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Level IV Data Package

MWH Group 223000

Method: EPA 200.7

2711200573

EPA 200.7/6010B QC Check List

Analyst STE Analysis Date 11/21/08 Reviewer/Date MAE 11/23/08

Instrumnet PerKin Elmer Optima 4300DV

✓ All sample analyzed within 6 month holding time

✓ All sample raw concentraction below the high standard or linear anged samples marked for dilution and rerun

Initial and closing QC
- ✓ ICV within +/- 5%
- ✓ Linearity check +/- 10%
- ✓ ICSAB +/- 20%
- ✓ QCS +/- 5%
- ✓ MRL +/- 50%

Middle, closing and batch QC
- n/a FilterCheck < 1/2 MRL
- ✓ MBLANK < 1/2 MRL
- ✓ LCS +/-15%
- ✓ MS/MSD +/-/30%(200.7) +/- 25% (6010B)
- ✓ CCV/MCV/ECV +/- 10%
- ✓ ICB/CCB/ECB < 1/2 MRL
- ✓ CCB ran after the CCV

General QC
- ✓ RPD between MS/MSD is within +/-/20%
- ✓ RPD between LCS/LCSD is within +/- 20%
- ✓ Internal standards +/-20%
- ✓ All pH of the samples are < 2

✓ No more than 20 samples per batch

✓ MS is run at frequency of 1 every 10 samples and MSD is run at frequency of 1 every 20 samples

QIR needed for failed QC

n/a Special Det Code noted on the cover sheet

n/a R value for multi point calibration is > 0.995

n/a Proper MRL check ran for special low MRL samples

Reagent and Standards used for
Optima 4300 DV
Updated 11/06/07

Int: STE
Date: 11/21/08

Method 200.7/6010

ICP SUMMARY SHEET

File ID: 071121d
Date Started: 11/21/07
Analyst ID: ste

SAMPLE ID

QCS1	(19:48)	QCS2	(19:51)	QCS3	(19:55)
LINEARITY	(19:58)	WASH	(20:11)	FILTER CHECK	(20:38)
2711200845	(20:46)	B2711160108	(20:59)	B2711160128	(21:03)
B2711160129	(21:07)	B2711160130	(21:11)	B2711160131	(21:15)
B2711160132	(21:19)	B2711160133	(21:23)	B2711160134	(21:27)
B2711160135	(21:32)	2711200328	(21:44)	B2711160136	(21:57)
B2711160137	(22:01)	2711200221	(22:05)	2711200224	(22:10)
2711200225	(22:15)	2711200226	(22:19)	2711200227	(22:24)
2711200232	(22:29)	2711200233	(22:34)	2711210438	(23:07)
B2711160138	(23:20)	B2711160139	(23:24)	B2711160140	(23:29)
B2711160141	(23:33)	B2711160142	(23:37)	B2711160143	(23:42)
B2711160144	(23:46)	B2711160145	(23:50)	B2711160146	(23:55)
2711210440	(12:07)	B2711160147	(12:20)	2711200220	(12:25)
2711200222	(12:30)	2711200223	(12:35)	2711200228	(12:39)
2711200234	(12:44)	2711200572_1	(12:48)	2711200573_1	(12:53)
2711200049	(12:58)	2711210442	(1:31)	2711160138	(1:43)
2711160139	(1:47)	2711160140	(1:52)	2711160141	(1:56)
2711160142	(2:00)	2711160143	(2:04)	2711160144	(2:08)
2711160145	(2:13)	2711160146	(2:18)	2711210129	(2:30)
2711020164	(2:43)	2711020165	(2:48)	2711020166	(2:52)
2711080062	(2:56)	2711160071	(3:00)	F2711140388	(3:04)
2711210016	(3:09)	2711210046	(3:14)	2711210047	(3:19)
2711200738	(3:52)				

COMMENT:

Analyst: STE

Approved By: MJF 11/27/07

BATCH NUMBER for 071121d

Test Parameter:

SCA YR AG AL AS B_ BA BE CA CD CO CR CU FE K MG MN MO NA NI

Batch ID: 2711200845

2711200845	2711200328	2711200221
2711200224	2711200225	2711200226
2711200227	2711200232	2711200233

Batch ID: 2711210438

2711210438	2711210440	2711200220
2711200222	2711200223	2711200228
2711200234	2711200572_10X	2711200573_10X
2711200049		

Batch ID: 2711210442

2711210442	2711160138	2711160139
2711160140	2711160141	2711160142
2711160143	2711160144	2711160145
2711160146	2711210129	2711020164
2711020165	2711020166	2711080062
2711160071	2711210016	2711210046
2711210047		

Batch ID:

2711200738

File ID: 071121d

CR

Sample ID	Date	Time	Dil	Raw	Rept.	Limit	Comment
ICV	11/21/07	19:38	1	10.026	10	95-105	100%
ICB	11/21/07	19:42	1	-0.0001	ND		
QCS1	11/21/07	19:48	1	10.188	10		
QCS2	11/21/07	19:51	1	10.083	10	100%	
QCS3	11/21/07	19:55	1	10.042	10		
LINEARITY	11/21/07	19:58	1	0.0015	.0015		
ICSA	11/21/07	20:02	1	-0.0007	ND	80-120	
ICSAB	11/21/07	20:07	1	.24603	.246	80-120	98.4%
WASH	11/21/07	20:11	1	0.0000	0.0000		
CCV	11/21/07	20:15	1	5.0887	5.09	90-110	101%
MBLANK	11/21/07	20:19	1	-0.0002	ND ✓		
MRL	11/21/07	20:25	1	0.0097	.0097	50-150	97.4%
LCS	11/21/07	20:29	1	1.0408	1.04	85-115	104%
LCSD	11/21/07	20:33	1	1.0401	1.04	85-115	104%
FILTER CHECK	11/21/07	20:38	1	-0.0028	ND		
MRL/2	11/21/07	20:42	1	-0.0028	ND		
2711200845	11/21/07	20:46	1	0.0000	0.0000		
2711200845MS	11/21/07	20:51	1	1.0087	1.01	[1.009]	100%
2711200845MSD	11/21/07	20:55	1	.99631	.996	[0.996]	99.6%
2711200845T	11/21/07	20:55	1		1.00	70 - 130	
B2711160108	11/21/07	20:59	1	-0.0010	ND		
B2711160128	11/21/07	21:03	1	-0.0008	ND		
B2711160129	11/21/07	21:07	1	-.00107	ND		
B2711160130	11/21/07	21:11	1	-0.0007	ND		
B2711160131	11/21/07	21:15	1	-0.0006	ND		
B2711160132	11/21/07	21:19	1	-0.0010	ND		
B2711160133	11/21/07	21:23	1	-0.0007	ND		
B2711160134	11/21/07	21:27	1	-0.0008	ND		
B2711160135	11/21/07	21:32	1	-0.0009	ND		
CCV	11/21/07	21:36	1	5.0260	5.03	90-110	100%
CCB	11/21/07	21:40	1	-0.0001	ND ✓		
2711200328	11/21/07	21:44	1	0.0068	.0068		
2711200328MS	11/21/07	21:49	1	1.0238	1.02	[1.017]	101%
2711200328MSD	11/21/07	21:53	1	1.0111	1.01	[1.004]	100%
2711200328T	11/21/07	21:53	1		1.00	70 - 130	
B2711160136	11/21/07	21:57	1	-0.0010	ND		
B2711160137	11/21/07	22:01	1	-0.0010	ND		
2711200221	11/21/07	22:05	1	-0.0010	ND		
2711200224	11/21/07	22:10	1	-0.0010	ND		
2711200225	11/21/07	22:15	1	-0.0008	ND		
2711200226	11/21/07	22:19	1	-0.0011	ND		
2711200227	11/21/07	22:24	1	-0.0011	ND		
2711200232	11/21/07	22:29	1	-0.0011	ND		
2711200233	11/21/07	22:34	1	-0.0009	ND		
CCV	11/21/07	22:39	1	5.0536	5.05	90-110	101%
CCB	11/21/07	22:43	1	-0.0001	ND ✓		

File ID: 071121d

CR

Sample ID	Date	Time	Dil	Raw	Rept.	Limit	Comment
MCV	11/21/07	22:47	1	2.6341	2.63	90-110	105%
MBLANK	11/21/07	22:51	1	-0.0000	ND ✓		
MRL	11/21/07	22:55	1	0.0095	.0095	50-150	95.4%
LCS	11/21/07	22:59	1	1.0305	1.03	85-115	103%
LCSD	11/21/07	23:03	1	1.0344	1.03	85-115	103%
2711210438	11/21/07	23:07	1	-0.0000	ND		
2711210438MS	11/21/07	23:12	1	1.0077	1.01	[1.008]	100%
2711210438MSD	11/21/07	23:16	1	1.0124	1.01	[1.012]	101%
2711210438T	11/21/07	23:16	1		1.00	70 - 130	
B2711160138	11/21/07	23:20	1	-0.0010	ND		
B2711160139	11/21/07	23:24	1	-0.0011	ND		
B2711160140	11/21/07	23:29	1	-0.0011	ND		
B2711160141	11/21/07	23:33	1	-0.0009	ND		
B2711160142	11/21/07	23:37	1	-0.0011	ND		
B2711160143	11/21/07	23:42	1	-0.0010	ND		
B2711160144	11/21/07	23:46	1	-0.0008	ND		
B2711160145	11/21/07	23:50	1	-0.0007	ND		
B2711160146	11/21/07	23:55	1	-0.0008	ND		
CCV	11/21/07	23:59	1	5.0417	5.04	90-110	100%
CCB	11/22/07	12:03	1	-0.0001	ND ✓		
2711210440	11/22/07	12:07	1	-0.0002	ND		
2711210440MS	11/22/07	12:12	1	1.0371	1.04	[1.037]	103%
2711210440MSD	11/22/07	12:16	1	1.0173	1.02	[1.017]	101%
2711210440T	11/22/07	12:16	1		1.00	70 - 130	
B2711160147	11/22/07	12:20	1	-0.0007	ND		
2711200220	11/22/07	12:25	1	-0.0009	ND		
2711200222	11/22/07	12:30	1	-0.0009	ND		
2711200223	11/22/07	12:35	1	-0.0009	ND		
2711200228	11/22/07	12:39	1	-0.0009	ND		
2711200234	11/22/07	12:44	1	-0.0011	ND		
2711200572_10X ✓	11/22/07	12:48	10	-0.0043	ND		
2711200573_10X ✓	11/22/07	12:53	10	0.0135	.014		
2711200049	11/22/07	12:58	1	-0.0009	ND		
CCV	11/22/07	1:03	1	5.0882	5.09	90-110	101%
CCB	11/22/07	1:07	1	0.0001	0.0001 ✓		
MCV	11/22/07	1:11	1	2.6000	2.6	90-110	104%
MBLANK	11/22/07	1:15	1	-0.0001	ND ✓		
MRL	11/22/07	1:19	1	0.0095	.0095	50-150	95.4%
LCS	11/22/07	1:23	1	1.0370	1.04	85-115	103%
LCSD	11/22/07	1:27	1	1.0351	1.04	85-115	103%
2711210442	11/22/07	1:31	1	0.0004	0.0003		
2711210442MS	11/22/07	1:35	1	1.0247	1.02	[1.025]	102%
2711210442MSD	11/22/07	1:39	1	1.0240	1.02	[1.024]	102%
2711210442T	11/22/07	1:39	1		1.00	70 - 130	
2711160138	11/22/07	1:43	1	-0.0010	ND		
2711160139	11/22/07	1:47	1	-0.0012	ND		
2711160140	11/22/07	1:52	1	-0.0011	ND		
2711160141	11/22/07	1:56	1	-0.0012	ND		
2711160142	11/22/07	2:00	1	-0.0011	ND		

File ID: 071121d

CR

Sample ID	Date	Time	Dil	Raw	Rept.	Limit	Comment
2711160143	11/22/07	2:04	1	-0.0011	ND		
2711160144	11/22/07	2:08	1	.01457	.015		
2711160145	11/22/07	2:13	1	-0.0010	ND		
2711160146	11/22/07	2:18	1	-0.0011	ND		
CCV	11/22/07	2:22	1	5.1083	5.11	90-110	102%
CCB	11/22/07	2:26	1	-0.0001	ND ✓		
2711210129	11/22/07	2:30	1	-0.0012	ND		
2711210129MS	11/22/07	2:35	1	1.0219	1.02	[1.022]	102%
2711210129MSD	11/22/07	2:39	1	1.0228	1.02	[1.023]	102%
2711210129T	11/22/07	2:39	1		1.00	70 - 130	
2711020164	11/22/07	2:43	1	-0.0013	ND		
2711020165	11/22/07	2:48	1	-0.0010	ND		
2711020166	11/22/07	2:52	1	-0.0004	ND		
2711080062	11/22/07	2:56	1	-0.0010	ND		
2711160071	11/22/07	3:00	1	-0.0010	ND		
F2711140388	11/22/07	3:04	1	-0.0014	ND		
2711210016	11/22/07	3:09	1	-0.0014	ND		
2711210046	11/22/07	3:14	1	-0.0010	ND		
2711210047	11/22/07	3:19	1	-0.0011	ND		
CCV	11/22/07	3:24	1	5.1223	5.12	90-110	102%
CCB	11/22/07	3:28	1	-0.0001	ND ✓		
MCV	11/22/07	3:32	1	2.6506	2.65	90-110	106%
MBLANK	11/22/07	3:36	1	-0.0001	ND		
MRL	11/22/07	3:40	1	0.0099	.0099	50-150	98.9%
LCS	11/22/07	3:44	1	1.0404	1.04	85-115	104%
LCSD	11/22/07	3:48	1	1.0399	1.04	85-115	103%
2711200738	11/22/07	3:52	1	-0.0011	ND		
2711200738MS	11/22/07	3:57	1	1.0277	1.03	[1.028]	102%

n/a

ONR

Analysis Begun

Start Time: 11/21/2007 7:31:13 PM
Logged In Analyst: Administrator
Spectrometer Model: Optima 4300 DV, S/N 077N2121801
Plasma On Time: 12:00:00 AM
Technique: ICP Continuous
Autosampler Model: AS-93plus

Sample Information File: C:\pe\Owner\Sample Information\NOVEMBER_11_2007_SIF\071121D.sif
Batch ID: 071121D
Results Data Set: 071121D
Results Library: C:\pe\Owner\Results\Results.mdb

Method Loaded
Method Name: Fullist-syljohn
IEC File: 070703.iec
Method Description: ICP FULLLIST
Method Last Saved: 11/19/2007 9:16:55 PM
MSF File:

Analyte	Calibration Equation	Processing	View	Internal Standard	IEC
Ag	Lin, Calc Int	Peak Area	Axial	Sca	Yes
Al	Lin, Calc Int	Peak Area	Radial	Yr	Yes
As	Lin, Calc Int	Peak Area	Axial	Sca	Yes
B_	Lin, Calc Int	Peak Area	Axial	Sca	Yes
Ba	Lin, Calc Int	Peak Area	Axial	Sca	Yes
Be	Lin, Calc Int	Peak Area	Axial	Sca	Yes
Ca	Lin, Calc Int	Peak Area	Radial	Yr	Yes
Cd	Lin, Calc Int	Peak Area	Axial	Sca	Yes
Co	Lin, Calc Int	Peak Area	Axial	Sca	Yes
Cr	Lin, Calc Int	Peak Area	Axial	Sca	Yes
Cu	Lin, Calc Int	Peak Area	Axial	Sca	Yes
Fe	Lin, Calc Int	Peak Area	Radial	Yr	Yes
K	Lin, Calc Int	Peak Area	Radial	Yr	Yes
Mg	Lin, Calc Int	Peak Area	Radial	Yr	Yes
Mn	Lin, Calc Int	Peak Area	Axial	Sca	Yes
Mo	Lin, Calc Int	Peak Area	Axial	Sca	Yes
Na	Lin, Calc Int	Peak Area	Radial	Yr	Yes
Ni	Lin, Calc Int	Peak Area	Axial	Sca	Yes
Pb	Lin, Calc Int	Peak Area	Axial	Sca	Yes
Sb	Lin, Calc Int	Peak Area	Axial	Sca	Yes
Se	Lin, Calc Int	Peak Area	Axial	Sca	Yes
Tl	Lin, Calc Int	Peak Area	Axial	Sca	Yes
V	Lin, Calc Int	Peak Area	Axial	Sca	Yes
Zn	Lin, Calc Int	Peak Area	Axial	Sca	Yes
Sca	Lin, Calc Int	Peak Area	Axial	n/a	n/a
Yr	Lin, Calc Int	Peak Area	Radial	n/a	n/a

Sequence No.: 1
Sample ID: Calib Blank 1
Analyst:
Initial Sample Wt:
Dilution:
Autosampler Location: 0
Date Collected: 11/21/2007 7:31:13 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: Calib Blank 1

Analyte	Back Pressure	Flow
All	226.0 kPa	0.65 L/min

Mean Data: Calib Blank 1

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc.	Calib Units
Sca	425260.2	2764.35	0.65%	100.0	%
Yr	206125.5	4208.75	2.04%	100	%
Ag†	232.1	30.86	13.30%	[0.00]	mg/L
Al†	57.5	11.01	19.16%	[0.00]	mg/L
As†	9.8	1.11	11.30%	[0.00]	mg/L
B_†	964.9	75.51	7.83%	[0.00]	mg/L
Ba†	-12.6	3.59	28.45%	[0.00]	mg/L
Be†	-3652.2	15.90	0.44%	[0.00]	mg/L
Ca†	436.2	2.81	0.65%	[0.00]	mg/L

Cdt	54.4	1.13	2.07%	[0.00] mg/L
Cot	-40.9	1.18	2.89%	[0.00] mg/L
Crt	243.7	3.27	1.34%	[0.00] mg/L
Cut	2460.7	60.81	2.47%	[0.00] mg/L
Fet	0.8	1.07	128.42%	[0.00] mg/L
Kt	283.3	46.40	16.38%	[0.00] mg/L
Mgt	-8.1	1.18	14.54%	[0.00] mg/L
Mnt	188.3	4.28	2.27%	[0.00] mg/L
Mot	104.4	9.48	9.07%	[0.00] mg/L
Nat	75.6	2.89	3.82%	[0.00] mg/L
Nit	-37.9	2.40	6.32%	[0.00] mg/L
Pbt	2.1	2.01	95.13%	[0.00] mg/L
Sbt	17.0	0.83	4.86%	[0.00] mg/L
Set	3.7	1.84	49.75%	[0.00] mg/L
Tlt	4.3	1.60	36.87%	[0.00] mg/L
Vt	131.5	29.75	22.62%	[0.00] mg/L
Znt	150.0	3.97	2.65%	[0.00] mg/L

Sequence No.: 2
Sample ID: Standard 2
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 15
Date Collected: 11/21/2007 7:35:09 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: Standard 2

