7	86.6				mg/L	0	Standard
	Dy	164	6.3	93.2				mg/L	6	Standard
	Ho-1	165	10.0	86.6				mg/L	2	Standard
	Er	166	6.7	86.6				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		98.111	
	Be	9	98.423		
	Al	27	100.210		
	Sc	45			
	Ti	47	100.528		
	V	51	101.106		
	Cr	52	100.839		
	Cr	53			
	Mn	55	100.302		
	Co	59	101.424		
	Ni	60	100.585		
	Cu	65	100.818		
	Zn	66	99.776		
>	Ge	72		97.998	
	As	75	100.137		
	Se	82	99.885		
	Se-1	77			
>	Ga	71			
	Rb	85			

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⌈	Y	89		
⌊>	Rh	103		
⌈	Mo	98	100.615	
|	Ag	107	101.689	
|	Cd	111	100.440	
|	Cd	114		
|>	In	115		98.754
|	Sn	118	101.038	
|	Sb	123	100.370	
⌊	Ba	135	100.679	
⌈	Ce	140		
⌊>	Tb	159		
⌈	Ho	165		
|	Tl	203	99.929	
|	Tl	205		
|	Pb	206	99.983	
|	Pb	207	99.746	
|	Pb	208	100.166	
|	U	238	99.779	
⌊>	Bi	209		99.498
⌈	Na	23	45.494	
|	Mg	24	100.234	
|	K	39	93.887	
|	Ca	43	81.216	
|	Fe	54	100.772	
|	Fe	57	100.805	
⌊>	Sc-1	45		
	Cl	35		
	Kr	83		
	Br	81		
	P	31		
	S	34		
	Sr	88		
	C	12		
	N	14		
	Hg	202		
	Dy	164		
	Ho-1	165		
	Er	166		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Na	23	
QC Std 1	Ca	43	

Sample ID: QC Std 1
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Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Friday, November 22, 2013 09:53:31
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	228701.9	2.0				ug/L	231878	Standard
	Be	9	23.3	65.5	**0.0008**	0.006	683.8	ug/L	7	Standard
	Al	27	646.7	47.8	**-0.0001**	0.002	2565.8	ug/L	115	Standard
	Sc	45	55126.8	1.8				ug/L	57581	Standard
	Ti	47	17.7	17.3	**-0.0179**	0.006	36.1	ug/L	17	Standard
	V	51	1469.4	5.7	**-0.0299**	0.009	30.3	ug/L	1678	Standard
	Cr	52	4986.5	1.0	**-0.1049**	0.007	6.9	ug/L	5719	Standard
	Cr	53	83.3	22.7	**-0.0184**	0.014	74.4	ug/L	132	Standard
	Mn	55	1116.7	1.8	**0.0004**	0.001	223.1	ug/L	927	Standard
	Co	59	116.0	24.9	**-0.0025**	0.003	130.2	ug/L	80	Standard
	Ni	60	33.0	22.9	**-0.0118**	0.003	21.8	ug/L	39	Standard
	Cu	65	122.3	13.9	**0.0014**	0.006	424.5	ug/L	91	Standard
	Zn	66	173.7	6.0	**-0.1708**	0.007	4.2	ug/L	159	Standard
>	**Ge**	72	497406.8	0.8				ug/L	504090	Standard
	As	75	-253.0	11.7	**0.0046**	0.018	397.4	ug/L	-261	Standard
	Se	82	-36.3	16.0	**0.0142**	0.034	242.3	ug/L	-43	Standard
	Se-1	77	87.0	7.5	**0.0014**	0.050	3466.4	ug/L	86	Standard
>	**Ga**	71	18.3	56.8				mg/L	35	Standard
	Rb	85	18.3	31.5				ug/L	20	Standard
	Y	89	469617.1	0.8				ug/L	462194	Standard
>	**Rh**	103	3.3	86.6				ug/L	7	Standard
	Mo	98	152.5	14.2	**0.0339**	0.006	16.4	ug/L	8	Standard
	Ag	107	114.3	42.5	**0.0005**	0.007	1330.3	ug/L	62	Standard
	Cd	111	23.4	116.0	**0.0013**	0.012	956.5	mg/L	1	Standard
	Cd	114	60.9	86.4	**0.0029**	0.009	311.0	ug/L	23	Standard
>	**In**	115	496450.1	0.9				ug/L	502083	Standard
	Sn	118	89.7	18.1	**-0.0257**	0.011	42.9	ug/L	144	Standard
	Sb	123	482.2	26.7	**0.1745**	0.047	27.2	ug/L	19	Standard
	Ba	135	21.7	90.0	**0.0040**	0.010	252.7	ug/L	9	Standard
	Ce	140	10.0	86.6				ug/L	17	Standard
>	**Tb**	159	485890.3	1.1				ug/L	490863	Standard
	Ho	165	1.7	173.2				ug/L	2	Standard
	Tl	203	71.7	83.3	**0.0048**	0.009	188.2	ug/L	2	Standard
	Tl	205	43.3	54.5	**0.0026**	0.003	128.7	ug/L	0	Standard
	Pb	206	112.3	21.7	**0.0053**	0.009	174.6	ug/L	84	Standard
	Pb	207	97.7	7.0	**0.0068**	0.003	41.2	ug/L	73	Standard
	Pb	208	235.7	12.4	**-0.0023**	0.005	199.6	ug/L	199	Standard
	U	238	21.0	54.9	**0.0042**	0.003	63.2	ug/L	1	Standard
>	**Bi**	209	284987.6	0.2				ug/L	281512	Standard

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Na	23	0.0		**-0.4293**	0.000	0.0	mg/L	2	Standard
Mg	24	43.3	75.1	**0.0193**	0.042	218.7	mg/L	38	Standard
K	39	1.7	173.2	**-0.0709**	0.152	214.2	mg/L	0	Standard
Ca	43	28.3	71.3	**0.3668**	2.041	556.5	mg/L	23	Standard
Fe	54	237.4	19.0	**0.0050**	0.021	423.0	mg/L	234	Standard
Fe	57	90.0	5.6	**-0.0093**	0.006	66.7	mg/L	118	Standard
Sc-1	45	55126.8	1.8				mg/L	57581	Standard
Cl	35	24406.3	1.0				ug/L	22827	Standard
Kr	83	85.7	7.8				ug/L	90	Standard
Br	81	2283.5	4.7				ug/L	2287	Standard
P	31	246953.0	0.5				ug/L	215766	Standard
S	34	37212.3	2.4				ug/L	23460	Standard
Sr	88	50.0	17.3				ug/L	48	Standard
C	12	0.0					mg/L	3	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	3.0	173.2				mg/L	6	Standard
Ho-1	165	1.7	173.2				mg/L	2	Standard
Er	166	6.7	173.2				mg/L	7	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		98.630	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.674	
As	75			
Se	82			
Se-1	77			
Ga	71			
Rb	85			

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⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	98.878
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	101.234
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Na	23	
QC Std 2	Ca	43	

Sample ID: QC Std 2
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Method 6020 - Summary Report

Sample ID: QC Std 3
Sample Date/Time: Friday, November 22, 2013 09:56:37
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	234524.9	1.8				ug/L	231878	Standard
	Be	9	528.3	5.2	**0.1891**	0.010	5.2	ug/L	7	Standard
	Al	27	560.0	44.2	**-0.0007**	0.002	231.6	ug/L	115	Standard
	Sc	45	56342.9	2.5				ug/L	57581	Standard
	Ti	47	24.7	2.3	**-0.0038**	0.002	48.7	ug/L	17	Standard
	V	51	4685.8	4.7	**0.3555**	0.020	5.6	ug/L	1678	Standard
	Cr	52	11154.8	1.8	**0.6822**	0.042	6.2	ug/L	5719	Standard
	Cr	53	1281.7	2.1	**0.8076**	0.023	2.9	ug/L	132	Standard
	Mn	55	8178.5	1.7	**0.5148**	0.013	2.5	ug/L	927	Standard
	Co	59	3577.8	0.7	**0.3935**	0.007	1.9	ug/L	80	Standard
	Ni	60	4599.4	1.0	**1.5507**	0.027	1.7	ug/L	39	Standard
	Cu	65	2459.2	2.8	**0.8099**	0.034	4.2	ug/L	91	Standard
	Zn	66	10357.5	1.3	**6.2655**	0.153	2.4	ug/L	159	Standard
>	**Ge**	72	505964.8	1.2				ug/L	504090	Standard
	As	75	432.7	19.7	**0.4092**	0.047	11.4	ug/L	-261	Standard
	Se	82	28.8	63.3	**0.4036**	0.105	26.1	ug/L	-43	Standard
	Se-1	77	131.7	16.7	**0.3605**	0.169	46.9	ug/L	86	Standard
>	**Ga**	71	15.0	88.2				mg/L	35	Standard
	Rb	85	18.3	56.8				ug/L	20	Standard
	Y	89	464181.0	1.7				ug/L	462194	Standard
>	**Rh**	103	5.0	100.0				ug/L	7	Standard
	Mo	98	82.4	85.8	**0.0162**	0.018	108.5	ug/L	8	Standard
	Ag	107	3049.0	2.8	**0.4039**	0.012	3.1	ug/L	62	Standard
	Cd	111	557.4	10.6	**0.2365**	0.026	11.1	mg/L	1	Standard
	Cd	114	1420.8	4.6	**0.2372**	0.012	4.9	ug/L	23	Standard
>	**In**	115	502257.6	0.1				ug/L	502083	Standard
	Sn	118	98.3	23.7	**-0.0202**	0.016	81.5	ug/L	144	Standard
	Sb	123	1202.4	6.3	**0.4375**	0.028	6.4	ug/L	19	Standard
	Ba	135	1439.4	4.1	**0.7384**	0.031	4.2	ug/L	9	Standard
	Ce	140	15.0	88.2				ug/L	17	Standard
>	**Tb**	159	490231.9	1.1				ug/L	490863	Standard
	Ho	165	5.0	173.2				ug/L	2	Standard
	Tl	203	596.0	9.6	**0.0833**	0.009	11.0	ug/L	2	Standard
	Tl	205	595.0	10.7	**0.0789**	0.009	11.0	ug/L	0	Standard
	Pb	206	660.7	5.7	**0.2082**	0.015	7.3	ug/L	84	Standard
	Pb	207	548.0	7.7	**0.1907**	0.018	9.6	ug/L	73	Standard
	Pb	208	1509.7	3.3	**0.1954**	0.009	4.6	ug/L	199	Standard
	U	238	1697.1	4.0	**0.3861**	0.018	4.5	ug/L	1	Standard
>	**Bi**	209	286899.5	0.6				ug/L	281512	Standard

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Na	23	0.0		**-0.4293**	0.000	0.0	mg/L	2	Standard
Mg	24	31.7	36.5	**0.0033**	0.015	472.3	mg/L	38	Standard
K	39	0.0		**-0.1586**			mg/L	0	Standard
Ca	43	21.7	26.6	**-0.3379**	0.608	179.8	mg/L	23	Standard
Fe	54	316.4	13.2	**0.0366**	0.020	53.5	mg/L	234	Standard
Fe	57	111.7	18.1	**0.0222**	0.036	160.8	mg/L	118	Standard
> **Sc-1**	45	56342.9	2.5				mg/L	57581	Standard
Cl	35	23832.1	2.6				ug/L	22827	Standard
Kr	83	88.3	5.3				ug/L	90	Standard
Br	81	2180.2	9.5				ug/L	2287	Standard
P	31	259427.2	4.8				ug/L	215766	Standard
S	34	34756.5	3.5				ug/L	23460	Standard
Sr	88	46.7	22.3				ug/L	48	Standard
C	12	3.3	173.2				mg/L	3	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	3.2	186.4				mg/L	6	Standard
Ho-1	165	5.0	173.2				mg/L	2	Standard
Er	166	3.3	173.2				mg/L	7	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.141	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.372	
As	75			
Se	82			
Se-1	77			
> Ga	71			
Rb	85			

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⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	100.035
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	101.914
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Al	27	

Sample ID: QC Std 3
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Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Friday, November 22, 2013 09:59:42
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	230320.7	0.2				ug/L	231878	Standard
	Be	9	8.3	91.7	**-0.0049**	0.003	59.6	ug/L	7	Standard
	Al	27	7418602.8	1.3	**45.5665**	0.591	1.3	ug/L	115	Standard
	Sc	45	54124.9	1.7				ug/L	57581	Standard
	Ti	47	45335.7	1.8	**98.3177**	0.913	0.9	ug/L	17	Standard
	V	51	1365.2	4.2	**-0.0405**	0.007	16.5	ug/L	1678	Standard
	Cr	52	5563.7	1.0	**-0.0196**	0.014	70.2	ug/L	5719	Standard
	Cr	53	1601.8	8.8	**1.0608**	0.085	8.0	ug/L	132	Standard
	Mn	55	2010.8	3.7	**0.0688**	0.008	11.1	ug/L	927	Standard
	Co	59	261.3	2.2	**0.0148**	0.001	4.4	ug/L	80	Standard
	Ni	60	1127.7	2.9	**0.3742**	0.011	2.8	ug/L	39	Standard
	Cu	65	669.7	5.3	**0.1971**	0.010	5.1	ug/L	91	Standard
	Zn	66	1202.0	3.8	**0.5000**	0.020	4.0	ug/L	159	Standard
>	**Ge**	72	491170.1	1.3				ug/L	504090	Standard
	As	75	-282.3	5.5	**-0.0151**	0.011	74.0	ug/L	-261	Standard
	Se	82	-47.3	21.9	**-0.0559**	0.067	119.5	ug/L	-43	Standard
	Se-1	77	277.0	0.0	**1.6446**	0.032	2.0	ug/L	86	Standard
>	**Ga**	71	213.3	15.2				mg/L	35	Standard
	Rb	85	3648.8	3.1				ug/L	20	Standard
	Y	89	449613.4	2.8				ug/L	462194	Standard
>	**Rh**	103	5.0	0.0				ug/L	7	Standard
	Mo	98	353306.5	0.7	**90.7381**	1.547	1.7	ug/L	8	Standard
	Ag	107	89.3	6.4	**-0.0026**	0.001	32.9	ug/L	62	Standard
	Cd	111	-89.6	29.7	**-0.0502**	0.013	25.2	mg/L	1	Standard
	Cd	114	831.0	12.8	**0.1410**	0.021	14.8	ug/L	23	Standard
>	**In**	115	484236.8	1.2				ug/L	502083	Standard
	Sn	118	86.3	18.8	**-0.0264**	0.012	47.2	ug/L	144	Standard
	Sb	123	181.6	10.3	**0.0644**	0.007	10.6	ug/L	19	Standard
	Ba	135	85.0	5.4	**0.0384**	0.003	7.8	ug/L	9	Standard
	Ce	140	995.0	3.5				ug/L	17	Standard
>	**Tb**	159	480623.1	1.3				ug/L	490863	Standard
	Ho	165	5.0	100.0				ug/L	2	Standard
	Tl	203	59.3	9.7	**0.0033**	0.001	25.8	ug/L	2	Standard
	Tl	205	48.3	6.0	**0.0036**	0.000	12.8	ug/L	0	Standard
	Pb	206	144.0	11.0	**0.0196**	0.006	31.6	ug/L	84	Standard
	Pb	207	124.3	14.6	**0.0201**	0.007	36.9	ug/L	73	Standard
	Pb	208	369.3	0.4	**0.0213**	0.000	1.1	ug/L	199	Standard
	U	238	1.0	100.0	**-0.0004**	0.000	63.7	ug/L	1	Standard
>	**Bi**	209	272309.3	0.7				ug/L	281512	Standard

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	Na	23	58.3	17.8	**16.0707**	3.183	19.8	mg/L	2	Standard
	Mg	24	9021.0	2.8	**11.7598**	0.380	3.2	mg/L	38	Standard
	K	39	105.0	14.3	**5.4347**	0.894	16.5	mg/L	0	Standard
	Ca	43	133.3	7.8	**11.1349**	1.294	11.6	mg/L	23	Standard
	Fe	54	25439.2	1.2	**11.2680**	0.096	0.8	mg/L	234	Standard
	Fe	57	6951.6	2.2	**11.2311**	0.331	2.9	mg/L	118	Standard
>	**Sc-1**	45	54124.9	1.7				mg/L	57581	Standard
	Cl	35	23404.1	1.6				ug/L	22827	Standard
	Kr	83	96.7	12.3				ug/L	90	Standard
	Br	81	2386.9	3.4				ug/L	2287	Standard
	P	31	171062.4	2.9				ug/L	215766	Standard
	S	34	33450.2	0.7				ug/L	23460	Standard
	Sr	88	48.3	31.6				ug/L	48	Standard
	C	12	0.0					mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	0	Standard
	Dy	164	6.5	179.6				mg/L	6	Standard
	Ho-1	165	5.0	100.0				mg/L	2	Standard
	Er	166	3.3	173.2				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		99.328	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.437	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

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⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	96.446
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	96.731
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Na	23	
QC Std 4	Mg	24	
QC Std 4	Ca	43	

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Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Friday, November 22, 2013 10:02:47
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	247897.2	2.2				ug/L	231878	Standard
	Be	9	284606.5	0.5	**100.4891**	2.564	2.6	ug/L	7	Standard
	Al	27	6946965.9	2.0	**39.6473**	0.545	1.4	ug/L	115	Standard
	Sc	45	57990.8	1.6				ug/L	57581	Standard
	Ti	47	43326.2	0.5	**87.9267**	1.520	1.7	ug/L	17	Standard
	V	51	820602.0	1.3	**95.3595**	1.249	1.3	ug/L	1678	Standard
	Cr	52	784454.1	0.6	**97.0639**	2.056	2.1	ug/L	5719	Standard
	Cr	53	148356.1	0.7	**98.6115**	1.435	1.5	ug/L	132	Standard
	Mn	55	1386880.2	0.4	**97.5609**	1.682	1.7	ug/L	927	Standard
	Co	59	877518.5	0.1	**96.8021**	2.076	2.1	ug/L	80	Standard
	Ni	60	297117.8	1.1	**98.0119**	3.151	3.2	ug/L	39	Standard
	Cu	65	293847.0	1.3	**98.0195**	1.134	1.2	ug/L	91	Standard
	Zn	66	164896.3	1.8	**100.1780**	0.372	0.4	ug/L	159	Standard
>	**Ge**	72	524970.3	2.1				ug/L	504090	Standard
	As	75	175626.3	1.8	**99.5112**	0.384	0.4	ug/L	-261	Standard
	Se	82	17306.4	0.6	**99.2471**	1.658	1.7	ug/L	-43	Standard
	Se-1	77	12640.3	0.7	**100.9408**	1.482	1.5	ug/L	86	Standard
>	**Ga**	71	223.3	18.1				mg/L	35	Standard
	Rb	85	3588.8	5.1				ug/L	20	Standard
	Y	89	485946.9	1.0				ug/L	462194	Standard
>	**Rh**	103	71.7	8.1				ug/L	7	Standard
	Mo	98	347829.4	1.0	**83.4553**	0.984	1.2	ug/L	8	Standard
	Ag	107	742288.1	2.1	**98.9076**	2.406	2.4	ug/L	62	Standard
	Cd	111	234682.1	0.3	**100.1985**	0.865	0.9	mg/L	1	Standard
	Cd	114	575129.3	1.1	**96.0519**	0.919	1.0	ug/L	23	Standard
>	**In**	115	518286.7	1.0				ug/L	502083	Standard
	Sn	118	852.7	3.1	**0.4922**	0.012	2.5	ug/L	144	Standard
	Sb	123	284602.7	1.1	**101.4647**	0.155	0.2	ug/L	19	Standard
	Ba	135	199044.7	1.1	**99.9223**	0.167	0.2	ug/L	9	Standard
	Ce	140	940.0	1.9				ug/L	17	Standard
>	**Tb**	159	511921.8	1.1				ug/L	490863	Standard
	Ho	165	6.7	43.3				ug/L	2	Standard
	Tl	203	665403.2	0.6	**98.1747**	0.627	0.6	ug/L	2	Standard
	Tl	205	723857.8	0.4	**98.7253**	0.855	0.9	ug/L	0	Standard
	Pb	206	275021.1	1.3	**100.3939**	0.061	0.1	ug/L	84	Standard
	Pb	207	248855.8	0.9	**100.1924**	0.430	0.4	ug/L	73	Standard
	Pb	208	644905.2	0.9	**98.6794**	0.289	0.3	ug/L	199	Standard
	U	238	445075.9	2.1	**99.9261**	0.895	0.9	ug/L	1	Standard
>	**Bi**	209	291139.1	1.2				ug/L	281512	Standard

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	Na	23	51.7	11.2	**13.1752**	1.341	10.2	mg/L	2	Standard
	Mg	24	8414.0	1.6	**10.2306**	0.034	0.3	mg/L	38	Standard
	K	39	73.3	10.4	**3.4835**	0.410	11.8	mg/L	0	Standard
	Ca	43	125.0	21.2	**9.4157**	2.471	26.2	mg/L	23	Standard
	Fe	54	23530.2	1.5	**9.7140**	0.137	1.4	mg/L	234	Standard
	Fe	57	6206.3	2.3	**9.3307**	0.149	1.6	mg/L	118	Standard
>	**Sc-1**	45	57990.8	1.6				mg/L	57581	Standard
	Cl	35	24781.6	1.4				ug/L	22827	Standard
	Kr	83	125.0	9.4				ug/L	90	Standard
	Br	81	2450.2	1.9				ug/L	2287	Standard
	P	31	256201.3	0.7				ug/L	215766	Standard
	S	34	35503.2	1.0				ug/L	23460	Standard
	Sr	88	51.7	22.3				ug/L	48	Standard
	C	12	0.0					mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	0	Standard
	Dy	164	2.7	219.6				mg/L	6	Standard
	Ho-1	165	6.7	43.3				mg/L	2	Standard
	Er	166	13.3	43.3				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		106.908	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		104.142	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

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⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	103.227
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	103.420
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Mg	24	
QC Std 5	K	39	
QC Std 5	Ca	43	
QC Std 5	Fe	54	

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QC Std 5	Fe	57

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, November 22, 2013 10:05:54
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	250820.0	2.7				ug/L	231878	Standard
	Be	9	138485.4	3.1	**48.3006**	0.289	0.6	ug/L	7	Standard
	Al	27	8648194.7	1.2	**48.8022**	1.511	3.1	ug/L	115	Standard
	Sc	45	56311.1	1.0				ug/L	57581	Standard
	Ti	47	48561.0	1.7	**100.4134**	1.580	1.6	ug/L	17	Standard
	V	51	423208.1	0.9	**50.0113**	0.559	1.1	ug/L	1678	Standard
	Cr	52	397648.6	0.6	**49.7607**	0.546	1.1	ug/L	5719	Standard
	Cr	53	74943.2	1.5	**50.7135**	0.099	0.2	ug/L	132	Standard
	Mn	55	711353.6	0.9	**50.9429**	0.270	0.5	ug/L	927	Standard
	Co	59	446360.4	0.2	**50.1585**	0.579	1.2	ug/L	80	Standard
	Ni	60	149923.1	0.4	**50.3668**	0.482	1.0	ug/L	39	Standard
	Cu	65	148762.5	1.1	**50.5414**	0.270	0.5	ug/L	91	Standard
	Zn	66	80519.1	1.4	**49.7044**	0.493	1.0	ug/L	159	Standard
>	**Ge**	72	515173.0	1.4				ug/L	504090	Standard
	As	75	87291.4	0.7	**50.4795**	0.564	1.1	ug/L	-261	Standard
	Se	82	8661.0	0.6	**50.7201**	0.566	1.1	ug/L	-43	Standard
	Se-1	77	6217.3	2.7	**50.2223**	1.553	3.1	ug/L	86	Standard
>	**Ga**	71	51.7	24.4				mg/L	35	Standard
	Rb	85	1243.4	3.0				ug/L	20	Standard
	Y	89	485044.9	0.2				ug/L	462194	Standard
>	**Rh**	103	18.3	41.7				ug/L	7	Standard
	Mo	98	423706.6	1.3	**100.7349**	0.836	0.8	ug/L	8	Standard
	Ag	107	386108.2	0.6	**50.9709**	0.129	0.3	ug/L	62	Standard
	Cd	111	118473.3	0.4	**50.1188**	0.340	0.7	mg/L	1	Standard
	Cd	114	303708.0	0.2	**50.2598**	0.389	0.8	ug/L	23	Standard
>	**In**	115	523021.2	0.7				ug/L	502083	Standard
	Sn	118	75644.1	2.2	**51.0477**	0.919	1.8	ug/L	144	Standard
	Sb	123	142635.6	0.5	**50.3897**	0.176	0.3	ug/L	19	Standard
	Ba	135	100822.0	1.3	**50.1518**	0.528	1.1	ug/L	9	Standard
	Ce	140	46.7	55.0				ug/L	17	Standard
>	**Tb**	159	511718.1	2.6				ug/L	490863	Standard
	Ho	165	3.3	173.2				ug/L	2	Standard
	Tl	203	339959.5	0.9	**50.2380**	0.343	0.7	ug/L	2	Standard
	Tl	205	376617.3	1.5	**51.4550**	1.241	2.4	ug/L	0	Standard
	Pb	206	138622.6	0.7	**50.6730**	0.571	1.1	ug/L	84	Standard
	Pb	207	125655.7	1.9	**50.6544**	0.371	0.7	ug/L	73	Standard
	Pb	208	327013.2	0.1	**50.1076**	0.854	1.7	ug/L	199	Standard
	U	238	225591.7	0.5	**50.7457**	1.068	2.1	ug/L	1	Standard
>	**Bi**	209	290666.7	1.6				ug/L	281512	Standard

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	Na	23	25.0	72.1	**6.3308**	4.812	76.0	mg/L	2	Standard
	Mg	24	4038.9	1.8	**5.0387**	0.067	1.3	mg/L	38	Standard
	K	39	116.7	17.8	**5.8070**	1.085	18.7	mg/L	0	Standard
	Ca	43	66.7	11.5	**4.0574**	0.681	16.8	mg/L	23	Standard
	Fe	54	11315.9	2.8	**4.7602**	0.111	2.3	mg/L	234	Standard
	Fe	57	3160.3	4.9	**4.8213**	0.279	5.8	mg/L	118	Standard
>	**Sc-1**	45	56311.1	1.0				mg/L	57581	Standard
	Cl	35	26481.1	1.8				ug/L	22827	Standard
	Kr	83	93.3	10.0				ug/L	90	Standard
	Br	81	2486.9	12.1				ug/L	2287	Standard
	P	31	281910.3	1.1				ug/L	215766	Standard
	S	34	41214.3	0.9				ug/L	23460	Standard
	Sr	88	63.3	27.7				ug/L	48	Standard
	C	12	3.3	173.2				mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	0	Standard
	Dy	164	9.8	104.1				mg/L	6	Standard
	Ho-1	165	3.3	173.2				mg/L	2	Standard
	Er	166	3.3	173.2				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		108.169	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		102.199	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

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	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	104.170
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	103.252
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, November 22, 2013 10:08:59
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	244917.9	2.7				ug/L	231878	Standard
	Be	9	40.0	37.5	**0.0064**	0.006	90.5	ug/L	7	Standard
	Al	27	1061.7	29.9	**0.0021**	0.002	96.5	ug/L	115	Standard
	Sc	45	56341.3	2.2				ug/L	57581	Standard
	Ti	47	20.3	12.4	**-0.0133**	0.005	38.2	ug/L	17	Standard
	V	51	1519.9	4.4	**-0.0285**	0.007	24.0	ug/L	1678	Standard
	Cr	52	5283.3	2.3	**-0.0837**	0.012	14.0	ug/L	5719	Standard
	Cr	53	135.0	7.4	**0.0153**	0.007	42.5	ug/L	132	Standard
	Mn	55	1050.4	3.6	**-0.0065**	0.002	36.9	ug/L	927	Standard
	Co	59	117.0	11.6	**-0.0027**	0.001	54.2	ug/L	80	Standard
	Ni	60	60.0	23.2	**-0.0030**	0.005	159.1	ug/L	39	Standard
	Cu	65	139.7	14.9	**0.0062**	0.007	109.6	ug/L	91	Standard
	Zn	66	194.0	4.1	**-0.1610**	0.005	2.9	ug/L	159	Standard
>	**Ge**	72	510513.4	0.7				ug/L	504090	Standard
	As	75	-233.1	31.9	**0.0202**	0.043	211.2	ug/L	-261	Standard
	Se	82	-40.7	38.9	**-0.0058**	0.092	1585.5	ug/L	-43	Standard
	Se-1	77	83.7	19.7	**-0.0445**	0.138	310.4	ug/L	86	Standard
>	**Ga**	71	18.3	41.7				mg/L	35	Standard
	Rb	85	28.3	44.4				ug/L	20	Standard
	Y	89	471958.7	1.3				ug/L	462194	Standard
>	**Rh**	103	1.7	173.2				ug/L	7	Standard
	Mo	98	120.9	25.7	**0.0249**	0.007	29.2	ug/L	8	Standard
	Ag	107	98.7	20.0	**-0.0022**	0.003	116.9	ug/L	62	Standard
	Cd	111	14.5	15.8	**-0.0029**	0.001	31.8	mg/L	1	Standard
	Cd	114	47.8	27.0	**0.0004**	0.002	595.2	ug/L	23	Standard
>	**In**	115	514960.0	1.1				ug/L	502083	Standard
	Sn	118	80.7	14.9	**-0.0341**	0.008	23.3	ug/L	144	Standard
	Sb	123	536.1	28.7	**0.1873**	0.054	28.7	ug/L	19	Standard
	Ba	135	17.7	6.5	**0.0016**	0.001	31.8	ug/L	9	Standard
	Ce	140	11.7	49.5				ug/L	17	Standard
>	**Tb**	159	504706.2	2.3				ug/L	490863	Standard
	Ho	165	6.7	43.3				ug/L	2	Standard
	Tl	203	49.0	22.7	**0.0011**	0.002	145.2	ug/L	2	Standard
	Tl	205	56.7	22.2	**0.0042**	0.002	40.8	ug/L	0	Standard
	Pb	206	94.0	11.3	**-0.0027**	0.004	140.9	ug/L	84	Standard
	Pb	207	84.0	5.5	**0.0001**	0.002	1634.8	ug/L	73	Standard
	Pb	208	253.0	14.7	**-0.0008**	0.006	668.7	ug/L	199	Standard
	U	238	33.3	54.5	**0.0068**	0.004	59.6	ug/L	1	Standard
>	**Bi**	209	294176.4	0.4				ug/L	281512	Standard

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Na	23	0.0		**-0.4293**	0.000	0.0	mg/L	2	Standard
Mg	24	48.3	31.6	**0.0240**	0.019	80.4	mg/L	38	Standard
K	39	1.7	173.2	**-0.0719**	0.150	208.8	mg/L	0	Standard
Ca	43	16.7	121.2	**-0.8298**	1.993	240.2	mg/L	23	Standard
Fe	54	249.4	11.1	**0.0076**	0.010	131.8	mg/L	234	Standard
Fe	57	105.0	14.3	**0.0113**	0.025	221.4	mg/L	118	Standard
Sc-1	45	56341.3	2.2				mg/L	57581	Standard
Cl	35	26055.1	1.2				ug/L	22827	Standard
Kr	83	93.3	17.4				ug/L	90	Standard
Br	81	2403.5	7.3				ug/L	2287	Standard
P	31	264045.1	5.3				ug/L	215766	Standard
S	34	39006.8	2.7				ug/L	23460	Standard
Sr	88	55.0	18.2				ug/L	48	Standard
C	12	0.0					mg/L	3	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.8	177.4				mg/L	6	Standard
Ho-1	165	6.7	43.3				mg/L	2	Standard
Er	166	3.3	173.2				mg/L	7	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.623	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.274	
As	75			
Se	82			
Se-1	77			
> Ga	71			
Rb	85			

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	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	102.565
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	104.499
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: PBW 56 WG453567-03
Sample Date/Time: Friday, November 22, 2013 10:12:05
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	211027.8	0.6				ug/L	231878	Standard
	Be	9	21.7	53.3	**0.0010**	0.005	501.0	ug/L	7	Standard
	Al	27	303.3	46.4	**-0.0020**	0.001	45.9	ug/L	115	Standard
	Sc	45	49487.4	1.3				ug/L	57581	Standard
	Ti	47	14.0	31.1	**-0.0233**	0.010	41.8	ug/L	17	Standard
	V	51	1337.8	1.2	**-0.0321**	0.001	1.9	ug/L	1678	Standard
	Cr	52	4472.3	2.1	**-0.1227**	0.012	9.9	ug/L	5719	Standard
	Cr	53	106.7	44.3	**0.0044**	0.036	834.3	ug/L	132	Standard
	Mn	55	595.0	4.5	**-0.0346**	0.002	6.6	ug/L	927	Standard
	Co	59	100.3	18.5	**-0.0033**	0.002	71.1	ug/L	80	Standard
	Ni	60	29.7	14.0	**-0.0121**	0.001	12.2	ug/L	39	Standard
	Cu	65	49.3	10.2	**-0.0228**	0.002	9.2	ug/L	91	Standard
	Zn	66	329.0	22.6	**-0.0528**	0.053	101.1	ug/L	159	Standard
>	**Ge**	72	458539.6	1.1				ug/L	504090	Standard
	As	75	-234.0	4.5	**0.0041**	0.005	127.5	ug/L	-261	Standard
	Se	82	-41.7	18.6	**-0.0390**	0.049	125.7	ug/L	-43	Standard
	Se-1	77	77.3	22.0	**-0.0239**	0.162	679.1	ug/L	86	Standard
>	**Ga**	71	15.0	33.3				mg/L	35	Standard
	Rb	85	13.3	21.7				ug/L	20	Standard
	Y	89	419172.0	1.8				ug/L	462194	Standard
>	**Rh**	103	6.7	43.3				ug/L	7	Standard
	Mo	98	48.8	28.3	**0.0088**	0.004	42.0	ug/L	8	Standard
	Ag	107	83.7	23.3	**-0.0029**	0.003	102.1	ug/L	62	Standard
	Cd	111	11.2	89.1	**-0.0037**	0.005	128.8	mg/L	1	Standard
	Cd	114	38.5	123.3	**-0.0004**	0.009	2006.0	ug/L	23	Standard
>	**In**	115	463098.0	0.6				ug/L	502083	Standard
	Sn	118	55.7	15.0	**-0.0470**	0.007	14.0	ug/L	144	Standard
	Sb	123	91.6	13.7	**0.0317**	0.005	15.2	ug/L	19	Standard
	Ba	135	13.0	73.4	**0.0000**	0.005	63654.9	ug/L	9	Standard
	Ce	140	8.3	34.6				ug/L	17	Standard
>	**Tb**	159	445472.5	0.9				ug/L	490863	Standard
	Ho	165	8.3	91.7				ug/L	2	Standard
	Tl	203	53.3	65.8	**0.0026**	0.006	217.7	ug/L	2	Standard
	Tl	205	35.0	14.3	**0.0017**	0.001	40.8	ug/L	0	Standard
	Pb	206	88.0	11.2	**-0.0015**	0.004	234.6	ug/L	84	Standard
	Pb	207	80.7	8.4	**0.0022**	0.003	146.2	ug/L	73	Standard
	Pb	208	201.0	2.3	**-0.0055**	0.001	18.0	ug/L	199	Standard
	U	238	5.7	81.5	**0.0008**	0.001	148.5	ug/L	1	Standard
>	**Bi**	209	266164.0	1.1				ug/L	281512	Standard

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	Na	23	3.3	173.2	**0.5857**	1.758	300.2	mg/L	2	Standard
	Mg	24	51.7	34.0	**0.0373**	0.026	68.9	mg/L	38	Standard
	K	39	1.7	173.2	**-0.0630**	0.166	262.8	mg/L	0	Standard
	Ca	43	15.0	57.7	**-0.7905**	0.987	124.8	mg/L	23	Standard
	Fe	54	97.4	7.9	**-0.0518**	0.003	6.7	mg/L	234	Standard
	Fe	57	123.3	18.3	**0.0673**	0.043	64.1	mg/L	118	Standard
>	**Sc-1**	45	49487.4	1.3				mg/L	57581	Standard
	Cl	35	22512.7	1.5				ug/L	22827	Standard
	Kr	83	83.7	10.2				ug/L	90	Standard
	Br	81	2060.1	2.9				ug/L	2287	Standard
	P	31	77417.3	2.2				ug/L	215766	Standard
	S	34	35819.0	0.7				ug/L	23460	Standard
	Sr	88	66.7	4.3				ug/L	48	Standard
	C	12	0.0					mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	0	Standard
	Dy	164	-0.6	43.3				mg/L	6	Standard
	Ho-1	165	8.3	91.7				mg/L	2	Standard
	Er	166	13.3	43.3				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		91.008	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		90.964	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

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	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	92.235
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	94.548
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBW 56 WG453567-03
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Method 6020 - Summary Report

Sample ID: LCSW 56 WG453567-04
Sample Date/Time: Friday, November 22, 2013 10:15:09
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	241748.4	0.6				ug/L	231878	Standard
	Be	9	69721.7	0.5	**25.2282**	0.093	0.4	ug/L	7	Standard
	Al	27	4082.4	78.3	**0.0198**	0.019	94.2	ug/L	115	Standard
	Sc	45	56880.0	2.8				ug/L	57581	Standard
	Ti	47	35.3	62.9	**0.0178**	0.047	262.4	ug/L	17	Standard
	V	51	216706.4	0.6	**25.6069**	0.027	0.1	ug/L	1678	Standard
	Cr	52	206672.4	0.8	**25.6012**	0.367	1.4	ug/L	5719	Standard
	Cr	53	37351.0	0.3	**25.3389**	0.202	0.8	ug/L	132	Standard
	Mn	55	365557.4	1.2	**26.2437**	0.383	1.5	ug/L	927	Standard
	Co	59	228583.0	0.5	**25.7799**	0.282	1.1	ug/L	80	Standard
	Ni	60	76946.9	1.1	**25.9416**	0.398	1.5	ug/L	39	Standard
	Cu	65	75923.8	0.6	**25.8780**	0.295	1.1	ug/L	91	Standard
	Zn	66	42295.6	0.9	**26.0808**	0.388	1.5	ug/L	159	Standard
>	**Ge**	72	513117.1	0.6				ug/L	504090	Standard
	As	75	42797.5	0.4	**24.9262**	0.242	1.0	ug/L	-261	Standard
	Se	82	4200.8	1.0	**24.8166**	0.223	0.9	ug/L	-43	Standard
	Se-1	77	3124.7	0.5	**24.9743**	0.282	1.1	ug/L	86	Standard
>	**Ga**	71	33.3	45.8				mg/L	35	Standard
	Rb	85	50.0	20.0				ug/L	20	Standard
	Y	89	476120.5	1.0				ug/L	462194	Standard
>	**Rh**	103	30.0	28.9				ug/L	7	Standard
	Mo	98	90.1	25.1	**0.0174**	0.005	30.9	ug/L	8	Standard
	Ag	107	196745.2	0.6	**26.2582**	0.245	0.9	ug/L	62	Standard
	Cd	111	57377.0	0.3	**24.5409**	0.090	0.4	mg/L	1	Standard
	Cd	114	143375.8	0.2	**23.9897**	0.167	0.7	ug/L	23	Standard
>	**In**	115	517197.9	0.4				ug/L	502083	Standard
	Sn	118	102.3	16.1	**-0.0195**	0.011	56.5	ug/L	144	Standard
	Sb	123	70448.3	0.6	**25.1652**	0.094	0.4	ug/L	19	Standard
	Ba	135	49766.6	1.0	**25.0302**	0.132	0.5	ug/L	9	Standard
	Ce	140	48.3	29.9				ug/L	17	Standard
>	**Tb**	159	506941.2	0.4				ug/L	490863	Standard
	Ho	165	3.3	86.6				ug/L	2	Standard
	Tl	203	173373.0	0.8	**25.3646**	0.155	0.6	ug/L	2	Standard
	Tl	205	191182.1	1.5	**25.8569**	0.340	1.3	ug/L	0	Standard
	Pb	206	71217.7	1.3	**25.7564**	0.112	0.4	ug/L	84	Standard
	Pb	207	61302.8	1.2	**24.4530**	0.210	0.9	ug/L	73	Standard
	Pb	208	165462.0	0.9	**25.0813**	0.237	0.9	ug/L	199	Standard
	U	238	108434.7	1.3	**24.1461**	0.036	0.1	ug/L	1	Standard
>	**Bi**	209	293558.6	1.4				ug/L	281512	Standard

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Na	23	0.0		**-0.4293**	0.000	0.0	mg/L	2	Standard
Mg	24	46.7	22.3	**0.0213**	0.013	59.9	mg/L	38	Standard
K	39	1.7	173.2	**-0.0768**	0.142	184.2	mg/L	0	Standard
Ca	43	18.3	78.7	**-0.6769**	1.437	212.3	mg/L	23	Standard
Fe	54	305.2	19.5	**0.0300**	0.022	71.7	mg/L	234	Standard
Fe	57	98.3	7.8	**-0.0005**	0.016	3341.7	mg/L	118	Standard
Sc-1	45	56880.0	2.8				mg/L	57581	Standard
Cl	35	24088.5	2.2				ug/L	22827	Standard
Kr	83	87.3	5.2				ug/L	90	Standard
Br	81	2373.5	2.7				ug/L	2287	Standard
P	31	266366.4	3.7				ug/L	215766	Standard
S	34	33984.7	1.8				ug/L	23460	Standard
Sr	88	51.7	22.3				ug/L	48	Standard
C	12	0.0					mg/L	3	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	19.7	2.8				mg/L	6	Standard
Ho-1	165	3.3	86.6				mg/L	2	Standard
Er	166	6.7	173.2				mg/L	7	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.256	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.791	
As	75			
Se	82			
Se-1	77			
> Ga	71			
Rb	85			

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⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	103.010
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	104.279
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1311074001
Sample Date/Time: Friday, November 22, 2013 10:18:14
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	298759.6	2.5				ug/L	231878	Standard
	Be	9	153.3	142.4	**0.0360**	0.062	172.7	ug/L	7	Standard
	Al	27	82232242.5	3.2	**389.3698**	3.837	1.0	ug/L	115	Standard
	Sc	45	59878.1	2.2				ug/L	57581	Standard
	Ti	47	223.7	19.5	**0.3946**	0.080	20.2	ug/L	17	Standard
	V	51	3716.5	1.2	**0.2198**	0.019	8.5	ug/L	1678	Standard
	Cr	52	14391.2	1.4	**1.0219**	0.037	3.6	ug/L	5719	Standard
	Cr	53	2266.8	13.0	**1.4176**	0.151	10.6	ug/L	132	Standard
	Mn	55	2774702.3	2.0	**193.9727**	2.762	1.4	ug/L	927	Standard
	Co	59	4855.4	2.4	**0.5161**	0.005	1.0	ug/L	80	Standard
	Ni	60	9643.7	6.0	**3.1342**	0.092	2.9	ug/L	39	Standard
	Cu	65	3547.4	11.4	**1.1376**	0.174	15.3	ug/L	91	Standard
	Zn	66	9160.1	0.6	**5.2637**	0.148	2.8	ug/L	159	Standard
>	**Ge**	72	528491.9	3.1				ug/L	504090	Standard
	As	75	205.5	22.6	**0.2706**	0.023	8.5	ug/L	-261	Standard
	Se	82	88.6	29.2	**0.7365**	0.142	19.3	ug/L	-43	Standard
	Se-1	77	199.0	5.3	**0.8525**	0.045	5.3	ug/L	86	Standard
>	**Ga**	71	146.7	26.0				mg/L	35	Standard
	Rb	85	22586.8	2.2				ug/L	20	Standard
	Y	89	498434.8	1.1				ug/L	462194	Standard
>	**Rh**	103	2638.6	2.4				ug/L	7	Standard
	Mo	98	17522.6	1.7	**4.1167**	0.108	2.6	ug/L	8	Standard
	Ag	107	130.7	40.0	**0.0016**	0.006	402.3	ug/L	62	Standard
	Cd	111	71.2	73.5	**0.0203**	0.021	103.1	mg/L	1	Standard
	Cd	114	233.1	45.7	**0.0302**	0.016	54.2	ug/L	23	Standard
>	**In**	115	529085.6	3.7				ug/L	502083	Standard
	Sn	118	131.3	15.3	**-0.0020**	0.010	537.7	ug/L	144	Standard
	Sb	123	286.0	9.1	**0.0951**	0.010	10.0	ug/L	19	Standard
	Ba	135	22742.7	3.9	**11.1772**	0.039	0.4	ug/L	9	Standard
	Ce	140	1856.8	14.0				ug/L	17	Standard
>	**Tb**	159	541075.3	3.4				ug/L	490863	Standard
	Ho	165	26.7	43.3				ug/L	2	Standard
	Tl	203	409.7	19.2	**0.0565**	0.011	20.2	ug/L	2	Standard
	Tl	205	436.7	17.9	**0.0580**	0.010	17.0	ug/L	0	Standard
	Pb	206	294.3	10.2	**0.0745**	0.009	12.7	ug/L	84	Standard
	Pb	207	256.3	12.3	**0.0734**	0.012	16.4	ug/L	73	Standard
	Pb	208	707.3	29.7	**0.0726**	0.032	43.6	ug/L	199	Standard
	U	238	3938.5	8.6	**0.9138**	0.061	6.7	ug/L	1	Standard
>	**Bi**	209	281302.7	2.1				ug/L	281512	Standard

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	Na	23	281.7	16.1	**71.3670**	10.553	14.8	mg/L	2	Standard
	Mg	24	42210.4	3.9	**49.8403**	1.248	2.5	mg/L	38	Standard
	K	39	31.7	9.1	**1.3627**	0.120	8.8	mg/L	0	Standard
	Ca	43	596.7	9.2	**52.4570**	4.161	7.9	mg/L	23	Standard
	Fe	54	841.1	9.6	**0.2400**	0.025	10.5	mg/L	234	Standard
	Fe	57	620.0	4.5	**0.7645**	0.060	7.8	mg/L	118	Standard
>	**Sc-1**	45	59878.1	2.2				mg/L	57581	Standard
	Cl	35	67571.2	4.5				ug/L	22827	Standard
	Kr	83	115.7	11.8				ug/L	90	Standard
	Br	81	14770.6	8.3				ug/L	2287	Standard
	P	31	349405.9	7.5				ug/L	215766	Standard
	S	34	38579.5	12.1				ug/L	23460	Standard
	Sr	88	11787.9	4.3				ug/L	48	Standard
	C	12	3.3	173.2				mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	0	Standard
	Dy	164	18.9	92.5				mg/L	6	Standard
	Ho-1	165	26.7	43.3				mg/L	2	Standard
	Er	166	23.3	24.7				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		128.843	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		104.841	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

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⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	105.378
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	99.926
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1311079702
Sample Date/Time: Friday, November 22, 2013 10:21:19
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	299520.9	2.3				ug/L	231878	Standard
	Be	9	58.3	39.6	**0.0090**	0.007	76.3	ug/L	7	Standard
	Al	27	697165.6	2.6	**3.2890**	0.036	1.1	ug/L	115	Standard
	Sc	45	64334.7	2.3				ug/L	57581	Standard
	Ti	47	534.7	0.9	**0.9593**	0.013	1.4	ug/L	17	Standard
	V	51	2853.2	10.7	**0.1002**	0.033	32.5	ug/L	1678	Standard
	Cr	52	8127.2	11.8	**0.1863**	0.110	58.8	ug/L	5719	Standard
	Cr	53	598.3	11.7	**0.2952**	0.045	15.3	ug/L	132	Standard
	Mn	55	75152.0	2.2	**4.8637**	0.100	2.1	ug/L	927	Standard
	Co	59	434.3	1.3	**0.0288**	0.001	2.4	ug/L	80	Standard
	Ni	60	804.4	5.5	**0.2248**	0.014	6.2	ug/L	39	Standard
	Cu	65	614.0	10.3	**0.1498**	0.019	12.9	ug/L	91	Standard
	Zn	66	4656.4	2.5	**2.3699**	0.060	2.5	ug/L	159	Standard
>	**Ge**	72	561416.1	0.4				ug/L	504090	Standard
	As	75	-242.5	12.6	**0.0273**	0.017	60.9	ug/L	-261	Standard
	Se	82	-45.0	17.7	**-0.0074**	0.044	591.9	ug/L	-43	Standard
	Se-1	77	110.3	15.0	**0.0933**	0.127	136.1	ug/L	86	Standard
>	**Ga**	71	101.7	12.4				mg/L	35	Standard
	Rb	85	6404.7	2.2				ug/L	20	Standard
	Y	89	525885.8	2.4				ug/L	462194	Standard
>	**Rh**	103	10.0	50.0				ug/L	7	Standard
	Mo	98	62.9	8.6	**0.0095**	0.001	12.8	ug/L	8	Standard
	Ag	107	81.3	8.6	**-0.0055**	0.001	14.8	ug/L	62	Standard
	Cd	111	17.2	16.8	**-0.0024**	0.001	46.4	mg/L	1	Standard
	Cd	114	325.8	23.7	**0.0420**	0.012	27.5	ug/L	23	Standard
>	**In**	115	566823.0	0.5				ug/L	502083	Standard
	Sn	118	2145.8	6.3	**1.2490**	0.082	6.5	ug/L	144	Standard
	Sb	123	102.2	3.8	**0.0284**	0.001	4.4	ug/L	19	Standard
	Ba	135	6825.9	0.9	**3.1262**	0.037	1.2	ug/L	9	Standard
	Ce	140	3840.5	3.5				ug/L	17	Standard
>	**Tb**	159	562378.6	0.5				ug/L	490863	Standard
	Ho	165	35.0	65.5				ug/L	2	Standard
	Tl	203	45.0	13.3	**0.0001**	0.001	1046.6	ug/L	2	Standard
	Tl	205	45.0	50.9	**0.0022**	0.003	132.8	ug/L	0	Standard
	Pb	206	295.7	1.2	**0.0625**	0.001	1.0	ug/L	84	Standard
	Pb	207	243.3	2.7	**0.0567**	0.003	4.8	ug/L	73	Standard
	Pb	208	617.0	1.0	**0.0476**	0.001	1.5	ug/L	199	Standard
	U	238	33.0	18.2	**0.0062**	0.001	19.2	ug/L	1	Standard
>	**Bi**	209	316878.1	0.7				ug/L	281512	Standard

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	Na	23	3.3	86.6	**0.3617**	0.686	189.5	mg/L	2	Standard
	Mg	24	753.4	5.7	**0.7915**	0.029	3.6	mg/L	38	Standard
	K	39	3.3	86.6	**-0.0096**	0.129	1342.3	mg/L	0	Standard
	Ca	43	20.0	50.0	**-0.7483**	0.884	118.2	mg/L	23	Standard
	Fe	54	458.8	11.5	**0.0734**	0.023	31.2	mg/L	234	Standard
	Fe	57	161.7	23.2	**0.0680**	0.047	68.5	mg/L	118	Standard
>	**Sc-1**	45	64334.7	2.3				mg/L	57581	Standard
	Cl	35	32849.0	5.8				ug/L	22827	Standard
	Kr	83	109.7	1.9				ug/L	90	Standard
	Br	81	4427.3	4.0				ug/L	2287	Standard
	P	31	374868.2	2.9				ug/L	215766	Standard
	S	34	41642.2	1.1				ug/L	23460	Standard
	Sr	88	78.3	16.1				ug/L	48	Standard
	C	12	0.0					mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	0	Standard
	Dy	164	104.3	47.8				mg/L	6	Standard
	Ho-1	165	35.0	65.5				mg/L	2	Standard
	Er	166	50.0	34.6				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		129.171	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		111.372	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

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	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	112.894
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	112.563
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1311079705 WG453567-01
Sample Date/Time: Friday, November 22, 2013 10:24:24
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	289528.7	1.1				ug/L	231878	Standard
	Be	9	26.7	10.8	**0.0000**	0.001	3008.9	ug/L	7	Standard
	Al	27	665373.2	1.6	**3.2478**	0.076	2.3	ug/L	115	Standard
	Sc	45	62749.7	1.0				ug/L	57581	Standard
	Ti	47	285.3	6.2	**0.4895**	0.032	6.5	ug/L	17	Standard
	V	51	2301.5	7.5	**0.0418**	0.018	43.7	ug/L	1678	Standard
	Cr	52	6873.2	1.9	**0.0455**	0.013	27.8	ug/L	5719	Standard
	Cr	53	351.7	8.1	**0.1432**	0.018	12.8	ug/L	132	Standard
	Mn	55	81983.9	1.3	**5.3494**	0.060	1.1	ug/L	927	Standard
	Co	59	570.3	5.0	**0.0432**	0.003	6.4	ug/L	80	Standard
	Ni	60	812.0	1.9	**0.2288**	0.005	2.3	ug/L	39	Standard
	Cu	65	654.7	2.5	**0.1639**	0.006	3.6	ug/L	91	Standard
	Zn	66	4415.6	0.9	**2.2496**	0.018	0.8	ug/L	159	Standard
>	**Ge**	72	557703.4	0.4				ug/L	504090	Standard
	As	75	-235.1	6.4	**0.0305**	0.008	25.5	ug/L	-261	Standard
	Se	82	-47.9	12.9	**-0.0241**	0.033	136.0	ug/L	-43	Standard
	Se-1	77	97.0	5.4	**-0.0025**	0.038	1546.5	ug/L	86	Standard
>	**Ga**	71	60.0	25.0				mg/L	35	Standard
	Rb	85	5617.7	2.7				ug/L	20	Standard
	Y	89	509295.8	1.4				ug/L	462194	Standard
>	**Rh**	103	3.3	86.6				ug/L	7	Standard
	Mo	98	44.6	9.1	**0.0056**	0.001	16.8	ug/L	8	Standard
	Ag	107	74.3	7.4	**-0.0063**	0.001	9.9	ug/L	62	Standard
	Cd	111	9.6	57.3	**-0.0054**	0.002	39.7	mg/L	1	Standard
	Cd	114	52.4	19.6	**0.0004**	0.002	461.3	ug/L	23	Standard
>	**In**	115	565102.2	0.6				ug/L	502083	Standard
	Sn	118	98.3	14.2	**-0.0280**	0.009	30.8	ug/L	144	Standard
	Sb	123	73.9	17.6	**0.0193**	0.004	21.4	ug/L	19	Standard
	Ba	135	6549.1	1.7	**3.0085**	0.071	2.3	ug/L	9	Standard
	Ce	140	2923.6	3.0				ug/L	17	Standard
>	**Tb**	159	552099.3	0.9				ug/L	490863	Standard
	Ho	165	56.7	48.6				ug/L	2	Standard
	Tl	203	22.7	45.3	**-0.0029**	0.001	48.8	ug/L	2	Standard
	Tl	205	23.3	32.7	**-0.0005**	0.001	184.5	ug/L	0	Standard
	Pb	206	198.7	9.2	**0.0308**	0.006	20.5	ug/L	84	Standard
	Pb	207	181.7	4.4	**0.0346**	0.003	7.9	ug/L	73	Standard
	Pb	208	481.0	3.3	**0.0293**	0.002	8.0	ug/L	199	Standard
	U	238	15.7	30.2	**0.0027**	0.001	37.7	ug/L	1	Standard
>	**Bi**	209	313237.1	0.4				ug/L	281512	Standard

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⌈	**Na**	23	5.0	100.0	**0.7961**	1.226	154.0	mg/L	2	Standard
|	**Mg**	24	661.7	6.3	**0.7092**	0.039	5.5	mg/L	38	Standard
|	**K**	39	5.0	100.0	**0.0709**	0.231	325.8	mg/L	0	Standard
|	**Ca**	43	23.3	12.4	**-0.4184**	0.244	58.3	mg/L	23	Standard
|	**Fe**	54	434.3	12.2	**0.0679**	0.019	28.7	mg/L	234	Standard
|	**Fe**	57	145.0	9.1	**0.0508**	0.018	36.0	mg/L	118	Standard
⌊>	**Sc-1**	45	62749.7	1.0				mg/L	57581	Standard
	Cl	35	31228.8	3.1				ug/L	22827	Standard
	Kr	83	110.3	9.4				ug/L	90	Standard
	Br	81	3423.7	5.9				ug/L	2287	Standard
	P	31	371108.3	2.5				ug/L	215766	Standard
	S	34	41518.5	2.0				ug/L	23460	Standard
	Sr	88	88.3	40.9				ug/L	48	Standard
	C	12	0.0					mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	0	Standard
	Dy	164	40.8	28.0				mg/L	6	Standard
	Ho-1	165	56.7	48.6				mg/L	2	Standard
	Er	166	53.3	28.6				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		124.862	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		110.636	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			
⌊	Rb	85			

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⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	112.552
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	111.269
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1311079721S WG453567-05
Sample Date/Time: Friday, November 22, 2013 10:27:28
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	283807.2	1.8				ug/L	231878	Standard
	Be	9	83000.1	1.6	**25.5840**	0.349	1.4	ug/L	7	Standard
	Al	27	670943.3	1.2	**3.3418**	0.099	3.0	ug/L	115	Standard
	Sc	45	61168.2	1.1				ug/L	57581	Standard
	Ti	47	297.7	4.4	**0.5238**	0.028	5.3	ug/L	17	Standard
	V	51	222400.1	0.6	**24.6239**	0.303	1.2	ug/L	1678	Standard
	Cr	52	214251.6	1.1	**24.8511**	0.089	0.4	ug/L	5719	Standard
	Cr	53	40148.1	2.5	**25.5321**	0.864	3.4	ug/L	132	Standard
	Mn	55	464770.7	0.8	**31.2875**	0.238	0.8	ug/L	927	Standard
	Co	59	236711.8	0.9	**25.0210**	0.329	1.3	ug/L	80	Standard
	Ni	60	81733.9	0.8	**25.8265**	0.366	1.4	ug/L	39	Standard
	Cu	65	80364.6	0.7	**25.6732**	0.394	1.5	ug/L	91	Standard
	Zn	66	46000.7	1.0	**26.5905**	0.347	1.3	ug/L	159	Standard
>	**Ge**	72	547479.9	0.9				ug/L	504090	Standard
	As	75	45943.2	0.4	**25.0784**	0.260	1.0	ug/L	-261	Standard
	Se	82	4472.9	0.8	**24.7672**	0.231	0.9	ug/L	-43	Standard
	Se-1	77	3325.7	2.5	**24.9108**	0.654	2.6	ug/L	86	Standard
>	**Ga**	71	56.7	13.5				mg/L	35	Standard
	Rb	85	5617.7	2.6				ug/L	20	Standard
	Y	89	510781.0	1.2				ug/L	462194	Standard
>	**Rh**	103	26.7	28.6				ug/L	7	Standard
	Mo	98	61.4	10.2	**0.0094**	0.002	16.2	ug/L	8	Standard
	Ag	107	208453.5	0.4	**25.7713**	0.306	1.2	ug/L	62	Standard
	Cd	111	62841.3	0.7	**24.8974**	0.067	0.3	mg/L	1	Standard
	Cd	114	156884.5	0.4	**24.3161**	0.208	0.9	ug/L	23	Standard
>	**In**	115	558348.8	0.9				ug/L	502083	Standard
	Sn	118	133.0	0.8	**-0.0053**	0.001	19.7	ug/L	144	Standard
	Sb	123	77360.5	0.7	**25.5992**	0.284	1.1	ug/L	19	Standard
	Ba	135	60647.8	0.2	**28.2580**	0.305	1.1	ug/L	9	Standard
	Ce	140	3275.4	2.6				ug/L	17	Standard
>	**Tb**	159	549637.3	0.9				ug/L	490863	Standard
	Ho	165	36.7	28.4				ug/L	2	Standard
	Tl	203	182739.8	1.1	**25.1644**	0.265	1.1	ug/L	2	Standard
	Tl	205	200537.1	2.0	**25.5298**	0.567	2.2	ug/L	0	Standard
	Pb	206	77769.4	0.9	**26.4757**	0.235	0.9	ug/L	84	Standard
	Pb	207	67576.7	0.8	**25.3737**	0.192	0.8	ug/L	73	Standard
	Pb	208	175977.5	0.5	**25.1081**	0.160	0.6	ug/L	199	Standard
	U	238	118882.6	1.1	**24.9187**	0.271	1.1	ug/L	1	Standard
>	**Bi**	209	311862.5	0.2				ug/L	281512	Standard

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	Na	23	1.7	173.2	**-0.0175**	0.713	4071.0	mg/L	2	Standard
	Mg	24	726.7	3.3	**0.8041**	0.030	3.8	mg/L	38	Standard
	K	39	0.0		**-0.1586**			mg/L	0	Standard
	Ca	43	20.0	75.0	**-0.6606**	1.370	207.3	mg/L	23	Standard
	Fe	54	426.0	10.4	**0.0692**	0.019	27.9	mg/L	234	Standard
	Fe	57	198.3	25.4	**0.1331**	0.072	53.8	mg/L	118	Standard
>	**Sc-1**	45	61168.2	1.1				mg/L	57581	Standard
	Cl	35	29295.0	1.1				ug/L	22827	Standard
	Kr	83	95.3	10.2				ug/L	90	Standard
	Br	81	3003.6	2.5				ug/L	2287	Standard
	P	31	360003.6	2.6				ug/L	215766	Standard
	S	34	39272.6	4.3				ug/L	23460	Standard
	Sr	88	76.7	49.4				ug/L	48	Standard
	C	12	0.0					mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	0	Standard
	Dy	164	71.6	20.8				mg/L	6	Standard
	Ho-1	165	36.7	28.4				mg/L	2	Standard
	Er	166	36.7	41.7				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		122.395	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		108.608	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

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	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	111.206
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	110.781
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: November 24, 2013

Method 6020 - Summary Report

Sample ID: L1311079724SD WG453567-06
Sample Date/Time: Friday, November 22, 2013 10:30:33
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	276746.7	1.6				ug/L	231878	Standard
	Be	9	76459.1	1.4	**24.1744**	0.711	2.9	ug/L	7	Standard
	Al	27	634185.5	0.6	**3.2384**	0.035	1.1	ug/L	115	Standard
	Sc	45	59376.2	3.0				ug/L	57581	Standard
	Ti	47	269.3	14.3	**0.4903**	0.077	15.6	ug/L	17	Standard
	V	51	206183.0	0.3	**23.7708**	0.224	0.9	ug/L	1678	Standard
	Cr	52	200280.2	1.4	**24.1791**	0.443	1.8	ug/L	5719	Standard
	Cr	53	38487.2	1.9	**25.4895**	0.482	1.9	ug/L	132	Standard
	Mn	55	437485.0	0.7	**30.6758**	0.400	1.3	ug/L	927	Standard
	Co	59	223240.0	1.0	**24.5785**	0.332	1.3	ug/L	80	Standard
	Ni	60	77426.7	0.5	**25.4819**	0.036	0.1	ug/L	39	Standard
	Cu	65	75965.3	1.4	**25.2743**	0.205	0.8	ug/L	91	Standard
	Zn	66	44052.6	1.1	**26.5232**	0.358	1.3	ug/L	159	Standard
>	**Ge**	72	525599.9	0.6				ug/L	504090	Standard
	As	75	44000.6	1.4	**25.0161**	0.231	0.9	ug/L	-261	Standard
	Se	82	4297.0	1.2	**24.7828**	0.278	1.1	ug/L	-43	Standard
	Se-1	77	3206.7	1.1	**25.0209**	0.159	0.6	ug/L	86	Standard
>	**Ga**	71	90.0	5.6				mg/L	35	Standard
	Rb	85	5397.6	1.2				ug/L	20	Standard
	Y	89	490477.2	1.8				ug/L	462194	Standard
>	**Rh**	103	20.0	43.3				ug/L	7	Standard
	Mo	98	219.8	132.7	**0.0457**	0.066	144.8	ug/L	8	Standard
	Ag	107	200413.8	0.8	**25.3469**	0.192	0.8	ug/L	62	Standard
	Cd	111	60389.4	0.8	**24.4780**	0.289	1.2	mg/L	1	Standard
	Cd	114	149635.6	1.1	**23.7268**	0.328	1.4	ug/L	23	Standard
>	**In**	115	545763.3	0.6				ug/L	502083	Standard
	Sn	118	1745.4	1.1	**1.0413**	0.011	1.1	ug/L	144	Standard
	Sb	123	75269.2	0.4	**25.4810**	0.240	0.9	ug/L	19	Standard
	Ba	135	58424.8	0.6	**27.8491**	0.309	1.1	ug/L	9	Standard
	Ce	140	3077.0	3.3				ug/L	17	Standard
>	**Tb**	159	540929.0	1.1				ug/L	490863	Standard
	Ho	165	40.0	45.1				ug/L	2	Standard
	Tl	203	177350.3	0.8	**25.1391**	0.145	0.6	ug/L	2	Standard
	Tl	205	193178.8	1.1	**25.3152**	0.377	1.5	ug/L	0	Standard
	Pb	206	74987.1	0.3	**26.2785**	0.257	1.0	ug/L	84	Standard
	Pb	207	64841.8	1.6	**25.0595**	0.141	0.6	ug/L	73	Standard
	Pb	208	169987.7	0.6	**24.9661**	0.294	1.2	ug/L	199	Standard
	U	238	114238.4	1.4	**24.6514**	0.592	2.4	ug/L	1	Standard
>	**Bi**	209	302981.3	1.2				ug/L	281512	Standard

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	Na	23	5.0	100.0	**0.8432**	1.248	148.0	mg/L	2	Standard
	Mg	24	743.4	9.8	**0.8514**	0.113	13.2	mg/L	38	Standard
	K	39	1.7	173.2	**-0.0755**	0.144	190.8	mg/L	0	Standard
	Ca	43	31.7	59.8	**0.4439**	1.702	383.5	mg/L	23	Standard
	Fe	54	435.2	8.1	**0.0777**	0.009	11.5	mg/L	234	Standard
	Fe	57	163.3	15.1	**0.0894**	0.032	36.2	mg/L	118	Standard
>	**Sc-1**	45	59376.2	3.0				mg/L	57581	Standard
	Cl	35	26759.6	0.1				ug/L	22827	Standard
	Kr	83	100.3	7.2				ug/L	90	Standard
	Br	81	3790.5	1.9				ug/L	2287	Standard
	P	31	343297.2	2.6				ug/L	215766	Standard
	S	34	35919.2	2.0				ug/L	23460	Standard
	Sr	88	86.7	3.3				ug/L	48	Standard
	C	12	0.0					mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	0	Standard
	Dy	164	61.3	26.0				mg/L	6	Standard
	Ho-1	165	40.0	45.1				mg/L	2	Standard
	Er	166	43.3	35.3				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		119.350	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		104.267	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

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	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	108.700
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	107.626
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1311079724SD WG453567-06
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Method 6020 - Summary Report

Sample ID: L1311079708
Sample Date/Time: Friday, November 22, 2013 10:33:38
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	270123.8	1.7				ug/L	231878	Standard
	Be	9	51.7	45.7	**0.0087**	0.008	89.1	ug/L	7	Standard
	Al	27	774578.5	1.5	**4.0532**	0.054	1.3	ug/L	115	Standard
	Sc	45	58829.0	1.9				ug/L	57581	Standard
	Ti	47	307.3	11.2	**0.5671**	0.068	11.9	ug/L	17	Standard
	V	51	1948.2	5.8	**0.0160**	0.013	80.1	ug/L	1678	Standard
	Cr	52	7855.0	0.6	**0.2167**	0.009	4.3	ug/L	5719	Standard
	Cr	53	1000.0	3.3	**0.5870**	0.020	3.3	ug/L	132	Standard
	Mn	55	60490.2	1.0	**4.1684**	0.030	0.7	ug/L	927	Standard
	Co	59	456.3	26.0	**0.0342**	0.013	37.7	ug/L	80	Standard
	Ni	60	926.7	3.2	**0.2818**	0.011	3.8	ug/L	39	Standard
	Cu	65	784.4	2.2	**0.2196**	0.005	2.2	ug/L	91	Standard
	Zn	66	3999.9	1.4	**2.1504**	0.036	1.7	ug/L	159	Standard
>	**Ge**	72	525810.5	0.3				ug/L	504090	Standard
	As	75	-193.7	11.2	**0.0462**	0.012	25.9	ug/L	-261	Standard
	Se	82	-39.1	21.0	**0.0101**	0.046	458.0	ug/L	-43	Standard
	Se-1	77	122.0	2.2	**0.2429**	0.024	9.9	ug/L	86	Standard
>	**Ga**	71	65.0	7.7				mg/L	35	Standard
	Rb	85	5502.7	7.0				ug/L	20	Standard
	Y	89	486958.7	1.0				ug/L	462194	Standard
>	**Rh**	103	5.0	173.2				ug/L	7	Standard
	Mo	98	216.9	2.7	**0.0463**	0.002	3.3	ug/L	8	Standard
	Ag	107	153.0	73.7	**0.0045**	0.015	329.3	ug/L	62	Standard
	Cd	111	26.4	50.9	**0.0018**	0.006	309.7	mg/L	1	Standard
	Cd	114	161.0	35.2	**0.0185**	0.009	50.5	ug/L	23	Standard
>	**In**	115	533318.0	0.5				ug/L	502083	Standard
	Sn	118	709.3	0.8	**0.3808**	0.005	1.3	ug/L	144	Standard
	Sb	123	118.2	22.8	**0.0361**	0.009	26.0	ug/L	19	Standard
	Ba	135	7087.0	1.1	**3.4504**	0.031	0.9	ug/L	9	Standard
	Ce	140	1845.1	1.6				ug/L	17	Standard
>	**Tb**	159	521313.7	0.8				ug/L	490863	Standard
	Ho	165	36.7	47.9				ug/L	2	Standard
	Tl	203	130.7	101.2	**0.0128**	0.019	148.3	ug/L	2	Standard
	Tl	205	81.7	12.7	**0.0074**	0.001	18.4	ug/L	0	Standard
	Pb	206	344.7	11.3	**0.0863**	0.013	15.5	ug/L	84	Standard
	Pb	207	286.7	18.0	**0.0794**	0.020	24.8	ug/L	73	Standard
	Pb	208	754.0	3.3	**0.0736**	0.004	5.4	ug/L	199	Standard
	U	238	51.7	22.3	**0.0107**	0.002	23.2	ug/L	1	Standard
>	**Bi**	209	297913.7	0.6				ug/L	281512	Standard

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	Na	23	3.3	86.6	**0.4443**	0.757	170.3	mg/L	2	Standard
	Mg	24	888.4	6.9	**1.0314**	0.060	5.8	mg/L	38	Standard
	K	39	6.7	114.6	**0.1652**	0.366	221.8	mg/L	0	Standard
	Ca	43	21.7	35.3	**-0.4415**	0.689	156.1	mg/L	23	Standard
	Fe	54	572.1	0.9	**0.1359**	0.003	2.3	mg/L	234	Standard
	Fe	57	168.3	6.2	**0.0998**	0.020	20.0	mg/L	118	Standard
>	**Sc-1**	45	58829.0	1.9				mg/L	57581	Standard
	Cl	35	25660.4	0.8				ug/L	22827	Standard
	Kr	83	103.3	12.9				ug/L	90	Standard
	Br	81	3583.8	7.6				ug/L	2287	Standard
	P	31	341639.4	1.6				ug/L	215766	Standard
	S	34	34536.0	2.7				ug/L	23460	Standard
	Sr	88	78.3	19.5				ug/L	48	Standard
	C	12	0.0					mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	0	Standard
	Dy	164	48.1	36.9				mg/L	6	Standard
	Ho-1	165	36.7	47.9				mg/L	2	Standard
	Er	166	40.0	25.0				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		116.494	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		104.309	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

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⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	106.221
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	105.826
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1311079708PS WG453895-01
Sample Date/Time: Friday, November 22, 2013 10:36:43
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	284960.1	1.4				ug/L	231878	Standard
	Be	9	157401.7	0.7	**48.3341**	1.004	2.1	ug/L	7	Standard
	Al	27	799328.1	0.6	**3.9648**	0.033	0.8	ug/L	115	Standard
	Sc	45	62383.2	1.8				ug/L	57581	Standard
	Ti	47	328.7	12.4	**0.5834**	0.081	13.8	ug/L	17	Standard
	V	51	449009.5	0.7	**49.8649**	0.542	1.1	ug/L	1678	Standard
	Cr	52	436488.0	0.2	**51.3542**	0.119	0.2	ug/L	5719	Standard
	Cr	53	82504.0	0.7	**52.4739**	0.270	0.5	ug/L	132	Standard
	Mn	55	847514.0	0.8	**57.0487**	0.227	0.4	ug/L	927	Standard
	Co	59	485606.0	1.1	**51.2799**	0.431	0.8	ug/L	80	Standard
	Ni	60	165428.3	1.4	**52.2270**	0.520	1.0	ug/L	39	Standard
	Cu	65	163794.3	1.3	**52.2985**	0.425	0.8	ug/L	91	Standard
	Zn	66	88953.7	0.6	**51.6168**	0.312	0.6	ug/L	159	Standard
>	**Ge**	72	548154.2	0.5				ug/L	504090	Standard
	As	75	92022.2	0.6	**50.0111**	0.364	0.7	ug/L	-261	Standard
	Se	82	8774.2	1.0	**48.2979**	0.308	0.6	ug/L	-43	Standard
	Se-1	77	6383.7	1.5	**48.4304**	0.575	1.2	ug/L	86	Standard
>	**Ga**	71	138.3	21.2				mg/L	35	Standard
	Rb	85	5937.8	1.0				ug/L	20	Standard
	Y	89	517601.7	1.1				ug/L	462194	Standard
>	**Rh**	103	43.3	37.1				ug/L	7	Standard
	Mo	98	250.2	4.9	**0.0514**	0.003	6.2	ug/L	8	Standard
	Ag	107	424922.0	0.1	**52.4699**	0.454	0.9	ug/L	62	Standard
	Cd	111	129003.9	1.2	**51.0435**	0.475	0.9	mg/L	1	Standard
	Cd	114	318260.1	0.3	**49.2622**	0.399	0.8	ug/L	23	Standard
>	**In**	115	559183.6	0.8				ug/L	502083	Standard
	Sn	118	483.7	3.3	**0.2164**	0.013	5.9	ug/L	144	Standard
	Sb	123	156347.7	0.9	**51.6644**	0.679	1.3	ug/L	19	Standard
	Ba	135	119190.7	0.8	**55.4559**	0.078	0.1	ug/L	9	Standard
	Ce	140	2100.1	4.2				ug/L	17	Standard
>	**Tb**	159	558668.5	0.7				ug/L	490863	Standard
	Ho	165	40.0	12.5				ug/L	2	Standard
	Tl	203	373368.0	0.0	**51.6678**	0.457	0.9	ug/L	2	Standard
	Tl	205	407468.8	1.5	**52.1226**	0.759	1.5	ug/L	0	Standard
	Pb	206	155207.3	1.2	**53.1308**	0.993	1.9	ug/L	84	Standard
	Pb	207	140842.6	1.2	**53.1708**	0.461	0.9	ug/L	73	Standard
	Pb	208	358847.6	0.6	**51.4851**	0.472	0.9	ug/L	199	Standard
	U	238	246088.5	0.8	**51.8318**	0.863	1.7	ug/L	1	Standard
>	**Bi**	209	310391.2	0.9				ug/L	281512	Standard

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	Na	23	6.7	173.2	**1.2287**	2.872	233.7	mg/L	2	Standard
	Mg	24	850.0	8.7	**0.9268**	0.068	7.4	mg/L	38	Standard
	K	39	8.3	91.7	**0.2264**	0.356	157.2	mg/L	0	Standard
	Ca	43	28.3	62.0	**0.0504**	1.572	3118.3	mg/L	23	Standard
	Fe	54	629.8	8.4	**0.1451**	0.025	17.0	mg/L	234	Standard
	Fe	57	198.3	20.4	**0.1275**	0.055	42.8	mg/L	118	Standard
>	**Sc-1**	45	62383.2	1.8				mg/L	57581	Standard
	Cl	35	25045.4	4.0				ug/L	22827	Standard
	Kr	83	111.0	11.1				ug/L	90	Standard
	Br	81	3680.4	6.2				ug/L	2287	Standard
	P	31	435734.7	2.7				ug/L	215766	Standard
	S	34	31132.0	3.6				ug/L	23460	Standard
	Sr	88	103.3	34.0				ug/L	48	Standard
	C	12	0.0					mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	0	Standard
	Dy	164	61.3	25.1				mg/L	6	Standard
	Ho-1	165	40.0	12.5				mg/L	2	Standard
	Er	166	43.3	48.0				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		122.892	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		108.741	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

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	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	111.373
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	110.258
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1311079708SDL WG453895-02
Sample Date/Time: Friday, November 22, 2013 10:39:48
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	243748.4	0.7				ug/L	231878	Standard
	Be	9	35.0	62.3	**0.0045**	0.008	172.5	ug/L	7	Standard
	Al	27	142005.8	1.8	**0.8201**	0.009	1.1	ug/L	115	Standard
	Sc	45	54046.2	0.5				ug/L	57581	Standard
	Ti	47	61.0	15.6	**0.0818**	0.023	27.7	ug/L	17	Standard
	V	51	1460.1	2.7	**-0.0218**	0.007	30.9	ug/L	1678	Standard
	Cr	52	5039.5	2.9	**-0.0637**	0.025	39.3	ug/L	5719	Standard
	Cr	53	285.0	15.2	**0.1333**	0.032	23.6	ug/L	132	Standard
	Mn	55	10984.0	2.0	**0.7755**	0.021	2.7	ug/L	927	Standard
	Co	59	145.3	11.7	**0.0018**	0.002	123.1	ug/L	80	Standard
	Ni	60	166.7	4.6	**0.0377**	0.003	6.9	ug/L	39	Standard
	Cu	65	167.7	9.8	**0.0204**	0.006	30.1	ug/L	91	Standard
	Zn	66	2284.5	0.5	**1.2620**	0.015	1.2	ug/L	159	Standard
>	**Ge**	72	473081.7	0.8				ug/L	504090	Standard
	As	75	-228.8	30.0	**0.0118**	0.043	367.1	ug/L	-261	Standard
	Se	82	-36.0	39.9	**0.0045**	0.092	2035.2	ug/L	-43	Standard
	Se-1	77	100.0	9.0	**0.1560**	0.086	55.0	ug/L	86	Standard
>	**Ga**	71	23.3	32.7				mg/L	35	Standard
	Rb	85	948.4	3.1				ug/L	20	Standard
	Y	89	440324.1	2.5				ug/L	462194	Standard
>	**Rh**	103	5.0	100.0				ug/L	7	Standard
	Mo	98	41.9	27.0	**0.0063**	0.003	45.5	ug/L	8	Standard
	Ag	107	88.3	5.3	**-0.0031**	0.001	20.8	ug/L	62	Standard
	Cd	111	16.3	12.8	**-0.0019**	0.001	50.4	mg/L	1	Standard
	Cd	114	59.4	4.8	**0.0027**	0.000	16.2	ug/L	23	Standard
>	**In**	115	495416.2	0.7				ug/L	502083	Standard
	Sn	118	84.7	0.7	**-0.0291**	0.000	0.8	ug/L	144	Standard
	Sb	123	189.7	17.4	**0.0658**	0.012	18.0	ug/L	19	Standard
	Ba	135	1322.1	1.5	**0.6871**	0.015	2.1	ug/L	9	Standard
	Ce	140	343.3	10.2				ug/L	17	Standard
>	**Tb**	159	481948.7	0.8				ug/L	490863	Standard
	Ho	165	18.3	56.8				ug/L	2	Standard
	Tl	203	56.3	12.6	**0.0026**	0.001	40.5	ug/L	2	Standard
	Tl	205	33.3	43.3	**0.0013**	0.002	162.8	ug/L	0	Standard
	Pb	206	140.3	9.2	**0.0168**	0.005	29.4	ug/L	84	Standard
	Pb	207	124.3	2.6	**0.0188**	0.001	7.8	ug/L	73	Standard
	Pb	208	287.0	7.3	**0.0066**	0.003	51.2	ug/L	199	Standard
	U	238	22.0	67.0	**0.0045**	0.003	76.4	ug/L	1	Standard
>	**Bi**	209	279338.1	0.3				ug/L	281512	Standard

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	Na	23	1.7	173.2	**0.0392**	0.811	2072.4	mg/L	2	Standard
	Mg	24	198.3	33.6	**0.2233**	0.088	39.6	mg/L	38	Standard
	K	39	3.3	86.6	**0.0187**	0.154	819.3	mg/L	0	Standard
	Ca	43	20.0	109.0	**-0.4219**	2.235	529.8	mg/L	23	Standard
	Fe	54	147.6	26.0	**-0.0333**	0.017	52.5	mg/L	234	Standard
	Fe	57	148.3	21.7	**0.0894**	0.054	60.1	mg/L	118	Standard
>	**Sc-1**	45	54046.2	0.5				mg/L	57581	Standard
	Cl	35	23607.1	2.4				ug/L	22827	Standard
	Kr	83	89.3	14.6				ug/L	90	Standard
	Br	81	2466.9	4.2				ug/L	2287	Standard
	P	31	132722.3	2.5				ug/L	215766	Standard
	S	34	33348.3	1.9				ug/L	23460	Standard
	Sr	88	63.3	9.1				ug/L	48	Standard
	C	12	0.0					mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	0	Standard
	Dy	164	13.2	44.9				mg/L	6	Standard
	Ho-1	165	18.3	56.8				mg/L	2	Standard
	Er	166	3.3	173.2				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		105.119	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		93.849	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

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	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.672
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	99.228
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, November 22, 2013 10:42:55
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	252837.4	1.4				ug/L	231878	Standard
	Be	9	143851.4	1.3	**49.7849**	1.129	2.3	ug/L	7	Standard
	Al	27	8855961.8	0.4	**49.5596**	0.909	1.8	ug/L	115	Standard
	Sc	45	56518.6	1.9				ug/L	57581	Standard
	Ti	47	48114.9	0.7	**101.0448**	1.032	1.0	ug/L	17	Standard
	V	51	401345.4	0.3	**48.1619**	0.730	1.5	ug/L	1678	Standard
	Cr	52	384324.2	1.4	**48.8253**	0.415	0.8	ug/L	5719	Standard
	Cr	53	73705.6	2.5	**50.6501**	0.787	1.6	ug/L	132	Standard
	Mn	55	685809.5	1.0	**49.8861**	1.207	2.4	ug/L	927	Standard
	Co	59	431380.5	1.4	**49.2303**	0.857	1.7	ug/L	80	Standard
	Ni	60	145924.4	1.2	**49.7836**	0.131	0.3	ug/L	39	Standard
	Cu	65	144052.9	0.9	**49.7044**	0.391	0.8	ug/L	91	Standard
	Zn	66	79041.3	1.7	**49.5493**	0.273	0.6	ug/L	159	Standard
>	**Ge**	72	507268.2	1.4				ug/L	504090	Standard
	As	75	85646.2	1.0	**50.2980**	0.292	0.6	ug/L	-261	Standard
	Se	82	8467.3	1.3	**50.3568**	0.337	0.7	ug/L	-43	Standard
	Se-1	77	6099.2	1.8	**50.0251**	0.210	0.4	ug/L	86	Standard
>	**Ga**	71	60.0	22.0				mg/L	35	Standard
	Rb	85	1281.7	3.5				ug/L	20	Standard
	Y	89	474400.7	1.9				ug/L	462194	Standard
>	**Rh**	103	26.7	10.8				ug/L	7	Standard
	Mo	98	413430.0	0.6	**98.3346**	0.811	0.8	ug/L	8	Standard
	Ag	107	381422.3	1.1	**50.3721**	0.460	0.9	ug/L	62	Standard
	Cd	111	118843.8	0.6	**50.2947**	0.200	0.4	mg/L	1	Standard
	Cd	114	305302.8	0.5	**50.5433**	0.354	0.7	ug/L	23	Standard
>	**In**	115	522806.6	0.2				ug/L	502083	Standard
	Sn	118	74961.0	0.5	**50.6084**	0.122	0.2	ug/L	144	Standard
	Sb	123	143970.8	0.6	**50.8821**	0.343	0.7	ug/L	19	Standard
	Ba	135	100874.7	0.3	**50.1990**	0.188	0.4	ug/L	9	Standard
	Ce	140	30.0	33.3				ug/L	17	Standard
>	**Tb**	159	516029.2	1.0				ug/L	490863	Standard
	Ho	165	10.0	50.0				ug/L	2	Standard
	Tl	203	337539.9	0.9	**49.8648**	0.148	0.3	ug/L	2	Standard
	Tl	205	364151.1	1.2	**49.7295**	0.422	0.8	ug/L	0	Standard
	Pb	206	138441.3	0.7	**50.5892**	0.080	0.2	ug/L	84	Standard
	Pb	207	124510.5	0.3	**50.1823**	0.240	0.5	ug/L	73	Standard
	Pb	208	324428.8	0.4	**49.6917**	0.284	0.6	ug/L	199	Standard
	U	238	224104.9	0.1	**50.3897**	0.357	0.7	ug/L	1	Standard
>	**Bi**	209	290733.9	0.6				ug/L	281512	Standard

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	Na	23	26.7	21.7	**6.7647**	1.448	21.4	mg/L	2	Standard
	Mg	24	4195.6	1.5	**5.2168**	0.054	1.0	mg/L	38	Standard
	K	39	101.7	12.4	**5.0148**	0.593	11.8	mg/L	0	Standard
	Ca	43	61.7	12.4	**3.5590**	0.848	23.8	mg/L	23	Standard
	Fe	54	11251.2	4.5	**4.7187**	0.309	6.5	mg/L	234	Standard
	Fe	57	2928.6	3.0	**4.4394**	0.162	3.7	mg/L	118	Standard
>	**Sc-1**	45	56518.6	1.9				mg/L	57581	Standard
	Cl	35	28848.1	1.9				ug/L	22827	Standard
	Kr	83	105.7	7.6				ug/L	90	Standard
	Br	81	2336.8	12.8				ug/L	2287	Standard
	P	31	292103.0	2.2				ug/L	215766	Standard
	S	34	46030.0	6.0				ug/L	23460	Standard
	Sr	88	58.3	26.2				ug/L	48	Standard
	C	12	0.0					mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	0	Standard
	Dy	164	6.5	86.7				mg/L	6	Standard
	Ho-1	165	10.0	50.0				mg/L	2	Standard
	Er	166	3.3	173.2				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		109.039	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		100.631	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

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	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	104.128
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	103.276
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, November 22, 2013 10:46:00
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	254005.7	2.6				ug/L	231878	Standard
	Be	9	46.7	89.9	**0.0080**	0.014	179.6	ug/L	7	Standard
	Al	27	3200.9	162.8	**0.0137**	0.029	211.0	ug/L	115	Standard
	Sc	45	56649.1	1.7				ug/L	57581	Standard
	Ti	47	25.3	36.7	**-0.0028**	0.019	662.6	ug/L	17	Standard
	V	51	1459.8	0.3	**-0.0351**	0.003	8.3	ug/L	1678	Standard
	Cr	52	4860.4	2.0	**-0.1358**	0.021	15.2	ug/L	5719	Standard
	Cr	53	116.7	24.7	**0.0029**	0.019	647.7	ug/L	132	Standard
	Mn	55	1004.7	6.1	**-0.0096**	0.003	35.0	ug/L	927	Standard
	Co	59	98.7	34.3	**-0.0048**	0.004	76.3	ug/L	80	Standard
	Ni	60	62.7	76.5	**-0.0021**	0.016	743.0	ug/L	39	Standard
	Cu	65	164.7	22.8	**0.0149**	0.012	81.6	ug/L	91	Standard
	Zn	66	191.3	13.3	**-0.1624**	0.015	9.2	ug/L	159	Standard
>	**Ge**	72	508978.5	1.4				ug/L	504090	Standard
	As	75	-242.8	19.2	**0.0137**	0.029	212.0	ug/L	-261	Standard
	Se	82	-41.1	20.2	**-0.0091**	0.052	568.9	ug/L	-43	Standard
	Se-1	77	83.7	20.1	**-0.0418**	0.145	347.0	ug/L	86	Standard
>	**Ga**	71	35.0	24.7				mg/L	35	Standard
	Rb	85	21.7	48.0				ug/L	20	Standard
	Y	89	482844.7	0.5				ug/L	462194	Standard
>	**Rh**	103	5.0	100.0				ug/L	7	Standard
	Mo	98	79.0	31.0	**0.0145**	0.006	39.7	ug/L	8	Standard
	Ag	107	83.0	34.4	**-0.0045**	0.004	83.2	ug/L	62	Standard
	Cd	111	12.5	140.7	**-0.0039**	0.007	192.4	mg/L	1	Standard
	Cd	114	43.0	100.5	**-0.0006**	0.007	1214.8	ug/L	23	Standard
>	**In**	115	524519.3	0.5				ug/L	502083	Standard
	Sn	118	74.0	8.2	**-0.0396**	0.004	9.8	ug/L	144	Standard
	Sb	123	442.9	22.8	**0.1511**	0.035	23.1	ug/L	19	Standard
	Ba	135	14.7	78.7	**-0.0000**	0.006	12063.8	ug/L	9	Standard
	Ce	140	11.7	65.5				ug/L	17	Standard
>	**Tb**	159	513138.1	0.6				ug/L	490863	Standard
	Ho	165	3.3	86.6				ug/L	2	Standard
	Tl	203	24.7	99.5	**-0.0024**	0.004	150.0	ug/L	2	Standard
	Tl	205	128.3	156.3	**0.0139**	0.027	195.4	ug/L	0	Standard
	Pb	206	107.3	19.4	**0.0023**	0.008	337.2	ug/L	84	Standard
	Pb	207	89.3	13.3	**0.0024**	0.005	205.1	ug/L	73	Standard
	Pb	208	303.0	49.8	**0.0069**	0.023	334.8	ug/L	199	Standard
	U	238	60.0	150.3	**0.0128**	0.020	157.7	ug/L	1	Standard
>	**Bi**	209	293312.9	0.2				ug/L	281512	Standard

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Na	23	0.0		**-0.4293**	0.000	0.0	mg/L	2	Standard
Mg	24	51.7	24.4	**0.0277**	0.015	53.5	mg/L	38	Standard
K	39	0.0		**-0.1586**			mg/L	0	Standard
Ca	43	18.3	15.7	**-0.6817**	0.296	43.4	mg/L	23	Standard
Fe	54	250.9	5.8	**0.0077**	0.004	56.5	mg/L	234	Standard
Fe	57	125.0	30.2	**0.0411**	0.056	137.4	mg/L	118	Standard
Sc-1	45	56649.1	1.7				mg/L	57581	Standard
Cl	35	30004.3	0.4				ug/L	22827	Standard
Kr	83	92.0	3.9				ug/L	90	Standard
Br	81	2396.9	3.1				ug/L	2287	Standard
P	31	272721.3	1.7				ug/L	215766	Standard
S	34	47300.4	1.9				ug/L	23460	Standard
Sr	88	58.3	55.1				ug/L	48	Standard
C	12	3.3	173.2				mg/L	3	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	16.3	72.3				mg/L	6	Standard
Ho-1	165	3.3	86.6				mg/L	2	Standard
Er	166	6.7	86.6				mg/L	7	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.543	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.970	
As	75			
Se	82			
Se-1	77			
> Ga	71			
Rb	85			

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	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	104.469
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	104.192
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1311095401
Sample Date/Time: Friday, November 22, 2013 10:49:07
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	332405.5	3.0				ug/L	231878	Standard
	Be	9	71.7	107.3	**0.0109**	0.020	185.8	ug/L	7	Standard
	Al	27	235996469.8	0.5	**1005.0351**	29.606	2.9	ug/L	115	Standard
	Sc	45	49741.5	2.2				ug/L	57581	Standard
	Ti	47	210.0	7.0	**0.4430**	0.036	8.1	ug/L	17	Standard
	V	51	3187.6	5.6	**0.2237**	0.025	11.2	ug/L	1678	Standard
	Cr	52	11188.8	1.1	**0.8706**	0.021	2.5	ug/L	5719	Standard
	Cr	53	2588.6	5.9	**1.9366**	0.117	6.0	ug/L	132	Standard
	Mn	55	402125.9	1.6	**33.0261**	0.587	1.8	ug/L	927	Standard
	Co	59	3403.7	0.7	**0.4231**	0.003	0.8	ug/L	80	Standard
	Ni	60	20934.1	2.6	**8.0522**	0.195	2.4	ug/L	39	Standard
	Cu	65	8040.1	5.2	**3.0961**	0.158	5.1	ug/L	91	Standard
	Zn	66	26423.0	1.6	**18.5460**	0.289	1.6	ug/L	159	Standard
>	**Ge**	72	448811.9	0.2				ug/L	504090	Standard
	As	75	1522.3	4.6	**1.1629**	0.046	4.0	ug/L	-261	Standard
	Se	82	1030.4	3.0	**7.1272**	0.195	2.7	ug/L	-43	Standard
	Se-1	77	685.7	7.9	**5.7127**	0.492	8.6	ug/L	86	Standard
>	**Ga**	71	46.7	6.2				mg/L	35	Standard
	Rb	85	14670.4	1.1				ug/L	20	Standard
	Y	89	423453.8	1.9				ug/L	462194	Standard
>	**Rh**	103	1390.1	11.4				ug/L	7	Standard
	Mo	98	1565.8	2.4	**0.4303**	0.007	1.7	ug/L	8	Standard
	Ag	107	84.7	37.1	**-0.0023**	0.005	204.8	ug/L	62	Standard
	Cd	111	51.6	45.8	**0.0163**	0.012	70.8	mg/L	1	Standard
	Cd	114	150.3	41.9	**0.0213**	0.012	56.3	ug/L	23	Standard
>	**In**	115	448097.4	1.3				ug/L	502083	Standard
	Sn	118	113.3	13.2	**-0.0000**	0.012	70695.3	ug/L	144	Standard
	Sb	123	173.5	11.0	**0.0667**	0.009	12.9	ug/L	19	Standard
	Ba	135	6318.7	1.3	**3.6619**	0.014	0.4	ug/L	9	Standard
	Ce	140	360.0	4.2				ug/L	17	Standard
>	**Tb**	159	485168.8	1.8				ug/L	490863	Standard
	Ho	165	55.0	39.6				ug/L	2	Standard
	Tl	203	178.0	31.0	**0.0269**	0.010	37.2	ug/L	2	Standard
	Tl	205	163.3	22.1	**0.0245**	0.006	24.5	ug/L	0	Standard
	Pb	206	128.7	28.3	**0.0223**	0.016	73.8	ug/L	84	Standard
	Pb	207	110.0	15.5	**0.0223**	0.008	38.0	ug/L	73	Standard
	Pb	208	328.0	36.7	**0.0238**	0.023	95.1	ug/L	199	Standard
	U	238	118948.5	1.6	**33.5356**	0.119	0.4	ug/L	1	Standard
>	**Bi**	209	231865.4	1.8				ug/L	281512	Standard

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	Na	23	505.0	12.9	**154.7151**	19.628	12.7	mg/L	2	Standard
	Mg	24	367624.8	0.3	**523.1368**	12.425	2.4	mg/L	38	Standard
	K	39	53.3	23.6	**2.9362**	0.773	26.3	mg/L	0	Standard
	Ca	43	946.7	1.2	**102.5654**	3.276	3.2	mg/L	23	Standard
	Fe	54	195.0	25.8	**-0.0043**	0.026	599.2	mg/L	234	Standard
	Fe	57	881.7	11.2	**1.4183**	0.190	13.4	mg/L	118	Standard
>	**Sc-1**	45	49741.5	2.2				mg/L	57581	Standard
	Cl	35	182152.3	2.8				ug/L	22827	Standard
	Kr	83	188.7	6.2				ug/L	90	Standard
	Br	81	120238.6	1.4				ug/L	2287	Standard
	P	31	276010.1	1.7				ug/L	215766	Standard
	S	34	47063.0	3.7				ug/L	23460	Standard
	Sr	88	8489.1	6.5				ug/L	48	Standard
	C	12	13.3	114.6				mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	0	Standard
	Dy	164	12.5	48.3				mg/L	6	Standard
	Ho-1	165	55.0	39.6				mg/L	2	Standard
	Er	166	16.7	34.6				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		143.353	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		89.034	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

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⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	89.248
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	82.364
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1311095402
Sample Date/Time: Friday, November 22, 2013 10:52:12
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	399524.1	0.7				ug/L	231878	Standard
	Be	9	28.3	27.0	**-0.0018**	0.002	89.9	ug/L	7	Standard
	Al	27	276371371.3	1.2	**978.7778**	19.103	2.0	ug/L	115	Standard
	Sc	45	44839.6	0.6				ug/L	57581	Standard
	Ti	47	215.0	4.2	**0.4795**	0.023	4.8	ug/L	17	Standard
	V	51	3374.0	2.7	**0.2714**	0.014	5.3	ug/L	1678	Standard
	Cr	52	10938.6	2.5	**0.9112**	0.038	4.2	ug/L	5719	Standard
	Cr	53	4999.2	5.6	**4.0005**	0.236	5.9	ug/L	132	Standard
	Mn	55	249868.9	0.8	**21.4847**	0.115	0.5	ug/L	927	Standard
	Co	59	1986.5	2.1	**0.2527**	0.005	2.1	ug/L	80	Standard
	Ni	60	17111.7	1.0	**6.8971**	0.058	0.8	ug/L	39	Standard
	Cu	65	11328.9	6.2	**4.5942**	0.298	6.5	ug/L	91	Standard
	Zn	66	12899.2	5.2	**9.3546**	0.525	5.6	ug/L	159	Standard
>	**Ge**	72	428102.7	0.2				ug/L	504090	Standard
	As	75	3151.3	8.0	**2.3419**	0.180	7.7	ug/L	-261	Standard
	Se	82	1481.7	7.0	**10.6272**	0.752	7.1	ug/L	-43	Standard
	Se-1	77	771.4	10.4	**6.8716**	0.809	11.8	ug/L	86	Standard
>	**Ga**	71	115.0	38.6				mg/L	35	Standard
	Rb	85	46623.3	0.7				ug/L	20	Standard
	Y	89	388620.8	0.3				ug/L	462194	Standard
>	**Rh**	103	1708.4	9.1				ug/L	7	Standard
	Mo	98	1784.3	2.7	**0.5221**	0.017	3.2	ug/L	8	Standard
	Ag	107	55.7	3.7	**-0.0063**	0.000	6.4	ug/L	62	Standard
	Cd	111	315.7	8.7	**0.1566**	0.014	9.1	mg/L	1	Standard
	Cd	114	745.9	14.9	**0.1454**	0.022	15.0	ug/L	23	Standard
>	**In**	115	421568.9	0.7				ug/L	502083	Standard
	Sn	118	91.0	6.6	**-0.0132**	0.005	38.7	ug/L	144	Standard
	Sb	123	240.8	3.4	**0.1007**	0.003	3.0	ug/L	19	Standard
	Ba	135	7321.4	0.4	**4.5119**	0.044	1.0	ug/L	9	Standard
	Ce	140	1480.1	3.8				ug/L	17	Standard
>	**Tb**	159	463422.3	0.8				ug/L	490863	Standard
	Ho	165	176.7	23.6				ug/L	2	Standard
	Tl	203	92.0	6.1	**0.0126**	0.001	9.5	ug/L	2	Standard
	Tl	205	115.0	13.0	**0.0181**	0.003	15.7	ug/L	0	Standard
	Pb	206	113.7	8.8	**0.0204**	0.005	23.3	ug/L	84	Standard
	Pb	207	104.3	6.4	**0.0244**	0.004	15.4	ug/L	73	Standard
	Pb	208	257.0	3.0	**0.0149**	0.002	10.6	ug/L	199	Standard
	U	238	31385.8	1.9	**9.6912**	0.158	1.6	ug/L	1	Standard
>	**Bi**	209	211687.2	0.5				ug/L	281512	Standard

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	Na	23	365.0	11.7	**124.0368**	15.258	12.3	mg/L	2	Standard
	Mg	24	814640.8	1.3	**1285.5584**	9.531	0.7	mg/L	38	Standard
	K	39	33.3	45.8	**1.9781**	0.972	49.1	mg/L	0	Standard
	Ca	43	508.3	6.5	**60.0547**	3.734	6.2	mg/L	23	Standard
	Fe	54	167.1	21.2	**-0.0092**	0.020	214.4	mg/L	234	Standard
	Fe	57	813.4	7.1	**1.4541**	0.125	8.6	mg/L	118	Standard
>	**Sc-1**	45	44839.6	0.6				mg/L	57581	Standard
	Cl	35	264985.9	1.0				ug/L	22827	Standard
	Kr	83	290.7	10.3				ug/L	90	Standard
	Br	81	217646.2	2.7				ug/L	2287	Standard
	P	31	239831.6	0.8				ug/L	215766	Standard
	S	34	45225.7	1.5				ug/L	23460	Standard
	Sr	88	11731.2	0.2				ug/L	48	Standard
	C	12	13.3	114.6				mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	0	Standard
	Dy	164	114.9	30.5				mg/L	6	Standard
	Ho-1	165	176.7	23.6				mg/L	2	Standard
	Er	166	106.7	47.2				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		172.299	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		84.926	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

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⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	83.964
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	75.196
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1311095403
Sample Date/Time: Friday, November 22, 2013 10:55:16
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	403676.9	0.4				ug/L	231878	Standard
	Be	9	51.7	56.7	**0.0032**	0.006	201.0	ug/L	7	Standard
	Al	27	292507228.4	1.4	**1025.1471**	11.683	1.1	ug/L	115	Standard
	Sc	45	46645.0	1.7				ug/L	57581	Standard
	Ti	47	240.7	5.2	**0.5441**	0.030	5.6	ug/L	17	Standard
	V	51	3082.7	2.7	**0.2303**	0.011	4.9	ug/L	1678	Standard
	Cr	52	10563.7	0.4	**0.8559**	0.004	0.5	ug/L	5719	Standard
	Cr	53	5961.2	2.9	**4.7906**	0.145	3.0	ug/L	132	Standard
	Mn	55	298278.2	0.9	**25.6940**	0.236	0.9	ug/L	927	Standard
	Co	59	2280.8	2.8	**0.2929**	0.009	3.1	ug/L	80	Standard
	Ni	60	18875.1	0.5	**7.6194**	0.024	0.3	ug/L	39	Standard
	Cu	65	12895.5	3.4	**5.2409**	0.175	3.3	ug/L	91	Standard
	Zn	66	22610.2	0.2	**16.6287**	0.062	0.4	ug/L	159	Standard
>	**Ge**	72	427592.6	0.2				ug/L	504090	Standard
	As	75	3994.8	5.6	**2.9300**	0.153	5.2	ug/L	-261	Standard
	Se	82	1806.6	5.3	**12.9206**	0.676	5.2	ug/L	-43	Standard
	Se-1	77	880.0	4.6	**7.9521**	0.388	4.9	ug/L	86	Standard
>	**Ga**	71	133.3	26.6				mg/L	35	Standard
	Rb	85	48850.3	0.6				ug/L	20	Standard
	Y	89	394815.0	1.2				ug/L	462194	Standard
>	**Rh**	103	1856.8	5.3				ug/L	7	Standard
	Mo	98	1896.7	2.9	**0.5512**	0.022	3.9	ug/L	8	Standard
	Ag	107	82.0	44.4	**-0.0020**	0.006	303.7	ug/L	62	Standard
	Cd	111	451.6	9.2	**0.2263**	0.024	10.8	mg/L	1	Standard
	Cd	114	1128.1	4.8	**0.2223**	0.013	6.1	ug/L	23	Standard
>	**In**	115	424746.3	1.1				ug/L	502083	Standard
	Sn	118	195.3	13.5	**0.0733**	0.023	31.8	ug/L	144	Standard
	Sb	123	222.6	7.8	**0.0920**	0.008	9.0	ug/L	19	Standard
	Ba	135	7873.4	1.0	**4.8162**	0.040	0.8	ug/L	9	Standard
	Ce	140	1195.0	1.9				ug/L	17	Standard
>	**Tb**	159	466989.5	0.9				ug/L	490863	Standard
	Ho	165	286.7	17.1				ug/L	2	Standard
	Tl	203	140.3	32.6	**0.0224**	0.009	42.3	ug/L	2	Standard
	Tl	205	120.0	36.3	**0.0190**	0.008	43.8	ug/L	0	Standard
	Pb	206	172.0	15.7	**0.0495**	0.014	28.5	ug/L	84	Standard
	Pb	207	140.0	26.1	**0.0440**	0.021	47.1	ug/L	73	Standard
	Pb	208	335.0	17.8	**0.0311**	0.013	41.9	ug/L	199	Standard
	U	238	34758.5	1.5	**10.6939**	0.204	1.9	ug/L	1	Standard
>	**Bi**	209	212476.2	0.9				ug/L	281512	Standard

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	Na	23	375.0	13.3	**122.4919**	16.951	13.8	mg/L	2	Standard
	Mg	24	844713.0	1.0	**1281.5793**	13.946	1.1	mg/L	38	Standard
	K	39	38.3	19.9	**2.2053**	0.464	21.1	mg/L	0	Standard
	Ca	43	525.0	7.2	**59.6787**	5.431	9.1	mg/L	23	Standard
	Fe	54	197.1	7.7	**0.0029**	0.009	309.7	mg/L	234	Standard
	Fe	57	923.4	7.7	**1.5994**	0.109	6.8	mg/L	118	Standard
>	**Sc-1**	45	46645.0	1.7				mg/L	57581	Standard
	Cl	35	276776.1	1.4				ug/L	22827	Standard
	Kr	83	299.3	6.7				ug/L	90	Standard
	Br	81	274226.3	1.4				ug/L	2287	Standard
	P	31	245395.0	1.7				ug/L	215766	Standard
	S	34	46287.3	1.4				ug/L	23460	Standard
	Sr	88	12056.5	2.6				ug/L	48	Standard
	C	12	6.7	86.6				mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	0	Standard
	Dy	164	114.6	15.3				mg/L	6	Standard
	Ho-1	165	286.7	17.1				mg/L	2	Standard
	Er	166	113.3	22.2				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		174.090	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		84.825	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

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⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	84.597
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	75.477
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1311096903
Sample Date/Time: Friday, November 22, 2013 10:58:21
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	293768.1	3.7				ug/L	231878	Standard
	Be	9	33.3	37.7	**0.0020**	0.004	204.3	ug/L	7	Standard
	Al	27	29083759.6	3.1	**140.0875**	1.063	0.8	ug/L	115	Standard
	Sc	45	53171.5	2.4				ug/L	57581	Standard
	Ti	47	163.3	10.1	**0.3110**	0.032	10.3	ug/L	17	Standard
	V	51	-1606.0	37.0	**-0.4164**	0.073	17.6	ug/L	1678	Standard
	Cr	52	10197.4	4.4	**0.6461**	0.048	7.5	ug/L	5719	Standard
	Cr	53	26488.1	2.8	**19.4221**	0.204	1.1	ug/L	132	Standard
	Mn	55	1435159.4	1.5	**111.7527**	1.433	1.3	ug/L	927	Standard
	Co	59	1417.4	2.8	**0.1571**	0.003	2.1	ug/L	80	Standard
	Ni	60	8374.3	1.9	**3.0351**	0.098	3.2	ug/L	39	Standard
	Cu	65	3921.5	17.0	**1.4061**	0.241	17.1	ug/L	91	Standard
	Zn	66	5926.8	11.0	**3.7141**	0.432	11.6	ug/L	159	Standard
>	**Ge**	72	474290.5	2.6				ug/L	504090	Standard
	As	75	11929.2	2.9	**7.6264**	0.204	2.7	ug/L	-261	Standard
	Se	82	3934.3	1.6	**25.1547**	0.816	3.2	ug/L	-43	Standard
	Se-1	77	2984.3	1.5	**25.8382**	0.675	2.6	ug/L	86	Standard
>	**Ga**	71	85.0	15.6				mg/L	35	Standard
	Rb	85	52152.9	1.5				ug/L	20	Standard
	Y	89	453061.4	2.4				ug/L	462194	Standard
>	**Rh**	103	1251.7	4.4				ug/L	7	Standard
	Mo	98	2749.5	2.0	**0.7003**	0.010	1.4	ug/L	8	Standard
	Ag	107	78.7	11.8	**-0.0042**	0.001	28.0	ug/L	62	Standard
	Cd	111	19.5	33.4	**-0.0003**	0.003	955.4	mg/L	1	Standard
	Cd	114	71.8	24.8	**0.0051**	0.003	58.1	ug/L	23	Standard
>	**In**	115	485323.4	1.7				ug/L	502083	Standard
	Sn	118	244.3	4.0	**0.0886**	0.010	11.0	ug/L	144	Standard
	Sb	123	105.5	19.8	**0.0352**	0.007	20.7	ug/L	19	Standard
	Ba	135	4043327.6	1.4	**2167.9049**	8.797	0.4	ug/L	9	Standard
	Ce	140	740.0	18.0				ug/L	17	Standard
>	**Tb**	159	505748.8	2.4				ug/L	490863	Standard
	Ho	165	21.7	48.0				ug/L	2	Standard
	Tl	203	58.7	12.8	**0.0039**	0.001	31.7	ug/L	2	Standard
	Tl	205	71.7	35.8	**0.0078**	0.004	51.9	ug/L	0	Standard
	Pb	206	118.0	7.2	**0.0129**	0.003	23.9	ug/L	84	Standard
	Pb	207	102.3	9.6	**0.0141**	0.004	29.8	ug/L	73	Standard
	Pb	208	261.0	6.7	**0.0068**	0.003	41.0	ug/L	199	Standard
	U	238	233.0	8.7	**0.0596**	0.005	9.1	ug/L	1	Standard
>	**Bi**	209	252820.3	1.1				ug/L	281512	Standard

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	Na	23	265.0	5.0	**75.8317**	5.654	7.5	mg/L	2	Standard
	Mg	24	281078.6	1.6	**374.2403**	13.518	3.6	mg/L	38	Standard
	K	39	18.3	15.7	**0.8347**	0.163	19.5	mg/L	0	Standard
	Ca	43	460.0	23.9	**45.3269**	11.649	25.7	mg/L	23	Standard
	Fe	54	1109.1	4.7	**0.4049**	0.014	3.4	mg/L	234	Standard
	Fe	57	710.0	8.0	**1.0290**	0.078	7.6	mg/L	118	Standard
>	**Sc-1**	45	53171.5	2.4				mg/L	57581	Standard
	Cl	35	34031.5	2.2				ug/L	22827	Standard
	Kr	83	265.0	8.2				ug/L	90	Standard
	Br	81	770339.0	1.1				ug/L	2287	Standard
	P	31	329789.8	2.1				ug/L	215766	Standard
	S	34	38325.1	1.2				ug/L	23460	Standard
	Sr	88	6874.9	2.8				ug/L	48	Standard
	C	12	0.0					mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	0	Standard
	Dy	164	29.2	32.6				mg/L	6	Standard
	Ho-1	165	21.7	48.0				mg/L	2	Standard
	Er	166	16.7	69.3				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		126.691	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		94.088	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

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⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	96.662
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	89.808
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
V 51 Lower	V	51	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1311096904
Sample Date/Time: Friday, November 22, 2013 11:01:26
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	268204.0	2.5				ug/L	231878	Standard
	Be	9	90.0	11.1	**0.0213**	0.003	15.2	ug/L	7	Standard
	Al	27	36755736.6	0.7	**193.9526**	4.143	2.1	ug/L	115	Standard
	Sc	45	54772.2	0.9				ug/L	57581	Standard
	Ti	47	244.3	11.9	**0.4810**	0.067	14.0	ug/L	17	Standard
	V	51	4321.7	1.4	**0.3338**	0.003	1.0	ug/L	1678	Standard
	Cr	52	13337.5	3.8	**1.0373**	0.073	7.1	ug/L	5719	Standard
	Cr	53	1798.4	10.8	**1.2162**	0.134	11.0	ug/L	132	Standard
	Mn	55	5820834.9	0.6	**443.0487**	7.720	1.7	ug/L	927	Standard
	Co	59	25390.3	2.1	**3.0126**	0.059	2.0	ug/L	80	Standard
	Ni	60	11573.1	1.7	**4.1048**	0.091	2.2	ug/L	39	Standard
	Cu	65	2835.6	2.6	**0.9814**	0.020	2.0	ug/L	91	Standard
	Zn	66	8073.2	7.6	**5.0359**	0.393	7.8	ug/L	159	Standard
>	**Ge**	72	485448.5	1.1				ug/L	504090	Standard
	As	75	6583.0	1.7	**4.1829**	0.069	1.6	ug/L	-261	Standard
	Se	82	207.8	17.2	**1.5182**	0.216	14.2	ug/L	-43	Standard
	Se-1	77	198.3	10.3	**0.9891**	0.190	19.2	ug/L	86	Standard
>	**Ga**	71	116.7	13.8				mg/L	35	Standard
	Rb	85	4662.4	1.0				ug/L	20	Standard
	Y	89	459513.9	1.9				ug/L	462194	Standard
>	**Rh**	103	215.0	22.2				ug/L	7	Standard
	Mo	98	1589.1	3.5	**0.3906**	0.012	3.1	ug/L	8	Standard
	Ag	107	145.3	12.5	**0.0047**	0.002	51.9	ug/L	62	Standard
	Cd	111	13.1	22.0	**-0.0033**	0.001	37.8	mg/L	1	Standard
	Cd	114	46.3	48.4	**0.0003**	0.004	1200.7	ug/L	23	Standard
>	**In**	115	500424.9	0.5				ug/L	502083	Standard
	Sn	118	77.0	13.7	**-0.0351**	0.008	21.7	ug/L	144	Standard
	Sb	123	70.7	10.2	**0.0213**	0.003	13.1	ug/L	19	Standard
	Ba	135	43352.9	0.3	**22.5351**	0.102	0.5	ug/L	9	Standard
	Ce	140	10932.3	2.0				ug/L	17	Standard
>	**Tb**	159	502161.2	0.9				ug/L	490863	Standard
	Ho	165	131.7	11.6				ug/L	2	Standard
	Tl	203	125.3	3.6	**0.0141**	0.001	4.8	ug/L	2	Standard
	Tl	205	210.0	17.2	**0.0278**	0.006	19.9	ug/L	0	Standard
	Pb	206	234.3	6.6	**0.0566**	0.006	10.0	ug/L	84	Standard
	Pb	207	186.7	11.0	**0.0486**	0.009	17.6	ug/L	73	Standard
	Pb	208	484.3	6.5	**0.0417**	0.005	12.8	ug/L	199	Standard
	U	238	22910.3	0.3	**5.6094**	0.044	0.8	ug/L	1	Standard
>	**Bi**	209	266965.4	0.6				ug/L	281512	Standard

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	Na	23	116.7	21.1	**32.1623**	7.167	22.3	mg/L	2	Standard
	Mg	24	100972.0	1.1	**130.4175**	1.142	0.9	mg/L	38	Standard
	K	39	11.7	65.5	**0.4549**	0.401	88.1	mg/L	0	Standard
	Ca	43	245.0	5.4	**22.2002**	1.130	5.1	mg/L	23	Standard
	Fe	54	5572.9	4.2	**2.3620**	0.125	5.3	mg/L	234	Standard
	Fe	57	1673.4	5.9	**2.5548**	0.184	7.2	mg/L	118	Standard
>	**Sc-1**	45	54772.2	0.9				mg/L	57581	Standard
	Cl	35	36256.0	1.0				ug/L	22827	Standard
	Kr	83	138.0	6.6				ug/L	90	Standard
	Br	81	29906.2	6.2				ug/L	2287	Standard
	P	31	348250.6	1.4				ug/L	215766	Standard
	S	34	43181.4	0.2				ug/L	23460	Standard
	Sr	88	1215.0	7.5				ug/L	48	Standard
	C	12	13.3	114.6				mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	0	Standard
	Dy	164	209.9	32.8				mg/L	6	Standard
	Ho-1	165	131.7	11.6				mg/L	2	Standard
	Er	166	210.0	8.2				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		115.666	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		96.302	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

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⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	99.670
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	94.833
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1311096906 WG453567-02
Sample Date/Time: Friday, November 22, 2013 11:04:31
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	260146.2	1.3				ug/L	231878	Standard
	Be	9	41.7	38.6	**0.0059**	0.005	87.7	ug/L	7	Standard
	Al	27	55406929.2	1.6	**301.3163**	1.459	0.5	ug/L	115	Standard
	Sc	45	53522.7	0.2				ug/L	57581	Standard
	Ti	47	212.0	2.1	**0.4082**	0.013	3.1	ug/L	17	Standard
	V	51	3088.2	6.0	**0.1772**	0.024	13.5	ug/L	1678	Standard
	Cr	52	10505.6	4.2	**0.6509**	0.070	10.8	ug/L	5719	Standard
	Cr	53	2978.6	8.0	**2.0588**	0.183	8.9	ug/L	132	Standard
	Mn	55	63014240.8	1.7	**4780.3648**	82.710	1.7	ug/L	927	Standard
	Co	59	10377.2	2.3	**1.2176**	0.029	2.4	ug/L	80	Standard
	Ni	60	10256.5	2.5	**3.6229**	0.115	3.2	ug/L	39	Standard
	Cu	65	2759.9	5.8	**0.9510**	0.061	6.4	ug/L	91	Standard
	Zn	66	9945.6	3.0	**6.2480**	0.211	3.4	ug/L	159	Standard
>	**Ge**	72	487093.4	0.8				ug/L	504090	Standard
	As	75	569.8	13.2	**0.5031**	0.046	9.2	ug/L	-261	Standard
	Se	82	178.7	5.4	**1.3347**	0.054	4.1	ug/L	-43	Standard
	Se-1	77	359.3	3.3	**2.3785**	0.126	5.3	ug/L	86	Standard
>	**Ga**	71	605.0	7.9				mg/L	35	Standard
	Rb	85	6806.5	2.7				ug/L	20	Standard
	Y	89	459698.1	0.8				ug/L	462194	Standard
>	**Rh**	103	198.3	16.8				ug/L	7	Standard
	Mo	98	1202.1	6.0	**0.2936**	0.016	5.4	ug/L	8	Standard
	Ag	107	63.0	5.5	**-0.0067**	0.000	7.0	ug/L	62	Standard
	Cd	111	91.4	10.8	**0.0312**	0.004	13.9	mg/L	1	Standard
	Cd	114	244.4	11.7	**0.0345**	0.005	13.9	ug/L	23	Standard
>	**In**	115	501684.9	0.9				ug/L	502083	Standard
	Sn	118	145.3	5.0	**0.0130**	0.005	41.8	ug/L	144	Standard
	Sb	123	101.3	0.5	**0.0324**	0.000	1.1	ug/L	19	Standard
	Ba	135	29697.7	0.4	**15.3963**	0.083	0.5	ug/L	9	Standard
	Ce	140	478.3	15.7				ug/L	17	Standard
>	**Tb**	159	504520.7	0.4				ug/L	490863	Standard
	Ho	165	53.3	19.5				ug/L	2	Standard
	Tl	203	104.3	4.4	**0.0104**	0.001	7.5	ug/L	2	Standard
	Tl	205	141.7	2.0	**0.0172**	0.000	2.0	ug/L	0	Standard
	Pb	206	252.7	4.4	**0.0620**	0.004	6.7	ug/L	84	Standard
	Pb	207	202.3	4.0	**0.0538**	0.003	6.4	ug/L	73	Standard
	Pb	208	545.0	3.2	**0.0500**	0.003	5.2	ug/L	199	Standard
	U	238	11945.0	1.8	**2.8674**	0.057	2.0	ug/L	1	Standard
>	**Bi**	209	272275.1	0.8				ug/L	281512	Standard

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	Na	23	275.0	1.8	**78.0987**	1.418	1.8	mg/L	2	Standard
	Mg	24	35798.9	1.0	**47.2946**	0.545	1.2	mg/L	38	Standard
	K	39	13.3	57.3	**0.5580**	0.410	73.5	mg/L	0	Standard
	Ca	43	575.0	15.2	**56.7947**	9.015	15.9	mg/L	23	Standard
	Fe	54	308.5	10.3	**0.0401**	0.014	35.3	mg/L	234	Standard
	Fe	57	505.0	7.1	**0.6823**	0.061	9.0	mg/L	118	Standard
>	**Sc-1**	45	53522.7	0.2				mg/L	57581	Standard
	Cl	35	44754.0	0.9				ug/L	22827	Standard
	Kr	83	129.7	6.6				ug/L	90	Standard
	Br	81	34145.1	0.4				ug/L	2287	Standard
	P	31	350675.4	2.8				ug/L	215766	Standard
	S	34	44849.6	1.4				ug/L	23460	Standard
	Sr	88	1025.0	5.6				ug/L	48	Standard
	C	12	10.0	100.0				mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	0	Standard
	Dy	164	31.7	16.5				mg/L	6	Standard
	Ho-1	165	53.3	19.5				mg/L	2	Standard
	Er	166	33.3	86.6				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		112.191	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		96.628	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

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⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	99.921
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	96.719
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1311096908S WG453567-07
Sample Date/Time: Friday, November 22, 2013 11:07:36
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	262326.4	3.3				ug/L	231878	Standard
	Be	9	74268.3	0.9	**24.7853**	0.941	3.8	ug/L	7	Standard
	Al	27	55042684.6	0.8	**297.0339**	8.188	2.8	ug/L	115	Standard
	Sc	45	54165.0	2.1				ug/L	57581	Standard
	Ti	47	210.7	3.6	**0.3991**	0.016	4.0	ug/L	17	Standard
	V	51	192025.3	0.6	**23.5696**	0.156	0.7	ug/L	1678	Standard
	Cr	52	188195.9	0.1	**24.1907**	0.115	0.5	ug/L	5719	Standard
	Cr	53	37277.5	3.6	**26.2919**	1.053	4.0	ug/L	132	Standard
	Mn	55	62671947.2	0.9	**4691.2587**	32.553	0.7	ug/L	927	Standard
	Co	59	209320.4	0.7	**24.5374**	0.189	0.8	ug/L	80	Standard
	Ni	60	77979.8	0.3	**27.3277**	0.178	0.7	ug/L	39	Standard
	Cu	65	68524.6	1.3	**24.2735**	0.220	0.9	ug/L	91	Standard
	Zn	66	47590.6	1.2	**30.5512**	0.460	1.5	ug/L	159	Standard
>	**Ge**	72	493636.9	0.4				ug/L	504090	Standard
	As	75	43850.5	0.1	**26.5364**	0.079	0.3	ug/L	-261	Standard
	Se	82	4456.4	0.5	**27.3421**	0.208	0.8	ug/L	-43	Standard
	Se-1	77	3335.0	1.2	**27.7865**	0.241	0.9	ug/L	86	Standard
>	**Ga**	71	590.0	6.6				mg/L	35	Standard
	Rb	85	6706.5	1.4				ug/L	20	Standard
	Y	89	457375.2	1.6				ug/L	462194	Standard
>	**Rh**	103	203.3	15.6				ug/L	7	Standard
	Mo	98	1269.2	2.0	**0.3093**	0.007	2.2	ug/L	8	Standard
	Ag	107	175307.4	0.7	**24.0390**	0.078	0.3	ug/L	62	Standard
	Cd	111	56102.9	0.7	**24.6569**	0.253	1.0	mg/L	1	Standard
	Cd	114	140024.1	1.0	**24.0737**	0.280	1.2	ug/L	23	Standard
>	**In**	115	503342.1	0.4				ug/L	502083	Standard
	Sn	118	124.3	5.2	**-0.0021**	0.004	201.5	ug/L	144	Standard
	Sb	123	71839.3	0.6	**26.3694**	0.253	1.0	ug/L	19	Standard
	Ba	135	77132.5	0.9	**39.8681**	0.520	1.3	ug/L	9	Standard
	Ce	140	448.3	1.7				ug/L	17	Standard
>	**Tb**	159	508004.3	0.5				ug/L	490863	Standard
	Ho	165	46.7	16.4				ug/L	2	Standard
	Tl	203	161792.6	0.8	**25.3489**	0.291	1.1	ug/L	2	Standard
	Tl	205	179959.3	1.7	**26.0651**	0.488	1.9	ug/L	0	Standard
	Pb	206	69009.1	0.3	**26.7292**	0.019	0.1	ug/L	84	Standard
	Pb	207	59812.2	0.8	**25.5521**	0.288	1.1	ug/L	73	Standard
	Pb	208	154545.7	0.4	**25.0872**	0.194	0.8	ug/L	199	Standard
	U	238	122386.3	0.9	**29.1866**	0.332	1.1	ug/L	1	Standard
>	**Bi**	209	274112.0	0.3				ug/L	281512	Standard

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	Na	23	278.3	5.8	**78.1438**	5.165	6.6	mg/L	2	Standard
	Mg	24	35867.4	1.2	**46.8420**	1.455	3.1	mg/L	38	Standard
	K	39	11.7	107.9	**0.4573**	0.668	146.2	mg/L	0	Standard
	Ca	43	506.7	5.4	**49.1862**	3.878	7.9	mg/L	23	Standard
	Fe	54	251.7	12.3	**0.0133**	0.016	121.8	mg/L	234	Standard
	Fe	57	455.0	8.6	**0.5914**	0.076	12.9	mg/L	118	Standard
>	**Sc-1**	45	54165.0	2.1				mg/L	57581	Standard
	Cl	35	44516.0	0.5				ug/L	22827	Standard
	Kr	83	121.7	5.3				ug/L	90	Standard
	Br	81	33781.0	2.2				ug/L	2287	Standard
	P	31	333555.8	2.0				ug/L	215766	Standard
	S	34	45003.4	1.8				ug/L	23460	Standard
	Sr	88	1070.0	10.1				ug/L	48	Standard
	C	12	26.7	57.3				mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	6.7	86.6				mg/L	0	Standard
	Dy	164	35.2	88.1				mg/L	6	Standard
	Ho-1	165	46.7	16.4				mg/L	2	Standard
	Er	166	30.0	33.3				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		113.131	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.926	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

Sample ID: L1311096908S WG453567-07
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⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	100.251
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	97.371
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1311096910SD WG453567-08
Sample Date/Time: Friday, November 22, 2013 11:10:40
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	268909.3	2.1				ug/L	231878	Standard
	Be	9	74494.5	3.1	**24.2289**	0.238	1.0	ug/L	7	Standard
	Al	27	54712927.1	0.8	**287.9067**	3.778	1.3	ug/L	115	Standard
	Sc	45	54160.0	1.2				ug/L	57581	Standard
	Ti	47	238.0	32.6	**0.4576**	0.163	35.7	ug/L	17	Standard
	V	51	195824.3	1.6	**24.0549**	0.424	1.8	ug/L	1678	Standard
	Cr	52	190303.0	0.7	**24.4864**	0.375	1.5	ug/L	5719	Standard
	Cr	53	37417.8	3.5	**26.4073**	1.031	3.9	ug/L	132	Standard
	Mn	55	62533520.9	0.7	**4683.6907**	22.599	0.5	ug/L	927	Standard
	Co	59	211755.5	0.5	**24.8390**	0.323	1.3	ug/L	80	Standard
	Ni	60	78164.8	0.8	**27.4082**	0.104	0.4	ug/L	39	Standard
	Cu	65	68461.7	0.9	**24.2671**	0.311	1.3	ug/L	91	Standard
	Zn	66	46474.8	0.7	**29.8466**	0.386	1.3	ug/L	159	Standard
>	**Ge**	72	493349.6	0.8				ug/L	504090	Standard
	As	75	43991.6	0.2	**26.6376**	0.233	0.9	ug/L	-261	Standard
	Se	82	4499.2	1.0	**27.6179**	0.126	0.5	ug/L	-43	Standard
	Se-1	77	3419.7	0.4	**28.5295**	0.227	0.8	ug/L	86	Standard
>	**Ga**	71	586.7	16.3				mg/L	35	Standard
	Rb	85	6624.8	0.8				ug/L	20	Standard
	Y	89	462644.8	1.5				ug/L	462194	Standard
>	**Rh**	103	225.0	10.2				ug/L	7	Standard
	Mo	98	1122.1	3.1	**0.2717**	0.008	2.9	ug/L	8	Standard
	Ag	107	176739.9	0.9	**24.1284**	0.247	1.0	ug/L	62	Standard
	Cd	111	56950.9	0.3	**24.9183**	0.149	0.6	mg/L	1	Standard
	Cd	114	141337.0	1.5	**24.1909**	0.331	1.4	ug/L	23	Standard
>	**In**	115	505587.4	0.3				ug/L	502083	Standard
	Sn	118	221.7	5.7	**0.0655**	0.009	13.5	ug/L	144	Standard
	Sb	123	72374.5	0.2	**26.4474**	0.096	0.4	ug/L	19	Standard
	Ba	135	78375.2	1.1	**40.3302**	0.557	1.4	ug/L	9	Standard
	Ce	140	526.7	3.1				ug/L	17	Standard
>	**Tb**	159	511717.8	0.3				ug/L	490863	Standard
	Ho	165	16.7	17.3				ug/L	2	Standard
	Tl	203	163400.7	0.6	**25.4703**	0.254	1.0	ug/L	2	Standard
	Tl	205	182214.3	1.6	**26.2548**	0.187	0.7	ug/L	0	Standard
	Pb	206	71086.7	1.0	**27.3952**	0.368	1.3	ug/L	84	Standard
	Pb	207	60908.9	0.8	**25.8890**	0.384	1.5	ug/L	73	Standard
	Pb	208	157678.6	0.7	**25.4659**	0.251	1.0	ug/L	199	Standard
	U	238	124121.0	0.6	**29.4485**	0.098	0.3	ug/L	1	Standard
>	**Bi**	209	275525.1	1.0				ug/L	281512	Standard

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	Na	23	270.0	10.3	**75.7597**	7.786	10.3	mg/L	2	Standard
	Mg	24	35707.0	0.6	**46.6211**	0.574	1.2	mg/L	38	Standard
	K	39	11.7	24.7	**0.4616**	0.155	33.6	mg/L	0	Standard
	Ca	43	558.3	11.2	**54.3614**	5.745	10.6	mg/L	23	Standard
	Fe	54	269.5	18.2	**0.0210**	0.022	104.4	mg/L	234	Standard
	Fe	57	471.7	8.6	**0.6178**	0.065	10.4	mg/L	118	Standard
>	**Sc-1**	45	54160.0	1.2				mg/L	57581	Standard
	Cl	35	44733.3	0.5				ug/L	22827	Standard
	Kr	83	122.3	14.9				ug/L	90	Standard
	Br	81	33550.4	1.3				ug/L	2287	Standard
	P	31	346529.8	0.8				ug/L	215766	Standard
	S	34	44075.7	2.7				ug/L	23460	Standard
	Sr	88	1088.4	7.7				ug/L	48	Standard
	C	12	3.3	173.2				mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	6.7	173.2				mg/L	0	Standard
	Dy	164	42.2	37.1				mg/L	6	Standard
	Ho-1	165	16.7	17.3				mg/L	2	Standard
	Er	166	23.3	65.5				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		115.970	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.869	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

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⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	100.698
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	97.873
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1311079711
Sample Date/Time: Friday, November 22, 2013 11:15:42
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	284936.8	2.2				ug/L	231878	Standard
	Be	9	38.3	54.3	**0.0038**	0.007	170.7	ug/L	7	Standard
	Al	27	34445.2	70.0	**0.1687**	0.122	72.5	ug/L	115	Standard
	Sc	45	57629.4	2.5				ug/L	57581	Standard
	Ti	47	25.3	21.7	**-0.0046**	0.011	249.6	ug/L	17	Standard
	V	51	2207.4	3.0	**0.0451**	0.006	12.6	ug/L	1678	Standard
	Cr	52	7523.2	4.1	**0.1714**	0.030	17.6	ug/L	5719	Standard
	Cr	53	313.3	27.1	**0.1302**	0.056	42.8	ug/L	132	Standard
	Mn	55	20503.8	130.0	**1.3485**	1.858	137.8	ug/L	927	Standard
	Co	59	142.7	40.0	**-0.0004**	0.006	1646.9	ug/L	80	Standard
	Ni	60	846.4	3.1	**0.2543**	0.010	3.8	ug/L	39	Standard
	Cu	65	559.3	4.1	**0.1439**	0.007	5.0	ug/L	91	Standard
	Zn	66	3098.0	1.0	**1.5944**	0.035	2.2	ug/L	159	Standard
>	**Ge**	72	527941.4	0.8				ug/L	504090	Standard
	As	75	-250.1	5.8	**0.0149**	0.009	57.3	ug/L	-261	Standard
	Se	82	-35.8	18.4	**0.0299**	0.036	120.7	ug/L	-43	Standard
	Se-1	77	99.0	5.3	**0.0551**	0.046	84.1	ug/L	86	Standard
>	**Ga**	71	21.7	35.3				mg/L	35	Standard
	Rb	85	68.3	66.0				ug/L	20	Standard
	Y	89	492169.6	0.9				ug/L	462194	Standard
>	**Rh**	103	0.0					ug/L	7	Standard
	Mo	98	35.0	13.1	**0.0036**	0.001	29.3	ug/L	8	Standard
	Ag	107	148.3	67.6	**0.0031**	0.013	401.7	ug/L	62	Standard
	Cd	111	36.9	105.5	**0.0056**	0.016	276.7	mg/L	1	Standard
	Cd	114	117.6	124.1	**0.0107**	0.023	213.2	ug/L	23	Standard
>	**In**	115	553828.3	0.8				ug/L	502083	Standard
	Sn	118	151.3	9.0	**0.0071**	0.008	111.9	ug/L	144	Standard
	Sb	123	44.1	44.9	**0.0099**	0.007	67.2	ug/L	19	Standard
	Ba	135	920.4	65.6	**0.4251**	0.284	66.7	ug/L	9	Standard
	Ce	140	31.7	36.5				ug/L	17	Standard
>	**Tb**	159	533180.8	0.2				ug/L	490863	Standard
	Ho	165	5.0	100.0				ug/L	2	Standard
	Tl	203	95.3	118.0	**0.0073**	0.016	215.0	ug/L	2	Standard
	Tl	205	53.3	32.9	**0.0034**	0.002	65.6	ug/L	0	Standard
	Pb	206	126.3	14.9	**0.0071**	0.006	90.1	ug/L	84	Standard
	Pb	207	111.3	29.0	**0.0092**	0.012	133.7	ug/L	73	Standard
	Pb	208	263.3	13.3	**-0.0009**	0.005	602.6	ug/L	199	Standard
	U	238	31.7	65.1	**0.0061**	0.004	71.6	ug/L	1	Standard
>	**Bi**	209	306574.3	0.6				ug/L	281512	Standard

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⌈	**Na**	23	1.7	173.2	**0.0091**	0.759	8353.5	mg/L	2	Standard
|	**Mg**	24	476.7	14.1	**0.5499**	0.094	17.1	mg/L	38	Standard
|	**K**	39	5.0	0.0	**0.0912**	0.006	6.8	mg/L	0	Standard
|	**Ca**	43	16.7	121.2	**-0.8947**	1.889	211.2	mg/L	23	Standard
|	**Fe**	54	285.9	7.0	**0.0206**	0.006	30.2	mg/L	234	Standard
|	**Fe**	57	106.7	10.8	**0.0100**	0.017	167.9	mg/L	118	Standard
⌊>	**Sc-1**	45	57629.4	2.5				mg/L	57581	Standard
	Cl	35	37616.0	2.3				ug/L	22827	Standard
	Kr	83	105.0	9.9				ug/L	90	Standard
	Br	81	3530.4	8.8				ug/L	2287	Standard
	P	31	326289.5	1.1				ug/L	215766	Standard
	S	34	49691.4	0.5				ug/L	23460	Standard
	Sr	88	80.0	21.7				ug/L	48	Standard
	C	12	0.0					mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	6.7	86.6				mg/L	0	Standard
	Dy	164	16.3	33.6				mg/L	6	Standard
	Ho-1	165	5.0	100.0				mg/L	2	Standard
	Er	166	6.7	86.6				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		122.882	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		104.732	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			
⌊	Rb	85			

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⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	110.306
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	108.903
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1311079714
Sample Date/Time: Friday, November 22, 2013 11:18:47
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	281770.9	3.2				ug/L	231878	Standard
	Be	9	43.3	13.3	**0.0055**	0.002	41.3	ug/L	7	Standard
	Al	27	63750.2	82.0	**0.3106**	0.256	82.5	ug/L	115	Standard
	Sc	45	57611.0	2.8				ug/L	57581	Standard
	Ti	47	24.7	32.5	**-0.0061**	0.016	271.4	ug/L	17	Standard
	V	51	2202.8	6.1	**0.0437**	0.015	35.0	ug/L	1678	Standard
	Cr	52	7314.1	1.4	**0.1425**	0.007	4.7	ug/L	5719	Standard
	Cr	53	345.0	8.8	**0.1502**	0.017	11.6	ug/L	132	Standard
	Mn	55	20227.2	115.8	**1.3304**	1.641	123.3	ug/L	927	Standard
	Co	59	210.3	81.1	**0.0070**	0.019	267.8	ug/L	80	Standard
	Ni	60	141.3	20.8	**0.0228**	0.009	39.7	ug/L	39	Standard
	Cu	65	622.3	5.4	**0.1640**	0.009	5.7	ug/L	91	Standard
	Zn	66	3600.1	1.7	**1.8907**	0.034	1.8	ug/L	159	Standard
>	**Ge**	72	529822.0	1.1				ug/L	504090	Standard
	As	75	-241.2	7.2	**0.0204**	0.011	51.8	ug/L	-261	Standard
	Se	82	-26.7	19.2	**0.0820**	0.029	35.5	ug/L	-43	Standard
	Se-1	77	108.0	9.7	**0.1234**	0.076	61.8	ug/L	86	Standard
>	**Ga**	71	18.3	41.7				mg/L	35	Standard
	Rb	85	61.7	24.8				ug/L	20	Standard
	Y	89	500852.9	1.4				ug/L	462194	Standard
>	**Rh**	103	3.3	173.2				ug/L	7	Standard
	Mo	98	33.3	38.9	**0.0033**	0.003	93.3	ug/L	8	Standard
	Ag	107	91.0	12.5	**-0.0040**	0.001	37.0	ug/L	62	Standard
	Cd	111	9.6	52.3	**-0.0053**	0.002	37.8	mg/L	1	Standard
	Cd	114	57.6	39.6	**0.0014**	0.004	260.2	ug/L	23	Standard
>	**In**	115	551479.4	1.5				ug/L	502083	Standard
	Sn	118	339.3	9.1	**0.1283**	0.023	18.1	ug/L	144	Standard
	Sb	123	71.1	57.4	**0.0191**	0.014	73.2	ug/L	19	Standard
	Ba	135	582.3	7.3	**0.2676**	0.023	8.7	ug/L	9	Standard
	Ce	140	30.0	100.0				ug/L	17	Standard
>	**Tb**	159	535570.0	0.9				ug/L	490863	Standard
	Ho	165	3.3	86.6				ug/L	2	Standard
	Tl	203	31.0	28.1	**-0.0017**	0.001	70.5	ug/L	2	Standard
	Tl	205	116.7	71.9	**0.0116**	0.011	93.4	ug/L	0	Standard
	Pb	206	114.3	1.3	**0.0030**	0.001	27.8	ug/L	84	Standard
	Pb	207	97.0	3.6	**0.0037**	0.001	21.5	ug/L	73	Standard
	Pb	208	334.7	22.0	**0.0094**	0.011	112.0	ug/L	199	Standard
	U	238	67.0	76.3	**0.0136**	0.011	79.6	ug/L	1	Standard
>	**Bi**	209	306855.5	1.4				ug/L	281512	Standard

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⌈	**Na**	23	0.0		**-0.4293**	0.000	0.0	mg/L	2	Standard
|	**Mg**	24	498.3	36.6	**0.5725**	0.213	37.2	mg/L	38	Standard
|	**K**	39	1.7	173.2	**-0.0734**	0.147	200.8	mg/L	0	Standard
|	**Ca**	43	15.0	0.0	**-1.0319**	0.039	3.8	mg/L	23	Standard
|	**Fe**	54	302.5	18.5	**0.0279**	0.026	91.7	mg/L	234	Standard
|	**Fe**	57	133.3	13.2	**0.0513**	0.029	56.3	mg/L	118	Standard
⌊>	**Sc-1**	45	57611.0	2.8				mg/L	57581	Standard
	Cl	35	37777.7	0.8				ug/L	22827	Standard
	Kr	83	94.7	7.4				ug/L	90	Standard
	Br	81	3697.1	10.2				ug/L	2287	Standard
	P	31	324464.8	1.9				ug/L	215766	Standard
	S	34	49432.2	0.6				ug/L	23460	Standard
	Sr	88	73.3	20.8				ug/L	48	Standard
	C	12	0.0					mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	0	Standard
	Dy	164	2.5	239.4				mg/L	6	Standard
	Ho-1	165	3.3	86.6				mg/L	2	Standard
	Er	166	16.7	69.3				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		121.517	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		105.105	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			
⌊	Rb	85			

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⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	109.838
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	109.003
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: November 24, 2013

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, November 22, 2013 11:21:54
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	270041.9	0.7				ug/L	231878	Standard
	Be	9	151298.4	1.0	**49.0180**	0.503	1.0	ug/L	7	Standard
	Al	27	9245936.9	1.9	**48.4408**	1.133	2.3	ug/L	115	Standard
	Sc	45	56933.5	3.0				ug/L	57581	Standard
	Ti	47	48700.5	1.6	**99.1988**	1.095	1.1	ug/L	17	Standard
	V	51	401207.1	1.9	**46.6890**	0.705	1.5	ug/L	1678	Standard
	Cr	52	385684.5	1.5	**47.5092**	0.644	1.4	ug/L	5719	Standard
	Cr	53	75380.4	1.5	**50.2537**	0.849	1.7	ug/L	132	Standard
	Mn	55	711920.5	2.1	**50.2225**	0.906	1.8	ug/L	927	Standard
	Co	59	430864.5	1.1	**47.6936**	0.522	1.1	ug/L	80	Standard
	Ni	60	149247.5	0.7	**49.3913**	0.222	0.4	ug/L	39	Standard
	Cu	65	147476.6	0.6	**49.3586**	0.194	0.4	ug/L	91	Standard
	Zn	66	81369.6	1.7	**49.4788**	0.475	1.0	ug/L	159	Standard
>	**Ge**	72	522935.8	0.8				ug/L	504090	Standard
	As	75	87501.5	1.0	**49.8481**	0.461	0.9	ug/L	-261	Standard
	Se	82	8728.7	0.9	**50.3572**	0.610	1.2	ug/L	-43	Standard
	Se-1	77	6283.6	0.5	**49.9956**	0.166	0.3	ug/L	86	Standard
>	**Ga**	71	60.0	52.0				mg/L	35	Standard
	Rb	85	1373.4	3.6				ug/L	20	Standard
	Y	89	490380.3	1.4				ug/L	462194	Standard
>	**Rh**	103	51.7	36.6				ug/L	7	Standard
	Mo	98	435109.2	1.5	**98.6558**	1.731	1.8	ug/L	8	Standard
	Ag	107	397089.7	0.8	**49.9910**	0.510	1.0	ug/L	62	Standard
	Cd	111	123900.2	0.6	**49.9841**	0.361	0.7	mg/L	1	Standard
	Cd	114	319357.6	0.3	**50.3985**	0.255	0.5	ug/L	23	Standard
>	**In**	115	548443.3	0.3				ug/L	502083	Standard
	Sn	118	78029.8	2.0	**50.2173**	0.995	2.0	ug/L	144	Standard
	Sb	123	150460.1	1.2	**50.6892**	0.555	1.1	ug/L	19	Standard
	Ba	135	104282.6	0.1	**49.4693**	0.218	0.4	ug/L	9	Standard
	Ce	140	51.7	5.6				ug/L	17	Standard
>	**Tb**	159	534228.4	0.2				ug/L	490863	Standard
	Ho	165	3.3	86.6				ug/L	2	Standard
	Tl	203	346495.0	0.8	**49.6899**	0.341	0.7	ug/L	2	Standard
	Tl	205	386242.9	0.7	**51.2039**	0.490	1.0	ug/L	0	Standard
	Pb	206	145665.5	0.3	**51.6719**	0.045	0.1	ug/L	84	Standard
	Pb	207	131467.3	0.8	**51.4350**	0.345	0.7	ug/L	73	Standard
	Pb	208	338874.4	0.6	**50.3850**	0.331	0.7	ug/L	199	Standard
	U	238	233149.5	0.5	**50.8874**	0.120	0.2	ug/L	1	Standard
>	**Bi**	209	299499.5	0.2				ug/L	281512	Standard

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	Na	23	18.3	31.5	**4.5163**	1.672	37.0	mg/L	2	Standard
	Mg	24	4440.7	0.7	**5.4856**	0.148	2.7	mg/L	38	Standard
	K	39	73.3	35.0	**3.5364**	1.236	34.9	mg/L	0	Standard
	Ca	43	66.7	18.9	**3.9707**	1.022	25.7	mg/L	23	Standard
	Fe	54	11052.6	2.8	**4.5975**	0.162	3.5	mg/L	234	Standard
	Fe	57	2920.3	4.4	**4.3906**	0.068	1.6	mg/L	118	Standard
>	**Sc-1**	45	56933.5	3.0				mg/L	57581	Standard
	Cl	35	33943.3	3.5				ug/L	22827	Standard
	Kr	83	108.3	8.4				ug/L	90	Standard
	Br	81	2863.6	6.0				ug/L	2287	Standard
	P	31	339343.6	3.0				ug/L	215766	Standard
	S	34	57271.4	1.4				ug/L	23460	Standard
	Sr	88	63.3	24.1				ug/L	48	Standard
	C	12	0.0					mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	0	Standard
	Dy	164	3.2	173.2				mg/L	6	Standard
	Ho-1	165	3.3	86.6				mg/L	2	Standard
	Er	166	3.3	173.2				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		116.458	
	Be	9	98.036		
	Al	27	96.882		
	Sc	45			
	Ti	47	99.199		
	V	51	93.378		
	Cr	52	95.018		
	Cr	53			
	Mn	55	100.445		
	Co	59	95.387		
	Ni	60	98.783		
	Cu	65	98.717		
	Zn	66	98.958		
>	Ge	72		103.739	
	As	75	99.696		
	Se	82	100.714		
	Se-1	77			
>	Ga	71			
	Rb	85			