Analyte	Back Pressure	Flow
All	225.0 kPa	0.65 L/min

Mean Data: Standard 2

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc.	Calib Units
Sca	378659.1	1487.94	0.39%	89.0	%
Yr	196473.5	105.22	0.05%	95.3	%
Agt	473967.7	1280.38	0.27%	[2]	mg/L
Alt	39672.4	227.63	0.57%	[10]	mg/L
Ast	15723.4	35.40	0.23%	[10]	mg/L
B_t	121536.5	366.54	0.30%	[5.02]	mg/L
Bat	561405.5	1425.60	0.25%	[10]	mg/L
Bet	9212937.2	37753.50	0.41%	[4.01]	mg/L
Cat	381367.7	197.34	0.05%	[100]	mg/L
Cdt	104134.4	286.93	0.28%	[5.01]	mg/L
Cot	195410.1	685.11	0.35%	[10]	mg/L
Crt	602424.7	394.94	0.07%	[9.97]	mg/L
Cut	3539830.3	28901.50	0.82%	[10]	mg/L
Fet	4453.7	5.45	0.12%	[9.98]	mg/L
Kt	103457.2	1248.01	1.21%	[100]	mg/L
Mgt	155171.2	183.70	0.12%	[100]	mg/L
Mnt	4387681.8	12370.77	0.28%	[10]	mg/L
Mot	101373.4	198.36	0.20%	[9.98]	mg/L
Nat	373519.1	2607.11	0.70%	[100]	mg/L
Nit	165067.8	176.22	0.11%	[10]	mg/L
Pbt	35090.8	198.70	0.57%	[10]	mg/L
Sbt	16176.3	22.07	0.14%	[10]	mg/L
Set	9697.7	35.78	0.37%	[10]	mg/L
Tlt	20587.8	65.40	0.32%	[10]	mg/L
Vt	1399247.7	3404.02	0.24%	[10]	mg/L
Znt	365051.0	398.43	0.11%	[10]	mg/L

Calibration Summary

Analyte	Stds.	Equation	Intercept	Slope	Curvature	Corr. Coef.	Reslope
Ag	1	Lin, Calc Int	0.0	237000	0.00000	1.000000	
Al	1	Lin, Calc Int	0.0	3967	0.00000	1.000000	
As	1	Lin, Calc Int	0.0	1572	0.00000	1.000000	
B_	1	Lin, Calc Int	0.0	24210	0.00000	1.000000	
Ba	1	Lin, Calc Int	0.0	56140	0.00000	1.000000	
Be	1	Lin, Calc Int	0.0	2297000	0.00000	1.000000	
Ca	1	Lin, Calc Int	0.0	3814	0.00000	1.000000	
Cd	1	Lin, Calc Int	0.0	20790	0.00000	1.000000	
Co	1	Lin, Calc Int	0.0	19540	0.00000	1.000000	
Cr	1	Lin, Calc Int	-0.0	60420	0.00000	1.000000	
Cu	1	Lin, Calc Int	-0.0	354000	0.00000	1.000000	
Fe	1	Lin, Calc Int	0.0	446.3	0.00000	1.000000	
K	1	Lin, Calc Int	0.0	1035	0.00000	1.000000	
Mg	1	Lin, Calc Int	0.0	1552	0.00000	1.000000	
Mn	1	Lin, Calc Int	0.0	438800	0.00000	1.000000	
Mo	1	Lin, Calc Int	0.0	10160	0.00000	1.000000	
Na	1	Lin, Calc Int	-0.0	3735	0.00000	1.000000	
Ni	1	Lin, Calc Int	0.0	16510	0.00000	1.000000	
Pb	1	Lin, Calc Int	0.0	3509	0.00000	1.000000	
Sb	1	Lin, Calc Int	0.0	1618	0.00000	1.000000	
Se	1	Lin, Calc Int	0.0	969.8	0.00000	1.000000	
Tl	1	Lin, Calc Int	0.0	2059	0.00000	1.000000	
V	1	Lin, Calc Int	0.0	139900	0.00000	1.000000	
Zn	1	Lin, Calc Int	0.0	36510	0.00000	1.000000	

Sequence No.: 3
Sample ID: ICV
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 15
Date Collected: 11/21/2007 7:38:49 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: ICV

Analyte	Back Pressure	Flow
All	226.0 kPa	0.65 L/min

Mean Data: ICV

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Sca	376749.4	88.6	%	0.22				0.25%
Yr	195185.3	94.7	%	1.08				1.14%
Agt	474813.0	2.00	mg/L	0.001	2.00	mg/L	0.001	0.07%
QC value within limits for Ag		Recovery = 100.18%						
Alt	39784.4	10.0	mg/L	0.01	10.0	mg/L	0.01	0.13%
QC value within limits for Al		Recovery = 100.28%						
Ast	15689.8	9.98	mg/L	0.031	9.98	mg/L	0.031	0.31%
QC value within limits for As		Recovery = 99.78%						
B_t	122399.8	5.04	mg/L	0.008	5.04	mg/L	0.008	0.15%
QC value within limits for B_		Recovery = 100.71%						
Bat	564004.8	10.0	mg/L	0.03	10.0	mg/L	0.03	0.25%
QC value within limits for Ba		Recovery = 100.46%						
Bet	9307059.8	4.05	mg/L	0.019	4.05	mg/L	0.019	0.48%
QC value within limits for Be		Recovery = 101.27%						
Cat	380857.1	99.9	mg/L	0.52	99.9	mg/L	0.52	0.53%
QC value within limits for Ca		Recovery = 99.87%						
Cdt	104586.7	4.90	mg/L	0.014	4.90	mg/L	0.014	0.28%
QC value within limits for Cd		Recovery = 97.94%						
Cot	196355.9	10.0	mg/L	0.03	10.0	mg/L	0.03	0.31%
QC value within limits for Co		Recovery = 100.48%						
Crt	605854.8	10.0	mg/L	0.00	10.0	mg/L	0.00	0.03%
QC value within limits for Cr		Recovery = 100.27%						
Cut	3538626.8	10.0	mg/L	0.02	10.0	mg/L	0.02	0.22%
QC value within limits for Cu		Recovery = 100.06%						
Fet	4457.6	9.99	mg/L	0.132	9.99	mg/L	0.132	1.32%
QC value within limits for Fe		Recovery = 99.89%						
Kt	103614.3	100	mg/L	0.2	100	mg/L	0.2	0.21%
QC value within limits for K		Recovery = 100.15%						
Mgt	155665.5	100	mg/L	0.5	100	mg/L	0.5	0.46%
QC value within limits for Mg		Recovery = 100.32%						
Mnt	4404401.8	10.0	mg/L	0.03	10.0	mg/L	0.03	0.31%
QC value within limits for Mn		Recovery = 100.38%						
Mot	101609.6	10.0	mg/L	0.02	10.0	mg/L	0.02	0.20%
QC value within limits for Mo		Recovery = 100.03%						
Nat	374898.0	100	mg/L	0.2	100	mg/L	0.2	0.19%
QC value within limits for Na		Recovery = 100.37%						
Nit	166018.7	10.1	mg/L	0.01	10.1	mg/L	0.01	0.11%
QC value within limits for Ni		Recovery = 100.58%						
Pbt	34912.7	9.95	mg/L	0.022	9.95	mg/L	0.022	0.22%
QC value within limits for Pb		Recovery = 99.49%						
Sbt	16072.4	9.78	mg/L	0.005	9.78	mg/L	0.005	0.05%
QC value within limits for Sb		Recovery = 97.77%						
Set	9647.5	9.97	mg/L	0.032	9.97	mg/L	0.032	0.33%
QC value within limits for Se		Recovery = 99.68%						
Tlt	20482.4	9.98	mg/L	0.037	9.98	mg/L	0.037	0.37%
QC value within limits for Tl		Recovery = 99.77%						
Vt	1406276.6	10.1	mg/L	0.01	10.1	mg/L	0.01	0.10%
QC value within limits for V		Recovery = 101.06%						
Znt	366445.8	9.97	mg/L	0.017	9.97	mg/L	0.017	0.17%
QC value within limits for Zn		Recovery = 99.70%						

All analyte(s) passed QC.

Sequence No.: 4
Sample ID: ICB
Analyst:
Initial Sample Wt:
Dilution: 1X

Autosampler Location: 0
Date Collected: 11/21/2007 7:42:29 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: ICB

Analyte	Back Pressure	Flow
All	225.0 kPa	0.65 L/min

Mean Data: ICB

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Sca	431402.7	101	%	1.0				0.94%
Yr	208654.0	101	%	0.9				0.85%
Ag†	-9.8	-0.00004	mg/L	0.000066	-0.00004	mg/L	0.000066	158.46%
QC value within limits for Ag	Recovery = Not calculated							
Al†	-12.5	-0.00315	mg/L	0.000511	-0.00315	mg/L	0.000511	16.21%
QC value within limits for Al	Recovery = Not calculated							
As†	1.4	0.00088	mg/L	0.000987	0.00088	mg/L	0.000987	111.65%
QC value within limits for As	Recovery = Not calculated							
B_†	135.6	0.00560	mg/L	0.003463	0.00560	mg/L	0.003463	61.86%
QC value within limits for B_	Recovery = Not calculated							
Ba†	3.5	0.00006	mg/L	0.000030	0.00006	mg/L	0.000030	49.29%
QC value within limits for Ba	Recovery = Not calculated							
Be†	39.5	0.00002	mg/L	0.000042	0.00002	mg/L	0.000042	244.17%
QC value within limits for Be	Recovery = Not calculated							
Ca†	-7.7	-0.00201	mg/L	0.000171	-0.00201	mg/L	0.000171	8.48%
QC value within limits for Ca	Recovery = Not calculated							
Cd†	-0.9	-0.00006	mg/L	0.000051	-0.00006	mg/L	0.000051	85.77%
QC value within limits for Cd	Recovery = Not calculated							
Co†	-1.2	-0.00006	mg/L	0.000040	-0.00006	mg/L	0.000040	65.44%
QC value within limits for Co	Recovery = Not calculated							
Cr†	-5.3	-0.00009	mg/L	0.000137	-0.00009	mg/L	0.000137	155.60%
QC value within limits for Cr	Recovery = Not calculated							
Cu†	-48.8	-0.00014	mg/L	0.000170	-0.00014	mg/L	0.000170	123.12%
QC value within limits for Cu	Recovery = Not calculated							
Fe†	-1.9	-0.00435	mg/L	0.002031	-0.00435	mg/L	0.002031	46.64%
QC value within limits for Fe	Recovery = Not calculated							
K†	-34.9	-0.0337	mg/L	0.02397	-0.0337	mg/L	0.02397	71.10%
QC value within limits for K	Recovery = Not calculated							
Mg†	-0.9	-0.00055	mg/L	0.002156	-0.00055	mg/L	0.002156	393.27%
QC value within limits for Mg	Recovery = Not calculated							
Mn†	13.2	0.00003	mg/L	0.000008	0.00003	mg/L	0.000008	26.96%
QC value within limits for Mn	Recovery = Not calculated							
Mo†	-17.7	-0.00175	mg/L	0.000837	-0.00175	mg/L	0.000837	47.95%
QC value within limits for Mo	Recovery = Not calculated							
Na†	-33.1	-0.00885	mg/L	0.010047	-0.00885	mg/L	0.010047	113.54%
QC value within limits for Na	Recovery = Not calculated							
Ni†	4.7	0.00029	mg/L	0.000089	0.00029	mg/L	0.000089	31.22%
QC value within limits for Ni	Recovery = Not calculated							
Pb†	4.9	0.00139	mg/L	0.000139	0.00139	mg/L	0.000139	10.01%
QC value within limits for Pb	Recovery = Not calculated							
Sb†	-3.1	-0.00191	mg/L	0.001166	-0.00191	mg/L	0.001166	60.98%
QC value within limits for Sb	Recovery = Not calculated							
Se†	4.5	0.00463	mg/L	0.002825	0.00463	mg/L	0.002825	60.99%
QC value within limits for Se	Recovery = Not calculated							
Tl†	-0.9	-0.00043	mg/L	0.002404	-0.00043	mg/L	0.002404	554.95%
QC value within limits for Tl	Recovery = Not calculated							
V†	7.6	0.00005	mg/L	0.000223	0.00005	mg/L	0.000223	414.35%
QC value within limits for V	Recovery = Not calculated							
Zn†	-3.4	-0.00010	mg/L	0.000149	-0.00010	mg/L	0.000149	156.23%
QC value within limits for Zn	Recovery = Not calculated							

All analyte(s) passed QC.

Sequence No.: 5
Sample ID: QCS1
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 1
Date Collected: 11/21/2007 7:46:25 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: QCS1

Analyte	Back Pressure	Flow
All	225.0 kPa	0.65 L/min

Mean Data: QCS1

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Sca	381449.2	89.7	%	0.42				0.47%
Yr	198166.1	96.1	%	1.55				1.62%
Ag†	484781.8	2.05	mg/L	0.000	2.05	mg/L	0.000	0.02%
QC value within limits for Ag Recovery = 102.28%								
Al†	40379.3	10.2	mg/L	0.07	10.2	mg/L	0.07	0.64%
QC value within limits for Al Recovery = 101.78%								
As†	15416.5	9.80	mg/L	0.113	9.80	mg/L	0.113	1.15%
QC value within limits for As Recovery = 98.04%								
B_†	121877.6	5.01	mg/L	0.002	5.01	mg/L	0.002	0.04%
QC value within limits for B_ Recovery = 100.27%								
Ba†	565502.1	10.1	mg/L	0.01	10.1	mg/L	0.01	0.07%
QC value within limits for Ba Recovery = 100.73%								
Be†	9394208.0	4.09	mg/L	0.036	4.09	mg/L	0.036	0.88%
QC value within limits for Be Recovery = 102.22%								
Ca†	386070.4	101	mg/L	0.6	101	mg/L	0.6	0.61%
QC value within limits for Ca Recovery = 101.23%								
Cd†	85641.8	3.99	mg/L	0.004	3.99	mg/L	0.004	0.11%
QC value less than the lower limit for Cd Recovery = 79.78%								
Co†	198346.1	10.2	mg/L	0.01	10.2	mg/L	0.01	0.06%
QC value within limits for Co Recovery = 101.50%								
Cr†	606835.8	10.0	mg/L	0.02	10.0	mg/L	0.02	0.22%
QC value within limits for Cr Recovery = 100.43%								
Cu†	3548134.4	10.0	mg/L	0.15	10.0	mg/L	0.15	1.52%
QC value within limits for Cu Recovery = 100.33%								
Fe†	4556.0	10.2	mg/L	0.06	10.2	mg/L	0.06	0.60%
QC value within limits for Fe Recovery = 102.09%								
K†	103699.3	100	mg/L	0.7	100	mg/L	0.7	0.68%
QC value within limits for K Recovery = 100.23%								
Mg†	156443.5	101	mg/L	0.5	101	mg/L	0.5	0.54%
QC value within limits for Mg Recovery = 100.82%								
Mn†	4429021.2	10.1	mg/L	0.01	10.1	mg/L	0.01	0.09%
QC value within limits for Mn Recovery = 100.94%								
Mo†	101650.7	10.0	mg/L	0.01	10.0	mg/L	0.01	0.06%
QC value within limits for Mo Recovery = 100.07%								
Na†	379497.3	102	mg/L	0.6	102	mg/L	0.6	0.56%
QC value within limits for Na Recovery = 101.60%								
Ni†	167194.2	10.1	mg/L	0.01	10.1	mg/L	0.01	0.06%
QC value within limits for Ni Recovery = 101.29%								
Pb†	35525.2	10.1	mg/L	0.10	10.1	mg/L	0.10	0.97%
QC value within limits for Pb Recovery = 101.24%								
Sb†	15749.4	9.58	mg/L	0.100	9.58	mg/L	0.100	1.04%
QC value within limits for Sb Recovery = 95.77%								
Se†	9825.6	10.2	mg/L	0.05	10.2	mg/L	0.05	0.54%
QC value within limits for Se Recovery = 101.52%								
Tl†	21019.7	10.2	mg/L	0.10	10.2	mg/L	0.10	0.96%
QC value within limits for Tl Recovery = 102.38%								
V†	1410745.7	10.1	mg/L	0.01	10.1	mg/L	0.01	0.13%
QC value within limits for V Recovery = 101.38%								
Zn†	371418.1	10.1	mg/L	0.00	10.1	mg/L	0.00	0.01%
QC value within limits for Zn Recovery = 101.05%								

QC Failed. Retry.

Sequence No.: 6
Sample ID: QCS1

Autosampler Location: 1
Date Collected: 11/21/2007 7:48:09 PM

Analyst:
Initial Sample Wt:
Dilution:

Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: QCS1

Analyte	Back Pressure	Flow
All	225.0 kPa	0.65 L/min

Mean Data: QCS1

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Sca	376367.8	88.5	%	0.79				0.89%
Yr	194622.5	94.4	%	0.59				0.63%
Ag†	490762.6	2.07	mg/L	0.002	2.07	mg/L	0.002	0.09%
QC value within limits for Ag Recovery = 103.54%								
Al†	40343.0	10.2	mg/L	0.01	10.2	mg/L	0.01	0.13%
QC value within limits for Al Recovery = 101.69%								
As†	15806.0	10.1	mg/L	0.02	10.1	mg/L	0.02	0.21%
QC value within limits for As Recovery = 100.52%								
B_†	124697.8	5.13	mg/L	0.004	5.13	mg/L	0.004	0.08%
QC value within limits for B_ Recovery = 102.60%								
Ba†	571432.2	10.2	mg/L	0.02	10.2	mg/L	0.02	0.23%
QC value within limits for Ba Recovery = 101.79%								
Be†	9653308.0	4.20	mg/L	0.009	4.20	mg/L	0.009	0.21%
QC value greater than the upper limit for Be Recovery = 105.04%								
Ca†	392461.5	103	mg/L	0.3	103	mg/L	0.3	0.33%
QC value within limits for Ca Recovery = 102.91%								
Cd†	86546.2	4.03	mg/L	0.013	4.03	mg/L	0.013	0.31%
QC value less than the lower limit for Cd Recovery = 80.57%								
Co†	200634.2	10.3	mg/L	0.03	10.3	mg/L	0.03	0.28%
QC value within limits for Co Recovery = 102.67%								
Cr†	615607.7	10.2	mg/L	0.00	10.2	mg/L	0.00	0.00%
QC value within limits for Cr Recovery = 101.88%								
Cu†	3629156.0	10.3	mg/L	0.03	10.3	mg/L	0.03	0.33%
QC value within limits for Cu Recovery = 102.62%								
Fe†	4651.2	10.4	mg/L	0.12	10.4	mg/L	0.12	1.16%
QC value within limits for Fe Recovery = 104.23%								
K†	103291.9	99.8	mg/L	0.35	99.8	mg/L	0.35	0.35%
QC value within limits for K Recovery = 99.84%								
Mg†	158482.3	102	mg/L	0.0	102	mg/L	0.0	0.03%
QC value within limits for Mg Recovery = 102.13%								
Mn†	4478877.0	10.2	mg/L	0.02	10.2	mg/L	0.02	0.18%
QC value within limits for Mn Recovery = 102.08%								
Mo†	103085.3	10.1	mg/L	0.01	10.1	mg/L	0.01	0.11%
QC value within limits for Mo Recovery = 101.49%								
Na†	377590.1	101	mg/L	0.5	101	mg/L	0.5	0.48%
QC value within limits for Na Recovery = 101.09%								
Ni†	169403.5	10.3	mg/L	0.00	10.3	mg/L	0.00	0.00%
QC value within limits for Ni Recovery = 102.63%								
Pb†	36192.8	10.3	mg/L	0.08	10.3	mg/L	0.08	0.82%
QC value within limits for Pb Recovery = 103.14%								
Sb†	16104.8	9.79	mg/L	0.020	9.79	mg/L	0.020	0.21%
QC value within limits for Sb Recovery = 97.94%								
Se†	10046.9	10.4	mg/L	0.02	10.4	mg/L	0.02	0.23%
QC value within limits for Se Recovery = 103.80%								
Tl†	21416.9	10.4	mg/L	0.05	10.4	mg/L	0.05	0.51%
QC value within limits for Tl Recovery = 104.31%								
V†	1429098.0	10.3	mg/L	0.00	10.3	mg/L	0.00	0.01%
QC value within limits for V Recovery = 102.70%								
Zn†	376634.5	10.2	mg/L	0.02	10.2	mg/L	0.02	0.19%
QC value within limits for Zn Recovery = 102.47%								

QC Failed. Continue with analysis.

Sequence No.: 7
Sample ID: QCS2
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 1
Date Collected: 11/21/2007 7:51:43 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: QCS2

Analyte	Back Pressure	Flow
All	225.0 kPa	0.65 L/min

Mean Data: QCS2

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Sca	376962.0	88.6	%	0.06				0.07%
Yr	196153.2	95.2	%	0.32				0.33%
Al†	39390.6	9.93	mg/L	0.078	9.93	mg/L	0.078	0.79%
QC value within limits for Al	Recovery = 99.29%							
B_†	122798.7	5.05	mg/L	0.004	5.05	mg/L	0.004	0.07%
QC value within limits for B_	Recovery = 101.03%							
Ba†	565049.1	10.1	mg/L	0.02	10.1	mg/L	0.02	0.17%
QC value within limits for Ba	Recovery = 100.65%							
Ca†	385726.9	101	mg/L	0.3	101	mg/L	0.3	0.31%
QC value within limits for Ca	Recovery = 101.14%							
Co†	198665.1	10.2	mg/L	0.03	10.2	mg/L	0.03	0.25%
QC value within limits for Co	Recovery = 101.67%							
Cr†	609254.4	10.1	mg/L	0.00	10.1	mg/L	0.00	0.05%
QC value within limits for Cr	Recovery = 100.83%							
Cu†	3584785.3	10.1	mg/L	0.00	10.1	mg/L	0.00	0.00%
QC value within limits for Cu	Recovery = 101.37%							
Fe†	4521.2	10.1	mg/L	0.04	10.1	mg/L	0.04	0.44%
QC value within limits for Fe	Recovery = 101.31%							
K†	100520.9	97.2	mg/L	0.69	97.2	mg/L	0.69	0.71%
QC value within limits for K	Recovery = 97.16%							
Mg†	155428.8	100	mg/L	0.2	100	mg/L	0.2	0.24%
QC value within limits for Mg	Recovery = 100.17%							
Mn†	4421686.1	10.1	mg/L	0.03	10.1	mg/L	0.03	0.27%
QC value within limits for Mn	Recovery = 100.77%							
Mo†	101929.4	10.0	mg/L	0.02	10.0	mg/L	0.02	0.18%
QC value within limits for Mo	Recovery = 100.35%							
Na†	369186.5	98.8	mg/L	0.47	98.8	mg/L	0.47	0.47%
QC value within limits for Na	Recovery = 98.84%							
Zn†	373421.0	10.2	mg/L	0.00	10.2	mg/L	0.00	0.04%
QC value within limits for Zn	Recovery = 102.29%							

All analyte(s) passed QC.

Sequence No.: 8
Sample ID: QCS3
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 1
Date Collected: 11/21/2007 7:55:15 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: QCS3

Analyte	Back Pressure	Flow
All	225.0 kPa	0.65 L/min

Mean Data: QCS3

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Sca	381035.1	89.6	%	0.16				0.17%
Yr	196239.2	95.2	%	0.49				0.52%
Al†	39846.3	10.0	mg/L	0.03	10.0	mg/L	0.03	0.29%
QC value within limits for Al		Recovery = 100.44%						
B_†	122235.0	5.03	mg/L	0.001	5.03	mg/L	0.001	0.02%
QC value within limits for B_		Recovery = 100.57%						
Ba†	562928.7	10.0	mg/L	0.01	10.0	mg/L	0.01	0.12%
QC value within limits for Ba		Recovery = 100.27%						
Ca†	387277.9	102	mg/L	0.1	102	mg/L	0.1	0.08%
QC value within limits for Ca		Recovery = 101.55%						
Co†	197915.3	10.1	mg/L	0.00	10.1	mg/L	0.00	0.02%
QC value within limits for Co		Recovery = 101.28%						
Cr†	606784.5	10.0	mg/L	0.00	10.0	mg/L	0.00	0.01%
QC value within limits for Cr		Recovery = 100.42%						
Cu†	3540201.0	10.0	mg/L	0.02	10.0	mg/L	0.02	0.18%
QC value within limits for Cu		Recovery = 100.11%						
Fe†	4538.3	10.2	mg/L	0.14	10.2	mg/L	0.14	1.40%
QC value within limits for Fe		Recovery = 101.70%						
K†	101792.7	98.4	mg/L	0.42	98.4	mg/L	0.42	0.43%
QC value within limits for K		Recovery = 98.39%						
Mg†	156113.5	101	mg/L	0.0	101	mg/L	0.0	0.03%
QC value within limits for Mg		Recovery = 100.61%						
Mn†	4390877.4	10.0	mg/L	0.01	10.0	mg/L	0.01	0.07%
QC value within limits for Mn		Recovery = 100.07%						
Mo†	101579.7	10.0	mg/L	0.00	10.0	mg/L	0.00	0.00%
QC value within limits for Mo		Recovery = 100.00%						
Na†	373285.3	99.9	mg/L	0.11	99.9	mg/L	0.11	0.11%
QC value within limits for Na		Recovery = 99.94%						
Zn†	371939.3	10.2	mg/L	0.01	10.2	mg/L	0.01	0.14%
QC value within limits for Zn		Recovery = 101.89%						

All analyte(s) passed QC.

Sequence No.: 9
Sample ID: LINEARITY
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 9
Date Collected: 11/21/2007 7:58:48 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: LINEARITY

Analyte	Back Pressure	Flow
All	226.0 kPa	0.65 L/min

Mean Data: LINEARITY

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Calib Std.Dev.	Sample Conc.	Sample Units	Sample Std.Dev.	RSD
Sca	358138.4	84.2	%	0.47				0.56%
Yr	189009.2	91.7	%	0.26				0.28%
Al†	-75.5	-0.0190	mg/L	0.00370	-0.0190	mg/L	0.00370	19.44%
QC value within limits for Al	Recovery = Not calculated							
B_†	481.7	0.0199	mg/L	0.00080	0.0199	mg/L	0.00080	4.00%
QC value within limits for B_	Recovery = Not calculated							
Ba†	106.0	0.00189	mg/L	0.000099	0.00189	mg/L	0.000099	5.27%
QC value within limits for Ba	Recovery = Not calculated							
Ca†	1139109.5	299	mg/L	2.0	299	mg/L	2.0	0.66%
QC value within limits for Ca	Recovery = 99.56%							
Co†	57.2	0.00293	mg/L	0.000000	0.00293	mg/L	0.000000	0.02%
QC value within limits for Co	Recovery = Not calculated							
Cr†	87.9	0.00145	mg/L	0.000015	0.00145	mg/L	0.000015	1.07%
QC value within limits for Cr	Recovery = Not calculated							
Cu†	-3539.5	-0.01000	mg/L	0.000043	-0.01000	mg/L	0.000043	0.43%
QC value within limits for Cu	Recovery = Not calculated							
Fe†	43416.8	97.3	mg/L	0.36	97.3	mg/L	0.36	0.37%
QC value within limits for Fe	Recovery = 97.29%							
K†	318238.3	308	mg/L	1.5	308	mg/L	1.5	0.49%
QC value within limits for K	Recovery = 102.53%							
Mg†	298673.5	192	mg/L	0.8	192	mg/L	0.8	0.41%
QC value within limits for Mg	Recovery = 96.24%							
Mn†	1562.1	0.00356	mg/L	0.000040	0.00356	mg/L	0.000040	1.12%
QC value within limits for Mn	Recovery = Not calculated							
Mo†	-5.0	-0.00050	mg/L	0.000339	-0.00050	mg/L	0.000339	68.31%
QC value within limits for Mo	Recovery = Not calculated							
Na†	1122430.4	301	mg/L	0.7	301	mg/L	0.7	0.23%
QC value within limits for Na	Recovery = 100.17%							
Zn†	923.7	0.0253	mg/L	0.00021	0.0253	mg/L	0.00021	0.84%
QC value within limits for Zn	Recovery = Not calculated							

All analyte(s) passed QC.

Sequence No.: 10
Sample ID: ICSA
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 10
Date Collected: 11/21/2007 8:02:57 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: ICSA

Analyte	Back Pressure	Flow
All	226.0 kPa	0.65 L/min

Mean Data: ICSA

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Calib Std.Dev.	Sample Conc.	Sample Units	Sample Std.Dev.	RSD
Sca	371165.9	87.3	%	0.77				0.88%
Yr	189973.1	92.2	%	0.42				0.45%
Al†	993368.7	250	mg/L	2.0	250	mg/L	2.0	0.80%
QC value within limits for Al	Recovery = 100.16%							
B_†	-62.8	-0.00260	mg/L	0.001246	-0.00260	mg/L	0.001246	48.00%
QC value within limits for B_	Recovery = Not calculated							
Ba†	140.9	0.00251	mg/L	0.000063	0.00251	mg/L	0.000063	2.53%
QC value within limits for Ba	Recovery = Not calculated							
Ca†	978198.3	256	mg/L	0.5	256	mg/L	0.5	0.21%
QC value within limits for Ca	Recovery = 102.60%							
Co†	27.8	0.00142	mg/L	0.000142	0.00142	mg/L	0.000142	9.97%
QC value within limits for Co	Recovery = Not calculated							
Cr†	-44.6	-0.00074	mg/L	0.000359	-0.00074	mg/L	0.000359	48.63%
QC value within limits for Cr	Recovery = Not calculated							
Cu†	-3702.6	-0.0105	mg/L	0.00012	-0.0105	mg/L	0.00012	1.13%
QC value within limits for Cu	Recovery = Not calculated							
Fe†	43578.8	97.7	mg/L	0.84	97.7	mg/L	0.84	0.86%
QC value within limits for Fe	Recovery = 97.65%							
K†	443.6	0.429	mg/L	0.0159	0.429	mg/L	0.0159	3.71%
QC value within limits for K	Recovery = Not calculated							
Mg†	377844.9	244	mg/L	0.4	244	mg/L	0.4	0.17%
QC value within limits for Mg	Recovery = 97.40%							
Mn†	1735.4	0.00396	mg/L	0.000050	0.00396	mg/L	0.000050	1.27%
QC value within limits for Mn	Recovery = Not calculated							
Mo†	-50.3	-0.00495	mg/L	0.000193	-0.00495	mg/L	0.000193	3.89%
QC value within limits for Mo	Recovery = Not calculated							
Na†	424.3	0.114	mg/L	0.0048	0.114	mg/L	0.0048	4.24%
QC value within limits for Na	Recovery = Not calculated							
Zn†	721.5	0.0198	mg/L	0.00055	0.0198	mg/L	0.00055	2.79%
QC value within limits for Zn	Recovery = Not calculated							

All analyte(s) passed QC.

Sequence No.: 11
Sample ID: ICSAB
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 11
Date Collected: 11/21/2007 8:07:06 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: ICSAB

Analyte	Back Pressure	Flow
All	226.0 kPa	0.65 L/min

Mean Data: ICSAB

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Sca	371836.0	87.4	%	0.57				0.65%
Yr	194608.7	94.4	%	0.30				0.32%
Al†	984298.3	248	mg/L	0.1	248	mg/L	0.1	0.04%
QC value within limits for Al	Recovery = 99.24%							
B_†	-328.0	-0.0140	mg/L	0.00042	-0.0140	mg/L	0.00042	2.97%
QC value within limits for B_	Recovery = Not calculated							
Ba†	14598.7	0.260	mg/L	0.0013	0.260	mg/L	0.0013	0.52%
QC value within limits for Ba	Recovery = 104.02%							
Ca†	968774.5	254	mg/L	0.6	254	mg/L	0.6	0.25%
QC value within limits for Ca	Recovery = 101.61%							
Co†	4661.1	0.239	mg/L	0.0012	0.239	mg/L	0.0012	0.51%
QC value within limits for Co	Recovery = 95.41%							
Cr†	14866.2	0.246	mg/L	0.0013	0.246	mg/L	0.0013	0.53%
QC value within limits for Cr	Recovery = 98.41%							
Cu†	85795.9	0.243	mg/L	0.0015	0.243	mg/L	0.0015	0.63%
QC value within limits for Cu	Recovery = 97.04%							
Fe†	43748.7	98.0	mg/L	0.10	98.0	mg/L	0.10	0.10%
QC value within limits for Fe	Recovery = 98.03%							
K†	171.9	0.166	mg/L	0.0060	0.166	mg/L	0.0060	3.60%
QC value within limits for K	Recovery = Not calculated							
Mg†	373871.1	241	mg/L	0.3	241	mg/L	0.3	0.12%
QC value within limits for Mg	Recovery = 96.38%							
Mn†	113661.6	0.259	mg/L	0.0005	0.259	mg/L	0.0005	0.18%
QC value within limits for Mn	Recovery = 103.62%							
Mo†	-65.3	-0.00642	mg/L	0.000315	-0.00642	mg/L	0.000315	4.90%
QC value within limits for Mo	Recovery = Not calculated							
Na†	307.0	0.0822	mg/L	0.00283	0.0822	mg/L	0.00283	3.45%
QC value within limits for Na	Recovery = Not calculated							
Zn†	19659.2	0.539	mg/L	0.0032	0.539	mg/L	0.0032	0.59%
QC value within limits for Zn	Recovery = 107.71%							

All analyte(s) passed QC.

Sequence No.: 12
Sample ID: WASH
Analyst:
Initial Sample Wt:
Dilution: 1X

Autosampler Location: 0
Date Collected: 11/21/2007 8:11:15 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: WASH

Analyte	Back Pressure	Flow
All	225.0 kPa	0.65 L/min

Mean Data: WASH

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Sca	422213.9	99.3	%	0.31				0.32%
Yr	207513.6	101	%	1.1				1.13%
Al†	-34.3	-0.00865	mg/L	0.007248	-0.00865	mg/L	0.007248	83.83%
QC value within limits for Al	Recovery = Not calculated							
B_†	-360.1	-0.0149	mg/L	0.00039	-0.0149	mg/L	0.00039	2.60%
QC value within limits for B_	Recovery = Not calculated							
Ba†	-2.2	-0.00004	mg/L	0.000046	-0.00004	mg/L	0.000046	119.33%
QC value within limits for Ba	Recovery = Not calculated							
Ca†	-10.5	-0.00276	mg/L	0.001487	-0.00276	mg/L	0.001487	53.95%
QC value within limits for Ca	Recovery = Not calculated							
Co†	0.3	0.00002	mg/L	0.000297	0.00002	mg/L	0.000297	>999.9%
QC value within limits for Co	Recovery = Not calculated							
Cr†	1.0	0.00002	mg/L	0.000079	0.00002	mg/L	0.000079	468.11%
QC value within limits for Cr	Recovery = Not calculated							
Cu†	114.6	0.00032	mg/L	0.000085	0.00032	mg/L	0.000085	26.28%
QC value within limits for Cu	Recovery = Not calculated							
Fe†	-0.4	-0.00084	mg/L	0.000804	-0.00084	mg/L	0.000804	95.68%
QC value within limits for Fe	Recovery = Not calculated							
K†	-20.7	-0.0200	mg/L	0.03757	-0.0200	mg/L	0.03757	187.44%
QC value within limits for K	Recovery = Not calculated							
Mg†	0.9	0.00058	mg/L	0.001042	0.00058	mg/L	0.001042	178.81%
QC value within limits for Mg	Recovery = Not calculated							
Mn†	-6.5	-0.00001	mg/L	0.000025	-0.00001	mg/L	0.000025	166.38%
QC value within limits for Mn	Recovery = Not calculated							
Mo†	-66.6	-0.00656	mg/L	0.000032	-0.00656	mg/L	0.000032	0.48%
QC value within limits for Mo	Recovery = Not calculated							
Na†	-26.3	-0.00705	mg/L	0.002583	-0.00705	mg/L	0.002583	36.62%
QC value within limits for Na	Recovery = Not calculated							
Zn†	-4.0	-0.00011	mg/L	0.000115	-0.00011	mg/L	0.000115	104.78%
QC value within limits for Zn	Recovery = Not calculated							

All analyte(s) passed QC.

Sequence No.: 13
Sample ID: CCV
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 4
Date Collected: 11/21/2007 8:15:06 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	226.0 kPa	0.65 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Sca	386803.8	91.0	%	0.22				0.24%
Yr	199906.2	97.0	%	2.20				2.26%
Al†	19888.7	5.01	mg/L	0.021	5.01	mg/L	0.021	0.43%
QC value within limits for Al	Recovery = 100.26%							
B_†	60032.9	2.47	mg/L	0.004	2.47	mg/L	0.004	0.18%
QC value within limits for B_	Recovery = 98.77%							
Ba†	288201.8	5.13	mg/L	0.004	5.13	mg/L	0.004	0.08%
QC value within limits for Ba	Recovery = 102.67%							
Ca†	195807.6	51.3	mg/L	0.35	51.3	mg/L	0.35	0.69%
QC value within limits for Ca	Recovery = 102.69%							
Co†	101223.5	5.18	mg/L	0.000	5.18	mg/L	0.000	0.00%
QC value within limits for Co	Recovery = 103.60%							
Cr†	307481.3	5.09	mg/L	0.003	5.09	mg/L	0.003	0.06%
QC value within limits for Cr	Recovery = 101.77%							
Cu†	1787762.4	5.06	mg/L	0.023	5.06	mg/L	0.023	0.46%
QC value within limits for Cu	Recovery = 101.11%							
Fe†	2274.8	5.10	mg/L	0.112	5.10	mg/L	0.112	2.19%
QC value within limits for Fe	Recovery = 101.95%							
K†	50222.3	48.5	mg/L	0.14	48.5	mg/L	0.14	0.29%
QC value within limits for K	Recovery = 97.09%							
Mg†	79562.1	51.3	mg/L	0.22	51.3	mg/L	0.22	0.42%
QC value within limits for Mg	Recovery = 102.55%							
Mn†	2272251.5	5.18	mg/L	0.001	5.18	mg/L	0.001	0.02%
QC value within limits for Mn	Recovery = 103.57%							
Mo†	51373.7	5.06	mg/L	0.010	5.06	mg/L	0.010	0.20%
QC value within limits for Mo	Recovery = 101.15%							
Na†	185277.7	49.6	mg/L	0.04	49.6	mg/L	0.04	0.08%
QC value within limits for Na	Recovery = 99.21%							
Zn†	191060.6	5.23	mg/L	0.001	5.23	mg/L	0.001	0.02%
QC value within limits for Zn	Recovery = 104.68%							

All analyte(s) passed QC.