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⌈	Y	89		
⌊>	Rh	103		
⌈	Mo	98	98.656	
|	Ag	107	99.982	
|	Cd	111	99.968	
|	Cd	114		
|>	In	115		109.234
|	Sn	118	100.435	
|	Sb	123	101.378	
⌊	Ba	135	98.939	
⌈	Ce	140		
⌊>	Tb	159		
⌈	Ho	165		
|	Tl	203	99.380	
|	Tl	205		
|	Pb	206		
|	Pb	207		
|	Pb	208	100.770	
|	U	238	101.775	
⌊>	Bi	209		106.389
⌈	Na	23		
|	Mg	24		
|	K	39		
|	Ca	43		
|	Fe	54		
|	Fe	57		
⌊>	Sc-1	45		
	Cl	35		
	Kr	83		
	Br	81		
	P	31		
	S	34		
	Sr	88		
	C	12		
	N	14		
	Hg	202		
	Dy	164		
	Ho-1	165		
	Er	166		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, November 22, 2013 11:24:59
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexION Data\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	265722.0	1.9				ug/L	231878	Standard
	Be	9	20.0	50.0	**-0.0014**	0.003	228.7	ug/L	7	Standard
	Al	27	1065.0	14.5	**0.0016**	0.001	44.3	ug/L	115	Standard
	Sc	45	55713.9	1.2				ug/L	57581	Standard
	Ti	47	22.7	29.4	**-0.0091**	0.013	148.4	ug/L	17	Standard
	V	51	1472.2	2.6	**-0.0363**	0.004	11.8	ug/L	1678	Standard
	Cr	52	5234.6	0.9	**-0.0980**	0.005	5.0	ug/L	5719	Standard
	Cr	53	181.7	10.4	**0.0458**	0.013	29.3	ug/L	132	Standard
	Mn	55	1585.4	4.5	**0.0308**	0.004	14.5	ug/L	927	Standard
	Co	59	92.0	30.3	**-0.0057**	0.003	53.5	ug/L	80	Standard
	Ni	60	67.3	13.8	**-0.0007**	0.003	426.3	ug/L	39	Standard
	Cu	65	211.0	5.8	**0.0298**	0.004	12.5	ug/L	91	Standard
	Zn	66	238.7	5.3	**-0.1348**	0.008	5.7	ug/L	159	Standard
>	**Ge**	72	516689.8	0.6				ug/L	504090	Standard
	As	75	-241.4	11.4	**0.0170**	0.015	87.8	ug/L	-261	Standard
	Se	82	-33.3	29.9	**0.0404**	0.057	140.4	ug/L	-43	Standard
	Se-1	77	94.7	4.3	**0.0368**	0.033	89.2	ug/L	86	Standard
>	**Ga**	71	25.0	34.6				mg/L	35	Standard
	Rb	85	23.3	24.7				ug/L	20	Standard
	Y	89	484090.2	0.6				ug/L	462194	Standard
>	**Rh**	103	0.0					ug/L	7	Standard
	Mo	98	92.1	58.4	**0.0170**	0.012	72.0	ug/L	8	Standard
	Ag	107	83.0	23.1	**-0.0047**	0.002	50.1	ug/L	62	Standard
	Cd	111	15.5	101.8	**-0.0028**	0.006	229.1	mg/L	1	Standard
	Cd	114	56.1	79.1	**0.0013**	0.007	532.3	ug/L	23	Standard
>	**In**	115	537702.0	0.8				ug/L	502083	Standard
	Sn	118	82.3	20.9	**-0.0354**	0.011	30.7	ug/L	144	Standard
	Sb	123	394.2	35.4	**0.1303**	0.047	35.8	ug/L	19	Standard
	Ba	135	16.0	81.3	**0.0004**	0.006	1572.3	ug/L	9	Standard
	Ce	140	5.0	100.0				ug/L	17	Standard
>	**Tb**	159	526248.1	0.5				ug/L	490863	Standard
	Ho	165	5.0	173.2				ug/L	2	Standard
	Tl	203	41.0	85.1	**-0.0001**	0.005	3391.1	ug/L	2	Standard
	Tl	205	21.7	81.0	**-0.0006**	0.002	384.2	ug/L	0	Standard
	Pb	206	110.0	15.9	**0.0024**	0.006	247.4	ug/L	84	Standard
	Pb	207	88.3	22.5	**0.0013**	0.008	604.0	ug/L	73	Standard
	Pb	208	223.0	9.7	**-0.0059**	0.003	51.4	ug/L	199	Standard
	U	238	15.7	30.2	**0.0028**	0.001	36.2	ug/L	1	Standard
>	**Bi**	209	298910.7	0.5				ug/L	281512	Standard

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Na	23	0.0		**-0.4293**	0.000	0.0	mg/L	2	Standard
Mg	24	48.3	33.3	**0.0248**	0.021	84.4	mg/L	38	Standard
K	39	1.7	173.2	**-0.0736**	0.147	199.8	mg/L	0	Standard
Ca	43	13.3	86.6	**-1.1550**	1.138	98.5	mg/L	23	Standard
Fe	54	274.0	16.2	**0.0196**	0.019	97.9	mg/L	234	Standard
Fe	57	141.7	11.3	**0.0716**	0.028	39.0	mg/L	118	Standard
Sc-1	45	55713.9	1.2				mg/L	57581	Standard
Cl	35	33433.5	1.0				ug/L	22827	Standard
Kr	83	96.7	15.6				ug/L	90	Standard
Br	81	2686.9	1.7				ug/L	2287	Standard
P	31	301123.1	1.1				ug/L	215766	Standard
S	34	53534.4	1.9				ug/L	23460	Standard
Sr	88	90.0	5.6				ug/L	48	Standard
C	12	0.0					mg/L	3	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.5	179.6				mg/L	6	Standard
Ho-1	165	5.0	173.2				mg/L	2	Standard
Er	166	3.3	173.2				mg/L	7	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.595	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.500	
As	75			
Se	82			
Se-1	77			
> Ga	71			
Rb	85			

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	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	107.094
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	106.180
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1311096912
Sample Date/Time: Friday, November 22, 2013 11:28:28
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	269317.4	3.2				ug/L	231878	Standard
	Be	9	33.3	8.7	**0.0028**	0.001	42.0	ug/L	7	Standard
	Al	27	64514599.7	1.4	**339.0409**	6.422	1.9	ug/L	115	Standard
	Sc	45	54280.5	3.1				ug/L	57581	Standard
	Ti	47	507.7	9.3	**1.0500**	0.112	10.7	ug/L	17	Standard
	V	51	4096.9	3.2	**0.3012**	0.021	6.9	ug/L	1678	Standard
	Cr	52	13628.1	0.4	**1.0608**	0.019	1.8	ug/L	5719	Standard
	Cr	53	4565.7	13.1	**3.1766**	0.403	12.7	ug/L	132	Standard
	Mn	55	758279.7	1.2	**57.1444**	0.430	0.8	ug/L	927	Standard
	Co	59	6778.8	1.9	**0.7856**	0.009	1.1	ug/L	80	Standard
	Ni	60	17283.9	2.1	**6.0882**	0.082	1.3	ug/L	39	Standard
	Cu	65	2011.1	4.4	**0.6777**	0.028	4.1	ug/L	91	Standard
	Zn	66	6289.3	1.3	**3.8255**	0.020	0.5	ug/L	159	Standard
>	**Ge**	72	489621.6	0.8				ug/L	504090	Standard
	As	75	1144.4	7.7	**0.8499**	0.057	6.7	ug/L	-261	Standard
	Se	82	456.3	4.6	**3.0316**	0.110	3.6	ug/L	-43	Standard
	Se-1	77	497.0	13.8	**3.5458**	0.557	15.7	ug/L	86	Standard
>	**Ga**	71	155.0	29.0				mg/L	35	Standard
	Rb	85	7778.7	3.3				ug/L	20	Standard
	Y	89	459487.3	1.3				ug/L	462194	Standard
>	**Rh**	103	186.7	10.8				ug/L	7	Standard
	Mo	98	670.2	6.8	**0.1629**	0.012	7.1	ug/L	8	Standard
	Ag	107	87.3	20.5	**-0.0033**	0.002	75.3	ug/L	62	Standard
	Cd	111	37.4	10.8	**0.0075**	0.002	24.5	mg/L	1	Standard
	Cd	114	129.3	6.0	**0.0148**	0.001	9.6	ug/L	23	Standard
>	**In**	115	498577.9	0.3				ug/L	502083	Standard
	Sn	118	88.0	9.3	**-0.0271**	0.006	21.0	ug/L	144	Standard
	Sb	123	322.9	6.5	**0.1148**	0.008	6.9	ug/L	19	Standard
	Ba	135	31971.7	0.6	**16.6788**	0.149	0.9	ug/L	9	Standard
	Ce	140	3130.3	0.4				ug/L	17	Standard
>	**Tb**	159	508277.3	1.2				ug/L	490863	Standard
	Ho	165	88.3	21.4				ug/L	2	Standard
	Tl	203	71.7	14.9	**0.0055**	0.002	31.2	ug/L	2	Standard
	Tl	205	120.0	29.2	**0.0144**	0.005	36.2	ug/L	0	Standard
	Pb	206	247.0	5.4	**0.0617**	0.005	8.6	ug/L	84	Standard
	Pb	207	182.0	3.8	**0.0465**	0.003	6.6	ug/L	73	Standard
	Pb	208	559.0	8.1	**0.0541**	0.008	13.9	ug/L	199	Standard
	U	238	17450.4	1.4	**4.2700**	0.056	1.3	ug/L	1	Standard
>	**Bi**	209	267109.2	0.1				ug/L	281512	Standard

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Na	23	271.7	21.8	**76.3114**	18.334	24.0	mg/L	2	Standard
Mg	24	62754.8	2.9	**81.7941**	1.949	2.4	mg/L	38	Standard
K	39	15.0	88.2	**0.6236**	0.667	106.9	mg/L	0	Standard
Ca	43	493.3	3.6	**47.7021**	2.453	5.1	mg/L	23	Standard
Fe	54	374.7	12.1	**0.0680**	0.024	35.1	mg/L	234	Standard
Fe	57	455.0	8.3	**0.5905**	0.082	13.9	mg/L	118	Standard
Sc-1	45	54280.5	3.1				mg/L	57581	Standard
Cl	35	49240.6	1.6				ug/L	22827	Standard
Kr	83	108.3	3.5				ug/L	90	Standard
Br	81	91887.9	1.9				ug/L	2287	Standard
P	31	341683.7	1.6				ug/L	215766	Standard
S	34	47766.8	0.8				ug/L	23460	Standard
Sr	88	906.7	11.6				ug/L	48	Standard
C	12	20.0	86.6				mg/L	3	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	152.8	4.9				mg/L	6	Standard
Ho-1	165	88.3	21.4				mg/L	2	Standard
Er	166	80.0	43.3				mg/L	7	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		116.146	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.130	
As	75			
Se	82			
Se-1	77			
> Ga	71			
Rb	85			

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	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	99.302
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	94.884
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1311096913
Sample Date/Time: Friday, November 22, 2013 11:31:33
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	271957.7	1.5				ug/L	231878	Standard
	Be	9	41.7	42.1	**0.0054**	0.006	105.8	ug/L	7	Standard
	Al	27	21478368.6	0.8	**111.7528**	2.228	2.0	ug/L	115	Standard
	Sc	45	54297.2	2.5				ug/L	57581	Standard
	Ti	47	252.7	2.6	**0.5002**	0.017	3.4	ug/L	17	Standard
	V	51	1391.9	24.6	**-0.0349**	0.042	121.4	ug/L	1678	Standard
	Cr	52	13509.7	1.5	**1.0642**	0.028	2.6	ug/L	5719	Standard
	Cr	53	9012.7	2.6	**6.4187**	0.146	2.3	ug/L	132	Standard
	Mn	55	929233.1	1.0	**70.8001**	0.653	0.9	ug/L	927	Standard
	Co	59	26050.7	0.5	**3.0979**	0.011	0.3	ug/L	80	Standard
	Ni	60	587727.9	1.4	**210.0476**	3.546	1.7	ug/L	39	Standard
	Cu	65	1627.8	1.4	**0.5469**	0.007	1.2	ug/L	91	Standard
	Zn	66	8129.5	1.9	**5.0850**	0.121	2.4	ug/L	159	Standard
>	**Ge**	72	484417.8	0.6				ug/L	504090	Standard
	As	75	6608.3	3.7	**4.2072**	0.163	3.9	ug/L	-261	Standard
	Se	82	2610.9	2.3	**16.4186**	0.404	2.5	ug/L	-43	Standard
	Se-1	77	665.7	1.4	**5.0652**	0.095	1.9	ug/L	86	Standard
>	**Ga**	71	66.7	15.6				mg/L	35	Standard
	Rb	85	43046.1	3.3				ug/L	20	Standard
	Y	89	447867.1	1.4				ug/L	462194	Standard
>	**Rh**	103	453.3	1.3				ug/L	7	Standard
	Mo	98	12345.7	1.3	**3.0878**	0.037	1.2	ug/L	8	Standard
	Ag	107	89.0	4.1	**-0.0030**	0.000	14.9	ug/L	62	Standard
	Cd	111	3.5	147.3	**-0.0076**	0.002	29.8	mg/L	1	Standard
	Cd	114	55.6	23.8	**0.0020**	0.002	113.8	ug/L	23	Standard
>	**In**	115	496504.8	0.5				ug/L	502083	Standard
	Sn	118	164.7	1.3	**0.0278**	0.001	4.3	ug/L	144	Standard
	Sb	123	91.7	17.5	**0.0293**	0.006	20.8	ug/L	19	Standard
	Ba	135	49440.5	0.3	**25.9034**	0.090	0.3	ug/L	9	Standard
	Ce	140	703.3	11.8				ug/L	17	Standard
>	**Tb**	159	503582.8	1.3				ug/L	490863	Standard
	Ho	165	20.0	43.3				ug/L	2	Standard
	Tl	203	72.3	5.8	**0.0057**	0.001	12.0	ug/L	2	Standard
	Tl	205	90.0	14.7	**0.0100**	0.002	19.3	ug/L	0	Standard
	Pb	206	145.0	16.2	**0.0217**	0.010	44.0	ug/L	84	Standard
	Pb	207	127.7	8.0	**0.0233**	0.005	20.1	ug/L	73	Standard
	Pb	208	327.3	5.8	**0.0160**	0.003	18.6	ug/L	199	Standard
	U	238	3948.8	2.7	**0.9760**	0.026	2.6	ug/L	1	Standard
>	**Bi**	209	264305.7	0.3				ug/L	281512	Standard

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	Na	23	145.0	15.8	**40.5071**	7.519	18.6	mg/L	2	Standard
	Mg	24	108829.5	1.8	**141.8388**	3.339	2.4	mg/L	38	Standard
	K	39	23.3	12.4	**1.0797**	0.168	15.5	mg/L	0	Standard
	Ca	43	336.7	12.0	**31.6813**	3.315	10.5	mg/L	23	Standard
	Fe	54	1341.1	2.7	**0.4981**	0.016	3.2	mg/L	234	Standard
	Fe	57	598.3	4.2	**0.8237**	0.064	7.8	mg/L	118	Standard
>	**Sc-1**	45	54297.2	2.5				mg/L	57581	Standard
	Cl	35	41978.8	3.6				ug/L	22827	Standard
	Kr	83	108.3	5.4				ug/L	90	Standard
	Br	81	505443.1	1.3				ug/L	2287	Standard
	P	31	354146.6	1.5				ug/L	215766	Standard
	S	34	42487.9	3.4				ug/L	23460	Standard
	Sr	88	2415.2	0.9				ug/L	48	Standard
	C	12	6.7	86.6				mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	0	Standard
	Dy	164	22.1	68.3				mg/L	6	Standard
	Ho-1	165	20.0	43.3				mg/L	2	Standard
	Er	166	26.7	21.7				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		117.285	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		96.098	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

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⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	98.889
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	93.888
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Ni 60 Upper, S, EEE	Ni	60	

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Method 6020 - Summary Report

Sample ID: L1311084201
Sample Date/Time: Friday, November 22, 2013 11:34:58
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	294977.5	1.6				ug/L	231878	Standard
	Be	9	65.0	100.6	**0.0111**	0.019	171.3	ug/L	7	Standard
	Al	27	55347324.0	1.3	**265.5310**	7.367	2.8	ug/L	115	Standard
	Sc	45	54778.9	1.3				ug/L	57581	Standard
	Ti	47	243.3	4.9	**0.4543**	0.029	6.4	ug/L	17	Standard
	V	51	4184.6	1.1	**0.2925**	0.003	0.9	ug/L	1678	Standard
	Cr	52	11546.4	1.8	**0.7250**	0.042	5.9	ug/L	5719	Standard
	Cr	53	1416.7	4.4	**0.8952**	0.028	3.2	ug/L	132	Standard
	Mn	55	517440.5	1.1	**37.5089**	0.320	0.9	ug/L	927	Standard
	Co	59	11529.1	1.1	**1.2967**	0.034	2.6	ug/L	80	Standard
	Ni	60	28672.4	1.1	**9.7370**	0.120	1.2	ug/L	39	Standard
	Cu	65	5261.6	4.0	**1.7699**	0.051	2.9	ug/L	91	Standard
	Zn	66	7618.9	3.3	**4.5068**	0.082	1.8	ug/L	159	Standard
>	**Ge**	72	508670.4	1.6				ug/L	504090	Standard
	As	75	2994.2	2.1	**1.9037**	0.016	0.8	ug/L	-261	Standard
	Se	82	12.6	139.9	**0.3075**	0.103	33.5	ug/L	-43	Standard
	Se-1	77	206.0	12.6	**0.9718**	0.198	20.4	ug/L	86	Standard
>	**Ga**	71	56.7	31.0				mg/L	35	Standard
	Rb	85	8554.1	2.0				ug/L	20	Standard
	Y	89	477483.6	1.8				ug/L	462194	Standard
>	**Rh**	103	1670.1	7.0				ug/L	7	Standard
	Mo	98	163075.8	1.6	**38.7571**	0.476	1.2	ug/L	8	Standard
	Ag	107	147.7	64.1	**0.0040**	0.012	304.1	ug/L	62	Standard
	Cd	111	58.4	74.3	**0.0155**	0.018	116.7	mg/L	1	Standard
	Cd	114	718.6	24.7	**0.1111**	0.028	25.4	ug/L	23	Standard
>	**In**	115	523172.8	0.9				ug/L	502083	Standard
	Sn	118	1358.4	2.4	**0.8287**	0.028	3.3	ug/L	144	Standard
	Sb	123	7701.0	2.7	**2.7151**	0.065	2.4	ug/L	19	Standard
	Ba	135	25894.4	1.6	**12.8711**	0.110	0.9	ug/L	9	Standard
	Ce	140	2056.8	21.7				ug/L	17	Standard
>	**Tb**	159	523751.8	2.9				ug/L	490863	Standard
	Ho	165	26.7	39.0				ug/L	2	Standard
	Tl	203	1337.4	11.9	**0.1995**	0.024	11.9	ug/L	2	Standard
	Tl	205	1521.7	15.6	**0.2126**	0.032	15.0	ug/L	0	Standard
	Pb	206	7153.0	3.0	**2.6846**	0.063	2.3	ug/L	84	Standard
	Pb	207	6181.6	2.5	**2.5603**	0.044	1.7	ug/L	73	Standard
	Pb	208	15629.1	1.3	**2.4534**	0.012	0.5	ug/L	199	Standard
	U	238	7364.8	1.4	**1.7222**	0.010	0.6	ug/L	1	Standard
>	**Bi**	209	279430.6	0.9				ug/L	281512	Standard

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	Na	23	148.3	12.8	**41.0062**	5.849	14.3	mg/L	2	Standard
	Mg	24	27319.6	1.8	**35.2541**	0.326	0.9	mg/L	38	Standard
	K	39	11.7	65.5	**0.4577**	0.411	89.8	mg/L	0	Standard
	Ca	43	291.7	16.9	**26.8638**	4.629	17.2	mg/L	23	Standard
	Fe	54	772.4	3.9	**0.2417**	0.015	6.1	mg/L	234	Standard
	Fe	57	448.3	12.4	**0.5707**	0.082	14.3	mg/L	118	Standard
>	**Sc-1**	45	54778.9	1.3				mg/L	57581	Standard
	Cl	35	52798.5	1.9				ug/L	22827	Standard
	Kr	83	117.3	14.0				ug/L	90	Standard
	Br	81	9536.3	5.4				ug/L	2287	Standard
	P	31	349772.9	2.6				ug/L	215766	Standard
	S	34	46076.6	1.0				ug/L	23460	Standard
	Sr	88	7311.8	3.3				ug/L	48	Standard
	C	12	20.0	50.0				mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	6.7	173.2				mg/L	0	Standard
	Dy	164	59.0	50.4				mg/L	6	Standard
	Ho-1	165	26.7	39.0				mg/L	2	Standard
	Er	166	20.0	50.0				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		127.212	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		100.909	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

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⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	104.200
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	99.261
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1311084301
Sample Date/Time: Friday, November 22, 2013 11:38:03
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	278932.6	0.9				ug/L	231878	Standard
	Be	9	690.0	5.8	**0.2084**	0.011	5.3	ug/L	7	Standard
	Al	27	57186635.6	1.0	**290.0721**	3.740	1.3	ug/L	115	Standard
	Sc	45	56528.6	0.8				ug/L	57581	Standard
	Ti	47	613.7	3.0	**1.2728**	0.043	3.4	ug/L	17	Standard
	V	51	3154.0	10.2	**0.1812**	0.041	22.5	ug/L	1678	Standard
	Cr	52	10037.0	2.3	**0.5732**	0.028	4.9	ug/L	5719	Standard
	Cr	53	6529.7	9.2	**4.5530**	0.417	9.2	ug/L	132	Standard
	Mn	55	8550650.3	0.8	**641.6725**	5.516	0.9	ug/L	927	Standard
	Co	59	1577.4	6.4	**0.1695**	0.011	6.7	ug/L	80	Standard
	Ni	60	6671.5	1.9	**2.3227**	0.039	1.7	ug/L	39	Standard
	Cu	65	46016.1	0.4	**16.3302**	0.096	0.6	ug/L	91	Standard
	Zn	66	7228.7	1.5	**4.4130**	0.061	1.4	ug/L	159	Standard
>	**Ge**	72	492340.0	0.2				ug/L	504090	Standard
	As	75	143.4	73.8	**0.2422**	0.064	26.4	ug/L	-261	Standard
	Se	82	21.4	211.8	**0.3643**	0.277	76.0	ug/L	-43	Standard
	Se-1	77	768.7	6.4	**5.8543**	0.405	6.9	ug/L	86	Standard
>	**Ga**	71	105.0	16.5				mg/L	35	Standard
	Rb	85	42863.9	0.3				ug/L	20	Standard
	Y	89	469744.6	1.2				ug/L	462194	Standard
>	**Rh**	103	131.7	21.6				ug/L	7	Standard
	Mo	98	4215.1	3.0	**1.0386**	0.038	3.6	ug/L	8	Standard
	Ag	107	58.3	16.2	**-0.0074**	0.001	17.6	ug/L	62	Standard
	Cd	111	8.8	6.9	**-0.0052**	0.000	5.5	mg/L	1	Standard
	Cd	114	104.6	19.3	**0.0103**	0.004	33.9	ug/L	23	Standard
>	**In**	115	502686.5	0.6				ug/L	502083	Standard
	Sn	118	450.7	5.5	**0.2275**	0.018	7.8	ug/L	144	Standard
	Sb	123	90.8	7.7	**0.0285**	0.002	8.6	ug/L	19	Standard
	Ba	135	139289.0	0.7	**72.0939**	0.597	0.8	ug/L	9	Standard
	Ce	140	653.3	4.5				ug/L	17	Standard
>	**Tb**	159	514471.3	1.3				ug/L	490863	Standard
	Ho	165	18.3	41.7				ug/L	2	Standard
	Tl	203	49.3	15.7	**0.0019**	0.001	66.2	ug/L	2	Standard
	Tl	205	43.3	6.7	**0.0030**	0.000	14.0	ug/L	0	Standard
	Pb	206	1151.7	2.0	**0.4223**	0.010	2.3	ug/L	84	Standard
	Pb	207	952.4	4.5	**0.3851**	0.018	4.7	ug/L	73	Standard
	Pb	208	2530.1	1.1	**0.3834**	0.004	1.0	ug/L	199	Standard
	U	238	1103.4	1.3	**0.2697**	0.003	1.1	ug/L	1	Standard
>	**Bi**	209	266808.3	0.3				ug/L	281512	Standard

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	Na	23	190.0	7.9	**50.9370**	3.934	7.7	mg/L	2	Standard
	Mg	24	93338.4	2.2	**116.8115**	2.658	2.3	mg/L	38	Standard
	K	39	46.7	37.6	**2.2143**	0.885	39.9	mg/L	0	Standard
	Ca	43	425.0	9.2	**39.0218**	4.039	10.4	mg/L	23	Standard
	Fe	54	14537.4	0.6	**6.1201**	0.062	1.0	mg/L	234	Standard
	Fe	57	4450.7	0.8	**6.8243**	0.103	1.5	mg/L	118	Standard
>	**Sc-1**	45	56528.6	0.8				mg/L	57581	Standard
	Cl	35	34253.4	2.6				ug/L	22827	Standard
	Kr	83	163.3	25.3				ug/L	90	Standard
	Br	81	18885.1	1.8				ug/L	2287	Standard
	P	31	427760.5	1.8				ug/L	215766	Standard
	S	34	48204.9	2.2				ug/L	23460	Standard
	Sr	88	816.7	8.8				ug/L	48	Standard
	C	12	20.0	50.0				mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	0	Standard
	Dy	164	33.2	17.8				mg/L	6	Standard
	Ho-1	165	18.3	41.7				mg/L	2	Standard
	Er	166	3.3	173.2				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		120.293	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.669	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

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⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	100.120
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	94.777
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1311079718
Sample Date/Time: Friday, November 22, 2013 11:41:07
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	277439.6	2.3				ug/L	231878	Standard
	Be	9	35.0	49.5	**0.0029**	0.005	176.2	ug/L	7	Standard
	Al	27	811231.3	0.5	**4.1340**	0.077	1.9	ug/L	115	Standard
	Sc	45	58583.0	0.5				ug/L	57581	Standard
	Ti	47	263.3	7.6	**0.4733**	0.042	8.9	ug/L	17	Standard
	V	51	1991.8	5.0	**0.0190**	0.011	57.4	ug/L	1678	Standard
	Cr	52	6165.6	2.2	**-0.0006**	0.014	2301.4	ug/L	5719	Standard
	Cr	53	603.3	14.6	**0.3198**	0.056	17.6	ug/L	132	Standard
	Mn	55	60577.9	0.5	**4.1359**	0.036	0.9	ug/L	927	Standard
	Co	59	359.7	1.1	**0.0232**	0.001	2.6	ug/L	80	Standard
	Ni	60	535.3	2.1	**0.1514**	0.003	2.0	ug/L	39	Standard
	Cu	65	574.0	4.2	**0.1478**	0.007	4.9	ug/L	91	Standard
	Zn	66	3391.0	2.6	**1.7614**	0.060	3.4	ug/L	159	Standard
>	**Ge**	72	530640.3	0.4				ug/L	504090	Standard
	As	75	-186.1	29.3	**0.0515**	0.030	59.1	ug/L	-261	Standard
	Se	82	-32.1	31.2	**0.0521**	0.057	108.8	ug/L	-43	Standard
	Se-1	77	113.0	6.9	**0.1625**	0.065	40.3	ug/L	86	Standard
>	**Ga**	71	46.7	32.7				mg/L	35	Standard
	Rb	85	5666.1	8.2				ug/L	20	Standard
	Y	89	490900.3	2.4				ug/L	462194	Standard
>	**Rh**	103	6.7	114.6				ug/L	7	Standard
	Mo	98	66.2	4.9	**0.0108**	0.001	7.0	ug/L	8	Standard
	Ag	107	71.0	16.2	**-0.0064**	0.002	23.6	ug/L	62	Standard
	Cd	111	6.6	17.6	**-0.0065**	0.000	7.7	mg/L	1	Standard
	Cd	114	50.2	44.3	**0.0003**	0.004	1271.1	ug/L	23	Standard
>	**In**	115	545621.7	1.2				ug/L	502083	Standard
	Sn	118	116.7	16.1	**-0.0138**	0.013	90.4	ug/L	144	Standard
	Sb	123	42.2	12.9	**0.0094**	0.002	18.4	ug/L	19	Standard
	Ba	135	7403.1	2.5	**3.5232**	0.080	2.3	ug/L	9	Standard
	Ce	140	2008.5	4.4				ug/L	17	Standard
>	**Tb**	159	540198.0	0.4				ug/L	490863	Standard
	Ho	165	31.7	39.7				ug/L	2	Standard
	Tl	203	46.7	18.2	**0.0006**	0.001	213.6	ug/L	2	Standard
	Tl	205	48.3	31.6	**0.0028**	0.002	69.9	ug/L	0	Standard
	Pb	206	176.7	5.8	**0.0251**	0.004	15.6	ug/L	84	Standard
	Pb	207	149.0	7.0	**0.0240**	0.004	17.5	ug/L	73	Standard
	Pb	208	405.0	1.7	**0.0201**	0.001	2.7	ug/L	199	Standard
	U	238	18.0	14.7	**0.0032**	0.001	16.5	ug/L	1	Standard
>	**Bi**	209	304440.3	1.0				ug/L	281512	Standard

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	Na	23	3.3	86.6	**0.4426**	0.755	170.6	mg/L	2	Standard
	Mg	24	923.4	6.2	**1.0788**	0.073	6.8	mg/L	38	Standard
	K	39	5.0	100.0	**0.0878**	0.247	280.8	mg/L	0	Standard
	Ca	43	21.7	13.3	**-0.4284**	0.274	64.0	mg/L	23	Standard
	Fe	54	439.2	10.1	**0.0820**	0.019	23.4	mg/L	234	Standard
	Fe	57	183.3	15.0	**0.1235**	0.043	34.6	mg/L	118	Standard
>	**Sc-1**	45	58583.0	0.5				mg/L	57581	Standard
	Cl	35	32062.6	1.1				ug/L	22827	Standard
	Kr	83	93.7	10.5				ug/L	90	Standard
	Br	81	3817.1	0.3				ug/L	2287	Standard
	P	31	360096.9	2.2				ug/L	215766	Standard
	S	34	45541.7	2.5				ug/L	23460	Standard
	Sr	88	90.0	38.9				ug/L	48	Standard
	C	12	0.0					mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	6.7	86.6				mg/L	0	Standard
	Dy	164	77.6	13.5				mg/L	6	Standard
	Ho-1	165	31.7	39.7				mg/L	2	Standard
	Er	166	50.0	20.0				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		119.649	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		105.267	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

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	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	108.672
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	108.145
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1311096913
Sample Date/Time: Friday, November 22, 2013 11:44:12
Number of Replicates: 3
Autosampler Position: 327
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	248388.9	2.9				ug/L	231878	Standard
	Be	9	25.0	87.2	**0.0009**	0.008	868.9	ug/L	7	Standard
	Al	27	387094.9	1.6	**2.2024**	0.088	4.0	ug/L	115	Standard
	Sc	45	49597.7	1.7				ug/L	57581	Standard
	Ti	47	19.3	11.9	**-0.0123**	0.005	39.3	ug/L	17	Standard
	V	51	1328.0	7.8	**-0.0393**	0.013	32.1	ug/L	1678	Standard
	Cr	52	4674.4	5.7	**-0.1161**	0.032	27.7	ug/L	5719	Standard
	Cr	53	363.3	2.9	**0.1905**	0.009	4.7	ug/L	132	Standard
	Mn	55	19722.5	0.8	**1.4541**	0.021	1.4	ug/L	927	Standard
	Co	59	488.0	3.0	**0.0436**	0.002	4.4	ug/L	80	Standard
	Ni	60	11358.3	1.0	**4.1230**	0.038	0.9	ug/L	39	Standard
	Cu	65	256.3	3.0	**0.0530**	0.002	4.1	ug/L	91	Standard
	Zn	66	4049.5	0.4	**2.4482**	0.029	1.2	ug/L	159	Standard
>	**Ge**	72	474299.6	0.8				ug/L	504090	Standard
	As	75	-159.1	22.8	**0.0560**	0.023	40.9	ug/L	-261	Standard
	Se	82	-4.5	133.9	**0.2048**	0.038	18.8	ug/L	-43	Standard
	Se-1	77	101.0	11.2	**0.1619**	0.096	59.2	ug/L	86	Standard
>	**Ga**	71	28.3	10.2				mg/L	35	Standard
	Rb	85	858.4	9.6				ug/L	20	Standard
	Y	89	439323.6	1.1				ug/L	462194	Standard
>	**Rh**	103	11.7	65.5				ug/L	7	Standard
	Mo	98	223.0	8.9	**0.0510**	0.005	9.7	ug/L	8	Standard
	Ag	107	48.3	9.3	**-0.0087**	0.001	7.4	ug/L	62	Standard
	Cd	111	4.3	92.9	**-0.0072**	0.002	24.4	mg/L	1	Standard
	Cd	114	31.5	42.8	**-0.0023**	0.002	101.5	ug/L	23	Standard
>	**In**	115	501869.1	0.6				ug/L	502083	Standard
	Sn	118	131.7	8.1	**0.0033**	0.008	242.9	ug/L	144	Standard
	Sb	123	17.2	24.4	**0.0014**	0.002	107.4	ug/L	19	Standard
	Ba	135	949.7	1.8	**0.4851**	0.010	2.1	ug/L	9	Standard
	Ce	140	38.3	15.1				ug/L	17	Standard
>	**Tb**	159	488302.2	0.6				ug/L	490863	Standard
	Ho	165	5.0	0.0				ug/L	2	Standard
	Tl	203	57.0	32.2	**0.0026**	0.003	102.5	ug/L	2	Standard
	Tl	205	80.0	49.6	**0.0078**	0.005	70.6	ug/L	0	Standard
	Pb	206	113.3	10.6	**0.0061**	0.005	80.0	ug/L	84	Standard
	Pb	207	90.3	16.0	**0.0042**	0.006	149.0	ug/L	73	Standard
	Pb	208	249.7	4.1	**0.0003**	0.001	495.9	ug/L	199	Standard
	U	238	75.3	13.3	**0.0169**	0.002	14.4	ug/L	1	Standard
>	**Bi**	209	281892.2	0.9				ug/L	281512	Standard

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⌈	**Na**	23	8.3	34.6	**2.1315**	0.864	40.5	mg/L	2	Standard
|	**Mg**	24	2201.8	2.5	**3.1060**	0.123	4.0	mg/L	38	Standard
|	**K**	39	0.0		**-0.1586**			mg/L	0	Standard
|	**Ca**	43	30.0	44.1	**0.8622**	1.449	168.1	mg/L	23	Standard
|	**Fe**	54	107.4	25.6	**-0.0470**	0.013	28.1	mg/L	234	Standard
|	**Fe**	57	121.7	16.6	**0.0631**	0.033	51.8	mg/L	118	Standard
⌊>	**Sc-1**	45	49597.7	1.7				mg/L	57581	Standard
	Cl	35	31699.2	4.6				ug/L	22827	Standard
	Kr	83	109.0	10.4				ug/L	90	Standard
	Br	81	11547.7	0.4				ug/L	2287	Standard
	P	31	100874.9	2.8				ug/L	215766	Standard
	S	34	48547.7	2.8				ug/L	23460	Standard
	Sr	88	118.3	30.6				ug/L	48	Standard
	C	12	0.0					mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	0	Standard
	Dy	164	9.5	107.6				mg/L	6	Standard
	Ho-1	165	5.0	0.0				mg/L	2	Standard
	Er	166	10.0	100.0				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		107.120	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		94.090	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			
⌊	Rb	85			

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	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	99.957
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	100.135
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, November 22, 2013 11:47:19
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	272885.7	1.2				ug/L	231878	Standard
	Be	9	151936.4	1.3	**48.7156**	0.865	1.8	ug/L	7	Standard
	Al	27	9414183.6	1.0	**48.8109**	0.926	1.9	ug/L	115	Standard
	Sc	45	56518.6	2.0				ug/L	57581	Standard
	Ti	47	49052.9	0.6	**98.1725**	1.013	1.0	ug/L	17	Standard
	V	51	402020.2	1.0	**45.9638**	0.579	1.3	ug/L	1678	Standard
	Cr	52	385057.3	1.6	**46.5876**	0.795	1.7	ug/L	5719	Standard
	Cr	53	75772.3	1.0	**49.6305**	0.748	1.5	ug/L	132	Standard
	Mn	55	716341.1	0.2	**49.6506**	0.344	0.7	ug/L	927	Standard
	Co	59	439382.3	2.1	**47.7861**	1.121	2.3	ug/L	80	Standard
	Ni	60	153028.0	1.1	**49.7568**	0.669	1.3	ug/L	39	Standard
	Cu	65	150743.9	1.0	**49.5698**	0.593	1.2	ug/L	91	Standard
	Zn	66	82798.6	0.8	**49.4702**	0.584	1.2	ug/L	159	Standard
>	**Ge**	72	532252.1	0.5				ug/L	504090	Standard
	As	75	88992.8	0.8	**49.8117**	0.640	1.3	ug/L	-261	Standard
	Se	82	8838.1	1.3	**50.0954**	0.636	1.3	ug/L	-43	Standard
	Se-1	77	6473.4	1.5	**50.6136**	0.904	1.8	ug/L	86	Standard
>	**Ga**	71	51.7	34.0				mg/L	35	Standard
	Rb	85	1295.1	1.8				ug/L	20	Standard
	Y	89	492331.7	2.1				ug/L	462194	Standard
>	**Rh**	103	30.0	28.9				ug/L	7	Standard
	Mo	98	440748.2	0.3	**98.9260**	0.462	0.5	ug/L	8	Standard
	Ag	107	404090.8	0.6	**50.3603**	0.370	0.7	ug/L	62	Standard
	Cd	111	125407.7	0.6	**50.0836**	0.418	0.8	mg/L	1	Standard
	Cd	114	319040.9	0.8	**49.8415**	0.383	0.8	ug/L	23	Standard
>	**In**	115	554020.1	0.4				ug/L	502083	Standard
	Sn	118	78038.5	0.9	**49.7161**	0.317	0.6	ug/L	144	Standard
	Sb	123	153076.1	0.4	**51.0531**	0.414	0.8	ug/L	19	Standard
	Ba	135	106094.8	0.8	**49.8229**	0.497	1.0	ug/L	9	Standard
	Ce	140	41.7	36.7				ug/L	17	Standard
>	**Tb**	159	542948.8	0.5				ug/L	490863	Standard
	Ho	165	3.3	173.2				ug/L	2	Standard
	Tl	203	349348.3	1.2	**49.8325**	0.231	0.5	ug/L	2	Standard
	Tl	205	390705.4	1.1	**51.5192**	0.082	0.2	ug/L	0	Standard
	Pb	206	146437.3	1.1	**51.6692**	0.056	0.1	ug/L	84	Standard
	Pb	207	132861.3	0.8	**51.7091**	0.784	1.5	ug/L	73	Standard
	Pb	208	342338.1	1.0	**50.6297**	0.221	0.4	ug/L	199	Standard
	U	238	233651.4	1.4	**50.7245**	0.170	0.3	ug/L	1	Standard
>	**Bi**	209	301101.7	1.1				ug/L	281512	Standard

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	Na	23	31.7	39.7	**8.1165**	3.359	41.4	mg/L	2	Standard
	Mg	24	4480.7	3.7	**5.5759**	0.276	4.9	mg/L	38	Standard
	K	39	78.3	35.2	**3.8406**	1.429	37.2	mg/L	0	Standard
	Ca	43	56.7	10.2	**3.0568**	0.475	15.5	mg/L	23	Standard
	Fe	54	11134.6	4.9	**4.6671**	0.278	6.0	mg/L	234	Standard
	Fe	57	3243.7	2.0	**4.9347**	0.189	3.8	mg/L	118	Standard
>	**Sc-1**	45	56518.6	2.0				mg/L	57581	Standard
	Cl	35	35864.4	0.8				ug/L	22827	Standard
	Kr	83	106.7	10.5				ug/L	90	Standard
	Br	81	3030.3	5.2				ug/L	2287	Standard
	P	31	354956.1	2.3				ug/L	215766	Standard
	S	34	58735.4	3.1				ug/L	23460	Standard
	Sr	88	86.7	34.8				ug/L	48	Standard
	C	12	3.3	173.2				mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	0	Standard
	Dy	164	9.8	101.7				mg/L	6	Standard
	Ho-1	165	3.3	173.2				mg/L	2	Standard
	Er	166	3.3	173.2				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		117.685	
	Be	9	97.431		
	Al	27	97.622		
	Sc	45			
	Ti	47	98.173		
	V	51	91.928		
	Cr	52	93.175		
	Cr	53			
	Mn	55	99.301		
	Co	59	95.572		
	Ni	60	99.514		
	Cu	65	99.140		
	Zn	66	98.940		
>	Ge	72		105.587	
	As	75	99.623		
	Se	82	100.191		
	Se-1	77			
>	Ga	71			
	Rb	85			

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	Y	89		
>	Rh	103		
	Mo	98	98.926	
	Ag	107	100.721	
	Cd	111	100.167	
	Cd	114		
>	In	115		110.344
	Sn	118	99.432	
	Sb	123	102.106	
	Ba	135	99.646	
	Ce	140		
>	Tb	159		
	Ho	165		
	Tl	203	99.665	
	Tl	205		
	Pb	206		
	Pb	207		
	Pb	208	101.259	
	U	238	101.449	
>	Bi	209		106.959
	Na	23		
	Mg	24		
	K	39		
	Ca	43		
	Fe	54		
	Fe	57		
>	Sc-1	45		
	Cl	35		
	Kr	83		
	Br	81		
	P	31		
	S	34		
	Sr	88		
	C	12		
	N	14		
	Hg	202		
	Dy	164		
	Ho-1	165		
	Er	166		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, November 22, 2013 11:50:23
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	271712.4	2.6				ug/L	231878	Standard
	Be	9	30.0	88.2	**0.0015**	0.008	547.6	ug/L	7	Standard
	Al	27	1001.7	84.3	**0.0011**	0.004	389.0	ug/L	115	Standard
	Sc	45	56568.7	1.3				ug/L	57581	Standard
	Ti	47	19.7	26.1	**-0.0157**	0.010	64.9	ug/L	17	Standard
	V	51	1570.0	5.0	**-0.0268**	0.011	39.4	ug/L	1678	Standard
	Cr	52	5516.3	2.2	**-0.0703**	0.011	15.3	ug/L	5719	Standard
	Cr	53	195.0	26.8	**0.0531**	0.034	64.1	ug/L	132	Standard
	Mn	55	1058.0	4.0	**-0.0078**	0.002	32.1	ug/L	927	Standard
	Co	59	96.3	33.0	**-0.0053**	0.003	64.7	ug/L	80	Standard
	Ni	60	58.0	37.4	**-0.0041**	0.007	171.6	ug/L	39	Standard
	Cu	65	183.7	5.2	**0.0199**	0.003	15.6	ug/L	91	Standard
	Zn	66	201.0	12.6	**-0.1596**	0.015	9.2	ug/L	159	Standard
>	**Ge**	72	522658.5	0.8				ug/L	504090	Standard
	As	75	-312.7	19.2	**-0.0222**	0.035	158.3	ug/L	-261	Standard
	Se	82	-53.2	26.1	**-0.0722**	0.081	112.0	ug/L	-43	Standard
	Se-1	77	95.0	10.4	**0.0303**	0.074	245.5	ug/L	86	Standard
>	**Ga**	71	23.3	24.7				mg/L	35	Standard
	Rb	85	20.0	43.3				ug/L	20	Standard
	Y	89	498154.3	2.2				ug/L	462194	Standard
>	**Rh**	103	1.7	173.2				ug/L	7	Standard
	Mo	98	90.9	56.4	**0.0162**	0.012	71.1	ug/L	8	Standard
	Ag	107	88.7	19.9	**-0.0043**	0.002	51.5	ug/L	62	Standard
	Cd	111	7.9	37.3	**-0.0060**	0.001	19.6	mg/L	1	Standard
	Cd	114	29.5	52.9	**-0.0030**	0.002	81.1	ug/L	23	Standard
>	**In**	115	550820.2	0.3				ug/L	502083	Standard
	Sn	118	81.3	14.8	**-0.0373**	0.008	20.4	ug/L	144	Standard
	Sb	123	399.2	41.9	**0.1290**	0.056	43.3	ug/L	19	Standard
	Ba	135	12.0	46.4	**-0.0017**	0.003	158.6	ug/L	9	Standard
	Ce	140	16.7	45.8				ug/L	17	Standard
>	**Tb**	159	535674.9	0.5				ug/L	490863	Standard
	Ho	165	6.7	114.6				ug/L	2	Standard
	Tl	203	30.7	51.6	**-0.0017**	0.002	128.6	ug/L	2	Standard
	Tl	205	20.0	25.0	**-0.0009**	0.001	72.7	ug/L	0	Standard
	Pb	206	105.3	10.5	**0.0000**	0.004	15654.1	ug/L	84	Standard
	Pb	207	93.7	5.3	**0.0026**	0.002	63.9	ug/L	73	Standard
	Pb	208	241.0	13.5	**-0.0040**	0.005	116.7	ug/L	199	Standard
	U	238	14.3	70.6	**0.0024**	0.002	88.1	ug/L	1	Standard
>	**Bi**	209	305278.2	0.7				ug/L	281512	Standard

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⌈	**Na**	23	1.7	173.2	**0.0266**	0.790	2967.2	mg/L	2	Standard
|	**Mg**	24	53.3	30.1	**0.0300**	0.020	66.5	mg/L	38	Standard
|	**K**	39	0.0		**-0.1586**			mg/L	0	Standard
|	**Ca**	43	16.7	45.8	**-0.8453**	0.742	87.8	mg/L	23	Standard
|	**Fe**	54	250.9	16.7	**0.0079**	0.018	222.7	mg/L	234	Standard
|	**Fe**	57	145.0	26.0	**0.0730**	0.058	80.0	mg/L	118	Standard
⌊>	**Sc-1**	45	56568.7	1.3				mg/L	57581	Standard
	Cl	35	34824.7	2.4				ug/L	22827	Standard
	Kr	83	107.0	13.8				ug/L	90	Standard
	Br	81	2760.3	3.2				ug/L	2287	Standard
	P	31	315499.6	1.1				ug/L	215766	Standard
	S	34	53723.5	4.1				ug/L	23460	Standard
	Sr	88	61.7	4.7				ug/L	48	Standard
	C	12	0.0					mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	0	Standard
	Dy	164	6.2	93.6				mg/L	6	Standard
	Ho-1	165	6.7	114.6				mg/L	2	Standard
	Er	166	10.0	100.0				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		117.179	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		103.684	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			
⌊	Rb	85			

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	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	109.707
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	108.442
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Friday, November 22, 2013 11:53:30
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexION Data\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	270824.0	0.1				ug/L	231878	Standard
	Be	9	601.7	14.8	**0.1864**	0.029	15.4	ug/L	7	Standard
	Al	27	758.4	35.1	**-0.0001**	0.001	1376.4	ug/L	115	Standard
	Sc	45	55377.7	1.6				ug/L	57581	Standard
	Ti	47	11.3	33.4	**-0.0324**	0.008	24.0	ug/L	17	Standard
	V	51	4761.3	2.0	**0.3522**	0.011	3.1	ug/L	1678	Standard
	Cr	52	11552.7	0.9	**0.7006**	0.016	2.2	ug/L	5719	Standard
	Cr	53	1343.4	4.3	**0.8297**	0.040	4.8	ug/L	132	Standard
	Mn	55	8323.3	0.7	**0.5120**	0.005	0.9	ug/L	927	Standard
	Co	59	3457.7	2.3	**0.3710**	0.008	2.2	ug/L	80	Standard
	Ni	60	4724.4	1.0	**1.5579**	0.015	0.9	ug/L	39	Standard
	Cu	65	2537.9	2.7	**0.8177**	0.025	3.1	ug/L	91	Standard
	Zn	66	10789.5	0.9	**6.3878**	0.054	0.8	ug/L	159	Standard
>	**Ge**	72	517315.1	0.2				ug/L	504090	Standard
	As	75	445.4	8.8	**0.4113**	0.022	5.4	ug/L	-261	Standard
	Se	82	28.0	29.0	**0.3959**	0.047	11.8	ug/L	-43	Standard
	Se-1	77	150.3	7.8	**0.4901**	0.094	19.2	ug/L	86	Standard
>	**Ga**	71	31.7	50.8				mg/L	35	Standard
	Rb	85	16.7	45.8				ug/L	20	Standard
	Y	89	492265.6	0.1				ug/L	462194	Standard
>	**Rh**	103	5.0	100.0				ug/L	7	Standard
	Mo	98	38.9	26.9	**0.0046**	0.002	53.4	ug/L	8	Standard
	Ag	107	3195.7	0.7	**0.3891**	0.005	1.3	ug/L	62	Standard
	Cd	111	580.3	1.0	**0.2262**	0.004	1.7	mg/L	1	Standard
	Cd	114	1391.3	2.3	**0.2131**	0.007	3.2	ug/L	23	Standard
>	**In**	115	545705.8	0.8				ug/L	502083	Standard
	Sn	118	78.0	9.0	**-0.0389**	0.005	12.7	ug/L	144	Standard
	Sb	123	1274.6	1.6	**0.4268**	0.008	1.9	ug/L	19	Standard
	Ba	135	1494.4	2.3	**0.7052**	0.012	1.7	ug/L	9	Standard
	Ce	140	15.0	88.2				ug/L	17	Standard
>	**Tb**	159	535485.9	1.3				ug/L	490863	Standard
	Ho	165	11.7	65.5				ug/L	2	Standard
	Tl	203	563.7	5.5	**0.0740**	0.004	5.7	ug/L	2	Standard
	Tl	205	613.3	28.2	**0.0770**	0.023	29.5	ug/L	0	Standard
	Pb	206	656.7	5.3	**0.1941**	0.013	6.4	ug/L	84	Standard
	Pb	207	583.0	3.3	**0.1925**	0.008	4.1	ug/L	73	Standard
	Pb	208	1514.0	3.7	**0.1837**	0.006	3.5	ug/L	199	Standard
	U	238	1879.4	1.7	**0.4053**	0.005	1.3	ug/L	1	Standard
>	**Bi**	209	302629.9	0.8				ug/L	281512	Standard

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	Na	23	1.7	173.2	**0.0382**	0.810	2121.8	mg/L	2	Standard
	Mg	24	65.0	20.4	**0.0463**	0.017	36.2	mg/L	38	Standard
	K	39	3.3	173.2	**0.0175**	0.305	1743.6	mg/L	0	Standard
	Ca	43	23.3	68.9	**-0.1416**	1.612	1138.8	mg/L	23	Standard
	Fe	54	256.8	10.1	**0.0128**	0.011	85.1	mg/L	234	Standard
	Fe	57	130.0	6.7	**0.0540**	0.011	20.3	mg/L	118	Standard
>	**Sc-1**	45	55377.7	1.6				mg/L	57581	Standard
	Cl	35	35219.6	1.6				ug/L	22827	Standard
	Kr	83	88.0	2.3				ug/L	90	Standard
	Br	81	2750.3	5.8				ug/L	2287	Standard
	P	31	311106.0	2.4				ug/L	215766	Standard
	S	34	51870.3	1.8				ug/L	23460	Standard
	Sr	88	75.0	29.1				ug/L	48	Standard
	C	12	0.0					mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	0	Standard
	Dy	164	3.0	187.1				mg/L	6	Standard
	Ho-1	165	11.7	65.5				mg/L	2	Standard
	Er	166	6.7	86.6				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		116.796	
	Be	9	93.184		
	Al	27			
	Sc	45			
	Ti	47			
	V	51	88.045		
	Cr	52	87.573		
	Cr	53			
	Mn	55	102.396		
	Co	59	92.752		
	Ni	60	97.367		
	Cu	65	102.209		
	Zn	66	102.204		
>	Ge	72		102.624	
	As	75	102.820		
	Se	82	98.969		
	Se-1	77			
>	Ga	71			
	Rb	85			

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⌈	Y	89		
⌊>	Rh	103		
⌈	Mo	98		
|	Ag	107	97.271	
|	Cd	111	94.248	
|	Cd	114		
|>	In	115		108.688
|	Sn	118		
|	Sb	123	106.692	
⌊	Ba	135	94.028	
⌈	Ce	140		
⌊>	Tb	159		
⌈	Ho	165		
|	Tl	203	92.478	
|	Tl	205		
|	Pb	206		
|	Pb	207		
|	Pb	208	91.869	
|	U	238	101.336	
⌊>	Bi	209		107.501
⌈	Na	23		
|	Mg	24		
|	K	39		
|	Ca	43		
|	Fe	54		
|	Fe	57		
⌊>	Sc-1	45		
	Cl	35		
	Kr	83		
	Br	81		
	P	31		
	S	34		
	Sr	88		
	C	12		
	N	14		
	Hg	202		
	Dy	164		
	Ho-1	165		
	Er	166		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: PBS 54 WG453334-02
Sample Date/Time: Friday, November 22, 2013 12:04:21
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	357683.3	1.5				ug/L	231878	Standard
	Be	9	23.3	61.9	**-0.0024**	0.003	145.1	ug/L	7	Standard
	Al	27	2503.5	1.7	**0.0058**	0.000	5.1	ug/L	115	Standard
	Sc	45	62860.1	1.5				ug/L	57581	Standard
	Ti	47	57.7	25.3	**0.0557**	0.028	49.9	ug/L	17	Standard
	V	51	-11280.7	14.9	**-1.4614**	0.179	12.3	ug/L	1678	Standard
	Cr	52	16260.4	1.4	**1.1706**	0.032	2.8	ug/L	5719	Standard
	Cr	53	140979.5	0.7	**89.2628**	0.768	0.9	ug/L	132	Standard
	Mn	55	2496.5	1.9	**0.0849**	0.004	5.1	ug/L	927	Standard
	Co	59	97.7	8.3	**-0.0057**	0.001	15.2	ug/L	80	Standard
	Ni	60	2397.5	1.6	**0.7302**	0.017	2.3	ug/L	39	Standard
	Cu	65	442.3	3.8	**0.0989**	0.006	5.7	ug/L	91	Standard
	Zn	66	3164.3	2.8	**1.5542**	0.044	2.8	ug/L	159	Standard
>	**Ge**	72	550971.9	0.7				ug/L	504090	Standard
	As	75	-1000.5	23.8	**-0.3838**	0.129	33.5	ug/L	-261	Standard
	Se	82	-14.7	34.3	**0.1533**	0.027	17.9	ug/L	-43	Standard
	Se-1	77	14241.7	4.5	**108.4019**	5.126	4.7	ug/L	86	Standard
>	**Ga**	71	420.0	32.7				mg/L	35	Standard
	Rb	85	43.3	17.6				ug/L	20	Standard
	Y	89	530872.0	0.6				ug/L	462194	Standard
>	**Rh**	103	5.0	0.0				ug/L	7	Standard
	Mo	98	21.5	2.2	**0.0002**	0.000	35.2	ug/L	8	Standard
	Ag	107	106.7	13.1	**-0.0031**	0.002	50.7	ug/L	62	Standard
	Cd	111	6.6	34.8	**-0.0067**	0.001	12.5	mg/L	1	Standard
	Cd	114	29.0	27.0	**-0.0035**	0.001	33.4	ug/L	23	Standard
>	**In**	115	599133.3	0.9				ug/L	502083	Standard
	Sn	118	99.7	9.1	**-0.0307**	0.005	15.8	ug/L	144	Standard
	Sb	123	94.8	1.0	**0.0244**	0.000	1.8	ug/L	19	Standard
	Ba	135	87.3	7.4	**0.0306**	0.003	8.3	ug/L	9	Standard
	Ce	140	85.0	21.2				ug/L	17	Standard
>	**Tb**	159	587285.5	0.2				ug/L	490863	Standard
	Ho	165	8.3	34.6				ug/L	2	Standard
	Tl	203	20.3	29.6	**-0.0032**	0.001	25.8	ug/L	2	Standard
	Tl	205	20.0	0.0	**-0.0009**	0.000	1.2	ug/L	0	Standard
	Pb	206	162.3	17.0	**0.0183**	0.009	50.8	ug/L	84	Standard
	Pb	207	128.7	5.7	**0.0147**	0.003	17.4	ug/L	73	Standard
	Pb	208	353.3	4.4	**0.0110**	0.002	21.5	ug/L	199	Standard
	U	238	2.0	50.0	**-0.0002**	0.000	102.0	ug/L	1	Standard
>	**Bi**	209	314046.6	0.4				ug/L	281512	Standard

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⌈	**Na**	23	0.0		**-0.4293**	0.000	0.0	mg/L	2	Standard
|	**Mg**	24	125.0	13.9	**0.1040**	0.019	18.0	mg/L	38	Standard
|	**K**	39	3.3	173.2	**-0.0075**	0.262	3464.5	mg/L	0	Standard
|	**Ca**	43	28.3	27.0	**0.0184**	0.669	3638.8	mg/L	23	Standard
|	**Fe**	54	296.6	10.4	**0.0149**	0.013	89.8	mg/L	234	Standard
|	**Fe**	57	148.3	29.1	**0.0557**	0.064	115.0	mg/L	118	Standard
⌊>	**Sc-1**	45	62860.1	1.5				mg/L	57581	Standard
	Cl	35	47497.0	2.9				ug/L	22827	Standard
	Kr	83	112.7	5.7				ug/L	90	Standard
	Br	81	8512.4	12.2				ug/L	2287	Standard
	P	31	383289.4	0.8				ug/L	215766	Standard
	S	34	58710.2	0.2				ug/L	23460	Standard
	Sr	88	70.0	14.3				ug/L	48	Standard
	C	12	3.3	173.2				mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	0	Standard
	Dy	164	19.5	86.6				mg/L	6	Standard
	Ho-1	165	8.3	34.6				mg/L	2	Standard
	Er	166	10.0	100.0				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		154.255	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		109.300	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			
⌊	Rb	85			

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⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	119.330
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	111.557
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
V 51 Lower	V	51	
Se-1 77 Upper, S, EEE	Se-1	77	

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Method 6020 - Summary Report

Sample ID: LCSS 54 WG453334-03
Sample Date/Time: Friday, November 22, 2013 12:07:26
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	359328.4	3.9				ug/L	231878	Standard
	Be	9	94088.0	2.5	**22.9204**	0.816	3.6	ug/L	7	Standard
	Al	27	26576.0	84.4	**0.0992**	0.084	84.9	ug/L	115	Standard
	Sc	45	60597.6	0.9				ug/L	57581	Standard
	Ti	47	92.0	20.1	**0.1200**	0.036	29.9	ug/L	17	Standard
	V	51	178353.1	4.0	**19.3312**	0.819	4.2	ug/L	1678	Standard
	Cr	52	203237.7	0.7	**23.0783**	0.174	0.8	ug/L	5719	Standard
	Cr	53	180918.7	0.4	**113.1346**	0.793	0.7	ug/L	132	Standard
	Mn	55	358080.9	1.1	**23.6323**	0.333	1.4	ug/L	927	Standard
	Co	59	213592.4	0.9	**22.1503**	0.267	1.2	ug/L	80	Standard
	Ni	60	79135.1	0.7	**24.5324**	0.140	0.6	ug/L	39	Standard
	Cu	65	79137.8	0.7	**24.8029**	0.221	0.9	ug/L	91	Standard
	Zn	66	48026.0	0.8	**27.2449**	0.170	0.6	ug/L	159	Standard
>	**Ge**	72	557964.3	0.3				ug/L	504090	Standard
	As	75	43834.9	2.0	**23.4860**	0.435	1.9	ug/L	-261	Standard
	Se	82	4533.8	0.4	**24.6328**	0.129	0.5	ug/L	-43	Standard
	Se-1	77	17643.9	1.3	**132.7678**	1.333	1.0	ug/L	86	Standard
>	**Ga**	71	475.0	7.4				mg/L	35	Standard
	Rb	85	73.3	20.8				ug/L	20	Standard
	Y	89	538844.4	3.4				ug/L	462194	Standard
>	**Rh**	103	16.7	69.3				ug/L	7	Standard
	Mo	98	53.9	54.2	**0.0069**	0.006	88.7	ug/L	8	Standard
	Ag	107	207898.6	1.8	**23.7947**	0.326	1.4	ug/L	62	Standard
	Cd	111	64708.5	0.3	**23.7371**	0.108	0.5	mg/L	1	Standard
	Cd	114	164090.6	1.4	**23.5468**	0.244	1.0	ug/L	23	Standard
>	**In**	115	603028.8	0.5				ug/L	502083	Standard
	Sn	118	626.0	6.6	**0.2776**	0.025	9.0	ug/L	144	Standard
	Sb	123	82109.6	0.3	**25.1562**	0.050	0.2	ug/L	19	Standard
	Ba	135	54734.0	0.7	**23.6108**	0.233	1.0	ug/L	9	Standard
	Ce	140	68.3	11.2				ug/L	17	Standard
>	**Tb**	159	585277.6	1.2				ug/L	490863	Standard
	Ho	165	8.3	34.6				ug/L	2	Standard
	Tl	203	182597.1	0.9	**24.3622**	0.183	0.8	ug/L	2	Standard
	Tl	205	199236.5	1.0	**24.5767**	0.487	2.0	ug/L	0	Standard
	Pb	206	79469.5	1.1	**26.2124**	0.259	1.0	ug/L	84	Standard
	Pb	207	68582.9	0.7	**24.9505**	0.271	1.1	ug/L	73	Standard
	Pb	208	178328.8	0.6	**24.6536**	0.447	1.8	ug/L	199	Standard
	U	238	122954.2	1.0	**24.9737**	0.568	2.3	ug/L	1	Standard
>	**Bi**	209	321891.7	1.2				ug/L	281512	Standard

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Na	23	0.0		**-0.4293**	0.000	0.0	mg/L	2	Standard
Mg	24	135.0	32.3	**0.1212**	0.052	42.8	mg/L	38	Standard
K	39	3.3	173.2	**0.0010**	0.276	26934.5	mg/L	0	Standard
Ca	43	26.7	57.3	**-0.0330**	1.408	4264.5	mg/L	23	Standard
Fe	54	312.5	5.2	**0.0254**	0.008	29.7	mg/L	234	Standard
Fe	57	133.3	34.0	**0.0413**	0.068	164.2	mg/L	118	Standard
Sc-1	45	60597.6	0.9				mg/L	57581	Standard
Cl	35	47529.1	0.3				ug/L	22827	Standard
Kr	83	122.0	17.8				ug/L	90	Standard
Br	81	6511.4	3.8				ug/L	2287	Standard
P	31	382727.2	1.0				ug/L	215766	Standard
S	34	60524.0	0.9				ug/L	23460	Standard
Sr	88	73.3	19.7				ug/L	48	Standard
C	12	0.0					mg/L	3	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	19.8	85.9				mg/L	6	Standard
Ho-1	165	8.3	34.6				mg/L	2	Standard
Er	166	3.3	173.2				mg/L	7	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		154.964	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.687	
As	75			
Se	82			
Se-1	77			
> Ga	71			
Rb	85			

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⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	120.105
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	114.344
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cr 53 Upper, S, EEE	Cr	53	
Se-1 77 Upper, S, EEE	Se-1	77	
In 115 Int Std for sample	In	115	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1311088701
Sample Date/Time: Friday, November 22, 2013 12:10:30
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	350336.1	1.3				ug/L	231878	Standard
	Be	9	2241.8	3.6	**0.5521**	0.027	4.9	ug/L	7	Standard
	Al	27	17460104.7	1.8	**70.5079**	1.013	1.4	ug/L	115	Standard
	Sc	45	85725.2	2.4				ug/L	57581	Standard
	Ti	47	298083.6	0.4	**570.6230**	4.287	0.8	ug/L	17	Standard
	V	51	733062.5	1.2	**80.2853**	1.015	1.3	ug/L	1678	Standard
	Cr	52	491554.7	1.8	**57.0244**	0.806	1.4	ug/L	5719	Standard
	Cr	53	191950.5	2.7	**120.3104**	3.421	2.8	ug/L	132	Standard
	Mn	55	9700569.2	0.9	**643.7863**	4.368	0.7	ug/L	927	Standard
	Co	59	164474.2	0.4	**17.0910**	0.083	0.5	ug/L	80	Standard
	Ni	60	146612.0	1.1	**45.5737**	0.560	1.2	ug/L	39	Standard
	Cu	65	127684.2	2.1	**40.1352**	0.965	2.4	ug/L	91	Standard
	Zn	66	152946.1	0.7	**87.5801**	0.399	0.5	ug/L	159	Standard
>	**Ge**	72	556711.5	0.4				ug/L	504090	Standard
	As	75	10387.8	2.6	**5.6973**	0.163	2.9	ug/L	-261	Standard
	Se	82	-152.3	20.7	**-0.5875**	0.167	28.4	ug/L	-43	Standard
	Se-1	77	9918.9	7.1	**74.4888**	5.368	7.2	ug/L	86	Standard
>	**Ga**	71	52377.0	0.9				mg/L	35	Standard
	Rb	85	514608.1	1.7				ug/L	20	Standard
	Y	89	920620.4	2.4				ug/L	462194	Standard
>	**Rh**	103	45.0	11.1				ug/L	7	Standard
	Mo	98	2715.7	2.2	**0.5695**	0.003	0.6	ug/L	8	Standard
	Ag	107	12178.6	1.2	**1.4142**	0.044	3.1	ug/L	62	Standard
	Cd	111	3829.9	2.6	**1.4309**	0.034	2.4	mg/L	1	Standard
	Cd	114	9596.2	2.6	**1.4035**	0.007	0.5	ug/L	23	Standard
>	**In**	115	588614.1	2.1				ug/L	502083	Standard
	Sn	118	2369.2	1.0	**1.3341**	0.028	2.1	ug/L	144	Standard
	Sb	123	2062.8	4.1	**0.6429**	0.029	4.5	ug/L	19	Standard
	Ba	135	521159.2	1.1	**230.4127**	2.493	1.1	ug/L	9	Standard
	Ce	140	1394034.8	1.7				ug/L	17	Standard
>	**Tb**	159	601510.4	1.3				ug/L	490863	Standard
	Ho	165	16657.5	2.3				ug/L	2	Standard
	Tl	203	1653.1	3.3	**0.2201**	0.006	2.7	ug/L	2	Standard
	Tl	205	1825.1	4.3	**0.2274**	0.010	4.5	ug/L	0	Standard
	Pb	206	92810.1	1.3	**31.3931**	0.193	0.6	ug/L	84	Standard
	Pb	207	78265.0	0.7	**29.1979**	0.154	0.5	ug/L	73	Standard
	Pb	208	206298.6	1.1	**29.2453**	0.124	0.4	ug/L	199	Standard
	U	238	6187.6	0.8	**1.2878**	0.011	0.9	ug/L	1	Standard
>	**Bi**	209	313938.5	0.7				ug/L	281512	Standard

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	Na	23	36.7	15.7	**6.1248**	1.158	18.9	mg/L	2	Standard
	Mg	24	568.3	5.9	**0.4326**	0.028	6.5	mg/L	38	Standard
	K	39	41.7	55.4	**1.2517**	0.796	63.6	mg/L	0	Standard
	Ca	43	95.0	39.7	**3.6840**	2.577	69.9	mg/L	23	Standard
	Fe	54	82229.9	2.0	**23.0994**	0.099	0.4	mg/L	234	Standard
	Fe	57	22855.6	2.7	**23.4760**	0.435	1.9	mg/L	118	Standard
>	**Sc-1**	45	85725.2	2.4				mg/L	57581	Standard
	Cl	35	37763.7	2.8				ug/L	22827	Standard
	Kr	83	314.3	8.2				ug/L	90	Standard
	Br	81	6814.9	2.6				ug/L	2287	Standard
	P	31	401334.3	0.7				ug/L	215766	Standard
	S	34	57246.5	5.1				ug/L	23460	Standard
	Sr	88	228.3	12.5				ug/L	48	Standard
	C	12	0.0					mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	146.7	10.4				mg/L	0	Standard
	Dy	164	24079.3	2.5				mg/L	6	Standard
	Ho-1	165	16657.5	2.3				mg/L	2	Standard
	Er	166	15958.4	3.5				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		151.086	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		110.439	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

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⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	117.234
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	111.519
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ti 47 Upper, S, EEE	Ti	47	
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	
Se 82 Lower	Se	82	

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Ba 135 Upper, S, EEE Ba 135

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Method 6020 - Summary Report

Sample ID: L1311088702
Sample Date/Time: Friday, November 22, 2013 12:13:35
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	351395.7	1.8				ug/L	231878	Standard
	Be	9	2698.6	5.4	**0.6637**	0.024	3.7	ug/L	7	Standard
	Al	27	15455412.2	1.2	**62.2302**	0.785	1.3	ug/L	115	Standard
	Sc	45	90754.3	0.3				ug/L	57581	Standard
	Ti	47	222387.7	1.2	**418.0751**	6.905	1.7	ug/L	17	Standard
	V	51	769582.0	0.8	**82.7822**	1.161	1.4	ug/L	1678	Standard
	Cr	52	414331.1	0.3	**47.0747**	0.320	0.7	ug/L	5719	Standard
	Cr	53	187536.8	0.7	**115.4332**	1.543	1.3	ug/L	132	Standard
	Mn	55	13032060.9	1.1	**849.4063**	10.308	1.2	ug/L	927	Standard
	Co	59	179600.2	0.7	**18.3291**	0.140	0.8	ug/L	80	Standard
	Ni	60	129412.3	0.6	**39.5015**	0.113	0.3	ug/L	39	Standard
	Cu	65	186142.3	1.5	**57.4770**	0.966	1.7	ug/L	91	Standard
	Zn	66	161458.5	1.2	**90.8046**	0.886	1.0	ug/L	159	Standard
>	**Ge**	72	566890.6	0.7				ug/L	504090	Standard
	As	75	11015.6	2.9	**5.9261**	0.152	2.6	ug/L	-261	Standard
	Se	82	-128.8	13.1	**-0.4488**	0.091	20.3	ug/L	-43	Standard
	Se-1	77	11060.7	4.3	**81.6369**	3.412	4.2	ug/L	86	Standard
>	**Ga**	71	51689.7	0.6				mg/L	35	Standard
	Rb	85	547826.6	0.8				ug/L	20	Standard
	Y	89	990213.6	0.4				ug/L	462194	Standard
>	**Rh**	103	83.3	34.1				ug/L	7	Standard
	Mo	98	3837.4	1.5	**0.7955**	0.018	2.2	ug/L	8	Standard
	Ag	107	3761.5	1.1	**0.4200**	0.004	0.9	ug/L	62	Standard
	Cd	111	3001.0	0.4	**1.1038**	0.005	0.4	mg/L	1	Standard
	Cd	114	7919.2	5.8	**1.1408**	0.058	5.1	ug/L	23	Standard
>	**In**	115	596735.1	0.8				ug/L	502083	Standard
	Sn	118	2033.8	2.9	**1.1155**	0.028	2.5	ug/L	144	Standard
	Sb	123	2253.0	4.6	**0.6928**	0.031	4.4	ug/L	19	Standard
	Ba	135	655180.2	0.9	**285.6885**	2.569	0.9	ug/L	9	Standard
	Ce	140	1524560.0	2.1				ug/L	17	Standard
>	**Tb**	159	626729.6	0.5				ug/L	490863	Standard
	Ho	165	19908.1	1.2				ug/L	2	Standard
	Tl	203	1738.1	3.4	**0.2287**	0.008	3.5	ug/L	2	Standard
	Tl	205	2020.1	4.8	**0.2487**	0.012	4.9	ug/L	0	Standard
	Pb	206	153185.9	1.3	**51.1565**	0.716	1.4	ug/L	84	Standard
	Pb	207	127294.9	1.6	**46.8829**	0.790	1.7	ug/L	73	Standard
	Pb	208	338637.1	1.9	**47.3981**	0.928	2.0	ug/L	199	Standard
	U	238	6621.4	2.1	**1.3600**	0.029	2.1	ug/L	1	Standard
>	**Bi**	209	318134.9	0.1				ug/L	281512	Standard

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	Na	23	35.0	0.0	**5.4650**	0.018	0.3	mg/L	2	Standard
	Mg	24	438.3	4.0	**0.3051**	0.015	4.8	mg/L	38	Standard
	K	39	35.0	74.2	**0.9508**	0.822	86.5	mg/L	0	Standard
	Ca	43	76.7	10.0	**2.1922**	0.479	21.9	mg/L	23	Standard
	Fe	54	80961.1	0.7	**21.4747**	0.165	0.8	mg/L	234	Standard
	Fe	57	22207.9	3.9	**21.5334**	0.851	4.0	mg/L	118	Standard
>	**Sc-1**	45	90754.3	0.3				mg/L	57581	Standard
	Cl	35	36911.6	1.3				ug/L	22827	Standard
	Kr	83	313.3	7.5				ug/L	90	Standard
	Br	81	6658.1	7.6				ug/L	2287	Standard
	P	31	407728.4	0.8				ug/L	215766	Standard
	S	34	52761.7	0.2				ug/L	23460	Standard
	Sr	88	303.3	25.8				ug/L	48	Standard
	C	12	3.3	173.2				mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	153.3	39.8				mg/L	0	Standard
	Dy	164	30991.6	1.4				mg/L	6	Standard
	Ho-1	165	19908.1	1.2				mg/L	2	Standard
	Er	166	19736.2	1.7				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		151.543	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		112.458	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

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	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	118.852
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	113.009
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ti 47 Upper, S, EEE	Ti	47	
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	
Se 82 Lower	Se	82	

Sample ID: L1311088702
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Ba 135 Upper, S, EEE Ba 135

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Method 6020 - Summary Report

Sample ID: L1311088703 WG453334-01
Sample Date/Time: Friday, November 22, 2013 12:16:40
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	359354.1	3.0				ug/L	231878	Standard
	Be	9	2870.3	3.8	**0.6908**	0.010	1.5	ug/L	7	Standard
	Al	27	17962493.3	1.8	**70.7741**	3.045	4.3	ug/L	115	Standard
	Sc	45	91051.1	0.3				ug/L	57581	Standard
	Ti	47	257773.3	0.2	**480.8605**	4.896	1.0	ug/L	17	Standard
	V	51	722736.9	1.0	**77.1231**	0.342	0.4	ug/L	1678	Standard
	Cr	52	457529.4	0.6	**51.6533**	0.241	0.5	ug/L	5719	Standard
	Cr	53	204610.7	0.7	**124.9733**	1.271	1.0	ug/L	132	Standard
	Mn	55	11099675.3	1.0	**717.8391**	4.222	0.6	ug/L	927	Standard
	Co	59	164016.0	1.1	**16.6073**	0.035	0.2	ug/L	80	Standard
	Ni	60	142488.9	1.3	**43.1616**	0.733	1.7	ug/L	39	Standard
	Cu	65	156854.1	0.9	**48.0529**	0.554	1.2	ug/L	91	Standard
	Zn	66	170613.2	0.4	**95.2305**	0.895	0.9	ug/L	159	Standard
>	**Ge**	72	571312.6	1.0				ug/L	504090	Standard
	As	75	11023.9	2.7	**5.8859**	0.143	2.4	ug/L	-261	Standard
	Se	82	-145.7	7.3	**-0.5327**	0.061	11.4	ug/L	-43	Standard
	Se-1	77	12201.9	1.2	**89.4441**	1.703	1.9	ug/L	86	Standard
>	**Ga**	71	55136.8	2.5				mg/L	35	Standard
	Rb	85	587608.3	1.0				ug/L	20	Standard
	Y	89	1003291.7	0.4				ug/L	462194	Standard
>	**Rh**	103	103.3	11.2				ug/L	7	Standard
	Mo	98	3564.1	1.1	**0.7303**	0.011	1.4	ug/L	8	Standard
	Ag	107	10411.2	1.1	**1.1763**	0.018	1.5	ug/L	62	Standard
	Cd	111	3520.4	0.2	**1.2819**	0.004	0.3	mg/L	1	Standard
	Cd	114	9224.1	1.4	**1.3156**	0.025	1.9	ug/L	23	Standard
>	**In**	115	603429.3	0.5				ug/L	502083	Standard
	Sn	118	2501.2	0.1	**1.3762**	0.007	0.5	ug/L	144	Standard
	Sb	123	2704.8	2.7	**0.8234**	0.020	2.5	ug/L	19	Standard
	Ba	135	719808.1	0.3	**310.3834**	0.605	0.2	ug/L	9	Standard
	Ce	140	1450926.1	1.5				ug/L	17	Standard
>	**Tb**	159	624063.1	0.7				ug/L	490863	Standard
	Ho	165	20502.2	2.1				ug/L	2	Standard
	Tl	203	1880.8	2.0	**0.2483**	0.004	1.7	ug/L	2	Standard
	Tl	205	2065.1	7.0	**0.2548**	0.020	7.8	ug/L	0	Standard
	Pb	206	140951.6	0.7	**47.1410**	0.137	0.3	ug/L	84	Standard
	Pb	207	117903.0	0.5	**43.4892**	0.193	0.4	ug/L	73	Standard
	Pb	208	311480.3	1.1	**43.6628**	0.561	1.3	ug/L	199	Standard
	U	238	7153.7	0.5	**1.4717**	0.017	1.1	ug/L	1	Standard
>	**Bi**	209	317642.5	0.8				ug/L	281512	Standard

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	Na	23	50.0	40.0	**7.9706**	3.384	42.5	mg/L	2	Standard
	Mg	24	453.3	14.7	**0.3157**	0.053	16.7	mg/L	38	Standard
	K	39	56.7	39.8	**1.6335**	0.717	43.9	mg/L	0	Standard
	Ca	43	151.7	27.5	**6.7149**	2.497	37.2	mg/L	23	Standard
	Fe	54	82808.6	1.6	**21.8947**	0.316	1.4	mg/L	234	Standard
	Fe	57	22191.2	1.2	**21.4460**	0.240	1.1	mg/L	118	Standard
>	**Sc-1**	45	91051.1	0.3				mg/L	57581	Standard
	Cl	35	36988.4	1.3				ug/L	22827	Standard
	Kr	83	328.3	1.8				ug/L	90	Standard
	Br	81	7391.8	3.6				ug/L	2287	Standard
	P	31	406241.3	1.3				ug/L	215766	Standard
	S	34	53470.9	1.9				ug/L	23460	Standard
	Sr	88	285.0	4.6				ug/L	48	Standard
	C	12	3.3	173.2				mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	223.3	10.3				mg/L	0	Standard
	Dy	164	30624.7	2.6				mg/L	6	Standard
	Ho-1	165	20502.2	2.1				mg/L	2	Standard
	Er	166	19445.8	4.0				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		154.975	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		113.335	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

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	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	120.185
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	112.834
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ti 47 Upper, S, EEE	Ti	47	
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	
Se 82 Lower	Se	82	

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In 115 Int Std for sample	In	115	Rerun sample
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1311088712S WG453334-04
Sample Date/Time: Friday, November 22, 2013 12:19:45
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	359476.2	0.9				ug/L	231878	Standard
	Be	9	96340.3	0.3	**23.4441**	0.277	1.2	ug/L	7	Standard
	Al	27	16452241.2	1.1	**64.7527**	1.092	1.7	ug/L	115	Standard
	Sc	45	88982.2	1.6				ug/L	57581	Standard
	Ti	47	223794.0	0.7	**417.1666**	5.774	1.4	ug/L	17	Standard
	V	51	836931.2	1.1	**89.2859**	1.722	1.9	ug/L	1678	Standard
	Cr	52	564601.1	1.5	**63.8778**	1.430	2.2	ug/L	5719	Standard
	Cr	53	230045.0	1.0	**140.4132**	1.536	1.1	ug/L	132	Standard
	Mn	55	11575205.2	2.0	**748.1474**	20.546	2.7	ug/L	927	Standard
	Co	59	378533.3	1.2	**38.3239**	0.645	1.7	ug/L	80	Standard
	Ni	60	200781.3	0.6	**60.7843**	0.789	1.3	ug/L	39	Standard
	Cu	65	227466.1	0.5	**69.6521**	0.530	0.8	ug/L	91	Standard
	Zn	66	199652.6	1.1	**111.3995**	0.607	0.5	ug/L	159	Standard
>	**Ge**	72	571724.4	0.8				ug/L	504090	Standard
	As	75	55316.1	0.4	**28.8894**	0.131	0.5	ug/L	-261	Standard
	Se	82	4311.3	2.1	**22.8790**	0.566	2.5	ug/L	-43	Standard
	Se-1	77	15907.3	1.7	**116.7277**	1.093	0.9	ug/L	86	Standard
>	**Ga**	71	48489.1	1.6				mg/L	35	Standard
	Rb	85	530147.6	1.0				ug/L	20	Standard
	Y	89	980251.2	0.4				ug/L	462194	Standard
>	**Rh**	103	93.3	8.2				ug/L	7	Standard
	Mo	98	3712.1	4.0	**0.7653**	0.032	4.1	ug/L	8	Standard
	Ag	107	212439.0	0.6	**24.4451**	0.145	0.6	ug/L	62	Standard
	Cd	111	67434.7	1.4	**24.8683**	0.249	1.0	mg/L	1	Standard
	Cd	114	172610.6	2.0	**24.9008**	0.379	1.5	ug/L	23	Standard
>	**In**	115	599838.7	0.5				ug/L	502083	Standard
	Sn	118	1970.8	3.4	**1.0724**	0.045	4.2	ug/L	144	Standard
	Sb	123	84220.9	0.8	**25.9406**	0.237	0.9	ug/L	19	Standard
	Ba	135	752956.7	0.7	**326.6173**	0.669	0.2	ug/L	9	Standard
	Ce	140	1387081.0	0.7				ug/L	17	Standard
>	**Tb**	159	622873.6	0.3				ug/L	490863	Standard
	Ho	165	19090.4	1.4				ug/L	2	Standard
	Tl	203	183568.0	0.6	**24.8275**	0.131	0.5	ug/L	2	Standard
	Tl	205	199152.0	1.1	**24.9002**	0.220	0.9	ug/L	0	Standard
	Pb	206	203405.3	0.8	**68.0689**	0.395	0.6	ug/L	84	Standard
	Pb	207	172548.4	1.3	**63.6808**	0.404	0.6	ug/L	73	Standard
	Pb	208	452575.2	0.9	**63.4794**	0.415	0.7	ug/L	199	Standard
	U	238	129148.9	1.9	**26.5870**	0.439	1.7	ug/L	1	Standard
>	**Bi**	209	317529.5	0.6				ug/L	281512	Standard

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	Na	23	70.0	12.4	**11.5809**	1.293	11.2	mg/L	2	Standard
	Mg	24	441.7	8.0	**0.3144**	0.025	7.9	mg/L	38	Standard
	K	39	48.3	26.0	**1.4024**	0.391	27.9	mg/L	0	Standard
	Ca	43	113.3	35.7	**4.5790**	2.573	56.2	mg/L	23	Standard
	Fe	54	69975.7	1.9	**18.9182**	0.141	0.7	mg/L	234	Standard
	Fe	57	19193.8	2.8	**18.9606**	0.227	1.2	mg/L	118	Standard
>	**Sc-1**	45	88982.2	1.6				mg/L	57581	Standard
	Cl	35	36790.0	3.0				ug/L	22827	Standard
	Kr	83	302.3	2.0				ug/L	90	Standard
	Br	81	6704.8	5.1				ug/L	2287	Standard
	P	31	399468.6	1.8				ug/L	215766	Standard
	S	34	51836.9	1.2				ug/L	23460	Standard
	Sr	88	233.3	8.7				ug/L	48	Standard
	C	12	3.3	173.2				mg/L	3	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	270.0	25.9				mg/L	0	Standard
	Dy	164	29287.6	1.0				mg/L	6	Standard
	Ho-1	165	19090.4	1.4				mg/L	2	Standard
	Er	166	19188.8	3.5				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		155.028	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		113.417	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

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	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	119.470
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	112.794
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ti 47 Upper, S, EEE	Ti	47	
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Se-1 77 Upper, S, EEE	Se-1	77
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1311088713SD WG453334-05
Sample Date/Time: Friday, November 22, 2013 12:22:50
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	358285.5	1.4				ug/L	231878	Standard
	Be	9	93370.2	1.3	**22.8002**	0.577	2.5	ug/L	7	Standard
	Al	27	19186647.6	1.9	**75.7780**	2.284	3.0	ug/L	115	Standard
	Sc	45	88072.0	1.8				ug/L	57581	Standard
	Ti	47	273067.1	0.5	**517.5847**	3.906	0.8	ug/L	17	Standard
	V	51	892766.2	2.1	**96.8600**	2.262	2.3	ug/L	1678	Standard
	Cr	52	633322.3	1.6	**72.9631**	1.374	1.9	ug/L	5719	Standard
	Cr	53	242710.6	1.8	**150.6386**	2.133	1.4	ug/L	132	Standard
	Mn	55	10939056.7	0.2	**718.8662**	4.855	0.7	ug/L	927	Standard
	Co	59	379574.8	1.9	**39.0770**	0.864	2.2	ug/L	80	Standard
	Ni	60	237891.4	0.9	**73.2324**	0.340	0.5	ug/L	39	Standard
	Cu	65	230231.5	1.0	**71.6865**	0.597	0.8	ug/L	91	Standard
	Zn	66	217172.0	0.6	**123.2489**	0.570	0.5	ug/L	159	Standard
>	**Ge**	72	562243.0	0.4				ug/L	504090	Standard
	As	75	55412.3	0.1	**29.4245**	0.162	0.6	ug/L	-261	Standard
	Se	82	4308.1	0.3	**23.2421**	0.041	0.2	ug/L	-43	Standard
	Se-1	77	15728.5	1.0	**117.3738**	1.462	1.2	ug/L	86	Standard
>	**Ga**	71	53793.7	1.2				mg/L	35	Standard
	Rb	85	567148.4	2.8				ug/L	20	Standard
	Y	89	970735.1	2.1				ug/L	462194	Standard
>	**Rh**	103	93.3	15.5				ug/L	7	Standard
	Mo	98	3946.0	0.3	**0.8231**	0.013	1.6	ug/L	8	Standard
	Ag	107	207609.8	0.9	**24.1579**	0.248	1.0	ug/L	62	Standard
	Cd	111	67402.9	0.7	**25.1375**	0.266	1.1	mg/L	1	Standard
	Cd	114	172399.8	1.3	**25.1507**	0.214	0.9	ug/L	23	Standard
>	**In**	115	593210.7	1.5				ug/L	502083	Standard
	Sn	118	2221.8	1.9	**1.2353**	0.044	3.5	ug/L	144	Standard
	Sb	123	82409.0	1.3	**25.6664**	0.064	0.2	ug/L	19	Standard
	Ba	135	730560.8	0.6	**320.4747**	2.991	0.9	ug/L	9	Standard
	Ce	140	1386700.3	0.2				ug/L	17	Standard
>	**Tb**	159	621188.3	0.5				ug/L	490863	Standard
	Ho	165	19581.0	0.7				ug/L	2	Standard
	Tl	203	180454.3	1.0	**24.4663**	0.064	0.3	ug/L	2	Standard
	Tl	205	195765.5	2.8	**24.5354**	0.524	2.1	ug/L	0	Standard
	Pb	206	221095.8	0.4	**74.1793**	0.769	1.0	ug/L	84	Standard
	Pb	207	185162.6	0.7	**68.5112**	0.419	0.6	ug/L	73	Standard
	Pb	208	488759.5	1.6	**68.7251**	0.596	0.9	ug/L	199	Standard
	U	238	127363.5	1.3	**26.2841**	0.155	0.6	ug/L	1	Standard
>	**Bi**	209	316743.3	0.7				ug/L	281512	Standard

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	Na	23	60.0	38.2	**10.0320**	4.132	41.2	mg/L	2	Standard
	Mg	24	456.7	15.3	**0.3308**	0.062	18.6	mg/L	38	Standard
	K	39	33.3	31.2	**0.9341**	0.356	38.1	mg/L	0	Standard
	Ca	43	138.3	24.1	**6.2222**	2.218	35.6	mg/L	23	Standard
	Fe	54	78793.1	1.4	**21.5395**	0.371	1.7	mg/L	234	Standard
	Fe	57	22239.6	2.5	**22.2251**	0.348	1.6	mg/L	118	Standard
>	**Sc-1**	45	88072.0	1.8				mg/L	57581	Standard
	Cl	35	36268.7	0.6				ug/L	22827	Standard
	Kr	83	306.0	4.0				ug/L	90	Standard
	Br	81	6804.9	6.0				ug/L	2287	Standard
	P	31	395954.0	0.9				ug/L	215766	Standard
	S	34	50923.8	0.6				ug/L	23460	Standard
	Sr	88	266.7	11.3				ug/L	48	Standard
	C	12	3.3	173.2				mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	250.0	10.6				mg/L	0	Standard
	Dy	164	29178.3	3.2				mg/L	6	Standard
	Ho-1	165	19581.0	0.7				mg/L	2	Standard
	Er	166	18471.3	3.4				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		154.514	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		111.536	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

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	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	118.150
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	112.515
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ti 47 Upper, S, EEE	Ti	47	
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

Sample ID: L1311088713SD WG453334-05
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Se-1 77 Upper, S, EEE	Se-1	77
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1311088705
Sample Date/Time: Friday, November 22, 2013 12:25:54
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	338837.1	0.9				ug/L	231878	Standard
	Be	9	2225.2	4.2	**0.5668**	0.029	5.1	ug/L	7	Standard
	Al	27	13013153.5	1.5	**54.3296**	0.346	0.6	ug/L	115	Standard
	Sc	45	85499.0	2.1				ug/L	57581	Standard
	Ti	47	213495.0	1.0	**404.4997**	4.966	1.2	ug/L	17	Standard
	V	51	685398.9	0.1	**74.2813**	0.138	0.2	ug/L	1678	Standard
	Cr	52	337750.3	1.2	**38.5389**	0.420	1.1	ug/L	5719	Standard
	Cr	53	167575.1	1.6	**103.9450**	1.653	1.6	ug/L	132	Standard
	Mn	55	9597972.8	1.1	**630.4810**	8.800	1.4	ug/L	927	Standard
	Co	59	142676.7	1.2	**14.6719**	0.159	1.1	ug/L	80	Standard
	Ni	60	97150.5	0.5	**29.8819**	0.210	0.7	ug/L	39	Standard
	Cu	65	104458.9	0.9	**32.4898**	0.308	0.9	ug/L	91	Standard
	Zn	66	116739.7	0.4	**66.0952**	0.199	0.3	ug/L	159	Standard
>	**Ge**	72	562463.2	0.2				ug/L	504090	Standard
	As	75	8260.4	3.0	**4.5172**	0.136	3.0	ug/L	-261	Standard
	Se	82	-134.1	27.8	**-0.4823**	0.198	41.1	ug/L	-43	Standard
	Se-1	77	10701.4	1.4	**79.5917**	1.240	1.6	ug/L	86	Standard
>	**Ga**	71	43826.6	2.1				mg/L	35	Standard
	Rb	85	504347.4	1.2				ug/L	20	Standard
	Y	89	907468.3	0.9				ug/L	462194	Standard
>	**Rh**	103	50.0	10.0				ug/L	7	Standard
	Mo	98	3067.2	1.2	**0.6463**	0.014	2.1	ug/L	8	Standard
	Ag	107	1940.5	4.9	**0.2132**	0.012	5.8	ug/L	62	Standard
	Cd	111	1227.9	6.5	**0.4540**	0.025	5.4	mg/L	1	Standard
	Cd	114	3250.1	1.2	**0.4722**	0.012	2.4	ug/L	23	Standard
>	**In**	115	586403.3	1.4				ug/L	502083	Standard
	Sn	118	1626.8	3.9	**0.8919**	0.052	5.8	ug/L	144	Standard
	Sb	123	1837.1	0.9	**0.5740**	0.004	0.7	ug/L	19	Standard
	Ba	135	476621.3	1.3	**211.4929**	2.203	1.0	ug/L	9	Standard
	Ce	140	1276640.2	0.9				ug/L	17	Standard
>	**Tb**	159	606006.5	0.2				ug/L	490863	Standard
	Ho	165	16739.2	1.2				ug/L	2	Standard
	Tl	203	1625.1	4.5	**0.2166**	0.009	4.2	ug/L	2	Standard
	Tl	205	1666.8	5.3	**0.2076**	0.012	5.9	ug/L	0	Standard
	Pb	206	62410.3	1.6	**21.1248**	0.283	1.3	ug/L	84	Standard
	Pb	207	51619.8	0.6	**19.2699**	0.061	0.3	ug/L	73	Standard
	Pb	208	137087.0	0.6	**19.4451**	0.049	0.3	ug/L	199	Standard
	U	238	5717.7	0.3	**1.1915**	0.010	0.9	ug/L	1	Standard
>	**Bi**	209	313553.3	0.8				ug/L	281512	Standard

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	Na	23	18.3	56.8	**2.8236**	1.780	63.0	mg/L	2	Standard
	Mg	24	470.0	12.3	**0.3527**	0.052	14.8	mg/L	38	Standard
	K	39	36.7	7.9	**1.0762**	0.104	9.6	mg/L	0	Standard
	Ca	43	65.0	26.6	**1.7403**	1.186	68.2	mg/L	23	Standard
	Fe	54	69186.2	1.4	**19.4781**	0.622	3.2	mg/L	234	Standard
	Fe	57	19152.1	3.7	**19.6984**	0.611	3.1	mg/L	118	Standard
>	**Sc-1**	45	85499.0	2.1				mg/L	57581	Standard
	Cl	35	34977.0	1.0				ug/L	22827	Standard
	Kr	83	287.0	10.0				ug/L	90	Standard
	Br	81	6284.6	2.9				ug/L	2287	Standard
	P	31	380697.0	1.0				ug/L	215766	Standard
	S	34	47068.0	0.3				ug/L	23460	Standard
	Sr	88	246.7	9.4				ug/L	48	Standard
	C	12	3.3	173.2				mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	56.7	66.8				mg/L	0	Standard
	Dy	164	25554.7	0.1				mg/L	6	Standard
	Ho-1	165	16739.2	1.2				mg/L	2	Standard
	Er	166	16245.4	3.4				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		146.127	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		111.580	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

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	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	116.794
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	111.382
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ti 47 Upper, S, EEE	Ti	47	
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	
Se 82 Lower	Se	82	

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Ba 135 Upper, S, EEE Ba 135

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Method 6020 - Summary Report

Sample ID: L1311088705PS WG453986-01
Sample Date/Time: Friday, November 22, 2013 12:28:59
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	371977.4	4.1				ug/L	231878	Standard
	Be	9	199341.1	0.3	**46.9355**	1.889	4.0	ug/L	7	Standard
	Al	27	13519657.0	1.0	**51.4629**	1.684	3.3	ug/L	115	Standard
	Sc	45	93460.8	2.2				ug/L	57581	Standard
	Ti	47	230858.4	2.9	**404.9638**	6.338	1.6	ug/L	17	Standard
	V	51	1218874.4	0.2	**122.4709**	1.543	1.3	ug/L	1678	Standard
	Cr	52	813665.3	0.8	**86.9186**	1.283	1.5	ug/L	5719	Standard
	Cr	53	263892.1	1.9	**151.6018**	0.699	0.5	ug/L	132	Standard
	Mn	55	11431848.2	0.5	**695.4661**	11.646	1.7	ug/L	927	Standard
	Co	59	656289.2	0.6	**62.5527**	0.783	1.3	ug/L	80	Standard
	Ni	60	288725.3	1.3	**82.2816**	1.242	1.5	ug/L	39	Standard
	Cu	65	284522.5	1.1	**82.0118**	0.614	0.7	ug/L	91	Standard
	Zn	66	212390.6	0.6	**111.5524**	0.949	0.9	ug/L	159	Standard
>	**Ge**	72	607423.2	1.5				ug/L	504090	Standard
	As	75	108342.9	0.7	**53.1333**	0.920	1.7	ug/L	-261	Standard
	Se	82	9569.8	0.6	**47.5463**	0.507	1.1	ug/L	-43	Standard
	Se-1	77	17505.8	0.2	**120.9561**	1.725	1.4	ug/L	86	Standard
>	**Ga**	71	49096.1	0.6				mg/L	35	Standard
	Rb	85	552171.1	1.5				ug/L	20	Standard
	Y	89	970559.8	2.0				ug/L	462194	Standard
>	**Rh**	103	71.7	16.1				ug/L	7	Standard
	Mo	98	3514.9	1.2	**0.6992**	0.001	0.2	ug/L	8	Standard
	Ag	107	466217.3	1.3	**51.8036**	0.246	0.5	ug/L	62	Standard
	Cd	111	142264.0	1.3	**50.6554**	0.309	0.6	mg/L	1	Standard
	Cd	114	356590.4	0.5	**49.6714**	0.414	0.8	ug/L	23	Standard
>	**In**	115	621376.2	1.1				ug/L	502083	Standard
	Sn	118	2047.5	0.9	**1.0757**	0.013	1.2	ug/L	144	Standard
	Sb	123	177113.1	0.2	**52.6693**	0.543	1.0	ug/L	19	Standard
	Ba	135	633064.8	0.6	**265.1180**	3.856	1.5	ug/L	9	Standard
	Ce	140	1364984.5	2.0				ug/L	17	Standard
>	**Tb**	159	637229.8	0.9				ug/L	490863	Standard
	Ho	165	17438.4	2.6				ug/L	2	Standard
	Tl	203	396860.9	0.9	**51.8927**	0.659	1.3	ug/L	2	Standard
	Tl	205	434797.2	0.7	**52.5538**	0.297	0.6	ug/L	0	Standard
	Pb	206	231303.4	1.6	**74.8298**	1.405	1.9	ug/L	84	Standard
	Pb	207	204817.1	1.0	**73.0794**	1.118	1.5	ug/L	73	Standard
	Pb	208	531373.0	0.5	**72.0534**	0.696	1.0	ug/L	199	Standard
	U	238	277382.0	0.2	**55.2003**	0.252	0.5	ug/L	1	Standard
>	**Bi**	209	328487.7	0.6				ug/L	281512	Standard

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	Na	23	25.0	20.0	**3.6493**	0.740	20.3	mg/L	2	Standard
	Mg	24	498.3	17.1	**0.3403**	0.060	17.8	mg/L	38	Standard
	K	39	41.7	42.1	**1.1252**	0.536	47.6	mg/L	0	Standard
	Ca	43	60.0	43.3	**1.0602**	1.476	139.3	mg/L	23	Standard
	Fe	54	75770.3	1.7	**19.5088**	0.229	1.2	mg/L	234	Standard
	Fe	57	20707.5	3.3	**19.4810**	0.388	2.0	mg/L	118	Standard
>	**Sc-1**	45	93460.8	2.2				mg/L	57581	Standard
	Cl	35	36264.7	2.6				ug/L	22827	Standard
	Kr	83	305.0	4.6				ug/L	90	Standard
	Br	81	6834.9	3.7				ug/L	2287	Standard
	P	31	592594.1	2.9				ug/L	215766	Standard
	S	34	46727.0	1.4				ug/L	23460	Standard
	Sr	88	265.0	1.9				ug/L	48	Standard
	C	12	0.0					mg/L	3	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	86.7	37.1				mg/L	0	Standard
	Dy	164	27478.2	2.8				mg/L	6	Standard
	Ho-1	165	17438.4	2.6				mg/L	2	Standard
	Er	166	17149.7	3.1				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		160.419	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		120.499	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

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	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	123.760
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	116.687
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ti 47 Upper, S, EEE	Ti	47	
V 51 Upper, S, EEE	V	51	
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	

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Zn 66 Upper, S, EEE	Zn	66	
Ge 72 Int Std for sample	Ge	72	Rerun sample
Se-1 77 Upper, S, EEE	Se-1	77	
In 115 Int Std for sample	In	115	Rerun sample
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1311088705SDL WG453986-02
Sample Date/Time: Friday, November 22, 2013 12:32:04
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	247127.1	3.3				ug/L	231878	Standard
	Be	9	351.7	8.1	**0.1164**	0.007	5.8	ug/L	7	Standard
	Al	27	1790822.2	0.6	**10.2570**	0.398	3.9	ug/L	115	Standard
	Sc	45	56260.9	0.5				ug/L	57581	Standard
	Ti	47	35216.5	0.8	**77.4915**	0.616	0.8	ug/L	17	Standard
	V	51	120225.1	1.1	**14.9734**	0.073	0.5	ug/L	1678	Standard
	Cr	52	61748.3	1.7	**7.5882**	0.117	1.5	ug/L	5719	Standard
	Cr	53	34734.8	1.7	**24.9778**	0.275	1.1	ug/L	132	Standard
	Mn	55	1429149.7	0.9	**109.0237**	0.733	0.7	ug/L	927	Standard
	Co	59	24624.0	1.4	**2.9298**	0.036	1.2	ug/L	80	Standard
	Ni	60	16957.2	1.9	**6.0428**	0.136	2.2	ug/L	39	Standard
	Cu	65	19011.3	0.8	**6.8385**	0.037	0.5	ug/L	91	Standard
	Zn	66	24615.7	2.1	**15.9822**	0.324	2.0	ug/L	159	Standard
>	**Ge**	72	484018.7	0.6				ug/L	504090	Standard
	As	75	1244.7	7.8	**0.9192**	0.057	6.2	ug/L	-261	Standard
	Se	82	-65.6	11.3	**-0.1733**	0.045	25.8	ug/L	-43	Standard
	Se-1	77	2387.2	0.8	**20.0869**	0.259	1.3	ug/L	86	Standard
>	**Ga**	71	7541.9	2.5				mg/L	35	Standard
	Rb	85	87907.7	1.9				ug/L	20	Standard
	Y	89	516928.2	1.6				ug/L	462194	Standard
>	**Rh**	103	16.7	45.8				ug/L	7	Standard
	Mo	98	534.9	2.6	**0.1285**	0.003	2.4	ug/L	8	Standard
	Ag	107	375.7	11.4	**0.0364**	0.006	15.5	ug/L	62	Standard
	Cd	111	210.5	2.6	**0.0839**	0.002	2.2	mg/L	1	Standard
	Cd	114	554.1	10.4	**0.0881**	0.010	10.9	ug/L	23	Standard
>	**In**	115	500814.0	0.6				ug/L	502083	Standard
	Sn	118	281.3	2.0	**0.1092**	0.004	4.0	ug/L	144	Standard
	Sb	123	422.1	2.7	**0.1509**	0.003	2.2	ug/L	19	Standard
	Ba	135	83164.6	0.7	**43.2043**	0.544	1.3	ug/L	9	Standard
	Ce	140	225650.0	2.0				ug/L	17	Standard
>	**Tb**	159	499634.4	0.4				ug/L	490863	Standard
	Ho	165	2798.6	3.8				ug/L	2	Standard
	Tl	203	294.7	4.2	**0.0383**	0.002	5.1	ug/L	2	Standard
	Tl	205	358.3	5.3	**0.0464**	0.003	5.8	ug/L	0	Standard
	Pb	206	10860.2	1.2	**4.0106**	0.039	1.0	ug/L	84	Standard
	Pb	207	8997.0	1.3	**3.6644**	0.051	1.4	ug/L	73	Standard
	Pb	208	24712.5	0.6	**3.8212**	0.017	0.4	ug/L	199	Standard
	U	238	981.0	3.2	**0.2242**	0.007	3.1	ug/L	1	Standard
>	**Bi**	209	285285.4	0.2				ug/L	281512	Standard

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	Na	23	5.0	173.2	**0.9272**	2.350	253.4	mg/L	2	Standard
	Mg	24	115.0	11.5	**0.1079**	0.017	15.4	mg/L	38	Standard
	K	39	6.7	114.6	**0.1813**	0.389	214.6	mg/L	0	Standard
	Ca	43	35.0	28.6	**0.9660**	0.997	103.3	mg/L	23	Standard
	Fe	54	12698.5	3.7	**5.3585**	0.179	3.3	mg/L	234	Standard
	Fe	57	3365.4	1.6	**5.1473**	0.068	1.3	mg/L	118	Standard
>	**Sc-1**	45	56260.9	0.5				mg/L	57581	Standard
	Cl	35	26982.0	3.5				ug/L	22827	Standard
	Kr	83	138.7	1.8				ug/L	90	Standard
	Br	81	3070.3	3.4				ug/L	2287	Standard
	P	31	133455.4	2.6				ug/L	215766	Standard
	S	34	37382.7	1.5				ug/L	23460	Standard
	Sr	88	113.3	6.7				ug/L	48	Standard
	C	12	0.0					mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	13.3	86.6				mg/L	0	Standard
	Dy	164	4217.5	7.9				mg/L	6	Standard
	Ho-1	165	2798.6	3.8				mg/L	2	Standard
	Er	166	2710.2	10.2				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		106.576	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		96.018	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

Sample ID: L1311088705SDL WG453986-02
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	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	99.747
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	101.340
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Approved: November 24, 2013

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, November 22, 2013 12:35:11
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	229679.6	1.2				ug/L	231878	Standard
	Be	9	134064.3	3.4	**51.0768**	2.055	4.0	ug/L	7	Standard
	Al	27	7976322.5	1.1	**49.1337**	0.792	1.6	ug/L	115	Standard
	Sc	45	53308.6	2.1				ug/L	57581	Standard
	Ti	47	45752.3	1.6	**97.1751**	1.986	2.0	ug/L	17	Standard
	V	51	395860.6	0.8	**48.0385**	0.291	0.6	ug/L	1678	Standard
	Cr	52	379477.2	0.9	**48.7632**	0.996	2.0	ug/L	5719	Standard
	Cr	53	71972.2	0.9	**50.0256**	0.292	0.6	ug/L	132	Standard
	Mn	55	668729.7	0.3	**49.1894**	0.627	1.3	ug/L	927	Standard
	Co	59	420170.8	1.5	**48.4948**	0.877	1.8	ug/L	80	Standard
	Ni	60	143419.3	1.1	**49.4911**	0.979	2.0	ug/L	39	Standard
	Cu	65	141624.9	1.6	**49.4215**	0.805	1.6	ug/L	91	Standard
	Zn	66	77042.4	1.4	**48.8430**	0.503	1.0	ug/L	159	Standard
>	**Ge**	72	501575.3	1.4				ug/L	504090	Standard
	As	75	83980.8	1.4	**49.8801**	0.411	0.8	ug/L	-261	Standard
	Se	82	8216.9	0.9	**49.4286**	0.341	0.7	ug/L	-43	Standard
	Se-1	77	6073.9	1.4	**50.3973**	1.072	2.1	ug/L	86	Standard
>	**Ga**	71	48.3	26.0				mg/L	35	Standard
	Rb	85	1210.0	3.3				ug/L	20	Standard
	Y	89	452995.4	0.3				ug/L	462194	Standard
>	**Rh**	103	23.3	53.9				ug/L	7	Standard
	Mo	98	404603.9	1.0	**101.1400**	0.443	0.4	ug/L	8	Standard
	Ag	107	368271.8	1.4	**51.1138**	0.327	0.6	ug/L	62	Standard
	Cd	111	112218.3	0.9	**49.9161**	0.824	1.7	mg/L	1	Standard
	Cd	114	285442.2	0.8	**49.6660**	0.579	1.2	ug/L	23	Standard
>	**In**	115	497454.2	1.0				ug/L	502083	Standard
	Sn	118	71218.0	1.6	**50.5374**	1.107	2.2	ug/L	144	Standard
	Sb	123	134929.8	0.3	**50.1204**	0.538	1.1	ug/L	19	Standard
	Ba	135	96154.5	0.4	**50.2910**	0.372	0.7	ug/L	9	Standard
	Ce	140	93.3	13.5				ug/L	17	Standard
>	**Tb**	159	486172.1	0.8				ug/L	490863	Standard
	Ho	165	11.7	49.5				ug/L	2	Standard
	Tl	203	321905.3	0.2	**49.2941**	0.115	0.2	ug/L	2	Standard
	Tl	205	354009.7	0.6	**50.1129**	0.407	0.8	ug/L	0	Standard
	Pb	206	131693.2	0.5	**49.8821**	0.230	0.5	ug/L	84	Standard
	Pb	207	118362.5	0.7	**49.4471**	0.359	0.7	ug/L	73	Standard
	Pb	208	313178.9	0.6	**49.7211**	0.236	0.5	ug/L	199	Standard
	U	238	209951.0	0.7	**48.9321**	0.404	0.8	ug/L	1	Standard
>	**Bi**	209	280479.9	0.2				ug/L	281512	Standard

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	Na	23	11.7	49.5	**2.8969**	1.614	55.7	mg/L	2	Standard
	Mg	24	3940.5	2.9	**5.1952**	0.169	3.2	mg/L	38	Standard
	K	39	91.7	3.1	**4.7916**	0.187	3.9	mg/L	0	Standard
	Ca	43	55.0	18.2	**3.2172**	0.993	30.9	mg/L	23	Standard
	Fe	54	11949.8	2.5	**5.3238**	0.201	3.8	mg/L	234	Standard
	Fe	57	3307.0	4.8	**5.3425**	0.178	3.3	mg/L	118	Standard
>	**Sc-1**	45	53308.6	2.1				mg/L	57581	Standard
	Cl	35	30528.1	0.7				ug/L	22827	Standard
	Kr	83	109.7	3.5				ug/L	90	Standard
	Br	81	2506.9	7.0				ug/L	2287	Standard
	P	31	290168.5	2.8				ug/L	215766	Standard
	S	34	47678.3	2.4				ug/L	23460	Standard
	Sr	88	75.0	6.7				ug/L	48	Standard
	C	12	0.0					mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	0	Standard
	Dy	164	16.5	36.7				mg/L	6	Standard
	Ho-1	165	11.7	49.5				mg/L	2	Standard
	Er	166	3.3	173.2				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		99.052	
	Be	9	102.154		
	Al	27	98.267		
	Sc	45			
	Ti	47	97.175		
	V	51	96.077		
	Cr	52	97.526		
	Cr	53			
	Mn	55	98.379		
	Co	59	96.990		
	Ni	60	98.982		
	Cu	65	98.843		
	Zn	66	97.686		
>	Ge	72		99.501	
	As	75	99.760		
	Se	82	98.857		
	Se-1	77			
>	Ga	71			
	Rb	85			

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	Y	89		
>	Rh	103		
	Mo	98	101.140	
	Ag	107	102.228	
	Cd	111	99.832	
	Cd	114		
>	In	115		99.078
	Sn	118	101.075	
	Sb	123	100.241	
	Ba	135	100.582	
	Ce	140		
>	Tb	159		
	Ho	165		
	Tl	203	98.588	
	Tl	205		
	Pb	206		
	Pb	207		
	Pb	208	99.442	
	U	238	97.864	
>	Bi	209		99.633
	Na	23		
	Mg	24		
	K	39		
	Ca	43		
	Fe	54		
	Fe	57		
>	Sc-1	45		
	Cl	35		
	Kr	83		
	Br	81		
	P	31		
	S	34		
	Sr	88		
	C	12		
	N	14		
	Hg	202		
	Dy	164		
	Ho-1	165		
	Er	166		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, November 22, 2013 12:38:36
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	233009.8	1.0				ug/L	231878	Standard
	Be	9	25.0	34.6	**0.0013**	0.003	237.9	ug/L	7	Standard
	Al	27	738.4	108.2	**0.0004**	0.005	1216.0	ug/L	115	Standard
	Sc	45	52442.3	0.9				ug/L	57581	Standard
	Ti	47	25.3	65.7	**-0.0004**	0.037	8809.6	ug/L	17	Standard
	V	51	1144.5	26.7	**-0.0671**	0.039	57.7	ug/L	1678	Standard
	Cr	52	4731.4	3.8	**-0.1267**	0.026	20.4	ug/L	5719	Standard
	Cr	53	1816.8	8.9	**1.2221**	0.113	9.2	ug/L	132	Standard
	Mn	55	2630.7	91.4	**0.1169**	0.183	156.4	ug/L	927	Standard
	Co	59	162.7	62.8	**0.0033**	0.012	367.7	ug/L	80	Standard
	Ni	60	54.0	17.7	**-0.0041**	0.003	83.4	ug/L	39	Standard
	Cu	65	121.7	0.5	**0.0020**	0.000	10.3	ug/L	91	Standard
	Zn	66	172.7	6.0	**-0.1694**	0.007	4.0	ug/L	159	Standard
>	**Ge**	72	488219.5	0.5				ug/L	504090	Standard
	As	75	-260.5	14.8	**-0.0028**	0.023	832.9	ug/L	-261	Standard
	Se	82	-38.3	20.0	**-0.0016**	0.046	2824.8	ug/L	-43	Standard
	Se-1	77	164.7	8.1	**0.6869**	0.108	15.8	ug/L	86	Standard
>	**Ga**	71	21.7	48.0				mg/L	35	Standard
	Rb	85	38.3	79.7				ug/L	20	Standard
	Y	89	450441.3	1.0				ug/L	462194	Standard
>	**Rh**	103	3.3	86.6				ug/L	7	Standard
	Mo	98	84.9	59.1	**0.0173**	0.013	73.7	ug/L	8	Standard
	Ag	107	121.7	56.1	**0.0018**	0.010	543.6	ug/L	62	Standard
	Cd	111	14.9	105.1	**-0.0024**	0.007	295.1	mg/L	1	Standard
	Cd	114	33.3	77.5	**-0.0018**	0.005	256.0	ug/L	23	Standard
>	**In**	115	489886.8	0.3				ug/L	502083	Standard
	Sn	118	64.0	12.5	**-0.0433**	0.006	13.5	ug/L	144	Standard
	Sb	123	316.6	29.1	**0.1146**	0.035	30.5	ug/L	19	Standard
	Ba	135	45.7	72.8	**0.0170**	0.018	104.2	ug/L	9	Standard
	Ce	140	108.3	125.3				ug/L	17	Standard
>	**Tb**	159	483913.5	1.1				ug/L	490863	Standard
	Ho	165	6.7	86.6				ug/L	2	Standard
	Tl	203	148.3	24.3	**0.0167**	0.005	32.7	ug/L	2	Standard
	Tl	205	136.7	25.7	**0.0159**	0.005	30.9	ug/L	0	Standard
	Pb	206	121.3	36.7	**0.0094**	0.017	178.1	ug/L	84	Standard
	Pb	207	117.3	24.1	**0.0157**	0.012	73.9	ug/L	73	Standard
	Pb	208	231.7	17.0	**-0.0023**	0.006	261.9	ug/L	199	Standard
	U	238	13.3	71.3	**0.0025**	0.002	88.7	ug/L	1	Standard
>	**Bi**	209	279970.3	0.4				ug/L	281512	Standard

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⌈	**Na**	23	1.7	173.2	**0.0526**	0.835	1586.1	mg/L	2	Standard
|	**Mg**	24	38.3	7.5	**0.0150**	0.004	28.2	mg/L	38	Standard
|	**K**	39	1.7	173.2	**-0.0673**	0.158	235.0	mg/L	0	Standard
|	**Ca**	43	20.0	86.6	**-0.3672**	1.816	494.6	mg/L	23	Standard
|	**Fe**	54	297.8	16.8	**0.0379**	0.022	59.0	mg/L	234	Standard
|	**Fe**	57	111.7	5.2	**0.0347**	0.008	23.6	mg/L	118	Standard
⌊>	**Sc-1**	45	52442.3	0.9				mg/L	57581	Standard
	Cl	35	27915.7	1.8				ug/L	22827	Standard
	Kr	83	96.7	9.8				ug/L	90	Standard
	Br	81	2383.5	2.4				ug/L	2287	Standard
	P	31	265779.9	4.0				ug/L	215766	Standard
	S	34	42900.7	2.7				ug/L	23460	Standard
	Sr	88	71.7	29.0				ug/L	48	Standard
	C	12	0.0					mg/L	3	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	0.0					mg/L	0	Standard
	Dy	164	2.9	203.0				mg/L	6	Standard
	Ho-1	165	6.7	86.6				mg/L	2	Standard
	Er	166	10.0	100.0				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		100.488	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		96.852	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			
⌊	Rb	85			

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	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.571
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	99.452
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1311088706
Sample Date/Time: Friday, November 22, 2013 12:46:16
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	325685.5	1.8				ug/L	231878	Standard
	Be	9	2088.5	2.5	**0.5531**	0.011	1.9	ug/L	7	Standard
	Al	27	12558037.5	2.5	**54.5448**	0.468	0.9	ug/L	115	Standard
	Sc	45	80793.2	0.9				ug/L	57581	Standard
	Ti	47	162782.2	1.1	**316.9280**	1.500	0.5	ug/L	17	Standard
	V	51	614761.0	1.7	**68.4521**	1.012	1.5	ug/L	1678	Standard
	Cr	52	350632.2	0.8	**41.1681**	0.402	1.0	ug/L	5719	Standard
	Cr	53	169767.6	1.7	**108.2167**	1.121	1.0	ug/L	132	Standard
	Mn	55	8806467.8	0.7	**594.4790**	1.454	0.2	ug/L	927	Standard
	Co	59	139321.0	1.5	**14.7241**	0.262	1.8	ug/L	80	Standard
	Ni	60	117011.2	2.2	**36.9889**	0.505	1.4	ug/L	39	Standard
	Cu	65	110328.3	1.5	**35.2668**	0.266	0.8	ug/L	91	Standard
	Zn	66	122758.6	0.3	**71.4509**	0.431	0.6	ug/L	159	Standard
>	**Ge**	72	547321.2	0.8				ug/L	504090	Standard
	As	75	7985.3	6.2	**4.4899**	0.299	6.7	ug/L	-261	Standard
	Se	82	-92.1	11.5	**-0.2716**	0.054	20.0	ug/L	-43	Standard
	Se-1	77	11558.1	2.4	**88.4135**	1.476	1.7	ug/L	86	Standard
>	**Ga**	71	39143.8	1.1				mg/L	35	Standard
	Rb	85	392655.5	1.8				ug/L	20	Standard
	Y	89	886163.0	1.8				ug/L	462194	Standard
>	**Rh**	103	80.0	27.2				ug/L	7	Standard
	Mo	98	2716.0	4.1	**0.5911**	0.011	1.8	ug/L	8	Standard
	Ag	107	4272.6	3.1	**0.5049**	0.009	1.7	ug/L	62	Standard
	Cd	111	2225.5	2.0	**0.8596**	0.028	3.3	mg/L	1	Standard
	Cd	114	5765.7	0.3	**0.8727**	0.019	2.2	ug/L	23	Standard
>	**In**	115	567128.4	2.5				ug/L	502083	Standard
	Sn	118	1569.7	5.7	**0.8893**	0.052	5.9	ug/L	144	Standard
	Sb	123	2236.7	2.8	**0.7240**	0.017	2.3	ug/L	19	Standard
	Ba	135	478759.8	1.0	**219.7061**	3.234	1.5	ug/L	9	Standard
	Ce	140	1055363.2	1.2				ug/L	17	Standard
>	**Tb**	159	582898.9	1.4				ug/L	490863	Standard
	Ho	165	15723.2	3.6				ug/L	2	Standard
	Tl	203	1251.1	2.0	**0.1732**	0.002	1.2	ug/L	2	Standard
	Tl	205	1343.4	6.2	**0.1744**	0.010	5.8	ug/L	0	Standard
	Pb	206	70483.9	1.6	**24.9533**	0.121	0.5	ug/L	84	Standard
	Pb	207	58701.9	2.3	**22.9179**	0.116	0.5	ug/L	73	Standard
	Pb	208	155167.8	2.3	**23.0192**	0.093	0.4	ug/L	199	Standard
	U	238	4560.0	1.9	**0.9934**	0.003	0.3	ug/L	1	Standard
>	**Bi**	209	299884.1	2.0				ug/L	281512	Standard

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	Na	23	58.3	26.2	**10.6172**	2.968	28.0	mg/L	2	Standard
	Mg	24	385.0	12.8	**0.3004**	0.041	13.6	mg/L	38	Standard
	K	39	21.7	58.1	**0.6148**	0.454	73.9	mg/L	0	Standard
	Ca	43	120.0	28.9	**5.7247**	2.365	41.3	mg/L	23	Standard
	Fe	54	64046.6	2.2	**19.0744**	0.574	3.0	mg/L	234	Standard
	Fe	57	17581.9	1.2	**19.1333**	0.287	1.5	mg/L	118	Standard
>	**Sc-1**	45	80793.2	0.9				mg/L	57581	Standard
	Cl	35	34870.1	1.1				ug/L	22827	Standard
	Kr	83	250.3	5.2				ug/L	90	Standard
	Br	81	6164.6	5.4				ug/L	2287	Standard
	P	31	366699.7	2.7				ug/L	215766	Standard
	S	34	48248.4	3.8				ug/L	23460	Standard
	Sr	88	258.3	8.7				ug/L	48	Standard
	C	12	0.0					mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	140.0	18.9				mg/L	0	Standard
	Dy	164	24306.4	2.4				mg/L	6	Standard
	Ho-1	165	15723.2	3.6				mg/L	2	Standard
	Er	166	15538.0	4.3				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		140.455	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		108.576	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

Sample ID: L1311088706
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	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	112.955
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	106.526
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ti 47 Upper, S, EEE	Ti	47	
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1311088707
Sample Date/Time: Friday, November 22, 2013 12:49:21
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	352788.9	1.6				ug/L	231878	Standard
	Be	9	2441.9	2.0	**0.5978**	0.017	2.8	ug/L	7	Standard
	Al	27	16416578.5	0.8	**65.8446**	1.316	2.0	ug/L	115	Standard
	Sc	45	86694.1	2.1				ug/L	57581	Standard
	Ti	47	261160.6	0.9	**501.7691**	4.770	1.0	ug/L	17	Standard
	V	51	672285.9	2.3	**73.8850**	1.868	2.5	ug/L	1678	Standard
	Cr	52	400361.8	0.8	**46.4797**	0.479	1.0	ug/L	5719	Standard
	Cr	53	186752.3	0.9	**117.4772**	1.015	0.9	ug/L	132	Standard
	Mn	55	10411608.6	0.5	**693.5308**	3.015	0.4	ug/L	927	Standard
	Co	59	150899.8	1.3	**15.7370**	0.221	1.4	ug/L	80	Standard
	Ni	60	128889.3	1.1	**40.2085**	0.392	1.0	ug/L	39	Standard
	Cu	65	129021.8	1.7	**40.7035**	0.665	1.6	ug/L	91	Standard
	Zn	66	138485.7	0.6	**79.5663**	0.482	0.6	ug/L	159	Standard
>	**Ge**	72	554669.2	0.2				ug/L	504090	Standard
	As	75	9284.8	2.2	**5.1268**	0.111	2.2	ug/L	-261	Standard
	Se	82	-143.1	16.1	**-0.5408**	0.123	22.7	ug/L	-43	Standard
	Se-1	77	11841.6	1.9	**89.3973**	1.625	1.8	ug/L	86	Standard
>	**Ga**	71	51126.2	3.3				mg/L	35	Standard
	Rb	85	490519.1	1.0				ug/L	20	Standard
	Y	89	944487.2	2.3				ug/L	462194	Standard
>	**Rh**	103	73.3	31.5				ug/L	7	Standard
	Mo	98	2728.7	3.7	**0.5888**	0.024	4.1	ug/L	8	Standard
	Ag	107	1938.5	2.9	**0.2186**	0.006	2.6	ug/L	62	Standard
	Cd	111	985.5	2.7	**0.3720**	0.012	3.3	mg/L	1	Standard
	Cd	114	2460.7	1.6	**0.3646**	0.007	1.9	ug/L	23	Standard
>	**In**	115	572213.0	0.5				ug/L	502083	Standard
	Sn	118	1287.4	2.1	**0.7060**	0.015	2.1	ug/L	144	Standard
	Sb	123	1641.6	3.8	**0.5252**	0.017	3.3	ug/L	19	Standard
	Ba	135	605452.4	0.7	**275.3118**	1.119	0.4	ug/L	9	Standard
	Ce	140	1301681.2	1.9				ug/L	17	Standard
>	**Tb**	159	595779.3	1.5				ug/L	490863	Standard
	Ho	165	17783.8	0.9				ug/L	2	Standard
	Tl	203	1556.4	1.4	**0.2148**	0.003	1.2	ug/L	2	Standard
	Tl	205	1671.8	8.0	**0.2158**	0.018	8.4	ug/L	0	Standard
	Pb	206	68724.8	0.4	**24.0965**	0.215	0.9	ug/L	84	Standard
	Pb	207	57195.8	0.7	**22.1166**	0.143	0.6	ug/L	73	Standard
	Pb	208	150390.7	0.4	**22.0972**	0.127	0.6	ug/L	199	Standard
	U	238	5810.1	0.1	**1.2538**	0.007	0.6	ug/L	1	Standard
>	**Bi**	209	302771.6	0.5				ug/L	281512	Standard

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	Na	23	33.3	37.7	**5.4797**	2.331	42.5	mg/L	2	Standard
	Mg	24	503.3	5.7	**0.3746**	0.032	8.4	mg/L	38	Standard
	K	39	43.3	33.3	**1.2741**	0.446	35.0	mg/L	0	Standard
	Ca	43	88.3	19.9	**3.1689**	1.230	38.8	mg/L	23	Standard
	Fe	54	77478.1	2.0	**21.5256**	0.880	4.1	mg/L	234	Standard
	Fe	57	21056.3	1.1	**21.3766**	0.434	2.0	mg/L	118	Standard
>	**Sc-1**	45	86694.1	2.1				mg/L	57581	Standard
	Cl	35	34793.2	1.0				ug/L	22827	Standard
	Kr	83	306.3	6.5				ug/L	90	Standard
	Br	81	6161.3	6.2				ug/L	2287	Standard
	P	31	374016.0	3.8				ug/L	215766	Standard
	S	34	47447.5	0.9				ug/L	23460	Standard
	Sr	88	263.3	6.1				ug/L	48	Standard
	C	12	0.0					mg/L	3	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	120.0	30.0				mg/L	0	Standard
	Dy	164	26243.7	3.5				mg/L	6	Standard
	Ho-1	165	17783.8	0.9				mg/L	2	Standard
	Er	166	17266.5	0.6				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		152.144	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		110.034	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

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	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	113.968
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	107.552
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ti 47 Upper, S, EEE	Ti	47	
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	
Se 82 Lower	Se	82	

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Ba 135 Upper, S, EEE Ba 135

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Method 6020 - Summary Report

Sample ID: L1311088708
Sample Date/Time: Friday, November 22, 2013 12:52:26
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	351100.0	2.7				ug/L	231878	Standard
	Be	9	2690.2	2.8	**0.6629**	0.030	4.6	ug/L	7	Standard
	Al	27	19042086.3	0.7	**76.7588**	1.712	2.2	ug/L	115	Standard
	Sc	45	91314.4	1.5				ug/L	57581	Standard
	Ti	47	284324.0	0.8	**538.1430**	11.693	2.2	ug/L	17	Standard
	V	51	710690.9	1.6	**76.9535**	2.213	2.9	ug/L	1678	Standard
	Cr	52	445134.4	2.2	**50.9827**	1.658	3.3	ug/L	5719	Standard
	Cr	53	199631.7	1.2	**123.7015**	1.887	1.5	ug/L	132	Standard
	Mn	55	11844222.1	0.3	**777.1965**	13.410	1.7	ug/L	927	Standard
	Co	59	178609.1	1.6	**18.3516**	0.449	2.4	ug/L	80	Standard
	Ni	60	159486.1	1.1	**49.0116**	0.501	1.0	ug/L	39	Standard
	Cu	65	136819.8	2.1	**42.5202**	1.068	2.5	ug/L	91	Standard
	Zn	66	155751.5	0.9	**88.1792**	1.504	1.7	ug/L	159	Standard
>	**Ge**	72	563164.9	1.5				ug/L	504090	Standard
	As	75	10181.5	8.5	**5.5222**	0.400	7.2	ug/L	-261	Standard
	Se	82	-142.3	9.2	**-0.5248**	0.059	11.3	ug/L	-43	Standard
	Se-1	77	12223.9	2.1	**90.9166**	2.333	2.6	ug/L	86	Standard
>	**Ga**	71	56992.0	1.8				mg/L	35	Standard
	Rb	85	539785.3	1.7				ug/L	20	Standard
	Y	89	1064086.2	1.7				ug/L	462194	Standard
>	**Rh**	103	80.0	16.5				ug/L	7	Standard
	Mo	98	3197.0	1.4	**0.6809**	0.009	1.4	ug/L	8	Standard
	Ag	107	4567.4	4.9	**0.5282**	0.022	4.2	ug/L	62	Standard
	Cd	111	2353.8	1.8	**0.8886**	0.015	1.7	mg/L	1	Standard
	Cd	114	6161.6	1.4	**0.9117**	0.018	2.0	ug/L	23	Standard
>	**In**	115	580214.8	0.8				ug/L	502083	Standard
	Sn	118	2595.9	2.7	**1.4926**	0.047	3.2	ug/L	144	Standard
	Sb	123	2199.7	0.9	**0.6957**	0.008	1.1	ug/L	19	Standard
	Ba	135	697110.7	1.4	**312.6142**	2.090	0.7	ug/L	9	Standard
	Ce	140	1454882.2	0.9				ug/L	17	Standard
>	**Tb**	159	616346.7	0.8				ug/L	490863	Standard
	Ho	165	22860.6	3.1				ug/L	2	Standard
	Tl	203	1705.8	1.7	**0.2334**	0.004	1.8	ug/L	2	Standard
	Tl	205	1820.1	3.0	**0.2326**	0.007	3.0	ug/L	0	Standard
	Pb	206	85303.5	1.1	**29.5940**	0.242	0.8	ug/L	84	Standard
	Pb	207	71877.4	0.8	**27.5018**	0.162	0.6	ug/L	73	Standard
	Pb	208	190030.8	1.2	**27.6294**	0.237	0.9	ug/L	199	Standard
	U	238	6202.6	2.7	**1.3241**	0.031	2.3	ug/L	1	Standard
>	**Bi**	209	306070.5	0.4				ug/L	281512	Standard

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	Na	23	55.0	24.1	**8.7621**	2.125	24.3	mg/L	2	Standard
	Mg	24	428.3	15.5	**0.2958**	0.056	18.9	mg/L	38	Standard
	K	39	53.3	14.3	**1.5249**	0.263	17.3	mg/L	0	Standard
	Ca	43	110.0	16.4	**4.1668**	0.986	23.7	mg/L	23	Standard
	Fe	54	83765.3	0.9	**22.0876**	0.335	1.5	mg/L	234	Standard
	Fe	57	22835.5	1.3	**22.0150**	0.600	2.7	mg/L	118	Standard
>	**Sc-1**	45	91314.4	1.5				mg/L	57581	Standard
	Cl	35	35665.9	1.7				ug/L	22827	Standard
	Kr	83	339.3	1.9				ug/L	90	Standard
	Br	81	6097.9	3.8				ug/L	2287	Standard
	P	31	394140.9	0.8				ug/L	215766	Standard
	S	34	48387.1	1.4				ug/L	23460	Standard
	Sr	88	265.0	10.5				ug/L	48	Standard
	C	12	3.3	173.2				mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	156.7	14.7				mg/L	0	Standard
	Dy	164	34338.9	1.7				mg/L	6	Standard
	Ho-1	165	22860.6	3.1				mg/L	2	Standard
	Er	166	21899.1	0.7				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		151.416	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		111.719	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

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	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	115.562
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	108.724
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ti 47 Upper, S, EEE	Ti	47	
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	
Se 82 Lower	Se	82	

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Ba 135 Upper, S, EEE Ba 135

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Method 6020 - Summary Report

Sample ID: L1311088709
Sample Date/Time: Friday, November 22, 2013 12:55:30
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	354201.7	2.0				ug/L	231878	Standard
	Be	9	2720.2	3.9	**0.6638**	0.013	1.9	ug/L	7	Standard
	Al	27	17972731.6	3.1	**71.7807**	1.428	2.0	ug/L	115	Standard
	Sc	45	88573.3	2.7				ug/L	57581	Standard
	Ti	47	232640.6	1.2	**447.9572**	4.425	1.0	ug/L	17	Standard
	V	51	659658.5	0.8	**72.6552**	0.870	1.2	ug/L	1678	Standard
	Cr	52	446779.2	0.4	**52.0753**	0.507	1.0	ug/L	5719	Standard
	Cr	53	205602.3	0.9	**129.6297**	0.464	0.4	ug/L	132	Standard
	Mn	55	11143298.1	1.1	**743.9127**	3.610	0.5	ug/L	927	Standard
	Co	59	170940.3	0.9	**17.8693**	0.228	1.3	ug/L	80	Standard
	Ni	60	144232.6	1.0	**45.0977**	0.197	0.4	ug/L	39	Standard
	Cu	65	128081.1	1.2	**40.4973**	0.525	1.3	ug/L	91	Standard
	Zn	66	150081.3	0.4	**86.4474**	0.755	0.9	ug/L	159	Standard
>	**Ge**	72	553438.3	0.6				ug/L	504090	Standard
	As	75	9940.5	5.3	**5.4903**	0.300	5.5	ug/L	-261	Standard
	Se	82	-157.5	21.0	**-0.6206**	0.174	28.1	ug/L	-43	Standard
	Se-1	77	13056.3	1.0	**98.8636**	0.494	0.5	ug/L	86	Standard
>	**Ga**	71	53131.4	2.6				mg/L	35	Standard
	Rb	85	555932.1	0.5				ug/L	20	Standard
	Y	89	991327.2	1.2				ug/L	462194	Standard
>	**Rh**	103	58.3	21.6				ug/L	7	Standard
	Mo	98	3246.7	2.8	**0.6792**	0.010	1.5	ug/L	8	Standard
	Ag	107	4336.0	2.1	**0.4916**	0.003	0.7	ug/L	62	Standard
	Cd	111	2210.0	3.1	**0.8192**	0.036	4.4	mg/L	1	Standard
	Cd	114	5870.8	4.7	**0.8528**	0.040	4.6	ug/L	23	Standard
>	**In**	115	590623.8	1.4				ug/L	502083	Standard
	Sn	118	1816.4	5.0	**0.9977**	0.042	4.2	ug/L	144	Standard
	Sb	123	2199.1	1.4	**0.6832**	0.012	1.7	ug/L	19	Standard
	Ba	135	673805.8	0.8	**296.8655**	2.500	0.8	ug/L	9	Standard
	Ce	140	1462689.8	1.4				ug/L	17	Standard
>	**Tb**	159	617392.7	1.5				ug/L	490863	Standard
	Ho	165	20657.4	0.6				ug/L	2	Standard
	Tl	203	1760.1	0.5	**0.2375**	0.002	1.0	ug/L	2	Standard
	Tl	205	1823.4	3.2	**0.2298**	0.009	3.7	ug/L	0	Standard
	Pb	206	89941.5	1.1	**30.7646**	0.146	0.5	ug/L	84	Standard
	Pb	207	75351.6	1.0	**28.4255**	0.062	0.2	ug/L	73	Standard
	Pb	208	200271.4	0.9	**28.7102**	0.209	0.7	ug/L	199	Standard
	U	238	5709.1	0.5	**1.2016**	0.018	1.5	ug/L	1	Standard
>	**Bi**	209	310458.1	1.2				ug/L	281512	Standard

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	Na	23	45.0	50.9	**7.3755**	4.038	54.8	mg/L	2	Standard
	Mg	24	421.7	7.1	**0.3007**	0.031	10.3	mg/L	38	Standard
	K	39	46.7	34.4	**1.3590**	0.530	39.0	mg/L	0	Standard
	Ca	43	110.0	4.5	**4.3889**	0.449	10.2	mg/L	23	Standard
	Fe	54	75120.7	1.2	**20.4170**	0.354	1.7	mg/L	234	Standard
	Fe	57	20966.2	3.4	**20.8467**	1.252	6.0	mg/L	118	Standard
>	**Sc-1**	45	88573.3	2.7				mg/L	57581	Standard
	Cl	35	35612.5	0.5				ug/L	22827	Standard
	Kr	83	324.7	8.1				ug/L	90	Standard
	Br	81	6304.6	5.5				ug/L	2287	Standard
	P	31	372809.2	3.4				ug/L	215766	Standard
	S	34	48161.4	0.4				ug/L	23460	Standard
	Sr	88	270.0	14.0				ug/L	48	Standard
	C	12	3.3	173.2				mg/L	3	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	156.7	19.5				mg/L	0	Standard
	Dy	164	30475.7	4.0				mg/L	6	Standard
	Ho-1	165	20657.4	0.6				mg/L	2	Standard
	Er	166	19906.4	0.8				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		152.753	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		109.790	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

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	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	117.635
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	110.282
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ti 47 Upper, S, EEE	Ti	47	
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	
Se 82 Lower	Se	82	

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Ba 135 Upper, S, EEE Ba 135

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Method 6020 - Summary Report

Sample ID: L1311088710
Sample Date/Time: Friday, November 22, 2013 12:58:35
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	347681.0	2.9				ug/L	231878	Standard
	Be	9	2653.6	6.6	**0.6596**	0.034	5.2	ug/L	7	Standard
	Al	27	13889473.9	1.9	**56.5263**	0.575	1.0	ug/L	115	Standard
	Sc	45	88987.2	1.3				ug/L	57581	Standard
	Ti	47	168099.0	2.3	**320.4873**	5.646	1.8	ug/L	17	Standard
	V	51	703704.5	1.5	**76.7613**	1.276	1.7	ug/L	1678	Standard
	Cr	52	370563.9	2.5	**42.6314**	0.985	2.3	ug/L	5719	Standard
	Cr	53	180880.0	0.6	**112.9227**	0.883	0.8	ug/L	132	Standard
	Mn	55	10007278.8	1.2	**661.5723**	9.478	1.4	ug/L	927	Standard
	Co	59	144259.2	1.3	**14.9303**	0.233	1.6	ug/L	80	Standard
	Ni	60	113704.8	1.9	**35.1999**	0.536	1.5	ug/L	39	Standard
	Cu	65	103112.0	1.1	**32.2749**	0.268	0.8	ug/L	91	Standard
	Zn	66	131918.5	1.1	**75.2033**	0.440	0.6	ug/L	159	Standard
>	**Ge**	72	558893.4	0.5				ug/L	504090	Standard
	As	75	9429.0	3.2	**5.1654**	0.134	2.6	ug/L	-261	Standard
	Se	82	-139.6	17.7	**-0.5165**	0.132	25.6	ug/L	-43	Standard
	Se-1	77	12370.4	1.1	**92.7143**	1.313	1.4	ug/L	86	Standard
>	**Ga**	71	47802.0	1.0				mg/L	35	Standard
	Rb	85	391420.0	2.4				ug/L	20	Standard
	Y	89	1016688.5	1.6				ug/L	462194	Standard
>	**Rh**	103	73.3	30.7				ug/L	7	Standard
	Mo	98	2996.0	1.3	**0.6309**	0.006	0.9	ug/L	8	Standard
	Ag	107	3215.3	2.5	**0.3632**	0.010	2.7	ug/L	62	Standard
	Cd	111	1032.6	2.6	**0.3805**	0.009	2.4	mg/L	1	Standard
	Cd	114	2870.4	4.3	**0.4160**	0.020	4.7	ug/L	23	Standard
>	**In**	115	586523.8	0.4				ug/L	502083	Standard
	Sn	118	1486.1	5.1	**0.8063**	0.044	5.4	ug/L	144	Standard
	Sb	123	1978.1	5.3	**0.6183**	0.030	4.9	ug/L	19	Standard
	Ba	135	670055.4	0.3	**297.2565**	0.460	0.2	ug/L	9	Standard
	Ce	140	1546721.9	0.6				ug/L	17	Standard
>	**Tb**	159	611133.5	0.8				ug/L	490863	Standard
	Ho	165	21311.7	3.4				ug/L	2	Standard
	Tl	203	1439.4	1.4	**0.1923**	0.002	0.8	ug/L	2	Standard
	Tl	205	1636.8	12.2	**0.2049**	0.025	12.3	ug/L	0	Standard
	Pb	206	86111.7	0.7	**29.3235**	0.198	0.7	ug/L	84	Standard
	Pb	207	71686.5	0.6	**26.9225**	0.149	0.6	ug/L	73	Standard
	Pb	208	190906.4	0.9	**27.2442**	0.101	0.4	ug/L	199	Standard
	U	238	5337.6	1.1	**1.1183**	0.008	0.7	ug/L	1	Standard
>	**Bi**	209	311824.1	0.6				ug/L	281512	Standard

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	Na	23	20.0	25.0	**2.9987**	0.814	27.2	mg/L	2	Standard
	Mg	24	403.3	5.0	**0.2842**	0.019	6.7	mg/L	38	Standard
	K	39	43.3	29.0	**1.2410**	0.400	32.2	mg/L	0	Standard
	Ca	43	76.7	26.4	**2.2881**	1.283	56.1	mg/L	23	Standard
	Fe	54	74598.6	0.9	**20.1748**	0.141	0.7	mg/L	234	Standard
	Fe	57	20989.5	0.7	**20.7523**	0.283	1.4	mg/L	118	Standard
>	**Sc-1**	45	88987.2	1.3				mg/L	57581	Standard
	Cl	35	35259.0	1.7				ug/L	22827	Standard
	Kr	83	312.7	6.7				ug/L	90	Standard
	Br	81	5881.1	5.1				ug/L	2287	Standard
	P	31	389778.4	3.3				ug/L	215766	Standard
	S	34	47021.2	1.0				ug/L	23460	Standard
	Sr	88	283.3	8.7				ug/L	48	Standard
	C	12	0.0					mg/L	3	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	133.3	26.3				mg/L	0	Standard
	Dy	164	31463.7	4.8				mg/L	6	Standard
	Ho-1	165	21311.7	3.4				mg/L	2	Standard
	Er	166	20550.6	2.0				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		149.941	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		110.872	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

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⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	116.818
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	110.767
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ti 47 Upper, S, EEE	Ti	47	
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	
Se 82 Lower	Se	82	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1311088711
Sample Date/Time: Friday, November 22, 2013 13:01:40
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	350680.8	1.6				ug/L	231878	Standard
	Be	9	2733.6	3.9	**0.6744**	0.035	5.2	ug/L	7	Standard
	Al	27	18351770.4	1.2	**74.0530**	1.848	2.5	ug/L	115	Standard
	Sc	45	93893.4	1.1				ug/L	57581	Standard
	Ti	47	424246.1	1.2	**802.3422**	5.669	0.7	ug/L	17	Standard
	V	51	847789.4	1.2	**91.7595**	0.757	0.8	ug/L	1678	Standard
	Cr	52	417428.9	0.8	**47.7223**	0.488	1.0	ug/L	5719	Standard
	Cr	53	183702.1	1.7	**113.7434**	1.583	1.4	ug/L	132	Standard
	Mn	55	13432176.2	1.4	**880.7702**	14.437	1.6	ug/L	927	Standard
	Co	59	184239.9	1.7	**18.9152**	0.221	1.2	ug/L	80	Standard
	Ni	60	131764.5	1.5	**40.4627**	0.628	1.6	ug/L	39	Standard
	Cu	65	144569.5	0.6	**44.8992**	0.373	0.8	ug/L	91	Standard
	Zn	66	199518.4	0.5	**112.9547**	0.439	0.4	ug/L	159	Standard
>	**Ge**	72	563499.1	0.5				ug/L	504090	Standard
	As	75	10263.7	4.7	**5.5641**	0.228	4.1	ug/L	-261	Standard
	Se	82	-204.8	13.0	**-0.8573**	0.136	15.8	ug/L	-43	Standard
	Se-1	77	11263.9	1.8	**83.6547**	1.228	1.5	ug/L	86	Standard
>	**Ga**	71	65980.1	2.2				mg/L	35	Standard
	Rb	85	650560.2	2.1				ug/L	20	Standard
	Y	89	1033406.8	1.6				ug/L	462194	Standard
>	**Rh**	103	88.3	21.4				ug/L	7	Standard
	Mo	98	3907.0	0.5	**0.8266**	0.009	1.1	ug/L	8	Standard
	Ag	107	1809.4	1.1	**0.1983**	0.003	1.8	ug/L	62	Standard
	Cd	111	1070.3	1.6	**0.3959**	0.005	1.3	mg/L	1	Standard
	Cd	114	2769.0	3.6	**0.4023**	0.015	3.8	ug/L	23	Standard
>	**In**	115	584752.2	0.7				ug/L	502083	Standard
	Sn	118	1972.1	2.0	**1.1032**	0.032	2.9	ug/L	144	Standard
	Sb	123	2632.5	1.4	**0.8270**	0.007	0.9	ug/L	19	Standard
	Ba	135	826558.9	0.4	**367.8025**	1.184	0.3	ug/L	9	Standard
	Ce	140	1701258.2	1.8				ug/L	17	Standard
>	**Tb**	159	613320.6	0.5				ug/L	490863	Standard
	Ho	165	22186.2	0.4				ug/L	2	Standard
	Tl	203	2130.8	2.2	**0.2888**	0.007	2.4	ug/L	2	Standard
	Tl	205	2271.8	1.5	**0.2871**	0.005	1.9	ug/L	0	Standard
	Pb	206	111687.1	0.4	**38.2111**	0.366	1.0	ug/L	84	Standard
	Pb	207	92912.0	0.8	**35.0561**	0.171	0.5	ug/L	73	Standard
	Pb	208	245218.0	0.6	**35.1610**	0.324	0.9	ug/L	199	Standard
	U	238	11229.8	0.9	**2.3640**	0.035	1.5	ug/L	1	Standard
>	**Bi**	209	310467.4	0.7				ug/L	281512	Standard