Sequence No.: 49
Sample ID: MCV
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 5
Date Collected: 11/21/2007 10:47:02 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: MCV

Analyte	Back Pressure	Flow
All	225.0 kPa	0.65 L/min

Mean Data: MCV

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Sca	400218.4	94.1	%	1.71				1.81%
Yr	199683.2	96.9	%	1.44				1.49%
Al†	10446.0	2.63	mg/L	0.010	2.63	mg/L	0.010	0.38%
QC value within limits for Al		Recovery = 105.32%						
B_†	30581.2	1.26	mg/L	0.001	1.26	mg/L	0.001	0.06%
QC value within limits for B_		Recovery = 101.05%						
Ba†	149402.1	2.66	mg/L	0.012	2.66	mg/L	0.012	0.44%
QC value within limits for Ba		Recovery = 106.45%						
Ca†	101887.4	26.7	mg/L	0.06	26.7	mg/L	0.06	0.21%
QC value within limits for Ca		Recovery = 106.87%						
Cr†	159165.2	2.63	mg/L	0.006	2.63	mg/L	0.006	0.23%
QC value within limits for Cr		Recovery = 105.37%						
Cu†	909461.9	2.57	mg/L	0.004	2.57	mg/L	0.004	0.16%
QC value within limits for Cu		Recovery = 102.77%						
Fe†	1207.2	2.71	mg/L	0.039	2.71	mg/L	0.039	1.43%
QC value within limits for Fe		Recovery = 108.20%						
K†	26021.2	25.2	mg/L	0.10	25.2	mg/L	0.10	0.40%
QC value within limits for K		Recovery = 100.61%						
Mg†	41959.8	27.0	mg/L	0.05	27.0	mg/L	0.05	0.20%
QC value within limits for Mg		Recovery = 108.16%						
Mn†	1182887.8	2.70	mg/L	0.010	2.70	mg/L	0.010	0.36%
QC value within limits for Mn		Recovery = 107.84%						
Mo†	26400.9	2.60	mg/L	0.007	2.60	mg/L	0.007	0.28%
QC value within limits for Mo		Recovery = 103.96%						
Na†	95699.5	25.6	mg/L	0.05	25.6	mg/L	0.05	0.21%
QC value within limits for Na		Recovery = 102.48%						
Zn†	99079.4	2.71	mg/L	0.008	2.71	mg/L	0.008	0.31%
QC value within limits for Zn		Recovery = 108.57%						

All analyte(s) passed QC.

Sequence No.: 50
Sample ID: MBLANK
Analyst:
Initial Sample Wt:
Dilution: 1X

Autosampler Location: 0
Date Collected: 11/21/2007 10:51:12 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: MBLANK

Analyte	Back Pressure	Flow
All	225.0 kPa	0.65 L/min

Mean Data: MBLANK

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Calib Std.Dev.	Sample Conc.	Sample Units	Sample Std.Dev.	RSD
Sca	430193.6	101	%	0.3				0.31%
Yr	204442.8	99.2	%	1.30				1.31%
Al†	-24.8	-0.00625	mg/L	0.011772	-0.00625	mg/L	0.011772	188.48%
QC value within limits for Al	Recovery = Not calculated							
B_†	-295.0	-0.0122	mg/L	0.00021	-0.0122	mg/L	0.00021	1.70%
QC value within limits for B_	Recovery = Not calculated							
Ba†	-1.2	-0.00002	mg/L	0.000039	-0.00002	mg/L	0.000039	181.74%
QC value within limits for Ba	Recovery = Not calculated							
Ca†	-18.6	-0.00487	mg/L	0.002974	-0.00487	mg/L	0.002974	61.10%
QC value within limits for Ca	Recovery = Not calculated							
Cr†	-2.4	-0.00004	mg/L	0.000037	-0.00004	mg/L	0.000037	94.78%
QC value within limits for Cr	Recovery = Not calculated							
Cu†	-357.4	-0.00101	mg/L	0.000092	-0.00101	mg/L	0.000092	9.13%
QC value within limits for Cu	Recovery = Not calculated							
Fe†	-1.0	-0.00234	mg/L	0.005349	-0.00234	mg/L	0.005349	228.13%
QC value within limits for Fe	Recovery = Not calculated							
K†	-89.4	-0.0864	mg/L	0.04971	-0.0864	mg/L	0.04971	57.52%
QC value within limits for K	Recovery = Not calculated							
Mg†	-3.0	-0.00197	mg/L	0.001221	-0.00197	mg/L	0.001221	62.15%
QC value within limits for Mg	Recovery = Not calculated							
Mn†	-9.3	-0.00002	mg/L	0.000035	-0.00002	mg/L	0.000035	163.32%
QC value within limits for Mn	Recovery = Not calculated							
Mo†	-57.9	-0.00570	mg/L	0.000599	-0.00570	mg/L	0.000599	10.51%
QC value within limits for Mo	Recovery = Not calculated							
Na†	-53.2	-0.0142	mg/L	0.00268	-0.0142	mg/L	0.00268	18.84%
QC value within limits for Na	Recovery = Not calculated							
Zn†	-46.7	-0.00128	mg/L	0.000028	-0.00128	mg/L	0.000028	2.20%
QC value within limits for Zn	Recovery = Not calculated							

All analyte(s) passed QC.

Sequence No.: 51
Sample ID: MRL
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 3
Date Collected: 11/21/2007 10:55:02 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: MRL

Analyte	Back Pressure	Flow
All	225.0 kPa	0.65 L/min

Mean Data: MRL

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Calib Std.Dev.	Sample Conc.	Sample Units	Sample Std.Dev.	RSD
Sca	423775.2	99.7	%	0.69				0.69%
Yr	204113.1	99.0	%	0.59				0.59%
Al†	170.1	0.0429	mg/L	0.00254	0.0429	mg/L	0.00254	5.92%
QC value within limits for Al	Recovery = 85.76%							
B_†	764.8	0.0316	mg/L	0.00065	0.0316	mg/L	0.00065	2.07%
QC value within limits for B_	Recovery = 63.18%							
Ba†	1170.9	0.0209	mg/L	0.00017	0.0209	mg/L	0.00017	0.80%
QC value within limits for Ba	Recovery = 90.68%							
Ca†	4029.7	1.06	mg/L	0.000	1.06	mg/L	0.000	0.04%
QC value within limits for Ca	Recovery = 105.66%							
Cr†	576.7	0.00954	mg/L	0.000210	0.00954	mg/L	0.000210	2.20%
QC value within limits for Cr	Recovery = 95.44%							
Cu†	3086.7	0.00872	mg/L	0.000095	0.00872	mg/L	0.000095	1.09%
QC value within limits for Cu	Recovery = 87.20%							
Fe†	5.9	0.0133	mg/L	0.00068	0.0133	mg/L	0.00068	5.08%
QC value within limits for Fe	Recovery = 66.53%							
K†	952.2	0.920	mg/L	0.0391	0.920	mg/L	0.0391	4.25%
QC value within limits for K	Recovery = 92.04%							
Mg†	165.9	0.107	mg/L	0.0025	0.107	mg/L	0.0025	2.34%
QC value within limits for Mg	Recovery = 106.88%							
Mn†	944.0	0.00215	mg/L	0.000039	0.00215	mg/L	0.000039	1.81%
QC value within limits for Mn	Recovery = 107.57%							
Mo†	126.4	0.0124	mg/L	0.00010	0.0124	mg/L	0.00010	0.81%
QC value within limits for Mo	Recovery = 62.22%							
Na†	3532.2	0.946	mg/L	0.0041	0.946	mg/L	0.0041	0.43%
QC value within limits for Na	Recovery = 94.57%							
Zn†	771.5	0.0211	mg/L	0.00028	0.0211	mg/L	0.00028	1.32%
QC value within limits for Zn	Recovery = 105.68%							

All analyte(s) passed QC.

Sequence No.: 52
Sample ID: LCS
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 6
Date Collected: 11/21/2007 10:59:05 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: LCS

Analyte	Back Pressure	Flow
All	226.0 kPa	0.65 L/min

Mean Data: LCS

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Sca	406585.9	95.6	%	0.07				0.07%
Yr	200202.4	97.1	%	0.47				0.48%
Al†	8083.4	2.04	mg/L	0.005	2.04	mg/L	0.005	0.27%
QC value within limits for Al	Recovery = 101.88%							
B_†	11736.0	0.485	mg/L	0.0077	0.485	mg/L	0.0077	1.59%
QC value within limits for B_	Recovery = 96.95%							
Ba†	57837.2	1.03	mg/L	0.011	1.03	mg/L	0.011	1.10%
QC value within limits for Ba	Recovery = 103.02%							
Ca†	200847.7	52.7	mg/L	0.16	52.7	mg/L	0.16	0.30%
QC value within limits for Ca	Recovery = 105.33%							
Cr†	62269.4	1.03	mg/L	0.011	1.03	mg/L	0.011	1.04%
QC value within limits for Cr	Recovery = 103.05%							
Cu†	361850.7	1.02	mg/L	0.009	1.02	mg/L	0.009	0.85%
QC value within limits for Cu	Recovery = 102.22%							
Fe†	2399.4	5.38	mg/L	0.031	5.38	mg/L	0.031	0.57%
QC value within limits for Fe	Recovery = 107.53%							
K†	20720.2	20.0	mg/L	0.09	20.0	mg/L	0.09	0.43%
QC value within limits for K	Recovery = 100.14%							
Mg†	32996.6	21.3	mg/L	0.11	21.3	mg/L	0.11	0.50%
QC value within limits for Mg	Recovery = 106.32%							
Mn†	234481.7	0.534	mg/L	0.0001	0.534	mg/L	0.0001	0.03%
QC value within limits for Mn	Recovery = 106.88%							
Mo†	10384.9	1.02	mg/L	0.009	1.02	mg/L	0.009	0.90%
QC value within limits for Mo	Recovery = 102.24%							
Na†	188852.2	50.6	mg/L	0.32	50.6	mg/L	0.32	0.64%
QC value within limits for Na	Recovery = 101.12%							
Zn†	39525.8	1.08	mg/L	0.011	1.08	mg/L	0.011	0.98%
QC value within limits for Zn	Recovery = 108.27%							

All analyte(s) passed QC.

Sequence No.: 53
Sample ID: LCSD
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 7
Date Collected: 11/21/2007 11:03:11 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: LCSD

Analyte	Back Pressure	Flow
All	225.0 kPa	0.65 L/min

Mean Data: LCSD

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Sca	401581.2	94.4	%	0.33				0.35%
Yr	198995.7	96.5	%	0.03				0.04%
Al†	8034.2	2.03	mg/L	0.009	2.03	mg/L	0.009	0.43%
QC value within limits for Al		Recovery = 101.26%						
B_†	11818.1	0.488	mg/L	0.0042	0.488	mg/L	0.0042	0.87%
QC value within limits for B_		Recovery = 97.63%						
Ba†	58269.2	1.04	mg/L	0.011	1.04	mg/L	0.011	1.08%
QC value within limits for Ba		Recovery = 103.79%						
Ca†	202902.7	53.2	mg/L	0.09	53.2	mg/L	0.09	0.16%
QC value within limits for Ca		Recovery = 106.41%						
Cr†	62502.7	1.03	mg/L	0.012	1.03	mg/L	0.012	1.17%
QC value within limits for Cr		Recovery = 103.44%						
Cu†	361161.1	1.02	mg/L	0.004	1.02	mg/L	0.004	0.39%
QC value within limits for Cu		Recovery = 102.03%						
Fe†	2383.7	5.34	mg/L	0.002	5.34	mg/L	0.002	0.03%
QC value within limits for Fe		Recovery = 106.83%						
K†	20884.3	20.2	mg/L	0.08	20.2	mg/L	0.08	0.38%
QC value within limits for K		Recovery = 100.93%						
Mg†	33229.8	21.4	mg/L	0.01	21.4	mg/L	0.01	0.06%
QC value within limits for Mg		Recovery = 107.07%						
Mn†	233784.9	0.533	mg/L	0.0011	0.533	mg/L	0.0011	0.22%
QC value within limits for Mn		Recovery = 106.56%						
Mo†	10434.2	1.03	mg/L	0.011	1.03	mg/L	0.011	1.03%
QC value within limits for Mo		Recovery = 102.72%						
Na†	190937.3	51.1	mg/L	0.06	51.1	mg/L	0.06	0.12%
QC value within limits for Na		Recovery = 102.24%						
Zn†	39914.3	1.09	mg/L	0.010	1.09	mg/L	0.010	0.95%
QC value within limits for Zn		Recovery = 109.34%						

All analyte(s) passed QC.

Sequence No.: 55
Sample ID: 2711210438MS
Analyst:
Initial Sample Wt:
Dilution: 1X

Autosampler Location: 63
Date Collected: 11/21/2007 11:12:06 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: 2711210438MS

Analyte	Back Pressure	Flow
All	226.0 kPa	0.65 L/min

Mean Data: 2711210438MS

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Sca	376198.0	88.5	%	0.74				0.83%
Yr	187240.8	90.8	%	0.15				0.17%
Alt	8017.2	2.02	mg/L	0.007	2.02	mg/L	0.007	0.35%
B_t	14128.4	0.584	mg/L	0.0032	0.584	mg/L	0.0032	0.55%
Bat	57629.4	1.03	mg/L	0.005	1.03	mg/L	0.005	0.49%
Cat	265547.3	69.6	mg/L	0.29	69.6	mg/L	0.29	0.42%
Crt	60892.3	1.01	mg/L	0.006	1.01	mg/L	0.006	0.57%
Cut	356118.3	1.01	mg/L	0.005	1.01	mg/L	0.005	0.51%
Fet	2392.2	5.36	mg/L	0.041	5.36	mg/L	0.041	0.76%
Kt	28454.7	27.5	mg/L	0.12	27.5	mg/L	0.12	0.42%
Mgt	78526.2	50.6	mg/L	0.03	50.6	mg/L	0.03	0.07%
Mnt	231041.5	0.527	mg/L	0.0021	0.527	mg/L	0.0021	0.40%
Mot	9860.8	0.971	mg/L	0.0037	0.971	mg/L	0.0037	0.38%
Nat	856217.5	229	mg/L	0.3	229	mg/L	0.3	0.11%
Znt	41329.7	1.13	mg/L	0.003	1.13	mg/L	0.003	0.24%

Sequence No.: 56
Sample ID: 2711210438MSD
Analyst:
Initial Sample Wt:
Dilution: 1X

Autosampler Location: 64
Date Collected: 11/21/2007 11:16:15 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: 2711210438MSD

Analyte	Back Pressure	Flow
All	225.0 kPa	0.65 L/min

Mean Data: 2711210438MSD

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Sca	374962.1	88.2	%	0.36				0.41%
Yr	190437.2	92.4	%	1.55				1.67%
Al†	7931.7	2.00	mg/L	0.033	2.00	mg/L	0.033	1.66%
B_†	14231.0	0.588	mg/L	0.0042	0.588	mg/L	0.0042	0.71%
Ba†	57874.6	1.03	mg/L	0.004	1.03	mg/L	0.004	0.39%
Ca†	264694.3	69.4	mg/L	0.39	69.4	mg/L	0.39	0.56%
Cr†	61176.5	1.01	mg/L	0.004	1.01	mg/L	0.004	0.41%
Cu†	354191.0	1.00	mg/L	0.003	1.00	mg/L	0.003	0.33%
Fe†	2359.8	5.29	mg/L	0.084	5.29	mg/L	0.084	1.59%
K†	28574.3	27.6	mg/L	0.18	27.6	mg/L	0.18	0.65%
Mg†	78453.7	50.6	mg/L	0.29	50.6	mg/L	0.29	0.58%
Mn†	230964.4	0.526	mg/L	0.0009	0.526	mg/L	0.0009	0.17%
Mo†	9962.3	0.981	mg/L	0.0028	0.981	mg/L	0.0028	0.28%
Na†	857017.8	229	mg/L	0.3	229	mg/L	0.3	0.11%
Zn†	41472.3	1.14	mg/L	0.005	1.14	mg/L	0.005	0.48%

Sequence No.: 66
Sample ID: CCV
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 4
Date Collected: 11/21/2007 11:59:43 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	226.0 kPa	0.65 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Sca	380192.8	89.4	%	0.07				0.08%
Yr	190236.2	92.3	%	0.14				0.16%
Al†	20164.3	5.08	mg/L	0.019	5.08	mg/L	0.019	0.38%
QC value within limits for Al	Recovery = 101.65%							
B_†	59530.3	2.46	mg/L	0.002	2.46	mg/L	0.002	0.08%
QC value within limits for B_	Recovery = 98.35%							
Ba†	284961.7	5.08	mg/L	0.001	5.08	mg/L	0.001	0.03%
QC value within limits for Ba	Recovery = 101.52%							
Ca†	196969.4	51.6	mg/L	0.15	51.6	mg/L	0.15	0.29%
QC value within limits for Ca	Recovery = 103.30%							
Cr†	304642.4	5.04	mg/L	0.002	5.04	mg/L	0.002	0.05%
QC value within limits for Cr	Recovery = 100.84%							
Cu†	1742299.6	4.92	mg/L	0.080	4.92	mg/L	0.080	1.63%
QC value within limits for Cu	Recovery = 98.44%							
Fe†	2360.0	5.29	mg/L	0.009	5.29	mg/L	0.009	0.17%
QC value within limits for Fe	Recovery = 105.77%							
K†	50267.3	48.6	mg/L	0.29	48.6	mg/L	0.29	0.59%
QC value within limits for K	Recovery = 97.18%							
Mg†	81282.0	52.4	mg/L	0.10	52.4	mg/L	0.10	0.18%
QC value within limits for Mg	Recovery = 104.76%							
Mn†	2229753.2	5.08	mg/L	0.033	5.08	mg/L	0.033	0.66%
QC value within limits for Mn	Recovery = 101.64%							
Mo†	50735.9	4.99	mg/L	0.010	4.99	mg/L	0.010	0.20%
QC value within limits for Mo	Recovery = 99.90%							
Na†	184367.4	49.4	mg/L	0.12	49.4	mg/L	0.12	0.25%
QC value within limits for Na	Recovery = 98.72%							
Zn†	189126.9	5.18	mg/L	0.004	5.18	mg/L	0.004	0.07%
QC value within limits for Zn	Recovery = 103.62%							

All analyte(s) passed QC.