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	Na	23	51.7	31.1	**7.9824**	2.630	32.9	mg/L	2	Standard
	Mg	24	481.7	1.2	**0.3264**	0.008	2.6	mg/L	38	Standard
	K	39	45.0	19.2	**1.2227**	0.279	22.8	mg/L	0	Standard
	Ca	43	95.0	5.3	**3.1137**	0.322	10.3	mg/L	23	Standard
	Fe	54	103329.0	1.2	**26.5145**	0.155	0.6	mg/L	234	Standard
	Fe	57	28147.8	2.2	**26.4129**	0.358	1.4	mg/L	118	Standard
>	**Sc-1**	45	93893.4	1.1				mg/L	57581	Standard
	Cl	35	34155.1	1.5				ug/L	22827	Standard
	Kr	83	398.3	7.9				ug/L	90	Standard
	Br	81	6074.6	6.5				ug/L	2287	Standard
	P	31	365292.4	2.2				ug/L	215766	Standard
	S	34	45257.5	1.5				ug/L	23460	Standard
	Sr	88	326.7	12.7				ug/L	48	Standard
	C	12	0.0					mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	173.3	28.5				mg/L	0	Standard
	Dy	164	33818.4	1.5				mg/L	6	Standard
	Ho-1	165	22186.2	0.4				mg/L	2	Standard
	Er	166	21605.4	2.6				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		151.235	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		111.785	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

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⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	116.465
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	110.286
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ti 47 Upper, S, EEE	Ti	47	
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Se 82 Lower	Se	82
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1311106701
Sample Date/Time: Friday, November 22, 2013 13:04:44
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	354979.0	1.3				ug/L	231878	Standard
	Be	9	2376.9	4.3	**0.5781**	0.032	5.5	ug/L	7	Standard
	Al	27	14351031.7	3.1	**57.2006**	1.968	3.4	ug/L	115	Standard
	Sc	45	85899.6	2.4				ug/L	57581	Standard
	Ti	47	184728.3	0.5	**348.8534**	3.722	1.1	ug/L	17	Standard
	V	51	674963.7	2.6	**72.9005**	1.434	2.0	ug/L	1678	Standard
	Cr	52	340738.0	1.5	**38.7575**	0.587	1.5	ug/L	5719	Standard
	Cr	53	189550.0	0.7	**117.2093**	1.753	1.5	ug/L	132	Standard
	Mn	55	10760433.7	1.0	**704.5574**	9.597	1.4	ug/L	927	Standard
	Co	59	145398.0	0.4	**14.9044**	0.219	1.5	ug/L	80	Standard
	Ni	60	108020.1	1.2	**33.1177**	0.117	0.4	ug/L	39	Standard
	Cu	65	111544.4	0.5	**34.5847**	0.438	1.3	ug/L	91	Standard
	Zn	66	146210.1	1.3	**82.5778**	0.500	0.6	ug/L	159	Standard
>	**Ge**	72	564330.1	1.3				ug/L	504090	Standard
	As	75	8633.2	5.8	**4.7013**	0.317	6.7	ug/L	-261	Standard
	Se	82	-104.7	7.8	**-0.3233**	0.039	12.0	ug/L	-43	Standard
	Se-1	77	13510.4	0.6	**100.3514**	1.533	1.5	ug/L	86	Standard
>	**Ga**	71	47726.7	1.0				mg/L	35	Standard
	Rb	85	522160.3	1.8				ug/L	20	Standard
	Y	89	925835.1	0.5				ug/L	462194	Standard
>	**Rh**	103	48.3	6.0				ug/L	7	Standard
	Mo	98	2462.6	2.5	**0.5141**	0.010	2.0	ug/L	8	Standard
	Ag	107	3866.5	0.9	**0.4367**	0.004	1.0	ug/L	62	Standard
	Cd	111	2535.1	0.5	**0.9405**	0.005	0.5	mg/L	1	Standard
	Cd	114	6692.3	3.1	**0.9731**	0.035	3.6	ug/L	23	Standard
>	**In**	115	590738.0	0.5				ug/L	502083	Standard
	Sn	118	1587.1	4.5	**0.8606**	0.046	5.4	ug/L	144	Standard
	Sb	123	2103.9	2.1	**0.6532**	0.011	1.7	ug/L	19	Standard
	Ba	135	523165.2	0.2	**230.4393**	1.540	0.7	ug/L	9	Standard
	Ce	140	1308804.5	1.0				ug/L	17	Standard
>	**Tb**	159	610299.0	0.7				ug/L	490863	Standard
	Ho	165	17361.6	3.1				ug/L	2	Standard
	Tl	203	1605.1	2.0	**0.2148**	0.004	2.0	ug/L	2	Standard
	Tl	205	1820.1	4.4	**0.2280**	0.010	4.4	ug/L	0	Standard
	Pb	206	86684.9	0.8	**29.4790**	0.255	0.9	ug/L	84	Standard
	Pb	207	71630.3	0.8	**26.8648**	0.222	0.8	ug/L	73	Standard
	Pb	208	189535.9	0.5	**27.0123**	0.153	0.6	ug/L	199	Standard
	U	238	6099.2	1.3	**1.2763**	0.017	1.3	ug/L	1	Standard
>	**Bi**	209	312244.9	0.1				ug/L	281512	Standard

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	Na	23	51.7	14.8	**8.7655**	1.375	15.7	mg/L	2	Standard
	Mg	24	580.0	4.0	**0.4412**	0.018	4.0	mg/L	38	Standard
	K	39	43.3	29.0	**1.2875**	0.390	30.3	mg/L	0	Standard
	Ca	43	108.3	17.5	**4.4984**	1.288	28.6	mg/L	23	Standard
	Fe	54	69569.9	0.9	**19.4923**	0.365	1.9	mg/L	234	Standard
	Fe	57	19576.0	4.0	**20.0435**	0.669	3.3	mg/L	118	Standard
>	**Sc-1**	45	85899.6	2.4				mg/L	57581	Standard
	Cl	35	35404.0	2.4				ug/L	22827	Standard
	Kr	83	278.3	6.6				ug/L	90	Standard
	Br	81	6391.3	4.7				ug/L	2287	Standard
	P	31	398315.7	3.0				ug/L	215766	Standard
	S	34	49368.6	1.6				ug/L	23460	Standard
	Sr	88	303.3	6.9				ug/L	48	Standard
	C	12	6.7	173.2				mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	236.7	17.6				mg/L	0	Standard
	Dy	164	27048.4	5.2				mg/L	6	Standard
	Ho-1	165	17361.6	3.1				mg/L	2	Standard
	Er	166	16782.6	1.0				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		153.088	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		111.950	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

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⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	117.657
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	110.917
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ti 47 Upper, S, EEE	Ti	47	
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	
Se-1 77 Upper, S, EEE	Se-1	77	

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Ba 135 Upper, S, EEE Ba 135

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Method 6020 - Summary Report

Sample ID: L1311106702
Sample Date/Time: Friday, November 22, 2013 13:07:49
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	352302.8	1.6				ug/L	231878	Standard
	Be	9	2705.2	3.7	**0.6639**	0.023	3.4	ug/L	7	Standard
	Al	27	13376798.0	2.8	**53.7082**	0.681	1.3	ug/L	115	Standard
	Sc	45	91564.2	1.3				ug/L	57581	Standard
	Ti	47	282497.3	0.6	**528.4872**	2.993	0.6	ug/L	17	Standard
	V	51	758133.6	0.5	**81.1479**	0.771	1.0	ug/L	1678	Standard
	Cr	52	404980.4	0.7	**45.7686**	0.550	1.2	ug/L	5719	Standard
	Cr	53	177549.2	0.4	**108.7488**	1.188	1.1	ug/L	132	Standard
	Mn	55	12424694.9	0.5	**805.8711**	4.209	0.5	ug/L	927	Standard
	Co	59	167807.3	1.6	**17.0419**	0.335	2.0	ug/L	80	Standard
	Ni	60	116295.3	1.2	**35.3232**	0.448	1.3	ug/L	39	Standard
	Cu	65	110512.6	1.2	**33.9401**	0.349	1.0	ug/L	91	Standard
	Zn	66	121147.4	1.1	**67.7300**	0.360	0.5	ug/L	159	Standard
>	**Ge**	72	569661.4	0.7				ug/L	504090	Standard
	As	75	9777.3	6.1	**5.2541**	0.341	6.5	ug/L	-261	Standard
	Se	82	-158.6	44.8	**-0.6006**	0.370	61.7	ug/L	-43	Standard
	Se-1	77	11038.0	1.6	**81.0784**	1.832	2.3	ug/L	86	Standard
>	**Ga**	71	54267.0	1.8				mg/L	35	Standard
	Rb	85	459725.5	0.7				ug/L	20	Standard
	Y	89	1007639.9	1.6				ug/L	462194	Standard
>	**Rh**	103	58.3	13.1				ug/L	7	Standard
	Mo	98	2808.5	0.8	**0.5868**	0.004	0.6	ug/L	8	Standard
	Ag	107	1511.1	7.0	**0.1612**	0.012	7.4	ug/L	62	Standard
	Cd	111	612.7	4.0	**0.2203**	0.009	4.1	mg/L	1	Standard
	Cd	114	1599.3	2.9	**0.2266**	0.006	2.8	ug/L	23	Standard
>	**In**	115	590846.1	0.2				ug/L	502083	Standard
	Sn	118	1521.4	2.9	**0.8210**	0.025	3.0	ug/L	144	Standard
	Sb	123	1916.8	2.1	**0.5946**	0.013	2.2	ug/L	19	Standard
	Ba	135	618216.1	1.9	**272.2492**	5.041	1.9	ug/L	9	Standard
	Ce	140	1657966.6	2.1				ug/L	17	Standard
>	**Tb**	159	617473.6	1.2				ug/L	490863	Standard
	Ho	165	20901.1	0.8				ug/L	2	Standard
	Tl	203	1553.4	7.4	**0.2058**	0.013	6.4	ug/L	2	Standard
	Tl	205	1640.1	5.0	**0.2033**	0.008	4.1	ug/L	0	Standard
	Pb	206	80255.3	1.2	**27.0633**	0.122	0.5	ug/L	84	Standard
	Pb	207	66983.4	0.9	**24.9130**	0.291	1.2	ug/L	73	Standard
	Pb	208	176358.4	0.7	**24.9240**	0.168	0.7	ug/L	199	Standard
	U	238	6451.4	1.4	**1.3388**	0.016	1.2	ug/L	1	Standard
>	**Bi**	209	314855.4	1.2				ug/L	281512	Standard

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	Na	23	26.7	10.8	**4.0263**	0.541	13.4	mg/L	2	Standard
	Mg	24	460.0	3.8	**0.3189**	0.017	5.2	mg/L	38	Standard
	K	39	18.3	31.5	**0.4167**	0.176	42.2	mg/L	0	Standard
	Ca	43	86.7	12.0	**2.7556**	0.658	23.9	mg/L	23	Standard
	Fe	54	81157.7	3.3	**21.3319**	0.447	2.1	mg/L	234	Standard
	Fe	57	22059.4	4.9	**21.2003**	1.083	5.1	mg/L	118	Standard
>	**Sc-1**	45	91564.2	1.3				mg/L	57581	Standard
	Cl	35	32960.5	0.8				ug/L	22827	Standard
	Kr	83	348.7	15.1				ug/L	90	Standard
	Br	81	5911.2	2.7				ug/L	2287	Standard
	P	31	375230.6	3.1				ug/L	215766	Standard
	S	34	42061.6	1.1				ug/L	23460	Standard
	Sr	88	260.0	16.8				ug/L	48	Standard
	C	12	6.7	86.6				mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	93.3	27.0				mg/L	0	Standard
	Dy	164	31442.4	2.0				mg/L	6	Standard
	Ho-1	165	20901.1	0.8				mg/L	2	Standard
	Er	166	19599.3	1.3				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		151.934	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		113.008	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

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⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	117.679
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	111.844
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ti 47 Upper, S, EEE	Ti	47	
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	
Se 82 Lower	Se	82	

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Method 6020 - Summary Report

Sample ID: L1311106703
Sample Date/Time: Friday, November 22, 2013 13:10:54
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	363906.9	1.0				ug/L	231878	Standard
	Be	9	2890.3	0.5	**0.6870**	0.007	1.1	ug/L	7	Standard
	Al	27	18918809.9	2.4	**73.5454**	1.354	1.8	ug/L	115	Standard
	Sc	45	91091.3	0.7				ug/L	57581	Standard
	Ti	47	288002.8	0.6	**539.5467**	8.361	1.5	ug/L	17	Standard
	V	51	770804.4	2.5	**82.6319**	2.793	3.4	ug/L	1678	Standard
	Cr	52	461260.3	2.3	**52.3116**	1.628	3.1	ug/L	5719	Standard
	Cr	53	200470.9	0.7	**122.9571**	0.351	0.3	ug/L	132	Standard
	Mn	55	11989508.7	0.8	**778.7418**	13.278	1.7	ug/L	927	Standard
	Co	59	178359.2	1.6	**18.1403**	0.459	2.5	ug/L	80	Standard
	Ni	60	161592.5	0.9	**49.1604**	0.880	1.8	ug/L	39	Standard
	Cu	65	130975.7	0.4	**40.2872**	0.252	0.6	ug/L	91	Standard
	Zn	66	157073.3	0.4	**88.0222**	0.834	0.9	ug/L	159	Standard
>	Ge	72	568905.7	0.9				ug/L	504090	Standard
	As	75	11153.0	4.4	**5.9773**	0.238	4.0	ug/L	-261	Standard
	Se	82	-167.9	10.2	**-0.6523**	0.082	12.6	ug/L	-43	Standard
	Se-1	77	12308.7	1.5	**90.6074**	0.860	0.9	ug/L	86	Standard
>	Ga	71	60888.8	2.5				mg/L	35	Standard
	Rb	85	561346.3	1.6				ug/L	20	Standard
	Y	89	1007289.3	2.1				ug/L	462194	Standard
>	Rh	103	43.3	52.0				ug/L	7	Standard
	Mo	98	3304.2	1.5	**0.6921**	0.012	1.8	ug/L	8	Standard
	Ag	107	1886.1	2.8	**0.2054**	0.006	2.8	ug/L	62	Standard
	Cd	111	1030.9	2.9	**0.3775**	0.010	2.6	mg/L	1	Standard
	Cd	114	2780.8	3.7	**0.4002**	0.014	3.4	ug/L	23	Standard
>	In	115	590053.3	0.3				ug/L	502083	Standard
	Sn	118	1658.8	3.6	**0.9045**	0.032	3.6	ug/L	144	Standard
	Sb	123	1935.7	0.8	**0.6013**	0.003	0.5	ug/L	19	Standard
	Ba	135	686392.7	0.5	**302.6822**	1.068	0.4	ug/L	9	Standard
	Ce	140	1603057.5	1.9				ug/L	17	Standard
>	Tb	159	623535.4	1.6				ug/L	490863	Standard
	Ho	165	20986.2	1.5				ug/L	2	Standard
	Tl	203	1848.4	0.9	**0.2494**	0.001	0.2	ug/L	2	Standard
	Tl	205	1961.8	8.7	**0.2472**	0.024	9.7	ug/L	0	Standard
	Pb	206	71585.7	0.6	**24.4437**	0.094	0.4	ug/L	84	Standard
	Pb	207	59938.3	0.8	**22.5719**	0.081	0.4	ug/L	73	Standard
	Pb	208	157950.3	0.5	**22.6024**	0.117	0.5	ug/L	199	Standard
	U	238	6993.6	1.1	**1.4698**	0.005	0.3	ug/L	1	Standard
>	Bi	209	310901.2	1.0				ug/L	281512	Standard

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	Na	23	30.0	44.1	**4.6080**	2.239	48.6	mg/L	2	Standard
	Mg	24	488.3	8.7	**0.3428**	0.035	10.3	mg/L	38	Standard
	K	39	40.0	12.5	**1.1046**	0.151	13.6	mg/L	0	Standard
	Ca	43	73.3	3.9	**1.9718**	0.161	8.2	mg/L	23	Standard
	Fe	54	91103.4	1.8	**24.0869**	0.363	1.5	mg/L	234	Standard
	Fe	57	25247.7	1.1	**24.4104**	0.259	1.1	mg/L	118	Standard
>	**Sc-1**	45	91091.3	0.7				mg/L	57581	Standard
	Cl	35	34598.8	1.0				ug/L	22827	Standard
	Kr	83	351.0	4.5				ug/L	90	Standard
	Br	81	6648.1	4.2				ug/L	2287	Standard
	P	31	381352.5	4.5				ug/L	215766	Standard
	S	34	44752.7	0.5				ug/L	23460	Standard
	Sr	88	336.7	3.1				ug/L	48	Standard
	C	12	3.3	173.2				mg/L	3	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	73.3	20.8				mg/L	0	Standard
	Dy	164	31729.7	1.1				mg/L	6	Standard
	Ho-1	165	20986.2	1.5				mg/L	2	Standard
	Er	166	20086.6	1.3				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		156.939	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		112.858	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

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⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	117.521
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	110.440
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ti 47 Upper, S, EEE	Ti	47	
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	
Se 82 Lower	Se	82	

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Method 6020 - Summary Report

Sample ID: L1311106704
Sample Date/Time: Friday, November 22, 2013 13:13:58
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	349306.5	4.8				ug/L	231878	Standard
	Be	9	2151.8	6.1	**0.5314**	0.033	6.2	ug/L	7	Standard
	Al	27	15720506.6	2.8	**63.7136**	1.540	2.4	ug/L	115	Standard
	Sc	45	79799.7	3.2				ug/L	57581	Standard
	Ti	47	161860.3	0.4	**314.7374**	13.897	4.4	ug/L	17	Standard
	V	51	544876.1	0.8	**60.5620**	2.414	4.0	ug/L	1678	Standard
	Cr	52	371610.9	2.4	**43.5893**	0.931	2.1	ug/L	5719	Standard
	Cr	53	195540.4	0.9	**124.5236**	6.202	5.0	ug/L	132	Standard
	Mn	55	14610094.6	0.4	**984.9894**	41.206	4.2	ug/L	927	Standard
	Co	59	171976.7	1.6	**18.1515**	0.720	4.0	ug/L	80	Standard
	Ni	60	177855.5	0.8	**56.1589**	2.176	3.9	ug/L	39	Standard
	Cu	65	97541.0	0.7	**31.1347**	1.337	4.3	ug/L	91	Standard
	Zn	66	123894.8	0.5	**72.0127**	2.894	4.0	ug/L	159	Standard
>	**Ge**	72	548686.2	4.2				ug/L	504090	Standard
	As	75	10709.3	2.6	**5.9580**	0.258	4.3	ug/L	-261	Standard
	Se	82	-120.7	8.0	**-0.4272**	0.052	12.2	ug/L	-43	Standard
	Se-1	77	13059.6	0.7	**99.8667**	4.126	4.1	ug/L	86	Standard
>	**Ga**	71	38216.5	2.1				mg/L	35	Standard
	Rb	85	428693.6	2.2				ug/L	20	Standard
	Y	89	885777.4	1.6				ug/L	462194	Standard
>	**Rh**	103	65.0	15.4				ug/L	7	Standard
	Mo	98	3053.0	4.4	**0.6512**	0.032	5.0	ug/L	8	Standard
	Ag	107	1596.4	9.5	**0.1749**	0.016	9.4	ug/L	62	Standard
	Cd	111	1746.6	2.6	**0.6587**	0.040	6.0	mg/L	1	Standard
	Cd	114	4553.1	3.7	**0.6729**	0.035	5.1	ug/L	23	Standard
>	**In**	115	579551.6	3.5				ug/L	502083	Standard
	Sn	118	1028.0	1.1	**0.5384**	0.028	5.2	ug/L	144	Standard
	Sb	123	2126.8	4.3	**0.6734**	0.023	3.5	ug/L	19	Standard
	Ba	135	503035.6	0.6	**226.0012**	6.796	3.0	ug/L	9	Standard
	Ce	140	1144630.9	0.4				ug/L	17	Standard
>	**Tb**	159	592386.6	3.7				ug/L	490863	Standard
	Ho	165	15915.0	0.9				ug/L	2	Standard
	Tl	203	1411.7	3.7	**0.1916**	0.000	0.3	ug/L	2	Standard
	Tl	205	1658.4	10.5	**0.2107**	0.015	7.1	ug/L	0	Standard
	Pb	206	55740.7	0.6	**19.2888**	0.700	3.6	ug/L	84	Standard
	Pb	207	46322.7	0.6	**17.6797**	0.684	3.9	ug/L	73	Standard
	Pb	208	121170.7	0.7	**17.5685**	0.560	3.2	ug/L	199	Standard
	U	238	5689.4	0.9	**1.2121**	0.039	3.2	ug/L	1	Standard
>	**Bi**	209	306929.2	3.8				ug/L	281512	Standard

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	Na	23	28.3	36.7	**5.0416**	2.182	43.3	mg/L	2	Standard
	Mg	24	350.0	17.9	**0.2727**	0.046	16.9	mg/L	38	Standard
	K	39	33.3	8.7	**1.0462**	0.136	13.0	mg/L	0	Standard
	Ca	43	73.3	15.7	**2.6182**	0.927	35.4	mg/L	23	Standard
	Fe	54	60979.9	2.5	**18.3947**	0.794	4.3	mg/L	234	Standard
	Fe	57	16712.5	2.2	**18.4135**	0.432	2.3	mg/L	118	Standard
>	**Sc-1**	45	79799.7	3.2				mg/L	57581	Standard
	Cl	35	35855.7	0.9				ug/L	22827	Standard
	Kr	83	275.0	6.0				ug/L	90	Standard
	Br	81	6394.7	6.7				ug/L	2287	Standard
	P	31	399869.9	1.1				ug/L	215766	Standard
	S	34	46546.4	2.0				ug/L	23460	Standard
	Sr	88	218.3	4.8				ug/L	48	Standard
	C	12	0.0					mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	166.7	21.1				mg/L	0	Standard
	Dy	164	24275.5	3.2				mg/L	6	Standard
	Ho-1	165	15915.0	0.9				mg/L	2	Standard
	Er	166	15694.8	3.5				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		150.642	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		108.847	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

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⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	115.429
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	109.029
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ti 47 Upper, S, EEE	Ti	47	
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	
Se 82 Lower	Se	82	

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Ba 135 Upper, S, EEE Ba 135

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, November 22, 2013 13:17:05
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	228637.4	1.4				ug/L	231878	Standard
	Be	9	129276.2	3.4	**49.4583**	1.001	2.0	ug/L	7	Standard
	Al	27	7792020.2	2.8	**48.2064**	0.686	1.4	ug/L	115	Standard
	Sc	45	50947.2	1.3				ug/L	57581	Standard
	Ti	47	44445.1	1.1	**98.5388**	0.626	0.6	ug/L	17	Standard
	V	51	388997.1	0.7	**49.2856**	0.380	0.8	ug/L	1678	Standard
	Cr	52	371515.5	1.3	**49.8467**	0.387	0.8	ug/L	5719	Standard
	Cr	53	72970.3	1.7	**52.9509**	0.709	1.3	ug/L	132	Standard
	Mn	55	652474.8	1.1	**50.0996**	0.314	0.6	ug/L	927	Standard
	Co	59	410393.3	2.1	**49.4433**	0.857	1.7	ug/L	80	Standard
	Ni	60	139480.8	1.4	**50.2432**	0.786	1.6	ug/L	39	Standard
	Cu	65	138861.5	1.6	**50.5877**	0.859	1.7	ug/L	91	Standard
	Zn	66	76248.0	0.8	**50.4732**	0.205	0.4	ug/L	159	Standard
>	**Ge**	72	480442.9	0.7				ug/L	504090	Standard
	As	75	80074.7	0.7	**49.6523**	0.317	0.6	ug/L	-261	Standard
	Se	82	7917.0	0.7	**49.7165**	0.496	1.0	ug/L	-43	Standard
	Se-1	77	5980.8	3.4	**51.8173**	1.566	3.0	ug/L	86	Standard
>	**Ga**	71	70.0	14.3				mg/L	35	Standard
	Rb	85	1230.1	6.1				ug/L	20	Standard
	Y	89	438664.6	0.5				ug/L	462194	Standard
>	**Rh**	103	26.7	57.3				ug/L	7	Standard
	Mo	98	401604.7	1.4	**104.0511**	1.468	1.4	ug/L	8	Standard
	Ag	107	361312.2	1.5	**51.9798**	0.917	1.8	ug/L	62	Standard
	Cd	111	109162.7	1.2	**50.3240**	0.671	1.3	mg/L	1	Standard
	Cd	114	276925.4	1.8	**49.9386**	0.904	1.8	ug/L	23	Standard
>	**In**	115	479949.6	0.3				ug/L	502083	Standard
	Sn	118	69458.2	2.1	**51.0834**	1.194	2.3	ug/L	144	Standard
	Sb	123	131208.2	1.3	**50.5112**	0.511	1.0	ug/L	19	Standard
	Ba	135	93275.3	1.1	**50.5617**	0.477	0.9	ug/L	9	Standard
	Ce	140	96.7	57.2				ug/L	17	Standard
>	**Tb**	159	470373.6	1.1				ug/L	490863	Standard
	Ho	165	10.0	50.0				ug/L	2	Standard
	Tl	203	314371.0	0.7	**49.8351**	0.353	0.7	ug/L	2	Standard
	Tl	205	343033.1	0.5	**50.2694**	0.518	1.0	ug/L	0	Standard
	Pb	206	127960.1	0.6	**50.1751**	0.389	0.8	ug/L	84	Standard
	Pb	207	116128.7	1.0	**50.2222**	0.480	1.0	ug/L	73	Standard
	Pb	208	303554.3	1.4	**49.8898**	0.660	1.3	ug/L	199	Standard
	U	238	205492.1	0.2	**49.5787**	0.205	0.4	ug/L	1	Standard
>	**Bi**	209	270944.5	0.6				ug/L	281512	Standard

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	Na	23	18.3	41.7	**5.0698**	2.303	45.4	mg/L	2	Standard
	Mg	24	3818.8	5.6	**5.2679**	0.299	5.7	mg/L	38	Standard
	K	39	80.0	25.0	**4.3699**	1.180	27.0	mg/L	0	Standard
	Ca	43	51.7	20.1	**3.1351**	1.187	37.9	mg/L	23	Standard
	Fe	54	12432.8	1.9	**5.8037**	0.182	3.1	mg/L	234	Standard
	Fe	57	3270.4	2.1	**5.5362**	0.172	3.1	mg/L	118	Standard
>	**Sc-1**	45	50947.2	1.3				mg/L	57581	Standard
	Cl	35	29045.8	2.2				ug/L	22827	Standard
	Kr	83	101.7	10.8				ug/L	90	Standard
	Br	81	2450.2	5.8				ug/L	2287	Standard
	P	31	289015.5	3.1				ug/L	215766	Standard
	S	34	46812.3	3.1				ug/L	23460	Standard
	Sr	88	68.3	23.5				ug/L	48	Standard
	C	12	0.0					mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	6.7	86.6				mg/L	0	Standard
	Dy	164	2.7	219.6				mg/L	6	Standard
	Ho-1	165	10.0	50.0				mg/L	2	Standard
	Er	166	13.3	43.3				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		98.602	
	Be	9	98.917		
	Al	27	96.413		
	Sc	45			
	Ti	47	98.539		
	V	51	98.571		
	Cr	52	99.693		
	Cr	53			
	Mn	55	100.199		
	Co	59	98.887		
	Ni	60	100.486		
	Cu	65	101.175		
	Zn	66	100.946		
>	Ge	72		95.309	
	As	75	99.305		
	Se	82	99.433		
	Se-1	77			
>	Ga	71			
	Rb	85			

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	Y	89		
>	Rh	103		
	Mo	98	104.051	
	Ag	107	103.960	
	Cd	111	100.648	
	Cd	114		
>	In	115		95.592
	Sn	118	102.167	
	Sb	123	101.022	
	Ba	135	101.123	
	Ce	140		
>	Tb	159		
	Ho	165		
	Tl	203	99.670	
	Tl	205		
	Pb	206		
	Pb	207		
	Pb	208	99.780	
	U	238	99.157	
>	Bi	209		96.246
	Na	23		
	Mg	24		
	K	39		
	Ca	43		
	Fe	54		
	Fe	57		
>	Sc-1	45		
	Cl	35		
	Kr	83		
	Br	81		
	P	31		
	S	34		
	Sr	88		
	C	12		
	N	14		
	Hg	202		
	Dy	164		
	Ho-1	165		
	Er	166		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, November 22, 2013 13:20:10
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	222012.3	3.0				ug/L	231878	Standard
	Be	9	53.3	148.9	**0.0124**	0.030	243.6	ug/L	7	Standard
	Al	27	11362.4	169.7	**0.0661**	0.119	179.9	ug/L	115	Standard
	Sc	45	51437.2	3.1				ug/L	57581	Standard
	Ti	47	202.3	157.4	**0.3981**	0.714	179.4	ug/L	17	Standard
	V	51	1191.3	1.8	**-0.0572**	0.002	4.3	ug/L	1678	Standard
	Cr	52	4665.1	0.5	**-0.1187**	0.003	2.3	ug/L	5719	Standard
	Cr	53	2756.9	10.0	**1.9480**	0.201	10.3	ug/L	132	Standard
	Mn	55	2287.3	86.5	**0.0953**	0.154	161.5	ug/L	927	Standard
	Co	59	138.7	41.2	**0.0009**	0.007	785.9	ug/L	80	Standard
	Ni	60	163.7	123.0	**0.0363**	0.073	201.9	ug/L	39	Standard
	Cu	65	201.0	87.5	**0.0324**	0.065	200.2	ug/L	91	Standard
	Zn	66	269.0	61.6	**-0.1015**	0.112	110.0	ug/L	159	Standard
>	**Ge**	72	475319.9	0.2				ug/L	504090	Standard
	As	75	-277.7	12.3	**-0.0179**	0.021	118.2	ug/L	-261	Standard
	Se	82	-50.1	16.2	**-0.0831**	0.051	61.3	ug/L	-43	Standard
	Se-1	77	204.7	5.6	**1.0813**	0.104	9.6	ug/L	86	Standard
>	**Ga**	71	50.0	130.0				mg/L	35	Standard
	Rb	85	126.7	156.2				ug/L	20	Standard
	Y	89	442670.6	2.3				ug/L	462194	Standard
>	**Rh**	103	3.3	86.6				ug/L	7	Standard
	Mo	98	74.3	52.1	**0.0152**	0.010	66.7	ug/L	8	Standard
	Ag	107	80.7	25.3	**-0.0036**	0.003	81.7	ug/L	62	Standard
	Cd	111	11.9	130.5	**-0.0036**	0.007	201.3	mg/L	1	Standard
	Cd	114	53.4	96.9	**0.0021**	0.009	455.9	ug/L	23	Standard
>	**In**	115	474281.8	0.3				ug/L	502083	Standard
	Sn	118	120.0	7.5	**-0.0000**	0.007	27093.9	ug/L	144	Standard
	Sb	123	327.8	38.3	**0.1229**	0.049	39.8	ug/L	19	Standard
	Ba	135	121.3	161.8	**0.0592**	0.108	181.8	ug/L	9	Standard
	Ce	140	248.3	161.0				ug/L	17	Standard
>	**Tb**	159	465152.2	0.3				ug/L	490863	Standard
	Ho	165	6.7	86.6				ug/L	2	Standard
	Tl	203	122.7	12.7	**0.0133**	0.002	18.7	ug/L	2	Standard
	Tl	205	115.0	15.7	**0.0133**	0.003	19.4	ug/L	0	Standard
	Pb	206	117.0	29.4	**0.0090**	0.013	147.9	ug/L	84	Standard
	Pb	207	98.7	31.9	**0.0091**	0.013	147.5	ug/L	73	Standard
	Pb	208	231.3	15.9	**-0.0013**	0.006	448.7	ug/L	199	Standard
	U	238	9.7	84.3	**0.0017**	0.002	114.7	ug/L	1	Standard
>	**Bi**	209	272154.5	0.6				ug/L	281512	Standard

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Na	23	0.0		**-0.4293**	0.000	0.0	mg/L	2	Standard
Mg	24	46.7	48.3	**0.0280**	0.032	114.7	mg/L	38	Standard
K	39	1.7	173.2	**-0.0684**	0.156	228.2	mg/L	0	Standard
Ca	43	11.7	24.7	**-1.2230**	0.268	21.9	mg/L	23	Standard
Fe	54	270.7	3.8	**0.0280**	0.005	16.4	mg/L	234	Standard
Fe	57	91.7	20.7	**0.0037**	0.031	831.1	mg/L	118	Standard
Sc-1	45	51437.2	3.1				mg/L	57581	Standard
Cl	35	27310.6	2.8				ug/L	22827	Standard
Kr	83	101.0	5.9				ug/L	90	Standard
Br	81	2250.2	11.3				ug/L	2287	Standard
P	31	259253.1	2.0				ug/L	215766	Standard
S	34	41775.9	3.3				ug/L	23460	Standard
Sr	88	71.7	33.0				ug/L	48	Standard
C	12	0.0					mg/L	3	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	2.7	221.0				mg/L	6	Standard
Ho-1	165	6.7	86.6				mg/L	2	Standard
Er	166	13.3	114.6				mg/L	7	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		95.745	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		94.293	
As	75			
Se	82			
Se-1	77			
Ga	71			
Rb	85			

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	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	94.463
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	96.676
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: PBS 77 WG452890-02
Sample Date/Time: Friday, November 22, 2013 13:23:16
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	333066.5	1.5				ug/L	231878	Standard
	Be	9	23.3	49.5	**-0.0019**	0.003	163.5	ug/L	7	Standard
	Al	27	3307.2	80.3	**0.0099**	0.011	112.2	ug/L	115	Standard
	Sc	45	59645.5	2.3				ug/L	57581	Standard
	Ti	47	60.0	30.9	**0.0646**	0.037	56.5	ug/L	17	Standard
	V	51	-16345.8	6.4	**-2.0926**	0.113	5.4	ug/L	1678	Standard
	Cr	52	19126.4	7.9	**1.5965**	0.172	10.8	ug/L	5719	Standard
	Cr	53	149472.3	6.4	**98.2164**	5.722	5.8	ug/L	132	Standard
	Mn	55	5215.1	92.3	**0.2791**	0.332	118.9	ug/L	927	Standard
	Co	59	164.3	76.3	**0.0019**	0.014	725.3	ug/L	80	Standard
	Ni	60	563.3	4.9	**0.1604**	0.008	4.9	ug/L	39	Standard
	Cu	65	410.0	7.0	**0.0936**	0.009	10.1	ug/L	91	Standard
	Zn	66	3136.7	1.5	**1.6073**	0.026	1.6	ug/L	159	Standard
>	**Ge**	72	530823.4	0.6				ug/L	504090	Standard
	As	75	-893.1	18.0	**-0.3443**	0.093	26.9	ug/L	-261	Standard
	Se	82	-53.7	21.7	**-0.0699**	0.064	91.5	ug/L	-43	Standard
	Se-1	77	12225.6	5.8	**96.4808**	5.057	5.2	ug/L	86	Standard
>	**Ga**	71	271.7	15.3				mg/L	35	Standard
	Rb	85	213.3	124.5				ug/L	20	Standard
	Y	89	512098.9	3.6				ug/L	462194	Standard
>	**Rh**	103	3.3	86.6				ug/L	7	Standard
	Mo	98	83.1	64.7	**0.0138**	0.011	82.9	ug/L	8	Standard
	Ag	107	110.3	68.8	**-0.0021**	0.009	437.4	ug/L	62	Standard
	Cd	111	18.5	108.7	**-0.0020**	0.008	388.4	mg/L	1	Standard
	Cd	114	58.8	104.6	**0.0012**	0.009	760.5	ug/L	23	Standard
>	**In**	115	568478.9	1.2				ug/L	502083	Standard
	Sn	118	167.3	13.0	**0.0145**	0.012	83.9	ug/L	144	Standard
	Sb	123	159.9	8.7	**0.0471**	0.004	9.4	ug/L	19	Standard
	Ba	135	377.3	134.7	**0.1635**	0.229	140.0	ug/L	9	Standard
	Ce	140	726.7	157.7				ug/L	17	Standard
>	**Tb**	159	561766.8	0.8				ug/L	490863	Standard
	Ho	165	11.7	137.8				ug/L	2	Standard
	Tl	203	57.7	120.6	**0.0019**	0.009	488.7	ug/L	2	Standard
	Tl	205	30.0	44.1	**0.0004**	0.002	401.4	ug/L	0	Standard
	Pb	206	187.7	49.4	**0.0282**	0.030	107.8	ug/L	84	Standard
	Pb	207	173.3	41.5	**0.0328**	0.026	78.4	ug/L	73	Standard
	Pb	208	345.3	12.6	**0.0111**	0.005	45.3	ug/L	199	Standard
	U	238	7.7	116.9	**0.0010**	0.002	187.4	ug/L	1	Standard
>	**Bi**	209	305437.4	2.4				ug/L	281512	Standard

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⌈	**Na**	23	1.7	173.2	**0.0025**	0.748	29625.4	mg/L	2	Standard
|	**Mg**	24	71.7	31.5	**0.0483**	0.027	56.0	mg/L	38	Standard
|	**K**	39	1.7	173.2	**-0.0769**	0.141	184.1	mg/L	0	Standard
|	**Ca**	43	18.3	31.5	**-0.7808**	0.489	62.6	mg/L	23	Standard
|	**Fe**	54	337.9	5.1	**0.0377**	0.006	17.2	mg/L	234	Standard
|	**Fe**	57	158.3	7.9	**0.0813**	0.019	22.8	mg/L	118	Standard
⌊>	**Sc-1**	45	59645.5	2.3				mg/L	57581	Standard
	Cl	35	34044.9	2.5				ug/L	22827	Standard
	Kr	83	130.0	8.7				ug/L	90	Standard
	Br	81	6214.6	4.7				ug/L	2287	Standard
	P	31	356543.6	4.6				ug/L	215766	Standard
	S	34	46767.1	1.6				ug/L	23460	Standard
	Sr	88	105.0	12.6				ug/L	48	Standard
	C	12	0.0					mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	0	Standard
	Dy	164	39.4	151.7				mg/L	6	Standard
	Ho-1	165	11.7	137.8				mg/L	2	Standard
	Er	166	13.3	173.2				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		143.638	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		105.303	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			
⌊	Rb	85			

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⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	113.224
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	108.499
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
V 51 Lower	V	51	

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Method 6020 - Summary Report

Sample ID: LCSS 77 WG452890-03
Sample Date/Time: Friday, November 22, 2013 13:26:21
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	369117.1	0.3				ug/L	231878	Standard
	Be	9	96419.3	2.3	**22.8477**	0.450	2.0	ug/L	7	Standard
	Al	27	4092.2	16.6	**0.0116**	0.003	22.5	ug/L	115	Standard
	Sc	45	60247.9	0.5				ug/L	57581	Standard
	Ti	47	66.0	15.2	**0.0728**	0.019	26.6	ug/L	17	Standard
	V	51	168128.4	2.5	**18.5785**	0.401	2.2	ug/L	1678	Standard
	Cr	52	216582.7	0.7	**25.1534**	0.164	0.7	ug/L	5719	Standard
	Cr	53	203085.5	1.3	**129.5571**	1.846	1.4	ug/L	132	Standard
	Mn	55	364087.3	0.7	**24.5131**	0.075	0.3	ug/L	927	Standard
	Co	59	218111.5	1.1	**23.0736**	0.304	1.3	ug/L	80	Standard
	Ni	60	81206.7	0.6	**25.6811**	0.110	0.4	ug/L	39	Standard
	Cu	65	78964.6	1.1	**25.2467**	0.362	1.4	ug/L	91	Standard
	Zn	66	45452.4	1.8	**26.2940**	0.554	2.1	ug/L	159	Standard
>	**Ge**	72	546986.5	0.4				ug/L	504090	Standard
	As	75	43892.0	1.0	**23.9854**	0.143	0.6	ug/L	-261	Standard
	Se	82	4518.1	1.6	**25.0362**	0.397	1.6	ug/L	-43	Standard
	Se-1	77	17302.9	1.5	**132.8159**	1.789	1.3	ug/L	86	Standard
>	**Ga**	71	343.3	11.7				mg/L	35	Standard
	Rb	85	90.0	5.6				ug/L	20	Standard
	Y	89	527309.4	2.0				ug/L	462194	Standard
>	**Rh**	103	25.0	87.2				ug/L	7	Standard
	Mo	98	113.9	40.9	**0.0194**	0.010	51.4	ug/L	8	Standard
	Ag	107	208336.9	0.6	**23.9728**	0.384	1.6	ug/L	62	Standard
	Cd	111	65893.9	0.8	**24.2985**	0.085	0.4	mg/L	1	Standard
	Cd	114	167456.7	2.1	**24.1537**	0.233	1.0	ug/L	23	Standard
>	**In**	115	599905.3	1.2				ug/L	502083	Standard
	Sn	118	209.0	4.6	**0.0337**	0.006	17.4	ug/L	144	Standard
	Sb	123	83425.6	0.8	**25.6934**	0.149	0.6	ug/L	19	Standard
	Ba	135	56086.6	0.9	**24.3206**	0.101	0.4	ug/L	9	Standard
	Ce	140	90.0	49.4				ug/L	17	Standard
>	**Tb**	159	588793.4	1.3				ug/L	490863	Standard
	Ho	165	5.0	0.0				ug/L	2	Standard
	Tl	203	185253.3	0.5	**25.2354**	0.079	0.3	ug/L	2	Standard
	Tl	205	200970.8	0.9	**25.3083**	0.213	0.8	ug/L	0	Standard
	Pb	206	80729.5	1.1	**27.1872**	0.139	0.5	ug/L	84	Standard
	Pb	207	70060.6	1.6	**26.0220**	0.196	0.8	ug/L	73	Standard
	Pb	208	178697.3	1.6	**25.2205**	0.324	1.3	ug/L	199	Standard
	U	238	123452.4	2.3	**25.5974**	0.587	2.3	ug/L	1	Standard
>	**Bi**	209	315268.0	0.8				ug/L	281512	Standard

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Na	23	0.0		**-0.4293**	0.000	0.0	mg/L	2	Standard
Mg	24	73.3	40.0	**0.0493**	0.034	69.1	mg/L	38	Standard
K	39	1.7	173.2	**-0.0789**	0.138	174.9	mg/L	0	Standard
Ca	43	15.0	33.3	**-1.0960**	0.456	41.6	mg/L	23	Standard
Fe	54	374.4	5.5	**0.0510**	0.009	16.9	mg/L	234	Standard
Fe	57	166.7	26.9	**0.0914**	0.067	73.1	mg/L	118	Standard
Sc-1	45	60247.9	0.5				mg/L	57581	Standard
Cl	35	33184.3	0.8				ug/L	22827	Standard
Kr	83	126.0	15.3				ug/L	90	Standard
Br	81	6137.9	3.7				ug/L	2287	Standard
P	31	369971.4	1.4				ug/L	215766	Standard
S	34	43596.0	2.3				ug/L	23460	Standard
Sr	88	85.0	48.1				ug/L	48	Standard
C	12	0.0					mg/L	3	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.7	177.5				mg/L	6	Standard
Ho-1	165	5.0	0.0				mg/L	2	Standard
Er	166	6.7	86.6				mg/L	7	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		159.186	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.510	
As	75			
Se	82			
Se-1	77			
> Ga	71			
Rb	85			

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⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	119.483
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	111.991
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cr 53 Upper, S, EEE	Cr	53	
Se-1 77 Upper, S, EEE	Se-1	77	

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Method 6020 - Summary Report

Sample ID: L1311081411 WG452890-01
Sample Date/Time: Friday, November 22, 2013 13:29:26
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	348584.3	0.2				ug/L	231878	Standard
	Be	9	2183.5	8.4	**0.5400**	0.045	8.4	ug/L	7	Standard
	Al	27	12710351.1	2.3	**51.5832**	1.172	2.3	ug/L	115	Standard
	Sc	45	77985.3	2.9				ug/L	57581	Standard
	Ti	47	145076.7	1.6	**274.1543**	1.863	0.7	ug/L	17	Standard
	V	51	512531.7	3.6	**55.3697**	2.496	4.5	ug/L	1678	Standard
	Cr	52	351701.9	1.4	**40.0647**	0.804	2.0	ug/L	5719	Standard
	Cr	53	184314.9	2.8	**114.0383**	2.115	1.9	ug/L	132	Standard
	Mn	55	9698233.5	0.6	**635.4938**	4.054	0.6	ug/L	927	Standard
	Co	59	138194.1	0.8	**14.1767**	0.232	1.6	ug/L	80	Standard
	Ni	60	97759.1	2.4	**29.9916**	0.430	1.4	ug/L	39	Standard
	Cu	65	157151.6	1.7	**48.7759**	0.406	0.8	ug/L	91	Standard
	Zn	66	148264.2	0.2	**83.8152**	0.708	0.8	ug/L	159	Standard
>	**Ge**	72	563862.0	1.0				ug/L	504090	Standard
	As	75	15314.9	4.5	**8.2199**	0.286	3.5	ug/L	-261	Standard
	Se	82	-104.7	18.0	**-0.3245**	0.105	32.4	ug/L	-43	Standard
	Se-1	77	12703.3	2.8	**94.3701**	1.858	2.0	ug/L	86	Standard
>	**Ga**	71	36184.8	1.8				mg/L	35	Standard
	Rb	85	358043.0	2.7				ug/L	20	Standard
	Y	89	916875.7	2.0				ug/L	462194	Standard
>	**Rh**	103	105.0	25.2				ug/L	7	Standard
	Mo	98	2825.0	0.8	**0.5955**	0.006	1.0	ug/L	8	Standard
	Ag	107	20309.9	0.6	**2.3793**	0.015	0.6	ug/L	62	Standard
	Cd	111	4345.9	0.9	**1.6327**	0.015	0.9	mg/L	1	Standard
	Cd	114	11331.7	2.0	**1.6667**	0.016	1.0	ug/L	23	Standard
>	**In**	115	585785.9	1.0				ug/L	502083	Standard
	Sn	118	2707.2	4.1	**1.5446**	0.062	4.0	ug/L	144	Standard
	Sb	123	8439.1	0.3	**2.6574**	0.025	0.9	ug/L	19	Standard
	Ba	135	524747.0	1.2	**233.0826**	0.751	0.3	ug/L	9	Standard
	Ce	140	1213106.6	1.2				ug/L	17	Standard
>	**Tb**	159	602074.3	1.5				ug/L	490863	Standard
	Ho	165	17086.3	0.8				ug/L	2	Standard
	Tl	203	1192.0	1.5	**0.1572**	0.002	1.1	ug/L	2	Standard
	Tl	205	1396.7	20.5	**0.1731**	0.035	20.0	ug/L	0	Standard
	Pb	206	463280.2	1.3	**156.9597**	1.028	0.7	ug/L	84	Standard
	Pb	207	394766.6	2.0	**147.5001**	1.855	1.3	ug/L	73	Standard
	Pb	208	1029075.0	1.0	**146.1429**	0.851	0.6	ug/L	199	Standard
	U	238	5057.8	3.6	**1.0531**	0.030	2.8	ug/L	1	Standard
>	**Bi**	209	313723.8	0.9				ug/L	281512	Standard

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	Na	23	50.0	17.3	**9.3551**	1.519	16.2	mg/L	2	Standard
	Mg	24	220.0	27.3	**0.1629**	0.053	32.6	mg/L	38	Standard
	K	39	31.7	45.6	**1.0171**	0.550	54.0	mg/L	0	Standard
	Ca	43	105.0	25.2	**4.9421**	1.756	35.5	mg/L	23	Standard
	Fe	54	51562.6	1.7	**15.8946**	0.243	1.5	mg/L	234	Standard
	Fe	57	14476.9	0.9	**16.3066**	0.459	2.8	mg/L	118	Standard
>	**Sc-1**	45	77985.3	2.9				mg/L	57581	Standard
	Cl	35	34183.2	1.2				ug/L	22827	Standard
	Kr	83	278.3	9.3				ug/L	90	Standard
	Br	81	6428.0	3.9				ug/L	2287	Standard
	P	31	381843.0	3.1				ug/L	215766	Standard
	S	34	46297.3	1.9				ug/L	23460	Standard
	Sr	88	253.3	17.8				ug/L	48	Standard
	C	12	0.0					mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	293.3	7.9				mg/L	0	Standard
	Dy	164	25012.4	3.0				mg/L	6	Standard
	Ho-1	165	17086.3	0.8				mg/L	2	Standard
	Er	166	16412.2	3.5				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		150.331	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		111.857	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

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⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	116.671
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	111.442
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ti 47 Upper, S, EEE	Ti	47	
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Pb 206 Upper, S, EEE	Pb	206
Pb 207 Upper, S, EEE	Pb	207
Pb 208 Upper, S, EEE	Pb	208

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Method 6020 - Summary Report

Sample ID: L1311081411S WG452890-04
Sample Date/Time: Friday, November 22, 2013 13:32:31
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	371178.4	0.9				ug/L	231878	Standard
	Be	9	98328.1	1.6	**23.1736**	0.476	2.1	ug/L	7	Standard
	Al	27	18235511.4	2.0	**69.5071**	1.592	2.3	ug/L	115	Standard
	Sc	45	89770.2	0.6				ug/L	57581	Standard
	Ti	47	280533.7	0.7	**524.7103**	2.348	0.4	ug/L	17	Standard
	V	51	943277.4	0.4	**100.9999**	1.239	1.2	ug/L	1678	Standard
	Cr	52	693377.8	1.8	**78.8994**	2.280	2.9	ug/L	5719	Standard
	Cr	53	274042.9	1.0	**167.8534**	1.250	0.7	ug/L	132	Standard
	Mn	55	12796722.5	1.4	**829.9610**	20.557	2.5	ug/L	927	Standard
	Co	59	392757.8	1.8	**39.9042**	1.065	2.7	ug/L	80	Standard
	Ni	60	221051.0	1.3	**67.1459**	0.195	0.3	ug/L	39	Standard
	Cu	65	265333.1	0.5	**81.5366**	1.136	1.4	ug/L	91	Standard
	Zn	66	230975.0	1.0	**129.3636**	0.633	0.5	ug/L	159	Standard
>	**Ge**	72	569779.8	1.1				ug/L	504090	Standard
	As	75	63218.1	0.6	**33.1087**	0.504	1.5	ug/L	-261	Standard
	Se	82	4311.2	2.0	**22.9533**	0.314	1.4	ug/L	-43	Standard
	Se-1	77	17452.4	1.6	**128.5776**	0.716	0.6	ug/L	86	Standard
>	**Ga**	71	55319.1	0.8				mg/L	35	Standard
	Rb	85	624337.1	0.4				ug/L	20	Standard
	Y	89	962535.1	0.8				ug/L	462194	Standard
>	**Rh**	103	138.3	29.2				ug/L	7	Standard
	Mo	98	3301.0	1.4	**0.6803**	0.003	0.5	ug/L	8	Standard
	Ag	107	224417.5	0.9	**25.8337**	0.079	0.3	ug/L	62	Standard
	Cd	111	69581.1	1.0	**25.6703**	0.144	0.6	mg/L	1	Standard
	Cd	114	177654.4	0.9	**25.6420**	0.457	1.8	ug/L	23	Standard
>	**In**	115	599622.0	1.0				ug/L	502083	Standard
	Sn	118	3373.7	1.4	**1.8999**	0.018	1.0	ug/L	144	Standard
	Sb	123	90754.1	1.4	**27.9623**	0.117	0.4	ug/L	19	Standard
	Ba	135	714617.0	1.4	**310.0944**	1.681	0.5	ug/L	9	Standard
	Ce	140	1509291.6	1.9				ug/L	17	Standard
>	**Tb**	159	632260.7	0.4				ug/L	490863	Standard
	Ho	165	19327.3	2.8				ug/L	2	Standard
	Tl	203	185040.5	1.0	**24.9345**	0.252	1.0	ug/L	2	Standard
	Tl	205	200703.9	0.4	**25.0021**	0.124	0.5	ug/L	0	Standard
	Pb	206	633750.1	1.4	**211.3879**	3.676	1.7	ug/L	84	Standard
	Pb	207	539034.4	1.4	**198.2860**	3.224	1.6	ug/L	73	Standard
	Pb	208	1403522.5	0.8	**196.2241**	2.127	1.1	ug/L	199	Standard
	U	238	129470.2	1.1	**26.5562**	0.357	1.3	ug/L	1	Standard
>	**Bi**	209	318703.1	0.6				ug/L	281512	Standard

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	Na	23	45.0	69.4	**7.2411**	5.330	73.6	mg/L	2	Standard
	Mg	24	431.7	24.8	**0.3036**	0.085	27.9	mg/L	38	Standard
	K	39	53.3	23.6	**1.5524**	0.410	26.4	mg/L	0	Standard
	Ca	43	121.7	6.3	**5.0063**	0.434	8.7	mg/L	23	Standard
	Fe	54	80406.9	1.5	**21.5616**	0.282	1.3	mg/L	234	Standard
	Fe	57	22651.9	2.2	**22.2115**	0.626	2.8	mg/L	118	Standard
>	**Sc-1**	45	89770.2	0.6				mg/L	57581	Standard
	Cl	35	36655.6	1.3				ug/L	22827	Standard
	Kr	83	359.0	1.7				ug/L	90	Standard
	Br	81	6861.6	4.3				ug/L	2287	Standard
	P	31	398056.7	1.4				ug/L	215766	Standard
	S	34	49203.1	1.0				ug/L	23460	Standard
	Sr	88	333.3	2.3				ug/L	48	Standard
	C	12	0.0					mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	330.0	16.0				mg/L	0	Standard
	Dy	164	29222.8	2.4				mg/L	6	Standard
	Ho-1	165	19327.3	2.8				mg/L	2	Standard
	Er	166	18241.0	3.7				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		160.075	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		113.031	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

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	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	119.427
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	113.211
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ti 47 Upper, S, EEE	Ti	47	
V 51 Upper, S, EEE	V	51	
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	

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Zn 66 Upper, S, EEE	Zn	66
Se-1 77 Upper, S, EEE	Se-1	77
Ba 135 Upper, S, EEE	Ba	135
Pb 206 Upper, S, EEE	Pb	206
Pb 207 Upper, S, EEE	Pb	207
Pb 208 Upper, S, EEE	Pb	208

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Method 6020 - Summary Report

Sample ID: L1311081411SD WG452890-05
Sample Date/Time: Friday, November 22, 2013 13:35:36
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	363839.2	1.8				ug/L	231878	Standard
	Be	9	100165.0	1.4	**24.0895**	0.733	3.0	ug/L	7	Standard
	Al	27	16708591.5	0.8	**64.9797**	1.124	1.7	ug/L	115	Standard
	Sc	45	83787.9	3.1				ug/L	57581	Standard
	Ti	47	346324.5	0.8	**653.5801**	7.163	1.1	ug/L	17	Standard
	V	51	911144.5	0.6	**98.4305**	1.795	1.8	ug/L	1678	Standard
	Cr	52	668265.9	0.9	**76.6910**	1.187	1.5	ug/L	5719	Standard
	Cr	53	261740.1	1.6	**161.7596**	3.444	2.1	ug/L	132	Standard
	Mn	55	10885834.3	0.3	**712.2528**	8.490	1.2	ug/L	927	Standard
	Co	59	377826.9	0.4	**38.7270**	0.546	1.4	ug/L	80	Standard
	Ni	60	207361.3	0.5	**63.5561**	0.940	1.5	ug/L	39	Standard
	Cu	65	256653.7	1.1	**79.5649**	0.115	0.1	ug/L	91	Standard
	Zn	66	206324.6	0.3	**116.5731**	1.740	1.5	ug/L	159	Standard
>	**Ge**	72	564745.4	1.2				ug/L	504090	Standard
	As	75	62624.1	0.8	**33.0884**	0.271	0.8	ug/L	-261	Standard
	Se	82	4365.0	1.8	**23.4478**	0.686	2.9	ug/L	-43	Standard
	Se-1	77	17123.7	1.4	**127.3049**	3.291	2.6	ug/L	86	Standard
>	**Ga**	71	53392.3	2.3				mg/L	35	Standard
	Rb	85	558265.7	1.7				ug/L	20	Standard
	Y	89	910263.4	1.6				ug/L	462194	Standard
>	**Rh**	103	128.3	17.6				ug/L	7	Standard
	Mo	98	3018.1	1.8	**0.6315**	0.015	2.3	ug/L	8	Standard
	Ag	107	223983.5	0.9	**26.1850**	0.105	0.4	ug/L	62	Standard
	Cd	111	70442.7	1.6	**26.3918**	0.240	0.9	mg/L	1	Standard
	Cd	114	181855.8	1.9	**26.6529**	0.329	1.2	ug/L	23	Standard
>	**In**	115	590428.9	0.7				ug/L	502083	Standard
	Sn	118	3745.8	4.0	**2.1535**	0.076	3.5	ug/L	144	Standard
	Sb	123	88304.1	1.0	**27.6316**	0.172	0.6	ug/L	19	Standard
	Ba	135	626771.7	1.7	**276.2026**	2.696	1.0	ug/L	9	Standard
	Ce	140	1385052.0	1.3				ug/L	17	Standard
>	**Tb**	159	619424.6	2.0				ug/L	490863	Standard
	Ho	165	16445.6	3.6				ug/L	2	Standard
	Tl	203	184980.9	1.6	**25.3986**	0.072	0.3	ug/L	2	Standard
	Tl	205	198848.0	0.6	**25.2439**	0.414	1.6	ug/L	0	Standard
	Pb	206	481723.5	1.9	**163.7021**	0.723	0.4	ug/L	84	Standard
	Pb	207	408570.0	0.9	**153.1429**	1.504	1.0	ug/L	73	Standard
	Pb	208	1055419.6	1.8	**150.3406**	1.546	1.0	ug/L	199	Standard
	U	238	128867.8	1.2	**26.9343**	0.265	1.0	ug/L	1	Standard
>	**Bi**	209	312780.0	1.7				ug/L	281512	Standard

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	Na	23	35.0	37.8	**6.0028**	2.547	42.4	mg/L	2	Standard
	Mg	24	486.7	18.8	**0.3760**	0.089	23.7	mg/L	38	Standard
	K	39	60.0	16.7	**1.9084**	0.384	20.1	mg/L	0	Standard
	Ca	43	103.3	7.4	**4.3491**	0.709	16.3	mg/L	23	Standard
	Fe	54	77287.6	1.3	**22.2238**	0.810	3.6	mg/L	234	Standard
	Fe	57	21335.0	1.2	**22.4326**	0.952	4.2	mg/L	118	Standard
>	**Sc-1**	45	83787.9	3.1				mg/L	57581	Standard
	Cl	35	36193.2	1.2				ug/L	22827	Standard
	Kr	83	353.0	3.8				ug/L	90	Standard
	Br	81	6601.4	4.2				ug/L	2287	Standard
	P	31	393726.9	0.7				ug/L	215766	Standard
	S	34	49142.9	1.4				ug/L	23460	Standard
	Sr	88	308.3	8.9				ug/L	48	Standard
	C	12	0.0					mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	323.3	8.9				mg/L	0	Standard
	Dy	164	25488.3	4.5				mg/L	6	Standard
	Ho-1	165	16445.6	3.6				mg/L	2	Standard
	Er	166	16028.5	3.7				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		156.909	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		112.033	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

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	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	117.596
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	111.107
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ti 47 Upper, S, EEE	Ti	47	
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Se-1 77 Upper, S, EEE	Se-1	77
Ba 135 Upper, S, EEE	Ba	135
Pb 206 Upper, S, EEE	Pb	206
Pb 207 Upper, S, EEE	Pb	207
Pb 208 Upper, S, EEE	Pb	208

Approved: November 24, 2013

Method 6020 - Summary Report

Sample ID: L1311081401
Sample Date/Time: Friday, November 22, 2013 13:38:40
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	373713.1	2.7				ug/L	231878	Standard
	Be	9	2851.9	10.1	**0.6590**	0.052	7.9	ug/L	7	Standard
	Al	27	18969732.1	0.9	**71.8375**	1.566	2.2	ug/L	115	Standard
	Sc	45	86764.4	1.5				ug/L	57581	Standard
	Ti	47	210974.8	1.1	**404.8676**	7.432	1.8	ug/L	17	Standard
	V	51	698679.0	0.2	**76.6996**	0.774	1.0	ug/L	1678	Standard
	Cr	52	566214.1	1.7	**65.9727**	1.585	2.4	ug/L	5719	Standard
	Cr	53	250051.8	1.6	**157.1185**	0.934	0.6	ug/L	132	Standard
	Mn	55	12601615.6	2.2	**838.5110**	24.979	3.0	ug/L	927	Standard
	Co	59	154127.0	0.7	**16.0553**	0.276	1.7	ug/L	80	Standard
	Ni	60	135925.7	0.9	**42.3530**	0.326	0.8	ug/L	39	Standard
	Cu	65	137637.3	0.1	**43.3734**	0.519	1.2	ug/L	91	Standard
	Zn	66	167193.7	2.2	**95.9893**	1.084	1.1	ug/L	159	Standard
>	**Ge**	72	555371.4	1.1				ug/L	504090	Standard
	As	75	5453.8	9.9	**3.0710**	0.273	8.9	ug/L	-261	Standard
	Se	82	-163.0	3.8	**-0.6474**	0.025	3.8	ug/L	-43	Standard
	Se-1	77	14421.5	3.0	**108.8832**	2.197	2.0	ug/L	86	Standard
>	**Ga**	71	57662.9	1.6				mg/L	35	Standard
	Rb	85	604996.2	0.9				ug/L	20	Standard
	Y	89	981966.1	0.7				ug/L	462194	Standard
>	**Rh**	103	86.7	29.0				ug/L	7	Standard
	Mo	98	2295.7	1.8	**0.4773**	0.013	2.7	ug/L	8	Standard
	Ag	107	28736.2	0.2	**3.3324**	0.049	1.5	ug/L	62	Standard
	Cd	111	7247.8	1.0	**2.6961**	0.012	0.4	mg/L	1	Standard
	Cd	114	18869.6	2.4	**2.7473**	0.055	2.0	ug/L	23	Standard
>	**In**	115	592909.7	1.4				ug/L	502083	Standard
	Sn	118	4249.3	2.5	**2.4449**	0.071	2.9	ug/L	144	Standard
	Sb	123	1933.0	3.0	**0.5975**	0.013	2.1	ug/L	19	Standard
	Ba	135	716357.3	1.2	**314.3821**	1.172	0.4	ug/L	9	Standard
	Ce	140	1726840.1	1.2				ug/L	17	Standard
>	**Tb**	159	618455.9	1.2				ug/L	490863	Standard
	Ho	165	20800.9	0.9				ug/L	2	Standard
	Tl	203	2072.5	4.7	**0.2789**	0.011	4.1	ug/L	2	Standard
	Tl	205	2141.8	5.0	**0.2687**	0.011	4.3	ug/L	0	Standard
	Pb	206	90581.6	0.6	**30.7904**	0.149	0.5	ug/L	84	Standard
	Pb	207	75323.5	1.5	**28.2361**	0.225	0.8	ug/L	73	Standard
	Pb	208	198196.2	1.7	**28.2326**	0.268	0.9	ug/L	199	Standard
	U	238	6977.9	2.6	**1.4593**	0.025	1.7	ug/L	1	Standard
>	**Bi**	209	312409.1	1.0				ug/L	281512	Standard

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	Na	23	48.3	36.3	**8.0560**	2.972	36.9	mg/L	2	Standard
	Mg	24	465.0	15.8	**0.3432**	0.066	19.1	mg/L	38	Standard
	K	39	31.7	24.1	**0.8901**	0.240	27.0	mg/L	0	Standard
	Ca	43	95.0	36.8	**3.5938**	2.312	64.3	mg/L	23	Standard
	Fe	54	77863.8	2.3	**21.6017**	0.203	0.9	mg/L	234	Standard
	Fe	57	21371.7	3.8	**21.6713**	0.516	2.4	mg/L	118	Standard
>	**Sc-1**	45	86764.4	1.5				mg/L	57581	Standard
	Cl	35	36020.8	1.7				ug/L	22827	Standard
	Kr	83	336.7	3.3				ug/L	90	Standard
	Br	81	6828.2	8.4				ug/L	2287	Standard
	P	31	392133.5	1.3				ug/L	215766	Standard
	S	34	48363.7	0.7				ug/L	23460	Standard
	Sr	88	321.7	17.1				ug/L	48	Standard
	C	12	0.0					mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	243.3	9.5				mg/L	0	Standard
	Dy	164	31149.9	0.6				mg/L	6	Standard
	Ho-1	165	20800.9	0.9				mg/L	2	Standard
	Er	166	19916.4	3.0				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		161.168	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		110.173	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

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	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	118.090
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	110.975
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ti 47 Upper, S, EEE	Ti	47	
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	
Se 82 Lower	Se	82	

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Se-1 77 Upper, S, EEE	Se-1	77
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1311081402
Sample Date/Time: Friday, November 22, 2013 13:41:45
Number of Replicates: 3
Autosampler Position: 327
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	370759.3	2.0				ug/L	231878	Standard
	Be	9	2563.6	4.8	**0.5975**	0.040	6.7	ug/L	7	Standard
	Al	27	17283971.1	2.0	**65.9839**	2.554	3.9	ug/L	115	Standard
	Sc	45	83241.4	0.5				ug/L	57581	Standard
	Ti	47	184971.6	0.3	**350.9704**	2.957	0.8	ug/L	17	Standard
	V	51	637612.5	1.5	**69.1938**	1.336	1.9	ug/L	1678	Standard
	Cr	52	407568.5	0.8	**46.7384**	0.920	2.0	ug/L	5719	Standard
	Cr	53	215618.4	0.7	**133.9793**	2.514	1.9	ug/L	132	Standard
	Mn	55	12205204.4	1.2	**803.0088**	15.994	2.0	ug/L	927	Standard
	Co	59	170853.3	1.4	**17.5984**	0.190	1.1	ug/L	80	Standard
	Ni	60	127004.5	1.2	**39.1275**	0.129	0.3	ug/L	39	Standard
	Cu	65	122628.3	0.6	**38.2047**	0.235	0.6	ug/L	91	Standard
	Zn	66	152584.5	0.6	**86.6062**	0.738	0.9	ug/L	159	Standard
>	**Ge**	72	561654.1	1.2				ug/L	504090	Standard
	As	75	7342.0	9.2	**4.0388**	0.370	9.2	ug/L	-261	Standard
	Se	82	-133.3	2.5	**-0.4791**	0.019	4.1	ug/L	-43	Standard
	Se-1	77	14465.2	1.2	**108.0015**	0.996	0.9	ug/L	86	Standard
>	**Ga**	71	46265.5	1.2				mg/L	35	Standard
	Rb	85	532447.8	0.9				ug/L	20	Standard
	Y	89	961878.7	0.8				ug/L	462194	Standard
>	**Rh**	103	85.0	10.2				ug/L	7	Standard
	Mo	98	3567.7	4.4	**0.7429**	0.025	3.4	ug/L	8	Standard
	Ag	107	8219.6	1.3	**0.9409**	0.010	1.1	ug/L	62	Standard
	Cd	111	4344.7	0.2	**1.6108**	0.036	2.3	mg/L	1	Standard
	Cd	114	11095.5	2.4	**1.6105**	0.046	2.9	ug/L	23	Standard
>	**In**	115	593719.5	2.4				ug/L	502083	Standard
	Sn	118	2121.8	3.8	**1.1740**	0.030	2.6	ug/L	144	Standard
	Sb	123	2095.3	1.7	**0.6476**	0.024	3.8	ug/L	19	Standard
	Ba	135	612793.7	0.6	**268.6312**	4.685	1.7	ug/L	9	Standard
	Ce	140	1522777.6	1.1				ug/L	17	Standard
>	**Tb**	159	619656.0	0.8				ug/L	490863	Standard
	Ho	165	19067.0	4.1				ug/L	2	Standard
	Tl	203	1733.8	0.8	**0.2330**	0.004	1.7	ug/L	2	Standard
	Tl	205	1818.4	1.1	**0.2283**	0.001	0.4	ug/L	0	Standard
	Pb	206	100775.7	1.2	**34.3488**	0.020	0.1	ug/L	84	Standard
	Pb	207	84664.6	2.0	**31.8241**	0.302	0.9	ug/L	73	Standard
	Pb	208	220984.8	0.5	**31.5685**	0.187	0.6	ug/L	199	Standard
	U	238	5983.5	1.9	**1.2546**	0.012	0.9	ug/L	1	Standard
>	**Bi**	209	311589.6	1.1				ug/L	281512	Standard

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	Na	23	48.3	43.1	**8.4385**	3.798	45.0	mg/L	2	Standard
	Mg	24	343.3	12.4	**0.2551**	0.035	13.8	mg/L	38	Standard
	K	39	53.3	27.1	**1.6864**	0.505	30.0	mg/L	0	Standard
	Ca	43	85.0	36.7	**3.1582**	2.040	64.6	mg/L	23	Standard
	Fe	54	68636.6	2.3	**19.8402**	0.374	1.9	mg/L	234	Standard
	Fe	57	18906.8	2.3	**19.9773**	0.551	2.8	mg/L	118	Standard
>	**Sc-1**	45	83241.4	0.5				mg/L	57581	Standard
	Cl	35	36270.0	1.4				ug/L	22827	Standard
	Kr	83	312.0	3.1				ug/L	90	Standard
	Br	81	7105.0	6.0				ug/L	2287	Standard
	P	31	391006.2	0.8				ug/L	215766	Standard
	S	34	49171.3	1.4				ug/L	23460	Standard
	Sr	88	285.0	13.7				ug/L	48	Standard
	C	12	3.3	173.2				mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	140.0	18.9				mg/L	0	Standard
	Dy	164	30129.3	3.0				mg/L	6	Standard
	Ho-1	165	19067.0	4.1				mg/L	2	Standard
	Er	166	18978.5	0.4				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		159.894	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		111.419	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

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	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	118.251
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	110.684
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ti 47 Upper, S, EEE	Ti	47	
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	
Se 82 Lower	Se	82	

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Se-1 77 Upper, S, EEE	Se-1	77
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1311081403
Sample Date/Time: Friday, November 22, 2013 13:44:50
Number of Replicates: 3
Autosampler Position: 328
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	378709.9	1.2				ug/L	231878	Standard
	Be	9	2528.5	5.7	**0.5765**	0.040	7.0	ug/L	7	Standard
	Al	27	18017028.3	3.2	**67.2942**	1.458	2.2	ug/L	115	Standard
	Sc	45	82696.7	0.3				ug/L	57581	Standard
	Ti	47	217692.4	0.1	**417.9152**	3.326	0.8	ug/L	17	Standard
	V	51	652387.6	0.1	**71.6335**	0.573	0.8	ug/L	1678	Standard
	Cr	52	348571.7	0.4	**40.3359**	0.316	0.8	ug/L	5719	Standard
	Cr	53	205852.4	1.1	**129.3926**	0.469	0.4	ug/L	132	Standard
	Mn	55	13219730.2	0.9	**879.9405**	12.912	1.5	ug/L	927	Standard
	Co	59	150157.1	1.2	**15.6477**	0.283	1.8	ug/L	80	Standard
	Ni	60	114640.4	0.5	**35.7339**	0.407	1.1	ug/L	39	Standard
	Cu	65	124894.7	0.5	**39.3700**	0.421	1.1	ug/L	91	Standard
	Zn	66	149754.9	1.4	**85.9907**	0.614	0.7	ug/L	159	Standard
>	**Ge**	72	555122.4	0.7				ug/L	504090	Standard
	As	75	7192.6	4.8	**4.0044**	0.211	5.3	ug/L	-261	Standard
	Se	82	-146.5	10.5	**-0.5585**	0.079	14.2	ug/L	-43	Standard
	Se-1	77	15275.4	3.4	**115.4413**	3.937	3.4	ug/L	86	Standard
>	**Ga**	71	51487.3	1.6				mg/L	35	Standard
	Rb	85	594454.5	1.0				ug/L	20	Standard
	Y	89	953568.7	1.2				ug/L	462194	Standard
>	**Rh**	103	70.0	18.9				ug/L	7	Standard
	Mo	98	2396.2	2.6	**0.4986**	0.020	3.9	ug/L	8	Standard
	Ag	107	6061.5	0.7	**0.6909**	0.010	1.5	ug/L	62	Standard
	Cd	111	2649.7	1.7	**0.9802**	0.026	2.7	mg/L	1	Standard
	Cd	114	7116.3	1.0	**1.0315**	0.006	0.6	ug/L	23	Standard
>	**In**	115	592802.1	1.6				ug/L	502083	Standard
	Sn	118	1941.8	0.5	**1.0689**	0.017	1.6	ug/L	144	Standard
	Sb	123	1877.3	4.6	**0.5801**	0.017	3.0	ug/L	19	Standard
	Ba	135	633865.8	0.4	**278.2602**	3.649	1.3	ug/L	9	Standard
	Ce	140	1463229.9	0.7				ug/L	17	Standard
>	**Tb**	159	620650.3	0.6				ug/L	490863	Standard
	Ho	165	18549.7	3.8				ug/L	2	Standard
	Tl	203	1905.8	3.3	**0.2572**	0.009	3.6	ug/L	2	Standard
	Tl	205	2151.8	4.3	**0.2712**	0.011	4.0	ug/L	0	Standard
	Pb	206	80716.8	0.8	**27.5513**	0.137	0.5	ug/L	84	Standard
	Pb	207	66969.0	1.2	**25.2107**	0.321	1.3	ug/L	73	Standard
	Pb	208	174479.2	1.0	**24.9579**	0.161	0.6	ug/L	199	Standard
	U	238	6069.9	1.3	**1.2749**	0.006	0.5	ug/L	1	Standard
>	**Bi**	209	311063.8	0.8				ug/L	281512	Standard

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	Na	23	31.7	59.8	**5.4190**	3.490	64.4	mg/L	2	Standard
	Mg	24	495.0	5.1	**0.3868**	0.020	5.3	mg/L	38	Standard
	K	39	60.0	16.7	**1.9300**	0.353	18.3	mg/L	0	Standard
	Ca	43	105.0	16.5	**4.5345**	1.149	25.3	mg/L	23	Standard
	Fe	54	75125.4	1.4	**21.8701**	0.304	1.4	mg/L	234	Standard
	Fe	57	20740.9	0.7	**22.0742**	0.223	1.0	mg/L	118	Standard
>	**Sc-1**	45	82696.7	0.3				mg/L	57581	Standard
	Cl	35	34938.2	0.5				ug/L	22827	Standard
	Kr	83	315.7	7.5				ug/L	90	Standard
	Br	81	6187.9	7.5				ug/L	2287	Standard
	P	31	407563.3	1.8				ug/L	215766	Standard
	S	34	46166.9	0.7				ug/L	23460	Standard
	Sr	88	275.0	4.8				ug/L	48	Standard
	C	12	0.0					mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	130.0	27.7				mg/L	0	Standard
	Dy	164	27686.0	0.8				mg/L	6	Standard
	Ho-1	165	18549.7	3.8				mg/L	2	Standard
	Er	166	17623.6	4.3				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		163.323	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		110.124	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

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⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	118.069
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	110.497
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ti 47 Upper, S, EEE	Ti	47	
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	
Se 82 Lower	Se	82	

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Se-1 77 Upper, S, EEE	Se-1	77
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1311081403PS WG453985-01
Sample Date/Time: Friday, November 22, 2013 13:47:55
Number of Replicates: 3
Autosampler Position: 329
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	398930.4	0.7				ug/L	231878	Standard
	Be	9	206644.8	1.5	**45.3222**	1.003	2.2	ug/L	7	Standard
	Al	27	19033893.2	0.5	**67.5013**	0.561	0.8	ug/L	115	Standard
	Sc	45	90308.4	0.9				ug/L	57581	Standard
	Ti	47	237453.9	0.4	**413.8781**	1.402	0.3	ug/L	17	Standard
	V	51	1167020.9	2.1	**116.4710**	2.220	1.9	ug/L	1678	Standard
	Cr	52	811691.2	1.0	**86.1277**	0.920	1.1	ug/L	5719	Standard
	Cr	53	307493.9	4.1	**175.5193**	7.056	4.0	ug/L	132	Standard
	Mn	55	15524456.1	0.7	**938.1804**	5.617	0.6	ug/L	927	Standard
	Co	59	653805.4	2.2	**61.9041**	1.359	2.2	ug/L	80	Standard
	Ni	60	302002.9	2.0	**85.4961**	1.507	1.8	ug/L	39	Standard
	Cu	65	305286.6	0.4	**87.4231**	0.247	0.3	ug/L	91	Standard
	Zn	66	243341.3	0.7	**127.0065**	0.937	0.7	ug/L	159	Standard
>	**Ge**	72	611401.7	0.5				ug/L	504090	Standard
	As	75	105295.9	0.5	**51.3018**	0.473	0.9	ug/L	-261	Standard
	Se	82	9287.6	0.4	**45.8478**	0.177	0.4	ug/L	-43	Standard
	Se-1	77	21910.5	0.7	**150.5636**	0.612	0.4	ug/L	86	Standard
>	**Ga**	71	58029.3	1.0				mg/L	35	Standard
	Rb	85	631965.7	2.6				ug/L	20	Standard
	Y	89	1016607.0	1.4				ug/L	462194	Standard
>	**Rh**	103	128.3	16.2				ug/L	7	Standard
	Mo	98	2742.9	1.8	**0.5296**	0.018	3.4	ug/L	8	Standard
	Ag	107	459473.1	0.1	**49.6420**	0.867	1.7	ug/L	62	Standard
	Cd	111	145269.6	0.2	**50.2935**	0.738	1.5	mg/L	1	Standard
	Cd	114	365239.1	1.4	**49.4582**	0.312	0.6	ug/L	23	Standard
>	**In**	115	639177.9	1.7				ug/L	502083	Standard
	Sn	118	1957.8	2.3	**0.9935**	0.008	0.8	ug/L	144	Standard
	Sb	123	177769.4	1.1	**51.3919**	0.344	0.7	ug/L	19	Standard
	Ba	135	794586.6	0.8	**323.4949**	2.807	0.9	ug/L	9	Standard
	Ce	140	1525753.8	1.4				ug/L	17	Standard
>	**Tb**	159	665666.6	1.3				ug/L	490863	Standard
	Ho	165	19797.9	1.1				ug/L	2	Standard
	Tl	203	393805.1	1.1	**51.4394**	0.299	0.6	ug/L	2	Standard
	Tl	205	421903.2	2.0	**50.9443**	0.957	1.9	ug/L	0	Standard
	Pb	206	251318.2	0.5	**81.2245**	0.371	0.5	ug/L	84	Standard
	Pb	207	220890.6	0.7	**78.7358**	0.603	0.8	ug/L	73	Standard
	Pb	208	559124.5	1.3	**75.7388**	0.517	0.7	ug/L	199	Standard
	U	238	277773.9	0.8	**55.2226**	0.274	0.5	ug/L	1	Standard
>	**Bi**	209	328812.3	0.6				ug/L	281512	Standard

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⌈	**Na**	23	55.0	56.8	**8.8946**	5.352	60.2	mg/L	2	Standard
|	**Mg**	24	445.0	8.8	**0.3121**	0.033	10.5	mg/L	38	Standard
|	**K**	39	38.3	61.6	**1.0669**	0.763	71.6	mg/L	0	Standard
|	**Ca**	43	71.7	10.7	**1.9062**	0.425	22.3	mg/L	23	Standard
|	**Fe**	54	80048.7	0.2	**21.3381**	0.232	1.1	mg/L	234	Standard
|	**Fe**	57	22274.7	0.7	**21.7062**	0.144	0.7	mg/L	118	Standard
⌊>	**Sc-1**	45	90308.4	0.9				mg/L	57581	Standard
	Cl	35	36669.7	2.0				ug/L	22827	Standard
	Kr	83	363.0	9.5				ug/L	90	Standard
	Br	81	7408.5	8.3				ug/L	2287	Standard
	P	31	623315.8	1.3				ug/L	215766	Standard
	S	34	44730.9	1.4				ug/L	23460	Standard
	Sr	88	303.3	5.3				ug/L	48	Standard
	C	12	0.0					mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	140.0	18.9				mg/L	0	Standard
	Dy	164	30497.4	3.6				mg/L	6	Standard
	Ho-1	165	19797.9	1.1				mg/L	2	Standard
	Er	166	19522.6	3.3				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		172.043	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		121.288	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			
⌊	Rb	85			

Sample ID: L1311081403PS WG453985-01
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⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	127.305
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	116.802
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ti 47 Upper, S, EEE	Ti	47	
V 51 Upper, S, EEE	V	51	
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	

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Zn 66 Upper, S, EEE	Zn	66	
Ge 72 Int Std for sample	Ge	72	Rerun sample
Se-1 77 Upper, S, EEE	Se-1	77	
In 115 Int Std for sample	In	115	Rerun sample
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1311081403SDL WG453985-02
Sample Date/Time: Friday, November 22, 2013 13:50:59
Number of Replicates: 3
Autosampler Position: 330
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	249265.4	0.6				ug/L	231878	Standard
	Be	9	393.3	21.0	**0.1299**	0.028	21.6	ug/L	7	Standard
	Al	27	2570984.9	1.5	**14.5882**	0.158	1.1	ug/L	115	Standard
	Sc	45	53939.2	2.7				ug/L	57581	Standard
	Ti	47	35378.6	0.6	**77.7526**	0.823	1.1	ug/L	17	Standard
	V	51	117929.8	1.7	**14.6657**	0.282	1.9	ug/L	1678	Standard
	Cr	52	66113.3	1.7	**8.1667**	0.054	0.7	ug/L	5719	Standard
	Cr	53	43184.8	1.6	**31.0331**	0.117	0.4	ug/L	132	Standard
	Mn	55	2095107.3	9.9	**159.5659**	14.077	8.8	ug/L	927	Standard
	Co	59	26288.1	1.8	**3.1248**	0.044	1.4	ug/L	80	Standard
	Ni	60	19586.3	1.7	**6.9735**	0.026	0.4	ug/L	39	Standard
	Cu	65	21896.8	1.7	**7.8723**	0.046	0.6	ug/L	91	Standard
	Zn	66	30053.8	1.4	**19.5502**	0.197	1.0	ug/L	159	Standard
>	**Ge**	72	484655.1	1.5				ug/L	504090	Standard
	As	75	1001.5	9.5	**0.7689**	0.050	6.5	ug/L	-261	Standard
	Se	82	-61.7	12.0	**-0.1490**	0.046	31.2	ug/L	-43	Standard
	Se-1	77	3344.0	2.8	**28.3926**	0.592	2.1	ug/L	86	Standard
>	**Ga**	71	8902.6	4.5				mg/L	35	Standard
	Rb	85	102918.4	1.3				ug/L	20	Standard
	Y	89	519974.8	2.3				ug/L	462194	Standard
>	**Rh**	103	23.3	121.8				ug/L	7	Standard
	Mo	98	406.9	9.6	**0.0973**	0.010	10.2	ug/L	8	Standard
	Ag	107	1109.4	5.4	**0.1383**	0.009	6.2	ug/L	62	Standard
	Cd	111	460.7	7.0	**0.1954**	0.015	7.6	mg/L	1	Standard
	Cd	114	1188.1	9.9	**0.1987**	0.021	10.6	ug/L	23	Standard
>	**In**	115	498427.4	0.3				ug/L	502083	Standard
	Sn	118	381.7	12.0	**0.1813**	0.033	18.1	ug/L	144	Standard
	Sb	123	419.3	5.3	**0.1506**	0.008	5.1	ug/L	19	Standard
	Ba	135	108326.2	0.7	**56.5444**	0.309	0.5	ug/L	9	Standard
	Ce	140	251341.2	1.6				ug/L	17	Standard
>	**Tb**	159	495253.6	1.6				ug/L	490863	Standard
	Ho	165	3032.0	5.2				ug/L	2	Standard
	Tl	203	380.3	10.6	**0.0524**	0.006	12.2	ug/L	2	Standard
	Tl	205	388.3	17.3	**0.0516**	0.010	18.6	ug/L	0	Standard
	Pb	206	13780.9	1.1	**5.1993**	0.077	1.5	ug/L	84	Standard
	Pb	207	11371.6	0.9	**4.7314**	0.043	0.9	ug/L	73	Standard
	Pb	208	30765.2	1.0	**4.8605**	0.067	1.4	ug/L	199	Standard
	U	238	998.7	1.3	**0.2327**	0.004	1.5	ug/L	1	Standard
>	**Bi**	209	279834.5	0.3				ug/L	281512	Standard

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	Na	23	3.3	86.6	**0.5027**	0.807	160.6	mg/L	2	Standard
	Mg	24	96.7	3.0	**0.0901**	0.002	2.3	mg/L	38	Standard
	K	39	15.0	88.2	**0.6521**	0.734	112.6	mg/L	0	Standard
	Ca	43	26.7	21.7	**0.2602**	0.600	230.5	mg/L	23	Standard
	Fe	54	13635.0	0.4	**6.0165**	0.150	2.5	mg/L	234	Standard
	Fe	57	3717.1	4.2	**5.9519**	0.096	1.6	mg/L	118	Standard
>	**Sc-1**	45	53939.2	2.7				mg/L	57581	Standard
	Cl	35	26292.8	3.5				ug/L	22827	Standard
	Kr	83	135.3	8.8				ug/L	90	Standard
	Br	81	2856.9	10.1				ug/L	2287	Standard
	P	31	131809.4	2.6				ug/L	215766	Standard
	S	34	34230.3	1.3				ug/L	23460	Standard
	Sr	88	130.0	29.0				ug/L	48	Standard
	C	12	0.0					mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	16.7	91.7				mg/L	0	Standard
	Dy	164	4507.7	3.1				mg/L	6	Standard
	Ho-1	165	3032.0	5.2				mg/L	2	Standard
	Er	166	2846.9	3.6				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		107.498	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		96.145	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

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	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	99.272
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	99.404
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, November 22, 2013 13:54:06
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	220280.6	2.9				ug/L	231878	Standard
	Be	9	128019.2	4.3	**50.8326**	0.784	1.5	ug/L	7	Standard
	Al	27	7605476.8	3.6	**48.8459**	1.150	2.4	ug/L	115	Standard
	Sc	45	50733.1	1.8				ug/L	57581	Standard
	Ti	47	43595.0	1.7	**95.6265**	0.424	0.4	ug/L	17	Standard
	V	51	389037.1	2.8	**48.7595**	0.775	1.6	ug/L	1678	Standard
	Cr	52	371887.8	1.4	**49.3616**	0.048	0.1	ug/L	5719	Standard
	Cr	53	71767.9	1.8	**51.5233**	0.237	0.5	ug/L	132	Standard
	Mn	55	657656.6	2.2	**49.9603**	0.612	1.2	ug/L	927	Standard
	Co	59	415428.8	1.3	**49.5221**	0.339	0.7	ug/L	80	Standard
	Ni	60	139681.0	1.2	**49.7861**	0.911	1.8	ug/L	39	Standard
	Cu	65	138154.4	1.3	**49.7949**	0.179	0.4	ug/L	91	Standard
	Zn	66	75414.6	0.5	**49.3899**	0.405	0.8	ug/L	159	Standard
>	**Ge**	72	485588.7	1.3				ug/L	504090	Standard
	As	75	80354.5	1.2	**49.2990**	0.180	0.4	ug/L	-261	Standard
	Se	82	7734.4	1.4	**48.0660**	0.890	1.9	ug/L	-43	Standard
	Se-1	77	5935.2	3.5	**50.8571**	1.113	2.2	ug/L	86	Standard
>	**Ga**	71	68.3	15.2				mg/L	35	Standard
	Rb	85	1206.7	8.1				ug/L	20	Standard
	Y	89	436573.2	2.7				ug/L	462194	Standard
>	**Rh**	103	40.0	43.3				ug/L	7	Standard
	Mo	98	401842.8	0.8	**105.5998**	0.742	0.7	ug/L	8	Standard
	Ag	107	357003.5	0.9	**52.0909**	0.196	0.4	ug/L	62	Standard
	Cd	111	105970.3	1.6	**49.5460**	0.314	0.6	mg/L	1	Standard
	Cd	114	268831.6	1.0	**49.1710**	0.383	0.8	ug/L	23	Standard
>	**In**	115	473213.9	1.3				ug/L	502083	Standard
	Sn	118	68899.7	1.8	**51.3968**	1.049	2.0	ug/L	144	Standard
	Sb	123	126266.7	0.7	**49.3043**	0.372	0.8	ug/L	19	Standard
	Ba	135	91790.2	1.1	**50.4664**	0.265	0.5	ug/L	9	Standard
	Ce	140	51.7	75.2				ug/L	17	Standard
>	**Tb**	159	463226.2	0.2				ug/L	490863	Standard
	Ho	165	10.0	86.6				ug/L	2	Standard
	Tl	203	307494.3	0.5	**49.2202**	0.357	0.7	ug/L	2	Standard
	Tl	205	335272.6	1.4	**49.6124**	0.946	1.9	ug/L	0	Standard
	Pb	206	126242.4	0.8	**49.9833**	0.444	0.9	ug/L	84	Standard
	Pb	207	114496.7	1.1	**49.9972**	0.318	0.6	ug/L	73	Standard
	Pb	208	296316.3	1.4	**49.1737**	0.619	1.3	ug/L	199	Standard
	U	238	197491.5	1.1	**48.1138**	0.704	1.5	ug/L	1	Standard
>	**Bi**	209	268340.2	1.2				ug/L	281512	Standard

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	Na	23	18.3	41.7	**5.1215**	2.381	46.5	mg/L	2	Standard
	Mg	24	3703.8	1.9	**5.1295**	0.046	0.9	mg/L	38	Standard
	K	39	106.7	9.8	**5.8924**	0.588	10.0	mg/L	0	Standard
	Ca	43	55.0	24.1	**3.5253**	1.522	43.2	mg/L	23	Standard
	Fe	54	11904.4	3.9	**5.5739**	0.120	2.2	mg/L	234	Standard
	Fe	57	3283.7	3.6	**5.5860**	0.308	5.5	mg/L	118	Standard
>	**Sc-1**	45	50733.1	1.8				mg/L	57581	Standard
	Cl	35	27925.1	2.6				ug/L	22827	Standard
	Kr	83	105.0	14.0				ug/L	90	Standard
	Br	81	2483.5	2.6				ug/L	2287	Standard
	P	31	271301.3	1.9				ug/L	215766	Standard
	S	34	44090.8	2.4				ug/L	23460	Standard
	Sr	88	68.3	61.4				ug/L	48	Standard
	C	12	0.0					mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	0	Standard
	Dy	164	13.0	43.3				mg/L	6	Standard
	Ho-1	165	10.0	86.6				mg/L	2	Standard
	Er	166	6.7	86.6				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		94.998	
	Be	9	101.665		
	Al	27	97.692		
	Sc	45			
	Ti	47	95.626		
	V	51	97.519		
	Cr	52	98.723		
	Cr	53			
	Mn	55	99.921		
	Co	59	99.044		
	Ni	60	99.572		
	Cu	65	99.590		
	Zn	66	98.780		
>	Ge	72		96.330	
	As	75	98.598		
	Se	82	96.132		
	Se-1	77			
>	Ga	71			
	Rb	85			

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⌈	Y	89		
⌊>	Rh	103		
⌈	Mo	98	105.600	
|	Ag	107	104.182	
|	Cd	111	99.092	
|	Cd	114		
|>	In	115		94.250
|	Sn	118	102.794	
|	Sb	123	98.609	
⌊	Ba	135	100.933	
⌈	Ce	140		
⌊>	Tb	159		
⌈	Ho	165		
|	Tl	203	98.440	
|	Tl	205		
|	Pb	206		
|	Pb	207		
|	Pb	208	98.347	
|	U	238	96.228	
⌊>	Bi	209		95.321
⌈	Na	23		
|	Mg	24		
|	K	39		
|	Ca	43		
|	Fe	54		
|	Fe	57		
⌊>	Sc-1	45		
	Cl	35		
	Kr	83		
	Br	81		
	P	31		
	S	34		
	Sr	88		
	C	12		
	N	14		
	Hg	202		
	Dy	164		
	Ho-1	165		
	Er	166		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, November 22, 2013 13:57:11
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	209792.5	0.9				ug/L	231878	Standard
	Be	9	16.7	75.5	**-0.0011**	0.005	466.7	ug/L	7	Standard
	Al	27	691.7	29.0	**0.0006**	0.001	222.7	ug/L	115	Standard
	Sc	45	49900.4	1.9				ug/L	57581	Standard
	Ti	47	15.3	10.0	**-0.0208**	0.004	18.0	ug/L	17	Standard
	V	51	1063.7	16.0	**-0.0712**	0.023	32.9	ug/L	1678	Standard
	Cr	52	4533.7	1.7	**-0.1262**	0.004	3.3	ug/L	5719	Standard
	Cr	53	2723.6	4.0	**1.9582**	0.105	5.4	ug/L	132	Standard
	Mn	55	1261.7	10.9	**0.0172**	0.011	66.0	ug/L	927	Standard
	Co	59	117.7	16.3	**-0.0014**	0.002	166.7	ug/L	80	Standard
	Ni	60	65.3	8.7	**0.0009**	0.002	241.0	ug/L	39	Standard
	Cu	65	112.3	9.5	**0.0004**	0.004	958.3	ug/L	91	Standard
	Zn	66	169.0	6.3	**-0.1668**	0.009	5.1	ug/L	159	Standard
>	**Ge**	72	467425.3	1.3				ug/L	504090	Standard
	As	75	-279.4	14.1	**-0.0218**	0.024	110.6	ug/L	-261	Standard
	Se	82	-51.9	31.2	**-0.0996**	0.102	102.7	ug/L	-43	Standard
	Se-1	77	200.3	6.3	**1.0734**	0.127	11.9	ug/L	86	Standard
>	**Ga**	71	30.0	44.1				mg/L	35	Standard
	Rb	85	25.0	34.6				ug/L	20	Standard
	Y	89	425185.4	2.3				ug/L	462194	Standard
>	**Rh**	103	1.7	173.2				ug/L	7	Standard
	Mo	98	109.5	31.3	**0.0254**	0.009	37.0	ug/L	8	Standard
	Ag	107	96.7	33.2	**-0.0008**	0.005	594.9	ug/L	62	Standard
	Cd	111	5.9	58.5	**-0.0063**	0.002	26.3	mg/L	1	Standard
	Cd	114	33.8	36.3	**-0.0013**	0.002	167.5	ug/L	23	Standard
>	**In**	115	459114.4	1.3				ug/L	502083	Standard
	Sn	118	108.3	10.8	**-0.0061**	0.008	129.2	ug/L	144	Standard
	Sb	123	335.6	26.9	**0.1299**	0.034	26.5	ug/L	19	Standard
	Ba	135	18.3	30.0	**0.0030**	0.003	97.9	ug/L	9	Standard
	Ce	140	16.7	75.5				ug/L	17	Standard
>	**Tb**	159	452025.5	2.1				ug/L	490863	Standard
	Ho	165	3.3	86.6				ug/L	2	Standard
	Tl	203	123.0	0.8	**0.0138**	0.000	2.4	ug/L	2	Standard
	Tl	205	146.7	2.0	**0.0184**	0.001	3.1	ug/L	0	Standard
	Pb	206	91.7	21.7	**-0.0001**	0.008	5828.6	ug/L	84	Standard
	Pb	207	93.0	16.1	**0.0076**	0.007	94.9	ug/L	73	Standard
	Pb	208	233.0	14.2	**-0.0002**	0.006	2990.6	ug/L	199	Standard
	U	238	18.0	44.1	**0.0038**	0.002	49.4	ug/L	1	Standard
>	**Bi**	209	266736.0	2.0				ug/L	281512	Standard

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Na	23	0.0		**-0.4293**	0.000	0.0	mg/L	2	Standard
Mg	24	35.0	24.7	**0.0131**	0.013	99.8	mg/L	38	Standard
K	39	0.0		**-0.1586**			mg/L	0	Standard
Ca	43	5.0	0.0	**-1.9160**	0.011	0.6	mg/L	23	Standard
Fe	54	272.4	18.5	**0.0328**	0.026	78.1	mg/L	234	Standard
Fe	57	91.7	28.0	**0.0089**	0.046	518.8	mg/L	118	Standard
Sc-1	45	49900.4	1.9				mg/L	57581	Standard
Cl	35	26352.3	4.1				ug/L	22827	Standard
Kr	83	98.3	17.0				ug/L	90	Standard
Br	81	2230.2	0.4				ug/L	2287	Standard
P	31	254837.1	1.2				ug/L	215766	Standard
S	34	40220.0	3.3				ug/L	23460	Standard
Sr	88	48.3	36.3				ug/L	48	Standard
C	12	0.0					mg/L	3	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	-0.3	173.2				mg/L	6	Standard
Ho-1	165	3.3	86.6				mg/L	2	Standard
Er	166	6.7	173.2				mg/L	7	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		90.475	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		92.727	
As	75			
Se	82			
Se-1	77			
Ga	71			
Rb	85			

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	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	91.442
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	94.751
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1311081404
Sample Date/Time: Friday, November 22, 2013 14:00:17
Number of Replicates: 3
Autosampler Position: 331
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	322257.6	2.7				ug/L	231878	Standard
	Be	9	2431.9	4.7	**0.6521**	0.014	2.2	ug/L	7	Standard
	Al	27	14641893.4	3.2	**64.2756**	0.919	1.4	ug/L	115	Standard
	Sc	45	80838.4	1.6				ug/L	57581	Standard
	Ti	47	165938.4	0.8	**333.7579**	2.963	0.9	ug/L	17	Standard
	V	51	632544.5	0.5	**72.7754**	0.742	1.0	ug/L	1678	Standard
	Cr	52	869842.3	0.9	**106.6878**	0.410	0.4	ug/L	5719	Standard
	Cr	53	282235.6	2.6	**185.9247**	5.301	2.9	ug/L	132	Standard
	Mn	55	11333765.6	0.8	**790.3872**	5.813	0.7	ug/L	927	Standard
	Co	59	145131.2	1.3	**15.8452**	0.164	1.0	ug/L	80	Standard
	Ni	60	141066.7	1.5	**46.0747**	0.515	1.1	ug/L	39	Standard
	Cu	65	139627.1	1.2	**46.1207**	0.370	0.8	ug/L	91	Standard
	Zn	66	171013.6	2.0	**102.9356**	0.769	0.7	ug/L	159	Standard
>	**Ge**	72	529840.6	1.3				ug/L	504090	Standard
	As	75	6455.2	1.4	**3.7739**	0.047	1.3	ug/L	-261	Standard
	Se	82	-119.1	10.6	**-0.4414**	0.069	15.5	ug/L	-43	Standard
	Se-1	77	11893.7	5.0	**94.0062**	3.499	3.7	ug/L	86	Standard
>	**Ga**	71	48266.8	3.3				mg/L	35	Standard
	Rb	85	496906.6	3.5				ug/L	20	Standard
	Y	89	922475.3	1.9				ug/L	462194	Standard
>	**Rh**	103	85.0	31.1				ug/L	7	Standard
	Mo	98	2979.0	6.1	**0.6641**	0.026	3.9	ug/L	8	Standard
	Ag	107	53377.5	2.0	**6.6395**	0.066	1.0	ug/L	62	Standard
	Cd	111	19881.8	1.8	**7.9333**	0.088	1.1	mg/L	1	Standard
	Cd	114	50704.8	1.9	**7.9159**	0.114	1.4	ug/L	23	Standard
>	**In**	115	554057.9	2.9				ug/L	502083	Standard
	Sn	118	6606.4	3.0	**4.1266**	0.043	1.0	ug/L	144	Standard
	Sb	123	2360.9	1.6	**0.7828**	0.020	2.6	ug/L	19	Standard
	Ba	135	641849.0	2.2	**301.4735**	2.987	1.0	ug/L	9	Standard
	Ce	140	1400754.5	2.9				ug/L	17	Standard
>	**Tb**	159	586612.7	2.4				ug/L	490863	Standard
	Ho	165	19021.9	2.1				ug/L	2	Standard
	Tl	203	1753.8	14.7	**0.2494**	0.032	12.9	ug/L	2	Standard
	Tl	205	1846.8	3.8	**0.2457**	0.013	5.1	ug/L	0	Standard
	Pb	206	126745.5	2.8	**45.7186**	0.090	0.2	ug/L	84	Standard
	Pb	207	106377.3	2.4	**42.3217**	0.136	0.3	ug/L	73	Standard
	Pb	208	278582.3	2.3	**42.1196**	0.259	0.6	ug/L	199	Standard
	U	238	5762.8	1.8	**1.2789**	0.028	2.2	ug/L	1	Standard
>	**Bi**	209	294501.2	2.7				ug/L	281512	Standard

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	Na	23	28.3	83.4	**4.9374**	4.467	90.5	mg/L	2	Standard
	Mg	24	325.0	18.7	**0.2479**	0.054	21.6	mg/L	38	Standard
	K	39	26.7	60.3	**0.7899**	0.571	72.3	mg/L	0	Standard
	Ca	43	95.0	10.5	**4.0113**	0.640	16.0	mg/L	23	Standard
	Fe	54	71950.4	1.4	**21.4309**	0.590	2.8	mg/L	234	Standard
	Fe	57	19676.1	5.0	**21.4133**	0.877	4.1	mg/L	118	Standard
>	**Sc-1**	45	80838.4	1.6				mg/L	57581	Standard
	Cl	35	33028.6	1.8				ug/L	22827	Standard
	Kr	83	291.3	7.5				ug/L	90	Standard
	Br	81	5837.8	8.6				ug/L	2287	Standard
	P	31	348771.3	3.3				ug/L	215766	Standard
	S	34	43143.0	2.1				ug/L	23460	Standard
	Sr	88	255.0	7.1				ug/L	48	Standard
	C	12	3.3	173.2				mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	376.7	17.3				mg/L	0	Standard
	Dy	164	28534.8	2.2				mg/L	6	Standard
	Ho-1	165	19021.9	2.1				mg/L	2	Standard
	Er	166	17960.6	3.7				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		138.977	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		105.108	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

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⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	110.352
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	104.614
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ti 47 Upper, S, EEE	Ti	47	
Cr 52 Upper, S, EEE	Cr	52	
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	

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Zn 66 Upper, S, EEE	Zn	66
Se 82 Lower	Se	82
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1311081405
Sample Date/Time: Friday, November 22, 2013 14:03:22
Number of Replicates: 3
Autosampler Position: 332
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	350418.2	1.6				ug/L	231878	Standard
	Be	9	2788.6	2.4	**0.6883**	0.008	1.2	ug/L	7	Standard
	Al	27	16277320.1	1.2	**65.7246**	1.204	1.8	ug/L	115	Standard
	Sc	45	85314.5	1.1				ug/L	57581	Standard
	Ti	47	218917.2	0.5	**426.9878**	5.860	1.4	ug/L	17	Standard
	V	51	688125.8	0.9	**76.7804**	1.162	1.5	ug/L	1678	Standard
	Cr	52	567464.4	0.6	**67.2129**	0.850	1.3	ug/L	5719	Standard
	Cr	53	241687.4	0.6	**154.3667**	1.836	1.2	ug/L	132	Standard
	Mn	55	9508140.2	0.5	**642.9535**	6.944	1.1	ug/L	927	Standard
	Co	59	160805.2	0.9	**17.0265**	0.316	1.9	ug/L	80	Standard
	Ni	60	138584.3	1.6	**43.8875**	0.317	0.7	ug/L	39	Standard
	Cu	65	150101.4	2.0	**48.0738**	0.512	1.1	ug/L	91	Standard
	Zn	66	159569.9	0.6	**93.1157**	0.336	0.4	ug/L	159	Standard
>	**Ge**	72	546411.7	1.0				ug/L	504090	Standard
	As	75	9499.8	3.4	**5.3180**	0.127	2.4	ug/L	-261	Standard
	Se	82	-134.1	7.8	**-0.5035**	0.062	12.3	ug/L	-43	Standard
	Se-1	77	14289.4	2.8	**109.6758**	3.007	2.7	ug/L	86	Standard
>	**Ga**	71	53271.8	0.7				mg/L	35	Standard
	Rb	85	533640.1	2.5				ug/L	20	Standard
	Y	89	949422.3	1.6				ug/L	462194	Standard
>	**Rh**	103	106.7	31.2				ug/L	7	Standard
	Mo	98	3075.7	3.0	**0.6575**	0.009	1.4	ug/L	8	Standard
	Ag	107	24601.6	1.2	**2.9251**	0.031	1.1	ug/L	62	Standard
	Cd	111	5555.2	2.4	**2.1180**	0.028	1.3	mg/L	1	Standard
	Cd	114	14499.3	0.6	**2.1646**	0.038	1.8	ug/L	23	Standard
>	**In**	115	577892.7	1.7				ug/L	502083	Standard
	Sn	118	4076.5	2.3	**2.4047**	0.031	1.3	ug/L	144	Standard
	Sb	123	2328.5	0.6	**0.7399**	0.016	2.1	ug/L	19	Standard
	Ba	135	590443.8	1.4	**265.8608**	1.618	0.6	ug/L	9	Standard
	Ce	140	1465370.1	0.4				ug/L	17	Standard
>	**Tb**	159	608282.5	1.1				ug/L	490863	Standard
	Ho	165	18933.5	2.6				ug/L	2	Standard
	Tl	203	1646.8	4.3	**0.2279**	0.005	2.4	ug/L	2	Standard
	Tl	205	1851.8	6.8	**0.2396**	0.011	4.8	ug/L	0	Standard
	Pb	206	191218.9	1.4	**67.2169**	0.488	0.7	ug/L	84	Standard
	Pb	207	159905.8	1.5	**61.9909**	0.400	0.6	ug/L	73	Standard
	Pb	208	416861.3	1.3	**61.4177**	0.479	0.8	ug/L	199	Standard
	U	238	6475.1	2.5	**1.3994**	0.005	0.4	ug/L	1	Standard
>	**Bi**	209	302316.8	2.1				ug/L	281512	Standard

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	Na	23	40.0	37.5	**6.7573**	2.769	41.0	mg/L	2	Standard
	Mg	24	495.0	7.1	**0.3739**	0.029	7.7	mg/L	38	Standard
	K	39	41.7	50.0	**1.2523**	0.720	57.5	mg/L	0	Standard
	Ca	43	130.0	11.5	**5.9303**	0.875	14.8	mg/L	23	Standard
	Fe	54	78558.2	1.0	**22.1701**	0.243	1.1	mg/L	234	Standard
	Fe	57	21597.0	0.7	**22.2836**	0.349	1.6	mg/L	118	Standard
>	**Sc-1**	45	85314.5	1.1				mg/L	57581	Standard
	Cl	35	35665.9	1.3				ug/L	22827	Standard
	Kr	83	307.3	4.1				ug/L	90	Standard
	Br	81	6248.0	1.7				ug/L	2287	Standard
	P	31	365964.4	1.6				ug/L	215766	Standard
	S	34	47723.4	0.6				ug/L	23460	Standard
	Sr	88	293.3	6.9				ug/L	48	Standard
	C	12	0.0					mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	490.0	13.4				mg/L	0	Standard
	Dy	164	29746.5	2.1				mg/L	6	Standard
	Ho-1	165	18933.5	2.6				mg/L	2	Standard
	Er	166	18741.6	4.6				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		151.121	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		108.396	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

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⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	115.099
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	107.390
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ti 47 Upper, S, EEE	Ti	47	
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	
Se 82 Lower	Se	82	

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Se-1 77 Upper, S, EEE	Se-1	77
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1311081407
Sample Date/Time: Friday, November 22, 2013 14:06:27
Number of Replicates: 3
Autosampler Position: 333
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	341537.3	1.9				ug/L	231878	Standard
	Be	9	2695.2	0.4	**0.6827**	0.014	2.1	ug/L	7	Standard
	Al	27	17894119.3	1.5	**74.1288**	1.031	1.4	ug/L	115	Standard
	Sc	45	82879.6	3.3				ug/L	57581	Standard
	Ti	47	182035.1	1.2	**349.7333**	2.799	0.8	ug/L	17	Standard
	V	51	613679.3	1.8	**67.4386**	1.949	2.9	ug/L	1678	Standard
	Cr	52	426603.0	0.3	**49.5818**	0.772	1.6	ug/L	5719	Standard
	Cr	53	206501.0	0.5	**129.9232**	1.865	1.4	ug/L	132	Standard
	Mn	55	9042006.6	0.6	**602.3380**	6.882	1.1	ug/L	927	Standard
	Co	59	143197.5	0.9	**14.9343**	0.229	1.5	ug/L	80	Standard
	Ni	60	163599.3	1.7	**51.0417**	0.334	0.7	ug/L	39	Standard
	Cu	65	138518.7	0.7	**43.7052**	0.312	0.7	ug/L	91	Standard
	Zn	66	173579.0	1.0	**99.8040**	0.684	0.7	ug/L	159	Standard
>	**Ge**	72	554669.9	1.3				ug/L	504090	Standard
	As	75	8381.4	6.0	**4.6413**	0.212	4.6	ug/L	-261	Standard
	Se	82	-126.0	14.2	**-0.4493**	0.105	23.4	ug/L	-43	Standard
	Se-1	77	13461.0	0.6	**101.7371**	1.649	1.6	ug/L	86	Standard
>	**Ga**	71	45533.3	1.1				mg/L	35	Standard
	Rb	85	423895.8	1.8				ug/L	20	Standard
	Y	89	922062.5	1.6				ug/L	462194	Standard
>	**Rh**	103	63.3	25.4				ug/L	7	Standard
	Mo	98	2939.7	1.6	**0.6295**	0.009	1.5	ug/L	8	Standard
	Ag	107	7775.0	0.9	**0.9156**	0.007	0.7	ug/L	62	Standard
	Cd	111	3845.9	1.7	**1.4663**	0.019	1.3	mg/L	1	Standard
	Cd	114	9986.3	1.3	**1.4910**	0.015	1.0	ug/L	23	Standard
>	**In**	115	576813.9	0.5				ug/L	502083	Standard
	Sn	118	2374.2	0.7	**1.3659**	0.016	1.2	ug/L	144	Standard
	Sb	123	2568.0	2.5	**0.8178**	0.020	2.4	ug/L	19	Standard
	Ba	135	603028.6	1.0	**272.0339**	3.812	1.4	ug/L	9	Standard
	Ce	140	1222283.2	2.1				ug/L	17	Standard
>	**Tb**	159	602992.5	1.2				ug/L	490863	Standard
	Ho	165	17371.6	1.2				ug/L	2	Standard
	Tl	203	1410.4	1.4	**0.1930**	0.002	1.2	ug/L	2	Standard
	Tl	205	1505.1	2.8	**0.1929**	0.006	3.1	ug/L	0	Standard
	Pb	206	106217.4	1.0	**37.0634**	0.421	1.1	ug/L	84	Standard
	Pb	207	88809.5	1.0	**34.1768**	0.356	1.0	ug/L	73	Standard
	Pb	208	235305.7	1.0	**34.4115**	0.308	0.9	ug/L	199	Standard
	U	238	4959.8	3.5	**1.0645**	0.036	3.4	ug/L	1	Standard
>	**Bi**	209	304387.8	0.2				ug/L	281512	Standard

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	Na	23	81.7	3.5	**14.6481**	0.913	6.2	mg/L	2	Standard
	Mg	24	418.3	11.6	**0.3200**	0.033	10.3	mg/L	38	Standard
	K	39	33.3	34.6	**1.0082**	0.431	42.7	mg/L	0	Standard
	Ca	43	143.3	27.1	**7.1328**	2.852	40.0	mg/L	23	Standard
	Fe	54	69522.3	1.3	**20.1956**	0.433	2.1	mg/L	234	Standard
	Fe	57	19125.4	1.9	**20.3196**	1.028	5.1	mg/L	118	Standard
>	**Sc-1**	45	82879.6	3.3				mg/L	57581	Standard
	Cl	35	36273.4	0.6				ug/L	22827	Standard
	Kr	83	294.0	3.1				ug/L	90	Standard
	Br	81	5961.2	4.8				ug/L	2287	Standard
	P	31	380715.9	1.1				ug/L	215766	Standard
	S	34	51572.6	1.3				ug/L	23460	Standard
	Sr	88	313.3	5.1				ug/L	48	Standard
	C	12	0.0					mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	230.0	19.0				mg/L	0	Standard
	Dy	164	26719.4	1.7				mg/L	6	Standard
	Ho-1	165	17371.6	1.2				mg/L	2	Standard
	Er	166	16398.9	0.2				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		147.292	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		110.034	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

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⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	114.884
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	108.126
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ti 47 Upper, S, EEE	Ti	47	
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	
Se 82 Lower	Se	82	

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Se-1 77 Upper, S, EEE	Se-1	77
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1311081408
Sample Date/Time: Friday, November 22, 2013 14:09:31
Number of Replicates: 3
Autosampler Position: 334
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	330196.1	2.9				ug/L	231878	Standard
	Be	9	2436.9	2.7	**0.6379**	0.017	2.6	ug/L	7	Standard
	Al	27	14700041.2	1.3	**63.0292**	2.523	4.0	ug/L	115	Standard
	Sc	45	79204.9	3.0				ug/L	57581	Standard
	Ti	47	179309.2	1.3	**352.3099**	2.426	0.7	ug/L	17	Standard
	V	51	643002.2	0.2	**72.2698**	0.749	1.0	ug/L	1678	Standard
	Cr	52	358549.8	1.1	**42.5102**	0.716	1.7	ug/L	5719	Standard
	Cr	53	176374.9	3.7	**113.4613**	3.839	3.4	ug/L	132	Standard
	Mn	55	17791633.6	1.3	**1212.2832**	27.130	2.2	ug/L	927	Standard
	Co	59	153215.4	0.3	**16.3433**	0.218	1.3	ug/L	80	Standard
	Ni	60	120399.5	1.3	**38.4117**	0.090	0.2	ug/L	39	Standard
	Cu	65	154201.8	1.5	**49.7601**	0.231	0.5	ug/L	91	Standard
	Zn	66	150089.5	1.2	**88.2210**	0.143	0.2	ug/L	159	Standard
>	**Ge**	72	542353.2	1.1				ug/L	504090	Standard
	As	75	8858.9	4.0	**5.0056**	0.154	3.1	ug/L	-261	Standard
	Se	82	-115.0	11.1	**-0.4031**	0.070	17.5	ug/L	-43	Standard
	Se-1	77	11592.1	2.9	**89.5219**	3.335	3.7	ug/L	86	Standard
>	**Ga**	71	45732.3	1.1				mg/L	35	Standard
	Rb	85	425923.7	0.6				ug/L	20	Standard
	Y	89	900668.5	3.2				ug/L	462194	Standard
>	**Rh**	103	75.0	41.6				ug/L	7	Standard
	Mo	98	3337.6	3.7	**0.7284**	0.020	2.8	ug/L	8	Standard
	Ag	107	7147.0	3.5	**0.8559**	0.020	2.3	ug/L	62	Standard
	Cd	111	4764.0	2.9	**1.8518**	0.031	1.7	mg/L	1	Standard
	Cd	114	12241.6	3.1	**1.8629**	0.035	1.9	ug/L	23	Standard
>	**In**	115	566418.3	1.2				ug/L	502083	Standard
	Sn	118	2549.9	2.8	**1.5021**	0.025	1.6	ug/L	144	Standard
	Sb	123	2629.3	2.8	**0.8528**	0.017	2.0	ug/L	19	Standard
	Ba	135	648085.6	1.2	**297.7150**	0.362	0.1	ug/L	9	Standard
	Ce	140	1189780.6	2.4				ug/L	17	Standard
>	**Tb**	159	585487.9	0.2				ug/L	490863	Standard
	Ho	165	17141.4	1.1				ug/L	2	Standard
	Tl	203	1752.1	15.4	**0.2419**	0.033	13.6	ug/L	2	Standard
	Tl	205	1681.8	6.6	**0.2168**	0.011	5.3	ug/L	0	Standard
	Pb	206	112825.2	1.5	**39.5441**	0.312	0.8	ug/L	84	Standard
	Pb	207	94862.4	1.8	**36.6676**	0.279	0.8	ug/L	73	Standard
	Pb	208	246948.9	1.6	**36.2745**	0.192	0.5	ug/L	199	Standard
	U	238	5837.1	2.0	**1.2584**	0.003	0.3	ug/L	1	Standard
>	**Bi**	209	303083.2	2.1				ug/L	281512	Standard

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	Na	23	96.7	7.9	**18.2083**	0.988	5.4	mg/L	2	Standard
	Mg	24	333.3	20.1	**0.2608**	0.057	21.8	mg/L	38	Standard
	K	39	35.0	51.5	**1.1255**	0.687	61.1	mg/L	0	Standard
	Ca	43	185.0	2.7	**10.4187**	0.283	2.7	mg/L	23	Standard
	Fe	54	66960.1	3.3	**20.3536**	0.751	3.7	mg/L	234	Standard
	Fe	57	18806.7	2.4	**20.8947**	0.436	2.1	mg/L	118	Standard
>	**Sc-1**	45	79204.9	3.0				mg/L	57581	Standard
	Cl	35	36523.3	1.0				ug/L	22827	Standard
	Kr	83	296.7	4.9				ug/L	90	Standard
	Br	81	8949.3	10.1				ug/L	2287	Standard
	P	31	394276.0	0.9				ug/L	215766	Standard
	S	34	54236.9	1.5				ug/L	23460	Standard
	Sr	88	338.3	6.2				ug/L	48	Standard
	C	12	6.7	173.2				mg/L	3	Standard
	N	14	13.3	86.6				mg/L	0	Standard
	Hg	202	200.0	25.0				mg/L	0	Standard
	Dy	164	26786.2	2.8				mg/L	6	Standard
	Ho-1	165	17141.4	1.1				mg/L	2	Standard
	Er	166	16328.8	3.8				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		142.400	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		107.591	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

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⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	112.814
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	107.662
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ti 47 Upper, S, EEE	Ti	47	
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	
Se 82 Lower	Se	82	

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Ba 135 Upper, S, EEE Ba 135

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Method 6020 - Summary Report

Sample ID: L1311081409
Sample Date/Time: Friday, November 22, 2013 14:12:36
Number of Replicates: 3
Autosampler Position: 335
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	359002.2	1.4				ug/L	231878	Standard
	Be	9	2250.2	4.8	**0.5406**	0.031	5.7	ug/L	7	Standard
	Al	27	11730324.7	2.4	**46.2354**	1.532	3.3	ug/L	115	Standard
	Sc	45	77670.3	1.9				ug/L	57581	Standard
	Ti	47	76223.6	0.5	**144.3857**	1.384	1.0	ug/L	17	Standard
	V	51	448469.5	4.0	**48.5387**	2.178	4.5	ug/L	1678	Standard
	Cr	52	918584.6	3.0	**106.1385**	3.743	3.5	ug/L	5719	Standard
	Cr	53	319690.9	0.8	**198.3820**	2.633	1.3	ug/L	132	Standard
	Mn	55	15223748.9	1.2	**1000.1293**	17.117	1.7	ug/L	927	Standard
	Co	59	137584.2	1.1	**14.1488**	0.231	1.6	ug/L	80	Standard
	Ni	60	109504.3	1.4	**33.6871**	0.640	1.9	ug/L	39	Standard
	Cu	65	166288.2	0.9	**51.7462**	0.489	0.9	ug/L	91	Standard
	Zn	66	128126.1	0.2	**72.5716**	0.340	0.5	ug/L	159	Standard
>	**Ge**	72	562454.7	0.5				ug/L	504090	Standard
	As	75	5976.1	2.8	**3.3107**	0.072	2.2	ug/L	-261	Standard
	Se	82	-89.2	6.7	**-0.2428**	0.034	14.2	ug/L	-43	Standard
	Se-1	77	13461.6	1.7	**100.3114**	1.697	1.7	ug/L	86	Standard
>	**Ga**	71	32179.2	3.4				mg/L	35	Standard
	Rb	85	280560.7	1.2				ug/L	20	Standard
	Y	89	940368.4	1.4				ug/L	462194	Standard
>	**Rh**	103	73.3	21.9				ug/L	7	Standard
	Mo	98	2861.6	1.5	**0.5960**	0.008	1.4	ug/L	8	Standard
	Ag	107	76963.3	0.5	**8.9519**	0.099	1.1	ug/L	62	Standard
	Cd	111	9815.6	1.1	**3.6553**	0.062	1.7	mg/L	1	Standard
	Cd	114	25762.3	1.8	**3.7541**	0.048	1.3	ug/L	23	Standard
>	**In**	115	592795.1	0.7				ug/L	502083	Standard
	Sn	118	6768.2	1.7	**3.9476**	0.068	1.7	ug/L	144	Standard
	Sb	123	6061.7	2.6	**1.8846**	0.040	2.1	ug/L	19	Standard
	Ba	135	581681.5	0.8	**255.3262**	2.557	1.0	ug/L	9	Standard
	Ce	140	1269759.9	0.9				ug/L	17	Standard
>	**Tb**	159	610121.9	0.4				ug/L	490863	Standard
	Ho	165	17838.8	2.2				ug/L	2	Standard
	Tl	203	1162.0	2.7	**0.1528**	0.003	2.1	ug/L	2	Standard
	Tl	205	1201.7	1.6	**0.1483**	0.001	0.9	ug/L	0	Standard
	Pb	206	287349.7	1.1	**97.1468**	0.357	0.4	ug/L	84	Standard
	Pb	207	243793.6	1.3	**90.8987**	0.554	0.6	ug/L	73	Standard
	Pb	208	630815.9	1.1	**89.3891**	0.321	0.4	ug/L	199	Standard
	U	238	4848.1	1.3	**1.0075**	0.008	0.8	ug/L	1	Standard
>	**Bi**	209	314350.6	0.7				ug/L	281512	Standard

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	Na	23	35.0	0.0	**6.4595**	0.129	2.0	mg/L	2	Standard
	Mg	24	346.7	12.9	**0.2797**	0.046	16.5	mg/L	38	Standard
	K	39	26.7	39.0	**0.8257**	0.372	45.0	mg/L	0	Standard
	Ca	43	90.0	20.0	**3.9407**	1.391	35.3	mg/L	23	Standard
	Fe	54	41497.8	1.5	**12.8269**	0.430	3.4	mg/L	234	Standard
	Fe	57	11786.3	3.2	**13.2984**	0.518	3.9	mg/L	118	Standard
>	**Sc-1**	45	77670.3	1.9				mg/L	57581	Standard
	Cl	35	35109.3	1.3				ug/L	22827	Standard
	Kr	83	258.7	8.4				ug/L	90	Standard
	Br	81	6608.1	1.7				ug/L	2287	Standard
	P	31	380115.0	1.8				ug/L	215766	Standard
	S	34	47124.8	1.3				ug/L	23460	Standard
	Sr	88	251.7	16.7				ug/L	48	Standard
	C	12	6.7	86.6				mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	593.3	3.5				mg/L	0	Standard
	Dy	164	28388.4	3.5				mg/L	6	Standard
	Ho-1	165	17838.8	2.2				mg/L	2	Standard
	Er	166	17113.0	2.5				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		154.823	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		111.578	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

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⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	118.067
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	111.665
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ti 47 Upper, S, EEE	Ti	47	
Cr 52 Upper, S, EEE	Cr	52	
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	

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Se-1 77 Upper, S, EEE	Se-1	77
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1311081410
Sample Date/Time: Friday, November 22, 2013 14:15:41
Number of Replicates: 3
Autosampler Position: 336
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	367649.9	2.0				ug/L	231878	Standard
	Be	9	2361.9	0.7	**0.5542**	0.008	1.4	ug/L	7	Standard
	Al	27	14122396.0	2.2	**54.3506**	1.272	2.3	ug/L	115	Standard
	Sc	45	78248.3	2.9				ug/L	57581	Standard
	Ti	47	111399.4	0.5	**211.8403**	0.627	0.3	ug/L	17	Standard
	V	51	544994.4	2.4	**59.2463**	1.312	2.2	ug/L	1678	Standard
	Cr	52	865462.7	0.6	**100.3300**	0.864	0.9	ug/L	5719	Standard
	Cr	53	307584.2	1.0	**191.5897**	2.421	1.3	ug/L	132	Standard
	Mn	55	9016252.0	0.5	**594.5214**	3.848	0.6	ug/L	927	Standard
	Co	59	131860.0	1.1	**13.6108**	0.187	1.4	ug/L	80	Standard
	Ni	60	112845.3	0.6	**34.8456**	0.143	0.4	ug/L	39	Standard
	Cu	65	180577.4	0.2	**56.4103**	0.098	0.2	ug/L	91	Standard
	Zn	66	147033.0	0.2	**83.6403**	0.299	0.4	ug/L	159	Standard
>	**Ge**	72	560317.8	0.3				ug/L	504090	Standard
	As	75	7373.7	1.2	**4.0638**	0.054	1.3	ug/L	-261	Standard
	Se	82	-116.4	3.9	**-0.3904**	0.024	6.3	ug/L	-43	Standard
	Se-1	77	13813.0	0.2	**103.3438**	0.306	0.3	ug/L	86	Standard
>	**Ga**	71	41931.3	1.8				mg/L	35	Standard
	Rb	85	445781.3	2.1				ug/L	20	Standard
	Y	89	921763.1	0.7				ug/L	462194	Standard
>	**Rh**	103	101.7	12.4				ug/L	7	Standard
	Mo	98	3175.1	1.6	**0.6572**	0.004	0.5	ug/L	8	Standard
	Ag	107	64356.7	0.4	**7.4323**	0.095	1.3	ug/L	62	Standard
	Cd	111	8723.0	1.3	**3.2255**	0.072	2.2	mg/L	1	Standard
	Cd	114	22830.5	1.4	**3.3040**	0.077	2.3	ug/L	23	Standard
>	**In**	115	596865.3	1.2				ug/L	502083	Standard
	Sn	118	7593.9	2.5	**4.4091**	0.090	2.0	ug/L	144	Standard
	Sb	123	4631.3	2.4	**1.4289**	0.021	1.5	ug/L	19	Standard
	Ba	135	585032.5	0.8	**255.0556**	2.604	1.0	ug/L	9	Standard
	Ce	140	1218933.2	1.5				ug/L	17	Standard
>	**Tb**	159	614282.6	1.9				ug/L	490863	Standard
	Ho	165	18067.4	2.2				ug/L	2	Standard
	Tl	203	1446.1	4.2	**0.1899**	0.007	3.6	ug/L	2	Standard
	Tl	205	1515.1	8.8	**0.1863**	0.016	8.3	ug/L	0	Standard
	Pb	206	279728.6	0.5	**93.7868**	0.530	0.6	ug/L	84	Standard
	Pb	207	236142.3	0.5	**87.3188**	0.793	0.9	ug/L	73	Standard
	Pb	208	611570.8	0.5	**85.9432**	0.288	0.3	ug/L	199	Standard
	U	238	5771.4	3.4	**1.1895**	0.037	3.1	ug/L	1	Standard
>	**Bi**	209	316985.7	0.9				ug/L	281512	Standard

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	Na	23	35.0	24.7	**6.3794**	1.475	23.1	mg/L	2	Standard
	Mg	24	468.3	4.4	**0.3869**	0.017	4.5	mg/L	38	Standard
	K	39	33.3	45.8	**1.0572**	0.521	49.3	mg/L	0	Standard
	Ca	43	85.0	27.0	**3.5583**	1.775	49.9	mg/L	23	Standard
	Fe	54	55857.7	0.5	**17.1748**	0.550	3.2	mg/L	234	Standard
	Fe	57	15794.9	3.9	**17.7589**	1.195	6.7	mg/L	118	Standard
>	**Sc-1**	45	78248.3	2.9				mg/L	57581	Standard
	Cl	35	35069.9	0.8				ug/L	22827	Standard
	Kr	83	287.7	1.6				ug/L	90	Standard
	Br	81	6651.5	5.9				ug/L	2287	Standard
	P	31	396636.7	1.3				ug/L	215766	Standard
	S	34	46706.9	2.8				ug/L	23460	Standard
	Sr	88	280.0	9.4				ug/L	48	Standard
	C	12	3.3	173.2				mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	500.0	11.1				mg/L	0	Standard
	Dy	164	26876.1	1.4				mg/L	6	Standard
	Ho-1	165	18067.4	2.2				mg/L	2	Standard
	Er	166	17239.8	4.5				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		158.553	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		111.154	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

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	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	118.878
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	112.601
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ti 47 Upper, S, EEE	Ti	47	
Cr 52 Upper, S, EEE	Cr	52	
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	

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Se-1 77 Upper, S, EEE	Se-1	77
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, November 22, 2013 14:18:46
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	227829.8	5.2				ug/L	231878	Standard
	Be	9	127697.9	3.0	**49.0785**	1.327	2.7	ug/L	7	Standard
	Al	27	7719837.5	4.5	**47.9492**	0.556	1.2	ug/L	115	Standard
	Sc	45	50525.8	2.6				ug/L	57581	Standard
	Ti	47	43472.0	2.4	**96.7560**	0.155	0.2	ug/L	17	Standard
	V	51	393889.2	0.1	**50.1190**	1.089	2.2	ug/L	1678	Standard
	Cr	52	375154.4	0.4	**50.5577**	0.975	1.9	ug/L	5719	Standard
	Cr	53	71897.1	4.3	**52.3599**	1.070	2.0	ug/L	132	Standard
	Mn	55	660202.7	2.3	**50.8925**	0.107	0.2	ug/L	927	Standard
	Co	59	420536.7	0.6	**50.8782**	0.869	1.7	ug/L	80	Standard
	Ni	60	138096.0	2.2	**49.9372**	0.053	0.1	ug/L	39	Standard
	Cu	65	137461.5	1.8	**50.2754**	0.385	0.8	ug/L	91	Standard
	Zn	66	75651.4	2.1	**50.2745**	0.294	0.6	ug/L	159	Standard
>	**Ge**	72	478577.5	2.3				ug/L	504090	Standard
	As	75	80130.3	0.5	**49.8931**	0.919	1.8	ug/L	-261	Standard
	Se	82	7838.3	0.2	**49.4310**	1.141	2.3	ug/L	-43	Standard
	Se-1	77	5976.2	3.6	**51.9769**	0.941	1.8	ug/L	86	Standard
>	**Ga**	71	56.7	22.2				mg/L	35	Standard
	Rb	85	1246.7	17.8				ug/L	20	Standard
	Y	89	435628.9	2.1				ug/L	462194	Standard
>	**Rh**	103	25.0	69.3				ug/L	7	Standard
	Mo	98	402401.1	1.2	**106.0526**	1.091	1.0	ug/L	8	Standard
	Ag	107	359504.4	2.0	**52.6029**	0.180	0.3	ug/L	62	Standard
	Cd	111	108039.0	2.5	**50.6534**	0.206	0.4	mg/L	1	Standard
	Cd	114	271997.7	3.7	**49.8768**	0.808	1.6	ug/L	23	Standard
>	**In**	115	471889.5	2.1				ug/L	502083	Standard
	Sn	118	69165.9	2.2	**51.7365**	0.318	0.6	ug/L	144	Standard
	Sb	123	127009.3	1.4	**49.7367**	0.549	1.1	ug/L	19	Standard
	Ba	135	92187.3	2.0	**50.8269**	0.107	0.2	ug/L	9	Standard
	Ce	140	146.7	52.2				ug/L	17	Standard
>	**Tb**	159	467895.6	2.4				ug/L	490863	Standard
	Ho	165	8.3	91.7				ug/L	2	Standard
	Tl	203	308356.2	1.4	**49.5371**	0.292	0.6	ug/L	2	Standard
	Tl	205	342957.0	1.7	**50.9295**	0.319	0.6	ug/L	0	Standard
	Pb	206	126725.5	1.4	**50.3564**	0.053	0.1	ug/L	84	Standard
	Pb	207	114610.2	0.8	**50.2370**	0.882	1.8	ug/L	73	Standard
	Pb	208	298310.9	1.1	**49.6869**	0.353	0.7	ug/L	199	Standard
	U	238	200718.8	0.2	**49.0820**	0.694	1.4	ug/L	1	Standard
>	**Bi**	209	267361.3	1.5				ug/L	281512	Standard

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	Na	23	20.0	90.1	**5.5745**	5.401	96.9	mg/L	2	Standard
	Mg	24	3583.8	2.1	**4.9845**	0.153	3.1	mg/L	38	Standard
	K	39	86.7	53.6	**4.7431**	2.522	53.2	mg/L	0	Standard
	Ca	43	43.3	6.7	**2.2685**	0.413	18.2	mg/L	23	Standard
	Fe	54	12092.2	2.4	**5.6921**	0.243	4.3	mg/L	234	Standard
	Fe	57	3333.7	3.8	**5.6983**	0.332	5.8	mg/L	118	Standard
>	**Sc-1**	45	50525.8	2.6				mg/L	57581	Standard
	Cl	35	28444.0	0.3				ug/L	22827	Standard
	Kr	83	105.7	12.0				ug/L	90	Standard
	Br	81	2313.5	2.6				ug/L	2287	Standard
	P	31	280612.3	4.0				ug/L	215766	Standard
	S	34	45413.0	3.1				ug/L	23460	Standard
	Sr	88	68.3	18.4				ug/L	48	Standard
	C	12	0.0					mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	0	Standard
	Dy	164	-0.8	69.3				mg/L	6	Standard
	Ho-1	165	8.3	91.7				mg/L	2	Standard
	Er	166	16.7	69.3				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		98.254	
	Be	9	98.157		
	Al	27	95.898		
	Sc	45			
	Ti	47	96.756		
	V	51	100.238		
	Cr	52	101.115		
	Cr	53			
	Mn	55	101.785		
	Co	59	101.756		
	Ni	60	99.874		
	Cu	65	100.551		
	Zn	66	100.549		
>	Ge	72		94.939	
	As	75	99.786		
	Se	82	98.862		
	Se-1	77			
>	Ga	71			
	Rb	85			

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⌈	Y	89		
⌊>	Rh	103		
⌈	Mo	98	106.053	
|	Ag	107	105.206	
|	Cd	111	101.307	
|	Cd	114		
|>	In	115		93.986
|	Sn	118	103.473	
|	Sb	123	99.473	
⌊	Ba	135	101.654	
⌈	Ce	140		
⌊>	Tb	159		
⌈	Ho	165		
|	Tl	203	99.074	
|	Tl	205		
|	Pb	206		
|	Pb	207		
|	Pb	208	99.374	
|	U	238	98.164	
⌊>	Bi	209		94.973
⌈	Na	23		
|	Mg	24		
|	K	39		
|	Ca	43		
|	Fe	54		
|	Fe	57		
⌊>	Sc-1	45		
	Cl	35		
	Kr	83		
	Br	81		
	P	31		
	S	34		
	Sr	88		
	C	12		
	N	14		
	Hg	202		
	Dy	164		
	Ho-1	165		
	Er	166		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, November 22, 2013 14:21:51
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	206395.8	3.6				ug/L	231878	Standard
	Be	9	25.0	20.0	**0.0025**	0.002	69.6	ug/L	7	Standard
	Al	27	1098.4	81.7	**0.0035**	0.006	180.6	ug/L	115	Standard
	Sc	45	49141.3	2.5				ug/L	57581	Standard
	Ti	47	21.7	49.8	**-0.0054**	0.025	466.2	ug/L	17	Standard
	V	51	1287.1	13.5	**-0.0389**	0.024	61.2	ug/L	1678	Standard
	Cr	52	4799.8	3.2	**-0.0764**	0.021	27.5	ug/L	5719	Standard
	Cr	53	3185.3	3.5	**2.3466**	0.070	3.0	ug/L	132	Standard
	Mn	55	4499.0	91.6	**0.2800**	0.333	119.0	ug/L	927	Standard
	Co	59	170.7	71.1	**0.0055**	0.015	277.4	ug/L	80	Standard
	Ni	60	71.3	18.3	**0.0036**	0.005	136.6	ug/L	39	Standard
	Cu	65	119.3	22.0	**0.0039**	0.010	261.4	ug/L	91	Standard
	Zn	66	180.0	2.5	**-0.1570**	0.003	2.1	ug/L	159	Standard
>	**Ge**	72	458826.1	0.7				ug/L	504090	Standard
	As	75	-241.8	10.4	**-0.0008**	0.016	1880.4	ug/L	-261	Standard
	Se	82	-48.3	19.5	**-0.0827**	0.062	75.1	ug/L	-43	Standard
	Se-1	77	199.0	6.5	**1.0939**	0.107	9.8	ug/L	86	Standard
>	**Ga**	71	26.7	10.8				mg/L	35	Standard
	Rb	85	138.3	132.8				ug/L	20	Standard
	Y	89	420975.4	2.5				ug/L	462194	Standard
>	**Rh**	103	6.7	86.6				ug/L	7	Standard
	Mo	98	100.6	38.6	**0.0234**	0.011	46.1	ug/L	8	Standard
	Ag	107	128.0	44.3	**0.0042**	0.009	211.6	ug/L	62	Standard
	Cd	111	17.9	132.1	**-0.0003**	0.012	3592.6	mg/L	1	Standard
	Cd	114	71.8	120.6	**0.0062**	0.017	272.3	ug/L	23	Standard
>	**In**	115	452527.9	1.0				ug/L	502083	Standard
	Sn	118	119.7	16.9	**0.0040**	0.016	393.5	ug/L	144	Standard
	Sb	123	320.0	31.6	**0.1256**	0.040	32.0	ug/L	19	Standard
	Ba	135	301.0	150.2	**0.1676**	0.263	157.1	ug/L	9	Standard
	Ce	140	665.0	146.0				ug/L	17	Standard
>	**Tb**	159	446095.7	2.3				ug/L	490863	Standard
	Ho	165	10.0	132.3				ug/L	2	Standard
	Tl	203	163.3	61.5	**0.0208**	0.017	80.6	ug/L	2	Standard
	Tl	205	123.3	33.0	**0.0152**	0.006	41.8	ug/L	0	Standard
	Pb	206	200.0	64.3	**0.0445**	0.053	119.1	ug/L	84	Standard
	Pb	207	168.3	70.3	**0.0420**	0.054	127.8	ug/L	73	Standard
	Pb	208	264.0	16.4	**0.0056**	0.008	138.1	ug/L	199	Standard
	U	238	17.7	58.9	**0.0038**	0.003	69.2	ug/L	1	Standard
>	**Bi**	209	262950.2	0.9				ug/L	281512	Standard

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Na	23	0.0		**-0.4293**	0.000	0.0	mg/L	2	Standard
Mg	24	48.3	29.9	**0.0330**	0.021	64.1	mg/L	38	Standard
K	39	3.3	86.6	**0.0393**	0.171	435.9	mg/L	0	Standard
Ca	43	8.3	34.6	**-1.5281**	0.341	22.3	mg/L	23	Standard
Fe	54	297.3	22.9	**0.0467**	0.032	67.6	mg/L	234	Standard
Fe	57	85.0	10.2	**-0.0004**	0.019	5076.6	mg/L	118	Standard
Sc-1	45	49141.3	2.5				mg/L	57581	Standard
Cl	35	26402.3	3.3				ug/L	22827	Standard
Kr	83	103.3	7.8				ug/L	90	Standard
Br	81	2053.5	12.4				ug/L	2287	Standard
P	31	262397.0	2.6				ug/L	215766	Standard
S	34	41159.2	4.1				ug/L	23460	Standard
Sr	88	63.3	4.6				ug/L	48	Standard
C	12	0.0					mg/L	3	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	6.3	86.9				mg/L	6	Standard
Ho-1	165	10.0	132.3				mg/L	2	Standard
Er	166	6.7	173.2				mg/L	7	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		89.010	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		91.021	
As	75			
Se	82			
Se-1	77			
Ga	71			
Rb	85			

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	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	90.130
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	93.406
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: PBW 6A WG453975-03
Sample Date/Time: Friday, November 22, 2013 14:30:06
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	174854.3	4.2				ug/L	231878	Standard
	Be	9	8.3	124.9	**-0.0038**	0.005	141.4	ug/L	7	Standard
	Al	27	3082.0	6.2	**0.0209**	0.001	2.9	ug/L	115	Standard
	Sc	45	43572.6	1.3				ug/L	57581	Standard
	Ti	47	43.0	15.2	**0.0549**	0.017	31.6	ug/L	17	Standard
	V	51	1103.7	19.4	**-0.0477**	0.031	65.8	ug/L	1678	Standard
	Cr	52	4422.0	1.1	**-0.0626**	0.007	11.5	ug/L	5719	Standard
	Cr	53	2431.9	1.9	**1.9719**	0.024	1.2	ug/L	132	Standard
	Mn	55	2584.6	2.5	**0.1479**	0.004	2.9	ug/L	927	Standard
	Co	59	100.0	7.9	**-0.0020**	0.001	50.1	ug/L	80	Standard
	Ni	60	78.3	7.4	**0.0094**	0.003	28.1	ug/L	39	Standard
	Cu	65	131.7	3.7	**0.0140**	0.002	17.9	ug/L	91	Standard
	Zn	66	1564.1	3.4	**0.9245**	0.034	3.7	ug/L	159	Standard
>	**Ge**	72	414395.3	0.8				ug/L	504090	Standard
	As	75	-260.4	22.2	**-0.0309**	0.041	132.6	ug/L	-261	Standard
	Se	82	-38.8	16.5	**-0.0478**	0.047	97.5	ug/L	-43	Standard
	Se-1	77	174.3	8.6	**1.0403**	0.167	16.0	ug/L	86	Standard
>	**Ga**	71	46.7	22.3				mg/L	35	Standard
	Rb	85	100.0	47.7				ug/L	20	Standard
	Y	89	372470.6	2.1				ug/L	462194	Standard
>	**Rh**	103	3.3	86.6				ug/L	7	Standard
	Mo	98	12.2	13.3	**-0.0004**	0.001	132.5	ug/L	8	Standard
	Ag	107	54.0	17.7	**-0.0059**	0.002	26.9	ug/L	62	Standard
	Cd	111	3.0	88.4	**-0.0075**	0.001	20.1	mg/L	1	Standard
	Cd	114	39.2	29.7	**0.0010**	0.003	277.5	ug/L	23	Standard
>	**In**	115	394065.7	0.9				ug/L	502083	Standard
	Sn	118	91.3	6.4	**-0.0075**	0.005	63.8	ug/L	144	Standard
	Sb	123	43.6	11.8	**0.0155**	0.002	14.5	ug/L	19	Standard
	Ba	135	89.7	7.4	**0.0519**	0.004	7.5	ug/L	9	Standard
	Ce	140	205.0	22.0				ug/L	17	Standard
>	**Tb**	159	394310.3	2.5				ug/L	490863	Standard
	Ho	165	5.0	100.0				ug/L	2	Standard
	Tl	203	89.0	12.5	**0.0104**	0.002	19.5	ug/L	2	Standard
	Tl	205	86.7	8.8	**0.0113**	0.001	11.6	ug/L	0	Standard
	Pb	206	99.3	6.1	**0.0087**	0.003	32.6	ug/L	84	Standard
	Pb	207	72.3	11.3	**0.0031**	0.004	136.3	ug/L	73	Standard
	Pb	208	231.3	4.4	**0.0051**	0.002	37.6	ug/L	199	Standard
	U	238	5.3	28.6	**0.0009**	0.000	48.8	ug/L	1	Standard
>	**Bi**	209	232862.8	0.3				ug/L	281512	Standard

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Na	23	0.0		**-0.4293**	0.000	0.0	mg/L	2	Standard
Mg	24	36.7	31.5	**0.0229**	0.019	82.6	mg/L	38	Standard
K	39	1.7	173.2	**-0.0500**	0.188	376.2	mg/L	0	Standard
Ca	43	18.3	41.7	**-0.1520**	0.959	631.0	mg/L	23	Standard
Fe	54	221.0	10.7	**0.0233**	0.013	54.0	mg/L	234	Standard
Fe	57	115.0	17.4	**0.0802**	0.042	52.9	mg/L	118	Standard
Sc-1	45	43572.6	1.3				mg/L	57581	Standard
Cl	35	21262.9	2.2				ug/L	22827	Standard
Kr	83	83.0	9.6				ug/L	90	Standard
Br	81	2316.8	6.5				ug/L	2287	Standard
P	31	167097.5	6.8				ug/L	215766	Standard
S	34	29891.1	2.3				ug/L	23460	Standard
Sr	88	56.7	5.1				ug/L	48	Standard
C	12	0.0					mg/L	3	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	6.5	93.0				mg/L	6	Standard
Ho-1	165	5.0	100.0				mg/L	2	Standard
Er	166	3.3	173.2				mg/L	7	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		75.408	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		82.207	
As	75			
Se	82			
Se-1	77			
> Ga	71			
Rb	85			