Sequence No.: 67
Sample ID: CCB
Analyst:
Initial Sample Wt:
Dilution: 1X

Autosampler Location: 0
Date Collected: 11/22/2007 12:03:52 AM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: CCB

Analyte	Back Pressure	Flow
All	226.0 kPa	0.65 L/min

Mean Data: CCB

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Calib Std.Dev.	Sample Conc.	Sample Units	Sample Std.Dev.	RSD
Sca	412724.0	97.1	%	0.66				0.68%
Yr	196809.8	95.5	%	0.58				0.61%
Al†	-21.6	-0.00544	mg/L	0.000699	-0.00544	mg/L	0.000699	12.85%
QC value within limits for Al	Recovery = Not calculated							
B_†	-99.4	-0.00411	mg/L	0.000400	-0.00411	mg/L	0.000400	9.75%
QC value within limits for B_	Recovery = Not calculated							
Ba†	2.4	0.00004	mg/L	0.000041	0.00004	mg/L	0.000041	96.50%
QC value within limits for Ba	Recovery = Not calculated							
Ca†	-20.6	-0.00540	mg/L	0.000591	-0.00540	mg/L	0.000591	10.94%
QC value within limits for Ca	Recovery = Not calculated							
Cr†	-4.4	-0.00007	mg/L	0.000036	-0.00007	mg/L	0.000036	49.34%
QC value within limits for Cr	Recovery = Not calculated							
Cu†	-346.4	-0.00098	mg/L	0.000027	-0.00098	mg/L	0.000027	2.79%
QC value within limits for Cu	Recovery = Not calculated							
Fe†	-3.0	-0.00675	mg/L	0.001845	-0.00675	mg/L	0.001845	27.36%
QC value within limits for Fe	Recovery = Not calculated							
K†	-54.3	-0.0525	mg/L	0.00449	-0.0525	mg/L	0.00449	8.56%
QC value within limits for K	Recovery = Not calculated							
Mg†	-1.2	-0.00076	mg/L	0.000589	-0.00076	mg/L	0.000589	77.45%
QC value within limits for Mg	Recovery = Not calculated							
Mn†	-18.8	-0.00004	mg/L	0.000008	-0.00004	mg/L	0.000008	18.22%
QC value within limits for Mn	Recovery = Not calculated							
Mo†	-48.5	-0.00477	mg/L	0.000522	-0.00477	mg/L	0.000522	10.94%
QC value within limits for Mo	Recovery = Not calculated							
Na†	-98.8	-0.0265	mg/L	0.00492	-0.0265	mg/L	0.00492	18.58%
QC value within limits for Na	Recovery = Not calculated							
Zn†	-44.6	-0.00122	mg/L	0.000087	-0.00122	mg/L	0.000087	7.11%
QC value within limits for Zn	Recovery = Not calculated							

All analyte(s) passed QC.

Sequence No.: 69
Sample ID: 2711210440MS
Analyst:
Initial Sample Wt:
Dilution: 1X

Autosampler Location: 75
Date Collected: 11/22/2007 12:12:31 AM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: 2711210440MS

Analyte	Back Pressure	Flow
All	227.0 kPa	0.65 L/min

Mean Data: 2711210440MS

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Sca	366210.3	86.1	%	0.72				0.84%
Yr	184312.0	89.4	%	0.24				0.27%
Al†	8429.4	2.12	mg/L	0.000	2.12	mg/L	0.000	0.02%
B_†	14443.6	0.597	mg/L	0.0009	0.597	mg/L	0.0009	0.15%
Ba†	59627.3	1.06	mg/L	0.005	1.06	mg/L	0.005	0.45%
Ca†	254547.3	66.7	mg/L	0.11	66.7	mg/L	0.11	0.17%
Cr†	62669.2	1.04	mg/L	0.002	1.04	mg/L	0.002	0.21%
Cu†	365301.1	1.03	mg/L	0.004	1.03	mg/L	0.004	0.34%
Fe†	2474.8	5.55	mg/L	0.019	5.55	mg/L	0.019	0.35%
K†	28429.9	27.5	mg/L	0.07	27.5	mg/L	0.07	0.25%
Mg†	67220.4	43.3	mg/L	0.01	43.3	mg/L	0.01	0.02%
Mn†	243174.5	0.554	mg/L	0.0032	0.554	mg/L	0.0032	0.57%
Mo†	10234.7	1.01	mg/L	0.006	1.01	mg/L	0.006	0.57%
Na†	754676.0	202	mg/L	1.0	202	mg/L	1.0	0.49%
Zn†	43499.9	1.19	mg/L	0.003	1.19	mg/L	0.003	0.23%

Sequence No.: 70
Sample ID: 2711210440MSD
Analyst:
Initial Sample Wt:
Dilution: 1X

Autosampler Location: 76
Date Collected: 11/22/2007 12:16:40 AM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: 2711210440MSD

Analyte	Back Pressure	Flow
All	226.0 kPa	0.65 L/min

Mean Data: 2711210440MSD

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Sca	375749.7	88.4	%	0.19				0.21%
Yr	189675.9	92.0	%	0.75				0.82%
Al†	8197.6	2.07	mg/L	0.025	2.07	mg/L	0.025	1.22%
B_†	14276.7	0.590	mg/L	0.0001	0.590	mg/L	0.0001	0.01%
Ba†	58325.8	1.04	mg/L	0.002	1.04	mg/L	0.002	0.19%
Ca†	249085.8	65.3	mg/L	0.07	65.3	mg/L	0.07	0.11%
Cr†	61473.5	1.02	mg/L	0.000	1.02	mg/L	0.000	0.04%
Cu†	357623.4	1.01	mg/L	0.000	1.01	mg/L	0.000	0.00%
Fe†	2439.6	5.47	mg/L	0.053	5.47	mg/L	0.053	0.96%
K†	27883.3	27.0	mg/L	0.16	27.0	mg/L	0.16	0.59%
Mg†	65906.4	42.5	mg/L	0.13	42.5	mg/L	0.13	0.31%
Mn†	236954.8	0.540	mg/L	0.0015	0.540	mg/L	0.0015	0.28%
Mo†	10031.6	0.988	mg/L	0.0033	0.988	mg/L	0.0033	0.34%
Na†	741943.1	199	mg/L	0.5	199	mg/L	0.5	0.27%
Zn†	42650.6	1.17	mg/L	0.001	1.17	mg/L	0.001	0.09%

Sequence No.: 79
Sample ID: 2711200049
Analyst:
Initial Sample Wt:
Dilution: 1X

Autosampler Location: 85
Date Collected: 11/22/2007 12:58:21 AM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: 2711200049

Analyte	Back Pressure	Flow
All	227.0 kPa	0.65 L/min

Mean Data: 2711200049

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Sca	389322.9	91.5	%	0.42				0.46%
Yr	189819.7	92.1	%	0.15				0.17%
Alt	107.2	0.0270	mg/L	0.00066	0.0270	mg/L	0.00066	2.45%
B_t	3233.8	0.134	mg/L	0.0006	0.134	mg/L	0.0006	0.47%
Bat	2313.5	0.0412	mg/L	0.00048	0.0412	mg/L	0.00048	1.16%
Cat	163510.1	42.9	mg/L	0.21	42.9	mg/L	0.21	0.48%
Crt	-53.1	-0.00088	mg/L	0.000122	-0.00088	mg/L	0.000122	13.85%
Cut	-254.7	-0.00072	mg/L	0.000074	-0.00072	mg/L	0.000074	10.33%
Fet	-2.2	-0.00484	mg/L	0.003682	-0.00484	mg/L	0.003682	76.13%
Kt	3127.0	3.02	mg/L	0.006	3.02	mg/L	0.006	0.18%
Mgt	25897.4	16.7	mg/L	0.11	16.7	mg/L	0.11	0.63%
Mnt	94.6	0.00022	mg/L	0.000017	0.00022	mg/L	0.000017	7.84%
Mot	-48.9	-0.00481	mg/L	0.000677	-0.00481	mg/L	0.000677	14.06%
Nat	202399.3	54.2	mg/L	0.08	54.2	mg/L	0.08	0.14%
Znt	95.2	0.00261	mg/L	0.000079	0.00261	mg/L	0.000079	3.01%

Sequence No.: 80
Sample ID: CCV
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 4
Date Collected: 11/22/2007 1:03:06 AM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	228.0 kPa	0.65 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Sca	374007.4	87.9	%	1.15				1.30%
Yr	182528.9	88.6	%	0.05				0.06%
Al†	20410.4	5.14	mg/L	0.009	5.14	mg/L	0.009	0.18%
QC value within limits for Al	Recovery = 102.89%							
B_†	60012.5	2.48	mg/L	0.003	2.48	mg/L	0.003	0.13%
QC value within limits for B_	Recovery = 99.15%							
Ba†	286236.7	5.10	mg/L	0.011	5.10	mg/L	0.011	0.22%
QC value within limits for Ba	Recovery = 101.97%							
Ca†	199311.6	52.3	mg/L	0.01	52.3	mg/L	0.01	0.02%
QC value within limits for Ca	Recovery = 104.52%							
Cr†	307451.2	5.09	mg/L	0.002	5.09	mg/L	0.002	0.05%
QC value within limits for Cr	Recovery = 101.77%							
Cu†	1758230.9	4.97	mg/L	0.042	4.97	mg/L	0.042	0.85%
QC value within limits for Cu	Recovery = 99.34%							
Fe†	2409.0	5.40	mg/L	0.007	5.40	mg/L	0.007	0.13%
QC value within limits for Fe	Recovery = 107.96%							
K†	51405.3	49.7	mg/L	0.10	49.7	mg/L	0.10	0.20%
QC value within limits for K	Recovery = 99.37%							
Mg†	82363.3	53.1	mg/L	0.01	53.1	mg/L	0.01	0.02%
QC value within limits for Mg	Recovery = 106.16%							
Mn†	2272456.2	5.18	mg/L	0.021	5.18	mg/L	0.021	0.41%
QC value within limits for Mn	Recovery = 103.58%							
Mo†	51028.8	5.02	mg/L	0.006	5.02	mg/L	0.006	0.12%
QC value within limits for Mo	Recovery = 100.47%							
Na†	186891.3	50.0	mg/L	0.27	50.0	mg/L	0.27	0.54%
QC value within limits for Na	Recovery = 100.07%							
Zn†	190580.7	5.22	mg/L	0.010	5.22	mg/L	0.010	0.20%
QC value within limits for Zn	Recovery = 104.41%							

All analyte(s) passed QC.

Sequence No.: 81
Sample ID: CCB
Analyst:
Initial Sample Wt:
Dilution: 1X

Autosampler Location: 0
Date Collected: 11/22/2007 1:07:15 AM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: CCB

Analyte	Back Pressure	Flow
All	227.0 kPa	0.65 L/min

Mean Data: CCB

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Calib Std.Dev.	Sample Conc.	Sample Units	Sample Std.Dev.	RSD
Sca	403197.7	94.8	%	0.25				0.26%
Yr	191909.7	93.1	%	0.93				1.00%
Al†	35.1	0.00885	mg/L	0.008783	0.00885	mg/L	0.008783	99.26%
QC value within limits for Al	Recovery = Not calculated							
B_†	-28.5	-0.00118	mg/L	0.000731	-0.00118	mg/L	0.000731	62.00%
QC value within limits for B_	Recovery = Not calculated							
Ba†	-1.5	-0.00003	mg/L	0.000026	-0.00003	mg/L	0.000026	96.67%
QC value within limits for Ba	Recovery = Not calculated							
Ca†	-24.3	-0.00636	mg/L	0.001002	-0.00636	mg/L	0.001002	15.74%
QC value within limits for Ca	Recovery = Not calculated							
Cr†	6.3	0.00010	mg/L	0.000041	0.00010	mg/L	0.000041	39.87%
QC value within limits for Cr	Recovery = Not calculated							
Cu†	-359.1	-0.00101	mg/L	0.000022	-0.00101	mg/L	0.000022	2.15%
QC value within limits for Cu	Recovery = Not calculated							
Fe†	-3.0	-0.00669	mg/L	0.007008	-0.00669	mg/L	0.007008	104.71%
QC value within limits for Fe	Recovery = Not calculated							
K†	-57.2	-0.0553	mg/L	0.04114	-0.0553	mg/L	0.04114	74.39%
QC value within limits for K	Recovery = Not calculated							
Mg†	-2.7	-0.00175	mg/L	0.001080	-0.00175	mg/L	0.001080	61.60%
QC value within limits for Mg	Recovery = Not calculated							
Mn†	-22.2	-0.00005	mg/L	0.000008	-0.00005	mg/L	0.000008	14.96%
QC value within limits for Mn	Recovery = Not calculated							
Mo†	-46.8	-0.00460	mg/L	0.000095	-0.00460	mg/L	0.000095	2.06%
QC value within limits for Mo	Recovery = Not calculated							
Na†	-36.9	-0.00987	mg/L	0.001687	-0.00987	mg/L	0.001687	17.08%
QC value within limits for Na	Recovery = Not calculated							
Zn†	-47.5	-0.00130	mg/L	0.000048	-0.00130	mg/L	0.000048	3.65%
QC value within limits for Zn	Recovery = Not calculated							

All analyte(s) passed QC.

Sequence No.: 82
Sample ID: MCV
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 5
Date Collected: 11/22/2007 1:11:06 AM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: MCV

Analyte	Back Pressure	Flow
All	228.0 kPa	0.65 L/min

Mean Data: MCV

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Sca	389026.3	91.5	%	0.94				1.02%
Yr	187722.8	91.1	%	0.59				0.65%
Al†	10515.7	2.65	mg/L	0.002	2.65	mg/L	0.002	0.07%
QC value within limits for Al Recovery = 106.03%								
B_†	30302.7	1.25	mg/L	0.015	1.25	mg/L	0.015	1.24%
QC value within limits for B_ Recovery = 100.13%								
Ba†	147302.0	2.62	mg/L	0.036	2.62	mg/L	0.036	1.36%
QC value within limits for Ba Recovery = 104.95%								
Ca†	103569.0	27.2	mg/L	0.26	27.2	mg/L	0.26	0.98%
QC value within limits for Ca Recovery = 108.63%								
Cr†	157106.4	2.60	mg/L	0.039	2.60	mg/L	0.039	1.49%
QC value within limits for Cr Recovery = 104.00%								
Cu†	892863.4	2.52	mg/L	0.008	2.52	mg/L	0.008	0.30%
QC value within limits for Cu Recovery = 100.89%								
Fe†	1233.9	2.76	mg/L	0.014	2.76	mg/L	0.014	0.52%
QC value greater than the upper limit for Fe Recovery = 110.60%								
K†	26123.6	25.3	mg/L	0.09	25.3	mg/L	0.09	0.35%
QC value within limits for K Recovery = 101.00%								
Mg†	42944.8	27.7	mg/L	0.02	27.7	mg/L	0.02	0.08%
QC value greater than the upper limit for Mg Recovery = 110.70%								
Mn†	1167748.7	2.66	mg/L	0.003	2.66	mg/L	0.003	0.11%
QC value within limits for Mn Recovery = 106.46%								
Mo†	25942.1	2.55	mg/L	0.027	2.55	mg/L	0.027	1.07%
QC value within limits for Mo Recovery = 102.16%								
Na†	95511.2	25.6	mg/L	0.09	25.6	mg/L	0.09	0.35%
QC value within limits for Na Recovery = 102.28%								
Zn†	97636.9	2.67	mg/L	0.030	2.67	mg/L	0.030	1.11%
QC value within limits for Zn Recovery = 106.98%								

QC Failed. Continue with analysis.

Sequence No.: 54
Sample ID: 2711210438
Analyst:
Initial Sample Wt:
Dilution: 1X

Autosampler Location: 62
Date Collected: 11/21/2007 11:07:17 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: 2711210438

Analyte	Back Pressure	Flow
All	225.0 kPa	0.65 L/min

Mean Data: 2711210438

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Sca	389403.5	91.6	%	0.31				0.33%
Yr	195258.2	94.7	%	0.63				0.66%
Alt	26.6	0.00670	mg/L	0.000039	0.00670	mg/L	0.000039	0.58%
B_t	1757.5	0.0726	mg/L	0.00037	0.0726	mg/L	0.00037	0.50%
Bat	124.1	0.00221	mg/L	0.000025	0.00221	mg/L	0.000025	1.13%
Cat	69655.6	18.3	mg/L	0.01	18.3	mg/L	0.01	0.08%
Crt	-2.6	-0.00004	mg/L	0.000132	-0.00004	mg/L	0.000132	307.18%
Cut	965.5	0.00273	mg/L	0.000058	0.00273	mg/L	0.000058	2.14%
Fet	11.4	0.0255	mg/L	0.00351	0.0255	mg/L	0.00351	13.76%
Kt	8120.2	7.85	mg/L	0.081	7.85	mg/L	0.081	1.03%
Mgt	47369.2	30.5	mg/L	0.06	30.5	mg/L	0.06	0.19%
Mnt	384.3	0.00088	mg/L	0.000002	0.00088	mg/L	0.000002	0.20%
Mot	-61.5	-0.00606	mg/L	0.000121	-0.00606	mg/L	0.000121	2.00%
Nat	701407.2	188	mg/L	1.2	188	mg/L	1.2	0.64%
Znt	325.7	0.00892	mg/L	0.000063	0.00892	mg/L	0.000063	0.70%

Sequence No.: 68
Sample ID: 2711210440
Analyst:
Initial Sample Wt:
Dilution: 1X

Autosampler Location: 74
Date Collected: 11/22/2007 12:07:43 AM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: 2711210440

Analyte	Back Pressure	Flow
All	226.0 kPa	0.65 L/min

Mean Data: 2711210440

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Sca	389561.2	91.6	%	0.99				1.08%
Yr	193479.2	93.9	%	1.36				1.45%
Alt	137.2	0.0346	mg/L	0.00263	0.0346	mg/L	0.00263	7.61%
B_t	1702.8	0.0703	mg/L	0.00116	0.0703	mg/L	0.00116	1.64%
Bat	66.2	0.00118	mg/L	0.000099	0.00118	mg/L	0.000099	8.42%
Cat	51773.3	13.6	mg/L	0.17	13.6	mg/L	0.17	1.28%
Crt	-10.9	-0.00018	mg/L	0.000029	-0.00018	mg/L	0.000029	16.38%
Cut	-47.0	-0.00013	mg/L	0.000150	-0.00013	mg/L	0.000150	112.76%
Fet	44.0	0.0986	mg/L	0.00238	0.0986	mg/L	0.00238	2.41%
Kt	7043.6	6.81	mg/L	0.177	6.81	mg/L	0.177	2.60%
Mgt	34389.7	22.2	mg/L	0.32	22.2	mg/L	0.32	1.42%
Mnt	4901.9	0.0112	mg/L	0.00011	0.0112	mg/L	0.00011	0.96%
Mot	-67.5	-0.00664	mg/L	0.000113	-0.00664	mg/L	0.000113	1.70%
Nat	570940.3	153	mg/L	2.0	153	mg/L	2.0	1.33%
Znt	1177.4	0.0323	mg/L	0.00007	0.0323	mg/L	0.00007	0.22%

Sequence No.: 78
Sample ID: 2711200573_10X
Analyst:
Initial Sample Wt:
Dilution: 10X

Autosampler Location: 84
Date Collected: 11/22/2007 12:53:31 AM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: 2711200573_10X

Analyte	Back Pressure	Flow
All	228.0 kPa	0.65 L/min

Mean Data: 2711200573_10X

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Calib Std.Dev.	Sample Conc.	Sample Units	Sample Std.Dev.	RSD
Sca	381830.5	89.8	%	1.28				1.43%
Yr	185306.2	89.9	%	1.34				1.49%
Al†	-27.6	-0.00695	mg/L	0.004604	-0.0695	mg/L	0.04604	66.27%
B_†	7376.9	0.305	mg/L	0.0004	3.05	mg/L	0.004	0.14%
Ba†	118.6	0.00211	mg/L	0.000007	0.0211	mg/L	0.00007	0.33%
Ca†	156246.5	41.0	mg/L	0.28	410	mg/L	2.8	0.69%
Cr†	81.7	0.00135	mg/L	0.000029	0.0135	mg/L	0.00029	2.17%
Cu†	-333.9	-0.00094	mg/L	0.000042	-0.00943	mg/L	0.000416	4.41%
Fe†	-1.8	-0.00405	mg/L	0.007177	-0.0405	mg/L	0.07177	177.37%
K†	2661.7	2.57	mg/L	0.042	25.7	mg/L	0.42	1.64%
Mg†	29381.4	18.9	mg/L	0.34	189	mg/L	3.4	1.77%
Mn†	39390.0	0.0898	mg/L	0.00037	0.898	mg/L	0.0037	0.41%
Mo†	-5.7	-0.00056	mg/L	0.000329	-0.00558	mg/L	0.003286	58.87%
Na†	484447.5	130	mg/L	0.6	1300	mg/L	5.5	0.43%
Zn†	-139.4	-0.00382	mg/L	0.000029	-0.0382	mg/L	0.00029	0.75%

Standard Preparation Worksheet & Certificate of Analysis

Reagent	Lot #		
HNO3 R# 1004132		HCL R# 100427	
IS = Yttrium(ME0709008)0.75mL + Scandium (ME0710007)0.5mL to 1000mL w/ 2% HNO3			
Standards	**Lot #**	**Exp. Date**	**Dilution**
Calibration	ME0704023	(05/01/08)	1:10 ME0704027
(Prepare daily)	ME0704024	(05/01/08)	1:10
			CCV/ECV MCV
CCV/MCV/ECV	ME0710008	(04/17/09)	1:20 ME0710008 1:40 ME0710008
(Prepare daily)			
Spike/LCS	ME0606004	(12/13/07)	1:100 ME0601006
(Prepare daily)	ME0710001	(04/02/08)	1:100
	ME0708001	(02/03/09)	1:200
MRL	ME0709021	(03/20/08)	1:100 ME0603015
(Prepare daily)			
ICSA	ME0709017	(03/20/08)	
ICSAB	ME0709019	(03/20/08)	
QCS	ME0610005	(04/10/08)	
Linearity	ME0711002	(05/06/08)	
Method Sr/Ti/Sn/SiO2			
Calibration	ME0708004	(02/07/08)	
CCV/ECV	ME0711003	(02/06/08)	
QCS	ME0711004	(02/06/08)	
Spike/LCS	ME0709014	(11/30/07)	1:100
(Prepare daily)			
MRL	ME0709013	(11/30/07)	1:100
(Prepare daily)			
Method Li			
Std/ICV/MRL	ME0711001	(05/01/08)	1:1000, 200, 40, 10
(Prepare daily)			
QCS	ME0707002	(01/10/08)	1:1000
(Prepare daily)			
LCS/Spike	ME0707002	(01/10/08)	1:50
(Prepare daily)			
ccv	ME0707002	(01/10/08)	1:40
(Prepare daily)			

From May 2005: the calibration std for ICP should be ME0505010,011 not ME0408010 dilution should be 1:20 and 1:40 not 1:200 and 1:400. 1/10/2006.

Intial: wbh
Date: 4/23/07

METALS STANDARD DOCUMENTATION

Standard: ICP Calibration STD
Date Received/Prepped: Prep Daily
Date Expired: 5/1/2008
Manufacturer: MWH-wbh
Matrix: 2% HNO3 + 5% HCl
Amount:

ME #: 07040027
By: wbh
Lot #:
Certificate: NO
NIST SRM:
Storage: Room Temp

Component	Comment	Conc.	Unit:
Mo	1:10 ME0704024	10	ug/ml
Sb		10	ug/ml
Sn		10	ug/ml
Ti		10	ug/ml
B		5	ug/ml
Ca	1:10 ME0704023	100	ug/ml
K		100	ug/ml
Mg		100	ug/ml
Na		100	ug/ml
Al		10	ug/ml
As		10	ug/ml
Ba		10	ug/ml
Co		10	ug/ml
Cr		10	ug/ml
Cu		10	ug/ml
Fe		10	ug/ml
Mn		10	ug/ml
Ni		10	ug/ml
Pb		10	ug/ml
Se		10	ug/ml
Tl		10	ug/ml
V		10	ug/ml
Zn		10	ug/ml
Cd		5	ug/ml
Be		4	ug/ml
SR		3	ug/ml
Ag		2	ug/ml

Intial: WBH
Date: 4/23/07

METALS STANDARD DOCUMENTATION

Standard:	ICPCalibration Stock Std #2	**ME #:**	0704024
Date Received/Prepped:	4/23/2007	**By:**	wbh
Date Expired:	5/1/2008	**Lot #:**	A2-MEB235011
Manufacturer:	Inorganic Ventures	**Certificate:**	Y
Matrix:	5% Nitric Acid + Trace HF	**NIST SRM:**	Varies
Amount:	500 mL	**Storage:**	Room Temp

Component	Comment	Conc.	Unit:
Mo	(P/N MWH-ICAP-CAL-2)	100	ug/ml

Intial: WBH
Date: 4/23/07

METALS STANDARD DOCUMENTATION

Standard:	ICPCalibration Stock Std #1	**ME #:**	0704023
Date Received/Prepped:	4/23/2007	**By:**	wbh
Date Expired:	5/1/2008	**Lot #:**	A2-MEB235010
Manufacturer:	Inorganic Ventures	**Certificate:**	Y
Matrix:	5% Nitric Acid	**NIST SRM:**	Varies
Amount:	500 mL	**Storage:**	Room Temp

Component	Comment	Conc.	Unit:
Ca	(P/N MWH-ICAP-CAL-1)	1000	ug/ml
K		1000	ug/ml
Mg		1000	ug/ml
Na		1000	ug/ml
Al		100	ug/ml
As		100	ug/ml
Ba		100	ug/ml
Co		100	ug/ml
Cr		100	ug/ml
Cu		100	ug/ml
Fe		100	ug/ml
Mn		100	ug/ml
Ni		100	ug/ml
Pb		100	ug/ml
Se		100	ug/ml
Tl		100	ug/ml
V		100	ug/ml
Zn		100	ug/ml
Cd		50	ug/ml
Be		40	ug/ml
SR		30	ug/ml
Ag		20	ug/ml

INORGANIC VENTURES

CERTIFICATE OF ANALYSIS

1.0 **INORGANIC VENTURES** is an ISO Guide 34:2000 registered Certified Reference Material (CRM) Manufacturer (Certificate #883-02). The certificate is designed and the data is determined in accordance with ISO Guide 31:2000 (Reference Materials-Contents of Certificates and Labels), ISO Guide 34:2000 "Quality System Guidelines for the Production of Reference Materials," and ISO Guide 35-1989 "Certification of Reference Materials - General and Statistical Principals."

M20704024

2.0 **DESCRIPTION OF CRM** Custom Solution

Catalog No.: MWH-ICAP-CAL-2

Lot Number: **A2-MEB235011**

Matrix: tr. HF, 5% HNO3(abs)

100.00 µg/mL each:
Mo, Sb, Sn, Ti,
50.00 µg/mL each:
B

3.0 **CERTIFIED VALUES AND UNCERTAINTIES**

ELEMENT	CERTIFIED VALUE	ELEMENT	CERTIFIED VALUE	ELEMENT	CERTIFIED VALUE
Antimony, Sb	100.4 ± 0.3 µg/mL	Boron, B	50.07 ± 0.28 µg/mL	Molybdenum, Mo	100.3 ± 0.3 µg/mL
Tin, Sn	100.3 ± 0.3 µg/mL	Titanium, Ti	100.5 ± 0.2 µg/mL		

Certified Density: 1.037 g/mL (measured at 22° C)

The Certified Value is based upon the most precise method used to analyze this CRM. The following equations are used in the calculation of the certified value and the uncertainty:

$$\text{Certified Value } (\bar{x}) = \frac{\Sigma x_i}{n}$$

$$\text{Uncertainty } (\pm) = \frac{2[(\Sigma s_i)^2]^{1/2}}{(n)^{1/2}}$$

($\bar{x}$) = mean
x_i = individual results
n = number of measurements
Σs_i = The summation of all significant estimated errors (Most common are the errors from instrumental measurement, weighing, dilution to volume, and the fixed error reported on the NIST SRM certificate of analysis.)

4.0 TRACEBILITY TO NIST AND VALUES OBTAINED BY INDEPENDENT METHODS

"Property of the result of a measurement or the value of a standard whereby it can be related to stated references, usually national or international standards, through an unbroken chain of comparisons all having stated uncertainties." (ISO VIM, 2nd ed., 1993, definition 6.10)

This product is Traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRMs are available, the term "in-house std." is specified.

INORGANIC VENTURES

CERTIFICATE OF ANALYSIS

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2.0 **DESCRIPTION OF CRM** Custom Solution

MF0704023

Catalog No.: MWH-ICAP-CAL-1

Lot Number: **A2-MEB235010**

Matrix: 5% HNO3(abs)

1,000.00 µg/mL each:
Ca, K, Mg, Na,
100.00 µg/mL each:
Al, As, Ba, Co, Cr3, Cu, Fe, Mn, Ni, Pb, Se, Tl, V, Zn,
50.00 µg/mL each:
Cd,
40.00 µg/mL each:
Be,
30.00 µg/mL each:
Sr,
20.00 µg/mL each:
Ag

3.0 **CERTIFIED VALUES AND UNCERTAINTIES**

ELEMENT	CERTIFIED VALUE	ELEMENT	CERTIFIED VALUE	ELEMENT	CERTIFIED VALUE
Aluminum, Al	100.1 ± 0.5 µg/mL	Arsenic, As	100.2 ± 0.3 µg/mL	Barium, Ba	99.9 ± 0.2 µg/mL
Beryllium, Be	39.98 ± 0.08 µg/mL	Cadmium, Cd	50.05 ± 0.12 µg/mL	Calcium, Ca	997 ± 3 µg/mL
Chromium+3, Cr3	100.1 ± 0.4 µg/mL	Cobalt, Co	100.1 ± 0.2 µg/mL	Copper, Cu	100.1 ± 0.2 µg/mL
Iron, Fe	100.0 ± 0.2 µg/mL	Lead, Pb	100.1 ± 0.3 µg/mL	Magnesium, Mg	996 ± 3 µg/mL
Manganese, Mn	100.1 ± 0.3 µg/mL	Nickel, Ni	100.1 ± 0.2 µg/mL	Potassium, K	1,003 ± 2 µg/mL
Selenium, Se	100.1 ± 0.2 µg/mL	Silver, Ag	20.03 ± 0.06 µg/mL	Sodium, Na	997 ± 5 µg/mL
Strontium, Sr	29.92 ± 0.18 µg/mL	Thallium, Tl	100.0 ± 0.1 µg/mL	Vanadium, V	100.1 ± 0.3 µg/mL
Zinc, Zn	100.1 ± 0.4 µg/mL				

Certified Density: 1.056 g/mL (measured at 22° C)

Intial: STE
Date: 10/19/07

METALS STANDARD DOCUMENTATION

Standard: ICP CCV/MCV/QCS Stock Standard
Date Received/Prepped: 10/19/2007
Date Expired: 4/17/2009
Manufacturer: CPI
Matrix: 5% HNO3 = tr HF
Amount: 100 mL x 10

ME #: 0710008
By: STE
Lot #: 07J154
Certificate: Y
NIST SRM: Various
Storage: Room Temp

Component	Comment	Conc. Unit:
Ag	P/N 4400-061003RH01	20 ppm
Al		100 ppm
As		100 ppm
B		50 ppm
Ba		100 ppm
bE		40 ppm
Ca		1000 ppm
Cd		50 ppm
Co		100 ppm
Cr		100 ppm
Cu		100 ppm
Fe		100 ppm
K		1000 ppm
Mg		1000 ppm
Mn		100 ppm
Mo		100 ppm
Na		1000 ppm
Ni		100 ppm
Pb		100 ppm
Sb		100 ppm
Se		100 ppm
Tl		100 ppm
V		100 ppm
Zn		100 ppm
Sr		20 ppm
Sn		20 ppm
Ti		20 ppm

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Expiry: 4/17/2009

Certificate of Analysis

Part Number: **4400-061003RH01**
Lot Number: **07J154**
Shelf Life: **18 months**

ME 0710008
10/19/07
STE

MWH
Custom Multi
5% HNO3 + tr HF

Concentrations in ug/mL ± 0.5%

Ag	20	K	1000	Sr	20
Al	100	Mg	1000	Sn	20
As	100	Mn	100	Ti	20
B	50	Mo	100		
Ba	100	Na	1000		
Be	40	Ni	100		
Ca	1000	Pb	100		
Cd	50	Sb	100		
Co	100	Se	100		
Cr	100	TL	100		
Cu	100	V	100		
Fe	100	Zn	100		

This standard solution was prepared using high-purity starting materials, high-purity acid (if required) and 18-megaohm de-ionized water. The starting materials were weighed to five significant figures and diluted in volumetric glassware calibrated to five significant figures.

Starting materials were analyzed at 1000µg/mL by ICP-MS for trace impurities. The standard solution concentrations were certified instrumentally against the National Institute of Standards and Technology's SRM 3100 series, NIST approved second source and/or gravimetrically.

Accuracy and stability are guaranteed to within plus or minus 0.5% of the certified value for the stated shelf life from the date of shipment. The solution should be kept tightly capped and stored under normal laboratory conditions. See attached MSDS for proper handling information.

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Intial: STE
Date: 10/2/07

METALS STANDARD DOCUMENTATION

Standard: ICP Spike Solution
Date Received/Prepped: 10/2/2007
Date Expired: 4/2/2008
Manufacturer: MWH-STE
Matrix: H2O
Amount: 125mL

ME #: 0710001
By: STE
Lot #: VARIOUS
Certificate:
NIST SRM:
Storage: Room Temp

Component	Comment	Conc. Unit:
AS	8.0mL ME0611005/100mL	80 ppm
PB	8.0mL ME0704013/100mL	80 ppm
SE	8.0mL ME0703001/100mL	80 ppm
TL	8.0mL ME0702006/100mL	80 ppm

METALS STANDARD DOCUMENTATION

CWB
6/19/06

Standard:	ICP/ICPMS LCS/SPIKE Solution	**ME #:**	0606004
Date Received/Prepped:	6/19/2006	**By:**	wbh
Date Expired:	12/13/2006	**Lot #:**	06F103
Manufacturer:	CPI	**Certificate:**	Y
Matrix:	5% HNO3 + 0.1% HF	**NIST SRM:**	3100 Series
Amount:	10 x 100 mL	**Storage:**	Room Temp

Component	Comment	Conc.	Unit:
Iron	CPI P/N: 4400-050314RH01	500	mg/L
Aluminum		200	mg/L
Barium		100	mg/L
Cobalt		100	mg/L
Chromium		100	mg/L
Copper		100	mg/L
Molybdenum		100	mg/L
Strontium		100	mg/L
Titanium		100	mg/L
Vanadium		100	mg/L
Zinc		100	mg/L
Tin		100	mg/L
Silver		50	mg/L
Boron		50	mg/L
Manganese		50	mg/L
Nickel		50	mg/L
Antimony		50	mg/L
Arsenic		20	mg/L
Cadmium		20	mg/L
Lead		20	mg/L
Selenium		20	mg/L
Thallium		20	mg/L
Uraium		20	mg/L
Beryllium		5	mg/L
Tin		100	mg/L

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Expiry: 12/13/2007

Certificate of Analysis

Part Number: **4400-050314RH01**
Lot Number: **06F103**
Shelf Life: **18 months**

M70 606004

MWH Labs
5% HNO3 + 0.1% HF
#REF!

Concentrations in ug/mL ± 0.5%

Fe	500	B	50
Al	200	Mn	50
Ba	100	Ni	50
Co	100	Sb	50
Cr	100	As	20
Cu	100	Cd	20
Mo	100	Pb	20
Sr	100	Se	20
Ti	100	TL	20
V	100	Sn	100
Zn	100	Be	5
Ag	50	U	20

This standard solution was prepared using high-purity starting materials, high-purity acid (if required) and 18-megaohm de-ionized water. The starting materials were weighed to five significant figures and diluted in volumetric glassware calibrated to five significant figures.

Starting materials were analyzed at 1000µg/mL by ICP-MS for trace impurities. The standard solution concentrations were certified instrumentally against the National Institute of Standards and Technology's SRM 3100 series, NIST approved second source and/or gravimetrically.

Accuracy and stability are guaranteed to within plus or minus 0.5% of the certified value for the stated shelf life from the date of shipment. The solution should be kept tightly capped and stored under normal laboratory conditions. See attached MSDS for proper handling information.