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	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	78.486
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	82.719
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSW 6A WG453975-04
Sample Date/Time: Friday, November 22, 2013 14:33:11
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	179185.0	0.7				ug/L	231878	Standard
	Be	9	48278.5	1.6	**23.5669**	0.231	1.0	ug/L	7	Standard
	Al	27	1378.4	2.1	**0.0068**	0.000	2.3	ug/L	115	Standard
	Sc	45	44883.1	1.4				ug/L	57581	Standard
	Ti	47	19.7	7.8	**-0.0069**	0.004	56.6	ug/L	17	Standard
	V	51	168326.7	1.0	**23.7484**	0.223	0.9	ug/L	1678	Standard
	Cr	52	163067.8	0.6	**24.0887**	0.181	0.8	ug/L	5719	Standard
	Cr	53	29482.0	3.3	**23.8881**	0.684	2.9	ug/L	132	Standard
	Mn	55	280506.7	1.9	**24.0510**	0.383	1.6	ug/L	927	Standard
	Co	59	179370.8	0.3	**24.1676**	0.174	0.7	ug/L	80	Standard
	Ni	60	57306.8	0.5	**23.0791**	0.121	0.5	ug/L	39	Standard
	Cu	65	57858.9	0.6	**23.5569**	0.223	0.9	ug/L	91	Standard
	Zn	66	32375.6	1.1	**23.8272**	0.374	1.6	ug/L	159	Standard
>	**Ge**	72	429482.0	0.5				ug/L	504090	Standard
	As	75	32363.3	1.5	**22.5341**	0.342	1.5	ug/L	-261	Standard
	Se	82	3101.2	0.5	**21.9157**	0.035	0.2	ug/L	-43	Standard
	Se-1	77	2457.5	1.2	**23.4212**	0.173	0.7	ug/L	86	Standard
>	**Ga**	71	41.7	56.7				mg/L	35	Standard
	Rb	85	46.7	12.4				ug/L	20	Standard
	Y	89	383718.6	1.2				ug/L	462194	Standard
>	**Rh**	103	18.3	41.7				ug/L	7	Standard
	Mo	98	37.8	30.3	**0.0072**	0.003	46.1	ug/L	8	Standard
	Ag	107	143957.3	0.6	**24.3841**	0.425	1.7	ug/L	62	Standard
	Cd	111	41443.2	1.2	**22.4942**	0.054	0.2	mg/L	1	Standard
	Cd	114	101269.4	0.3	**21.5045**	0.277	1.3	ug/L	23	Standard
>	**In**	115	407553.2	1.5				ug/L	502083	Standard
	Sn	118	107.7	10.2	**0.0039**	0.009	226.1	ug/L	144	Standard
	Sb	123	50077.8	0.7	**22.7054**	0.480	2.1	ug/L	19	Standard
	Ba	135	36498.9	0.4	**23.2986**	0.297	1.3	ug/L	9	Standard
	Ce	140	40.0	25.0				ug/L	17	Standard
>	**Tb**	159	405540.8	0.7				ug/L	490863	Standard
	Ho	165	3.3	86.6				ug/L	2	Standard
	Tl	203	128464.7	0.6	**22.8752**	0.061	0.3	ug/L	2	Standard
	Tl	205	136453.5	1.9	**22.4608**	0.261	1.2	ug/L	0	Standard
	Pb	206	51822.1	0.8	**22.8083**	0.132	0.6	ug/L	84	Standard
	Pb	207	44323.8	2.1	**21.5147**	0.339	1.6	ug/L	73	Standard
	Pb	208	122064.1	0.6	**22.5172**	0.221	1.0	ug/L	199	Standard
	U	238	78471.4	1.5	**21.2700**	0.366	1.7	ug/L	1	Standard
>	**Bi**	209	241174.0	0.8				ug/L	281512	Standard

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	Na	23	1.7	173.2	**0.1326**	0.973	733.9	mg/L	2	Standard
	Mg	24	23.3	44.6	**-0.0000**	0.016	46729.2	mg/L	38	Standard
	K	39	0.0		**-0.1586**			mg/L	0	Standard
	Ca	43	20.0	25.0	**-0.0158**	0.584	3688.6	mg/L	23	Standard
	Fe	54	287.6	7.8	**0.0555**	0.010	18.1	mg/L	234	Standard
	Fe	57	93.3	16.4	**0.0302**	0.029	94.6	mg/L	118	Standard
>	**Sc-1**	45	44883.1	1.4				mg/L	57581	Standard
	Cl	35	20561.9	2.3				ug/L	22827	Standard
	Kr	83	86.3	8.8				ug/L	90	Standard
	Br	81	2290.2	10.3				ug/L	2287	Standard
	P	31	211933.6	0.4				ug/L	215766	Standard
	S	34	26533.2	4.3				ug/L	23460	Standard
	Sr	88	58.3	27.6				ug/L	48	Standard
	C	12	0.0					mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	0	Standard
	Dy	164	6.3	93.2				mg/L	6	Standard
	Ho-1	165	3.3	86.6				mg/L	2	Standard
	Er	166	6.7	86.6				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		77.275	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		85.200	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

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	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	81.172
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	85.671
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L13110120503 WG453975-01
Sample Date/Time: Friday, November 22, 2013 14:36:16
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	278668.8	8.2				ug/L	231878	Standard
	Be	9	23.3	44.6	**-0.0005**	0.004	795.1	ug/L	7	Standard
	Al	27	207928974.9	8.7	**1055.3411**	11.103	1.1	ug/L	115	Standard
	Sc	45	46523.1	4.5				ug/L	57581	Standard
	Ti	47	155.3	11.7	**0.3404**	0.039	11.4	ug/L	17	Standard
	V	51	3214.1	3.0	**0.2608**	0.030	11.6	ug/L	1678	Standard
	Cr	52	12759.0	0.8	**1.2416**	0.106	8.5	ug/L	5719	Standard
	Cr	53	4272.3	13.9	**3.4848**	0.354	10.2	ug/L	132	Standard
	Mn	55	3220.7	2.7	**0.2026**	0.008	3.7	ug/L	927	Standard
	Co	59	2426.9	1.7	**0.3208**	0.012	3.6	ug/L	80	Standard
	Ni	60	19808.3	7.0	**8.1826**	0.229	2.8	ug/L	39	Standard
	Cu	65	6980.9	7.9	**2.8833**	0.109	3.8	ug/L	91	Standard
	Zn	66	8293.6	8.7	**6.0607**	0.286	4.7	ug/L	159	Standard
>	**Ge**	72	417652.1	4.6				ug/L	504090	Standard
	As	75	1770.7	7.4	**1.4187**	0.147	10.4	ug/L	-261	Standard
	Se	82	2892.3	3.3	**21.0363**	0.263	1.3	ug/L	-43	Standard
	Se-1	77	2205.2	5.9	**21.5469**	0.402	1.9	ug/L	86	Standard
>	**Ga**	71	33.3	8.7				mg/L	35	Standard
	Rb	85	11304.2	5.6				ug/L	20	Standard
	Y	89	383573.2	3.4				ug/L	462194	Standard
>	**Rh**	103	1513.4	6.2				ug/L	7	Standard
	Mo	98	1778.6	5.0	**0.5550**	0.012	2.2	ug/L	8	Standard
	Ag	107	63.0	0.0	**-0.0044**	0.001	15.5	ug/L	62	Standard
	Cd	111	10.6	33.5	**-0.0031**	0.002	77.7	mg/L	1	Standard
	Cd	114	44.5	45.5	**0.0022**	0.005	212.4	ug/L	23	Standard
>	**In**	115	395665.1	6.1				ug/L	502083	Standard
	Sn	118	81.0	3.7	**-0.0170**	0.002	10.5	ug/L	144	Standard
	Sb	123	122.3	5.7	**0.0524**	0.005	8.8	ug/L	19	Standard
	Ba	135	4460.0	5.8	**2.9262**	0.022	0.8	ug/L	9	Standard
	Ce	140	538.3	11.6				ug/L	17	Standard
>	**Tb**	159	420790.5	6.1				ug/L	490863	Standard
	Ho	165	38.3	58.8				ug/L	2	Standard
	Tl	203	86.7	23.1	**0.0120**	0.005	37.7	ug/L	2	Standard
	Tl	205	121.7	17.1	**0.0198**	0.004	19.1	ug/L	0	Standard
	Pb	206	105.7	7.2	**0.0174**	0.003	18.4	ug/L	84	Standard
	Pb	207	90.0	9.1	**0.0176**	0.006	33.3	ug/L	73	Standard
	Pb	208	238.7	1.1	**0.0121**	0.003	26.8	ug/L	199	Standard
	U	238	77227.0	7.1	**24.2753**	0.393	1.6	ug/L	1	Standard
>	**Bi**	209	207840.8	5.7				ug/L	281512	Standard

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	Na	23	416.7	7.8	**136.3381**	5.275	3.9	mg/L	2	Standard
	Mg	24	277511.5	5.4	**422.0980**	14.211	3.4	mg/L	38	Standard
	K	39	51.7	40.3	**3.0038**	1.122	37.4	mg/L	0	Standard
	Ca	43	958.4	1.8	**111.3787**	7.036	6.3	mg/L	23	Standard
	Fe	54	253.9	10.1	**0.0331**	0.017	52.6	mg/L	234	Standard
	Fe	57	880.0	8.2	**1.5214**	0.090	5.9	mg/L	118	Standard
>	**Sc-1**	45	46523.1	4.5				mg/L	57581	Standard
	Cl	35	229002.0	3.0				ug/L	22827	Standard
	Kr	83	147.0	18.4				ug/L	90	Standard
	Br	81	93364.4	7.1				ug/L	2287	Standard
	P	31	248082.1	9.8				ug/L	215766	Standard
	S	34	48681.7	7.8				ug/L	23460	Standard
	Sr	88	10477.0	1.7				ug/L	48	Standard
	C	12	10.0	100.0				mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	0	Standard
	Dy	164	29.5	1.6				mg/L	6	Standard
	Ho-1	165	38.3	58.8				mg/L	2	Standard
	Er	166	10.0	100.0				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		120.179	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		82.853	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

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⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	78.805
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	73.830
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1311120504S WG453975-05
Sample Date/Time: Friday, November 22, 2013 14:39:20
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	332115.7	1.0				ug/L	231878	Standard
	Be	9	56983.7	2.2	**15.0045**	0.223	1.5	ug/L	7	Standard
	Al	27	234529387.7	1.3	**999.1492**	16.251	1.6	ug/L	115	Standard
	Sc	45	49566.0	1.5				ug/L	57581	Standard
	Ti	47	234.7	7.6	**0.4992**	0.048	9.6	ug/L	17	Standard
	V	51	163935.2	1.2	**22.0149**	0.381	1.7	ug/L	1678	Standard
	Cr	52	160610.2	1.2	**22.5529**	0.520	2.3	ug/L	5719	Standard
	Cr	53	32640.1	2.1	**25.1987**	0.694	2.8	ug/L	132	Standard
	Mn	55	283548.9	0.3	**23.1540**	0.223	1.0	ug/L	927	Standard
	Co	59	167802.1	0.9	**21.5335**	0.402	1.9	ug/L	80	Standard
	Ni	60	75659.8	1.1	**29.0261**	0.034	0.1	ug/L	39	Standard
	Cu	65	60164.2	0.6	**23.3306**	0.279	1.2	ug/L	91	Standard
	Zn	66	45256.2	0.3	**31.8159**	0.302	0.9	ug/L	159	Standard
>	**Ge**	72	450943.4	1.1				ug/L	504090	Standard
	As	75	38931.3	0.9	**25.7955**	0.246	1.0	ug/L	-261	Standard
	Se	82	7267.8	0.5	**48.6311**	0.310	0.6	ug/L	-43	Standard
	Se-1	77	5211.9	1.9	**48.0629**	0.989	2.1	ug/L	86	Standard
>	**Ga**	71	51.7	22.3				mg/L	35	Standard
	Rb	85	11854.6	2.5				ug/L	20	Standard
	Y	89	421850.8	1.1				ug/L	462194	Standard
>	**Rh**	103	1893.5	10.1				ug/L	7	Standard
	Mo	98	1686.3	3.0	**0.4684**	0.010	2.2	ug/L	8	Standard
	Ag	107	128832.2	1.6	**20.0421**	0.186	0.9	ug/L	62	Standard
	Cd	111	43143.4	1.4	**21.5127**	0.198	0.9	mg/L	1	Standard
	Cd	114	105762.6	1.0	**20.6311**	0.204	1.0	ug/L	23	Standard
>	**In**	115	443603.0	0.9				ug/L	502083	Standard
	Sn	118	134.7	8.4	**0.0178**	0.009	49.2	ug/L	144	Standard
	Sb	123	56535.8	0.7	**23.5473**	0.314	1.3	ug/L	19	Standard
	Ba	135	42814.1	1.4	**25.1055**	0.128	0.5	ug/L	9	Standard
	Ce	140	968.4	18.0				ug/L	17	Standard
>	**Tb**	159	466505.4	1.4				ug/L	490863	Standard
	Ho	165	38.3	27.2				ug/L	2	Standard
	Tl	203	125089.3	1.3	**23.5455**	0.195	0.8	ug/L	2	Standard
	Tl	205	135395.8	2.0	**23.5616**	0.495	2.1	ug/L	0	Standard
	Pb	206	53999.7	1.9	**25.1250**	0.131	0.5	ug/L	84	Standard
	Pb	207	46487.9	2.2	**23.8557**	0.254	1.1	ug/L	73	Standard
	Pb	208	117640.0	0.0	**22.9420**	0.322	1.4	ug/L	199	Standard
	U	238	172911.1	0.6	**49.5446**	0.425	0.9	ug/L	1	Standard
>	**Bi**	209	228157.2	1.4				ug/L	281512	Standard

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	Na	23	460.0	15.7	**141.2908**	20.909	14.8	mg/L	2	Standard
	Mg	24	295173.6	2.4	**421.4171**	10.875	2.6	mg/L	38	Standard
	K	39	35.0	37.8	**1.8722**	0.767	41.0	mg/L	0	Standard
	Ca	43	951.7	11.7	**103.5558**	13.513	13.0	mg/L	23	Standard
	Fe	54	234.7	18.9	**0.0153**	0.023	149.9	mg/L	234	Standard
	Fe	57	898.4	9.6	**1.4529**	0.161	11.1	mg/L	118	Standard
>	**Sc-1**	45	49566.0	1.5				mg/L	57581	Standard
	Cl	35	219085.7	3.2				ug/L	22827	Standard
	Kr	83	176.7	4.6				ug/L	90	Standard
	Br	81	136885.7	1.8				ug/L	2287	Standard
	P	31	294683.9	2.2				ug/L	215766	Standard
	S	34	53879.0	0.4				ug/L	23460	Standard
	Sr	88	10073.3	1.6				ug/L	48	Standard
	C	12	6.7	173.2				mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	0	Standard
	Dy	164	35.5	57.5				mg/L	6	Standard
	Ho-1	165	38.3	27.2				mg/L	2	Standard
	Er	166	23.3	49.5				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		143.228	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		89.457	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

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⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	88.353
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	81.047
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1311120505SD WG453975-06
Sample Date/Time: Friday, November 22, 2013 14:42:25
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	333407.4	1.7				ug/L	231878	Standard
	Be	9	58971.2	1.7	**15.4694**	0.174	1.1	ug/L	7	Standard
	Al	27	232706780.8	2.2	**987.4674**	12.707	1.3	ug/L	115	Standard
	Sc	45	47450.9	3.0				ug/L	57581	Standard
	Ti	47	192.7	6.1	**0.4014**	0.025	6.3	ug/L	17	Standard
	V	51	161567.1	1.3	**21.7825**	0.159	0.7	ug/L	1678	Standard
	Cr	52	162799.3	1.1	**22.9655**	0.233	1.0	ug/L	5719	Standard
	Cr	53	31557.8	1.4	**24.4582**	0.227	0.9	ug/L	132	Standard
	Mn	55	277352.6	0.8	**22.7396**	0.183	0.8	ug/L	927	Standard
	Co	59	167629.4	1.8	**21.5977**	0.319	1.5	ug/L	80	Standard
	Ni	60	75223.0	1.3	**28.9782**	0.287	1.0	ug/L	39	Standard
	Cu	65	59367.4	1.4	**23.1147**	0.185	0.8	ug/L	91	Standard
	Zn	66	39871.1	0.3	**28.1133**	0.234	0.8	ug/L	159	Standard
>	**Ge**	72	449070.2	0.6				ug/L	504090	Standard
	As	75	37891.9	0.2	**25.2142**	0.104	0.4	ug/L	-261	Standard
	Se	82	7252.3	0.2	**48.7286**	0.356	0.7	ug/L	-43	Standard
	Se-1	77	5178.2	2.4	**47.9435**	0.881	1.8	ug/L	86	Standard
>	**Ga**	71	58.3	13.1				mg/L	35	Standard
	Rb	85	12228.3	1.4				ug/L	20	Standard
	Y	89	411051.6	1.2				ug/L	462194	Standard
>	**Rh**	103	1738.4	2.0				ug/L	7	Standard
	Mo	98	1928.3	1.3	**0.5448**	0.008	1.5	ug/L	8	Standard
	Ag	107	125853.2	0.5	**19.8863**	0.163	0.8	ug/L	62	Standard
	Cd	111	42782.4	0.5	**21.6674**	0.076	0.4	mg/L	1	Standard
	Cd	114	104952.6	0.5	**20.7933**	0.011	0.1	ug/L	23	Standard
>	**In**	115	436763.3	0.6				ug/L	502083	Standard
	Sn	118	112.7	3.7	**0.0017**	0.003	184.2	ug/L	144	Standard
	Sb	123	55414.2	0.9	**23.4403**	0.245	1.0	ug/L	19	Standard
	Ba	135	42300.3	0.9	**25.1932**	0.075	0.3	ug/L	9	Standard
	Ce	140	355.0	15.5				ug/L	17	Standard
>	**Tb**	159	462058.1	0.5				ug/L	490863	Standard
	Ho	165	36.7	7.9				ug/L	2	Standard
	Tl	203	122576.5	0.1	**23.1018**	0.046	0.2	ug/L	2	Standard
	Tl	205	134176.6	1.3	**23.3777**	0.274	1.2	ug/L	0	Standard
	Pb	206	53978.0	0.7	**25.1486**	0.135	0.5	ug/L	84	Standard
	Pb	207	46263.5	0.7	**23.7727**	0.133	0.6	ug/L	73	Standard
	Pb	208	116710.0	1.1	**22.7868**	0.237	1.0	ug/L	199	Standard
	U	238	171892.6	1.2	**49.3126**	0.538	1.1	ug/L	1	Standard
>	**Bi**	209	227860.9	0.2				ug/L	281512	Standard

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	Na	23	508.3	20.2	**162.9649**	29.644	18.2	mg/L	2	Standard
	Mg	24	278838.4	2.4	**415.8526**	3.437	0.8	mg/L	38	Standard
	K	39	36.7	28.4	**2.0610**	0.603	29.3	mg/L	0	Standard
	Ca	43	826.7	10.3	**93.5037**	7.122	7.6	mg/L	23	Standard
	Fe	54	244.0	2.7	**0.0252**	0.007	27.4	mg/L	234	Standard
	Fe	57	846.7	10.0	**1.4281**	0.163	11.4	mg/L	118	Standard
>	**Sc-1**	45	47450.9	3.0				mg/L	57581	Standard
	Cl	35	204710.9	2.6				ug/L	22827	Standard
	Kr	83	169.3	12.1				ug/L	90	Standard
	Br	81	101921.7	0.6				ug/L	2287	Standard
	P	31	295711.3	3.1				ug/L	215766	Standard
	S	34	53209.9	0.4				ug/L	23460	Standard
	Sr	88	10203.4	6.4				ug/L	48	Standard
	C	12	3.3	173.2				mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	6.7	86.6				mg/L	0	Standard
	Dy	164	9.2	108.8				mg/L	6	Standard
	Ho-1	165	36.7	7.9				mg/L	2	Standard
	Er	166	16.7	69.3				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		143.785	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		89.085	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

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⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	86.990
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	80.942
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1311120505SD WG453975-06
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Method 6020 - Summary Report

Sample ID: L1311095103
Sample Date/Time: Friday, November 22, 2013 14:45:30
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	273791.7	0.9				ug/L	231878	Standard
	Be	9	66.7	82.6	**0.0132**	0.017	131.6	ug/L	7	Standard
	Al	27	43264425.9	0.4	**223.5720**	2.109	0.9	ug/L	115	Standard
	Sc	45	51226.5	1.1				ug/L	57581	Standard
	Ti	47	268.3	59.0	**0.5426**	0.351	64.6	ug/L	17	Standard
	V	51	1140.8	21.9	**-0.0644**	0.032	49.1	ug/L	1678	Standard
	Cr	52	8427.0	4.0	**0.3944**	0.043	10.9	ug/L	5719	Standard
	Cr	53	7742.0	4.4	**5.5860**	0.246	4.4	ug/L	132	Standard
	Mn	55	638213.1	2.7	**49.3213**	1.135	2.3	ug/L	927	Standard
	Co	59	1364.1	2.6	**0.1495**	0.004	2.5	ug/L	80	Standard
	Ni	60	6898.9	1.9	**2.4790**	0.041	1.6	ug/L	39	Standard
	Cu	65	3893.5	2.8	**1.3870**	0.036	2.6	ug/L	91	Standard
	Zn	66	58006.2	1.5	**38.5818**	0.495	1.3	ug/L	159	Standard
>	**Ge**	72	477325.2	0.4				ug/L	504090	Standard
	As	75	-74.2	99.5	**0.1094**	0.046	42.1	ug/L	-261	Standard
	Se	82	7.5	389.0	**0.2806**	0.184	65.5	ug/L	-43	Standard
	Se-1	77	720.7	2.6	**5.6375**	0.149	2.6	ug/L	86	Standard
>	**Ga**	71	68.3	37.5				mg/L	35	Standard
	Rb	85	65643.6	0.7				ug/L	20	Standard
	Y	89	439984.4	1.4				ug/L	462194	Standard
>	**Rh**	103	111.7	37.6				ug/L	7	Standard
	Mo	98	847.6	2.4	**0.2179**	0.004	2.0	ug/L	8	Standard
	Ag	107	71.0	20.8	**-0.0051**	0.002	42.7	ug/L	62	Standard
	Cd	111	103.5	7.3	**0.0391**	0.003	8.8	mg/L	1	Standard
	Cd	114	309.2	22.2	**0.0487**	0.012	24.9	ug/L	23	Standard
>	**In**	115	474489.3	0.8				ug/L	502083	Standard
	Sn	118	277.3	5.3	**0.1172**	0.010	8.8	ug/L	144	Standard
	Sb	123	78.2	9.8	**0.0256**	0.003	11.3	ug/L	19	Standard
	Ba	135	48486.5	1.1	**26.5818**	0.116	0.4	ug/L	9	Standard
	Ce	140	266.7	51.4				ug/L	17	Standard
>	**Tb**	159	489790.8	0.6				ug/L	490863	Standard
	Ho	165	3.3	173.2				ug/L	2	Standard
	Tl	203	84.0	20.8	**0.0079**	0.003	35.8	ug/L	2	Standard
	Tl	205	150.0	49.8	**0.0196**	0.011	58.2	ug/L	0	Standard
	Pb	206	616.0	3.8	**0.2168**	0.008	3.8	ug/L	84	Standard
	Pb	207	502.3	7.6	**0.1946**	0.016	8.4	ug/L	73	Standard
	Pb	208	1477.7	20.6	**0.2157**	0.052	24.1	ug/L	199	Standard
	U	238	1736.8	3.9	**0.4388**	0.014	3.3	ug/L	1	Standard
>	**Bi**	209	258357.5	0.7				ug/L	281512	Standard

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	Na	23	263.3	5.8	**78.1769**	5.428	6.9	mg/L	2	Standard
	Mg	24	64990.8	2.1	**89.7568**	2.606	2.9	mg/L	38	Standard
	K	39	40.0	12.5	**2.0872**	0.263	12.6	mg/L	0	Standard
	Ca	43	391.7	13.5	**39.7417**	6.060	15.2	mg/L	23	Standard
	Fe	54	9154.4	3.7	**4.2226**	0.164	3.9	mg/L	234	Standard
	Fe	57	2881.9	6.6	**4.8313**	0.306	6.3	mg/L	118	Standard
>	**Sc-1**	45	51226.5	1.1				mg/L	57581	Standard
	Cl	35	38927.3	1.8				ug/L	22827	Standard
	Kr	83	145.7	8.9				ug/L	90	Standard
	Br	81	11851.3	2.2				ug/L	2287	Standard
	P	31	375055.5	2.5				ug/L	215766	Standard
	S	34	46467.8	1.1				ug/L	23460	Standard
	Sr	88	733.4	10.3				ug/L	48	Standard
	C	12	13.3	43.3				mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	0	Standard
	Dy	164	12.7	117.1				mg/L	6	Standard
	Ho-1	165	3.3	173.2				mg/L	2	Standard
	Er	166	13.3	86.6				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		118.076	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		94.691	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

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	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	94.504
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	91.775
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1311095103
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Method 6020 - Summary Report

Sample ID: L1311095104
Sample Date/Time: Friday, November 22, 2013 14:48:35
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	270059.2	1.6				ug/L	231878	Standard
	Be	9	53.3	23.6	**0.0093**	0.004	45.3	ug/L	7	Standard
	Al	27	18194337.6	2.2	**95.3342**	2.908	3.1	ug/L	115	Standard
	Sc	45	50102.7	1.4				ug/L	57581	Standard
	Ti	47	205.0	10.6	**0.3899**	0.045	11.6	ug/L	17	Standard
	V	51	3330.8	1.9	**0.2050**	0.013	6.2	ug/L	1678	Standard
	Cr	52	7905.7	0.9	**0.2946**	0.015	5.0	ug/L	5719	Standard
	Cr	53	2310.2	4.3	**1.5692**	0.093	5.9	ug/L	132	Standard
	Mn	55	424693.7	0.9	**31.9363**	0.700	2.2	ug/L	927	Standard
	Co	59	1437.7	1.3	**0.1538**	0.003	1.8	ug/L	80	Standard
	Ni	60	4494.3	1.4	**1.5640**	0.007	0.5	ug/L	39	Standard
	Cu	65	7521.9	1.7	**2.6460**	0.029	1.1	ug/L	91	Standard
	Zn	66	5327.9	1.2	**3.1936**	0.037	1.2	ug/L	159	Standard
>	**Ge**	72	490223.7	1.5				ug/L	504090	Standard
	As	75	897.1	2.2	**0.6991**	0.005	0.7	ug/L	-261	Standard
	Se	82	37.5	33.5	**0.4639**	0.079	17.0	ug/L	-43	Standard
	Se-1	77	206.3	0.7	**1.0406**	0.037	3.5	ug/L	86	Standard
>	**Ga**	71	63.3	31.9				mg/L	35	Standard
	Rb	85	7405.1	2.1				ug/L	20	Standard
	Y	89	445836.6	1.2				ug/L	462194	Standard
>	**Rh**	103	1028.4	9.0				ug/L	7	Standard
	Mo	98	158009.0	1.4	**39.8444**	0.539	1.4	ug/L	8	Standard
	Ag	107	81.0	18.7	**-0.0041**	0.002	49.8	ug/L	62	Standard
	Cd	111	-22.6	46.6	**-0.0193**	0.005	24.9	mg/L	1	Standard
	Cd	114	335.7	6.8	**0.0513**	0.004	8.0	ug/L	23	Standard
>	**In**	115	493103.5	0.9				ug/L	502083	Standard
	Sn	118	346.0	0.3	**0.1586**	0.002	1.0	ug/L	144	Standard
	Sb	123	327.0	3.7	**0.1177**	0.004	3.2	ug/L	19	Standard
	Ba	135	16344.5	0.8	**8.6176**	0.059	0.7	ug/L	9	Standard
	Ce	140	1443.4	4.1				ug/L	17	Standard
>	**Tb**	159	495006.3	0.6				ug/L	490863	Standard
	Ho	165	33.3	31.2				ug/L	2	Standard
	Tl	203	162.3	4.6	**0.0201**	0.001	5.9	ug/L	2	Standard
	Tl	205	175.0	9.9	**0.0226**	0.002	11.0	ug/L	0	Standard
	Pb	206	923.4	2.5	**0.3312**	0.008	2.3	ug/L	84	Standard
	Pb	207	783.7	4.2	**0.3110**	0.015	4.8	ug/L	73	Standard
	Pb	208	2044.7	2.1	**0.3023**	0.008	2.8	ug/L	199	Standard
	U	238	1198.0	3.8	**0.2929**	0.010	3.4	ug/L	1	Standard
>	**Bi**	209	266822.6	0.4				ug/L	281512	Standard

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Na	23	133.3	14.2	**40.1998**	5.229	13.0	mg/L	2	Standard
Mg	24	35167.4	1.2	**49.6356**	0.557	1.1	mg/L	38	Standard
K	39	11.7	49.5	**0.5090**	0.326	64.1	mg/L	0	Standard
Ca	43	241.7	20.9	**24.0971**	5.210	21.6	mg/L	23	Standard
Fe	54	284.0	14.0	**0.0376**	0.017	46.2	mg/L	234	Standard
Fe	57	295.0	21.2	**0.3675**	0.109	29.5	mg/L	118	Standard
> **Sc-1**	45	50102.7	1.4				mg/L	57581	Standard
Cl	35	57920.5	1.8				ug/L	22827	Standard
Kr	83	106.0	10.5				ug/L	90	Standard
Br	81	11554.4	4.6				ug/L	2287	Standard
P	31	318056.6	3.7				ug/L	215766	Standard
S	34	40978.7	0.6				ug/L	23460	Standard
Sr	88	5601.0	1.7				ug/L	48	Standard
C	12	0.0					mg/L	3	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	22.5	53.7				mg/L	6	Standard
Ho-1	165	33.3	31.2				mg/L	2	Standard
Er	166	16.7	69.3				mg/L	7	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		116.466	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.249	
As	75			
Se	82			
Se-1	77			
> Ga	71			
Rb	85			

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	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.212
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	94.782
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1311095104PS WG453994-01
Sample Date/Time: Friday, November 22, 2013 14:51:40
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	284897.6	2.0				ug/L	231878	Standard
	Be	9	158811.3	0.9	**48.7794**	0.912	1.9	ug/L	7	Standard
	Al	27	19584779.1	2.0	**97.2578**	1.031	1.1	ug/L	115	Standard
	Sc	45	53574.6	2.2				ug/L	57581	Standard
	Ti	47	265.3	50.1	**0.4887**	0.271	55.5	ug/L	17	Standard
	V	51	409118.6	0.9	**47.9718**	0.392	0.8	ug/L	1678	Standard
	Cr	52	401014.2	0.4	**49.8024**	0.267	0.5	ug/L	5719	Standard
	Cr	53	75008.6	2.1	**50.3755**	0.864	1.7	ug/L	132	Standard
	Mn	55	1188721.7	0.3	**84.5430**	0.547	0.6	ug/L	927	Standard
	Co	59	443563.1	1.0	**49.4646**	0.312	0.6	ug/L	80	Standard
	Ni	60	152568.7	0.7	**50.8674**	0.318	0.6	ug/L	39	Standard
	Cu	65	153124.9	0.4	**51.6338**	0.393	0.8	ug/L	91	Standard
	Zn	66	86408.0	0.2	**52.9572**	0.187	0.4	ug/L	159	Standard
>	**Ge**	72	519061.4	0.4				ug/L	504090	Standard
	As	75	88803.4	0.8	**50.9626**	0.237	0.5	ug/L	-261	Standard
	Se	82	8682.6	1.6	**50.4610**	0.620	1.2	ug/L	-43	Standard
	Se-1	77	6459.4	2.0	**51.8010**	0.851	1.6	ug/L	86	Standard
>	**Ga**	71	130.0	20.0				mg/L	35	Standard
	Rb	85	7903.7	2.7				ug/L	20	Standard
	Y	89	487828.1	1.4				ug/L	462194	Standard
>	**Rh**	103	1171.7	8.7				ug/L	7	Standard
	Mo	98	175642.0	0.5	**41.7139**	0.463	1.1	ug/L	8	Standard
	Ag	107	376506.2	1.0	**49.6520**	0.716	1.4	ug/L	62	Standard
	Cd	111	120132.9	0.9	**50.7660**	0.430	0.8	mg/L	1	Standard
	Cd	114	299323.0	0.5	**49.4801**	0.264	0.5	ug/L	23	Standard
>	**In**	115	523582.5	0.7				ug/L	502083	Standard
	Sn	118	495.3	7.4	**0.2449**	0.022	9.1	ug/L	144	Standard
	Sb	123	145449.9	0.2	**51.3301**	0.357	0.7	ug/L	19	Standard
	Ba	135	119525.6	0.8	**59.3937**	0.292	0.5	ug/L	9	Standard
	Ce	140	1785.1	16.0				ug/L	17	Standard
>	**Tb**	159	524548.5	1.5				ug/L	490863	Standard
	Ho	165	23.3	12.4				ug/L	2	Standard
	Tl	203	334026.0	1.0	**51.6004**	0.439	0.9	ug/L	2	Standard
	Tl	205	371754.6	1.8	**53.0873**	0.874	1.6	ug/L	0	Standard
	Pb	206	145749.7	0.3	**55.6968**	0.109	0.2	ug/L	84	Standard
	Pb	207	131322.0	0.1	**55.3483**	0.115	0.2	ug/L	73	Standard
	Pb	208	322848.5	0.2	**51.7095**	0.074	0.1	ug/L	199	Standard
	U	238	233531.6	0.1	**54.9070**	0.128	0.2	ug/L	1	Standard
>	**Bi**	209	278031.1	0.2				ug/L	281512	Standard

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	Na	23	151.7	26.6	**42.7372**	10.771	25.2	mg/L	2	Standard
	Mg	24	36879.8	1.7	**48.6799**	0.296	0.6	mg/L	38	Standard
	K	39	11.7	65.5	**0.4668**	0.410	87.9	mg/L	0	Standard
	Ca	43	273.3	20.1	**25.7602**	6.155	23.9	mg/L	23	Standard
	Fe	54	423.8	22.3	**0.0914**	0.038	41.9	mg/L	234	Standard
	Fe	57	300.0	4.4	**0.3428**	0.033	9.5	mg/L	118	Standard
>	**Sc-1**	45	53574.6	2.2				mg/L	57581	Standard
	Cl	35	60323.9	0.7				ug/L	22827	Standard
	Kr	83	124.3	9.3				ug/L	90	Standard
	Br	81	12081.5	4.8				ug/L	2287	Standard
	P	31	440313.3	3.0				ug/L	215766	Standard
	S	34	42118.5	1.6				ug/L	23460	Standard
	Sr	88	6132.9	2.0				ug/L	48	Standard
	C	12	6.7	86.6				mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	0	Standard
	Dy	164	22.5	25.0				mg/L	6	Standard
	Ho-1	165	23.3	12.4				mg/L	2	Standard
	Er	166	16.7	34.6				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		122.865	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		102.970	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

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	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	104.282
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.763
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: November 24, 2013

Method 6020 - Summary Report

Sample ID: L1311095104SDL WG453994-02
Sample Date/Time: Friday, November 22, 2013 14:54:45
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	256710.1	1.5				ug/L	231878	Standard
	Be	9	21.7	48.0	**-0.0007**	0.003	512.2	ug/L	7	Standard
	Al	27	3579436.2	1.7	**19.7272**	0.506	2.6	ug/L	115	Standard
	Sc	45	47561.2	1.0				ug/L	57581	Standard
	Ti	47	109.0	104.9	**0.1887**	0.254	134.8	ug/L	17	Standard
	V	51	1674.8	23.4	**0.0062**	0.049	802.8	ug/L	1678	Standard
	Cr	52	7060.6	1.4	**0.2176**	0.017	7.9	ug/L	5719	Standard
	Cr	53	1858.4	13.9	**1.2960**	0.178	13.7	ug/L	132	Standard
	Mn	55	81517.4	2.0	**6.2965**	0.116	1.8	ug/L	927	Standard
	Co	59	368.3	9.5	**0.0291**	0.004	14.0	ug/L	80	Standard
	Ni	60	1085.0	25.7	**0.3739**	0.098	26.2	ug/L	39	Standard
	Cu	65	1905.1	15.8	**0.6644**	0.105	15.8	ug/L	91	Standard
	Zn	66	3020.0	9.6	**1.7618**	0.176	10.0	ug/L	159	Standard
>	**Ge**	72	472206.5	0.9				ug/L	504090	Standard
	As	75	65.4	216.7	**0.1962**	0.088	45.0	ug/L	-261	Standard
	Se	82	-14.0	103.9	**0.1438**	0.093	64.7	ug/L	-43	Standard
	Se-1	77	182.7	18.2	**0.8947**	0.282	31.5	ug/L	86	Standard
>	**Ga**	71	71.7	76.9				mg/L	35	Standard
	Rb	85	1548.4	15.4				ug/L	20	Standard
	Y	89	425137.4	1.0				ug/L	462194	Standard
>	**Rh**	103	198.3	13.9				ug/L	7	Standard
	Mo	98	29456.2	0.7	**7.5003**	0.040	0.5	ug/L	8	Standard
	Ag	107	104.0	35.8	**-0.0007**	0.005	767.1	ug/L	62	Standard
	Cd	111	17.8	114.6	**-0.0011**	0.009	851.3	mg/L	1	Standard
	Cd	114	145.6	59.1	**0.0181**	0.015	83.9	ug/L	23	Standard
>	**In**	115	488100.2	0.3				ug/L	502083	Standard
	Sn	118	162.3	14.1	**0.0281**	0.016	58.1	ug/L	144	Standard
	Sb	123	238.5	9.4	**0.0854**	0.009	10.2	ug/L	19	Standard
	Ba	135	3389.7	5.7	**1.7996**	0.100	5.5	ug/L	9	Standard
	Ce	140	553.3	83.3				ug/L	17	Standard
>	**Tb**	159	479062.4	0.4				ug/L	490863	Standard
	Ho	165	10.0	86.6				ug/L	2	Standard
	Tl	203	146.3	27.9	**0.0171**	0.006	37.9	ug/L	2	Standard
	Tl	205	131.7	15.3	**0.0157**	0.003	19.0	ug/L	0	Standard
	Pb	206	288.7	18.8	**0.0762**	0.021	28.0	ug/L	84	Standard
	Pb	207	243.3	21.4	**0.0715**	0.022	31.3	ug/L	73	Standard
	Pb	208	593.3	4.1	**0.0580**	0.004	7.3	ug/L	199	Standard
	U	238	252.3	4.1	**0.0600**	0.002	4.1	ug/L	1	Standard
>	**Bi**	209	272082.9	0.2				ug/L	281512	Standard

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	Na	23	20.0	25.0	**6.0051**	1.643	27.4	mg/L	2	Standard
	Mg	24	7203.4	2.5	**10.6807**	0.241	2.3	mg/L	38	Standard
	K	39	6.7	114.6	**0.2476**	0.466	188.3	mg/L	0	Standard
	Ca	43	53.3	19.5	**3.7216**	1.247	33.5	mg/L	23	Standard
	Fe	54	126.0	21.9	**-0.0353**	0.014	39.6	mg/L	234	Standard
	Fe	57	168.3	20.2	**0.1601**	0.066	41.3	mg/L	118	Standard
>	**Sc-1**	45	47561.2	1.0				mg/L	57581	Standard
	Cl	35	42047.6	2.7				ug/L	22827	Standard
	Kr	83	87.3	10.6				ug/L	90	Standard
	Br	81	4307.3	5.3				ug/L	2287	Standard
	P	31	137502.9	1.8				ug/L	215766	Standard
	S	34	45889.4	3.0				ug/L	23460	Standard
	Sr	88	965.0	5.0				ug/L	48	Standard
	C	12	3.3	173.2				mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	0	Standard
	Dy	164	9.2	100.9				mg/L	6	Standard
	Ho-1	165	10.0	86.6				mg/L	2	Standard
	Er	166	16.7	91.7				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		110.709	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		93.675	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

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	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.215
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	96.650
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1311095104SDL WG453994-02
Sample Date/Time: Friday, November 22, 2013 14:57:49
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	253754.3	1.6				ug/L	231878	Standard
	Be	9	16.7	45.8	**-0.0023**	0.003	120.2	ug/L	7	Standard
	Al	27	667161.4	1.1	**3.7159**	0.023	0.6	ug/L	115	Standard
	Sc	45	46865.7	2.2				ug/L	57581	Standard
	Ti	47	19.0	9.1	**-0.0121**	0.005	38.0	ug/L	17	Standard
	V	51	1718.0	5.5	**0.0159**	0.015	95.7	ug/L	1678	Standard
	Cr	52	6721.8	2.6	**0.1867**	0.010	5.5	ug/L	5719	Standard
	Cr	53	1510.1	8.3	**1.0602**	0.112	10.6	ug/L	132	Standard
	Mn	55	16228.4	0.9	**1.2097**	0.031	2.5	ug/L	927	Standard
	Co	59	134.7	5.7	**0.0008**	0.001	93.9	ug/L	80	Standard
	Ni	60	232.0	6.7	**0.0632**	0.006	9.1	ug/L	39	Standard
	Cu	65	488.0	3.9	**0.1425**	0.007	4.9	ug/L	91	Standard
	Zn	66	3159.3	2.1	**1.8946**	0.045	2.4	ug/L	159	Standard
>	**Ge**	72	464150.8	1.7				ug/L	504090	Standard
	As	75	-169.3	24.8	**0.0475**	0.025	53.3	ug/L	-261	Standard
	Se	82	-27.0	42.9	**0.0595**	0.072	120.4	ug/L	-43	Standard
	Se-1	77	145.7	2.2	**0.5888**	0.050	8.5	ug/L	86	Standard
>	**Ga**	71	16.7	17.3				mg/L	35	Standard
	Rb	85	273.3	9.2				ug/L	20	Standard
	Y	89	423322.8	1.3				ug/L	462194	Standard
>	**Rh**	103	60.0	22.0				ug/L	7	Standard
	Mo	98	5499.9	2.6	**1.4098**	0.029	2.1	ug/L	8	Standard
	Ag	107	63.0	16.6	**-0.0064**	0.001	22.7	ug/L	62	Standard
	Cd	111	4.6	64.2	**-0.0070**	0.001	19.2	mg/L	1	Standard
	Cd	114	55.1	31.6	**0.0022**	0.003	144.6	ug/L	23	Standard
>	**In**	115	483649.5	0.5				ug/L	502083	Standard
	Sn	118	122.3	10.4	**-0.0001**	0.009	16724.7	ug/L	144	Standard
	Sb	123	51.8	8.0	**0.0149**	0.002	10.3	ug/L	19	Standard
	Ba	135	653.3	4.6	**0.3442**	0.017	4.9	ug/L	9	Standard
	Ce	140	51.7	64.4				ug/L	17	Standard
>	**Tb**	159	470526.2	0.7				ug/L	490863	Standard
	Ho	165	1.7	173.2				ug/L	2	Standard
	Tl	203	103.3	9.5	**0.0104**	0.002	14.7	ug/L	2	Standard
	Tl	205	96.7	7.9	**0.0107**	0.001	10.2	ug/L	0	Standard
	Pb	206	126.0	8.2	**0.0128**	0.004	31.7	ug/L	84	Standard
	Pb	207	107.0	13.6	**0.0130**	0.006	47.4	ug/L	73	Standard
	Pb	208	276.7	4.6	**0.0064**	0.002	30.6	ug/L	199	Standard
	U	238	42.3	29.5	**0.0096**	0.003	31.5	ug/L	1	Standard
>	**Bi**	209	270682.5	0.3				ug/L	281512	Standard

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	Na	23	10.0	86.6	**2.8099**	2.766	98.4	mg/L	2	Standard
	Mg	24	1580.1	5.2	**2.3509**	0.160	6.8	mg/L	38	Standard
	K	39	1.7	173.2	**-0.0536**	0.182	339.3	mg/L	0	Standard
	Ca	43	16.7	45.8	**-0.5159**	0.871	168.9	mg/L	23	Standard
	Fe	54	117.5	23.5	**-0.0388**	0.014	34.9	mg/L	234	Standard
	Fe	57	161.7	34.1	**0.1511**	0.100	66.3	mg/L	118	Standard
>	**Sc-1**	45	46865.7	2.2				mg/L	57581	Standard
	Cl	35	39918.5	1.6				ug/L	22827	Standard
	Kr	83	87.7	7.2				ug/L	90	Standard
	Br	81	2640.2	11.2				ug/L	2287	Standard
	P	31	102247.2	1.7				ug/L	215766	Standard
	S	34	49151.3	2.1				ug/L	23460	Standard
	Sr	88	210.0	23.8				ug/L	48	Standard
	C	12	0.0					mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	0	Standard
	Dy	164	6.3	186.3				mg/L	6	Standard
	Ho-1	165	1.7	173.2				mg/L	2	Standard
	Er	166	6.7	86.6				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		109.434	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		92.077	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

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	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	96.329
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	96.153
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, November 22, 2013 15:00:57
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	266323.7	1.0				ug/L	231878	Standard
	Be	9	151887.9	6.4	**49.8777**	2.701	5.4	ug/L	7	Standard
	Al	27	8924445.9	0.9	**47.4063**	0.260	0.5	ug/L	115	Standard
	Sc	45	50617.7	0.8				ug/L	57581	Standard
	Ti	47	45691.5	1.9	**95.9193**	2.030	2.1	ug/L	17	Standard
	V	51	390780.6	2.2	**46.8681**	1.049	2.2	ug/L	1678	Standard
	Cr	52	376634.9	0.7	**47.8186**	0.499	1.0	ug/L	5719	Standard
	Cr	53	71468.2	1.0	**49.0983**	0.376	0.8	ug/L	132	Standard
	Mn	55	686099.1	0.7	**49.8817**	0.484	1.0	ug/L	927	Standard
	Co	59	423508.1	0.7	**48.3115**	0.160	0.3	ug/L	80	Standard
	Ni	60	146837.8	0.4	**50.0804**	0.392	0.8	ug/L	39	Standard
	Cu	65	144297.6	1.1	**49.7735**	0.801	1.6	ug/L	91	Standard
	Zn	66	80646.1	0.8	**50.5483**	0.632	1.3	ug/L	159	Standard
>	**Ge**	72	507423.0	0.5				ug/L	504090	Standard
	As	75	84604.2	0.5	**49.6722**	0.444	0.9	ug/L	-261	Standard
	Se	82	8352.2	1.0	**49.6618**	0.749	1.5	ug/L	-43	Standard
	Se-1	77	6257.0	1.5	**51.3256**	0.895	1.7	ug/L	86	Standard
>	**Ga**	71	58.3	26.2				mg/L	35	Standard
	Rb	85	1300.1	3.9				ug/L	20	Standard
	Y	89	471242.8	1.9				ug/L	462194	Standard
>	**Rh**	103	25.0	60.0				ug/L	7	Standard
	Mo	98	435786.0	0.2	**104.0078**	0.872	0.8	ug/L	8	Standard
	Ag	107	387238.8	0.5	**51.3195**	0.800	1.6	ug/L	62	Standard
	Cd	111	119023.6	0.6	**50.5434**	0.343	0.7	mg/L	1	Standard
	Cd	114	306335.2	0.9	**50.8868**	0.440	0.9	ug/L	23	Standard
>	**In**	115	521043.5	1.0				ug/L	502083	Standard
	Sn	118	76167.6	0.1	**51.6024**	0.507	1.0	ug/L	144	Standard
	Sb	123	142502.9	0.5	**50.5369**	0.573	1.1	ug/L	19	Standard
	Ba	135	100734.8	0.8	**50.3005**	0.360	0.7	ug/L	9	Standard
	Ce	140	50.0	62.5				ug/L	17	Standard
>	**Tb**	159	512200.3	0.2				ug/L	490863	Standard
	Ho	165	6.7	86.6				ug/L	2	Standard
	Tl	203	331114.8	1.0	**49.3471**	0.475	1.0	ug/L	2	Standard
	Tl	205	368992.5	0.4	**50.8372**	0.597	1.2	ug/L	0	Standard
	Pb	206	142787.3	0.6	**52.6415**	0.734	1.4	ug/L	84	Standard
	Pb	207	129330.0	0.2	**52.5880**	0.730	1.4	ug/L	73	Standard
	Pb	208	323824.6	0.4	**50.0376**	0.596	1.2	ug/L	199	Standard
	U	238	224611.6	0.5	**50.9491**	0.598	1.2	ug/L	1	Standard
>	**Bi**	209	288217.6	1.6				ug/L	281512	Standard

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	Na	23	33.3	8.7	**9.6379**	0.909	9.4	mg/L	2	Standard
	Mg	24	3913.8	7.7	**5.4351**	0.420	7.7	mg/L	38	Standard
	K	39	70.0	14.3	**3.8213**	0.565	14.8	mg/L	0	Standard
	Ca	43	65.0	30.8	**4.6146**	2.168	47.0	mg/L	23	Standard
	Fe	54	10915.0	2.1	**5.1158**	0.128	2.5	mg/L	234	Standard
	Fe	57	2908.6	3.7	**4.9397**	0.223	4.5	mg/L	118	Standard
>	**Sc-1**	45	50617.7	0.8				mg/L	57581	Standard
	Cl	35	34884.8	2.5				ug/L	22827	Standard
	Kr	83	103.0	8.5				ug/L	90	Standard
	Br	81	2750.3	5.5				ug/L	2287	Standard
	P	31	323324.8	4.6				ug/L	215766	Standard
	S	34	56076.9	1.2				ug/L	23460	Standard
	Sr	88	86.7	13.3				ug/L	48	Standard
	C	12	0.0					mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	0	Standard
	Dy	164	5.9	94.0				mg/L	6	Standard
	Ho-1	165	6.7	86.6				mg/L	2	Standard
	Er	166	16.7	69.3				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		114.855	
	Be	9	99.755		
	Al	27	94.813		
	Sc	45			
	Ti	47	95.919		
	V	51	93.736		
	Cr	52	95.637		
	Cr	53			
	Mn	55	99.763		
	Co	59	96.623		
	Ni	60	100.161		
	Cu	65	99.547		
	Zn	66	101.097		
>	Ge	72		100.661	
	As	75	99.344		
	Se	82	99.324		
	Se-1	77			
>	Ga	71			
	Rb	85			

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Y	89			
> Rh	103			
Mo	98	104.008		
Ag	107	102.639		
Cd	111	101.087		
Cd	114			
> In	115			103.776
Sn	118	103.205		
Sb	123	101.074		
Ba	135	100.601		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	98.694		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.075		
U	238	101.898		
> Bi	209			102.382
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, November 22, 2013 15:04:01
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	270525.6	1.2				ug/L	231878	Standard
	Be	9	63.3	112.3	**0.0124**	0.023	184.8	ug/L	7	Standard
	Al	27	25477.6	170.2	**0.1285**	0.226	175.6	ug/L	115	Standard
	Sc	45	52136.2	0.9				ug/L	57581	Standard
	Ti	47	21.7	46.2	**-0.0104**	0.021	200.1	ug/L	17	Standard
	V	51	1467.7	33.0	**-0.0343**	0.058	168.5	ug/L	1678	Standard
	Cr	52	5181.2	8.4	**-0.0950**	0.055	58.0	ug/L	5719	Standard
	Cr	53	1251.7	4.1	**0.7814**	0.033	4.2	ug/L	132	Standard
	Mn	55	1505.8	62.0	**0.0267**	0.067	253.0	ug/L	927	Standard
	Co	59	271.3	124.1	**0.0148**	0.038	257.9	ug/L	80	Standard
	Ni	60	82.7	60.3	**0.0048**	0.017	352.4	ug/L	39	Standard
	Cu	65	205.7	27.5	**0.0290**	0.019	66.5	ug/L	91	Standard
	Zn	66	224.7	15.2	**-0.1414**	0.021	14.9	ug/L	159	Standard
>	**Ge**	72	509077.4	0.3				ug/L	504090	Standard
	As	75	-225.7	16.6	**0.0240**	0.021	89.3	ug/L	-261	Standard
	Se	82	-19.9	79.0	**0.1161**	0.093	79.9	ug/L	-43	Standard
	Se-1	77	136.7	8.3	**0.3965**	0.091	23.0	ug/L	86	Standard
>	**Ga**	71	26.7	57.3				mg/L	35	Standard
	Rb	85	11.7	24.7				ug/L	20	Standard
	Y	89	469300.8	0.7				ug/L	462194	Standard
>	**Rh**	103	1.7	173.2				ug/L	7	Standard
	Mo	98	182.1	90.1	**0.0388**	0.039	99.5	ug/L	8	Standard
	Ag	107	120.0	66.8	**0.0004**	0.010	2836.5	ug/L	62	Standard
	Cd	111	11.5	118.0	**-0.0043**	0.006	132.1	mg/L	1	Standard
	Cd	114	55.9	57.3	**0.0015**	0.005	342.3	ug/L	23	Standard
>	**In**	115	524966.5	0.5				ug/L	502083	Standard
	Sn	118	90.7	6.5	**-0.0284**	0.004	13.6	ug/L	144	Standard
	Sb	123	458.8	31.3	**0.1566**	0.050	32.2	ug/L	19	Standard
	Ba	135	21.7	64.7	**0.0034**	0.007	202.3	ug/L	9	Standard
	Ce	140	11.7	65.5				ug/L	17	Standard
>	**Tb**	159	515816.8	1.8				ug/L	490863	Standard
	Ho	165	1.7	173.2				ug/L	2	Standard
	Tl	203	102.7	41.7	**0.0089**	0.006	69.0	ug/L	2	Standard
	Tl	205	203.3	98.7	**0.0237**	0.027	112.6	ug/L	0	Standard
	Pb	206	126.3	13.5	**0.0087**	0.006	67.0	ug/L	84	Standard
	Pb	207	93.7	11.4	**0.0038**	0.004	106.5	ug/L	73	Standard
	Pb	208	316.3	51.1	**0.0084**	0.024	285.9	ug/L	199	Standard
	U	238	67.7	156.8	**0.0142**	0.023	163.5	ug/L	1	Standard
>	**Bi**	209	295696.6	0.7				ug/L	281512	Standard

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Na	23	0.0		**-0.4293**	0.000	0.0	mg/L	2	Standard
Mg	24	81.7	67.4	**0.0737**	0.073	99.6	mg/L	38	Standard
K	39	1.7	173.2	**-0.0675**	0.158	233.7	mg/L	0	Standard
Ca	43	11.7	24.7	**-1.2362**	0.293	23.7	mg/L	23	Standard
Fe	54	254.4	3.4	**0.0186**	0.003	15.8	mg/L	234	Standard
Fe	57	135.0	6.4	**0.0754**	0.013	16.8	mg/L	118	Standard
Sc-1	45	52136.2	0.9				mg/L	57581	Standard
Cl	35	35002.4	0.4				ug/L	22827	Standard
Kr	83	77.7	11.9				ug/L	90	Standard
Br	81	2513.5	9.0				ug/L	2287	Standard
P	31	311757.0	1.7				ug/L	215766	Standard
S	34	55750.7	0.8				ug/L	23460	Standard
Sr	88	73.3	21.9				ug/L	48	Standard
C	12	0.0					mg/L	3	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.7	108.3				mg/L	6	Standard
Ho-1	165	1.7	173.2				mg/L	2	Standard
Er	166	6.7	173.2				mg/L	7	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		116.667	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.989	
As	75			
Se	82			
Se-1	77			
> Ga	71			
Rb	85			

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	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	104.558
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	105.039
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1311120502
Sample Date/Time: Friday, November 22, 2013 15:07:08
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	276502.3	1.6				ug/L	231878	Standard
	Be	9	20.0	43.3	**-0.0017**	0.003	151.1	ug/L	7	Standard
	Al	27	10665501.3	1.3	**54.5841**	1.499	2.7	ug/L	115	Standard
	Sc	45	43453.9	0.7				ug/L	57581	Standard
	Ti	47	396.0	4.4	**1.0656**	0.045	4.2	ug/L	17	Standard
	V	51	-1092.4	105.1	**-0.3884**	0.188	48.3	ug/L	1678	Standard
	Cr	52	9155.1	7.0	**0.8315**	0.121	14.6	ug/L	5719	Standard
	Cr	53	35718.3	21.2	**33.0877**	7.230	21.8	ug/L	132	Standard
	Mn	55	242392.7	2.6	**23.7137**	0.461	1.9	ug/L	927	Standard
	Co	59	3157.7	2.9	**0.4698**	0.013	2.7	ug/L	80	Standard
	Ni	60	3348.4	5.7	**1.5167**	0.078	5.2	ug/L	39	Standard
	Cu	65	3308.7	4.6	**1.4985**	0.081	5.4	ug/L	91	Standard
	Zn	66	4738.7	8.9	**3.7458**	0.381	10.2	ug/L	159	Standard
>	**Ge**	72	376365.9	0.6				ug/L	504090	Standard
	As	75	47163.4	14.8	**37.3939**	5.726	15.3	ug/L	-261	Standard
	Se	82	20880.7	12.8	**166.9197**	22.319	13.4	ug/L	-43	Standard
	Se-1	77	4121.2	13.7	**45.5196**	6.580	14.5	ug/L	86	Standard
>	**Ga**	71	150.0	28.5				mg/L	35	Standard
	Rb	85	36348.5	0.8				ug/L	20	Standard
	Y	89	354183.8	0.8				ug/L	462194	Standard
>	**Rh**	103	876.7	8.8				ug/L	7	Standard
	Mo	98	771.4	0.7	**0.2553**	0.002	0.9	ug/L	8	Standard
	Ag	107	50.0	14.0	**-0.0060**	0.001	21.6	ug/L	62	Standard
	Cd	111	19.3	10.9	**0.0024**	0.001	51.8	mg/L	1	Standard
	Cd	114	27.1	31.2	**-0.0013**	0.002	147.8	ug/L	23	Standard
>	**In**	115	369526.0	0.3				ug/L	502083	Standard
	Sn	118	109.3	9.2	**0.0151**	0.010	64.4	ug/L	144	Standard
	Sb	123	81.0	3.4	**0.0356**	0.001	3.7	ug/L	19	Standard
	Ba	135	53579.6	0.6	**37.7211**	0.150	0.4	ug/L	9	Standard
	Ce	140	1658.4	6.2				ug/L	17	Standard
>	**Tb**	159	391131.9	1.9				ug/L	490863	Standard
	Ho	165	45.0	50.9				ug/L	2	Standard
	Tl	203	16.0	18.8	**-0.0023**	0.001	32.0	ug/L	2	Standard
	Tl	205	131.7	5.8	**0.0250**	0.002	7.1	ug/L	0	Standard
	Pb	206	110.0	11.8	**0.0270**	0.007	26.5	ug/L	84	Standard
	Pb	207	95.0	13.8	**0.0273**	0.009	32.2	ug/L	73	Standard
	Pb	208	263.7	8.4	**0.0248**	0.005	21.0	ug/L	199	Standard
	U	238	110.7	2.1	**0.0388**	0.001	1.7	ug/L	1	Standard
>	**Bi**	209	183681.0	0.8				ug/L	281512	Standard

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Na	23	31.7	65.7	**10.7279**	7.360	68.6	mg/L	2	Standard
Mg	24	909214.8	3.3	**1480.8729**	58.130	3.9	mg/L	38	Standard
K	39	43.3	17.6	**2.7093**	0.488	18.0	mg/L	0	Standard
Ca	43	71.7	16.1	**6.6341**	1.515	22.8	mg/L	23	Standard
Fe	54	262.1	4.8	**0.0465**	0.007	14.4	mg/L	234	Standard
Fe	57	413.3	22.7	**0.6890**	0.192	27.9	mg/L	118	Standard
Sc-1	45	43453.9	0.7				mg/L	57581	Standard
Cl	35	39818.3	3.7				ug/L	22827	Standard
Kr	83	8847.0	15.7				ug/L	90	Standard
Br	81	6844670.7	5.5				ug/L	2287	Standard
P	31	214322.1	4.5				ug/L	215766	Standard
S	34	22238.0	2.3				ug/L	23460	Standard
Sr	88	6366.3	4.5				ug/L	48	Standard
C	12	6.7	173.2				mg/L	3	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	63.3	18.2				mg/L	0	Standard
Dy	164	33.3	16.1				mg/L	6	Standard
Ho-1	165	45.0	50.9				mg/L	2	Standard
Er	166	70.0	14.3				mg/L	7	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		119.244	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		74.662	
As	75			
Se	82			
Se-1	77			
> Ga	71			
Rb	85			

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	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	73.599
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	65.248
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Se 82 Upper, S, EEE	Se	82	

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Method 6020 - Summary Report

Sample ID: L1311108601
Sample Date/Time: Friday, November 22, 2013 15:10:13
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	231935.3	1.6				ug/L	231878	Standard
	Be	9	28.3	71.3	**0.0026**	0.008	287.5	ug/L	7	Standard
	Al	27	4888828.3	1.1	**29.8242**	0.687	2.3	ug/L	115	Standard
	Sc	45	53161.5	1.8				ug/L	57581	Standard
	Ti	47	376.3	12.5	**0.7794**	0.105	13.5	ug/L	17	Standard
	V	51	11377.8	0.7	**1.2376**	0.013	1.1	ug/L	1678	Standard
	Cr	52	6626.8	3.3	**0.1420**	0.033	23.3	ug/L	5719	Standard
	Cr	53	4665.7	15.8	**3.3158**	0.547	16.5	ug/L	132	Standard
	Mn	55	25350.5	0.9	**1.8678**	0.024	1.3	ug/L	927	Standard
	Co	59	356.7	5.6	**0.0270**	0.002	8.4	ug/L	80	Standard
	Ni	60	1472.1	4.8	**0.5074**	0.027	5.3	ug/L	39	Standard
	Cu	65	984.4	11.2	**0.3174**	0.041	12.9	ug/L	91	Standard
	Zn	66	20541.2	0.7	**13.3950**	0.123	0.9	ug/L	159	Standard
>	**Ge**	72	480314.8	0.3				ug/L	504090	Standard
	As	75	1570.0	54.5	**1.1274**	0.533	47.2	ug/L	-261	Standard
	Se	82	685.8	50.0	**4.5252**	2.159	47.7	ug/L	-43	Standard
	Se-1	77	423.7	10.9	**2.9880**	0.414	13.8	ug/L	86	Standard
>	**Ga**	71	50.0	30.0				mg/L	35	Standard
	Rb	85	4472.3	2.4				ug/L	20	Standard
	Y	89	441415.5	1.7				ug/L	462194	Standard
>	**Rh**	103	58.3	42.3				ug/L	7	Standard
	Mo	98	9099.3	1.2	**2.3726**	0.028	1.2	ug/L	8	Standard
	Ag	107	50.7	15.3	**-0.0080**	0.001	13.8	ug/L	62	Standard
	Cd	111	38.8	3.7	**0.0089**	0.001	6.5	mg/L	1	Standard
	Cd	114	135.2	23.7	**0.0169**	0.006	34.9	ug/L	23	Standard
>	**In**	115	476058.8	0.7				ug/L	502083	Standard
	Sn	118	117.7	9.9	**-0.0021**	0.008	393.4	ug/L	144	Standard
	Sb	123	40.1	1.3	**0.0107**	0.000	0.9	ug/L	19	Standard
	Ba	135	51499.0	0.3	**28.1418**	0.183	0.7	ug/L	9	Standard
	Ce	140	378.3	11.4				ug/L	17	Standard
>	**Tb**	159	471762.4	1.1				ug/L	490863	Standard
	Ho	165	6.7	114.6				ug/L	2	Standard
	Tl	203	84.3	5.3	**0.0075**	0.001	9.8	ug/L	2	Standard
	Tl	205	93.3	27.5	**0.0103**	0.004	36.8	ug/L	0	Standard
	Pb	206	122.3	7.8	**0.0118**	0.004	32.1	ug/L	84	Standard
	Pb	207	105.3	3.8	**0.0126**	0.002	13.6	ug/L	73	Standard
	Pb	208	291.7	5.9	**0.0092**	0.003	31.1	ug/L	199	Standard
	U	238	254.0	1.6	**0.0612**	0.001	1.6	ug/L	1	Standard
>	**Bi**	209	268409.9	0.1				ug/L	281512	Standard

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	Na	23	46.7	27.0	**12.9797**	3.529	27.2	mg/L	2	Standard
	Mg	24	7375.1	1.7	**9.7834**	0.285	2.9	mg/L	38	Standard
	K	39	16.7	69.3	**0.7516**	0.649	86.3	mg/L	0	Standard
	Ca	43	106.7	42.0	**8.6394**	4.763	55.1	mg/L	23	Standard
	Fe	54	270.8	16.8	**0.0241**	0.023	95.1	mg/L	234	Standard
	Fe	57	170.0	25.1	**0.1295**	0.071	54.5	mg/L	118	Standard
>	**Sc-1**	45	53161.5	1.8				mg/L	57581	Standard
	Cl	35	32734.7	2.3				ug/L	22827	Standard
	Kr	83	89.0	8.5				ug/L	90	Standard
	Br	81	108571.8	50.0				ug/L	2287	Standard
	P	31	435603.6	1.2				ug/L	215766	Standard
	S	34	35892.5	2.5				ug/L	23460	Standard
	Sr	88	418.3	6.8				ug/L	48	Standard
	C	12	3.3	173.2				mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	0	Standard
	Dy	164	9.8	104.1				mg/L	6	Standard
	Ho-1	165	6.7	114.6				mg/L	2	Standard
	Er	166	3.3	173.2				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		100.025	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		95.284	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

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	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	94.817
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	95.346
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1311108602
Sample Date/Time: Friday, November 22, 2013 15:13:18
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	236736.8	0.3				ug/L	231878	Standard
	Be	9	36.7	7.9	**0.0055**	0.001	19.7	ug/L	7	Standard
	Al	27	4780750.2	1.2	**28.5675**	0.393	1.4	ug/L	115	Standard
	Sc	45	52796.9	2.3				ug/L	57581	Standard
	Ti	47	372.0	4.9	**0.7756**	0.032	4.1	ug/L	17	Standard
	V	51	9907.4	2.1	**1.0601**	0.036	3.4	ug/L	1678	Standard
	Cr	52	23615.7	1.9	**2.4810**	0.065	2.6	ug/L	5719	Standard
	Cr	53	6813.2	3.2	**4.9135**	0.192	3.9	ug/L	132	Standard
	Mn	55	40528.5	0.9	**3.0588**	0.029	1.0	ug/L	927	Standard
	Co	59	534.7	7.4	**0.0490**	0.005	11.2	ug/L	80	Standard
	Ni	60	37837.9	0.3	**13.7190**	0.179	1.3	ug/L	39	Standard
	Cu	65	2650.6	2.3	**0.9321**	0.014	1.5	ug/L	91	Standard
	Zn	66	22238.6	0.2	**14.6367**	0.191	1.3	ug/L	159	Standard
>	**Ge**	72	476758.9	1.1				ug/L	504090	Standard
	As	75	433.3	11.2	**0.4258**	0.033	7.8	ug/L	-261	Standard
	Se	82	239.1	9.6	**1.7404**	0.159	9.1	ug/L	-43	Standard
	Se-1	77	349.7	2.6	**2.3599**	0.083	3.5	ug/L	86	Standard
>	**Ga**	71	78.3	35.2				mg/L	35	Standard
	Rb	85	3152.0	1.1				ug/L	20	Standard
	Y	89	440388.4	2.0				ug/L	462194	Standard
>	**Rh**	103	70.0	37.8				ug/L	7	Standard
	Mo	98	7422.6	0.6	**1.9371**	0.021	1.1	ug/L	8	Standard
	Ag	107	71.7	9.9	**-0.0050**	0.001	21.0	ug/L	62	Standard
	Cd	111	34.6	17.3	**0.0070**	0.003	39.0	mg/L	1	Standard
	Cd	114	161.7	25.6	**0.0217**	0.007	33.7	ug/L	23	Standard
>	**In**	115	475477.4	1.1				ug/L	502083	Standard
	Sn	118	183.7	10.8	**0.0471**	0.014	30.3	ug/L	144	Standard
	Sb	123	56.7	4.7	**0.0172**	0.001	7.4	ug/L	19	Standard
	Ba	135	51764.9	0.8	**28.3241**	0.460	1.6	ug/L	9	Standard
	Ce	140	620.0	9.3				ug/L	17	Standard
>	**Tb**	159	474830.6	0.5				ug/L	490863	Standard
	Ho	165	20.0	66.1				ug/L	2	Standard
	Tl	203	84.0	13.3	**0.0075**	0.002	22.7	ug/L	2	Standard
	Tl	205	98.3	10.6	**0.0111**	0.001	13.4	ug/L	0	Standard
	Pb	206	283.3	6.8	**0.0760**	0.008	11.2	ug/L	84	Standard
	Pb	207	247.0	4.6	**0.0750**	0.006	7.4	ug/L	73	Standard
	Pb	208	650.3	8.2	**0.0692**	0.008	12.2	ug/L	199	Standard
	U	238	378.0	2.1	**0.0918**	0.003	2.8	ug/L	1	Standard
>	**Bi**	209	267417.7	0.8				ug/L	281512	Standard

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	Na	23	46.7	32.7	**13.0173**	4.151	31.9	mg/L	2	Standard
	Mg	24	7205.0	2.3	**9.6261**	0.416	4.3	mg/L	38	Standard
	K	39	18.3	87.7	**0.8519**	0.890	104.5	mg/L	0	Standard
	Ca	43	138.3	16.7	**11.9636**	2.167	18.1	mg/L	23	Standard
	Fe	54	395.2	5.9	**0.0819**	0.015	17.9	mg/L	234	Standard
	Fe	57	246.7	19.7	**0.2615**	0.092	35.1	mg/L	118	Standard
>	**Sc-1**	45	52796.9	2.3				mg/L	57581	Standard
	Cl	35	32639.1	0.7				ug/L	22827	Standard
	Kr	83	95.7	7.6				ug/L	90	Standard
	Br	81	38676.1	7.4				ug/L	2287	Standard
	P	31	435088.8	2.2				ug/L	215766	Standard
	S	34	38609.1	1.0				ug/L	23460	Standard
	Sr	88	416.7	5.9				ug/L	48	Standard
	C	12	10.0	173.2				mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	0	Standard
	Dy	164	15.7	44.7				mg/L	6	Standard
	Ho-1	165	20.0	66.1				mg/L	2	Standard
	Er	166	20.0	132.3				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		102.095	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		94.578	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

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	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	94.701
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	94.993
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1311120502
Sample Date/Time: Friday, November 22, 2013 15:16:25
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	220937.6	0.8				ug/L	231878	Standard
	Be	9	16.7	62.4	**-0.0014**	0.004	295.7	ug/L	7	Standard
	Al	27	407888.2	1.5	**2.6079**	0.032	1.2	ug/L	115	Standard
	Sc	45	44343.2	2.6				ug/L	57581	Standard
	Ti	47	30.3	12.5	**0.0193**	0.009	44.6	ug/L	17	Standard
	V	51	286.5	39.2	**-0.1699**	0.016	9.2	ug/L	1678	Standard
	Cr	52	5990.5	4.4	**0.1498**	0.030	20.0	ug/L	5719	Standard
	Cr	53	9027.7	3.4	**7.2495**	0.332	4.6	ug/L	132	Standard
	Mn	55	10857.6	1.4	**0.8497**	0.011	1.4	ug/L	927	Standard
	Co	59	197.0	7.7	**0.0105**	0.002	22.4	ug/L	80	Standard
	Ni	60	132.0	1.3	**0.0298**	0.001	4.4	ug/L	39	Standard
	Cu	65	276.7	8.9	**0.0709**	0.009	13.1	ug/L	91	Standard
	Zn	66	2133.5	1.4	**1.3032**	0.035	2.7	ug/L	159	Standard
>	**Ge**	72	430358.8	1.2				ug/L	504090	Standard
	As	75	3377.8	10.5	**2.4848**	0.218	8.8	ug/L	-261	Standard
	Se	82	1487.4	9.7	**10.6047**	0.900	8.5	ug/L	-43	Standard
	Se-1	77	718.4	6.0	**6.3132**	0.474	7.5	ug/L	86	Standard
>	**Ga**	71	33.3	22.9				mg/L	35	Standard
	Rb	85	1625.1	4.1				ug/L	20	Standard
	Y	89	391519.0	0.5				ug/L	462194	Standard
>	**Rh**	103	33.3	82.6				ug/L	7	Standard
	Mo	98	44.6	14.7	**0.0084**	0.002	21.4	ug/L	8	Standard
	Ag	107	44.3	16.9	**-0.0084**	0.001	13.7	ug/L	62	Standard
	Cd	111	2.9	67.9	**-0.0077**	0.001	13.2	mg/L	1	Standard
	Cd	114	28.6	19.6	**-0.0020**	0.001	53.8	ug/L	23	Standard
>	**In**	115	437487.1	0.6				ug/L	502083	Standard
	Sn	118	113.7	5.7	**0.0024**	0.005	200.6	ug/L	144	Standard
	Sb	123	13.6	35.9	**0.0009**	0.002	239.8	ug/L	19	Standard
	Ba	135	2465.9	1.1	**1.4594**	0.023	1.5	ug/L	9	Standard
	Ce	140	100.0	18.0				ug/L	17	Standard
>	**Tb**	159	432297.3	0.9				ug/L	490863	Standard
	Ho	165	3.3	173.2				ug/L	2	Standard
	Tl	203	36.7	22.0	**0.0005**	0.001	272.6	ug/L	2	Standard
	Tl	205	45.0	11.1	**0.0039**	0.001	21.6	ug/L	0	Standard
	Pb	206	83.3	6.6	**0.0001**	0.003	2796.3	ug/L	84	Standard
	Pb	207	81.3	9.1	**0.0062**	0.004	63.4	ug/L	73	Standard
	Pb	208	201.3	5.0	**-0.0020**	0.001	63.7	ug/L	199	Standard
	U	238	7.7	82.8	**0.0015**	0.002	117.6	ug/L	1	Standard
>	**Bi**	209	241186.8	1.6				ug/L	281512	Standard

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	Na	23	6.7	114.6	**1.9012**	2.667	140.3	mg/L	2	Standard
	Mg	24	37636.7	0.5	**60.0467**	1.268	2.1	mg/L	38	Standard
	K	39	8.3	34.6	**0.3857**	0.198	51.4	mg/L	0	Standard
	Ca	43	21.7	66.6	**0.2107**	1.775	842.4	mg/L	23	Standard
	Fe	54	99.3	32.9	**-0.0452**	0.018	39.5	mg/L	234	Standard
	Fe	57	130.0	6.7	**0.1058**	0.016	14.9	mg/L	118	Standard
>	**Sc-1**	45	44343.2	2.6				mg/L	57581	Standard
	Cl	35	35198.2	3.5				ug/L	22827	Standard
	Kr	83	92.3	10.1				ug/L	90	Standard
	Br	81	290215.4	5.6				ug/L	2287	Standard
	P	31	90541.5	2.3				ug/L	215766	Standard
	S	34	44033.9	1.7				ug/L	23460	Standard
	Sr	88	286.7	6.6				ug/L	48	Standard
	C	12	3.3	173.2				mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	6.7	173.2				mg/L	0	Standard
	Dy	164	16.0	70.4				mg/L	6	Standard
	Ho-1	165	3.3	173.2				mg/L	2	Standard
	Er	166	13.3	86.6				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		95.282	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		85.373	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

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	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	87.134
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	85.675
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1311101002
Sample Date/Time: Friday, November 22, 2013 15:19:32
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	242310.3	3.3				ug/L	231878	Standard
	Be	9	40.0	65.0	**0.0066**	0.010	150.6	ug/L	7	Standard
	Al	27	5088720.8	1.1	**29.7259**	0.852	2.9	ug/L	115	Standard
	Sc	45	51985.7	1.5				ug/L	57581	Standard
	Ti	47	97.7	17.0	**0.1601**	0.036	22.3	ug/L	17	Standard
	V	51	2998.5	6.4	**0.1698**	0.025	14.5	ug/L	1678	Standard
	Cr	52	7746.3	0.6	**0.2909**	0.021	7.3	ug/L	5719	Standard
	Cr	53	2175.2	11.3	**1.4972**	0.158	10.5	ug/L	132	Standard
	Mn	55	3429.7	20.5	**0.1805**	0.055	30.4	ug/L	927	Standard
	Co	59	430.0	51.2	**0.0357**	0.027	74.5	ug/L	80	Standard
	Ni	60	1355.7	2.9	**0.4636**	0.009	1.9	ug/L	39	Standard
	Cu	65	693.0	3.0	**0.2101**	0.004	2.0	ug/L	91	Standard
	Zn	66	3348.7	1.2	**1.9398**	0.055	2.8	ug/L	159	Standard
>	**Ge**	72	482031.3	1.4				ug/L	504090	Standard
	As	75	51.3	121.0	**0.1869**	0.038	20.2	ug/L	-261	Standard
	Se	82	29.6	120.8	**0.4161**	0.219	52.6	ug/L	-43	Standard
	Se-1	77	189.3	3.5	**0.9213**	0.038	4.1	ug/L	86	Standard
>	**Ga**	71	66.7	30.3				mg/L	35	Standard
	Rb	85	1738.4	6.7				ug/L	20	Standard
	Y	89	445745.9	1.5				ug/L	462194	Standard
>	**Rh**	103	16.7	17.3				ug/L	7	Standard
	Mo	98	337.2	32.4	**0.0826**	0.028	33.7	ug/L	8	Standard
	Ag	107	86.3	21.0	**-0.0030**	0.003	84.7	ug/L	62	Standard
	Cd	111	12.6	28.7	**-0.0034**	0.002	48.9	mg/L	1	Standard
	Cd	114	60.0	39.5	**0.0031**	0.004	136.9	ug/L	23	Standard
>	**In**	115	482606.3	0.5				ug/L	502083	Standard
	Sn	118	123.7	4.6	**0.0011**	0.004	362.8	ug/L	144	Standard
	Sb	123	162.6	39.7	**0.0573**	0.025	42.8	ug/L	19	Standard
	Ba	135	3248.3	2.4	**1.7442**	0.050	2.9	ug/L	9	Standard
	Ce	140	40.0	33.1				ug/L	17	Standard
>	**Tb**	159	474999.1	0.4				ug/L	490863	Standard
	Ho	165	5.0	100.0				ug/L	2	Standard
	Tl	203	105.3	16.7	**0.0107**	0.003	26.3	ug/L	2	Standard
	Tl	205	181.7	52.9	**0.0231**	0.014	61.0	ug/L	0	Standard
	Pb	206	122.3	7.6	**0.0113**	0.004	33.8	ug/L	84	Standard
	Pb	207	104.3	6.7	**0.0118**	0.003	27.2	ug/L	73	Standard
	Pb	208	290.7	30.9	**0.0086**	0.015	172.4	ug/L	199	Standard
	U	238	314.7	21.3	**0.0753**	0.016	21.7	ug/L	1	Standard
>	**Bi**	209	271032.7	0.4				ug/L	281512	Standard

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	Na	23	46.7	22.3	**13.2645**	2.886	21.8	mg/L	2	Standard
	Mg	24	5089.2	2.5	**6.8913**	0.173	2.5	mg/L	38	Standard
	K	39	5.0	100.0	**0.1210**	0.281	232.1	mg/L	0	Standard
	Ca	43	85.0	25.6	**6.5311**	2.176	33.3	mg/L	23	Standard
	Fe	54	268.9	10.3	**0.0257**	0.012	47.5	mg/L	234	Standard
	Fe	57	178.3	39.9	**0.1510**	0.126	83.2	mg/L	118	Standard
>	**Sc-1**	45	51985.7	1.5				mg/L	57581	Standard
	Cl	35	35897.2	2.4				ug/L	22827	Standard
	Kr	83	90.7	15.1				ug/L	90	Standard
	Br	81	14016.8	26.9				ug/L	2287	Standard
	P	31	306008.1	3.3				ug/L	215766	Standard
	S	34	46059.9	0.5				ug/L	23460	Standard
	Sr	88	130.0	33.3				ug/L	48	Standard
	C	12	3.3	173.2				mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	0	Standard
	Dy	164	-0.8	34.6				mg/L	6	Standard
	Ho-1	165	5.0	100.0				mg/L	2	Standard
	Er	166	16.7	34.6				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		104.499	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		95.624	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

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	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	96.121
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	96.277
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1311101004
Sample Date/Time: Friday, November 22, 2013 15:22:37
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	245440.8	2.0				ug/L	231878	Standard
	Be	9	15.0	0.0	**-0.0027**	0.000	3.9	ug/L	7	Standard
	Al	27	11398117.7	0.8	**65.7181**	1.586	2.4	ug/L	115	Standard
	Sc	45	52086.1	2.4				ug/L	57581	Standard
	Ti	47	131.0	4.8	**0.2316**	0.010	4.1	ug/L	17	Standard
	V	51	2239.9	6.2	**0.0716**	0.021	28.9	ug/L	1678	Standard
	Cr	52	7954.8	4.6	**0.3109**	0.048	15.6	ug/L	5719	Standard
	Cr	53	1951.8	6.6	**1.3264**	0.098	7.4	ug/L	132	Standard
	Mn	55	2420414.7	1.4	**184.0592**	1.613	0.9	ug/L	927	Standard
	Co	59	2090.8	5.0	**0.2333**	0.012	5.2	ug/L	80	Standard
	Ni	60	4811.1	5.9	**1.6912**	0.084	5.0	ug/L	39	Standard
	Cu	65	740.4	4.0	**0.2253**	0.009	4.2	ug/L	91	Standard
	Zn	66	3432.7	1.4	**1.9779**	0.035	1.8	ug/L	159	Standard
>	**Ge**	72	485718.0	1.5				ug/L	504090	Standard
	As	75	120.3	70.7	**0.2297**	0.053	23.3	ug/L	-261	Standard
	Se	82	38.8	61.5	**0.4751**	0.152	32.1	ug/L	-43	Standard
	Se-1	77	169.0	4.8	**0.7318**	0.050	6.8	ug/L	86	Standard
>	**Ga**	71	58.3	27.6				mg/L	35	Standard
	Rb	85	5334.3	4.4				ug/L	20	Standard
	Y	89	449693.0	1.1				ug/L	462194	Standard
>	**Rh**	103	43.3	24.0				ug/L	7	Standard
	Mo	98	872.4	7.1	**0.2190**	0.015	6.8	ug/L	8	Standard
	Ag	107	87.7	69.1	**-0.0029**	0.009	290.5	ug/L	62	Standard
	Cd	111	32.4	149.8	**0.0056**	0.022	395.2	mg/L	1	Standard
	Cd	114	116.6	124.4	**0.0130**	0.026	197.3	ug/L	23	Standard
>	**In**	115	485900.4	0.6				ug/L	502083	Standard
	Sn	118	374.7	8.1	**0.1832**	0.022	12.0	ug/L	144	Standard
	Sb	123	145.9	14.8	**0.0506**	0.008	15.8	ug/L	19	Standard
	Ba	135	14796.9	0.8	**7.9166**	0.035	0.4	ug/L	9	Standard
	Ce	140	160.0	26.7				ug/L	17	Standard
>	**Tb**	159	485482.4	1.0				ug/L	490863	Standard
	Ho	165	5.0	100.0				ug/L	2	Standard
	Tl	203	165.3	53.9	**0.0202**	0.014	69.3	ug/L	2	Standard
	Tl	205	131.7	43.7	**0.0159**	0.008	53.0	ug/L	0	Standard
	Pb	206	162.0	23.9	**0.0270**	0.015	55.5	ug/L	84	Standard
	Pb	207	114.7	35.2	**0.0163**	0.017	105.5	ug/L	73	Standard
	Pb	208	294.0	2.7	**0.0093**	0.001	16.0	ug/L	199	Standard
	U	238	528.7	2.3	**0.1272**	0.002	1.2	ug/L	1	Standard
>	**Bi**	209	270414.0	1.2				ug/L	281512	Standard

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	Na	23	150.0	12.0	**43.5217**	4.248	9.8	mg/L	2	Standard
	Mg	24	1975.1	7.9	**2.6507**	0.268	10.1	mg/L	38	Standard
	K	39	15.0	57.7	**0.6745**	0.493	73.0	mg/L	0	Standard
	Ca	43	335.0	5.2	**33.0368**	2.334	7.1	mg/L	23	Standard
	Fe	54	1992.7	5.4	**0.8256**	0.036	4.3	mg/L	234	Standard
	Fe	57	860.0	2.1	**1.3098**	0.039	3.0	mg/L	118	Standard
>	**Sc-1**	45	52086.1	2.4				mg/L	57581	Standard
	Cl	35	36554.0	1.6				ug/L	22827	Standard
	Kr	83	84.3	14.6				ug/L	90	Standard
	Br	81	12064.8	8.6				ug/L	2287	Standard
	P	31	338629.0	0.4				ug/L	215766	Standard
	S	34	50350.2	0.2				ug/L	23460	Standard
	Sr	88	426.7	14.0				ug/L	48	Standard
	C	12	3.3	173.2				mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	0	Standard
	Dy	164	9.4	104.5				mg/L	6	Standard
	Ho-1	165	5.0	100.0				mg/L	2	Standard
	Er	166	13.3	114.6				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		105.849	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		96.355	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

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	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	96.777
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	96.058
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1311101006
Sample Date/Time: Friday, November 22, 2013 15:25:45
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	244578.3	1.0				ug/L	231878	Standard
	Be	9	25.0	40.0	**0.0009**	0.003	390.5	ug/L	7	Standard
	Al	27	6508174.9	1.3	**37.6487**	0.844	2.2	ug/L	115	Standard
	Sc	45	53119.7	2.4				ug/L	57581	Standard
	Ti	47	171.7	40.1	**0.3248**	0.150	46.0	ug/L	17	Standard
	V	51	2556.6	5.8	**0.1152**	0.017	14.7	ug/L	1678	Standard
	Cr	52	7929.7	4.2	**0.3204**	0.041	12.9	ug/L	5719	Standard
	Cr	53	1683.4	4.7	**1.1476**	0.049	4.3	ug/L	132	Standard
	Mn	55	865490.3	1.6	**66.5693**	1.428	2.1	ug/L	927	Standard
	Co	59	1317.4	3.8	**0.1430**	0.006	3.9	ug/L	80	Standard
	Ni	60	4670.4	0.2	**1.6618**	0.011	0.7	ug/L	39	Standard
	Cu	65	730.0	4.8	**0.2248**	0.014	6.1	ug/L	91	Standard
	Zn	66	3225.0	2.4	**1.8667**	0.035	1.9	ug/L	159	Standard
>	**Ge**	72	479865.0	0.7				ug/L	504090	Standard
	As	75	357.7	1.7	**0.3770**	0.005	1.3	ug/L	-261	Standard
	Se	82	0.1	7102.4	**0.2341**	0.040	17.0	ug/L	-43	Standard
	Se-1	77	162.3	3.5	**0.6914**	0.045	6.5	ug/L	86	Standard
>	**Ga**	71	50.0	20.0				mg/L	35	Standard
	Rb	85	5514.3	1.7				ug/L	20	Standard
	Y	89	444825.3	0.4				ug/L	462194	Standard
>	**Rh**	103	40.0	12.5				ug/L	7	Standard
	Mo	98	958.0	3.3	**0.2412**	0.007	2.8	ug/L	8	Standard
	Ag	107	58.7	10.4	**-0.0070**	0.001	11.7	ug/L	62	Standard
	Cd	111	7.4	47.4	**-0.0058**	0.002	27.6	mg/L	1	Standard
	Cd	114	25.9	68.8	**-0.0030**	0.003	105.1	ug/L	23	Standard
>	**In**	115	485207.7	0.6				ug/L	502083	Standard
	Sn	118	152.3	11.4	**0.0215**	0.012	57.2	ug/L	144	Standard
	Sb	123	126.8	9.9	**0.0434**	0.005	11.4	ug/L	19	Standard
	Ba	135	16658.5	1.7	**8.9259**	0.116	1.3	ug/L	9	Standard
	Ce	140	255.0	20.5				ug/L	17	Standard
>	**Tb**	159	482349.7	1.0				ug/L	490863	Standard
	Ho	165	20.0	66.1				ug/L	2	Standard
	Tl	203	92.7	10.4	**0.0087**	0.002	18.1	ug/L	2	Standard
	Tl	205	108.3	14.1	**0.0124**	0.002	18.5	ug/L	0	Standard
	Pb	206	117.0	7.3	**0.0092**	0.003	36.8	ug/L	84	Standard
	Pb	207	96.0	6.5	**0.0081**	0.003	35.1	ug/L	73	Standard
	Pb	208	243.3	1.3	**0.0008**	0.001	73.7	ug/L	199	Standard
	U	238	919.4	1.7	**0.2210**	0.004	1.9	ug/L	1	Standard
>	**Bi**	209	271212.9	0.4				ug/L	281512	Standard

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	Na	23	138.3	21.2	**39.3245**	8.135	20.7	mg/L	2	Standard
	Mg	24	1340.1	6.2	**1.7501**	0.138	7.9	mg/L	38	Standard
	K	39	21.7	74.2	**1.0188**	0.885	86.9	mg/L	0	Standard
	Ca	43	310.0	4.3	**29.7405**	1.698	5.7	mg/L	23	Standard
	Fe	54	2102.3	5.9	**0.8575**	0.044	5.1	mg/L	234	Standard
	Fe	57	811.7	6.8	**1.1996**	0.070	5.9	mg/L	118	Standard
>	**Sc-1**	45	53119.7	2.4				mg/L	57581	Standard
	Cl	35	36940.3	2.0				ug/L	22827	Standard
	Kr	83	95.0	1.8				ug/L	90	Standard
	Br	81	9442.9	3.8				ug/L	2287	Standard
	P	31	335870.8	3.0				ug/L	215766	Standard
	S	34	51425.5	1.3				ug/L	23460	Standard
	Sr	88	213.3	23.9				ug/L	48	Standard
	C	12	16.7	34.6				mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	0	Standard
	Dy	164	22.7	22.4				mg/L	6	Standard
	Ho-1	165	20.0	66.1				mg/L	2	Standard
	Er	166	13.3	114.6				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		105.477	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		95.194	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

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	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	96.639
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	96.341
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1311101008
Sample Date/Time: Friday, November 22, 2013 15:28:50
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	247143.4	2.3				ug/L	231878	Standard
	Be	9	21.7	26.6	**-0.0004**	0.002	518.1	ug/L	7	Standard
	Al	27	2620658.0	0.2	**15.0032**	0.328	2.2	ug/L	115	Standard
	Sc	45	51930.5	1.5				ug/L	57581	Standard
	Ti	47	69.7	22.9	**0.0967**	0.036	36.8	ug/L	17	Standard
	V	51	1682.6	6.6	**0.0005**	0.013	2538.9	ug/L	1678	Standard
	Cr	52	6900.6	1.3	**0.1655**	0.010	6.2	ug/L	5719	Standard
	Cr	53	1621.8	6.6	**1.0849**	0.083	7.7	ug/L	132	Standard
	Mn	55	4412.6	1.0	**0.2520**	0.004	1.7	ug/L	927	Standard
	Co	59	310.3	6.6	**0.0208**	0.002	10.7	ug/L	80	Standard
	Ni	60	1243.7	3.7	**0.4184**	0.015	3.6	ug/L	39	Standard
	Cu	65	651.7	2.9	**0.1925**	0.008	4.2	ug/L	91	Standard
	Zn	66	4821.8	2.2	**2.8810**	0.072	2.5	ug/L	159	Standard
>	**Ge**	72	487470.4	0.6				ug/L	504090	Standard
	As	75	-216.9	5.2	**0.0235**	0.007	28.0	ug/L	-261	Standard
	Se	82	-23.1	54.1	**0.0914**	0.077	83.9	ug/L	-43	Standard
	Se-1	77	166.0	4.9	**0.7009**	0.067	9.6	ug/L	86	Standard
>	**Ga**	71	48.3	39.2				mg/L	35	Standard
	Rb	85	3937.2	5.1				ug/L	20	Standard
	Y	89	442980.0	1.6				ug/L	462194	Standard
>	**Rh**	103	16.7	62.4				ug/L	7	Standard
	Mo	98	395.1	7.4	**0.0955**	0.008	8.4	ug/L	8	Standard
	Ag	107	53.7	15.8	**-0.0079**	0.001	14.5	ug/L	62	Standard
	Cd	111	5.8	10.0	**-0.0065**	0.000	3.8	mg/L	1	Standard
	Cd	114	41.5	38.2	**-0.0004**	0.003	756.8	ug/L	23	Standard
>	**In**	115	492700.4	0.7				ug/L	502083	Standard
	Sn	118	193.0	11.7	**0.0490**	0.015	31.1	ug/L	144	Standard
	Sb	123	41.4	31.3	**0.0107**	0.005	46.4	ug/L	19	Standard
	Ba	135	3538.1	0.9	**1.8613**	0.022	1.2	ug/L	9	Standard
	Ce	140	253.3	8.0				ug/L	17	Standard
>	**Tb**	159	484601.3	0.8				ug/L	490863	Standard
	Ho	165	21.7	13.3				ug/L	2	Standard
	Tl	203	90.3	15.5	**0.0080**	0.002	26.8	ug/L	2	Standard
	Tl	205	106.7	11.8	**0.0118**	0.002	15.1	ug/L	0	Standard
	Pb	206	159.3	3.8	**0.0246**	0.002	9.7	ug/L	84	Standard
	Pb	207	132.7	1.9	**0.0229**	0.001	5.0	ug/L	73	Standard
	Pb	208	366.3	3.9	**0.0199**	0.002	11.0	ug/L	199	Standard
	U	238	80.3	7.9	**0.0184**	0.002	8.4	ug/L	1	Standard
>	**Bi**	209	276375.5	0.2				ug/L	281512	Standard

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	Na	23	23.3	32.7	**6.4459**	2.264	35.1	mg/L	2	Standard
	Mg	24	990.0	3.1	**1.3125**	0.040	3.0	mg/L	38	Standard
	K	39	5.0	0.0	**0.1186**	0.004	3.5	mg/L	0	Standard
	Ca	43	136.7	10.6	**12.0356**	1.329	11.0	mg/L	23	Standard
	Fe	54	342.2	7.3	**0.0599**	0.010	15.9	mg/L	234	Standard
	Fe	57	180.0	9.6	**0.1530**	0.025	16.5	mg/L	118	Standard
>	**Sc-1**	45	51930.5	1.5				mg/L	57581	Standard
	Cl	35	37628.0	1.1				ug/L	22827	Standard
	Kr	83	95.7	13.2				ug/L	90	Standard
	Br	81	5334.3	9.4				ug/L	2287	Standard
	P	31	318366.7	0.4				ug/L	215766	Standard
	S	34	51306.7	0.0				ug/L	23460	Standard
	Sr	88	115.0	4.3				ug/L	48	Standard
	C	12	0.0					mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	0	Standard
	Dy	164	19.4	53.0				mg/L	6	Standard
	Ho-1	165	21.7	13.3				mg/L	2	Standard
	Er	166	13.3	114.6				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		106.583	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		96.703	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

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	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.131
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.175
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1311101010
Sample Date/Time: Friday, November 22, 2013 15:31:54
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	240578.3	0.5				ug/L	231878	Standard
	Be	9	28.3	20.4	**0.0023**	0.002	90.3	ug/L	7	Standard
	Al	27	5371646.5	0.6	**31.5859**	0.212	0.7	ug/L	115	Standard
	Sc	45	52234.9	2.3				ug/L	57581	Standard
	Ti	47	223.7	8.7	**0.4346**	0.041	9.5	ug/L	17	Standard
	V	51	3975.3	4.9	**0.2895**	0.024	8.3	ug/L	1678	Standard
	Cr	52	9589.7	3.2	**0.5302**	0.042	7.9	ug/L	5719	Standard
	Cr	53	1355.1	7.1	**0.8965**	0.073	8.1	ug/L	132	Standard
	Mn	55	2826398.8	0.8	**214.7727**	1.632	0.8	ug/L	927	Standard
	Co	59	1582.7	5.3	**0.1725**	0.010	5.9	ug/L	80	Standard
	Ni	60	8486.7	2.1	**2.9997**	0.080	2.7	ug/L	39	Standard
	Cu	65	476.7	6.0	**0.1301**	0.011	8.7	ug/L	91	Standard
	Zn	66	2916.6	1.1	**1.6364**	0.012	0.7	ug/L	159	Standard
>	**Ge**	72	486098.7	0.6				ug/L	504090	Standard
	As	75	859.3	4.1	**0.6806**	0.019	2.8	ug/L	-261	Standard
	Se	82	-0.4	2517.0	**0.2312**	0.055	23.7	ug/L	-43	Standard
	Se-1	77	140.0	0.7	**0.4792**	0.007	1.4	ug/L	86	Standard
>	**Ga**	71	53.3	39.0				mg/L	35	Standard
	Rb	85	16514.0	1.1				ug/L	20	Standard
	Y	89	451490.0	2.1				ug/L	462194	Standard
>	**Rh**	103	6.7	114.6				ug/L	7	Standard
	Mo	98	149.9	16.5	**0.0337**	0.006	17.8	ug/L	8	Standard
	Ag	107	68.7	5.5	**-0.0057**	0.001	9.0	ug/L	62	Standard
	Cd	111	4.5	46.3	**-0.0071**	0.001	12.9	mg/L	1	Standard
	Cd	114	42.2	7.1	**-0.0002**	0.000	213.8	ug/L	23	Standard
>	**In**	115	490383.2	0.8				ug/L	502083	Standard
	Sn	118	227.0	3.4	**0.0742**	0.006	8.6	ug/L	144	Standard
	Sb	123	70.5	3.0	**0.0217**	0.001	3.6	ug/L	19	Standard
	Ba	135	49691.4	0.3	**26.3606**	0.169	0.6	ug/L	9	Standard
	Ce	140	2616.9	4.0				ug/L	17	Standard
>	**Tb**	159	484774.8	0.2				ug/L	490863	Standard
	Ho	165	86.7	6.7				ug/L	2	Standard
	Tl	203	47.0	16.9	**0.0013**	0.001	97.3	ug/L	2	Standard
	Tl	205	66.7	57.3	**0.0061**	0.005	89.4	ug/L	0	Standard
	Pb	206	112.0	10.3	**0.0066**	0.005	70.4	ug/L	84	Standard
	Pb	207	101.0	2.0	**0.0096**	0.001	7.0	ug/L	73	Standard
	Pb	208	281.3	3.8	**0.0063**	0.002	26.8	ug/L	199	Standard
	U	238	25.7	4.5	**0.0055**	0.000	5.6	ug/L	1	Standard
>	**Bi**	209	275418.0	0.5				ug/L	281512	Standard

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	Na	23	130.0	21.4	**37.6826**	8.499	22.6	mg/L	2	Standard
	Mg	24	1128.4	8.5	**1.4945**	0.166	11.1	mg/L	38	Standard
	K	39	18.3	83.3	**0.8452**	0.819	96.9	mg/L	0	Standard
	Ca	43	268.3	8.8	**25.9128**	3.116	12.0	mg/L	23	Standard
	Fe	54	21329.0	0.4	**9.7784**	0.187	1.9	mg/L	234	Standard
	Fe	57	5939.5	4.1	**9.9280**	0.504	5.1	mg/L	118	Standard
>	**Sc-1**	45	52234.9	2.3				mg/L	57581	Standard
	Cl	35	35778.2	1.4				ug/L	22827	Standard
	Kr	83	87.7	12.6				ug/L	90	Standard
	Br	81	6451.4	4.5				ug/L	2287	Standard
	P	31	373091.8	1.7				ug/L	215766	Standard
	S	34	59901.6	2.3				ug/L	23460	Standard
	Sr	88	195.0	27.0				ug/L	48	Standard
	C	12	3.3	173.2				mg/L	3	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	0.0					mg/L	0	Standard
	Dy	164	89.0	18.8				mg/L	6	Standard
	Ho-1	165	86.7	6.7				mg/L	2	Standard
	Er	166	90.0	40.1				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		103.752	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		96.431	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

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	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.670
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	97.835
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Approved: November 24, 2013

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, November 22, 2013 15:35:01
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	244617.6	1.8				ug/L	231878	Standard
	Be	9	135195.7	2.5	**48.3537**	0.925	1.9	ug/L	7	Standard
	Al	27	8312779.0	1.2	**48.0811**	0.682	1.4	ug/L	115	Standard
	Sc	45	51365.3	3.0				ug/L	57581	Standard
	Ti	47	44094.7	1.5	**95.8603**	0.572	0.6	ug/L	17	Standard
	V	51	377987.0	1.2	**46.9530**	0.750	1.6	ug/L	1678	Standard
	Cr	52	362683.8	0.1	**47.6885**	0.456	1.0	ug/L	5719	Standard
	Cr	53	69247.9	1.3	**49.2709**	0.616	1.3	ug/L	132	Standard
	Mn	55	657904.8	0.6	**49.5408**	0.800	1.6	ug/L	927	Standard
	Co	59	404981.3	1.0	**47.8459**	0.384	0.8	ug/L	80	Standard
	Ni	60	139908.3	0.6	**49.4220**	0.817	1.7	ug/L	39	Standard
	Cu	65	139214.0	1.2	**49.7283**	0.085	0.2	ug/L	91	Standard
	Zn	66	77273.9	0.6	**50.1595**	0.438	0.9	ug/L	159	Standard
>	**Ge**	72	489959.2	1.1				ug/L	504090	Standard
	As	75	82295.5	1.3	**50.0362**	0.373	0.7	ug/L	-261	Standard
	Se	82	8087.8	1.8	**49.7981**	0.395	0.8	ug/L	-43	Standard
	Se-1	77	5874.8	2.9	**49.8963**	1.854	3.7	ug/L	86	Standard
>	**Ga**	71	55.0	24.1				mg/L	35	Standard
	Rb	85	1231.7	3.4				ug/L	20	Standard
	Y	89	454333.8	1.5				ug/L	462194	Standard
>	**Rh**	103	23.3	65.5				ug/L	7	Standard
	Mo	98	409342.8	1.0	**101.5523**	0.394	0.4	ug/L	8	Standard
	Ag	107	366678.9	1.1	**50.5101**	0.359	0.7	ug/L	62	Standard
	Cd	111	112980.2	0.8	**49.8724**	0.300	0.6	mg/L	1	Standard
	Cd	114	290653.8	0.6	**50.1911**	0.493	1.0	ug/L	23	Standard
>	**In**	115	501225.6	0.6				ug/L	502083	Standard
	Sn	118	71787.7	0.4	**50.5541**	0.365	0.7	ug/L	144	Standard
	Sb	123	136690.4	0.5	**50.3911**	0.578	1.1	ug/L	19	Standard
	Ba	135	96217.6	0.8	**49.9431**	0.332	0.7	ug/L	9	Standard
	Ce	140	41.7	60.4				ug/L	17	Standard
>	**Tb**	159	497730.3	1.0				ug/L	490863	Standard
	Ho	165	6.7	114.6				ug/L	2	Standard
	Tl	203	322392.5	0.5	**49.6134**	0.562	1.1	ug/L	2	Standard
	Tl	205	358539.9	1.6	**51.0026**	0.711	1.4	ug/L	0	Standard
	Pb	206	133797.2	0.7	**50.9336**	0.879	1.7	ug/L	84	Standard
	Pb	207	120096.8	0.2	**50.4213**	0.565	1.1	ug/L	73	Standard
	Pb	208	314675.0	0.5	**50.2082**	0.716	1.4	ug/L	199	Standard
	U	238	214697.2	1.0	**50.2880**	0.902	1.8	ug/L	1	Standard
>	**Bi**	209	279114.9	1.0				ug/L	281512	Standard

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	Na	23	16.7	17.3	**4.5161**	0.702	15.5	mg/L	2	Standard
	Mg	24	3895.5	3.7	**5.3336**	0.269	5.0	mg/L	38	Standard
	K	39	90.0	0.0	**4.8869**	0.147	3.0	mg/L	0	Standard
	Ca	43	46.7	27.0	**2.5234**	1.213	48.1	mg/L	23	Standard
	Fe	54	11406.0	3.3	**5.2715**	0.138	2.6	mg/L	234	Standard
	Fe	57	3090.3	7.6	**5.1780**	0.376	7.3	mg/L	118	Standard
>	**Sc-1**	45	51365.3	3.0				mg/L	57581	Standard
	Cl	35	34326.2	2.2				ug/L	22827	Standard
	Kr	83	88.7	6.2				ug/L	90	Standard
	Br	81	3140.3	8.3				ug/L	2287	Standard
	P	31	331394.8	2.5				ug/L	215766	Standard
	S	34	59274.1	0.6				ug/L	23460	Standard
	Sr	88	75.0	13.3				ug/L	48	Standard
	C	12	0.0					mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	0	Standard
	Dy	164	2.5	222.5				mg/L	6	Standard
	Ho-1	165	6.7	114.6				mg/L	2	Standard
	Er	166	16.7	34.6				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		105.494	
	Be	9	96.707		
	Al	27	96.162		
	Sc	45			
	Ti	47	95.860		
	V	51	93.906		
	Cr	52	95.377		
	Cr	53			
	Mn	55	99.082		
	Co	59	95.692		
	Ni	60	98.844		
	Cu	65	99.457		
	Zn	66	100.319		
>	Ge	72		97.197	
	As	75	100.072		
	Se	82	99.596		
	Se-1	77			
>	Ga	71			
	Rb	85			

Sample ID: QC Std 6
Report Date/Time: Friday, November 22, 2013 15:37:14
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	Y	89		
>	Rh	103		
	Mo	98	101.552	
	Ag	107	101.020	
	Cd	111	99.745	
	Cd	114		
>	In	115		99.829
	Sn	118	101.108	
	Sb	123	100.782	
	Ba	135	99.886	
	Ce	140		
>	Tb	159		
	Ho	165		
	Tl	203	99.227	
	Tl	205		
	Pb	206		
	Pb	207		
	Pb	208	100.416	
	U	238	100.576	
>	Bi	209		99.148
	Na	23		
	Mg	24		
	K	39		
	Ca	43		
	Fe	54		
	Fe	57		
>	Sc-1	45		
	Cl	35		
	Kr	83		
	Br	81		
	P	31		
	S	34		
	Sr	88		
	C	12		
	N	14		
	Hg	202		
	Dy	164		
	Ho-1	165		
	Er	166		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, November 22, 2013 15:38:06
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	241622.0	2.3				ug/L	231878	Standard
	Be	9	11.7	24.7	**-0.0038**	0.001	30.6	ug/L	7	Standard
	Al	27	480.0	41.8	**-0.0012**	0.001	101.9	ug/L	115	Standard
	Sc	45	50748.2	2.4				ug/L	57581	Standard
	Ti	47	15.7	19.5	**-0.0218**	0.007	31.3	ug/L	17	Standard
	V	51	1255.6	7.2	**-0.0546**	0.010	19.2	ug/L	1678	Standard
	Cr	52	4629.0	0.9	**-0.1455**	0.011	7.4	ug/L	5719	Standard
	Cr	53	938.4	4.3	**0.5887**	0.033	5.5	ug/L	132	Standard
	Mn	55	1068.0	11.6	**-0.0023**	0.010	414.6	ug/L	927	Standard
	Co	59	104.7	17.1	**-0.0037**	0.002	60.5	ug/L	80	Standard
	Ni	60	55.3	10.9	**-0.0039**	0.002	51.3	ug/L	39	Standard
	Cu	65	151.7	5.4	**0.0123**	0.003	25.0	ug/L	91	Standard
	Zn	66	172.0	9.4	**-0.1707**	0.011	6.7	ug/L	159	Standard
>	**Ge**	72	492264.1	1.1				ug/L	504090	Standard
	As	75	-239.0	6.5	**0.0115**	0.009	79.1	ug/L	-261	Standard
	Se	82	-31.5	19.0	**0.0416**	0.036	85.4	ug/L	-43	Standard
	Se-1	77	117.7	18.0	**0.2730**	0.186	68.0	ug/L	86	Standard
>	**Ga**	71	25.0	20.0				mg/L	35	Standard
	Rb	85	25.0	0.0				ug/L	20	Standard
	Y	89	461615.5	1.3				ug/L	462194	Standard
>	**Rh**	103	6.7	43.3				ug/L	7	Standard
	Mo	98	87.8	23.9	**0.0171**	0.005	29.2	ug/L	8	Standard
	Ag	107	74.0	18.7	**-0.0054**	0.002	36.0	ug/L	62	Standard
	Cd	111	16.5	72.3	**-0.0020**	0.005	264.7	mg/L	1	Standard
	Cd	114	44.3	53.4	**-0.0002**	0.004	2679.0	ug/L	23	Standard
>	**In**	115	510865.5	0.8				ug/L	502083	Standard
	Sn	118	88.7	6.6	**-0.0281**	0.004	14.7	ug/L	144	Standard
	Sb	123	338.9	35.9	**0.1175**	0.043	36.7	ug/L	19	Standard
	Ba	135	19.7	51.2	**0.0027**	0.005	189.7	ug/L	9	Standard
	Ce	140	6.7	43.3				ug/L	17	Standard
>	**Tb**	159	494544.0	1.4				ug/L	490863	Standard
	Ho	165	3.3	86.6				ug/L	2	Standard
	Tl	203	77.3	32.1	**0.0055**	0.004	67.8	ug/L	2	Standard
	Tl	205	90.0	16.7	**0.0089**	0.002	23.2	ug/L	0	Standard
	Pb	206	93.0	8.4	**-0.0023**	0.003	128.9	ug/L	84	Standard
	Pb	207	89.3	7.3	**0.0030**	0.003	96.9	ug/L	73	Standard
	Pb	208	200.7	5.5	**-0.0081**	0.001	18.3	ug/L	199	Standard
	U	238	9.7	31.6	**0.0016**	0.001	43.5	ug/L	1	Standard
>	**Bi**	209	287955.0	0.8				ug/L	281512	Standard

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Na	23	0.0		**-0.4293**	0.000	0.0	mg/L	2	Standard
Mg	24	48.3	21.5	**0.0309**	0.016	52.6	mg/L	38	Standard
K	39	0.0		**-0.1586**			mg/L	0	Standard
Ca	43	10.0	100.0	**-1.3977**	1.068	76.4	mg/L	23	Standard
Fe	54	254.2	12.1	**0.0221**	0.018	80.3	mg/L	234	Standard
Fe	57	111.7	15.7	**0.0416**	0.035	85.1	mg/L	118	Standard
Sc-1	45	50748.2	2.4				mg/L	57581	Standard
Cl	35	33614.6	0.8				ug/L	22827	Standard
Kr	83	82.7	7.8				ug/L	90	Standard
Br	81	3147.0	7.0				ug/L	2287	Standard
P	31	298649.7	0.9				ug/L	215766	Standard
S	34	55431.2	1.6				ug/L	23460	Standard
Sr	88	70.0	12.4				ug/L	48	Standard
C	12	0.0					mg/L	3	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	3.3	173.2				mg/L	6	Standard
Ho-1	165	3.3	86.6				mg/L	2	Standard
Er	166	0.0					mg/L	7	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.202	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.654	
As	75			
Se	82			
Se-1	77			
> Ga	71			
Rb	85			

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	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	101.749
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	102.289
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Friday, November 22, 2013 15:41:12
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	246052.2	1.7				ug/L	231878	Standard
	Be	9	590.0	16.5	**0.2022**	0.038	19.0	ug/L	7	Standard
	Al	27	368.3	17.7	**-0.0019**	0.000	18.0	ug/L	115	Standard
	Sc	45	51492.4	1.7				ug/L	57581	Standard
	Ti	47	12.3	32.8	**-0.0290**	0.009	29.4	ug/L	17	Standard
	V	51	4391.8	2.7	**0.3360**	0.011	3.1	ug/L	1678	Standard
	Cr	52	10152.1	1.9	**0.5914**	0.012	2.1	ug/L	5719	Standard
	Cr	53	2043.5	3.7	**1.3751**	0.039	2.8	ug/L	132	Standard
	Mn	55	7780.0	1.7	**0.5026**	0.004	0.9	ug/L	927	Standard
	Co	59	3243.7	3.4	**0.3663**	0.009	2.5	ug/L	80	Standard
	Ni	60	4439.0	3.1	**1.5410**	0.036	2.3	ug/L	39	Standard
	Cu	65	2351.5	4.4	**0.7966**	0.029	3.7	ug/L	91	Standard
	Zn	66	9644.4	2.5	**5.9957**	0.095	1.6	ug/L	159	Standard
>	**Ge**	72	491245.4	1.0				ug/L	504090	Standard
	As	75	355.7	3.7	**0.3707**	0.008	2.0	ug/L	-261	Standard
	Se	82	21.8	20.5	**0.3669**	0.028	7.6	ug/L	-43	Standard
	Se-1	77	169.0	7.6	**0.7156**	0.107	15.0	ug/L	86	Standard
>	**Ga**	71	20.0	66.1				mg/L	35	Standard
	Rb	85	20.0	25.0				ug/L	20	Standard
	Y	89	458684.6	0.6				ug/L	462194	Standard
>	**Rh**	103	13.3	43.3				ug/L	7	Standard
	Mo	98	26.5	29.5	**0.0022**	0.002	85.5	ug/L	8	Standard
	Ag	107	2919.6	2.7	**0.3824**	0.009	2.5	ug/L	62	Standard
	Cd	111	532.0	6.8	**0.2231**	0.017	7.5	mg/L	1	Standard
	Cd	114	1415.3	7.3	**0.2339**	0.016	6.7	ug/L	23	Standard
>	**In**	115	506927.3	0.8				ug/L	502083	Standard
	Sn	118	54.7	22.7	**-0.0513**	0.009	17.3	ug/L	144	Standard
	Sb	123	1157.5	1.1	**0.4170**	0.003	0.7	ug/L	19	Standard
	Ba	135	1407.4	2.3	**0.7152**	0.021	3.0	ug/L	9	Standard
	Ce	140	11.7	107.9				ug/L	17	Standard
>	**Tb**	159	489865.7	1.5				ug/L	490863	Standard
	Ho	165	8.3	91.7				ug/L	2	Standard
	Tl	203	543.0	3.5	**0.0760**	0.003	3.8	ug/L	2	Standard
	Tl	205	583.3	6.0	**0.0780**	0.004	5.6	ug/L	0	Standard
	Pb	206	627.7	2.4	**0.1981**	0.007	3.6	ug/L	84	Standard
	Pb	207	521.3	4.4	**0.1816**	0.008	4.3	ug/L	73	Standard
	Pb	208	1440.7	2.3	**0.1867**	0.007	3.6	ug/L	199	Standard
	U	238	1694.8	1.6	**0.3890**	0.003	0.8	ug/L	1	Standard
>	**Bi**	209	284308.1	0.8				ug/L	281512	Standard

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	Na	23	1.7	173.2	**0.0744**	0.872	1172.9	mg/L	2	Standard
	Mg	24	45.0	29.4	**0.0253**	0.019	76.2	mg/L	38	Standard
	K	39	1.7	173.2	**-0.0637**	0.164	257.8	mg/L	0	Standard
	Ca	43	25.0	52.9	**0.2153**	1.437	667.4	mg/L	23	Standard
	Fe	54	280.4	9.1	**0.0323**	0.011	34.9	mg/L	234	Standard
	Fe	57	108.3	10.7	**0.0326**	0.021	63.3	mg/L	118	Standard
>	**Sc-1**	45	51492.4	1.7				mg/L	57581	Standard
	Cl	35	33163.6	1.5				ug/L	22827	Standard
	Kr	83	88.7	3.6				ug/L	90	Standard
	Br	81	2553.5	8.6				ug/L	2287	Standard
	P	31	297949.7	1.3				ug/L	215766	Standard
	S	34	52224.9	1.9				ug/L	23460	Standard
	Sr	88	75.0	17.6				ug/L	48	Standard
	C	12	3.3	173.2				mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	0	Standard
	Dy	164	3.0	201.4				mg/L	6	Standard
	Ho-1	165	8.3	91.7				mg/L	2	Standard
	Er	166	6.7	173.2				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		106.113	
	Be	9	101.113		
	Al	27			
	Sc	45			
	Ti	47			
	V	51	84.002		
	Cr	52	73.930		
	Cr	53			
	Mn	55	100.528		
	Co	59	91.567		
	Ni	60	96.315		
	Cu	65	99.577		
	Zn	66	95.931		
>	Ge	72		97.452	
	As	75	92.670		
	Se	82	91.719		
	Se-1	77			
>	Ga	71			
	Rb	85			

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	Y	89		
>	Rh	103		
	Mo	98		
	Ag	107	95.595	
	Cd	111	92.973	
	Cd	114		
>	In	115		100.965
	Sn	118		
	Sb	123	104.261	
	Ba	135	95.360	
	Ce	140		
>	Tb	159		
	Ho	165		
	Tl	203	95.028	
	Tl	205		
	Pb	206		
	Pb	207		
	Pb	208	93.336	
	U	238	97.259	
>	Bi	209		100.993
	Na	23		
	Mg	24		
	K	39		
	Ca	43		
	Fe	54		
	Fe	57		
>	Sc-1	45		
	Cl	35		
	Kr	83		
	Br	81		
	P	31		
	S	34		
	Sr	88		
	C	12		
	N	14		
	Hg	202		
	Dy	164		
	Ho-1	165		
	Er	166		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 8
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Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Friday, November 22, 2013 15:44:30
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	234186.2	1.5				ug/L	231878	Standard
	Be	9	21.7	53.3	**0.0000**	0.004	14063.8	ug/L	7	Standard
	Al	27	7461723.8	0.8	**45.0800**	0.634	1.4	ug/L	115	Standard
	Sc	45	48188.2	1.5				ug/L	57581	Standard
	Ti	47	43029.7	1.3	**97.3935**	1.085	1.1	ug/L	17	Standard
	V	51	1062.4	11.0	**-0.0725**	0.015	20.5	ug/L	1678	Standard
	Cr	52	5251.2	2.2	**-0.0307**	0.015	47.6	ug/L	5719	Standard
	Cr	53	3150.3	4.0	**2.2600**	0.083	3.7	ug/L	132	Standard
	Mn	55	1760.4	4.5	**0.0557**	0.005	9.8	ug/L	927	Standard
	Co	59	257.0	2.4	**0.0156**	0.001	3.8	ug/L	80	Standard
	Ni	60	1105.7	3.8	**0.3835**	0.014	3.7	ug/L	39	Standard
	Cu	65	693.3	6.3	**0.2163**	0.015	6.8	ug/L	91	Standard
	Zn	66	1223.4	5.4	**0.5489**	0.046	8.4	ug/L	159	Standard
>	**Ge**	72	470612.7	0.5				ug/L	504090	Standard
	As	75	-291.9	18.8	**-0.0285**	0.034	119.4	ug/L	-261	Standard
	Se	82	-49.8	8.0	**-0.0843**	0.024	28.6	ug/L	-43	Standard
	Se-1	77	355.7	4.0	**2.4544**	0.139	5.7	ug/L	86	Standard
>	**Ga**	71	170.0	5.9				mg/L	35	Standard
	Rb	85	3412.1	0.6				ug/L	20	Standard
	Y	89	428017.5	1.7				ug/L	462194	Standard
>	**Rh**	103	8.3	124.9				ug/L	7	Standard
	Mo	98	350649.8	0.4	**91.6459**	0.684	0.7	ug/L	8	Standard
	Ag	107	90.0	10.0	**-0.0023**	0.001	50.4	ug/L	62	Standard
	Cd	111	-21.4	23.7	**-0.0191**	0.002	12.0	mg/L	1	Standard
	Cd	114	917.8	5.9	**0.1594**	0.011	7.2	ug/L	23	Standard
>	**In**	115	475797.2	1.1				ug/L	502083	Standard
	Sn	118	82.0	5.3	**-0.0285**	0.003	10.5	ug/L	144	Standard
	Sb	123	130.7	6.5	**0.0459**	0.004	8.0	ug/L	19	Standard
	Ba	135	101.3	10.9	**0.0481**	0.006	13.0	ug/L	9	Standard
	Ce	140	906.7	2.7				ug/L	17	Standard
>	**Tb**	159	474595.2	0.7				ug/L	490863	Standard
	Ho	165	6.7	114.6				ug/L	2	Standard
	Tl	203	62.0	23.8	**0.0040**	0.002	58.7	ug/L	2	Standard
	Tl	205	88.3	17.3	**0.0097**	0.002	23.0	ug/L	0	Standard
	Pb	206	137.3	5.9	**0.0182**	0.003	17.7	ug/L	84	Standard
	Pb	207	117.0	10.4	**0.0182**	0.005	29.0	ug/L	73	Standard
	Pb	208	318.7	3.1	**0.0142**	0.002	12.1	ug/L	199	Standard
	U	238	2.7	94.4	**0.0000**	0.001	1810.0	ug/L	1	Standard
>	**Bi**	209	265954.9	0.6				ug/L	281512	Standard

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	Na	23	43.3	24.0	**13.3485**	3.517	26.3	mg/L	2	Standard
	Mg	24	8487.4	2.4	**12.4302**	0.420	3.4	mg/L	38	Standard
	K	39	81.7	24.7	**4.7153**	1.177	25.0	mg/L	0	Standard
	Ca	43	110.0	22.7	**10.1389**	2.934	28.9	mg/L	23	Standard
	Fe	54	23275.3	1.2	**11.5823**	0.137	1.2	mg/L	234	Standard
	Fe	57	6383.0	2.9	**11.5883**	0.435	3.8	mg/L	118	Standard
>	**Sc-1**	45	48188.2	1.5				mg/L	57581	Standard
	Cl	35	32491.5	0.3				ug/L	22827	Standard
	Kr	83	105.3	9.2				ug/L	90	Standard
	Br	81	2603.6	2.8				ug/L	2287	Standard
	P	31	197230.5	1.3				ug/L	215766	Standard
	S	34	51696.4	1.7				ug/L	23460	Standard
	Sr	88	81.7	15.4				ug/L	48	Standard
	C	12	0.0					mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	0	Standard
	Dy	164	13.2	116.4				mg/L	6	Standard
	Ho-1	165	6.7	114.6				mg/L	2	Standard
	Er	166	3.3	173.2				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		100.995	
	Be	9			
	Al	27	0.902		
	Sc	45			
	Ti	47	97.393		
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		93.359	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

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	Y	89		
>	Rh	103		
	Mo	98	91.646	
	Ag	107		
	Cd	111		
	Cd	114		
>	In	115		94.765
	Sn	118		
	Sb	123		
	Ba	135		
	Ce	140		
>	Tb	159		
	Ho	165		
	Tl	203		
	Tl	205		
	Pb	206		
	Pb	207		
	Pb	208		
	U	238		
>	Bi	209		94.474
	Na	23	106.788	
	Mg	24	248.604	
	K	39	94.307	
	Ca	43	67.592	
	Fe	54	92.658	
	Fe	57	92.707	
>	Sc-1	45		
	Cl	35		
	Kr	83		
	Br	81		
	P	31		
	S	34		
	Sr	88		
	C	12		
	N	14		
	Hg	202		
	Dy	164		
	Ho-1	165		
	Er	166		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Mg	24	
QC Std 4	Ca	43	

Sample ID: QC Std 4
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Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Friday, November 22, 2013 15:47:34
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	249193.4	2.6				ug/L	231878	Standard
	Be	9	289136.4	1.4	**101.5399**	1.230	1.2	ug/L	7	Standard
	Al	27	7041143.8	1.0	**39.9936**	1.301	3.3	ug/L	115	Standard
	Sc	45	52166.3	0.8				ug/L	57581	Standard
	Ti	47	41192.9	1.1	**87.9898**	1.624	1.8	ug/L	17	Standard
	V	51	766750.3	0.9	**93.7872**	1.575	1.7	ug/L	1678	Standard
	Cr	52	725212.0	0.4	**94.4200**	1.050	1.1	ug/L	5719	Standard
	Cr	53	139364.7	0.8	**97.5023**	1.383	1.4	ug/L	132	Standard
	Mn	55	1325907.3	2.0	**98.1673**	2.069	2.1	ug/L	927	Standard
	Co	59	812110.7	1.6	**94.2891**	2.142	2.3	ug/L	80	Standard
	Ni	60	275852.1	0.3	**95.7504**	0.383	0.4	ug/L	39	Standard
	Cu	65	274390.7	0.8	**96.3405**	0.717	0.7	ug/L	91	Standard
	Zn	66	161827.6	0.4	**103.5010**	0.442	0.4	ug/L	159	Standard
>	**Ge**	72	498689.6	0.7				ug/L	504090	Standard
	As	75	168199.3	0.4	**100.3213**	0.408	0.4	ug/L	-261	Standard
	Se	82	16408.3	0.5	**99.0344**	0.256	0.3	ug/L	-43	Standard
	Se-1	77	12174.6	1.5	**102.3311**	0.801	0.8	ug/L	86	Standard
>	**Ga**	71	225.0	8.9				mg/L	35	Standard
	Rb	85	3482.1	5.3				ug/L	20	Standard
	Y	89	466305.9	1.3				ug/L	462194	Standard
>	**Rh**	103	53.3	5.4				ug/L	7	Standard
	Mo	98	348701.5	1.6	**85.1121**	0.765	0.9	ug/L	8	Standard
	Ag	107	712258.8	1.1	**96.5466**	0.364	0.4	ug/L	62	Standard
	Cd	111	229358.7	0.5	**99.6259**	0.802	0.8	mg/L	1	Standard
	Cd	114	569040.1	1.2	**96.6926**	1.756	1.8	ug/L	23	Standard
>	**In**	115	509430.8	0.8				ug/L	502083	Standard
	Sn	118	497.0	2.4	**0.2555**	0.007	2.6	ug/L	144	Standard
	Sb	123	277448.6	0.7	**100.6349**	0.067	0.1	ug/L	19	Standard
	Ba	135	195085.4	1.6	**99.6338**	0.980	1.0	ug/L	9	Standard
	Ce	140	993.4	4.8				ug/L	17	Standard
>	**Tb**	159	503872.0	2.1				ug/L	490863	Standard
	Ho	165	6.7	114.6				ug/L	2	Standard
	Tl	203	642854.3	1.5	**97.9311**	0.444	0.5	ug/L	2	Standard
	Tl	205	712121.4	1.5	**100.2834**	1.067	1.1	ug/L	0	Standard
	Pb	206	272587.1	1.3	**102.7507**	0.929	0.9	ug/L	84	Standard
	Pb	207	245727.9	1.5	**102.1518**	0.250	0.2	ug/L	73	Standard
	Pb	208	624056.9	0.5	**98.6057**	1.019	1.0	ug/L	199	Standard
	U	238	436684.6	1.1	**101.2454**	0.410	0.4	ug/L	1	Standard
>	**Bi**	209	281959.0	1.5				ug/L	281512	Standard

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	Na	23	58.3	43.1	**16.6741**	7.451	44.7	mg/L	2	Standard
	Mg	24	7837.0	2.1	**10.5936**	0.146	1.4	mg/L	38	Standard
	K	39	56.7	22.2	**2.9689**	0.706	23.8	mg/L	0	Standard
	Ca	43	111.7	11.3	**9.3393**	1.331	14.3	mg/L	23	Standard
	Fe	54	22041.0	2.1	**10.1195**	0.262	2.6	mg/L	234	Standard
	Fe	57	6204.6	0.0	**10.3875**	0.088	0.9	mg/L	118	Standard
>	**Sc-1**	45	52166.3	0.8				mg/L	57581	Standard
	Cl	35	33766.9	2.5				ug/L	22827	Standard
	Kr	83	111.3	5.1				ug/L	90	Standard
	Br	81	2823.6	5.2				ug/L	2287	Standard
	P	31	283525.0	1.0				ug/L	215766	Standard
	S	34	52112.8	1.5				ug/L	23460	Standard
	Sr	88	60.0	14.4				ug/L	48	Standard
	C	12	0.0					mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	0	Standard
	Dy	164	9.7	105.8				mg/L	6	Standard
	Ho-1	165	6.7	114.6				mg/L	2	Standard
	Er	166	6.7	86.6				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		107.467	
	Be	9	101.540		
	Al	27	0.800		
	Sc	45			
	Ti	47	87.990		
	V	51	93.787		
	Cr	52	94.420		
	Cr	53			
	Mn	55	98.167		
	Co	59	94.289		
	Ni	60	95.750		
	Cu	65	96.340		
	Zn	66	103.501		
>	Ge	72		98.929	
	As	75	100.321		
	Se	82	99.034		
	Se-1	77			
>	Ga	71			
	Rb	85			

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⌈	Y	89		
⌊>	Rh	103		
⌈	Mo	98	85.112	
|	Ag	107	96.547	
|	Cd	111	99.626	
|	Cd	114		
|>	In	115		101.463
|	Sn	118		
|	Sb	123	100.635	
⌊	Ba	135	99.634	
⌈	Ce	140		
⌊>	Tb	159		
⌈	Ho	165		
|	Tl	203	97.931	
|	Tl	205		
|	Pb	206		
|	Pb	207		
|	Pb	208	98.606	
|	U	238	101.245	
⌊>	Bi	209		100.159
⌈	Na	23	133.393	
|	Mg	24	211.872	
|	K	39	59.378	
|	Ca	43	62.262	
|	Fe	54	80.956	
|	Fe	57	83.100	
⌊>	Sc-1	45		
	Cl	35		
	Kr	83		
	Br	81		
	P	31		
	S	34		
	Sr	88		
	C	12		
	N	14		
	Hg	202		
	Dy	164		
	Ho-1	165		
	Er	166		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Na	23	
QC Std 5	Mg	24	
QC Std 5	K	39	
QC Std 5	Ca	43	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, November 22, 2013 15:50:41
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	252805.4	1.8				ug/L	231878	Standard
	Be	9	142091.6	1.3	**49.1760**	0.246	0.5	ug/L	7	Standard
	Al	27	8591724.6	0.7	**48.0853**	0.558	1.2	ug/L	115	Standard
	Sc	45	53072.8	1.1				ug/L	57581	Standard
	Ti	47	44955.6	0.8	**96.3528**	1.272	1.3	ug/L	17	Standard
	V	51	387188.0	0.9	**47.4148**	0.684	1.4	ug/L	1678	Standard
	Cr	52	371638.2	1.4	**48.1775**	0.664	1.4	ug/L	5719	Standard
	Cr	53	71545.2	1.2	**50.1848**	0.710	1.4	ug/L	132	Standard
	Mn	55	677764.3	0.5	**50.3095**	0.459	0.9	ug/L	927	Standard
	Co	59	413766.4	0.6	**48.1909**	0.479	1.0	ug/L	80	Standard
	Ni	60	144281.1	0.8	**50.2402**	0.595	1.2	ug/L	39	Standard
	Cu	65	141680.3	0.5	**49.8939**	0.476	1.0	ug/L	91	Standard
	Zn	66	78935.1	0.6	**50.5122**	0.512	1.0	ug/L	159	Standard
>	**Ge**	72	497007.5	0.5				ug/L	504090	Standard
	As	75	83425.3	0.5	**50.0046**	0.278	0.6	ug/L	-261	Standard
	Se	82	8313.1	1.3	**50.4597**	0.678	1.3	ug/L	-43	Standard
	Se-1	77	6032.9	1.1	**50.5103**	0.293	0.6	ug/L	86	Standard
>	**Ga**	71	70.0	18.9				mg/L	35	Standard
	Rb	85	1270.1	5.3				ug/L	20	Standard
	Y	89	458633.0	0.5				ug/L	462194	Standard
>	**Rh**	103	18.3	41.7				ug/L	7	Standard
	Mo	98	424841.7	2.0	**103.0131**	2.129	2.1	ug/L	8	Standard
	Ag	107	379477.6	1.4	**51.0899**	0.711	1.4	ug/L	62	Standard
	Cd	111	116712.6	0.8	**50.3522**	0.250	0.5	mg/L	1	Standard
	Cd	114	299372.1	1.1	**50.5230**	0.415	0.8	ug/L	23	Standard
>	**In**	115	512842.2	0.3				ug/L	502083	Standard
	Sn	118	73446.3	2.0	**50.5474**	0.844	1.7	ug/L	144	Standard
	Sb	123	140485.1	0.8	**50.6158**	0.568	1.1	ug/L	19	Standard
	Ba	135	99017.5	0.4	**50.2320**	0.076	0.2	ug/L	9	Standard
	Ce	140	61.7	30.7				ug/L	17	Standard
>	**Tb**	159	503308.3	0.8				ug/L	490863	Standard
	Ho	165	5.0	100.0				ug/L	2	Standard
	Tl	203	328667.5	0.3	**49.7418**	0.182	0.4	ug/L	2	Standard
	Tl	205	363811.7	1.5	**50.8987**	0.789	1.6	ug/L	0	Standard
	Pb	206	138792.1	0.2	**51.9586**	0.100	0.2	ug/L	84	Standard
	Pb	207	125480.1	0.4	**51.8098**	0.194	0.4	ug/L	73	Standard
	Pb	208	322151.0	0.5	**50.5490**	0.245	0.5	ug/L	199	Standard
	U	238	221581.2	0.4	**51.0391**	0.201	0.4	ug/L	1	Standard
>	**Bi**	209	283794.1	0.0				ug/L	281512	Standard

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	Na	23	15.0	33.3	**3.8878**	1.437	37.0	mg/L	2	Standard
	Mg	24	4182.2	6.0	**5.5381**	0.288	5.2	mg/L	38	Standard
	K	39	65.0	42.8	**3.3676**	1.523	45.2	mg/L	0	Standard
	Ca	43	56.7	27.0	**3.4314**	1.634	47.6	mg/L	23	Standard
	Fe	54	11172.9	3.2	**4.9912**	0.121	2.4	mg/L	234	Standard
	Fe	57	3215.3	3.9	**5.2144**	0.160	3.1	mg/L	118	Standard
>	**Sc-1**	45	53072.8	1.1				mg/L	57581	Standard
	Cl	35	34566.1	0.3				ug/L	22827	Standard
	Kr	83	90.7	4.5				ug/L	90	Standard
	Br	81	2626.9	5.5				ug/L	2287	Standard
	P	31	325865.9	5.7				ug/L	215766	Standard
	S	34	59120.1	1.8				ug/L	23460	Standard
	Sr	88	60.0	28.9				ug/L	48	Standard
	C	12	0.0					mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	0	Standard
	Dy	164	-0.2	173.2				mg/L	6	Standard
	Ho-1	165	5.0	100.0				mg/L	2	Standard
	Er	166	3.3	173.2				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		109.025	
	Be	9	98.352		
	Al	27	96.171		
	Sc	45			
	Ti	47	96.353		
	V	51	94.830		
	Cr	52	96.355		
	Cr	53			
	Mn	55	100.619		
	Co	59	96.382		
	Ni	60	100.480		
	Cu	65	99.788		
	Zn	66	101.024		
>	Ge	72		98.595	
	As	75	100.009		
	Se	82	100.919		
	Se-1	77			
>	Ga	71			
	Rb	85			

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	Y	89		
>	Rh	103		
	Mo	98	103.013	
	Ag	107	102.180	
	Cd	111	100.704	
	Cd	114		
>	In	115		102.143
	Sn	118	101.095	
	Sb	123	101.232	
	Ba	135	100.464	
	Ce	140		
>	Tb	159		
	Ho	165		
	Tl	203	99.484	
	Tl	205		
	Pb	206		
	Pb	207		
	Pb	208	101.098	
	U	238	102.078	
>	Bi	209		100.811
	Na	23		
	Mg	24		
	K	39		
	Ca	43		
	Fe	54		
	Fe	57		
>	Sc-1	45		
	Cl	35		
	Kr	83		
	Br	81		
	P	31		
	S	34		
	Sr	88		
	C	12		
	N	14		
	Hg	202		
	Dy	164		
	Ho-1	165		
	Er	166		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, November 22, 2013 15:53:47
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	241197.3	2.8				ug/L	231878	Standard
	Be	9	33.3	22.9	**0.0041**	0.003	73.6	ug/L	7	Standard
	Al	27	585.0	46.7	**-0.0007**	0.002	232.4	ug/L	115	Standard
	Sc	45	52132.9	1.3				ug/L	57581	Standard
	Ti	47	17.0	17.6	**-0.0188**	0.006	33.1	ug/L	17	Standard
	V	51	1375.5	2.0	**-0.0387**	0.005	13.2	ug/L	1678	Standard
	Cr	52	4865.1	0.8	**-0.1109**	0.006	5.5	ug/L	5719	Standard
	Cr	53	818.4	5.6	**0.5065**	0.036	7.2	ug/L	132	Standard
	Mn	55	964.0	7.7	**-0.0098**	0.005	54.7	ug/L	927	Standard
	Co	59	97.3	3.1	**-0.0045**	0.000	9.0	ug/L	80	Standard
	Ni	60	52.7	24.8	**-0.0047**	0.004	94.5	ug/L	39	Standard
	Cu	65	135.7	1.5	**0.0068**	0.001	8.4	ug/L	91	Standard
	Zn	66	175.7	1.7	**-0.1678**	0.001	0.8	ug/L	159	Standard
>	**Ge**	72	489780.4	1.0				ug/L	504090	Standard
	As	75	-234.8	13.2	**0.0132**	0.020	149.8	ug/L	-261	Standard
	Se	82	-40.7	14.5	**-0.0160**	0.038	236.8	ug/L	-43	Standard
	Se-1	77	116.7	5.4	**0.2688**	0.050	18.5	ug/L	86	Standard
>	**Ga**	71	16.7	62.4				mg/L	35	Standard
	Rb	85	21.7	26.6				ug/L	20	Standard
	Y	89	454753.6	2.0				ug/L	462194	Standard
>	**Rh**	103	1.7	173.2				ug/L	7	Standard
	Mo	98	109.6	41.4	**0.0226**	0.011	48.7	ug/L	8	Standard
	Ag	107	84.7	21.7	**-0.0038**	0.002	64.5	ug/L	62	Standard
	Cd	111	6.5	9.3	**-0.0063**	0.000	4.4	mg/L	1	Standard
	Cd	114	24.0	23.0	**-0.0036**	0.001	26.2	ug/L	23	Standard
>	**In**	115	506175.5	0.3				ug/L	502083	Standard
	Sn	118	100.7	10.6	**-0.0192**	0.007	38.2	ug/L	144	Standard
	Sb	123	509.3	27.4	**0.1809**	0.050	27.8	ug/L	19	Standard
	Ba	135	10.7	10.8	**-0.0018**	0.001	32.8	ug/L	9	Standard
	Ce	140	6.7	43.3				ug/L	17	Standard
>	**Tb**	159	494835.1	1.5				ug/L	490863	Standard
	Ho	165	1.7	173.2				ug/L	2	Standard
	Tl	203	63.0	13.0	**0.0035**	0.001	33.3	ug/L	2	Standard
	Tl	205	81.7	30.2	**0.0079**	0.003	42.3	ug/L	0	Standard
	Pb	206	95.3	14.3	**-0.0010**	0.005	511.5	ug/L	84	Standard
	Pb	207	86.0	7.1	**0.0022**	0.002	113.1	ug/L	73	Standard
	Pb	208	229.0	3.4	**-0.0032**	0.001	30.0	ug/L	199	Standard
	U	238	17.0	61.4	**0.0033**	0.002	72.1	ug/L	1	Standard
>	**Bi**	209	283804.1	0.7				ug/L	281512	Standard

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⌈	**Na**	23	1.7	173.2	**0.0598**	0.847	1417.1	mg/L	2	Standard
|	**Mg**	24	38.3	30.1	**0.0152**	0.015	100.0	mg/L	38	Standard
|	**K**	39	3.3	86.6	**0.0267**	0.160	600.8	mg/L	0	Standard
|	**Ca**	43	21.7	35.3	**-0.1808**	0.782	432.5	mg/L	23	Standard
|	**Fe**	54	227.7	24.0	**0.0063**	0.026	404.4	mg/L	234	Standard
|	**Fe**	57	126.7	12.1	**0.0613**	0.025	40.7	mg/L	118	Standard
⌊>	**Sc-1**	45	52132.9	1.3				mg/L	57581	Standard
	Cl	35	34018.1	1.2				ug/L	22827	Standard
	Kr	83	86.3	2.9				ug/L	90	Standard
	Br	81	2496.9	10.9				ug/L	2287	Standard
	P	31	302439.2	1.7				ug/L	215766	Standard
	S	34	56751.1	2.8				ug/L	23460	Standard
	Sr	88	58.3	32.5				ug/L	48	Standard
	C	12	0.0					mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	0	Standard
	Dy	164	3.0	187.1				mg/L	6	Standard
	Ho-1	165	1.7	173.2				mg/L	2	Standard
	Er	166	6.7	86.6				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		104.019	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		97.161	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			
⌊	Rb	85			

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	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	100.815
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	100.814
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1311120601
Sample Date/Time: Friday, November 22, 2013 15:56:53
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	249873.8	1.3				ug/L	231878	Standard
	Be	9	31.7	63.8	**0.0031**	0.007	229.7	ug/L	7	Standard
	Al	27	4681881.7	1.7	**26.5117**	0.798	3.0	ug/L	115	Standard
	Sc	45	52020.8	1.7				ug/L	57581	Standard
	Ti	47	1098.0	1.2	**2.3529**	0.023	1.0	ug/L	17	Standard
	V	51	4154.1	1.5	**0.3122**	0.008	2.6	ug/L	1678	Standard
	Cr	52	9425.9	1.0	**0.5087**	0.010	1.9	ug/L	5719	Standard
	Cr	53	2003.5	9.8	**1.3629**	0.144	10.6	ug/L	132	Standard
	Mn	55	338304.2	0.4	**25.6464**	0.059	0.2	ug/L	927	Standard
	Co	59	3741.8	4.0	**0.4300**	0.019	4.4	ug/L	80	Standard
	Ni	60	9427.3	1.9	**3.3361**	0.068	2.0	ug/L	39	Standard
	Cu	65	2517.5	3.2	**0.8660**	0.031	3.6	ug/L	91	Standard
	Zn	66	38034.3	0.6	**24.7531**	0.193	0.8	ug/L	159	Standard
>	**Ge**	72	485868.3	0.2				ug/L	504090	Standard
	As	75	716.3	9.7	**0.5935**	0.043	7.3	ug/L	-261	Standard
	Se	82	227.9	4.4	**1.6419**	0.065	3.9	ug/L	-43	Standard
	Se-1	77	177.7	1.2	**0.8071**	0.017	2.1	ug/L	86	Standard
>	**Ga**	71	540.0	4.2				mg/L	35	Standard
	Rb	85	10670.4	2.9				ug/L	20	Standard
	Y	89	452964.7	2.9				ug/L	462194	Standard
>	**Rh**	103	61.7	44.7				ug/L	7	Standard
	Mo	98	8441.3	0.8	**2.1174**	0.016	0.7	ug/L	8	Standard
	Ag	107	180.7	42.6	**0.0098**	0.011	109.0	ug/L	62	Standard
	Cd	111	148.3	27.0	**0.0572**	0.018	31.0	mg/L	1	Standard
	Cd	114	430.2	16.4	**0.0676**	0.012	18.2	ug/L	23	Standard
>	**In**	115	494748.1	0.2				ug/L	502083	Standard
	Sn	118	179.7	12.8	**0.0389**	0.016	41.6	ug/L	144	Standard
	Sb	123	702.9	1.8	**0.2577**	0.004	1.6	ug/L	19	Standard
	Ba	135	14290.4	1.0	**7.5086**	0.090	1.2	ug/L	9	Standard
	Ce	140	3187.0	5.4				ug/L	17	Standard
>	**Tb**	159	491256.3	1.4				ug/L	490863	Standard
	Ho	165	40.0	45.1				ug/L	2	Standard
	Tl	203	156.0	52.6	**0.0184**	0.013	70.4	ug/L	2	Standard
	Tl	205	113.3	28.4	**0.0129**	0.005	36.1	ug/L	0	Standard
	Pb	206	491.7	8.2	**0.1538**	0.016	10.6	ug/L	84	Standard
	Pb	207	422.3	10.0	**0.1470**	0.019	12.9	ug/L	73	Standard
	Pb	208	1039.0	2.7	**0.1294**	0.004	3.3	ug/L	199	Standard
	U	238	287.0	5.8	**0.0677**	0.004	6.3	ug/L	1	Standard
>	**Bi**	209	274591.9	0.6				ug/L	281512	Standard

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	Na	23	48.3	41.8	**13.8306**	6.136	44.4	mg/L	2	Standard
	Mg	24	9644.7	2.6	**13.0888**	0.537	4.1	mg/L	38	Standard
	K	39	45.0	19.2	**2.3293**	0.467	20.0	mg/L	0	Standard
	Ca	43	136.7	14.8	**12.0198**	2.112	17.6	mg/L	23	Standard
	Fe	54	11309.6	2.3	**5.1606**	0.208	4.0	mg/L	234	Standard
	Fe	57	3150.3	1.7	**5.2141**	0.124	2.4	mg/L	118	Standard
>	**Sc-1**	45	52020.8	1.7				mg/L	57581	Standard
	Cl	35	33877.9	3.1				ug/L	22827	Standard
	Kr	83	81.3	6.8				ug/L	90	Standard
	Br	81	39865.7	3.2				ug/L	2287	Standard
	P	31	358408.8	1.9				ug/L	215766	Standard
	S	34	47111.5	2.5				ug/L	23460	Standard
	Sr	88	373.3	19.3				ug/L	48	Standard
	C	12	3.3	173.2				mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	0	Standard
	Dy	164	215.9	14.5				mg/L	6	Standard
	Ho-1	165	40.0	45.1				mg/L	2	Standard
	Er	166	86.7	123.4				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		107.761	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		96.385	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

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	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.539
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	97.542
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1311121801
Sample Date/Time: Friday, November 22, 2013 15:59:58
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	252879.9	1.8				ug/L	231878	Standard
	Be	9	48.3	6.0	**0.0087**	0.001	8.7	ug/L	7	Standard
	Al	27	4809762.9	1.7	**26.9071**	0.346	1.3	ug/L	115	Standard
	Sc	45	51380.3	2.3				ug/L	57581	Standard
	Ti	47	1261.1	6.8	**2.6755**	0.177	6.6	ug/L	17	Standard
	V	51	5704.3	2.8	**0.4983**	0.020	4.0	ug/L	1678	Standard
	Cr	52	7838.4	1.1	**0.2816**	0.010	3.7	ug/L	5719	Standard
	Cr	53	1713.4	21.3	**1.1404**	0.270	23.6	ug/L	132	Standard
	Mn	55	524938.3	1.5	**39.3381**	0.276	0.7	ug/L	927	Standard
	Co	59	1810.4	1.3	**0.1970**	0.002	1.2	ug/L	80	Standard
	Ni	60	3433.1	2.1	**1.1847**	0.023	2.0	ug/L	39	Standard
	Cu	65	2442.9	1.5	**0.8279**	0.006	0.7	ug/L	91	Standard
	Zn	66	6407.4	0.8	**3.8822**	0.029	0.7	ug/L	159	Standard
>	**Ge**	72	492044.3	0.9				ug/L	504090	Standard
	As	75	242.3	17.5	**0.3020**	0.026	8.7	ug/L	-261	Standard
	Se	82	-9.2	125.2	**0.1781**	0.069	38.9	ug/L	-43	Standard
	Se-1	77	162.0	4.3	**0.6537**	0.072	11.0	ug/L	86	Standard
>	**Ga**	71	301.7	24.4				mg/L	35	Standard
	Rb	85	17164.7	2.4				ug/L	20	Standard
	Y	89	455838.0	2.4				ug/L	462194	Standard
>	**Rh**	103	35.0	14.3				ug/L	7	Standard
	Mo	98	2347.8	1.6	**0.5791**	0.010	1.7	ug/L	8	Standard
	Ag	107	68.7	9.7	**-0.0059**	0.001	15.4	ug/L	62	Standard
	Cd	111	64.0	6.4	**0.0192**	0.002	9.3	mg/L	1	Standard
	Cd	114	223.0	8.6	**0.0309**	0.003	10.9	ug/L	23	Standard
>	**In**	115	500485.4	0.2				ug/L	502083	Standard
	Sn	118	200.0	5.7	**0.0518**	0.008	15.6	ug/L	144	Standard
	Sb	123	189.8	3.4	**0.0652**	0.002	3.7	ug/L	19	Standard
	Ba	135	28255.0	0.8	**14.6825**	0.096	0.7	ug/L	9	Standard
	Ce	140	5531.0	20.4				ug/L	17	Standard
>	**Tb**	159	494802.3	1.4				ug/L	490863	Standard
	Ho	165	98.3	26.1				ug/L	2	Standard
	Tl	203	105.3	5.4	**0.0103**	0.001	9.6	ug/L	2	Standard
	Tl	205	96.7	15.8	**0.0104**	0.002	21.9	ug/L	0	Standard
	Pb	206	1066.0	2.3	**0.3721**	0.009	2.4	ug/L	84	Standard
	Pb	207	869.4	4.9	**0.3342**	0.016	4.7	ug/L	73	Standard
	Pb	208	2262.1	1.1	**0.3244**	0.006	2.0	ug/L	199	Standard
	U	238	238.3	4.6	**0.0556**	0.002	4.5	ug/L	1	Standard
>	**Bi**	209	277266.7	0.7				ug/L	281512	Standard

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	Na	23	36.7	31.5	**10.4818**	3.444	32.9	mg/L	2	Standard
	Mg	24	6929.9	2.0	**9.5112**	0.301	3.2	mg/L	38	Standard
	K	39	16.7	105.4	**0.7901**	1.007	127.5	mg/L	0	Standard
	Ca	43	120.0	12.5	**10.4312**	1.793	17.2	mg/L	23	Standard
	Fe	54	955.4	1.7	**0.3506**	0.017	5.0	mg/L	234	Standard
	Fe	57	341.7	18.6	**0.4371**	0.123	28.2	mg/L	118	Standard
>	**Sc-1**	45	51380.3	2.3				mg/L	57581	Standard
	Cl	35	36328.8	2.0				ug/L	22827	Standard
	Kr	83	105.7	13.6				ug/L	90	Standard
	Br	81	8799.2	1.6				ug/L	2287	Standard
	P	31	295066.1	2.0				ug/L	215766	Standard
	S	34	46133.5	1.3				ug/L	23460	Standard
	Sr	88	230.0	13.6				ug/L	48	Standard
	C	12	0.0					mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	0	Standard
	Dy	164	189.3	2.8				mg/L	6	Standard
	Ho-1	165	98.3	26.1				mg/L	2	Standard
	Er	166	83.3	34.6				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		109.057	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.610	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

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	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	99.682
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.492
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: November 24, 2013

Method 6020 - Summary Report

Sample ID: L1311121803
Sample Date/Time: Friday, November 22, 2013 16:03:03
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	267738.2	0.2				ug/L	231878	Standard
	Be	9	43.3	63.5	**0.0061**	0.009	146.6	ug/L	7	Standard
	Al	27	7011996.4	0.5	**37.0493**	0.202	0.5	ug/L	115	Standard
	Sc	45	51731.5	1.7				ug/L	57581	Standard
	Ti	47	326.7	6.4	**0.6551**	0.042	6.4	ug/L	17	Standard
	V	51	488.2	632.1	**-0.1487**	0.386	259.4	ug/L	1678	Standard
	Cr	52	846251.8	2.3	**112.3463**	3.046	2.7	ug/L	5719	Standard
	Cr	53	163787.4	2.1	**116.7085**	2.978	2.6	ug/L	132	Standard
	Mn	55	202560.5	2.4	**15.2029**	0.411	2.7	ug/L	927	Standard
	Co	59	868.4	19.0	**0.0866**	0.019	22.1	ug/L	80	Standard
	Ni	60	3552.1	3.1	**1.2326**	0.042	3.4	ug/L	39	Standard
	Cu	65	4885.5	2.0	**1.7059**	0.042	2.4	ug/L	91	Standard
	Zn	66	7651.9	2.2	**4.7145**	0.091	1.9	ug/L	159	Standard
>	**Ge**	72	489705.7	0.5				ug/L	504090	Standard
	As	75	355.3	53.9	**0.3709**	0.115	31.1	ug/L	-261	Standard
	Se	82	39.4	87.8	**0.4751**	0.211	44.5	ug/L	-43	Standard
	Se-1	77	246.0	8.2	**1.3845**	0.179	12.9	ug/L	86	Standard
>	**Ga**	71	306.7	5.0				mg/L	35	Standard
	Rb	85	16851.0	0.7				ug/L	20	Standard
	Y	89	455929.1	1.5				ug/L	462194	Standard
>	**Rh**	103	26.7	47.2				ug/L	7	Standard
	Mo	98	3728.5	6.0	**0.9095**	0.048	5.3	ug/L	8	Standard
	Ag	107	177.7	105.5	**0.0087**	0.025	290.8	ug/L	62	Standard
	Cd	111	115.5	119.9	**0.0410**	0.060	145.9	mg/L	1	Standard
	Cd	114	22983.3	1.7	**3.9143**	0.079	2.0	ug/L	23	Standard
>	**In**	115	507320.0	1.1				ug/L	502083	Standard
	Sn	118	204778.5	1.9	**142.6267**	1.178	0.8	ug/L	144	Standard
	Sb	123	736.0	2.4	**0.2632**	0.003	1.3	ug/L	19	Standard
	Ba	135	11936.0	2.5	**6.1143**	0.108	1.8	ug/L	9	Standard
	Ce	140	610.0	12.9				ug/L	17	Standard
>	**Tb**	159	494620.7	2.0				ug/L	490863	Standard
	Ho	165	18.3	68.6				ug/L	2	Standard
	Tl	203	222.7	109.9	**0.0290**	0.038	132.4	ug/L	2	Standard
	Tl	205	161.7	80.2	**0.0201**	0.019	93.7	ug/L	0	Standard
	Pb	206	630.7	12.5	**0.2093**	0.030	14.3	ug/L	84	Standard
	Pb	207	513.7	17.9	**0.1876**	0.039	20.7	ug/L	73	Standard
	Pb	208	1284.7	9.0	**0.1709**	0.019	10.8	ug/L	199	Standard
	U	238	192.3	34.0	**0.0455**	0.016	34.1	ug/L	1	Standard
>	**Bi**	209	272499.3	0.5				ug/L	281512	Standard

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	Na	23	38.3	19.9	**10.8998**	2.297	21.1	mg/L	2	Standard
	Mg	24	25651.7	1.8	**35.0570**	0.735	2.1	mg/L	38	Standard
	K	39	18.3	31.5	**0.8641**	0.336	38.9	mg/L	0	Standard
	Ca	43	111.7	18.1	**9.4474**	2.221	23.5	mg/L	23	Standard
	Fe	54	1148.2	5.8	**0.4378**	0.038	8.7	mg/L	234	Standard
	Fe	57	495.0	10.6	**0.6949**	0.100	14.3	mg/L	118	Standard
>	**Sc-1**	45	51731.5	1.7				mg/L	57581	Standard
	Cl	35	40859.7	2.4				ug/L	22827	Standard
	Kr	83	94.7	20.6				ug/L	90	Standard
	Br	81	11437.7	6.5				ug/L	2287	Standard
	P	31	332190.9	1.4				ug/L	215766	Standard
	S	34	43271.7	0.6				ug/L	23460	Standard
	Sr	88	261.7	16.7				ug/L	48	Standard
	C	12	0.0					mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	0	Standard
	Dy	164	19.4	49.2				mg/L	6	Standard
	Ho-1	165	18.3	68.6				mg/L	2	Standard
	Er	166	13.3	86.6				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		115.465	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.147	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

Sample ID: L1311121803
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⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	101.043
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	96.798
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cr 52 Upper, S, EEE	Cr	52	
Cr 53 Upper, S, EEE	Cr	53	
Sn 118 Upper, S, EEE	Sn	118	

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Method 6020 - Summary Report

Sample ID: L1311121805
Sample Date/Time: Friday, November 22, 2013 16:06:08
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	261497.7	1.6				ug/L	231878	Standard
	Be	9	26.7	28.6	**0.0009**	0.003	290.0	ug/L	7	Standard
	Al	27	5315115.3	0.4	**28.7563**	0.343	1.2	ug/L	115	Standard
	Sc	45	51432.2	1.1				ug/L	57581	Standard
	Ti	47	599.7	1.0	**1.2650**	0.020	1.6	ug/L	17	Standard
	V	51	90912.8	1.4	**11.2729**	0.121	1.1	ug/L	1678	Standard
	Cr	52	41415.2	0.7	**4.8398**	0.033	0.7	ug/L	5719	Standard
	Cr	53	11601.1	3.7	**8.2939**	0.355	4.3	ug/L	132	Standard
	Mn	55	79242.1	2.3	**5.9680**	0.141	2.4	ug/L	927	Standard
	Co	59	778.7	0.4	**0.0772**	0.001	1.0	ug/L	80	Standard
	Ni	60	3712.8	3.1	**1.3049**	0.039	3.0	ug/L	39	Standard
	Cu	65	2152.2	0.4	**0.7373**	0.001	0.1	ug/L	91	Standard
	Zn	66	9421.3	2.0	**5.9431**	0.091	1.5	ug/L	159	Standard
>	**Ge**	72	483952.2	0.6				ug/L	504090	Standard
	As	75	432.1	5.4	**0.4208**	0.013	3.0	ug/L	-261	Standard
	Se	82	102.8	9.7	**0.8709**	0.059	6.8	ug/L	-43	Standard
	Se-1	77	516.3	3.9	**3.7679**	0.181	4.8	ug/L	86	Standard
>	**Ga**	71	451.7	10.3				mg/L	35	Standard
	Rb	85	141243.7	1.0				ug/L	20	Standard
	Y	89	440397.6	2.3				ug/L	462194	Standard
>	**Rh**	103	78.3	44.8				ug/L	7	Standard
	Mo	98	16643.8	0.4	**4.2384**	0.013	0.3	ug/L	8	Standard
	Ag	107	59.7	9.5	**-0.0069**	0.001	10.9	ug/L	62	Standard
	Cd	111	41.0	27.8	**0.0095**	0.005	54.1	mg/L	1	Standard
	Cd	114	153.4	13.3	**0.0196**	0.004	19.4	ug/L	23	Standard
>	**In**	115	487837.9	0.6				ug/L	502083	Standard
	Sn	118	247.7	7.5	**0.0900**	0.013	13.9	ug/L	144	Standard
	Sb	123	672.5	4.9	**0.2499**	0.013	5.3	ug/L	19	Standard
	Ba	135	23157.7	0.6	**12.3446**	0.002	0.0	ug/L	9	Standard
	Ce	140	1056.7	3.8				ug/L	17	Standard
>	**Tb**	159	491544.4	0.3				ug/L	490863	Standard
	Ho	165	45.0	33.3				ug/L	2	Standard
	Tl	203	83.0	10.3	**0.0073**	0.001	19.4	ug/L	2	Standard
	Tl	205	98.3	11.7	**0.0111**	0.002	15.1	ug/L	0	Standard
	Pb	206	805.7	4.1	**0.2835**	0.014	5.0	ug/L	84	Standard
	Pb	207	652.0	2.7	**0.2524**	0.008	3.2	ug/L	73	Standard
	Pb	208	1679.4	5.8	**0.2405**	0.015	6.4	ug/L	199	Standard
	U	238	643.7	5.5	**0.1567**	0.009	5.9	ug/L	1	Standard
>	**Bi**	209	267550.6	0.4				ug/L	281512	Standard

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	Na	23	118.3	8.8	**34.7228**	2.839	8.2	mg/L	2	Standard
	Mg	24	24840.3	0.8	**34.1416**	0.237	0.7	mg/L	38	Standard
	K	39	50.0	10.0	**2.6405**	0.299	11.3	mg/L	0	Standard
	Ca	43	236.7	15.0	**22.9437**	4.081	17.8	mg/L	23	Standard
	Fe	54	376.2	9.3	**0.0775**	0.015	19.3	mg/L	234	Standard
	Fe	57	301.7	14.5	**0.3656**	0.071	19.5	mg/L	118	Standard
>	**Sc-1**	45	51432.2	1.1				mg/L	57581	Standard
	Cl	35	40326.3	0.8				ug/L	22827	Standard
	Kr	83	95.3	7.0				ug/L	90	Standard
	Br	81	8449.0	1.5				ug/L	2287	Standard
	P	31	346535.8	3.3				ug/L	215766	Standard
	S	34	43968.7	0.8				ug/L	23460	Standard
	Sr	88	495.0	16.9				ug/L	48	Standard
	C	12	3.3	173.2				mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	113.3	62.6				mg/L	0	Standard
	Dy	164	55.5	36.8				mg/L	6	Standard
	Ho-1	165	45.0	33.3				mg/L	2	Standard
	Er	166	23.3	49.5				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		112.774	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		96.005	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

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	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.163
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	95.040
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1311121808
Sample Date/Time: Friday, November 22, 2013 16:09:12
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	257366.4	2.0				ug/L	231878	Standard
	Be	9	240.0	16.5	**0.0738**	0.015	20.7	ug/L	7	Standard
	Al	27	102622812.7	0.4	**564.2762**	10.496	1.9	ug/L	115	Standard
	Sc	45	57636.1	1.8				ug/L	57581	Standard
	Ti	47	14862.0	1.9	**32.0210**	0.883	2.8	ug/L	17	Standard
	V	51	7075995.1	16.4	**874.8245**	136.716	15.6	ug/L	1678	Standard
	Cr	52	267390432.3	1.3	**35436.2491**	739.289	2.1	ug/L	5719	Standard
	Cr	53	43357659.5	0.1	**30652.6241**	299.709	1.0	ug/L	132	Standard
	Mn	55	2376973.6	0.4	**177.7710**	2.353	1.3	ug/L	927	Standard
	Co	59	15245.0	1.1	**1.7713**	0.012	0.7	ug/L	80	Standard
	Ni	60	114132.3	1.0	**39.9886**	0.493	1.2	ug/L	39	Standard
	Cu	65	389055.2	1.6	**137.9368**	0.994	0.7	ug/L	91	Standard
	Zn	66	62776.8	2.3	**40.3648**	0.569	1.4	ug/L	159	Standard
>	**Ge**	72	493890.6	0.9				ug/L	504090	Standard
	As	75	2433.9	0.2	**1.6192**	0.016	1.0	ug/L	-261	Standard
	Se	82	31.3	52.2	**0.4244**	0.101	23.8	ug/L	-43	Standard
	Se-1	77	179.0	8.9	**0.7927**	0.123	15.5	ug/L	86	Standard
>	**Ga**	71	3533.7	4.0				mg/L	35	Standard
	Rb	85	23723.6	0.6				ug/L	20	Standard
	Y	89	468625.1	0.2				ug/L	462194	Standard
>	**Rh**	103	140.0	23.4				ug/L	7	Standard
	Mo	98	32535.1	1.4	**8.1136**	0.023	0.3	ug/L	8	Standard
	Ag	107	3957.9	3.4	**0.5330**	0.011	2.0	ug/L	62	Standard
	Cd	111	91.9	42.6	**0.0315**	0.017	53.2	mg/L	1	Standard
	Cd	114	13186.4	2.9	**2.2824**	0.040	1.7	ug/L	23	Standard
>	**In**	115	498405.6	1.7				ug/L	502083	Standard
	Sn	118	118693.7	2.7	**84.1065**	0.884	1.1	ug/L	144	Standard
	Sb	123	5560.7	3.4	**2.0565**	0.043	2.1	ug/L	19	Standard
	Ba	135	28749.6	2.0	**15.0020**	0.130	0.9	ug/L	9	Standard
	Ce	140	26648.4	2.0				ug/L	17	Standard
>	**Tb**	159	512929.7	1.9				ug/L	490863	Standard
	Ho	165	648.3	10.5				ug/L	2	Standard
	Tl	203	210.3	61.9	**0.0275**	0.020	73.5	ug/L	2	Standard
	Tl	205	146.7	16.1	**0.0182**	0.003	17.3	ug/L	0	Standard
	Pb	206	10956.0	3.4	**4.3024**	0.073	1.7	ug/L	84	Standard
	Pb	207	8888.9	3.7	**3.8491**	0.079	2.0	ug/L	73	Standard
	Pb	208	23048.1	1.8	**3.7880**	0.049	1.3	ug/L	199	Standard
	U	238	2932.0	4.6	**0.7140**	0.045	6.3	ug/L	1	Standard
>	**Bi**	209	268393.8	1.7				ug/L	281512	Standard

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⌈	**Na**	23	360.0	9.1	**95.0853**	9.413	9.9	mg/L	2	Standard
|	**Mg**	24	45113.7	1.1	**55.3656**	1.226	2.2	mg/L	38	Standard
|	**K**	39	26.7	10.8	**1.1735**	0.149	12.7	mg/L	0	Standard
|	**Ca**	43	641.7	13.4	**58.8629**	7.086	12.0	mg/L	23	Standard
|	**Fe**	54	10530.8	11.7	**4.3224**	0.554	12.8	mg/L	234	Standard
|	**Fe**	57	4527.3	1.7	**6.8095**	0.195	2.9	mg/L	118	Standard
⌊>	**Sc-1**	45	57636.1	1.8				mg/L	57581	Standard
	Cl	35	81717.3	3.6				ug/L	22827	Standard
	Kr	83	132.3	1.9				ug/L	90	Standard
	Br	81	5611.0	2.8				ug/L	2287	Standard
	P	31	649205.2	1.5				ug/L	215766	Standard
	S	34	36492.5	10.2				ug/L	23460	Standard
	Sr	88	463.3	8.8				ug/L	48	Standard
	C	12	0.0					mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	20.0	50.0				mg/L	0	Standard
	Dy	164	912.8	2.0				mg/L	6	Standard
	Ho-1	165	648.3	10.5				mg/L	2	Standard
	Er	166	706.7	9.1				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		110.992	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		97.977	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			
⌊	Rb	85			

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	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	99.268
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	95.340
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
V 51 Upper, S, EEE	V	51	
Cr 52 Upper, S, EEE	Cr	52	
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	

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Cu 65 Upper, S, EEE	Cu	65

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Method 6020 - Summary Report

Sample ID: L1311121809
Sample Date/Time: Friday, November 22, 2013 16:12:17
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	290050.9	3.8				ug/L	231878	Standard
	Be	9	28.3	27.0	**0.0006**	0.003	452.6	ug/L	7	Standard
	Al	27	5324484.1	1.9	**25.9811**	0.545	2.1	ug/L	115	Standard
	Sc	45	57319.9	0.7				ug/L	57581	Standard
	Ti	47	631.7	3.4	**1.1493**	0.061	5.3	ug/L	17	Standard
	V	51	3180.3	15.0	**0.1378**	0.057	41.1	ug/L	1678	Standard
	Cr	52	22171.3	36.3	**1.8252**	0.910	49.9	ug/L	5719	Standard
	Cr	53	4018.9	44.2	**2.4233**	1.078	44.5	ug/L	132	Standard
	Mn	55	919927.1	0.9	**60.7354**	0.607	1.0	ug/L	927	Standard
	Co	59	885.4	6.5	**0.0757**	0.006	8.1	ug/L	80	Standard
	Ni	60	3261.7	1.8	**0.9871**	0.020	2.0	ug/L	39	Standard
	Cu	65	2199.2	0.5	**0.6475**	0.008	1.2	ug/L	91	Standard
	Zn	66	26716.2	1.1	**15.0037**	0.075	0.5	ug/L	159	Standard
>	**Ge**	72	558977.3	1.6				ug/L	504090	Standard
	As	75	62.5	66.3	**0.1890**	0.023	12.0	ug/L	-261	Standard
	Se	82	23.5	47.4	**0.3600**	0.061	17.0	ug/L	-43	Standard
	Se-1	77	198.3	3.5	**0.7620**	0.073	9.6	ug/L	86	Standard
>	**Ga**	71	91.7	15.7				mg/L	35	Standard
	Rb	85	16383.9	3.2				ug/L	20	Standard
	Y	89	515902.0	2.2				ug/L	462194	Standard
>	**Rh**	103	40.0	12.5				ug/L	7	Standard
	Mo	98	6085.0	2.2	**1.3483**	0.039	2.9	ug/L	8	Standard
	Ag	107	73.0	6.0	**-0.0064**	0.001	9.3	ug/L	62	Standard
	Cd	111	10.6	99.1	**-0.0050**	0.004	83.3	mg/L	1	Standard
	Cd	114	74.0	39.7	**0.0038**	0.005	121.1	ug/L	23	Standard
>	**In**	115	559545.7	0.9				ug/L	502083	Standard
	Sn	118	286.7	0.7	**0.0917**	0.003	2.8	ug/L	144	Standard
	Sb	123	3537.0	1.4	**1.1632**	0.018	1.5	ug/L	19	Standard
	Ba	135	30978.0	1.6	**14.3986**	0.222	1.5	ug/L	9	Standard
	Ce	140	153.3	14.7				ug/L	17	Standard
>	**Tb**	159	555144.0	0.6				ug/L	490863	Standard
	Ho	165	8.3	34.6				ug/L	2	Standard
	Tl	203	39.7	26.7	**-0.0005**	0.001	297.0	ug/L	2	Standard
	Tl	205	30.0	33.3	**0.0004**	0.001	320.1	ug/L	0	Standard
	Pb	206	221.3	3.8	**0.0399**	0.003	8.1	ug/L	84	Standard
	Pb	207	166.0	2.1	**0.0300**	0.002	5.8	ug/L	73	Standard
	Pb	208	466.3	2.3	**0.0284**	0.001	5.2	ug/L	199	Standard
	U	238	75.0	9.6	**0.0153**	0.001	9.3	ug/L	1	Standard
>	**Bi**	209	307414.1	0.7				ug/L	281512	Standard

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	Na	23	36.7	34.3	**9.3360**	3.310	35.5	mg/L	2	Standard
	Mg	24	7121.7	1.3	**8.7558**	0.146	1.7	mg/L	38	Standard
	K	39	20.0	0.0	**0.8456**	0.008	0.9	mg/L	0	Standard
	Ca	43	93.3	15.5	**6.5112**	1.364	20.9	mg/L	23	Standard
	Fe	54	533.2	16.4	**0.1258**	0.038	30.3	mg/L	234	Standard
	Fe	57	275.0	14.4	**0.2712**	0.061	22.4	mg/L	118	Standard
>	**Sc-1**	45	57319.9	0.7				mg/L	57581	Standard
	Cl	35	39107.1	4.4				ug/L	22827	Standard
	Kr	83	91.0	12.7				ug/L	90	Standard
	Br	81	9839.9	2.3				ug/L	2287	Standard
	P	31	342291.8	3.8				ug/L	215766	Standard
	S	34	39991.1	4.3				ug/L	23460	Standard
	Sr	88	280.0	9.4				ug/L	48	Standard
	C	12	3.3	173.2				mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	0	Standard
	Dy	164	18.7	56.0				mg/L	6	Standard
	Ho-1	165	8.3	34.6				mg/L	2	Standard
	Er	166	26.7	57.3				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		125.087	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		110.888	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

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⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	111.445
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	109.201
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1311121813 WG453975-02
Sample Date/Time: Friday, November 22, 2013 16:16:52
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	271061.6	3.4				ug/L	231878	Standard
	Be	9	10.0	100.0	**-0.0049**	0.003	64.6	ug/L	7	Standard
	Al	27	3465124.5	0.7	**18.0963**	0.647	3.6	ug/L	115	Standard
	Sc	45	52510.8	0.4				ug/L	57581	Standard
	Ti	47	283.0	32.7	**0.5501**	0.199	36.3	ug/L	17	Standard
	V	51	127459.4	1.8	**15.4378**	0.142	0.9	ug/L	1678	Standard
	Cr	52	35817.6	2.1	**3.9468**	0.058	1.5	ug/L	5719	Standard
	Cr	53	9833.2	9.4	**6.8218**	0.697	10.2	ug/L	132	Standard
	Mn	55	32912.1	2.1	**2.3601**	0.051	2.2	ug/L	927	Standard
	Co	59	758.4	2.7	**0.0722**	0.003	4.4	ug/L	80	Standard
	Ni	60	3782.5	3.7	**1.2918**	0.036	2.8	ug/L	39	Standard
	Cu	65	1610.8	0.7	**0.5250**	0.003	0.6	ug/L	91	Standard
	Zn	66	3480.4	1.7	**1.9530**	0.021	1.1	ug/L	159	Standard
>	**Ge**	72	497898.0	0.9				ug/L	504090	Standard
	As	75	451.6	5.1	**0.4250**	0.014	3.4	ug/L	-261	Standard
	Se	82	93.7	19.4	**0.7990**	0.111	13.9	ug/L	-43	Standard
	Se-1	77	473.0	11.5	**3.2769**	0.494	15.1	ug/L	86	Standard
>	**Ga**	71	408.3	7.2				mg/L	35	Standard
	Rb	85	204616.3	2.5				ug/L	20	Standard
	Y	89	458087.0	0.7				ug/L	462194	Standard
>	**Rh**	103	90.0	5.6				ug/L	7	Standard
	Mo	98	22771.6	0.5	**5.6505**	0.049	0.9	ug/L	8	Standard
	Ag	107	52.7	17.0	**-0.0081**	0.001	15.2	ug/L	62	Standard
	Cd	111	13.3	35.3	**-0.0033**	0.002	64.0	mg/L	1	Standard
	Cd	114	129.6	27.0	**0.0147**	0.006	40.2	ug/L	23	Standard
>	**In**	115	500783.7	0.7				ug/L	502083	Standard
	Sn	118	138.0	5.8	**0.0080**	0.006	69.9	ug/L	144	Standard
	Sb	123	322.9	3.5	**0.1143**	0.004	3.8	ug/L	19	Standard
	Ba	135	23555.6	0.6	**12.2322**	0.065	0.5	ug/L	9	Standard
	Ce	140	291.7	27.7				ug/L	17	Standard
>	**Tb**	159	498295.3	1.1				ug/L	490863	Standard
	Ho	165	16.7	17.3				ug/L	2	Standard
	Tl	203	98.3	8.6	**0.0095**	0.001	13.4	ug/L	2	Standard
	Tl	205	116.7	20.3	**0.0136**	0.004	26.0	ug/L	0	Standard
	Pb	206	244.3	4.7	**0.0588**	0.005	7.7	ug/L	84	Standard
	Pb	207	222.0	11.8	**0.0622**	0.011	17.5	ug/L	73	Standard
	Pb	208	565.3	6.3	**0.0534**	0.005	10.0	ug/L	199	Standard
	U	238	286.0	4.2	**0.0681**	0.003	4.5	ug/L	1	Standard
>	**Bi**	209	272180.0	0.5				ug/L	281512	Standard

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	Na	23	113.3	11.1	**32.5489**	3.549	10.9	mg/L	2	Standard
	Mg	24	30246.8	1.7	**40.7260**	0.847	2.1	mg/L	38	Standard
	K	39	65.0	20.4	**3.4024**	0.716	21.0	mg/L	0	Standard
	Ca	43	261.7	4.4	**25.0199**	1.205	4.8	mg/L	23	Standard
	Fe	54	314.4	4.0	**0.0455**	0.006	12.3	mg/L	234	Standard
	Fe	57	290.0	1.7	**0.3355**	0.009	2.8	mg/L	118	Standard
>	**Sc-1**	45	52510.8	0.4				mg/L	57581	Standard
	Cl	35	41212.0	0.8				ug/L	22827	Standard
	Kr	83	96.7	10.2				ug/L	90	Standard
	Br	81	9566.4	3.6				ug/L	2287	Standard
	P	31	350932.6	0.5				ug/L	215766	Standard
	S	34	39364.4	0.4				ug/L	23460	Standard
	Sr	88	608.3	11.5				ug/L	48	Standard
	C	12	0.0					mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	160.0	25.0				mg/L	0	Standard
	Dy	164	19.5	53.7				mg/L	6	Standard
	Ho-1	165	16.7	17.3				mg/L	2	Standard
	Er	166	10.0	100.0				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		116.898	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		98.772	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

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	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	99.741
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	96.685
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1311121813DP WG453975-07
Sample Date/Time: Friday, November 22, 2013 16:20:41
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 1
Method File: C:\NexION Data\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	264741.7	1.8				ug/L	231878	Standard
	Be	9	43.3	103.4	**0.0065**	0.015	235.3	ug/L	7	Standard
	Al	27	3436687.4	2.0	**18.3685**	0.619	3.4	ug/L	115	Standard
	Sc	45	50771.6	1.6				ug/L	57581	Standard
	Ti	47	325.3	24.2	**0.6630**	0.175	26.3	ug/L	17	Standard
	V	51	122770.2	1.9	**15.3443**	0.300	2.0	ug/L	1678	Standard
	Cr	52	38207.6	16.1	**4.4215**	0.833	18.8	ug/L	5719	Standard
	Cr	53	14947.7	25.4	**10.7412**	2.758	25.7	ug/L	132	Standard
	Mn	55	32146.4	2.0	**2.3794**	0.051	2.1	ug/L	927	Standard
	Co	59	706.7	1.4	**0.0688**	0.001	1.7	ug/L	80	Standard
	Ni	60	3656.1	2.7	**1.2887**	0.036	2.8	ug/L	39	Standard
	Cu	65	1736.1	10.1	**0.5886**	0.064	10.9	ug/L	91	Standard
	Zn	66	3495.7	2.9	**2.0347**	0.071	3.5	ug/L	159	Standard
>	**Ge**	72	482489.2	0.1				ug/L	504090	Standard
	As	75	412.4	22.2	**0.4095**	0.057	13.8	ug/L	-261	Standard
	Se	82	99.5	15.4	**0.8525**	0.096	11.2	ug/L	-43	Standard
	Se-1	77	558.0	6.5	**4.1462**	0.322	7.8	ug/L	86	Standard
>	**Ga**	71	450.0	4.0				mg/L	35	Standard
	Rb	85	197630.7	1.2				ug/L	20	Standard
	Y	89	446546.5	0.3				ug/L	462194	Standard
>	**Rh**	103	83.3	15.1				ug/L	7	Standard
	Mo	98	22061.5	0.2	**5.6261**	0.034	0.6	ug/L	8	Standard
	Ag	107	59.7	28.1	**-0.0069**	0.002	35.0	ug/L	62	Standard
	Cd	111	11.1	88.1	**-0.0041**	0.004	110.4	mg/L	1	Standard
	Cd	114	111.8	67.6	**0.0122**	0.014	110.9	ug/L	23	Standard
>	**In**	115	487273.4	0.8				ug/L	502083	Standard
	Sn	118	118.3	4.0	**-0.0036**	0.003	87.1	ug/L	144	Standard
	Sb	123	315.8	4.6	**0.1149**	0.006	5.0	ug/L	19	Standard
	Ba	135	22974.7	0.1	**12.2618**	0.099	0.8	ug/L	9	Standard
	Ce	140	316.7	37.0				ug/L	17	Standard
>	**Tb**	159	482692.3	1.3				ug/L	490863	Standard
	Ho	165	21.7	26.6				ug/L	2	Standard
	Tl	203	87.3	27.5	**0.0081**	0.004	48.3	ug/L	2	Standard
	Tl	205	91.7	8.3	**0.0102**	0.001	11.7	ug/L	0	Standard
	Pb	206	266.7	4.5	**0.0698**	0.005	7.7	ug/L	84	Standard
	Pb	207	204.0	0.5	**0.0564**	0.001	1.6	ug/L	73	Standard
	Pb	208	573.0	11.4	**0.0567**	0.011	20.0	ug/L	199	Standard
	U	238	333.7	23.1	**0.0813**	0.019	23.5	ug/L	1	Standard
>	**Bi**	209	266398.2	0.5				ug/L	281512	Standard

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	Na	23	120.0	8.3	**35.7271**	3.490	9.8	mg/L	2	Standard
	Mg	24	29475.3	2.4	**41.0450**	0.714	1.7	mg/L	38	Standard
	K	39	78.3	3.7	**4.2816**	0.148	3.5	mg/L	0	Standard
	Ca	43	263.3	1.1	**26.1458**	0.389	1.5	mg/L	23	Standard
	Fe	54	309.6	19.3	**0.0482**	0.030	61.2	mg/L	234	Standard
	Fe	57	300.0	10.0	**0.3698**	0.054	14.6	mg/L	118	Standard
>	**Sc-1**	45	50771.6	1.6				mg/L	57581	Standard
	Cl	35	40568.3	2.1				ug/L	22827	Standard
	Kr	83	91.3	14.7				ug/L	90	Standard
	Br	81	8942.6	2.6				ug/L	2287	Standard
	P	31	340272.4	4.0				ug/L	215766	Standard
	S	34	41082.3	1.1				ug/L	23460	Standard
	Sr	88	563.3	1.4				ug/L	48	Standard
	C	12	3.3	173.2				mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	193.3	16.6				mg/L	0	Standard
	Dy	164	25.1	22.7				mg/L	6	Standard
	Ho-1	165	21.7	26.6				mg/L	2	Standard
	Er	166	33.3	45.8				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		114.173	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		95.715	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

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	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.050
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	94.631
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1311121813DP WG453975-07
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Method 6020 - Summary Report

Sample ID: L1311122801
Sample Date/Time: Friday, November 22, 2013 16:23:45
Number of Replicates: 3
Autosampler Position: 327
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	264477.6	2.6				ug/L	231878	Standard
	Be	9	63.3	47.6	**0.0128**	0.010	74.6	ug/L	7	Standard
	Al	27	12242694.4	0.5	**65.5184**	1.858	2.8	ug/L	115	Standard
	Sc	45	51223.1	1.4				ug/L	57581	Standard
	Ti	47	1882.5	31.6	**4.0639**	1.265	31.1	ug/L	17	Standard
	V	51	3939.0	1.1	**0.2851**	0.012	4.1	ug/L	1678	Standard
	Cr	52	11369.4	17.9	**0.7688**	0.261	33.9	ug/L	5719	Standard
	Cr	53	6725.3	70.1	**4.7407**	3.345	70.5	ug/L	132	Standard
	Mn	55	134460.1	1.5	**10.1432**	0.236	2.3	ug/L	927	Standard
	Co	59	1589.8	2.5	**0.1734**	0.005	3.1	ug/L	80	Standard
	Ni	60	4084.2	1.9	**1.4318**	0.014	1.0	ug/L	39	Standard
	Cu	65	15325.4	1.2	**5.4827**	0.065	1.2	ug/L	91	Standard
	Zn	66	10296.2	0.3	**6.4943**	0.094	1.4	ug/L	159	Standard
>	**Ge**	72	485966.8	1.5				ug/L	504090	Standard
	As	75	164.9	54.7	**0.2570**	0.057	22.2	ug/L	-261	Standard
	Se	82	209.7	2.1	**1.5297**	0.042	2.8	ug/L	-43	Standard
	Se-1	77	436.3	1.1	**3.0547**	0.077	2.5	ug/L	86	Standard
>	**Ga**	71	331.7	6.8				mg/L	35	Standard
	Rb	85	12725.3	2.7				ug/L	20	Standard
	Y	89	444337.9	0.3				ug/L	462194	Standard
>	**Rh**	103	58.3	32.5				ug/L	7	Standard
	Mo	98	1373.5	3.5	**0.3442**	0.013	3.9	ug/L	8	Standard
	Ag	107	90.0	13.9	**-0.0027**	0.002	66.2	ug/L	62	Standard
	Cd	111	50.4	16.5	**0.0136**	0.004	27.2	mg/L	1	Standard
	Cd	114	179.3	12.6	**0.0240**	0.004	16.2	ug/L	23	Standard
>	**In**	115	490228.6	0.3				ug/L	502083	Standard
	Sn	118	210.7	8.7	**0.0625**	0.013	20.7	ug/L	144	Standard
	Sb	123	207.3	4.5	**0.0732**	0.003	4.4	ug/L	19	Standard
	Ba	135	66467.5	0.3	**35.2729**	0.193	0.5	ug/L	9	Standard
	Ce	140	5689.5	26.3				ug/L	17	Standard
>	**Tb**	159	488276.8	1.1				ug/L	490863	Standard
	Ho	165	118.3	8.8				ug/L	2	Standard
	Tl	203	109.3	9.6	**0.0115**	0.002	14.2	ug/L	2	Standard
	Tl	205	121.7	28.9	**0.0145**	0.005	35.4	ug/L	0	Standard
	Pb	206	2430.9	0.7	**0.9253**	0.010	1.0	ug/L	84	Standard
	Pb	207	2078.5	1.7	**0.8738**	0.025	2.9	ug/L	73	Standard
	Pb	208	5366.7	1.9	**0.8511**	0.026	3.1	ug/L	199	Standard
	U	238	1050.7	8.6	**0.2549**	0.020	7.8	ug/L	1	Standard
>	**Bi**	209	268686.6	1.2				ug/L	281512	Standard

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	Na	23	108.3	23.2	**31.9566**	7.872	24.6	mg/L	2	Standard
	Mg	24	17019.6	2.3	**23.4775**	0.576	2.5	mg/L	38	Standard
	K	39	20.0	43.3	**0.9633**	0.482	50.0	mg/L	0	Standard
	Ca	43	246.7	8.4	**24.1124**	2.493	10.3	mg/L	23	Standard
	Fe	54	563.2	3.1	**0.1666**	0.007	4.1	mg/L	234	Standard
	Fe	57	376.7	7.3	**0.4983**	0.056	11.3	mg/L	118	Standard
>	**Sc-1**	45	51223.1	1.4				mg/L	57581	Standard
	Cl	35	37035.2	0.9				ug/L	22827	Standard
	Kr	83	100.7	14.9				ug/L	90	Standard
	Br	81	7431.8	2.2				ug/L	2287	Standard
	P	31	345691.4	1.5				ug/L	215766	Standard
	S	34	46168.6	0.9				ug/L	23460	Standard
	Sr	88	481.7	7.3				ug/L	48	Standard
	C	12	3.3	173.2				mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	10.0	100.0				mg/L	0	Standard
	Dy	164	127.4	10.7				mg/L	6	Standard
	Ho-1	165	118.3	8.8				mg/L	2	Standard
	Er	166	123.3	28.5				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		114.059	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		96.405	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

Sample ID: L1311122801
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	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.639
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	95.444
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1311122801
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Method 6020 - Summary Report

Sample ID: L1311121808
Sample Date/Time: Friday, November 22, 2013 16:26:50
Number of Replicates: 3
Autosampler Position: 328
Sample Description: 5000
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	240087.8	2.1				ug/L	231878	Standard
	Be	9	13.3	78.1	**-0.0032**	0.004	116.0	ug/L	7	Standard
	Al	27	20473.8	5.1	**0.1166**	0.007	6.0	ug/L	115	Standard
	Sc	45	45402.9	0.7				ug/L	57581	Standard
	Ti	47	17.7	29.0	**-0.0140**	0.012	86.6	ug/L	17	Standard
	V	51	1441.8	11.0	**-0.0150**	0.022	144.4	ug/L	1678	Standard
	Cr	52	20145.3	15.7	**2.1636**	0.475	22.0	ug/L	5719	Standard
	Cr	53	3817.2	19.2	**2.8797**	0.586	20.4	ug/L	132	Standard
	Mn	55	2788.6	4.6	**0.1459**	0.010	6.6	ug/L	927	Standard
	Co	59	67.3	14.9	**-0.0074**	0.001	17.5	ug/L	80	Standard
	Ni	60	207.0	9.2	**0.0561**	0.007	12.3	ug/L	39	Standard
	Cu	65	105.3	13.5	**-0.0008**	0.006	717.3	ug/L	91	Standard
	Zn	66	3428.1	7.5	**2.1474**	0.169	7.9	ug/L	159	Standard
>	**Ge**	72	451081.0	0.6				ug/L	504090	Standard
	As	75	-223.2	12.3	**0.0087**	0.018	201.4	ug/L	-261	Standard
	Se	82	-31.0	11.8	**0.0273**	0.026	93.4	ug/L	-43	Standard
	Se-1	77	100.0	1.7	**0.1993**	0.022	10.8	ug/L	86	Standard
>	**Ga**	71	20.0	25.0				mg/L	35	Standard
	Rb	85	26.7	21.7				ug/L	20	Standard
	Y	89	410036.0	3.1				ug/L	462194	Standard
>	**Rh**	103	1.7	173.2				ug/L	7	Standard
	Mo	98	12.8	8.7	**-0.0009**	0.000	33.3	ug/L	8	Standard
	Ag	107	50.0	12.2	**-0.0080**	0.001	11.3	ug/L	62	Standard
	Cd	111	3.0	100.8	**-0.0077**	0.001	18.3	mg/L	1	Standard
	Cd	114	10.6	75.2	**-0.0057**	0.001	25.6	ug/L	23	Standard
>	**In**	115	469362.0	0.9				ug/L	502083	Standard
	Sn	118	101.0	13.0	**-0.0133**	0.010	78.3	ug/L	144	Standard
	Sb	123	22.0	8.8	**0.0038**	0.001	20.8	ug/L	19	Standard
	Ba	135	17.0	27.0	**0.0021**	0.003	123.1	ug/L	9	Standard
	Ce	140	20.0	25.0				ug/L	17	Standard
>	**Tb**	159	450356.9	0.5				ug/L	490863	Standard
	Ho	165	5.0	0.0				ug/L	2	Standard
	Tl	203	39.3	18.7	**0.0003**	0.001	390.4	ug/L	2	Standard
	Tl	205	55.0	31.5	**0.0047**	0.003	54.7	ug/L	0	Standard
	Pb	206	80.3	23.0	**-0.0047**	0.007	155.3	ug/L	84	Standard
	Pb	207	77.7	14.9	**0.0007**	0.005	682.3	ug/L	73	Standard
	Pb	208	181.7	9.2	**-0.0089**	0.003	30.6	ug/L	199	Standard
	U	238	0.3	173.2	**-0.0005**	0.000	26.3	ug/L	1	Standard
>	**Bi**	209	266961.7	0.4				ug/L	281512	Standard

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Na	23	1.7	173.2	**0.1277**	0.965	755.5	mg/L	2	Standard
Mg	24	56.7	18.4	**0.0516**	0.016	30.8	mg/L	38	Standard
K	39	0.0		**-0.1586**			mg/L	0	Standard
Ca	43	16.7	34.6	**-0.4409**	0.712	161.4	mg/L	23	Standard
Fe	54	96.5	10.4	**-0.0479**	0.005	10.7	mg/L	234	Standard
Fe	57	130.0	33.5	**0.0995**	0.084	84.5	mg/L	118	Standard
Sc-1	45	45402.9	0.7				mg/L	57581	Standard
Cl	35	35191.5	2.1				ug/L	22827	Standard
Kr	83	80.3	5.0				ug/L	90	Standard
Br	81	2136.8	3.8				ug/L	2287	Standard
P	31	91718.5	1.7				ug/L	215766	Standard
S	34	47975.8	1.7				ug/L	23460	Standard
Sr	88	88.3	18.2				ug/L	48	Standard
C	12	0.0					mg/L	3	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	2.9	173.2				mg/L	6	Standard
Ho-1	165	5.0	0.0				mg/L	2	Standard
Er	166	10.0	173.2				mg/L	7	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.540	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		89.484	
As	75			
Se	82			
Se-1	77			
> Ga	71			
Rb	85			

Sample ID: L1311121808
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	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	93.483
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	94.831
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: November 24, 2013

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, November 22, 2013 16:29:57
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	260901.3	2.4				ug/L	231878	Standard
	Be	9	145039.5	2.3	**48.6382**	0.538	1.1	ug/L	7	Standard
	Al	27	8743340.1	2.1	**47.4106**	0.172	0.4	ug/L	115	Standard
	Sc	45	51718.2	2.7				ug/L	57581	Standard
	Ti	47	45544.7	1.0	**97.1356**	1.056	1.1	ug/L	17	Standard
	V	51	390126.8	1.2	**47.5417**	0.781	1.6	ug/L	1678	Standard
	Cr	52	372831.3	2.1	**48.0986**	1.255	2.6	ug/L	5719	Standard
	Cr	53	69790.4	1.6	**48.7113**	0.779	1.6	ug/L	132	Standard
	Mn	55	677529.8	0.8	**50.0462**	0.621	1.2	ug/L	927	Standard
	Co	59	417403.4	2.2	**48.3795**	1.290	2.7	ug/L	80	Standard
	Ni	60	143765.3	1.7	**49.8173**	1.070	2.1	ug/L	39	Standard
	Cu	65	142477.2	1.4	**49.9304**	0.911	1.8	ug/L	91	Standard
	Zn	66	78820.5	0.5	**50.1904**	0.476	0.9	ug/L	159	Standard
>	**Ge**	72	499449.8	0.5				ug/L	504090	Standard
	As	75	83524.3	0.7	**49.8202**	0.451	0.9	ug/L	-261	Standard
	Se	82	8234.9	0.8	**49.7447**	0.605	1.2	ug/L	-43	Standard
	Se-1	77	6051.5	1.1	**50.4175**	0.300	0.6	ug/L	86	Standard
>	**Ga**	71	43.3	54.5				mg/L	35	Standard
	Rb	85	1225.0	9.2				ug/L	20	Standard
	Y	89	468509.6	1.7				ug/L	462194	Standard
>	**Rh**	103	31.7	9.1				ug/L	7	Standard
	Mo	98	422693.0	0.6	**101.5746**	1.002	1.0	ug/L	8	Standard
	Ag	107	379063.5	0.4	**50.5772**	0.318	0.6	ug/L	62	Standard
	Cd	111	117089.6	0.7	**50.0637**	0.474	0.9	mg/L	1	Standard
	Cd	114	293920.3	0.1	**49.1608**	0.456	0.9	ug/L	23	Standard
>	**In**	115	517490.4	0.9				ug/L	502083	Standard
	Sn	118	74866.2	1.6	**51.0644**	0.627	1.2	ug/L	144	Standard
	Sb	123	138774.0	1.0	**49.5546**	0.926	1.9	ug/L	19	Standard
	Ba	135	98606.2	0.6	**49.5761**	0.459	0.9	ug/L	9	Standard
	Ce	140	45.0	19.2				ug/L	17	Standard
>	**Tb**	159	497728.6	1.0				ug/L	490863	Standard
	Ho	165	8.3	69.3				ug/L	2	Standard
	Tl	203	326975.9	0.5	**49.4698**	0.197	0.4	ug/L	2	Standard
	Tl	205	368776.6	1.8	**51.5798**	1.179	2.3	ug/L	0	Standard
	Pb	206	138575.5	0.4	**51.8612**	0.298	0.6	ug/L	84	Standard
	Pb	207	125528.9	0.8	**51.8158**	0.738	1.4	ug/L	73	Standard
	Pb	208	318785.8	0.7	**50.0048**	0.386	0.8	ug/L	199	Standard
	U	238	219085.3	0.6	**50.4477**	0.203	0.4	ug/L	1	Standard
>	**Bi**	209	283892.8	0.9				ug/L	281512	Standard

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	Na	23	21.7	74.2	**5.9118**	4.594	77.7	mg/L	2	Standard
	Mg	24	4072.2	7.6	**5.5318**	0.317	5.7	mg/L	38	Standard
	K	39	81.7	14.1	**4.3998**	0.777	17.7	mg/L	0	Standard
	Ca	43	36.7	7.9	**1.4405**	0.250	17.4	mg/L	23	Standard
	Fe	54	10905.2	4.2	**4.9987**	0.086	1.7	mg/L	234	Standard
	Fe	57	3115.3	6.3	**5.1817**	0.221	4.3	mg/L	118	Standard
>	**Sc-1**	45	51718.2	2.7				mg/L	57581	Standard
	Cl	35	36340.2	4.2				ug/L	22827	Standard
	Kr	83	96.3	2.2				ug/L	90	Standard
	Br	81	2843.6	7.6				ug/L	2287	Standard
	P	31	351139.8	1.8				ug/L	215766	Standard
	S	34	61934.7	1.0				ug/L	23460	Standard
	Sr	88	50.0	36.1				ug/L	48	Standard
	C	12	0.0					mg/L	3	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	0.0					mg/L	0	Standard
	Dy	164	-0.3	173.2				mg/L	6	Standard
	Ho-1	165	8.3	69.3				mg/L	2	Standard
	Er	166	6.7	173.2				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		112.516	
	Be	9	97.276		
	Al	27	94.821		
	Sc	45			
	Ti	47	97.136		
	V	51	95.083		
	Cr	52	96.197		
	Cr	53			
	Mn	55	100.092		
	Co	59	96.759		
	Ni	60	99.635		
	Cu	65	99.861		
	Zn	66	100.381		
>	Ge	72		99.080	
	As	75	99.640		
	Se	82	99.489		
	Se-1	77			
>	Ga	71			
	Rb	85			

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Y	89			
> Rh	103			
Mo	98	101.575		
Ag	107	101.154		
Cd	111	100.127		
Cd	114			
> In	115			103.069
Sn	118	102.129		
Sb	123	99.109		
Ba	135	99.152		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	98.940		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.010		
U	238	100.895		
> Bi	209			100.846
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Friday, November 22, 2013 16:32:10
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, November 22, 2013 16:33:02
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	259792.5	2.5				ug/L	231878	Standard
	Be	9	23.3	32.7	**-0.0001**	0.003	1918.0	ug/L	7	Standard
	Al	27	1125.0	37.3	**0.0020**	0.002	104.4	ug/L	115	Standard
	Sc	45	52415.5	2.2				ug/L	57581	Standard
	Ti	47	16.3	9.4	**-0.0209**	0.004	17.9	ug/L	17	Standard
	V	51	1366.0	11.1	**-0.0433**	0.018	40.9	ug/L	1678	Standard
	Cr	52	4819.1	1.3	**-0.1295**	0.013	10.0	ug/L	5719	Standard
	Cr	53	683.3	11.2	**0.4003**	0.048	11.9	ug/L	132	Standard
	Mn	55	993.0	6.9	**-0.0091**	0.005	58.6	ug/L	927	Standard
	Co	59	134.0	29.2	**-0.0005**	0.004	877.6	ug/L	80	Standard
	Ni	60	67.7	10.4	**0.0002**	0.002	1632.0	ug/L	39	Standard
	Cu	65	137.7	1.7	**0.0066**	0.001	21.0	ug/L	91	Standard
	Zn	66	180.0	10.2	**-0.1673**	0.011	6.6	ug/L	159	Standard
>	**Ge**	72	499495.6	1.5				ug/L	504090	Standard
	As	75	-239.7	5.3	**0.0130**	0.009	72.6	ug/L	-261	Standard
	Se	82	-28.8	33.5	**0.0598**	0.061	101.8	ug/L	-43	Standard
	Se-1	77	116.0	1.7	**0.2439**	0.024	9.9	ug/L	86	Standard
>	**Ga**	71	13.3	78.1				mg/L	35	Standard
	Rb	85	18.3	31.5				ug/L	20	Standard
	Y	89	465875.2	2.6				ug/L	462194	Standard
>	**Rh**	103	0.0					ug/L	7	Standard
	Mo	98	102.4	25.5	**0.0207**	0.006	30.4	ug/L	8	Standard
	Ag	107	85.0	21.3	**-0.0039**	0.002	61.9	ug/L	62	Standard
	Cd	111	7.2	84.6	**-0.0060**	0.003	43.3	mg/L	1	Standard
	Cd	114	37.0	36.1	**-0.0014**	0.002	160.9	ug/L	23	Standard
>	**In**	115	510272.2	0.6				ug/L	502083	Standard
	Sn	118	111.7	5.1	**-0.0121**	0.004	32.2	ug/L	144	Standard
	Sb	123	415.5	34.7	**0.1456**	0.052	35.9	ug/L	19	Standard
	Ba	135	17.0	23.5	**0.0013**	0.002	147.6	ug/L	9	Standard
	Ce	140	5.0	100.0				ug/L	17	Standard
>	**Tb**	159	499799.6	0.1				ug/L	490863	Standard
	Ho	165	8.3	34.6				ug/L	2	Standard
	Tl	203	51.7	28.2	**0.0017**	0.002	125.3	ug/L	2	Standard
	Tl	205	68.3	72.2	**0.0060**	0.007	112.9	ug/L	0	Standard
	Pb	206	104.7	21.1	**0.0022**	0.008	360.9	ug/L	84	Standard
	Pb	207	82.0	12.4	**0.0002**	0.004	1678.3	ug/L	73	Standard
	Pb	208	241.3	7.8	**-0.0016**	0.003	158.1	ug/L	199	Standard
	U	238	29.7	64.2	**0.0061**	0.004	70.0	ug/L	1	Standard
>	**Bi**	209	286030.8	1.1				ug/L	281512	Standard

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⌈	**Na**	23	1.7	173.2	**0.0593**	0.846	1428.0	mg/L	2	Standard
|	**Mg**	24	70.0	7.1	**0.0579**	0.008	14.2	mg/L	38	Standard
|	**K**	39	0.0		**-0.1586**			mg/L	0	Standard
|	**Ca**	43	21.7	53.3	**-0.1745**	1.265	725.2	mg/L	23	Standard
|	**Fe**	54	242.8	1.1	**0.0127**	0.004	29.1	mg/L	234	Standard
|	**Fe**	57	123.3	22.3	**0.0540**	0.042	77.5	mg/L	118	Standard
⌊>	**Sc-1**	45	52415.5	2.2				mg/L	57581	Standard
	Cl	35	35439.4	0.6				ug/L	22827	Standard
	Kr	83	80.3	14.5				ug/L	90	Standard
	Br	81	2596.9	2.9				ug/L	2287	Standard
	P	31	307093.3	4.5				ug/L	215766	Standard
	S	34	58128.0	1.4				ug/L	23460	Standard
	Sr	88	80.0	18.8				ug/L	48	Standard
	C	12	0.0					mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	0	Standard
	Dy	164	-0.3	173.2				mg/L	6	Standard
	Ho-1	165	8.3	34.6				mg/L	2	Standard
	Er	166	6.7	173.2				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		112.038	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		99.089	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			
⌊	Rb	85			

Sample ID: QC Std 7
Report Date/Time: Friday, November 22, 2013 16:35:15
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	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	101.631
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	101.605
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1311121803
Sample Date/Time: Friday, November 22, 2013 16:36:07
Number of Replicates: 3
Autosampler Position: 329
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	231068.7	0.6				ug/L	231878	Standard
	Be	9	10.0	50.0	**-0.0043**	0.002	44.0	ug/L	7	Standard
	Al	27	592130.9	0.9	**3.6217**	0.054	1.5	ug/L	115	Standard
	Sc	45	44674.1	2.6				ug/L	57581	Standard
	Ti	47	36.0	2.8	**0.0295**	0.002	6.5	ug/L	17	Standard
	V	51	619.8	25.8	**-0.1262**	0.022	17.5	ug/L	1678	Standard
	Cr	52	75327.8	1.8	**10.1983**	0.182	1.8	ug/L	5719	Standard
	Cr	53	15014.1	2.3	**11.5773**	0.330	2.9	ug/L	132	Standard
	Mn	55	17518.5	2.8	**1.3564**	0.033	2.5	ug/L	927	Standard
	Co	59	134.7	1.5	**0.0013**	0.000	19.3	ug/L	80	Standard
	Ni	60	354.0	1.0	**0.1129**	0.002	1.9	ug/L	39	Standard
	Cu	65	530.0	6.6	**0.1646**	0.012	7.5	ug/L	91	Standard
	Zn	66	1884.5	1.7	**1.0573**	0.027	2.6	ug/L	159	Standard
>	**Ge**	72	449849.5	0.7				ug/L	504090	Standard
	As	75	-189.7	16.6	**0.0304**	0.020	66.2	ug/L	-261	Standard
	Se	82	-26.8	40.1	**0.0546**	0.071	130.0	ug/L	-43	Standard
	Se-1	77	118.0	11.4	**0.3703**	0.121	32.7	ug/L	86	Standard
>	**Ga**	71	51.7	34.0				mg/L	35	Standard
	Rb	85	1435.1	4.8				ug/L	20	Standard
	Y	89	408152.9	0.8				ug/L	462194	Standard
>	**Rh**	103	8.3	69.3				ug/L	7	Standard
	Mo	98	310.8	8.1	**0.0781**	0.006	7.7	ug/L	8	Standard
	Ag	107	55.7	6.8	**-0.0072**	0.001	8.2	ug/L	62	Standard
	Cd	111	4.2	76.4	**-0.0072**	0.002	21.1	mg/L	1	Standard
	Cd	114	2119.3	10.5	**0.3833**	0.038	9.8	ug/L	23	Standard
>	**In**	115	468931.7	0.9				ug/L	502083	Standard
	Sn	118	19170.1	3.0	**14.3637**	0.313	2.2	ug/L	144	Standard
	Sb	123	113.4	3.8	**0.0398**	0.001	3.4	ug/L	19	Standard
	Ba	135	1062.7	2.7	**0.5823**	0.011	1.9	ug/L	9	Standard
	Ce	140	55.0	31.5				ug/L	17	Standard
>	**Tb**	159	454757.6	1.2				ug/L	490863	Standard
	Ho	165	15.0	57.7				ug/L	2	Standard
	Tl	203	55.3	7.3	**0.0029**	0.001	22.2	ug/L	2	Standard
	Tl	205	56.7	51.7	**0.0050**	0.004	87.0	ug/L	0	Standard
	Pb	206	130.3	5.1	**0.0155**	0.003	16.2	ug/L	84	Standard
	Pb	207	117.3	3.0	**0.0184**	0.002	8.5	ug/L	73	Standard
	Pb	208	290.0	4.2	**0.0094**	0.002	21.8	ug/L	199	Standard
	U	238	15.3	63.3	**0.0032**	0.002	76.0	ug/L	1	Standard
>	**Bi**	209	265766.6	0.4				ug/L	281512	Standard

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⌈	**Na**	23	5.0	100.0	**1.2865**	1.744	135.6	mg/L	2	Standard
|	**Mg**	24	2453.5	4.7	**3.8506**	0.186	4.8	mg/L	38	Standard
|	**K**	39	1.7	173.2	**-0.0491**	0.190	385.6	mg/L	0	Standard
|	**Ca**	43	11.7	99.0	**-1.0519**	1.369	130.1	mg/L	23	Standard
|	**Fe**	54	172.0	2.9	**-0.0062**	0.004	72.7	mg/L	234	Standard
|	**Fe**	57	163.3	10.8	**0.1698**	0.029	17.2	mg/L	118	Standard
⌊>	**Sc-1**	45	44674.1	2.6				mg/L	57581	Standard
	Cl	35	32742.7	1.0				ug/L	22827	Standard
	Kr	83	84.0	10.2				ug/L	90	Standard
	Br	81	3040.3	8.6				ug/L	2287	Standard
	P	31	115267.2	3.7				ug/L	215766	Standard
	S	34	50913.8	3.9				ug/L	23460	Standard
	Sr	88	108.3	2.7				ug/L	48	Standard
	C	12	0.0					mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	0	Standard
	Dy	164	9.2	10.8				mg/L	6	Standard
	Ho-1	165	15.0	57.7				mg/L	2	Standard
	Er	166	16.7	124.9				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		99.651	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		89.240	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			
⌊	Rb	85			

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	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	93.397
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	94.407
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, November 22, 2013 16:39:14
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	254269.2	0.7				ug/L	231878	Standard
	Be	9	141583.6	2.0	**48.7175**	1.094	2.2	ug/L	7	Standard
	Al	27	8502531.1	0.7	**47.3080**	0.601	1.3	ug/L	115	Standard
	Sc	45	50147.9	1.8				ug/L	57581	Standard
	Ti	47	44319.1	1.3	**94.8623**	2.173	2.3	ug/L	17	Standard
	V	51	384424.3	1.4	**47.0119**	1.073	2.3	ug/L	1678	Standard
	Cr	52	364841.5	0.8	**47.2201**	0.901	1.9	ug/L	5719	Standard
	Cr	53	70334.6	1.6	**49.2601**	0.287	0.6	ug/L	132	Standard
	Mn	55	661818.4	0.4	**49.0561**	0.604	1.2	ug/L	927	Standard
	Co	59	406693.7	0.6	**47.3006**	0.503	1.1	ug/L	80	Standard
	Ni	60	141049.9	1.2	**49.0458**	0.737	1.5	ug/L	39	Standard
	Cu	65	138758.2	1.0	**48.7962**	0.711	1.5	ug/L	91	Standard
	Zn	66	77858.9	1.5	**49.7451**	0.259	0.5	ug/L	159	Standard
>	**Ge**	72	497720.8	1.1				ug/L	504090	Standard
	As	75	82702.1	1.1	**49.5019**	0.348	0.7	ug/L	-261	Standard
	Se	82	8093.7	1.3	**49.0674**	0.842	1.7	ug/L	-43	Standard
	Se-1	77	6007.5	1.0	**50.2244**	0.451	0.9	ug/L	86	Standard
>	**Ga**	71	50.0	17.3				mg/L	35	Standard
	Rb	85	1153.4	10.7				ug/L	20	Standard
	Y	89	452523.3	0.4				ug/L	462194	Standard
>	**Rh**	103	36.7	28.4				ug/L	7	Standard
	Mo	98	418771.1	0.8	**102.7125**	0.342	0.3	ug/L	8	Standard
	Ag	107	375238.6	1.0	**51.1061**	0.783	1.5	ug/L	62	Standard
	Cd	111	115393.8	0.5	**50.3600**	0.261	0.5	mg/L	1	Standard
	Cd	114	295227.4	0.3	**50.4016**	0.343	0.7	ug/L	23	Standard
>	**In**	115	506983.7	0.7				ug/L	502083	Standard
	Sn	118	73845.5	1.2	**51.4122**	0.334	0.6	ug/L	144	Standard
	Sb	123	136920.0	0.9	**49.9000**	0.221	0.4	ug/L	19	Standard
	Ba	135	97313.5	0.2	**49.9396**	0.341	0.7	ug/L	9	Standard
	Ce	140	45.0	29.4				ug/L	17	Standard
>	**Tb**	159	486005.0	0.4				ug/L	490863	Standard
	Ho	165	6.7	43.3				ug/L	2	Standard
	Tl	203	322060.6	0.7	**49.1291**	0.289	0.6	ug/L	2	Standard
	Tl	205	364253.6	1.3	**51.3640**	0.410	0.8	ug/L	0	Standard
	Pb	206	137575.8	0.4	**51.9138**	0.453	0.9	ug/L	84	Standard
	Pb	207	123964.4	0.6	**51.5912**	0.387	0.8	ug/L	73	Standard
	Pb	208	316019.5	0.9	**49.9797**	0.220	0.4	ug/L	199	Standard
	U	238	213337.8	0.7	**49.5304**	0.178	0.4	ug/L	1	Standard
>	**Bi**	209	281558.0	0.5				ug/L	281512	Standard

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	Na	23	25.0	20.0	**7.2042**	1.634	22.7	mg/L	2	Standard
	Mg	24	3783.8	3.0	**5.3020**	0.084	1.6	mg/L	38	Standard
	K	39	63.3	38.9	**3.4600**	1.364	39.4	mg/L	0	Standard
	Ca	43	35.0	14.3	**1.3756**	0.483	35.1	mg/L	23	Standard
	Fe	54	11062.4	4.1	**5.2340**	0.123	2.4	mg/L	234	Standard
	Fe	57	3067.0	3.4	**5.2694**	0.274	5.2	mg/L	118	Standard
>	**Sc-1**	45	50147.9	1.8				mg/L	57581	Standard
	Cl	35	34830.7	1.4				ug/L	22827	Standard
	Kr	83	102.7	14.2				ug/L	90	Standard
	Br	81	2603.6	2.5				ug/L	2287	Standard
	P	31	312252.0	1.7				ug/L	215766	Standard
	S	34	57828.5	0.6				ug/L	23460	Standard
	Sr	88	78.3	30.2				ug/L	48	Standard
	C	12	0.0					mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	0	Standard
	Dy	164	9.7	105.8				mg/L	6	Standard
	Ho-1	165	6.7	43.3				mg/L	2	Standard
	Er	166	6.7	86.6				mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		109.656	
	Be	9	97.435		
	Al	27	94.616		
	Sc	45			
	Ti	47	94.862		
	V	51	94.024		
	Cr	52	94.440		
	Cr	53			
	Mn	55	98.112		
	Co	59	94.601		
	Ni	60	98.092		
	Cu	65	97.592		
	Zn	66	99.490		
>	Ge	72		98.737	
	As	75	99.004		
	Se	82	98.135		
	Se-1	77			
>	Ga	71			
	Rb	85			

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Y	89			
> Rh	103			
Mo	98	102.712		
Ag	107	102.212		
Cd	111	100.720		
Cd	114			
> In	115			100.976
Sn	118	102.824		
Sb	123	99.800		
Ba	135	99.879		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	98.258		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.959		
U	238	99.061		
> Bi	209			100.016
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, November 22, 2013 16:42:19
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH user
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	257838.9	1.2				ug/L	231878	Standard
	Be	9	31.7	50.8	**0.0027**	0.006	201.3	ug/L	7	Standard
	Al	27	2177.0	126.9	**0.0079**	0.015	192.7	ug/L	115	Standard
	Sc	45	51194.7	2.0				ug/L	57581	Standard
	Ti	47	22.3	13.7	**-0.0078**	0.007	84.0	ug/L	17	Standard
	V	51	1503.5	28.8	**-0.0253**	0.053	210.0	ug/L	1678	Standard
	Cr	52	11085.0	99.3	**0.6996**	1.449	207.1	ug/L	5719	Standard
	Cr	53	923.4	58.1	**0.5722**	0.377	65.8	ug/L	132	Standard
	Mn	55	1199.4	32.9	**0.0067**	0.029	436.0	ug/L	927	Standard
	Co	59	179.7	79.0	**0.0049**	0.017	334.4	ug/L	80	Standard
	Ni	60	66.3	46.1	**-0.0002**	0.011	6076.3	ug/L	39	Standard
	Cu	65	113.3	16.2	**-0.0017**	0.006	376.2	ug/L	91	Standard
	Zn	66	178.7	10.1	**-0.1674**	0.011	6.8	ug/L	159	Standard
>	**Ge**	72	496370.0	0.1				ug/L	504090	Standard
	As	75	-262.5	6.0	**-0.0014**	0.009	656.8	ug/L	-261	Standard
	Se	82	-40.5	15.0	**-0.0117**	0.037	311.4	ug/L	-43	Standard
	Se-1	77	105.3	4.0	**0.1592**	0.035	22.3	ug/L	86	Standard
>	**Ga**	71	25.0	40.0				mg/L	35	Standard
	Rb	85	16.7	45.8				ug/L	20	Standard
	Y	89	462637.1	0.7				ug/L	462194	Standard
>	**Rh**	103	6.7	114.6				ug/L	7	Standard
	Mo	98	197.3	83.5	**0.0437**	0.040	92.0	ug/L	8	Standard
	Ag	107	154.7	89.9	**0.0055**	0.019	343.2	ug/L	62	Standard
	Cd	111	6.2	52.1	**-0.0065**	0.001	21.7	mg/L	1	Standard
	Cd	114	38.3	20.2	**-0.0012**	0.001	105.3	ug/L	23	Standard
>	**In**	115	512618.8	0.3				ug/L	502083	Standard
	Sn	118	127.0	4.9	**-0.0019**	0.005	242.0	ug/L	144	Standard
	Sb	123	456.8	31.5	**0.1597**	0.051	32.1	ug/L	19	Standard
	Ba	135	37.3	103.6	**0.0117**	0.020	169.0	ug/L	9	Standard
	Ce	140	8.3	34.6				ug/L	17	Standard
>	**Tb**	159	495080.7	1.1				ug/L	490863	Standard
	Ho	165	5.0	173.2				ug/L	2	Standard
	Tl	203	115.7	123.3	**0.0114**	0.022	189.5	ug/L	2	Standard
	Tl	205	70.0	55.8	**0.0062**	0.006	88.4	ug/L	0	Standard
	Pb	206	133.3	44.0	**0.0128**	0.022	174.1	ug/L	84	Standard
	Pb	207	119.7	39.0	**0.0155**	0.020	125.8	ug/L	73	Standard
	Pb	208	243.0	18.7	**-0.0015**	0.007	487.8	ug/L	199	Standard
	U	238	31.3	70.2	**0.0065**	0.005	77.7	ug/L	1	Standard
>	**Bi**	209	287571.2	0.9				ug/L	281512	Standard

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	Na	23	1.7	173.2	**0.0584**	0.845	1447.2	mg/L	2	Standard
	Mg	24	53.3	46.2	**0.0370**	0.034	91.6	mg/L	38	Standard
	K	39	1.7	173.2	**-0.0647**	0.163	251.1	mg/L	0	Standard
	Ca	43	16.7	17.3	**-0.6691**	0.344	51.4	mg/L	23	Standard
	Fe	54	230.7	15.2	**0.0099**	0.019	190.0	mg/L	234	Standard
	Fe	57	135.0	13.4	**0.0799**	0.033	41.0	mg/L	118	Standard
>	**Sc-1**	45	51194.7	2.0				mg/L	57581	Standard
	Cl	35	33996.1	1.9				ug/L	22827	Standard
	Kr	83	91.3	5.1				ug/L	90	Standard
	Br	81	2780.3	4.9				ug/L	2287	Standard
	P	31	298726.3	1.0				ug/L	215766	Standard
	S	34	54046.3	2.7				ug/L	23460	Standard
	Sr	88	88.3	18.2				ug/L	48	Standard
	C	12	3.3	173.2				mg/L	3	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	6.7	86.6				mg/L	0	Standard
	Dy	164	2.9	202.3				mg/L	6	Standard
	Ho-1	165	5.0	173.2				mg/L	2	Standard
	Er	166	10.0					mg/L	7	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		111.196	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		98.469	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			
	Rb	85			

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⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	102.098
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	102.152
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Friday, November 22, 2013 16:44:32
Page 3

Approved: November 24, 2013

2.1.3 Metals CVAA Data (Mercury)

2.1.3.1 Summary Data

Login Number: L13111086
Department: Metals - AA
Analyst: Pierce Morris

METHOD

Preparation: SW-846 7470

Analysis: SW-846 7470

HOLDING TIMES

Sample Preparation: All holding times were met.

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

CALIBRATION

Initial Calibration: All acceptance criteria were met.

Alternate Source Standards: All acceptance criteria were met.

Interference Check Standards: All acceptance criteria were met.

Continuing Calibration Verification: All acceptance criteria were met.

Continuing Calibration Blank: All acceptance criteria were met.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Serial Dilution/Post Digestion Spikes: WG453839 - All acceptance criteria were met.

Matrix Spikes: All acceptance criteria were met.

SAMPLES

Samples: All acceptance criteria were met.

Narrative ID: 75093
Approved By: Sheri Pfalzgraf

Certificate of Analysis

Microbac

Lab Report #: L13111086
Lab Project #: 3005.011
Project Name: White Sands MR
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L13111086-01	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	SMW 1-1113-1	**Prep Method:**	7470A	**Prep Date:**	11/21/2013 10:05
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	11/22/2013 09:05
Workgroup #:	WG453839	**Analyst:**	PDM	**Run Date:**	11/22/2013 09:28
Collect Date:	11/15/2013 10:00	**Dilution:**	1	**File ID:**	M7.112213.092821
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Mercury	7439-97-6		U	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Certificate of Analysis

Sample #:	L13111086-02	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	SMW 4-1113-1	**Prep Method:**	7470A	**Prep Date:**	11/21/2013 10:05
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	11/22/2013 09:05
Workgroup #:	WG453839	**Analyst:**	PDM	**Run Date:**	11/22/2013 09:33
Collect Date:	11/15/2013 11:50	**Dilution:**	1	**File ID:**	M7.112213.093325
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Mercury	7439-97-6		U	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Certificate of Analysis

2.1.3.2 QC Summary

Example Cold Vapor Mercury Calculations
Hydra AA Mercury Analyzer / CETAC M-7600 Quick Trace Mercury Analyzer

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and five standards.

2.0 Calculating the concentration (C) of an element in water using data from run log and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Diluted to Volume (mL)	40
Vi = Aliquot Volume (mL)	40
D = Manual dilution factor, if required (10X = 10)	1
Cx = Concentration of element in ppb (ug/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Ws} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Diluted to volume (mL)	40
Ws = Aliquot weight (g)	0.6
D = Manual dilution factor	1
Cx = Concentration of element in ug/kg	6.67

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

1 Cx = Concentration calculated as received (wet basis)	6.67
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	8.33

8.33 ug/kg = 0.00833 mg/kg

TCLP Non-Volatile

1/2

Analyst(s): BLG
Date: 11/20/13
Filter Lot #: 8285629
Microbac SOP: Tclp 01 Rev #: 10

Analyst / Date		Analyst / Date	
BLG 11/20/13		BLG 11/21/13	
Time On	Temp On °C	Time Off	Temp Off °C
1425	23	0707	23

Agitator Speed 30 ± 2 rpm ☑

Jug #	Sample #	Tests	Method	Fluid #	Matrix *	% Solid	Pretest pH Initial	Pretest pH Final	Int. Wt. (g)	Fluid Vol. (mL)	Final extract pH
D	11-1150-1	me	1311	F2319	S	100	12.30	11.32	25.45	509	11.20
	1151-1						12.34	11.33	25.44	509	10.97
	1152-1						12.25	11.25	25.32	506	11.46
	1153-1						12.40	11.23	25.06	501	12.35
	11-1148-1			F1942			9.25	4.58	25.00	500	6.45
	2						9.28	4.70	25.22	504	7.36
	3						9.65	4.53	25.15	503	6.69
	11-1224-1			F1942			7.57	1.96	59.87	1197	6.29
	2						7.72	1.76	67.54	1351	6.19
	3						7.40	1.73	46.96	939	6.22
	4						7.34	1.68	50.23	1005	6.34
	5						6.43	1.66	50.12	1002	4.98
	6						6.87	1.84	71.34	1427	6.18
	7						6.93	1.77	76.89	1538	5.18
	8						7.23	1.76	78.37	1567	6.07
	9						5.68	2.01	74.80	1496	6.12
	10						5.83	1.77	68.08	1362	6.15
	11						5.44	1.68	33.90	678	4.93
	12			F2319			8.88	5.21	43.40	868	6.69
	13	(SPIK)		F1942			8.73	1.76	49.06	981	6.53
	14			F1943			8.53	4.21	63.41	1268	6.29
	15						8.36	1.76	45.73	915	6.36
	16						8.14	1.63	52.84	1057	6.10
	17						5.7	2.02	62.30	1246	6.17
	18			F1942			5.92	1.93	52.42	1048	5.58

*Matrix Code: (S = solid, sand, soil or sludge) (P = paint) (O = organic) (W = water or aqueous waste)
D = Disposable plastic jug
TCLP Pretest weight will be 5.0 g (± 0.1) unless otherwise noted.
Temperature shall be maintained at 23° ± 2 for 18 ± 2 hours unless otherwise noted.

Comments: * All SXS reduced volume due to matrix. TSR notified. (11-1224 SXS are from a bldg. demo. project) BLG

Peer Review By: 11/22/13

TCLP Non-Volatile

2/2

Analyst(s): BLG
Date: 11/20/13
Filter Lot #:
Microbac SOP: _____ Rev #: _____

Analyst / Date		Analyst / Date	
Time On	Temp On °C	Time Off	Temp Off °C

Agitator Speed 30 ± 2 rpm ☐

Jug #	Sample #	Tests	Method	Fluid #	Matrix *	% Solid	Pretest pH Initial	Pretest pH Final	Int. Wt. (g)	Fluid Vol. (mL)	Final extract pH
D	11-1224-19	me	1311	F1943	S	100	6.10	1.82	70.71	1414	6.26
	20						6.20	1.62	30.48	610	5.23
	21						5.73	1.59	41.65	833	5.09
	22						5.62	1.49	60.09	1202	6.42
	23	(SPK)					5.84	1.70	49.74	995	6.35
N/A	FB1K1	me	1311	F1942	W	N/A	N/A	N/A	N/A	N/A	N/A
	FB1K2			F2319							

BLG 11/22/13

*Matrix Code: (S = solid, sand, soil or sludge) (P = paint) (O = organic) (W = water or aqueous waste)
D = Disposable plastic jug
TCLP Pretest weight will be 5.0 g (± 0.1) unless otherwise noted.
Temperature shall be maintained at 23° ± 2 for 18 ± 2 hours unless otherwise noted.

Comments: Reduced volume due to matrix. TSR notified. blg

Peer Review By: 11/22/13

Microbac Laboratories Inc.
Metals Digest Log

Workgroup: WG453788
Analyst: REK
Spike Analyst: REK
Method: 7470A
Run Date: 11/21/2013 10:05
Hotblock Start Temp: 94.9 @ 09:45
Hotblock End Temp: 94.8 @ 11:45
Instrument: HB6

SOP: ME404 Revison 15
Spike Solution: STD61484
Spike Witness: ERP
HNO3 Lot #: COA16631
Digestion Tubes Lot #: COA16971
H2SO4 Lot #: COA16973
KMnO4 1:1 Lot #: RGT28617
K2S2O8 1:1 Lot #: RGT28733
Mercury Water ICV Lot #: STD61486
HG H2O STDS 10PPM Lot #: STD61492

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Spike Amount	Due Date
1	WG453788-03	BLANK	1	40 mL	40 mL		
2	WG453698-01	FBLK1	17	4 mL	40 mL		
3	WG453698-02	FBLK1	17	4 mL	40 mL		
4	WG453788-04	LCS	1	40 mL	40 mL	4 mL	
5	L13111086-01	SAMP	1	40 mL	40 mL		11/29/13
6	L13111086-02	SAMP	1	40 mL	40 mL		11/29/13
7	L13111148-01	SAMP	17	4 mL	40 mL		11/29/13
8	L13111148-02	SAMP	17	4 mL	40 mL		11/29/13
9	L13111148-03	SAMP	17	4 mL	40 mL		11/29/13
10	L13111150-01	SAMP	17	4 mL	40 mL		11/22/13
11	L13111151-01	SAMP	17	4 mL	40 mL		11/22/13
12	L13111152-01	SAMP	17	4 mL	40 mL		11/22/13
13	L13111153-01	SAMP	17	4 mL	40 mL		11/22/13
14	L13111205-02	SAMP	1	40 mL	40 mL		11/29/13
15	WG453788-01	REF	1	40 mL	40 mL		
16	L13111205-03	RS01	1	40 mL	40 mL		11/29/13
17	WG453788-05	MS	1	36 mL	40 mL	4 mL	
18	L13111205-04	MS01	1	36 mL	40 mL	4 mL	11/29/13
19	WG453788-06	MSD	1	36 mL	40 mL	4 mL	
20	L13111205-05	SD01	1	36 mL	40 mL	4 mL	11/29/13
21	L13111206-01	SAMP	1	40 mL	40 mL		11/29/13
22	L13111228-01	SAMP	1	40 mL	40 mL		11/27/13
23	L13111228-02	SAMP	1	40 mL	40 mL		11/27/13
24	WG453788-02	REF	2	40 mL	40 mL		
25	L13111242-03	SAMP	2	40 mL	40 mL		11/27/13
26	L13111243-01	SAMP	2	40 mL	40 mL		11/27/13
27	WG453788-07	DUP	1	40 mL	40 mL		

Analyst: _____

Reviewer: _____

* All calibration and check standards are prepared and digested with sample batch following the procedures in section 7.0 of SOP ME404/ME405.

HB_DIG - Modified 07/26/2012
PDF ID: 3218185
Report generated: 11/21/2013 12:31

Microbac Laboratories Inc.

Instrument Run Log

Instrument: CVAA1 Dataset: 112213A.CSV
Analyst1: PDM Analyst2: N/A
Method: 7470 SOP: ME404 Rev: 15
Maintenance Log ID: 48290

Calibration Std: STD61492 ICV Std: STD61486 Post Spike: STD61492
ICSA: N/A ICSAB: N/A Int. Std:
CCV: LLCCV: Tuning Sol :
Stannous : RGT27563 Hydroxylamine : RGT27561

Workgroups: 453839

Comments: Sequences 30 and 31 were edited due to typographical error PDM.

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	M7.112213.085252	WG454033-01	Calibration Point		1		11/22/13 08:52
2	M7.112213.085524	WG454033-02	Calibration Point		1		11/22/13 08:55
3	M7.112213.085756	WG454033-03	Calibration Point		1		11/22/13 08:57
4	M7.112213.090028	WG454033-04	Calibration Point		1		11/22/13 09:00
5	M7.112213.090301	WG454033-05	Calibration Point		1		11/22/13 09:03
6	M7.112213.090535	WG454033-06	Calibration Point		1		11/22/13 09:05
7	M7.112213.090809	WG454033-07	Initial Calibration Verification		1		11/22/13 09:08
8	M7.112213.091040	WG454033-08	Initial Calib Blank		1		11/22/13 09:10
9	M7.112213.091313	WG454033-09	CCV		1		11/22/13 09:13
10	M7.112213.091544	WG454033-10	CCB		1		11/22/13 09:15
11	M7.112213.091815	WG453788-03	Method/Prep Blank	40/40	1		11/22/13 09:18
12	M7.112213.092046	WG453788-04	Laboratory Control S	40/40	1		11/22/13 09:20
13	M7.112213.092317	WG453698-01	Fluid Blank 1		1		11/22/13 09:23
14	M7.112213.092549	WG453698-02	Fluid Blank 1		1		11/22/13 09:25
15	M7.112213.092821	L13111086-01	SMW 1-1113-1	40/40	1		11/22/13 09:28
16	M7.112213.093053	WG453839-01	Post Digestion Spike		1	L13111086-01	11/22/13 09:30
17	M7.112213.093325	L13111086-02	SMW 4-1113-1	40/40	1		11/22/13 09:33
18	M7.112213.093558	L13111148-01	MILL FINES (SCREW 8) SCF	4/40	1		11/22/13 09:35
19	M7.112213.093831	WG453839-02	Post Digestion Spike		1	L13111148-01	11/22/13 09:38
20	M7.112213.094105	L13111148-02	MILL FINES (SCREW 10) SC	4/40	1		11/22/13 09:41
21	M7.112213.094337	WG454033-11	CCV		1		11/22/13 09:43
22	M7.112213.094608	WG454033-12	CCB		1		11/22/13 09:46
23	M7.112213.094842	L13111148-03	SALTCAKE	4/40	1		11/22/13 09:48
24	M7.112213.095116	L13111150-01	AWV (15 BAGS) *MARKED V	4/40	1		11/22/13 09:51
25	M7.112213.095346	L13111151-01	AWV 17 BAGS	4/40	1		11/22/13 09:53
26	M7.112213.095617	L13111152-01	EASTERN ALLOYS 6 BAGS	4/40	1		11/22/13 09:56
27	M7.112213.095848	L13111153-01	URV (4 BAGS) MARKED W/	4/40	1		11/22/13 09:58
28	M7.112213.100119	L13111205-02	MW95-2-131119	40/40	1		11/22/13 10:01
29	M7.112213.100350	L13111205-03	LF1MW07-131119	40/40	1	WG453788-01	11/22/13 10:03
30	M7.112213.100622	L13111205-04	LF1MW07-131119	36/40	1	WG453788-05	11/22/13 10:06
31	M7.112213.100854	L13111205-05	LF1MW07-131119	36/40	1	WG453788-06	11/22/13 10:08
32	M7.112213.101126	L13111206-01	STP-WC-1113	40/40	1		11/22/13 10:11
33	M7.112213.101359	WG454033-13	CCV		1		11/22/13 10:13
34	M7.112213.101630	WG454033-14	CCB		1		11/22/13 10:16

Page: 1 Approved: November 22, 2013

Maren Berry

Microbac Laboratories Inc.

Instrument Run Log

Instrument: CVAA1 Dataset: 112213A.CSV
Analyst1: PDM Analyst2: N/A
Method: 7470 SOP: ME404 Rev: 15
Maintenance Log ID: 48290

Calibration Std: STD61492 ICV Std: STD61486 Post Spike: STD61492
ICSA: N/A ICSAB: N/A Int. Std:
CCV: LLCCV: Tuning Sol :
Stannous : RGT27563 Hydroxylamine : RGT27561

Workgroups: 453839

Comments: Sequences 30 and 31 were edited due to typographical error PDM.

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	M7.112213.101903	L13111228-01	SMITH W1	40/40	1		11/22/13 10:19
36	M7.112213.102135	L13111228-02	SMITH W1	40/40	1		11/22/13 10:21
37	M7.112213.102409	L13111242-03	M\#5	40/40	1	WG453788-02	11/22/13 10:24
38	M7.112213.102642	WG453788-07	Duplicate	40/40	1	L13111242-03	11/22/13 10:26
39	M7.112213.102913	L13111243-01	1311-274-1	40/40	1		11/22/13 10:29
40	M7.112213.103145	WG454033-15	CCV		1		11/22/13 10:31
41	M7.112213.103416	WG454033-16	CCB		1		11/22/13 10:34

Page: 2 Approved: November 22, 2013

Maren Berry

Microbac Laboratories Inc.

Data Checklist

Date: 22-NOV-2013
Analyst: PDM
Analyst: NA
Method: 7470/245.1
Instrument: CVAA1
Curve Workgroup: 454033
Runlog ID: 57321
Analytical Workgroups: 453839

Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	1086,1205,1206
Client Forms	X
Level X	
Level 3	
Level 4	1086,1205,1206
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	PDM
Secondary Reviewer	MMB
Comments	

Primary Reviewer: 22-NOV-2013 Pierce Morris

Secondary Reviewer: 22-NOV-2013 Maren Berry

CHECKLIST1 - Modified 03/05/2008
Generated: NOV-22-2013 16:06:27

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 7470A

AAB#: WG453839

Login Number: L13111086

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
SMW 1-1113-1	01	11/15/13					11/21/2013	6	28		11/22/13	7	28	
SMW 4-1113-1	02	11/15/13					11/21/2013	5.9	28		11/22/13	6.9	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 3222073
Report generated 11/22/2013 14:55

Microbac Laboratories Inc.

METHOD BLANK SUMMARY

Login Number: L13111086
Blank File ID: M7.112213.091815
Prep Date: 11/21/13 10:05
Analyzed Date: 11/22/13 09:18
Analyst: PDM

Work Group: WG453839
Blank Sample ID: WG453788-03
Instrument ID: CVAA1
Method: 7470A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG453788-04	M7.112213.092046	11/22/13 09:20	01
SMW 1-1113-1	L13111086-01	M7.112213.092821	11/22/13 09:28	01
SMW 4-1113-1	L13111086-02	M7.112213.093325	11/22/13 09:33	01
DUP	WG453788-07	M7.112213.102642	11/22/13 10:26	01

Report Name: BLANK_SUMMARY
PDF File ID: 3222074
Report generated 11/22/2013 15:01

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L13111086 Prep Date: 11/21/13 10:05 Sample ID: WG453788-03
Instrument ID: CVAA1 Run Date: 11/22/13 09:18 Prep Method: 7470A
File ID: M7.112213.091815 Analyst: PDM Method: 7470A
Workgroup (AAB#): WG453839 Matrix: Water Units: mg/L
Contract #: Cal ID: CVAA1-22-NOV-13

Analytes	LOD	LOQ	Concentration	Dilution	Qualifier
Mercury	0.000100	0.000200	0.000100	1	U

LOD Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 3222075
22-NOV-2013 15:01

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L13111086 Run Date: 11/22/2013 Sample ID: WG453788-04
Instrument ID: CVAA1 Run Time: 09:20 Prep Method: 7470A
File ID: M7.112213.092046 Analyst: PDM Method: 7470A
Workgroup (AAB#): WG453839 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD61484 Cal ID: CVAA1-22-NOV-13

Analytes	Expected	Found	% Rec	LCS Limits	Q
Mercury	0.00400	0.00392	98.1	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 3222076
Report generated: 11/22/2013 16:12

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L13111086 Cal ID: CVAA1 - Worknum: WG453839
Instrument ID: CVAA1 Contract #: Method: 7470A
Parent ID: WG453788-01 File ID: M7.112213.100350 Dil: 1 Matrix: WATER
Sample ID: WG453788-05 MS File ID: M7.112213.100622 Dil: 1 Units: mg/L
Sample ID: WG453788-06 MSD File ID: M7.112213.100854 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Mercury	ND	0.00444	0.00439	98.8	0.00444	0.00446	100	1.46	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 3222077
Report generated 11/22/2013 16:12

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L13111086 **Worknum:** WG453839
Instrument ID: CVAA1 **Method:** 7470A
Post Spike ID: WG453839-01 **File ID:** M7.112213.093053 **Dil:** 1 **Units:** ug/L
Sample ID: L13111086-01 **File ID:** M7.112213.092821 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
MERCURY	1.03		0	U	1	103.0	85 - 115	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 3222072
Report generated: 11/22/2013 14:55

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L13111086
Analytical Method: 7470A
ICAL Worknum: WG454033

Workgroup (AAB#): WG453839
Instrument ID: CVAA1
Initial Calibration Date: 11/22/2013 09:05

Analyte	WG454033-01		WG454033-02		WG454033-03		WG454033-04		WG454033-05		WG454033-06	
	STD	INT	STD	INT	STD	INT	STD	INT	STD	INT	STD	INT
Mercury	0	29.17	0.200	1495	1.00	7403	2.00	14500	5.00	36760	10.0	70770

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
* = Out of Compliance; R < 0.995

INT_CAL_HG_FU - Modified 03/06/2008
PDF File ID: 3222078
Report generated 11/22/2013 14:55

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L13111086
Analytical Method: 7470A
ICAL Worknum: WG454033

Workgroup (AAB#): WG453839
Instrument ID: CVAA1
Initial Calibration Date: 11/22/2013 09:05

Analyte	R	Q
Mercury	1.000	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
* = Out of Compliance; R < 0.995

INT_CAL_HG_FU - Modified 03/06/2008
PDF File ID: 3222078
Report generated 11/22/2013 14:55

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L13111086
Instrument ID: CVAA1
File ID: M7.112213.091040
Workgroup (AAB#): WG453839
Matrix: WATER

Run Date: 11/22/2013
Run Time: 09:10
Analyst: PDM
Cal ID: CVAA1 - 22-NOV-13

Sample ID: WG454033-08
Method: 7470A
Units: ug/L

Analytes	MDL	RDL	Concentration	Qualifier
MERCURY	.1	.2	.1	U

U = Result is less than 2 x MDL
F = Result is between MDL and 2 x MDL
* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 3222080
Report generated 11/22/2013 14:56

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L13111086
Run Date: 11/22/2013
Sample ID: WG454033-10
Instrument ID: CVAA1
Run Time: 09:15
Method: 7470A
File ID: M7.112213.091544
Analyst: PDM
Units: ug/L
Workgroup (AAB#): WG453839
Cal ID: CVAA1 - 22-NOV-13
Matrix: WATER
QAPP: DOD4_NOFLAG

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.200	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 3222082
Report generated 11/22/2013 14:56

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L13111086 Run Date: 11/22/2013 Sample ID: WG454033-12

Instrument ID: CVAA1 Run Time: 09:46 Method: 7470A

File ID: M7.112213.094608 Analyst: PDM Units: ug/L

Workgroup (AAB#): WG453839 Cal ID: CVAA1 - 22-NOV-13

Matrix: WATER QAPP: DOD4_NOFLAG

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.200	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 3222082
Report generated 11/22/2013 14:56

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L13111086 Run Date: 11/22/2013 Sample ID: WG454033-14
Instrument ID: CVAA1 Run Time: 10:16 Method: 7470A
File ID: M7.112213.101630 Analyst: PDM Units: ug/L
Workgroup (AAB#): WG453839 Cal ID: CVAA1 - 22-NOV-13
Matrix: WATER QAPP: DOD4_NOFLAG

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.200	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 3222082
Report generated 11/22/2013 14:56

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L13111086 Run Date: 11/22/2013 Sample ID: WG454033-16

Instrument ID: CVAA1 Run Time: 10:34 Method: 7470A

File ID: M7.112213.103416 Analyst: PDM Units: ug/L

Workgroup (AAB#): WG453839 Cal ID: CVAA1 - 22-NOV-13

Matrix: WATER QAPP: DOD4_NOFLAG

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.200	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 3222082
Report generated 11/22/2013 14:56

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L13111086 Run Date: 11/22/2013 Sample ID: WG454033-07
Instrument ID: CVAA1 Run Time: 09:08 Method: 7470A
File ID: M7.112213.090809 Analyst: PDM Units: ug/L
Workgroup (AAB#): WG453839 Cal ID: CVAA1 - 22-NOV-13
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Mercury		2	2.06	103	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 3222079
Report generated 11/22/2013 14:55

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L13111086
Run Date: 11/22/2013
Sample ID: WG454033-09
Instrument ID: CVAA1
Run Time: 09:13
Method: 7470A
File ID: M7.112213.091313
Analyst: PDM
QC Key: DOD4
Workgroup (AAB#): WG453839
Cal ID: CVAA1 - 22-NOV-13
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00210	mg/L	105	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 3222081
Report generated 11/22/2013 14:56

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L13111086
Run Date: 11/22/2013
Sample ID: WG454033-11
Instrument ID: CVAA1
Run Time: 09:43
Method: 7470A
File ID: M7.112213.094337
Analyst: PDM
QC Key: DOD4
Workgroup (AAB#): WG453839
Cal ID: CVAA1 - 22-NOV-13
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00219	mg/L	110	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 3222081
Report generated 11/22/2013 14:56

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L13111086
Run Date: 11/22/2013
Sample ID: WG454033-13
Instrument ID: CVAA1
Run Time: 10:13
Method: 7470A
File ID: M7.112213.101359
Analyst: PDM
QC Key: DOD4
Workgroup (AAB#): WG453839
Cal ID: CVAA1 - 22-NOV-13
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00216	mg/L	108	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 3222081
Report generated 11/22/2013 14:56

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L13111086
Instrument ID: CVAA1
File ID: M7.112213.103145
Workgroup (AAB#): WG453839
Matrix: WATER

Run Date: 11/22/2013
Run Time: 10:31
Analyst: PDM
Cal ID: CVAA1 - 22-NOV-13

Sample ID: WG454033-15
Method: 7470A
QC Key: DOD4

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00215	mg/L	107	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 3222081
Report generated 11/22/2013 14:56

2.1.3.3 Raw Data

PDM

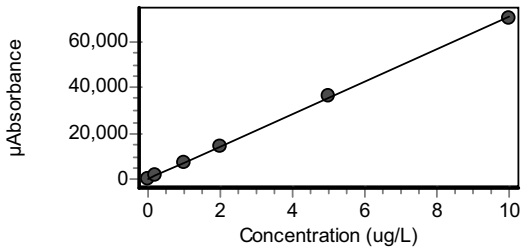
Report Generated By CETAC QuickTrace
Analyst: Mercury Analyzer
Worksheet file: C:\Program Files\QuickTrace\Worksheets\112213A.wsz
Date Started: 11/22/2013 8:43:37 AM
Comment:

Results

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
Standard #0					STD	11/22/13 08:52:52 am	0.0000	29	40.05		1.00
Replicates	35.5	11.7	34.5	35.0							
Standard #1 (0.2 ug/L)					STD	11/22/13 08:55:24 am	0.2000	1495	1.10		1.00
Replicates	1485.9	1478.4	1516.2	1497.7							
Standard #2 (1.0 ug/L)					STD	11/22/13 08:57:56 am	1.0000	7403	0.81		1.00
Replicates	7346.8	7358.4	7437.6	7468.9							
Standard #3 (2.0 ug/L)					STD	11/22/13 09:00:28 am	2.0000	14497	0.84		1.00
Replicates	14369.2	14431.0	14541.7	14644.2							
Standard #4 (5.0 ug/L)					STD	11/22/13 09:03:01 am	5.0000	36759	0.80		1.00
Replicates	36416.2	36636.7	36893.7	37087.7							
Standard #5 (10.0 ug/L)					STD	11/22/13 09:05:35 am	10.0000	70769	0.97		1.00
Replicates	69956.4	70499.5	71078.4	71540.7							

Calibration

Equation: A = 302.938 + 7095.214C
R2: 0.99965
SEE: 575.0582
Flags:



ICV					ICV	11/22/13 09:08:09 am	2.0640	14950	0.75		1.00
Replicates	14825.3	14891.5	15013.7	15070.2							
% Recovery	103.22										

Approved: 11/22/2013 15:17
Pierce Morris

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
ICB					ICB	11/22/13 09:10:40 am	-0.0378	35	48.13		1.00
	Replicates	46.9	51.8	22.8	18.3						
CCV					CCV	11/22/13 09:13:13 am	2.0990	15195	0.93		1.00
	Replicates	15043.5	15124.9	15243.9	15368.0						
	% Recovery	104.94									
CCB					CCB	11/22/13 09:15:44 am	-0.0398	21	50.73		1.00
	Replicates	34.7	18.5	9.5	19.7						
WG453788-03					MB	11/22/13 09:18:15 am	-0.0358	49	50.13		1.00
	Replicates	83.3	50.6	29.1	33.4						
WG453788-04					LCS	11/22/13 09:20:46 am	3.9240	28141	1.04		1.00
	Replicates	27793.1	28035.9	28268.2	28468.7						
	% Recovery	98.09									
WG453698-01					UNK	11/22/13 09:23:17 am	-0.0357	50	19.10		1.00
	Replicates	62.2	50.0	38.8	49.0						
WG453698-02					UNK	11/22/13 09:25:49 am	-0.0305	87	9.94		1.00
	Replicates	73.9	90.6	90.7	92.1						
L1311108601					UNK	11/22/13 09:28:21 am	-0.0298	92	13.61		1.00
	Replicates	78.1	92.6	107.9	87.8						
WG453839-01					SPK	11/22/13 09:30:53 am	1.0300	7608	0.89		1.00
	Replicates	7527.8	7589.3	7623.1	7690.8						
	% Recovery	105.93									
L1311108602					UNK	11/22/13 09:33:25 am	-0.0358	49	23.66		1.00
	Replicates	34.7	62.2	52.0	45.9						
L1311114801					UNK	11/22/13 09:35:58 am	-0.0372	39	65.38		1.00
	Replicates	6.8	50.1	32.7	66.6						
WG453839-02					SPK	11/22/13 09:38:31 am	1.0190	7533	0.38		1.00
	Replicates	7496.1	7523.7	7550.1	7560.4						
	% Recovery	105.61									

Approved: 11/22/2013 15:17

Pierce Morris

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
L1311114802					UNK	11/22/13 09:41:05 am	-0.0331	68	11.97		1.00
Replicates	55.9	69.7	71.2	74.2							
CCV					CCV	11/22/13 09:43:37 am	2.1920	15852	0.96		1.00
Replicates	15682.8	15787.9	15898.2	16039.7							
% Recovery	109.58										
CCB					CCB	11/22/13 09:46:08 am	-0.0314	80	22.52		1.00
Replicates	102.5	63.4	86.4	67.7							
L1311114803					UNK	11/22/13 09:48:42 am	-0.0334	66	19.35		1.00
Replicates	73.1	67.3	76.0	47.6							
L1311115001					UNK	11/22/13 09:51:16 am	-0.0204	158	10.83		1.00
Replicates	179.3	158.3	137.5	156.8							
L1311115101					UNK	11/22/13 09:53:46 am	-0.0229	141	9.41		1.00
Replicates	154.4	145.7	123.0	139.5							
L1311115201					UNK	11/22/13 09:56:17 am	-0.0263	116	3.40		1.00
Replicates	115.4	118.0	120.1	111.0							
L1311115301					UNK	11/22/13 09:58:48 am	0.4251	3319	0.98		1.00
Replicates	3272.6	3324.0	3331.1	3347.6							
L1311120502					UNK	11/22/13 10:01:19 am	-0.0434	-5	407.37		1.00
Replicates	-18.1	16.9	-25.1	6.7							
L1311120503					UNK	11/22/13 10:03:50 am	-0.0317	78	14.76		1.00
Replicates	70.1	76.2	71.7	95.2							
~~WG453788-04~~ WG453788-05					MSK	11/22/13 10:06:22 am	3.9530	28351	1.40		1.00
Replicates	27883.9	28188.6	28539.4	28793.6							
% Recovery	99.62										
~~WG453788-05~~ WG453788-06					MSDUP	11/22/13 10:08:54 am	4.0110	28765	1.03		1.00
Replicates	28411.1	28665.4	28881.9	29100.1							
% Recovery	101.08	RPD 1.46									

Approved: 11/22/2013 15:17

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Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
L1311120601					UNK	11/22/13 10:11:26 am	-0.0357	49	25.87		1.00
	Replicates	48.5	46.2	36.0	66.7						
CCV					CCV	11/22/13 10:13:59 am	2.1590	15623	0.91		1.00
	Replicates	15473.1	15551.3	15670.0	15798.6						
	% Recovery	107.96									
CCB					CCB	11/22/13 10:16:30 am	-0.0372	39	12.55		1.00
	Replicates	33.3	39.0	45.4	39.4						
L1311122801					UNK	11/22/13 10:19:03 am	-0.0345	58	23.19		1.00
	Replicates	45.8	77.2	55.4	53.7						
L1311122802					UNK	11/22/13 10:21:35 am	-0.0347	57	41.12		1.00
	Replicates	67.0	63.5	22.3	73.8						
L1311124203					UNK	11/22/13 10:24:09 am	-0.0292	96	3.59		1.00
	Replicates	98.9	93.1	92.3	98.3						
WG453788-07					UNK	11/22/13 10:26:42 am	-0.0274	108	8.58		1.00
	Replicates	107.3	97.0	109.3	119.6						
L1311124301					UNK	11/22/13 10:29:13 am	-0.0097	234	2.80		1.00
	Replicates	239.8	226.6	239.9	231.4						
CCV					CCV	11/22/13 10:31:45 am	2.1470	15536	0.97		1.00
	Replicates	15353.6	15488.7	15599.7	15703.9						
	% Recovery	107.35									
CCB					CCB	11/22/13 10:34:16 am	-0.0358	49	17.00		1.00
	Replicates	51.1	44.8	59.3	40.1						

Approved: 11/22/2013 15:17

Pierce Morris

2.2 General Chemistry Data

2.2.1 Method 9056

2.2.1.1 Summary Data

Login Number: L13111086
Department: General Chromatography
Analyst: Jeremy Kinney

METHOD

Analysis EPA300.0/SW846 9056

HOLDING TIMES

Sample Analysis: Hold times for NO2 and NO3 are 48 hours and the hold times for F, Cl, Br, and SO4 are 28 days. The hold time forms calculate the hold time based on 48 hours. All samples were analyzed in hold.

CALIBRATION

Initial Calibration: All acceptance criteria were met.

Alternate Source Standards: All acceptance criteria were met.

Continuing Calibration: All acceptance criteria were met.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Matrix Spikes: The client did not specify an MS/MSD for this sample delivery group. The laboratory selected sample 01 for MS/MSD analysis and recoveries out of range were observed for Fluoride, Sulfate. Please see the applicable QC report for a detailed presentation of the failures.

SAMPLES

Samples: All acceptance criteria were met.

MANUAL INTEGRATION: No manual integration required.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Microbac Laboratories Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or designated person, as

verified by the following signature.

Narrative ID: 74995
Approved By: Eric Lawson

Microbac

Lab Report #: L13111086
Lab Project #: 3005.011
Project Name: White Sands MR
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L13111086-01	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	SMW 1-1113-1	**Prep Method:**	300.0	**Prep Date:**	11/21/2013 09:20
Matrix:	Water	**Analytical Method:**	300.0	**Cal Date:**	11/06/2013 10:26
Workgroup #:	WG453893	**Analyst:**	JBK	**Run Date:**	11/21/2013 13:55
Collect Date:	11/15/2013 10:00	**Dilution:**	1	**File ID:**	I1_112113-19
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Chloride	16887-00-6	18.5		0.200	0.100
Fluoride	16984-48-8	0.293		0.200	0.100
Sulfate	14808-79-8	62.7		1.00	0.500

Sample #:	L13111086-02	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	SMW 4-1113-1	**Prep Method:**	300.0	**Prep Date:**	11/21/2013 09:20
Matrix:	Water	**Analytical Method:**	300.0	**Cal Date:**	11/06/2013 10:26
Workgroup #:	WG453893	**Analyst:**	JBK	**Run Date:**	11/21/2013 15:05
Collect Date:	11/15/2013 11:50	**Dilution:**	1	**File ID:**	I1_112113-23
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Chloride	16887-00-6	23.8		0.200	0.100
Fluoride	16984-48-8	0.276		0.200	0.100
Sulfate	14808-79-8	58.2		1.00	0.500

2.2.1.2 QC Summary Data

Example Calculations - Ion Chromatography

A. Methods 9056/300.0 (Quadratic with Offset)

1. Retrieve Curve Data from the ICAL Curve

c2 = the value of curve constant
c1= the curve slope
c0 = the curve offset

2. Obtain the area, y , from the instrument raw data

3. Calculate the concentration of the analyte, f(y), where:

$$f(y) = \frac{1}{2 * c_2} * \left(- c_1 \pm \sqrt{c_1^2 - 4 * c_2 * (c_0 - y)}\right)$$

Example Calculation:

Value of constant, c2, (curve):	0.0003
Value of curve constant, c1, (slope):	0.0869
Value of curve constant, c0, (offset):	-0.0103
Area of target analyte, y, (uS*min):	2.993
Calculated concentration, f(y), (mg/L):	31.1998864
or:	-40.1161215 *
Dilution factor (D):	1.00
Concentration of analyte in sample (mg/L):	31.200

* There are two possible solutions, but only one is valid.

B. Method 314.0 - Perchlorate (Linear)

Retrieve Curve Data from Linear Plot

c1 = the curve slope

Obtain the area, y , from the quantitation report

Calculate the concentration of the analyte, f(y), where:

f (y) = y / c1

Example Calculation:

Value of c1, slope:	0.0034
Area of target analyte, y:	0.083
Calculated concentration:	24.4117647
Dilution Factor:	1
Concentration in sample:	24.4117647

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC1 Dataset: 110613 ICAL IC1.SEQ
Analyst1: JBK Analyst2: NA
Method: 300/9056 SOP: IC01 Rev: 14

Maintenance Log ID: 48076 Syringe Filter Lot#: 00166429
Eluent ID#: RGT28571

Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM

Workgroups: WG450536 (ICAL) WG451714 (LOD/LOQ)

Internal STD: NA Surrogate STD: NA Calibration STD STD60856

CCV STD: STD60856 LCS STD: STD60857 MS/MSD STD: NA

Comments: WG450536 300/9056 ICAL
Q4 2013 WATER LOD/LOQ Verification

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	I1_110613-01	WG450536-01 STD \#6	1	1		11/06/13 08:59
2	I1_110613-02	WG450536-02 STD \#5	1	1		11/06/13 09:17
3	I1_110613-03	WG450536-03 STD \#4	1	1		11/06/13 09:34
4	I1_110613-04	WG450536-04 STD \#3	1	1		11/06/13 09:51
5	I1_110613-05	WG450536-05 STD \#2	1	1		11/06/13 10:09
6	I1_110613-06	WG450536-06 STD \#1	1	1		11/06/13 10:26
7	I1_110613-07	WG450536-07 ALT STD	1	1		11/06/13 11:07
8	I1_110613-08	L13100001-01 LOD (F,CL,BR,SO4)	1	1		11/06/13 11:24
9	I1_110613-09	L13100003-01 LOQ (F,CL,BR,SO4)	1	1		11/06/13 11:42
10	I1_110613-10	L13100001-01 LOD (NO2,NO3)	1	1		11/06/13 11:59
11	I1_110613-11	L13100003-01 LOQ (NO2,NO3)	1	1		11/06/13 12:16
12	I1_110613-12	LEVEL 4 (CCV/LCS)	1	1		11/06/13 12:34
13	I1_110613-13	LEVEL 6 (LCR)	1	1		11/06/13 12:51
14	I1_110613-14	WG451714-01 BLANK	1	1		11/06/13 13:09
15	I1_110613-15	END	1	1		11/06/13 13:26

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Page: 1 Approved: 08-NOV-13

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC1 Dataset: 112113 IC1.SEQ
Analyst1: JBK Analyst2: NA
Method: 300/9056 SOP: IC01 Rev: 14

Maintenance Log ID: 48281 Syringe Filter Lot#: 00169000
Eluent ID#: RGT28759
Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM
Workgroups: WG453893
Internal STD: NA Surrogate STD: NA Calibration STD STD60856 (11/6/13)
CCV STD: STD60856 LCS STD: STD60857 MS/MSD STD: STD60856

Comments: L13111157-01 dilution due to high Cl (>200ppm).
L13110833-01, 928 (ALL) and 852-03 dilutions due to one mor more of the target analytes near or greater than the ICAL.
L13110852-04 dilution due to SMI.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	I1_112113-01	ELUENT	1	1		11/21/13 08:42
2	I1_112113-02	DI WATER	1	1		11/21/13 08:59
3	I1_112113-03	WG453897-01 ANION CCV	1	1		11/21/13 09:17
4	I1_112113-04	WG453897-02 ANION CCB	1	1		11/21/13 09:34
5	I1_112113-05	WG453893-01 ANION BLANK	1	1		11/21/13 09:51
6	I1_112113-06	WG453893-02 ANION LCS	1	1		11/21/13 10:09
7	I1_112113-07	L13111157-01 1/2 (ALL-F)	1	2		11/21/13 10:26
8	I1_112113-08	L13111157-01 1/20 RR CL	1	20		11/21/13 10:44
9	I1_112113-09	L13110858-05 (REPORT)	1	1		11/21/13 11:01
10	I1_112113-10	L13110858-05 1/5	1	5		11/21/13 11:19
11	I1_112113-11	L13110953-08 1/250 SO4	1	250		11/21/13 11:36
12	I1_112113-12	L13110953-09 1/100 SO4	1	100		11/21/13 11:53
13	I1_112113-13	L13110833-01 1/2 (F,CL,SO4)	1	2		11/21/13 12:11
14	I1_112113-14	L13110833-02 (F,CL,SO4)	1	1		11/21/13 12:28
15	I1_112113-15	WG453897-03 ANION CCV	1	1		11/21/13 12:46
16	I1_112113-16	WG453897-04 ANION CCB	1	1		11/21/13 13:03
17	I1_112113-17	L13110928-01 1/5 (F,CL,SO4)	1	5		11/21/13 13:20
18	I1_112113-18	L13110928-02 1/5 (F,CL,SO4)	1	5		11/21/13 13:38
30	I1_112113-19	L13111086-01 (F,CL,SO4)	1	1		11/21/13 13:55
20	I1_112113-20	WG453893-04 DUP 1086-01	1	1		11/21/13 14:13
21	I1_112113-21	WG453893-05 MS 1086-01	1	1		11/21/13 14:30
22	I1_112113-22	WG453893-06 MSD 1086-01	1	1		11/21/13 14:47
23	I1_112113-23	L13111086-02 (F,CL,SO4)	1	1		11/21/13 15:05
24	I1_112113-24	L13110928-03 1/5 (F,CL,SO4)	1	5		11/21/13 15:22
25	I1_112113-25	L13110852-04 1/5 (SO4)	1	5		11/21/13 15:53
26	I1_112113-26	L13110852-03 1/20 (SO4)	1	5		11/21/13 16:10
27	I1_112113-27	WG453897-05 ANION CCV	1	1		11/21/13 16:27
28	I1_112113-28	WG453897-06 ANION CCB	1	1		11/21/13 16:45
29	I1_112113-29	END	1	1		11/21/13 17:02

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Page: 1 Approved: 22-NOV-13

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC1 Dataset: 112113 IC1.SEQ
Analyst1: JBK Analyst2: NA
Method: 300/9056 SOP: IC01 Rev: 14

Maintenance Log ID: 48281 Syringe Filter Lot#: 00169000
Eluent ID#: RGT28759
Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM
Workgroups: WG453893
Internal STD: NA Surrogate STD: NA STD60856 (11/6/13)
CCV STD: STD60856 LCS STD: STD60857 STD60856

Comments

Seq.	Rerun	Dil.	Reason	Analytes
9				
	L13110858-05 (REPORT): See appropriate narrative for details.			

Page: 2 Approved: 22-NOV-13

Microbac Laboratories Inc.

Data Checklist

Date: 06-NOV-2013
Analyst: JBK
Analyst: NA
Method: 300/9056
Instrument: IC1
Curve Workgroup: NA
Runlog ID: 56920
Analytical Workgroups: WG450536 (ICAL) WG451714 (LOD/LOQ)

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	NA
Endrin/DDT breakdown (8081/MS)	NA
Pentachlorophenol/benzidine tailing (MS)	NA
Eluent check (IC)/system pressure (HPLC)	X
Window standard (FID)	NA
Initial Calibration	WG450536
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	NA
% D/% Drift	NA
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	NA
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	NA
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual Integrations	X
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	X
Check for completeness	X
Primary Reviewer	JBK
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	MDC

Primary Reviewer:
06-NOV-2013

Secondary Reviewer:
08-NOV-2013

CHECKLIST1 - Modified 03/05/2008
Generated: NOV-08-2013 15:40:54

Microbac Laboratories Inc.

Data Checklist

Date: 21-NOV-2013
Analyst: JBK
Analyst: NA
Method: 300/9056
Instrument: IC1
Curve Workgroup: NA
Runlog ID: 57300
Analytical Workgroups: WG453893 (11-0833, 0852, 0858, 0928, 0953, 1086, 1157)

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	NA
Endrin/DDT breakdown (8081/MS)	NA
Pentachlorophenol/benzidine tailing (MS)	NA
Eluent check (IC)/system pressure (HPLC)	X
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	X
Special standards	NA
Blanks	X
TCL hits	NA
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	NA
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	X
Manual Integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	X
Check for completeness	X
Primary Reviewer	JBK
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer:
22-NOV-2013

Secondary Reviewer:
22-NOV-2013

CHECKLIST1 - Modified 03/05/2008
Generated: NOV-22-2013 16:21:55

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 300.0 AAB#: WG453893

Login Number: L13111086

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
SMW 1-1113-1	01	11/15/13					11/21/2013	6	2	*	11/21/13	6.2	2	*
SMW 4-1113-1	02	11/15/13					11/21/2013	5.9	2	*	11/21/13	6.1	2	*

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 3219765
Report generated 11/25/2013 09:09

Microbac Laboratories Inc.

METHOD BLANK SUMMARY

Login Number: L13111086
Blank File ID: I1_112113-05
Prep Date: 11/21/13 09:20
Analyzed Date: 11/21/13 09:51
Analyst: JBK

Work Group: WG453893
Blank Sample ID: WG453893-01
Instrument ID: IC1
Method: 300.0

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG453893-02	I1_112113-06	11/21/13 10:09	01
SMW 1-1113-1	L13111086-01	I1_112113-19	11/21/13 13:55	01
DUP	WG453893-04	I1_112113-20	11/21/13 14:13	01
SMW 4-1113-1	L13111086-02	I1_112113-23	11/21/13 15:05	01

Report Name: BLANK_SUMMARY
PDF File ID: 3219766
Report generated 11/25/2013 09:09

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L13111086 Prep Date: 11/21/13 09:20 Sample ID: WG453893-01
Instrument ID: IC1 Run Date: 11/21/13 09:51 Prep Method: 300.0
File ID: I1 112113-05 Analyst: JBK Method: 300.0
Workgroup (AAB#): WG453893 Matrix: Water Units: mg/L
Contract #: Cal ID: IC1-06-NOV-13

Analytes	LOD	LOQ	Concentration	Dilution	Qualifier
Chloride	0.100	0.200	0.100	1	U
Fluoride	0.100	0.200	0.100	1	U
Sulfate	0.500	1.00	0.500	1	U

LOD Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 3219767
25-NOV-2013 09:09

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L13111086 Run Date: 11/21/2013 Sample ID: WG453893-02
Instrument ID: IC1 Run Time: 10:09 Prep Method: 300.0
File ID: I1 112113-06 Analyst: JBK Method: 300.0
Workgroup (AAB#): WG453893 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD60856 Cal ID: IC1-06-NOV-13

Analytes	Expected	Found	% Rec	LCS Limits	Q
Chloride	8.00	8.01	100	90 - 110	
Fluoride	8.00	7.79	97.4	90 - 110	
Sulfate	40.0	40.8	102	90 - 110	

LCS - Modified 03/06/2008
PDF File ID: 3219768
Report generated: 11/25/2013 09:09

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L13111086 Cal ID: IC1 - Worknum: WG453893
Instrument ID: IC1 Contract #: Method: 300.0
Parent ID: WG453893-03 File ID: I1_112113-19 Dil: 1 Matrix: WATER
Sample ID: WG453893-05 MS File ID: I1_112113-21 Dil: 1 Units: mg/L
Sample ID: WG453893-06 MSD File ID: I1_112113-22 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Chloride	18.5	8.00	26.6	100	8.00	26.6	101	0.105	90 - 110	20	
Fluoride	0.293	8.00	7.33	87.9	8.00	7.34	88.1	0.150	90 - 110	20	*
Sulfate	62.7	40.0	107	110	40.0	107	111	0.0954	90 - 110	20	*

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 3223578
Report generated 11/25/2013 09:09

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L13111086
Analytical Method: 300.0
ICAL Workgroup: WG450536

Instrument ID: IC1
Initial Calibration Date: 06-NOV-13 10:26
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Chloride		5.674	7.25	0.99900	
Fluoride		3.960	8.13	1.00000	
Sulfate		7.597	10.2	0.99900	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 3219769
Report generated 11/25/2013 09:09

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L13111086

Analytical Method: 300.0

Instrument ID: IC1

Initial Calibration Date: 06-NOV-13 10:26

Column ID: F

Analyte	WG450536-01			WG450536-02			WG450536-03		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Chloride	24.0	4.80400000	4.996	12.0	2.19100000	5.477	8.00	1.39700000	5.727
Fluoride	24.0	6.64400000	3.612	12.0	3.26400000	3.676	8.00	2.11900000	3.775
Sulfate	120	18.5710000	6.462	60.0	8.42900000	7.118	40.0	5.34100000	7.489

INT_CAL - Modified 03/06/2008
PDF File ID: 3219769
Report generated 11/25/2013 09:09

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L13111086

Analytical Method: 300.0

Instrument ID: IC1

Initial Calibration Date: 06-NOV-13 10:26

Column ID: F

Analyte	WG450536-04			WG450536-05			WG450536-06		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Chloride	4.00	0.682000000	5.865	1.00	0.169000000	5.917	0.200	0.0330000000	6.061
Fluoride	4.00	0.992000000	4.032	1.00	0.237000000	4.219	0.200	0.0450000000	4.444
Sulfate	20.0	2.56800000	7.788	5.00	0.606000000	8.251	1.00	0.118000000	8.475

INT_CAL - Modified 03/06/2008
PDF File ID: 3219769
Report generated 11/25/2013 09:09

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L13111086 Run Date: 11/06/2013 Sample ID: WG450536-07
Instrument ID: IC1 Run Time: 11:07 Method: 300.0
File ID: I1 110613-07 Analyst: JBK QC Key: DOD4
ICal Workgroup: WG450536 Cal ID: IC1 - 06-NOV-13

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloride		8.00	7.82	mg/L	5.71	2.30	10	
Fluoride		8.00	8.17	mg/L	3.76	2.10	10	
Sulfate		40.0	39.6	mg/L	7.46	1.00	10	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 3219770
Report generated 11/25/2013 09:09

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L13111086
Run Date: 11/21/2013
Sample ID: WG453897-02
Instrument ID: IC1
Run Time: 09:34
Method: 300.0
File ID: I1_112113-04
Analyst: JBK
Units: mg/L
Workgroup (AAB#): WG453893
Cal ID: IC1 - 06-NOV-13
Matrix: WATER
QAPP: DOD4_NOFLAG

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.200	0.100	U
Fluoride	0.100	0.200	0.100	U
Sulfate	0.500	1.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 3223582
Report generated 11/25/2013 09:10

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L13111086
Run Date: 11/21/2013
Sample ID: WG453897-04
Instrument ID: IC1
Run Time: 13:03
Method: 300.0
File ID: I1_112113-16
Analyst: JBK
Units: mg/L
Workgroup (AAB#): WG453893
Cal ID: IC1 - 06-NOV-13
Matrix: WATER
QAPP: DOD4_NOFLAG

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.200	0.100	U
Fluoride	0.100	0.200	0.100	U
Sulfate	0.500	1.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 3223582
Report generated 11/25/2013 09:10

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L13111086
Run Date: 11/21/2013
Sample ID: WG453897-06
Instrument ID: IC1
Run Time: 16:45
Method: 300.0
File ID: I1_112113-28
Analyst: JBK
Units: mg/L
Workgroup (AAB#): WG453893
Cal ID: IC1 - 06-NOV-13
Matrix: WATER
QAPP: DOD4_NOFLAG

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.200	0.100	U
Fluoride	0.100	0.200	0.100	U
Sulfate	0.500	1.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 3223582
Report generated 11/25/2013 09:10

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L13111086
Run Date: 11/21/2013
Sample ID: WG453897-01
Instrument ID: IC1
Run Time: 09:17
Method: 300.0
File ID: I1 112113-03
Analyst: JBK
QC Key: DOD4
Workgroup (AAB#): WG453893
Cal ID: IC1 - 06-NOV-13
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	7.97	mg/L	5.60	0.363	10	
Fluoride		8.00	7.77	mg/L	3.95	2.90	10	
Sulfate		40.0	40.8	mg/L	7.24	2.12	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 3219771
Report generated 11/25/2013 09:10

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L13111086
Run Date: 11/21/2013
Sample ID: WG453897-03
Instrument ID: IC1
Run Time: 12:46
Method: 300.0
File ID: I1 112113-15
Analyst: JBK
QC Key: DOD4
Workgroup (AAB#): WG453893
Cal ID: IC1 - 06-NOV-13
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	8.01	mg/L	5.57	0.125	10	
Fluoride		8.00	7.82	mg/L	3.93	2.24	10	
Sulfate		40.0	40.9	mg/L	7.22	2.34	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 3219771
Report generated 11/25/2013 09:10

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L13111086
Run Date: 11/21/2013
Sample ID: WG453897-05
Instrument ID: IC1
Run Time: 16:27
Method: 300.0
File ID: I1 112113-27
Analyst: JBK
QC Key: DOD4
Workgroup (AAB#): WG453893
Cal ID: IC1 - 06-NOV-13
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	8.05	mg/L	5.54	0.663	10	
Fluoride		8.00	7.85	mg/L	3.91	1.84	10	
Sulfate		40.0	41.0	mg/L	7.21	2.46	10	

* Exceeds %D Criteria

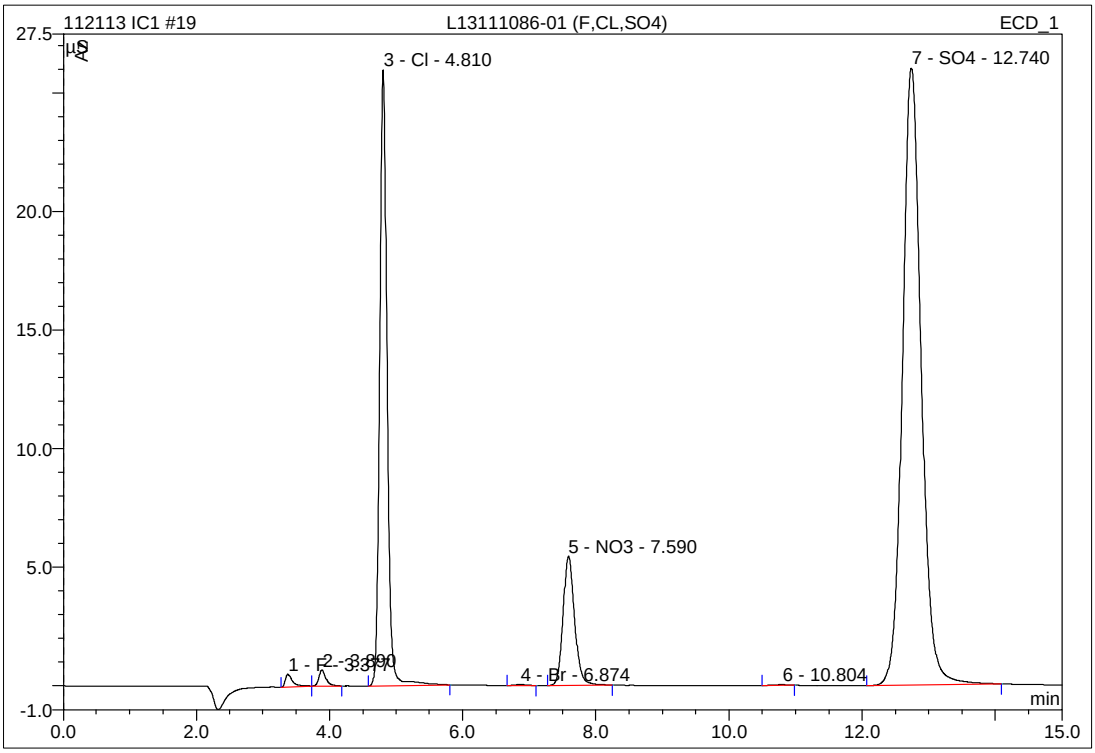
CCV - Modified 03/05/2008
PDF File ID: 3219771
Report generated 11/25/2013 09:10

2.2.1.3 Sample Data

19 L13111086-01 (F,CL,SO4)

1,1 JBK WG -03 REF

Sample Name:	**L13111086-01 (F,CL,SO4)**	*Injection Volume:*	**20.0**
Vial Number:	**20**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/21/2013 13:55**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.38	F	0.544	0.069	0.53	0.293	BMb
2	3.89	n.a.	0.671	0.083	0.63	n.a.	bMB
3	4.81	Cl	25.966	3.326	25.41	18.528	BMB
4	6.87	Br	0.040	0.008	0.06	0.120	BMB
5	7.59	NO3	5.456	1.100	8.40	2.506	BMB
6	10.80	n.a.	0.031	0.008	0.06	n.a.	BMB
7	12.74	SO4	26.012	8.495	64.90	62.693	BMB
Total:			58.721	13.089	100.00	84.140	

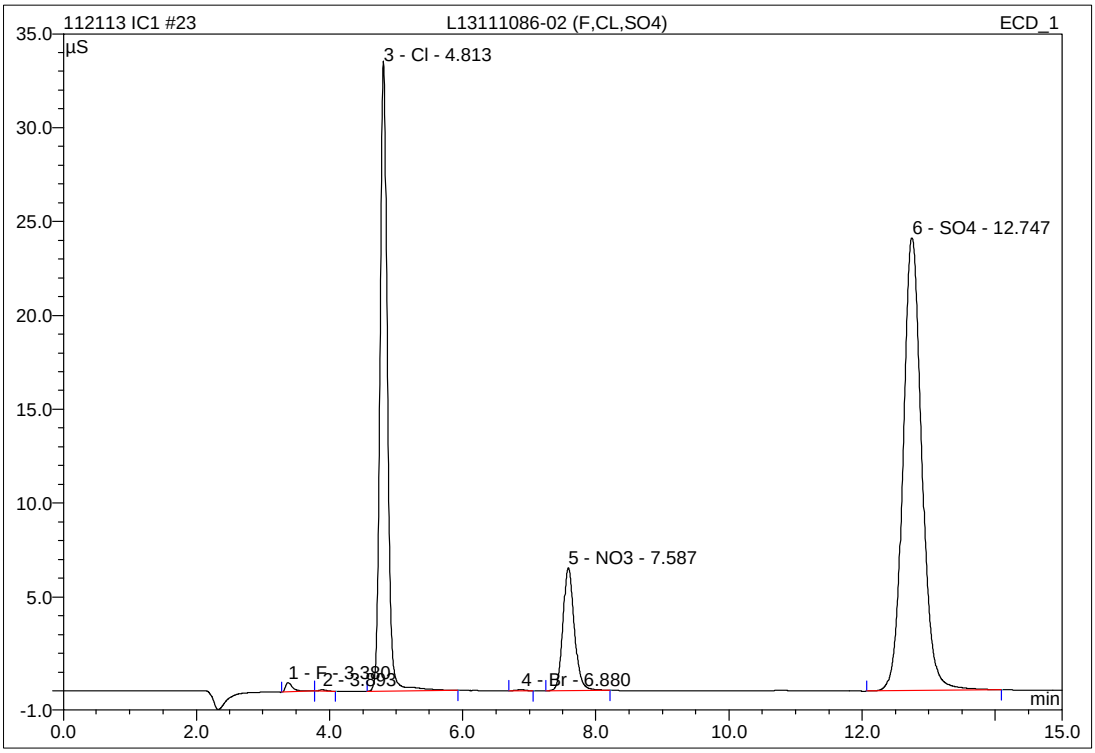
IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

23 L13111086-02 (F,CL,SO4)

1,1 JBK

Sample Name:	**L13111086-02 (F,CL,SO4)**	*Injection Volume:*	**20.0**
Vial Number:	**16**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/21/2013 15:05**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.38	F	0.508	0.064	0.48	0.276	BMB
2	3.89	n.a.	0.075	0.009	0.06	n.a.	bMB
3	4.81	Cl	33.549	4.275	31.54	23.806	BMB
4	6.88	Br	0.055	0.009	0.06	0.123	BMB
5	7.59	NO3	6.553	1.313	9.69	2.987	BMB
6	12.75	SO4	24.108	7.884	58.17	58.193	BMB
Total:			64.848	13.553	100.00	85.386	

IC/Integration

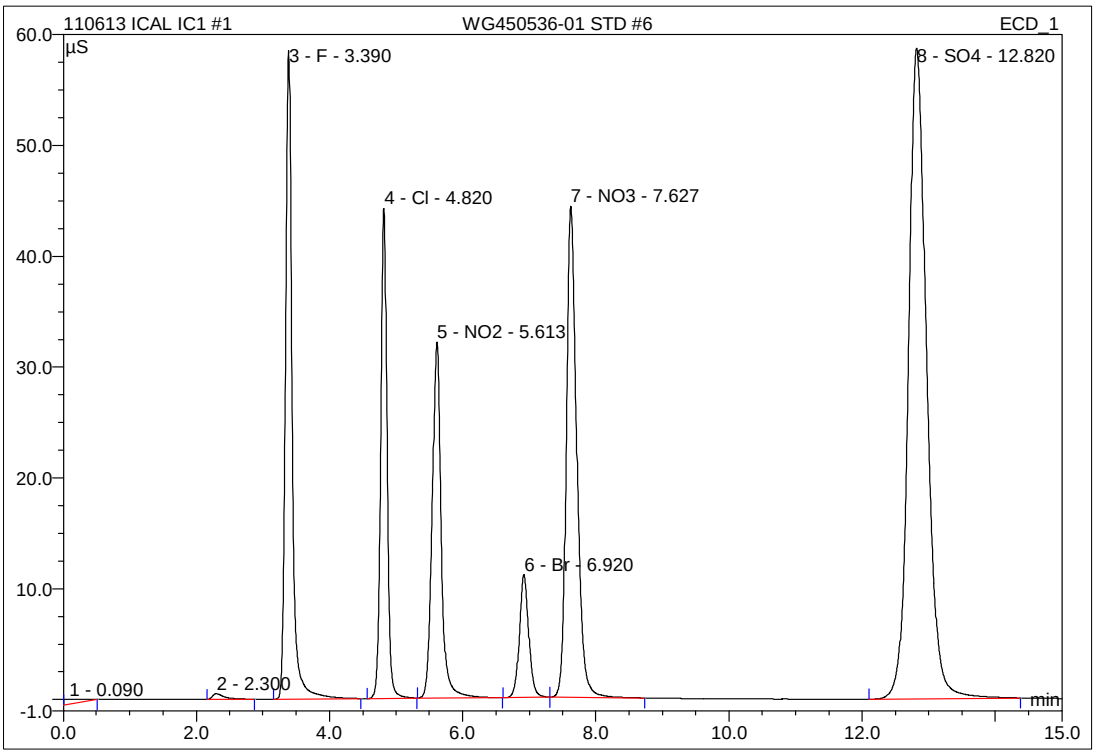
Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

2.2.1.4 Standards Data

1 WG450536-01 STD #6

1,1 JBK STD60856

Sample Name:	**WG450536-01 STD #6**	*Injection Volume:*	**20.0**
Vial Number:	**11**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/6/2013 8:59**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	0.09	n.a.	0.431	0.132	0.29	n.a.	BMB
2	2.30	n.a.	0.527	0.110	0.24	n.a.	BMB
3	3.39	F	58.509	6.644	14.68	25.442	BMB
4	4.82	Cl	44.229	4.804	10.62	26.751	BMB
5	5.61	NO2	32.141	5.066	11.19	15.551	BMB
6	6.92	Br	11.090	1.809	4.00	25.227	BMb
7	7.63	NO3	44.330	8.117	17.94	18.347	bMB
8	12.82	SO4	58.721	18.571	41.04	136.882	BMB
Total:			249.979	45.254	100.00	248.200	

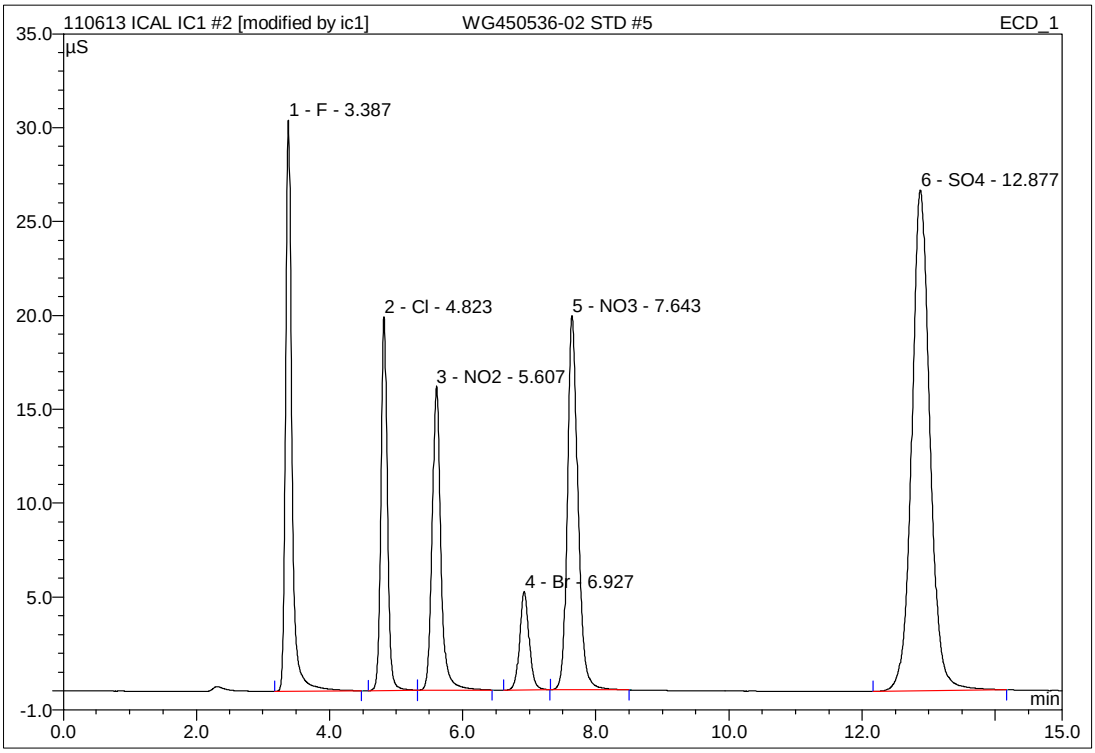
IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

2 WG450536-02 STD #5

1,1 JBK STD60856

Sample Name:	**WG450536-02 STD #5**	*Injection Volume:*	**20.0**
Vial Number:	**12**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/6/2013 9:17**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.39	F	30.428	3.264	15.63	12.514	BMB*
2	4.82	Cl	19.929	2.191	10.49	12.214	BMB
3	5.61	NO2	16.200	2.454	11.75	7.542	BMB
4	6.93	Br	5.239	0.867	4.15	12.094	BMB
5	7.64	NO3	19.921	3.678	17.61	8.325	BMB
6	12.88	SO4	26.681	8.429	40.36	62.207	BMB
Total:			118.398	20.883	100.00	114.896	

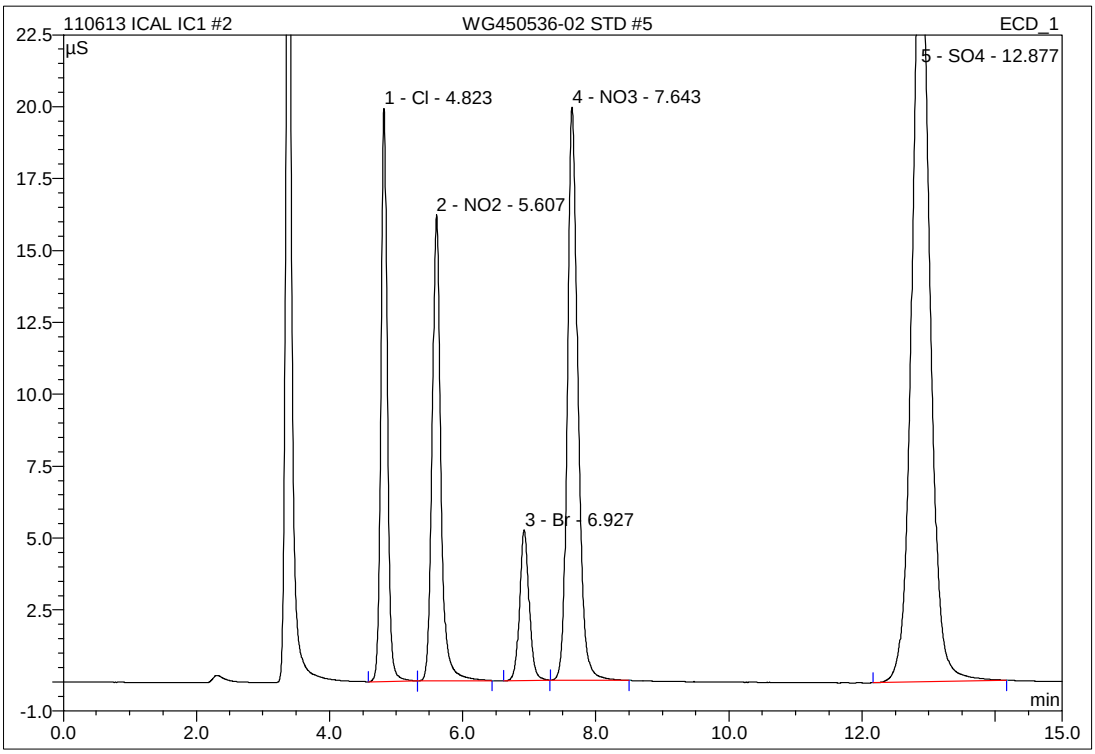
IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

2 WG450536-02 STD #5

1,1 JBK STD60856

Sample Name:	**WG450536-02 STD #5**	*Injection Volume:*	**20.0**
Vial Number:	**12**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/6/2013 9:17**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**



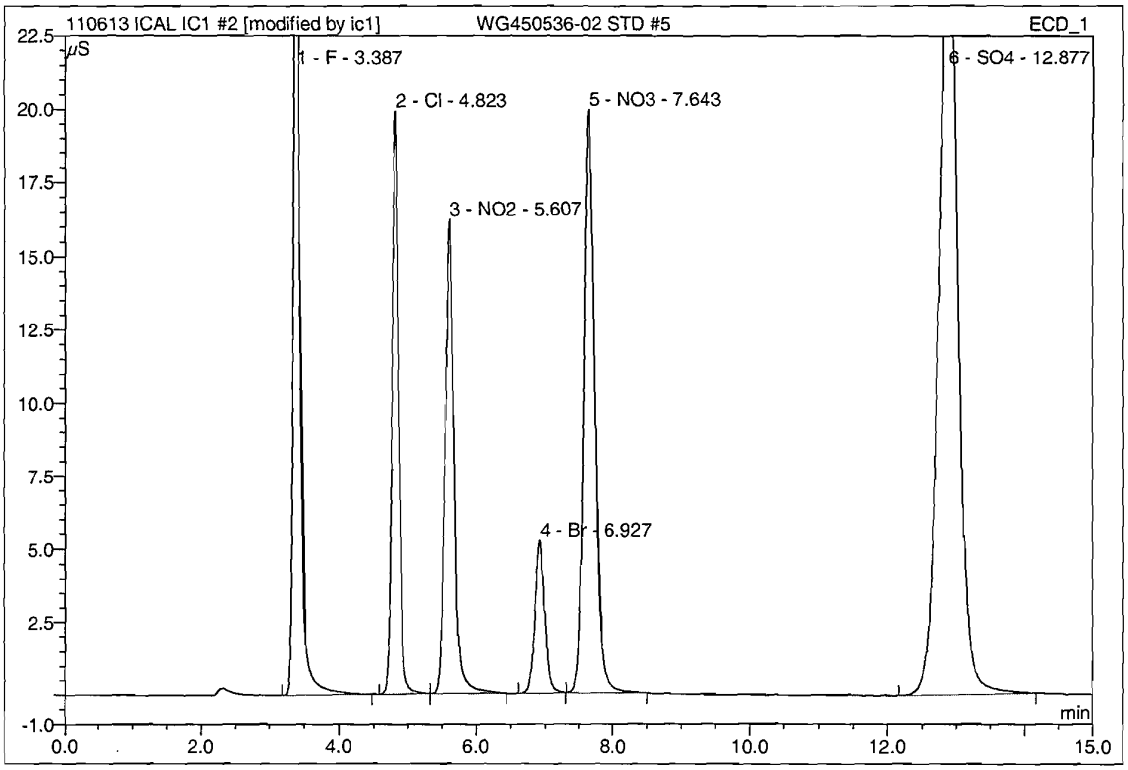
No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	4.82	Cl	19.929	2.191	12.44	12.214	BMB
2	5.61	NO2	16.200	2.454	13.93	7.542	BMB
3	6.93	Br	5.239	0.867	4.92	12.094	BMB
4	7.64	NO3	19.921	3.678	20.87	8.325	BMB
5	12.88	SO4	26.681	8.429	47.84	62.207	BMB
Total:			87.970	17.619	100.00	102.381	

2 WG450536-02 STD #5

1,1 JBK STD60856

#753019

Sample Name:	**WG450536-02 STD #5**	*Injection Volume:*	**20.0**
Vial Number:	**12**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/6/2013 9:17**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.39	F	30.428	3.264	15.63	12.514	BMB*
2	4.82	Cl	19.929	2.191	10.49	12.214	BMB
3	5.61	NO2	16.200	2.454	11.75	7.542	BMB
4	6.93	Br	5.239	0.867	4.15	12.094	BMB
5	7.64	NO3	19.921	3.678	17.61	8.325	BMB
6	12.88	SO4	26.681	8.429	40.36	62.207	BMB
Total:			118.398	20.883	100.00	114.896	

JBK #1
11/11/13
11/11/13

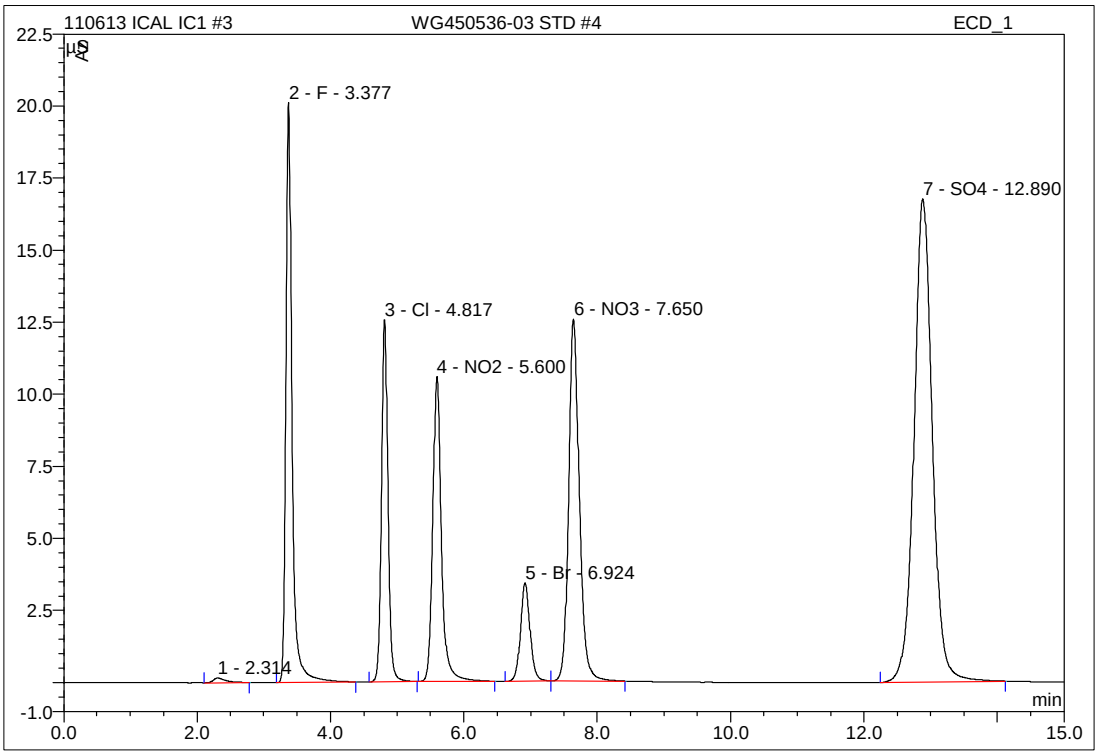
IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