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Intial: WBH
Date: 11/1/06

METALS STANDARD DOCUMENTATION

Standard:	Arsenic Stock Std	**ME #:**	0611005
Date Received/Prepped:	11/1/2006	**By:**	WBH
Date Expired:	10/1/2007	**Lot #:**	Y-AS02029
Manufacturer:	IV	**Certificate:**	Y
Matrix:	1.4% HNO3	**NIST SRM:**	
Amount:	100mL	**Storage:**	Room Temp

Component	Comment	Conc.	Unit:
AS	Cat # CGAS1-1	1004	ppm

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fax 732.901.1903
info@inorganicventures.com

CERTIFICATE OF ANALYSIS

1.0 **INORGANIC VENTURES** is an ISO Guide 34:2000 registered Certified Reference Material (CRM) Manufacturer (Certificate #883-02). The certificate is designed and the data is determined in accordance with ISO Guide 31:2000 (Reference Materials-Contents of Certificates and Labels), ISO Guide 34:2000 "Quality System Guidelines for the Production of Reference Materials," and ISO Guide 35-1989 "Certification of Reference Materials - General and Statistical Principals."

2.0 **DESCRIPTION OF CRM** **1000 µg/mL Arsenic in 1.4% (abs) HNO3**

Catalog Number:	CGAS1-1, CGAS1-2, and CGAS1-5
Lot Number:	**Y -AS02029**
Starting Material:	As Polycrystaline lump
Starting Material Purity (%):	99.999055
Starting Material Lot No:	23115
Matrix:	1.4% (abs) HNO3

MT061005

3.0 **CERTIFIED VALUES AND UNCERTAINTIES**

Certified Concentration: 1004 ± 2 µg/mL 995 ± 2 µg/g

Certified Density: 1.009 g/mL (measured at 22° C)

The Certified Value is the instrument analysis value. The following equations are used in the calculation of the certified value and the uncertainty:

Certified Value $(\bar{x}) = \frac{\Sigma x1}{n}$

$(\bar{x})$ = mean
x1 = individual results
n = number of measurements

Uncertainty $(\pm) = \frac{2[(\Sigma s1)2]^{1/2}}{(n)^{1/2}}$

$\Sigma s1$ = The summation of all significant estimated errors
(Most common are the errors from instrumental measurement weighting, dilution to volume, and the fixed error reported on the NIST SRM certificate of analysis.)

4.0 **TRACEABILITY TO NIST AND VALUES OBTAINED BY INDEPENDENT METHODS**

· "Property of the result of a measurement or the value of a standard whereby it can be related to stated references, usually national or international standards, through an unbroken chain of comparisons all having stated uncertainties." (ISO VIM, 2nd ed., 1993, definition 6.10)

· This IV product is Traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRMs are available, the term 'in-house std.' is specified.

4.1 **Assay Method #1** **1004 ± 2 µg/mL 995 ± 2 µg/g (Avg 2 runs)**
ICP Assay NIST SRM 3103a Lot Number: 010713

Assay Method #2 **1003 ± 5 µg/mL 994 ± 5 µg/g**
Gravimetric NIST SRM Lot Number: See Sec. 4.2

Intial: WBH
Date: 4/16/07

METALS STANDARD DOCUMENTATION

Standard:	Lead Stock Standard	**ME #:**	0704013
Date Received/Prepped:	4/16/2007	**By:**	WBH
Date Expired:	10/11/2008	**Lot #:**	07A097
Manufacturer:	CPI	**Certificate:**	Y
Matrix:	2% HNO3	**NIST SRM:**	3128
Amount:	100 mL	Room temp. storage	

Component	Comment	Conc. Unit:
Pb	P/N S4400-1000281	1000 ppm

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CERTIFICATE OF ANALYSIS

P/N S4400-1000281
P/N 4400-1000281

12707042 13

Single-Element Lead Standard
Pb in 2% HNO_3
1000 ± 3 µg/mL

Lot # 07A097

Material Source: Lead Metal
Source Purity: 99.995 %
Specific Gravity: 1.009 @ 21 °C

This standard solution was prepared using high-purity metal, sub-boiled distilled nitric acid and 18-megaohm deionized water. The starting material was weighed to five significant figures and diluted in volumetric glassware calibrated to five significant figures.

The standard solution concentration was certified by ICP against the National Institute of Standards and Technology's SRM 3128. Trace impurities of the 1000 µg/mL standard were analyzed by ICP-MS.

	ppb	DL		ppb	DL		ppb	DL		ppb	DL		ppb	DL
Al	10.3	0.1	Cu	58	0.1	Pb	X	0.1	K	ND	70	Tl	0.25	0.1
Sb	ND	0.1	Dy	ND	0.1	Li	2	0.4	Pr	ND	0.1	Th	ND	0.1
As	ND	6	Er	ND	0.1	Lu	ND	1	Re	ND	0.1	Tm	ND	0.1
Ba	0.22	0.1	Eu	ND	0.1	Mg	1.4	0.2	Rh	IN	0.1	Sn	ND	0.1
Be	0.58	0.1	Gd	ND	0.1	Mn	3.8	1	Rb	ND	0.1	Ti	0.58	0.1
Bi	0.7	0.1	Ga	ND	0.1	Hg	ND	0.2	Ru	ND	0.1	W	ND	0.1
B	ND	4	Ge	ND	0.1	Mo	0.17	0.1	Sm	ND	0.1	U	ND	0.1
Br	ND	10	Au	ND	0.1	Nd	ND	0.1	Se	ND	6	V	ND	1
Cd	ND	0.1	Hf	ND	0.1	Ni	0.9	0.1	Si	31	8	Yb	ND	0.1
Ca	25	7	Ho	ND	0.1	Nb	ND	0.1	Ag	6.1	0.1	Y	ND	0.1
Ce	ND	0.1	I	0.1	0.2	Os	ND	0.1	Na	3.5	1	Zn	23	2
Cs	0.26	0.1	Ir	ND	0.1	Pd	ND	0.1	Sr	ND	0.1	Zr	INT	0.1
Cr	ND	1	Fe	ND	30	P	ND	10	Ta	ND	0.1			
Co	ND	0.1	La	ND	0.1	Pt	ND	0.1	Te	ND	0.1			

X=Major Element INT=Interference from Major Element DL=Detection Limit ND=None Detected

Accuracy and stability are guaranteed to within plus or minus 0.3% of the certified value for 18 months after the date of shipment. The solution should be kept tightly capped and stored under normal laboratory conditions. See attached MSDS for proper handling information.

For questions or comments please call 1-800-878-7654 in the United States or +31 20 638 05 97 in Europe.

Intial: WBH
Date: 2/20/07

METALS STANDARD DOCUMENTATION

Standard:	Thallium 1000ppm Stock Std	**ME #:**	0702006
Date Received/Prepped:	2/20/2007	**By:**	WBH
Date Expired:	8/16/2008	**Lot #:**	06H213
Manufacturer:	CPI	**Certificate:**	Y
Matrix:	2% HNO3	**NIST SRM:**	3158
Amount:	100 mL	Room temp. storage	

Component	Comment	Conc. Unit:
Tl	P/N S4400-1000581	1000 ppm

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MF0702006

CERTIFICATE OF ANALYSIS

P/N 4400-1000581
P/N S4400-1000581

Single Element Thallium Standard
Tl in 2% HNO_3
1000 ± 3 µg/mL

Lot # 06H213

Material Source: Thallium metal
Source Purity: 99.999%
Specific Gravity: 1.015 @ 21 °C

This standard solution was prepared using high-purity metal, sub-boiled distilled nitric acid and 18-megaohm deionized water. The starting material was weighed to five significant figures and diluted in volumetric glassware calibrated to five significant figures.

The standard solution concentration was certified by ICP against the National Institute of Standards and Technology's SRM 3158. Trace impurities of the 1000 µg/mL standard were analyzed by ICP-MS.

	ppb	DL		ppb	DL		Ppb	DL		ppb	DL		ppb	DL
Al	13.3	0.1	Cu	9.3	0.1	Pb	41	0.1	K	ND	70	Tl	X	0.1
Sb	ND	0.1	Dy	ND	0.1	Li	ND	0.4	Pr	ND	0.1	Th	ND	0.1
As	ND	6	Er	ND	0.1	Lu	ND	1	Re	ND	0.1	Tm	ND	0.1
Ba	0.37	0.1	Eu	ND	0.1	Mg	1.7	0.2	Rh	ND	0.1	Sn	ND	0.1
Be	0.67	0.1	Gd	ND	0.1	Mn	ND	1	Rb	ND	0.1	Ti	0.45	0.1
Bi	0.12	0.1	Ga	ND	0.1	Hg	0.16	0.2	Ru	ND	0.1	W	ND	0.1
B	ND	4	Ge	ND	0.1	Mo	0.21	0.1	Sm	ND	0.1	U	ND	0.1
Br	ND	10	Au	ND	0.1	Nd	ND	0.1	Se	ND	6	V	ND	1
Cd	1.6	0.1	Hf	ND	0.1	Ni	1.1	0.1	Si	46	8	Yb	ND	0.1
Ca	51	7	Ho	ND	0.1	Nb	ND	0.1	Ag	0.3	0.1	Y	ND	0.1
Ce	ND	0.1	I	0.4	0.2	Os	ND	0.1	Na	3.3	1	Zn	14.7	2
Cs	0.24	0.1	Ir	ND	0.1	Pd	ND	0.1	Sr	ND	0.1	Zr	ND	0.1
Cr	ND	1	Fe	ND	30	P	20	10	Ta	ND	0.1			
Co	ND	0.1	La	ND	0.1	Pt	ND	0.1	Te	ND	0.1			

X=Major Element INT=Interference from Major Element DL=Detection Limit ND=None Detected

Accuracy and stability are guaranteed to within plus or minus 0.3% of the certified value for 18 months after the date of shipment. The solution should be kept tightly capped and stored under normal laboratory conditions. See attached MSDS for proper handling information.

For questions or comments please call 1-800-878-7654.

Intial: WBH
Date: 3/27/07

METALS STANDARD DOCUMENTATION

Standard:	Selenium Stock Standard	**ME #:**	0703001
Date Received/Prepped:	3/5/2007	**By:**	wbh
Date Expired:	8/22/2008	**Lot #:**	6.00E+228
Manufacturer:	CPI	**Certificate:**	Y
Matrix:	2% HNO3	**NIST SRM:**	3148
Amount:	100 mL	**Storage:**	Room Temp

Component	Comment	Conc.	Unit:
Se	P/N # S4400-1000491	1000	ppm

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CERTIFICATE OF ANALYSIS

MF070300 1

P/N 4400-1000491
P/N S4400-1000491

Single-Element Selenium Standard
Se in 2% HNO_3
1000 ± 3 µg/mL

Lot # 06E228

Material Source: Selenium Metal
Source Purity: 99.99%
Specific Gravity: 1.011 @ 21 °C

This standard solution was prepared using high-purity metal, sub-boiled distilled nitric acid and 18-megaohm deionized water. The starting material was weighed to five significant figures and diluted in volumetric glassware calibrated to five significant figures.

The standard solution concentration was certified by ICP against the National Institute of Standards and Technology's SRM 3148. Trace impurities of the 1000 µg/mL standard were analyzed by ICP-MS.

	ppb	DL		ppb	DL		ppb	DL		ppb	DL		ppb	DL
Al	1.8	0.1	Cu	0.4	0.1	Pb	0.3	0.1	K	ND	70	Tl	3.6	0.1
Sb	ND	0.1	Dy	ND	0.1	Li	ND	0.4	Pr	ND	0.1	Th	ND	0.1
As	ND	6	Er	ND	0.1	Lu	ND	1	Re	ND	0.1	Tm	ND	0.1
Ba	ND	0.1	Eu	ND	0.1	Mg	1.1	0.2	Rh	ND	0.1	Sn	ND	0.1
Be	ND	0.1	Gd	ND	0.1	Mn	ND	1	Rb	ND	0.1	Ti	ND	0.1
Bi	ND	0.1	Ga	ND	0.1	Hg	ND	0.2	Ru	ND	0.1	W	ND	0.1
B	ND	4	Ge	ND	0.1	Mo	0.6	0.1	Sm	ND	0.1	U	ND	0.1
Br	INT	10	Au	ND	0.1	Nd	ND	0.1	Se	X	6	V	ND	1
Cd	0.4	0.1	Hf	ND	0.1	Ni	0.6	0.1	Si	40	8	Yb	ND	0.1
Ca	5	7	Ho	ND	0.1	Nb	INT	0.1	Ag	0.8	0.1	Y	ND	0.1
Ce	ND	0.1	I	0.5	0.2	Os	ND	0.1	Na	3.8	1	Zn	ND	2
Cs	ND	0.1	Ir	ND	0.1	Pd	ND	0.1	Sr	ND	0.1	Zr	INT	0.1
Cr	ND	1	Fe	ND	30	P	ND	10	Ta	ND	0.1			
Co	ND	0.1	La	ND	0.1	Pt	ND	0.1	Te	ND	0.1			

X=Major Element INT=Interference from Major Element DL=Detection Limit ND=None Detected

Accuracy and stability are guaranteed to within plus or minus 0.3% of the certified value for 18 months after the date of shipment. The solution should be kept tightly capped and stored under normal laboratory conditions. See attached MSDS for proper handling information.

For questions or comments please call 1-800-878-7654 in the USA or +31 20 638 05 97 in Europe.

Intial: DYH
Date: 8/8/07

METALS STANDARD DOCUMENTATION

Standard: Dat MW Standard
Date Received/Prepped: 8/8/2007
Date Expired: 2/3/2009
Manufacturer: CPI International
Matrix: 5% HNO3
Amount: 100mL

ME #: 0708001
By: DYH
Lot #: 07H025
Certificate:
NIST SRM:
Storage: Room Temp

Component	Comment	Conc. Unit:
Na	P/N 4400-130309	10000 ug/mL
Ca		10000 ug/mL
Mg		4000 ug/mL
K		4000 ug/mL

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ME070802/

CERTIFICATE OF ANALYSIS

P/N: 4400-130309
Lot Number: 07H025
Shelf Life: 18 months
Expiration Date: 02/03/2009

MWH
Dat MW Standard
µg/mL ± 0.5% in 5% HNO_3

Na 10,000 Ca 10,000 Mg 4,000 K 4,000

This standard solution was prepared using high-purity starting materials, high-purity acid (if required) and 18-megaohm de-ionized water. The starting materials were weighed to five significant figures and diluted in volumetric glassware calibrated to five significant figures.

Starting materials were analyzed at 1000µg/mL by ICP-MS for trace impurities. The standard solution concentrations were certified instrumentally against the National Institute of Standards and Technology's SRM 3100 series, NIST approved second source and/or gravimetrically.

Accuracy and stability are guaranteed to within plus or minus 0.5% of the certified value for the stated shelf life from the date of shipment. The solution should be kept tightly capped and stored under normal laboratory conditions. See attached MSDS for proper handling information.

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Intial: STE
Date: 9/20/07

METALS STANDARD DOCUMENTATION

Standard:	Interference Check Standard (ICSAB)	**ME #:**	0709019
Date Received/Prepped:	9/20/2007	**By:**	STE
Date Expired:	3/20/2008	**Lot #:**	
Manufacturer:	MWH-STE	**Certificate:**	
Matrix:	5% HNO3	**NIST SRM:**	
Amount:	500 mL	Room temp. storage	

Component	Comment	Conc. Unit:
Al	P/N 4400-INTA1-500	250 ppm
Ca	P/N 4400-INTB1-100	250 ppm
Fe		100 ppm
Mg		250 ppm
Ag		0.5 ppm
Ba		0.25 ppm
Be		0.25 ppm
Cd		0.5 ppm
Component		0.25 ppm
Cr		0.25 ppm
Cu		0.25 ppm
Mn		0.25 ppm
Ni		0.5 ppm
Pb		0.5 ppm
V		0.25 ppm
Zn		0.5 ppm

Intial: STE
Date: 9/20/07

METALS STANDARD DOCUMENTATION

Standard:	Interference Check Standard (ICSA)	**ME #:**	0709017
Date Received/Prepped:	9/20/2007	**By:**	Ste
Date Expired:	3/20/2008	**Lot #:**	
Manufacturer:	MWH-STE	**Certificate:**	
Matrix:	5% HNO3	**NIST SRM:**	
Amount:	500 mL	Room temp. storage	

Component	Comment	Conc. Unit:
Al	P/N 4400-INTA1-500	250 ppm
Ca		250 ppm
Fe		100 ppm
Mg		250 ppm

Initial: STE
Date: 8/27/07

METALS STANDARD DOCUMENTATION

Standard: CLP Analytes B Solution
Date Received/Prepped: 8/27/2007
Date Expired: 2/15/2009
Manufacturer: CPI International
Matrix: 5% HNO3
Amount: 100 mL

ME #: 0708010
By: STE
Lot #: 07c256
Certificate:
NIST SRM:
Storage: Room Temp.

Component	Comment	Conc. Unit:
Ag	P/N 4400-INTB1-100	100 ug/L
Ba		50 ug/L
Be		50 ug/L
Cd		100 ug/L
Co		50 ug/L
Cr		50 ug/L
Cu		50 ug/L
Mn		50 ug/L
Ni		100 ug/L
Pb		100 ug/L
V		50 ug/L
Zn		100 ug/L

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FEB [illegible] 09

ME 070500

CERTIFICATE OF ANALYSIS

P/N 4400-INTB1-100

CLP Analytes B Solution
in 5% HNO_3

Lot # 07c256

Material Source: Metals and Salts
Source Purity: 99.99+%

Elements and Concentrations: µg/mL

Ag	100	Ba	50	Be	50	Cd	100
Co	50	Cr	50	Cu	50	Mn	50
Ni	100	Pb	100	V	50	Zn	100

This standard solution was prepared using high-purity reference materials, sub-boiled distilled nitric acid and 18-megaohm deionized water. The starting materials were weighed to five significant figures and diluted in volumetric glassware calibrated to five significant figures.

Starting materials were analyzed by ICP-MS for trace impurities. The standard solution concentrations were certified instrumentally against an independent source traceable to the National Institute of Standards and Technology's SRM 3100 series.

Accuracy and stability are guaranteed to within plus or minus 0.5% of the certified value for 18 months after the date of shipment. The solution should be kept tightly capped and stored under normal laboratory conditions. See attached MSDS for proper handling information.

For questions or comments please call 1-800-878-7654 in the USA or +31 20 638 05 97 in Europe.

Intial: STE
Date: 8/29/07

METALS STANDARD DOCUMENTATION

Standard:	CLP Interferents A Solution	**ME #:**	0708009
Date Received/Prepped:	8/27/2007	**By:**	STE
Date Expired:	2/15/2009	**Lot #:**	07E175
Manufacturer:	CPI International	**Certificate:**	
Matrix:	5% HNO3	**NIST SRM:**	
Amount:	500 mL	**Storage:**	Room Temp.

Component	Comment	Conc. Unit:
Al	P/N 4400-INTA1-500	5000 ug/mL
Ca		5000 ug/mL
Fe		2000 ug/mL
Mg		5000 ug/mL

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CERTIFICATE OF ANALYSIS

P/N 4400-INTA1-500

CLP Interferents A Solution
in 5% HNO_3

ME 07080091

Lot # 07E175

Material Source: Metals and Salts
Source Purity: 99.99+%

Elements and Concentrations: µg/mL

Al 5000 Ca 5000 Fe 2000 Mg 5000

This standard solution was prepared using high-purity reference materials, sub-boiled distilled nitric acid and 18-megaohm deionized water. The starting materials were weighed to five significant figures and diluted in volumetric glassware calibrated to five significant figures.

Starting materials were analyzed by ICP-MS for trace impurities. The standard solution concentrations were certified instrumentally against an independent source traceable to the National Institute of Standards and Technology's SRM 3100 series.

Accuracy and stability are guaranteed to within plus or minus 0.5% of the certified value for 18 months after the date of shipment. The solution should be kept tightly capped and stored under normal laboratory conditions. See attached MSDS for proper handling information.

For questions or comments please call 1-800-878-7654 in the USA or +31 20 638 05 97 in Europe.

Intial: STE
Date: 11/6/07

METALS STANDARD DOCUMENTATION

Standard: ICP LINEARITY CHECK **ME #:** 0711002
Date Received/Prepped 11/6/2007 **By:** STE
Date Expired: STE 11/6/07 ~~5/6/2008~~ 2/6/2008 **Lot #:** VARIOUS
Manufacturer: MWH-STE **Certificate:**
Matrix: 5% HNO3 **NIST SRM:**
Amount: 500 mL **Storage:** Room Temp.

Component	Comment	Conc. Unit:
Ca	15.0 mL ME0702002/500 mL	300 ppm
K	15.0 mL ME0702005/ 500 mL	300 ppm
Mg	10.0 mL ME0702004/ 500 mL	200 ppm
Na	15 mL ME0702003/ 500 mL	300 ppm
Fe	5.0 mL ME0701008/ 500 mL	100 ppm

Intial: WBH
Date: 1/27/07

METALS STANDARD DOCUMENTATION

Standard:	FE 10000ppm Stock Std	**ME #:**	701008
Date Received/Prepped:	1/26/2007	**By:**	WBH
Date Expired:	7/19/2008	**Lot #:**	06I143
Manufacturer:	CPI	**Certificate:**	
Matrix:	4% HNO3	**NIST SRM:**	3126a
Amount:	100 mL	**Storage:**	Room Temp

Component	Comment	Conc.	Unit:
Fe	PN4400-10M261	10000	PPM

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CERTIFICATE OF ANALYSIS

PTE0701003

P/N 4400-10M261
P/N S4400-10M261

Single-Element Iron Standard
Fe in 4% HNO_3
10,000 ± 30 µg/mL

Lot # 06I143

Material Source: Iron Metal
Source Purity: 99.999%
Specific Gravity: 1.062 @ 21 °C

This standard solution was prepared using high-purity metal, sub-boiled distilled nitric acid and 18-megaohm deionized water. The starting material was weighed to five significant figures and diluted in volumetric glassware calibrated to five significant figures.

The standard solution concentration was certified by ICP against the National Institute of Standards and Technology's SRM 3126a. Trace impurities of the standard solution at 1000 µg/mL were analyzed by ICP-MS.

	ppb	DL
Al	INT	0.1
Sb	0.35	0.1
As	ND	6
Ba	ND	0.1
Be	ND	0.1
Bi	ND	0.1
B	ND	4
Br	ND	10
Cd	ND	0.1
Ca	15	7
Ce	ND	0.1
Cs	0.34	0.1
Cr	3.3	1
Co	12	0.1

	ppb	DL
Cu	6.4	0.1
Dy	ND	0.1
Er	ND	0.1
Eu	ND	0.1
Gd	ND	0.1
Ga	0.41	0.1
Ge	INT	0.1
Au	ND	0.1
Hf	ND	0.1
Ho	ND	0.1
I	0.34	0.2
Ir	ND	0.1
Fe	X	30
La	ND	0.1

	ppb	DL
Pb	ND	0.1
Li	ND	0.4
Lu	ND	1
Mg	1.3	0.2
Mn	INT	1
Hg	ND	0.2
Mo	4.9	0.1
Nd	ND	0.1
Ni	9.3	0.1
Nb	ND	0.1
Os	ND	0.1
Pd	ND	0.1
P	28	10
Pt	ND	0.1

	ppb	DL
K	ND	70
Pr	ND	0.1
Re	ND	0.1
Rh	ND	0.1
Rb	ND	0.1
Ru	ND	0.1
Sm	ND	0.1
Se	ND	6
Si	INT	8
Ag	ND	0.1
Na	8	1
Sr	ND	0.1
Ta	ND	0.1
Te	ND	0.1

	ppb	DL
Tl	0.18	0.1
Th	ND	0.1
Tm	ND	0.1
Sn	0.67	0.1
Ti	0.21	0.1
W	0.13	0.1
U	ND	0.1
V	ND	1
Yb	ND	0.1
Y	ND	0.1
Zn	8.6	2
Zr	ND	0.1

INT=Interference from Major Element ND=Not Detected X=Major Element DL=Detection Limit

Accuracy and stability are guaranteed to within plus or minus 0.3% of the certified value for 18 months after the date of shipment. The solution should be kept tightly capped and stored under normal laboratory conditions. See attached MSDS for proper handling information.

For questions or comments please call 1-800-878-7654 in the USA or +31 20 638 05 97 in Europe.

Intial: WBH
Date: 2/20/07

METALS STANDARD DOCUMENTATION

Standard:	Potassium 10000ppm Stock Std	**ME #:**	0702005
Date Received/Prepped:	2/20/2007	**By:**	WBH
Date Expired:	8/16/2008	**Lot #:**	07B056
Manufacturer:	CPI	**Certificate:**	Y
Matrix:	1% HNO3	**NIST SRM:**	3141
Amount:	250 mL	Room temp. storage	

Component	Comment	Conc.	Unit:
K	P/N 4400-10M411	10000	ppm

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CERTIFICATE OF ANALYSIS

M20702005

P/N 4400-10M411
P/N S4400-10M411

Single-Element Potassium Standard
K in 1% HNO_3
10,000 ± 30 µg/mL

Lot # 07B056

Material Source: Potassium Nitrate (KNO_3)
Source Purity: 99.999%
Specific Gravity: 1.019 @ 21 °C

This standard solution was prepared using high-purity salt, sub-boiled distilled nitric acid and 18-megaohm deionized water. The starting material was weighed to five significant figures and diluted in volumetric glassware calibrated to five significant figures.

The standard solution concentration was certified by ICP against the National Institute of Standards and Technology's SRM 3141. Trace impurities of the standard solution at 1000µg/mL were analyzed by ICP-MS.

	ppb	DL		ppb	DL		ppb	DL		ppb	DL		ppb	DL
Al	0.39	0.1	Cu	0.16	0.1	Pb	ND	0.1	K	X	70	Tl	ND	0.1
Sb	0.34	0.1	Dy	ND	0.1	Li	ND	0.4	Pr	ND	0.1	Th	ND	0.1
As	ND	6	Er	ND	0.1	Lu	ND	1	Re	ND	0.1	Tm	ND	0.1
Ba	0.14	0.1	Eu	ND	0.1	Mg	2.6	0.2	Rh	ND	0.1	Sn	0.17	0.1
Be	ND	0.1	Gd	ND	0.1	Mn	0.93	1	Rb	9.5	0.1	Ti	ND	0.1
Bi	ND	0.1	Ga	ND	0.1	Hg	ND	0.2	Ru	ND	0.1	W	ND	0.1
B	ND	4	Ge	ND	0.1	Mo	ND	0.1	Sm	ND	0.1	U	ND	0.1
Br	ND	10	Au	ND	0.1	Nd	ND	0.1	Se	ND	6	V	ND	1
Cd	ND	0.1	Hf	ND	0.1	Ni	0.4	0.1	Si	50	20	Yb	ND	0.1
Ca	82	7	Ho	ND	0.1	Nb	ND	0.1	Ag	ND	0.1	Y	ND	0.1
Ce	ND	0.1	I	ND	0.2	Os	ND	0.1	Na	19	1	Zn	2.9	1
Cs	ND	0.1	Ir	ND	0.1	Pd	ND	0.1	Sr	1	0.1	Zr	ND	0.1
Cr	ND	1	Fe	ND	30	P	18	10	Ta	ND	0.1			
Co	ND	0.1	La	ND	0.1	Pt	ND	0.1	Te	ND	0.1			

X=Major Element INT=Interference from Major Element ND=Not Detected DL=Detection Limit

Accuracy and stability are guaranteed to within plus or minus 0.3% of the certified value for 18 months after the date of shipment. The solution should be kept tightly capped and stored under normal laboratory conditions. See attached MSDS for proper handling information.

For questions or comments please call 1-800-878-7654 in the USA or +31 20 638 05 97 in Europe.

Intial: WBH
Date: 2/20/07

METALS STANDARD DOCUMENTATION

Standard:	Magnessium 10000ppm Stock Std	**ME #:**	0702004
Date Received/Prepped:	2/20/2007	**By:**	WBH
Date Expired:	8/16/2008	**Lot #:**	07B058
Manufacturer:	CPI	**Certificate:**	Y
Matrix:	4% HNO3	**NIST SRM:**	3131
Amount:	250 mL	Room temp. storage	

Component	Comment	Conc.	Unit:
Mg	P/N 4400-10M311	10000	ppm

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CERTIFICATE OF ANALYSIS

17070204

P/N 4400-10M311
P/N S4400-10M311

Single-Element Magnesium Standard
Mg in 4% HNO_3
10,000 ± 30 µg/mL

Lot # 07B058

Material Source: Magnesium Metal
Source Purity: 99.99%
Specific Gravity: 1.056 @ 21 °C

This standard solution was prepared using high-purity metal, sub-boiled distilled nitric acid and 18-megaohm deionized water. The starting material was weighed to five significant figures and diluted in volumetric glassware calibrated to five significant figures.

The standard solution concentration was certified by ICP against the National Institute of Standards and Technology's SRM 3131. Trace impurities of the standard solution at 1000 µg/mL were analyzed by ICP-MS.

	ppb	DL		ppb	DL		ppb	DL		ppb	DL		ppb	DL
Al	28	0.1	Cu	1.6	0.1	Pb	7.7	0.7	K	ND	70	Tl	0.91	0.1
Sb	ND	0.1	Dy	ND	0.1	Li	ND	0.4	Pr	0.28	0.1	Th	ND	0.1
As	ND	6	Er	ND	0.1	Lu	ND	1	Re	ND	0.1	Tm	ND	0.1
Ba	0.28	0.1	Eu	ND	0.1	Mg	X	0.2	Rh	ND	0.1	Sn	0.14	0.1
Be	ND	0.1	Gd	0.23	0.1	Mn	19.8	1	Rb	ND	0.1	Ti	ND	0.1
Bi	ND	0.1	Ga	0.18	0.1	Hg	ND	0.2	Ru	ND	0.1	W	ND	0.1
B	ND	4	Ge	ND	0.1	Mo	ND	0.1	Sm	ND	0.1	U	ND	0.1
Br	ND	10	Au	ND	0.1	Nd	1.1	0.1	Se	ND	6	V	ND	1
Cd	ND	0.1	Hf	ND	0.1	Ni	1	0.1	Si	64	20	Yb	ND	0.1
Ca	ND	7	Ho	ND	0.1	Nb	ND	0.1	Ag	0.19	0.1	Y	0.2	0.1
Ce	2.1	0.1	I	1	0.2	Os	ND	0.1	Na	7.2	1	Zn	ND	1
Cs	ND	0.1	Ir	ND	0.1	Pd	ND	0.1	Sr	0.19	0.1	Zr	0.29	0.1
Cr	ND	1	Fe	80	30	P	ND	10	Ta	ND	0.1			
Co	ND	0.1	La	0.76	0.1	Pt	ND	0.1	Te	ND	0.1			

X=Major Element INT=Interference from Major Element ND=Not Detected DL=Detection Limit

Accuracy and stability are guaranteed to within plus or minus 0.3% of the certified value for 18 months after the date of shipment. The solution should be kept tightly capped and stored under normal laboratory conditions. See attached MSDS for proper handling information.

For questions or comments please call 1-800-878-7654 in the USA or +31 20 638 05 97 in Europe.

Intial: WBH
Date: 2/20/07

METALS STANDARD DOCUMENTATION

Standard:	Sodium 10000ppm Stock Std	**ME #:**	0702003
Date Received/Prepped:	2/20/2007	**By:**	WBH
Date Expired:	8/16/2008	**Lot #:**	07B057
Manufacturer:	CPI	**Certificate:**	Y
Matrix:	1% HNO3	**NIST SRM:**	3152a
Amount:	250 mL	Room temp. storage	

Component	Comment	Conc.	Unit:
Na	P/N 4400-10M521	10000	ppm

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CERTIFICATE OF ANALYSIS

M70702003

P/N 4400-10M521
P/N S4400-10M521

Single-Element Sodium Standard
Na in 1% HNO_3
10,000 ± 30 µg/mL

Lot # 07B057

Material Source: Sodium Nitrate ($NaNO_3$)
Source Purity: 99.99%
Specific Gravity: 1.053 @ 21 °C

This standard solution was prepared using high-purity salt, sub-boiled distilled nitric acid and 18-megaohm deionized water. The starting material was weighed to five significant figures and diluted in volumetric glassware calibrated to five significant figures.

The standard solution concentration was certified by ICP against the National Institute of Standards and Technology's SRM 3152a. Trace impurities of the standard solution at 1000µg/mL were analyzed by ICP-MS.

	ppb	DL		ppb	DL		ppb	DL		ppb	DL		ppb	DL
Al	1.5	0.1	Cu	0.45	0.1	Pb	ND	0.1	K	ND	70	Tl	ND	0.1
Sb	ND	0.1	Dy	ND	0.1	Li	ND	0.4	Pr	ND	0.1	Th	ND	0.1
As	ND	6	Er	ND	0.1	Lu	ND	1	Re	ND	0.1	Tm	ND	0.1
Ba	0.13	0.1	Eu	ND	0.1	Mg	2.3	0.2	Rh	ND	0.1	Sn	ND	0.1
Be	ND	0.1	Gd	ND	0.1	Mn	ND	1	Rb	ND	0.1	Ti	ND	0.1
Bi	ND	0.1	Ga	ND	0.1	Hg	ND	0.2	Ru	ND	0.1	W	ND	0.1
B	ND	4	Ge	ND	0.1	Mo	ND	0.1	Sm	ND	0.1	U	ND	0.1
Br	ND	10	Au	ND	0.1	Nd	ND	0.1	Se	ND	6	V	ND	1
Cd	ND	0.1	Hf	ND	0.1	Ni	0.4	0.1	Si	50	8	Yb	ND	0.1
Ca	120	7	Ho	ND	0.1	Nb	ND	0.1	Ag	ND	0.1	Y	ND	0.1
Ce	ND	0.1	I	ND	0.2	Os	ND	0.1	Na	X	1	Zn	2.9	2
Cs	ND	0.1	Ir	ND	0.1	Pd	ND	0.1	Sr	1	0.1	Zr	ND	0.1
Cr	ND	1	Fe	ND	30	P	18	10	Ta	ND	0.1			
Co	ND	0.1	La	ND	0.1	Pt	ND	0.1	Te	ND	0.1			

X=Major Element INT=Interference from Major Element ND=Not Detected DL=Detection Limit

Accuracy and stability are guaranteed to within plus or minus 0.3% of the certified value for 18 months after the date of shipment. The solution should be kept tightly capped and stored under normal laboratory conditions. See attached MSDS for proper handling information.

For questions or comments please call 1-800-878-7654 in the United States or +31 20 638 05 97 in Europe.

Intial: WBH
Date: 2/20/07

METALS STANDARD DOCUMENTATION

Standard:	Calcium 10000ppm Stock Std	**ME #:**	0702002
Date Received/Prepped:	2/20/2007	**By:**	WBH
Date Expired:	8/16/2008	**Lot #:**	07B065
Manufacturer:	CPI	**Certificate:**	Y
Matrix:	4% HNO3	**NIST SRM:**	3109a
Amount:	250 mL	Room temp. storage	

Component	Comment	Conc.	Unit:
Ca	P/N 4400-10M91	10000	ppm

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CERTIFICATE OF ANALYSIS

P/N 4400-10M91
P/N S4400-10M91

160702002

Single-Element Calcium Standard
Ca in 4% HNO_3
10,000 ± 30 µg/mL

Lot # 07B065

Material Source: Calcium Carbonate ($CaCO_3$)
Source Purity: 99.997%
Specific Gravity: 1.035 @ 21 °C

This standard solution was prepared using high-purity salt, sub-boiled distilled nitric acid and 18-megaohm deionized water. The starting material was weighed to five significant figures and diluted in volumetric glassware calibrated to five significant figures.

The standard solution concentration was certified by ICP against the National Institute of Standards and Technology's SRM 3109a. Trace impurities of the standard solution at 1000 µg/mL were analyzed by ICP-MS.

	ppb	DL		ppb	DL		ppb	DL		ppb	DL		ppb	DL
Al	7	0.1	Cu	1.7	0.1	Pb	0.23	0.1	K	ND	70	Tl	0.27	0.1
Sb	ND	0.1	Dy	ND	0.1	Li	ND	0.4	Pr	ND	0.1	Th	ND	0.1
As	ND	6	Er	ND	0.1	Lu	ND	1	Re	ND	0.1	Tm	ND	0.1
Ba	1.5	0.1	Eu	ND	0.1	Mg	38	0.2	Rh	ND	0.1	Sn	ND	0.1
Be	ND	0.1	Gd	ND	0.1	Mn	ND	1	Rb	ND	0.1	Ti	ND	0.1
Bi	ND	0.1	Ga	ND	0.1	Hg	ND	0.2	Ru	ND	0.1	W	ND	0.1
B	1.5	4	Ge	ND	0.1	Mo	ND	0.1	Sm	ND	0.1	U	ND	0.1
Br	ND	10	Au	ND	0.1	Nd	ND	0.1	Se	ND	6	V	ND	1
Cd	ND	0.1	Hf	ND	0.1	Ni	3	0.1	Si	47	8	Yb	ND	0.1
Ca	X	7	Ho	ND	0.1	Nb	ND	0.1	Ag	ND	0.1	Y	ND	0.1
Ce	ND	0.1	I	0.27	0.2	Os	ND	0.1	Na	11.6	1	Zn	3.5	2
Cs	ND	0.1	Ir	ND	0.1	Pd	ND	0.1	Sr	55	0.1	Zr	ND	0.1
Cr	ND	1	Fe	INT	30	P	ND	10	Ta	ND	0.1			
Co	INT	0.1	La	0.41	0.1	Pt	ND	0.1	Te	ND	0.1			

INT=Interference from Major Element ND=None Detected X=Major Element DL=Detection Limit

Accuracy and stability are guaranteed to within plus or minus 0.3% of the certified value for 18 months after the date of shipment. The solution should be kept tightly capped and stored under normal laboratory conditions. See attached MSDS for proper handling information.

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