3 WG450536-03 STD #4

1,1 JBK STD60856

Sample Name:	**WG450536-03 STD #4**	*Injection Volume:*	**20.0**
Vial Number:	**13**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/6/2013 9:34**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.31	n.a.	0.162	0.036	0.27	n.a.	BMB
2	3.38	F	20.121	2.119	15.83	8.136	BMB
3	4.82	Cl	12.573	1.397	10.43	7.794	BMB
4	5.60	NO2	10.582	1.591	11.88	4.896	BMB
5	6.92	Br	3.413	0.568	4.25	7.930	BMB
6	7.65	NO3	12.548	2.339	17.46	5.302	BMB
7	12.89	SO4	16.761	5.341	39.89	39.473	BMB
Total:			76.160	13.391	100.00	73.532	

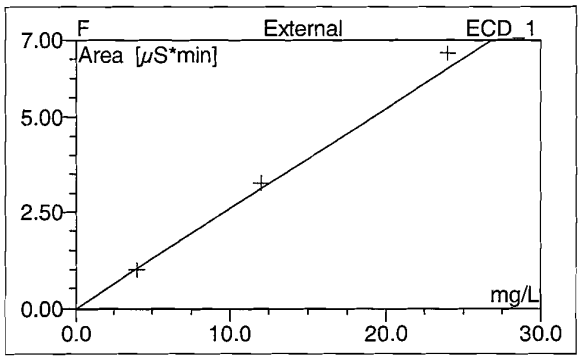
IC/Integration

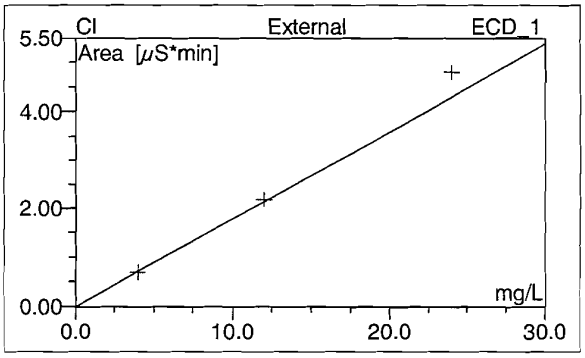
Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

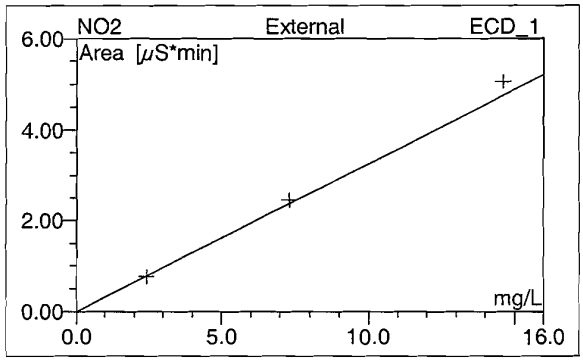
3 WG450536-03 STD #4

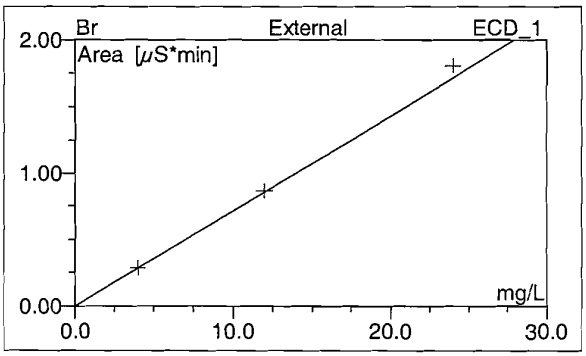
1,1 JBK STD60856

Sample Name:	**WG450536-03 STD #4**	*Injection Volume:*	**20.0**
Vial Number:	**13**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/6/2013 9:34**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**







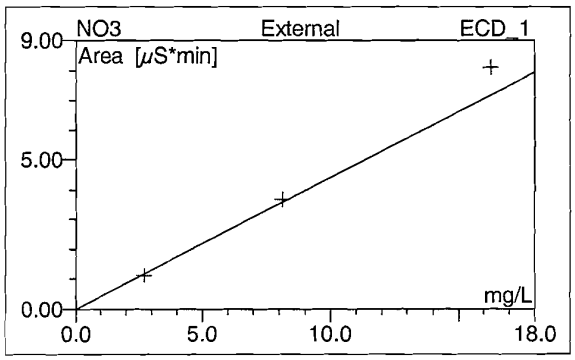


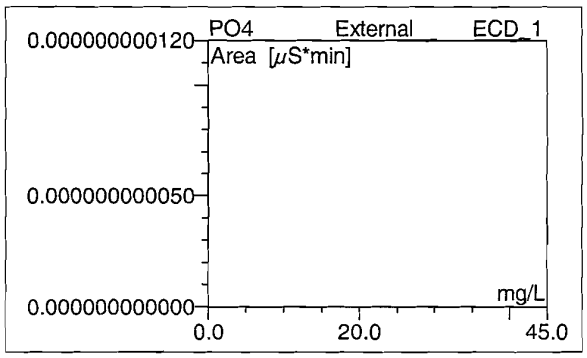
No.	Ret.Time min	Peak Name	Cal.Type	Points	Corr.Coeff. %	Offset	Slope	Curve
1	2.31	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2	3.38	F	YYLOff	3	99.9997	-0.0079	0.2615	0.0000
3	4.82	Cl	YYLOff	3	99.8983	-0.0037	0.1797	0.0000
4	5.60	NO2	YYLOff	3	99.9953	-0.0063	0.3262	0.0000
5	6.92	Br	YYLOff	3	99.9728	-0.0002	0.0717	0.0000
6	7.65	NO3	YYLOff	3	99.8870	-0.0100	0.4430	0.0000
7	12.89	SO4	YYLOff	3	99.8991	-0.0203	0.1358	0.0000
Average:					99.9420	-0.0081	0.2363	0.0000

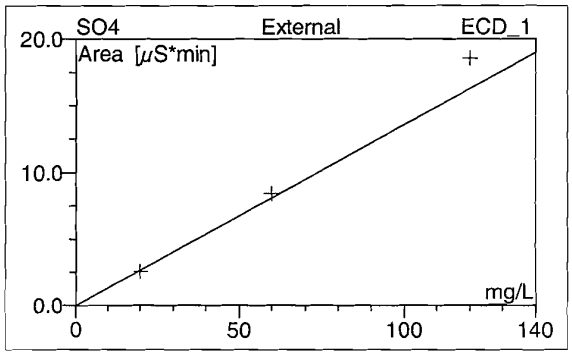
3 WG450536-03 STD #4

1,1 JBK STD60856

Sample Name:	**WG450536-03 STD #4**	*Injection Volume:*	**20.0**
Vial Number:	**13**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/6/2013 9:34**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**





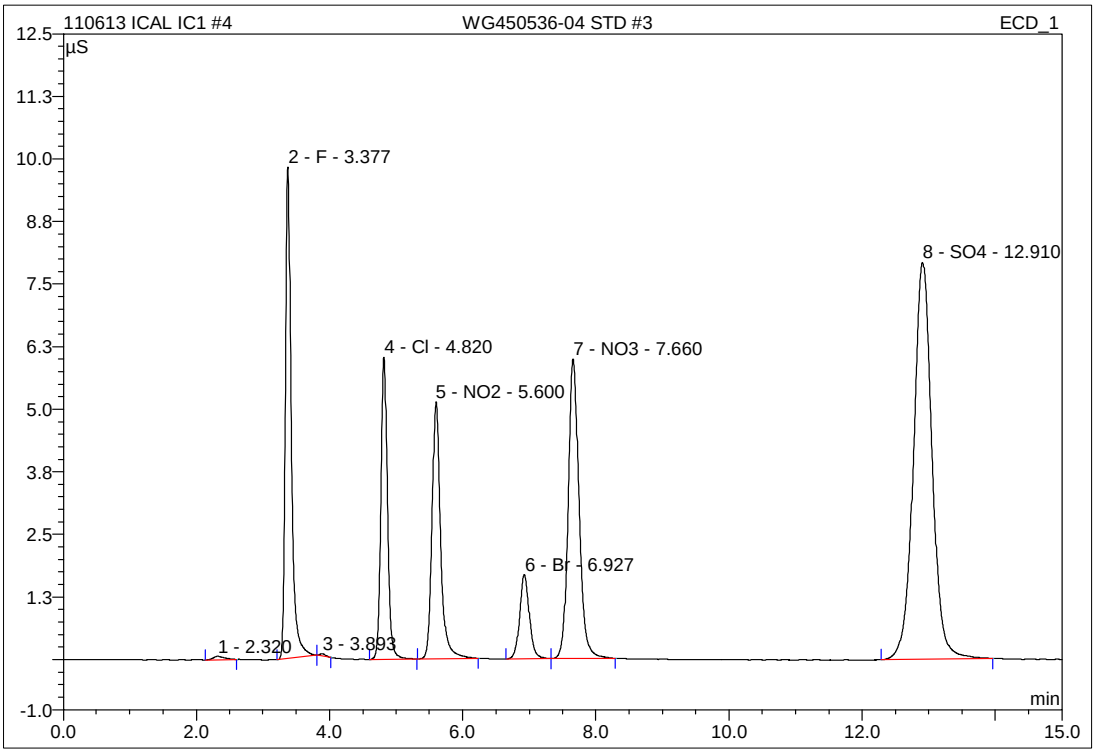


No.	Ret.Time min	Peak Name	Cal.Type	Points	Corr.Coeff. %	Offset	Slope	Curve
1	2.31	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2	3.38	F	YYLOff	3	99.9997	-0.0079	0.2615	0.0000
3	4.82	Cl	YYLOff	3	99.8983	-0.0037	0.1797	0.0000
4	5.60	NO2	YYLOff	3	99.9953	-0.0063	0.3262	0.0000
5	6.92	Br	YYLOff	3	99.9728	-0.0002	0.0717	0.0000
6	7.65	NO3	YYLOff	3	99.8870	-0.0100	0.4430	0.0000
7	12.89	SO4	YYLOff	3	99.8991	-0.0203	0.1358	0.0000
Average:					99.9420	-0.0081	0.2363	0.0000

4 WG450536-04 STD #3

1,1 JBK STD60856

Sample Name:	**WG450536-04 STD #3**	*Injection Volume:*	**20.0**
Vial Number:	**14**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/6/2013 9:51**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.32	n.a.	0.067	0.013	0.20	n.a.	BMB
2	3.38	F	9.819	0.992	15.39	3.825	BMb
3	3.89	n.a.	0.050	0.005	0.07	n.a.	bMB
4	4.82	Cl	6.037	0.682	10.59	3.818	BMB
5	5.60	NO2	5.131	0.766	11.89	2.368	BMB
6	6.93	Br	1.688	0.285	4.42	3.973	BMB
7	7.66	NO3	5.989	1.134	17.59	2.582	BMB
8	12.91	SO4	7.924	2.568	39.85	19.058	BMB
Total:			36.705	6.445	100.00	35.624	

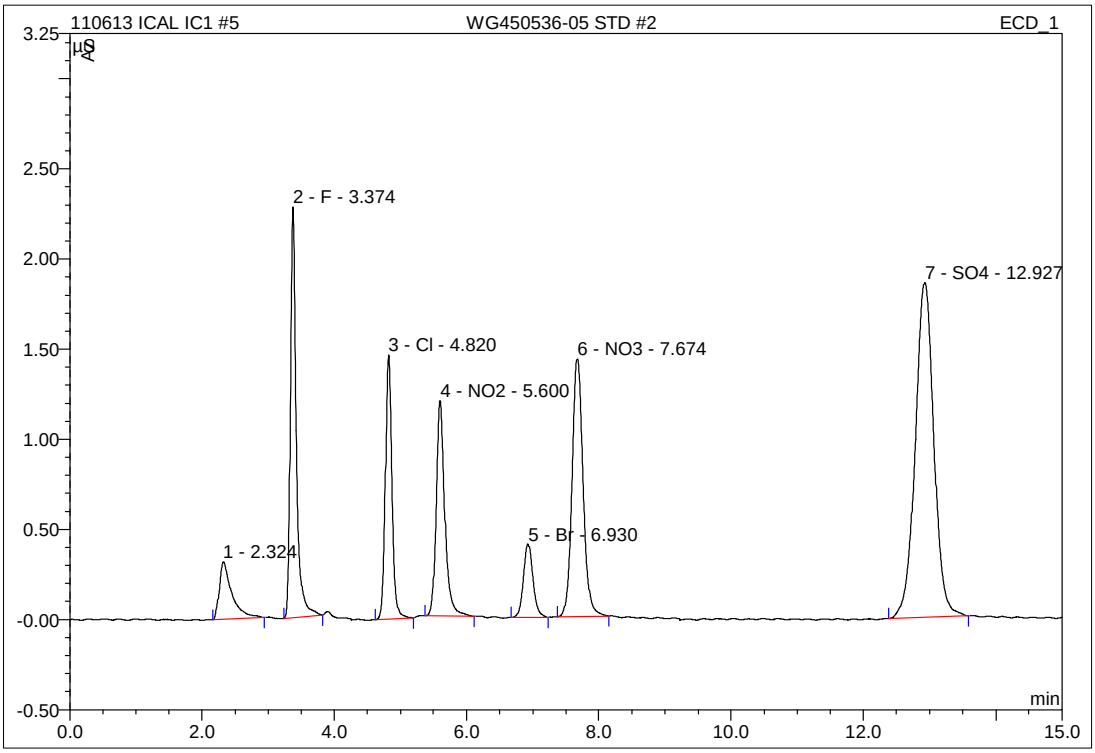
IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

5 WG450536-05 STD #2

1,1 JBK STD60856

Sample Name:	**WG450536-05 STD #2**	*Injection Volume:*	**20.0**
Vial Number:	**15**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/6/2013 10:09**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.32	n.a.	0.319	0.071	4.41	n.a.	BMB
2	3.37	F	2.278	0.237	14.76	0.936	BMB
3	4.82	Cl	1.466	0.169	10.54	0.962	BMB
4	5.60	NO2	1.196	0.180	11.18	0.570	BMB
5	6.93	Br	0.407	0.068	4.26	0.956	BMB
6	7.67	NO3	1.430	0.275	17.11	0.643	BMB
7	12.93	SO4	1.857	0.606	37.74	4.612	BMB
Total:			8.952	1.606	100.00	8.680	

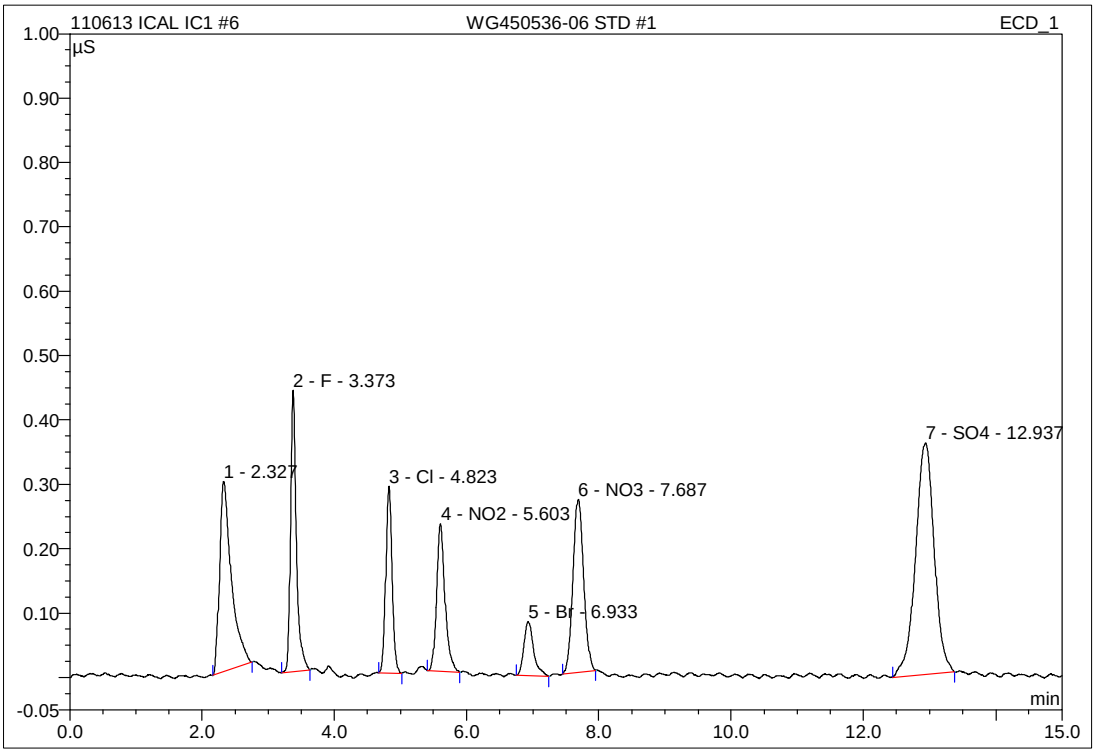
IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

6 WG450536-06 STD #1

1,1 JBK STD60856

Sample Name:	**WG450536-06 STD #1**	*Injection Volume:*	**20.0**
Vial Number:	**15**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/6/2013 10:26**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.33	n.a.	0.296	0.062	17.32	n.a.	BMB
2	3.37	F	0.438	0.045	12.67	0.202	BMB
3	4.82	Cl	0.291	0.033	9.15	0.202	BMB
4	5.60	NO2	0.229	0.034	9.53	0.123	BMB
5	6.93	Br	0.084	0.014	4.01	0.202	BMB
6	7.69	NO3	0.269	0.051	14.23	0.137	BMB
7	12.94	SO4	0.360	0.118	33.08	1.016	BMB
Total:			1.966	0.356	100.00	1.882	

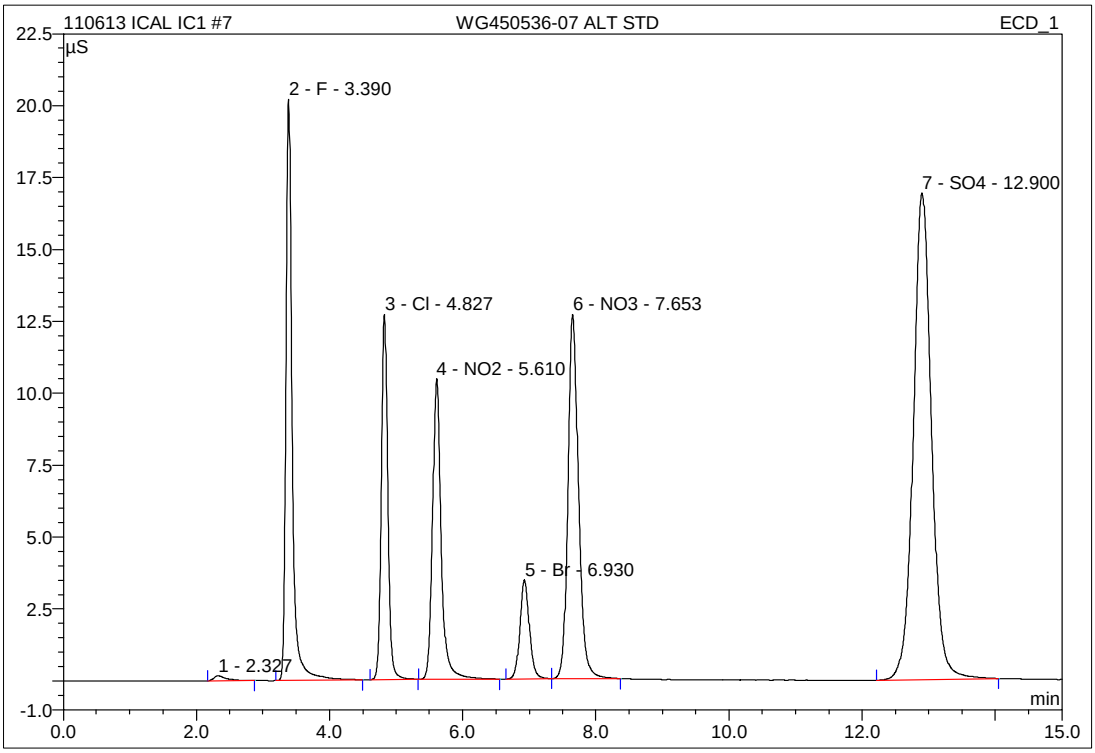
IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

7 WG450536-07 ALT STD

1,1 JBK STD60857

Sample Name:	**WG450536-07 ALT STD**	*Injection Volume:*	**20.0**
Vial Number:	**17**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/6/2013 11:07**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.33	n.a.	0.171	0.038	0.28	n.a.	BMB
2	3.39	F	20.200	2.127	15.86	8.165	BMB
3	4.83	Cl	12.689	1.401	10.45	7.817	BMB
4	5.61	NO2	10.450	1.577	11.76	4.853	BMB
5	6.93	Br	3.435	0.567	4.23	7.912	BMB
6	7.65	NO3	12.659	2.341	17.46	5.308	BMB
7	12.90	SO4	16.913	5.360	39.97	39.614	BMB
Total:			76.517	13.411	100.00	73.669	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

7 WG450536-07 ALT STD

1,1 JBK STD60857

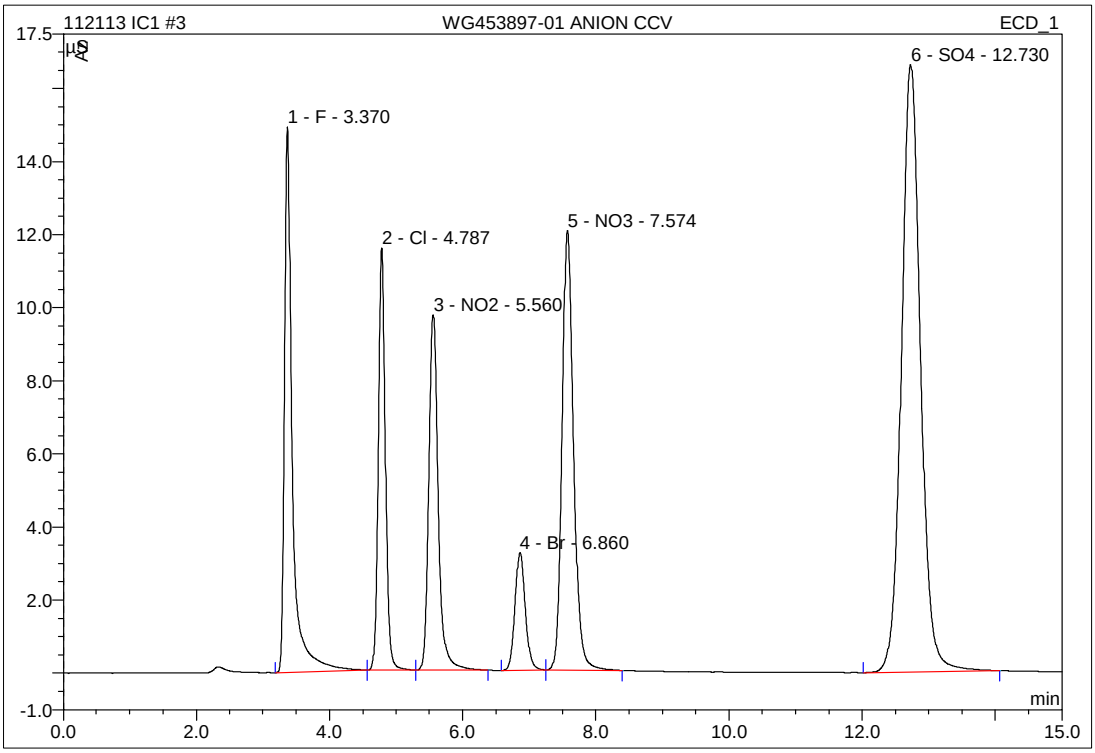
Sample Name:	**WG450536-07 ALT STD**	*Injection Volume:*	**20.0**
Vial Number:	**17**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/6/2013 11:07**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**

WG450536-07 ALT S	Actual mg/L	Recoved mg/L	%Difference	
F	8.00	8.1653	2.07	PASS
Cl	8.00	7.8171	-2.29	PASS
NO2-N	4.8714	4.8526	-0.38	PASS
Br	8.00	7.9119	-1.10	PASS
NO3-N	5.4216	5.3082	-2.09	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!
SO4	40	39.6139	-0.97	PASS

3 WG453897-01 ANION CCV

1,1 JBK STD60856 _____ psi @ _____

Sample Name:	**WG453897-01 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**11**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/21/2013 9:17**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.37	F	14.926	2.023	14.93	7.768	BMB
2	4.79	Cl	11.566	1.429	10.54	7.971	bMB
3	5.56	NO2	9.718	1.588	11.71	4.886	BMB
4	6.86	Br	3.229	0.582	4.29	8.116	BMB
5	7.57	NO3	12.033	2.405	17.74	5.451	BMB
6	12.73	SO4	16.624	5.528	40.78	40.846	BMB
Total:			68.095	13.553	100.00	75.038	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

3 WG453897-01 ANION CCV

1,1 JBK STD60856 _____ psi @ _____

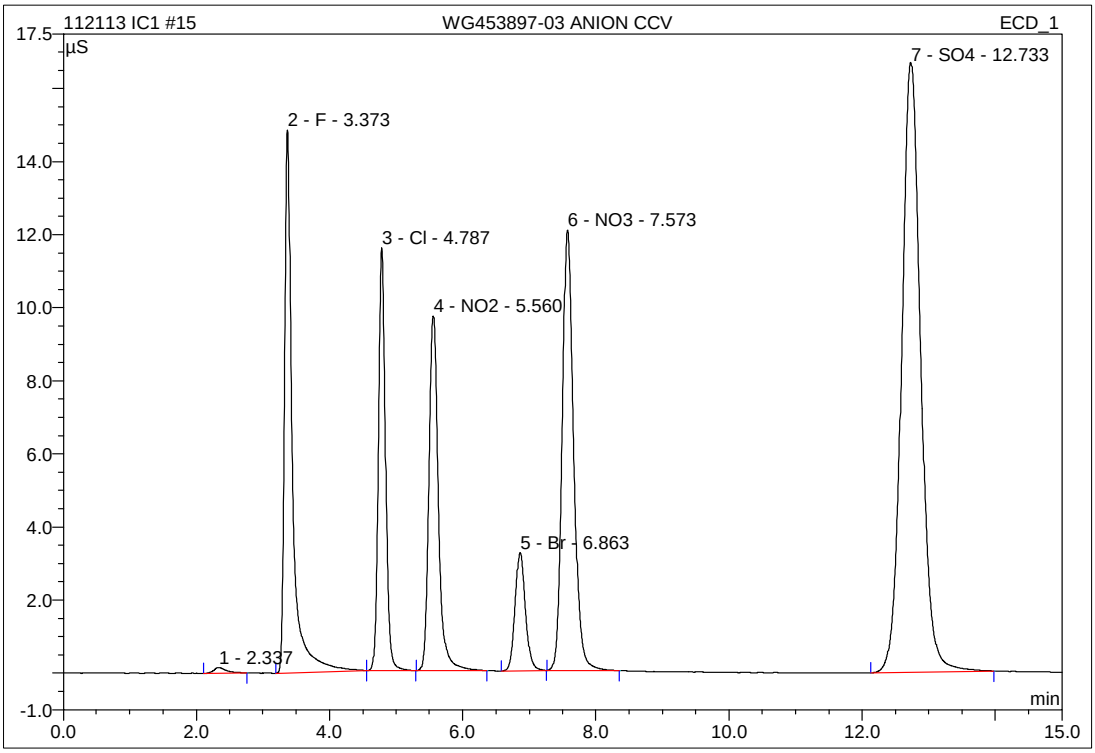
Sample Name:	**WG453897-01 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**11**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/21/2013 9:17**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**

WG453897-01 ANIOI	Actual mg/L	Recoved mg/L	%Difference	
F	8.00	7.7676	-2.91	PASS
Cl	8.00	7.9705	-0.37	PASS
NO2-N	4.8714	4.8863	0.31	PASS
Br	8.00	8.1163	1.45	PASS
NO3-N	5.4216	5.4513	0.55	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!
SO4	40	40.8464	2.12	PASS

15 WG453897-03 ANION CCV

1,1 JBK STD60856

Sample Name:	**WG453897-03 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**11**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/21/2013 12:46**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.34	n.a.	0.154	0.034	0.25	n.a.	BMB
2	3.37	F	14.866	2.037	14.94	7.821	BMB
3	4.79	Cl	11.570	1.436	10.53	8.010	bMB
4	5.56	NO2	9.697	1.587	11.64	4.883	BMB
5	6.86	Br	3.238	0.585	4.29	8.162	BMB
6	7.57	NO3	12.063	2.413	17.70	5.470	BMB
7	12.73	SO4	16.701	5.540	40.64	40.936	BMB
Total:			68.288	13.631	100.00	75.281	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

15 WG453897-03 ANION CCV

1,1 JBK STD60856

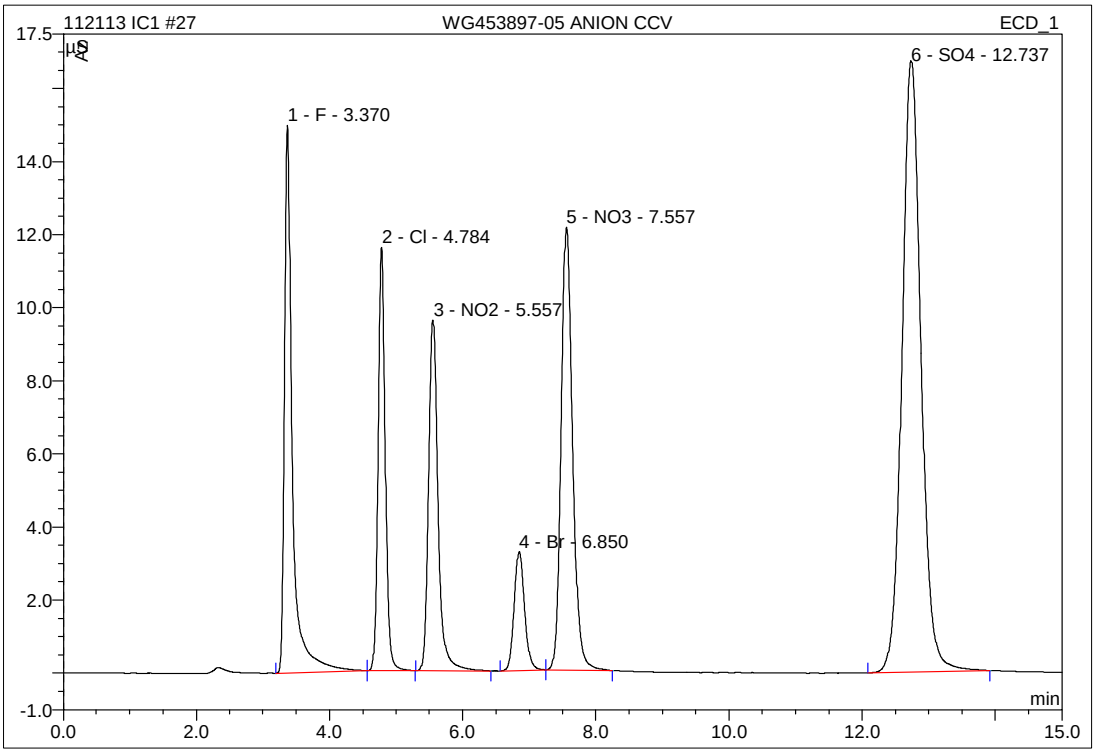
Sample Name:	**WG453897-03 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**11**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/21/2013 12:46**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**

WG453897-03 ANIOI	Actual mg/L	Recoved mg/L	%Difference	
F	8.00	7.8207	-2.24	PASS
Cl	8.00	8.0096	0.12	PASS
NO2-N	4.8714	4.8832	0.24	PASS
Br	8.00	8.1619	2.02	PASS
NO3-N	5.4216	5.4702	0.90	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!
SO4	40	40.9357	2.34	PASS

27 WG453897-05 ANION CCV

1,1 JBK STD60856

Sample Name:	**WG453897-05 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**11**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/21/2013 16:27**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.37	F	14.993	2.045	15.02	7.853	BMB
2	4.78	Cl	11.591	1.443	10.60	8.053	BMB
3	5.56	NO2	9.595	1.575	11.57	4.849	BMB
4	6.85	Br	3.249	0.588	4.32	8.199	BMb
5	7.56	NO3	12.119	2.417	17.75	5.478	bMB
6	12.74	SO4	16.733	5.546	40.74	40.984	BMB
Total:			68.281	13.615	100.00	75.416	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

27 WG453897-05 ANION CCV

1,1 JBK STD60856

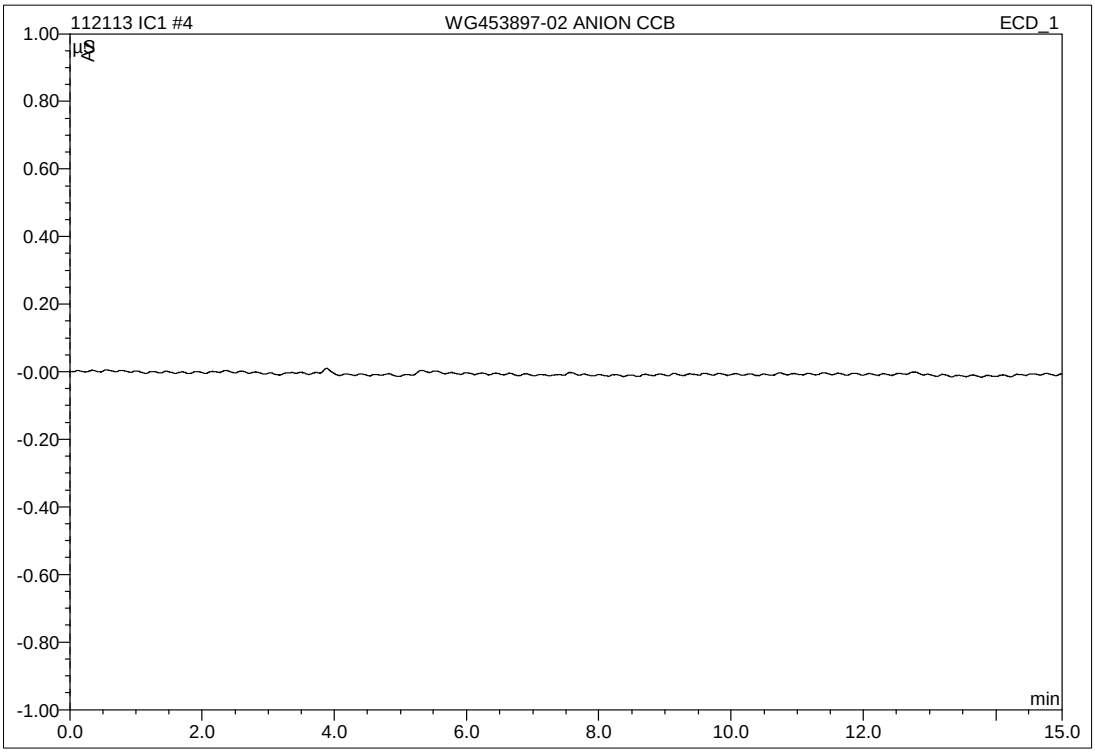
Sample Name:	**WG453897-05 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**11**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/21/2013 16:27**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**

WG453897-05 ANIOI	Actual mg/L	Recoved mg/L	%Difference	
F	8.00	7.8530	-1.84	PASS
Cl	8.00	8.0525	0.66	PASS
NO2-N	4.8714	4.8485	-0.47	PASS
Br	8.00	8.1990	2.49	PASS
NO3-N	5.4216	5.4785	1.05	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!
SO4	40	40.9841	2.46	PASS

4 WG453897-02 ANION CCB

1,1 JBK

Sample Name:	**WG453897-02 ANION CCB**	*Injection Volume:*	**20.0**
Vial Number:	**12**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/21/2013 9:34**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

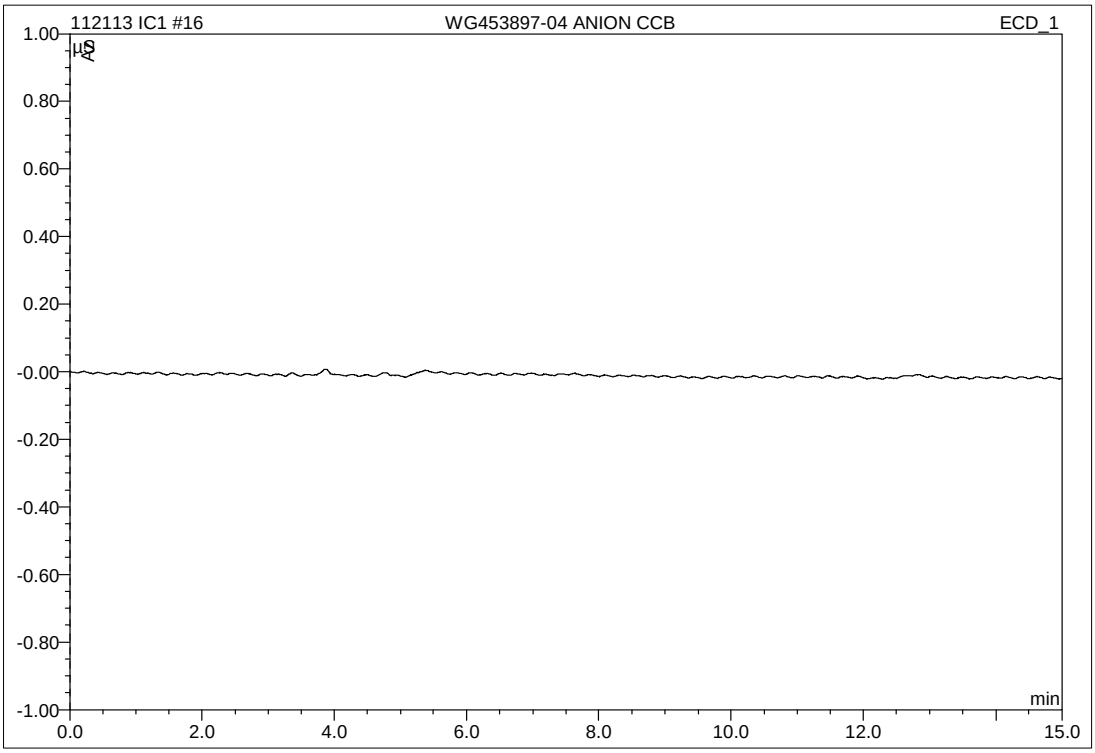
IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

16 WG453897-04 ANION CCB

1,1 JBK

Sample Name:	**WG453897-04 ANION CCB**	*Injection Volume:*	**20.0**
Vial Number:	**12**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/21/2013 13:03**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

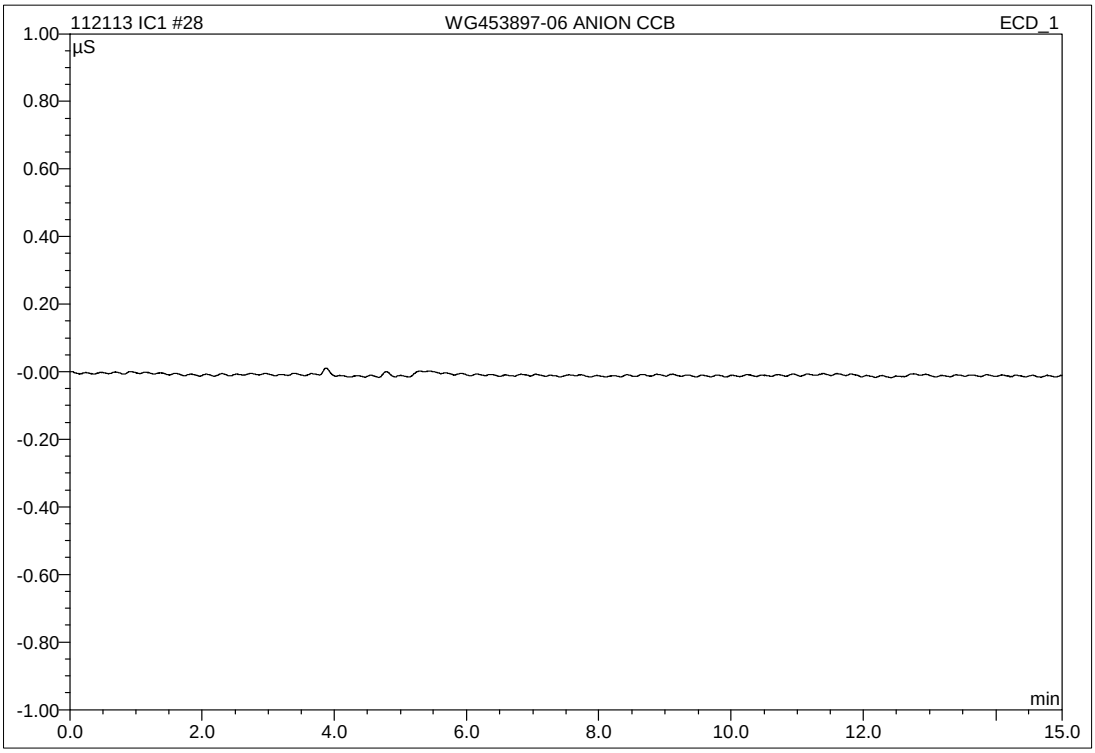
IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

28 WG453897-06 ANION CCB

1,1 JBK

Sample Name:	**WG453897-06 ANION CCB**	*Injection Volume:*	**20.0**
Vial Number:	**12**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/21/2013 16:45**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

RETENTION TIME WINDOWS

Lab Name: MICROBAC Laboratories, Inc.

Instrument ID: IC1

IC Column: AG14A-SC/AS14A-SC

	STANDARD #1	STANDARD #2	STANDARD #3
Date Run	6/5/2013	6/5/2013	6/6/2013
File #	WG432976-05	WG432976-07	WG433275-01
Time	16:16	18:25	16:50

COMPOUND	STD #1 RT	STD #2 RT	STD #3 RT	RT WIN
F	3.41	3.40	3.41	0.017
Cl	4.87	4.87	4.88	0.017
NO2-N	5.67	5.66	5.67	0.017
Br	7.01	6.99	7.02	0.046
NO3-N	7.76	7.74	7.77	0.046
SO4	13.35	13.35	13.35	0.000

Instrument ID: IC2

IC Column: AG14A-SC/AS14A-SC

	STANDARD #1	STANDARD #2	STANDARD #3
Date Run	6/6/2013	6/6/2013	6/7/2013
File #	WG433163-01	WG433163-05	WG433448-01
Time	12:58	18:54	12:23

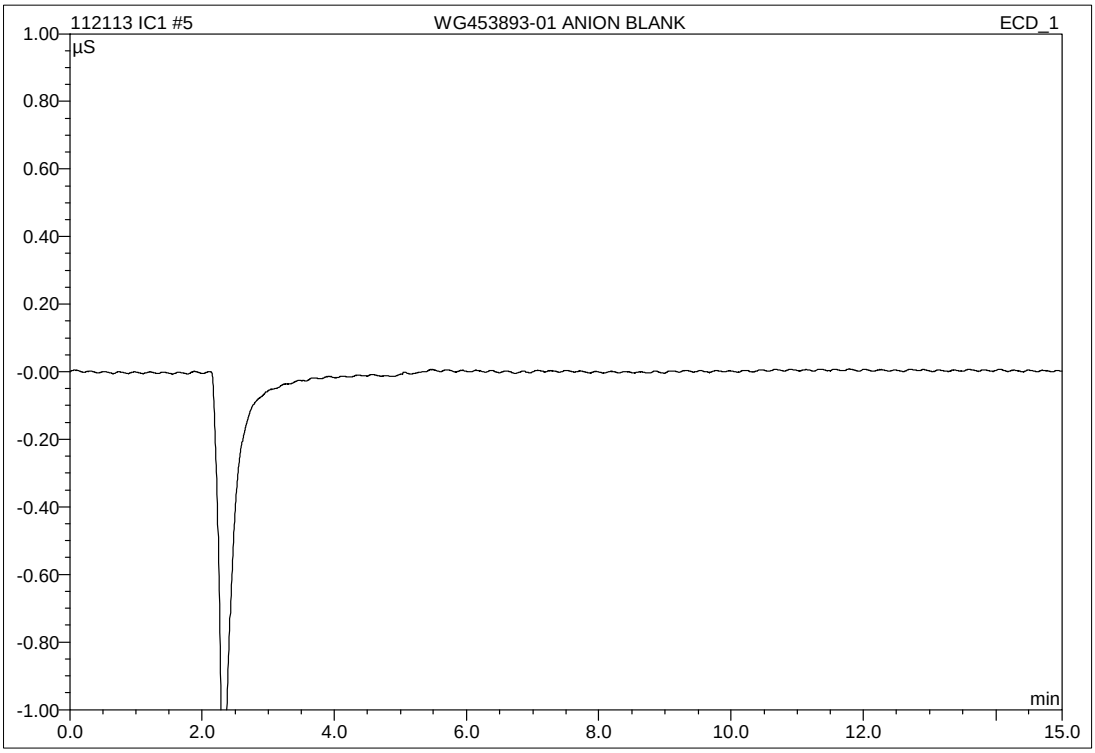
COMPOUND	STD #1 RT	STD #2 RT	STD #3 RT	RT WIN
F	3.31	3.30	3.31	0.017
Cl	4.90	4.89	4.92	0.046
NO2-N	5.79	5.78	5.83	0.079
Br	7.34	7.31	7.43	0.187
NO3-N	8.21	8.18	8.32	0.221
SO4	13.74	13.74	13.67	0.121

2.2.1.5 Raw QC Data

5 WG453893-01 ANION BLANK

1,1 JBK

Sample Name:	**WG453893-01 ANION BLANK**	*Injection Volume:*	**20.0**
Vial Number:	**13**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/21/2013 9:51**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

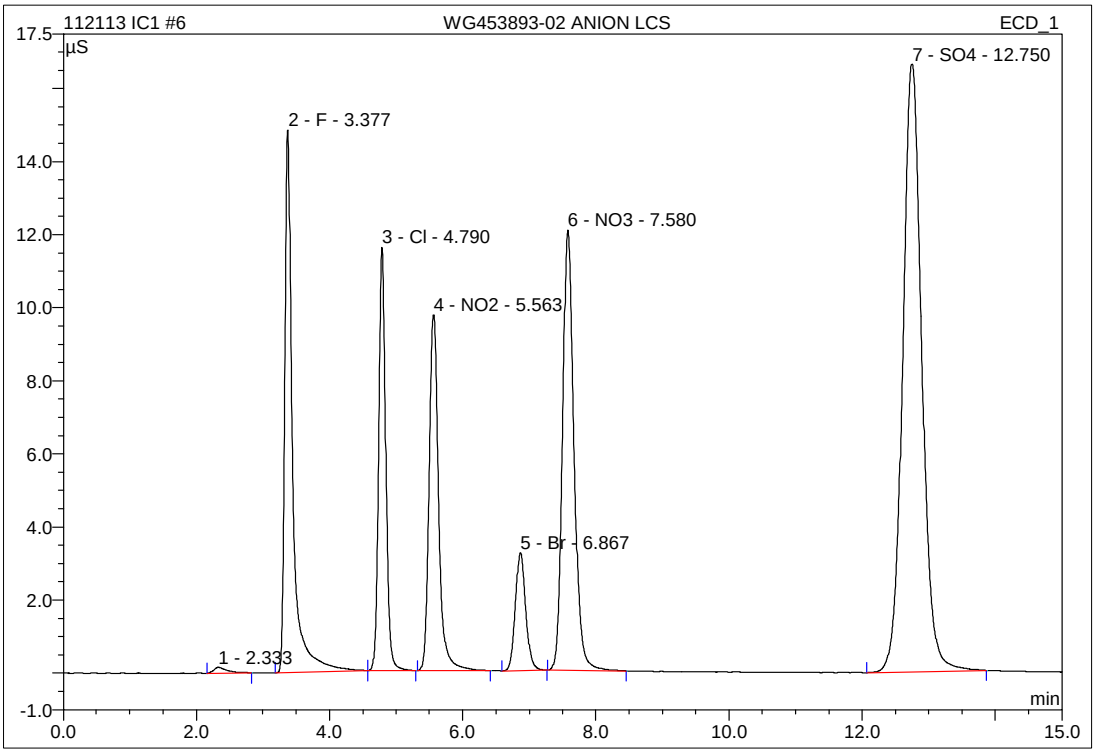
IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

6 WG453893-02 ANION LCS

1,1 JBK

Sample Name:	**WG453893-02 ANION LCS**	*Injection Volume:*	**20.0**
Vial Number:	**14**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/21/2013 10:09**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.33	n.a.	0.159	0.037	0.27	n.a.	BMB
2	3.38	F	14.851	2.028	14.90	7.788	BMB
3	4.79	Cl	11.581	1.437	10.55	8.014	BMB
4	5.56	NO2	9.738	1.601	11.76	4.927	BMB
5	6.87	Br	3.234	0.585	4.29	8.155	BMB
6	7.58	NO3	12.051	2.414	17.73	5.473	BMB
7	12.75	SO4	16.635	5.517	40.51	40.767	BMB
Total:			68.250	13.618	100.00	75.124	

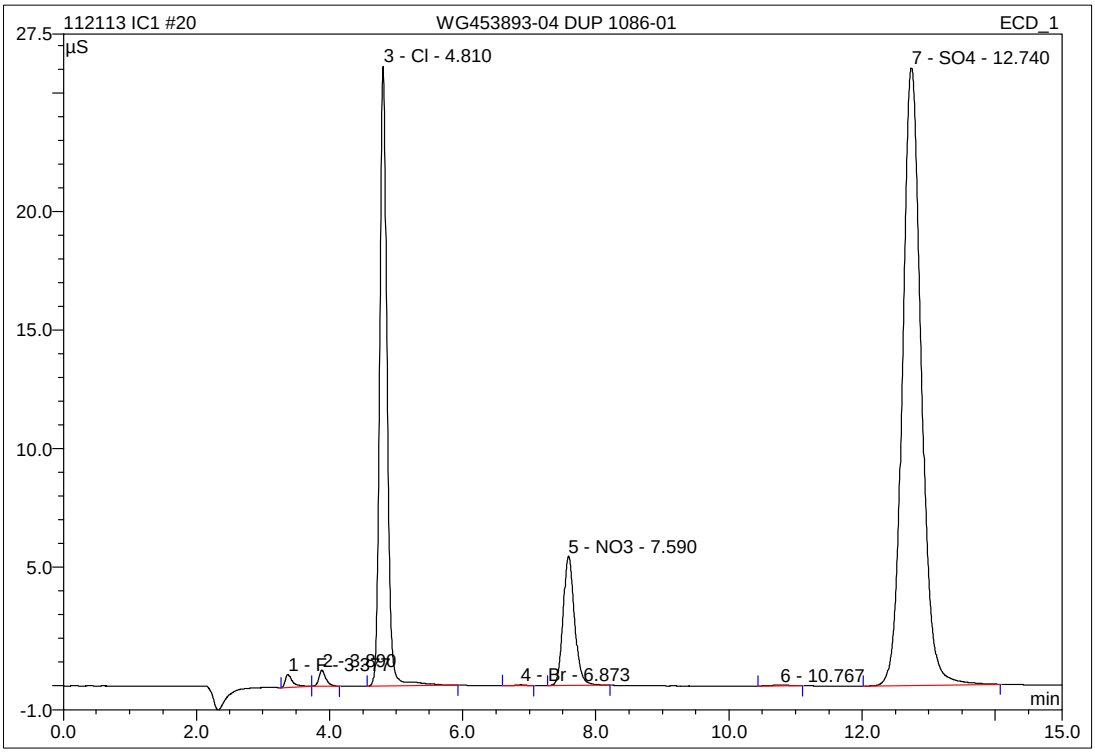
IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

20 WG453893-04 DUP 1086-01

1,1 JBK

Sample Name:	**WG453893-04 DUP 1086-01**	*Injection Volume:*	**20.0**
Vial Number:	**20**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/21/2013 14:13**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.38	F	0.539	0.067	0.51	0.288	BMb
2	3.89	n.a.	0.666	0.081	0.62	n.a.	bMB
3	4.81	Cl	26.125	3.343	25.50	18.624	BMB
4	6.87	Br	0.043	0.008	0.06	0.111	BMB
5	7.59	NO3	5.467	1.101	8.40	2.508	BMB
6	10.77	n.a.	0.044	0.014	0.11	n.a.	BMB
7	12.74	SO4	26.037	8.498	64.81	62.718	BMB
Total:			58.922	13.113	100.00	84.249	

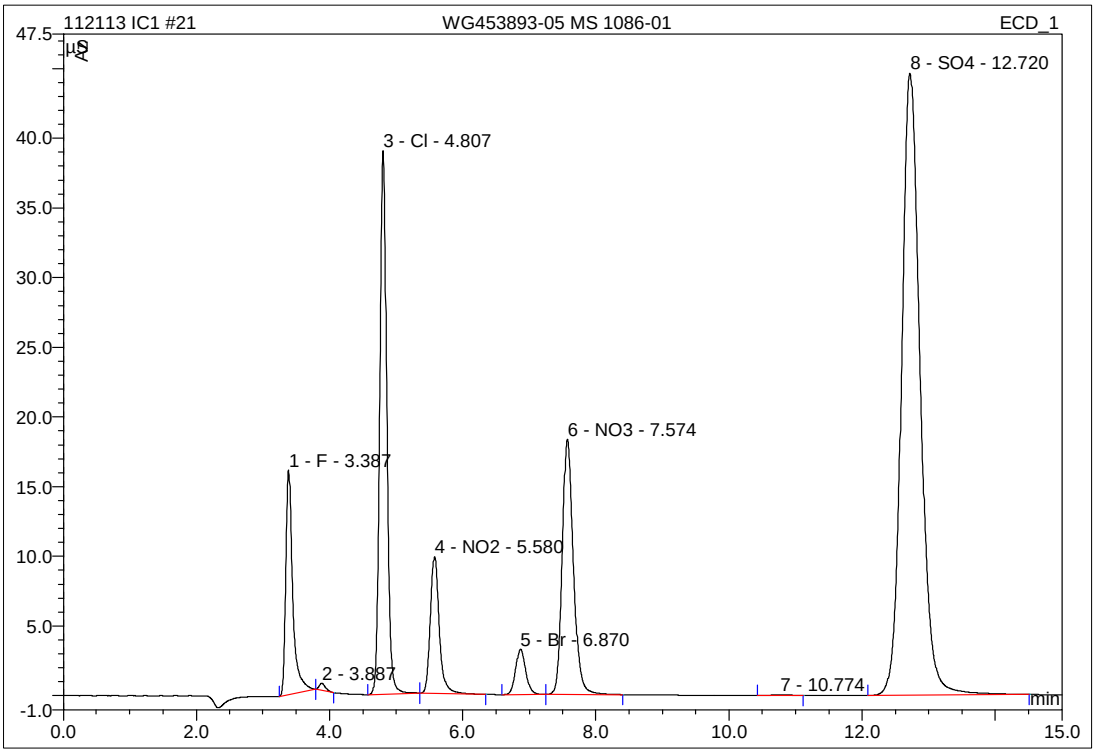
IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

21 WG453893-05 MS 1086-01

1,1 JBK

Sample Name:	**WG453893-05 MS 1086-01**	*Injection Volume:*	**20.0**
Vial Number:	**16**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/21/2013 14:30**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.39	F	16.108	1.908	7.09	7.328	BMb
2	3.89	n.a.	0.523	0.056	0.21	n.a.	bMB
3	4.81	Cl	38.993	4.770	17.72	26.564	BMb
4	5.58	NO2	9.788	1.523	5.66	4.688	bMB
5	6.87	Br	3.262	0.580	2.15	8.093	BMB
6	7.57	NO3	18.318	3.580	13.29	8.104	BMB
7	10.77	n.a.	0.040	0.013	0.05	n.a.	BMB
8	12.72	SO4	44.643	14.496	53.83	106.874	BMB
Total:			131.675	26.926	100.00	161.650	

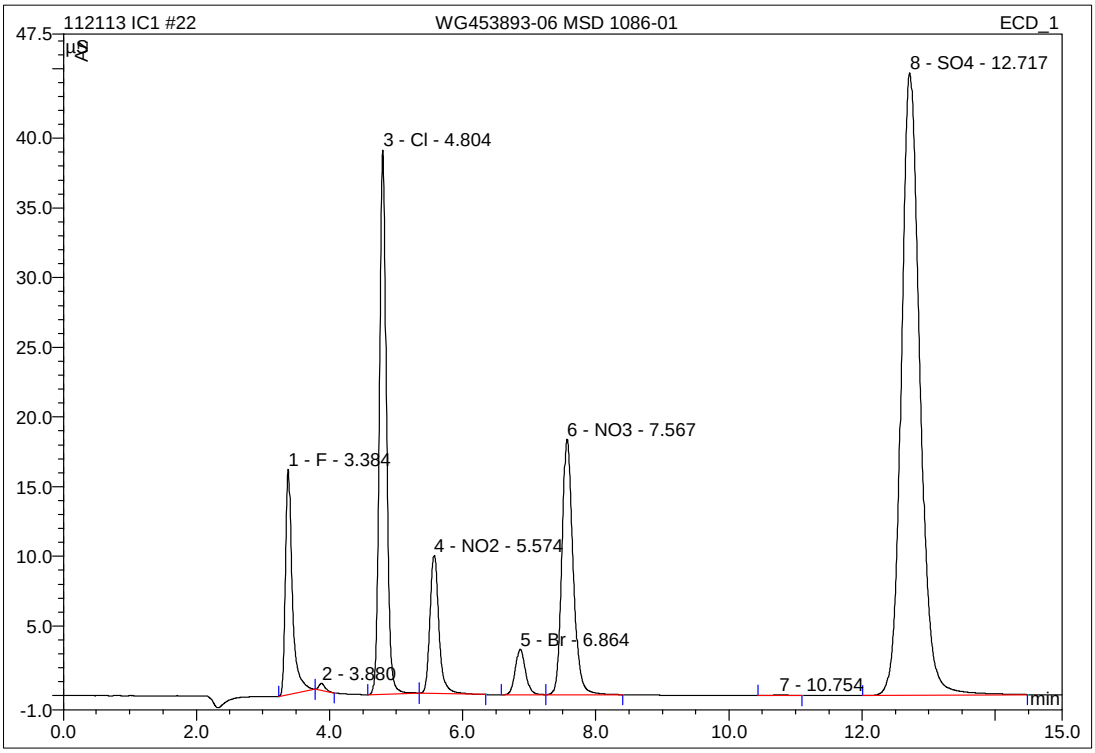
IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

22 WG453893-06 MSD 1086-01

1,1 JBK

Sample Name:	**WG453893-06 MSD 1086-01**	*Injection Volume:*	**20.0**
Vial Number:	**16**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/21/2013 14:47**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.38	F	16.154	1.911	7.09	7.339	BMb
2	3.88	n.a.	0.518	0.056	0.21	n.a.	bMB
3	4.80	Cl	39.034	4.775	17.71	26.592	BMb
4	5.57	NO2	9.905	1.540	5.71	4.740	bMB
5	6.86	Br	3.262	0.582	2.16	8.113	BMB
6	7.57	NO3	18.333	3.586	13.29	8.118	BMB
7	10.75	n.a.	0.040	0.013	0.05	n.a.	BMB
8	12.72	SO4	44.664	14.509	53.79	106.976	BMB
Total:			131.910	26.972	100.00	161.878	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

2.2.2 PH Data

2.2.2.1 Summary Data

Login Number: L13111086
Department: Conventionals
Analyst: Tammy Morris

METHOD

Analysis SW846 9040C,9045D/EPA 150.1/SM4500-H B (pH)

HOLDING TIMES

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Matrix Spikes: All acceptance criteria were met.

Duplicates: All acceptance criteria were met.

SAMPLES

Samples: All acceptance criteria were met.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Microbac Laboratories Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Narrative ID: 75486
Approved By: Deanna Hesson

Microbac

Lab Report #: L13111086
Lab Project #: 3005.011
Project Name: White Sands MR
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L13111086-01	**PrePrep Method:**	N/A	**Instrument:**	ORION-4STAR
Client ID:	SMW 1-1113-1	**Prep Method:**	9040C	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	9040C	**Cal Date:**	
Workgroup #:	WG453150	**Analyst:**	TMM	**Run Date:**	11/16/2013 13:08
Collect Date:	11/15/2013 10:00	**Dilution:**	1	**File ID:**	OS13112114431301
Sample Tag:		**Units:**	UNITS		

Analyte	CAS #	Result	Qual	LOQ	LOD
Corrosivity pH	10-29-7	6.62		0.000	0.000
Temperature At Determination (C)		18.7		0.000	0.000

Sample #:	L13111086-02	**PrePrep Method:**	N/A	**Instrument:**	ORION-4STAR
Client ID:	SMW 4-1113-1	**Prep Method:**	9040C	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	9040C	**Cal Date:**	
Workgroup #:	WG453150	**Analyst:**	TMM	**Run Date:**	11/16/2013 13:09
Collect Date:	11/15/2013 11:50	**Dilution:**	1	**File ID:**	OS13112114431601
Sample Tag:		**Units:**	UNITS		

Analyte	CAS #	Result	Qual	LOQ	LOD
Corrosivity pH	10-29-7	7.12		0.000	0.000
Temperature At Determination (C)		18.9		0.000	0.000

2.2.2.2 QC Summary Data

Example pH Calculations
(Direct Readout Parameter)

Readout from instrument = result in S.U.

where:

Readout = direct readout from the instrument

Microbac Laboratories Inc.

Data Checklist

Date: 16-NOV-2013
Analyst: TMM
Analyst: NA
Method: PH
Instrument: ORION4-STAR
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG453150

Calibration/Linearity	11/16/13
Second Source Check	
ICV/CCV (std)	
ICB/CCB	
Blank	
LCS/LCS Dup	
MS/MSD	
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	
Case Narratives	
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	TMM
Secondary Reviewer	SAV
Comments	

Primary Reviewer:
21-NOV-2013
Tammy Morris

Secondary Reviewer:
21-NOV-2013
Sarah Vandenberg

CHECKLIST1 - Modified 03/05/2008
Generated: NOV-21-2013 16:18:55

2.2.2.3 Raw Data

WG453150

pH
(pH2)

B,C) SW846 9045D
A) SM 4500-H(+)-B
A) EPA 150.1
A) SW846 9040C
SOP K1501, Rev 13

Instrument
- [x] Orion 4-Star
- [ ] Orion 710A #1
- [ ] Orion 710A #2

Sample	Calibration Buffers	Time of Calibration	A Water Misc. Liquid	B 50% Slurry of Solid	C 50% Water Org. Liq. Mix	Time Analyzed	Temp (°C)
LCS 6:		13:05	6.04			13:07	21.0
11-1086 7/1000			6.62			1308	18.7
02 1150			7.12			13:09	18.9
11-928-01			7.62			13:11	21.2
02			7.60			13:12	21.0
03			7.65			13:12	21.0
11-978-01			10.12			13:13	21.4
DUP: 11-928-03			7.66			13:14	21.2
LCS 9:			8.98			13:17	21.1

Analyst: Tammy Morris Date: 11/16/13 @ 13:05

DCN#98912

2.2.3 Alkalinity Data

2.2.3.1 Summary Data

Login Number: L13111086
Department: Conventionals
Analyst: Brice Fenton

METHOD

Analysis EPA 310.2 (Alkalinity)

HOLDING TIMES

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Matrix Spikes: All acceptance criteria were met.

Duplicates: All acceptance criteria were met.

SAMPLES

Samples: All acceptance criteria were met.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Microbac Laboratories Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Narrative ID: 75484
Approved By: Deanna Hesson

Microbac

Lab Report #: L13111086
Lab Project #: 3005.011
Project Name: White Sands MR
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L13111086-01	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	SMW 1-1113-1	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	11/25/2013 10:41
Workgroup #:	WG454148	**Analyst:**	BAF	**Run Date:**	11/25/2013 10:48
Collect Date:	11/15/2013 10:00	**Dilution:**	1	**File ID:**	S2131125002.019
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Alkalinity, Carbonate (as CaCO3)	13-01-4		U	20.0	10.0

U	Analyte was not detected. The concentration is below the reported LOD.

Certificate of Analysis

Sample #:	L13111086-01	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	SMW 1-1113-1	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	11/25/2013 10:41
Workgroup #:	WG454148	**Analyst:**	BAF	**Run Date:**	11/25/2013 10:48
Collect Date:	11/15/2013 10:00	**Dilution:**	1	**File ID:**	S2131125002.019
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Alkalinity, Bicarbonate (as CaCO3)	13-00-3	84.9		20.0	10.0

Sample #:	L13111086-01	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	SMW 1-1113-1	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	11/25/2013 10:41
Workgroup #:	WG454148	**Analyst:**	BAF	**Run Date:**	11/25/2013 10:48
Collect Date:	11/15/2013 10:00	**Dilution:**	1	**File ID:**	S2131125002.019
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Alkalinity, Total (as CaCO3)	11-43-8	84.9		20.0	10.0

Sample #:	L13111086-02	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	SMW 4-1113-1	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	11/25/2013 10:41
Workgroup #:	WG454148	**Analyst:**	BAF	**Run Date:**	11/25/2013 10:48
Collect Date:	11/15/2013 11:50	**Dilution:**	1	**File ID:**	S2131125002.020
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Alkalinity, Total (as CaCO3)	11-43-8	88.2		20.0	10.0

Sample #:	L13111086-02	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	SMW 4-1113-1	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	11/25/2013 10:41
Workgroup #:	WG454148	**Analyst:**	BAF	**Run Date:**	11/25/2013 10:48
Collect Date:	11/15/2013 11:50	**Dilution:**	1	**File ID:**	S2131125002.020
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Alkalinity, Carbonate (as CaCO3)	13-01-4		U	20.0	10.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L13111086
Lab Project #: 3005.011
Project Name: White Sands MR
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L13111086-02	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	SMW 4-1113-1	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	11/25/2013 10:41
Workgroup #:	WG454148	**Analyst:**	BAF	**Run Date:**	11/25/2013 10:48
Collect Date:	11/15/2013 11:50	**Dilution:**	1	**File ID:**	S2131125002.020
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Alkalinity, Bicarbonate (as CaCO3)	13-00-3	88.2		20.0	10.0

2.2.3.2 QC Summary Data

Example Calculations for Visible Spectrophotometric Methods

Linear Calibration Model

Step 1 - Retrieve Curve Data from ICAL

m = slope of the linear equation
b = intercept from the linear equation
y = instrument response as absorbance or OD
x = concentration of analyte (mg/L)
y = mx + b

Step 2: Calculate the instrument concentration, x

Where:

x = (y - b)/m

Step 3: Solve for analyte concentration in sample, Cx

Cx = (x) (D)

Example Calculation (LCS):

Value of m from plot:	7.809	
Value of b from plot:	0.0004135	
Absorbance of unknown from quantitation report (y):	0.31	
Calculated concentration (x):	0.03964483	
Dilution factor (D):	1.00	
Concentration of analyte in sample, Cy:	0.0396	mg/L

SmartChem Autoanalyzer - Quadratic Calibration for Chloride and Sulfate

Step 1 - Retrieve Curve Data from Smartchem ICAL

A, B, C = constants from the ICAL quadratic regression

x = instrument response as absorbance or OD

y = concentration of analyte (mg/L)

Step 2: Calculate the instrument concentration, y

Where:

y = Ax^2 + Bx + C

Step 3: Solve for analyte concentration in sample, Cy

Cy = (y) (D)

Example Calculation (LCS):

Value of A from plot:	101.2796	
Value of B from plot:	318.9056	
Value of C from plot:	-2.2712	
Absorbance of unknown from quantitation report (x):	0.1583	
Calculated concentration (y):	50.7495108	
Dilution factor (D):	1.00	
Concentration of analyte in sample, Cy:	50.75	mg/L

Microbac Laboratories Inc.

Data Checklist

Date: 25-NOV-2013
Analyst: BAF
Analyst: NA
Method: ALK
Instrument: SC2
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG454148 WG454153

Calibration/Linearity	11-25-2013
Second Source Check	X
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	X
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	BAF
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
25-NOV-2013

Brice Fenton

Secondary Reviewer:
25-NOV-2013

Dianna Hesson

CHECKLIST1 - Modified 03/05/2008
Generated: NOV-25-2013 13:31:34

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 310.2 AAB#: WG454148

Login Number: L13111086

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
SMW 1-1113-1	01	11/15/13					11/25/2013	10	14		11/25/13	10	14	
SMW 4-1113-1	02	11/15/13					11/25/2013	10	14		11/25/13	10	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 3225597
Report generated 11/25/2013 13:21

Microbac Laboratories Inc.

METHOD BLANK SUMMARY

Login Number: L13111086
Blank File ID: S2131125002.012
Prep Date: 11/25/13 10:44
Analyzed Date: 11/25/13 10:44
Analyst: BAF

Work Group: WG454148
Blank Sample ID: WG454148-01
Instrument ID: SMARTCHEM2
Method: 310.2

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG454148-02	S2131125002.013	11/25/13 10:44	01
LCS2	WG454148-03	S2131125002.014	11/25/13 10:45	01
SMW 1-1113-1	L13111086-01	S2131125002.019	11/25/13 10:48	01
SMW 1-1113-1	L13111086-01	S2131125002.019	11/25/13 10:48	01
SMW 1-1113-1	L13111086-01	S2131125002.019	11/25/13 10:48	01
SMW 4-1113-1	L13111086-02	S2131125002.020	11/25/13 10:48	01
SMW 4-1113-1	L13111086-02	S2131125002.020	11/25/13 10:48	01
SMW 4-1113-1	L13111086-02	S2131125002.020	11/25/13 10:48	01
DUP	WG454148-05	S2131125002.041	11/25/13 11:01	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 3225598
Report generated 11/25/2013 13:21

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L13111086 Prep Date: 11/25/13 10:44 Sample ID: WG454148-01
Instrument ID: SMARTCHEM2 Run Date: 11/25/13 10:44 Prep Method: 310.2
File ID: S2131125002.012 Analyst: BAF Method: 310.2
Workgroup (AAB#): WG454148 Matrix: Water Units: mg/L
Contract #: Cal ID: SMARTC-25-NOV-13

Analytes	LOD	LOQ	Concentration	Dilution	Qualifier
Alkalinity, Total (as CaCO3)	10.0	20.0	10.0	1	U

LOD Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 3225599
25-NOV-2013 13:21

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L13111086 Analyst: BAF Prep Method: 310.2
Instrument ID: SMARTCHEM2 Matrix: Water Method: 310.2
Workgroup (AAB#): WG454148 Units: mg/L
QC Key: DOD4 Lot #: STD61413

Sample ID: WG454148-02 LCS File ID: S2131125002.013 Run Date: 11/25/2013 10:44
Sample ID: WG454148-03 LCS2 File ID: S2131125002.014 Run Date: 11/25/2013 10:45

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Alkalinity, Total (as CaCO3)	200	202	101	200	203	102	0.708	85 - 115	20	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 3225600
Report generated: 11/25/2013 13:21

2.2.3.3 Raw Data

SMARTCHEM RUN LOG

(smartchem2, smartchem3)

WORKGROUP: WG454148

454153

Daily Check

- [x] Lamp On
- [x] Probe Rinse Full
- [x] DI Water > ½ Full
- [x] Wash Solution > ½ Full
- [ ] NO3 Reagent bottle connected / purged
- [ ] NO3 pH adj to pH 5-9

Syringe filter lot # _____

- [x] WBL Run
- [x] Reagents Full
- [x] Dilution H_2O Full
- [x] Waste Container Check

1) **Workgroup** 454148
   Plan # 20131125002
2) **Workgroup** _____
   Plan # _____
3) **Workgroup** 454153
   Plan # 20131125003

Instrument: SC1 [ ] SC2 [x]

	Analyte	1	2	3
		AIK		
		Dilution		
SC Prepared Curve				
Position				
1-1	ICV250			
1-2	BIK			
1-3	LCS200			
1-4	LCSDUP			
1-5	11-858-17	1/10		
1-6	11-951-03	1/3		AIK-B
1-7	04			↓
1-8	11-~~951-03~~	1392-02	1/2	
1-9	11-1086-01			+BC
1-10	02			↓
1-11	11-1205-01	1/4		+BC
1-12	02	1/4		↓
1-13	03	1/4		↓
1-14	MS 04	1/4		↓
1-15	MSD05	1/4		↓
1-16	11-1397-01			
1-17	02			
1-18	11-1222-01			
1-19	03			
1-20	04			
1-21	11-1295-01		1/2	
1-22	03		1/2	
2-1	07		1/10×1/2	color
2-2	11-1385-02	1/5		color
2-3	03	1/5		↓

Position	Analyte	1	2	3
	Run 2			
2-4 1	ICV250			
2-5 2	BIK			
2-6 3	LCS200			
2-7 4	LCSDUP			
2-8 5	11-1385-06	1/5		color
2-9 6	08	1/5		↓
2-10 7	09	1/5		↓
2-11 8	11-1304-02			AIK-B
2-12 9	11-1388-16			↓
2-13 10	17			↓
2-14 11	18			↓
2-15 12	11-1390-01			
2-16 13	04			
2-17 14	11-1391-01			AIK-B
2-18 15	DUP ↓			
2-19 16	11-1295-01	1/4		
2-20 17	03	1/2		
2-21 18	07	1/20		color
2-22 19	11-1385-02	1/5		↓
2-23 20	03	1/5		↓
2-24 21	05	1/5		↓
2-25 22				
2-26 1				
3-1 2				
3-2 3				
4				
5				

NOTES:
* Run NO2 std on NO3 runs
* LCSD must be run if no MS or Duplicate
*MS(10% sample): NO3, TKN, NH3, PHOS

2-4 11-1385-05 1/5
2-5 DUP ↓ 1/5
2-6
2-7

DCN#99063

SMARTCHEM RUN LOG
(smartchem2, smartchem3)

WORKGROUP: WG454148

Position	Analyte	1	2	3
3-3				
3-4				
3-5				
3-6				
3-7				
3-8				
3-9				
3-10				
3-11				
3-12				
3-13				
3-14				
3-15				

Position	Analyte	1	2	3
3-16				
3-17				
3-18				
3-19				
3-20				
3-21				
3-22				
3-23				
3-24				
3-25				
3-26				
3-27				
3-28				

	Chloride	EPA 325.2/SM 4500-CI E-2000
	Nitrate-Nitrite	EPA 353.2/SM 4500-NO3 F-2000
✓	Alkalinity	EPA 310.2
	Sulfate	EPA 375.4/SM 426C (15th)/ SM4500-504 E-1997

	Ammonia	EPA 350.1/SM 4500-NH3 B-1997
	TKN	EPA 351.2
	Phos	EPA 365.4

Analyte	ALK		Reagents
SOP & Revision	K3102 Rev.15		RGT28801
Curve Stock (SC made)	Std 61500		RGT28727
NO2 STD			RGT28803
ICV	Std 61145		
CCV	Std 61378		
LCS	Std 61413		
MS	Std 60183 Dilution 0.4/10 (2500)=100		

Comments: All 951s, 1086s, 1205s, 1304, 1388s, 1391 pH ≤ 8.3.

Analyst: Brice Fenton

Date: 11/25/13

DCN#99063

MICROBAC (OVD)

SMARTCHEM200 INST2 (VER3.1.14)

NH3, TKN, NO3NO2 (MG/L N)

ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WALK -Unit [mg/L] - ALKALINITY EPA 310.2

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
DIL-1	RBL	0.0	0.5643	0.00		10:35:03 AM
DIL-1	RBL	0.0	0.5662	0.00		10:35:21 AM
DIL-1	RBL	0.0	0.5660	0.00		10:36:15 AM
DIL-1	Std-1	0.0	-0.0024	0.00		10:36:33 AM
SR5-1	Std-2	10.0	-0.0117	0.00		10:37:27 AM
SR5-2	Std-3	20.0	-0.0234	0.00		10:37:45 AM
SR5-3	Std-4	50.0	-0.0585	0.00		10:38:39 AM
SR5-4	Std-5	100.0	-0.1196	0.00		10:38:57 AM
SR5-5	Std-6	200.0	-0.2565	0.00		10:39:51 AM
SR5-6	Std-7	250.0	-0.3259	0.00		10:41:22 AM
SR5-7	Std-8	300.0	-0.3840	0.00		10:41:39 AM
ST-3	1CCV (150 mg/L)	157.9	-0.1985	105.28		10:42:34 AM
ST-2	2CCB (0 mg/L)	4.3	-0.0043	0.00		10:42:52 AM
1	ICV	250.9	-0.3217	0.00		10:43:46 AM
2	WG454148-01 BLK	6.8	-0.0074	0.00		10:44:04 AM
3	WG454148-02 LCS	202.0	-0.2563	0.00		10:44:58 AM
4	WG454148-03 LCSDUP	203.4	-0.2582	0.00		10:45:16 AM
5	L13110858-17 (10)	204.0	-0.2590	0.00		10:46:10 AM
6	L13110951-03 (3)	187.3	-0.2369	0.00		10:46:28 AM
7	L13110951-04	113.0	-0.1406	0.00		10:47:22 AM
8	L13110832-02 (2) 1392	172.6	-0.2176	0.00		10:47:40 AM
9	L13111086-01	84.9	-0.1048	0.00		10:48:34 AM
10	L13111086-02	88.2	-0.1090	0.00		10:48:52 AM
ST-3	1CCV (150 mg/L)	162.7	-0.2047	108.46		10:49:46 AM
ST-2	2CCB (0 mg/L)	9.0	-0.0101	0.00		10:50:04 AM
11	L13111205-01 (4)	145.1	-0.1819	0.00		10:50:58 AM
12	L13111205-02 (4)	200.8	-0.2548	0.00		10:51:16 AM
13	L13111205-03 (4)	194.0	-0.2457	0.00		10:52:10 AM
14	L13111205-04 (4) MS	209.2	-0.2659	0.00		10:52:28 AM
15	L13111205-05 (4) MSD	204.7	-0.2599	0.00		10:53:22 AM
16	L13111397-01	281.6	-0.3635	0.00		10:53:40 AM
17	L13111397-02	215.9	-0.2748	0.00		10:54:34 AM

Report Date :11/25/2013 **Run Date :11/25/2013** **Operator : WESTCO** **Plan # :20131125001** 2

Plan Description : ALK-A2-BAF/11/25/2013

MICROBAC (OVD)
SMARTCHEM200 INST2 (VER3.1.14)
NH3, TKN, NO3NO2 (MG/L N)
ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WALK -Unit [mg/L] - ALKALINITY EPA 310.2

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
18	L13111222-01	49.6	-0.0605	0.00		10:54:52 AM
19	L13111222-03	57.5	-0.0704	0.00		10:55:46 AM
20	L13111222-04	56.7	-0.0693	0.00		10:56:04 AM
ST-3	1CCV (150 mg/L)	164.8	-0.2075	109.89		10:56:58 AM
ST-2	2CCB (0 mg/L)	16.4	-0.0192	0.00		10:57:16 AM
21	L13111295-01 (2)	X354.5	-0.4648	0.00	><,LH	10:58:10 AM
22	L13111295-03 (2)	296.9	-0.3845	0.00	><	10:58:28 AM
23	L13111295-07 (20)	193.3	-0.2448	0.00		10:59:22 AM
24	L13111385-02 (5)	176.1	-0.2222	0.00		10:59:40 AM
25	L13111385-03 (5)	113.8	-0.1416	0.00		11:00:34 AM
26	L13111385-05 (5) Ref	ok 172.3	-0.2173	0.00		11:00:52 AM
27	WG454148-05 (5) DUP	ok 183.7	-0.2322	0.00		11:01:46 AM
28	ID 28	26.2	-0.0314	0.00		11:02:04 AM
29	ID 29	21.0	-0.0249	0.00		11:02:58 AM
ST-3	1CCV (150 mg/L)	171.9	-0.2167	114.59		11:03:16 AM
ST-2	2CCB (0 mg/L)	23.9	-0.0285	0.00		11:04:10 AM
21-[1/2]	L13111295-01	562.8	-0.3632	0.00	LH	11:11:50 AM
ST-3	1CCV (150 mg/L)	178.8	-0.2257	119.17		11:11:50 AM
ST-2	2CCB (0 mg/L)	38.2	-0.0462	0.00		11:12:44 AM

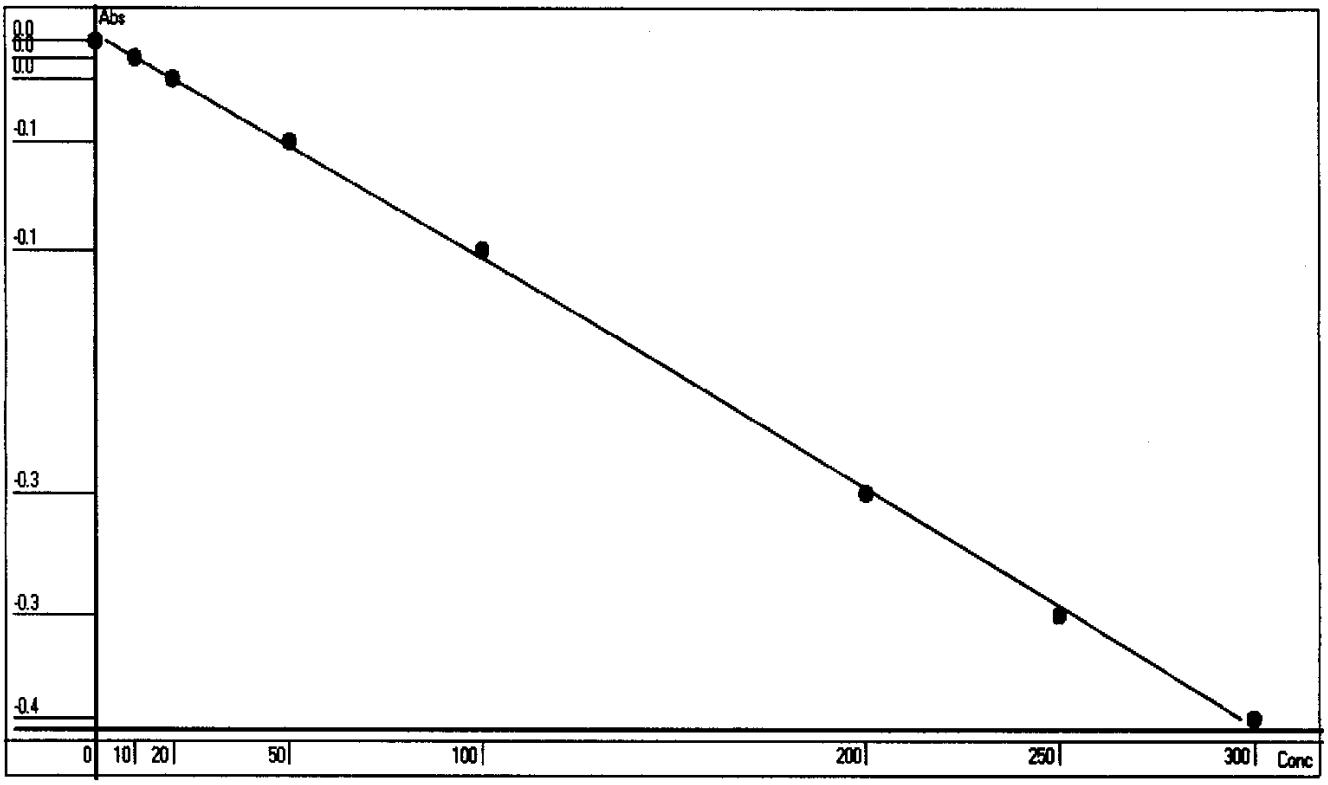
Report Date :11/25/2013 Run Date :11/25/2013 Operator : WESTCO Plan # :20131125001/2

Plan Description : ALK-A2-BAF/11/25/2013

Calibrant Report - WALK -

Calib Lot #:010104 Exp Date:6/21/2020 User:MICROBAC

Plan # : 20131125002 Description : [ALK-A2-BAF/11/25/2013] Unit



Point	OD	Conc	Recalc Conc	% Error
1	-0.0024	0	2.7147	271.47
2	-0.0117	10	10.2764	2.76
3	-0.0234	20	19.7612	-1.19
4	-0.0585	50	48.0255	-3.95
5	-0.1196	100	96.5464	-3.45
6	-0.2565	200	202.1261	1.06
7	-0.3259	250	253.9925	1.60
8	-0.3840	300	296.5569	-1.15

Conc= -115.6766*Abso^2 -814.7242*Abso +0.76 R^2=0.9994

RBL
0.5661
0

Report Date 11/25/2013 Run Date 11/25/2013

MICROBAC (OVD)

SMARTCHEM200 INST2 (VER3.1.14)

NH3, TKN, NO3NO2 (MG/L N)

ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WALK -Unit [mg/L] - ALKALINITY EPA 310.2

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
DIL-1	RBL	0.0	0.4563	0.00		11:33:51 AM
DIL-1	RBL	0.0	0.4596	0.00		11:34:09 AM
DIL-1	RBL	0.0	0.4601	0.00		11:35:03 AM
DIL-1	Std-1	0.0	0.0017	0.00	INV	11:35:21 AM
SR5-1	Std-2	10.0	-0.0054	0.00		11:36:15 AM
SR5-2	Std-3	20.0	-0.0148	0.00		11:36:33 AM
SR5-3	Std-4	50.0	-0.0475	0.00		11:37:27 AM
SR5-4	Std-5	100.0	-0.0909	0.00		11:37:45 AM
SR5-5	Std-6	200.0	-0.2078	0.00		11:38:39 AM
SR5-6	Std-7	250.0	-0.2591	0.00		11:38:57 AM
SR5-7	Std-8	300.0	-0.3090	0.00		11:39:51 AM
ST-3	1CCV (150 mg/L)	152.3	-0.1523	101.54		11:40:09 AM
ST-2	2CCB (0 mg/L)	-1.8	0.0063	0.00	INV,><,LL	11:41:03 AM
1	ICV	250.4	-0.2575	0.00		11:41:21 AM
2	WG454153-01 BLK	-2.1	0.0067	0.00	INV,><,LL	11:42:15 AM
3	WG454153-02 LCS	199.2	-0.2022	0.00		11:42:33 AM
4	WG454153-03 LCSDUP	205.4	-0.2088	0.00		11:43:27 AM
5	L13111385-06 (5)	102.6	-0.1003	0.00		11:43:45 AM
6	L13111385-08 (5)	178.6	-0.1802	0.00		11:44:40 AM
7	L13111385-09 (5)	130.4	-0.1293	0.00		11:44:58 AM
8	L13111304-02	35.4	-0.0313	0.00		11:45:52 AM
9	L13111388-16	298.2	-0.3101	0.00	><	11:46:10 AM
10	L13111388-17	298.5	-0.3104	0.00	><	11:47:04 AM
ST-3	1CCV (150 mg/L)	157.1	-0.1574	104.76		11:47:22 AM
ST-2	2CCB (0 mg/L)	8.3	-0.0039	0.00		11:48:16 AM
11	L13111388-18	X322.2	-0.3369	0.00	><,LH	11:48:34 AM
12	L13111390-01	X377.8	-0.3998	0.00	><,LH	11:49:28 AM
13	L13111390-04	X353.7	-0.3724	0.00	><,LH	11:49:46 AM
14	L13111391-01	264.0	-0.2724	0.00		11:50:40 AM
15	WG454153-05 DUP	264.3	-0.2727	0.00		11:50:58 AM
16	L13111295-01 (4)	279.4	-0.2893	0.00		11:51:52 AM
17	L13111295-03 (2)	290.3	-0.3013	0.00		11:52:10 AM

Report Date :11/25/2013 **Run Date :11/25/2013** **Operator : WESTCO** **Plan # :20131125003**

Plan Description : ALK-B2-BAF/11/25/2013

MICROBAC (OVD)
SMARTCHEM200 INST2 (VER3.1.14)
NH3, TKN, NO3NO2 (MG/L N)
ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WALK -Unit [mg/L] - ALKALINITY EPA 310.2

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
18	L13111295-07 (20)	186.9	-0.1890	0.00		11:53:04 AM
19	L13111385-02 (5)	159.5	-0.1599	0.00		11:53:22 AM
20	L13111385-03 (5)	110.5	-0.1085	0.00		11:54:16 AM
ST-3	1CCV (150 mg/L)	165.3	-0.1660	110.18		11:54:34 AM
ST-2	2CCB (0 mg/L)	20.4	-0.0161	0.00		11:55:28 AM
21	L13111385-05 (5)	171.7	-0.1728	0.00		11:55:46 AM
22	ID 22	8.9	-0.0045	0.00		11:56:40 AM
23	ID 23	7.4	-0.0030	0.00		11:56:58 AM
ST-3	1CCV (150 mg/L)	162.6	-0.1632	108.41		11:57:52 AM
ST-2	2CCB (0 mg/L)	13.9	-0.0095	0.00		11:58:10 AM
11-[1/2]	L13111388-18	408.4	-0.2075	0.00	LH	12:05:50 PM
12-[1/2]	L13111390-01	X744.4	-0.3934	0.00	><,LH	12:07:02 PM
13-[1/2]	L13111390-04	591.2	-0.3072	0.00	LH	12:08:14 PM
ST-3	1CCV (150 mg/L)	171.2	-0.1723	114.14		12:08:14 PM
ST-2	2CCB (0 mg/L)	17.3	-0.0130	0.00		12:09:08 PM
12-[1/4]	L13111390-01	X1327.4	-0.3477	0.00	><,LH	12:16:48 PM
ST-3	1CCV (150 mg/L)	170.4	-0.1714	113.57		12:16:48 PM
ST-2	2CCB (0 mg/L)	18.0	-0.0137	0.00		12:17:42 PM
12-[1/10]	L13111390-01	1842.7	-0.1862	0.00	LH	12:25:22 PM
ST-3	1CCV (150 mg/L)	167.5	-0.1684	111.69		12:25:22 PM
ST-2	2CCB (0 mg/L)	24.0	-0.0197	0.00		12:26:16 PM

1390-01 >10xs CCB

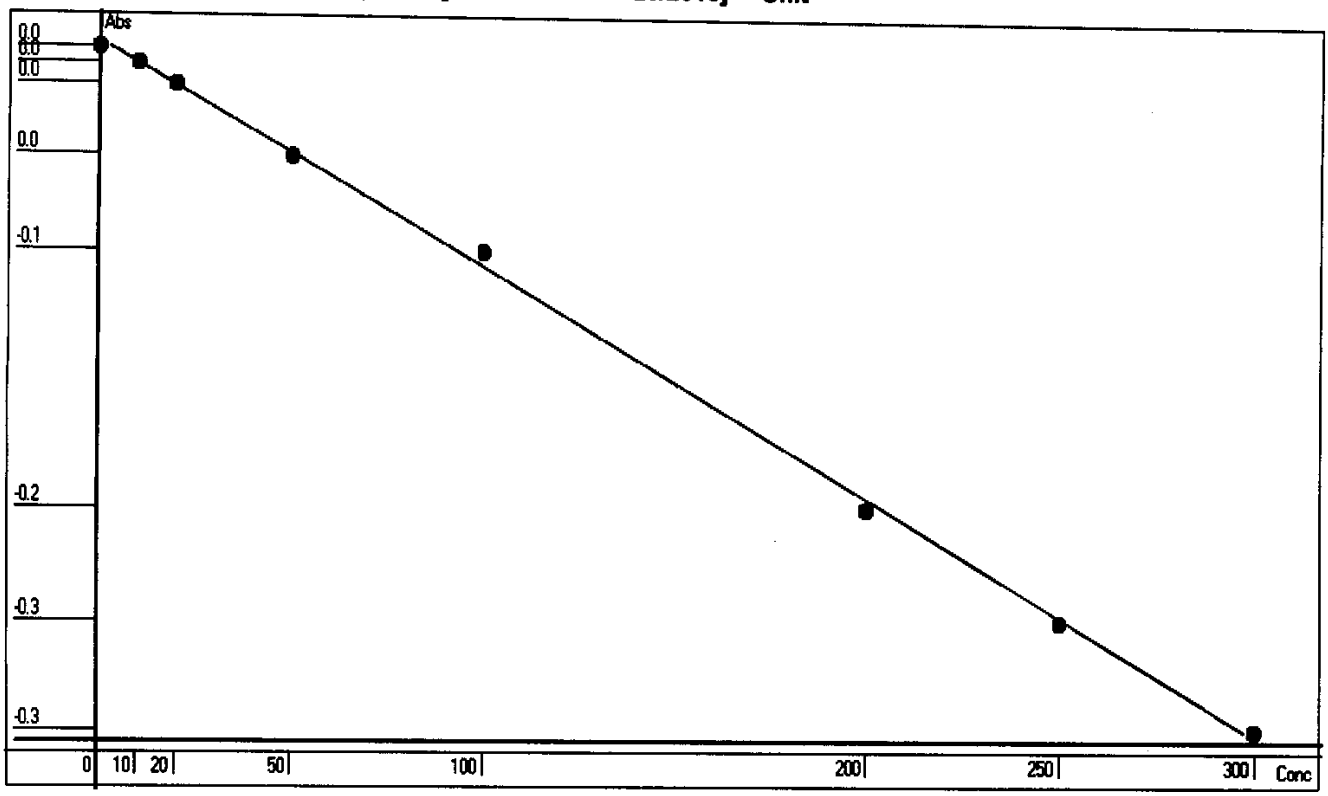
Report Date :11/25/2013 **Run Date :11/25/2013** **Operator : WESTCO** **Plan # :20131125003**

Plan Description : ALK-B2-BAF/11/25/2013

Calibrant Report - WALK -

Calib Lot #:010104 Exp Date:6/21/2020 User:MICROBAC

Plan # : 20131125003 Description : [ALK-B2-BAF/11/25/2013] Unit



Point	OD	Conc	Recalc Conc	% Error
1	0.0017	0	2.7944	279.44
2	-0.0054	10	9.8455	-1.55
3	-0.0148	20	19.1576	-4.21
4	-0.0475	50	51.3459	2.69
5	-0.0909	100	93.5729	-6.43
6	-0.2077	200	204.4183	2.21
7	-0.2591	250	251.9051	0.76
8	-0.3090	300	297.2503	-0.92

Conc= -149.5267*Abso^2 -993.6671*Abso +4.4841 R^2=0.9991

RBL
0.4599
0

Report Date 11/25/2013 Run Date 11/25/2013

2.2.4 Cyanide Data

2.2.4.1 Summary Data

Login Number: L13111086
Department: Conventionals
Analyst:

METHOD

Analysis SW846 9014/9010C/SM4500-CN-C,E-20th (Cyanide)

HOLDING TIMES

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: Cyanide-Ammenable is the difference between the total cyanide and the treated cyanide. The LCS is analyzed to show that all of the cyanide is ammenable (the treated portion is ND). The LCS forms cannot calculate cyanide ammenable. The LCS is acceptable.

Sample #	Analyte	Date	Result	Lower	Upper	Type
WG453588-02	Cyanide	2013-11-21 13:30:04	2.00	90	110	Recovery

Matrix Spikes: All acceptance criteria were met.

Duplicates: All acceptance criteria were met.

SAMPLES

Samples: All acceptance criteria were met.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Microbac Laboratories Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Narrative ID: 75109

Approved By: Deanna Hesson

Deanna Hesson

Microbac

Lab Report #: L13111086
Lab Project #: 3005.011
Project Name: White Sands MR
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L13111086-01	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	SMW 1-1113-1	**Prep Method:**	9014-9010C	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	9014-9010C	**Cal Date:**	11/21/2013 10:20
Workgroup #:	WG453554	**Analyst:**	DCM	**Run Date:**	11/21/2013 11:30
Collect Date:	11/15/2013 10:00	**Dilution:**	1	**File ID:**	1V.1311211130-16
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Cyanide	57-12-5		U	0.0100	0.00500

U	Analyte was not detected. The concentration is below the reported LOD.

Certificate of Analysis

Sample #:	L13111086-01	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	SMW 1-1113-1	**Prep Method:**	SM4500-CN-C,G-1999	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-CN-C,G-1999	**Cal Date:**	11/21/2013 10:20
Workgroup #:	WG453588	**Analyst:**	DCM	**Run Date:**	11/21/2013 13:30
Collect Date:	11/15/2013 10:00	**Dilution:**	1	**File ID:**	1V.1311211330-12
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Cyanide, Amenable to Chlor.	57-12-5		U	0.0100	0.00500

U	Analyte was not detected. The concentration is below the reported LOD.

Certificate of Analysis

Sample #:	L13111086-01	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	SMW 1-1113-1	**Prep Method:**	SM4500-CN-I	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-CN-I	**Cal Date:**	11/21/2013 10:20
Workgroup #:	WG453794	**Analyst:**	DCM	**Run Date:**	11/21/2013 13:10
Collect Date:	11/15/2013 10:00	**Dilution:**	1	**File ID:**	1V.1311211310-16
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Cyanide, Weak/Dissociable	57-12-5		U	0.0100	0.00500

U	Analyte was not detected. The concentration is below the reported LOD.

Certificate of Analysis

Sample #:	L13111086-02	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	SMW 4-1113-1	**Prep Method:**	9014-9010C	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	9014-9010C	**Cal Date:**	11/21/2013 10:20
Workgroup #:	WG453554	**Analyst:**	DCM	**Run Date:**	11/21/2013 11:30
Collect Date:	11/15/2013 11:50	**Dilution:**	1	**File ID:**	1V.1311211130-17
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Cyanide	57-12-5		U	0.0100	0.00500

U	Analyte was not detected. The concentration is below the reported LOD.

Certificate of Analysis

Sample #:	L13111086-02	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	SMW 4-1113-1	**Prep Method:**	SM4500-CN-C,G-1999	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-CN-C,G-1999	**Cal Date:**	11/21/2013 10:20
Workgroup #:	WG453588	**Analyst:**	DCM	**Run Date:**	11/21/2013 13:30
Collect Date:	11/15/2013 11:50	**Dilution:**	1	**File ID:**	1V.1311211330-13
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Cyanide, Amenable to Chlor.	57-12-5		U	0.0100	0.00500

U	Analyte was not detected. The concentration is below the reported LOD.

Certificate of Analysis

Sample #:	L13111086-02	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	SMW 4-1113-1	**Prep Method:**	SM4500-CN-I	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-CN-I	**Cal Date:**	11/21/2013 10:20
Workgroup #:	WG453794	**Analyst:**	DCM	**Run Date:**	11/21/2013 13:10
Collect Date:	11/15/2013 11:50	**Dilution:**	1	**File ID:**	1V.1311211310-17
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Cyanide, Weak/Dissociable	57-12-5		U	0.0100	0.00500

U	Analyte was not detected. The concentration is below the reported LOD.

Certificate of Analysis

2.2.4.2 QC Summary Data

Example Calculations for Visible Spectrophotometric Methods

Linear Calibration Model

Step 1 - Retrieve Curve Data from ICAL

m = slope of the linear equation
b = intercept from the linear equation
y = instrument response as absorbance or OD
x = concentration of analyte (mg/L)
y = mx + b

Step 2: Calculate the instrument concentration, x

Where:

x = (y - b)/m

Step 3: Solve for analyte concentration in sample, Cx

Cx = (x) (D)

Example Calculation (LCS):

Value of m from plot:	7.809	
Value of b from plot:	0.0004135	
Absorbance of unknown from quantitation report (y):	0.31	
Calculated concentration (x):	0.03964483	
Dilution factor (D):	1.00	
Concentration of analyte in sample, Cy:	0.0396	mg/L

SmartChem Autoanalyzer - Quadratic Calibration for Chloride and Sulfate

Step 1 - Retrieve Curve Data from Smartchem ICAL

A, B, C = constants from the ICAL quadratic regression

x = instrument response as absorbance or OD

y = concentration of analyte (mg/L)

Step 2: Calculate the instrument concentration, y

Where:

y = Ax^2 + Bx + C

Step 3: Solve for analyte concentration in sample, Cy

Cy = (y) (D)

Example Calculation (LCS):

Value of A from plot:	101.2796	
Value of B from plot:	318.9056	
Value of C from plot:	-2.2712	
Absorbance of unknown from quantitation report (x):	0.1583	
Calculated concentration (y):	50.7495108	
Dilution factor (D):	1.00	
Concentration of analyte in sample, Cy:	50.75	mg/L

Microbac Laboratories Inc.

Data Checklist

Date: 21-NOV-2013
Analyst: DCM
Analyst: NA
Method: CN
Instrument: UV-120-1V
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG453554

Calibration/Linearity	11/21/2013
Second Source Check	X
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	X
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	DCM
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
21-NOV-2013

Secondary Reviewer:
22-NOV-2013

CHECKLIST1 - Modified 03/05/2008
Generated: NOV-22-2013 15:45:43

Microbac Laboratories Inc.

Data Checklist

Date: 21-NOV-2013
Analyst: DCM
Analyst: NA
Method: CN-A
Instrument: UV-120-1V
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG453588

Calibration/Linearity	11/21/2013
Second Source Check	X
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	X
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	DCM
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
22-NOV-2013

Secondary Reviewer:
22-NOV-2013

CHECKLIST1 - Modified 03/05/2008
Generated: NOV-22-2013 15:45:40

Microbac Laboratories Inc.

Data Checklist

Date: 21-NOV-2013
Analyst: DCM
Analyst: NA
Method: CN-WD
Instrument: UV-120-1V
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG453794

Calibration/Linearity	11/21/2013
Second Source Check	X
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	X
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	DCM
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
21-NOV-2013

Secondary Reviewer:
22-NOV-2013

CHECKLIST1 - Modified 03/05/2008
Generated: NOV-22-2013 15:45:38

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 9014-9010C

AAB#: WG453554

Login Number: L13111086

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
SMW 1-1113-1	01	11/15/13					11/21/2013	6.1	14		11/21/13	6.1	14	
SMW 4-1113-1	02	11/15/13					11/21/2013	6	14		11/21/13	6	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 3222425
Report generated 11/22/2013 15:43

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: SM4500-CN-C,G-19 AAB#: WG453588

Login Number: L13111086

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
SMW 1-1113-1	01	11/15/13					11/21/2013	6.1	14		11/21/13	6.1	14	
SMW 4-1113-1	02	11/15/13					11/21/2013	6.1	14		11/21/13	6.1	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 3222372
Report generated 11/22/2013 15:41

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: SM4500-CN-I

AAB#: WG453794

Login Number: L13111086

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
SMW 1-1113-1	01	11/15/13					11/21/2013	6.1	14		11/21/13	6.1	14	
SMW 4-1113-1	02	11/15/13					11/21/2013	6.1	14		11/21/13	6.1	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 3222388
Report generated 11/22/2013 15:42

Microbac Laboratories Inc.

METHOD BLANK SUMMARY

Login Number: L13111086
Blank File ID: 1V.1311211130-03
Prep Date: 11/21/13 11:30
Analyzed Date: 11/21/13 11:30
Analyst: DCM

Work Group: WG453554
Blank Sample ID: WG453554-01
Instrument ID: UV-120-1V
Method: 9014-9010C

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG453554-02	1V.1311211130-04	11/21/13 11:30	
LCS	WG453554-03	1V.1311211130-05	11/21/13 11:30	
SMW 1-1113-1	L13111086-01	1V.1311211130-16	11/21/13 11:30	
SMW 4-1113-1	L13111086-02	1V.1311211130-17	11/21/13 11:30	
DUP	WG453554-05	1V.1311211130-20	11/21/13 11:30	

Report Name: BLANK_SUMMARY
PDF File ID: 3222426
Report generated 11/22/2013 15:43

Microbac Laboratories Inc.

METHOD BLANK SUMMARY

Login Number: L13111086
Blank File ID: 1V.1311211330-03
Prep Date: 11/21/13 13:30
Analyzed Date: 11/21/13 13:30
Analyst: DCM

Work Group: WG453588
Blank Sample ID: WG453588-01
Instrument ID: UV-120-1V
Method: SM4500-CN-C,G-19

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG453588-02	1V.1311211330-04	11/21/13 13:30	
SMW 1-1113-1	L13111086-01	1V.1311211330-12	11/21/13 13:30	DL02
SMW 4-1113-1	L13111086-02	1V.1311211330-13	11/21/13 13:30	DL02
DUP	WG453588-04	1V.1311211330-14	11/21/13 13:30	DL02

Report Name: BLANK_SUMMARY
PDF File ID: 3222373
Report generated 11/22/2013 15:41

Microbac Laboratories Inc.

METHOD BLANK SUMMARY

Login Number: L13111086
Blank File ID: 1V.1311211310-03
Prep Date: 11/21/13 13:10
Analyzed Date: 11/21/13 13:10
Analyst: DCM

Work Group: WG453794
Blank Sample ID: WG453794-01
Instrument ID: UV-120-1V
Method: SM4500-CN-I

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG453794-02	1V.1311211310-04	11/21/13 13:10	
LCS	WG453794-03	1V.1311211310-05	11/21/13 13:10	
SMW 1-1113-1	L13111086-01	1V.1311211310-16	11/21/13 13:10	DL01
SMW 4-1113-1	L13111086-02	1V.1311211310-17	11/21/13 13:10	DL01
DUP	WG453794-05	1V.1311211310-20	11/21/13 13:10	

Report Name: BLANK_SUMMARY
PDF File ID: 3222389
Report generated 11/22/2013 15:42

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L13111086 Prep Date: 11/21/13 11:30 Sample ID: WG453554-01
Instrument ID: UV-120-1V Run Date: 11/21/13 11:30 Prep Method: 9014-9010C
File ID: 1V.1311211130-03 Analyst: DCM Method: 9014-9010C
Workgroup (AAB#): WG453554 Matrix: Water Units: mg/L
Contract #: Cal ID: UV-120 - 21-NOV-13

Analytes	LOD	LOQ	Concentration	Dilution	Qualifier
Cyanide	0.00500	0.0100	0.00500	1	U

LOD Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 3222427
22-NOV-2013 15:43

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L13111086 Prep Date: 11/21/13 13:30 Sample ID: WG453588-01
Instrument ID: UV-120-1V Run Date: 11/21/13 13:30 Prep Method: SM4500-CN-C,G-1
File ID: 1V.1311211330-03 Analyst: DCM Method: SM4500-CN-C,G-1
Workgroup (AAB#): WG453588 Matrix: Water Units: mg/L
Contract #: Cal ID: UV-120 - 21-NOV-13

Analytes	LOD	LOQ	Concentration	Dilution	Qualifier
Cyanide, Amenable to Chlor.	0.00500	0.0100	0.00500	1	U

LOD Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 3222374
22-NOV-2013 15:41

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L13111086 Prep Date: 11/21/13 13:10 Sample ID: WG453794-01
Instrument ID: UV-120-1V Run Date: 11/21/13 13:10 Prep Method: SM4500-CN-I
File ID: 1V.1311211310-03 Analyst: DCM Method: SM4500-CN-I
Workgroup (AAB#): WG453794 Matrix: Water Units: mg/L
Contract #: Cal ID: UV-120 - 21-NOV-13

Analytes	LOD	LOQ	Concentration	Dilution	Qualifier
Cyanide, Weak/Dissociable	0.00500	0.0100	0.00500	1	U

LOD Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 3222390
22-NOV-2013 15:42

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L13111086 Run Date: 11/21/2013 Sample ID: WG453554-02
Instrument ID: UV-120-1V Run Time: 11:30 Prep Method: 9014-9010C
File ID: 1V.1311211130-04 Analyst: DCM Method: 9014-9010C
Workgroup (AAB#): WG453554 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD60204 Cal ID: UV-120-21-NOV-13

Analytes	Expected	Found	% Rec	LCS Limits	Q
Cyanide	0.200	0.202	101	90 - 110	

LCS - Modified 03/06/2008
PDF File ID: 3222429
Report generated: 11/22/2013 15:43

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L13111086 Run Date: 11/21/2013 Sample ID: WG453554-03
Instrument ID: UV-120-1V Run Time: 11:30 Prep Method: 9014-9010C
File ID: 1V.1311211130-05 Analyst: DCM Method: 9014-9010C
Workgroup (AAB#): WG453554 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD60204 Cal ID: UV-120-21-NOV-13

Analytes	Expected	Found	% Rec	LCS Limits	Q
Cyanide	0.0400	0.0367	91.8	90 - 110	

LCS - Modified 03/06/2008
PDF File ID: 3222429
Report generated: 11/22/2013 15:43

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L13111086 Run Date: 11/21/2013 Sample ID: WG453588-02
Instrument ID: UV-120-1V Run Time: 13:30 Prep Method: SM4500-CN-C,G-1
File ID: 1V.1311211330-04 Analyst: DCM Method: SM4500-CN-C,G-1
Workgroup (AAB#): WG453588 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD60204 Cal ID: UV-120-21-NOV-13

Analytes	Expected	Found	% Rec	LCS Limits	Q
Cyanide, Amenable to Chlor.	0.0400	0.000667	1.67	90 - 110	*

LCS - Modified 03/06/2008
PDF File ID: 3222375
Report generated: 11/22/2013 15:41

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L13111086 Run Date: 11/21/2013 Sample ID: WG453794-02
Instrument ID: UV-120-1V Run Time: 13:10 Prep Method: SM4500-CN-I
File ID: 1V.1311211310-04 Analyst: DCM Method: SM4500-CN-I
Workgroup (AAB#): WG453794 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD60204 Cal ID: UV-120-21-NOV-13

Analytes	Expected	Found	% Rec	LCS Limits	Q
Cyanide, Weak/Dissociable	0.200	0.201	101	90 - 110	

LCS - Modified 03/06/2008
PDF File ID: 3222391
Report generated: 11/22/2013 15:42

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L13111086 Run Date: 11/21/2013 Sample ID: WG453794-03
Instrument ID: UV-120-1V Run Time: 13:10 Prep Method: SM4500-CN-I
File ID: 1V.1311211310-05 Analyst: DCM Method: SM4500-CN-I
Workgroup (AAB#): WG453794 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD60204 Cal ID: UV-120-21-NOV-13

Analytes	Expected	Found	% Rec	LCS Limits	Q
Cyanide, Weak/Dissociable	0.0400	0.0374	93.4	90 - 110	

LCS - Modified 03/06/2008
PDF File ID: 3222391
Report generated: 11/22/2013 15:42

2.2.4.3 Raw Data

WG453784

Curves

Parameter: CN - Low

Spectrophotometer: UV-120-1V

Calibration (Curve) standard stock: Std 60203

Concentration: 1016 mg/L

Recipe for preparation of curve standards found in:
SOP: K3354 Revision: 14 Page: 15

Second Source Stock: Std 60204 (concentration: 1000 mg/L

Daily Preparation: 5(1000)/250 = 20
10(20)/100 = 2
concentration = 8(2)/50 = 0.04

Calibration Standards (mg/L)	Volume (mL)	Cell Size (cm)	Wavelength (nm)	Absorbance
Std 5 0.0508	50	5cm	578	0.394
Std 6 0.04064				0.319
Std 7 0.03048				0.236
Std 8 0.02032				0.152
Std 9 0.01016				0.079
Std 10 0.00508				0.039
Std 11 0.00				0.000
2nd Source 0.04				0.296

Analyst: David Merchale Cheatley Pryor

Date/Time: 11/21/13 1020

DCN#99013

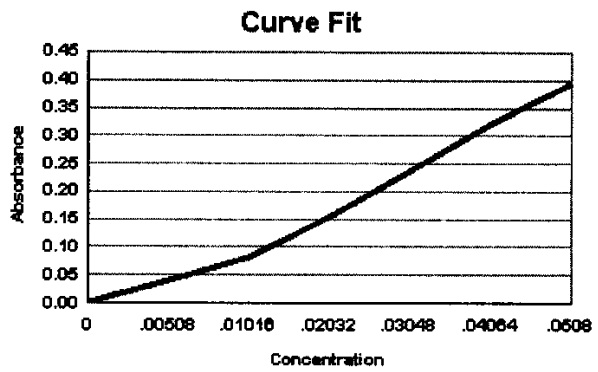
Microbac Laboratories Inc.
INITIAL CALIBRATION

Workgroup: WG453784
Analytical Method: 300
Instrument ID: UV-120-1V

Analyst: DCM
Initial Calibration Date: 11/21/2013

Analyte: CYANIDE
Number of Points: 7
Slope: 7.79407
Y-Intercept: -0.00120137
Coef. Of Correlation (R^2): 0.999679
Coef. Of Correlation (R): 0.999839

Concentration X	Absorbance Y	X^2	X * Y	Y-Fitted (mX^2+B)
0.00	0.00	0.00	0.00	-0.00120137
0.00508	0.0390	0.0000258	0.000198	0.0383925
0.0102	0.0790	0.000103	0.000803	0.0779863
0.0203	0.152	0.000413	0.00309	0.157174
0.0305	0.236	0.000929	0.00719	0.236362
0.0406	0.319	0.00165	0.0130	0.315549
0.0508	0.394	0.00258	0.0200	0.394737



WG_ICAL_CAL_WET - Modified 03/06/2008
Report generated 11/21/2013 10:29

[redacted]

Microbac Laboratories Inc.
ALTERNATE SOURCE REPORT

Workgroup #: WG453784
File ID: 1V.1311211020-08
CCV ID: WG453784-08
Units: mg/L
Analyte: CYANIDE

Instrument ID: UV-120-1V
Run Date: 11/21/2013
Run Time: 10:20
Analyst: DCM
Cal ID: UV-120 - 21-NOV-13 10:20:07

Analyte	Expected	Found	RF	%D	Q
Cyanide	.04	0.0381	7.40	4.8	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_SSCV - Modified 03/06/2008
Report generated 11/21/2013 10:29

[redacted]

WG453782

Curves

Parameter: CN- High

Spectrophotometer: UV-120-1V

Calibration (Curve) standard stock: Std 60203

Concentration: 1016 mg/L

Recipe for preparation of curve standards found in:
SOP: 14-354 Revision: 14 Page: 15

Second Source Stock: Std 60264 (concentration: 1000 mg/L)

Daily Preparation: 5(1000)/250 = 20
10(20)/100 = 2
concentration = 5(2)/50 = 0.2

Calibration Standards (mg/L)	Volume (mL)	Cell Size (cm)	Wavelength (nm)	Absorbance
Std 1 0.4064	50	1 cm	578	0.590
Std 2 0.3048				0.430
Std 3 0.2032				0.288
Std 4 0.1016				0.142
Std 6 0.04064				0.052
Std 8 0.02032				0.025
Std 11 0.00				0.000
2nd Source 0.2				0.290

Analyst: David Merchle Timothy Rupp

Date/Time: 11/21/13 1010

DCN#99014

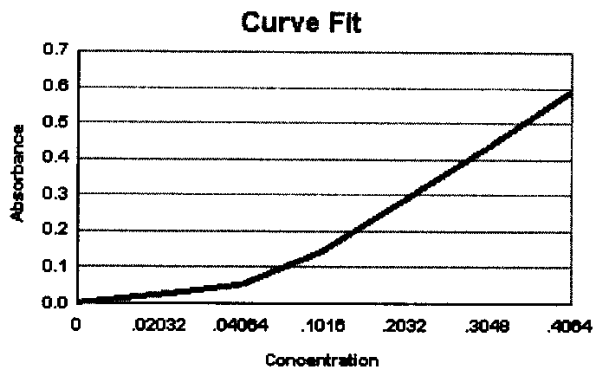
Microbac Laboratories Inc.
INITIAL CALIBRATION

Workgroup: WG453782
Analytical Method: 300
Instrument ID: UV-120-1V

Analyst: DCM
Initial Calibration Date: 11/21/2013

Analyte: CYANIDE
Number of Points: 7
Slope: 1.44800
Y-Intercept: -0.00463328
Coef. Of Correlation (R^2): 0.999633
Coef. Of Correlation (R): 0.999817

Concentration X	Absorbance Y	X^2	X * Y	Y-Fitted (mX^2+B)
0.00	0.00	0.00	0.00	-0.00463328
0.0203	0.0250	0.000413	0.000508	0.0247900
0.0406	0.0520	0.00165	0.00211	0.0542132
0.102	0.142	0.0103	0.0144	0.142483
0.203	0.288	0.0413	0.0585	0.289599
0.305	0.430	0.0929	0.131	0.436716
0.406	0.590	0.165	0.240	0.583832



WG_ICAL_CAL_WET - Modified 03/06/2008
Report generated 11/21/2013 10:25

[redacted]

Microbac Laboratories Inc.
ALTERNATE SOURCE REPORT

Workgroup #: WG453782
File ID: 1V.1311211010-08
CCV ID: WG453782-08
Units: mg/L
Analyte: CYANIDE

Instrument ID: UV-120-1V
Run Date: 11/21/2013
Run Time: 10:10
Analyst: DCM
Cal ID: UV-120 - 21-NOV-13 10:10:07

Analyte	Expected	Found	RF	%D	Q
Cyanide	.2	0.203	1.45	1.5	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_SSCV - Modified 03/06/2008
Report generated 11/21/2013 10:26

[redacted]

WORKGROUP: WG453588

Cyanide
(cyanide3)

- [ ] Total method 9010B/9014
  SM4500 CN C,E
  EPA 335.2
- [x] CN – Ameanable (same as total methods)
- [ ] WD method SM4500 CN I

SOP: K3354 Rev 14
Spec: UV-120-IV
Instrument: Easy-Dist
Matrix: Liquid (mg/L) Soil (mg/kg)

Curve ID: WG 453782 11/21/13
WG 453784

CCV: std 60203

Daily Dilution: 5(1000)/250 = 20
10(20)/100 = 2

True Value: 1016 mg/L

LCS: std 60204

Daily Dilution: 5(1000)/250 = 20
10(20)/100 = 2

True Value: 1000 mg/L

5(2)/50 = 0.2
1(2)/50 = 0.04

Spike: std 60204

Daily Dilution: 1(2)/50 = 0.04

True Value: 1000 mg/L

Distillation Reagents

RGT 28477
RGT 28707
RGT 28651
COA 17124

Colorimetric Reagents

RGT 28757
RGT 28657
RGT 28765

DCN#98985

WORKGROUP: WG453588

Cyanide
(cyanide3)

Sample	Volume mL/grams	pH > 12	Sulfide Presense	Dilution	Cell Size (cm)	Absorbance λ = 578 nm
CCV(high): ppm					1	0.311
CCV(low): 0.02032 ppm	50	✓	No		5	0.143
Blank	50	✓	No		5	0.006
LCS: ppm						
LCS: 0.04 ppm	50	✓	No		5	0.004
11-758-01		✓			5	0.003
02		✓			5	0.000
11-833-01		✓			1	~~0.340~~ 0.318
02		✓			5	0.002
11-928-01		✓			1	~~0.457~~ 0.413
02		✓			1	~~0.413~~ 0.457
03		✓			5	0.005
11-1086-01		✓			5	0.004
02		✓			5	0.005
distilled ccv 0.2032		✓			1	0.290
distilled ccv 0.02032		✓			5	0.144
Duplicate: 11-1086-01	50	✓	No		5	0.003
MS: (11-1086-02 ppm)	50	✓	No		5	0.010
MSD: (ppm)						
CCV high: (ppm)					1	0.311
CCV low: (0.02032 ppm)	50	✓	No		5	0.144

dcm 11/21/13

Analyst: David Merkly
Chrissy Payne

Date/Time (on) 11/20/13 1340
(off) 1510
(color) 1330

Page 2 of 2

DCN#98985

Cyanide, Amenable to Chlorination (mg/L)
CN (Total) - CN (Treated) = CN-A

SAMPLE	11/6/2013 CN (Total)	11/8/2013 CN (Treated)	CN-A
WG453588-01	0.00053905	0.00079565	-0.000257
WG453588-02	0.2021	0.00066735	0.201433
L13110758-01	0.00079565	0.0053905	-0.004595
L13110758-02	0.00028244	0.00015414	0.000128
L13110833-01	0.23663	0.22281	0.01382
L13110833-02	0.00079565	0.00041074	0.000385
L13110928-01	0.40237	0.28842	0.11395
L13110928-02	0.40375	0.31881	0.08494
L13110928-03	0.0056712	0.00079565	0.004876
L13111086-01	0.0013089	0.00066735	0.000642
L13111086-02	0.0018221	0.00079656	0.001026
WG453588-04	0.0013089	0.00053905	0.00077
WG453588-06	0.0018221	0.0014372	0.000385

Cyanide, Amenable to Chlorination (CN-A) is the difference between the total cyanide and the treated cyanide. The LCS is analyzed to verify that all of the cyanide in the spike solution is amenable (the treated portion is ND)

Microbac Laboratories Inc.
SAMPLE REPORT

Workgroup: WG453588 Treated **Analyst:** DCM
Analyte: CYANIDE **Date:** 11/21/2013

Sample ID	I Vol	F Vol	Response	Slope	Y Intercept	Anal. Conc.	Rep. Conc.	Dil	Units
WG453588-01	50	50	0.00500	7.794	-0.001201	0.00079565	0.00079565	1	mg/L
WG453588-02	50	50	0.00400	7.794	-0.001201	0.00066735	0.00066735	1	mg/L
L13110758-01	50	50	0.00300	7.794	-0.001201	0.00053905	ND	1	mg/L
L13110758-02	50	50	0	7.794	-0.001201	0.00015414	ND	1	mg/L
L13110833-01	50	50	0.318	1.448	-0.004633	0.22281	0.22281	1	mg/L
L13110833-02	50	50	0.00200	7.794	-0.001201	0.00041074	ND	1	mg/L
L13110928-01	50	50	0.413	1.448	-0.004633	0.28842	0.28842	1	mg/L
L13110928-02	50	50	0.457	1.448	-0.004633	0.31881	0.31881	1	mg/L
L13110928-03	50	50	0.00500	7.794	-0.001201	0.00079565	ND	1	mg/L
L13111086-01	50	50	0.00400	7.794	-0.001201	0.00066735	ND	1	mg/L
WG453588-03	50	50	0.00400	7.794	-0.001201	0.00066735	0.00066735	1	mg/L
L13111086-02	50	50	0.00500	7.794	-0.001201	0.00079565	ND	1	mg/L
WG453588-05	50	50	0.00500	7.794	-0.001201	0.00079565	0.00079565	1	mg/L
WG453588-04	50	50	0.00300	7.794	-0.001201	0.00053905	0.00053905	1	mg/L
WG453588-06	50	50	0.0100	7.794	-0.001201	0.0014372	0.0014372	1	mg/L

UV_SAMPLE_REPORT - Modified 03/06/2008

Report generated 11/21/2013 16:35

[redacted]

Microbac Laboratories Inc.
CONTINUING CALIBRATION REPORT

Workgroup #: WG453905
File ID: 1V.1311211330-01
CCV ID: WG453905-01
Units: mg/L
Analyte: CYANIDE

Instrument ID: UV-120-1V
Run Date: 11/21/2013
Run Time: 13:30
Analyst: DCM
Cal ID: UV-120 - 21-NOV-13

Analyte	Expected	Found	RF	%D	Q
Cyanide	.203	0.218	1.53	7.4	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_CCV - Modified 03/06/2008

Report generated 11/21/2013 16:33

[redacted]

Microbac Laboratories Inc.
CONTINUING CALIBRATION REPORT

Workgroup #: WG453905
File ID: 1V.1311211330-02
CCV ID: WG453905-02
Units: mg/L
Analyte: CYANIDE

Instrument ID: UV-120-1V
Run Date: 11/21/2013
Run Time: 13:30
Analyst: DCM
Cal ID: UV-120 - 21-NOV-13

Analyte	Expected	Found	RF	%D	Q
Cyanide	.0203	0.0185	7.04	8.9	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_CCV - Modified 03/06/2008

Report generated 11/21/2013 16:33

[redacted]

Microbac Laboratories Inc.
CONTINUING CALIBRATION REPORT

Workgroup #: WG453905
File ID: 1V.1311211330-18
CCV ID: WG453905-05
Units: mg/L
Analyte: CYANIDE

Instrument ID: UV-120-1V
Run Date: 11/21/2013
Run Time: 13:30
Analyst: DCM
Cal ID: UV-120 - 21-NOV-13

Analyte	Expected	Found	RF	%D	Q
Cyanide	.203	0.218	1.53	7.4	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_CCV - Modified 03/06/2008

Report generated 11/21/2013 16:33

[redacted]

Microbac Laboratories Inc.
CONTINUING CALIBRATION REPORT

Workgroup #: WG453905
File ID: 1V.1311211330-19
CCV ID: WG453905-06
Units: mg/L
Analyte: CYANIDE

Instrument ID: UV-120-1V
Run Date: 11/21/2013
Run Time: 13:30
Analyst: DCM
Cal ID: UV-120 - 21-NOV-13

Analyte	Expected	Found	RF	%D	Q
Cyanide	.0203	0.0186	7.09	8.4	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_CCV - Modified 03/06/2008

Report generated 11/21/2013 16:33

[redacted]

Microbac Laboratories Inc.
DISTILLED STANDARD REPORT

Workgroup #: WG453905
File ID: 1V.1311211330-16
CCV ID: WG453905-03
Units: mg/L

Instrument ID: UV-120-1V
Run Date: 11/21/2013
Run Time: 13:30
Analyst: DCM
Cal ID: UV-120 - 21-NOV-13

Analyte	Expected	Found	RF	%D	Q
Cyanide	.203	0.203	1.43	0.0	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WG_CCV_LCS - Modified 03/06/2008
Report generated 11/21/2013 16:37

[redacted]

Microbac Laboratories Inc.
DISTILLED STANDARD REPORT

Workgroup #: WG453905
File ID: 1V.1311211330-17
CCV ID: WG453905-04
Units: mg/L

Instrument ID: UV-120-1V
Run Date: 11/21/2013
Run Time: 13:30
Analyst: DCM
Cal ID: UV-120 - 21-NOV-13

Analyte	Expected	Found	RF	%D	Q
Cyanide	.0203	0.0186	7.09	8.4	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WG_CCV_LCS - Modified 03/06/2008
Report generated 11/21/2013 16:37

[redacted]

WORKGROUP: WG453794

Cyanide
(cyanide3)

☐ Total method 9010B/9014
SM4500 CN C,E
EPA 335.2

SOP: K3354 Rev 14
Spec: UV-120-IV
Instrument: Easy-Dist
Matrix: Liquid (mg/L) Soil (mg/kg)

☐ CN – Ameanable (same as total methods)

☑ WD method SM4500 CN I

Curve ID: WG453782 11/12/13
WG 453784

CCV: Std 60203 — Daily Dilution: 5(1000)/250 = 20; 10(20)/100 = 2

True Value: 1016 mg/L

LCS: Std 60204 — Daily Dilution: 5(1000)/250 = 20; 10(20)/100 = 2; 5(2)/50 = 0.2; 1(2)/50 = 0.04

True Value: 1000 mg/L

Spike: Std 60204 — Daily Dilution: 1(2)/50 = 0.04

True Value: 1000 mg/L

Distillation Reagents

RGT 28119
RGT 28115
RGT 28769
RGT 28647
RGT 28767

Colorimetric Reagents

RGT 28765
RGT 28657
RGT 28757

DCN#99020

Cyanide
(cyanide3)

Sample	Volume mL/grams	pH > 12	Sulfide Presense	Dilution	Cell Size (cm)	Absorbance λ = 578 nm
CCV(high): 0.2032 ppm	50	✓	No		1	0.284
CCV(low): 0.02032 ppm		✓			5	0.150
Blank		✓			5	0.005
LCS: 0.2 ppm		✓			1	0.287
LCS: 0.04 ppm		✓			5	0.290
11-758-01		✓			5	0.008
02		✓			5	0.006
11-833-01		✓			5	0.254
02		✓			5	0.006
11-928-01		✓			1	0.131
02		✓			1	0.142
03		✓			5	0.022
11-1175-02		✓			5	0.014
05		✓			5	0.026
11-1176-01		✓			5	0.011
11-1086-01		✓			5	0.006
02		✓			5	0.016
distilled ccv 0.2032		✓			1	0.290
distilled ccv 0.02032	—	✓	—		5	0.144
Duplicate: 11-1175-02	50	✓	No		5	0.014
MS: (↓ ppm)	50	✓	No		5	0.274
MSD: (ppm)						
CCV high: (ppm)					1	0.285
CCV low: (0.02032 ppm)	50	✓	No		5	~~0.255~~ 0.151

Analyst: David Merckle / Charlotte Payne

Date/Time (on) 11/21/13 0920
(off) 1050
(color) 1310

dcm 11/21/13

DCN#99020

Microbac Laboratories Inc.
SAMPLE REPORT

Workgroup: WG453794
Analyte: CYANIDE

Analyst: DCM
Date: 11/21/2013

Sample ID	I Vol	F Vol	Response	Slope	Y Intercept	Anal. Conc.	Rep. Conc.	Dil	Units
WG453794-01	50	50	0.00500	7.794	-0.001201	0.00079565	0.00079565	1	mg/L
WG453794-02	50	50	0.287	1.448	-0.004633	0.20140	0.20140	1	mg/L
WG453794-03	50	50	0.290	7.794	-0.001201	0.037362	0.037362	1	mg/L
L13110758-01	50	50	0.00800	7.794	-0.001201	0.0011806	ND	1	mg/L
L13110758-02	50	50	0.00600	7.794	-0.001201	0.00092395	ND	1	mg/L
L13110833-01	50	50	0.254	7.794	-0.001201	0.032743	0.032743	1	mg/L
L13110833-02	50	50	0.00600	7.794	-0.001201	0.00092395	ND	1	mg/L
L13110928-01	50	50	0.131	1.448	-0.004633	0.093670	0.093670	1	mg/L
L13110928-02	50	50	0.142	1.448	-0.004633	0.10127	0.10127	1	mg/L
L13110928-03	50	50	0.0220	7.794	-0.001201	0.0029768	ND	1	mg/L
L13111175-02	50	50	0.0140	7.794	-0.001201	0.0019504	ND	1	mg/L
WG453794-04	50	50	0.0140	7.794	-0.001201	0.0019504	0.0019504	1	mg/L
L13111175-05	50	50	0.0260	7.794	-0.001201	0.0034900	ND	1	mg/L
L13111176-01	50	50	0.0110	7.794	-0.001201	0.0015655	ND	1	mg/L
L13111086-01	50	50	0.00600	7.794	-0.001201	0.00092395	ND	1	mg/L
L13111086-02	50	50	0.0160	7.794	-0.001201	0.0022070	ND	1	mg/L
WG453794-05	50	50	0.0140	7.794	-0.001201	0.0019504	0.0019504	1	mg/L
WG453794-06	50	50	0.274	7.794	-0.001201	0.035309	0.035309	1	mg/L

[redacted]

UV_SAMPLE_REPORT - Modified 03/06/2008

Report generated 11/21/2013 16:23

Microbac Laboratories Inc.
CONTINUING CALIBRATION REPORT

Workgroup #: WG453904
File ID: 1V.1311211310-01
CCV ID: WG453904-01
Units: mg/L
Analyte: CYANIDE

Instrument ID: UV-120-1V
Run Date: 11/21/2013
Run Time: 13:10
Analyst: DCM
Cal ID: UV-120 - 21-NOV-13

Analyte	Expected	Found	RF	%D	Q
Cyanide	.203	0.199	1.40	2.0	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_CCV - Modified 03/06/2008

Report generated 11/21/2013 16:20

[redacted]

Microbac Laboratories Inc.
CONTINUING CALIBRATION REPORT

Workgroup #: WG453904
File ID: 1V.1311211310-02
CCV ID: WG453904-02
Units: mg/L
Analyte: CYANIDE

Instrument ID: UV-120-1V
Run Date: 11/21/2013
Run Time: 13:10
Analyst: DCM
Cal ID: UV-120 - 21-NOV-13

Analyte	Expected	Found	RF	%D	Q
Cyanide	.0203	0.0194	7.38	4.4	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_CCV - Modified 03/06/2008

Report generated 11/21/2013 16:20

[redacted]

Microbac Laboratories Inc.
CONTINUING CALIBRATION REPORT

Workgroup #: WG453904
File ID: 1V.1311211310-22
CCV ID: WG453904-05
Units: mg/L
Analyte: CYANIDE

Instrument ID: UV-120-1V
Run Date: 11/21/2013
Run Time: 13:10
Analyst: DCM
Cal ID: UV-120 - 21-NOV-13

Analyte	Expected	Found	RF	%D	Q
Cyanide	.203	0.200	1.40	1.5	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_CCV - Modified 03/06/2008

Report generated 11/21/2013 16:20

[redacted]

Microbac Laboratories Inc.
CONTINUING CALIBRATION REPORT

Workgroup #: WG453904
File ID: 1V.1311211310-23
CCV ID: WG453904-06
Units: mg/L
Analyte: CYANIDE

Instrument ID: UV-120-1V
Run Date: 11/21/2013
Run Time: 13:10
Analyst: DCM
Cal ID: UV-120 - 21-NOV-13

Analyte	Expected	Found	RF	%D	Q
Cyanide	.0203	0.0195	7.43	3.9	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_CCV - Modified 03/06/2008

Report generated 11/21/2013 16:20

[redacted]

Microbac Laboratories Inc.
DISTILLED STANDARD REPORT

Workgroup #: WG453904
File ID: 1V.1311211310-18
CCV ID: WG453904-03
Units: mg/L

Instrument ID: UV-120-1V
Run Date: 11/21/2013
Run Time: 13:10
Analyst: DCM
Cal ID: UV-120 - 21-NOV-13

Analyte	Expected	Found	RF	%D	Q
Cyanide	.203	0.203	1.43	0.0	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WG_CCV_LCS - Modified 03/06/2008
Report generated 11/21/2013 16:27

[redacted]

Microbac Laboratories Inc.
DISTILLED STANDARD REPORT

Workgroup #: WG453904
File ID: 1V.1311211310-19
CCV ID: WG453904-04
Units: mg/L

Instrument ID: UV-120-1V
Run Date: 11/21/2013
Run Time: 13:10
Analyst: DCM
Cal ID: UV-120 - 21-NOV-13

Analyte	Expected	Found	RF	%D	Q
Cyanide	.0203	0.0186	7.09	8.4	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WG_CCV_LCS - Modified 03/06/2008
Report generated 11/21/2013 16:27

[redacted]

WORKGROUP: WG453554

Cyanide
(cyanide3)

Sample	Volume mL/grams	pH > 12	Sulfide Presense	Dilution	Cell Size (cm)	Absorbance λ = 578 nm
CCV(high): 0.2032 ppm	50	✓	No		1	0.284
CCV(low): 0.02032 ppm	50	✓			5	0.145
Blank	50	✓			5	0.003
LCS: 0.2 ppm		✓			1	0.288
LCS: 0.04 ppm		✓			5	0.285
11-758-01		✓			5	0.005
02		✓			5	0.001
11-1003-01		✓			5	0.015
11-1019-01		✓			5	0.010
11-833-01		✓			1	0.338
02		✓			5	0.005
11-1105-01		✓			5	0.007
11-928-01		✓			1	0.578
02		✓			1	~~0.585~~ 0.580
03		✓			5	0.043
11-1086-01		✓			5	0.009
02	✓	✓	✓		5	0.013
distilled ccv 0.2032	50	✓	No		1	0.290
distilled ccv 0.02032	50	✓	No		5	0.144
Duplicate: 11-1105-01	50	✓	No		5	0.007
MS: (↓ ppm)	50	✓	No		5	0.291
MSD: (ppm)						
CCV high: (0.2032 ppm)	50	✓	No		1	0.287
CCV low: (0.02032 ppm)	50	✓	No		5	0.145

dcm 11/21/13

Analyst: David Merchle
Shelley Pierce

Date/Time (on) 11/20/13 0940
(off) 1110
(color) 11/21/13 1130

Page 2 of 2

DCN#98980

Microbac Laboratories Inc.
SAMPLE REPORT

Workgroup: WG453554 **Analyst:** DCM
Analyte: CYANIDE **Date:** 11/21/2013

Sample ID	I Vol	F Vol	Response	Slope	Y Intercept	Anal. Conc.	Rep. Conc.	Dil	Units
WG453554-01	50	50	0.00300	7.794	-0.001201	0.00053905	0.00053905	1	mg/L
WG453554-02	50	50	0.288	1.448	-0.004633	0.20210	0.20210	1	mg/L
WG453554-03	50	50	0.285	7.794	-0.001201	0.036720	0.036720	1	mg/L
L13110758-01	50	50	0.00500	7.794	-0.001201	0.00079565	ND	1	mg/L
L13110758-02	50	50	0.00100	7.794	-0.001201	0.00028244	ND	1	mg/L
L13111003-01	50	50	0.0150	7.794	-0.001201	0.0020787	ND	1	mg/L
L13111019-01	50	50	0.0100	7.794	-0.001201	0.0014372	ND	1	mg/L
L13110833-01	50	50	0.338	1.448	-0.004633	0.23663	0.23663	1	mg/L
L13110833-02	50	50	0.00500	7.794	-0.001201	0.00079565	ND	1	mg/L
L13111105-01	50	50	0.00700	7.794	-0.001201	0.0010523	ND	1	mg/L
WG453554-04	50	50	0.00700	7.794	-0.001201	0.0010523	0.0010523	1	mg/L
L13110928-01	50	50	0.578	1.448	-0.004633	0.40237	0.40237	1	mg/L
L13110928-02	50	50	0.580	1.448	-0.004633	0.40375	0.40375	1	mg/L
L13110928-03	50	50	0.0430	7.794	-0.001201	0.0056712	0.0056712 F	1	mg/L
L13111086-01	50	50	0.00900	7.794	-0.001201	0.0013089	ND	1	mg/L
L13111086-02	50	50	0.0130	7.794	-0.001201	0.0018221	ND	1	mg/L
WG453554-05	50	50	0.00700	7.794	-0.001201	0.0010523	0.0010523	1	mg/L
WG453554-06	50	50	0.291	7.794	-0.001201	0.037490	0.037490	1	mg/L

UV_SAMPLE_REPORT - Modified 03/06/2008

Report generated 11/21/2013 16:08

[redacted]

Microbac Laboratories Inc.
CONTINUING CALIBRATION REPORT

Workgroup #: WG453903
File ID: 1V.1311211130-01
CCV ID: WG453903-01
Units: mg/L
Analyte: CYANIDE

Instrument ID: UV-120-1V
Run Date: 11/21/2013
Run Time: 11:30
Analyst: DCM
Cal ID: UV-120 - 21-NOV-13

Analyte	Expected	Found	RF	%D	Q
Cyanide	.203	0.199	1.40	2.0	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_CCV - Modified 03/06/2008

Report generated 11/21/2013 16:04

[redacted]

Microbac Laboratories Inc.
CONTINUING CALIBRATION REPORT

Workgroup #: WG453903
File ID: 1V.1311211130-02
CCV ID: WG453903-02
Units: mg/L
Analyte: CYANIDE

Instrument ID: UV-120-1V
Run Date: 11/21/2013
Run Time: 11:30
Analyst: DCM
Cal ID: UV-120 - 21-NOV-13

Analyte	Expected	Found	RF	%D	Q
Cyanide	.0203	0.0188	7.14	7.4	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_CCV - Modified 03/06/2008

Report generated 11/21/2013 16:04

[redacted]

Microbac Laboratories Inc.
CONTINUING CALIBRATION REPORT

Workgroup #: WG453903
File ID: 1V.1311211130-22
CCV ID: WG453903-05
Units: mg/L
Analyte: CYANIDE

Instrument ID: UV-120-1V
Run Date: 11/21/2013
Run Time: 11:30
Analyst: DCM
Cal ID: UV-120 - 21-NOV-13

Analyte	Expected	Found	RF	%D	Q
Cyanide	.203	0.201	1.41	1.0	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_CCV - Modified 03/06/2008

Report generated 11/21/2013 16:04

[redacted]

Microbac Laboratories Inc.
CONTINUING CALIBRATION REPORT

Workgroup #: WG453903
File ID: 1V.1311211130-23
CCV ID: WG453903-06
Units: mg/L
Analyte: CYANIDE

Instrument ID: UV-120-1V
Run Date: 11/21/2013
Run Time: 11:30
Analyst: DCM
Cal ID: UV-120 - 21-NOV-13

Analyte	Expected	Found	RF	%D	Q
Cyanide	.0203	0.0188	7.14	7.4	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_CCV - Modified 03/06/2008

Report generated 11/21/2013 16:04

[redacted]

Microbac Laboratories Inc.
DISTILLED STANDARD REPORT

Workgroup #: WG453903
File ID: 1V.1311211130-18
CCV ID: WG453903-03
Units: mg/L

Instrument ID: UV-120-1V
Run Date: 11/21/2013
Run Time: 11:30
Analyst: DCM
Cal ID: UV-120 - 21-NOV-13

Analyte	Expected	Found	RF	%D	Q
Cyanide	.203	0.203	1.43	0.0	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WG_CCV_LCS - Modified 03/06/2008
Report generated 11/21/2013 16:11

[redacted]

Microbac Laboratories Inc.
DISTILLED STANDARD REPORT

Workgroup #: WG453903
File ID: 1V.1311211130-19
CCV ID: WG453903-04
Units: mg/L

Instrument ID: UV-120-1V
Run Date: 11/21/2013
Run Time: 11:30
Analyst: DCM
Cal ID: UV-120 - 21-NOV-13

Analyte	Expected	Found	RF	%D	Q
Cyanide	.0203	0.0186	7.09	8.4	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WG_CCV_LCS - Modified 03/06/2008
Report generated 11/21/2013 16:11

[redacted]

2.2.5 Conductivity Data

2.2.5.1 Summary Data

Login Number: L13111086
Department: Conventionals
Analyst: Deanna Hesson

METHOD

Analysis EPA 120.1/SM2510 B (Conductivity)

HOLDING TIMES

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Duplicates: All acceptance criteria were met.

Matrix Spikes: All acceptance criteria were met.

SAMPLES

Samples: All acceptance criteria were met.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Microbac Laboratories Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Narrative ID: 75485
Approved By: Deanna Hesson

2.2.5.2 QC Summary Data

(Readout)/(dilution) = mg/L

where:

Readout = direct readout from the instrument
dilution = dilution in decimal form (ex. 1/5 dilution = 0.2)

Microbac Laboratories Inc.

Data Checklist

Date: 18-NOV-2013
Analyst: DIH
Analyst: NA
Method: PH/COND/ALK
Instrument: TIAMO
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG453193 WG453198 WG453249 WG453298 WG453191 WG453224 W

Calibration/Linearity	11/18/13
Second Source Check	X
ICV/CCV (std)	
ICB/CCB	
Blank	X
LCS/LCS Dup	X
MS/MSD	
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	X
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	DIH
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
26-NOV-2013

Secondary Reviewer:
26-NOV-2013

CHECKLIST1 - Modified 03/05/2008
Generated: NOV-26-2013 15:33:57

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 120.1 AAB#: WG453304

Login Number: L13111086

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
SMW 1-1113-1	01	11/15/13					11/19/2013	3.6	28		11/19/13	3.6	28	
SMW 4-1113-1	02	11/15/13					11/19/2013	3.5	28		11/19/13	3.5	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 3226683
Report generated 11/25/2013 14:39

Microbac Laboratories Inc.

METHOD BLANK SUMMARY

Login Number: L13111086
Blank File ID: TI.111913.0022CO
Prep Date: 11/19/13 00:22
Analyzed Date: 11/19/13 00:22
Analyst: DIH

Work Group: WG453304
Blank Sample ID: WG453304-01
Instrument ID: TIAMO1
Method: 120.1

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG453304-02	TI.111913.0024CO	11/19/13 00:24	01
SMW 1-1113-1	L13111086-01	TI.111913.0052CO	11/19/13 00:52	01
SMW 4-1113-1	L13111086-02	TI.111913.0054CO	11/19/13 00:54	01
DUP	WG453304-05	TI.111913.0056CO	11/19/13 00:56	01
LCS2	WG453304-03	TI.111913.0058CO	11/19/13 00:58	01

Report Name: BLANK_SUMMARY
PDF File ID: 3226684
Report generated 11/25/2013 14:39

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L13111086 Prep Date: 11/19/13 00:22 Sample ID: WG453304-01
Instrument ID: TIAMO1 Run Date: 11/19/13 00:22 Prep Method: 120.1
File ID: TI.111913.0022CO Analyst: DIH Method: 120.1
Workgroup (AAB#): WG453304 Matrix: Water Units: umhos/cm
Contract #: Cal ID: TIAMO1 -

Analytes	LOD	LOQ	Concentration	Dilution	Qualifier
Conductivity	10.0	50.0	10.0	1	U

LOD Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 3226685
25-NOV-2013 14:39

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L13111086 Analyst: DIH Prep Method: 120.1
Instrument ID: TIAMO1 Matrix: Water Method: 120.1
Workgroup (AAB#): WG453304 Units: umhos/cm
QC Key: DOD4 Lot #: STD60276

Sample ID: WG453304-02 LCS File ID: TI.111913.0024CO Run Date: 11/19/2013 00:24
Sample ID: WG453304-03 LCS2 File ID: TI.111913.0058CO Run Date: 11/19/2013 00:58

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Conductivity	1410	1390	98.1	1410	1400	99.2	1.11	90 - 110	10	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 3226686
Report generated: 11/25/2013 14:40

2.2.5.3 Raw Data

Metrohm Tiamo (tiamo1)

Instrument: Tiamo

pH:

EPA 150.1 / SM 4500-H(+)-B / SW846 9040C

LCS 6: 59686 Calibration: 11/18/13

LCS 9: 59687

WG: 453193
453198
453249
453298

NOTE: • An LCS is analyzed every 20 samples
• Alternate levels

Cond:

EPA 120.1 / SM 2510B

LCS: std 60276 Daily Dil: 20/200 (0.1M) = 1412 umhos/cm

Cell Constant: 0.712

WG: 453191
453224
453~~304~~294
453304

NOTE: • LCS/LCSDUP required each work group
• End run with LCS

ALK:

EPA 310.1 / SM 2320B

LCS: 60183 Daily Dil: 10/250 (2500) = 100 mg/L

Titrant T: 1186-13-01 N: 0.1 N H_2SO_4

WG: 453189
453223
453293

NOTE: • LCS/LCSDUP required each work group

Analyst: [signature] Date: 11/18/13

File: 11182013PAC1
11182013PAC2

DCN#98928

Metrohm Tiamo (tiamo1)

	Sample ID	Dilution	pH	Cond	ALK	Acid
1	pH 6		✓			
2	BIK			✓		
3	LCS1412			✓		
4	BIK				✓	
5	LCS 100				✓	
6	LCSDUP				✓	
7	11-991-03		✓	✓	✓	
8	04		✓	✓	✓	
9	05		✓	✓	✓	
10	06		✓	✓	✓	
11	11-992-07		✓	✓	✓	
12	11-993-01		✓	✓	✓	
13	11-994-06		✓	✓	✓	
14	09		✓	✓	✓	
15	~~11-998-12~~		~~NO~~	✓	✓	
16	DUP ~~11-994~~ 994-09		✓		✓	
17	~~DUP~~ 11-994-03		✓	✓		
18	994-04		✓	✓		
19	05		✓	✓		
20	11-995-03		✓	✓		
21	11-996-02		✓	✓		
22	11-995-02		✓	✓		
23	DUP 995-02			✓		
24	~~11-998-01~~		✓			
25	11-997-01		✓			
26	03		✓			
27	11-999-01		✓			
28	11-1000-01		✓			
29	pH 9		✓			
30	11-1001-05		✓			
31	11-1006-07		✓			
32	10		✓			
33	12		✓			
34	14		✓			
35	16		✓			
36	19		✓			
37	22		✓			
38	26		✓			
39	30		✓			
40	32		✓			
41	11-1012-01		✓			
42	11-1013-01		✓			
43	03		✓			
44	11-1014-01		✓			
45	03		✓			
46	05		✓			
47	07		✓			
48	09		✓			
49	11-1016-01		✓			

991-01 → PH

995

1001 ~~1000~~-03 → dm PH

	Sample ID	Dilution	pH	Cond	ALK	Acid
50	DUP 1016-01		✓			
51	pH 6		✓			
52	11-1016-03		✓			
53	07		✓			
54	11-1020-01		✓			
55	DUP ↓		✓			
56	11-1023-01		✓	✓		
57	11-1026-01		✓	✓	✓	
58	03		✓	✓	✓	
59	04		✓	✓	✓	
60	05		✓	✓	✓	
61	11-1027-01		✓	✓	✓	
62	LCSDUP			✓		
63	BIK			✓		
64	LCS 1412			✓		
65	11-1028-01		✓	✓	✓	
66	11-1029-02		✓	✓	✓	
67	11-1030-02		✓	✓	✓	
68	03		✓	✓	✓	
69	04		✓	✓	✓	
70	06		✓	✓	✓	
71	BIK				✓	
72	LCS 100				✓	
73	11-1031-01		✓	✓	✓	
74	02		✓	✓	✓	
75	11-1032-01		✓	✓	✓	
76	~~11-1033-01~~ 1033 DUP		✓	NO	✓	
77	~~DUP ↓ DUP~~ 1032-01			✓	✓	
78	LCSDUP BIK				✓	
79	pH 9		✓			
80	11-1001-01		✓			
81	11-1034-01		✓	✓	✓	
82	11-1035-01		✓	✓	✓	
83	11-1036-01		✓	✓	✓	
84	11-1037-01		✓	✓	✓	
85	11-1039-01		✓	✓	✓	
86	02		✓	✓	✓	
87	11-1041-01		✓	✓	✓	
88	11-1044-01		✓	✓	✓	
89	11-1049-01		✓	✓	✓	
90	02		✓	✓	✓	
91	11-1053-01		✓	✓	✓	
92	LCS DUP			✓		
93	11-1045-01		✓			
94	DUP ↓		✓			
95	~~11-1073-01~~	BIK		✓	NO	
96	~~11-1078-01~~	LCS1412		✓	NO	
97	11-1078-02		✓	✓	✓	
98	11-1081-01		✓		✓	

dm 1001-01

Analyst: dm Date: 11/18/13

DCN#98928

*CTI cooler temp

Metrohm Tiamo (tiamo1)

	Sample ID	Dilution	pH	Cond	ALK	Acid		Sample ID	Dilution	pH	Cond	ALK	Acid
1	11-1078-01		✓	✓	✓		50						
2	11-1073-01		✓	✓	✓		51						
3	BLK				✓		52						
4	LCS 100				✓		53						
5	11-1085-01		✓	✓	✓		54						
6	02		✓	✓	✓		55						
7	DUP 02				✓		56						
8	11-~~1073~~-01	H6	✓	NO			57						
9	11-1074-01		✓	✓			58						
10	03		✓	✓			59						
11	11-1080-01		✓	✓			60						
12	02		✓	✓			61						
13	11-1082-22		✓	✓			62						
14	24		✓	✓			63						
15	11-1084-10		✓	✓			64						
16	12		✓	✓			65						
17	14		✓	✓			66						
18	16		✓	✓			67						
19	18		✓	✓			68						
20	20		✓	✓			69						
21	22		✓	✓			70						
22	11-1087-03		✓	✓			71						
23	DUP ✓		✓	✓			72						
24	~~LCSDUP~~ 1087-01		✓	✓			73						
25	~~11-1087-01~~ SDUP			✓			74						
26	BLK			✓			75						
27	LCS 1412			✓			76						
28	11-1087-04		✓	✓			77						
29	09		✓	✓			78						
30	11-1088-01		✓	✓			79						
31	03		✓	✓			80						
32	11-1089-01		✓	✓			81						
33	11-1086-01			✓			82						
34	02			✓			83						
35	DUP 02			✓			84						
36	LCS DUP			✓			85						
37	pH 9		✓				86						
38	LCSDUP	X			✓		87						
39							88						
40							89						
41							90						
42							91						
43							92						
44							93						
45							94						
46							95						
47							96						
48							97						
49							98						

#38 LCSDUP

~~14-1087-01~~ 11

Analyst: dch Date: 11/18/13

DCN#98928

Sample ID: PH 6 — 2013-11-18 13:36:39 UTC-5

sample pH	6.012	pH
Res25	23.83	°C

Sample ID: WG453191-01 — 2013-11-18 13:42:12 UTC-5

sample Conduntivity	9.400	µS/cm

Sample ID: WG453191-02 — 2013-11-18 13:44:04 UTC-5

sample Conduntivity	1397.700	µS/cm

Sample ID: WG453189-01 — 2013-11-18 13:46:04 UTC-5

Alkal mg/L CaCO3	5.20	mg/L

Sample ID: WG453189-02 — 2013-11-18 13:50:31 UTC-5

Alkal mg/L CaCO3	96.60	mg/L

Sample ID: WG453189-03 — 2013-11-18 13:55:46 UTC-5

Alkal mg/L CaCO3	93.20	mg/L

Sample ID: L13110991-03 — 2013-11-18 14:01:04 UTC-5

Alkal mg/L CaCO3	128.80	mg/L
sample Conduntivity	372.900	µS/cm
sample pH	6.961	pH

Sample ID: L13110991-04 — 2013-11-18 14:08:03 UTC-5

Alkal mg/L CaCO3	83.55	mg/L
sample Conduntivity	315.500	µS/cm
sample pH	6.335	pH

Sample ID: L13110991-05 — 2013-11-18 14:14:53 UTC-5

Alkal mg/L CaCO3	172.60	mg/L
sample Conduntivity	669.000	µS/cm
sample pH	8.026	pH

Sample ID: L13110991-06 — 2013-11-18 14:22:05 UTC-5

Alkal mg/L CaCO3	170.00	mg/L
sample Conduntivity	670.100	µS/cm
sample pH	8.136	pH

Sample ID: L13110992-07 — 2013-11-18 14:29:15 UTC-5

Alkal mg/L CaCO3	279.40	mg/L
sample Conduntivity	1185.400	µS/cm
sample pH	8.467	pH

11/25

Sample ID: L13110993-~~01~~ 11 — 2013-11-18 14:36:59 UTC-5

Alkal mg/L CaCO3	249.36	mg/L
sample Conduntivity	1119.900	µS/cm
sample pH	8.352	pH

Sample ID: L13110994-06 — 2013-11-18 14:44:39 UTC-5

Alkal mg/L CaCO3	113.00	mg/L
sample Conduntivity	266.600	µS/cm
sample pH	7.882	pH

Sample ID: L13110994-09 2013-11-18 14:51:32 UTC-5

Alkal mg/L CaCO3	26.40	mg/L
sample Conduntivity	139.800	µS/cm
sample pH	7.220	pH

Sample ID: L13110991-01 2013-11-18 14:58:04 UTC-5

sample pH	8.294	pH
Res25	21.81	°C

Sample ID: WG453189-05 2013-11-18 15:02:30 UTC-5

sample pH	7.599	pH
Alkal mg/L CaCO3	29.40	mg/L

Sample ID: L13110994-03 2013-11-18 15:07:37 UTC-5

sample Conduntivity	81.800	µS/cm
sample pH	5.996	pH

Sample ID: L13110994-04 2013-11-18 15:13:05 UTC-5

sample Conduntivity	430.500	µS/cm
sample pH	7.317	pH

Sample ID: L13110994-05 2013-11-18 15:18:36 UTC-5

sample Conduntivity	176.300	µS/cm
sample pH	6.605	pH

Sample ID: L13110995-03 2013-11-18 15:24:06 UTC-5

sample Conduntivity	297.500	µS/cm
sample pH	4.796	pH

Sample ID: L13110996-02 2013-11-18 15:29:35 UTC-5

sample Conduntivity	196.300	µS/cm
sample pH	7.391	pH

Sample ID: L13110995-02 2013-11-18 15:35:16 UTC-5

sample Conduntivity	860.400	µS/cm
sample pH	3.087	pH

Sample ID: WG453191-05 2013-11-18 15:40:43 UTC-5

sample Conduntivity	864.100	µS/cm

Sample ID: L13111001-03 2013-11-18 15:42:44 UTC-5

sample pH	8.405	pH
Res25	22.51	°C

Sample ID: L13110997-01 2013-11-18 15:47:04 UTC-5

sample pH . . . . . 7.878 pH
Res25 . . . . . 22.55 °C

Sample ID: L13110997-03 2013-11-18 15:51:19 UTC-5
sample pH . . . . . 8.103 pH
Res25 . . . . . 22.55 °C

Sample ID: L13110999-01 2013-11-18 15:55:33 UTC-5
sample pH . . . . . 7.823 pH
Res25 . . . . . 22.61 °C

Sample ID: L13111000-01 2013-11-18 15:59:46 UTC-5
sample pH . . . . . 7.755 pH
Res25 . . . . . 22.74 °C

Sample ID: PH 9 2013-11-18 16:03:58 UTC-5
sample pH . . . . . 8.999 pH
Res25 . . . . . 22.99 °C

Sample ID: L13111001-05 2013-11-18 16:08:09 UTC-5
sample pH . . . . . 8.783 pH
Res25 . . . . . 22.89 °C

Sample ID: L13111006-07 2013-11-18 16:12:19 UTC-5
sample pH . . . . . 8.072 pH
Res25 . . . . . 22.94 °C

Sample ID: L13111006-10 2013-11-18 16:16:28 UTC-5
sample pH . . . . . 8.280 pH
Res25 . . . . . 23.00 °C

Sample ID: L13111006-12 2013-11-18 16:20:36 UTC-5
sample pH . . . . . 7.226 pH
Res25 . . . . . 22.98 °C

Sample ID: L13111006-14 2013-11-18 16:24:44 UTC-5
sample pH . . . . . 7.041 pH
Res25 . . . . . 22.92 °C

Sample ID: L13111006-16 2013-11-18 16:28:53 UTC-5
sample pH . . . . . 7.914 pH
Res25 . . . . . 22.93 °C

Sample ID: L13111006-19 2013-11-18 16:33:02 UTC-5
sample pH . . . . . 8.025 pH
Res25 . . . . . 22.49 °C

Sample ID: L13111006-22 2013-11-18 16:37:11 UTC-5
sample pH . . . . . 7.868 pH

Res25 . . . . . 22.46 °C

Sample ID: L13111006-26 2013-11-18 16:41:22 UTC-5

sample pH . . . . . 7.097 pH
Res25 . . . . . 22.48 °C

Sample ID: L13111006-30 2013-11-18 16:45:33 UTC-5

sample pH . . . . . 7.972 pH
Res25 . . . . . 22.54 °C

Sample ID: L13111006-32 2013-11-18 16:49:46 UTC-5

sample pH . . . . . 7.993 pH
Res25 . . . . . 22.64 °C

Sample ID: L13111012-01 2013-11-18 16:54:00 UTC-5

sample pH . . . . . 7.760 pH
Res25 . . . . . 22.70 °C

Sample ID: L13111013-01 2013-11-18 16:58:15 UTC-5

sample pH . . . . . 8.009 pH
Res25 . . . . . 22.69 °C

Sample ID: L13111013-03 2013-11-18 17:02:31 UTC-5

sample pH . . . . . 7.770 pH
Res25 . . . . . 22.67 °C

Sample ID: L13111014-01 2013-11-18 17:06:48 UTC-5

sample pH . . . . . 7.676 pH
Res25 . . . . . 22.56 °C

Sample ID: L13111014-03 2013-11-18 17:11:06 UTC-5

sample pH . . . . . 7.469 pH
Res25 . . . . . 22.36 °C

Sample ID: L13111014-05 2013-11-18 17:15:26 UTC-5

sample pH . . . . . 7.475 pH
Res25 . . . . . 22.31 °C

Sample ID: L13111014-07 2013-11-18 17:19:48 UTC-5

sample pH . . . . . 8.851 pH
Res25 . . . . . 22.26 °C

Sample ID: L13111014-09 2013-11-18 17:24:10 UTC-5

sample pH . . . . . 8.949 pH
Res25 . . . . . 22.19 °C

Sample ID: L13111016-01 2013-11-18 17:28:33 UTC-5

sample pH . . . . . 8.241 pH
Res25 . . . . . 22.16 °C

Sample ID: WG453198-02 2013-11-18 17:32:58 UTC-5

sample pH	8.219	pH
Res25	22.25	°C

Sample ID: PH 6 2013-11-18 17:37:20 UTC-5

sample pH	6.041	pH
Res25	22.23	°C

Sample ID: L13111016-03 2013-11-18 17:41:41 UTC-5

sample pH	7.518	pH
Res25	22.14	°C

Sample ID: L13111016-07 2013-11-18 17:46:00 UTC-5

sample pH	8.057	pH
Res25	22.11	°C

Sample ID: L13111020-01 2013-11-18 17:50:19 UTC-5

sample pH	7.816	pH
Res25	22.07	°C

Sample ID: DUP1020-01 2013-11-18 17:54:36 UTC-5

sample pH	7.827	pH
Res25	22.09	°C

Sample ID: L13111023-01 2013-11-18 17:58:55 UTC-5

sample Conduntivity	2121.700	µS/cm
sample pH	7.888	pH

Sample ID: L13111026-01 2013-11-18 18:04:16 UTC-5

Alkal mg/L CaCO3	281.60	mg/L
sample Conduntivity	2886.800	µS/cm
sample pH	6.724	pH

Sample ID: L13111026-03 2013-11-18 18:12:05 UTC-5

Alkal mg/L CaCO3	302.97	mg/L
sample Conduntivity	3625.900	µS/cm
sample pH	6.635	pH

Sample ID: L13111026-04 2013-11-18 18:19:58 UTC-5

Alkal mg/L CaCO3	273.80	mg/L
sample Conduntivity	3647.200	µS/cm
sample pH	6.998	pH

Sample ID: L13111026-05 2013-11-18 18:27:33 UTC-5

Alkal mg/L CaCO3	42.60	mg/L
sample Conduntivity	3434.800	µS/cm
sample pH	8.140	pH

Sample ID: L13111027-01 2013-11-18 18:33:36 UTC-5

Alkal mg/L CaCO3 . . . . . 183.00 mg/L
sample Conduntivity . . . . . 707.400 µS/cm
sample pH . . . . . 8.255 pH

Sample ID: WG453191-03 2013-11-18 18:40:37 UTC-5
sample Conduntivity . . . . . 1392.500 µS/cm

Sample ID: WG453224-01 2013-11-18 18:42:25 UTC-5
sample Conduntivity . . . . . 3.400 µS/cm

Sample ID: WG453224-02 2013-11-18 18:44:19 UTC-5
sample Conduntivity . . . . . 1373.500 µS/cm

Sample ID: L13111028-01 2013-11-18 18:46:16 UTC-5
Alkal mg/L CaCO3 . . . . . 296.80 mg/L
sample Conduntivity . . . . . 1897.600 µS/cm
sample pH . . . . . 8.077 pH

Sample ID: L13111029-02 2013-11-18 18:53:57 UTC-5
Alkal mg/L CaCO3 . . . . . 121.76 mg/L
sample Conduntivity . . . . . 3833.200 µS/cm
sample pH . . . . . 8.021 pH

Sample ID: L13111030-02 2013-11-18 19:00:41 UTC-5
Alkal mg/L CaCO3 . . . . . 168.56 mg/L
sample Conduntivity . . . . . 1229.000 µS/cm
sample pH . . . . . 7.540 pH

Sample ID: L13111030-03 2013-11-18 19:07:44 UTC-5
Alkal mg/L CaCO3 . . . . . 12.38 mg/L
sample Conduntivity . . . . . 631.600 µS/cm
sample pH . . . . . 6.620 pH

Sample ID: L13111030-04 2013-11-18 19:13:43 UTC-5
Alkal mg/L CaCO3 . . . . . 167.40 mg/L
sample Conduntivity . . . . . 1222.700 µS/cm
sample pH . . . . . 7.421 pH

Sample ID: L13111030-06 2013-11-18 19:20:49 UTC-5
Alkal mg/L CaCO3 . . . . . 96.73 mg/L
sample Conduntivity . . . . . 834.200 µS/cm
sample pH . . . . . 7.686 pH

Sample ID: WG453223-01 2013-11-18 19:27:27 UTC-5
Alkal mg/L CaCO3 . . . . . 4.60 mg/L

Sample ID: WG453223-02 2013-11-18 19:31:49 UTC-5
Alkal mg/L CaCO3 . . . . . 98.20 mg/L

Sample ID: L13111031-01 2013-11-18 19:37:04 UTC-5

Alkal mg/L CaCO3	50.80	mg/L
sample Conduntivity	2379.700	µS/cm
sample pH	7.644	pH

Sample ID: L13111031-02 — 2013-11-18 19:43:43 UTC-5

Alkal mg/L CaCO3	58.20	mg/L
sample Conduntivity	193.000	µS/cm
sample pH	7.958	pH

Sample ID: L13111032-01 — 2013-11-18 19:50:17 UTC-5

Alkal mg/L CaCO3	21.40	mg/L
sample Conduntivity	791.200	µS/cm
sample pH	7.030	pH

Sample ID: WG453223-05 — 2013-11-18 19:56:45 UTC-5

sample pH	7.039	pH
Alkal mg/L CaCO3	21.20	mg/L

Sample ID: WG453224-05 — 2013-11-18 20:02:03 UTC-5

sample Conduntivity	793.100	µS/cm

Sample ID: WG453223-03 — 2013-11-18 20:04:03 UTC-5

Alkal mg/L CaCO3	85.40	mg/L

Sample ID: PH 9 — 2013-11-18 20:09:06 UTC-5

sample pH	9.000	pH
Res25	21.70	°C

Sample ID: L13111001-01 — 2013-11-18 20:13:24 UTC-5

sample pH	8.534	pH
Res25	21.58	°C

Sample ID: L13111034-01 — 2013-11-18 20:17:43 UTC-5

Alkal mg/L CaCO3	250.58	mg/L
sample Conduntivity	791.700	µS/cm
sample pH	7.342	pH

Sample ID: L13111035-01 — 2013-11-18 20:25:10 UTC-5

Alkal mg/L CaCO3	136.40	mg/L
sample Conduntivity	555.300	µS/cm
sample pH	8.069	pH

Sample ID: L13111036-01 — 2013-11-18 20:31:56 UTC-5

Alkal mg/L CaCO3	172.33	mg/L
sample Conduntivity	754.000	µS/cm
sample pH	8.122	pH

Sample ID: L13111037-01 — 2013-11-18 20:38:58 UTC-5

Alkal mg/L CaCO3	226.60	mg/L

sample Conduntivity . . . . . 1564.100 µS/cm
sample pH . . . . . 8.258 pH

Sample ID: L13111039-01 2013-11-18 20:46:18 UTC-5

Alkal mg/L CaCO3 . . . . . 517.98 mg/L
sample Conduntivity . . . . . 1433.600 µS/cm
sample pH . . . . . 8.204 pH

Sample ID: L13111039-02 2013-11-18 20:54:45 UTC-5

Alkal mg/L CaCO3 . . . . . 580.60 mg/L
sample Conduntivity . . . . . 1443.400 µS/cm
sample pH . . . . . 8.272 pH

Sample ID: L13111041-01 2013-11-18 21:03:27 UTC-5

Alkal mg/L CaCO3 . . . . . 38.39 mg/L
sample Conduntivity . . . . . 3463.700 µS/cm
sample pH . . . . . 7.968 pH

Sample ID: L13111044-01 2013-11-18 21:09:33 UTC-5

Alkal mg/L CaCO3 . . . . . 115.20 mg/L
sample Conduntivity . . . . . 331.400 µS/cm
sample pH . . . . . 7.685 pH

Sample ID: L13111049-01 2013-11-18 21:16:13 UTC-5

Alkal mg/L CaCO3 . . . . . 187.40 mg/L
sample Conduntivity . . . . . 705.400 µS/cm
sample pH . . . . . 8.174 pH

Sample ID: L13111049-02 2013-11-18 21:23:19 UTC-5

Alkal mg/L CaCO3 . . . . . 45.80 mg/L
sample Conduntivity . . . . . 996.600 µS/cm
sample pH . . . . . 7.645 pH

Sample ID: L13111053-01 2013-11-18 21:29:47 UTC-5

Alkal mg/L CaCO3 . . . . . 319.40 mg/L
sample Conduntivity . . . . . 2027.400 µS/cm
sample pH . . . . . 8.233 pH

Sample ID: WG453224-03 2013-11-18 21:37:34 UTC-5

sample Conduntivity . . . . . 1392.300 µS/cm

Sample ID: L13111045-01 2013-11-18 21:39:31 UTC-5

sample pH . . . . . 8.017 pH
Res25 . . . . . 21.58 °C

Sample ID: WG453249-02 2013-11-18 21:43:57 UTC-5

sample pH . . . . . 8.035 pH
Res25 . . . . . 21.50 °C

Sample ID: WG453294-01 — 2013-11-18 21:48:17 UTC-5

sample Conduntivity	8.100	µS/cm

Sample ID: WG453294-02 — 2013-11-18 21:50:13 UTC-5

sample Conduntivity	1365.600	µS/cm

Sample ID: L13111078-02 — 2013-11-18 21:52:13 UTC-5

Alkal mg/L CaCO3	36.80	mg/L
sample Conduntivity	5627.100	µS/cm
sample pH	7.735	pH

Sample ID: L13111081-01 — 2013-11-18 21:58:28 UTC-5

sample pH	7.535	pH
Alkal mg/L CaCO3	96.40	mg/L

Sample ID: L13111078-01 — 2013-11-18 22:03:56 UTC-5

sample pH	7.419	pH
Alkal mg/L CaCO3	39.20	mg/L

Sample ID: L13111073-01 — 2013-11-18 22:09:14 UTC-5

sample pH	7.314	pH
Alkal mg/L CaCO3	36.37	mg/L

Sample ID: WG453293-01 — 2013-11-18 22:14:28 UTC-5

Alkal mg/L CaCO3	4.20	mg/L

Sample ID: WG453293-02 — 2013-11-18 22:18:46 UTC-5

Alkal mg/L CaCO3	94.60	mg/L

Sample ID: WG453293-03 — 2013-11-18 22:23:59 UTC-5

Alkal mg/L CaCO3	96.15	mg/L

Sample ID: L13111085-01 — 2013-11-18 22:29:10 UTC-5

Alkal mg/L CaCO3	39.80	mg/L
sample Conduntivity	184.300	µS/cm
sample pH	7.782	pH

Sample ID: L13111085-02 — 2013-11-18 22:35:36 UTC-5

Alkal mg/L CaCO3	102.20	mg/L
sample Conduntivity	590.900	µS/cm
sample pH	8.006	pH

Sample ID: WG453293-05 — 2013-11-18 22:42:12 UTC-5

sample Conduntivity	591.000	µS/cm
sample pH	8.013	pH

Sample ID: PH 6 — 2013-11-18 22:47:32 UTC-5

sample pH	6.042	pH
Res25	20.88	°C

Sample ID: L13111074-01 2013-11-18 22:51:59 UTC-5

sample Conduntivity . . . . . 597.900 µS/cm

sample pH . . . . . 7.285 pH

Sample ID: L13111074-03 2013-11-18 22:57:22 UTC-5

sample Conduntivity . . . . . 174.200 µS/cm

sample pH . . . . . 7.502 pH

Sample ID: L13111080-01 2013-11-18 23:02:53 UTC-5

sample Conduntivity . . . . . 4718.200 µS/cm

sample pH . . . . . 8.464 pH

Sample ID: L13111080-02 2013-11-18 23:08:24 UTC-5

sample Conduntivity . . . . . 7670.500 µS/cm
sample pH . . . . . 8.482 pH

Sample ID: L13111082-22 2013-11-18 23:13:58 UTC-5

sample Conduntivity . . . . . 595.600 µS/cm
sample pH . . . . . 8.151 pH

Sample ID: L13111082-24 2013-11-18 23:19:32 UTC-5

sample Conduntivity . . . . . 174.800 µS/cm
sample pH . . . . . 7.733 pH

Sample ID: L13111084-10 2013-11-18 23:25:05 UTC-5

sample Conduntivity . . . . . 816.000 µS/cm
sample pH . . . . . 8.323 pH

Sample ID: L13111084-12 2013-11-18 23:30:39 UTC-5

sample Conduntivity . . . . . 925.900 µS/cm
sample pH . . . . . 8.068 pH

Sample ID: L13111084-14 2013-11-18 23:36:12 UTC-5

sample Conduntivity . . . . . 627.400 µS/cm
sample pH . . . . . 8.037 pH

Sample ID: L13111084-16 2013-11-18 23:41:44 UTC-5

sample Conduntivity . . . . . 554.900 µS/cm
sample pH . . . . . 8.087 pH

Sample ID: L13111084-18 2013-11-18 23:47:16 UTC-5

sample Conduntivity . . . . . 184.600 µS/cm
sample pH . . . . . 7.455 pH

Sample ID: L13111084-20 2013-11-18 23:52:46 UTC-5

sample Conduntivity . . . . . 798.900 µS/cm
sample pH . . . . . 7.842 pH

Sample ID: L13111084-22 2013-11-18 23:58:15 UTC-5

sample Conduntivity . . . . . 421.900 µS/cm
sample pH . . . . . 8.015 pH

Sample ID: L13111087-03 2013-11-19 00:03:43 UTC-5

sample Conduntivity . . . . . 926.300 µS/cm
sample pH . . . . . 8.073 pH

Sample ID: WG453294-05 2013-11-19 00:09:10 UTC-5

sample Conduntivity . . . . . 925.900 µS/cm
sample pH . . . . . 8.083 pH

Sample ID: L13111087-01 2013-11-19 00:14:36 UTC-5

sample Conduntivity . . . . . 971.100 µS/cm
sample pH . . . . . 8.277 pH

Sample ID: WG453294-03 2013-11-19 00:20:01 UTC-5
sample Conduntivity . . . . . 1394.100 µS/cm

dun 11/25

Sample ID: WG453~~2308~~304-01 2013-11-19 00:22:02 UTC-5
sample Conduntivity . . . . . 4.300 µS/cm

Sample ID: WG453~~2308~~304-02 2013-11-19 00:24:01 UTC-5
sample Conduntivity . . . . . 1385.300 µS/cm

Sample ID: L13111087-04 2013-11-19 00:26:00 UTC-5
sample Conduntivity . . . . . 628.700 µS/cm
sample pH . . . . . 8.034 pH

Sample ID: L13111087-05 2013-11-19 00:31:21 UTC-5
sample Conduntivity . . . . . 723.500 µS/cm
sample pH . . . . . 8.163 pH

Sample ID: L13111088-01 2013-11-19 00:36:41 UTC-5
sample Conduntivity . . . . . 588.900 µS/cm
sample pH . . . . . 8.145 pH

Sample ID: L13111088-03 2013-11-19 00:42:00 UTC-5
sample Conduntivity . . . . . 175.000 µS/cm
sample pH . . . . . 7.621 pH

Sample ID: L13111089-01 2013-11-19 00:47:19 UTC-5
sample Conduntivity . . . . . 587.500 µS/cm
sample pH . . . . . 8.108 pH

Sample ID: L13111086-01 2013-11-19 00:52:38 UTC-5
sample Conduntivity . . . . . 359.500 µS/cm

Sample ID: L13111086-02 2013-11-19 00:54:33 UTC-5
sample Conduntivity . . . . . 372.600 µS/cm

Sample ID: WG453304-05 2013-11-19 00:56:28 UTC-5
sample Conduntivity . . . . . 372.400 µS/cm

Sample ID: WG453304-03 2013-11-19 00:58:25 UTC-5
sample Conduntivity . . . . . 1400.700 µS/cm

Sample ID: PH 9 2013-11-19 01:00:23 UTC-5
sample pH . . . . . 9.004 pH
Res25 . . . . . 20.91 °C

2.2.6 Ammonia Data

2.2.6.1 Summary Data

Login Number: L13111086
Department: Conventionals
Analyst: Brice Fenton

METHOD

Analysis EPA 350.1/SM4500-NH3 B(NH3)

HOLDING TIMES

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Duplicates: All acceptance criteria were met.

Matrix Spikes: All acceptance criteria were met.

SAMPLES

Samples: All acceptance criteria were met.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Microbac Laboratories Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Narrative ID: 75487
Approved By: Deanna Hesson

Microbac

Lab Report #: L13111086
Lab Project #: 3005.011
Project Name: White Sands MR
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L13111086-01	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	SMW 1-1113-1	**Prep Method:**	350.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	350.1	**Cal Date:**	11/26/2013 13:04
Workgroup #:	WG454400	**Analyst:**	BAF	**Run Date:**	11/26/2013 13:23
Collect Date:	11/15/2013 10:00	**Dilution:**	1	**File ID:**	SC131126003.032
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Nitrogen, Ammonia	7664-41-7		U	0.100	0.0500

U	Analyte was not detected. The concentration is below the reported LOD.

Certificate of Analysis

Sample #:	L13111086-02	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	SMW 4-1113-1	**Prep Method:**	350.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	350.1	**Cal Date:**	11/26/2013 13:04
Workgroup #:	WG454400	**Analyst:**	BAF	**Run Date:**	11/26/2013 13:24
Collect Date:	11/15/2013 11:50	**Dilution:**	1	**File ID:**	SC131126003.033
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Nitrogen, Ammonia	7664-41-7	0.0634	J	0.100	0.0500

J	Estimated value ; the analyte concentration was less than the LOQ.

Certificate of Analysis

2.2.6.2 QC Summary Data

Example Calculations for Visible Spectrophotometric Methods

Linear Calibration Model

Step 1 - Retrieve Curve Data from ICAL

m = slope of the linear equation
b = intercept from the linear equation
y = instrument response as absorbance or OD
x = concentration of analyte (mg/L)
y = mx + b

Step 2: Calculate the instrument concentration, x

Where:

x = (y - b)/m

Step 3: Solve for analyte concentration in sample, Cx

Cx = (x) (D)

Example Calculation (LCS):

Value of m from plot:	7.809	
Value of b from plot:	0.0004135	
Absorbance of unknown from quantitation report (y):	0.31	
Calculated concentration (x):	0.03964483	
Dilution factor (D):	1.00	
Concentration of analyte in sample, Cy:	0.0396	mg/L

SmartChem Autoanalyzer - Quadratic Calibration for Chloride and Sulfate

Step 1 - Retrieve Curve Data from Smartchem ICAL

A, B, C = constants from the ICAL quadratic regression

x = instrument response as absorbance or OD

y = concentration of analyte (mg/L)

Step 2: Calculate the instrument concentration, y

Where:

y = Ax^2 + Bx + C

Step 3: Solve for analyte concentration in sample, Cy

Cy = (y) (D)

Example Calculation (LCS):

Value of A from plot:	101.2796	
Value of B from plot:	318.9056	
Value of C from plot:	-2.2712	
Absorbance of unknown from quantitation report (x):	0.1583	
Calculated concentration (y):	50.7495108	
Dilution factor (D):	1.00	
Concentration of analyte in sample, Cy:	50.75	mg/L

Microbac Laboratories Inc.

Data Checklist

Date: 26-NOV-2013
Analyst: BAF
Analyst: NA
Method: NH3
Instrument: SC
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG454401 WG454402 WG454400

Calibration/Linearity	11-26-2013
Second Source Check	X
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	X
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	BAF
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
26-NOV-2013

Brice Fenton

Secondary Reviewer:
27-NOV-2013

Dianna Hesson

CHECKLIST1 - Modified 03/05/2008
Generated: NOV-27-2013 07:15:56

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 350.1 AAB#: WG454400

Login Number: L13111086

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
SMW 1-1113-1	01	11/15/13					11/26/2013	11.1	28		11/26/13	11.1	28	
SMW 4-1113-1	02	11/15/13					11/26/2013	11.1	28		11/26/13	11.1	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 3230607
Report generated 11/27/2013 07:05

Microbac Laboratories Inc.

METHOD BLANK SUMMARY

Login Number: L13111086
Blank File ID: SC131126003.018
Prep Date: 11/26/13 13:10
Analyzed Date: 11/26/13 13:10
Analyst: BAF

Work Group: WG454400
Blank Sample ID: WG454400-01
Instrument ID: SMARTCHEM
Method: 350.1

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG454400-02	SC131126003.019	11/26/13 13:12	01
SMW 1-1113-1	L13111086-01	SC131126003.032	11/26/13 13:23	01
SMW 4-1113-1	L13111086-02	SC131126003.033	11/26/13 13:24	01
DUP	WG454400-06	SC131126003.045	11/26/13 13:35	01
LCS2	WG454400-03	SC131126003.090	11/26/13 14:15	01

Report Name: BLANK_SUMMARY
PDF File ID: 3230608
Report generated 11/27/2013 07:05

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L13111086 Prep Date: 11/26/13 13:10 Sample ID: WG454400-01
Instrument ID: SMARTCHEM Run Date: 11/26/13 13:10 Prep Method: 350.1
File ID: SC131126003.018 Analyst: BAF Method: 350.1
Workgroup (AAB#): WG454400 Matrix: Water Units: mg/L
Contract #: Cal ID: SMARTC-26-NOV-13

Analytes	LOD	LOQ	Concentration	Dilution	Qualifier
Nitrogen, Ammonia	0.0500	0.100	0.0702	1	*

LOD Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 3230609
27-NOV-2013 07:05

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L13111086 Analyst: BAF Prep Method: 350.1
Instrument ID: SMARTCHEM Matrix: Water Method: 350.1
Workgroup (AAB#): WG454400 Units: mg/L
QC Key: DOD4 Lot #: STD59167

Sample ID: WG454400-02 LCS File ID: SC131126003.019 Run Date: 11/26/2013 13:12
Sample ID: WG454400-03 LCS2 File ID: SC131126003.090 Run Date: 11/26/2013 14:15

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Nitrogen, Ammonia	2.00	1.83	91.7	2.00	2.08	104	12.6	90 - 110	20	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 3230610
Report generated: 11/27/2013 07:05

2.2.6.3 Raw Data

SMARTCHEM RUN LOG

(smartchem2, smartchem3)

WORKGROUP: WG454400

454401
454402

Daily Check

- [x] Lamp On
- [x] Probe Rinse Full
- [x] DI Water > ½ Full
- [x] Wash Solution > ½ Full
- [ ] NO3 Reagent bottle connected / purged
- [ ] NO3 pH adj to pH 5-9

Syringe filter lot # _____

- [x] WBL Run
- [x] Reagents Full
- [x] Dilution H_2O Full
- [x] Waste Container Check

1) **Workgroup** _____
Plan # 20131126003
2) **Workgroup** _____
Plan # _____
3) **Workgroup** _____
Plan # _____

Instrument: SC1 [x] SC2 [ ]

	Analyte	1	2	3
	NH3	Dilution		
SC Prepared Curve				
Position				
1-1	ICV 1.5			
1-2	Blk			
1-3	LCS 2			
1-4	LCSDUP			
1-5	11-1010-29			
1-6	31			
1-7	33			
1-8	35			
1-9	37			
1-10	39			
1-11	41			
1-12	43			
1-13	45			
1-14	11-1086-01			
1-15	02			
1-16	11-1112-01			
1-17	11-1115-01			
1-18	02			
1-19	03			
1-20	~~11-1122-01~~ 1222 [illegible] 11/22/13			
1-21	11-1124-01			
1-22	11-1143-02			
2-1	11-1154-01	Auto	1/4 x 1/3	
2-2	11-1367-02			
2-3	DUP 1010-29			

	Analyte	1	2	3
Position				
2-4	MS 1010-29			
2-5	MS 1010-31			
2-6	Blk			
2-7	LCS			
2-8	11-1239-01			
2-9	11-1281-01			
2-10	02			
2-11	03			
2-12	11-1286-01			
2-13	02			
2-14	03			
2-15	11-1287-01			
2-16	02			
2-17	03			
2-18	11-1289-01			
2-19	11-1317-01			
2-20	02			
2-21	03			
2-22	04			
2-23	11-1322-02			
2-24	04			
2-25	11-1324-01			
2-26	02			
3-1	11-1310-01			
3-2	DUP 1317-02			

NOTES:
* Run NO2 std on NO3 runs
* LCSD must be run if no MS or Duplicate
*MS(10% sample): NO3, TKN, NH3, PHOS

DCN#99101

SMARTCHEM RUN LOG
(smartchem2, smartchem3)

WORKGROUP: WG454400

Position	Analyte	1	2	3
3-3	MS 1317-02			
3-4	MS 1317-03			
3-5	Blk			
3-6	LCS			
3-7	LCSDUP			
3-8	11-1397-01			
3-9	02			
3-10	DUP ↓			
3-11	MS ↓			
3-12				
3-13	Blk			
3-14	LCSDUP			
3-15				

Position	Analyte	1	2	3
3-16				
3-17				
3-18				
3-19				
3-20				
3-21				
3-22				
3-23				
3-24				
3-25				
3-26				
3-27				
3-28				

	Chloride	EPA 325.2/SM 4500-CI E-2000
	Nitrate-Nitrite	EPA 353.2/SM 4500-NO3 F-2000
	Alkalinity	EPA 310.2
	Sulfate	EPA 375.4/SM 426C (15th)/ SM4500-504 E-1997

✓	Ammonia	EPA 350.1/SM 4500-NH3 B-1997
	TKN	EPA 351.2
	Phos	EPA 365.4

Analyte	NH3	NH3AA	Reagents
SOP & Revision	K3501 Rev 19 →		RGT28451
Curve Stock (SC made)	Std61226 →		RGT28431
NO2 STD			RGT28589
ICV	Std61525 →		
CCV	Std61225 →		
LCS	see dist. log	Std61423	
MS	Dilution	Std59167 0.1/10 (100) = 1	

Comments: _____

Analyst: Bruce Fenton Date: 11/26/13

DCN#99101

AMMONIA DISTILLATION LOG

SOP K3501 Revision # 18

10(100)/100 = 10.0

LCS: Std 59167 SPIKE: Std 59167 WATER (mg/L)

DAILY DIL. 10(10)/50 = 2.0 DAILY DIL. 5(10)/50 = 1.0 SOIL (mg/Kg)

☒ easy-dist method ☐ macro method RGT 28781 RGT 28276

SAMPLE	VOLUME DISTILLED (mL)	CHLORINE PRESENT?	pH ADJUSTED 9.5 ± 0.2	COMMENTS
BLANK	50	X	✓	
LCS( )	50	X	✓	
11-1010-29	50	X	✓	
-31	50	X	✓	
-33	50	X	✓	
-35	50	X	✓	
-37	50	X	✓	
-39	50	X	✓	
-41	50	X	✓	
-43	50	X	✓	
-45	50	X	✓	
11-1086-01	50	X	✓	
-02	50	X	✓	
11-1112-01	50	X	✓	
11-1115-01	50	X	✓	
-02	50	X	✓	
-03	50	X	✓	
eoe 11/26/13 11-1124-01	50	X	✓	
11-1129-01	50	X EPT 11/25/13	✓	
11-1143-02	50	~~50~~ X	✓	
11-1154-01	50	X	✓	
11-1367-02	50	X	✓	
DUP 11-1010-29	50	X	✓	
MS 11-1010-29	50	X	✓	
MS 11-1010-31	50	X	✓	

Analyst: Ethan Todd Date/Time: 11/25/13 0800

*MS required on 10% of samples (EPA 350.1)
*MS/MS required on each set of 20 samples (SM4500)

LCS 2	50	X	✓

AMMONIA DISTILLATION LOG

SOP K3501 Revision # 18

10(100)/100 = 10.0

LCS: Std 59167 SPIKE: Std 59167

WATER (mg/L)

DAILY DIL. 10(10)/50 = 2.0 DAILY DIL. 5(10)/50 = 1.0

SOIL (mg/Kg)

☒ easy-dist method ☐ macro method

RGT 28781
RGT 28276

SAMPLE	VOLUME DISTILLED (mL)	CHLORINE PRESENT?	pH ADJUSTED 9.5 ± 0.2	COMMENTS
BLANK	50	X	✓	
LCS( )	50	X	✓	
11-1239-01	50	X	✓	
11-1281-01	50	X	✓	
-02	50	X	✓	
-03	50	X	✓	
11-1286-01	50	X	✓	
-02	50	X	✓	
-03	50	X	✓	
11-1287-01	50	X	✓	
-02	50	X	✓	
-03	50	X	✓	
11-1289-01	50	X	✓	
11-1317-01	50	X	✓	
-02	50	X	✓	
-03	50	X	✓	
-04	50	✓	✓	
11-1322-02	50	X	✓	
-04	50	X	✓	
11-1324-01	50	✓	✓	
-02	50	X	✓	
11-1310-01	50	X	✓	
DUP 11-1317-02	50	X	✓	
MS 11-1317-02	50	X	✓	
MS 11-1317-03	50	X	✓	

Analyst: Ethan Todd Date/Time: 11/25/13 1445

*MS required on 10% of samples (EPA 350.1)
*MS/MS required on each set of 20 samples (SM4500)

D3987 Work Group Daily Log

Date : 11/24/13

#	Microbac Sample #	Due Date	NH3	COD	OG	CN	TS									Comments
1	11-1310-1	11/27	✓	✓	✓		✓									
2	FBIK		✓	✓	✓		✓									
3																
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																
16																
17																
18																
19																
20																
21																
22																

Agitated	Work Group	Run ID
NH3	454129	
COD	454130	
OG	454131	
TS	454132	

Filtered	Work Group	Run ID

✓ = Perform analysis
☆ = Perform analysis and spike sample

Comments: _____

Peer Reviewed by: _____ Date: _____

Generated: 12/03/2013 12:30

MICROBAC (OVD)
SMARTCHEM200 INST1 (VER3.1.14)
NH3, TKN, NO3NO2 (MG/L N)
ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WNH3 -Unit [mg/L] - EPA 350.1/SM4500-NH3 AMMONIA

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
DIL-1	RBL	0.000	0.0485	0.00		12:52:45 PM
DIL-1	RBL	0.000	0.0513	0.00		12:53:03 PM
DIL-1	RBL	0.000	0.0512	0.00		12:54:33 PM
DIL-1	Std-1	0.000	-0.0016	0.00	INV	12:54:51 PM
SR5-1	Std-2	0.030	0.0071	0.00		12:56:21 PM
SR5-2	Std-3	***	0.0303	0.00	SS	12:56:39 PM
SR5-3	Std-4	***	0.1837	0.00	SS	12:59:04 PM
SR5-4	Std-5	***	0.3245	0.00	SS	12:59:21 PM
SR5-5	Std-6	***	0.6394	0.00	SS	1:03:51 PM
ST-1	Std-7	3.000	0.9314	0.00		1:04:10 PM
ST-3	1CCV (1.5 mg/L)	1.388	0.4276	92.52		1:08:39 PM
ST-2	2CCB (0 mg/L)	-0.001	-0.0018	0.00	INV,><,LL	1:08:57 PM
1	ICV	1.486	0.4580	0.00		1:10:27 PM
2	WG454400-01 BLK	0.070	0.0202	0.00		1:10:45 PM
3	WG454400-02 LCS	1.833	0.5654	0.00		1:12:16 PM
4	WG454400-03 LCSDUP	X1.756	0.5415	0.00		1:12:34 PM
5	L13111010-29	0.088	0.0257	0.00		1:14:04 PM
6	L13111010-31	0.062	0.0177	0.00		1:14:22 PM
7	L13111010-33	0.508	0.1556	0.00		1:15:52 PM
8	L13111010-35	0.423	0.1293	0.00		1:16:10 PM
9	L13111010-37	0.676	0.2074	0.00		1:17:40 PM
10	L13111010-39	0.261	0.0793	0.00		1:17:58 PM
ST-3	1CCV (1.5 mg/L)	1.419	0.4373	94.61		1:19:28 PM
ST-2	2CCB (0 mg/L)	0.000	-0.0014	0.00	INV	1:19:46 PM
11	L13111010-41	0.052	0.0145	0.00		1:21:16 PM
12	L13111010-43	0.145	0.0434	0.00		1:21:34 PM
13	L13111010-45	0.172	0.0517	0.00		1:23:04 PM
14	L13111086-01	0.043	0.0119	0.00		1:23:22 PM
15	L13111086-02	0.063	0.0181	0.00		1:24:52 PM
16	L13111112-01	0.055	0.0156	0.00		1:25:10 PM
17	L13111115-01	0.106	0.0314	0.00		1:26:40 PM
18	L13111115-02	0.143	0.0426	0.00		1:26:58 PM

Report Date :11/26/2013 **Run Date :11/26/2013** **Operator : WESTCO** **Plan # :20131126003**

Plan Description : NH3-A1-BAF/11/26/2013

MICROBAC (OVD)

SMARTCHEM200 INST1 (VER3.1.14)

NH3, TKN, NO3NO2 (MG/L N)

ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WNH3 -Unit [mg/L] - EPA 350.1/SM4500-NH3 AMMONIA

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
19	L13111115-03	0.042	0.0114	0.00		1:28:28 PM
20	L13111122-01	X3.823	1.1806	0.00	><,LH	1:28:46 PM
ST-3	1CCV (1.5 mg/L)	1.447	0.4460	96.48		1:30:16 PM
ST-2	2CCB (0 mg/L)	-0.011	-0.0049	0.00	INV,><,LL	1:30:34 PM
21	L13111124-01	2.660	0.8210	0.00		1:32:04 PM
22	L13111143-02	1.550	0.4778	0.00		1:32:22 PM
23	L13111154-01	X14.311	4.4235	0.00	EPL,><,LH	1:33:52 PM
24	L13111367-02	X5.135	1.5862	0.00	><,LH	1:34:10 PM
25	WG454400-06 DUP	0.187	0.0563	0.00		1:35:40 PM
26	WG454400-07 MS	0.990	0.3047	0.00		1:35:58 PM
27	WG454400-08 MS	0.895	0.2752	0.00		1:37:28 PM
28	WG454401-01 BLK	0.023	0.0056	0.00		1:37:46 PM
29	WG454401-02 LCS	1.852	0.5710	0.00		1:39:16 PM
30	L13111239-01	0.044	0.0120	0.00		1:39:34 PM
ST-3	1CCV (1.5 mg/L)	1.449	0.4466	96.61		1:41:04 PM
ST-2	2CCB (0 mg/L)	-0.007	-0.0036	0.00	INV,><,LL	1:41:22 PM
31	L13111281-01	0.036	0.0096	0.00		1:42:52 PM
32	L13111281-02	0.021	0.0049	0.00		1:43:10 PM
33	L13111281-03	0.028	0.0071	0.00		1:44:40 PM
34	L13111286-01	0.081	0.0236	0.00		1:44:58 PM
35	L13111286-02	0.071	0.0205	0.00		1:46:28 PM
36	L13111286-03	0.122	0.0363	0.00		1:46:46 PM
37	L13111287-01	0.192	0.0579	0.00		1:48:17 PM
38	L13111287-02	0.064	0.0184	0.00		1:48:35 PM
39	L13111287-03	0.071	0.0205	0.00		1:50:05 PM
40	L13111289-01	0.343	0.1044	0.00		1:50:23 PM
ST-3	1CCV (1.5 mg/L)	1.448	0.4462	96.53		1:51:53 PM
ST-2	2CCB (0 mg/L)	-0.010	-0.0047	0.00	INV,><,LL	1:52:11 PM
41	L13111317-01	0.085	0.0248	0.00		1:53:41 PM
42	L13111317-02	0.077	0.0223	0.00		1:53:59 PM
43	L13111317-03	0.211	0.0638	0.00		1:55:29 PM
44	L13111317-04	0.108	0.0318	0.00		1:55:47 PM

Report Date :11/26/2013 **Run Date :11/26/2013** **Operator : WESTCO** **Plan # :20131126003**

Plan Description : NH3-A1-BAF/11/26/2013

MICROBAC (OVD)

SMARTCHEM200 INST1 (VER3.1.14)

NH3, TKN, NO3NO2 (MG/L N)

ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WNH3 -Unit [mg/L] - EPA 350.1/SM4500-NH3 AMMONIA

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
45	L13111322-02	0.108	0.0320	0.00		1:57:17 PM
46	L13111322-04	0.111	0.0329	0.00		1:57:35 PM
47	L13111324-01	1.491	0.4596	0.00		1:59:05 PM
48	L13111324-02	0.053	0.0148	0.00		1:59:23 PM
49	L13111310-01	0.188	0.0566	0.00		2:00:53 PM
50	WG454401-05 DUP	0.044	0.0121	0.00		2:01:11 PM
ST-3	1CCV (1.5 mg/L)	1.490	0.4592	99.33		2:02:41 PM
ST-2	2CCB (0 mg/L)	-0.008	-0.0041	0.00	INV,><,LL	2:02:59 PM
51	WG454401-06 MS	1.074	0.3306	0.00		2:04:29 PM
52	WG454401-07 MS	0.958	0.2948	0.00		2:04:47 PM
53	WG454402-01 BLK	X0.038	0.0103	0.00		2:06:17 PM
54	WG454402-02 LCS	2.099	0.6476	0.00		2:06:35 PM
55	WG454402-03 LCSDUP	2.047	0.6315	0.00		2:08:05 PM
56	L13111397-01	0.037	0.0098	0.00		2:08:23 PM
57	L13111397-02	-0.003	-0.0023	0.00	INV,><,LL	2:09:53 PM
58	WG454402-05 DUP	0.011	0.0019	0.00		2:10:11 PM
59	WG454402-06 MS	1.016	0.3126	0.00		2:11:41 PM
60	ID 60	0.006	0.0003	0.00		2:11:59 PM
ST-3	1CCV (1.5 mg/L)	1.459	0.4495	97.24		2:13:29 PM
ST-2	2CCB (0 mg/L)	-0.015	-0.0062	0.00	INV,><,LL	2:13:47 PM
61	ID 61 Blk	-0.014	-0.0058	0.00	INV,><,LL	2:15:18 PM
62	ID 62 LCSDUP	2.080	0.6417	0.00		2:15:35 PM
63	ID 63	2.084	0.6428	0.00		2:17:05 PM
64	ID 64	2.045	0.6307	0.00		2:17:23 PM
ST-3	1CCV (1.5 mg/L)	1.441	0.4439	96.03		2:18:54 PM
ST-2	2CCB (0 mg/L)	-0.013	-0.0056	0.00	INV,><,LL	2:19:12 PM
20-[1/2]	L13111122-01	3.459	0.5333	0.00	LH	2:31:22 PM
23-[1/2]	L13111154-01 (4)	X30.501	4.7139	0.00	><,LH	2:33:10 PM
24-[1/2]	L13111367-02	4.779	0.7373	0.00	LH	2:34:58 PM
ST-3	1CCV (1.5 mg/L)	1.486	0.4579	99.05		2:34:58 PM
ST-2	2CCB (0 mg/L)	-0.001	-0.0018	0.00	INV,><,LL	2:36:28 PM
23-[1/5]	L13111154-01 (4)(3)	X28.989	1.7912	0.00	><,LH	2:48:38 PM

Report Date :11/26/2013 **Run Date :11/26/2013** **Operator : WESTCO** **Plan # :20131126003**

Plan Description : NH3-A1-BAF/11/26/2013

MICROBAC (OVD)
SMARTCHEM200 INST1 (VER3.1.14)
NH3, TKN, NO3NO2 (MG/L N)
ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WNH3 -Unit [mg/L] - EPA 350.1/SM4500-NH3 AMMONIA

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
ST-3	1CCV (1.5 mg/L)	1.378	0.4246	91.87		2:48:38 PM
ST-2	2CCB (0 mg/L)	-0.009	-0.0043	0.00	INV,><,LL	2:50:08 PM
23-[1/10]	L13111154-01 (4)(3)	X 31.413	0.9698	0.00	><,LH	3:02:19 PM
ST-3	1CCV (1.5 mg/L)	1.488	0.4587	99.22		3:02:19 PM
ST-2	2CCB (0 mg/L)	0.005	-0.0001	0.00	INV	3:03:49 PM
23-[1/25]	L13111154-01 (4)(3)	30.983	0.3817	0.00	LH	3:15:59 PM
ST-3	1CCV (1.5 mg/L)	1.504	0.4635	100.26		3:15:59 PM
ST-2	2CCB (0 mg/L)	0.001	-0.0012	0.00	INV	3:17:29 PM

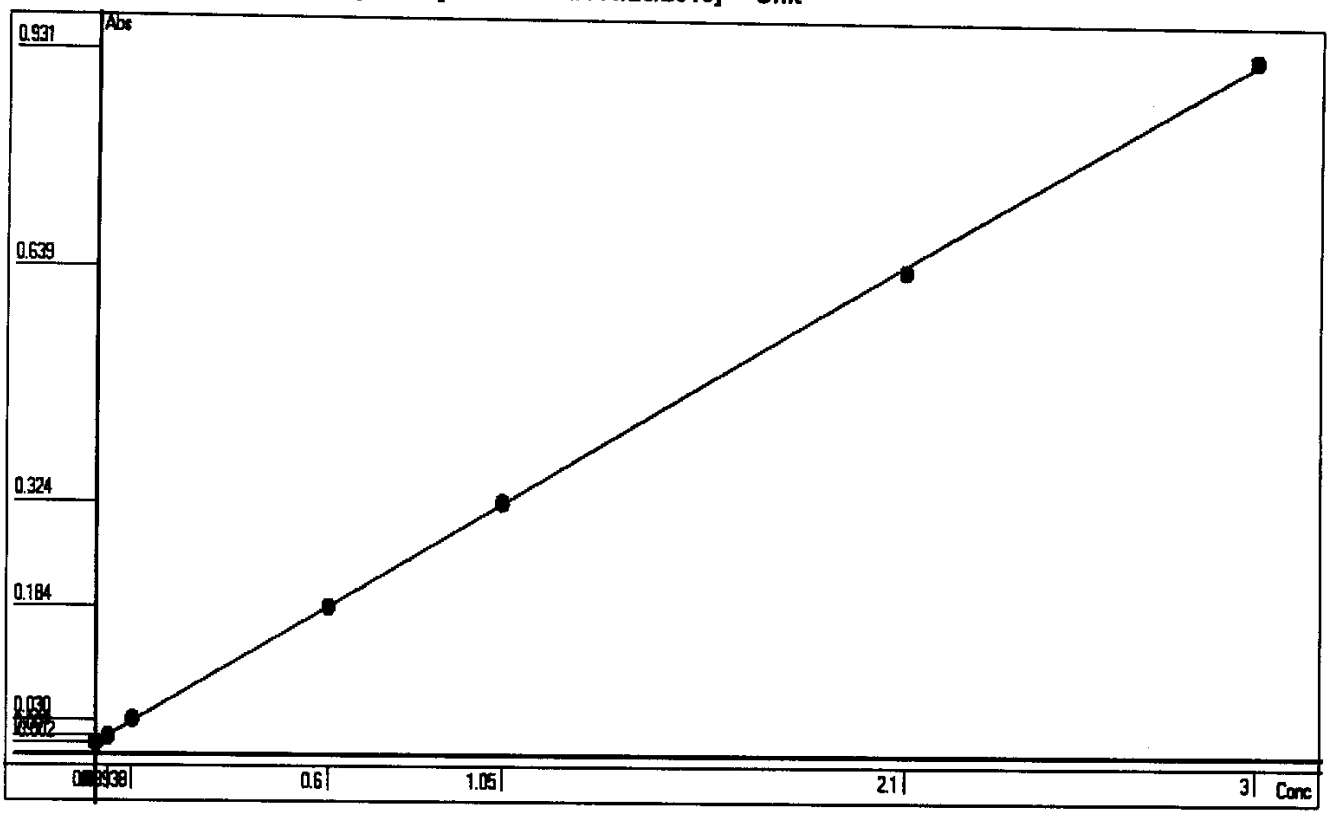
Report Date :11/26/2013 **Run Date :11/26/2013** **Operator : WESTCO** **Plan # :20131126003**

Plan Description : NH3-A1-BAF/11/26/2013

Calibrant Report - WNH3 -

Calib Lot #:010104 Exp Date:6/17/2020 User:Westco Scientific

Plan # : 20131126003 Description : [NH3-A1-BAF/11/26/2013] Unit



Point	OD	Conc	Recalc Conc	% Error
1	-0.0016	0	-0.0002	-0.02
2	0.0071	0.03	0.0280	-6.67
3	0.0302	0.0938	0.1027	9.49
4	0.1837	0.6	0.5991	-0.15
5	0.3244	1.05	1.0541	0.39
6	0.6393	2.1	2.0726	-1.30
7	0.9313	3	3.0169	0.56

Conc= +3.2341*Abso +0.005 R^2=0.9999

RBL
0.0512
0

Report Date 11/26/2013 Run Date 11/26/2013

2.2.7 Nitrate Data

2.2.7.1 Summary Data

Login Number: L13111086
Department: Conventionals
Analyst: Brice Fenton

METHOD

Analysis EPA 353.2/SM4500-NO3 F (Nitrate)

HOLDING TIMES

Sample Analysis: The instrument used for the analysis of nitrate only analyzes for nitrate-nitrite (NO3NO2) which is the amount of total nitrate (NO3) and nitrite (NO2) combined. The NO3 concentration is determined by analyzing for NO3NO2 and NO2 and calculating NO3 by the difference. An unpreserved bottle only has a 48 hour hold time for NO3 and NO2 separately. However if the bottle is preserved with sulfuric acid, the hold time for NO3NO2 is 28 days. The NO2 was analyzed within 48 hours. The NO3NO2 was analyzed from a preserved container within 28 days..

PREPARATION

Sample preparation proceeded normally.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Matrix Spikes: All acceptance criteria were met.

Duplicates: All acceptance criteria were met.

SAMPLES

Samples: All acceptance criteria were met.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Microbac Laboratories Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Narrative ID: 75488
Approved By: Deanna Hesson

Dannadsson

Microbac

Lab Report #: L13111086
Lab Project #: 3005.011
Project Name: White Sands MR
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L13111086-01	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	SMW 1-1113-1	**Prep Method:**	353.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	353.2	**Cal Date:**	11/18/2013 10:58
Workgroup #:	WG453286	**Analyst:**	BAF	**Run Date:**	11/18/2013 17:46
Collect Date:	11/15/2013 10:00	**Dilution:**	4	**File ID:**	SC13112213194201
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Nitrate-Nitrite (as N)		2.86		0.200	0.100

Sample #:	L13111086-02	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	SMW 4-1113-1	**Prep Method:**	353.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	353.2	**Cal Date:**	11/18/2013 10:58
Workgroup #:	WG453287	**Analyst:**	BAF	**Run Date:**	11/18/2013 18:25
Collect Date:	11/15/2013 11:50	**Dilution:**	4	**File ID:**	SC13112213251801
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Nitrate-Nitrite (as N)		3.08		0.200	0.100

2.2.7.2 QC Summary Data

Example Calculations for Visible Spectrophotometric Methods

Linear Calibration Model

Step 1 - Retrieve Curve Data from ICAL

m = slope of the linear equation
b = intercept from the linear equation
y = instrument response as absorbance or OD
x = concentration of analyte (mg/L)
y = mx + b

Step 2: Calculate the instrument concentration, x

Where:

x = (y - b)/m

Step 3: Solve for analyte concentration in sample, Cx

Cx = (x) (D)

Example Calculation (LCS):

Value of m from plot:	7.809	
Value of b from plot:	0.0004135	
Absorbance of unknown from quantitation report (y):	0.31	
Calculated concentration (x):	0.03964483	
Dilution factor (D):	1.00	
Concentration of analyte in sample, Cy:	0.0396	mg/L

SmartChem Autoanalyzer - Quadratic Calibration for Chloride and Sulfate

Step 1 - Retrieve Curve Data from Smartchem ICAL

A, B, C = constants from the ICAL quadratic regression

x = instrument response as absorbance or OD

y = concentration of analyte (mg/L)

Step 2: Calculate the instrument concentration, y

Where:

y = Ax^2 + Bx + C

Step 3: Solve for analyte concentration in sample, Cy

Cy = (y) (D)

Example Calculation (LCS):

Value of A from plot:	101.2796	
Value of B from plot:	318.9056	
Value of C from plot:	-2.2712	
Absorbance of unknown from quantitation report (x):	0.1583	
Calculated concentration (y):	50.7495108	
Dilution factor (D):	1.00	
Concentration of analyte in sample, Cy:	50.75	mg/L

Microbac Laboratories Inc.

Data Checklist

Date: 18-NOV-2013
Analyst: BAF
Analyst: NA
Method: NO3
Instrument: SC
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG453286 WG453287

Calibration/Linearity	11-18-2013
Second Source Check	X
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	X
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	BAF
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
19-NOV-2013

Brice Fenton

Secondary Reviewer:
22-NOV-2013

Dianna Hesson

CHECKLIST1 - Modified 03/05/2008
Generated: NOV-22-2013 13:01:47

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 353.2 AAB#: WG453286

Login Number: L13111086

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
SMW 1-1113-1	01	11/15/13					11/18/2013	3.3	28		11/18/13	3.3	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 3222612
Report generated 11/22/2013 16:08

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 353.2 AAB#: WG453287

Login Number: L13111086

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
SMW 4-1113-1	02	11/15/13					11/18/2013	3.3	28		11/18/13	3.3	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 3222612
Report generated 11/22/2013 16:08

Microbac Laboratories Inc.

METHOD BLANK SUMMARY

Login Number: L13111086
Blank File ID: SC13112213020801
Prep Date: 11/18/13 17:46
Analyzed Date: 11/18/13 17:46
Analyst: BAF

Work Group: WG453286
Blank Sample ID: WG453286-01
Instrument ID: SMARTCHEM
Method: 353.2

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
DUP	WG453286-05	SC13112213023001	11/18/13 17:46	
LCS	WG453286-02	SC13112213021401	11/18/13 17:46	
LCS2	WG453286-03	SC13112213021801	11/18/13 17:46	
SMW 1-1113-1	L13111086-01	SC13112213194201	11/18/13 17:46	

Report Name: BLANK_SUMMARY
PDF File ID: 3222613
Report generated 11/22/2013 16:08

Microbac Laboratories Inc.

METHOD BLANK SUMMARY

Login Number: L13111086
Blank File ID: SC13112213204901
Prep Date: 11/18/13 18:25
Analyzed Date: 11/18/13 18:25
Analyst: BAF

Work Group: WG453287
Blank Sample ID: WG453287-01
Instrument ID: SMARTCHEM
Method: 353.2

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
SMW 4-1113-1	L13111086-02	SC13112213251801	11/18/13 18:25	
DUP	WG453287-06	SC13112213211601	11/18/13 18:25	
LCS	WG453287-02	SC13112213205501	11/18/13 18:25	
LCS2	WG453287-03	SC13112213205901	11/18/13 18:25	

Report Name: BLANK_SUMMARY
PDF File ID: 3222613
Report generated 11/22/2013 16:08

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L13111086 Prep Date: 11/18/13 17:46 Sample ID: WG453286-01
Instrument ID: SMARTCHEM Run Date: 11/18/13 17:46 Prep Method: 353.2
File ID: SC13112213020801 Analyst: BAF Method: 353.2
Workgroup (AAB#): WG453286 Matrix: Water Units: mg/L
Contract #: Cal ID: SMARTC-18-NOV-13

Analytes	LOD	LOQ	Concentration	Dilution	Qualifier
Nitrate-Nitrite (as N)	0.0250	0.0500	0.0250	1	U

LOD Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 3222614
22-NOV-2013 16:08

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L13111086 Prep Date: 11/18/13 18:25 Sample ID: WG453287-01
Instrument ID: SMARTCHEM Run Date: 11/18/13 18:25 Prep Method: 353.2
File ID: SC13112213204901 Analyst: BAF Method: 353.2
Workgroup (AAB#): WG453287 Matrix: Water Units: mg/L
Contract #: Cal ID: SMARTC-18-NOV-13

Analytes	LOD	LOQ	Concentration	Dilution	Qualifier
Nitrate-Nitrite (as N)	0.0250	0.0500	0.0250	1	U

LOD Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 3222614
22-NOV-2013 16:08

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L13111086 Analyst: BAF Prep Method: 353.2
Instrument ID: SMARTCHEM Matrix: Water Method: 353.2
Workgroup (AAB#): WG453286 Units: mg/L
QC Key: DOD4 Lot #: STD61085

Sample ID: WG453286-02 LCS File ID: SC13112213021401 Run Date: 11/18/2013 17:46
Sample ID: WG453286-03 LCS2 File ID: SC13112213021801 Run Date: 11/18/2013 17:46

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Nitrate-Nitrite (as N)	1.00	0.976	97.6	1.00	0.956	95.6	2.07	90 - 110	15	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 3222615
Report generated: 11/22/2013 16:08

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L13111086 Analyst: BAF Prep Method: 353.2
Instrument ID: SMARTCHEM Matrix: Water Method: 353.2
Workgroup (AAB#): WG453287 Units: mg/L
QC Key: DOD4 Lot #: STD61085

Sample ID: WG453287-02 LCS File ID: SC13112213205501 Run Date: 11/18/2013 18:25
Sample ID: WG453287-03 LCS2 File ID: SC13112213205901 Run Date: 11/18/2013 18:25

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Nitrate-Nitrite (as N)	1.00	0.976	97.6	1.00	0.993	99.3	1.73	90 - 110	15	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 3222615
Report generated: 11/22/2013 16:08

2.2.7.3 Raw Data

SMARTCHEM RUN LOG

(smartchem2, smartchem3)

WORKGROUP: WG453286

453287

Daily Check

- [x] Lamp On
- [x] Probe Rinse Full
- [x] DI Water > ½ Full
- [x] Wash Solution > ½ Full
- [x] NO3 Reagent bottle connected / purged
- [x] NO3 pH adj to pH 5-9

Syringe filter lot # 169000

- [x] WBL Run
- [x] Reagents Full
- [x] Dilution H_2O Full
- [x] Waste Container Check

1) **Workgroup** _____
Plan # 20131118003
2) **Workgroup** _____
Plan # _____
3) **Workgroup** _____
Plan # _____

Instrument: SC1 [x] SC2 [ ]

	Analyte	1	2	3
	NO3	Dilution		
SC Prepared Curve				
Position				
1-1	ICV 1.5			
1-2	Blk			
1-3	LCS 1			
1-4	LCSDUP			
1-5	NO2 1			
1-6	11-808-01			
1-7	02			
1-8	03			
1-9	04			
1-10	05			
1-11	06			
1-12	11-842-01			
1-13	11-843-01			
1-14	11-953-01			
1-15	05			
1-16	08			
1-17	09			
1-18	10			
1-19	11			
1-20	12			
1-21	~~11-998-04~~	11-1086-01		
1-22	11-880-01			
2-1	DUP 01			
2-2	MS 02			
2-3	MSD 03			

	Analyte	1	2	3
Position				
2-4	11-880-04			
2-5	11-933-02	1/10		
2-6	11-951-03			
2-7	MS 880-04			
2-8	Blk			
2-9	LCS			
2-10	LCSDUP			
2-11	11-951-04			
2-12	11-954-01			
2-13	02			
2-14	03			
2-15	11-758-01			
2-16	02			
2-17	11-833-01			
2-18	02			
2-19	11-859-01	Auto 1/2		
2-20	11-928-01			
2-21	02			
2-22	03			
2-23	DUP 758-01			
2-24	MS ↓			
2-25	MS 758-02			
2-26	11-1086-02			
3-1				
3-2	NO2 check			

NOTES:
* Run NO2 std on NO3 runs
* LCSD must be run if no MS or Duplicate
*MS(10% sample): NO3, TKN, NH3, PHOS

DCN#98940

SMARTCHEM RUN LOG

(smartchem2, smartchem3)

WORKGROUP: WG453286

Position	Analyte	1	2	3
3-3				
3-4				
3-5				
3-6				
3-7				
3-8				
3-9				
3-10				
3-11				
3-12				
3-13				
3-14				
3-15				

Position	Analyte	1	2	3
3-16				
3-17				
3-18				
3-19				
3-20				
3-21				
3-22				
3-23				
3-24				
3-25				
3-26				
3-27				
3-28				

	Chloride	EPA 325.2/SM 4500-Cl E-2000
√	Nitrate-Nitrite	EPA 353.2/SM 4500-NO3 F-2000
	Alkalinity	EPA 310.2
	Sulfate	EPA 375.4/SM 426C (15th)/ SM4500-504 E-1997

	Ammonia	EPA 350.1/SM 4500-NH3 B-1997
	TKN	EPA 351.2
	Phos	EPA 365.4

Analyte	NO3		Reagents
SOP & Revision	K3532 Rev.19		RGT28425
Curve Stock (SC made)	Std61254		RGT28286
NO2 STD	Std61424		
ICV	Std61421		
CCV	Std60957		
LCS	Std61422		
MS	Std58660 Dilution 0.1/5(25)=0.5		

Comments: _____

Analyst: Bruce Fenton Date: 11/18/13

DCN#98940

MICROBAC (OVD)
SMARTCHEM200 INST1 (VER3.1.14)
NH3, TKN, NO3NO2 (MG/L N)
ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WNO3 -Unit [mg/L] - EPA 353.2 Nitrate-Nitrite

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
DIL-1	RBL	0.000	0.0250	0.00		5:31:38 PM
DIL-1	RBL	0.000	0.0260	0.00		5:32:50 PM
DIL-1	RBL	0.000	0.0281	0.00		5:34:02 PM
DIL-1	RBL	0.000	0.0269	0.00		5:35:14 PM
DIL-1	Std-1	0.000	0.0076	0.00		5:36:26 PM
SR5-1	Std-2	0.040	0.0126	0.00		5:37:38 PM
SR5-2	Std-3	0.100	0.0339	0.00		5:38:50 PM
SR5-3	Std-4	0.500	0.1684	0.00		5:40:02 PM
SR5-4	Std-5	1.000	0.3388	0.00		5:41:14 PM
ST-1	Std-6	2.000	0.6891	0.00		5:42:26 PM
ST-3	1CCV (1 mg/L)	0.962	0.3303	96.22		5:43:38 PM
ST-2	2CCB (0 mg/L)	0.004	0.0018	0.00	><	5:44:50 PM
1	ICV	1.493	0.5124	0.00		5:46:02 PM
2	WG453286-01 BLK	-0.003	-0.0008	0.00	INV,><,LL	5:47:15 PM
3	WG453286-02 LCS	0.976	0.3349	0.00		5:48:27 PM
4	WG453286-03 LCSDUP	0.956	0.3282	0.00		5:49:39 PM
5	NO2	X 0.769	0.2640	0.00		5:50:51 PM
6	L13110808-01	X7.385	2.5324	0.00	><,LH	5:52:03 PM
7	L13110808-02	1.394	0.4782	0.00	0	5:53:15 PM
8	L13110808-03	0.259	0.0893	0.00	0.003	5:54:27 PM
9	L13110808-04	0.265	0.0913	0.00	0	5:55:39 PM
10	L13110808-05	X7.483	2.5657	0.00	><,LH	5:56:51 PM
ST-3	1CCV (1 mg/L)	0.968	0.3323	96.81		5:58:03 PM
ST-2	2CCB (0 mg/L)	0.003	0.0013	0.00	><	5:59:15 PM
11	L13110808-06	0.603	0.2071	0.00	0	6:00:27 PM
12	L13110842-01	0.356	0.1224	0.00	0.005	6:01:39 PM
13	L13110843-01	0.242	0.0832	0.00	0	6:02:51 PM
14	L13110953-01	0.272	0.0935	0.00	0.004	6:04:03 PM
15	L13110953-05	0.612	0.2102	0.00	0	6:05:15 PM
16	L13110953-08	0.228	0.0787	0.00	0	6:06:27 PM
17	L13110953-09	0.487	0.1672	0.00	0.0046	6:07:39 PM
18	L13110953-10	0.295	0.1014	0.00	0.0043	6:08:51 PM

Report Date :11/19/2013 **Run Date :11/19/2013** **Operator : WESTCO** **Plan # :20131118003**

Plan Description : NO3-A1-BAF/11/18/2013

MICROBAC (OVD)

SMARTCHEM200 INST1 (VER3.1.14)

NH3, TKN, NO3NO2 (MG/L N)

ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WNO3 -Unit [mg/L] - EPA 353.2 Nitrate-Nitrite

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
19	L13110953-11	0.286	0.0986	0.00	3	6:10:03 PM
20	L13110953-12	0.337	0.1159	0.00	0.004	6:11:15 PM
ST-3	1CCV (1 mg/L)	0.970	0.3328	96.95		6:12:27 PM
ST-2	2CCB (0 mg/L)	-0.002	-0.0003	0.00	INV,><,LL	6:13:39 PM
21	~~L13110998-04~~ 11-1086-01	X2.710	0.9294	0.00	><,LH	6:14:51 PM
22	L13110880-01	0.242	0.0833	0.00	0	6:16:03 PM
23	WG453286-05 DUP	0.242	0.0832	0.00		6:17:15 PM
24	L13110880-02 MS	0.602	0.2068	0.00		6:18:27 PM
25	L13110880-03 MSD	0.565	0.1941	0.00		6:19:39 PM
26	L13110880-04	0.301	0.1037	0.00	0	6:20:51 PM
27	L13110933-02 (10)	1.471	0.5046	0.00	0.228	6:22:03 PM
28	L13110951-03	0.230	0.0794	0.00	0	6:23:15 PM
29	WG453286-09 MS	0.750	0.2574	0.00		6:24:27 PM
30	WG453287-01 BLK	-0.004	-0.0009	0.00	INV,><,LL	6:25:39 PM
ST-3	1CCV (1 mg/L)	0.958	0.3288	95.79		6:26:51 PM
ST-2	2CCB (0 mg/L)	0.001	0.0006	0.00	><	6:28:03 PM
31	WG453287-02 LCS	0.976	0.3350	0.00		6:29:15 PM
32	WG453287-03 LCSDUP	0.993	0.3410	0.00		6:30:27 PM
33	L13110951-04	0.231	0.0797	0.00	0	6:31:39 PM
34	L13110954-01	0.614	0.2108	0.00	0.027	6:32:51 PM
35	L13110954-02	0.915	0.3140	0.00	0	6:34:03 PM
36	L13110954-03	0.818	0.2809	0.00	0	6:35:15 PM
37	L13110758-01	1.367	0.4689	0.00		6:36:27 PM
38	L13110758-02	1.614	0.5538	0.00		6:37:40 PM
39	L13110833-01	X4.187	1.4359	0.00	><,LH	6:38:52 PM
40	L13110833-02	X 2.309	0.7920	0.00	><,LH	6:40:04 PM
ST-3	1CCV (1 mg/L)	0.951	0.3263	95.06		6:41:16 PM
ST-2	2CCB (0 mg/L)	-0.003	-0.0006	0.00	INV,><,LL	6:42:28 PM
41	L13110859-01	X11.159	3.8260	0.00	EPL,><,LH	6:43:40 PM
42	L13110928-01	X 7.803	2.6754	0.00	EPL,><,LH	6:44:52 PM
43	L13110928-02	X 7.649	2.6228	0.00	EPL,><,LH	6:46:04 PM
44	L13110928-03	X 4.656	1.5966	0.00	><,LH	6:47:16 PM

Report Date :11/19/2013 **Run Date :11/19/2013** **Operator : WESTCO** **Plan # :20131118003**

Plan Description : NO3-A1-BAF/11/18/2013

MICROBAC (OVD)
SMARTCHEM200 INST1 (VER3.1.14)
NH3, TKN, NO3NO2 (MG/L N)
ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WNO3 -Unit [mg/L] - EPA 353.2 Nitrate-Nitrite

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
45	WG453287-06 DUP	1.222	0.4195	0.00		6:48:28 PM
46	WG453287-07 MS	1.768	0.6065	0.00		6:49:40 PM
47	WG453287-08 MS	ok 2.053	0.7044	0.00	><,LH	6:50:52 PM
48	ID 48 11-1086-02	X 3.036	1.0412	0.00	><,LH	6:52:04 PM
49	ID 49	-0.008	-0.0024	0.00	INV,><,LL	6:53:16 PM
50	ID 50 NO2	0.944	0.3239	0.00		6:54:28 PM
ST-3	1CCV (1 mg/L)	0.951	0.3264	95.09		6:55:40 PM
ST-2	2CCB (0 mg/L)	-0.002	-0.0003	0.00	INV,><,LL	6:56:52 PM
51	ID 51	0.972	0.3335	0.00		6:58:04 PM
52	ID 52	1.155	0.3965	0.00		6:59:16 PM
ST-3	1CCV (1 mg/L)	0.952	0.3268	95.20		7:00:28 PM
6-[1/4]	L13110808-01	7.255	0.6222	0.00	O LH	7:09:29 PM
10-[1/4]	L13110808-05	7.573	0.6495	0.00	O LH	7:11:35 PM
21-[1/4]	~~L13110998-04~~ 11-1086-01	2.862	0.2457	0.00	LH	7:13:41 PM
39-[1/4]	L13110833-01	4.218	0.3619	0.00	LH	7:15:47 PM
40-[1/4]	L13110833-02	2.274	0.1953	0.00	LH	7:17:52 PM
41-[1/4]	L13110859-01(2)	X 10.070	0.8635	0.00	><,LH	7:19:58 PM
42-[1/4]	L13110928-01	7.728	0.6628	0.00	LH	7:22:04 PM
43-[1/4]	L13110928-02	7.635	0.6548	0.00	LH	7:24:11 PM
ST-3	1CCV (1 mg/L)	0.934	0.3206	93.39		7:25:04 PM
44-[1/4]	L13110928-03	4.852	0.4163	0.00	LH	7:27:28 PM
47-[1/4]	WG453287-08 MS	2.100	0.1804	0.00	LH	7:29:34 PM
ST-2	2CCB (0 mg/L)	-0.004	-0.0011	0.00	INV,><,LL	7:30:28 PM
48-[1/4]	~~ID 48~~ 11-1086-02	3.080	0.2644	0.00	LH	7:32:52 PM
ST-3	1CCV (1 mg/L)	0.975	0.3345	97.45		7:33:46 PM
ST-2	2CCB (0 mg/L)	0.006	0.0025	0.00	><	7:34:58 PM
41-[1/8]	L13110859-01(2)	10.449	0.4482	0.00	LH	7:44:08 PM
ST-3	1CCV (1 mg/L)	0.909	0.3120	90.89		7:45:02 PM
ST-2	2CCB (0 mg/L)	-0.006	-0.0018	0.00	INV,><,LL	7:46:14 PM

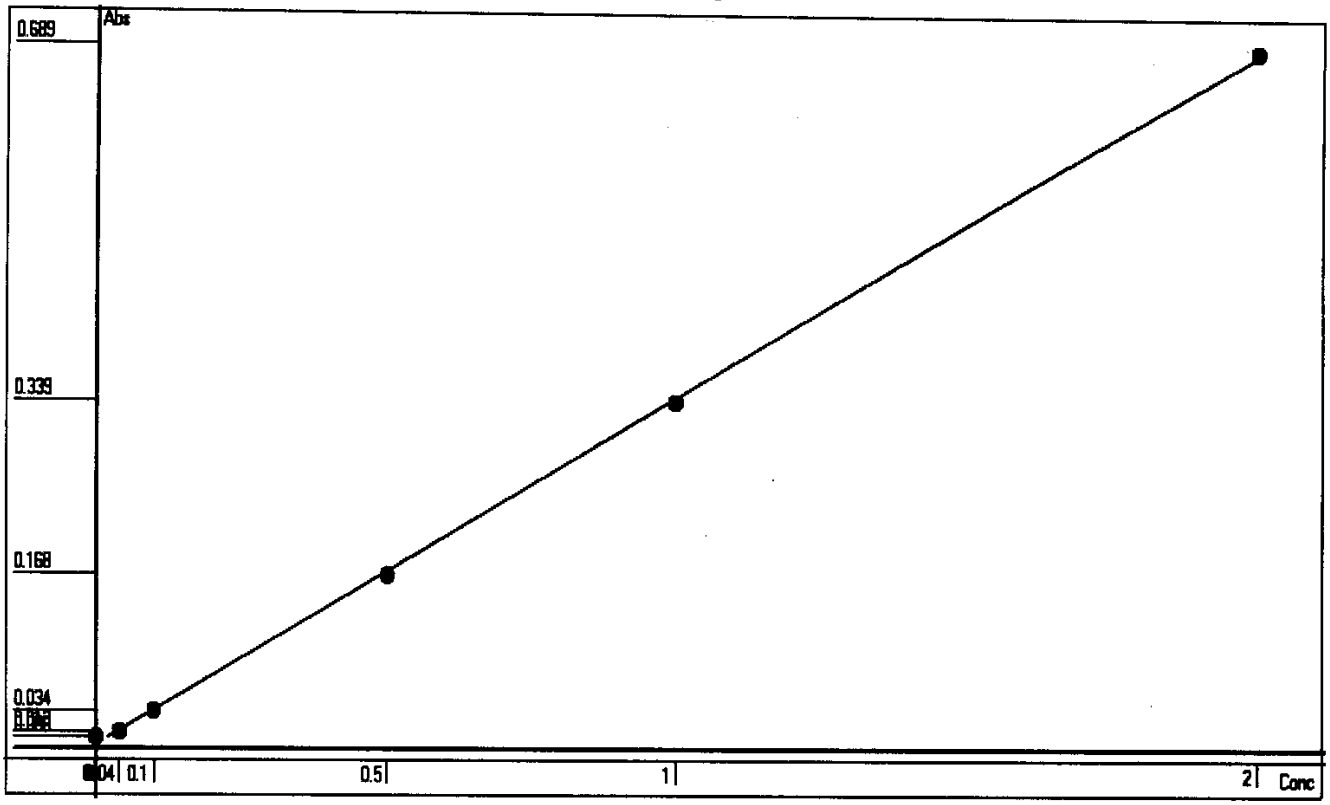
Report Date :11/19/2013 **Run Date :11/19/2013** **Operator : WESTCO** **Plan # :20131118003**

Plan Description : NO3-A1-BAF/11/18/2013

Calibrant Report - WNO3 -

Calib Lot #:010104 Exp Date:6/17/2020 User:MICROBAC

Plan # : 20131118003 Description : [NO3-A1-BAF/11/18/2013] Unit



Point	OD	Conc	Recalc Conc	% Error
1	0.0076	0	0.0211	2.11
2	0.0126	0.04	0.0357	-10.75
3	0.0338	0.1	0.0975	-2.50
4	0.1683	0.5	0.4898	-2.04
5	0.3388	1	0.9871	-1.29
6	0.6891	2	2.0089	0.45

Conc= +2.9168*Abso -0.0011 R^2=0.9997

RBL
0.0265
0

Report Date 11/19/2013 Run Date 11/19/2013

2.2.8 Orthophosphate Data

2.2.8.1 Summary Data

Login Number: L13111086
Department: Conventionals
Analyst: Tammy Morris

METHOD

Analysis EPA 365.2/SM4500-P E (Orthophosphate)

HOLDING TIMES

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Matrix Spikes: All acceptance criteria were met.

Duplicates: All acceptance criteria were met.

SAMPLES

Samples: All acceptance criteria were met.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Microbac Laboratories Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Narrative ID: 75489
Approved By: Deanna Hesson

Microbac

Lab Report #: L13111086
Lab Project #: 3005.011
Project Name: White Sands MR
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L13111086-01	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	SMW 1-1113-1	**Prep Method:**	SM4500-P-E-1999	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-P-E-1999	**Cal Date:**	10/30/2013 09:00
Workgroup #:	WG453085	**Analyst:**	TMM	**Run Date:**	11/16/2013 13:00
Collect Date:	11/15/2013 10:00	**Dilution:**	1	**File ID:**	1V.1311161300-07
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Orthophosphate	14265-44-2	0.0481	J	0.0500	0.0250

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L13111086
Lab Project #: 3005.011
Project Name: White Sands MR
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L13111086-02	**PrePrep Method:**	N/A	**Instrument:**	UV-120-1V
Client ID:	SMW 4-1113-1	**Prep Method:**	SM4500-P-E-1999	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-P-E-1999	**Cal Date:**	10/30/2013 09:00
Workgroup #:	WG453085	**Analyst:**	TMM	**Run Date:**	11/16/2013 13:00
Collect Date:	11/15/2013 11:50	**Dilution:**	1	**File ID:**	1V.1311161300-08
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Orthophosphate	14265-44-2	0.0334	J	0.0500	0.0250

J	Estimated value ; the analyte concentration was less than the LOQ.

Certificate of Analysis

2.2.8.2 QC Summary Data

Example Calculations for Visible Spectrophotometric Methods

Linear Calibration Model

Step 1 - Retrieve Curve Data from ICAL

m = slope of the linear equation
b = intercept from the linear equation
y = instrument response as absorbance or OD
x = concentration of analyte (mg/L)
y = mx + b

Step 2: Calculate the instrument concentration, x

Where:

x = (y - b)/m

Step 3: Solve for analyte concentration in sample, Cx

Cx = (x) (D)

Example Calculation (LCS):

Value of m from plot:	7.809	
Value of b from plot:	0.0004135	
Absorbance of unknown from quantitation report (y):	0.31	
Calculated concentration (x):	0.03964483	
Dilution factor (D):	1.00	
Concentration of analyte in sample, Cy:	0.0396	mg/L

SmartChem Autoanalyzer - Quadratic Calibration for Chloride and Sulfate

Step 1 - Retrieve Curve Data from Smartchem ICAL

A, B, C = constants from the ICAL quadratic regression

x = instrument response as absorbance or OD

y = concentration of analyte (mg/L)

Step 2: Calculate the instrument concentration, y

Where:

y = Ax^2 + Bx + C

Step 3: Solve for analyte concentration in sample, Cy

Cy = (y) (D)

Example Calculation (LCS):

Value of A from plot:	101.2796	
Value of B from plot:	318.9056	
Value of C from plot:	-2.2712	
Absorbance of unknown from quantitation report (x):	0.1583	
Calculated concentration (y):	50.7495108	
Dilution factor (D):	1.00	
Concentration of analyte in sample, Cy:	50.75	mg/L

Microbac Laboratories Inc.

Data Checklist

Date: 16-NOV-2013
Analyst: TMM
Analyst: NA
Method: PO4
Instrument: UV-120-1V
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG453085

Calibration/Linearity	10/30/13
Second Source Check	
ICV/CCV (std)	X
ICB/CCB	
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	TMM
Secondary Reviewer	SAV
Comments	

Primary Reviewer:
21-NOV-2013
Tammy Morris

Secondary Reviewer:
21-NOV-2013
Sarah Vandenberg

CHECKLIST1 - Modified 03/05/2008
Generated: NOV-21-2013 13:52:02

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: SM4500-P-E-1999 AAB#: WG453085

Login Number: L13111086

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
SMW 1-1113-1	01	11/15/13					11/16/2013	1.1	2		11/16/13	1.1	2	
SMW 4-1113-1	02	11/15/13					11/16/2013	1	2		11/16/13	1	2	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 3218401
Report generated 11/21/2013 13:34

Microbac Laboratories Inc.

METHOD BLANK SUMMARY

Login Number: L13111086
Blank File ID: 1V.1311161300-02
Prep Date: 11/16/13 13:00
Analyzed Date: 11/16/13 13:00
Analyst: TMM

Work Group: WG453085
Blank Sample ID: WG453085-01
Instrument ID: UV-120-1V
Method: SM4500-P-E-1999

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG453085-02	1V.1311161300-03	11/16/13 13:00	
LCS2	WG453085-03	1V.1311161300-04	11/16/13 13:00	
SMW 1-1113-1	L13111086-01	1V.1311161300-07	11/16/13 13:00	
SMW 4-1113-1	L13111086-02	1V.1311161300-08	11/16/13 13:00	
DUP	WG453085-05	1V.1311161300-09	11/16/13 13:00	

Report Name: BLANK_SUMMARY
PDF File ID: 3218402
Report generated 11/21/2013 13:34

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L13111086 Prep Date: 11/16/13 13:00 Sample ID: WG453085-01
Instrument ID: UV-120-1V Run Date: 11/16/13 13:00 Prep Method: SM4500-P-E-1999
File ID: 1V.1311161300-02 Analyst: TMM Method: SM4500-P-E-1999
Workgroup (AAB#): WG453085 Matrix: Water Units: mg/L
Contract #: Cal ID: UV-120 - 14-NOV-13

Analytes	LOD	LOQ	Concentration	Dilution	Qualifier
Orthophosphate	0.0250	0.0500	0.0250	1	U

LOD Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 3218403
21-NOV-2013 13:34

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L13111086 Analyst: TMM Prep Method: SM4500-P-E-1999
Instrument ID: UV-120-1V Matrix: Water Method: SM4500-P-E-1999
Workgroup (AAB#): WG453085 Units: mg/L
QC Key: DOD4 Lot #: STD61376

Sample ID: WG453085-02 LCS File ID: 1V.1311161300-03 Run Date: 11/16/2013 13:00
Sample ID: WG453085-03 LCS2 File ID: 1V.1311161300-04 Run Date: 11/16/2013 13:00

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Orthophosphate	1.00	1.04	104	1.00	1.03	103	0.473	90 - 110	20	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 3218404
Report generated: 11/21/2013 13:34

2.2.8.3 Raw Data

PLP 10-30-13
WG ~~450769~~
450776

Curves

Parameter: PO4

Spectrophotometer: UV-120-1V

Calibration (Curve) standard stock: Std ~~60962~~ 60315 PSW 10-30-13

Concentration: 1000 mg/L

Recipe for preparation of curve standards found in:
SOP: 36513 Revision: 14 Page: 9

Second Source Stock: ~~std 60961~~ 60078 PSW 10-30-13 (concentration: 10mg/L)

Daily Preparation: 5(10)/50=

concentration = 1.0mg/L

Calibration Standards (mg/L)	Volume (mL)	Cell Size (cm)	Wavelength (nm)	Absorbance
1.0	50	1cm	880	0.612
0.7	↓	↓	↓	0.430
0.5				0.308
0.2				0.124
0.1				0.062
0.05				0.030
0.00				0.000
2nd source (1.0)	↓	↓	↓	0.640

Analyst: Peggy S. Webb

Date/Time: 10-30-13 @ 0900

DCN#98528

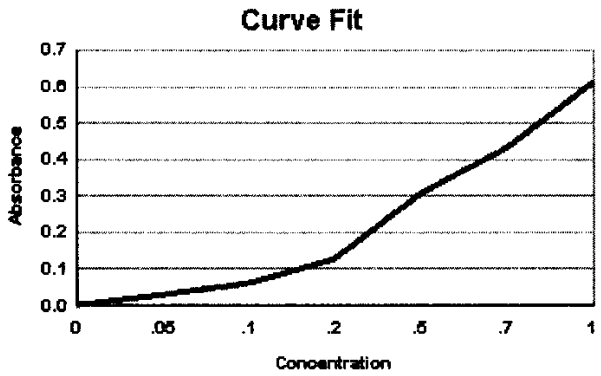
Microbac Laboratories Inc.
INITIAL CALIBRATION

Workgroup: WG450776
Analytical Method: 300
Instrument ID: UV-120-1V

Analyst: DLP
Initial Calibration Date: 10/30/2013

Analyte: ORTHOPHOSPHATE
Number of Points: 7
Slope: 0.612605
Y-Intercept: 0.000550868
Coef. Of Correlation (R^2): 0.999983
Coef. Of Correlation (R): 0.999991

Concentration X	Absorbance Y	X^2	X * Y	Y-Fitted (mX^2+B)
0.00	0.00	0.00	0.00	0.000550868
0.0500	0.0300	0.00250	0.00150	0.0311811
0.100	0.0620	0.0100	0.00620	0.0618114
0.200	0.124	0.0400	0.0248	0.123072
0.500	0.308	0.250	0.154	0.306854
0.700	0.430	0.490	0.301	0.429375
1.00	0.612	1.00	0.612	0.613156



WG_ICAL_CAL_WET - Modified 03/06/2008
Report generated 10/30/2013 11:00

[redacted]

Microbac Laboratories Inc.
ALTERNATE SOURCE REPORT

Workgroup #: WG450776
File ID: 1V.1310300900-08
CCV ID: WG450776-08
Units: mg/L
Analyte: ORTHOPHOSPHATE

Instrument ID: UV-120-1V
Run Date: 10/30/2013
Run Time: 09:00
Analyst: DLP
Cal ID: UV-120 - 30-OCT-13 09:00:07

Analyte	Expected	Found	RF	%D	Q
Orthophosphate	1	1.04	0.640	4.0	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_SSCV - Modified 03/06/2008
Report generated 10/30/2013 11:01

[redacted]

ORTHOPHOSPHATE

EPA 365.2/SM4500-P E
SOP K3653 Rev 14

Color Reagent Chemicals
28017
27551
27899
COA16278

CCV: Std 61375
Daily Dilution: 565/50
Daily Dilution: =0.5

LCS: Std 61376
Daily Dilution: 560/50
Daily Dilution: =1.01

Spike: Std 61376
Daily Dilution: 260/50
Daily Dilution: =0.40

Spectrophotometer: UV-120-1V
Curve ID: 10/30/13

SAMPLE	VOLUME	pH 7 ± 0.2	DILUTION	ABSORBANCE @ 880 nm
CCV: 0.5 mg/L	50	✓		0.320
BLANK	50	✓		0.001
LCS: 1.0 ppm	50	✓		0.636
LCSDUP: 1.0 ppm	50	✓		0.633
* 11-951-03	50	✓		0.005
~~11-1086-04~~ 11-951-04	50	✓		0.009
11-1086-01 1000	50	✓	11/16/13	0.0030
11-1086-02 1150	50	✓		0.021
	50			
	50			
	50			
	50			
	50			
	50			
	50			
	50			
	50			
	50			
	50			
	50			
	50			
DUP: 11-951-04	50	✓		0.010
MS: (0.4) ✓	50	✓		0.267
MSD: ( )	50			
CCV: (0.5)	50	✓		0.319

ANALYST: Tammy Morris DATE / TIME: 11/16/13 @ 1300

* analyst error sample run out of hold.

DCN#98910

Microbac Laboratories Inc.
SAMPLE REPORT

Workgroup: WG453085 **Analyst:** TMM
Analyte: ORTHOPHOSPHATE **Date:** 11/16/2013

Sample ID	I Vol	F Vol	Response	Slope	Y Intercept	Anal. Conc.	Rep. Conc.	Dil	Units
WG453085-01	50	50	0.00100	0.6126	0.0005509	0.00073315	0.00073315	1	mg/L
WG453085-02	50	50	0.636	0.6126	0.0005509	1.0373	1.0373	1	mg/L
WG453085-03	50	50	0.633	0.6126	0.0005509	1.0324	1.0324	1	mg/L
L13110951-03	50	50	0.00500	0.6126	0.0005509	0.0072626	ND	1	mg/L
L13110951-04	50	50	0.00900	0.6126	0.0005509	0.013792	ND	1	mg/L
WG453085-04	50	50	0.00900	0.6126	0.0005509	0.013792	0.013792	1	mg/L
L13111086-01	50	50	0.0300	0.6126	0.0005509	0.048072	0.048072 F	1	mg/L
L13111086-02	50	50	0.0210	0.6126	0.0005509	0.033381	0.033381 F	1	mg/L
WG453085-05	50	50	0.0100	0.6126	0.0005509	0.015424	0.015424	1	mg/L
WG453085-06	50	50	0.267	0.6126	0.0005509	0.43494	0.43494	1	mg/L

UV_SAMPLE_REPORT - Modified 03/06/2008

Report generated 11/21/2013 09:37

[redacted]

Microbac Laboratories Inc.
CONTINUING CALIBRATION REPORT

Workgroup #: WG453787
File ID: 1V.1311161300-01
CCV ID: WG453787-01
Units: mg/L
Analyte: ORTHOPHOSPHATE

Instrument ID: UV-120-1V
Run Date: 11/16/2013
Run Time: 13:00
Analyst: TMM
Cal ID: UV-120 - 14-NOV-13

Analyte	Expected	Found	RF	%D	Q
Orthophosphate	.5	0.521	0.640	4.2	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_CCV - Modified 03/06/2008

Report generated 11/21/2013 09:39

[redacted]

Microbac Laboratories Inc.
CONTINUING CALIBRATION REPORT

Workgroup #: WG453787
File ID: 1V.1311161300-11
CCV ID: WG453787-02
Units: mg/L
Analyte: ORTHOPHOSPHATE

Instrument ID: UV-120-1V
Run Date: 11/16/2013
Run Time: 13:00
Analyst: TMM
Cal ID: UV-120 - 14-NOV-13

Analyte	Expected	Found	RF	%D	Q
Orthophosphate	.5	0.520	0.638	4.0	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_CCV - Modified 03/06/2008

Report generated 11/21/2013 09:39

[redacted]

2.2.9 Total Dissolved Solids Data

2.2.9.1 Summary Data

Login Number: L13111086
Department: Conventionals
Analyst: April Greene

METHOD

Analysis EPA 160.1/SM2540 C(Total Dissolved Solids)

HOLDING TIMES

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: Recoveries out of range were observed for the following analytes: Total Dissolved Solids. Please see the applicable QC report for a detailed presentation of the failures.

Sample #	Analyte	Date	Result	Lower	Upper	Type
WG453716-03	Total Dissolved Solids	2013-11-21 07:42:03	13.9		10	RPD

Duplicates: All acceptance criteria were met.

Matrix Spikes: All acceptance criteria were met.

SAMPLES

Samples: All acceptance criteria were met.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Microbac Laboratories Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Narrative ID: 75492
Approved By: Deanna Hesson

Dannadsson

Microbac

Lab Report #: L13111086
Lab Project #: 3005.011
Project Name: White Sands MR
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L13111086-01	**PrePrep Method:**	N/A	**Instrument:**	OVEN
Client ID:	SMW 1-1113-1	**Prep Method:**	160.1/SM2540C	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM2540-C-1997	**Cal Date:**	
Workgroup #:	WG453716	**Analyst:**	ADG	**Run Date:**	11/21/2013 07:42
Collect Date:	11/15/2013 10:00	**Dilution:**	1	**File ID:**	EN.1311210742-16
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Total Dissolved Solids		238		20.0	10.0

Sample #:	L13111086-02	**PrePrep Method:**	N/A	**Instrument:**	OVEN
Client ID:	SMW 4-1113-1	**Prep Method:**	160.1/SM2540C	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM2540-C-1997	**Cal Date:**	
Workgroup #:	WG453716	**Analyst:**	ADG	**Run Date:**	11/21/2013 07:42
Collect Date:	11/15/2013 11:50	**Dilution:**	1	**File ID:**	EN.1311210742-17
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Total Dissolved Solids		212		20.0	10.0

2.2.9.2 QC Summary Data

$$[(WT2 - WT1) * 1000000]/volume = mg/L$$

where:

WT1 = weight (grams) of empty container.
WT2 = weight (grams) of dried sample and container.
1000000 = factor to get to mg/L.
volume = mL of sample used.

Microbac Laboratories Inc.

Data Checklist

Date: 21-NOV-2013
Analyst: ADG
Analyst: NA
Method: TDS
Instrument: OVEN
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG453716

Calibration/Linearity	11/21/13
Second Source Check	
ICV/CCV (std)	
ICB/CCB	
Blank	X
LCS/LCS Dup	X
MS/MSD	
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	X
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	ADG
Secondary Reviewer	SAV
Comments	

Primary Reviewer:
25-NOV-2013
April Greene

Secondary Reviewer:
25-NOV-2013
Sarah Vandenberg

CHECKLIST1 - Modified 03/05/2008
Generated: NOV-25-2013 13:38:15

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: SM2540-C-1997 AAB#: WG453716

Login Number: L13111086

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
SMW 1-1113-1	01	11/15/13					11/21/2013	5.9	7		11/21/13	5.9	7	
SMW 4-1113-1	02	11/15/13					11/21/2013	5.8	7		11/21/13	5.8	7	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 3225700
Report generated 11/25/2013 13:29

Microbac Laboratories Inc.

METHOD BLANK SUMMARY

Login Number: L13111086
Blank File ID: EN.1311210742-01
Prep Date: 11/21/13 07:42
Analyzed Date: 11/21/13 07:42
Analyst: ADG

Work Group: WG453716
Blank Sample ID: WG453716-01
Instrument ID: OVEN
Method: SM2540-C-1997

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG453716-02	EN.1311210742-02	11/21/13 07:42	
LCS2	WG453716-03	EN.1311210742-03	11/21/13 07:42	
SMW 1-1113-1	L13111086-01	EN.1311210742-16	11/21/13 07:42	
SMW 4-1113-1	L13111086-02	EN.1311210742-17	11/21/13 07:42	
DUP	WG453716-05	EN.1311210742-23	11/21/13 07:42	
DUP	WG453716-07	EN.1311210742-24	11/21/13 07:42	

Report Name: BLANK_SUMMARY
PDF File ID: 3225701
Report generated 11/25/2013 13:29

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L13111086 Prep Date: 11/21/13 07:42 Sample ID: WG453716-01
Instrument ID: OVEN Run Date: 11/21/13 07:42 Prep Method: 160.1/SM2540C
File ID: EN.1311210742-01 Analyst: ADG Method: SM2540-C-1997
Workgroup (AAB#): WG453716 Matrix: Water Units: mg/L
Contract #: Cal ID: OVEN-

Analytes	LOD	LOQ	Concentration	Dilution	Qualifier
Total Dissolved Solids	5.00	10.0	5.00	1	U

LOD Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 3225702
25-NOV-2013 13:29

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L13111086 Analyst: ADG Prep Method: 160.1/SM2540C
Instrument ID: OVEN Matrix: Water Method: SM2540-C-1997
Workgroup (AAB#): WG453716 Units: mg/L
QC Key: DOD4 Lot #: STD60796

Sample ID: WG453716-02 LCS File ID: EN.1311210742-02 Run Date: 11/21/2013 07:42
Sample ID: WG453716-03 LCS2 File ID: EN.1311210742-03 Run Date: 11/21/2013 07:42

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Total Dissolved Solids	500	454	90.8	500	522	104	13.9	80 - 120	10	#

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 3225703
Report generated: 11/25/2013 13:29

2.2.9.3 Raw Data

Tray 3

WORKGROUP: WG453716

TOTAL DISSOLVED SOLIDS

(tds1)

Oven: TDS MICS1
☐ EPA 160.1 / SM2540C
LCS: Std W0796
Daily Dilution: 5(5000)/50-000

Balance: AND GR-202 / Other
Matrix Spike:
Daily Dilution:
Filter Lot #: 9526 836

		On Temp/Time:	105 / 0900	104 / 0630	181 / 1338	/
SAMPLE	#	VOLUME (mL)	INITIAL WEIGHT WT1 (g)	DRY WEIGHT WT2A (g)	DRY WEIGHT WT2B (g)	DRY WEIGHT WT2C (g)
BLANK	BLK Q	100				
LCS: mg/L	LCS1	50				
LCSDUP: mg/L	LCS2	50				
Rerun 1073-01	1	50	55.4954	55.5017	55.5019	
04	2	50				
05	3	50				
1074-01	4	50				
03	5	50				
1078-01	6	15				
02	7	25				
1080-01	8	25				
02	9	25				
1082-22	10	50				
24	11	50				
1085-01	12	50				
02	13	50				
1086-01	14	50				
02	15	50				
1087-01	16	50				
03	17	50				
04	18	50				
1088-01	19	50				
03	20	50				
DUP: 1070-01	Dup1	25				
DUP: 1088-01	Dup2	50				
		Off Temp/Time:	104 / 0630	180 / 1240	180 / 1445	/

ANALYST: April Greene

* Duplicate required on 10% of samples

DATE/TIME: (on) 11-21-13 @ 0742
DATE/TIME: (off) 11-22-13
DATE/TIME: (off)
DATE/TIME: (off)

DCN#99003

Microbac Laboratories Inc.
GRAVIMETRIC REPORT

Workgroup (AAB#): WG453716
Analyst: ADG
Analyte: TOTAL DISSOLVED SOLIDS
Balance: BAL018
Instrument: OVEN

Method: 160.1/SM2540C
SOP: Revison
Spike Solution: STD60796
Daily Dilution:

SAMPLE NUMBER	INSTR#	INITIAL VOL	INITIAL WT	DRY WT A	DRY WT B	DRY WT C	Anal. Conc	Rep. Conc.	Units
WG453716-01	BLK	100	64.1989	64.1984	64.1987		-2.000	-2.000	mg/L
WG453716-02	LCS	50	68.2052	68.2274	68.2279		454.0	454.0	mg/L
WG453716-03	LCS2	50	60.1293	60.1551	60.1554		522.0	522.0	mg/L
L13111073-04	2	50	61.3805	61.3925	61.3929		248.0	248.0	mg/L
L13111073-05	3	50	62.2026	62.2151	62.2156		260.0	260.0	mg/L
L13111074-01	4	50	54.7666	54.7854	54.7857		382.0	382.0	mg/L
L13111074-03	5	50	56.4356	56.4407	56.4411		110.0	110.0	mg/L
L13111078-01	6	15	57.5686	57.6268	57.6272		3907	3907	mg/L
L13111078-02	7	25	57.0983	57.1931	57.1935		3808	3808	mg/L
L13111080-01	8	25	60.0647	60.1203	60.1205		2232	2232	mg/L
WG453716-04	8	25	60.0647	60.1203	60.1205		2232	2232	mg/L
L13111080-02	9	25	61.2247	61.3342	61.3347		4400	4400	mg/L
L13111082-22	10	50	60.5036	60.5229	60.5234		396.0	396.0	mg/L
L13111082-24	11	50	60.1758	60.1814	60.1814		112.0	112.0	mg/L
L13111085-01	12	50	61.0038	61.0078	61.008		84.00	84.00	mg/L
L13111085-02	13	50	62.925	62.944	62.9443		386.0	386.0	mg/L
L13111086-01	14	50	68.1132	68.1248	68.1251		238.0	238.0	mg/L
L13111086-02	15	50	57.6226	57.6337	57.6332		212.0	212.0	mg/L
L13111087-01	16	50	66.5695	66.6059	66.6064		738.0	738.0	mg/L
L13111087-03	17	50	66.0886	66.1245	66.1249		726.0	726.0	mg/L
L13111087-04	18	50	58.4547	58.4774	58.4779		464.0	464.0	mg/L
L13111088-01	19	50	51.0825	51.1022	51.1021		392.0	392.0	mg/L
WG453716-06	19	50	51.0825	51.1022	51.1021		392.0	392.0	mg/L
L13111088-03	20	50	57.1047	57.1107	57.1111		128.0	128.0	mg/L
WG453716-05	DUP	25	60.4448	60.4991	60.4996		2192	2192	mg/L
WG453716-07	DUP2	50	68.7015	68.722	68.7225		420.0	420.0	mg/L
L13111073-01	1	50	55.4954	55.5017	55.5019		130.0	130.0	mg/L

Analyst: April Greene

*Duplicate required on 10% of samples

Date/Time (on) : 11/21/2013 07:42
Date/Time (off): 11/22/2013 13:23
Date/Time (off): 11/22/2013 15:45
Date/Time (off):

CONT_GRAV_REPORT - Modified 02/18/2011
PDF ID: 3216796
Report generated: 11/22/2013 16:15

Microbac

2.2.10 Total Organic Carbon Data

2.2.10.1 Summary Data

Login Number: L13111086
Department: Conventionals
Analyst: Deanna Hesson

METHOD

Analysis Water: EPA 415.1/SM5310C/SW846 9060 (Total Organic Carbon)
Soil: Lloyd-Khan Methodology

HOLDING TIMES

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Duplicates: All acceptance criteria were met.

Matrix Spikes: All acceptance criteria were met.

SAMPLES

Samples: All acceptance criteria were met.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Microbac Laboratories Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Narrative ID: 75490
Approved By: Deanna Hesson

Microbac

Lab Report #: L13111086
Lab Project #: 3005.011
Project Name: White Sands MR
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L13111086-01	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	SMW 1-1113-1	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/09/2013 14:51
Workgroup #:	WG454385	**Analyst:**	DIH	**Run Date:**	11/26/2013 21:34
Collect Date:	11/15/2013 10:00	**Dilution:**	1	**File ID:**	TC11262013.046
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Total Organic Carbon	TOC	0.775	J	1.00	0.500

J	Estimated value ; the analyte concentration was less than the LOQ.

Certificate of Analysis

Sample #:	L13111086-02	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	SMW 4-1113-1	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/09/2013 14:51
Workgroup #:	WG454385	**Analyst:**	DIH	**Run Date:**	11/26/2013 21:46
Collect Date:	11/15/2013 11:50	**Dilution:**	1	**File ID:**	TC11262013.047
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Total Organic Carbon	TOC	0.788	J	1.00	0.500

J	Estimated value ; the analyte concentration was less than the LOQ.

Certificate of Analysis

2.2.10.2 QC Summary Data

Total Organic Carbon Example Calculations
(Direct Readout Parameter)

(Readout)/(dilution) = mg/L

where:

Readout = direct readout from the instrument
dilution = dilution in decimal form (ex. 1/5 dilution = 0.2)

Microbac Laboratories Inc.

Data Checklist

Date: 26-NOV-2013
Analyst: DCM
Analyst: NA
Method: TOC
Instrument: TOC-VWP
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG454382 WG454385 WG454387

Calibration/Linearity	7-9-2013
Second Source Check	X
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	X
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	DCM
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
27-NOV-2013

Secondary Reviewer:
27-NOV-2013

CHECKLIST1 - Modified 03/05/2008
Generated: NOV-27-2013 13:46:41

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 415.1 AAB#: WG454385

Login Number: L13111086

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
SMW 1-1113-1	01	11/15/13					11/26/2013	11.5	28		11/26/13	11.5	28	
SMW 4-1113-1	02	11/15/13					11/26/2013	11.4	28		11/26/13	11.4	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 3232706
Report generated 11/27/2013 13:35

Microbac Laboratories Inc.

METHOD BLANK SUMMARY

Login Number: L13111086
Blank File ID: TC11262013.032
Prep Date: 11/26/13 18:32
Analyzed Date: 11/26/13 18:32
Analyst: DIH

Work Group: WG454385
Blank Sample ID: WG454385-01
Instrument ID: TOC-VWP
Method: 415.1

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG454385-02	TC11262013.033	11/26/13 18:44	01
LCS2	WG454385-03	TC11262013.034	11/26/13 18:56	01
SMW 1-1113-1	L13111086-01	TC11262013.046	11/26/13 21:34	01
SMW 4-1113-1	L13111086-02	TC11262013.047	11/26/13 21:46	01
DUP	WG454385-07	TC11262013.056	11/26/13 23:41	01

Report Name: BLANK_SUMMARY
PDF File ID: 3232707
Report generated 11/27/2013 13:35

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L13111086 Prep Date: 11/26/13 18:32 Sample ID: WG454385-01
Instrument ID: TOC-VWP Run Date: 11/26/13 18:32 Prep Method: 415.1
File ID: TC11262013.032 Analyst: DIH Method: 415.1
Workgroup (AAB#): WG454385 Matrix: Water Units: mg/L
Contract #: Cal ID: TOC-VW-09-JUL-13

Analytes	LOD	LOQ	Concentration	Dilution	Qualifier
Total Organic Carbon	0.500	1.00	0.500	1	U

LOD Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 3232708
27-NOV-2013 13:35

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L13111086 Analyst: DIH Prep Method: 415.1
Instrument ID: TOC-VWP Matrix: Water Method: 415.1
Workgroup (AAB#): WG454385 Units: mg/L
QC Key: DOD4 Lot #: STD60155

Sample ID: WG454385-02 LCS File ID: TC11262013.033 Run Date: 11/26/2013 18:44
Sample ID: WG454385-03 LCS2 File ID: TC11262013.034 Run Date: 11/26/2013 18:56

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Total Organic Carbon	25.0	24.3	97.4	25.0	24.5	98.2	0.818	85 - 115	15	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 3232709
Report generated: 11/27/2013 13:35

2.2.10.3 Raw Data

WG437280

Total Organic Carbon

MAKE DAILY

CCV (TOC): _____ (5/200)(1000) = 25mg/L

LCS (TOC): _____ (5/200)(1000) = 25mg/L

CCV (TIC): _____ (5/200)(1000) = 25mg/L

see below

MS (TOC): _____

Calibration Curve Date: _____

Reagent: _____

☑ SM5310-C : Matrix 2 WG_____

☐ EPA 415.1/9060A(mod): Matrix 1 WG_____ SOP: K 4151 Rev. 15

WG_____ Instrument: Shimadza TOC-VWP/ASI

DAILY CHECK

☑ drain reservoir filled
☑ ASI water bottle full
☑ dilution water bottle full

☑ 3rd bottle full
☑ sufficient gas
☑ sufficient persulfate

☑ sufficient acid
☑ waste container

Position	Sample ID	Dilution	Position	Sample ID	Dilution	Position	Sample ID	Dilution
1	TC Curve		26	TC Curve		51		
2	TIC curve		27	Std 58866		52		
3	TC ICV		28			53	see SOP	
4	TIC ICV		29	TIC Curve		54	for curve	
5			30	Std 58877		55	points	
6			31			56		
7			32			57		
8			33	TC ICV		58	7/9/13	
9			34	Std 57523		59	~~see~~ 5/200 (1000)	
10			35			60	= 25mg/L	
11			36	TIC ICV		61		
12			37	Std 58878		62		
13			38			63		
14			39			64		
15	all points		40	analyzed	its	65	duplicate	
16			41			66		
17			42			67		
18			43			68		
19			44			69		
20			45			70		
21			46			71		
22			47			72		
23			48			73		
24			49			74		
25			50			75		

Analyst: Brie Jenson Date/Time: 7/9/13/1400

DCN#96473

C:\TOC3201\Data\07-09-2013-BAF-TOC.t32

	Analy	Sample Name	Result	Status	Date / Time	Vial
1	TOC		TOC:2.208mg/L TC:26.74mg/L IC:24.53mg/L	Complete	7/9/2013 5:17:57 PM	1
2	TOC		TOC:23.65mg/L TC:23.65mg/L IC:0.00022mg/L	Complete	7/9/2013 5:29:56 PM	2
3	TOC		TOC:22.05mg/L TC:22.22mg/L IC:0.1735mg/L	Complete	7/9/2013 5:42:12 PM	3
4	TOC		!!Error!! TOC:24.67mg/L TC:24.54mg/L IC:-0.1326mg	Complete	7/9/2013 5:54:31 PM	4

7/11/2013 12:57:57 PM

1/1

Instr.Information

System TOCVW ASI
Detector Wet Chemical

Cal. Curve

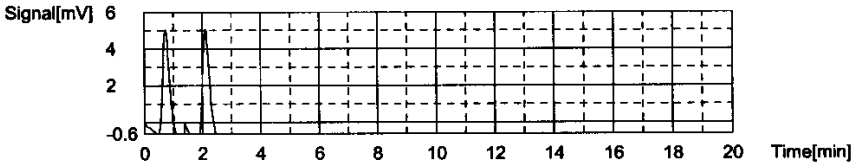
Sample Name: TCCURVE
Sample ID: Untitled
Cal. Curve: TCCURVE-07-09-2013.2013_07_09_13_54_59.cal
Status Completed

Type	Anal.
Standard	TC

Conc: 0.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	9.370	500uL	1	*******		7/9/2013 2:00:04 PM
2	10.94	500uL	1	*******		7/9/2013 2:03:54 PM

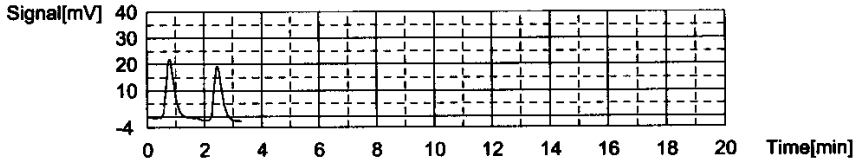
Acid Add. 0.000%
Mean Area 10.16



Conc: 1.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	43.95	500uL	1	*******		7/9/2013 2:09:31 PM
2	40.43	500uL	1	*******		7/9/2013 2:13:23 PM

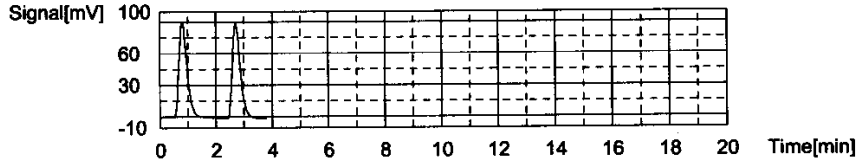
Acid Add. 0.000%
Mean Area 42.19



Conc: 5.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	180.9	500uL	1	*******		7/9/2013 2:19:14 PM
2	179.0	500uL	1	*******		7/9/2013 2:23:23 PM

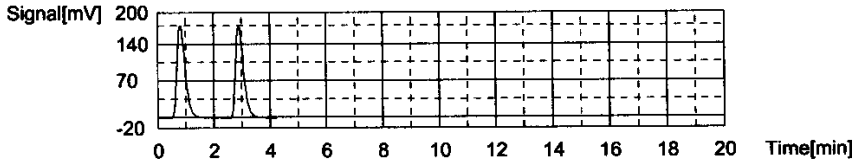
Acid Add. 0.000%
Mean Area 179.9



Conc: 10.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	357.3	500uL	1	*******		7/9/2013 2:29:25 PM
2	358.1	500uL	1	*******		7/9/2013 2:33:50 PM

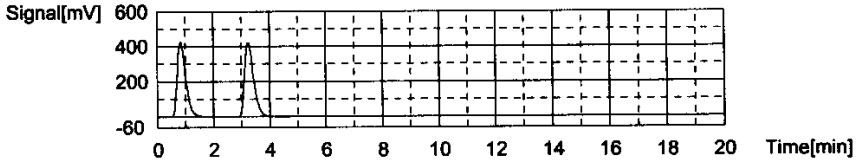
Acid Add. 0.000%
Mean Area 357.7



Conc: 25.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	900.5	500uL	1	*******		7/9/2013 2:40:10 PM
2	968.7	500uL	1	*******		7/9/2013 2:44:47 PM

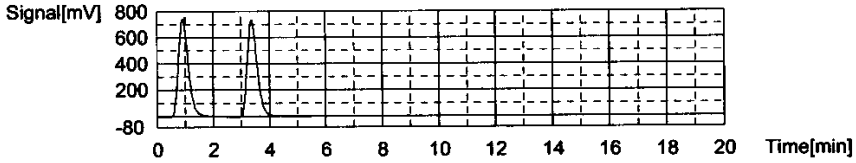
Acid Add. 0.000%
Mean Area 934.6



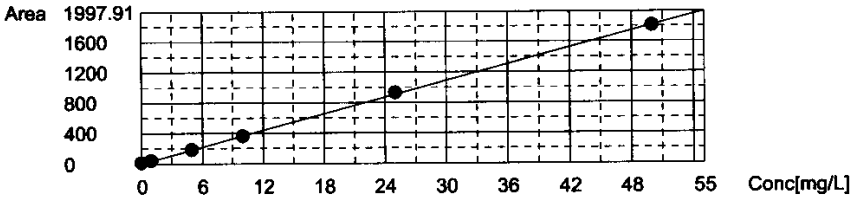
Conc: 50.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	1813	500uL	1	*******		7/9/2013 2:51:11 PM
2	1802	500uL	1	*******		7/9/2013 2:57:12 PM

Acid Add. 0.000%
Mean Area 1808



Slope: 36.20
Intercept 6.332
r^2 0.999673
Zero Shift No



Cal. Curve

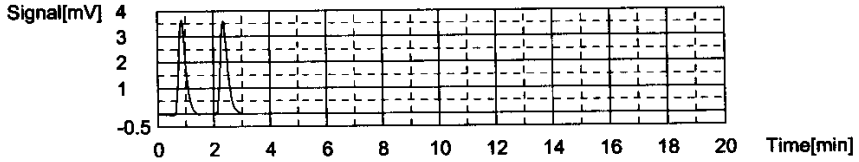
Sample Name: TICCURVE
Sample ID: Untitled
Cal. Curve: TICCURVE-07-09-2013.2013_07_09_14_57_12.cal
Status Completed

Type	Anal.
Standard	IC

Conc: 0.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	6.571	500uL	1	*******		7/9/2013 3:02:59 PM
2	6.428	500uL	1	*******		7/9/2013 3:07:04 PM

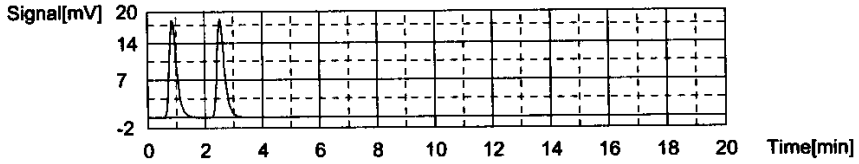
Acid Add. 10.00%
Mean Area 6.500



Conc: 1.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	33.29	500uL	1	*******		7/9/2013 3:14:33 PM
2	33.59	500uL	1	*******		7/9/2013 3:18:50 PM

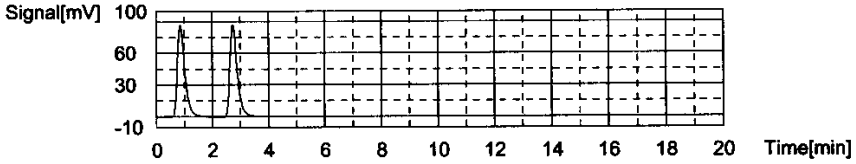
Acid Add. 10.00%
Mean Area 33.44



Conc: 5.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	158.6	500uL	1	*******		7/9/2013 3:26:34 PM
2	158.4	500uL	1	*******		7/9/2013 3:31:09 PM

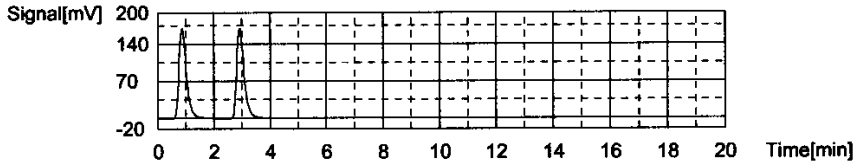
Acid Add. 10.00%
Mean Area 158.5



Conc: 10.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	312.7	500uL	1	*******		7/9/2013 3:39:08 PM
2	313.0	500uL	1	*******		7/9/2013 3:44:01 PM

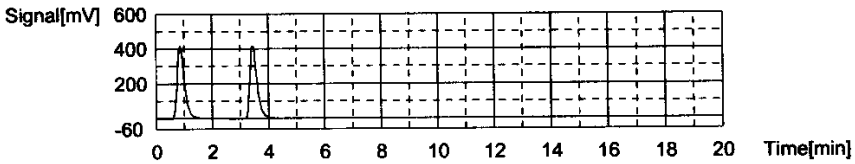
Acid Add. 10.00%
Mean Area 312.9



Conc: 25.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	755.5	500uL	1	*******		7/9/2013 3:52:43 PM
2	755.7	500uL	1	*******		7/9/2013 3:58:05 PM

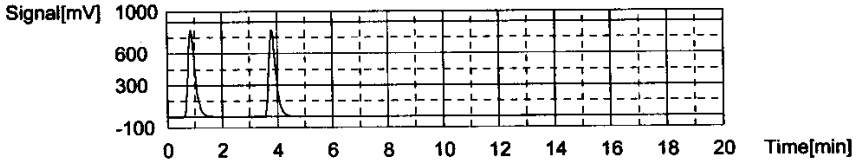
Acid Add. 10.00%
Mean Area 755.6



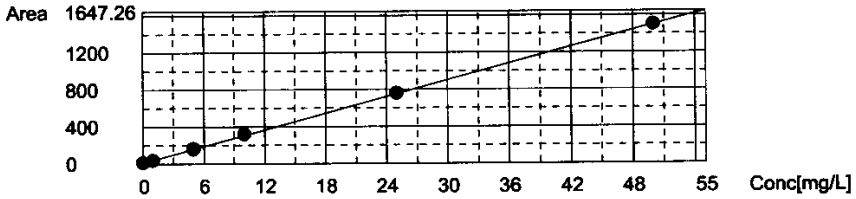
Conc: 50.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	1495	500uL	1	*******		7/9/2013 4:07:15 PM
2	1495	500uL	1	*******		7/9/2013 4:13:10 PM

Acid Add. 10.00%
Mean Area 1495



Slope: 29.78
Intercept 8.713
r^2 0.999949
Zero Shift No



Sample

Sample Name: TC ICV
Sample ID: Untitled
Origin: TCCURVE-07-09-2013.cal
Status Completed
Chk. Result

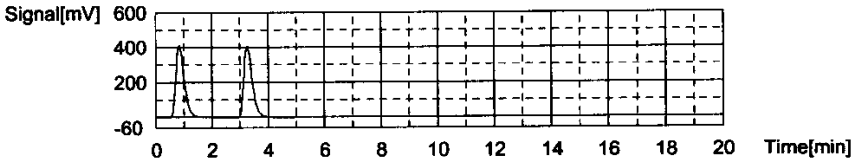
Type	Anal.	Dil.	Result
Unknown	TC	1.000	TC:23.67mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	868.0	23.80mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	7/9/2013 4:21:01 PM
2	858.5	23.54mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	7/9/2013 4:25:50 PM

Mean Area 863.3
Mean Conc. 23.67mg/L



Sample

Sample Name:	TIC ICV
Sample ID:	Untitled
Origin:	TICCURVE-07-09-2013.cal
Status	Completed
Chk. Result	

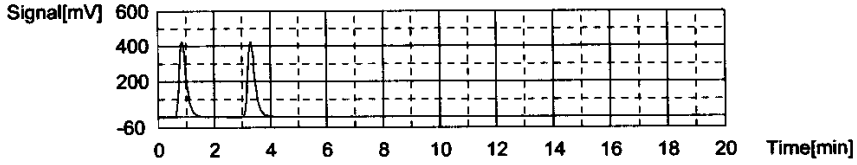
Type	Anal.	Dil.	Result
Unknown	IC	1.000	IC:25.62mg/L

1. Det

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	769.8	25.56mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	7/9/2013 4:32:54 PM
2	773.1	25.67mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	7/9/2013 4:38:08 PM

Mean Area	771.5
Mean Conc.	25.62mg/L



WORKGROUP: WG454382
454385
454387

Total Organic Carbon

MAKE DAILY

CCV (TOC): Std 58866
(5/200)(1000) = 25mg/L

LCS (TOC): Std 60155
(5/200)(1000) = 25mg/L

CCV (TIC): Std 58878
(5/200)(1000) = 25mg/L

MS (TOC): Std 60155
0.4/40 (1000) = 10

Calibration Curve Date: 7-9-13

Reagent: RGT 28721
RGT 27691

☑ SM5310-C : Matrix 2 WG 454387
☑ EPA 415.1/9060A(mod): Matrix 1 WG 454382 SOP: K 4151 Rev. 15
WG 454385 Instrument: Shimadza TOC-VWP/ASI

DAILY CHECK

☑ drain reservoir filled
☑ ASI water bottle full
☑ dilution water bottle full
☑ 3rd bottle full
☑ sufficient gas
☑ sufficient persulfate
☑ sufficient acid
☑ waste container

Position	Sample ID	Dilution
1	TIC	
2	CCV	
3	Blk	
4	LCS	
5	LCSDUP	
6	11-953-01	
7	11-842-01	
8	11-843-01	
9	11-1340-10	
10	11	
11	12	
12	13	
13	11-1341-01	
14	CCV	
15	CCB	
16	02	
17	11-1348-01	
18	02	
19	03	
20	04	
21	05	
22	06	
23	07	
24	08	
25	09	

Position	Sample ID	Dilution
26	CCV	
27	CCB	
28	11-1348-10	
29	11	
30	DUP ↓ ~~12~~	
31	MS ↓	
32	Blk	
33	LCS	
34	LCSDUP	
35	11-1348-12	
36	11-1392-03	
37	04	
38	CCV	
39	CCB	
40	05	
41	06	
42	07	
43	11-~~1392~~-02	1392-02
44	11-951-03	
45	04	
46	11-1086-01	
47	-02	
48	11-1124-01	1/4
49	11-1205-02	
50	CCV	

Position	Sample ID	Dilution
51	CCB	
52	11-1205-03	
53	MS 04	
54	MSD 05	
55	11-1154-01	
56	DUP 11-1205-03	
57	Blk	
58	LCS	
59	LCSDUP	
60	11-1173-11	1/2
61	11-1361-03	
62	CCV	
63	CCB	
64	11-1239-01	
65	11-1281-01	
66	02	
67	03	
68	11-1322-02	
~~69~~ 3	04	
~~70~~ 15	11-1323-01	
~~71~~ 27	02	
~~72~~ 32	DUP ↓	
~~73~~ 39	MS ↓	
~~74~~ 51	CCV	
~~75~~ 60	CCB	

Analyst: David Morckel

Date/Time: 11/26/13 1130

57	11-953-01	1/3
63	11-843-01	1/2

DCN#99100

~~1~~	~~CCV~~		~~4~~	~~1392-07~~	~~1/2~~
2	CCB		~~5~~	~~1392-05~~	~~1/2~~
~~3~~	~~1323-01~~	~~1/3~~	~~6~~	~~1392-04~~	~~1/3~~

Total Organic Carbon

MAKE DAILY

CCV (TOC): _____ (5/200)(1000) = 25mg/L

LCS (TOC): _____ (5/200)(1000) = 25mg/L

CCV (TIC): _____ (5/200)(1000) = 25mg/L

MS (TOC): _____

Calibration Curve Date: _____

Reagent: _____

☐ SM5310-C : Matrix 2 WG_____

☐ EPA 415.1/9060A(mod): Matrix 1 WG_____ SOP: K _____ Rev. _____

WG_____ Instrument: Shimadza TOC-VWP/ASI

DAILY CHECK

☐ drain reservoir filled
☐ ASI water bottle full
☐ dilution water bottle full
☐ 3rd bottle full
☐ sufficient gas
☐ sufficient persulfate
☐ sufficient acid
☐ waste container

Position	Sample ID	Dilution
1	CCV	
2	CCB	
3	11H323-01	1/5
4	11-1392-07	1/2
5	11-1392-05	1/2
6	11-1392-04	1/3
7	11-1392-03	1/3
8	CCV	
9	CCB	
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		

Position	Sample ID	Dilution
26		
27		
28		
29		
30		
31		
32		
33		
34		
35		
36		
37		
38		
39		
40		
41		
42		
43		
44		
45		
46		
47		
48		
49		
50		

Position	Sample ID	Dilution
51		
52		
53		
54		
55		
56		
57		
58		
59		
60		
61		
62		
63		
64		
65		
66		
67		
68		
69		
70		
71		
72		
73		
74		
75		

Analyst: _____ Date/Time: _____

DCN#99100

C:\TOC3201\Data\11-26-2013-DCM-TOC.t32

	Analyst	Sample Name	Result	Status	Date / Time	Vial
1	TOC	TIC	TOC:2.859mg/L TC:27.35mg/L IC:24.49mg/L	Completed	11/26/2013 12:10:	1
2	TOC	CCV	!!Error!! TOC:24.18mg/L TC:24.09mg/L IC:-0.09644	Completed	11/26/2013 12:22:	2
3	TOC	WG454382-01 BLK	!!Error!! TOC:0.1704mg/L TC:0.1003mg/L IC:-0.0700	Completed	11/26/2013 12:31:	0
4	TOC	WG454382-02 LCS	!!Error!! TOC:24.23mg/L TC:24.07mg/L IC:-0.1572m	Completed	11/26/2013 12:43:	4
5	TOC	WG454382-03 LCSDUP	!!Error!! TOC:24.17mg/L TC:24.02mg/L IC:-0.1495m	Completed	11/26/2013 12:55:	5
6	TOC		TOC:9.934mg/L TC:91.02mg/L IC:81.08mg/L	Completed	11/26/2013 1:11:1	6
7	TOC	L13110842-01	TOC:5.924mg/L TC:33.47mg/L IC:27.55mg/L	Completed	11/26/2013 1:24:5	7
8	TOC		TOC:10.82mg/L TC:63.42mg/L IC:52.60mg/L	Completed	11/26/2013 1:39:2	8
9	TOC	L13111340-10	TOC:14.29mg/L TC:40.71mg/L IC:26.42mg/L	Completed	11/26/2013 1:53:4	9
10	TOC	L13111340-11	TOC:8.513mg/L TC:26.70mg/L IC:18.19mg/L	Completed	11/26/2013 2:07:1	10
11	TOC	L13111340-12	TOC:2.651mg/L TC:11.41mg/L IC:8.755mg/L	Completed	11/26/2013 2:19:5	11
12	TOC	L13111340-13	TOC:3.053mg/L TC:10.91mg/L IC:7.858mg/L	Completed	11/26/2013 2:38:4	12
13	TOC	L13111341-01	TOC:2.833mg/L TC:3.911mg/L IC:1.078mg/L	Completed	11/26/2013 2:50:3	13
14	TOC	CCV	!!Error!! TOC:24.12mg/L TC:24.04mg/L IC:-0.07602	Completed	11/26/2013 3:02:3	14
15	TOC	CCB	!!Error!! TOC:0.1185mg/L TC:0.04630mg/L IC:-0.072	Completed	11/26/2013 3:11:3	0
16	TOC	L13111341-02	TOC:0.4825mg/L TC:1.200mg/L IC:0.7172mg/L	Completed	11/26/2013 3:23:0	16
17	TOC	L13111348-01	TOC:1.516mg/L TC:10.42mg/L IC:8.906mg/L	Completed	11/26/2013 3:35:3	17
18	TOC	L13111348-02	TOC:1.917mg/L TC:10.51mg/L IC:8.590mg/L	Completed	11/26/2013 3:48:1	18
19	TOC	L13111348-03	TOC:1.807mg/L TC:10.96mg/L IC:9.151mg/L	Completed	11/26/2013 4:00:5	19
20	TOC	L13111348-04	TOC:2.144mg/L TC:14.25mg/L IC:12.11mg/L	Completed	11/26/2013 4:13:3	20
21	TOC	L13111348-05	TOC:1.489mg/L TC:9.892mg/L IC:8.402mg/L	Completed	11/26/2013 4:26:1	21
22	TOC	L13111348-06	TOC:1.989mg/L TC:15.58mg/L IC:13.59mg/L	Completed	11/26/2013 4:39:1	22
23	TOC	L13111348-07	TOC:1.853mg/L TC:7.629mg/L IC:5.776mg/L	Completed	11/26/2013 4:51:3	23
24	TOC	L13111348-08	TOC:1.891mg/L TC:7.502mg/L IC:5.611mg/L	Completed	11/26/2013 5:03:5	24
25	TOC	L13111348-09	TOC:1.848mg/L TC:7.046mg/L IC:5.198mg/L	Completed	11/26/2013 5:16:1	25
26	TOC	CCV	!!Error!! TOC:23.96mg/L TC:23.91mg/L IC:-0.04495	Completed	11/26/2013 5:28:3	26
27	TOC	CCB	!!Error!! TOC:0.1209mg/L TC:0.05279mg/L IC:-0.068	Completed	11/26/2013 5:37:2	0
28	TOC	L13111348-10	TOC:1.831mg/L TC:9.911mg/L IC:8.080mg/L	Completed	11/26/2013 5:49:5	28
29	TOC	L13111348-11	TOC:1.665mg/L TC:9.231mg/L IC:7.566mg/L	Completed	11/26/2013 6:02:2	29
30	TOC	WG454382-05 DUP	TOC:1.854mg/L TC:8.698mg/L IC:6.844mg/L	Completed	11/26/2013 6:14:4	30
31	TOC	WG454382-06 MS	TOC:12.04mg/L TC:18.20mg/L IC:6.166mg/L	Completed	11/26/2013 6:27:2	31
32	TOC	WG454385-01 BLK	!!Error!! TOC:0.1128mg/L TC:0.05892mg/L IC:-0.053	Completed	11/26/2013 6:36:1	0
33	TOC	WG454385-02 LCS	!!Error!! TOC:24.34mg/L TC:24.25mg/L IC:-0.08512	Completed	11/26/2013 6:48:3	33
34	TOC	WG454385-03 LCSDUP	!!Error!! TOC:24.54mg/L TC:24.45mg/L IC:-0.08650	Completed	11/26/2013 7:00:5	34
35	TOC	L13111348-12	TOC:2.489mg/L TC:8.245mg/L IC:5.756mg/L	Completed	11/26/2013 7:13:1	35
36	TOC		TOC:19.48mg/L TC:71.21mg/L IC:51.73mg/L	Completed	11/26/2013 7:28:2	36
37	TOC		!!Error!! TOC:-8.132mg/L TC:80.10mg/L IC:88.24mg	Completed	11/26/2013 7:43:4	37
38	TOC	CCV	TOC:24.49mg/L TC:24.80mg/L IC:0.3159mg/L	Completed	11/26/2013 7:56:1	38
39	TOC	CCB	!!Error!! TOC:0.09892mg/L TC:0.08453mg/L IC:-0.01	Completed	11/26/2013 8:05:1	0
40	TOC		TOC:5.750mg/L TC:66.82mg/L IC:61.07mg/L	Completed	11/26/2013 8:20:3	40
41	TOC	~~L13111348-96~~	TOC:7.797mg/L TC:48.14mg/L IC:40.34mg/L	Completed	11/26/2013 8:34:2	41
42	TOC		TOC:7.751mg/L TC:50.38mg/L IC:42.63mg/L	Completed	11/26/2013 8:48:0	42
43	TOC	L13111392-02	TOC:11.05mg/L TC:47.23mg/L IC:36.18mg/L	Completed	11/26/2013 9:01:5	43
44	TOC	L13110951-03	TOC:4.217mg/L TC:26.92mg/L IC:22.70mg/L	Completed	11/26/2013 9:15:3	44
45	TOC	L13110951-04	TOC:2.303mg/L TC:4.723mg/L IC:2.420mg/L	Completed	11/26/2013 9:27:4	45
46	TOC	L13111086-01	TOC:0.7746mg/L TC:2.933mg/L IC:2.158mg/L	Completed	11/26/2013 9:39:3	46
47	TOC	L13111086-02	TOC:0.7880mg/L TC:2.726mg/L IC:1.938mg/L	Completed	11/26/2013 9:51:2	47
48	TOC	L13111124-01 (4)	TOC:11.63mg/L TC:12.06mg/L IC:0.4304mg/L	Completed	11/26/2013 10:03:	48
49	TOC	L13111205-02	TOC:2.548mg/L TC:30.41mg/L IC:27.86mg/L	Completed	11/26/2013 10:17:	49
50	TOC	CCV	TOC:24.01mg/L TC:24.05mg/L IC:0.04250mg/L	Completed	11/26/2013 10:29:	50
51	TOC	CCB	!!Error!! TOC:0.1136mg/L TC:0.06506mg/L IC:-0.048	Completed	11/26/2013 10:38:	0
52	TOC	L13111205-03	TOC:10.43mg/L TC:41.54mg/L IC:31.11mg/L	Completed	11/26/2013 10:52:	52
53	TOC	L13111205-04 MS	TOC:18.99mg/L TC:46.54mg/L IC:27.55mg/L	Completed	11/26/2013 11:06:	53
54	TOC	L13111205-05 MSD	TOC:18.27mg/L TC:29.88mg/L IC:11.61mg/L	Completed	11/26/2013 11:19:	54
55	TOC	L13111154-01	TOC:6.085mg/L TC:20.85mg/L IC:14.76mg/L	Completed	11/26/2013 11:33:	55
56	TOC	WG454385-07 DUP	TOC:9.307mg/L TC:36.35mg/L IC:27.04mg/L	Completed	11/26/2013 11:46:	56
57	TOC	WG454387-01 BLK	!!Error!! TOC:0.1173mg/L TC:0.1099mg/L IC:-0.0074	Completed	11/27/2013 12:03:	0
58	TOC	WG454387-02 LCS	!!Error!! TOC:24.74mg/L TC:24.68mg/L IC:-0.05958	Completed	11/27/2013 12:24:	58
59	TOC	WG454387-03 LCSDUP	!!Error!! TOC:24.90mg/L TC:24.83mg/L IC:-0.07032	Completed	11/27/2013 12:45:	59
60	TOC	L13111173-11 (2)	TOC:3.288mg/L TC:9.168mg/L IC:5.880mg/L	Completed	11/27/2013 1:06:5	60
61	TOC	L13111361-03	TOC:25.42mg/L TC:28.67mg/L IC:3.245mg/L	Completed	11/27/2013 1:35:4	61
62	TOC	CCV	!!Error!! TOC:24.87mg/L TC:24.83mg/L IC:-0.04304	Completed	11/27/2013 1:48:0	62
63	TOC	CCB	!!Error!! TOC:0.1240mg/L TC:0.07075mg/L IC:-0.053	Completed	11/27/2013 1:56:5	0
64	TOC	L13111239-01	TOC:2.856mg/L TC:3.379mg/L IC:0.5231mg/L	Completed	11/27/2013 2:17:1	64
65	TOC	L13111281-01	TOC:7.204mg/L TC:10.98mg/L IC:3.778mg/L	Completed	11/27/2013 2:39:2	65
66	TOC	L13111281-02	TOC:7.673mg/L TC:11.06mg/L IC:3.388mg/L	Completed	11/27/2013 3:00:5	66
67	TOC	L13111281-03	TOC:3.170mg/L TC:4.643mg/L IC:1.473mg/L	Completed	11/27/2013 3:21:3	67

11-1392-06

11-951-03 -

11-951-04 -

11/27/2013 11:22:32 AM

1/2

	Analys	Sample Name	Result	Status	Date / Time	Vial
68	TOC	L13111322-02	TOC:26.89mg/L TC:27.34mg/L IC:0.4504mg/L	Completed	11/27/2013 3:45:1	68
69	TOC	L13111322-04	TOC:4.690mg/L TC:6.019mg/L IC:1.328mg/L	Completed	11/27/2013 4:06:1	3
70	TOC		!!Error!! TOC:-1.013mg/L TC:81.66mg/L IC:82.68mg/	Completed	11/27/2013 4:34:4	15
71	TOC	L13111323-02	TOC:0.8313mg/L TC:1.012mg/L IC:0.1811mg/L	Completed	11/27/2013 4:54:3	27
72	TOC	WG454387-05 DUP	!!Error!! TOC:0.6455mg/L TC:0.6377mg/L IC:-0.0078	Completed	11/27/2013 5:13:5	32
73	TOC	WG454387-06 MS	!!Error!! TOC:10.73mg/L TC:10.70mg/L IC:-0.02534	Completed	11/27/2013 5:34:2	39
74	TOC	CCV	!!Error!! TOC:24.26mg/L TC:24.20mg/L IC:-0.05546	Completed	11/27/2013 5:46:4	51
75	TOC	CCB	!!Error!! TOC:0.1169mg/L TC:0.06459mg/L IC:-0.052	Completed	11/27/2013 5:55:4	0
76	TOC	L13110953-01 (3)	TOC:6.607mg/L TC:9.441mg/L IC:2.834mg/L	Completed	11/27/2013 6:08:0	57
77	TOC	L13110843-01 (2)	TOC:4.046mg/L TC:5.601mg/L IC:1.555mg/L	Completed	11/27/2013 6:20:4	63
78	TOC	CCV	!!Error!! TOC:24.12mg/L TC:24.03mg/L IC:-0.09721	Completed	11/27/2013 8:45:2	1
79	TOC	CCB	!!Error!! TOC:0.1234mg/L TC:0.05677mg/L IC:-0.066	Completed	11/27/2013 8:54:2	0
80	TOC	L13111323-01 (5)	TOC:5.312mg/L TC:42.62mg/L IC:37.30mg/L	Completed	11/27/2013 9:29:5	3
81	TOC	L13111392-07 (2)	TOC:5.190mg/L TC:32.17mg/L IC:26.98mg/L	Completed	11/27/2013 9:43:3	4
82	TOC	L13111392-05 (2)	TOC:5.257mg/L TC:33.03mg/L IC:27.77mg/L	Completed	11/27/2013 9:56:5	5
83	TOC	L13111392-04 (3)	TOC:4.020mg/L TC:21.06mg/L IC:17.04mg/L	Completed	11/27/2013 10:09:	6
84	TOC	L13111392-03 (3)	TOC:6.726mg/L TC:18.65mg/L IC:11.93mg/L	Completed	11/27/2013 10:22:	7
85	TOC	CCV	!!Error!! TOC:23.70mg/L TC:23.69mg/L IC:-0.01063	Completed	11/27/2013 10:35:	8
86	TOC	CCB	!!Error!! TOC:0.1276mg/L TC:0.06671mg/L IC:-0.060	Completed	11/27/2013 10:44:	0

Instr.Information

System TOCVW ASI
Detector Wet Chemical

Sample

Sample Name: TIC
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

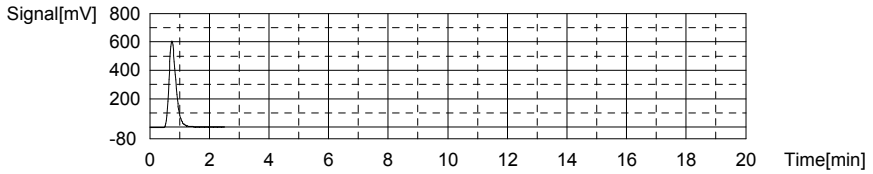
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.859mg/L TC:27.35mg/L IC:24.49mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	996.2	27.35mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/26/2013 12:04:29 PM

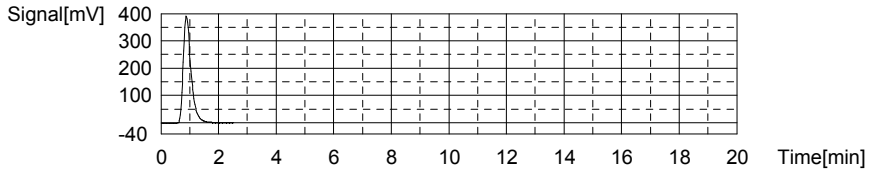
Mean Area 996.2
Mean Conc. 27.35mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	737.8	24.49mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/26/2013 12:10:11 PM

Mean Area 737.8
Mean Conc. 24.49mg/L



Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

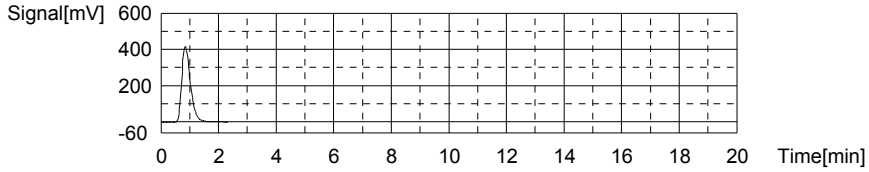
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:24.18mg/L TC:24.09mg/L IC:-0.09644mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	878.2	24.09mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/26/2013 12:17:56 PM

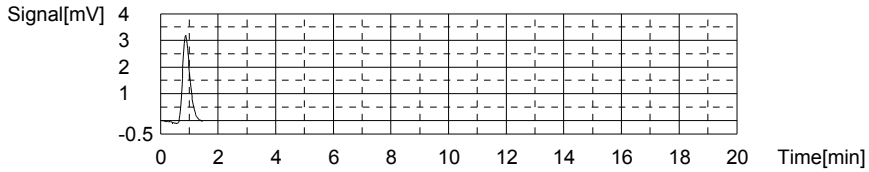
Mean Area 878.2
Mean Conc. 24.09mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	5.842	-0.09644mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/26/2013 12:22:20 PM

Mean Area 5.842
Mean Conc. -0.09644mg/L



Sample

Sample Name: WG454382-01 BLK
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

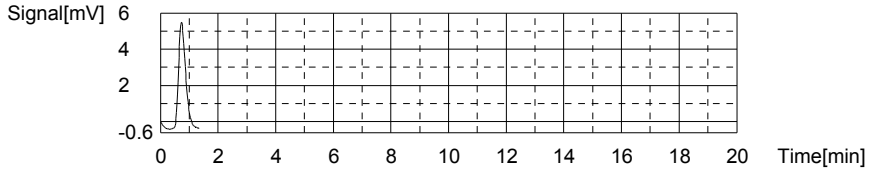
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.1704mg/L TC:0.1003mg/L IC:-0.07004mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.964	0.1003mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/26/2013 12:27:21 PM

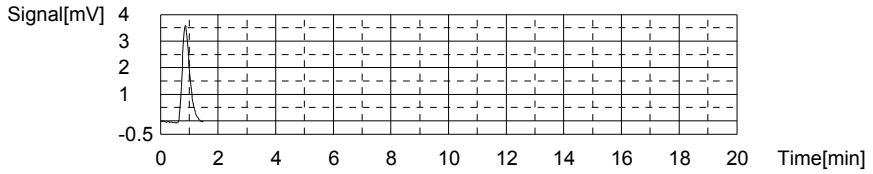
Mean Area 9.964
Mean Conc. 0.1003mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.628	-0.07004mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/26/2013 12:31:19 PM

Mean Area 6.628
Mean Conc. -0.07004mg/L



Sample

Sample Name: WG454382-02 LCS
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

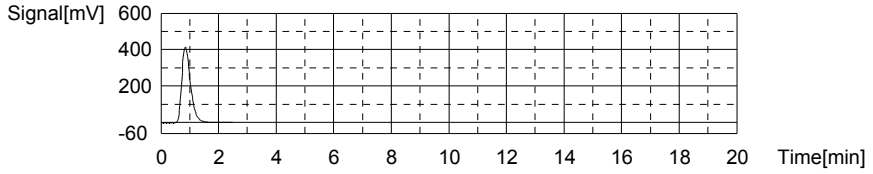
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:24.23mg/L TC:24.07mg/L IC:-0.1572mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	877.8	24.07mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/26/2013 12:39:14 PM

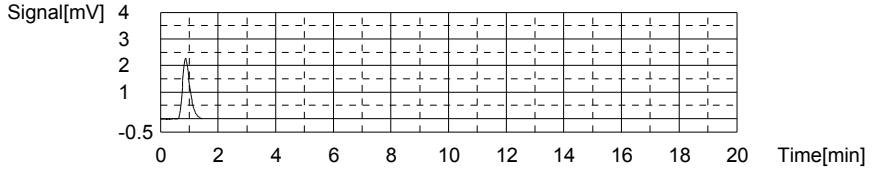
Mean Area 877.8
Mean Conc. 24.07mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	4.033	-0.1572mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/26/2013 12:43:33 PM

Mean Area 4.033
Mean Conc. -0.1572mg/L



Sample

Sample Name: WG454382-03 LCSDUP
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

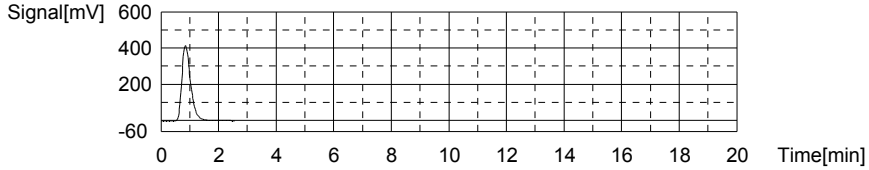
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:24.17mg/L TC:24.02mg/L IC:-0.1495mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	875.7	24.02mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/26/2013 12:51:32 PM

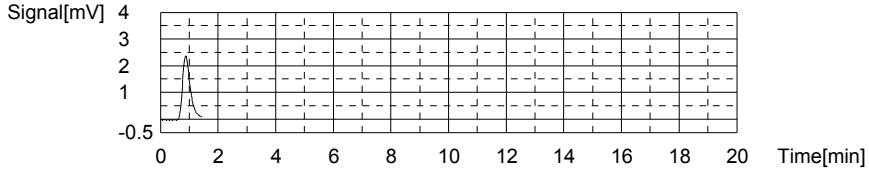
Mean Area 875.7
Mean Conc. 24.02mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	4.262	-0.1495mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/26/2013 12:55:50 PM

Mean Area 4.262
Mean Conc. -0.1495mg/L



Sample

Sample Name:
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

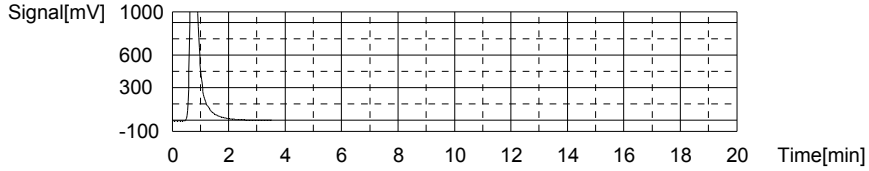
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:9.934mg/L TC:91.02mg/L IC:81.08mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	3301	91.02mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/26/2013 1:04:48 PM

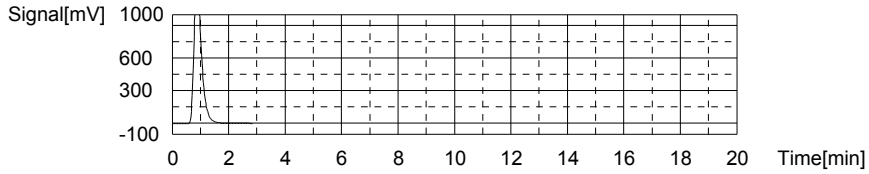
Mean Area 3301
Mean Conc. 91.02mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2423	81.08mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/26/2013 1:11:19 PM

Mean Area 2423
Mean Conc. 81.08mg/L



Sample

Sample Name: L13110842-01
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

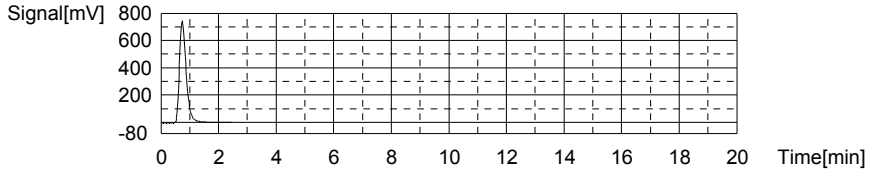
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:5.924mg/L TC:33.47mg/L IC:27.55mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1218	33.47mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/26/2013 1:19:11 PM

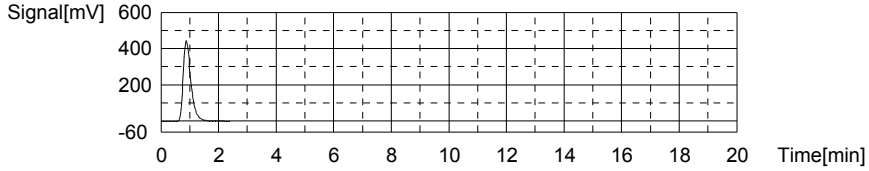
Mean Area 1218
Mean Conc. 33.47mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	829.0	27.55mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/26/2013 1:24:52 PM

Mean Area 829.0
Mean Conc. 27.55mg/L



Sample

Sample Name:
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

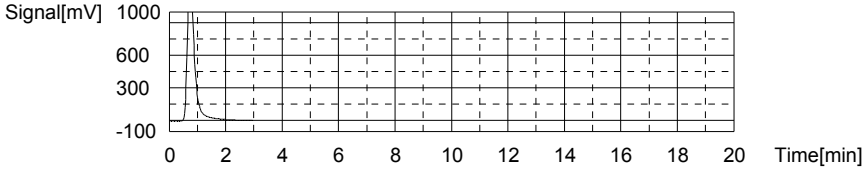
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:10.82mg/L TC:63.42mg/L IC:52.60mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2302	63.42mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/26/2013 1:33:16 PM

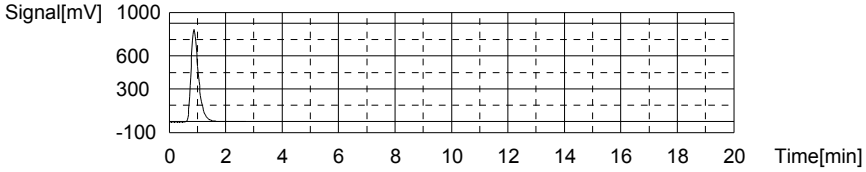
Mean Area 2302
Mean Conc. 63.42mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1575	52.60mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/26/2013 1:39:27 PM

Mean Area 1575
Mean Conc. 52.60mg/L



Sample

Sample Name: L13111340-10
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

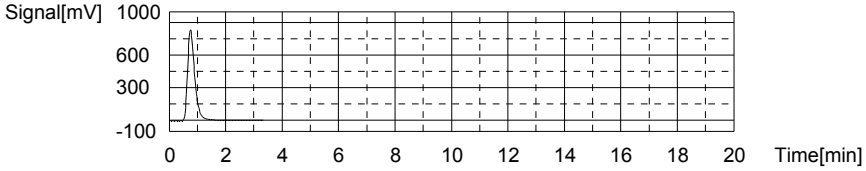
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:14.29mg/L TC:40.71mg/L IC:26.42mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1480	40.71mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/26/2013 1:48:12 PM

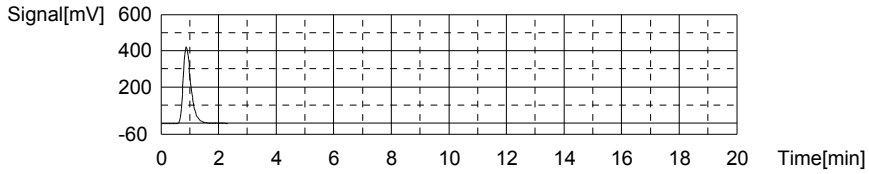
Mean Area 1480
Mean Conc. 40.71mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	795.5	26.42mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/26/2013 1:53:44 PM

Mean Area 795.5
Mean Conc. 26.42mg/L



Sample

Sample Name: L13111340-11
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

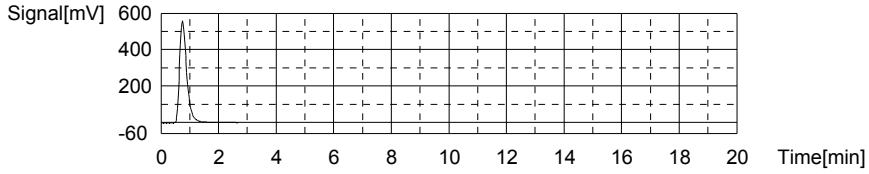
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:8.513mg/L TC:26.70mg/L IC:18.19mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	972.8	26.70mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/26/2013 2:01:50 PM

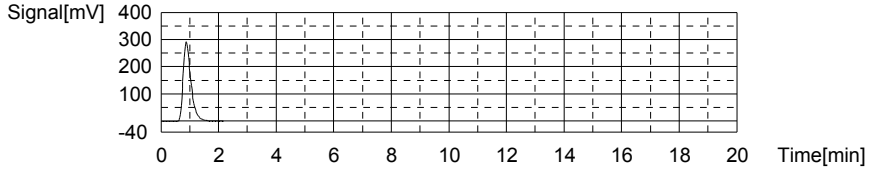
Mean Area 972.8
Mean Conc. 26.70mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	550.2	18.19mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/26/2013 2:07:15 PM

Mean Area 550.2
Mean Conc. 18.19mg/L



Sample

Sample Name: L13111340-12
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

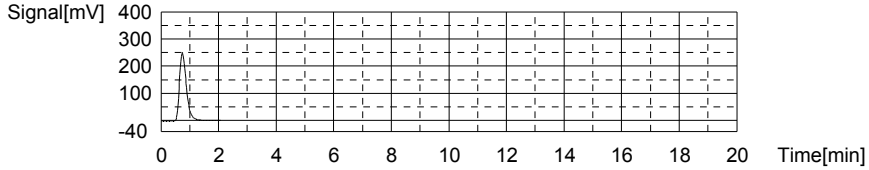
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.651mg/L TC:11.41mg/L IC:8.755mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	419.2	11.41mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/26/2013 2:14:45 PM

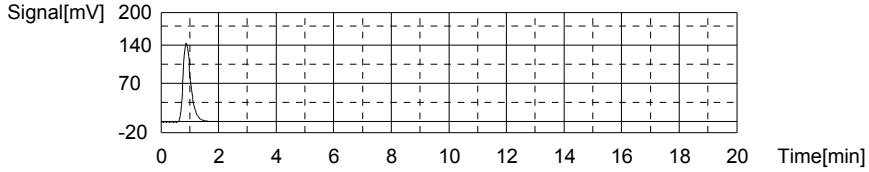
Mean Area 419.2
Mean Conc. 11.41mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	269.4	8.755mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/26/2013 2:19:51 PM

Mean Area 269.4
Mean Conc. 8.755mg/L



Sample

Sample Name: L13111340-13
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

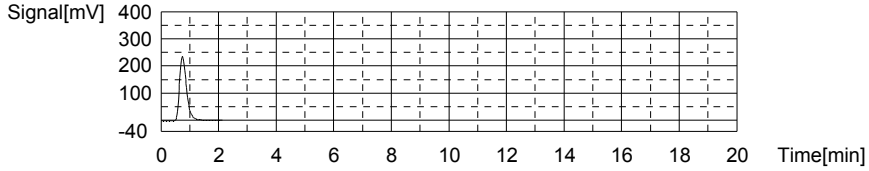
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.053mg/L TC:10.91mg/L IC:7.858mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	401.3	10.91mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/26/2013 2:33:41 PM

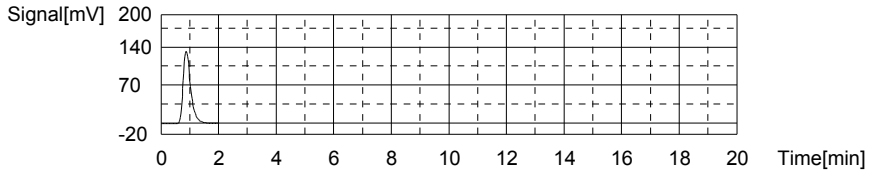
Mean Area 401.3
Mean Conc. 10.91mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	242.7	7.858mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/26/2013 2:38:46 PM

Mean Area 242.7
Mean Conc. 7.858mg/L



Sample

Sample Name: L13111341-01
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

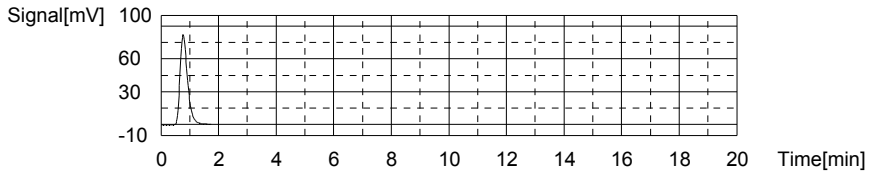
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.833mg/L TC:3.911mg/L IC:1.078mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	147.9	3.911mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/26/2013 2:45:56 PM

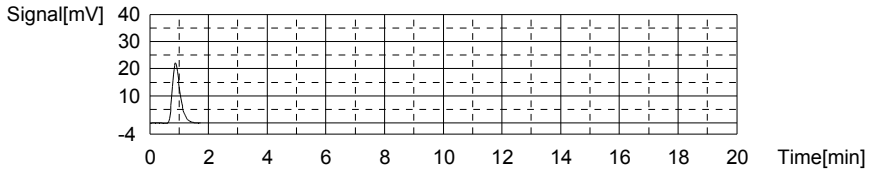
Mean Area 147.9
Mean Conc. 3.911mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	40.80	1.078mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/26/2013 2:50:36 PM

Mean Area 40.80
Mean Conc. 1.078mg/L



Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

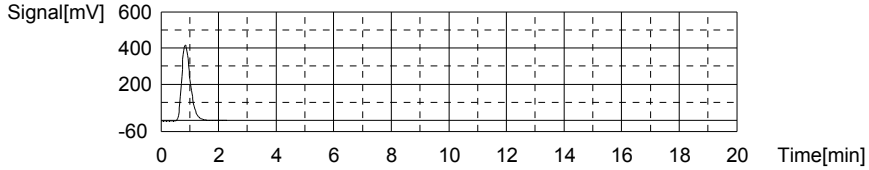
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:24.12mg/L TC:24.04mg/L IC:-0.07602mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	876.6	24.04mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/26/2013 2:58:19 PM

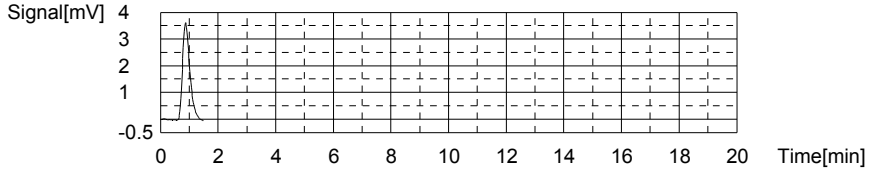
Mean Area 876.6
Mean Conc. 24.04mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.450	-0.07602mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/26/2013 3:02:39 PM

Mean Area 6.450
Mean Conc. -0.07602mg/L



Sample

Sample Name: CCB
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

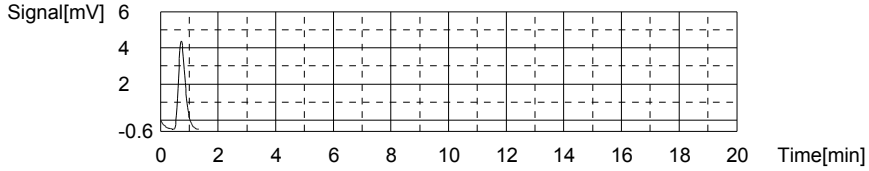
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.1185mg/L TC:0.04630mg/L IC:-0.07222mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.008	0.04630mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/26/2013 3:07:36 PM

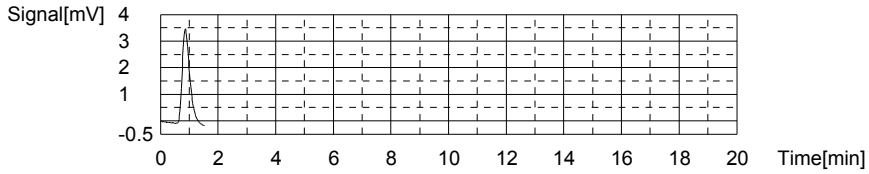
Mean Area 8.008
Mean Conc. 0.04630mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.563	-0.07222mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/26/2013 3:11:33 PM

Mean Area 6.563
Mean Conc. -0.07222mg/L



Sample

Sample Name: L13111341-02
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

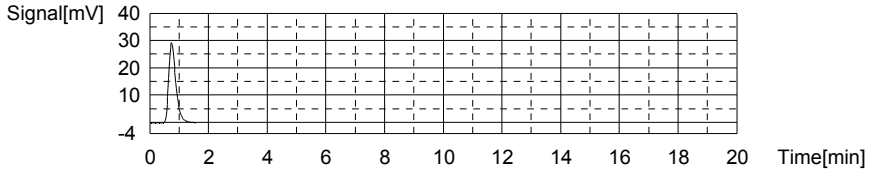
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.4825mg/L TC:1.200mg/L IC:0.7172mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	49.76	1.200mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/26/2013 3:18:34 PM

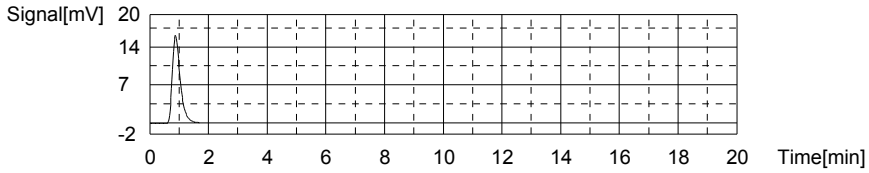
Mean Area 49.76
Mean Conc. 1.200mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	30.07	0.7172mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/26/2013 3:23:07 PM

Mean Area 30.07
Mean Conc. 0.7172mg/L



Sample

Sample Name: L13111348-01
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

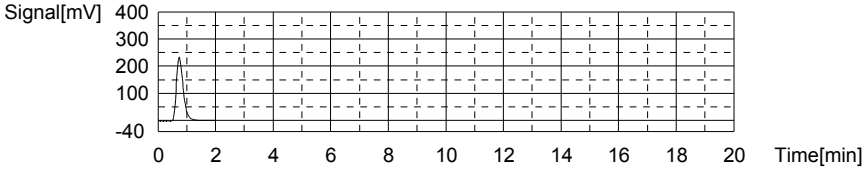
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.516mg/L TC:10.42mg/L IC:8.906mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	383.6	10.42mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/26/2013 3:30:33 PM

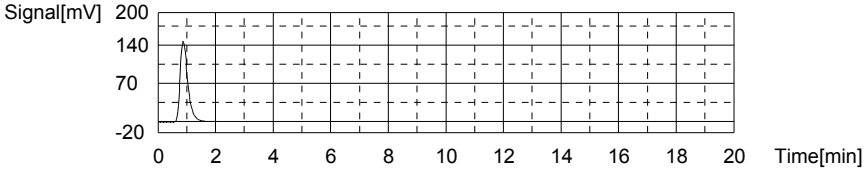
Mean Area 383.6
Mean Conc. 10.42mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	273.9	8.906mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/26/2013 3:35:38 PM

Mean Area 273.9
Mean Conc. 8.906mg/L



Sample

Sample Name: L13111348-02
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

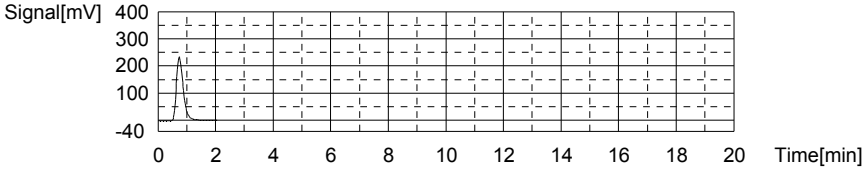
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.917mg/L TC:10.51mg/L IC:8.590mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	386.7	10.51mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/26/2013 3:43:08 PM

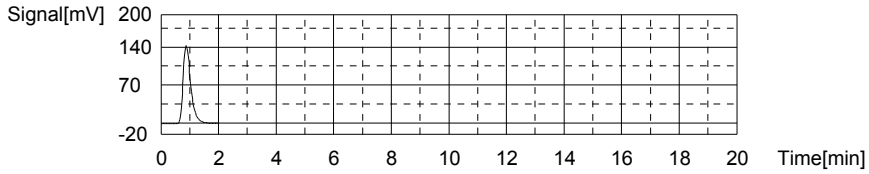
Mean Area 386.7
Mean Conc. 10.51mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	264.5	8.590mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/26/2013 3:48:11 PM

Mean Area 264.5
Mean Conc. 8.590mg/L



Sample

Sample Name: L13111348-03
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

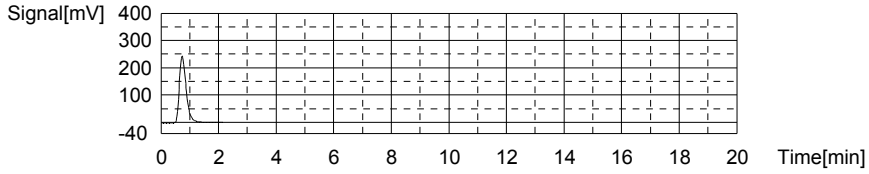
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.807mg/L TC:10.96mg/L IC:9.151mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	403.0	10.96mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/26/2013 3:55:46 PM

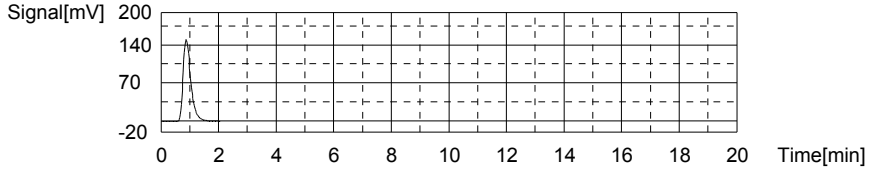
Mean Area 403.0
Mean Conc. 10.96mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	281.2	9.151mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/26/2013 4:00:50 PM

Mean Area 281.2
Mean Conc. 9.151mg/L



Sample

Sample Name: L13111348-04
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

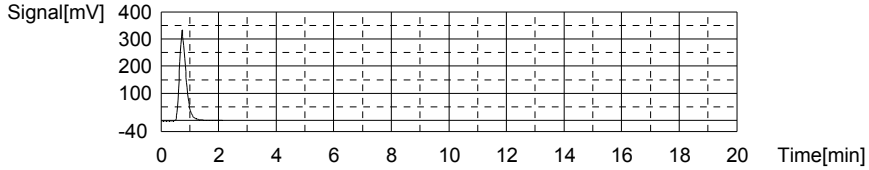
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.144mg/L TC:14.25mg/L IC:12.11mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	522.3	14.25mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/26/2013 4:08:24 PM

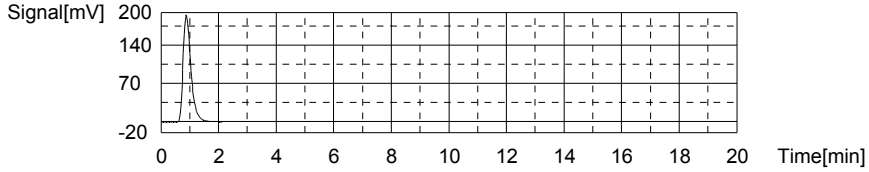
Mean Area 522.3
Mean Conc. 14.25mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	369.3	12.11mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/26/2013 4:13:39 PM

Mean Area 369.3
Mean Conc. 12.11mg/L



Sample

Sample Name: L13111348-05
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

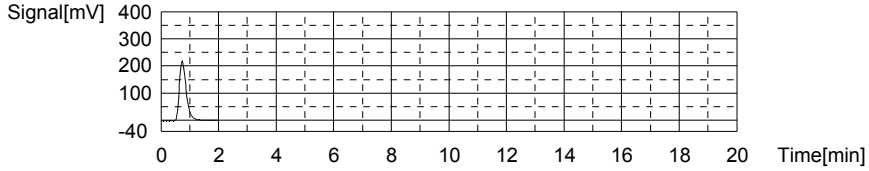
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.489mg/L TC:9.892mg/L IC:8.402mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	364.4	9.892mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/26/2013 4:21:05 PM

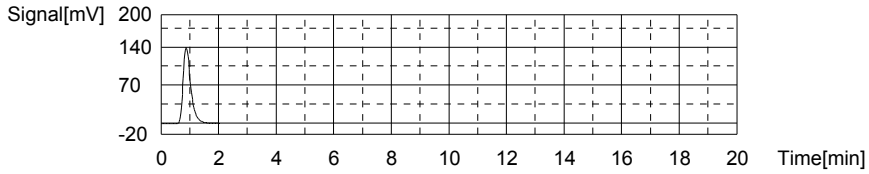
Mean Area 364.4
Mean Conc. 9.892mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	258.9	8.402mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/26/2013 4:26:12 PM

Mean Area 258.9
Mean Conc. 8.402mg/L



Sample

Sample Name: L13111348-06
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

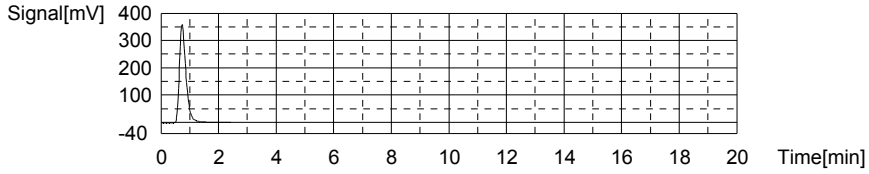
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.989mg/L TC:15.58mg/L IC:13.59mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	570.2	15.58mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/26/2013 4:34:03 PM

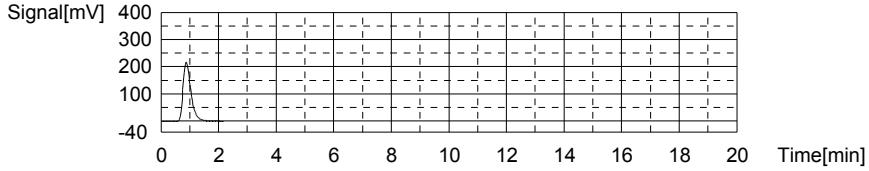
Mean Area 570.2
Mean Conc. 15.58mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	413.3	13.59mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/26/2013 4:39:19 PM

Mean Area 413.3
Mean Conc. 13.59mg/L



Sample

Sample Name: L13111348-07
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

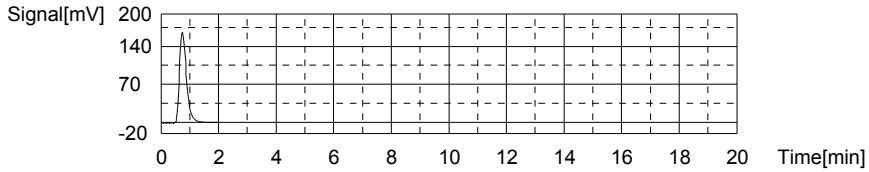
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.853mg/L TC:7.629mg/L IC:5.776mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	282.5	7.629mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/26/2013 4:46:45 PM

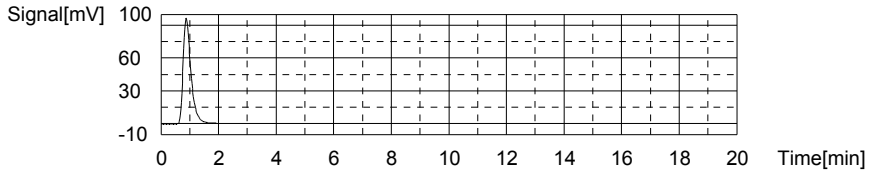
Mean Area 282.5
Mean Conc. 7.629mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	180.7	5.776mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/26/2013 4:51:38 PM

Mean Area 180.7
Mean Conc. 5.776mg/L



Sample

Sample Name: L13111348-08
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

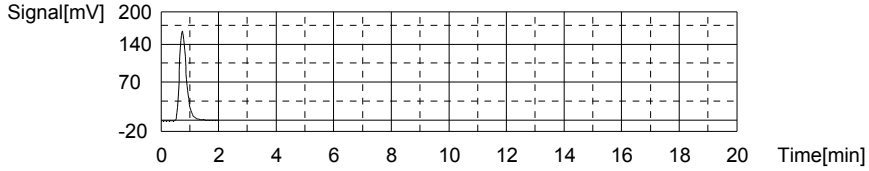
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.891mg/L TC:7.502mg/L IC:5.611mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	277.9	7.502mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/26/2013 4:59:02 PM

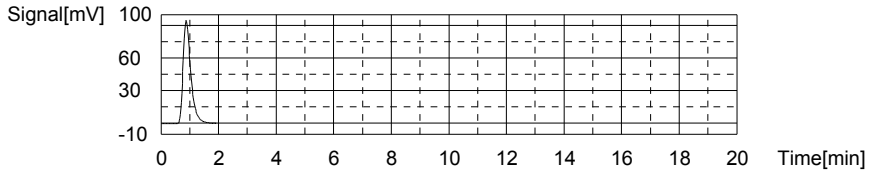
Mean Area 277.9
Mean Conc. 7.502mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	175.8	5.611mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/26/2013 5:03:58 PM

Mean Area 175.8
Mean Conc. 5.611mg/L



Sample

Sample Name: L13111348-09
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

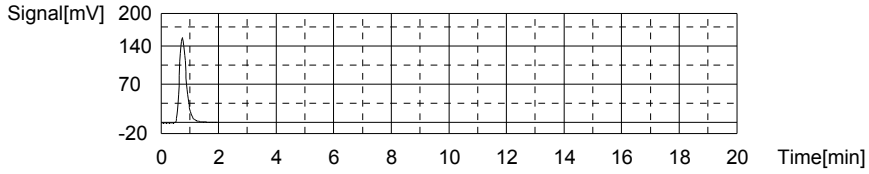
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.848mg/L TC:7.046mg/L IC:5.198mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	261.4	7.046mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/26/2013 5:11:21 PM

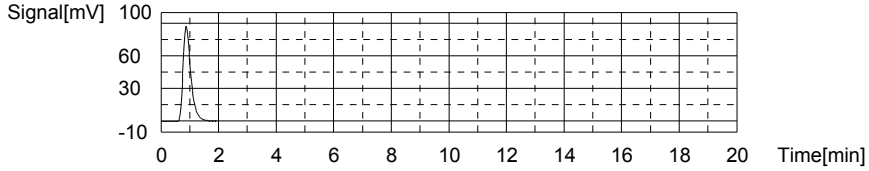
Mean Area 261.4
Mean Conc. 7.046mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	163.5	5.198mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/26/2013 5:16:16 PM

Mean Area 163.5
Mean Conc. 5.198mg/L



Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

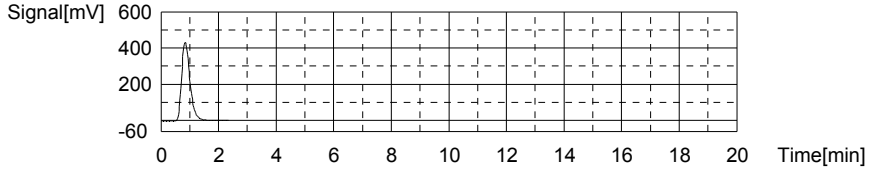
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:23.96mg/L TC:23.91mg/L IC:-0.04495mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	872.0	23.91mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/26/2013 5:24:03 PM

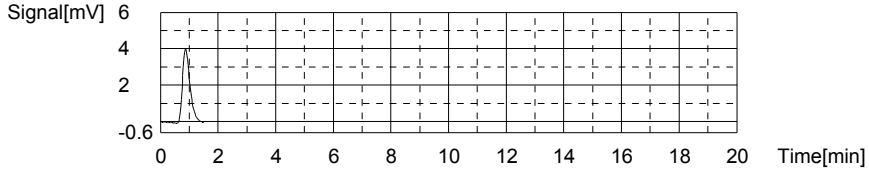
Mean Area 872.0
Mean Conc. 23.91mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.375	-0.04495mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/26/2013 5:28:30 PM

Mean Area 7.375
Mean Conc. -0.04495mg/L



Sample

Sample Name: CCB
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

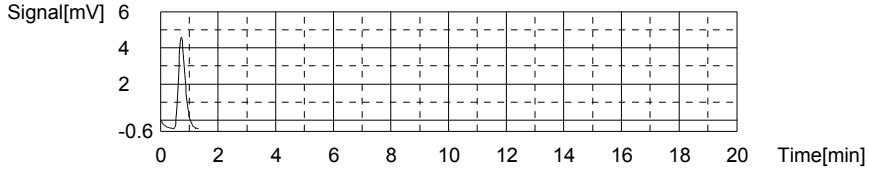
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.1209mg/L TC:0.05279mg/L IC:-0.06812mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.243	0.05279mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/26/2013 5:33:27 PM

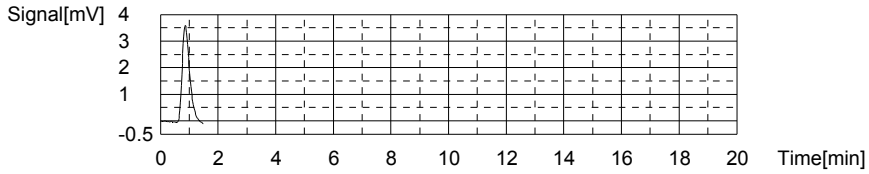
Mean Area 8.243
Mean Conc. 0.05279mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.685	-0.06812mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/26/2013 5:37:23 PM

Mean Area 6.685
Mean Conc. -0.06812mg/L



Sample

Sample Name: L13111348-10
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

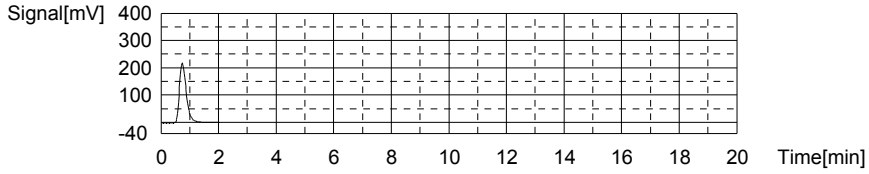
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.831mg/L TC:9.911mg/L IC:8.080mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	365.1	9.911mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/26/2013 5:44:50 PM

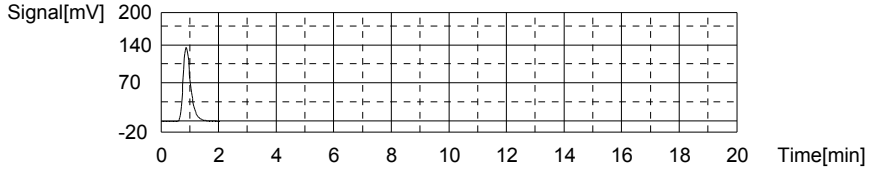
Mean Area 365.1
Mean Conc. 9.911mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	249.3	8.080mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/26/2013 5:49:55 PM

Mean Area 249.3
Mean Conc. 8.080mg/L



Sample

Sample Name: L13111348-11
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

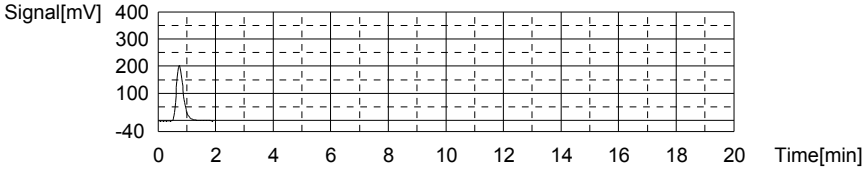
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.665mg/L TC:9.231mg/L IC:7.566mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	340.5	9.231mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/26/2013 5:57:18 PM

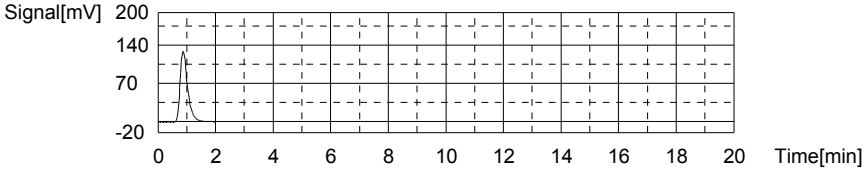
Mean Area 340.5
Mean Conc. 9.231mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	234.0	7.566mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/26/2013 6:02:22 PM

Mean Area 234.0
Mean Conc. 7.566mg/L



Sample

Sample Name: WG454382-05 DUP
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

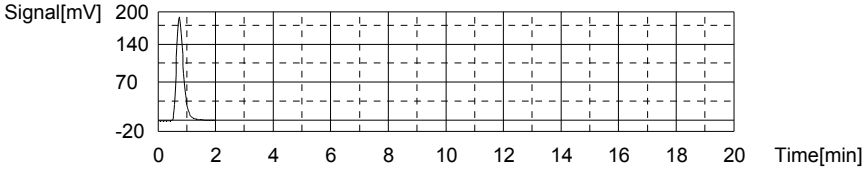
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.854mg/L TC:8.698mg/L IC:6.844mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	321.2	8.698mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/26/2013 6:09:48 PM

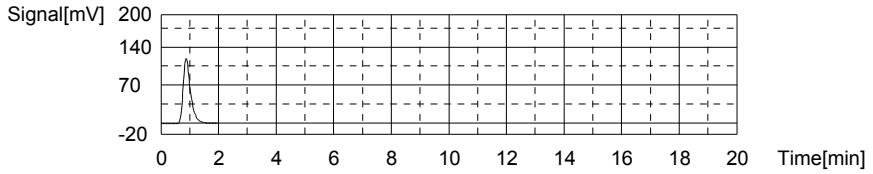
Mean Area 321.2
Mean Conc. 8.698mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	212.5	6.844mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/26/2013 6:14:45 PM

Mean Area 212.5
Mean Conc. 6.844mg/L



Sample

Sample Name: WG454382-06 MS
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

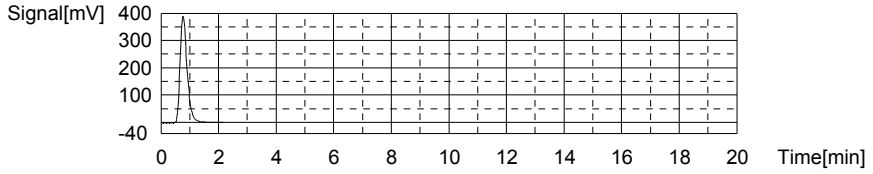
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:12.04mg/L TC:18.20mg/L IC:6.166mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	665.2	18.20mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/26/2013 6:22:23 PM

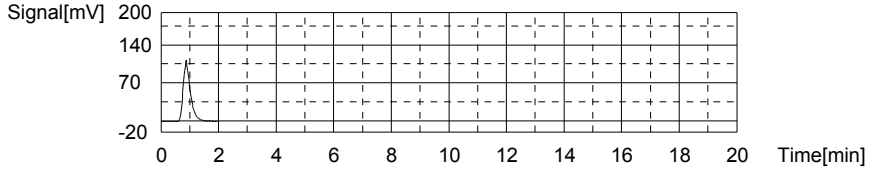
Mean Area 665.2
Mean Conc. 18.20mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	192.3	6.166mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/26/2013 6:27:21 PM

Mean Area 192.3
Mean Conc. 6.166mg/L



Sample

Sample Name: WG454385-01 BLK
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

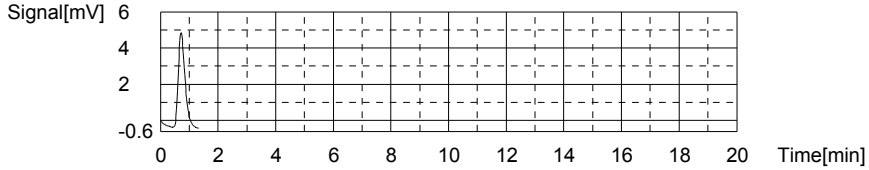
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.1128mg/L TC:0.05892mg/L IC:-0.05388mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.465	0.05892mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/26/2013 6:32:19 PM

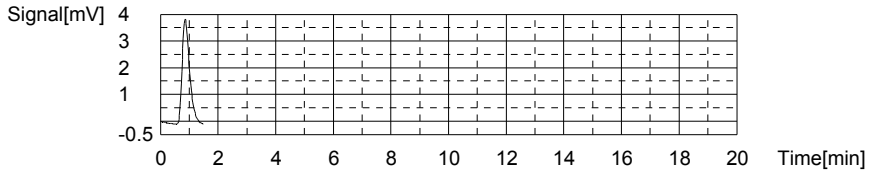
Mean Area 8.465
Mean Conc. 0.05892mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.109	-0.05388mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/26/2013 6:36:17 PM

Mean Area 7.109
Mean Conc. -0.05388mg/L



Sample

Sample Name: WG454385-02 LCS
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

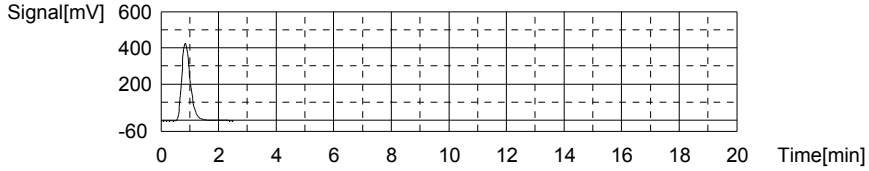
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:24.34mg/L TC:24.25mg/L IC:-0.08512mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	884.3	24.25mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/26/2013 6:44:16 PM

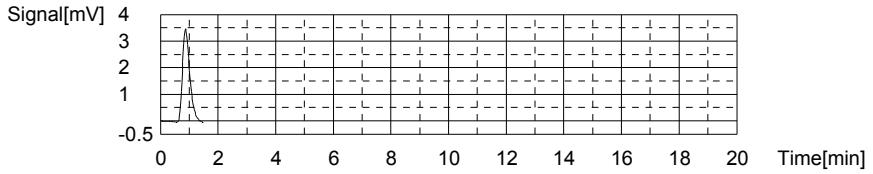
Mean Area 884.3
Mean Conc. 24.25mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.179	-0.08512mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/26/2013 6:48:38 PM

Mean Area 6.179
Mean Conc. -0.08512mg/L



Sample

Sample Name: WG454385-03 LCSDUP
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

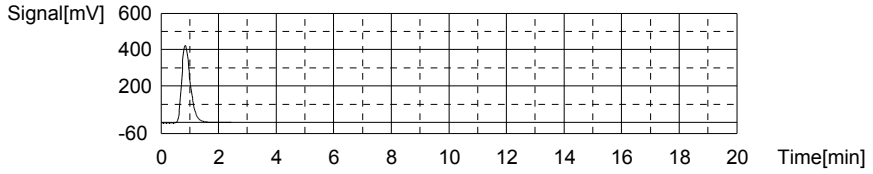
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:24.54mg/L TC:24.45mg/L IC:-0.08650mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	891.5	24.45mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/26/2013 6:56:32 PM

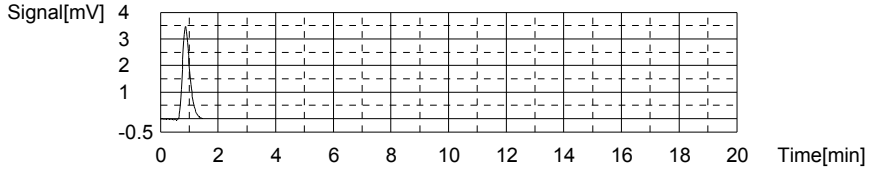
Mean Area 891.5
Mean Conc. 24.45mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.138	-0.08650mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/26/2013 7:00:50 PM

Mean Area 6.138
Mean Conc. -0.08650mg/L



Sample

Sample Name: L13111348-12
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

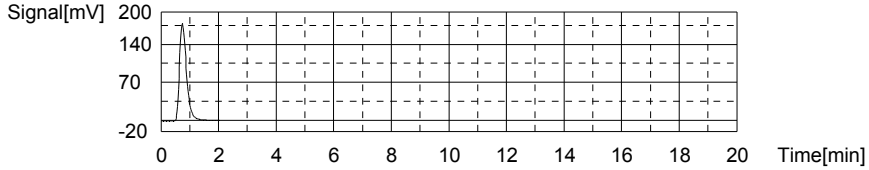
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.489mg/L TC:8.245mg/L IC:5.756mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	304.8	8.245mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/26/2013 7:08:20 PM

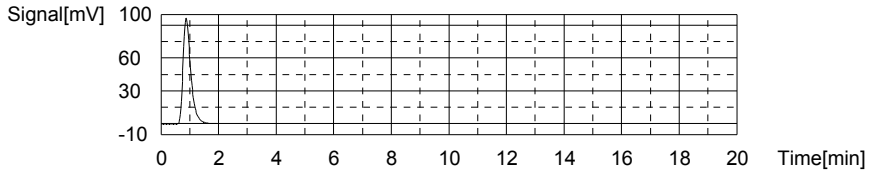
Mean Area 304.8
Mean Conc. 8.245mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	180.1	5.756mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/26/2013 7:13:16 PM

Mean Area 180.1
Mean Conc. 5.756mg/L



Sample

Sample Name:
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

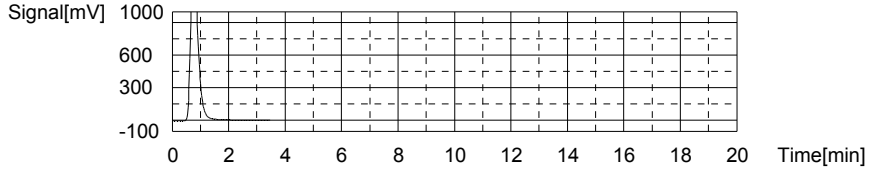
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:19.48mg/L TC:71.21mg/L IC:51.73mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2584	71.21mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/26/2013 7:22:10 PM

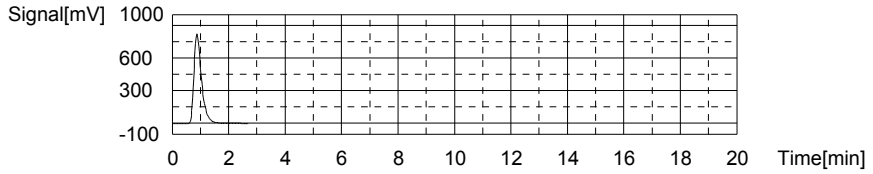
Mean Area 2584
Mean Conc. 71.21mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1549	51.73mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/26/2013 7:28:20 PM

Mean Area 1549
Mean Conc. 51.73mg/L



Sample

Sample Name:
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

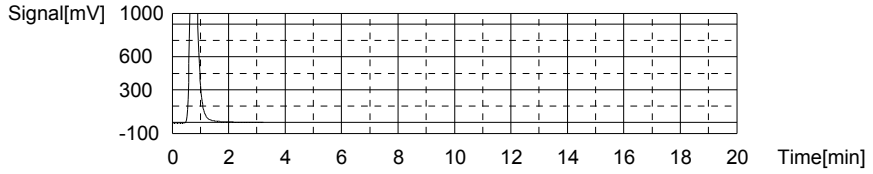
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:-8.132mg/L TC:80.10mg/L IC:88.24mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2906	80.10mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/26/2013 7:37:01 PM

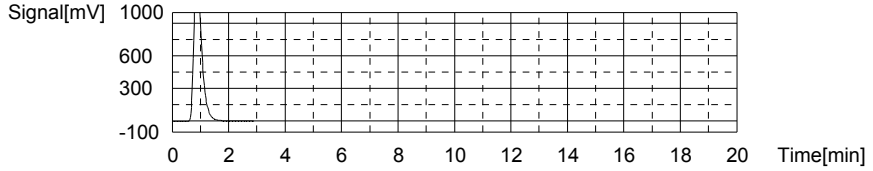
Mean Area 2906
Mean Conc. 80.10mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2636	88.24mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/26/2013 7:43:42 PM

Mean Area 2636
Mean Conc. 88.24mg/L



Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

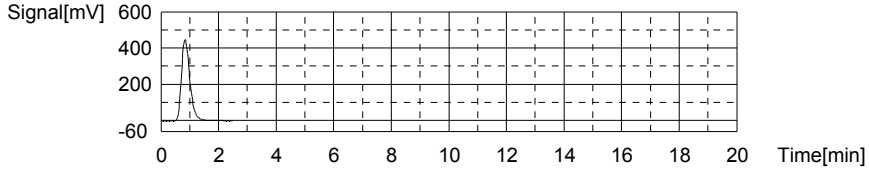
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:24.49mg/L TC:24.80mg/L IC:0.3159mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	904.1	24.80mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/26/2013 7:51:37 PM

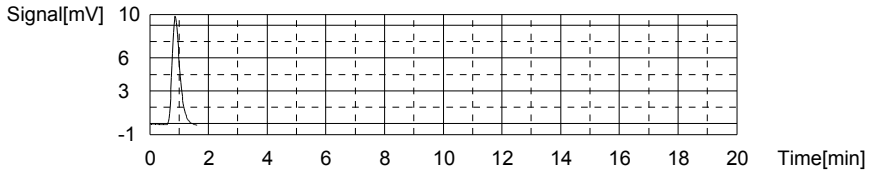
Mean Area 904.1
Mean Conc. 24.80mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	18.12	0.3159mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/26/2013 7:56:19 PM

Mean Area 18.12
Mean Conc. 0.3159mg/L



Sample

Sample Name: CCB
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

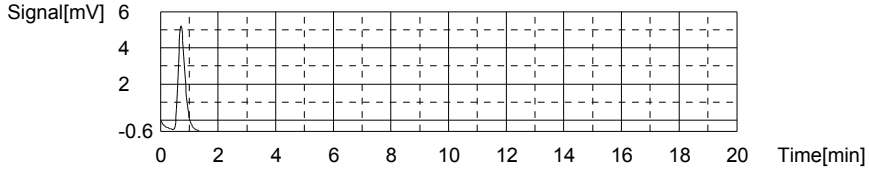
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.09892mg/L TC:0.08453mg/L IC:-0.01439mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.392	0.08453mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/26/2013 8:01:17 PM

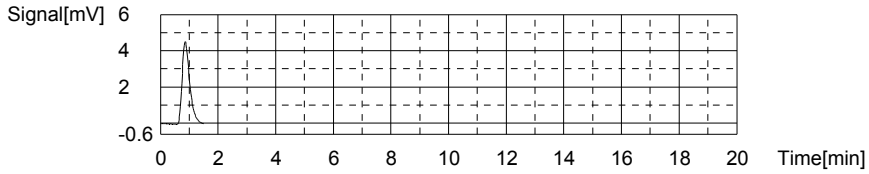
Mean Area 9.392
Mean Conc. 0.08453mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.285	-0.01439mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/26/2013 8:05:17 PM

Mean Area 8.285
Mean Conc. -0.01439mg/L



Sample

Sample Name:
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

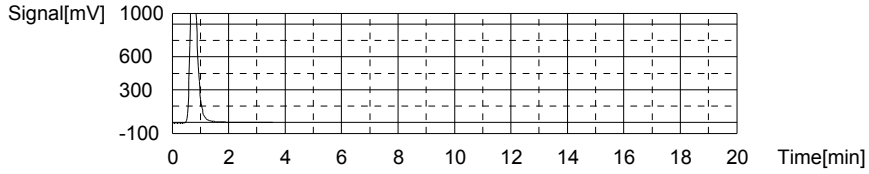
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:5.750mg/L TC:66.82mg/L IC:61.07mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2425	66.82mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/26/2013 8:14:18 PM

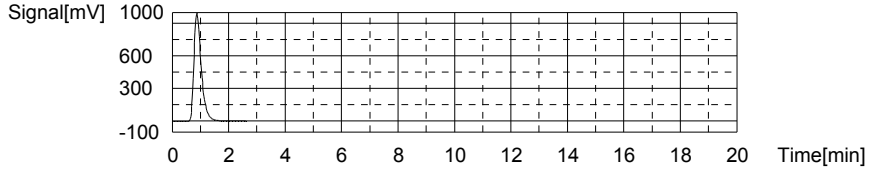
Mean Area 2425
Mean Conc. 66.82mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1827	61.07mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/26/2013 8:20:36 PM

Mean Area 1827
Mean Conc. 61.07mg/L



Sample

Sample Name: L13111348-06
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

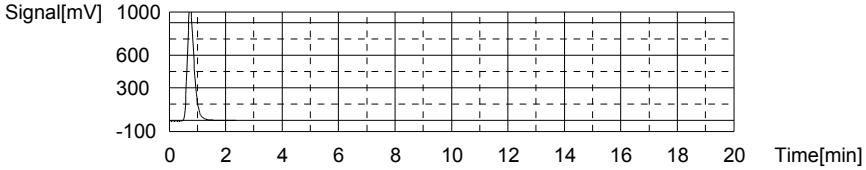
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:7.797mg/L TC:48.14mg/L IC:40.34mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1749	48.14mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/26/2013 8:28:25 PM

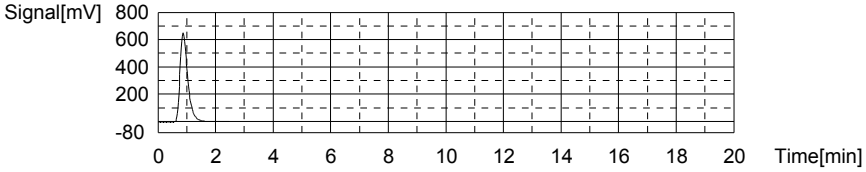
Mean Area 1749
Mean Conc. 48.14mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1210	40.34mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/26/2013 8:34:22 PM

Mean Area 1210
Mean Conc. 40.34mg/L



Sample

Sample Name:
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

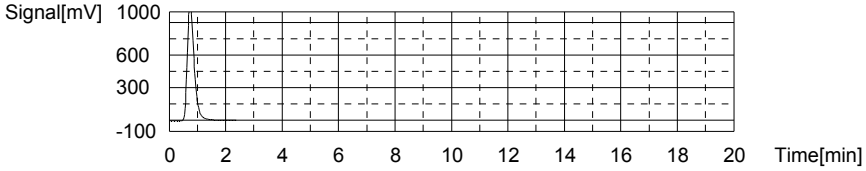
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:7.751mg/L TC:50.38mg/L IC:42.63mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1830	50.38mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/26/2013 8:42:12 PM

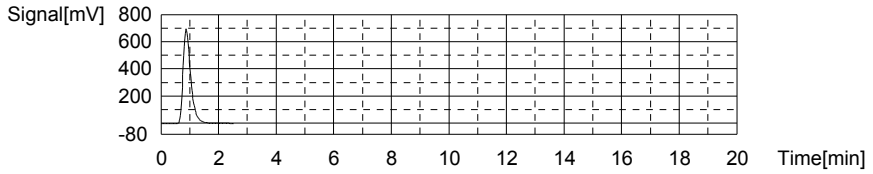
Mean Area 1830
Mean Conc. 50.38mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1278	42.63mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/26/2013 8:48:04 PM

Mean Area 1278
Mean Conc. 42.63mg/L



Sample

Sample Name: L13111392-02
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

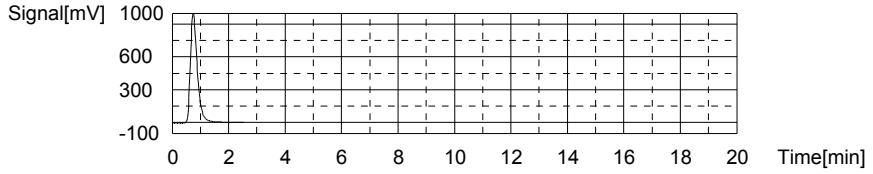
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:11.05mg/L TC:47.23mg/L IC:36.18mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1716	47.23mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/26/2013 8:56:02 PM

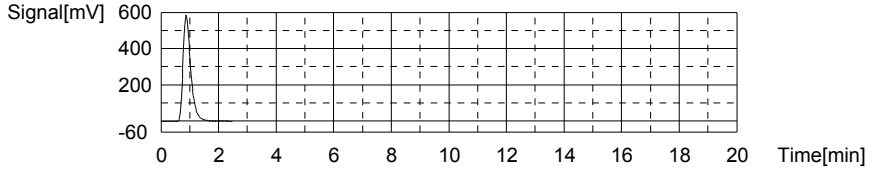
Mean Area 1716
Mean Conc. 47.23mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1086	36.18mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/26/2013 9:01:55 PM

Mean Area 1086
Mean Conc. 36.18mg/L



Sample

Sample Name: L1311951-03
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

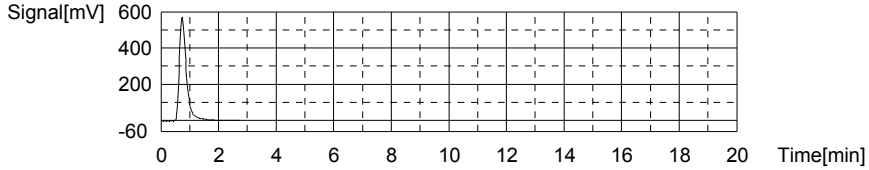
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.217mg/L TC:26.92mg/L IC:22.70mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	980.8	26.92mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/26/2013 9:10:06 PM

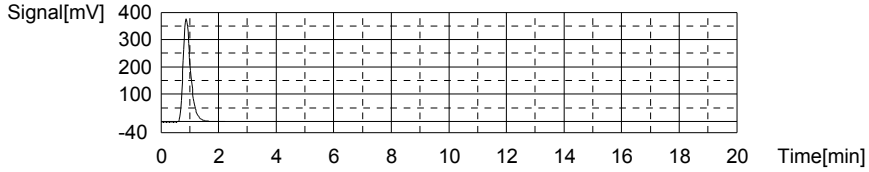
Mean Area 980.8
Mean Conc. 26.92mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	684.7	22.70mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/26/2013 9:15:35 PM

Mean Area 684.7
Mean Conc. 22.70mg/L



Sample

Sample Name: L1311951-04
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

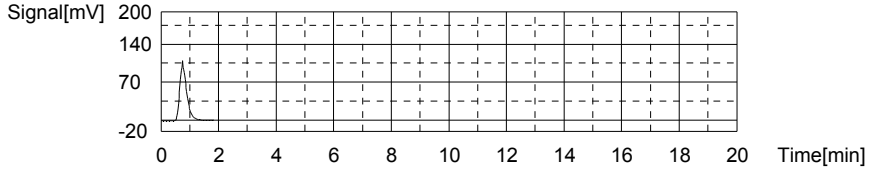
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.303mg/L TC:4.723mg/L IC:2.420mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	177.3	4.723mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/26/2013 9:22:53 PM

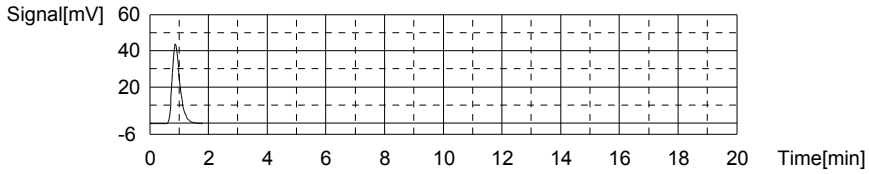
Mean Area 177.3
Mean Conc. 4.723mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	80.76	2.420mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/26/2013 9:27:40 PM

Mean Area 80.76
Mean Conc. 2.420mg/L



Sample

Sample Name: L13111086-01
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

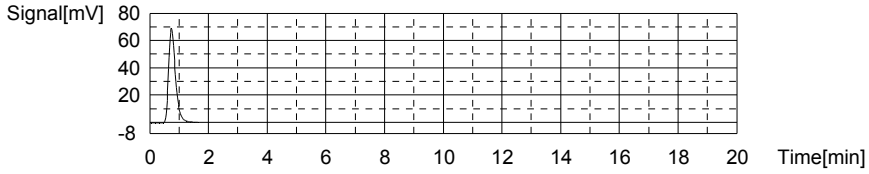
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.7746mg/L TC:2.933mg/L IC:2.158mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	112.5	2.933mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/26/2013 9:34:45 PM

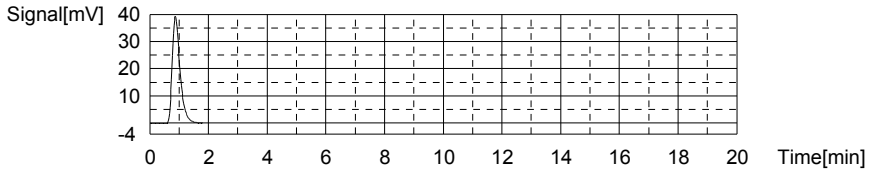
Mean Area 112.5
Mean Conc. 2.933mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	72.98	2.158mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/26/2013 9:39:31 PM

Mean Area 72.98
Mean Conc. 2.158mg/L



Sample

Sample Name: L13111086-02
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

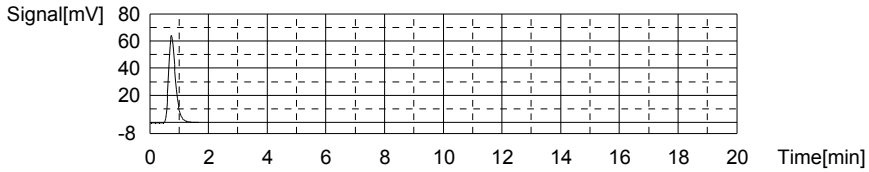
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.7880mg/L TC:2.726mg/L IC:1.938mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	105.0	2.726mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/26/2013 9:46:38 PM

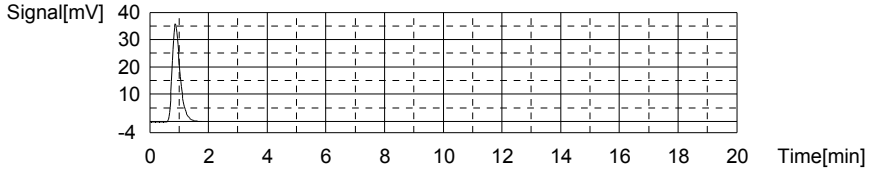
Mean Area 105.0
Mean Conc. 2.726mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	66.41	1.938mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/26/2013 9:51:21 PM

Mean Area 66.41
Mean Conc. 1.938mg/L



Sample

Sample Name: L13111124-01 (4)
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

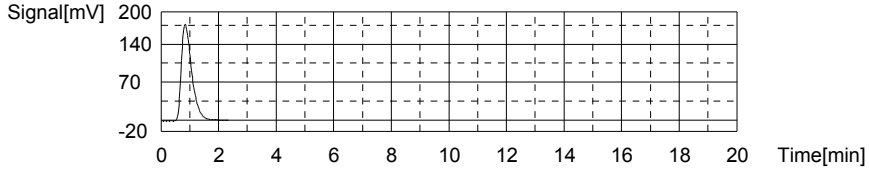
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:11.63mg/L TC:12.06mg/L IC:0.4304mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	443.0	12.06mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/26/2013 9:59:09 PM

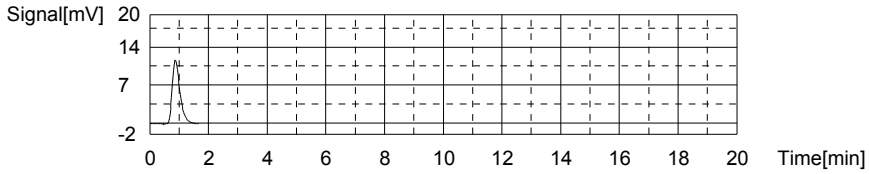
Mean Area 443.0
Mean Conc. 12.06mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	21.53	0.4304mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/26/2013 10:03:42 PM

Mean Area 21.53
Mean Conc. 0.4304mg/L



Sample

Sample Name: L13111205-02
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

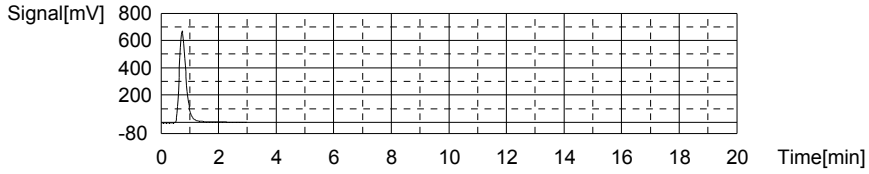
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.548mg/L TC:30.41mg/L IC:27.86mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1107	30.41mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/26/2013 10:12:10 PM

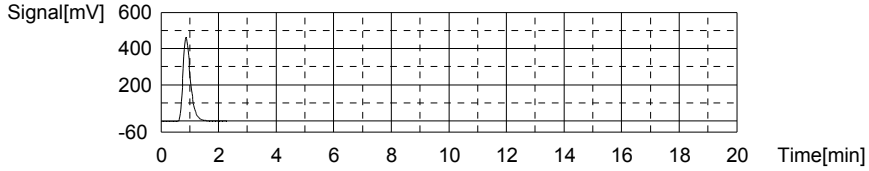
Mean Area 1107
Mean Conc. 30.41mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	838.2	27.86mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/26/2013 10:17:40 PM

Mean Area 838.2
Mean Conc. 27.86mg/L



Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

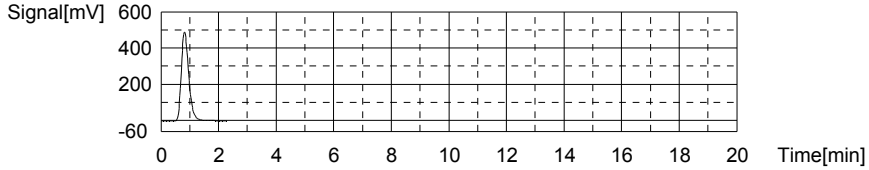
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:24.01mg/L TC:24.05mg/L IC:0.04250mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	876.9	24.05mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/26/2013 10:25:26 PM

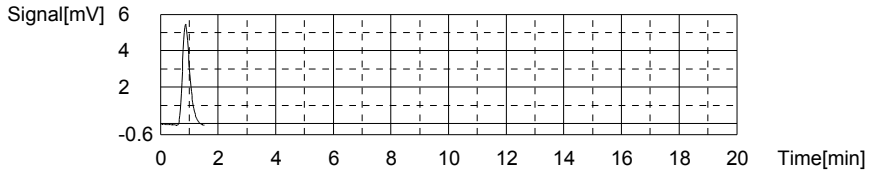
Mean Area 876.9
Mean Conc. 24.05mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.979	0.04250mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/26/2013 10:29:54 PM

Mean Area 9.979
Mean Conc. 0.04250mg/L



Sample

Sample Name: CCB
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

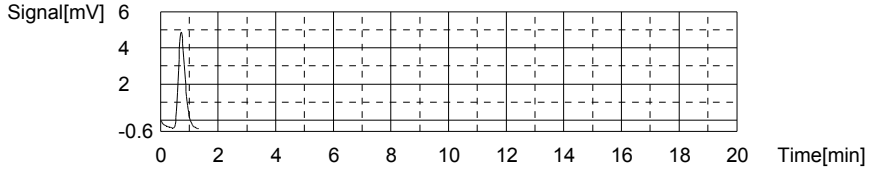
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.1136mg/L TC:0.06506mg/L IC:-0.04858mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.687	0.06506mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/26/2013 10:34:51 PM

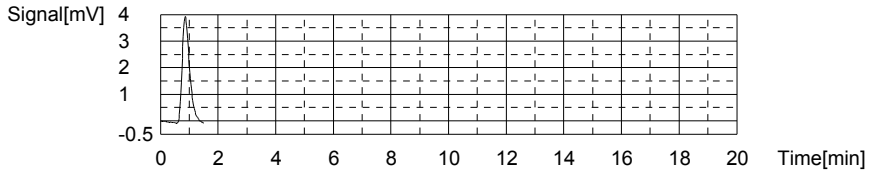
Mean Area 8.687
Mean Conc. 0.06506mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.267	-0.04858mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/26/2013 10:38:50 PM

Mean Area 7.267
Mean Conc. -0.04858mg/L



Sample

Sample Name: L13111205-03
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

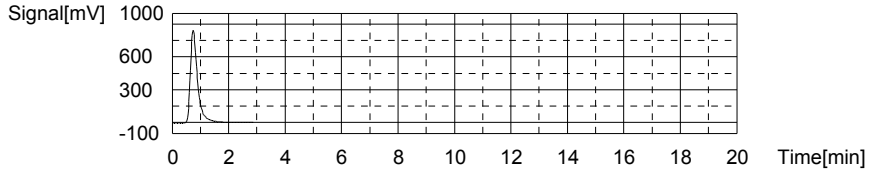
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:10.43mg/L TC:41.54mg/L IC:31.11mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1510	41.54mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/26/2013 10:47:11 PM

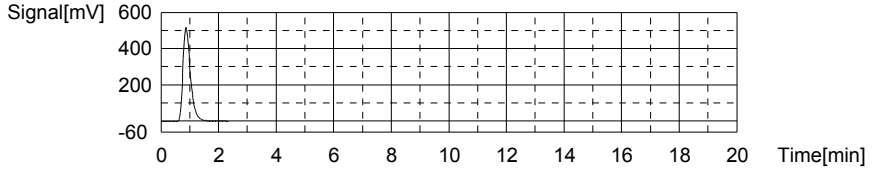
Mean Area 1510
Mean Conc. 41.54mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	934.9	31.11mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/26/2013 10:52:47 PM

Mean Area 934.9
Mean Conc. 31.11mg/L



Sample

Sample Name: L13111205-04 MS
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

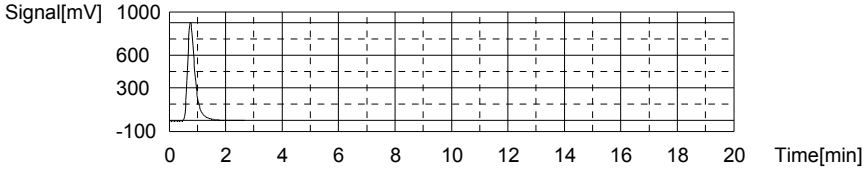
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:18.99mg/L TC:46.54mg/L IC:27.55mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1691	46.54mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/26/2013 11:00:56 PM

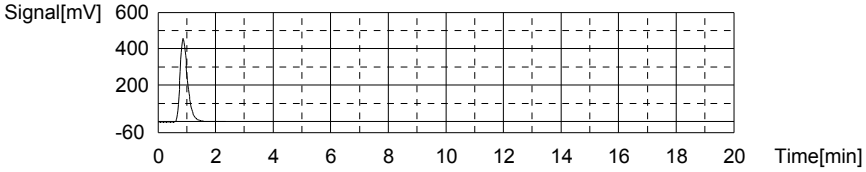
Mean Area 1691
Mean Conc. 46.54mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	829.1	27.55mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/26/2013 11:06:34 PM

Mean Area 829.1
Mean Conc. 27.55mg/L



Sample

Sample Name: L13111205-05 MSD
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

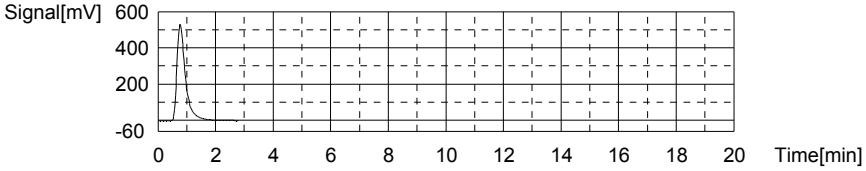
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:18.27mg/L TC:29.88mg/L IC:11.61mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1088	29.88mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/26/2013 11:14:49 PM

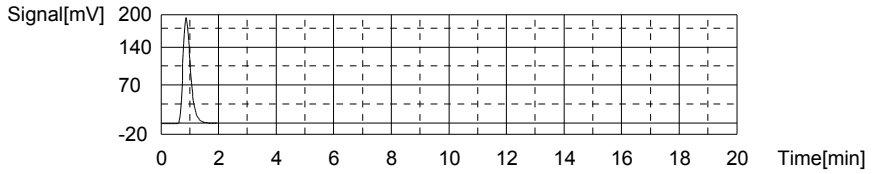
Mean Area 1088
Mean Conc. 29.88mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	354.3	11.61mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/26/2013 11:19:51 PM

Mean Area 354.3
Mean Conc. 11.61mg/L



Sample

Sample Name: L13111154-01
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

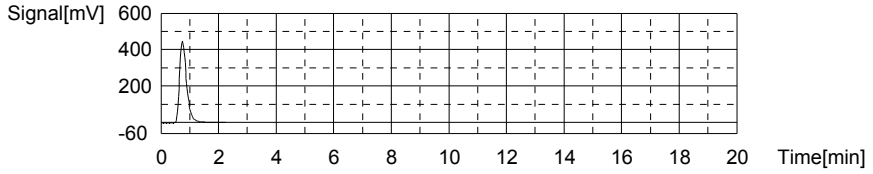
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:6.085mg/L TC:20.85mg/L IC:14.76mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	761.0	20.85mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/26/2013 11:27:34 PM

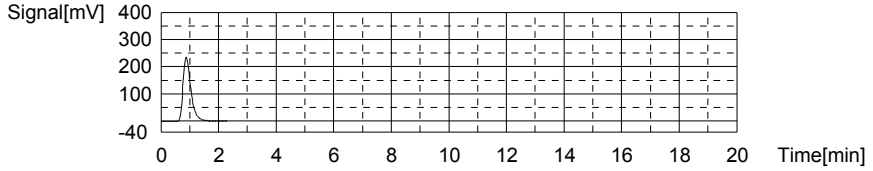
Mean Area 761.0
Mean Conc. 20.85mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	448.3	14.76mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/26/2013 11:33:01 PM

Mean Area 448.3
Mean Conc. 14.76mg/L



Sample

Sample Name: WG454385-07 DUP
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

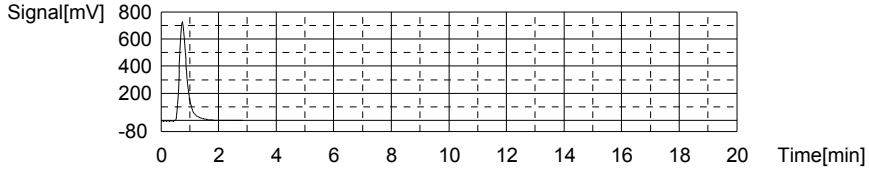
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:9.307mg/L TC:36.35mg/L IC:27.04mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1322	36.35mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/26/2013 11:41:19 PM

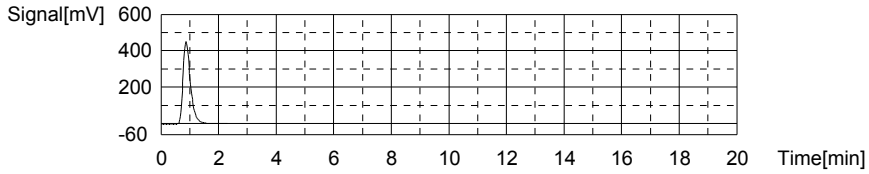
Mean Area 1322
Mean Conc. 36.35mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	813.8	27.04mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/26/2013 11:46:53 PM

Mean Area 813.8
Mean Conc. 27.04mg/L



Sample

Sample Name: WG454387-01 BLK
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

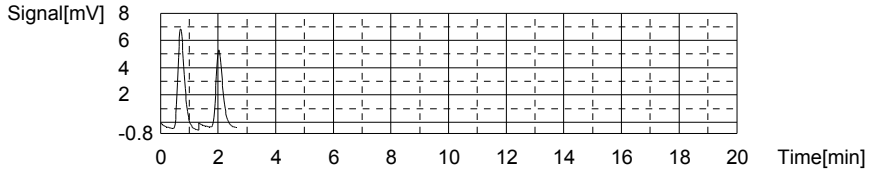
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.1173mg/L TC:0.1099mg/L IC:-0.00745mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	11.51	0.1430mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/26/2013 11:51:50 PM
2	9.108	0.07669mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/26/2013 11:55:17 PM

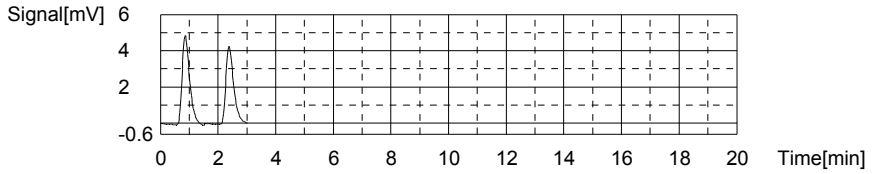
Mean Area 10.31
Mean Conc. 0.1099mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.080	0.01231mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/26/2013 11:59:18 PM
2	7.903	-0.02722mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/27/2013 12:03:16 AM

Mean Area 8.492
Mean Conc. -0.00745mg/L



Sample

Sample Name: WG454387-02 LCS
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

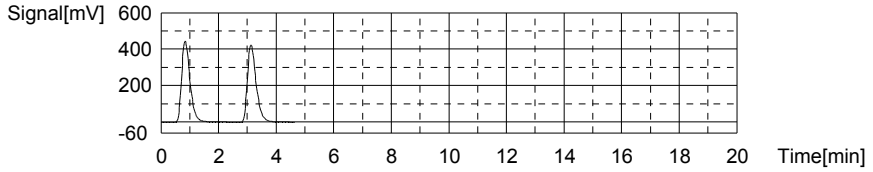
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:24.74mg/L TC:24.68mg/L IC:-0.05958mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	902.5	24.76mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/27/2013 12:11:02 AM
2	897.3	24.61mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/27/2013 12:15:39 AM

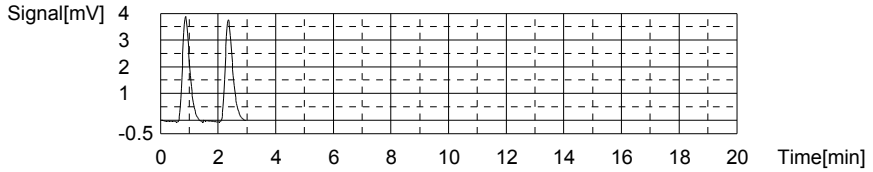
Mean Area 899.9
Mean Conc. 24.68mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.051	-0.05583mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/27/2013 12:20:04 AM
2	6.828	-0.06332mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/27/2013 12:24:11 AM

Mean Area 6.940
Mean Conc. -0.05958mg/L



Sample

Sample Name: WG454387-03 LCSDUP
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

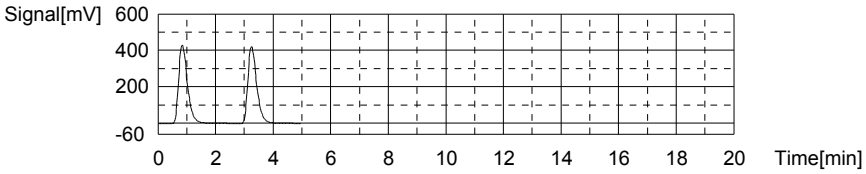
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:24.90mg/L TC:24.83mg/L IC:-0.07032mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	910.1	24.97mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/27/2013 12:32:04 AM
2	900.0	24.69mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/27/2013 12:36:53 AM

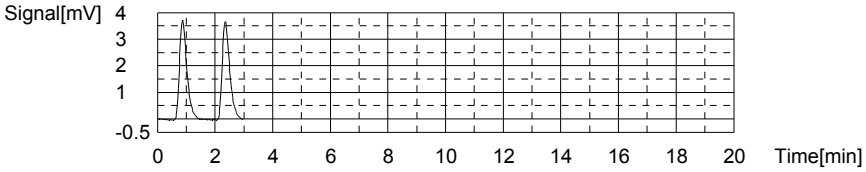
Mean Area 905.0
Mean Conc. 24.83mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.622	-0.07024mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/27/2013 12:41:16 AM
2	6.617	-0.07041mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/27/2013 12:45:25 AM

Mean Area 6.620
Mean Conc. -0.07032mg/L



Sample

Sample Name: L13111173-11 (2)
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

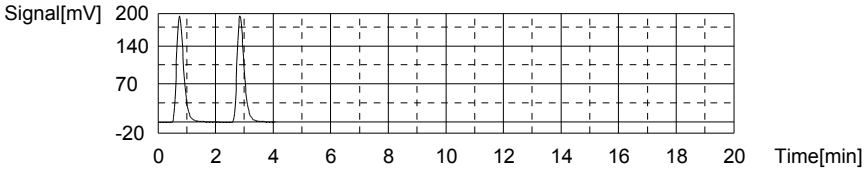
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.288mg/L TC:9.168mg/L IC:5.880mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	339.5	9.204mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/27/2013 12:52:59 AM
2	336.9	9.132mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/27/2013 12:57:13 AM

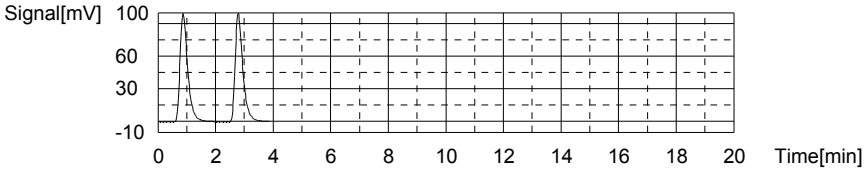
Mean Area 338.2
Mean Conc. 9.168mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	183.4	5.867mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/27/2013 1:02:06 AM
2	184.2	5.894mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/27/2013 1:06:50 AM

Mean Area 183.8
Mean Conc. 5.880mg/L



Sample

Sample Name: L13111361-03
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

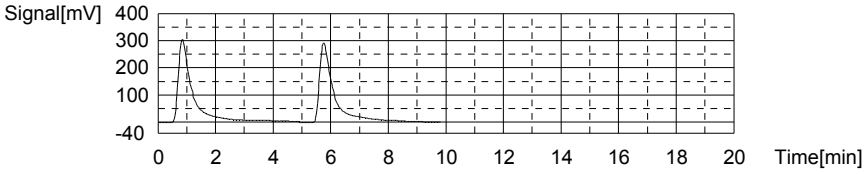
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:25.42mg/L TC:28.67mg/L IC:3.245mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1039	28.53mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/27/2013 1:17:12 AM
2	1049	28.80mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/27/2013 1:25:44 AM

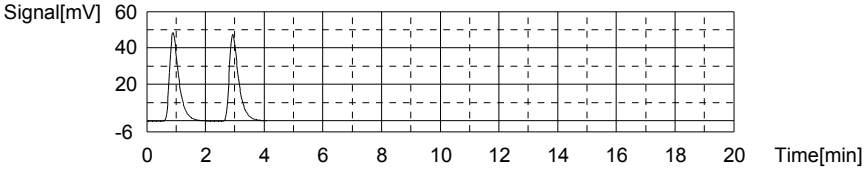
Mean Area 1044
Mean Conc. 28.67mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	105.7	3.257mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/27/2013 1:30:50 AM
2	105.0	3.234mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/27/2013 1:35:42 AM

Mean Area 105.3
Mean Conc. 3.245mg/L



Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

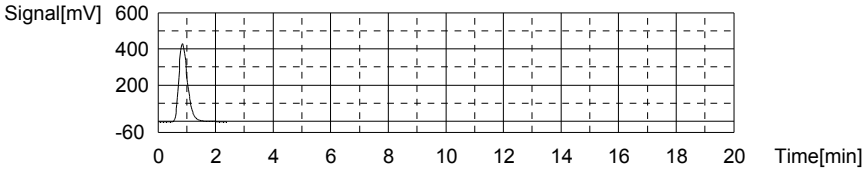
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:24.87mg/L TC:24.83mg/L IC:-0.04304mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	905.1	24.83mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/27/2013 1:43:35 AM

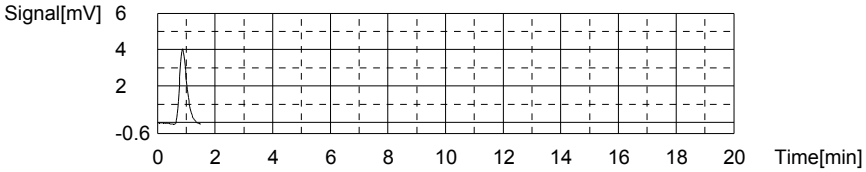
Mean Area 905.1
Mean Conc. 24.83mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.432	-0.04304mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/27/2013 1:48:00 AM

Mean Area 7.432
Mean Conc. -0.04304mg/L



Sample

Sample Name: CCB
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

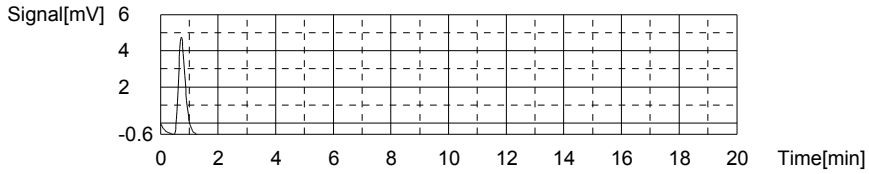
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.1240mg/L TC:0.07075mg/L IC:-0.05325mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.893	0.07075mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/27/2013 1:52:57 AM

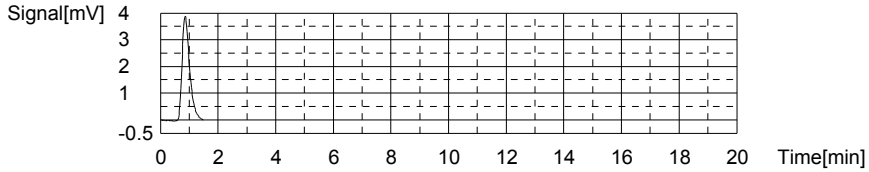
Mean Area 8.893
Mean Conc. 0.07075mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.128	-0.05325mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/27/2013 1:56:54 AM

Mean Area 7.128
Mean Conc. -0.05325mg/L



Sample

Sample Name: L13111239-01
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

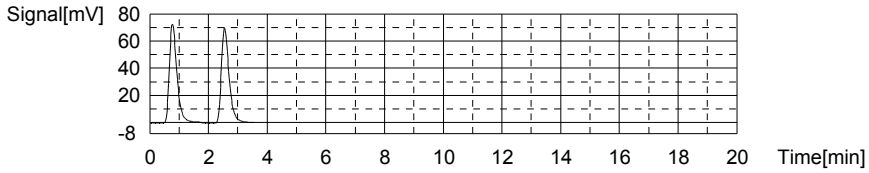
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.856mg/L TC:3.379mg/L IC:0.5231mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	129.6	3.405mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/27/2013 2:04:11 AM
2	127.7	3.353mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/27/2013 2:08:15 AM

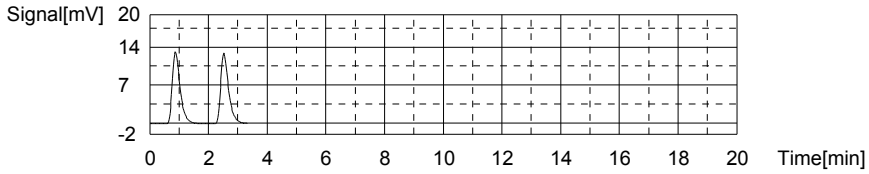
Mean Area 128.7
Mean Conc. 3.379mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	24.50	0.5302mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/27/2013 2:12:51 AM
2	24.08	0.5161mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/27/2013 2:17:16 AM

Mean Area 24.29
Mean Conc. 0.5231mg/L



Sample

Sample Name: L13111281-01
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

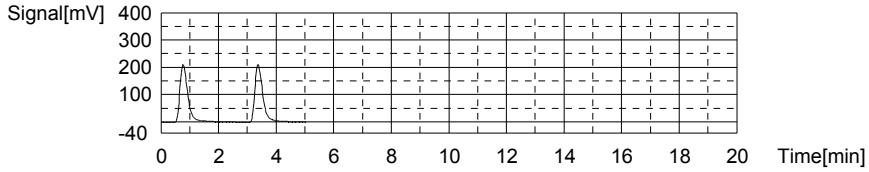
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:7.204mg/L TC:10.98mg/L IC:3.778mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	402.6	10.95mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/27/2013 2:25:21 AM
2	405.1	11.02mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/27/2013 2:30:03 AM

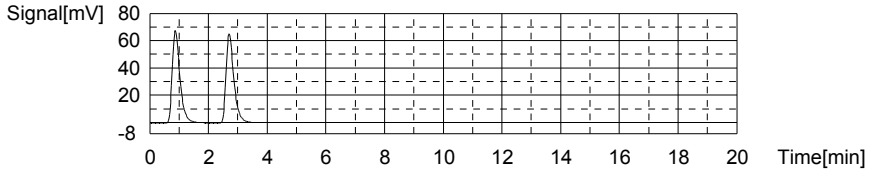
Mean Area 403.9
Mean Conc. 10.98mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	122.8	3.832mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/27/2013 2:34:52 AM
2	119.6	3.724mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/27/2013 2:39:28 AM

Mean Area 121.2
Mean Conc. 3.778mg/L



Sample

Sample Name: L13111281-02
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

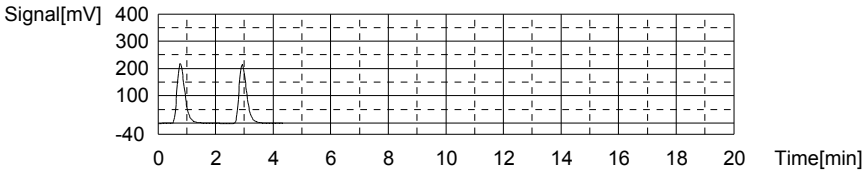
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:7.673mg/L TC:11.06mg/L IC:3.388mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	411.0	11.18mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/27/2013 2:47:07 AM
2	402.5	10.94mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/27/2013 2:51:34 AM

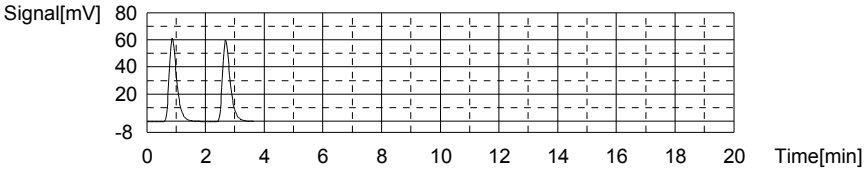
Mean Area 406.8
Mean Conc. 11.06mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	110.3	3.412mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/27/2013 2:56:21 AM
2	108.9	3.365mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/27/2013 3:00:54 AM

Mean Area 109.6
Mean Conc. 3.388mg/L



Sample

Sample Name: L13111281-03
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

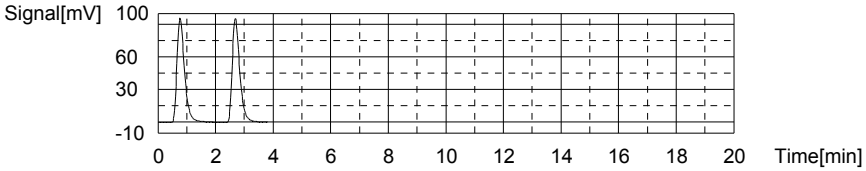
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.170mg/L TC:4.643mg/L IC:1.473mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	174.7	4.651mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/27/2013 3:08:18 AM
2	174.1	4.635mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/27/2013 3:12:27 AM

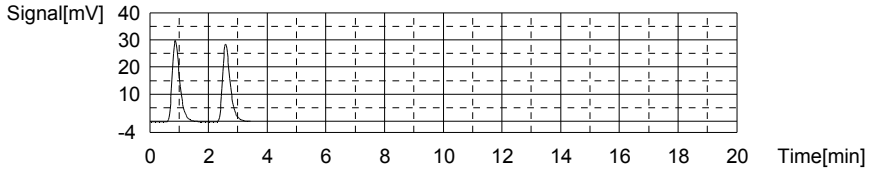
Mean Area 174.4
Mean Conc. 4.643mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	53.60	1.507mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/27/2013 3:17:08 AM
2	51.56	1.439mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/27/2013 3:21:35 AM

Mean Area 52.58
Mean Conc. 1.473mg/L



Sample

Sample Name: L13111322-02
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

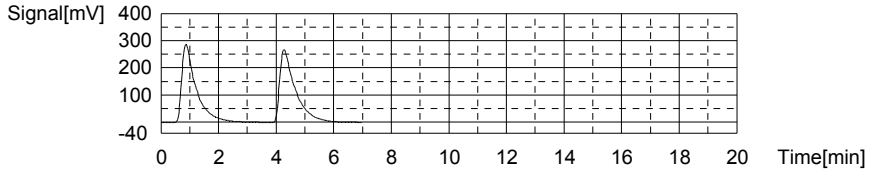
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:26.89mg/L TC:27.34mg/L IC:0.4504mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	988.3	27.13mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/27/2013 3:30:28 AM
2	1004	27.56mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/27/2013 3:36:23 AM

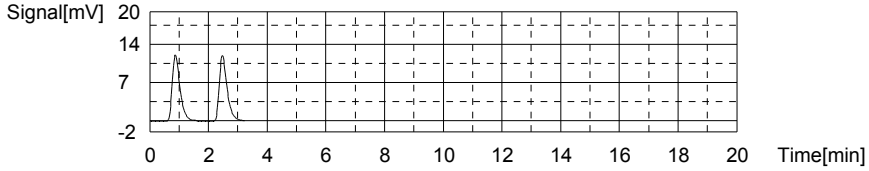
Mean Area 996.2
Mean Conc. 27.34mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	22.06	0.4482mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/27/2013 3:40:53 AM
2	22.19	0.4526mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/27/2013 3:45:15 AM

Mean Area 22.13
Mean Conc. 0.4504mg/L



Sample

Sample Name: L13111322-04
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

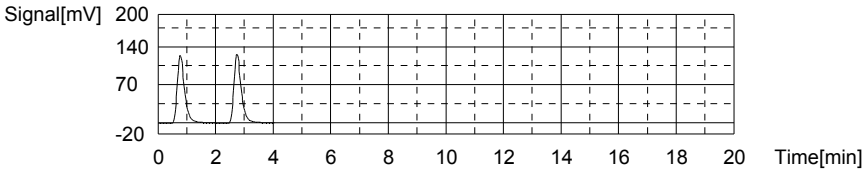
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.690mg/L TC:6.019mg/L IC:1.328mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	221.1	5.933mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/27/2013 3:52:43 AM
2	227.3	6.104mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/27/2013 3:57:03 AM

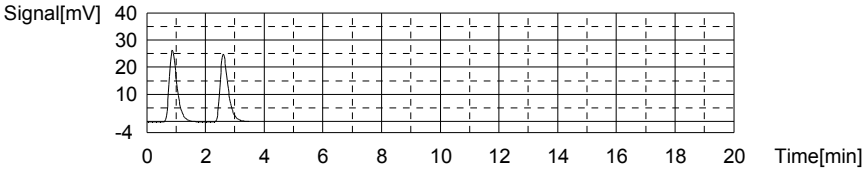
Mean Area 224.2
Mean Conc. 6.019mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	49.10	1.356mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/27/2013 4:01:44 AM
2	47.42	1.300mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/27/2013 4:06:12 AM

Mean Area 48.26
Mean Conc. 1.328mg/L



Sample

Sample Name:
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

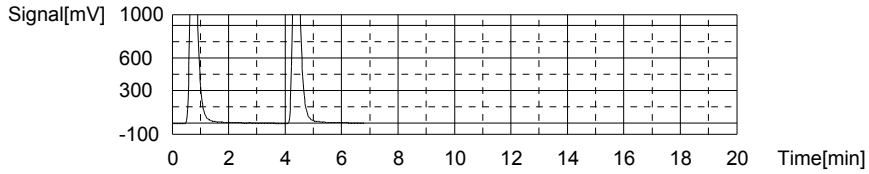
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:-1.013mg/L TC:81.66mg/L IC:82.68mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2944	81.15mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/27/2013 4:15:23 AM
2	2981	82.18mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/27/2013 4:21:54 AM

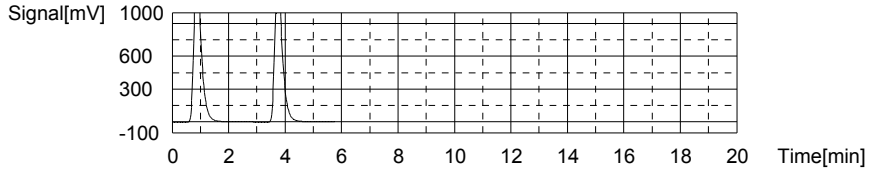
Mean Area 2963
Mean Conc. 81.66mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2496	83.53mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/27/2013 4:28:21 AM
2	2445	81.82mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/27/2013 4:34:41 AM

Mean Area 2471
Mean Conc. 82.68mg/L



Sample

Sample Name: L13111323-02
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

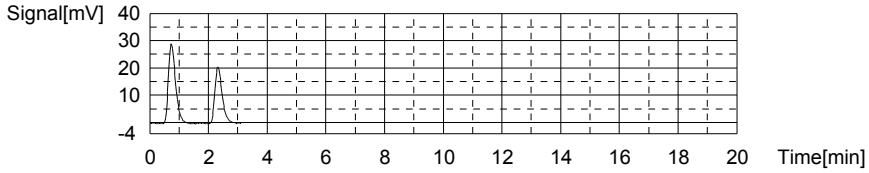
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.8313mg/L TC:1.012mg/L IC:0.1811mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	50.26	1.214mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/27/2013 4:41:48 AM
2	35.70	0.8113mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/27/2013 4:45:35 AM

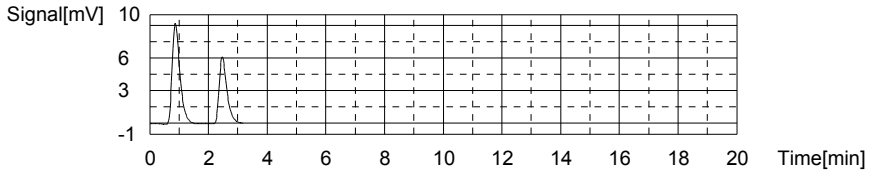
Mean Area 42.98
Mean Conc. 1.012mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	17.01	0.2786mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/27/2013 4:50:15 AM
2	11.20	0.08351mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/27/2013 4:54:32 AM

Mean Area 14.11
Mean Conc. 0.1811mg/L



Sample

Sample Name: WG454387-05 DUP
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

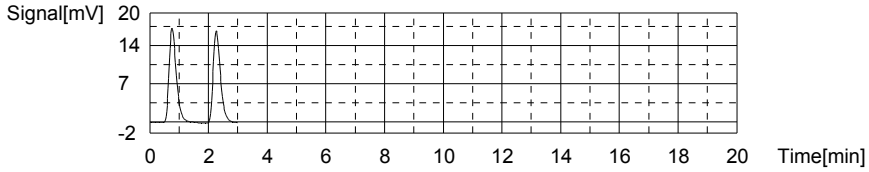
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.6455mg/L TC:0.6377mg/L IC:-0.00782mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	29.62	0.6433mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/27/2013 5:01:33 AM
2	29.21	0.6320mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/27/2013 5:05:18 AM

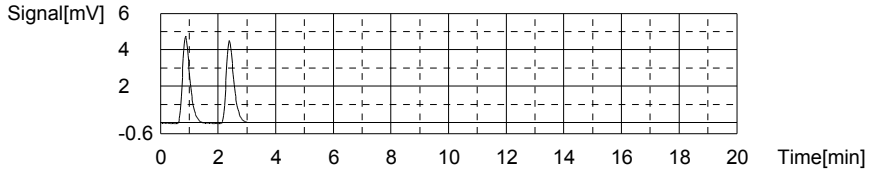
Mean Area 29.41
Mean Conc. 0.6377mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.662	-0.00173mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/27/2013 5:09:43 AM
2	8.299	-0.01392mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/27/2013 5:13:54 AM

Mean Area 8.481
Mean Conc. -0.00782mg/L



Sample

Sample Name: WG454387-06 MS
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

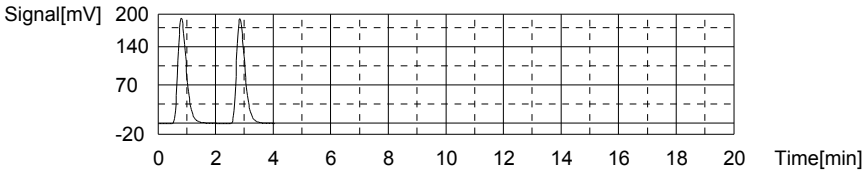
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:10.73mg/L TC:10.70mg/L IC:-0.02534mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	394.4	10.72mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/27/2013 5:21:28 AM
2	393.1	10.68mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/27/2013 5:25:45 AM

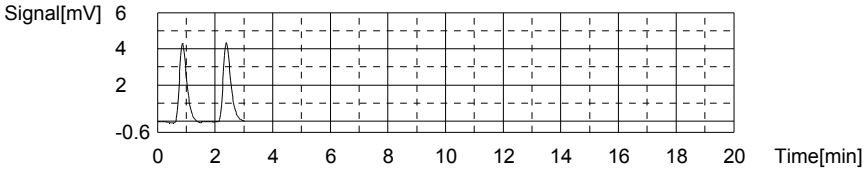
Mean Area 393.8
Mean Conc. 10.70mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.005	-0.02379mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/27/2013 5:30:08 AM
2	7.913	-0.02688mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/27/2013 5:34:20 AM

Mean Area 7.959
Mean Conc. -0.02534mg/L



Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

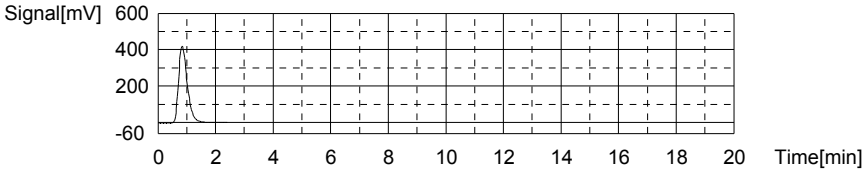
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:24.26mg/L TC:24.20mg/L IC:-0.05546mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	882.4	24.20mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/27/2013 5:42:22 AM

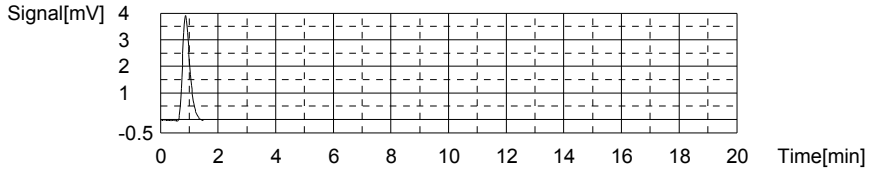
Mean Area 882.4
Mean Conc. 24.20mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.062	-0.05546mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/27/2013 5:46:45 AM

Mean Area 7.062
Mean Conc. -0.05546mg/L



Sample

Sample Name: CCB
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

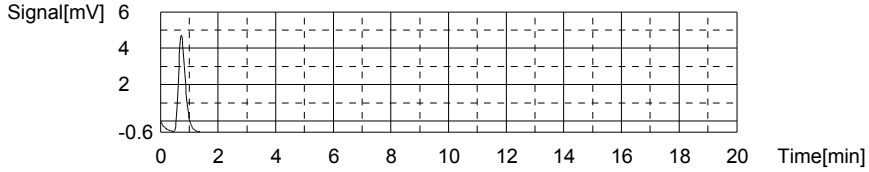
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.1169mg/L TC:0.06459mg/L IC:-0.05231mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.670	0.06459mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/27/2013 5:51:44 AM

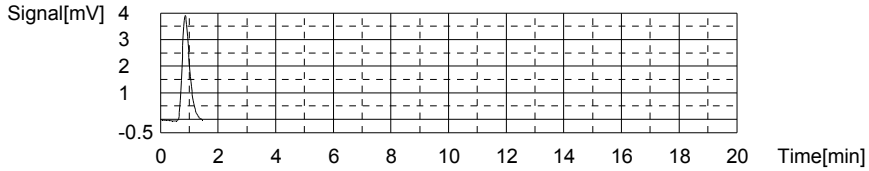
Mean Area 8.670
Mean Conc. 0.06459mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.156	-0.05231mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/27/2013 5:55:41 AM

Mean Area 7.156
Mean Conc. -0.05231mg/L



Sample

Sample Name: L13110953-01 (3)
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

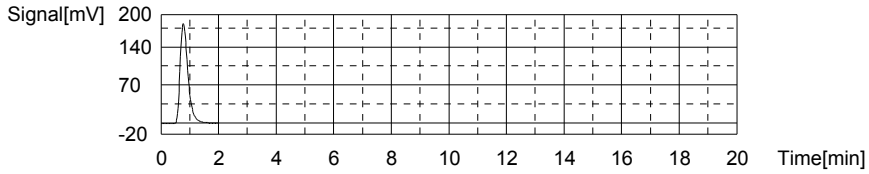
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:6.607mg/L TC:9.441mg/L IC:2.834mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	348.1	9.441mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/27/2013 6:03:15 AM

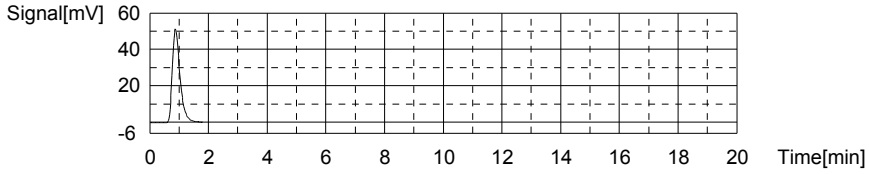
Mean Area 348.1
Mean Conc. 9.441mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	93.11	2.834mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/27/2013 6:08:02 AM

Mean Area 93.11
Mean Conc. 2.834mg/L



Sample

Sample Name: L13110843-01 (2)
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

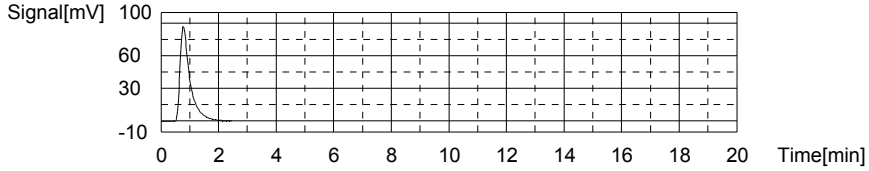
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.046mg/L TC:5.601mg/L IC:1.555mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	209.1	5.601mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/27/2013 6:16:05 AM

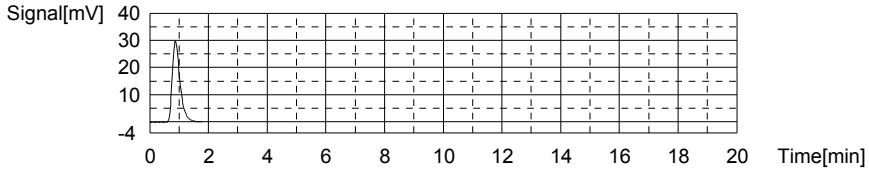
Mean Area 209.1
Mean Conc. 5.601mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	55.02	1.555mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/27/2013 6:20:48 AM

Mean Area 55.02
Mean Conc. 1.555mg/L



Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

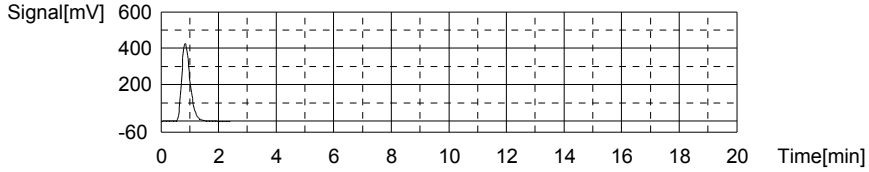
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:24.12mg/L TC:24.03mg/L IC:-0.09721mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	876.1	24.03mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/27/2013 8:41:10 AM

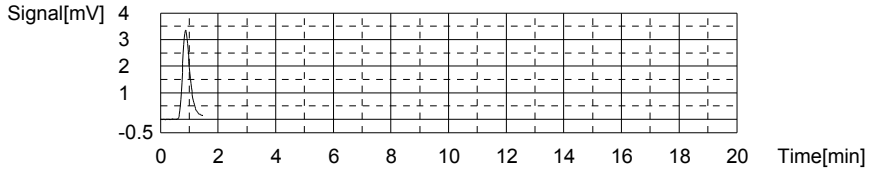
Mean Area 876.1
Mean Conc. 24.03mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	5.819	-0.09721mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/27/2013 8:45:29 AM

Mean Area 5.819
Mean Conc. -0.09721mg/L



Sample

Sample Name: CCB
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

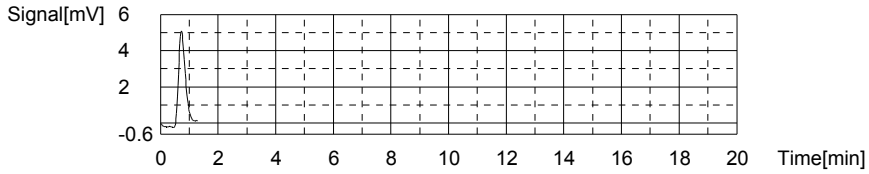
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.1234mg/L TC:0.05677mg/L IC:-0.06668mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.387	0.05677mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/27/2013 8:50:24 AM

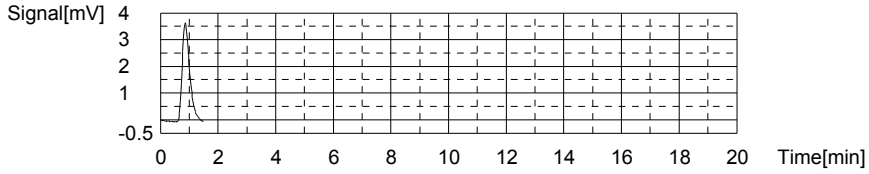
Mean Area 8.387
Mean Conc. 0.05677mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.728	-0.06668mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/27/2013 8:54:21 AM

Mean Area 6.728
Mean Conc. -0.06668mg/L



Sample

Sample Name: L13111323-01 (5)
Sample ID: <Untitled>
Origin: TOC-07-09-2013A.met
Status Completed
Chk. Result

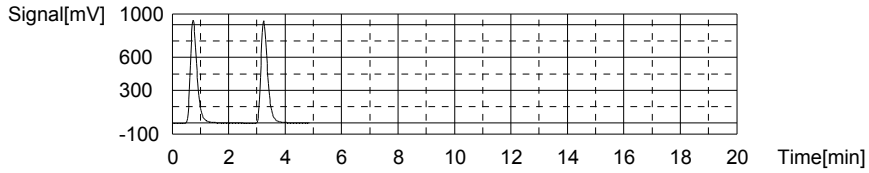
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:5.312mg/L TC:42.62mg/L IC:37.30mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1553	42.73mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/27/2013 9:12:49 AM
2	1545	42.51mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/27/2013 9:18:10 AM

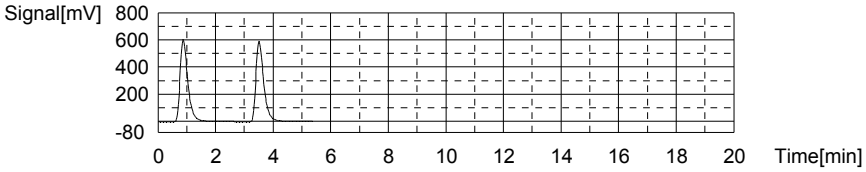
Mean Area 1549
Mean Conc. 42.62mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1127	37.56mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/27/2013 9:24:10 AM
2	1112	37.05mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/27/2013 9:29:57 AM

Mean Area 1120
Mean Conc. 37.30mg/L



Sample

Sample Name: L13111392-07 (2)
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

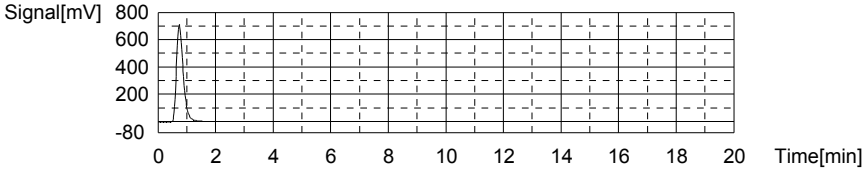
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:5.190mg/L TC:32.17mg/L IC:26.98mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1171	32.17mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/27/2013 9:37:41 AM

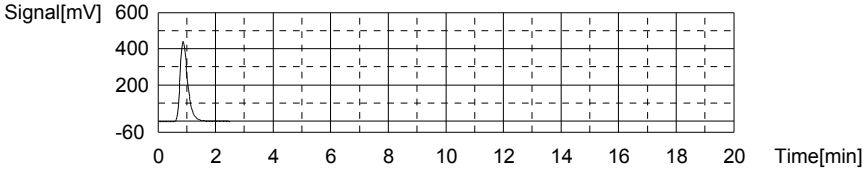
Mean Area 1171
Mean Conc. 32.17mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	812.2	26.98mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/27/2013 9:43:30 AM

Mean Area 812.2
Mean Conc. 26.98mg/L



Sample

Sample Name: L13111392-05 (2)
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

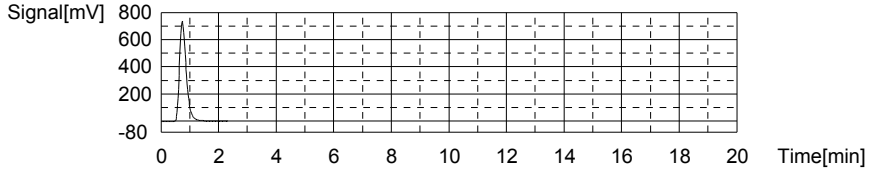
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:5.257mg/L TC:33.03mg/L IC:27.77mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1202	33.03mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/27/2013 9:51:15 AM

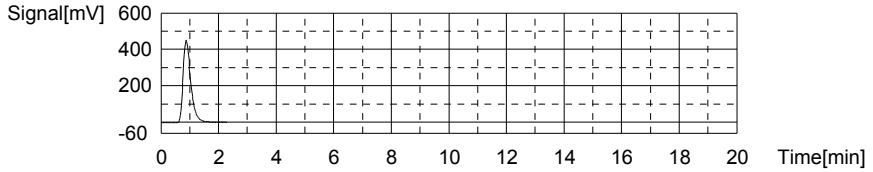
Mean Area 1202
Mean Conc. 33.03mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	835.7	27.77mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/27/2013 9:56:51 AM

Mean Area 835.7
Mean Conc. 27.77mg/L



Sample

Sample Name: L13111392-04 (3)
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

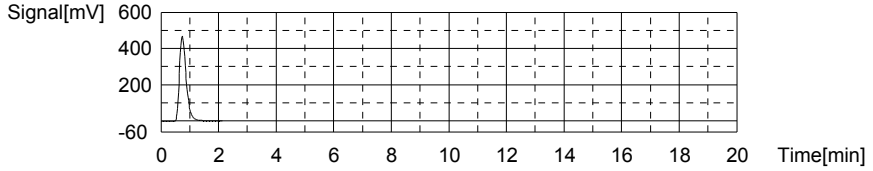
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.020mg/L TC:21.06mg/L IC:17.04mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	768.8	21.06mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/27/2013 10:04:24 AM

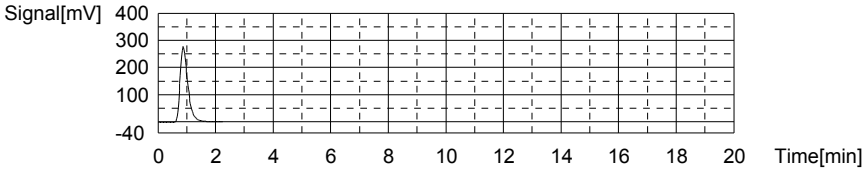
Mean Area 768.8
Mean Conc. 21.06mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	516.2	17.04mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/27/2013 10:09:50 AM

Mean Area 516.2
Mean Conc. 17.04mg/L



Sample

Sample Name: L13111392-03 (3)
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

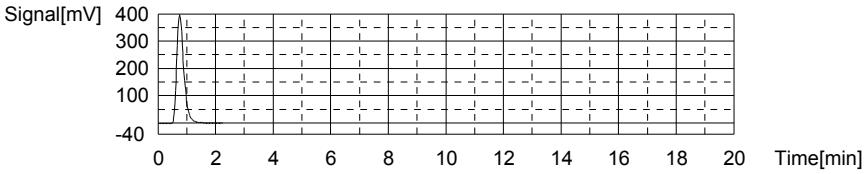
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:6.726mg/L TC:18.65mg/L IC:11.93mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	681.6	18.65mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/27/2013 10:17:31 AM

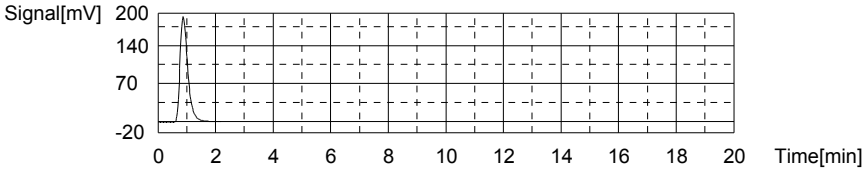
Mean Area 681.6
Mean Conc. 18.65mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	363.9	11.93mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/27/2013 10:22:53 AM

Mean Area 363.9
Mean Conc. 11.93mg/L



Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

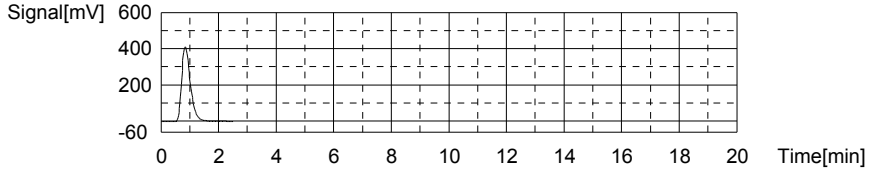
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:23.70mg/L TC:23.69mg/L IC:-0.01063mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	864.0	23.69mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/27/2013 10:30:49 AM

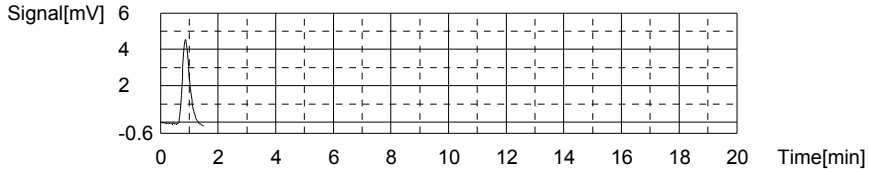
Mean Area 864.0
Mean Conc. 23.69mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.397	-0.01063mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/27/2013 10:35:15 AM

Mean Area 8.397
Mean Conc. -0.01063mg/L



Sample

Sample Name: CCB
Sample ID:
Origin: TOC-07-09-2013.met
Status Completed
Chk. Result

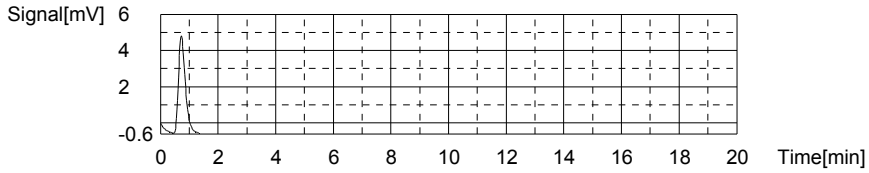
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.1276mg/L TC:0.06671mg/L IC:-0.06084mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.747	0.06671mg/L	500uL	1		TCCURVE-07-09-2013.2013_07_09_13_54_5	11/27/2013 10:40:13 AM

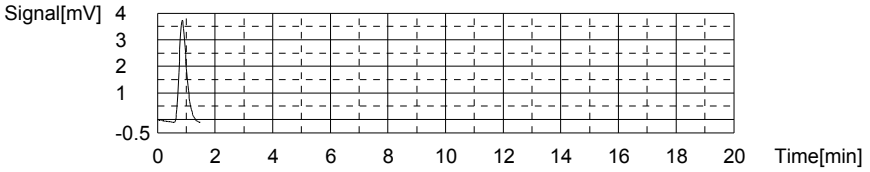
Mean Area 8.747
Mean Conc. 0.06671mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.902	-0.06084mg/L	500uL	1		TICCURVE-07-09-2013.2013_07_09_14_57_1	11/27/2013 10:44:11 AM

Mean Area 6.902
Mean Conc. -0.06084mg/L



2.2.11 Total Suspended Solids Data

2.2.11.1 Summary Data

Login Number: L13111086
Department: Conventionals
Analyst: April Greene

METHOD

Analysis EPA 160.2/SM2540 D (Total Suspended Solids)

HOLDING TIMES

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Duplicates: All acceptance criteria were met.

Matrix Spikes: All acceptance criteria were met.

SAMPLES

Samples: All acceptance criteria were met.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Microbac Laboratories Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Narrative ID: 75491
Approved By: Deanna Hesson

Microbac

Lab Report #: L13111086
Lab Project #: 3005.011
Project Name: White Sands MR
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L13111086-01	**PrePrep Method:**	N/A	**Instrument:**	OVEN
Client ID:	SMW 1-1113-1	**Prep Method:**	160.2/SM2540D	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM2540-D-1997	**Cal Date:**	
Workgroup #:	WG453718	**Analyst:**	ADG	**Run Date:**	11/21/2013 07:17
Collect Date:	11/15/2013 10:00	**Dilution:**	1	**File ID:**	EN.1311210717-12
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Total Suspended Solids			U	5.00	2.50

U	Analyte was not detected. The concentration is below the reported LOD.

Certificate of Analysis

Sample #:	L13111086-02	**PrePrep Method:**	N/A	**Instrument:**	OVEN
Client ID:	SMW 4-1113-1	**Prep Method:**	160.2/SM2540D	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM2540-D-1997	**Cal Date:**	
Workgroup #:	WG453718	**Analyst:**	ADG	**Run Date:**	11/21/2013 07:17
Collect Date:	11/15/2013 11:50	**Dilution:**	1	**File ID:**	EN.1311210717-13
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD
Total Suspended Solids			U	5.00	2.50

U	Analyte was not detected. The concentration is below the reported LOD.

Certificate of Analysis

2.2.11.2 QC Summary Data

Example Total Suspended Solids Calculations

$$[(WT2 - WT1) * 1000000]/volume = mg/L$$

where:

WT1 = weight (grams) of empty container.
WT2 = weight (grams) of dried sample and container.
1000000 = factor to get to mg/L.
volume = mL of sample used.

Microbac Laboratories Inc.

Data Checklist

Date: 21-NOV-2013
Analyst: ADG
Analyst: NA
Method: TSS
Instrument: OVEN
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG453718

Calibration/Linearity	11/21/13
Second Source Check	
ICV/CCV (std)	
ICB/CCB	
Blank	X
LCS/LCS Dup	X
MS/MSD	
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	
Case Narratives	
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	ADG
Secondary Reviewer	SAV
Comments	

Primary Reviewer:
25-NOV-2013
April Greene

Secondary Reviewer:
25-NOV-2013
Sarah Vandenberg

CHECKLIST1 - Modified 03/05/2008
Generated: NOV-25-2013 13:39:46

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: SM2540-D-1997 AAB#: WG453718

Login Number: L13111086

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
SMW 1-1113-1	01	11/15/13					11/21/2013	5.9	7		11/21/13	5.9	7	
SMW 4-1113-1	02	11/15/13					11/21/2013	5.8	7		11/21/13	5.8	7	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 3225165
Report generated 11/25/2013 12:54

Microbac Laboratories Inc.

METHOD BLANK SUMMARY

Login Number: L13111086
Blank File ID: EN.1311210717-01
Prep Date: 11/21/13 07:17
Analyzed Date: 11/21/13 07:17
Analyst: ADG

Work Group: WG453718
Blank Sample ID: WG453718-01
Instrument ID: OVEN
Method: SM2540-D-1997

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG453718-02	EN.1311210717-02	11/21/13 07:17	
LCS2	WG453718-03	EN.1311210717-03	11/21/13 07:17	
SMW 1-1113-1	L13111086-01	EN.1311210717-12	11/21/13 07:17	
SMW 4-1113-1	L13111086-02	EN.1311210717-13	11/21/13 07:17	
DUP	WG453718-05	EN.1311210717-24	11/21/13 07:17	
DUP	WG453718-07	EN.1311210717-25	11/21/13 07:17	

Report Name: BLANK_SUMMARY
PDF File ID: 3225166
Report generated 11/25/2013 12:54

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L13111086 Prep Date: 11/21/13 07:17 Sample ID: WG453718-01
Instrument ID: OVEN Run Date: 11/21/13 07:17 Prep Method: 160.2/SM2540D
File ID: EN.1311210717-01 Analyst: ADG Method: SM2540-D-1997
Workgroup (AAB#): WG453718 Matrix: Water Units: mg/L
Contract #: Cal ID: OVEN-

Analytes	LOD	LOQ	Concentration	Dilution	Qualifier
Total Suspended Solids	2.50	5.00	2.50	1	U

LOD Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 3225167
25-NOV-2013 12:54

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L13111086 Analyst: ADG Prep Method: 160.2/SM2540D
Instrument ID: OVEN Matrix: Water Method: SM2540-D-1997
Workgroup (AAB#): WG453718 Units: mg/L
QC Key: DOD4 Lot #: STD61473

Sample ID: WG453718-02 LCS File ID: EN.1311210717-02 Run Date: 11/21/2013 07:17
Sample ID: WG453718-03 LCS2 File ID: EN.1311210717-03 Run Date: 11/21/2013 07:17

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Total Suspended Solids	50.0	51.0	102	50.0	50.0	100	1.98	75 - 125	10	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 3225168
Report generated: 11/25/2013 12:54

2.2.11.3 Raw Data

Tray 9

WORKGROUP: WG453718

TOTAL SUSPENDED SOLIDS

(tss1)

Oven: TSS1 Other
Method: EPA 160.2 / SM2540D
LCS: 61473
MS: _____ mL LCS & _____ mL sample

Balance: AND GR-202 / Other
SOP: K1602 Rev #: 14
Filter Lot #: 9517112

		On Temp/Time:	1031/125	1041 0707	/	/
SAMPLE	#	VOLUME (mL)	INITIAL WEIGHT WT1 (g)	DRY WEIGHT WT2A (g)	DRY WEIGHT WT2B (g)	DRY WEIGHT WT2C (g)
BLANK	BLK	200				
LCS: mg/L	LCS1	100				
LCSDUP: mg/L	LCS2	100				
1078-01	1	200				
02	2	200				
1080-01	3	200				
02	4	100				
1082-22	5	200				
24	6	200				
1085-01	7	200				
02	8	200				
1086-01	9	200				
02	10	200				
1087-01	11	200				
1102-01	12	200				
03	13	200				
1103-01	14	200				
-03	15	200				
1116-05	16	200				
08	17	200				
1117-01	18	200				
05	19	200				
1118-01	20	200				
DUP: 1078-01	Dup1	200				
DUP: 1118-01	Dup2	200				
		Off Temp/Time:	104 1063 5	104 1·	/	/

ANALYST: Ami Greene

* Duplicate required on 10% of samples

DATE/TIME: (on) 11-21-13 @ 0717
DATE/TIME: (off) 11-22-13
DATE/TIME: (off)
DATE/TIME: (off)

DCN#99005

Microbac Laboratories Inc.
GRAVIMETRIC REPORT

Workgroup (AAB#): WG453718
Analyst: ADG
Analyte: TOTAL SUSPENDED SOLIDS
Balance: BAL018
Instrument#: OVEN

Method: 160.2/SM2540D
SOP: K1602 Revison 14
Spike Solution: STD61473
Daily Dilution:

SAMPLE NUMBER		INITIAL VOL	INITIAL WT	DRY WT A	DRY WT B	DRY WT C	Anal. Conc	Rep. Conc.	Units
WG453718-01	BLK	200	0.0871	0.087	0.087		-0.5000	-0.5000	mg/L
WG453718-02	LCS	100	0.0883	0.0935	0.0934		51.00	51.00	mg/L
WG453718-03	LCS2	100	0.0869	0.0922	0.0919		50.00	50.00	mg/L
L13111078-01	1	200	0.0872	0.0877	0.0877		2.500	ND	mg/L
WG453718-04	1	200	0.0872	0.0877	0.0877		2.500	2.500	mg/L
L13111078-02	2	200	0.0885	0.089	0.089		2.500	ND	mg/L
L13111080-01	3	200	0.0871	0.0875	0.0874		1.500	ND	mg/L
L13111080-02	4	100	0.0868	0.088	0.0879		11.00	11.00	mg/L
L13111082-22	5	200	0.0864	0.0866	0.0866		1.000	ND	mg/L
L13111082-24	6	200	0.0866	0.0867	0.0866		0	ND	mg/L
L13111085-01	7	200	0.0873	0.0874	0.0874		0.5000	ND	mg/L
L13111085-02	8	200	0.0875	0.0878	0.0878		1.500	ND	mg/L
L13111086-01	9	200	0.0867	0.0868	0.0867		0	ND	mg/L
L13111086-02	10	200	0.0858	0.0861	0.0861		1.500	ND	mg/L
L13111087-01	11	200	0.0865	0.0869	0.0869		2.000	ND	mg/L
L13111102-01	12	200	0.0865	0.087	0.0869		2.000	ND	mg/L
L13111102-03	13	200	0.0863	0.0868	0.0867		2.000	ND	mg/L
L13111103-01	14	200	0.0865	0.0871	0.0868		1.500	ND	mg/L
L13111103-03	15	200	0.0866	0.0871	0.087		2.000	ND	mg/L
L13111116-05	16	200	0.0865	0.0869	0.0867		1.000	ND	mg/L
L13111116-08	17	200	0.0881	0.0885	0.0885		2.000	ND	mg/L
L13111117-01	18	200	0.0864	0.0873	0.0872		4.000	ND	mg/L
L13111117-05	19	200	0.0872	0.088	0.0879		3.500	ND	mg/L
L13111118-01	20	200	0.0869	0.0875	0.0874		2.500	ND	mg/L
WG453718-06	20	200	0.0869	0.0875	0.0874		2.500	2.500	mg/L
WG453718-05	DUP	200	0.0871	0.0875	0.0875		2.000	2.000	mg/L
WG453718-07	DUP2	200	0.087	0.0874	0.0874		2.000	2.000	mg/L

Analyst: April Greene

*Duplicate required on 10% of samples

Date/Time (on) : 11/21/2013 07:17
Date/Time (off): 11/22/2013 07:01
Date/Time (off): 11/22/2013 09:08
Date/Time (off):

CONT_GRAV_REPORT - Modified 02/18/2011
PDF ID: 3216771
Report generated: 11/22/2013 09:16

Microbac

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
December 3, 2013

001 - BIO-CHEM TESTING WVDEP 220
002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental
004 - MICROBAC PITTSBURGH
ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE
AJF - AMANDA J. FICKIESEN
AML - TONY M. LONG
AZH - AFTER HOURS
BAF - BRICE A. FENTON
BJO - BRIAN J. OGDEN
BLG - BRENDA L. GREENWALT
BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES
CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS
CRW - CHRISTINA R. WILSON
CSH - CHRIS S. HILL
CTB - CHRIS T. BUCINA
DAK - DEAN A. K
DCM - DAVID C. MERCKLE
DDE - DEBRA D. ELLIOTT
DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE
DLR - DIANNA L. RAUCH
DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON
EDL - ERIN D. LONG
ENY - EMILY N. YOAK
EPT - ETHAN P. TIDD
ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN
HCB - HEIDI C. BROWN
HJR - HOLLY J. REED
JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON
JKS - JANE K. SCHAAD
JLL - JOHN L. LENT
JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES
JYH - JI Y. HU
KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES
KHR - KIM H. RHODES
KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER
KSC - KELLY S. CUNNINGHAM
LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA
MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING
MLW - MATTHEW L. WARREN
MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON
PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE
PSW - PEGGY S. WEBB
QX - QIN XU
RAH - ROY A. HALSTEAD
REK - BOB E. KYER
RLB - BOB BUCHANAN
RM - RAYMOND MALEKE
RNP - RICK N. PETTY
RS - ROSEMARY SCOTT
RWC - RODNEY W. CAMPBELL
SAV - SARAH A. VANDENBERG
SEP - SUZANNE J. PAUGH
SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF
TLC - TYLER L. CORDELL
TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS
TPA - TYLER P. AMRINE
VC - VICKI COLLIER
WJB - WILL J. BEASLEY
WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
December 03, 2013

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
H1	Sample analysis performed past holding time.
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value; the analyte concentration was less than the RL/LOQ.
J,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL/MDL).
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, H1	Not detected; Sample analysis performed past holding time.
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
TIC	Library Search Compound
TNTC	Too numerous to count
U	Analyte was not detected. The concentration is below the reported LOD.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

COC No. A 35208

158 Starlite Drive
Marietta, OH 45750

Microbac

CHAIN-OF-CUSTODY RECORD

Phone: 740-373-4071
Fax: 740-373-4835

Company Name: C B & I

Project Contact: Mark Lyon

Contact Phone #: 505-262-8920

Turn Around Requirements: Normal

Location: WSMR STP

Project ID: WSMR STP

Sampler (print): Bradley T. Davis

Signature: Bradley T. Davis

Program: ☐ CWA ☐ RCRA ☐ DOD ☐ AFCEE ☐ Other _____

Sample I.D. No.	Comp	Grab	Date	Time	Matrix*	NUMBER OF CONTAINERS	Hold	CN-Total	CN-Amenable	CN-Free	Metals-Sb, As, Ba, Be, Cd	Cr, Co, Cu, Pb, Ni, Se, Ag, Tl	Sn, V, Zn, Hg	Chloride, Fluoride, Sulfate	Ammonia-N	Nitrate + Nitrite-N	pH, Spec. Conductivity	TDS, TSS, TOC	Alkalinity	PO4	Na, K, Mg, Mn		TOTAL # (LAB USE)	ADDITIONAL REQUIREMENTS
SMW 1-1113-1		X	11-15-13	1800	W	8		X	X	X	X	X	X	X	X	X	X	X	X	X	X			
SMW 4-1113-1		X	11-15-13	1150	W	8		X	X	X	X	X	X	X	X	X	X	X	X	X	X			

Microbac OVD
Received: 11/16/2013 09:57
By: ROSEMARY SCOTT 221000045417

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Relinquished by: (Signature)	Date	Time	Received by: (Signature)
Bradley T. Davis	11-15-13	1500					

Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)	Date	Time	Remarks:

*Water (W), Soil (S), Solid Waste (SD), Unknown (X)

Page 1 of 1

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L13111086
Account: 3005
Project: 3005.011
Samples: 2
Due Date: 29-NOV-2013

Samplenum	Container ID	Products
L13111086-01	281207	300

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	18-NOV-2013 16:07	CLS		
2	ANALYZ	W1	SEM	21-NOV-2013 11:28	JBK	CLS	
3	STORE	SEM	A1	22-NOV-2013 11:20	CLS	JBK	

Samplenum	Container ID	Products
L13111086-01	281208	ALK-B ALK-C

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	18-NOV-2013 16:07	CLS		
2	ANALYZ	W1	WET	25-NOV-2013 09:04	BAF	CLS	
3	STORE	WET	A1	26-NOV-2013 17:10	CLS	DCM	

Samplenum	Container ID	Products
L13111086-01	281209	PO4

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	18-NOV-2013 16:07	CLS		
2	ANALYZ	W1	WET	18-NOV-2013 16:19	BAF	RS	
3	STORE	WET	A1	19-NOV-2013 15:54	CLS	BAF	

Samplenum	Container ID	Products
L13111086-01	281210	TSS

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	18-NOV-2013 16:07	CLS		
2	ANALYZ	W1	WET	21-NOV-2013 08:00	ADG	AZH	
3	STORE	WET	A1	22-NOV-2013 08:16	AZH	ADG	

Samplenum	Container ID	Products
L13111086-01	281211	TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	18-NOV-2013 16:07	CLS		<2
2	ANALYZ	W1	WET	18-NOV-2013 16:19	BAF	RS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Internal Chain of Custody Report

Login: L13111086
Account: 3005
Project: 3005.011
Samples: 2
Due Date: 29-NOV-2013

Samplenum	Container ID	Products
L13111086-01	281212	AG-MS AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-MS (

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	18-NOV-2013 16:07	CLS		>2
Comments:Added 5ml HNO3 Lot#: RGT 28681 11/18/13 @ 1620. PH did adjust. CLS							
2	PREP	W1	DIG	21-NOV-2013 04:40	REK	AZH	
3	ANALYZ*	DIG	METALS	21-NOV-2013 13:17	PDM	REK	
4	STORE	DIG	A1	25-NOV-2013 15:45	RS	ERP	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	18-NOV-2013 16:07	CLS		>2
Comments:Added 5ml HNO3 Lot#: RGT 28681 11/18/13 @ 1620. PH did adjust. CLS							

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L13111086-01	281213	CN-WD

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	18-NOV-2013 16:07	CLS		<12
Comments:Added 3ml NAOH Lot#: 2211493 11/18/13 @ 1620. PH did adjust. CLS							
2	ANALYZ	W1	WET	19-NOV-2013 14:12	DCM	CLS	

Samplenum	Container ID	Products
L13111086-02	281214	300

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	18-NOV-2013 16:08	CLS		
2	ANALYZ	W1	SEM	21-NOV-2013 11:28	JBK	CLS	
3	STORE	SEM	A1	22-NOV-2013 11:20	CLS	JBK	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L13111086
Account: 3005
Project: 3005.011
Samples: 2
Due Date: 29-NOV-2013

Samplenum	Container ID	Products
L13111086-02	281215	ALK-B ALK-C

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	18-NOV-2013 16:08	CLS		
2	ANALYZ	W1	WET	25-NOV-2013 09:04	BAF	CLS	
3	STORE	WET	A1	26-NOV-2013 17:10	CLS	DCM	

Samplenum	Container ID	Products
L13111086-02	281216	PO4

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	18-NOV-2013 16:08	CLS		
2	ANALYZ	W1	WET	18-NOV-2013 16:19	BAF	RS	
3	STORE	WET	A1	19-NOV-2013 15:54	CLS	BAF	

Samplenum	Container ID	Products
L13111086-02	281217	TSS

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	18-NOV-2013 16:08	CLS		
2	ANALYZ	W1	WET	21-NOV-2013 08:00	ADG	AZH	
3	STORE	WET	A1	22-NOV-2013 08:16	AZH	ADG	

Samplenum	Container ID	Products
L13111086-02	281218	TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	18-NOV-2013 16:08	CLS		<2
2	ANALYZ	W1	WET	18-NOV-2013 16:19	BAF	RS	

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W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L13111086
Account: 3005
Project: 3005.011
Samples: 2
Due Date: 29-NOV-2013

Samplenum	Container ID	Products
L13111086-02	281219	AG-MS AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-MS (

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	18-NOV-2013 16:08	CLS		>2
Comments:Added 5ml HNO3 Lot#: RGT 28681 11/18/13 @ 1620. PH did adjust. CLS							
2	PREP	W1	DIG	21-NOV-2013 04:40	REK	AZH	
3	ANALYZ*	DIG	METALS	21-NOV-2013 13:17	PDM	REK	
4	STORE	DIG	A1	25-NOV-2013 15:45	RS	ERP	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	18-NOV-2013 16:08	CLS		>2
Comments:Added 5ml HNO3 Lot#: RGT 28681 11/18/13 @ 1620. PH did adjust. CLS							

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L13111086-02	281220	CN-WD

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	18-NOV-2013 16:08	CLS		<12
Comments:Added 3ml NAOH Lot#: 2211493 11/18/13 @ 1620. PH did adjust. CLS							
2	ANALYZ	W1	WET	19-NOV-2013 14:12	DCM	CLS	
3	STORE	WET	A1	22-NOV-2013 15:43	CLS	DCM	

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